

Service Manual

ORDER NO.
CRT3877

HDD MULTIMEDIA AV NAVIGATION SERVER

AVIC-Z2_{/XU/UC}

AVIC-HD3_{/XU/EW5}



DVD is a trademark of DVD Format/Logo Licensing Corporation.

This service manual should be used together with the following manual(s) listed below. For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
AVIC-Z1/UC	CRT3618		
CX-3016	CRT3056	MS3	DVD Mech. Module:Circuit Description, Mech. Description, Disassembly
ND-BT1/E5	CRT3684		Bluetooth unit : (ND-BT1/E is sold with AVIC-HD3/XU/EW5.)

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 10)

PACKING SECTION PARTS LIST

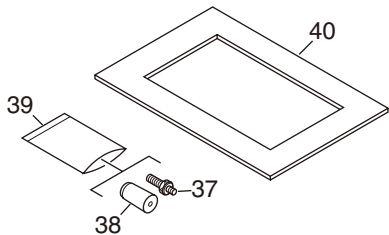
*:Non spare part

Mark	No.	Description	AVIC-Z1/UC	AVIC-Z2/XU/UC
	1-1	Owner's Manual	CRB2183	CRB2295
	1-2	Owner's Manual	CRB2184	CRB2297
	1-3	Owner's Manual/POC/FRE	CRB2185	CRB2296
	1-4	Owner's Manual/POC/FRE	CRB2186	CRB2298
	1-5	Owner's Manual	CRB2258	CRB2299
	1-6	Owner's Manual/POC/FRE	CRB2259	CRB2300
	1-13	Installation Manual	CRD4100	CRD4153
B	*	1-14 Registration Card	CRY1245	CRY1263
	*	1-25 Card	ARY1048	CRY1246(Warranty Card)
	2	Cover	CEG1177	CEG1383
	3	Carton	CHG5732	CHG6069
	4	Contain Box	CHL5732	CHL6069
	5	Protector(Upper)	CHP2227	CHP2782
	6	Protector	CHP2242	CHP3181
	7	Protector	CHP2272	CHP2783
C	10	Cord Assy	CDE8083	CDP1045
	23	Sub Carton	CHA3298	CHG5691
	24	Panel	CNS8669	CNS9008
	34	Cord Assy	CDE8082	CDP1047

Mark	No.	Description	AVIC-HD1BT/EW5	AVIC-HD3/XU/EW5
	1-1	Owner's Manual/PEE/ENG	CRB2187	CRB2301
	1-2	Owner's Manual/PEE/ENG	CRB2188	CRB2307
	1-3	Owner's Manual/PEE/SPE	CRB2189	CRB2302
	1-4	Owner's Manual/PEE/SPE	CRB2190	CRB2308
	1-5	Owner's Manual/PEE/GER	CRB2191	CRB2303
	1-6	Owner's Manual/PEE/GER	CRB2192	CRB2309
	1-7	Owner's Manual/PEE/FRE	CRB2193	CRB2304
	1-8	Owner's Manual/PEE/FRE	CRB2194	CRB2310
	1-9	Owner's Manual/PEE/ITA	CRB2195	CRB2305
	1-10	Owner's Manual/PEE/ITA	CRB2196	CRB2311
	1-11	Owner's Manual/PEE/DUT	CRB2197	CRB2306
	1-12	Owner's Manual/PEE/DUT	CRB2198	CRB2312
	1-13	Installation Manual	CRD4101	CRD4154
*	1-16	Passport	CRY1013	Not used
	1-18	Owner's Manual/PEE/ENG	CRB2260	CRB2313
	1-19	Owner's Manual/PEE/SPE	CRB2261	CRB2314
	1-20	Owner's Manual/PEE/GER	CRB2262	CRB2315
	1-21	Owner's Manual/PEE/FRE	CRB2263	CRB2316
	1-22	Owner's Manual/PEE/ITA	CRB2264	CRB2317
	1-23	Owner's Manual/PEE/DUT	CRB2265	CRB2318
	2	Cover	CEG1074	CEG1382
	3	Carton	CHG5899	CHG6070
	4	Contain Box	CHL5899	CHL6070
	5	Protector(Upper)	CHP2227	CHP3319
	6	Protector	CHP2242	CHP3181
	7	Protector	CHP2272	CHP3320
	10	Cord Assy	CDE8083	CDP1045
	12	Cord Assy	CDE8165	CDP1046
	13	Screw Assy	CEA3797	CEA7395
	16	Screw	CMZ50P060FTC(x8)	CMZ50P060FTC(x4)
	23	Sub Carton	CHA3298	CHG5691
	24	Panel	CNS8669	CNS8665
	35	Protector	Not used	CHP3321
	36	Protector	Not used	CHP3322
	37	Screw	Not used	CBA2081
	38	Bush	Not used	CNV3930
*	39	Polyethylene Bag	Not used	E36-615
	40	Panel	Not used	CNS9007



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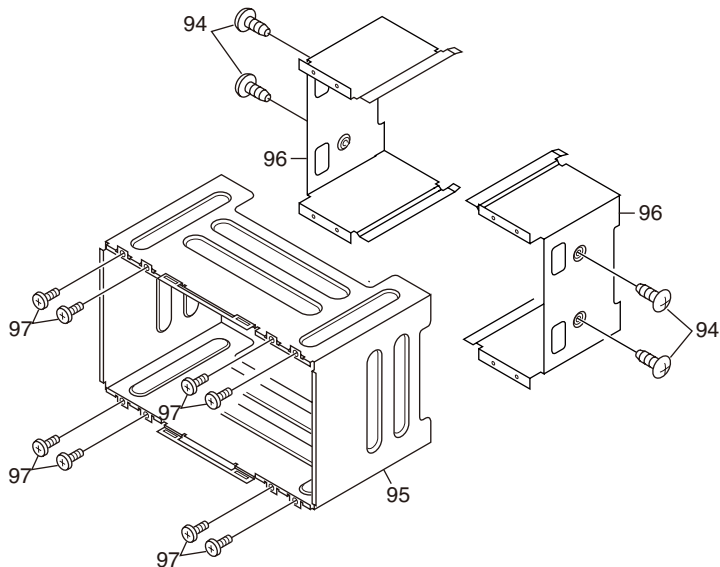
36

EXTERIOR(1)(Page 12)

EXTERIOR(1) SECTION PARTS LIST

Mark	No.	Description	AVIC-Z1/UC	AVIC-Z2/XU/UC
	5	Screw(M3 x 10)	CBA1637	CBA2097
	82	Panel Unit	CXC5925	CXC7880

Mark	No.	Description	AVIC-HD1BT/EW5	AVIC-HD3/XU/EW5
	5	Screw(M3 x 10)	CBA1637	CBA2097
	82	Panel Unit	CXC5984	CXC7980
	94	Screw	Not used	CMZ50P060FTC
	95	Holder	Not used	CND3430
	96	Holder	Not used	CND3431
	97	Screw	Not used	BMZ30P060FTC



EXTERIOR(2)(Page 14)**EXTERIOR(2) SECTION PARTS LIST**

Mark	No.	Description	AVIC-Z1/UC	AVIC-Z2/XU/UC
	4	Screw(M2 x 3)	CBA1527	CBA2096
	61	CC Unit	CWN1582	CWN2449
	71	HDD Assy(Service)	CXX2121	CXX2207

Mark	No.	Description	AVIC-HD1BT/EW5	AVIC-HD3/XU/EW5
	4	Screw(M2 x 3)	CBA1527	CBA2096
	61	CC Unit	CWN1632	CWN2450
	69	Chassis Unit	CXC6523	CXC8128
	71	HDD Assy(Service)	CXX2122	CXX2208

EXTERIOR(3)(Page 16)**EXTERIOR(3) SECTION PARTS LIST**

Mark	No.	Description	AVIC-Z1/UC	AVIC-Z2/XU/UC
	2	Cap	CNS1472	Not used
	3	Cord Assy	CDE8083	CDP1045
	22	Grille	CNS8523	CNS9018
	25	Lighting Conductor	CNV8732	CNV9510
	51	Cord Assy	CDE8082	CDP1047

Mark	No.	Description	AVIC-HD1BT/EW5	AVIC-HD3/XU/EW5
	2	Cap	CNS1472	Not used
	3	Cord Assy	CDE8083	CDP1045
	7	Cord Assy	CDE8165	CDP1046
	22	Grille	CNS8540	CNS9004
	25	Lighting Conductor	CNV8732	CNV9510

ELECTRICAL PARTS LIST(Page 121)

A GPS UNIT

Circuit Symbol and No.	Part Name	AVIC-Z1/UC AVIC-HD1BT/EW5	AVIC-Z2/XU/UC AVIC-HD3/XU/EW5
L402	Inductor	CTF1486	LCYC1R2K1608
L403	Inductor	CTF1486	LCYC1R2K1608

B AUDIO UNIT

Circuit Symbol and No.	Part Name	AVIC-Z1/UC	AVIC-Z2/XU/UC
Q1006	Transistor	DTC114EU	DTC114EUA
Q1201	Transistor	DTC114EU	DTC114EUA
Q1203	Transistor	DTC114EU	DTC114EUA
Q1431	Transistor	DTC114EU	DTC114EUA
Q1521	Transistor	DTC114EU	DTC114EUA
Q1852	Transistor	DTC114EU	DTC114EUA

Circuit Symbol and No.	Part Name	AVIC-HD1BT/EW5	AVIC-HD3/XU/EW5
Q1006	Transistor	DTC114EU	DTC114EUA
Q1201	Transistor	DTC114EU	DTC114EUA
Q1203	Transistor	DTC114EU	DTC114EUA
Q1431	Transistor	DTC114EU	DTC114EUA
Q1521	Transistor	DTC114EU	DTC114EUA
Q1823	Transistor	DTC114EU	DTC114EUA
Q1852	Transistor	DTC114EU	DTC114EUA
Q2501	Transistor	DTC124EU	DTC124EUA
Q2502	Transistor	DTC124EU	DTC124EUA
Q2503	Transistor	DTC124EU	DTC124EUA
Q2504	Transistor	DTC124EU	DTC124EUA

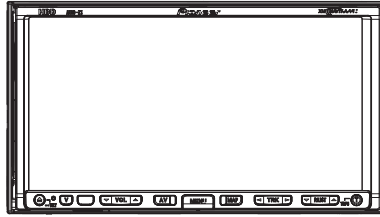
NAVI MOTHER UNIT

Circuit Symbol and No.	Part Name	AVIC-Z1/UC AVIC-HD1BT/EW5	AVIC-Z2/XU/UC AVIC-HD3/XU/EW5
Q5003	Transistor	DTC114EU	DTC114EUA
Q5004	Transistor	DTC114EU	DTC114EUA
Q5483	Transistor	DTC114EU	DTC114EUA
Q5651	Transistor	2SA1576	2SA1576A
Q5902	Transistor	DTC114EU	DTC114EUA
Q5921	Transistor	2SA1576	2SA1576A
Q6201	Transistor	DTC114EU	DTC114EUA
Q6204	Transistor	DTC114EU	DTC114EUA
Q6251	Transistor	DTC114EU	DTC114EUA
Q6301	Transistor	2SA1576	2SA1576A
Q6302	Transistor	DTC114EU	DTC114EUA
Q6311	Transistor	2SA1576	2SA1576A
Q6312	Transistor	DTC114EU	DTC114EUA
Q6351	Transistor	DTC114EU	DTC114EUA
Q6352	Transistor	DTC114EU	DTC114EUA
Q6355	Transistor	DTC114EU	DTC114EUA
Q6601	Transistor	2SA1576	2SA1576A

MONITOR UNIT

Circuit Symbol and No.	Part Name	AVIC-Z1/UC AVIC-HD1BT/EW5	AVIC-Z2/XU/UC AVIC-HD3/XU/EW5
Q352	Transistor	2SA1576	2SA1576A

Service Manual



AVIC-Z1/UC

ORDER NO.
CRT3618

HDD MULTIMEDIA AV NAVIGATION SERVER

AVIC-Z1 /UC AVIC-HD1BT /EW5

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3016	CRT3056	MS3	DVD Mech. Module:Circuit Descriptions, Mech. Descriptions, Disassembly
ND-BT1/E5	CRT3684		Bluetooth unit (ND-BT1/E is sold as packed unit of AVIC-HD/BT/EW5 in EW area.)



For details, refer to "Important Check Points for Good Servicing".

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SAFETY INFORMATION

UC

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

This product contains mercury. Disposal of this material may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance: www.eiae.org.

AVIC-Z1/UC

2

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3

4

EW5

1. Safety Precautions for those who Service this Unit.

- Follow the adjustment steps in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

- During repair or tests, minimum distance of 13cm from the focus lens must be kept.
- During repair or tests, do not view laser beam for 10 seconds or longer.

CAUTION

This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.

On the top of the player

CAUTION	: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. : AVOID EXPOSURE TO BEAM.
VORSICHT	: SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN : ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN!
ADVARSEL	: SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING : UNGÅ UDSÆTTELSE FOR STRÅLING.
WARNING	: SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA : DEL ÄR ÖPPNAD BETRakta EJ STRÅLEN.
VARO!	: AVATTAESSA ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE : LASERSATEIL YLLE. ÄLÄ KATSO SÄTEESEN.

VRW1860

WARNING!

The AEL (accessible emission level) of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.

A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

Wave length:

DVD:640~660nm

CD:770~810nm

DVD : 2.48mW(Emitting period :9sec.)

CD : 705 μ W(Emitting period : unlimited)

Additional Laser Caution

Transistors Q1101 and Q1102 in PCB drive the laser diodes for DVD and CD respectively. When Q1101 or Q1102 is shorted between their terminals, the laser diodes for DVD or CD will radiate beam. If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

● Service Precautions

- You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
- Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

● DVD section precaution

1. EJECT LOCK MODE for DVD mechanism.

In order to enter "EJECT LOCK" mode, reset start while pressing "AV" and "V" keys together.

Pressing the "AV" and "V" keys until monitor back light is turned on.

In order to exit "EJECT LOCK" mode, follow the same steps to enter this mode.

2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to skew adjustment.
5. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.



DVD is a trademark of DVD Format/Logo Licensing Corporation.

CONTENTS

	SAFETY INFORMATION	2
	1. SPECIFICATIONS	7
A	2. EXPLODED VIEWS AND PARTS LIST	9
	2.1 PACKING	10
	2.2 EXTERIOR(1)	12
	2.3 EXTERIOR(2)	14
	2.4 EXTERIOR(3)	16
	2.5 DVD MECHANISM MODULE	18
	3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	20
	3.1 BLOCK DIAGRAM	20
	3.2 OVERALL CONNECTION DIAGRAM	38
	3.3 GPS UNIT(GUIDE PAGE)	40
	3.4 AUDIO UNIT(P/S•I/F)(GUIDE PAGE)	46
	3.5 AUDIO UNIT(FM/AM•TMC TUNER)	52
B	3.6 DVD CORE UNIT(MS3)(SO-DC)(GUIDE PAGE)	54
	3.7 DVD CORE UNIT(MS3)(CPU)(GUIDE PAGE)	60
	3.8 COMPOUND UNIT(A) AND COMPOUND UNIT(B)	68
	3.9 PU UNIT(REFERENCE)	69
	3.10 NAVI MOTHER PCB(SYSCOM•P/S)(GUIDE PAGE)	70
	3.11 NAVI MOTHER PCB(NAVI AV•EXTERNAL I/F)(GUIDE PAGE)	76
	3.12 HDD DELAY PCB	82
	3.13 PANEL UNIT	84
	3.14 KEYBOARD UNIT	86
	3.15 MONITOR UNIT(MONITOR)(GUIDE PAGE)	88
	3.16 MONITOR UNIT(INVERTER)	94
	3.17 MAIN PCB UNIT	96
C	4. PCB CONNECTION DIAGRAM	98
	4.1 AUDIO UNIT	98
	4.2 DVD CORE UNIT(MS3)	102
	4.3 COMPOUND UNIT(A) AND COMPOUND UNIT(B)	106
	4.4 GPS UNIT	107
	4.5 NAVI MOTHER PCB	108
	4.6 HDD RELAY PCB	112
	4.7 PANEL UNIT	113
	4.8 MONITOR UNIT	114
	4.9 MAIN PCB UNIT	118
	4.10 KEYBOARD UNIT	120
	5. ELECTRICAL PARTS LIST	121
D	6. ADJUSTMENT	148
	6.1 JIG CONNECTION DIAGRAM	148
	6.2 DVD ADJUSTMENT	150
	6.3 VIDEO LEVEL ADJUSTMENT	167
	6.4 PLL ADJUSTMENT	169
	6.5 MONITOR UNIT ADJUSTMENT	171
	6.6 TEST MODE	184
	6.7 TEST DISC	207
	7. GENERAL INFORMATION	224
	7.1 DIAGNOSIS	224
	7.1.1 DISASSEMBLY	224
E	7.1.2 PCB LOCATIONS	232
	7.1.3 CONNECTOR FUNCTION DESCRIPTION	233
	7.2 IC	234
	8. OPERATIONS	246

1. SPECIFICATIONS

General

Rated power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Maximum current consumption	10.0 A
Dimensions (W × H × D): DIN	
Chassis	178 × 100 × 165 mm (7 × 3-7/8 × 6-1/2 in.)
Nose	170 × 96 × 16 mm (6-3/4 × 3-3/4 × 5/8 in.)
Weight	2.9 kg (6.4 lbs)
HDD	30 GB
Backup current	2.25 mA or less

Navigation

GPS Receiver:	
System	L1, C/Acode GPS SPS (Standard Positioning Service)
Reception system	8-channel multi-channel reception system
Reception frequency ...	1 575.42 MHz
Sensitivity	-130 dBm
Position update frequency	Approx. once per second
GPS antenna:	
Antenna	Micro strip flat antenna/ right-handed helical polari- zation
Antenna cable	5.0 m (16 ft. 5 in.)
Dimensions (W × H × D)	33 × 13 × 36 mm (1-1/4 × 1/2 × 1-3/8 in.)
Weight	105 g(0.23 lbs)

Display

Screen size/aspect ratio	7.0 inch wide/16:9 (effective display area: 156 × 82 mm) (6-1/8 × 3-1/4 in.)
Pixels	336 960 (1 440 × 234)
Type	TFT active matrix, transmis- sive type
Color system	NTSC
Operating temperature range	+14 °F to +122 °F
Storage temperature range	-4 °F to +176 °F
Angle adjustment	0° to 21° (initial settings: 0°)

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 Hz to 15 000 Hz with no more than 5% THD.	
Maximum power output	50 W × 4 50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for subwoofer)
Load impedance	4 Ω (4 Ω to 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance	2.0 V/1k Ω

Equalizer (3-Band Parametric Equalizer):

Low

Frequency..... 40/80/100/160 Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain..... ± 12 dB

Mid

Frequency..... 200/500/1k/2k Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain..... ± 12 dB

High

Frequency..... 3.15k/8k/10k/12.5k Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain..... ± 12 dB

Loudness contour:

Low..... +3.5 dB (100 Hz), +3 dB (10
 kHz)
 Mid +10 dB (100 Hz), +6.5 dB
 (10 kHz)
 High +11 dB (100 Hz), +11 dB
 (10 kHz)
 (Volume: -30 dB)

HPF:

Frequency..... 50/80/125 Hz
 Slope -12 dB/oct

Subwoofer:

Frequency..... 50/80/125 Hz
 Slope -18 dB/oct
 Gain..... ± 12 dB
 Phase..... Normal/Reverse

DVD Drive

System..... DVD-Video, Compact disc
 audio, MP3 system
 Usable discs..... DVD-Video, Compact disc,
 MP3

Region number..... 1

Signal format:

Sampling frequency 44.1/48/96 kHz
 Number of quantization bits
 16/20/24; linear

Frequency response 5 Hz to 44 000 Hz (with DVD,
 at sampling frequency 96
 kHz)

Signal-to-noise ratio 97 dB (1 kHz) (IHF-A net-
 work)
 (CD: 96 dB (1 kHz) (IHF-A
 network))

Dynamic range 95 dB (1 kHz)
 (CD: 94 dB (1 kHz))

Distortion..... 0.008 % (1 kHz)

Output level:

Video 1.0 V_{p-p}/75 Ω (± 0.2 V)
 Audio..... 1.0 V (1 kHz, 0 dB)

Number of channels..... 2 (stereo)

MP3 decoding format..... MPEG-1 & 2 Audio Layer 3

FM tuner

Frequency range..... 87.9 MHz to 107.9 MHz
 Usable sensitivity..... 8 dBf (0.7 μ V/75 Ω , mono, S/
 N: 30 dB)

Signal-to-noise ratio 75 dB (IHF-A network)

Distortion..... 0.3 % (at 65 dBf, 1 kHz,
 stereo)
 0.1 % (at 65 dBf, 1 kHz,
 mono)

Frequency response..... 30 Hz to 15 000 Hz (± 3 dB)

Stereo separation 45 dB (at 65 dBf, 1 kHz)

Selectivity 80 dB (± 200 kHz)

Three-signal intermodulation (desired signal level)
 30 dBf (two undesired signal
 level: 100 dBf)

AM tuner

Frequency range..... 530 kHz to 1 710 kHz (10
 kHz)

Usable sensitivity..... 18 μ V (S/N: 20 dB)

Signal-to-noise ratio 65 dB (IHF-A network)

Note:

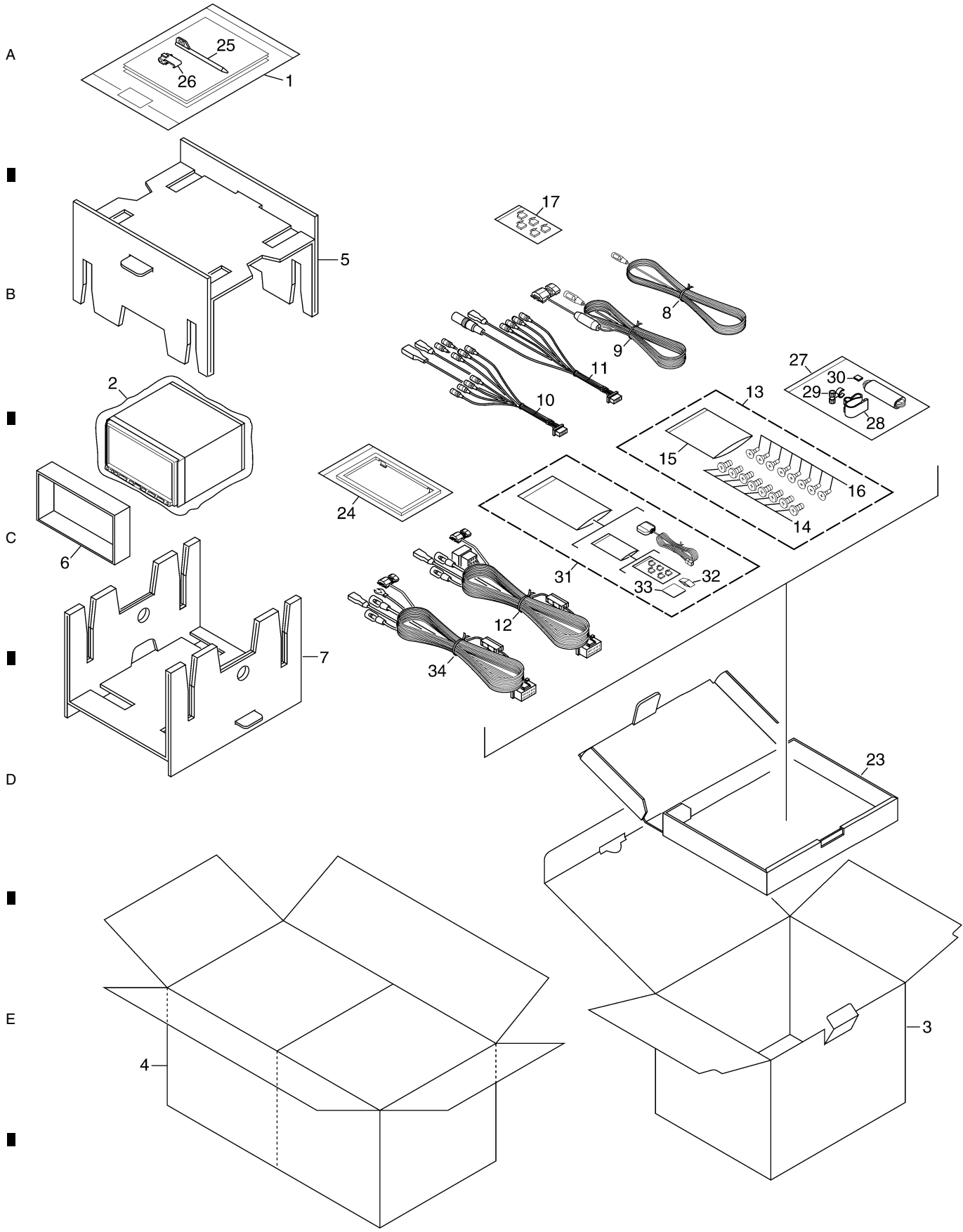
Specifications and design are subject to possible
 modifications without notice due to improve-
 ments.

2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.

- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screw adjacent to ∇ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



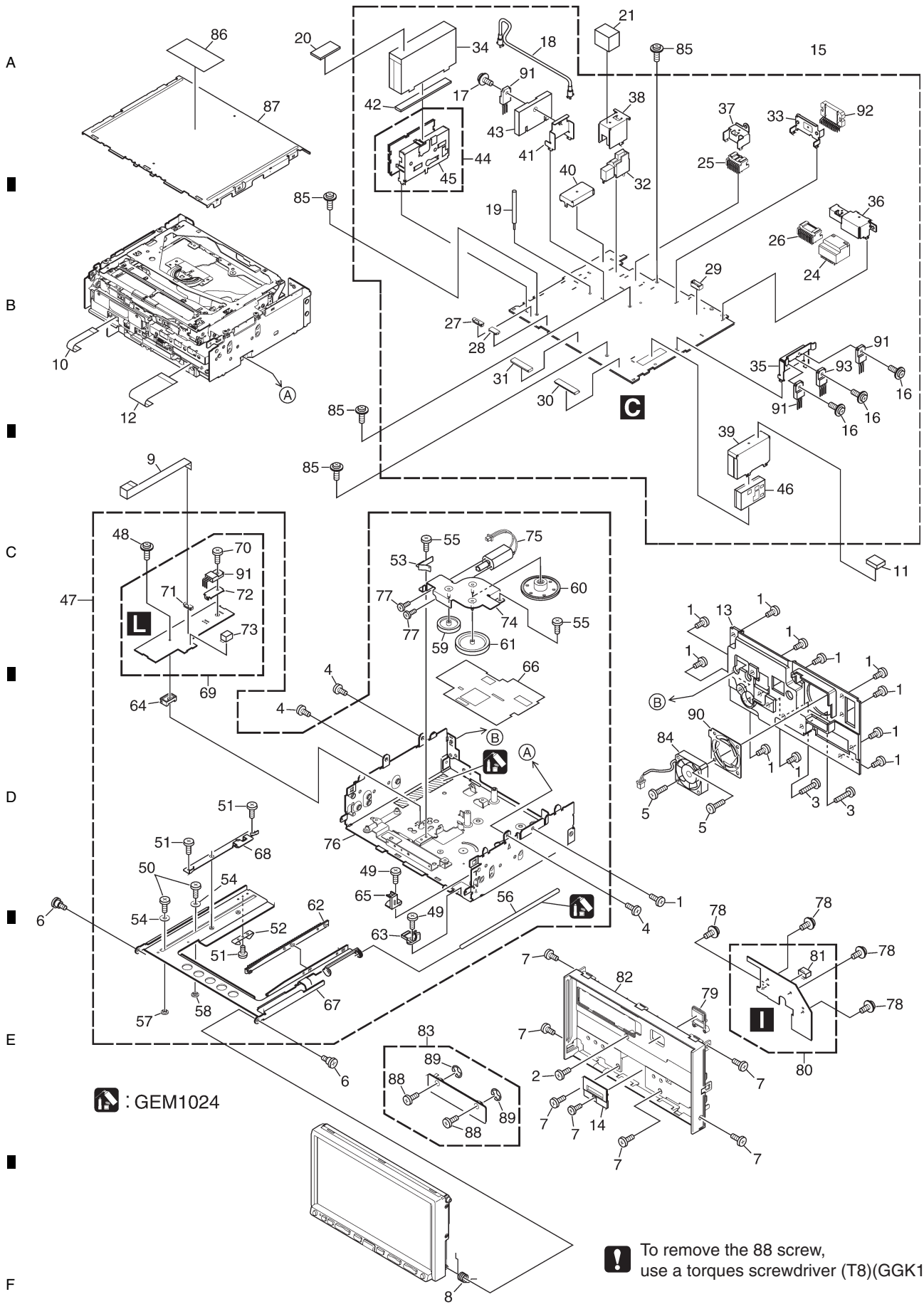
PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1-1	Owner's Manual(UC)	CRB2183	3	Carton(UC)	CHG5732
	Owner's Manual/PEE/ENG(EW)	CRB2187		Carton(EW)	CHG5899
1-2	Owner's Manual(UC)	CRB2184	4	Contain Box(UC)	CHL5732
	Owner's Manual/PEE/ENG(EW)	CRB2188		Contain Box(EW)	CHL5899
1-3	Owner's Manual/POC/FRE(UC)	CRB2185	5	Protector(Upper)	CHP2227
	Owner's Manual/PEE/SPE(EW)	CRB2189	6	Protector	CHP2242
1-4	Owner's Manual/POC/FRE(UC)	CRB2186	7	Protector	CHP2272
	Owner's Manual/PEE/SPE(EW)	CRB2190			
1-5	Owner's Manual/PEE/GER(EW)	CRB2191	8	Cord	CDE5044
	Owner's Manual(UC)	CRB2258	9	Cord	CDE6825
1-6	Owner's Manual/PEE/GER(EW)	CRB2192	10	Cord Assy	CDE8083
	Owner's Manual/POC/FRE(UC)	CRB2259	11	Cord Assy	CDE8084
1-7	Owner's Manual/PEE/FRE(EW)	CRB2193	12	Cord Assy(EW)	CDE8165
1-8	Owner's Manual/PEE/FRE(EW)	CRB2194	13	Screw Assy	CEA3797
1-9	Owner's Manual/PEE/ITA(EW)	CRB2195	14	Screw	BMZ50P060FTC
1-10	Owner's Manual/PEE/ITA(EW)	CRB2196	* 15	Polyethylene Bag	CEG-127
1-11	Owner's Manual/PEE/DUT(EW)	CRB2197	16	Screw	CMZ50P060FTC
1-12	Owner's Manual/PEE/DUT(EW)	CRB2198	17	Cord Clamper Assy	CEA4636
1-13	Installation Manual(UC)	CRD4100	18-22	*****	
	Installation Manual(EW)	CRD4101	23	Sub Carton	CHA3298
* 1-14	Registration Card(UC)	CRY1245	24	Panel	CNS8669
1-15	Caution Card(UC)	CRP1310	25	Pen	CNV8969
* 1-16	Passport(EW)	CRY1013	26	Connector	CKX1049
* 1-17	Warranty Card(EW)	CRY1157	27	Microphone Assy	CPM1064
1-18	Owner's Manual/PEE/ENG(EW)	CRB2260	28	Clip Holder	CZN5471
1-19	Owner's Manual/PEE/SPE(EW)	CRB2261	29	Microphone Holder	CZN5472
1-20	Owner's Manual/PEE/GER(EW)	CRB2262	30	Cushion	CZN5473
1-21	Owner's Manual/PEE/FRE(EW)	CRB2263	31	GPS Antenna Assy	CXC4864
1-22	Owner's Manual/PEE/ITA(EW)	CRB2264	32	Water Proof Pad	CZN5442
1-23	Owner's Manual/PEE/DUT(EW)	CRB2265	33	Sheet	CZN7008
1-24	Polyethylene Bag	CEG1116	34	Cord Assy(UC)	CDE8082
2	Cover(UC)	CEG1177			
	Cover(EW)	CEG1074			

Owner's Manual,Installation Manual

Part No.	Language
CRB2183,CRB2184,CRB2187,CRB2188,CRB2258,CRB2260	English
CRB2185,CRB2186,CRB2193,CRB2194,CRB2259,CRB2263	French
CRB2189,CRB2190,CRB2261	Spanish
CRB2191,CRB2192,CRB2262	German
CRB2195,CRB2196,CRB2264	Italian
CRB2197,CRB2198,CRB2265	Dutch
CRD4100	English,French
CRD4101	English,Spanish,German,French,Italian,Dutch

2.2 EXTERIOR(1)

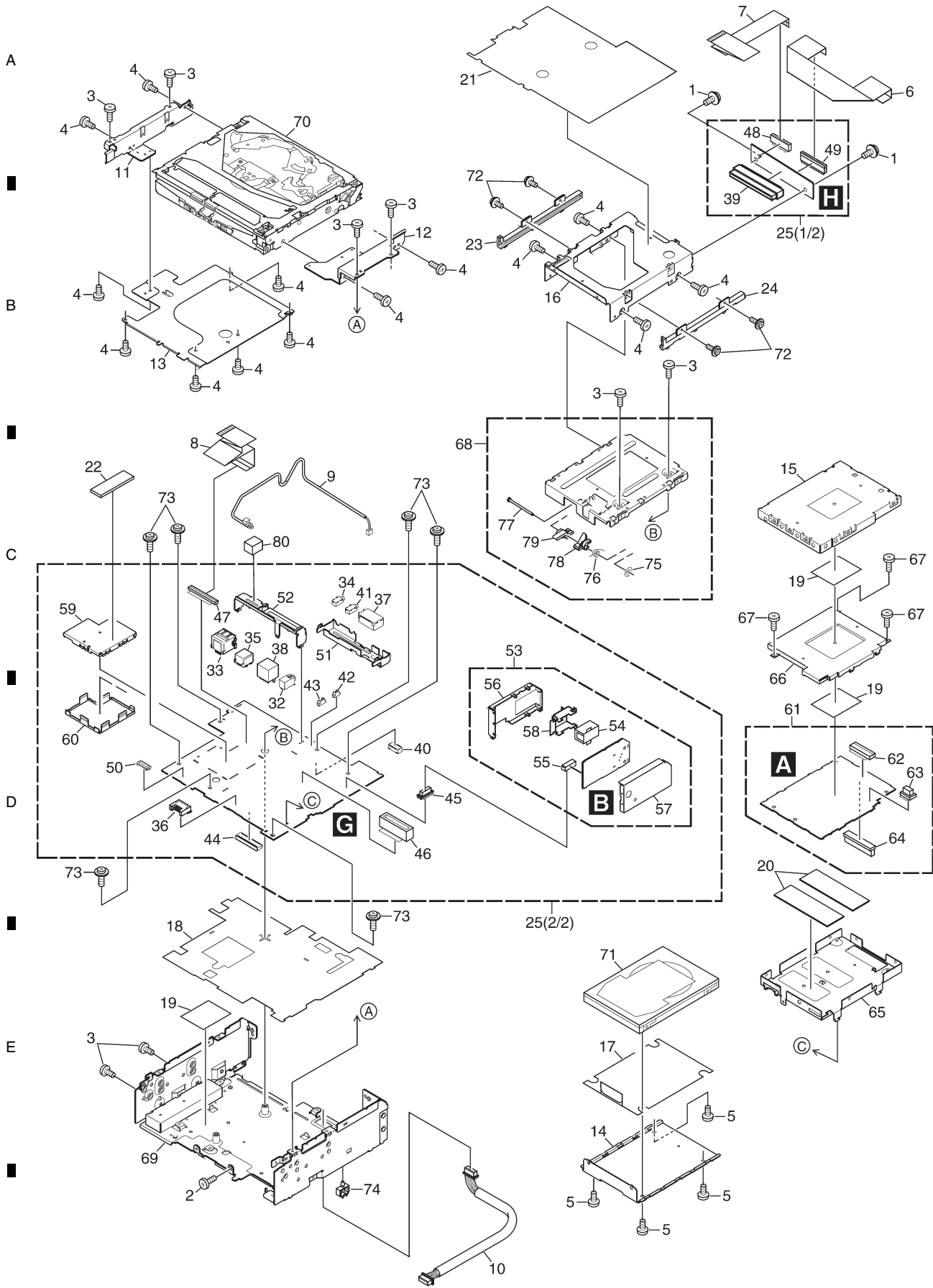


! To remove the 88 screw, use a torques screwdriver (T8)(GGK1068).

EXTERIOR(1) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ26P060FTC	48	Screw(M2 x 6)	CBA1399
2	Screw	BMZ26P120FTB	49	Screw(M2 x 1.5)	CBA1615
3	Screw	BMZ26P160FTB			
4	Screw	BSZ26P050FTB	50	Screw(M2 x 2.5)	CBA1881
5	Screw(M3 x 10)	CBA1637	51	Screw(M2 x 2)	CBA1771
			52	Spring	CZB3092
6	Screw	CBA1735	53	Spring	CZB3093
7	Screw(M2 x 3)	CBA1877	54	Washer	CZB5004
8	Spring	CBH2932			
9	FFC	CDE7998	55	Screw	CZB5005
10	FFC	CDE8204	56	Shaft	CZL3010
			57	Roller	CZL3011
11	Gasket(EW)	CNN1296	58	Roller	CZL3012
12	Flexible PCB	CNP8272	59	Gear	CZN7011
13	Heat Sink	CNR1849			
14	Cover	CNS8525	60	Gear	CZN7012
15	Audio Unit(UC)	CWN1583	61	Gear	CZN7013
	Audio Unit(EW)	CWN1633	62	Rack	CZN7014
			63	Holder	CZN7015
16	Screw	BMZ26P050FTB	64	Holder	CZN7042
17	Screw	BMZ26P120FTC			
18	Cord(EW)	CDH1354	65	Holder	CZN7043
19	Clamper(EW)	CEF1048	66	Sheet	CZN7044
20	Gasket(EW)	CNN1379	67	Frame	CZN7063
			68	Plate	CZN7064
21	Gasket	CNN1375	69	Main PCB Unit	CZW5026
22	*****				
23	*****		70	Screw	BMZ26P050FTC
24	Plug(CN1001)	CKM1278	71	Connector(CN2)	CZK3075
25	Connector(CN1202)	CKM1502	72	Heat Sink	CND1228
			73	Connector(CN1)	CZK3071
26	Connector(CN1201)	CKM1506	74	Bracket Unit	CZX5101
27	Connector(CN1832)	CKS5572			
28	Connector(CN1003)	CKS5644	75	Motor Unit(M1000)	CZX5102
29	Connector(CN1002)	CKS4674	76	Chassis Unit	CZX5169
30	Connector(CN1831)	CKS5110	77	Screw	JFZ20P020FTC
			78	Screw	BPZ20P060FTC
31	Connector(CN1203)	CKS5486	79	Button(DISC)	CAC9626
32	Antenna Jack(CN2501)	CKX1060			
33	Holder	CNC9921	80	Panel Unit	CWN1586
34	Shield	CND3004	81	Connector(CN6901)	CKS4487
35	Holder	CND3023	82	Panel Unit(UC)	CXC5925
				Panel Unit(EW)	CXC5984
36	Holder	CND3142	83	Cover Unit	CXC5989
37	Holder	CND3180			
38	Holder	CND3181	84	Fan Motor	CXM1320
39	Shield(EW)	CND3188	85	Screw	ASZ26P050FTC
40	Shield(EW)	CND3189	86	Label(EW)	VRW1860
			87	Csse	CNB3219
41	Holder	CND3411	88	Screw	CBA1981
42	Sheet	CNM9805			
43	Heat Sink	CNR1873	89	Washer	YE20FTC
44	FM/AM Tuner Unit(UC)	CWE1952	90	Holder	CND3484
	FM/AM Tuner Unit(EW)	CWE1951	91	Transistor(Q1207,1840,1850)	2SB1185
			92	IC(IC1401)	PAL007B
45	Holder	CND1054	93	IC(IC1403)	BA00CCOWT
46	Tuner Unit(Y2600)(EW)	CWE2023			
47	Drive Mechanism Unit	CXC6806			

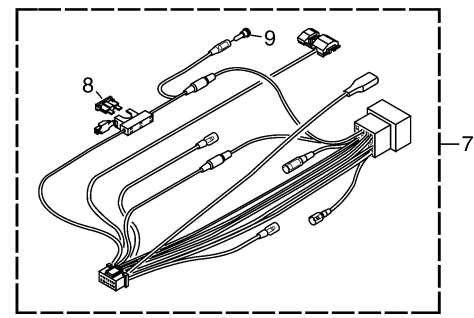
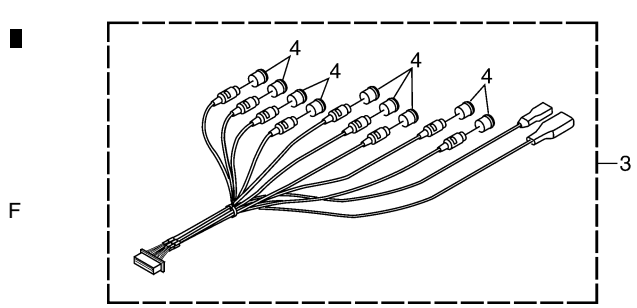
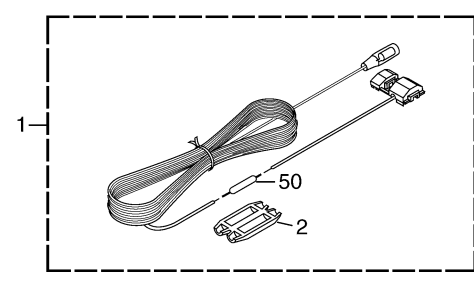
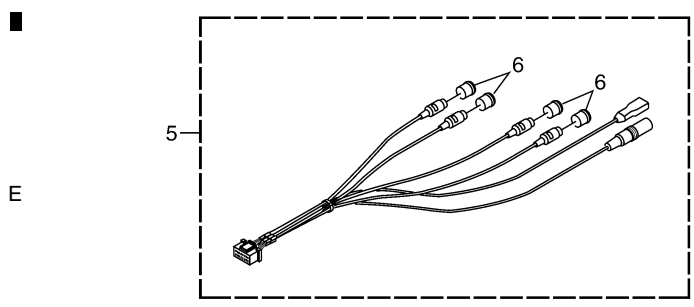
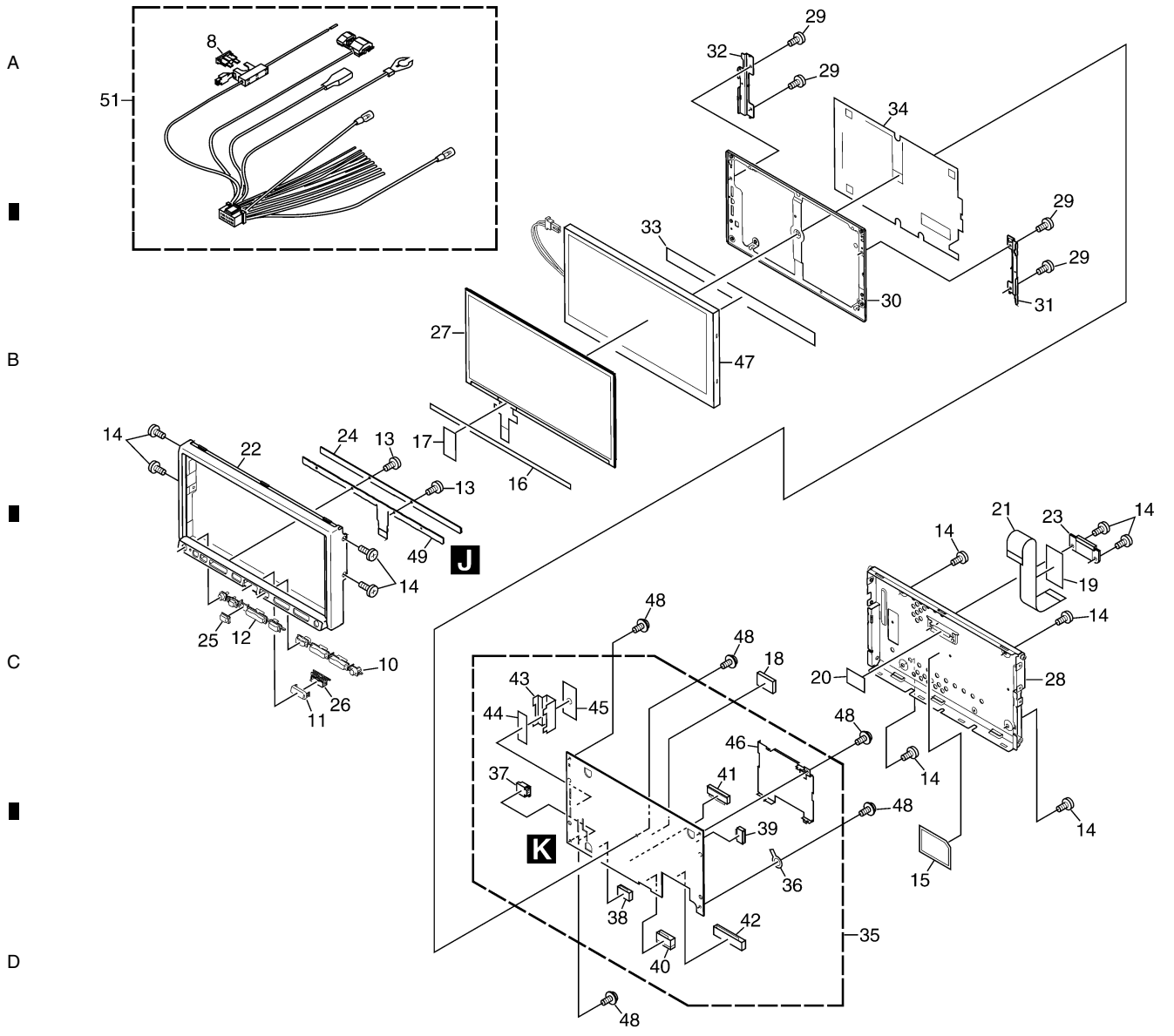
2.3 EXTERIOR(2)



EXTERIOR(2) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	AMZ26P040FTC	49	Connector(CN6802)	CKS5522
2	Screw	BMZ26P060FTC	50	Connector(CN5801)	CKS5543
3	Screw	BSZ26P050FTB			
4	Screw(M2 x 3)	CBA1527	51	Holder	CND3007
5	Screw	CBA1805	52	Holder	CND3183
			53	GPS Unit(UC)	CWX3304
6	FFC	CDE8077		GPS Unit(EW)	CWX3305
7	FFC	CDE8280	54	Connector(CN504)	CKS4432
8	FFC	CDE8286			
9	Cord Assy	CDE8081	55	Connector(CN461)	CKS5204
10	Cord Assy	CDE8156	56	Shield	CNC9191
			57	Shield	CNC9192
11	Bracket	CND1507	58	Holder	CNC9252
12	Bracket	CND1831	59	Shield Assy	CXC5867
13	Shield	CND3001			
14	Holder	CND3002	60	Shield Assy	CXC5868
15	Shield	CND3010	61	CC Unit(UC)	CWN1582
				CC Unit(EW)	CWN1632
16	Holder	CND3182	62	Connector(CN4151)	CKS5645
17	Insulator	CNM8452	63	Connector(CN4001)	CKS5229
18	Insulator	CNM9815			
19	Sheet	CNM9933	64	Connector(CN4804)	CKS5276
20	Sheet	CNM9947	65	Shield Assy	CXC5869
			66	Shield Assy	CXC5870
21	Insulator	CNN1376	67	Screw	PMH26P050FTC
22	Sheet	CNN1215	68	Frame Assy	CXC6022
23	Rail	CNV7149			
24	Rail	CNV7150	69	Chassis Unit(UC)	CXC5401
25	Navi Mother Unit(UC)	CWN1581		Chassis Unit(EW)	CXC6523
	Navi Mother Unit(EW)	CWN1631	70	DVD Mechanism Module(MS3)	CXX6341
			71	HDD Assy(Service)(UC)	CXX2121
26	*****			HDD Assy(Service)(EW)	CXX2122
27	*****				
28	*****		72	Screw	IMS20P030FTC
29	*****		73	Screw	ASZ26P050FTC
30	*****		74	Wire Clip(A)	VEC1355
			75	Washer	CBF1037
31	*****		76	Spring	CBH2618
32	Jack(CN5602)	CKN1037			
33	Connector(CN5571)	CKS3408	*	77 Shaft	CLA4187
34	Connector(CN5611)	CKS3759	*	78 Lever	CNV7151
35	Connector(CN5671)	CKS4473	*	79 Lever	CNV7152
			80	Gasket	CNN1297
36	Connector(CN6501)	CKS4485			
37	Connector(CN5531)	CKS4499			
38	Connector(CN5651)	CKS4590			
39	Connector(CN6801)	CKS4602			
40	Connector(CN5851)	CKS4674			
41	Connector(CN5621)	CKS4752			
42	Connector(CN6351)	CKS4822			
43	Connector(CN5601)	CKS4823			
44	Connector(CN5802)	CKS5110			
45	Connector(CN6401)	CKS5205			
46	Connector(CN5201)	CKS5277			
47	Connector(CN6101)	CKS5486			
48	Connector(CN6803)	CKS5486			

2.4 EXTERIOR(3)



EXTERIOR(3) SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Cord	CDE6825	48	Screw	PMB20P040FTC	
2	Cap	CNS1472				A
3	Cord Assy	CDE8083	49	Keyboard Unit(UC)	CWN1585	
4	Cap	CNV6727		Keyboard Unit(EW)	CWN1635	
5	Cord Assy	CDE8084	50	Resistor	RS1/2PMF102J	
			51	Cord Assy(UC)	CDE8082	
6	Cap	CNV6727				
7	Cord Assy(EW)	CDE8165				
⚠ 8	Fuse(10 A)	CEK1136				
9	Cap(EW)	CKX-003				
10	Button	CAC9622				
11	Button(MENU)	CAC9623				B
12	Button	CAC9625				
13	Screw(M2 x 5)	CBA1875				
14	Screw(M2 x 3)	CBA1877				
15	Shield	CNM9656				
16	Sheet	CNN1102				
17	Sheet	CNN1103				
18	Spacer	CNN1220				
19	Cover	CNN1221				
20	Cover	CNN1223				C
21	Flexible PCB	CNP8970				
22	Grille(UC)	CNS8523				
	Grille(EW)	CNS8540				
23	Guide	CNV5169				
24	Spacer	CNV8730				
25	Lighting Conductor	CNV8732				
26	Holder	CNV8931				
27	Touch Panel	CSX1093				
28	Case Unit	CXC5408				
29	Screw(M2 x 2)	CBA1771				D
30	Holder	CND3014				
31	Holder	CND3015				
32	Holder	CND3016				
33	Insulator	CNM9811				
34	Insulator	CNM9962				
35	Monitor Unit(UC)	CWN1584				
	Monitor Unit(EW)	CWN1634				
36	Terminal(CN971)	CKF1064				E
37	Connector(CN842)	CKS4428				
38	Connector(CN3)	CKS4675				
39	Connector(CN5)	CKS5037				
40	Connector(CN4)	CKS5041				
41	Connector(CN1)	CKS5095				
42	Connector(CN7)	CKS5111				
43	Shield	CND1177				
44	Insulator	CNM7876				
45	Insulator	CNM7877				F
46	Shield Assy	CXC6514				
47	LCD Module	CWX3263				

2.5 DVD MECHANISM MODULE

A

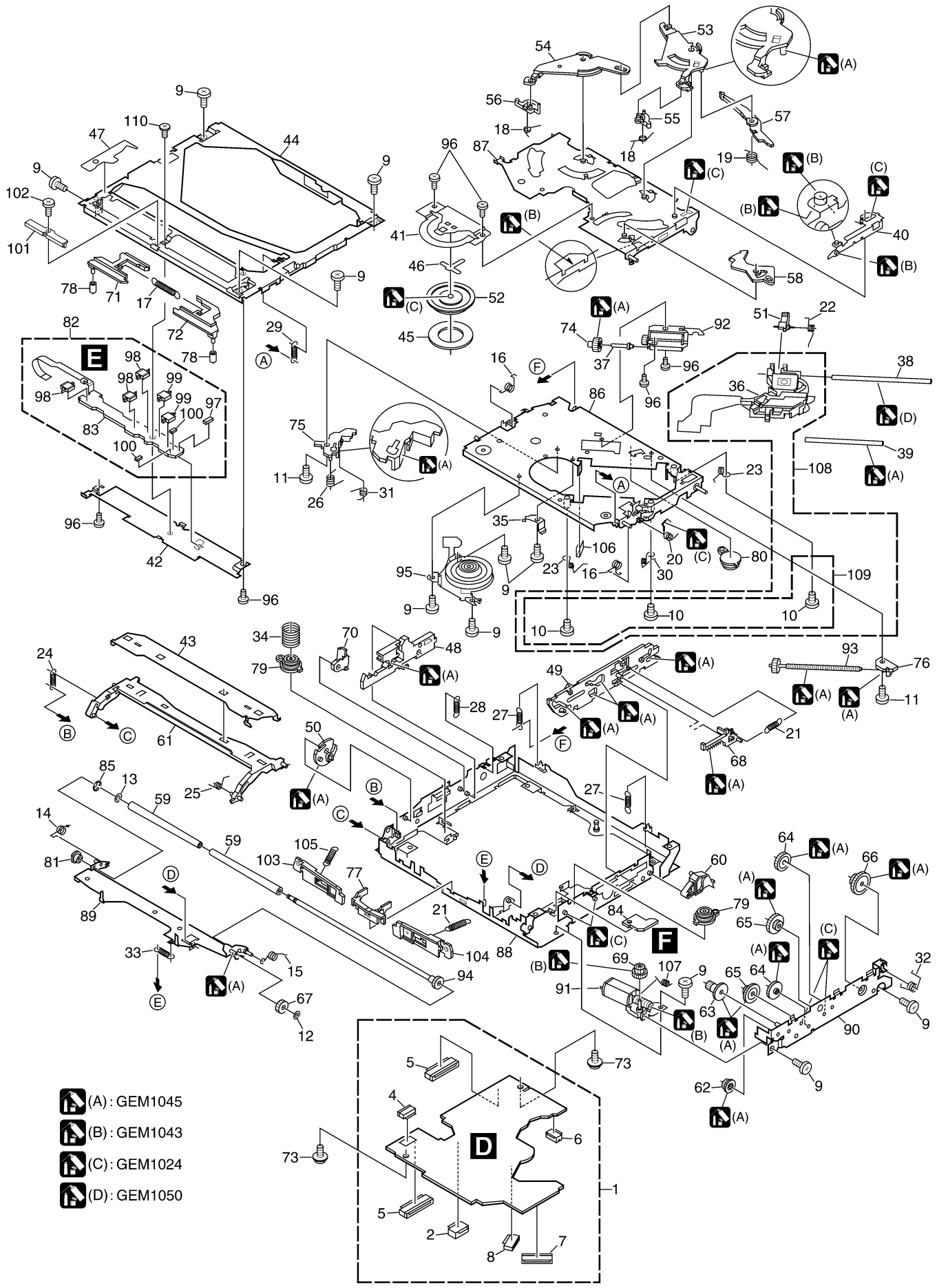
B

C

D

E

F



- (A): GEM1045
- (B): GEM1043
- (C): GEM1024
- (D): GEM1050

DVD MECHANISM MODULE SECTION PARTS LIST

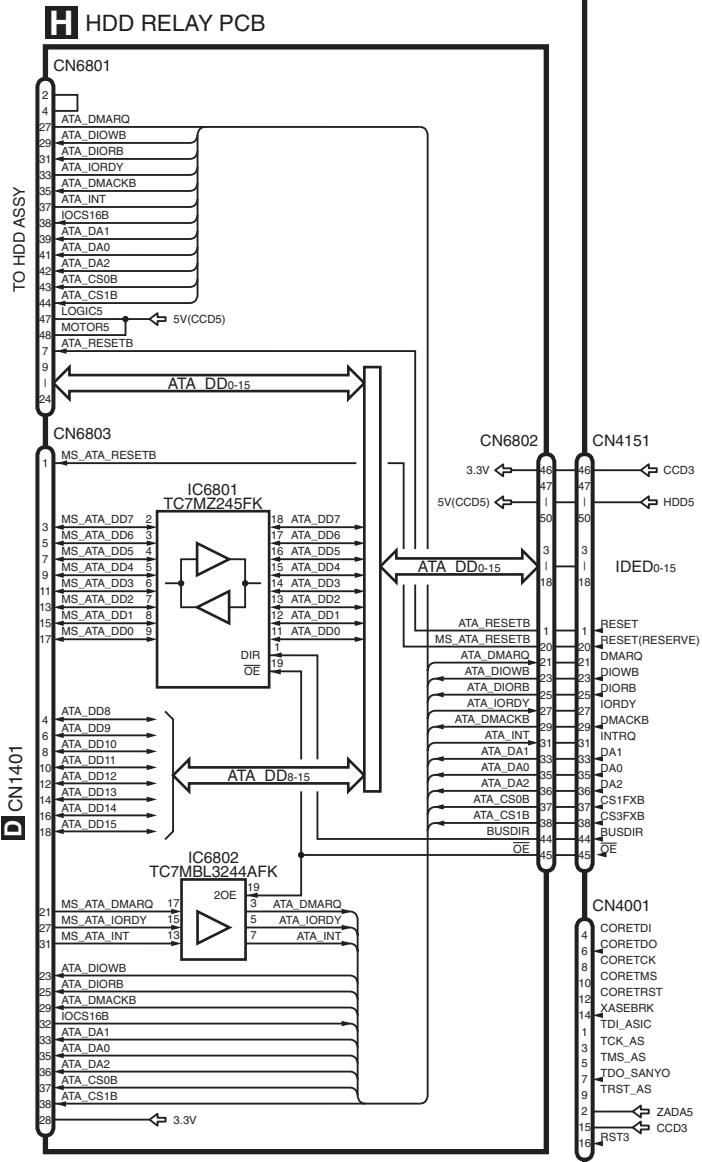
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	DVD Core Unit	CWX3301	* 57	Arm	CNV7163
2	Connector(CN1501)	CKS4282	58	Arm	CNV7164
3	Connector(CN1401)	CKS5100	59	Roller	CNV7165
4	Connector(CN1202)	CKS5043	60	Arm	CNV7166
5	Connector(CN1611)	CKS5100			
			61	Guide	CNV8093
6	Connector(CN1603)	CKS4374	62	Gear	CNV7169
7	Connector(CN1101)	CKS4842	63	Gear	CNV7170
8	Connector(CN1201)	CKS5017	64	Gear	CNV7171
9	Screw	BMZ20P020FTC	65	Gear(Black)	CNV7172
10	Screw(M2 x 3.5)	CBA1571			
			66	Gear	CNV7173
11	Screw(M2 x 2.5)	CBA1623	67	Gear	CNV7174
12	Washer	CBF1038	68	Rack	CNV7175
13	Washer	CBF1064	69	Gear	CNV7176
14	Spring	CBH2586	70	Arm	CNV8077
15	Spring	CBH2587			
			71	Lever	CNV7178
16	Spring	CBH2588	72	Lever	CNV7179
17	Spring	CBH2589	73	Screw	IMS20P030FTC
18	Spring	CBH2590	74	Gear	CNV7181
19	Spring	CBH2591	75	Holder	CNV7183
20	Spring	CBH2592			
			76	Holder	CNV7184
21	Spring	CBH2593	77	Guide	CNV7745
22	Spring	CBH2594	78	Roller	CNV7344
23	Spring	CBH2595	79	Damper	CNV7470
24	Spring	CBH2596	80	Damper	CNV7471
25	Spring	CBH2597			
			81	Collar	CNV8845
26	Spring	CBH2598	82	Compound Unit(A)	CWX3154
27	Spring	CBH2599	83	
28	Spring	CBH2600	84	Compound Unit(B)	CWX3394
29	Spring	CBH2601	85	Washer	YE20FTC
30	Spring	CBH2602			
			86	Chassis Unit	CXC3629
31	Spring	CBH2603	87	Arm Unit	CXB8681
32	Spring	CBH2604	88	Frame Unit	CXB8683
33	Spring	CBH2605	89	Arm Unit	CXC4701
34	Spring	CBH2711	90	Bracket Unit	CXB8685
35	Spring	CBL1564			
			91	Motor Unit(LOADING)(M1)	CXC4315
36	Pickup Unit(Service)(DP5)	CXX1945	92	Motor Unit(CARRIAGE)(M2)	CXC4314
37	Shaft	CLA3881	93	Screw Unit	CXB8689
38	Shaft	CLA4206	94	Roller Unit	CXC5676
39	Shaft	CLA4207	95	Motor(SPINDEL)(M3)	CXM1308
40	Lever	CNC9933			
			96	Screw	JFZ20P018FTC
41	Holder	CNC9939	97	Photo-transistor(Q1299)	CPT231SCTD
42	Holder	CND2251	98	Switch(S1201)	CSN1069
43	Holder	CND2642	99	Spring Switch(S1204)	CSN1070
44	Frame	CND2250	100	Resistor(R1298)	RS1/16S0R0J
45	Sheet	CNM6883			
			101	Guide	CNV7615
46	Sheet	CNM8283	102	Screw(M1.7 x 1.2)	CBA1572
47	Sheet	CNM8643	103	Arm	CNV7742
48	Lever	CNV8502	104	Arm	CNV7743
49	Lever	CNV8420	105	Spring	CBH2710
50	Cam	CNV7156			
			106	Spring	CBL1643
51	Rack	CNV7157	107	Spring	CBH2712
52	Clamper	CNV7158	108	Pickup Unit(Service)(Screw)	GXX1259
53	Arm	CNV7159	109	Screw Assy	CXX1750
54	Arm	CNV7160	110	Screw(M1.4 x 1.4)	CBA1787
55	Arm	CNV7161			
56	Arm	CNV7162			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A
B
C
D
E
F

A CC UNIT



AVIC-Z1/UC

20

1 2 3 4

A
B
C
D
E
F

CN4804

- DACOUT_L 1
- DACOUT_R 3
- ADCIN_L(MIC) 7
- ADCIN_R(TEL) 9
- DSPOUT_L 15
- DSPOUT_R 19
- SBCK 25
- SUBC 28
- BLKCK 30
- NCLDCLK 32
- HDDSNS 34
- MEMMUTE 35
- CD_DATA 36
- TELVC 37
- EMPH 38
- CD_LRCK 40
- XMS3RST 41
- CD_BCK 42
- TELSEL 74
- TCHSEL 76
- UNITPWR 78
- UNIT 90
- PCONT1 92
- PCONT2 94

- OVER 2
- CSYNC 6
- FSC 10
- B 14
- G 14
- R 16
- B82RO 24
- OFFOK 39
- REM 45

- ASENRO 48
- PROGGAIN2 49
- USB_XOVCR 51
- PROGGAIN1 52
- PROGGAIN0 53
- CTOM 55
- IRQPW 56
- MTOC 57
- ONSEIMUTE 58
- CTOB 59
- CPUWDT 60
- BTOC 61
- HYOKA 64

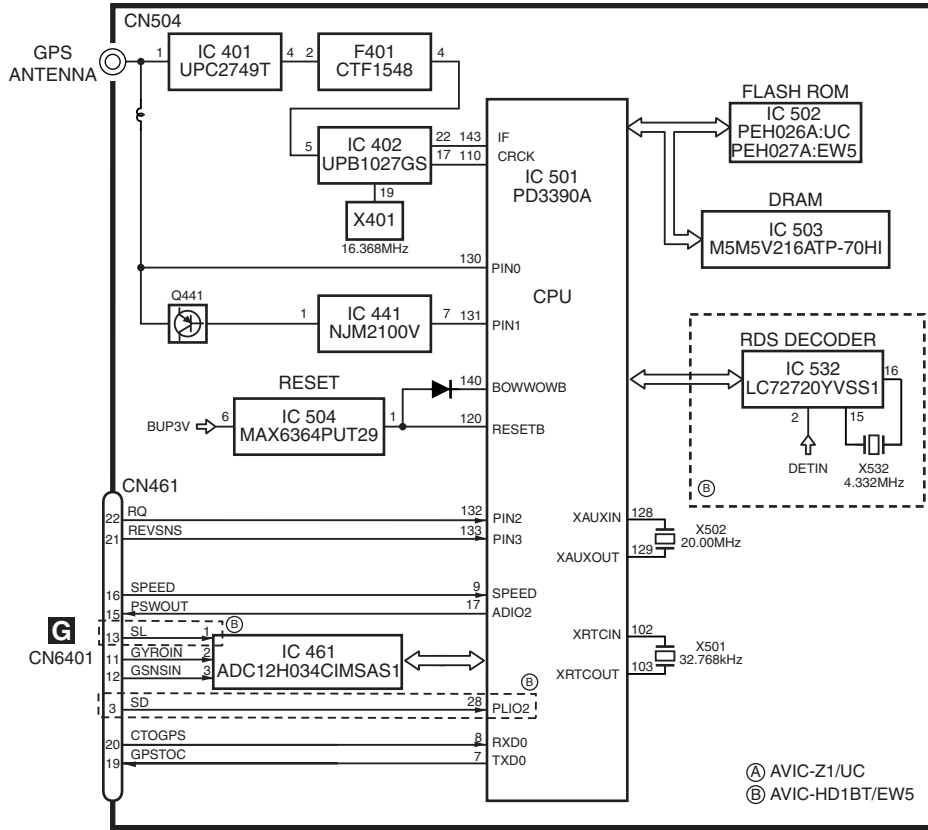
G

CN5201

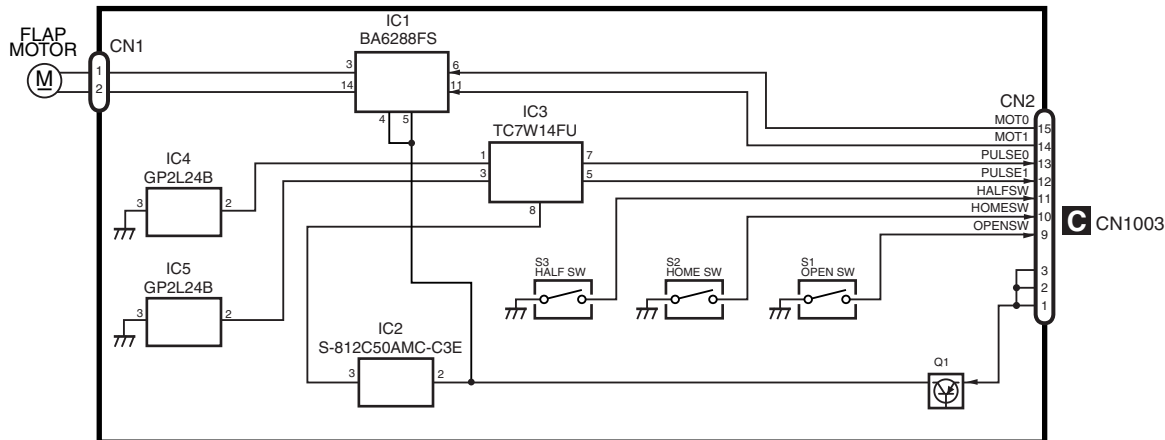
- TCHTQC 66
- QC 68
- PTQC 75
- CTOTCH 70
- CLOCK 72
- CTOP 73
- GPSTOC 77
- CTOGPS 79
- FRAME 80
- EXTOC 81
- PDCTOC 82
- ETCTOC 83
- CTOPDC 84
- CTOEX 85
- BB 86
- CTOETC 87
- BA 88
- CD 96
- CF 98
- CL 100
- CE 102
- CB 104

- BUSDIR(RESERVE) 43
- FREOCNT 63
- BUP3 22
- CCD3 105
- CCD5 111
- HDD5 112
- ZADA5 120

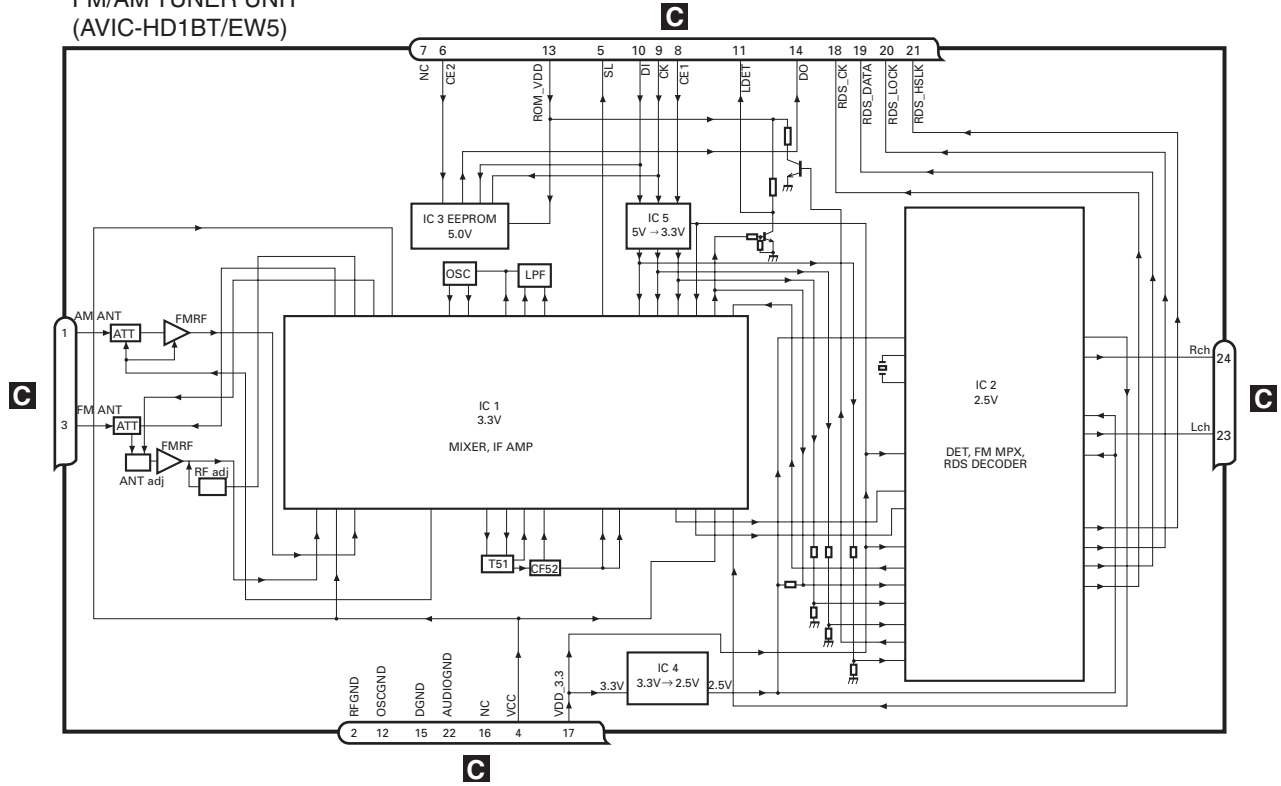
B GPS UNIT



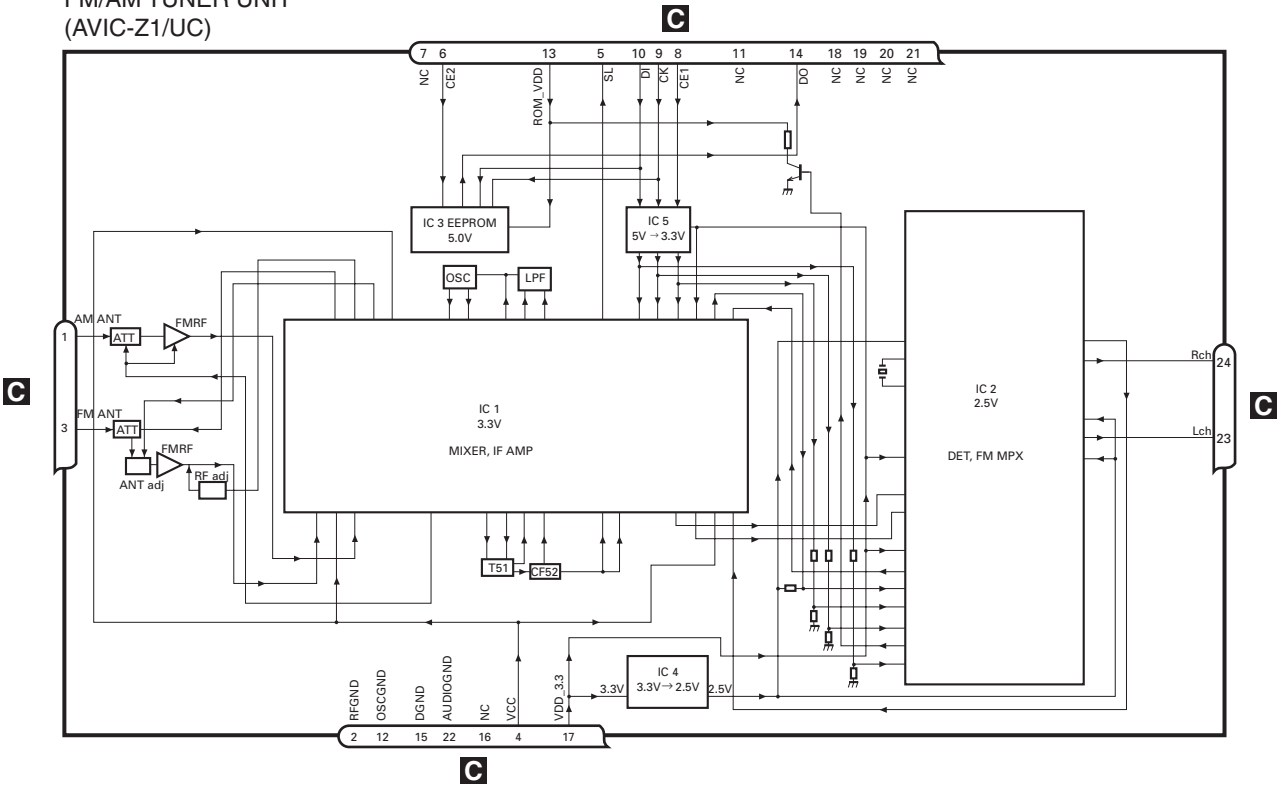
L MAIN PCB UNIT



FM/AM TUNER UNIT
(AVIC-HD1BT/EW5)



FM/AM TUNER UNIT
(AVIC-Z1/UC)



A

B

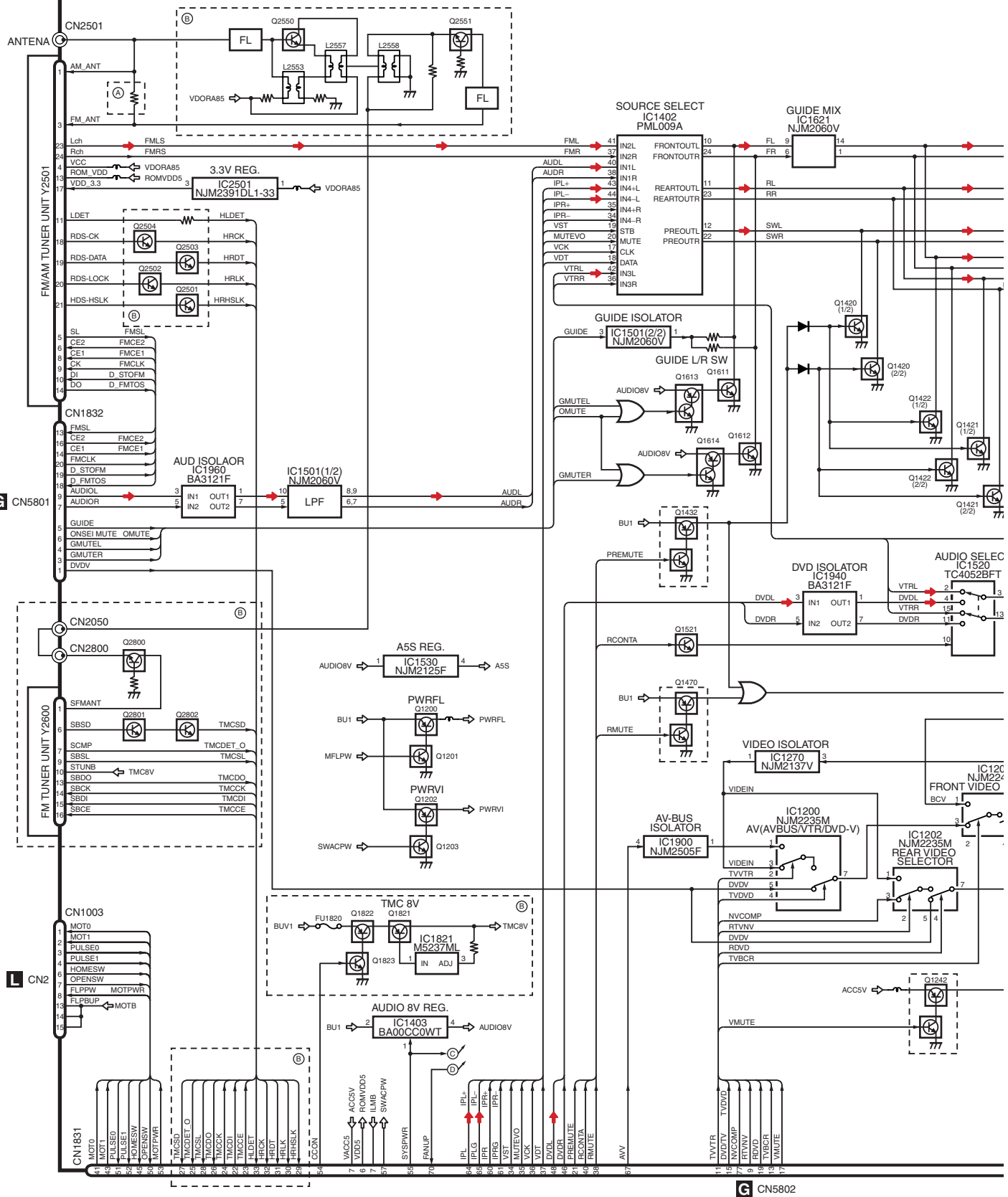
C

D

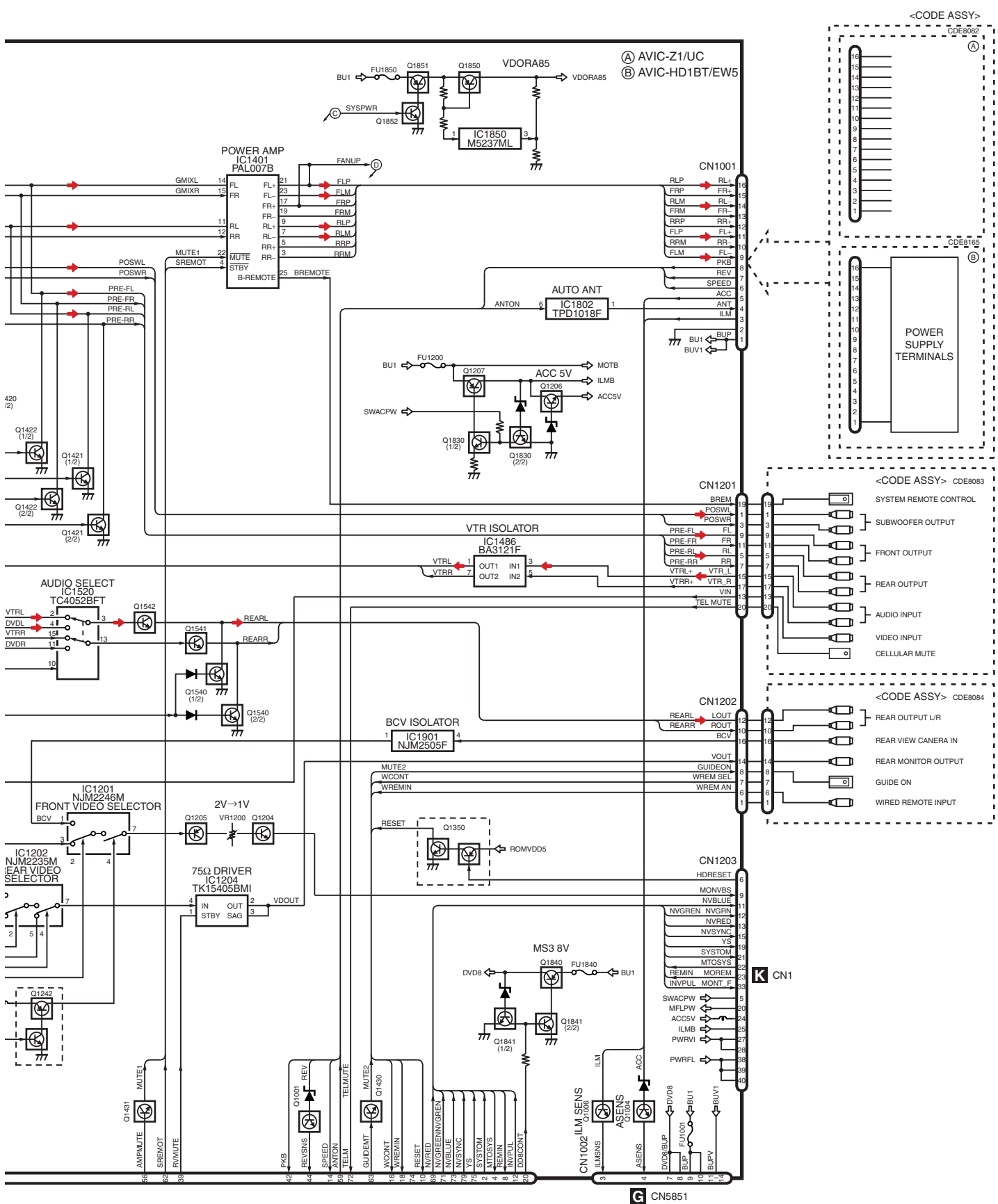
E

F

C AUDIO UNIT



CN5802



G CN5851

AVIC-Z1/UC

A
B
C
D
E
F

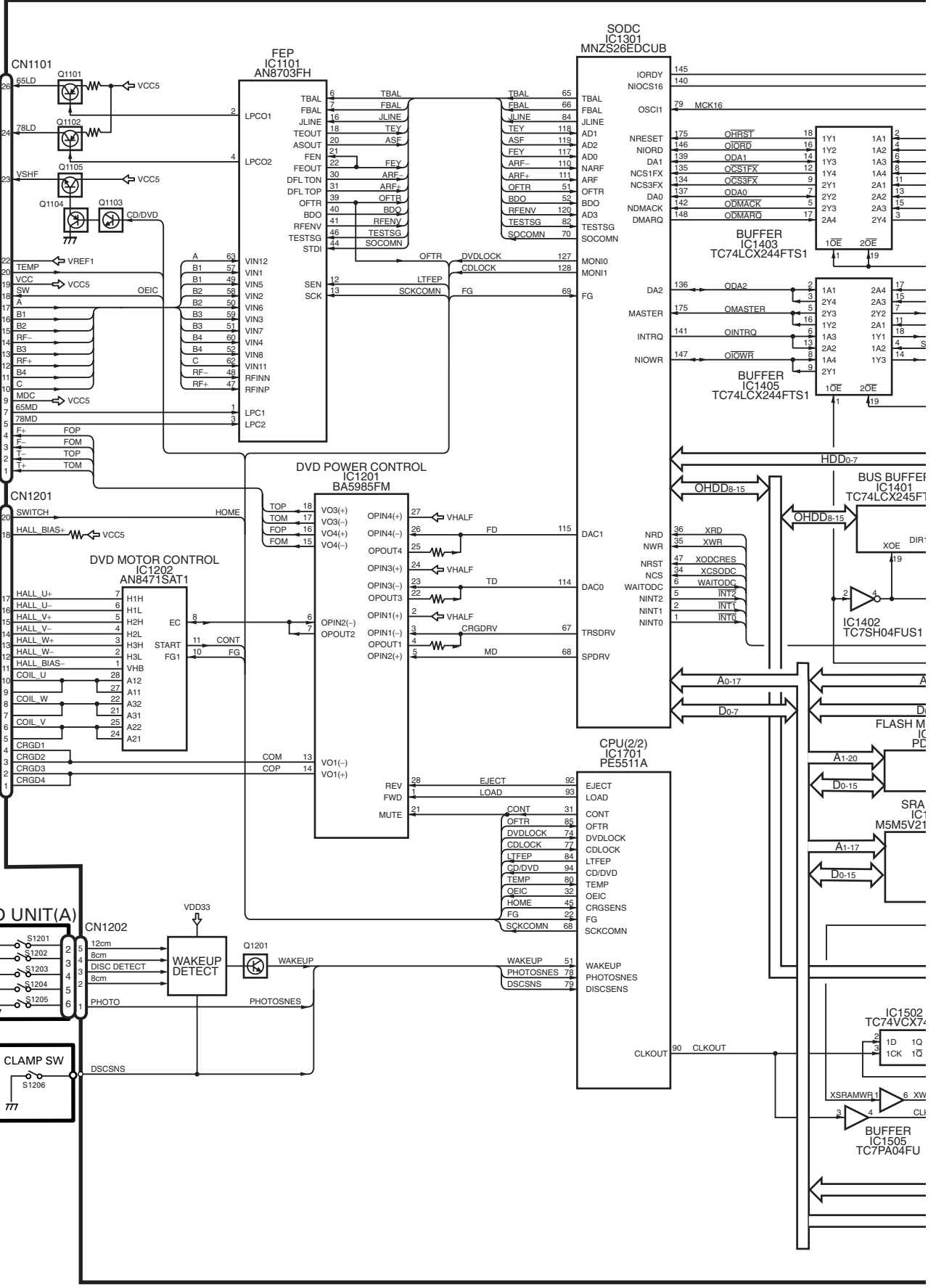
D DVD CORE UNIT

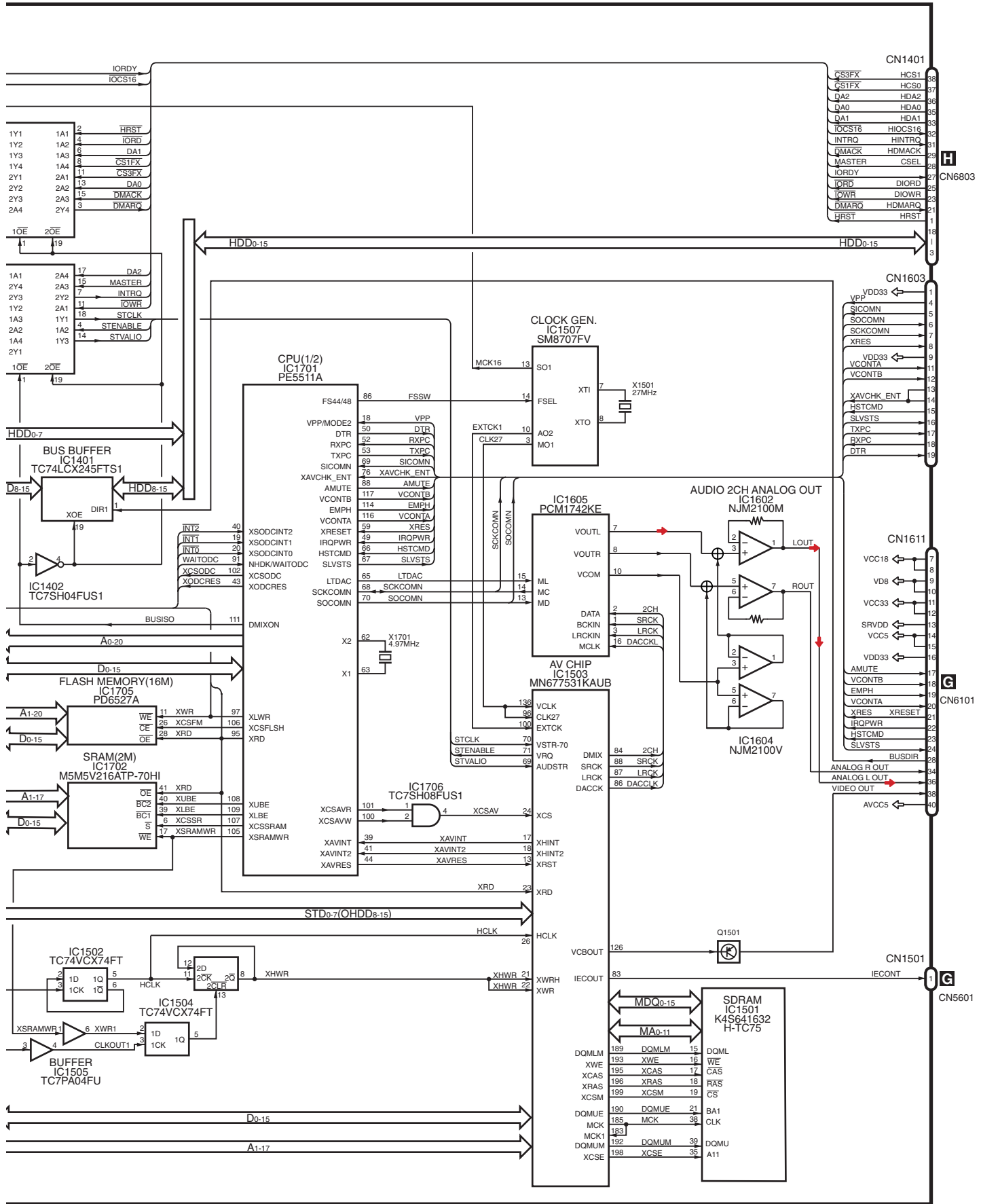
PICKUP UNIT(SERVICE)

CARRIAGE MOTOR SPINDLE MOTOR

E COMPOUND UNIT(A)

F COMPOUND UNIT(B)





A
B
C
D
E
F

G NAVI MOTHER PCB(1/2)

B CN461

D CN1

A

B

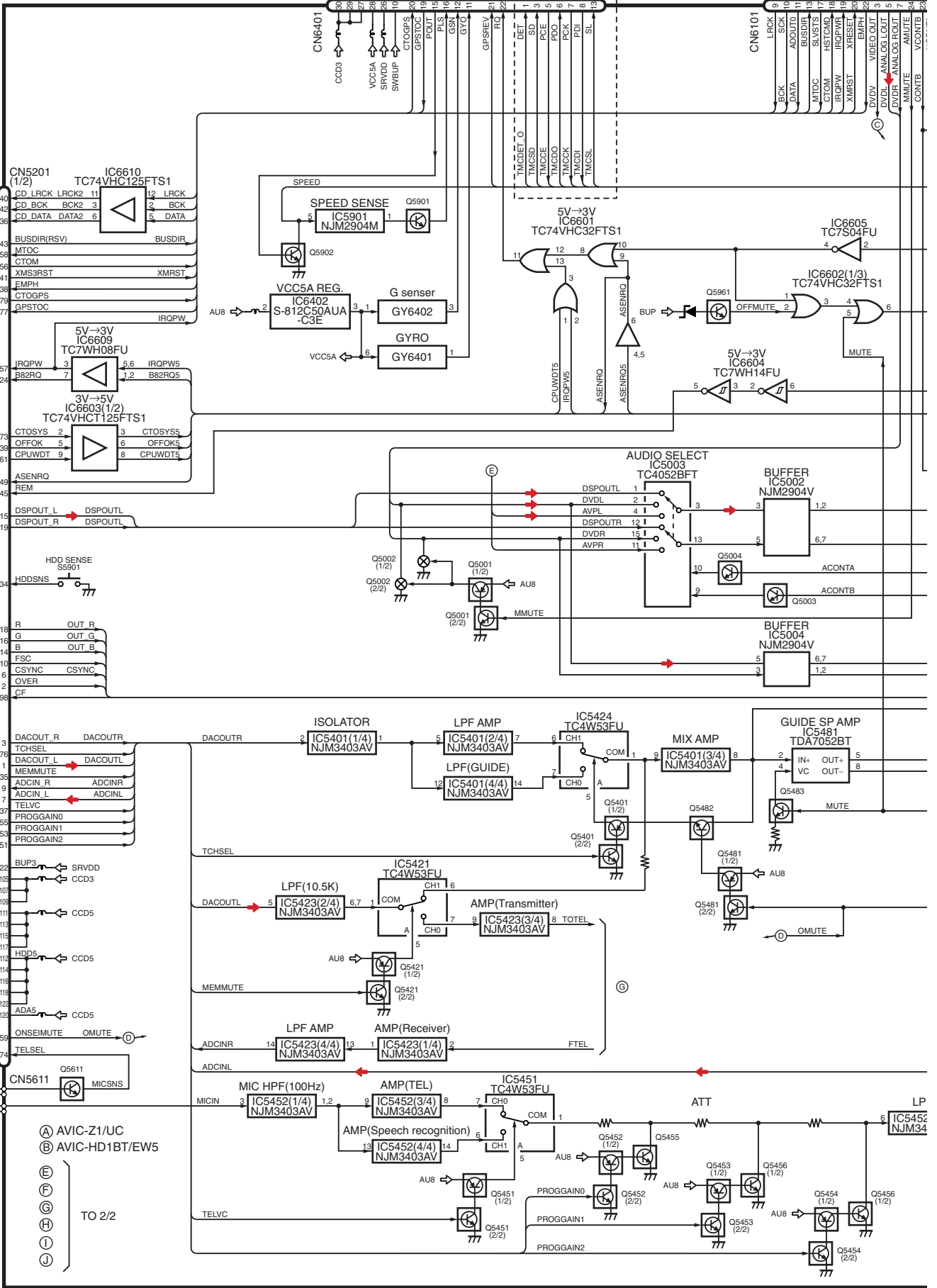
C

A CN4804

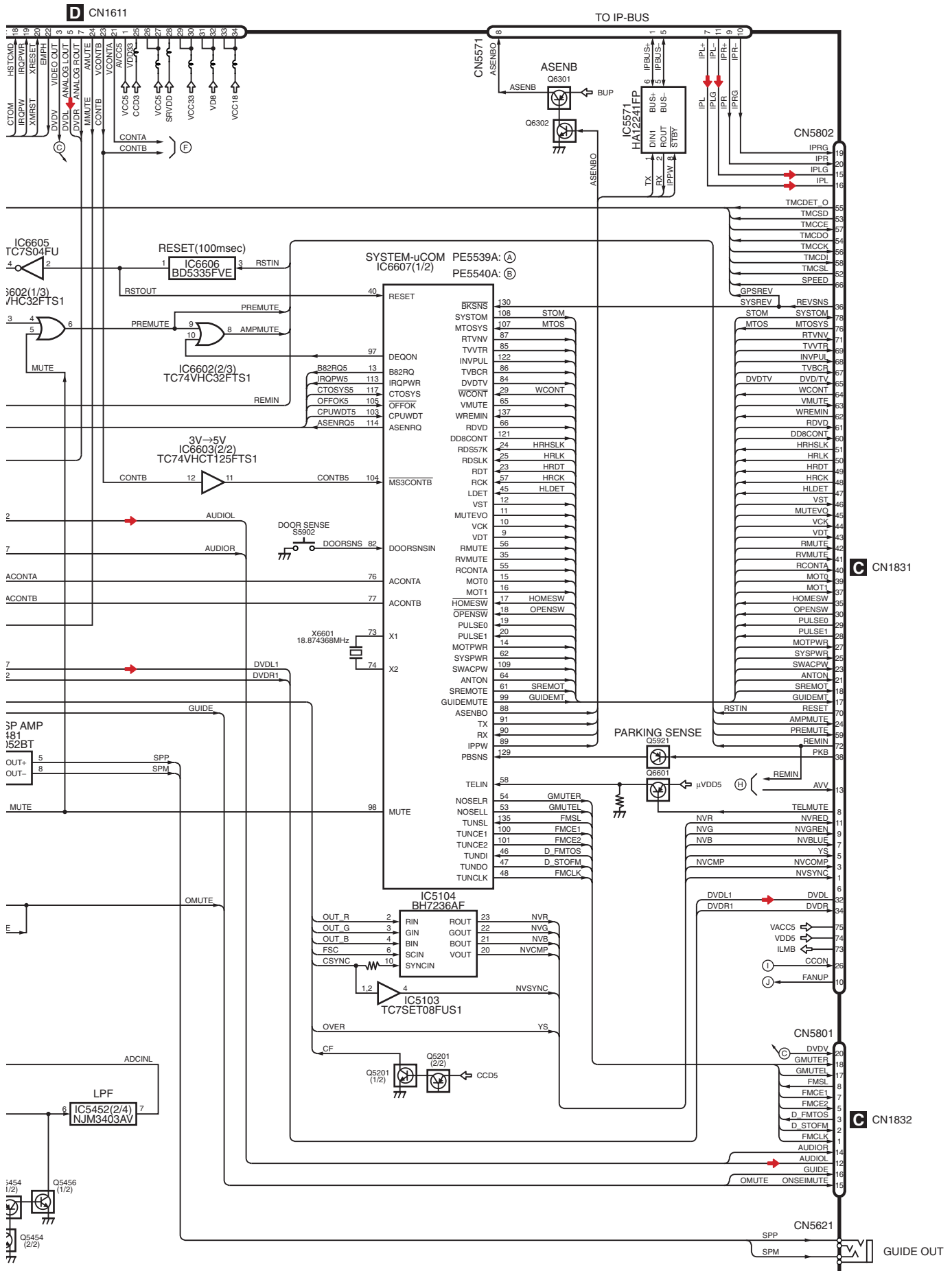
D

E

F

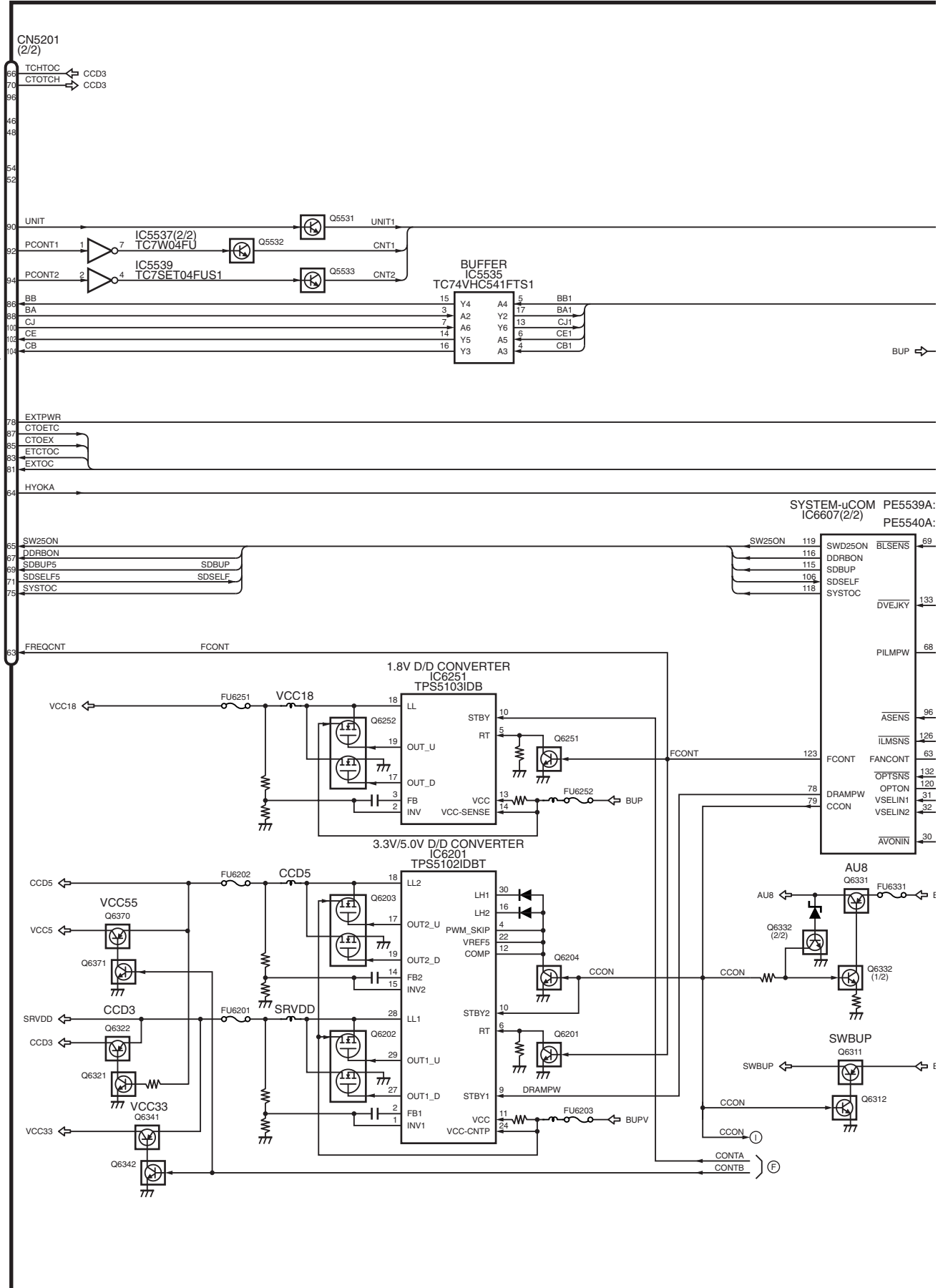


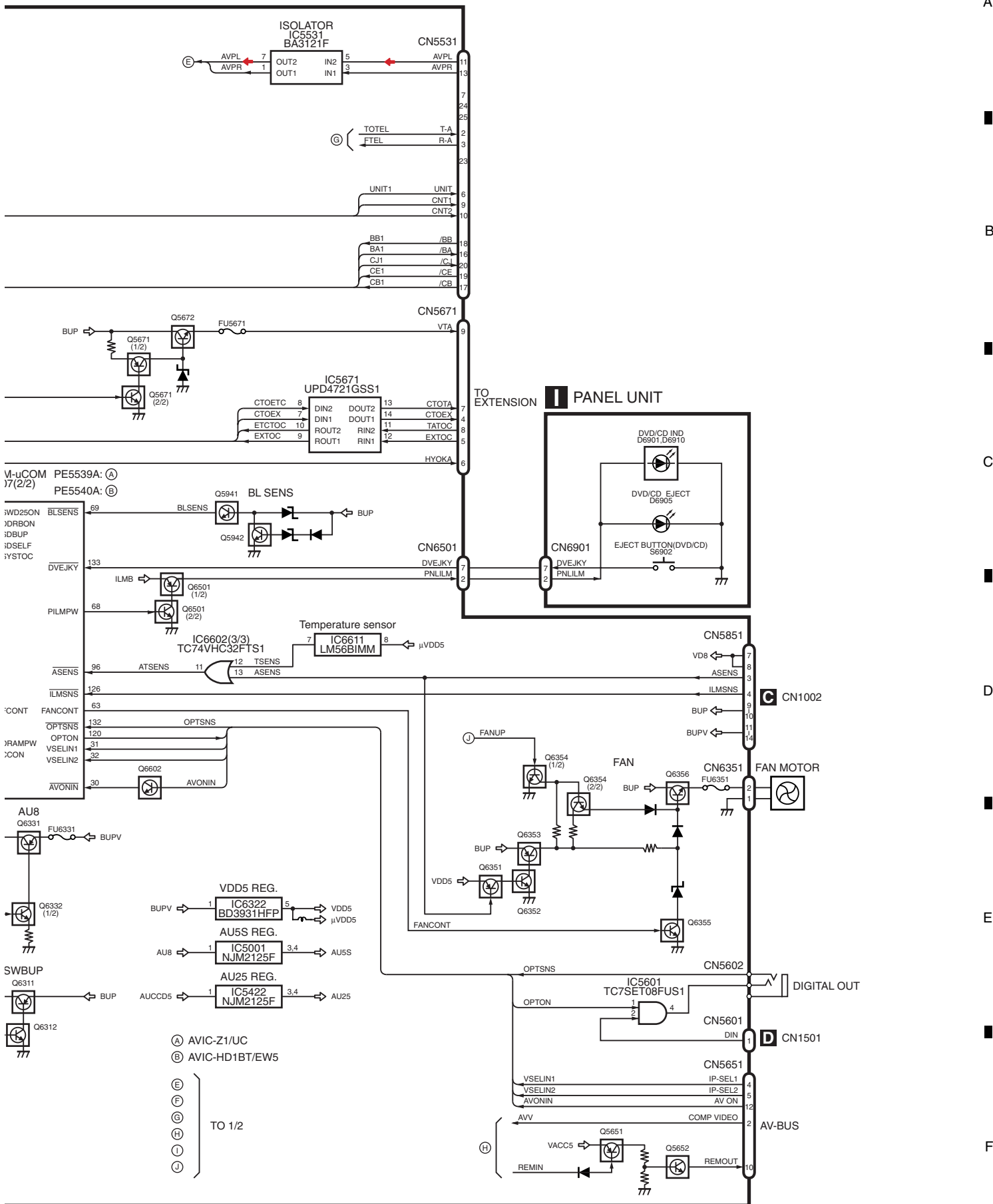
- (A) AVIC-Z1/UC
 - (B) AVIC-HD1BT/EW5
 - (E)
 - (F)
 - (G)
 - (H)
 - (I)
 - (J)
- TO 2/2



AVIC-Z1/UC

G NAVI MOTHER PCB(2/2)





- (A) AVIC-Z1/UC
 - (B) AVIC-HD1BT/EW5
 - (E)
 - (F)
 - (G)
 - (H)
 - (J)
 - (K)
- TO 1/2

K MONITOR UNIT

A

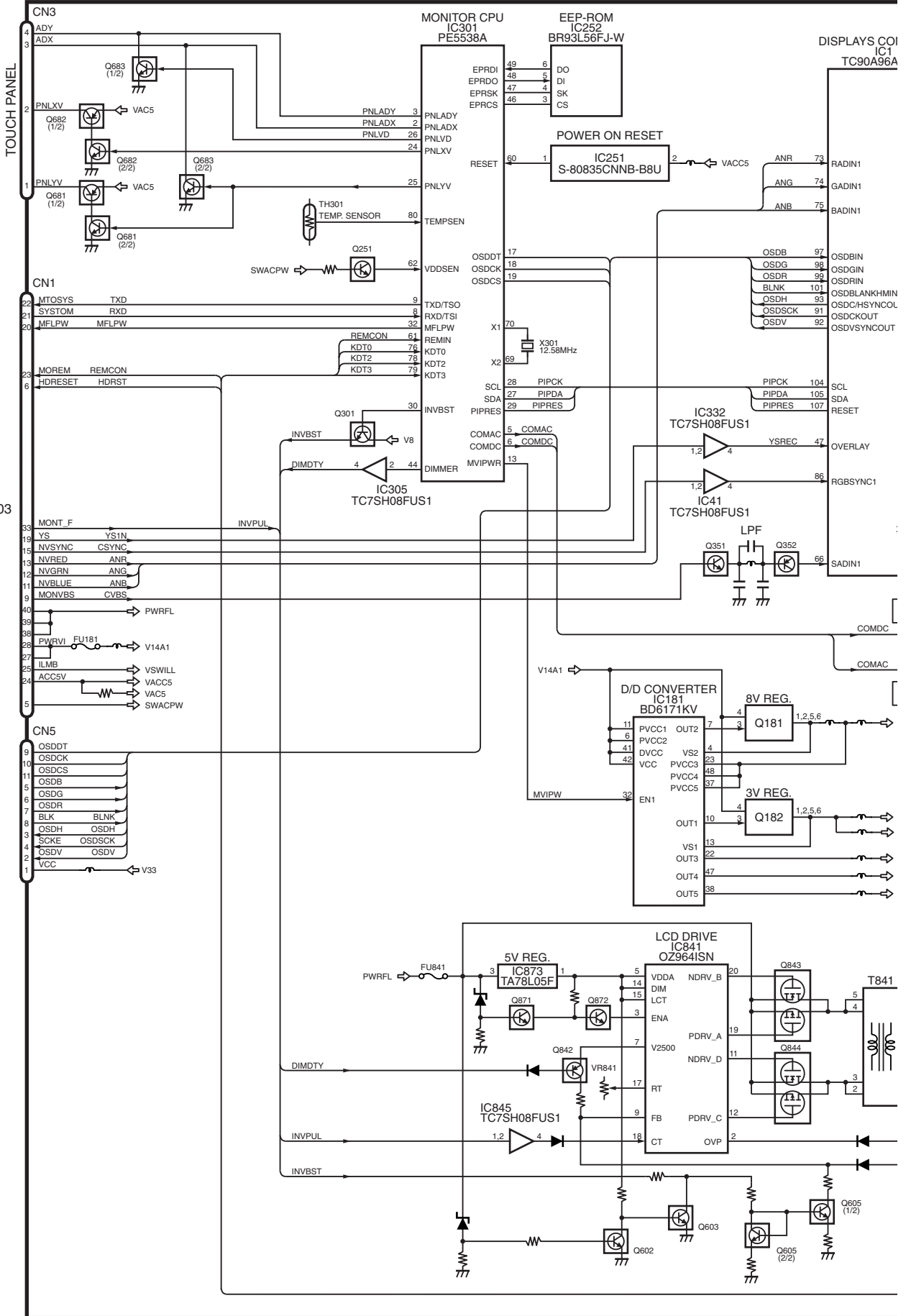
B

C

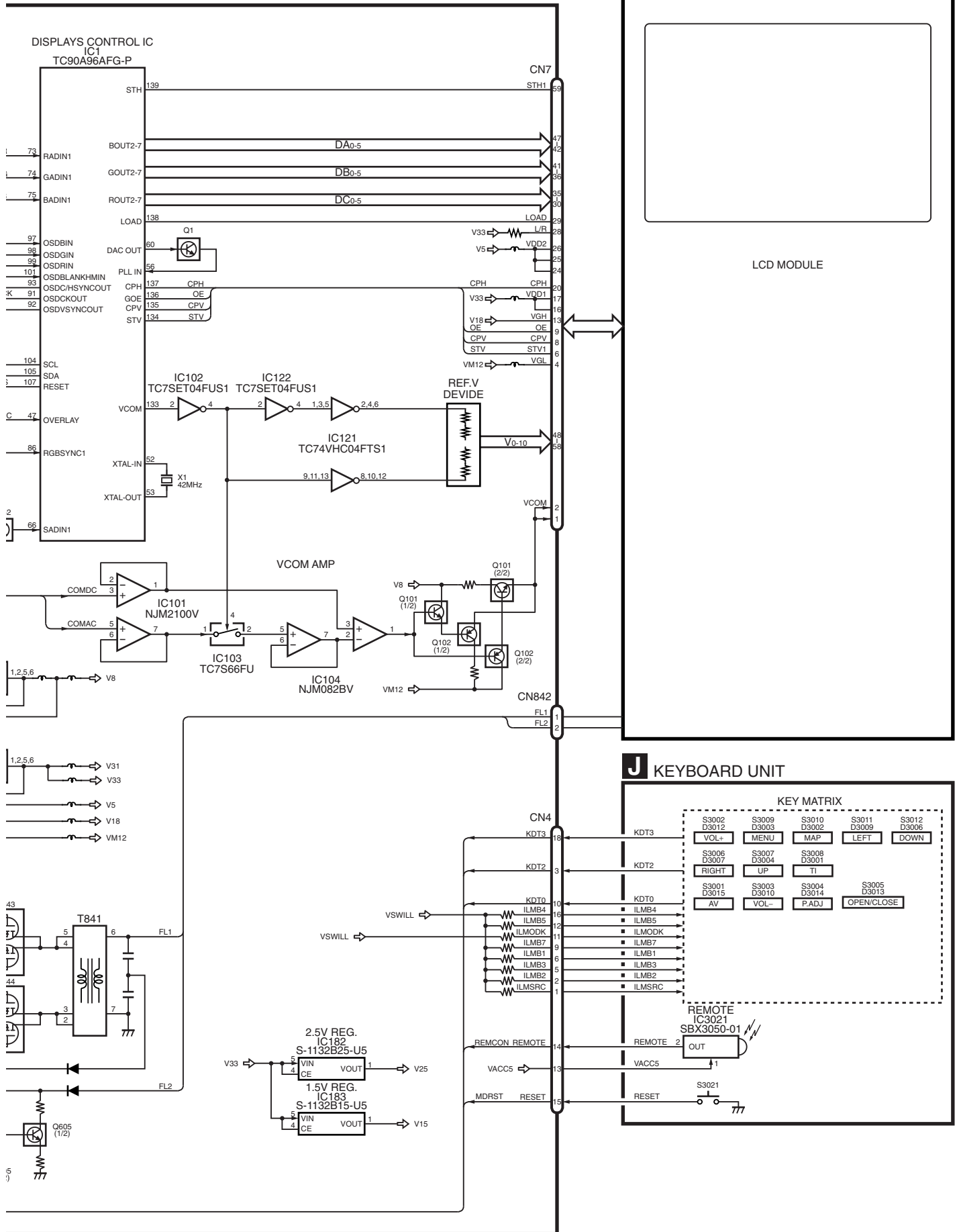
D

E

F



CN1203



A

B

C

D

E

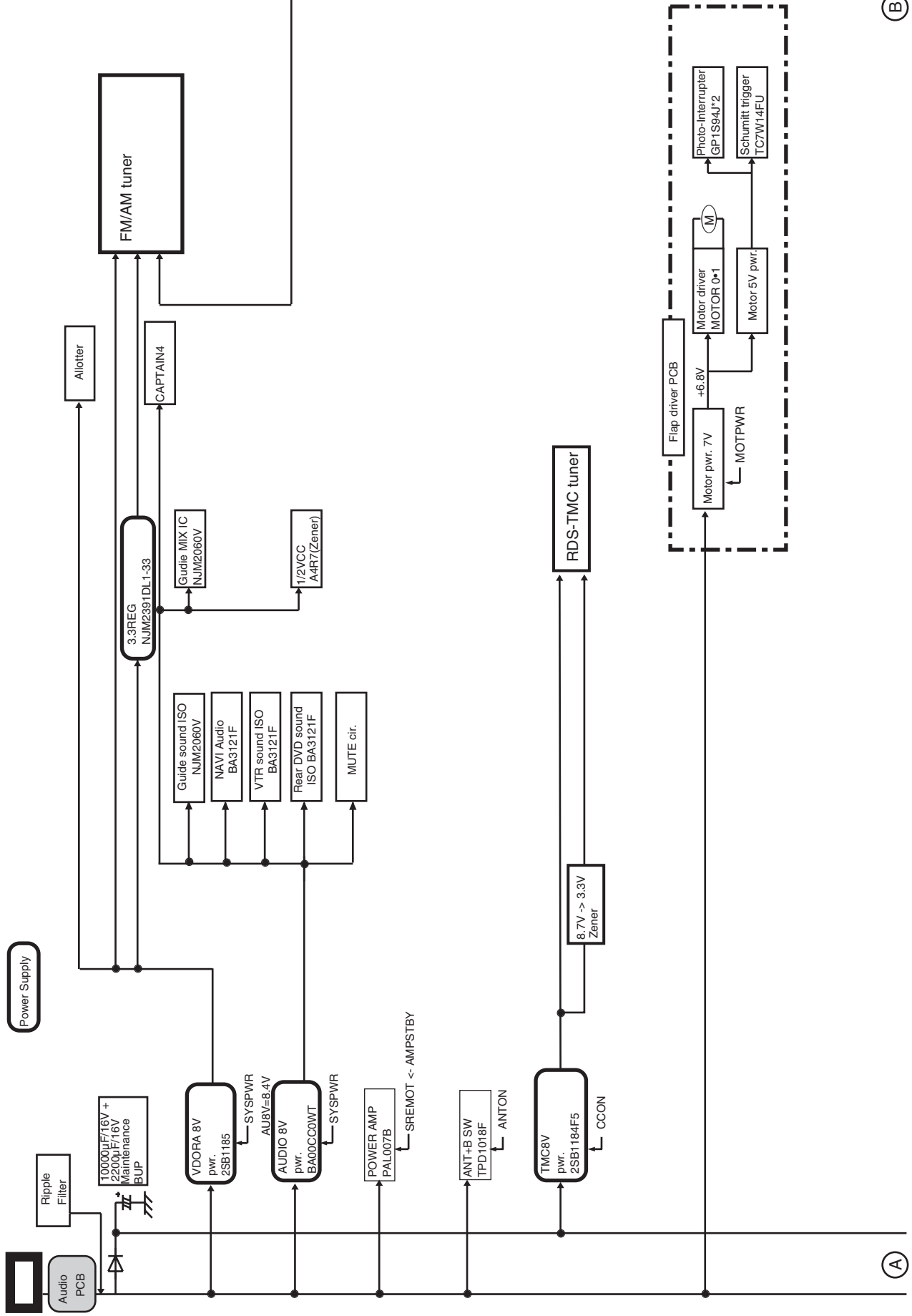
F

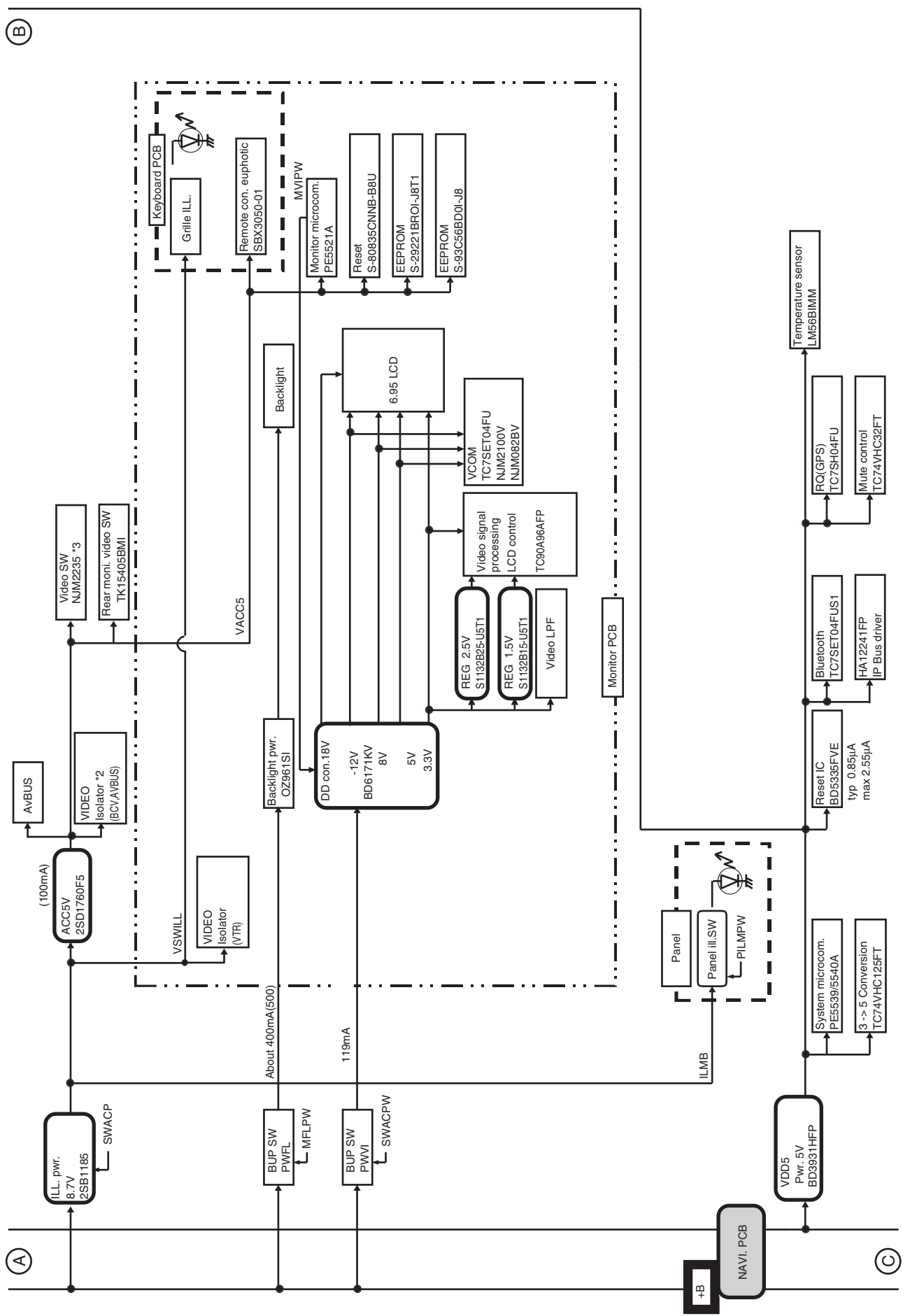
POWER SUPPLY MAP(Reference)

A
B
C
D
E
F

(B)

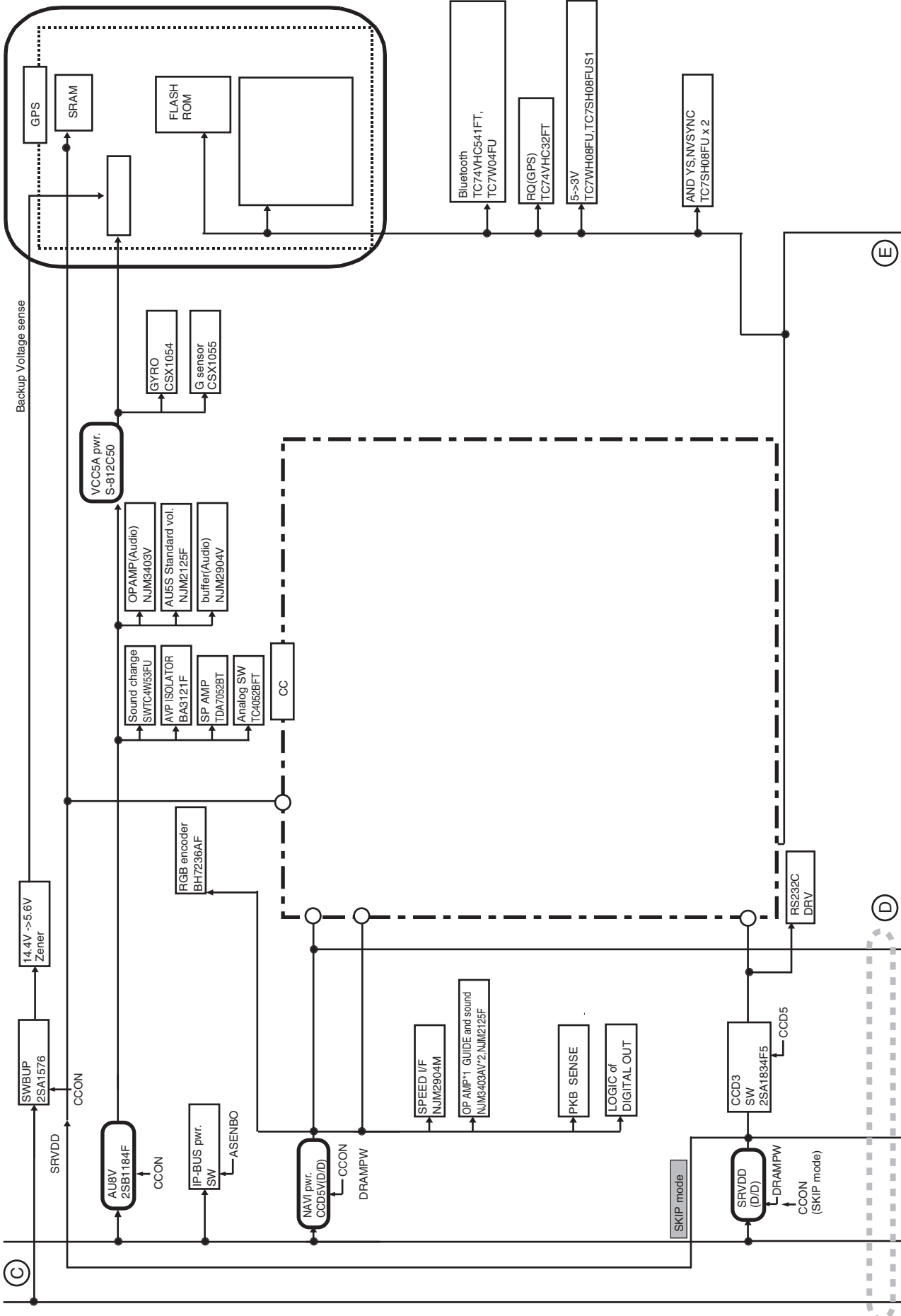
(A)





AVIC-Z1/UC

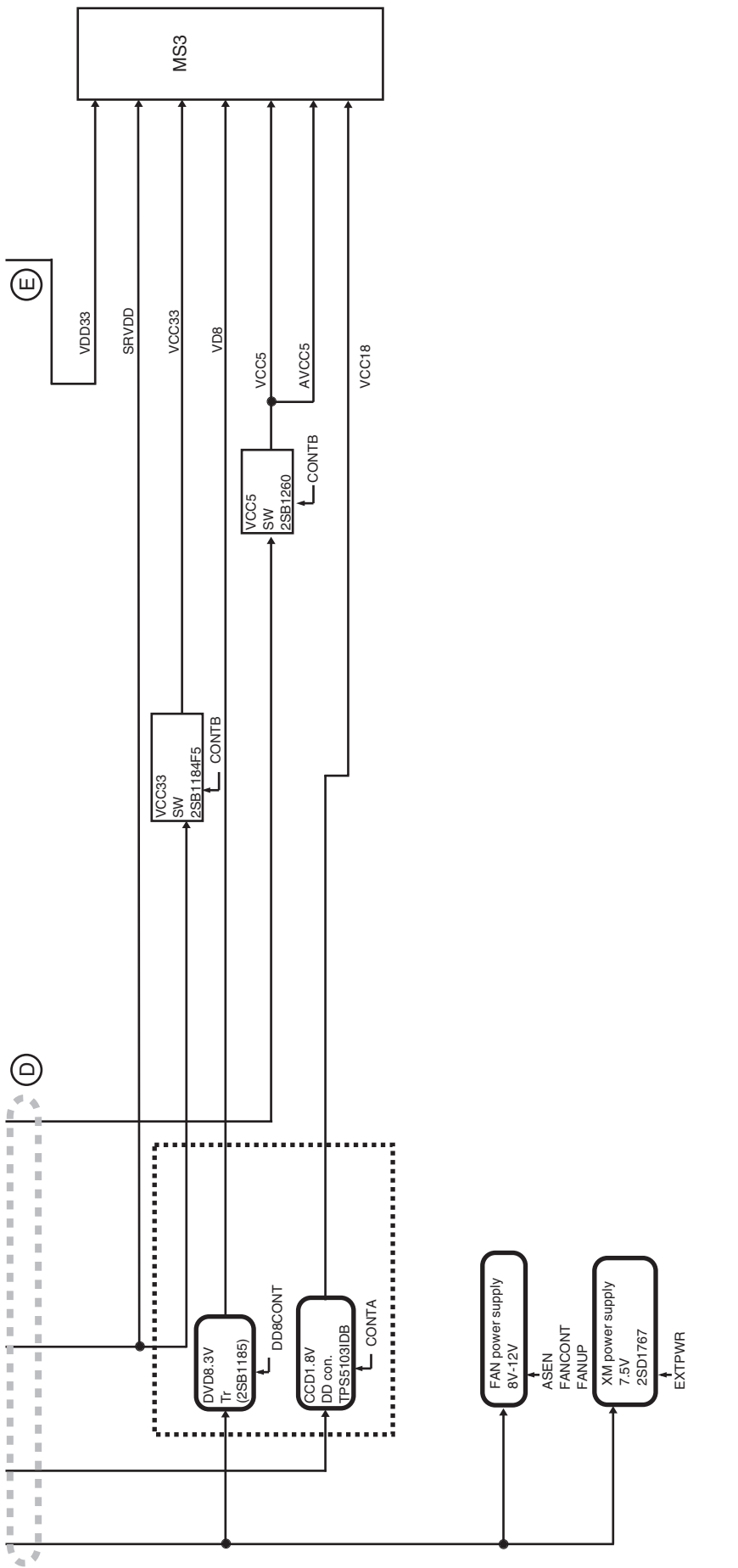
A
B
C
D
E
F



(E)

(D)

AVIC-Z1/UC



A

B

C

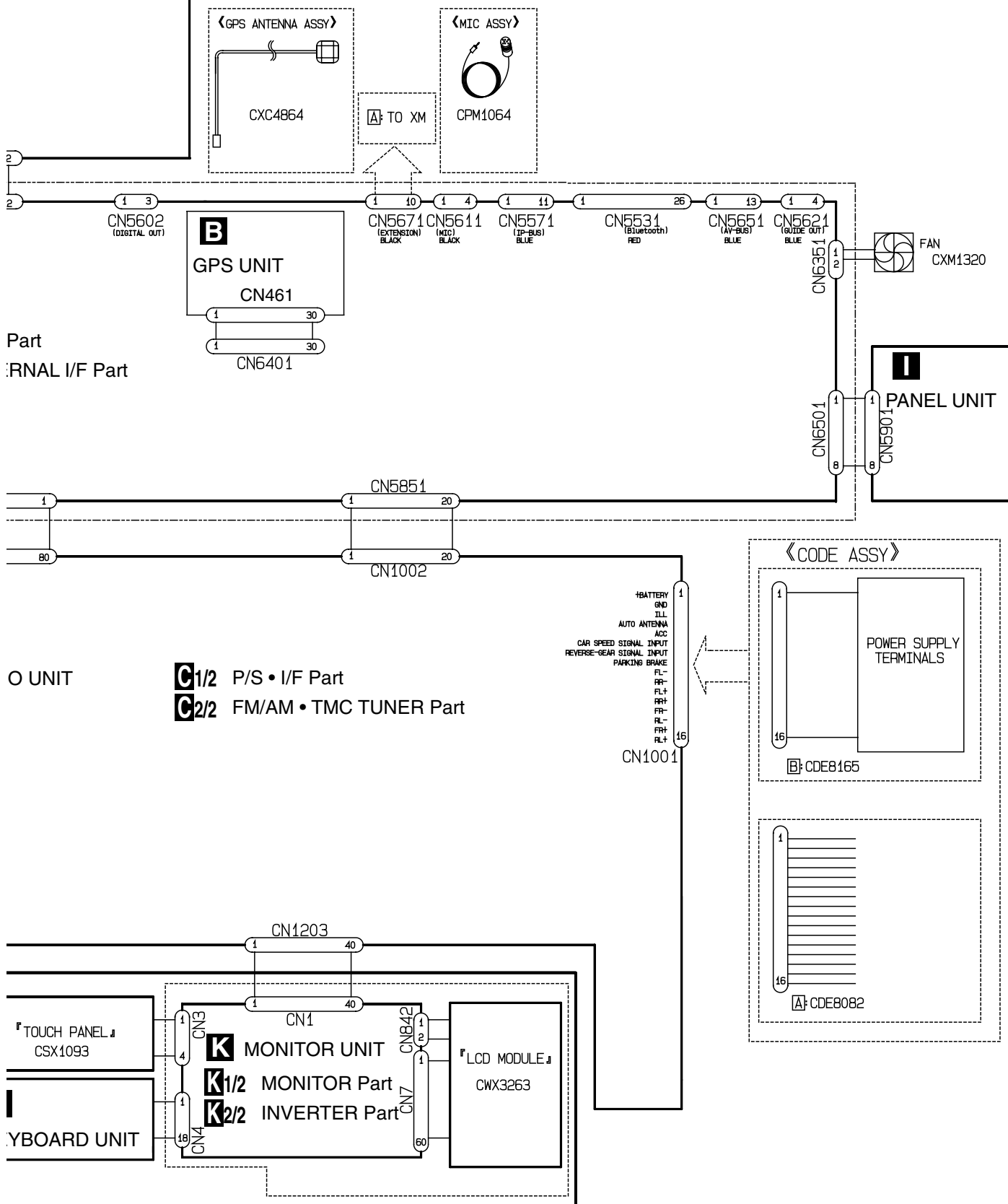
D

E

F

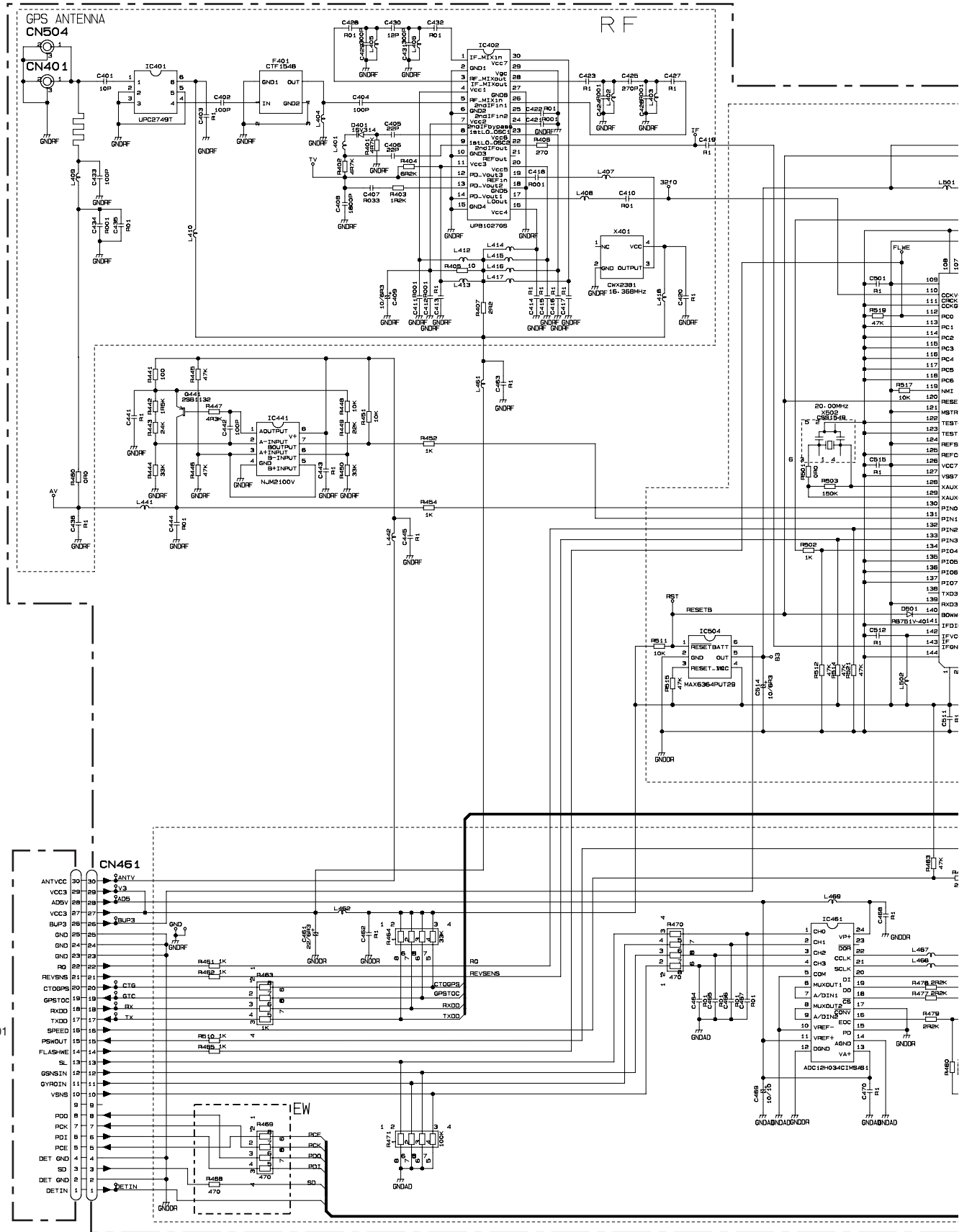
A	AVIC-Z1/UC
B	AVIC-HD1BT/EW5

※ It is common when not writing [A] and [B].



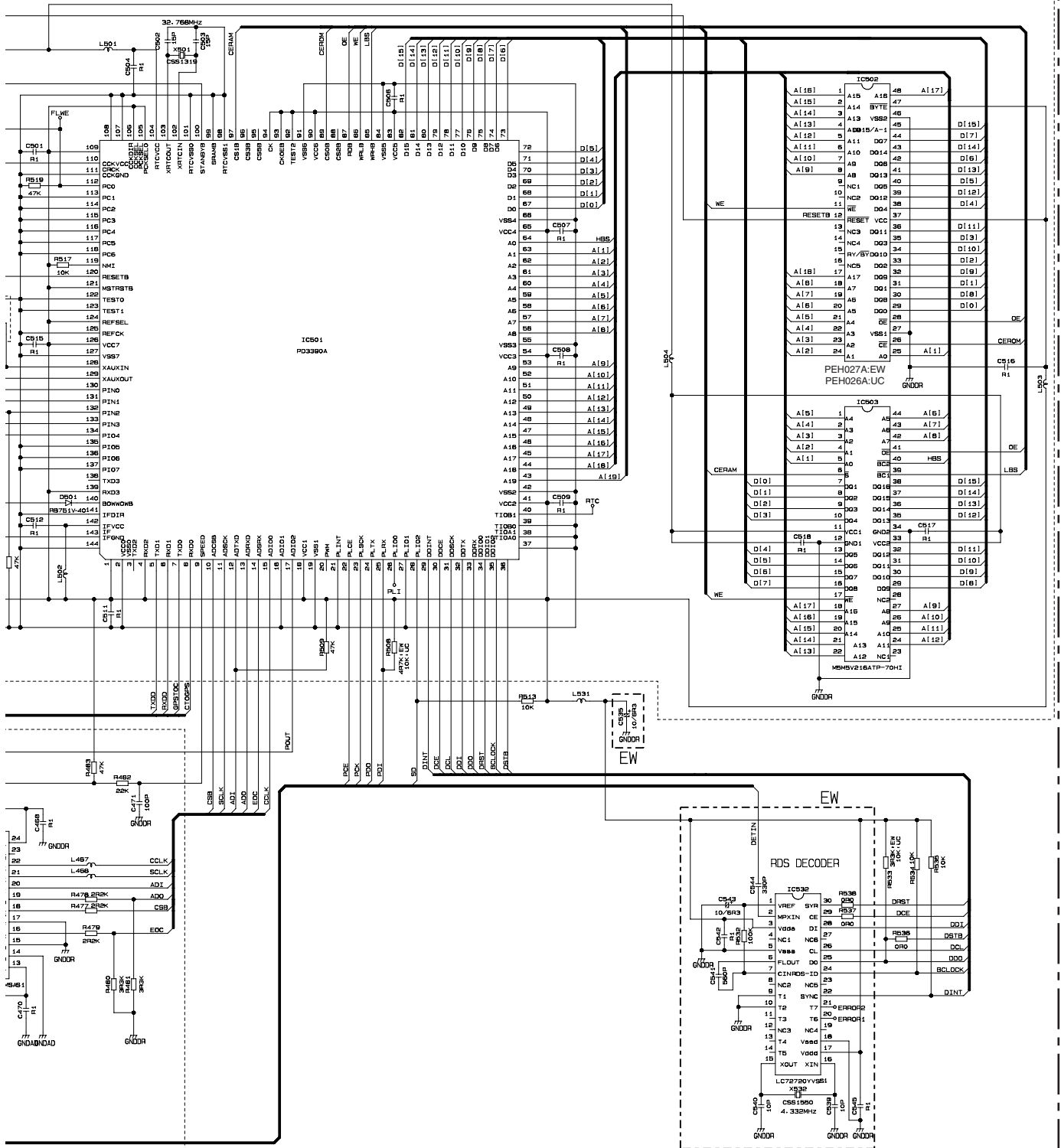
3.3 GPS UNIT(GUIDE PAGE)

B-a



B-b

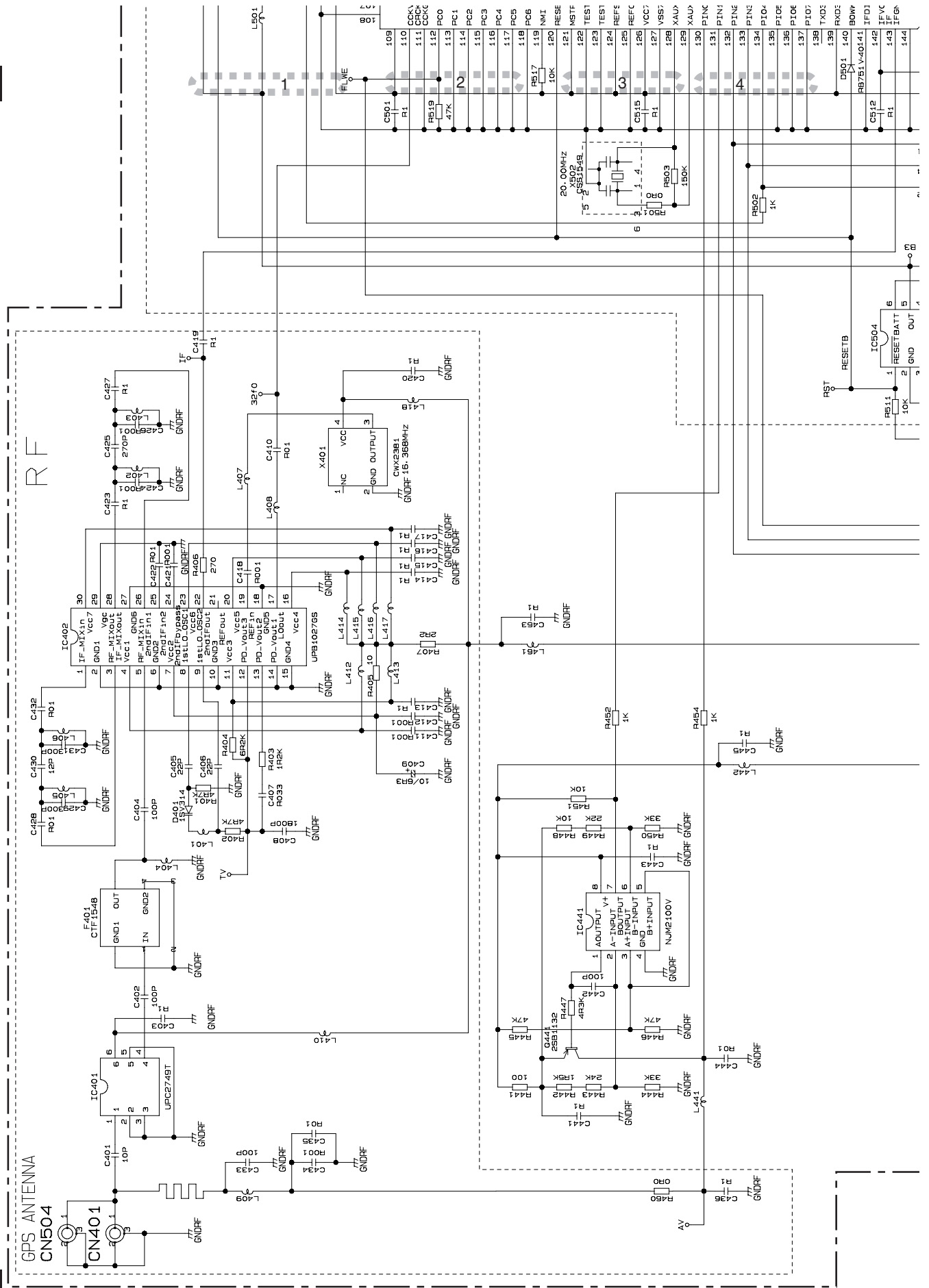
B GPS UNIT

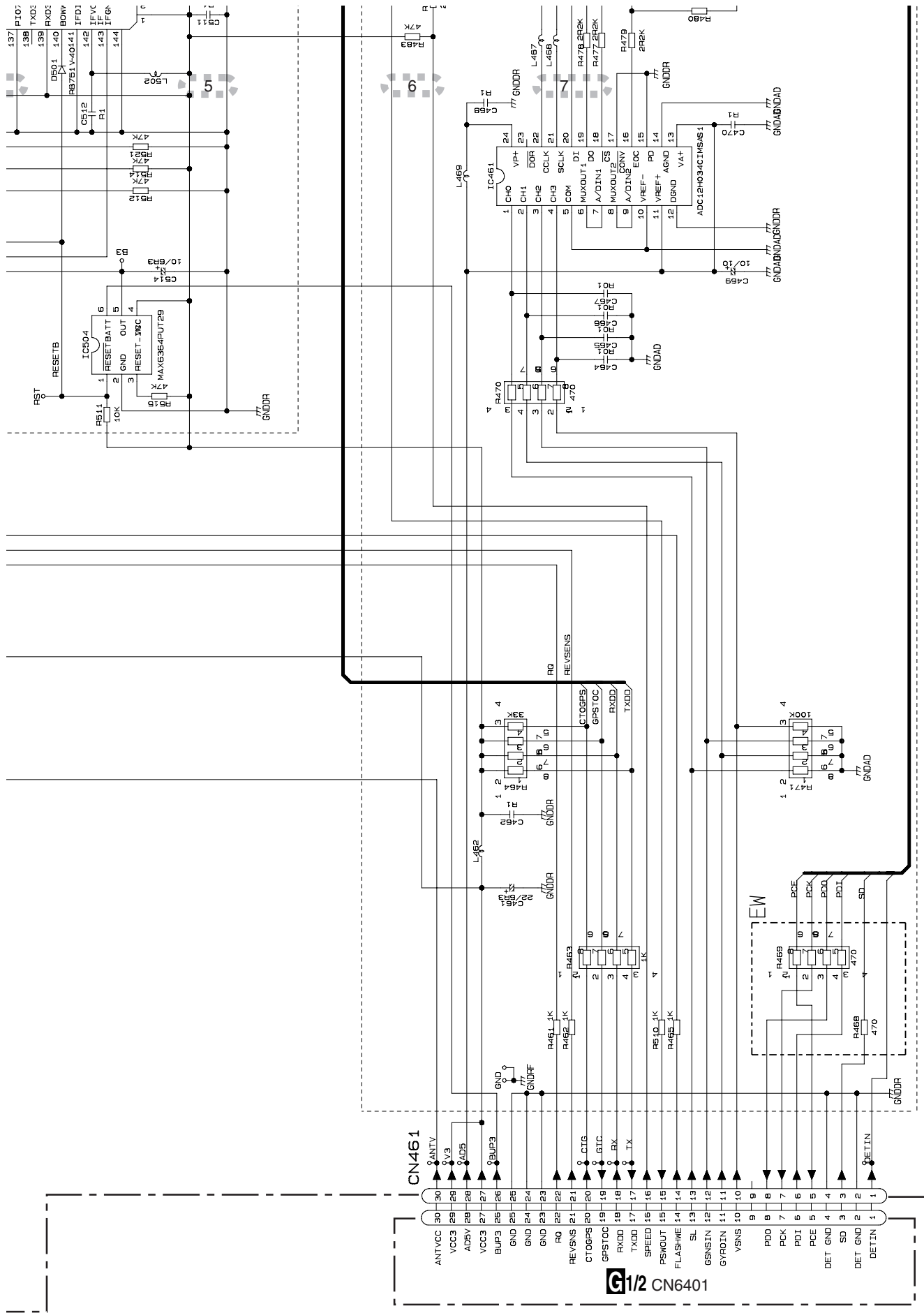


B-b

B-a B-b

B-a





AVIC-Z1/UC

B-b

B-a B-b

B-a

A B C D E F

A

B

C

D

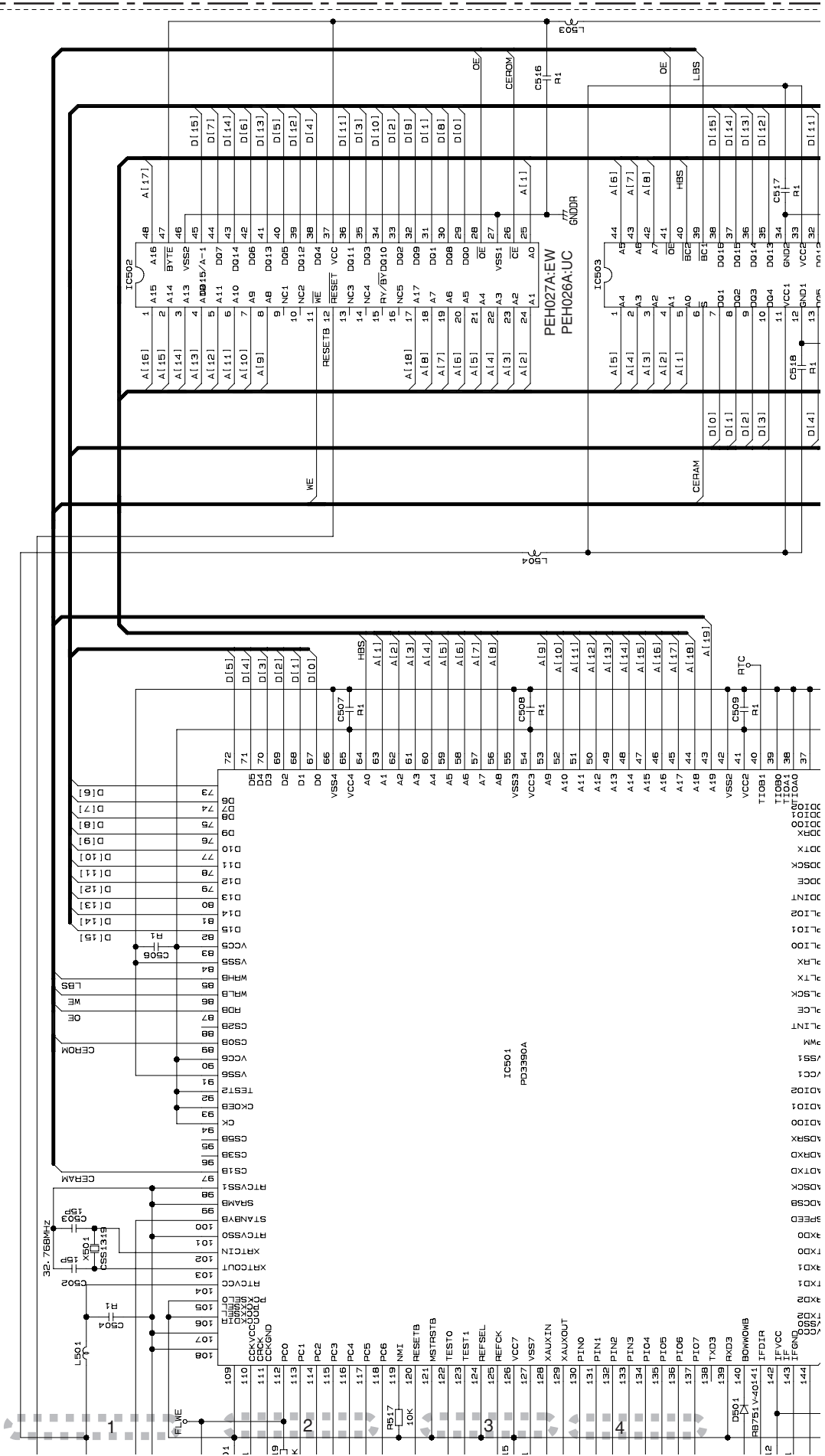
E

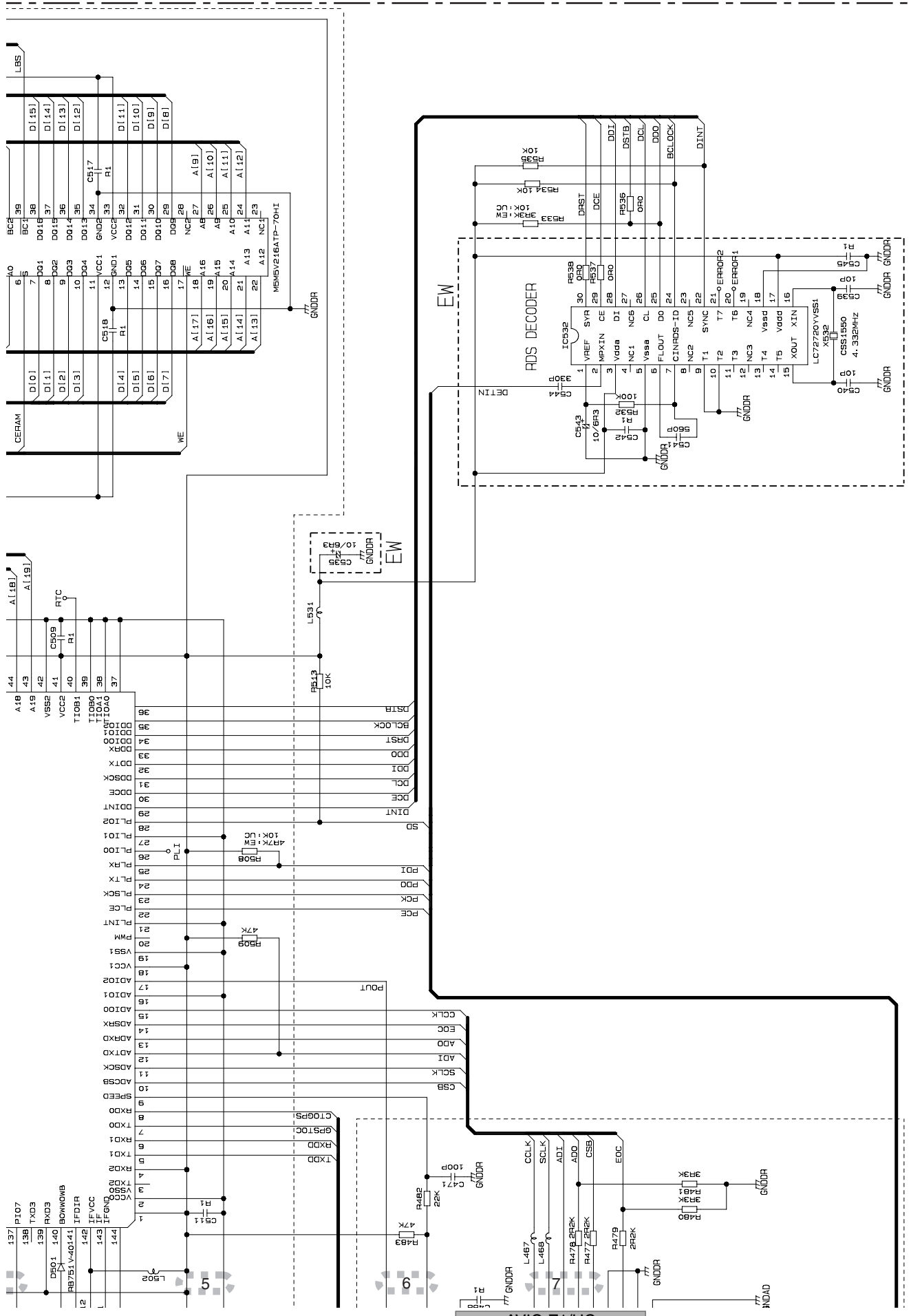
F

B GPS UNIT

B-a B-b

B-b



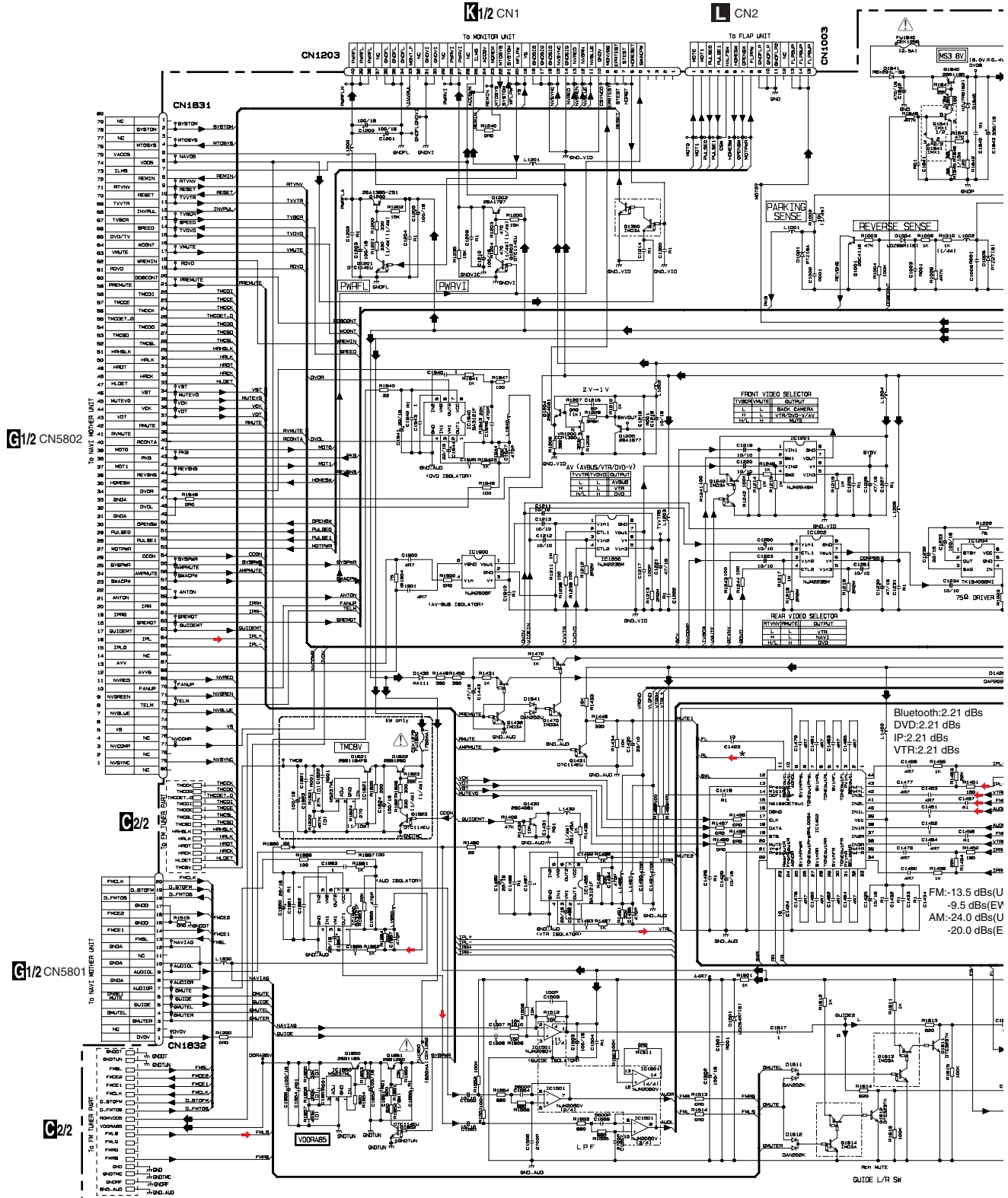


B-a B-b

B-b

3.4 AUDIO UNIT(P/S•I/F)(GUIDE PAGE)

C-a 1/2



G1/2 CN5802

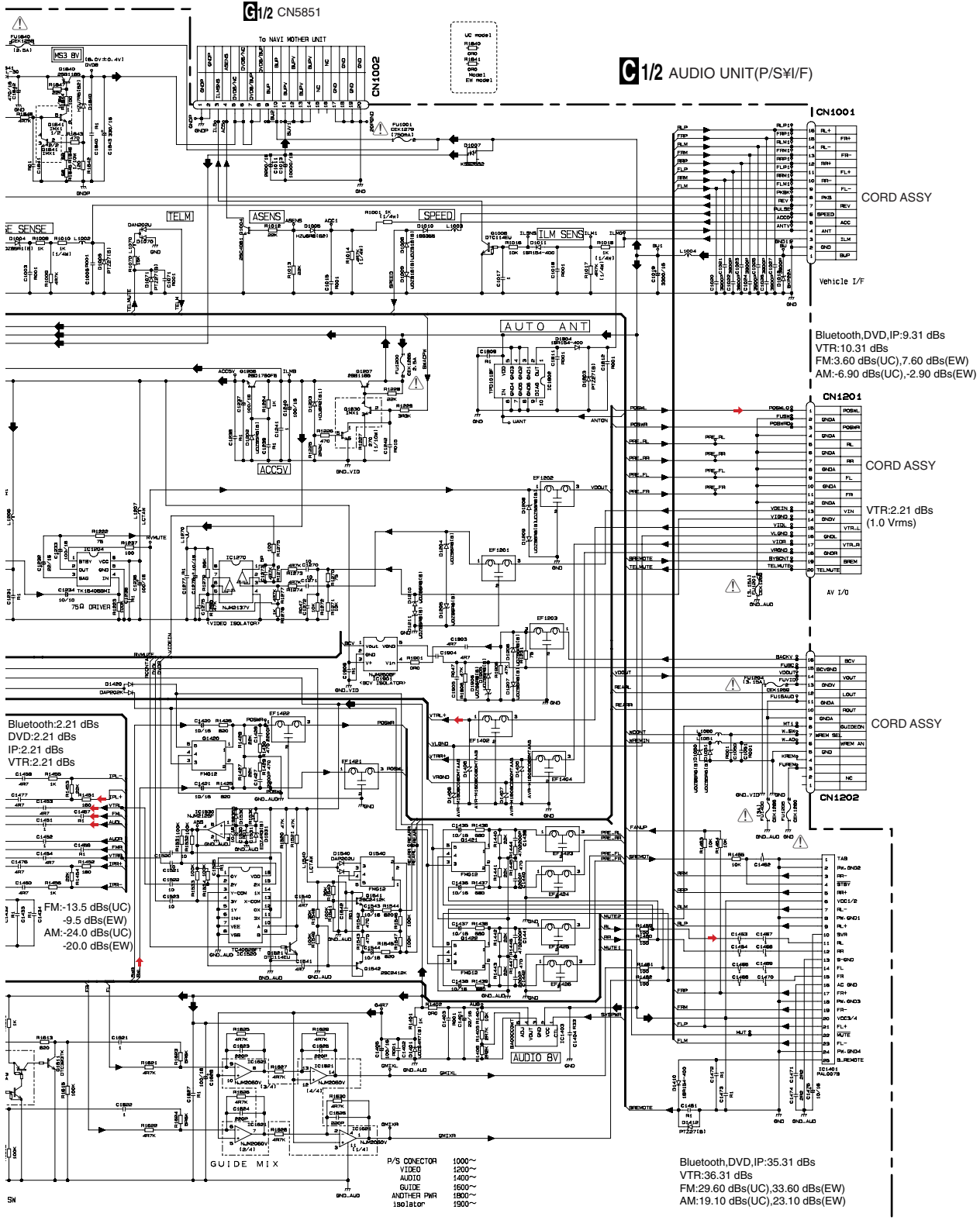
G2/2

G1/2 CN5801

G2/2

* Bluetooth:2.21 dBs
 DVD:2.21 dBs
 IP:2.21 dBs
 VTR:2.21 dBs
 FM:-13.5 dBs(U)
 -9.5 dBs(EV)
 AM:-24.0 dBs(U)
 -20.0 dBs(E)

C-b 1/2



A

B

C

D

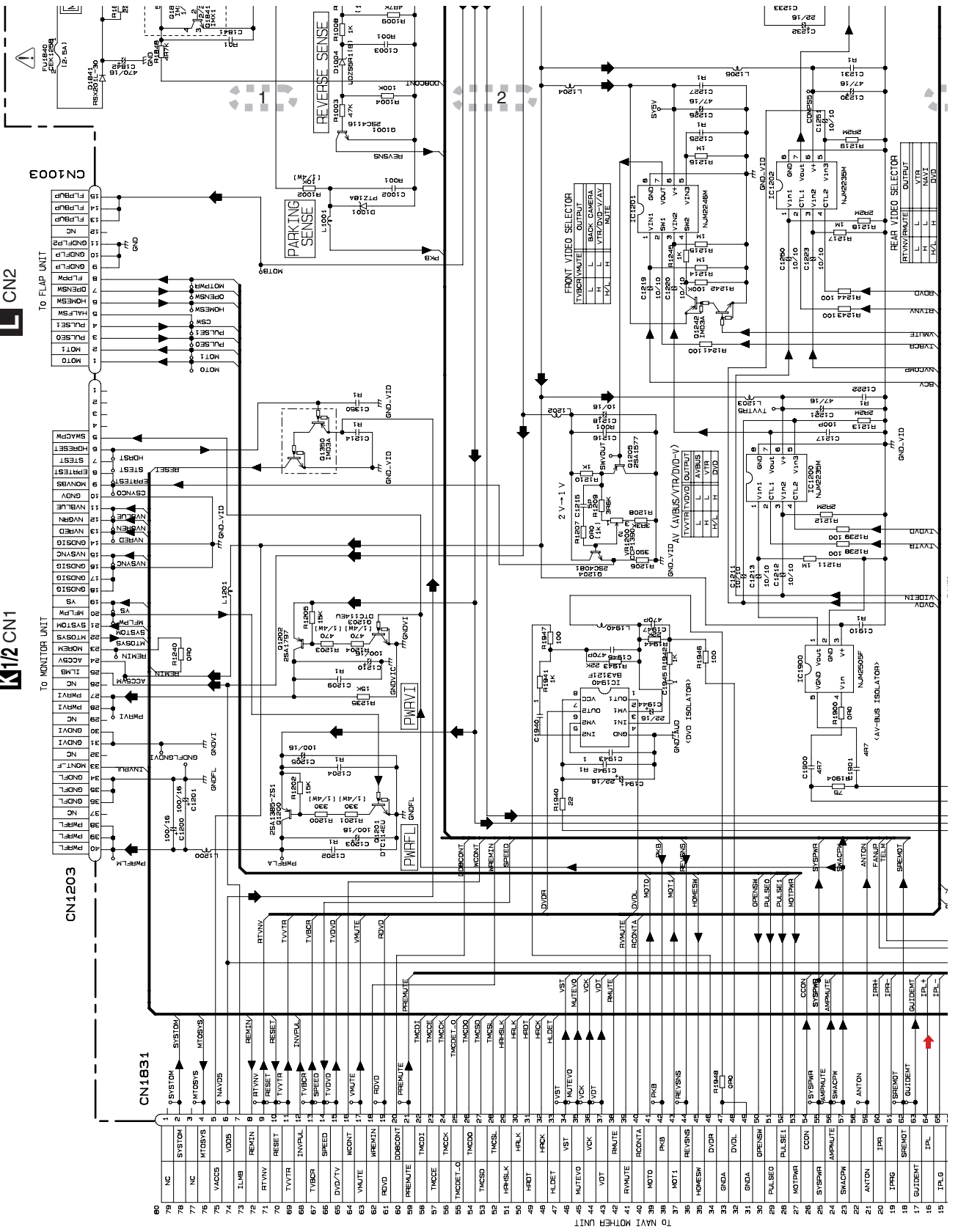
E

F

C-b 1/2

C-a C-b

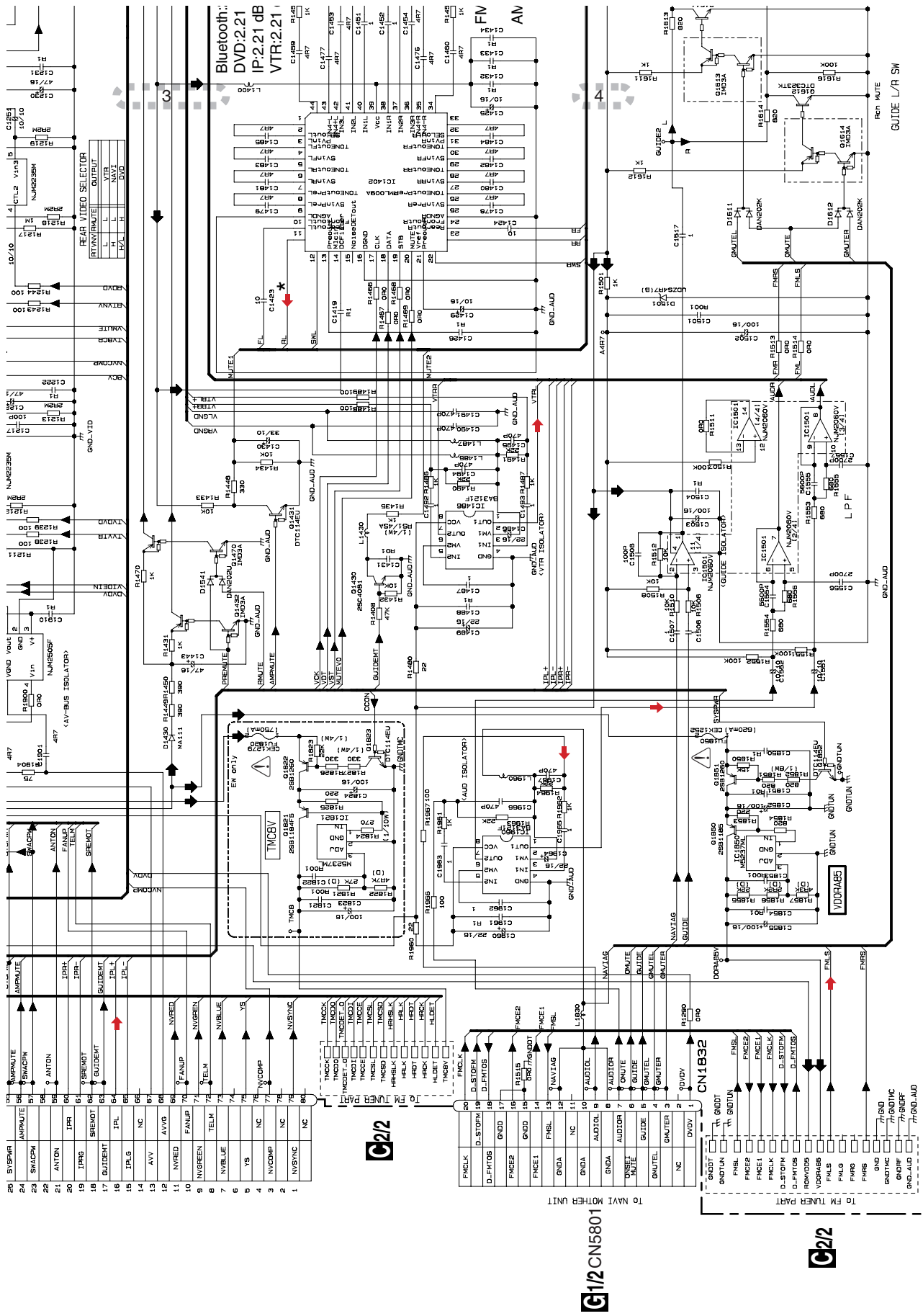
C-a 1/2



L CN2

K1/2 CN1

G1/2 CN5802

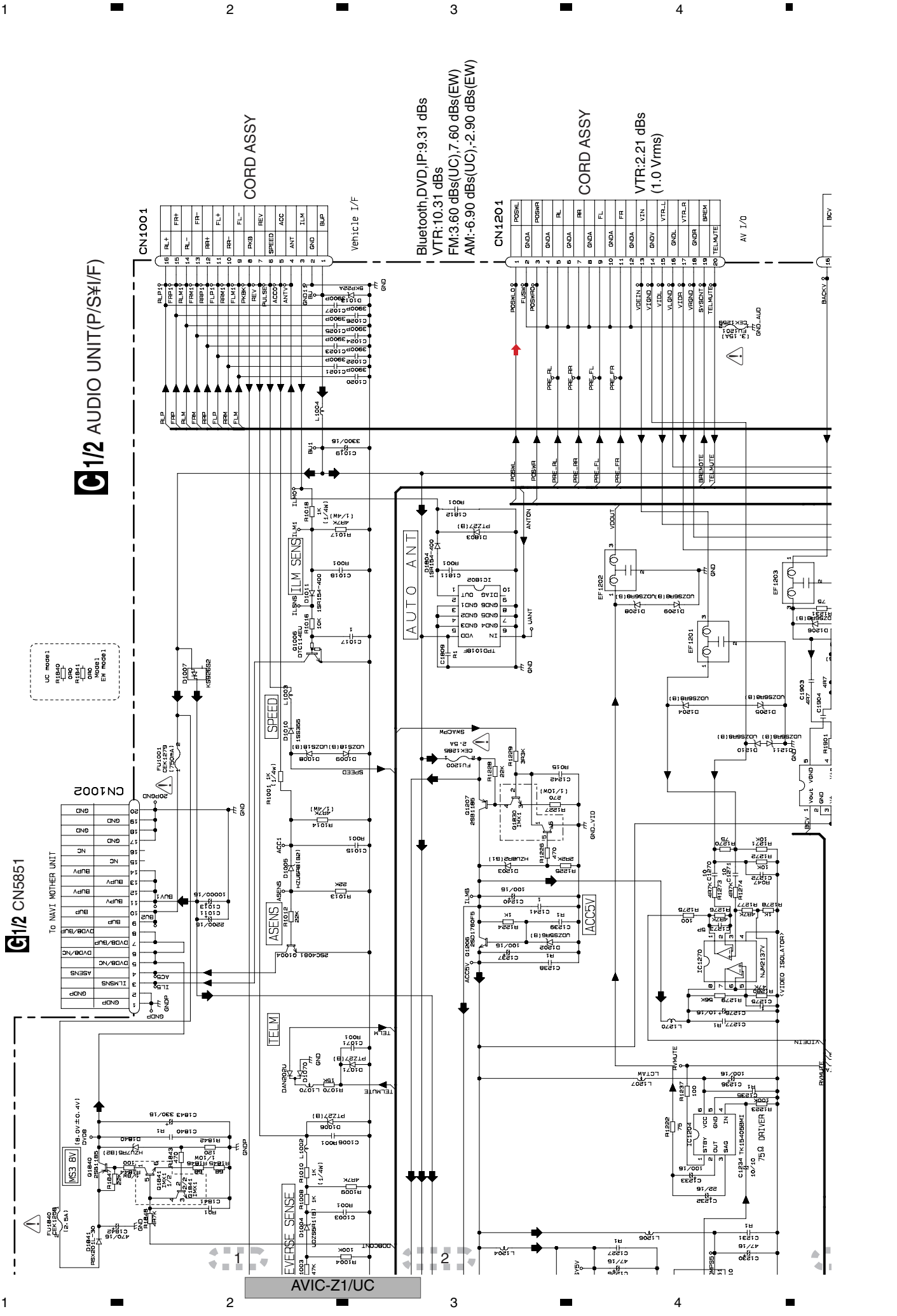


C-b 1/2

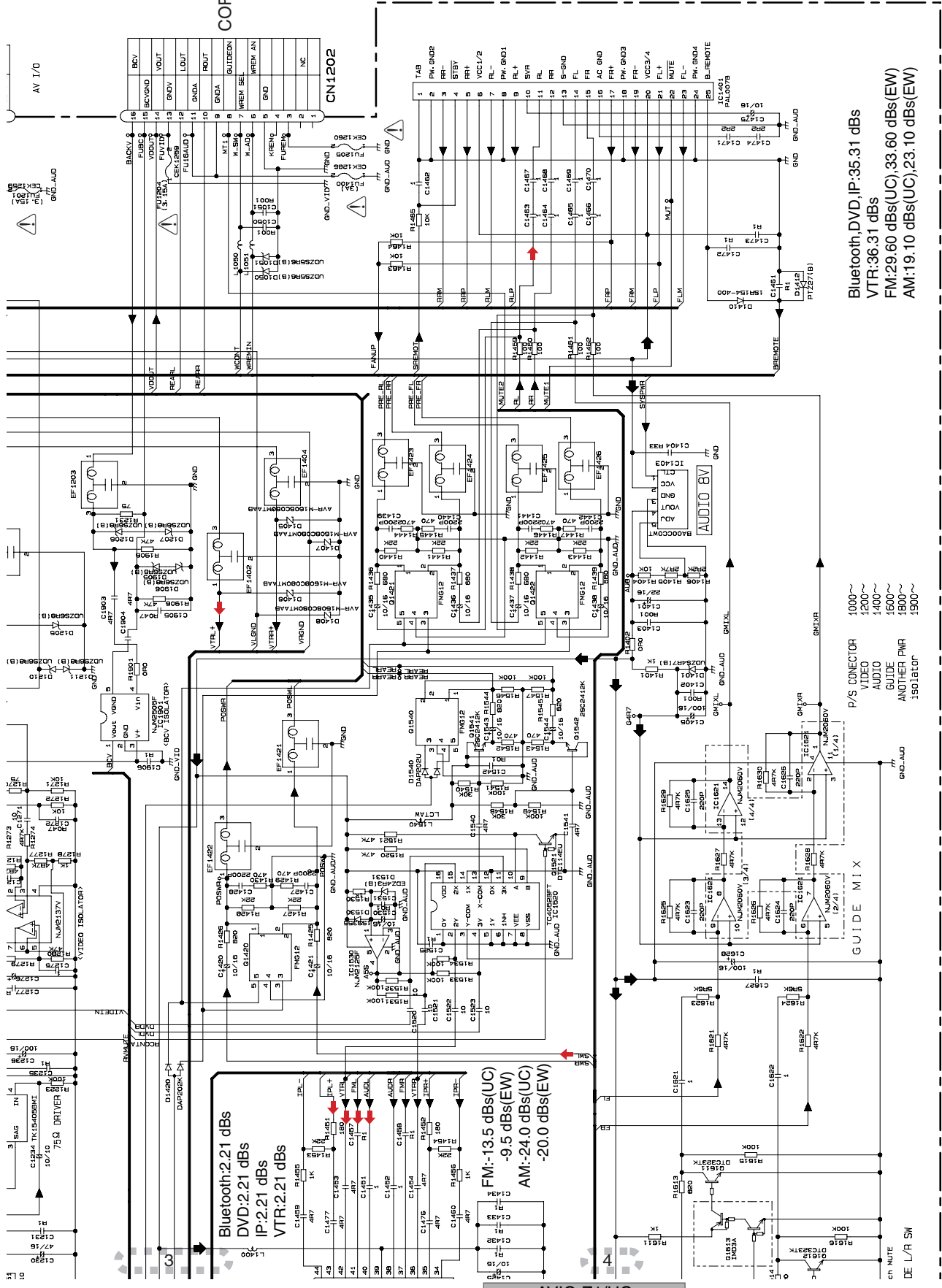
* Bluetooth,DVD,IP:9.31 dBs
 VTR:10.31 dBs
 FM:3.60 dBs(UC),7.60 dBs(EW)
 AM:-6.90 dBs(UC),-2.90 dBs(EW)

C-a C-b

C-a 1/2



CORD ASSY



Bluetooth:2.21 dB
 DVD:2.21 dB
 IP:2.21 dB
 VTR:2.21 dB

FM:-13.5 dBs(UC)
 -9.5 dBs(EW)
 AMI:-24.0 dBs(UC)
 -20.0 dBs(EW)

Bluetooth,DVD,IP:35.31 dBs
 VTR:36.31 dBs
 FM:29.60 dBs(UC),33.60 dBs(EW)
 AMI:19.10 dBs(UC),23.10 dBs(EW)

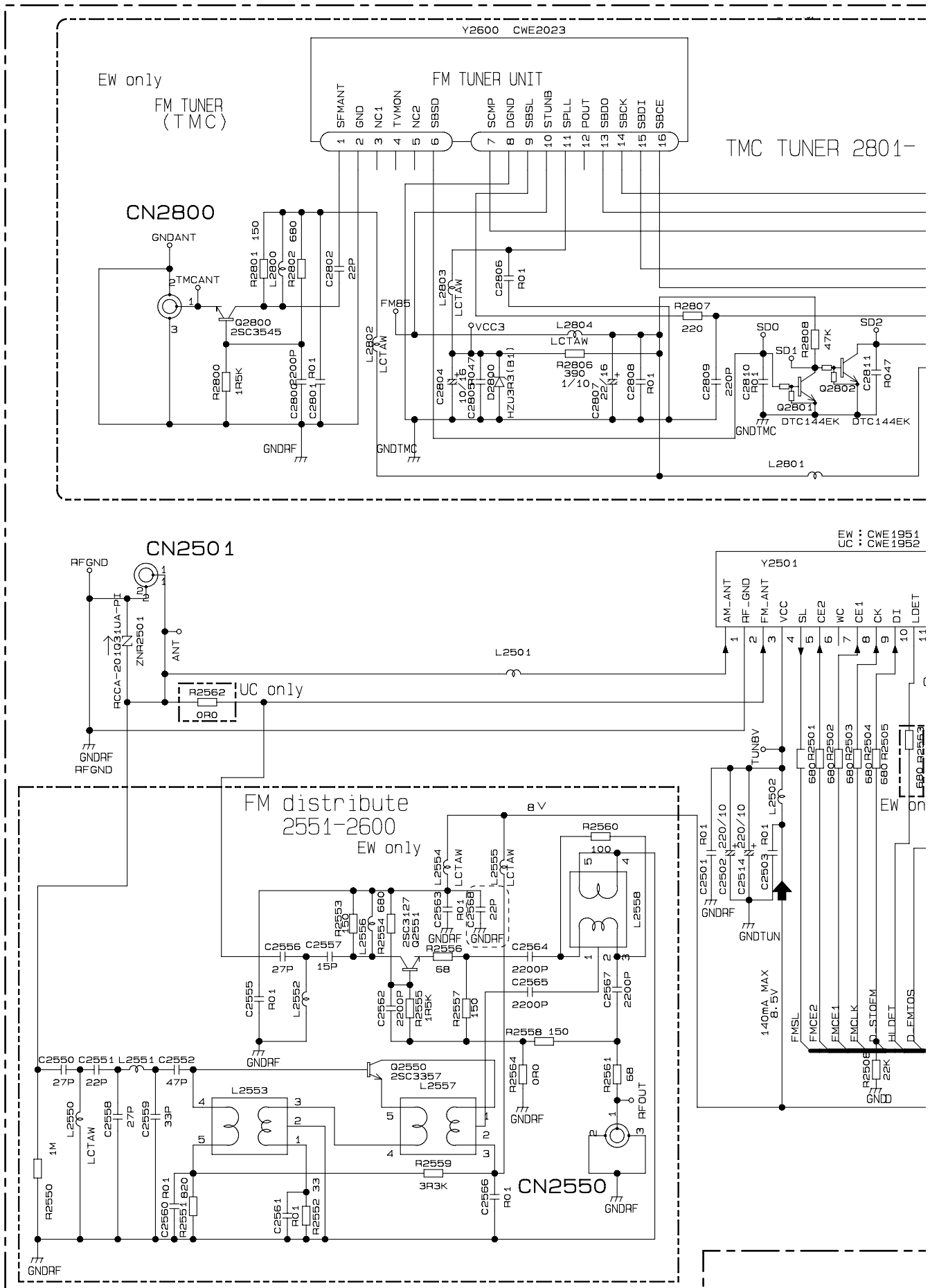
C-b 1/2

AVIC-Z1/UC

C-a C-b

A B C D E F

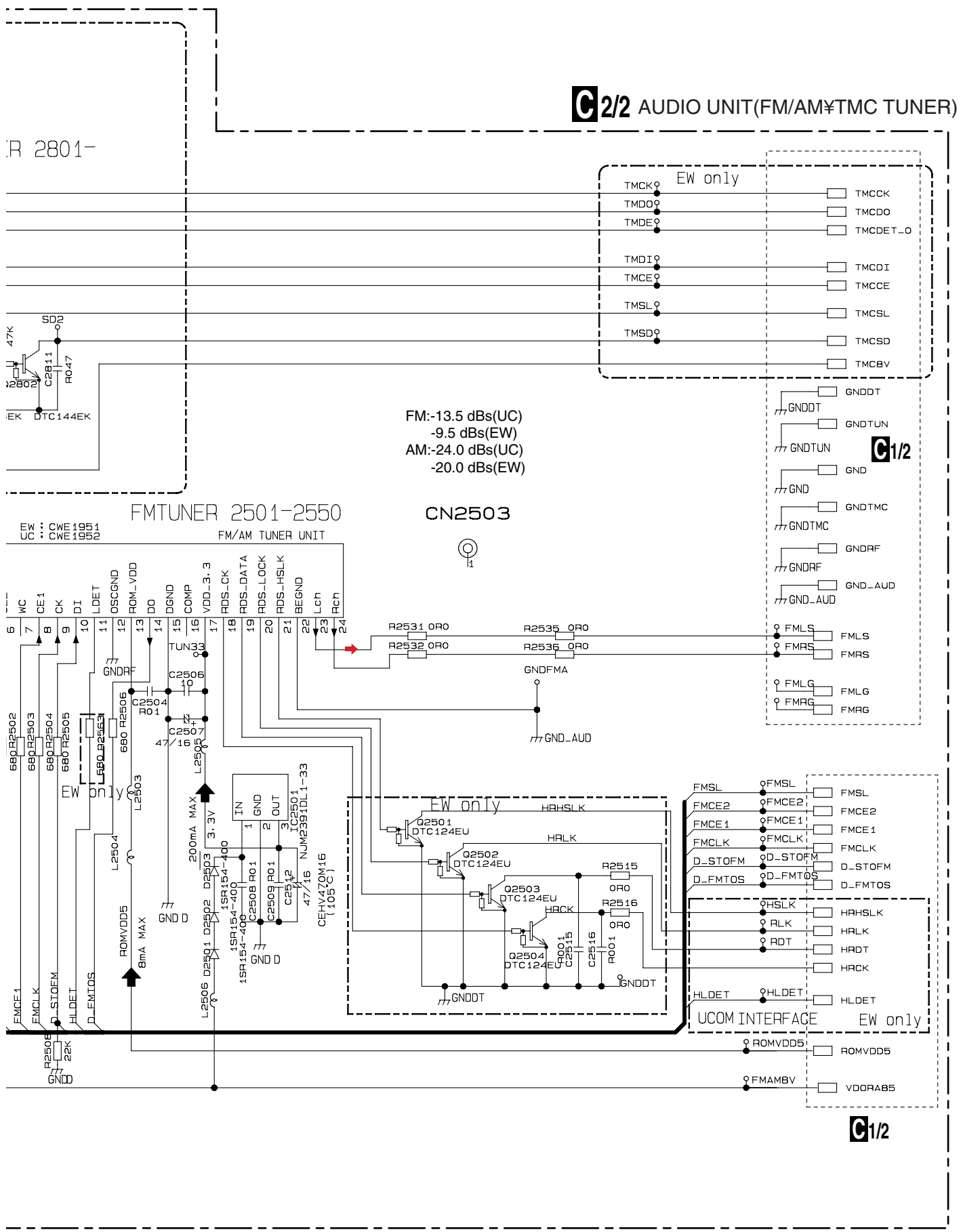
3.5 AUDIO UNIT(FM/AM•TMC TUNER)



EW : CWE1951
UC : CWE1952



A
B
C
D
E
F



C/2 AUDIO UNIT(FM/AM/TMC TUNER)

R 2801-

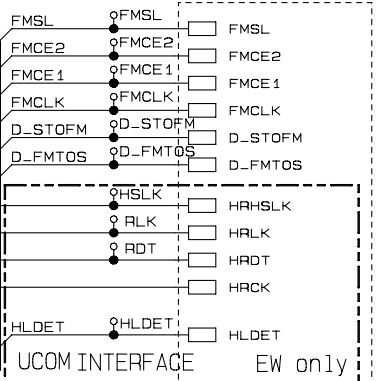
FM:-13.5 dBs(UC)
 -9.5 dBs(EW)
 AM:-24.0 dBs(UC)
 -20.0 dBs(EW)

FMTUNER 2501-2550

CN2503

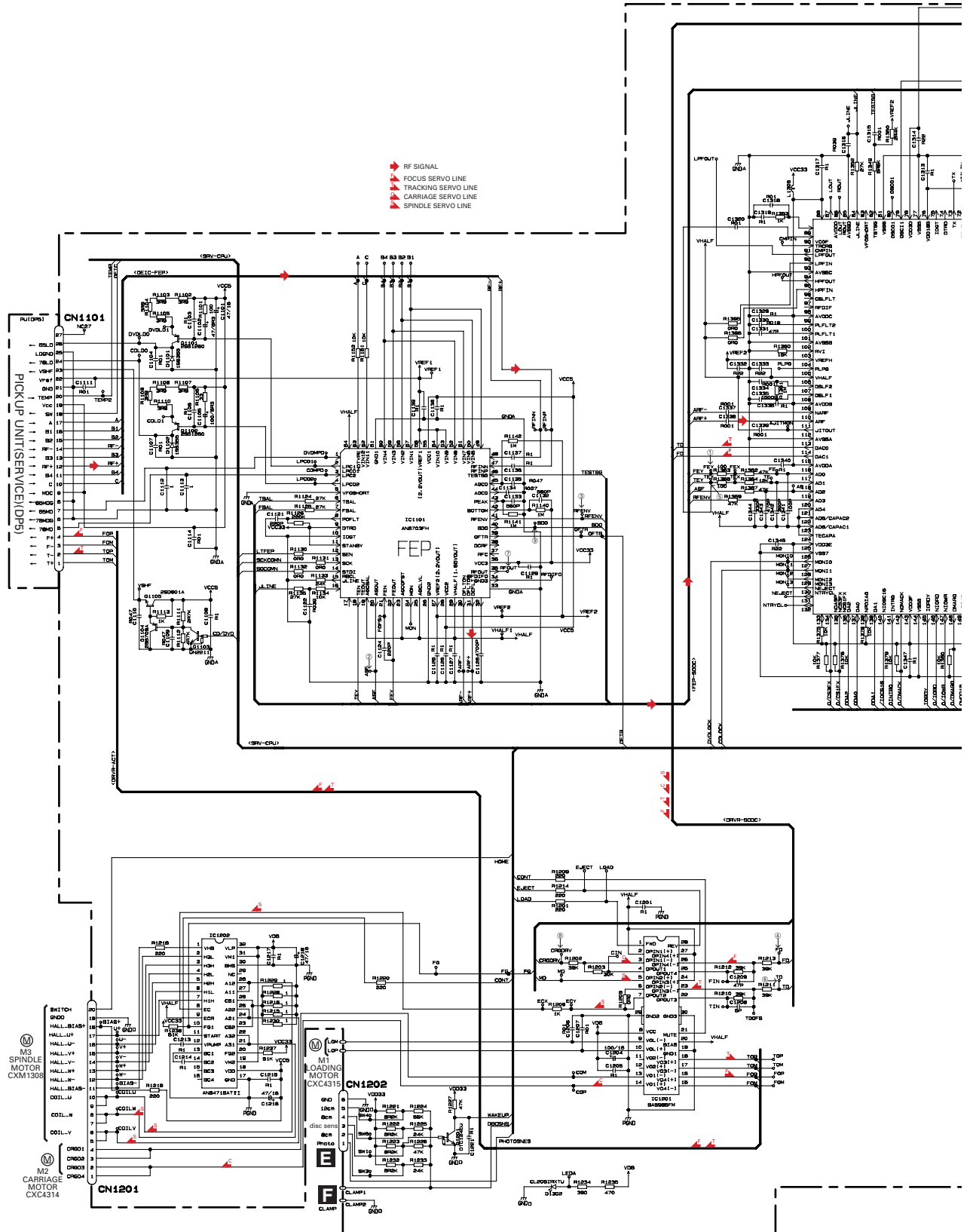
EW : CWE1951
 UC : CWE1952

FM/AM TUNER UNIT



3.6 DVD CORE UNIT(MS3)(SO-DC)(GUIDE PAGE)

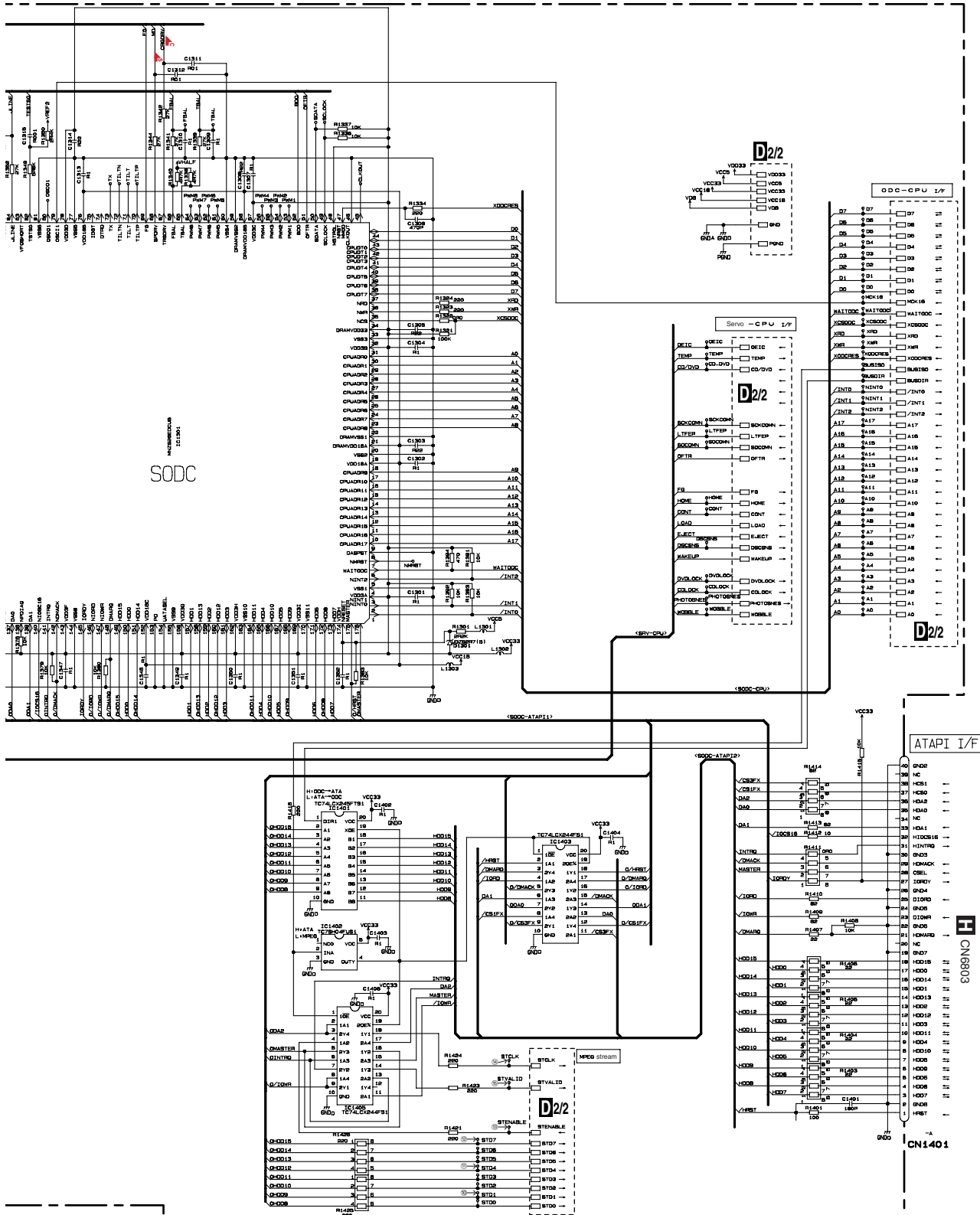
D-a 1/2



D1/2

D-b 1/2

D1/2 DVD CORE UNIT(MS3)(SO-DC)



A
B
C
D
E
F

D1/2

A D-b 1/2

B

C

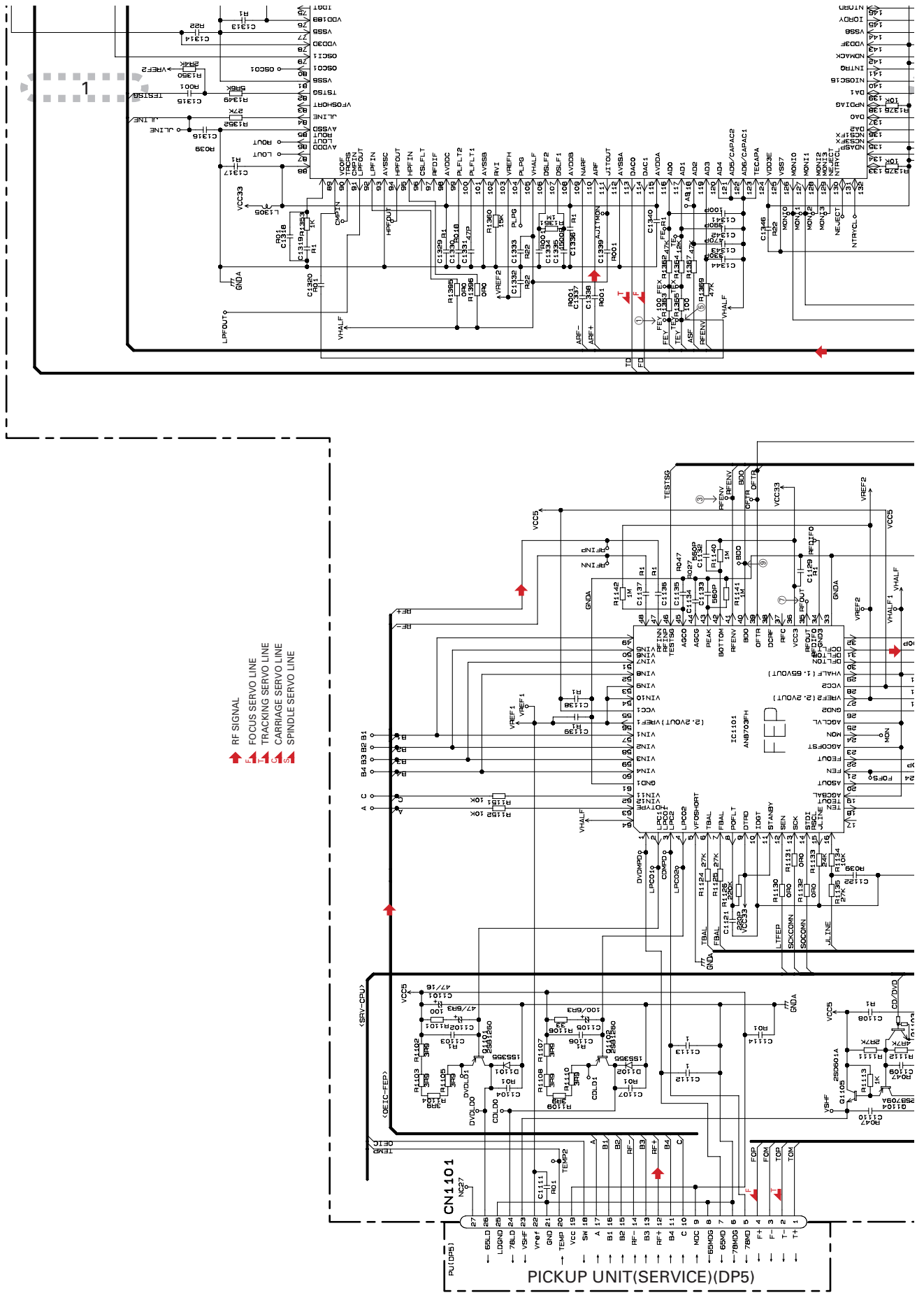
D

E

F

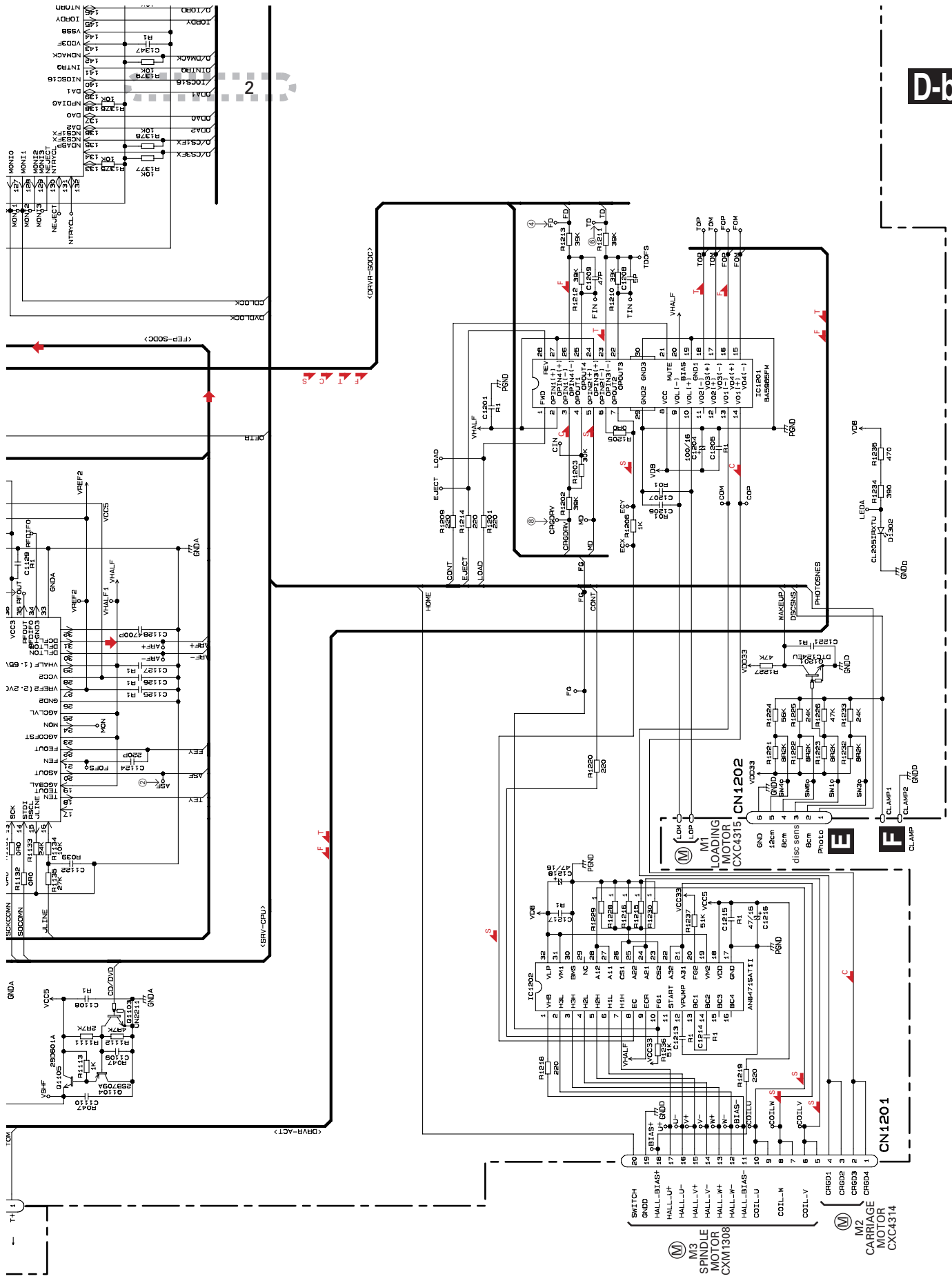
D-a D-b

D-a 1/2



- RF SIGNAL
- FOCUS SERVO LINE
- TRACKING SERVO LINE
- CARRIAGE SERVO LINE
- SPINDLE SERVO LINE

AVIC-Z1/UC



D-b 1/2

D-a D-b

D-a 1/2

AVIC-Z1/UC

A
B
C
D
E
F

5
6
7
8

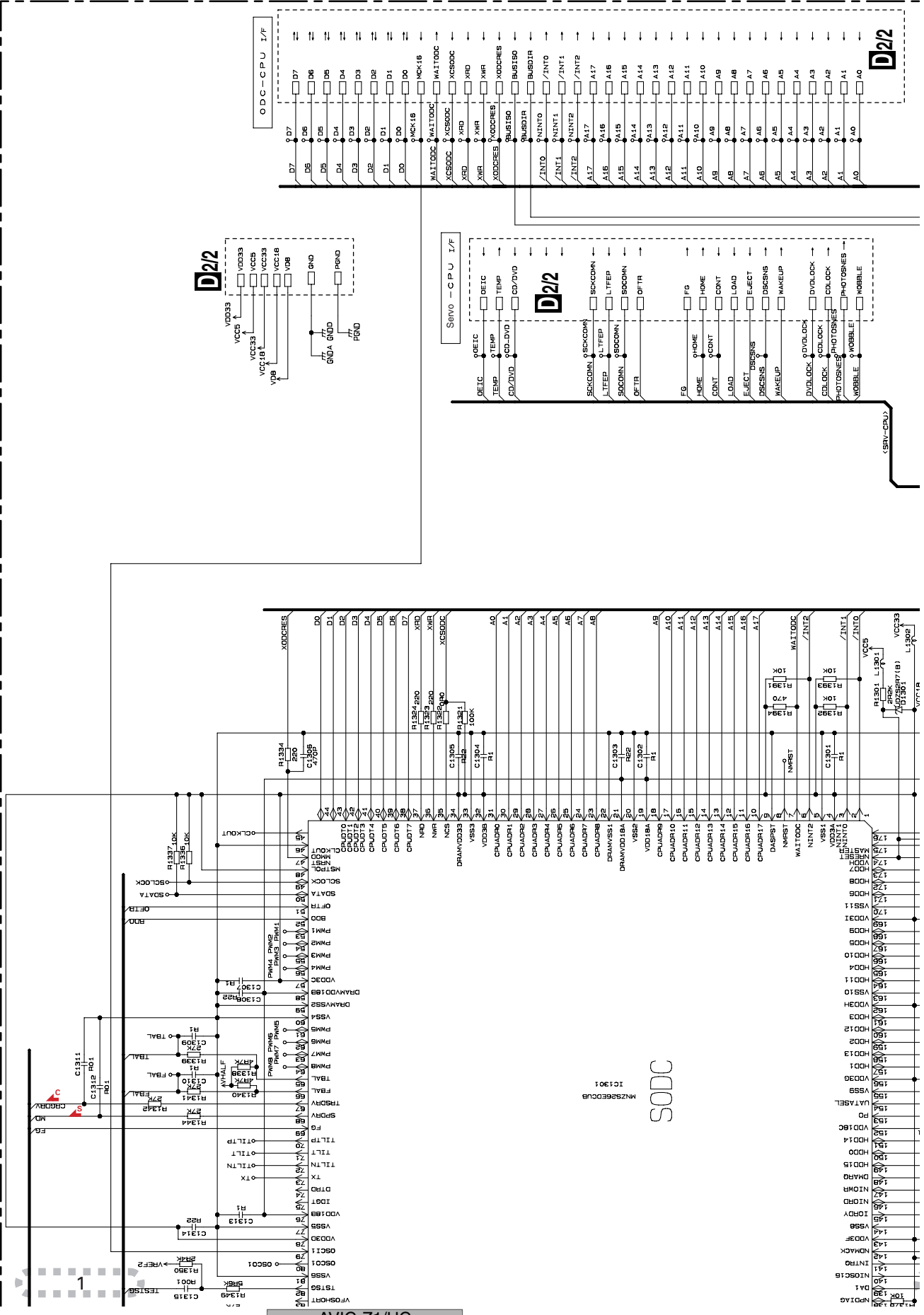
A B C D E F

1 2 3 4

D-a D-b

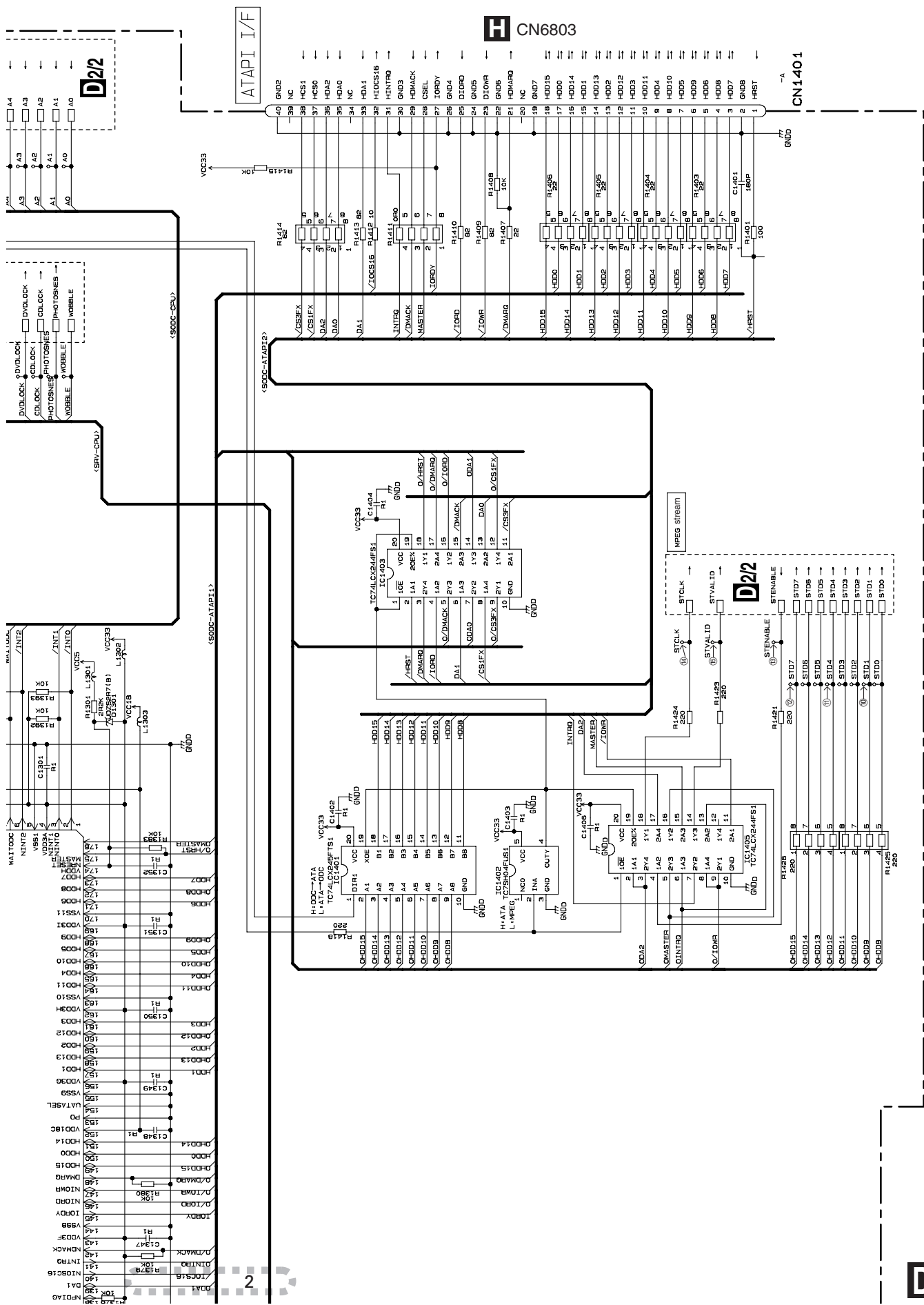
D-b 1/2

D1/2 DVD CORE UNIT(MS3)(SO-DC)



AVIC-Z1/UC

58



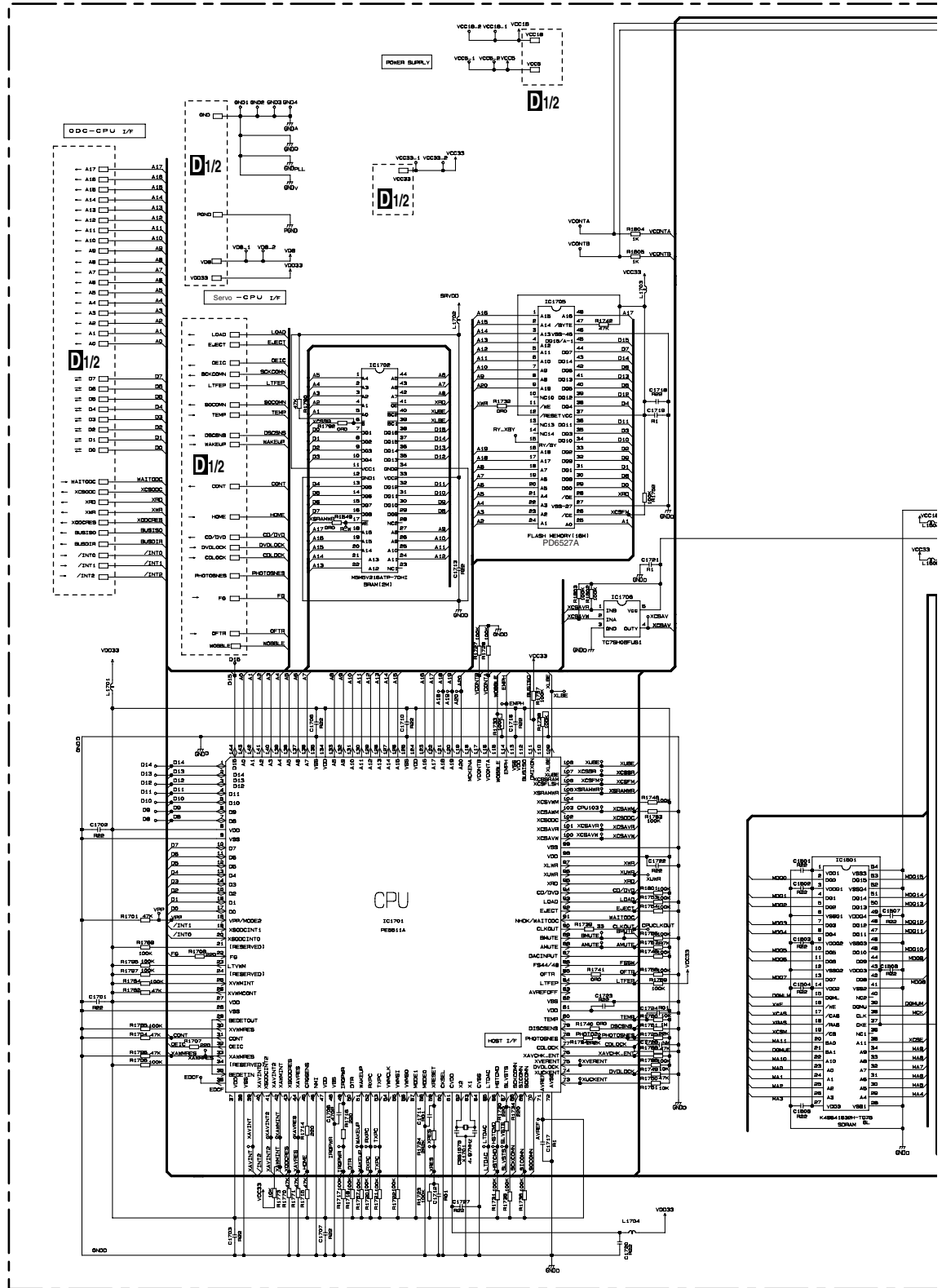
AVIC-Z1/UC

D-a D-b

D-b 1/2

3.7 DVD CORE UNIT(MS3)(CPU)(GUIDE PAGE)

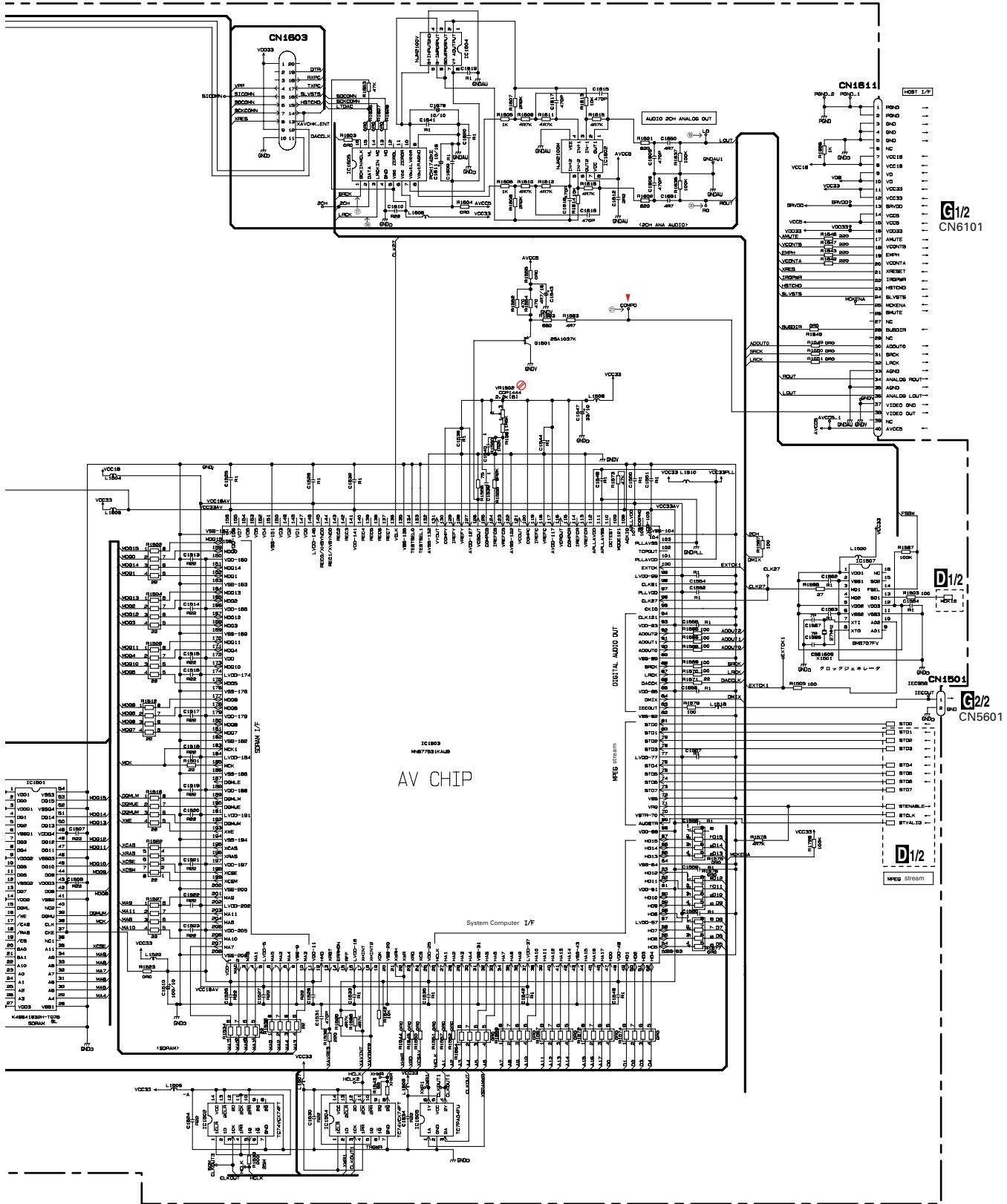
D-a 2/2



D2/2

D-b 2/2

D2/2 DVD CORE UNIT (MS3)(CPU)



G1/2 CN6101

D1/2

G2/2 CN5601

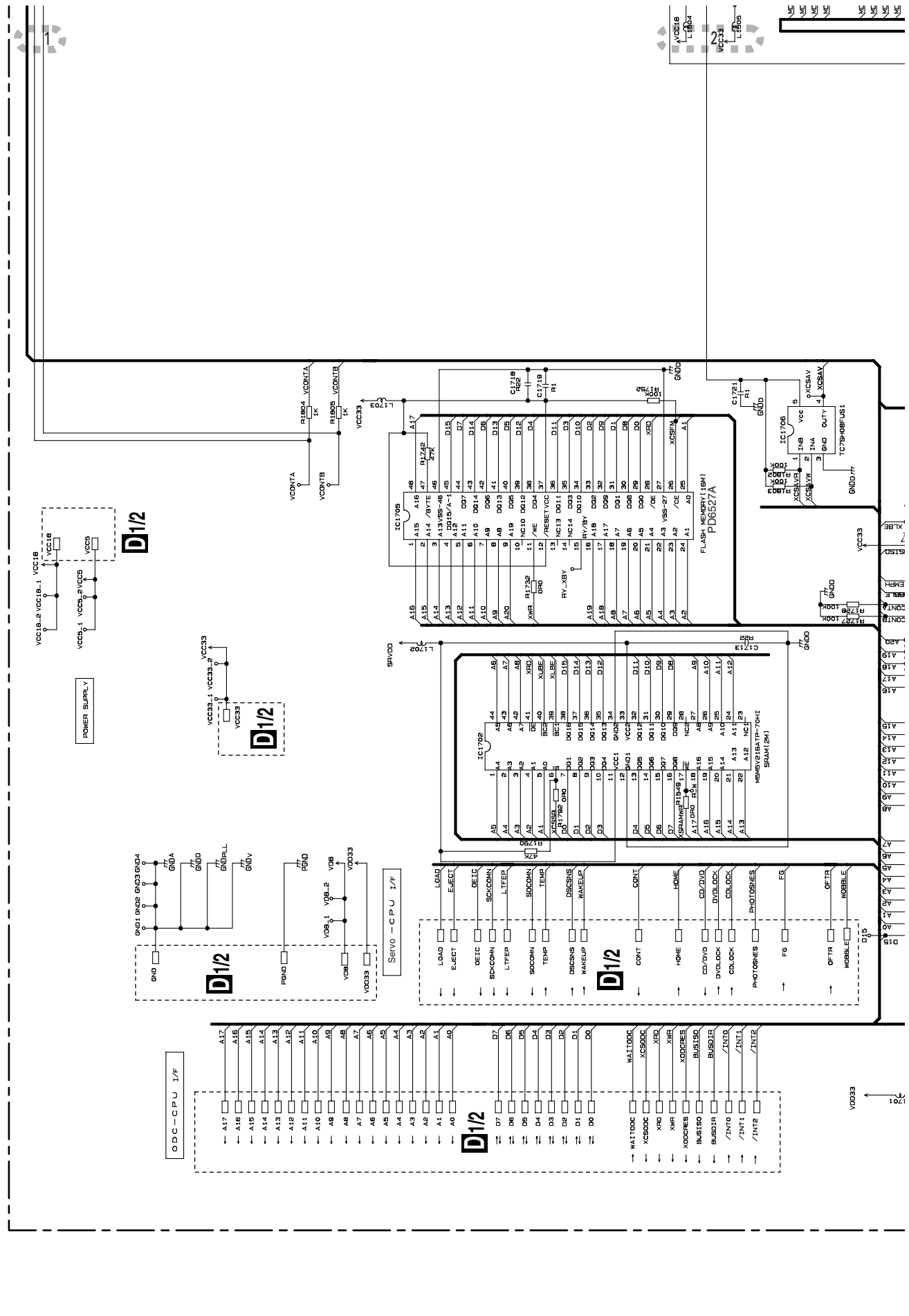
D1/2

D-b 2/2

A B C D E F

D-a D-b

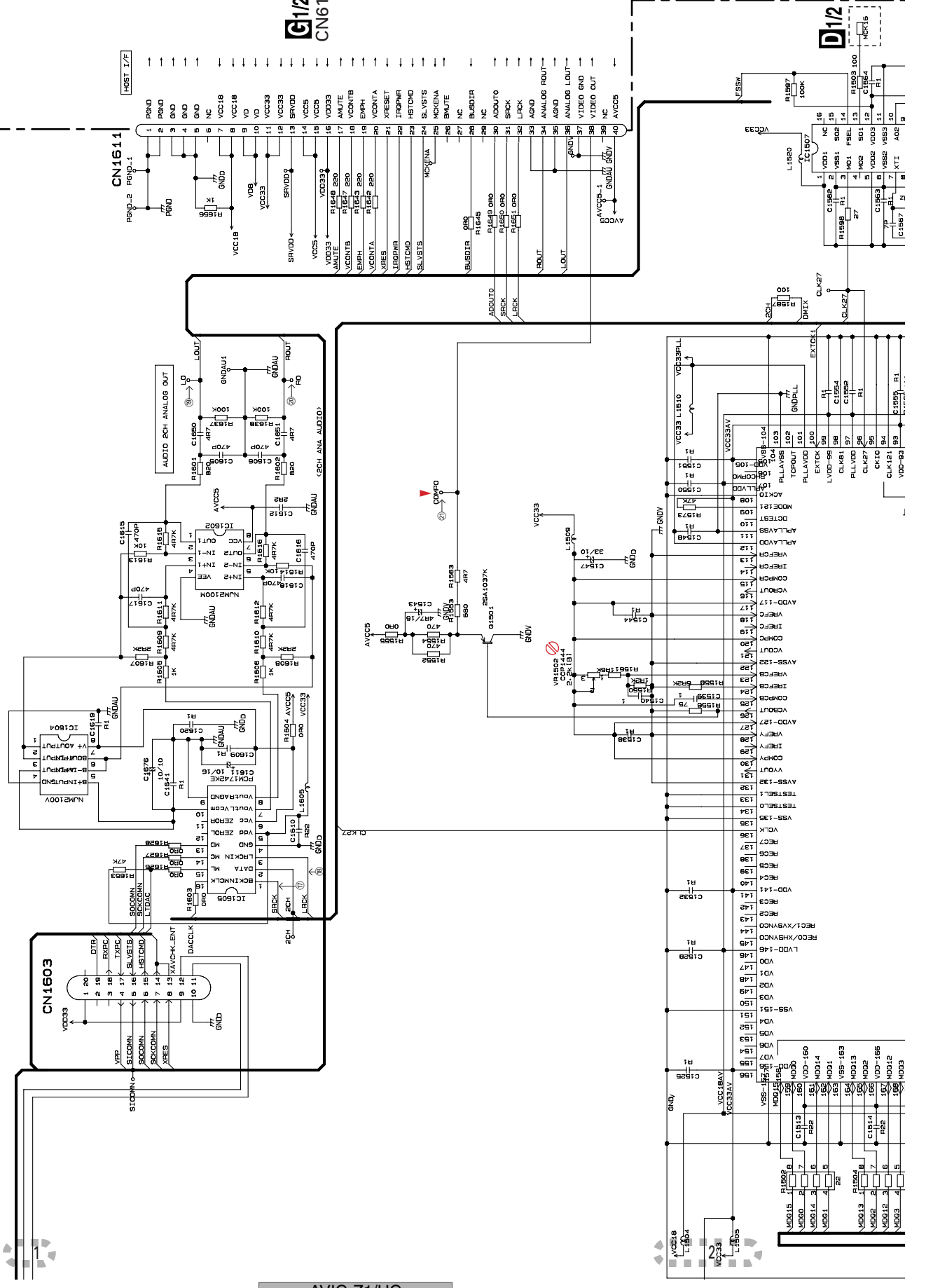
D-a 2/2

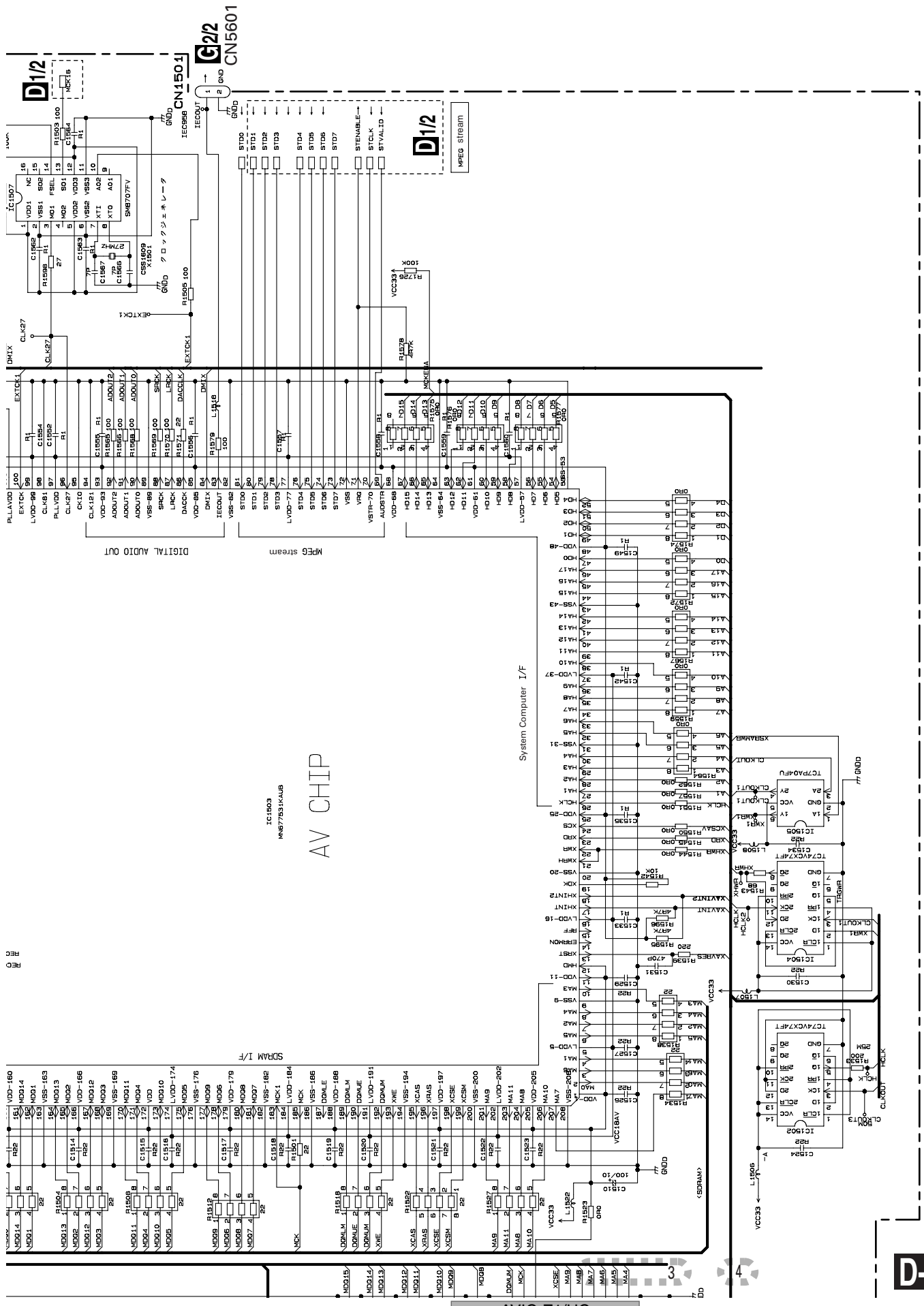


D2/2 DVD CORE UNIT (MS3)(CPU)

D-a D-b

D-b 2/2





5 6 7 8

5 6 7 8

D-a D-b

D-b 2/2

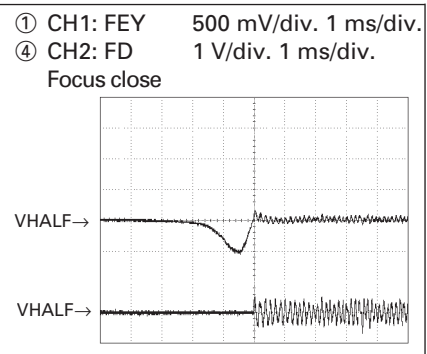
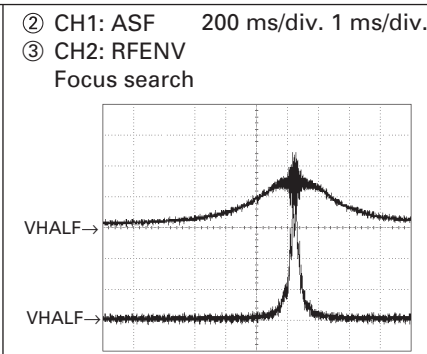
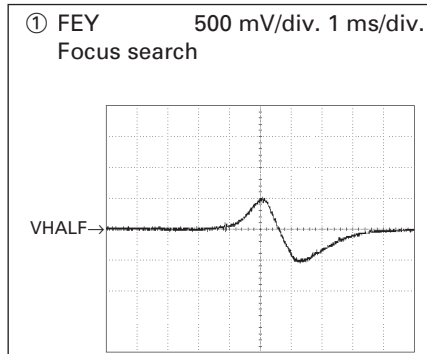
65

A B C D E F

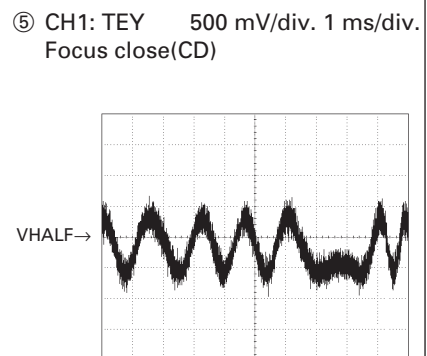
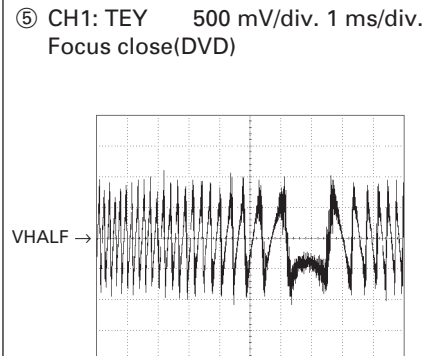
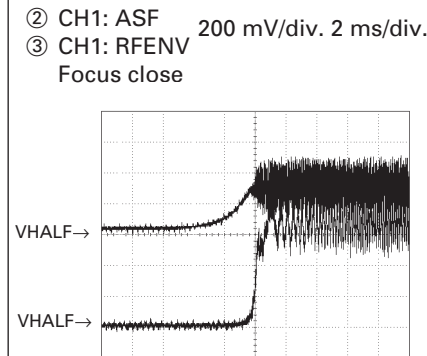
● Wave form

Note:1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage VHALF : 1.65 V

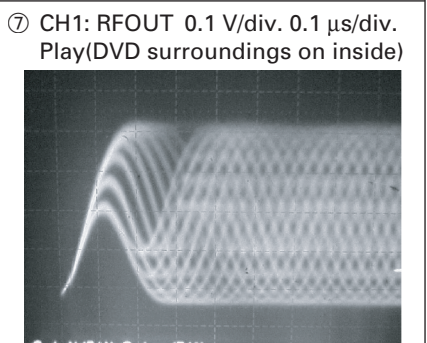
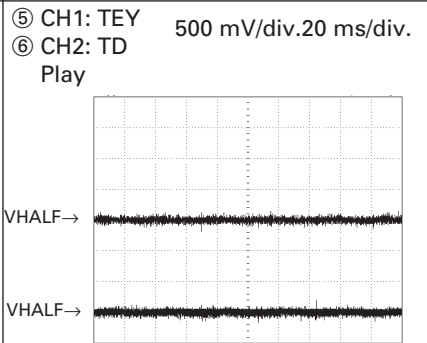
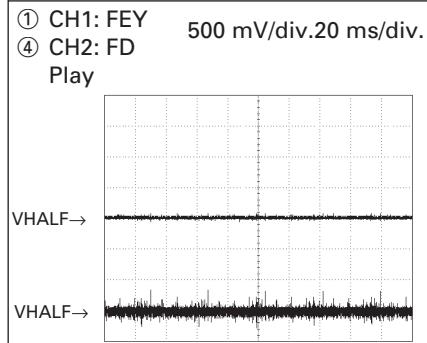
A



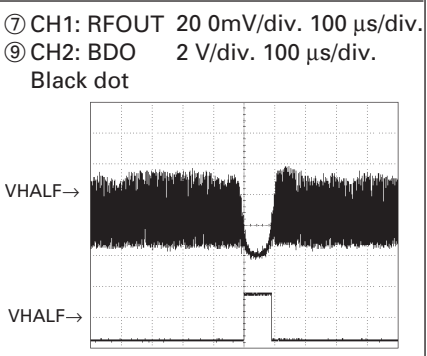
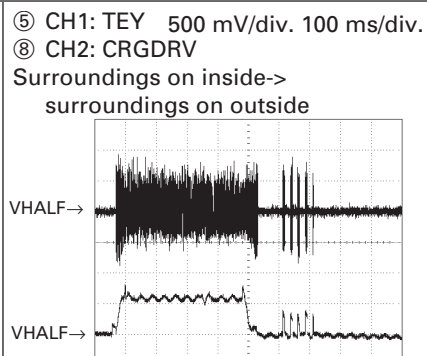
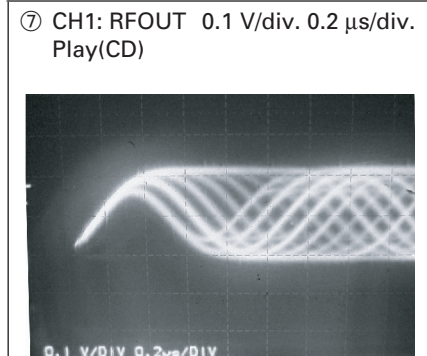
B



C



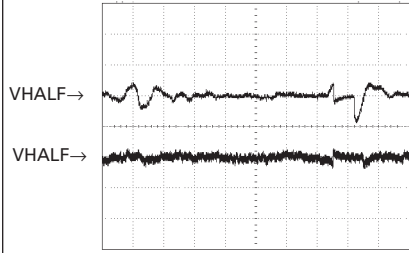
D



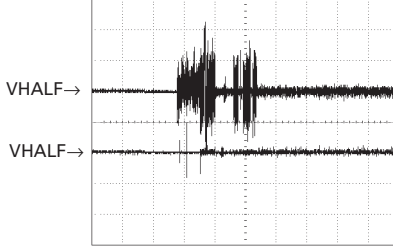
E

F

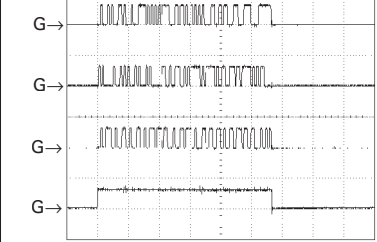
④ CH1: FD 1 V/div. 100 μs/div.
 ⑥ CH2: TD 500 mV/div. 100 μs/div.
 Black dot



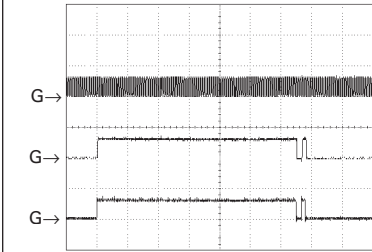
⑤ CH1: TEY 500 mV/div. 1 s/div.
 ① CH2: FEY
 EDC1 mode set up(DVD)



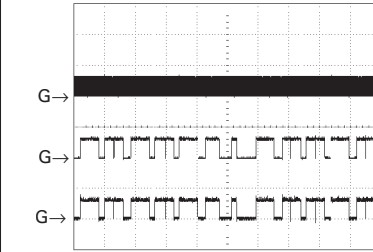
⑩ CH1: STD1
 ⑪ CH2: STD4 5 V/div. 2 μs/div.
 ⑫ CH3: STD7
 ⑬ CH4: STENABLE



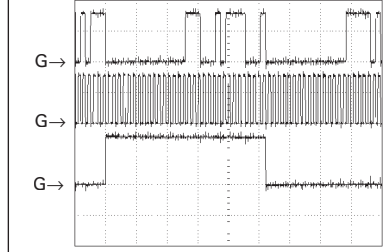
⑭ CH1: STCLK
 ⑮ CH2: STVALID 5 V/div. 2 μs/div.
 ⑬ CH3: STENABLE



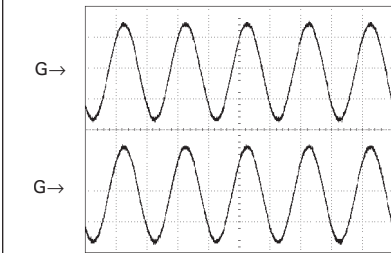
⑭ CH1: STCLK
 ⑮ CH2: STVALID 5 V/div. 50 μs/div.
 ⑬ CH3: STENABLE



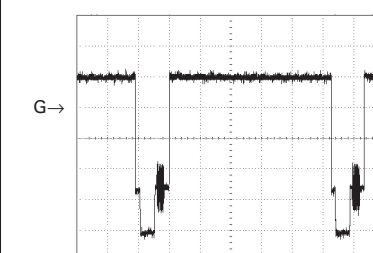
⑯ CH1: ADOUT0
 ⑰ CH2: SRCK 2 V/div. 2 μs/div.
 ⑱ CH3: LRCK



⑲ CH1: LO 1 V/div. 500 μs/div.
 ⑳ CH2: RO



㉑ CH1: COMPO 200 mV/div. 10 μs/div.
 [White 100 % output]



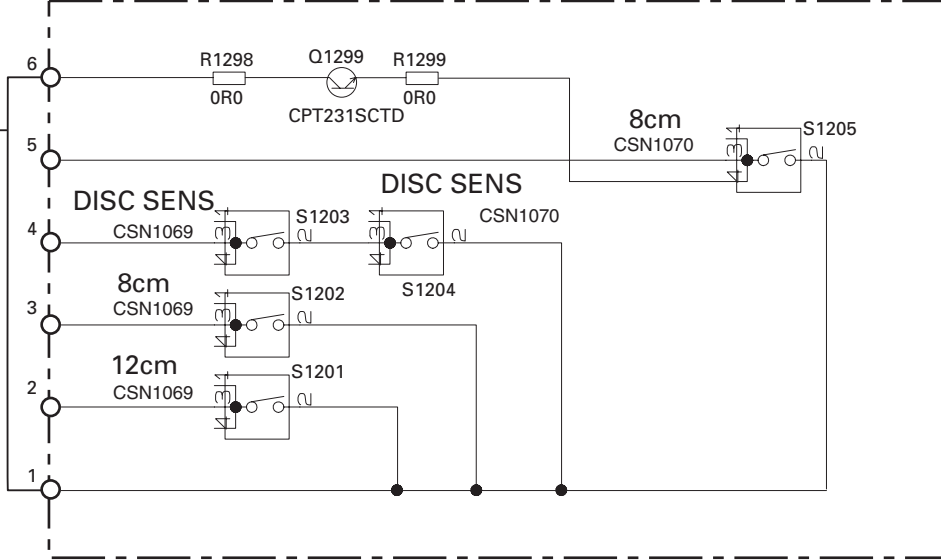
A
B
C
D
E
F

3.8 COMPOUND UNIT(A) AND COMPOUND UNIT(B)

A

E COMPOUND UNIT(A)

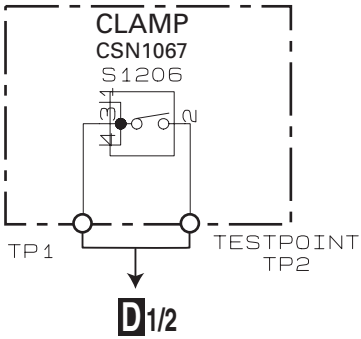
D1/2
CN1202



B

C

F COMPOUND UNIT(B)



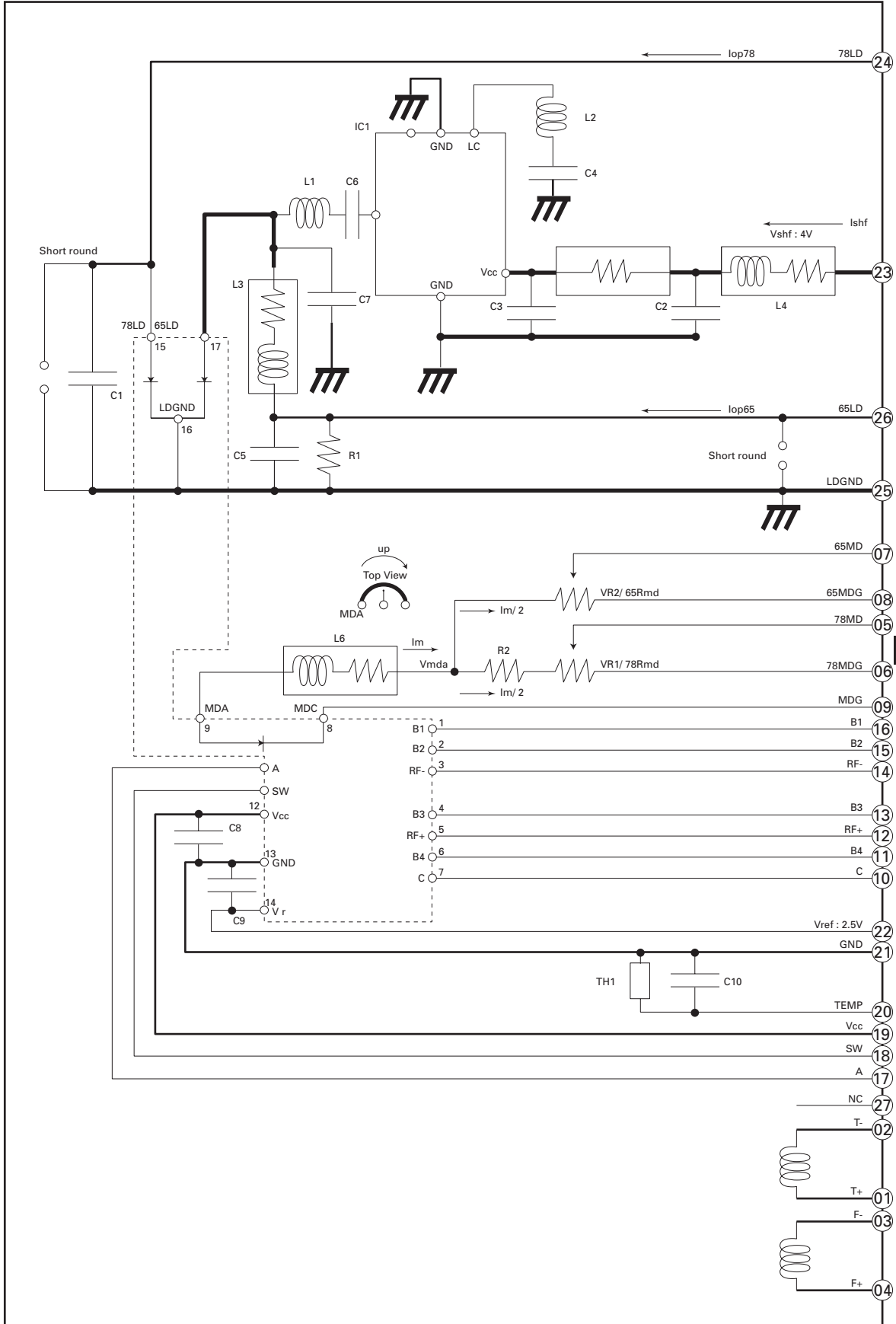
D

E

F

E F

3.9 PU UNIT(REFERENCE)



D1/2CN1101

3.10 NAVI MOTHER PCB(SYS·COM·P/S)(GUIDE PAGE)

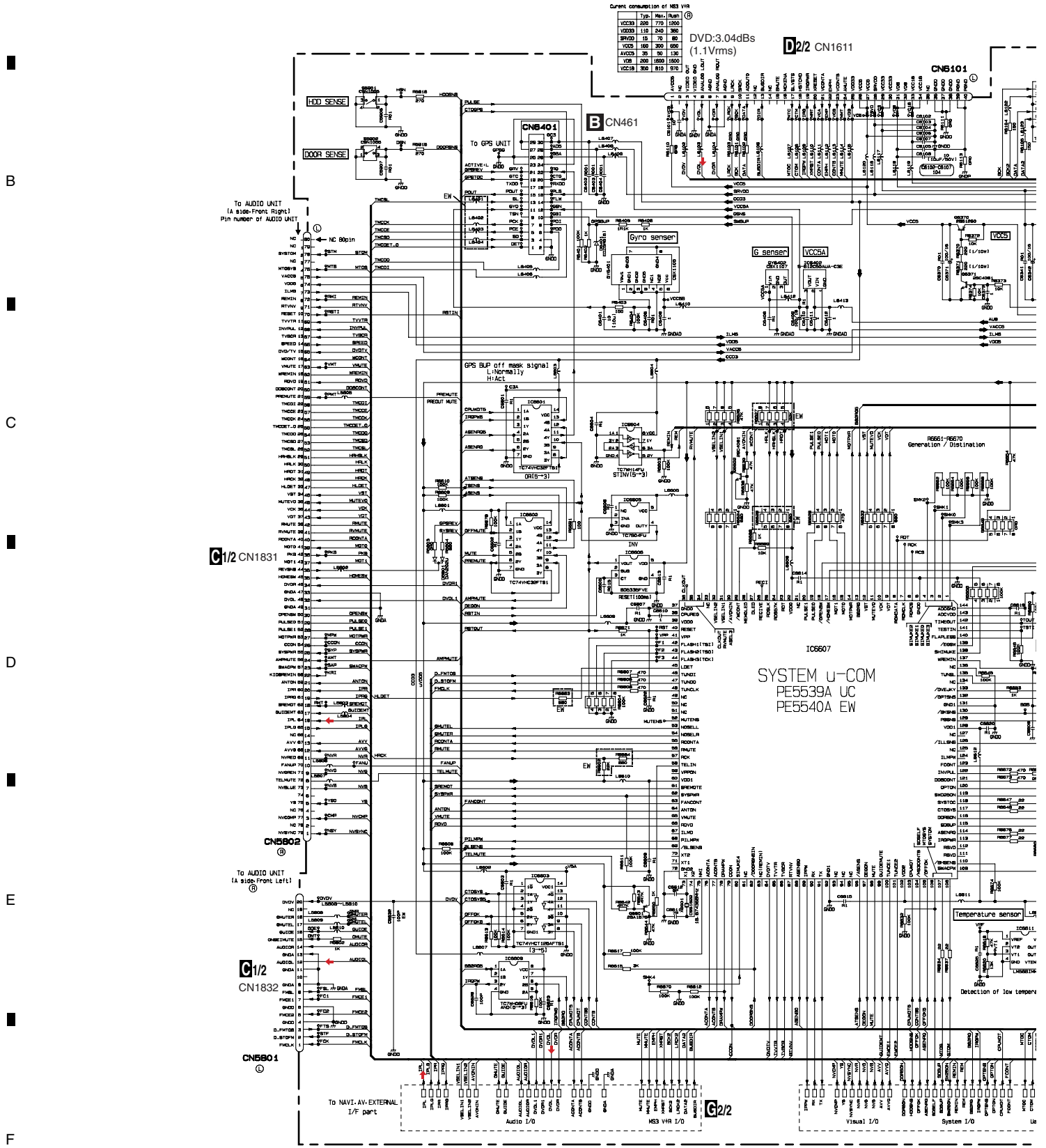
G-a 1/2

A
B
C
D
E
F

Current consumption of MES VHR

VCC3	Typ.	Max.	Push
VCC3	200	700	1000
VCC5	110	240	300
SPVDD	15	70	80
VCC5	100	300	650
VCC5	70	70	130
VCC18	200	1800	1800
VCC18	300	810	970

DVD:3.04dBs (1.1Vrms) D2/2 CN1611



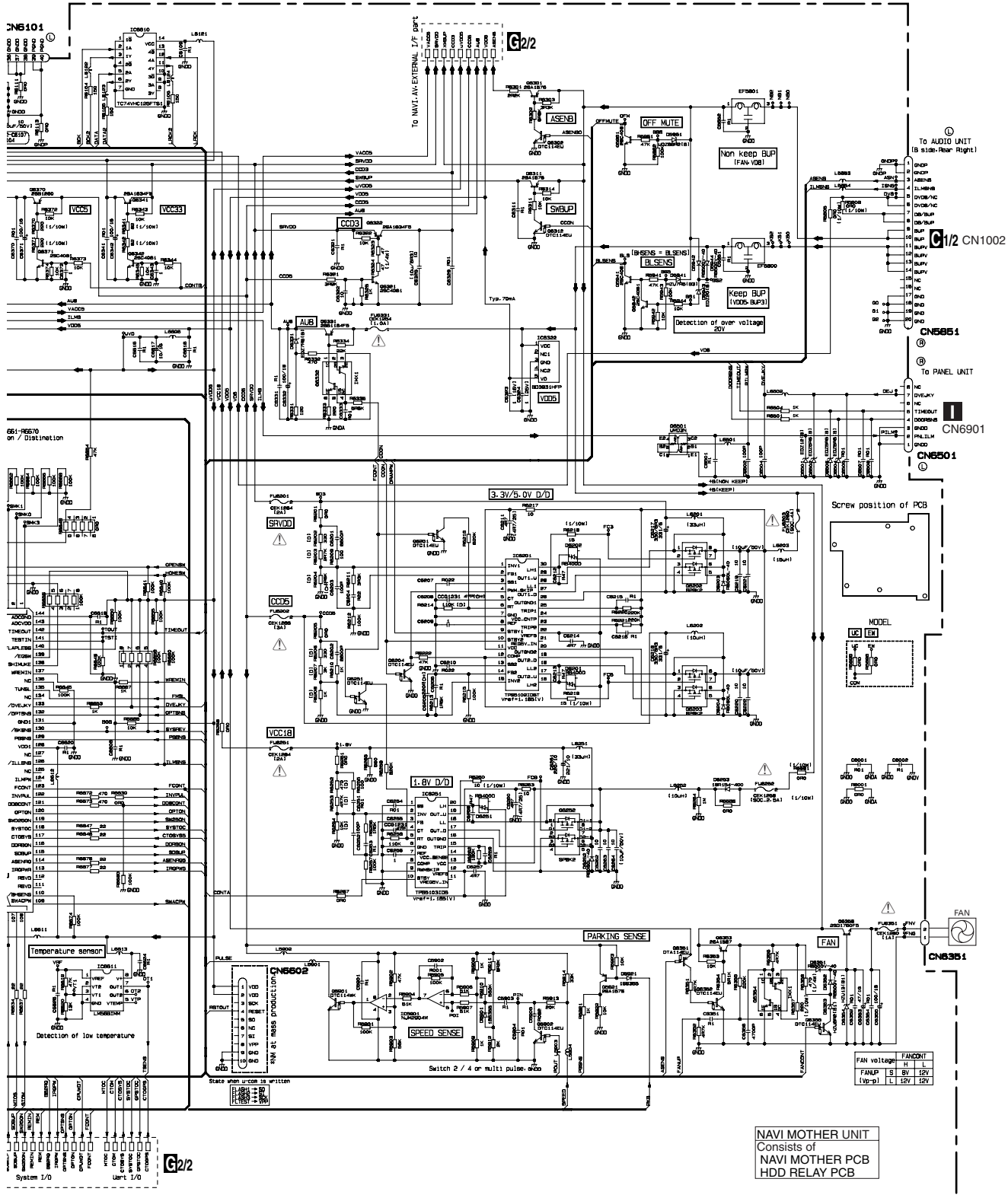
SYSTEM U-COM
PE5539A UC
PE5540A EW

G1/2

AVIC-Z1/UC

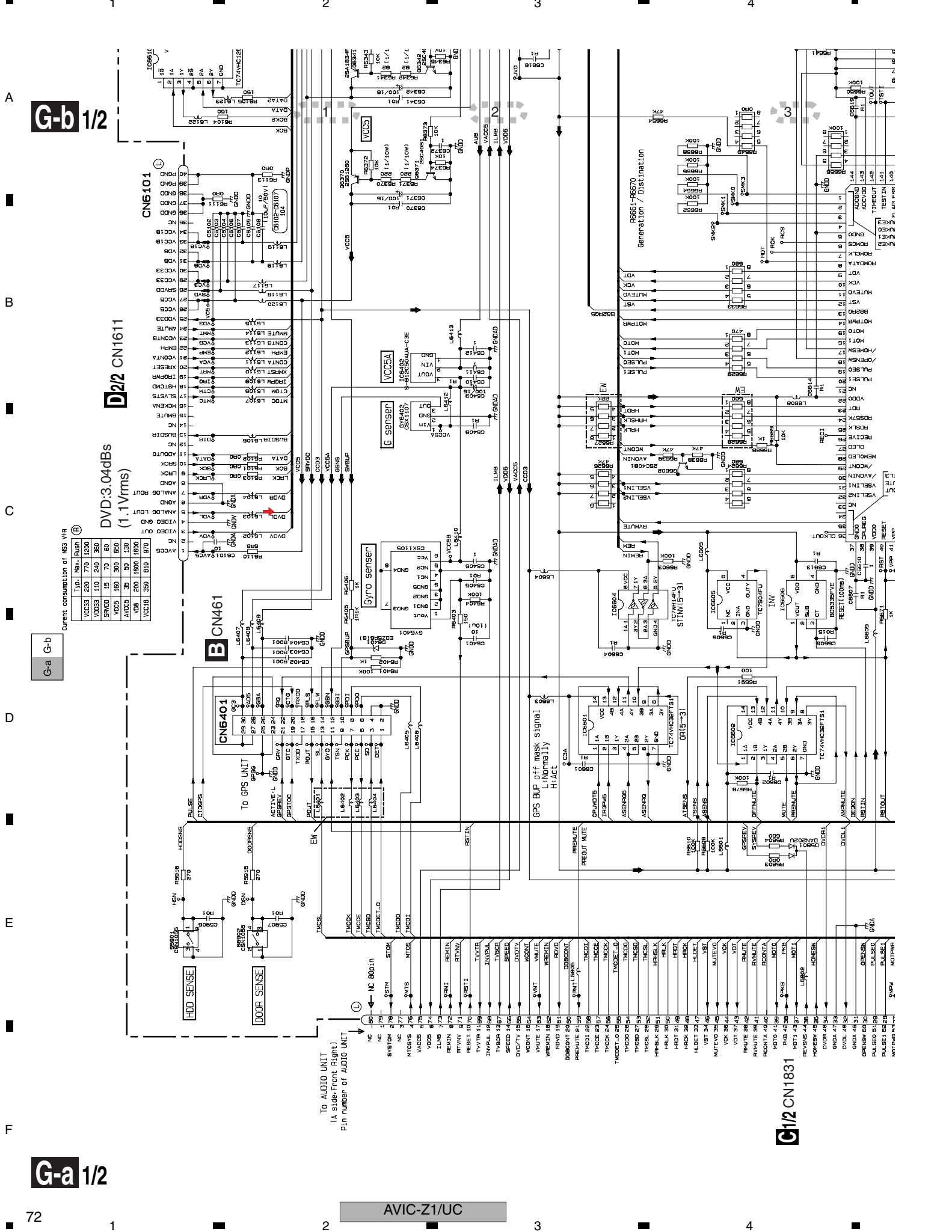
G-b 1/2

G1/2 NAVI MOTHER PCB(SYSCOM#P/S)



A
B
C
D
E
F





G-b 1/2

D2/D2 CN1611
 DVD:3.04dBs
 (1.1 Vrms)

Current consumption of MS3 VHR

Typ.	Max.	Push	
VCC33	220	770	1200
VDD33	110	240	350
SVDD	15	70	80
VCC5	150	300	650
VCC55	35	50	130
V08	200	1500	1500
VCC18	350	810	970

G-a G-b

B CN461

CN6401

G SENSER

DY/D SENSER

VCC5A

RR666-RR670

IC6604

IC6602

IC6605

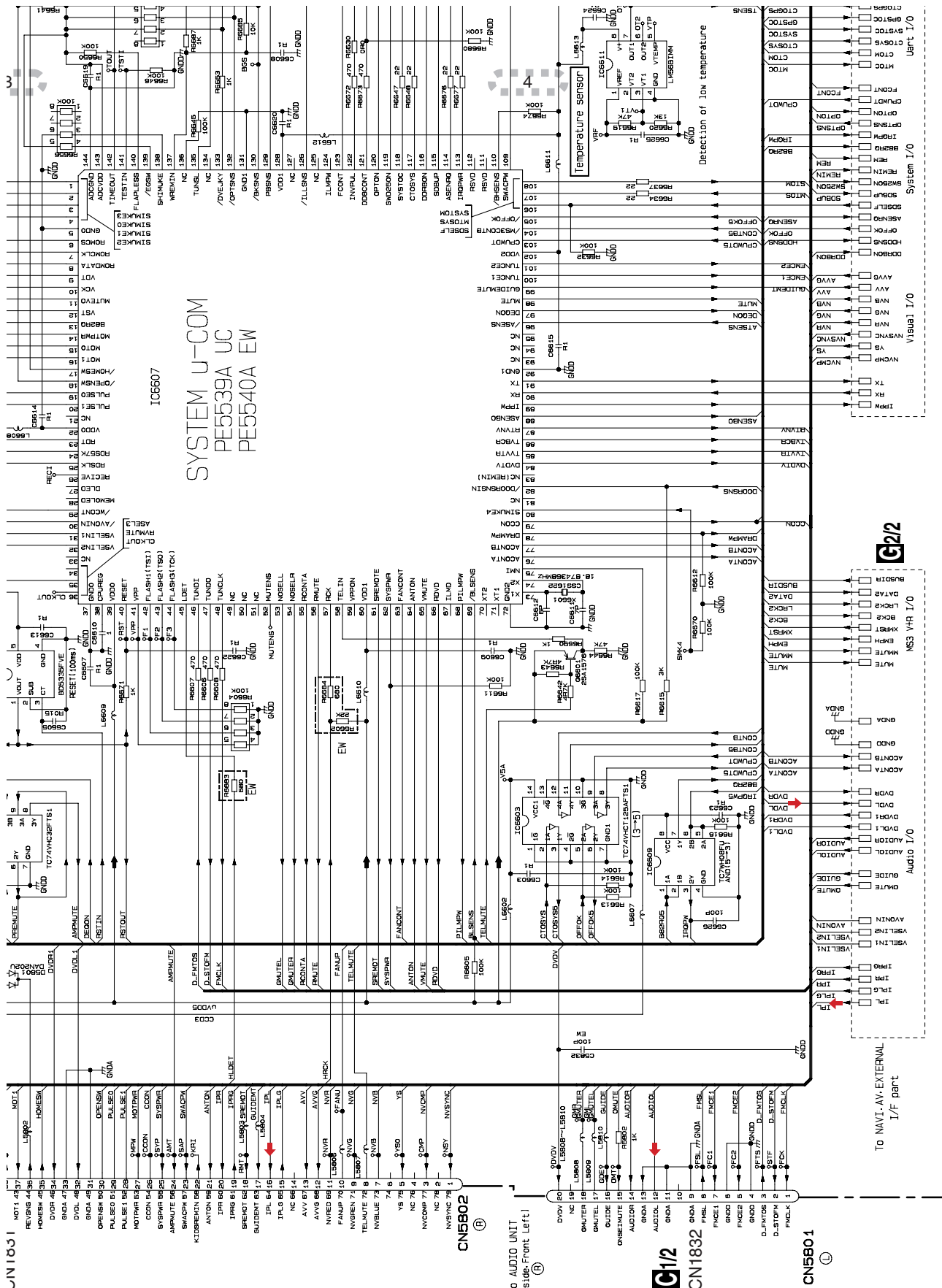
A
B
C
D
E
F

To AUDIO UNIT
 (A side-Front Right)
 Pin number of AUDIO UNIT

GPS BUP off mask signal
 L:Normally
 H:ACT

G/2 CN1831

G-a 1/2



SYSTEM U-COM
 PE5539A UC
 PE5540A EW

IC6607

G-b 1/2

G-a 1/2

G-a G-b

A B C D E F

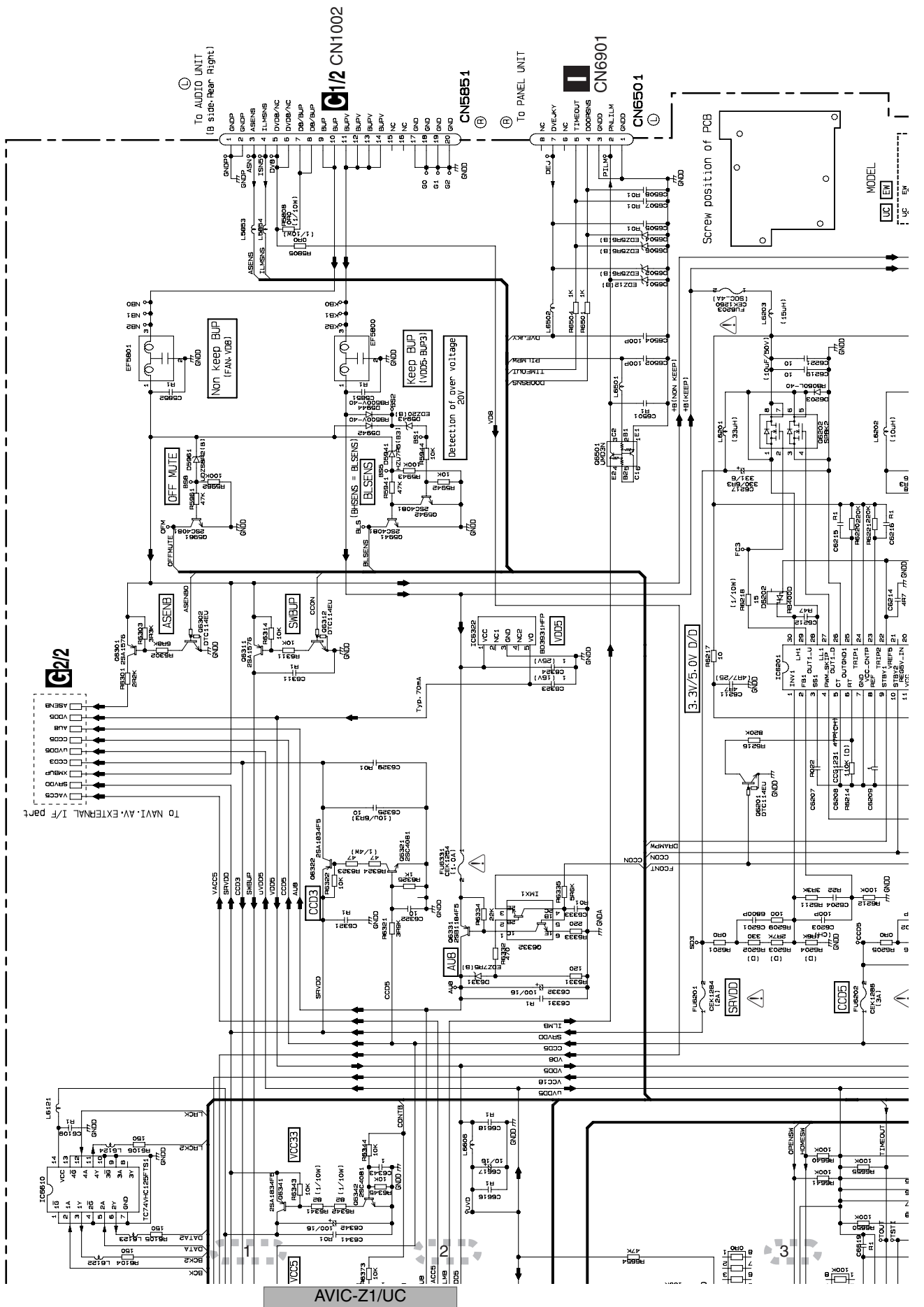
A B C D E F

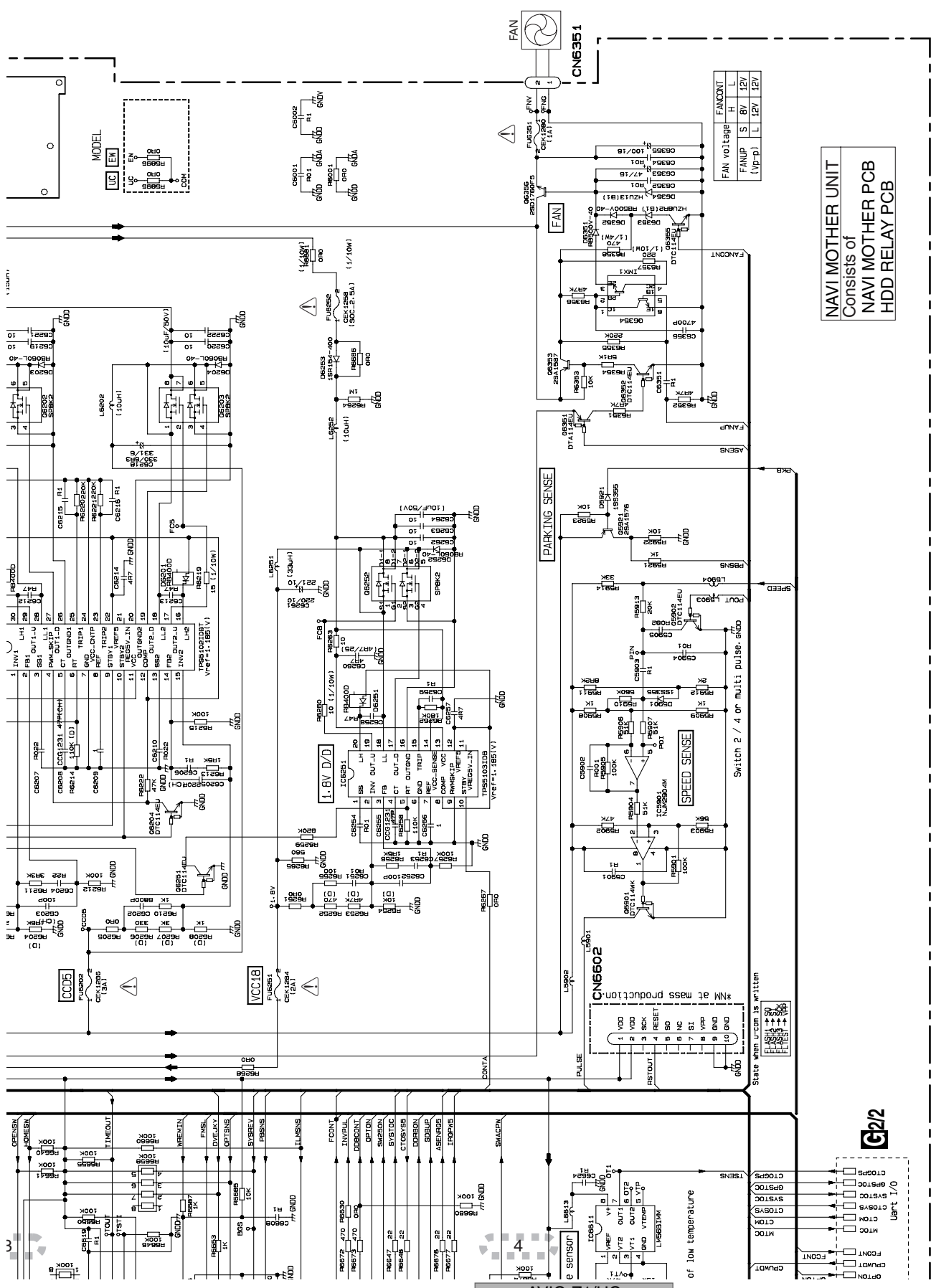
1 2 3 4

G1/2 NAVI MOTHER PCB(SYSCOM#P/S)

G-a G-b

G-b 1/2





NAVI MOTHER UNIT
Consists of
NAVI MOTHER PCB
HDD RELAY PCB

FAN VOLTAGE	
FANAMP	S B V 12V
(Vp-p)	L 12V 12V

G-a G-b

G-b 1/2

A
B
C
D
E
F

5

6

7

8

5

6

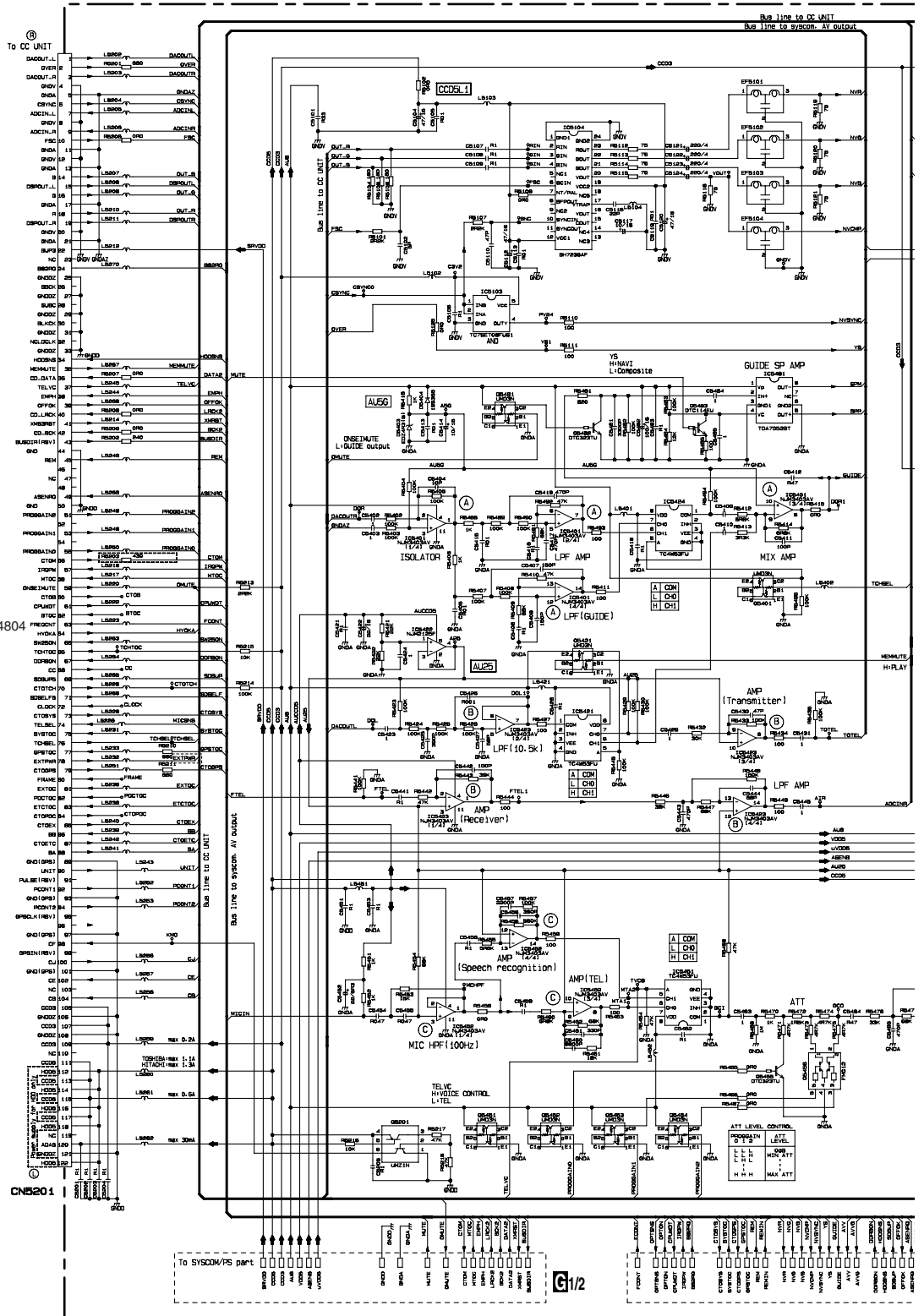
7

8

75

3.11 NAVI MOTHER PCB(NAVI AV•EXTERNAL I/F)(GUIDE PAGE)

G-a 2/2



G2/2

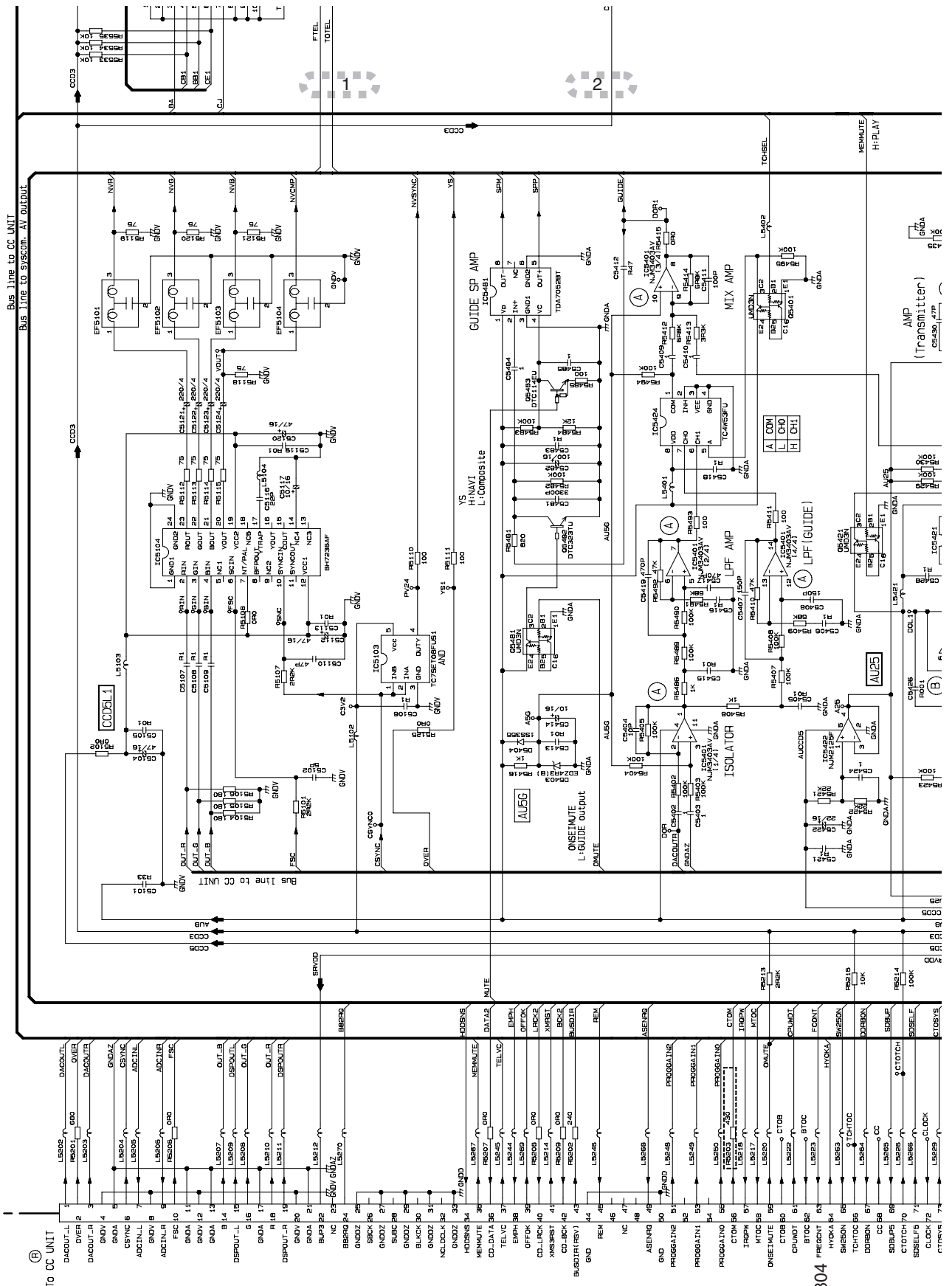
AVIC-Z1/UC

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74

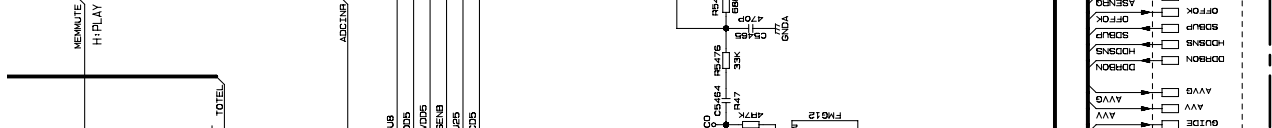
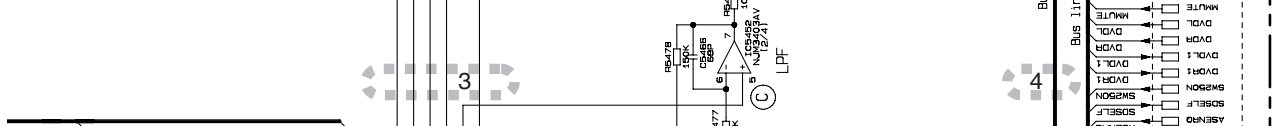
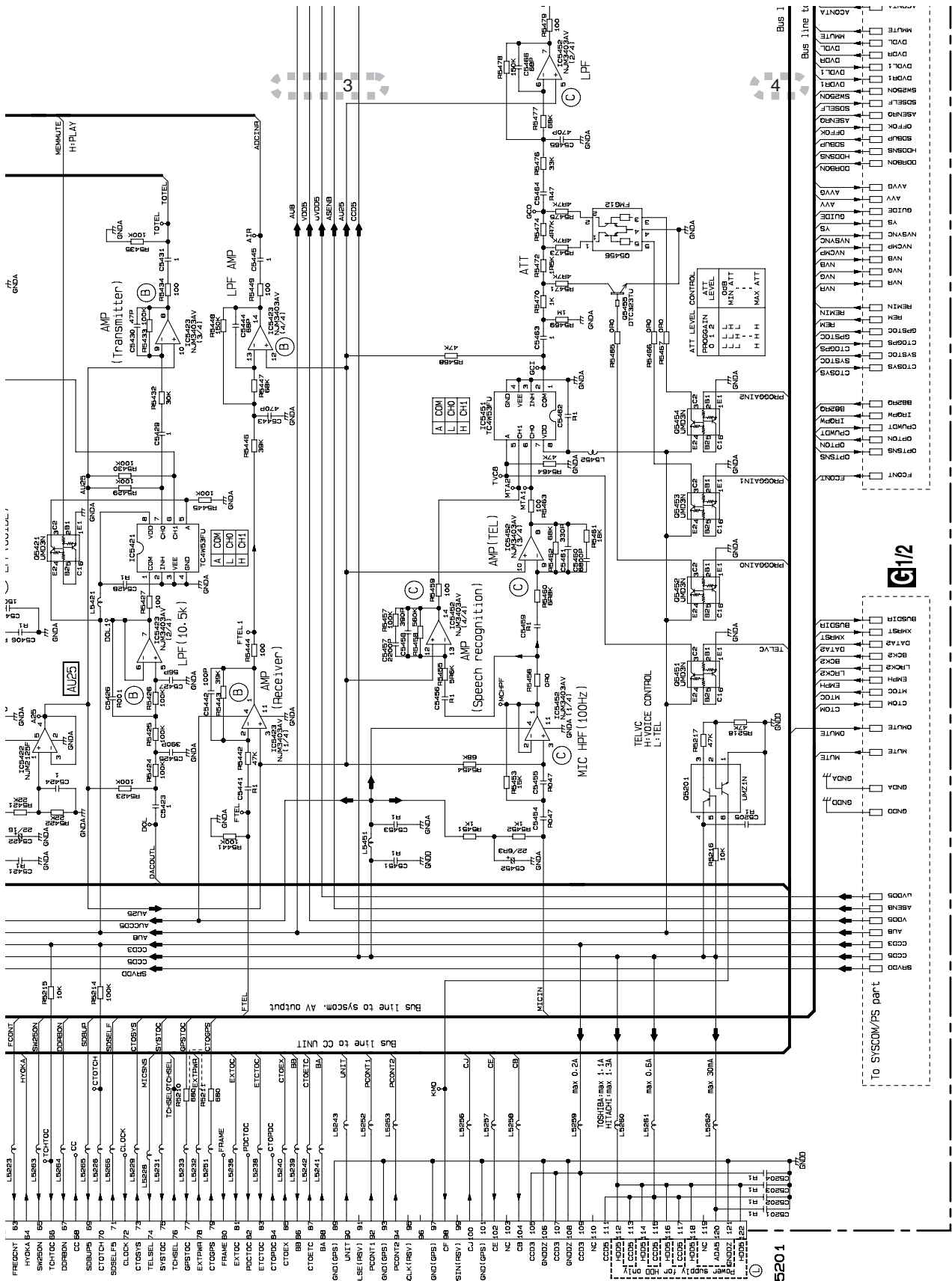
G-b 2/2

G-a G-b

G-a 2/2



CN4804



A

B

C

D

E

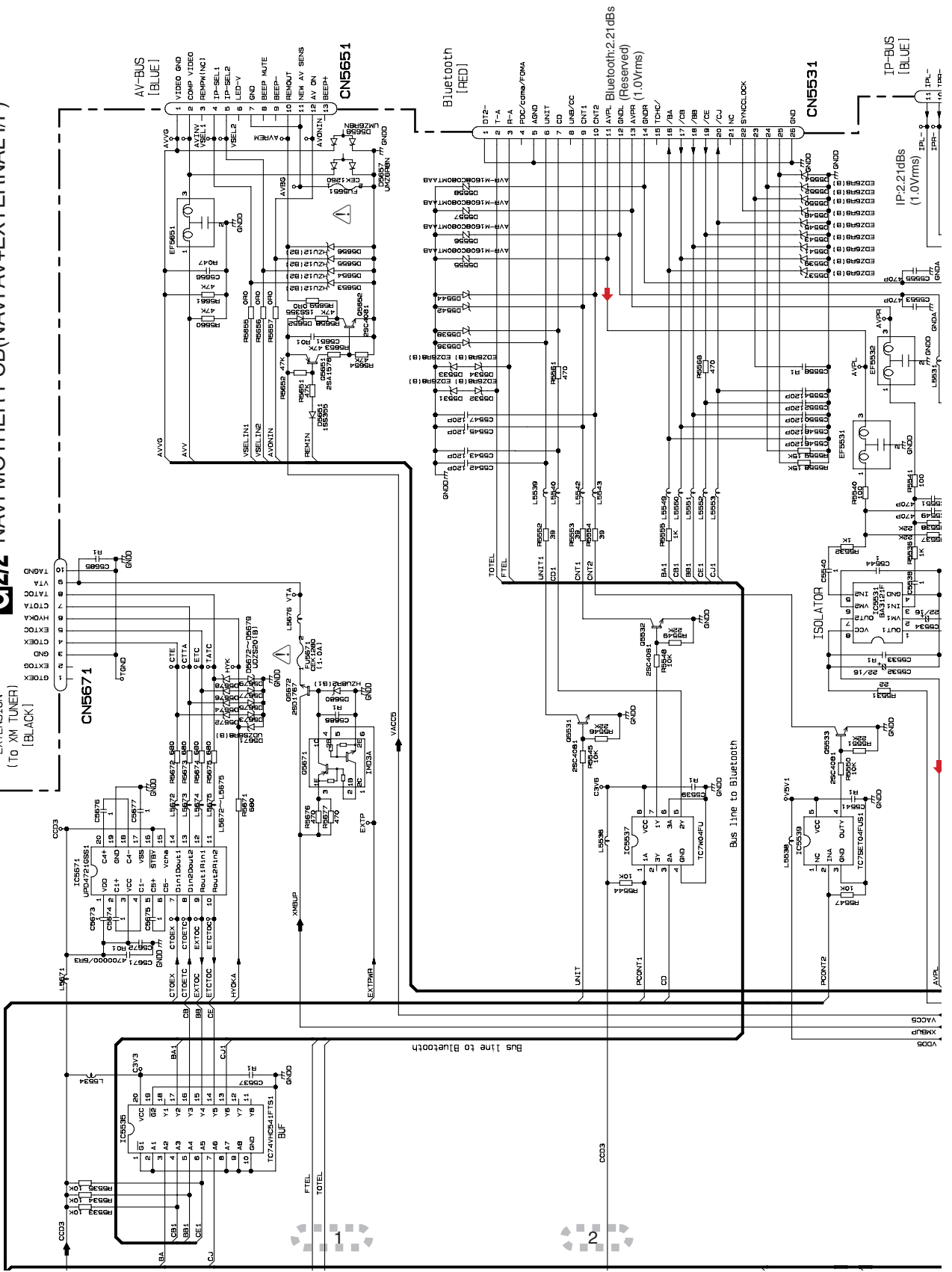
F

80

G-a G-b

G-b 2/2

G212 NAVI MOTHER PCB(NAVI AVÆEXTERNAL I/F)

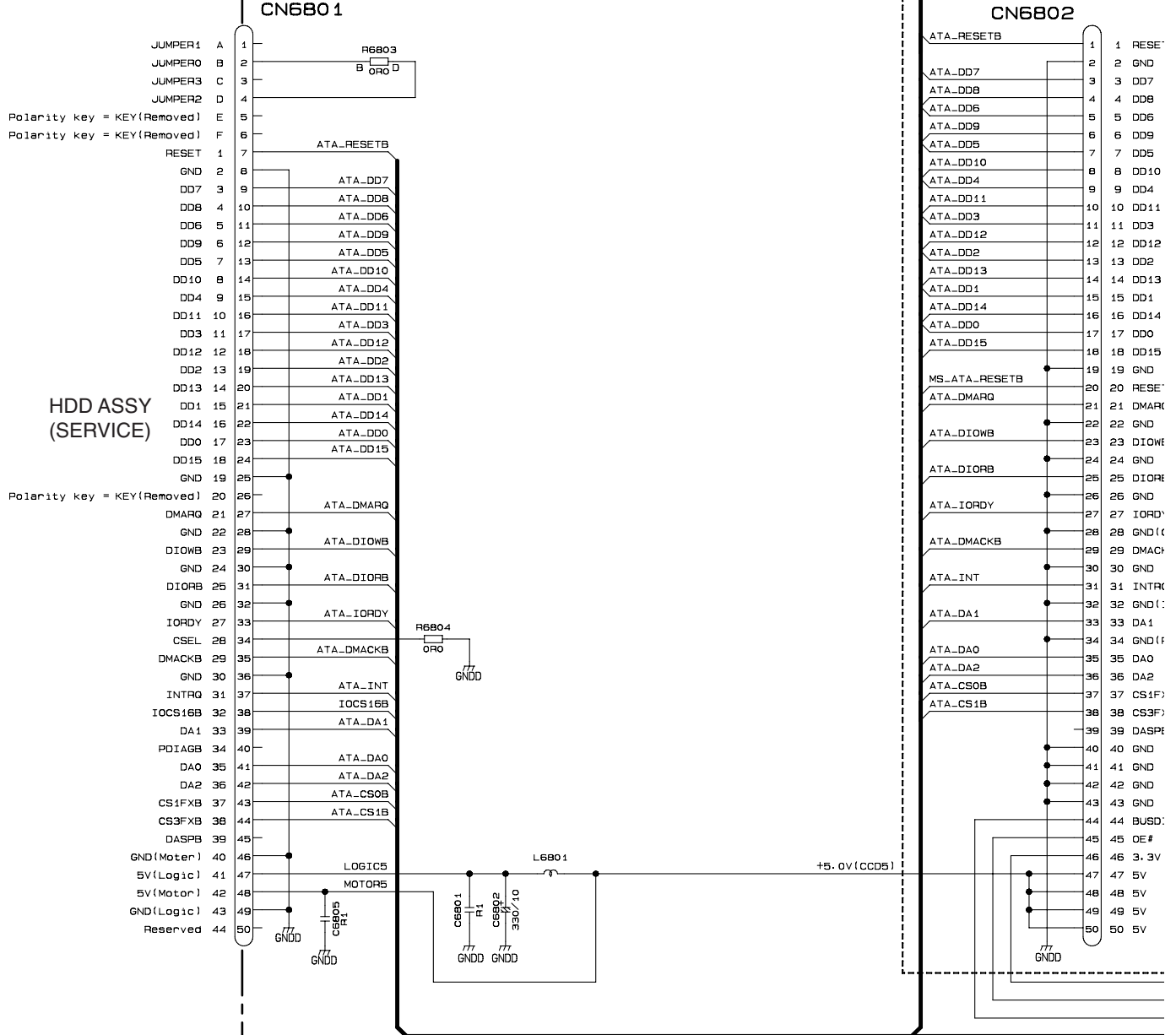


3.12 HDD PDELAY PCB

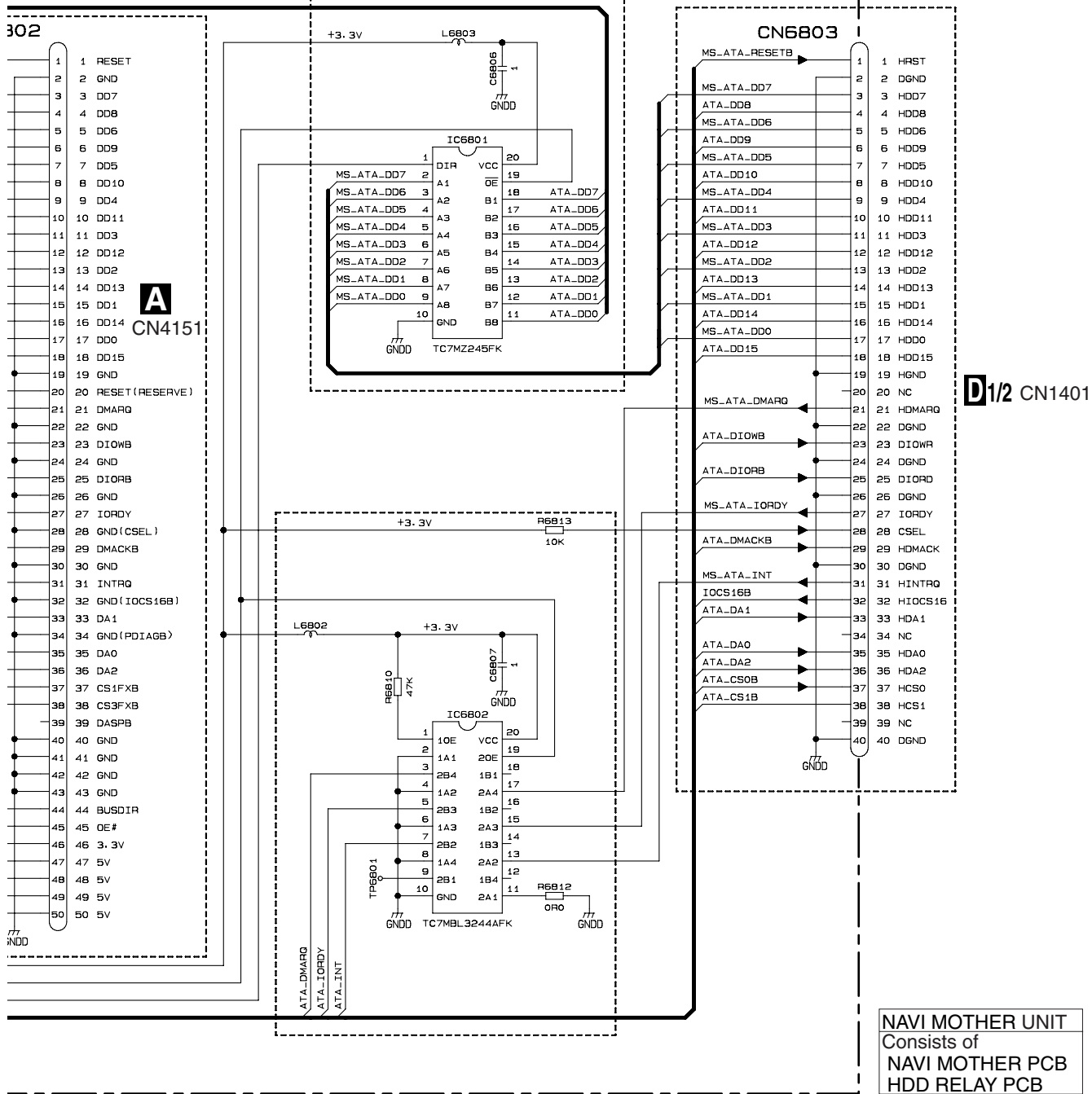
A
B
C
D
E
F

H HDD RELAY PCB

HDD



A
B
C
D
E
F

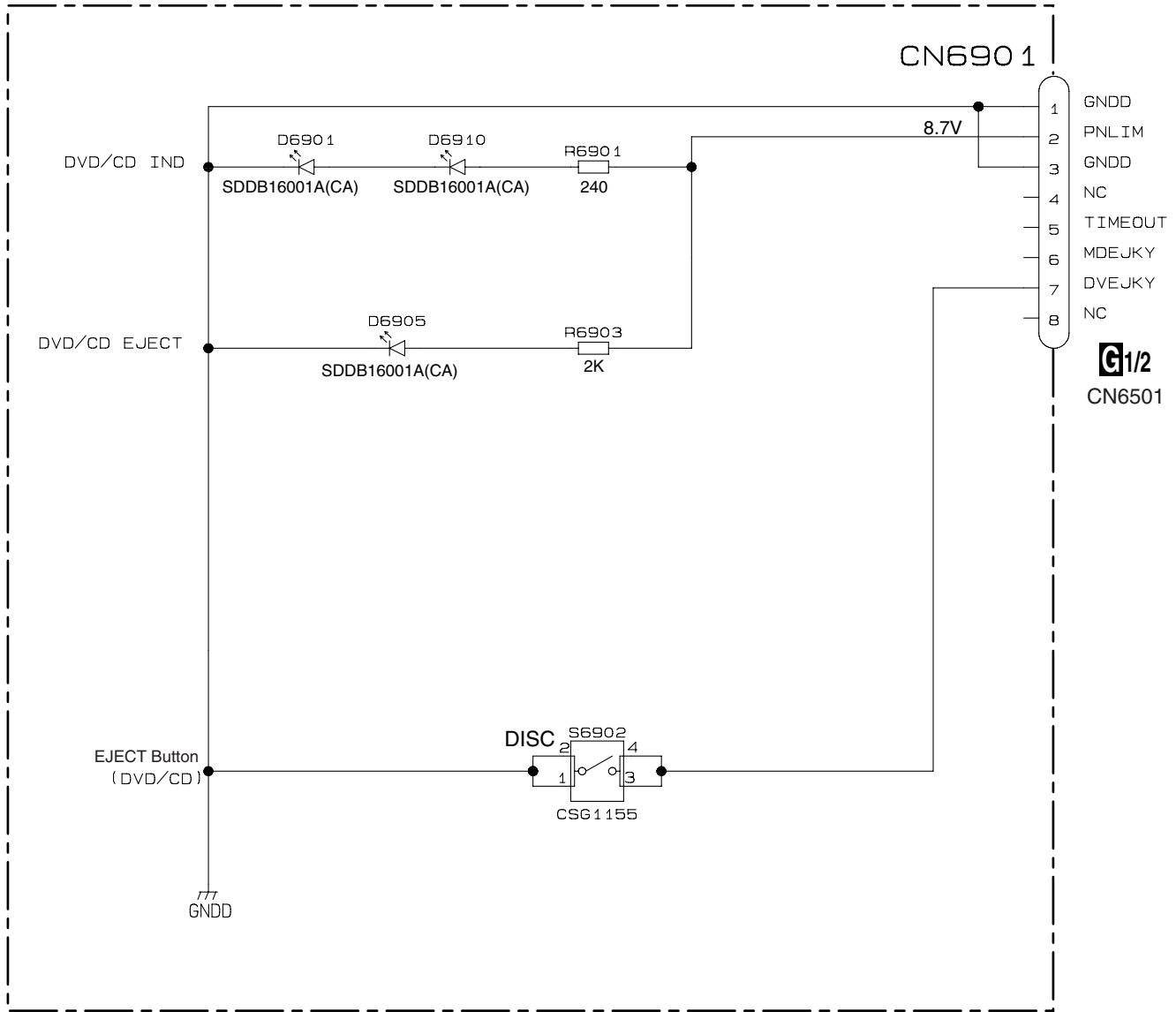


NAVI MOTHER UNIT
 Consists of
 NAVI MOTHER PCB
 HDD RELAY PCB



3.13 PANEL UNIT

PANEL UNIT



■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

AVIC-Z1/UC

■

7

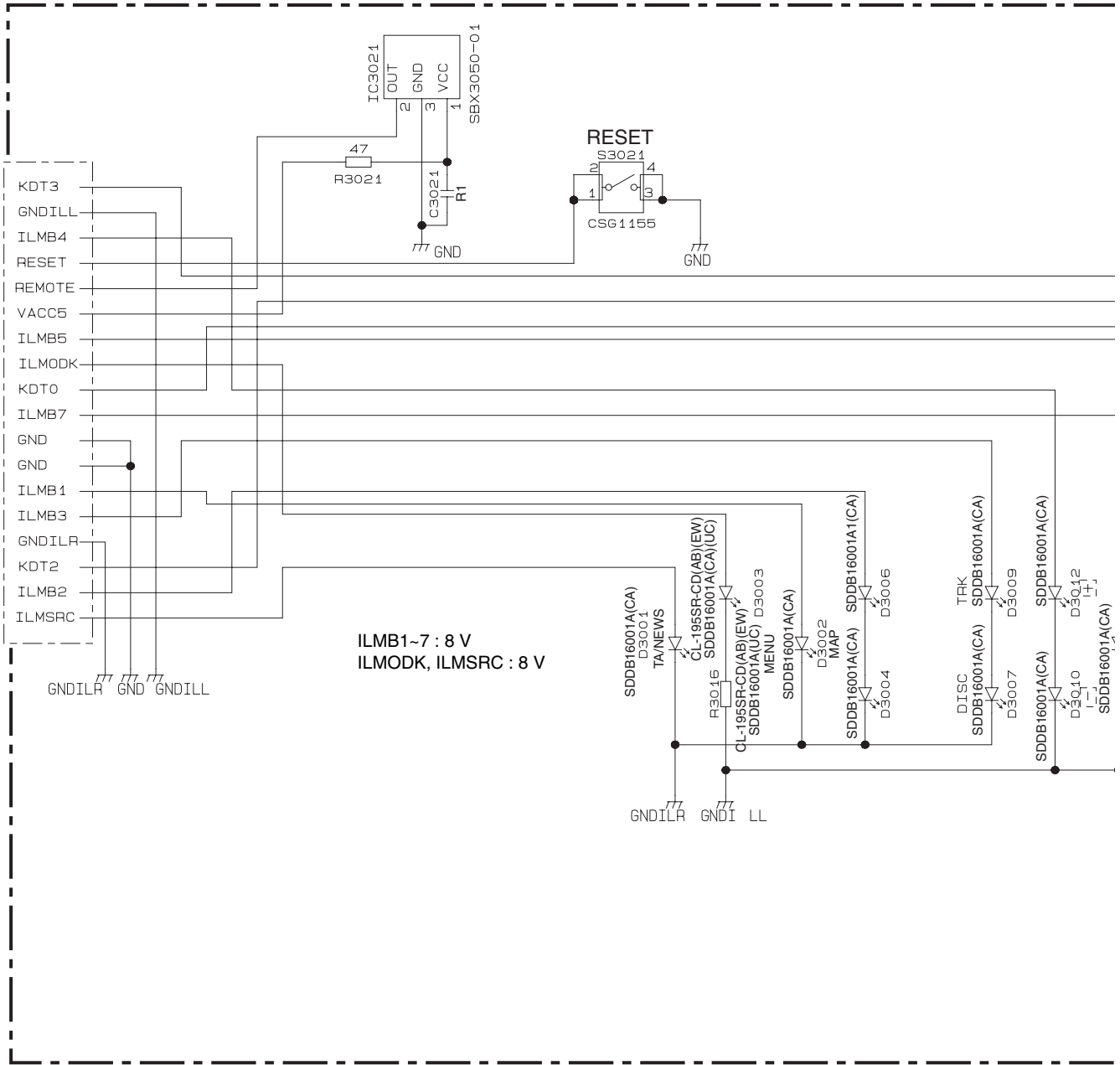
■

8

85

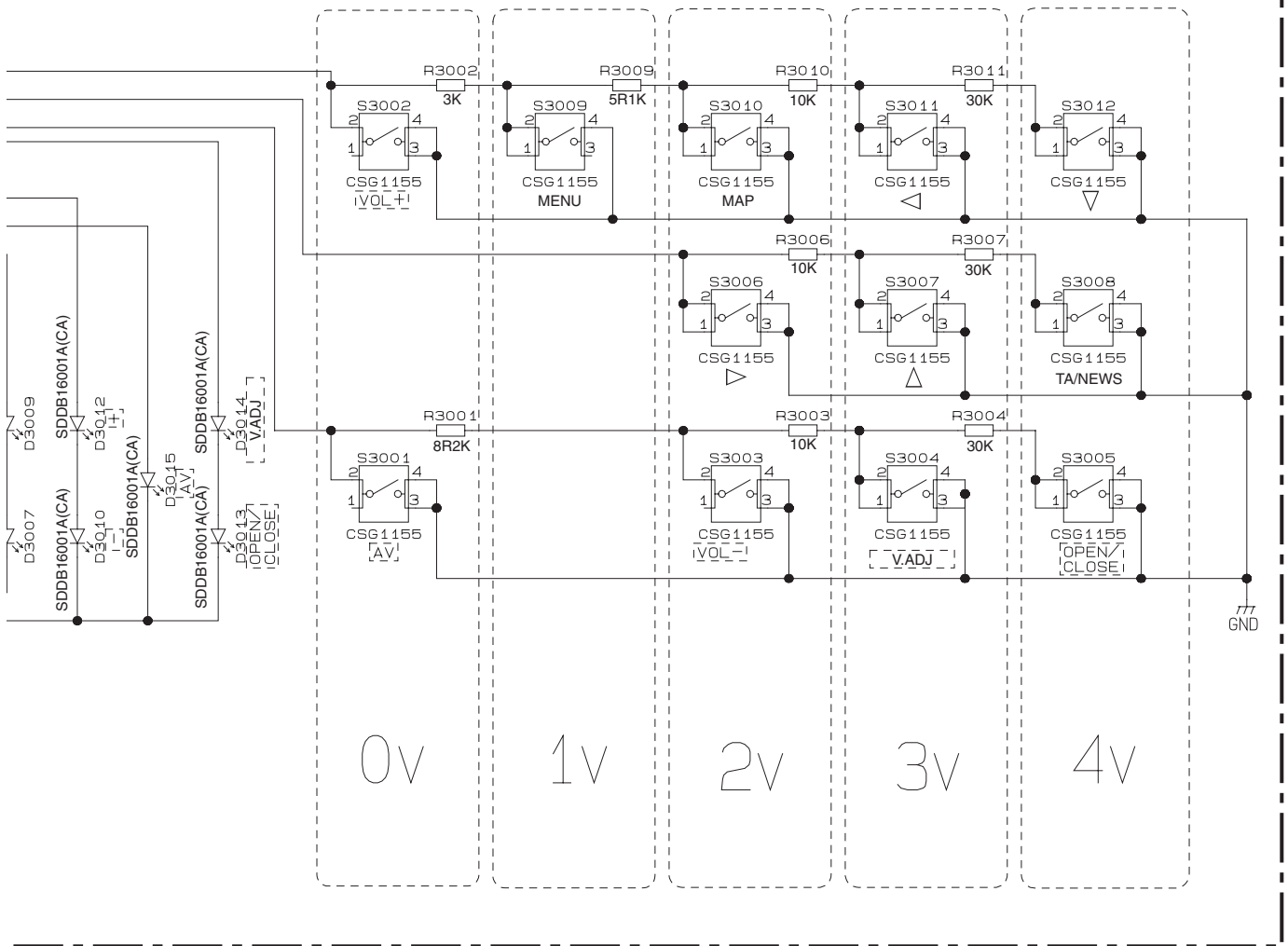
■

3.14 KEYBOARD UNIT



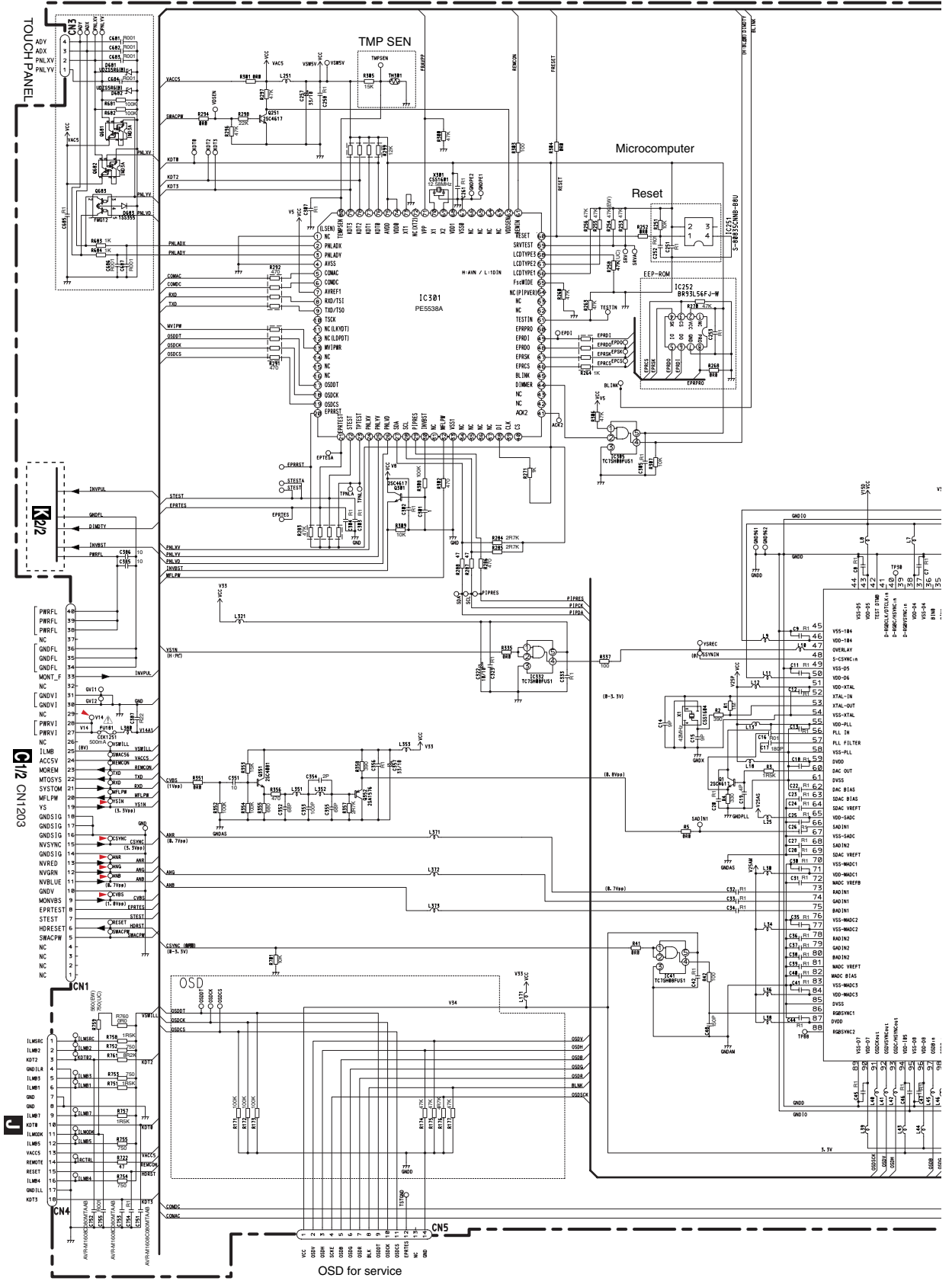
K1/2
CN4

J KEYBOARD UNIT



3.15 MONITOR UNIT(MONITOR)(GUIDE PAGE)

K-a 1/2



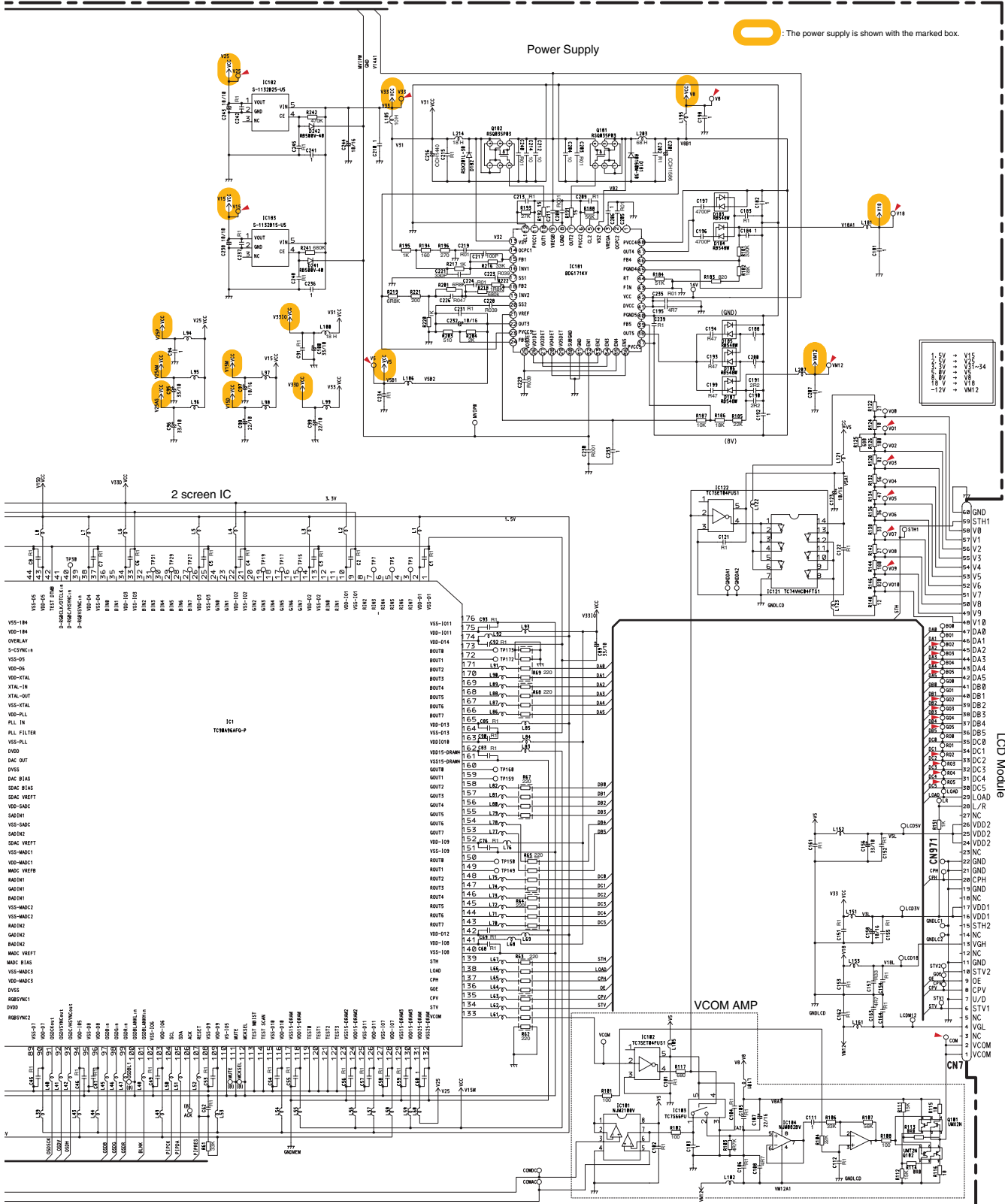
K1/2

AVIC-Z1/UC

K-b 1/2

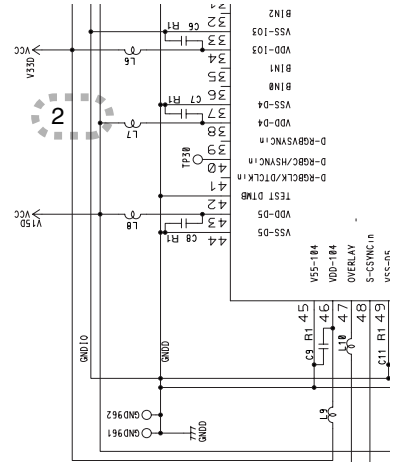
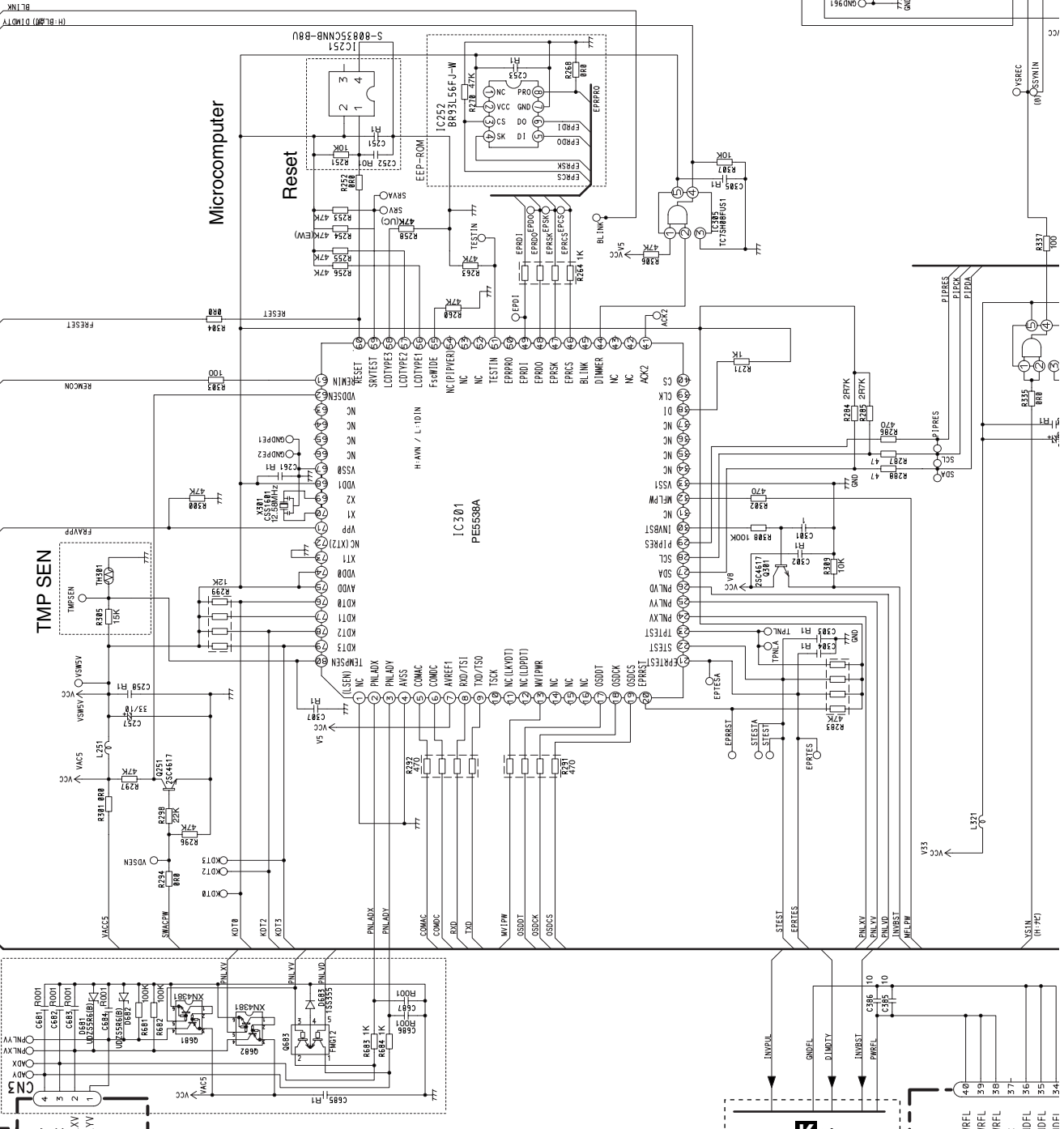
K1/2 MONITOR UNIT(MONITOR)

: The power supply is shown with the marked box.



1/2 K-b

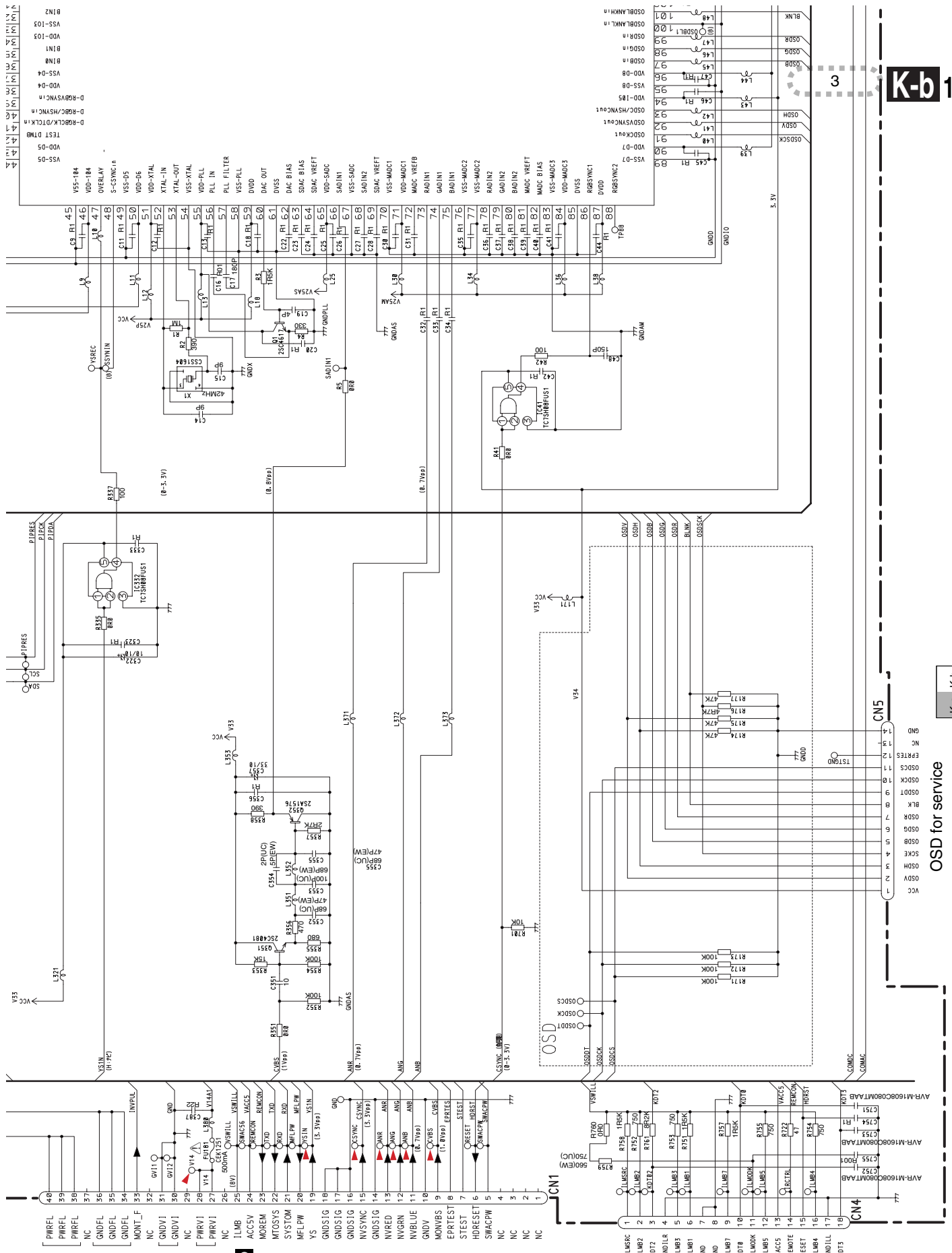
1



K-a K-b

TOUCH PANEL

2/2



C1/2 CN1203

AVIC-Z1/UC

K-a 1/2

K-a K-b

OSD for service

K-b 1/2

5

6

7

8

5

6

7

8

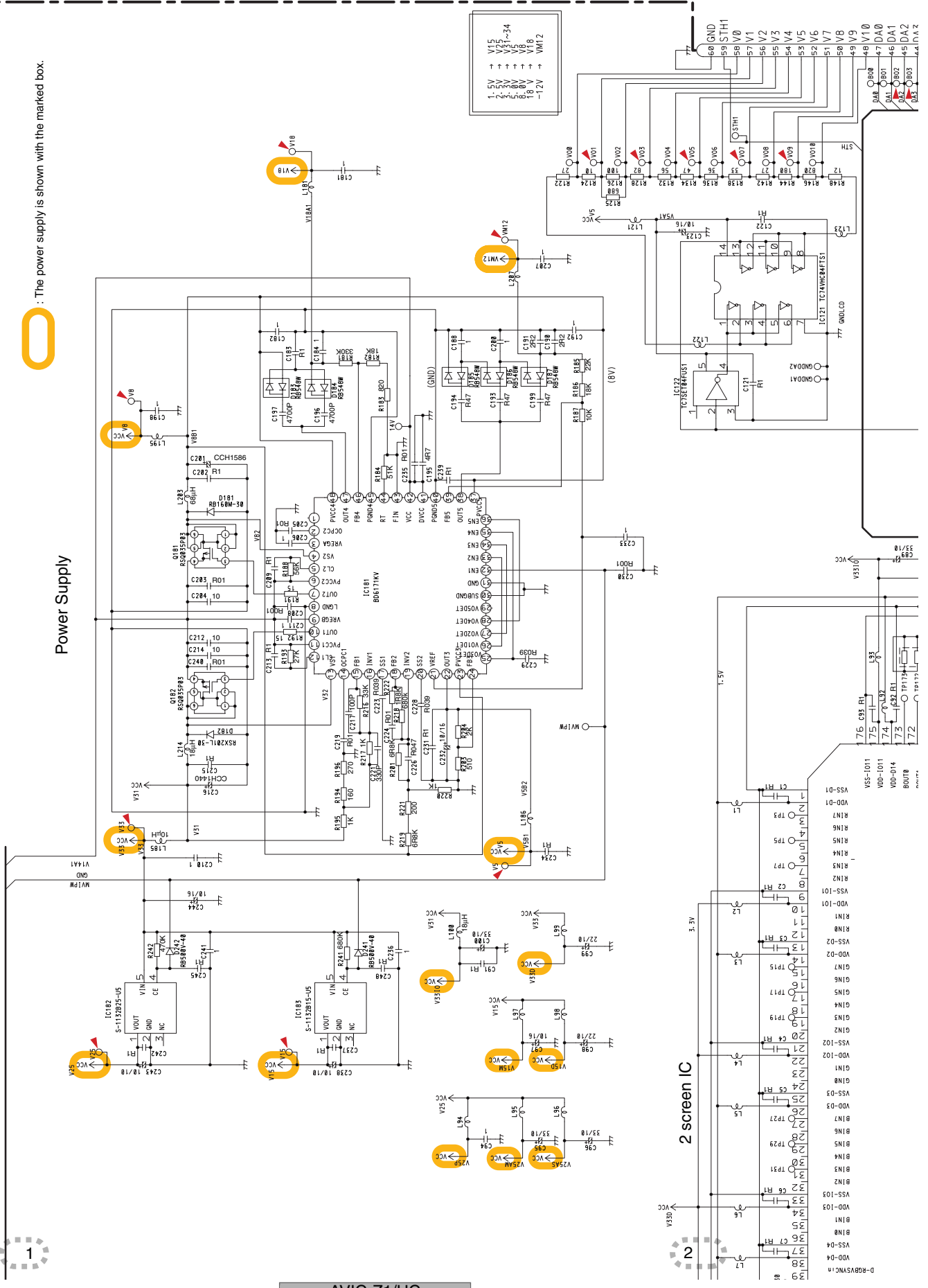
J

K1/2 MONITOR UNIT(MONITOR)

 : The power supply is shown with the marked box.

K-a K-b

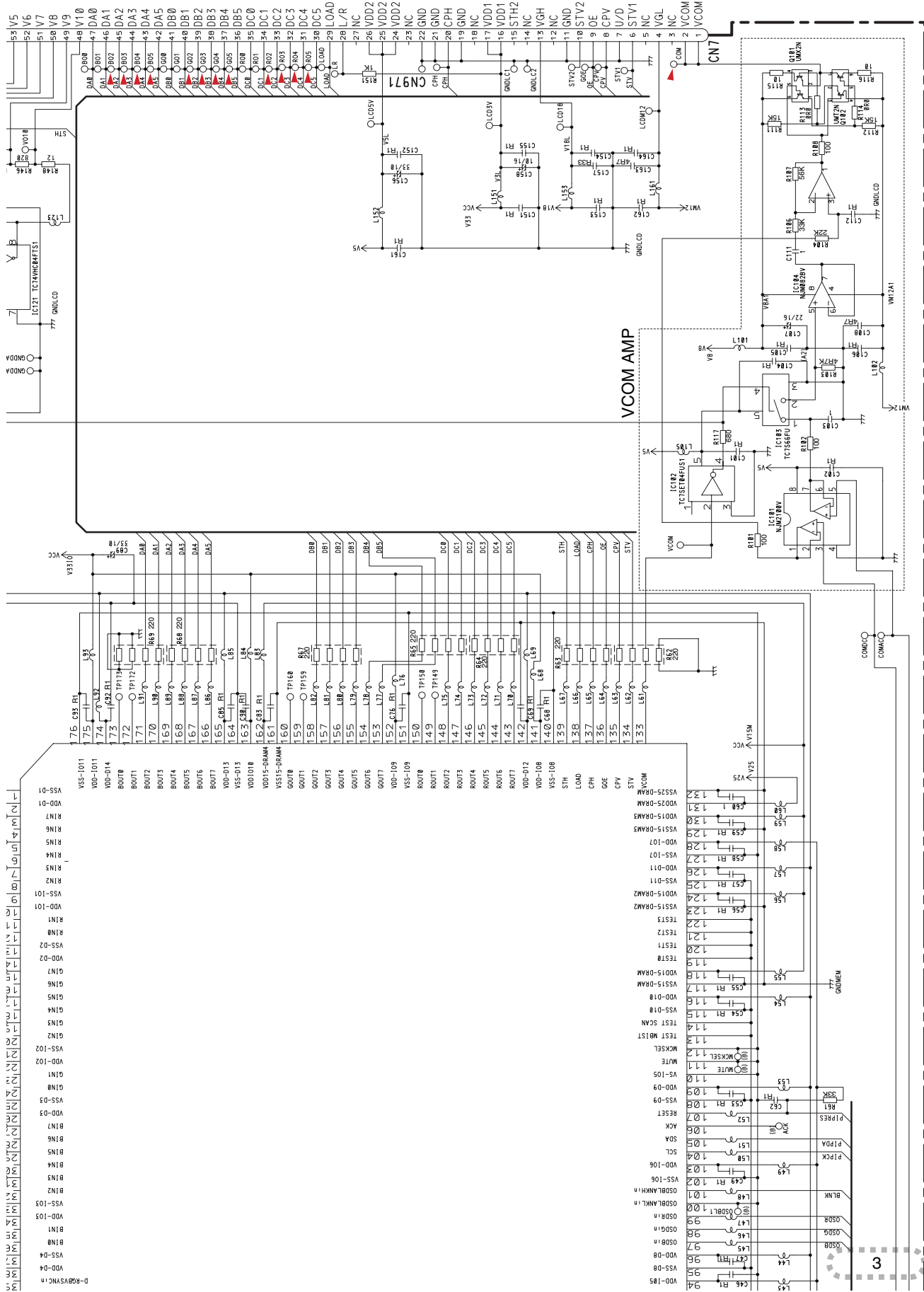
Power Supply



1/2 K-b

AVIC-Z1/UC

LCD Module

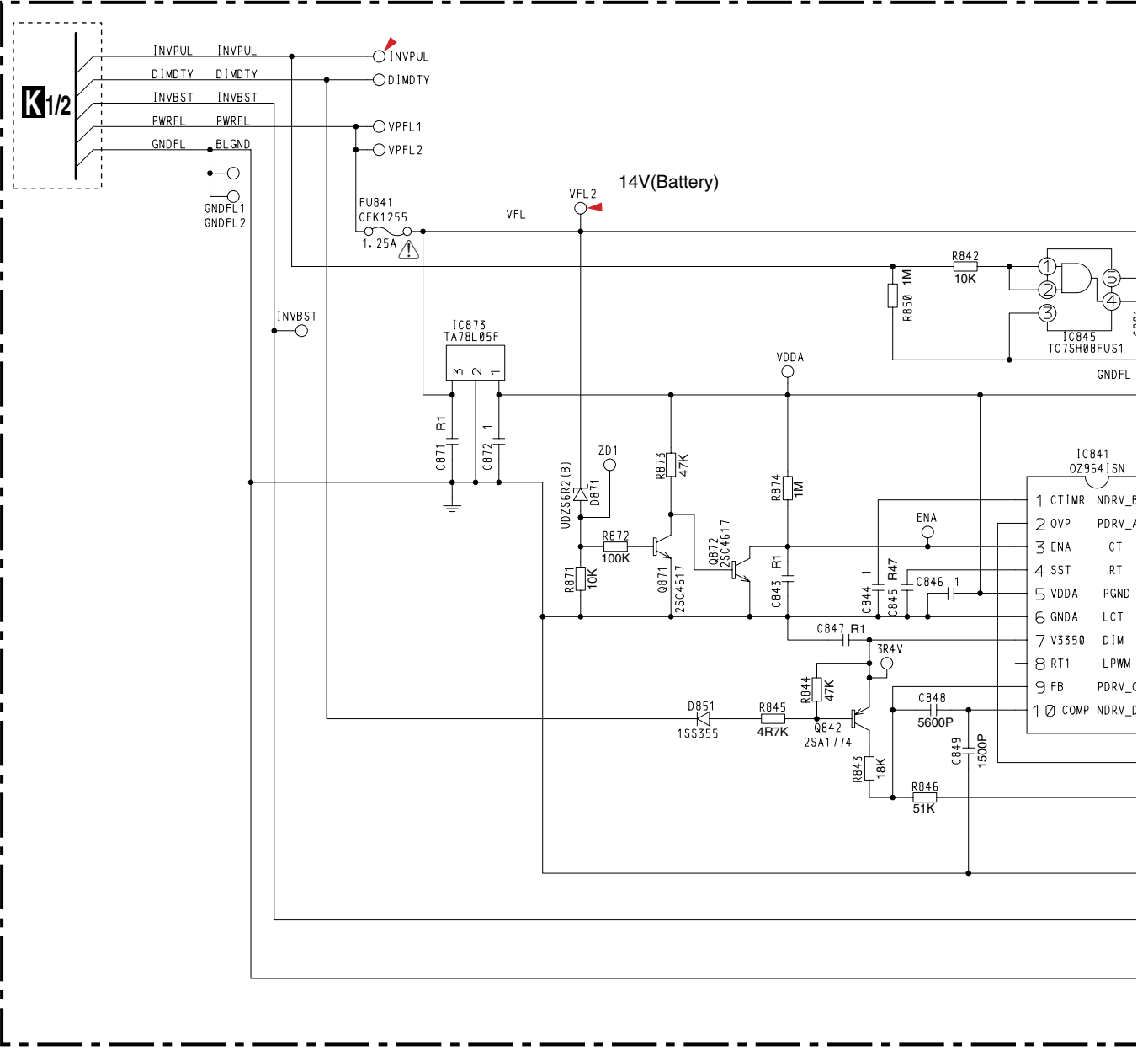


AVIC-Z1/UC

K-a K-b

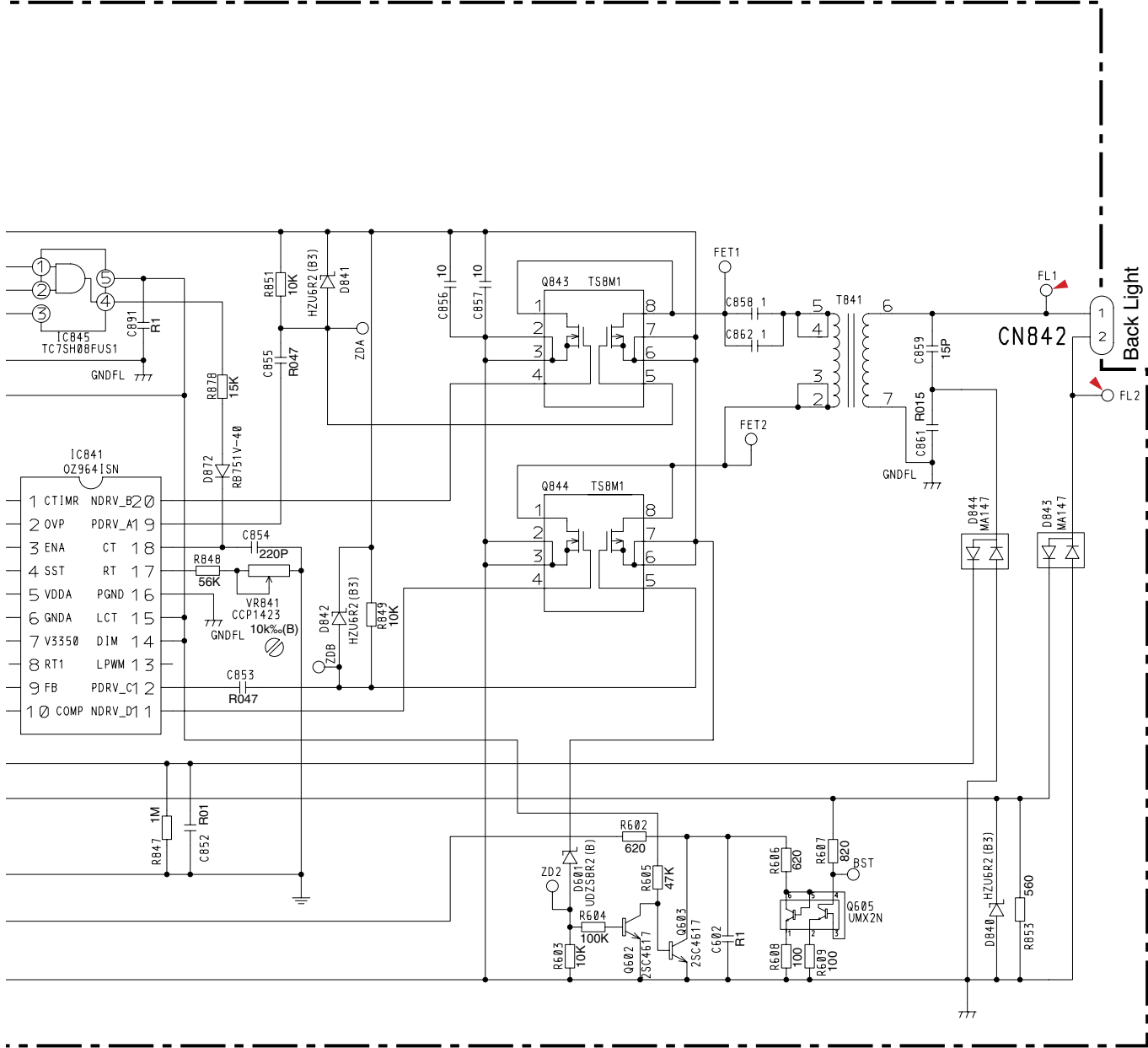
K-b 1/2

3.16 MONITOR UNIT(INVERTER)

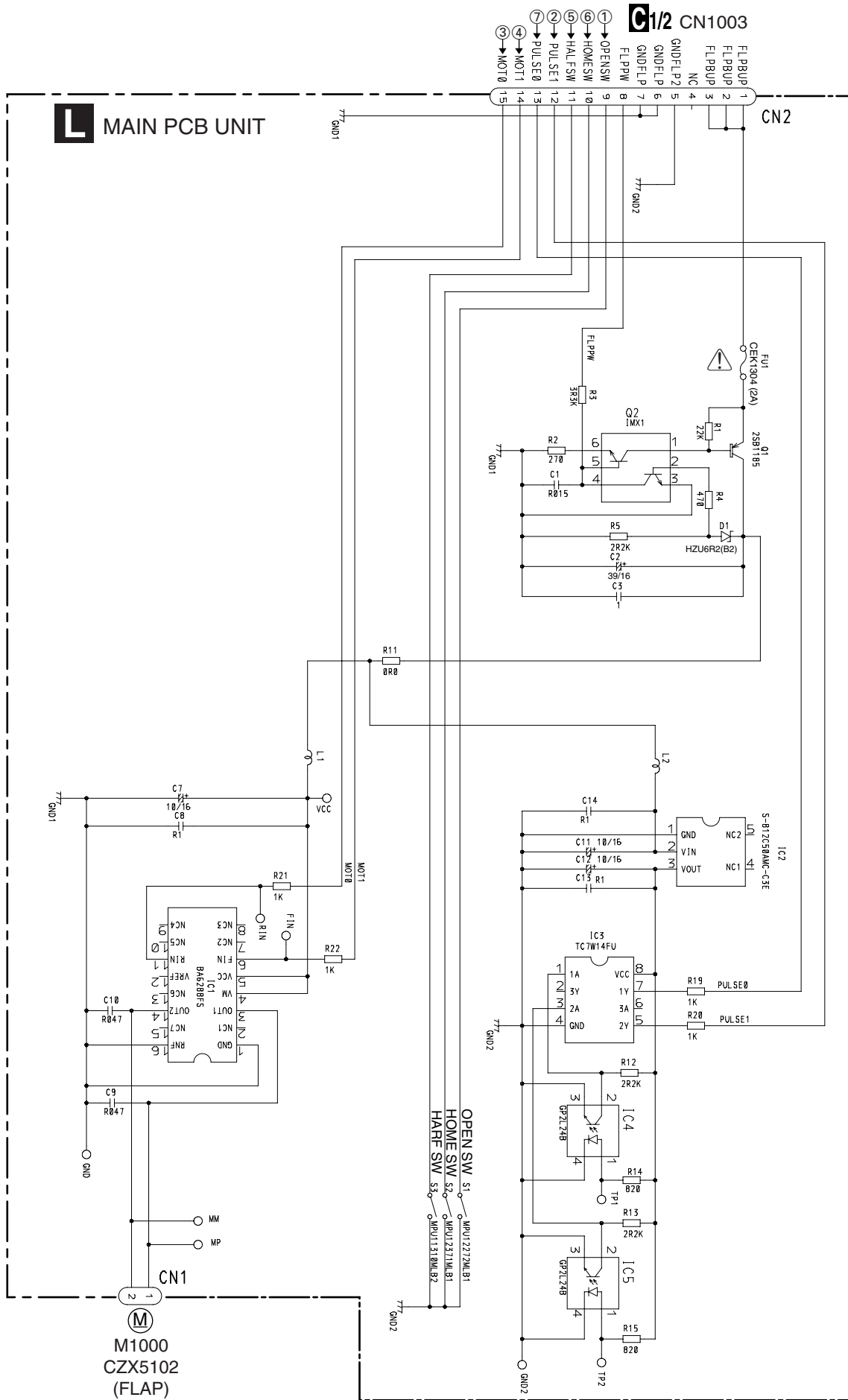


K2/2

K2/2 MONITOR UNIT(INVERTER)



3.17 MAIN PCB UNIT

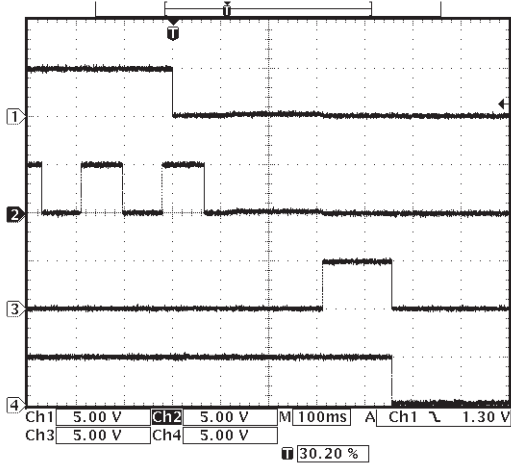


● Wave form

Note: The encircled numbers denote measuring points in the circuit diagram.

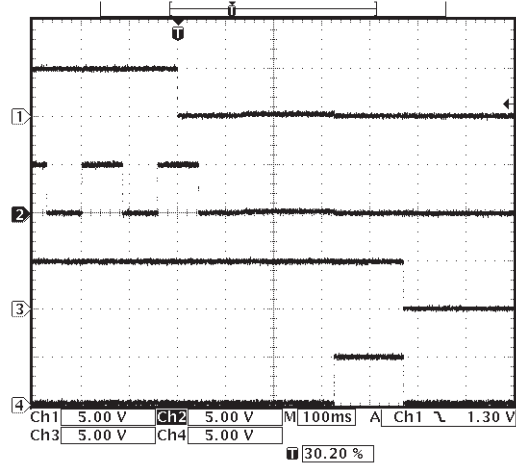
• FULL OPEN

- ① CH1 : OPENSW
- ② CH2 : PULSE1
- ③ CH3 : MOT0
- ④ CH4 : MOT1



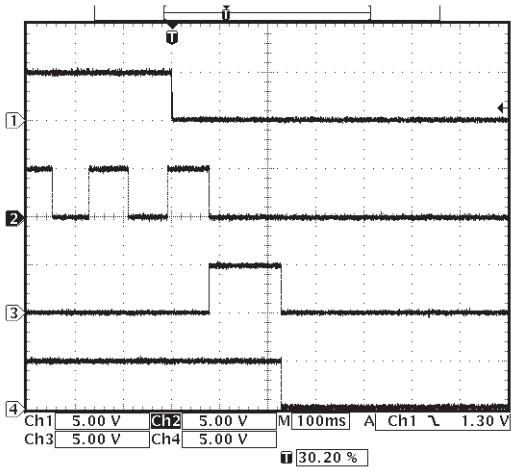
• CLOSE

- ⑥ CH1 : HOMESW
- ② CH2 : PULSE1
- ③ CH3 : MOT0
- ④ CH4 : MOT1



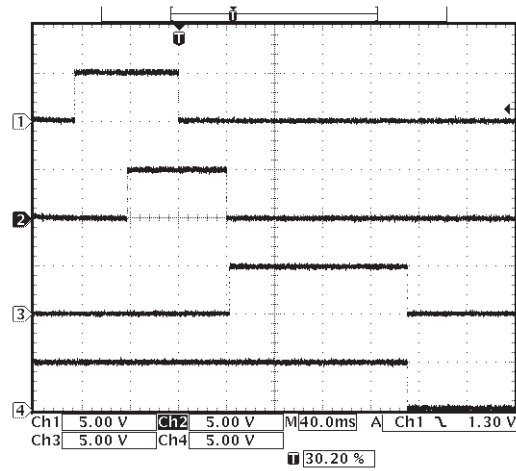
• HALF OPEN

- ⑤ CH1 : HALFSW
- ② CH2 : PULSE1
- ③ CH3 : MOT0
- ④ CH4 : MOT1



• ANGLE

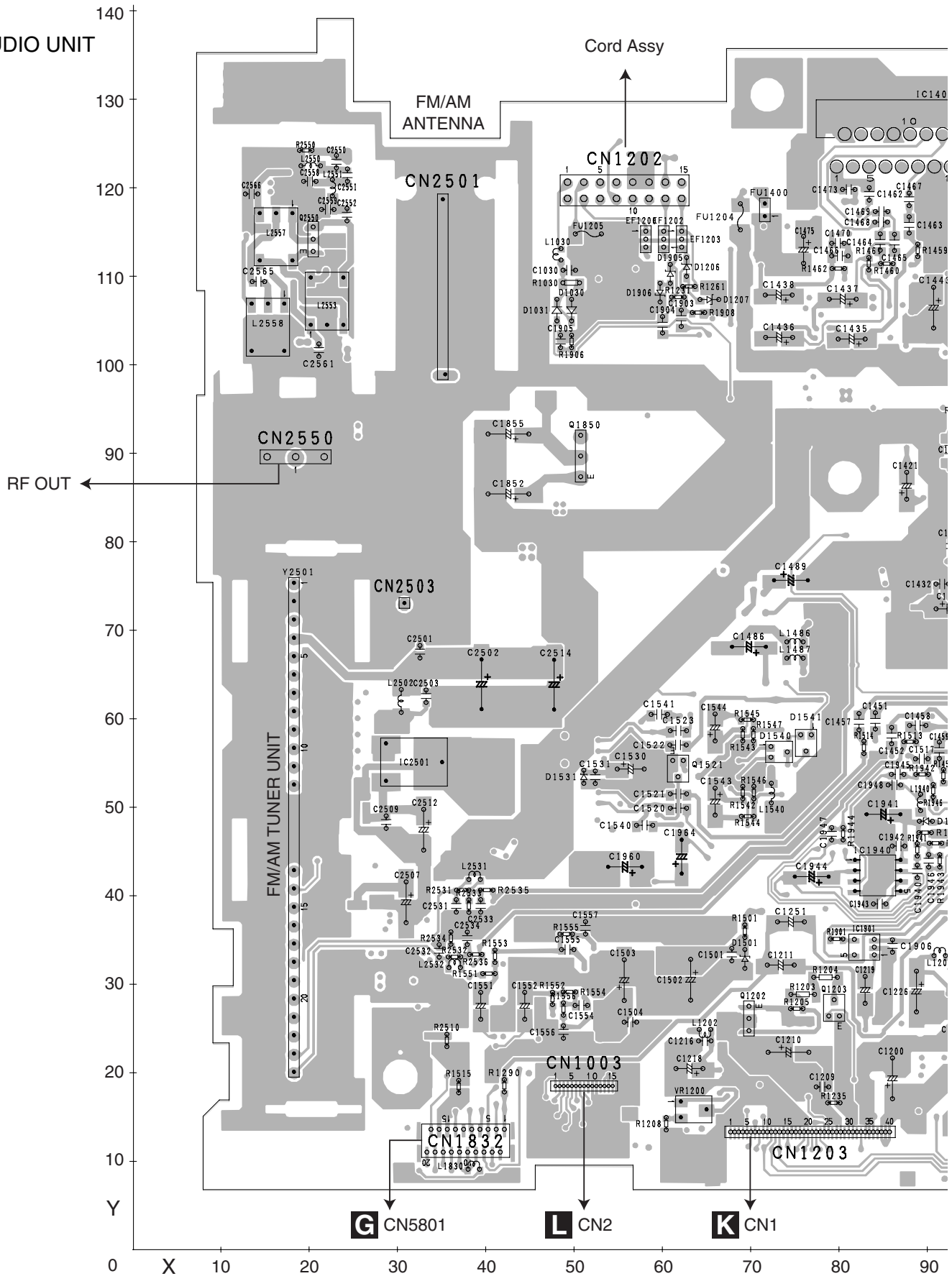
- ⑦ CH1 : PULSE0
- ② CH2 : PULSE1
- ③ CH3 : MOT0
- ④ CH4 : MOT1



A
B
C
D
E
F

4. PCB CONNECTION DIAGRAM

4.1 AUDIO UNIT



C AUDIO UNIT

G CN5801

L CN2

K CN1

C

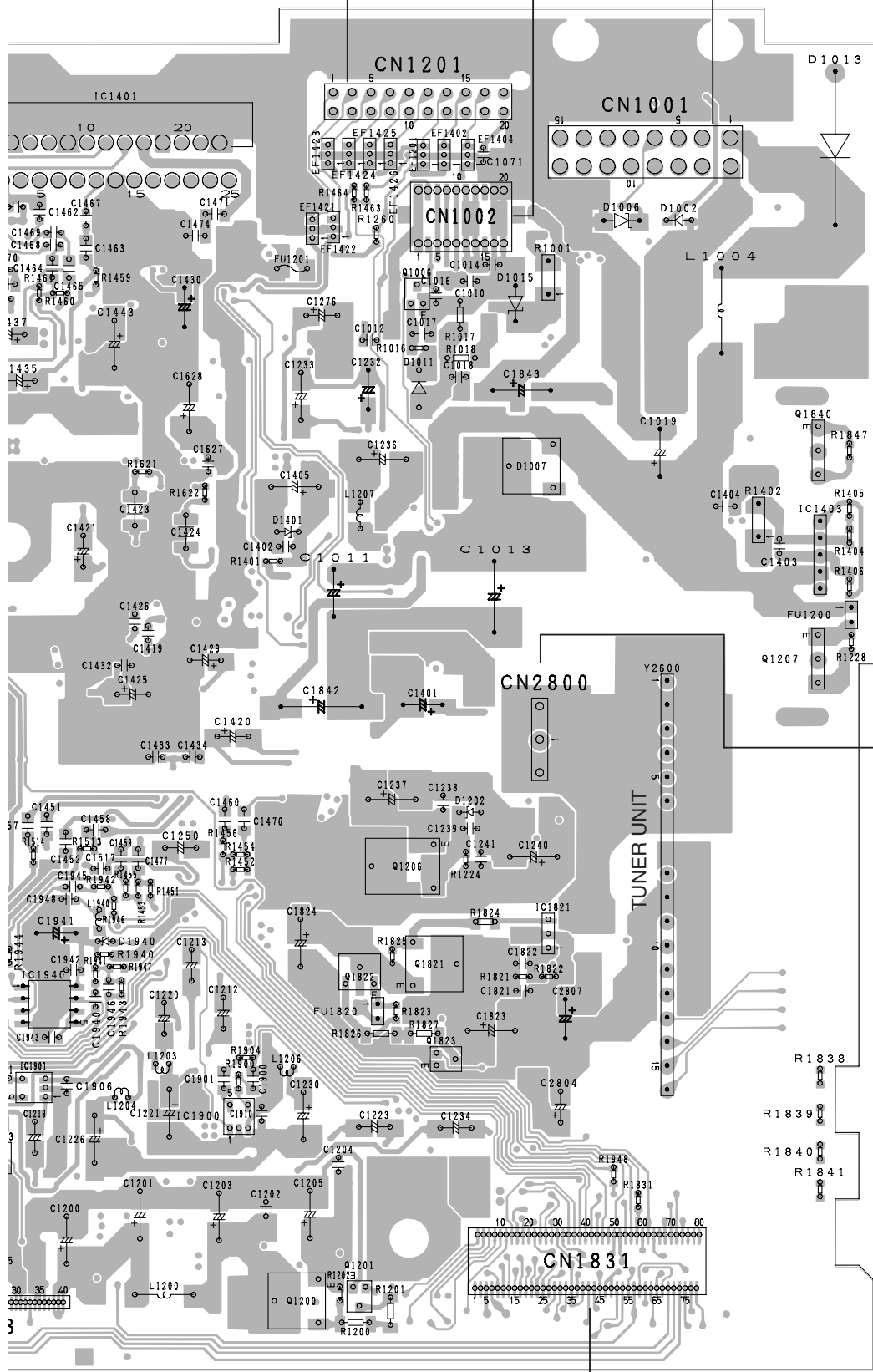
Cord Assy

G CN5851

Cord Assy

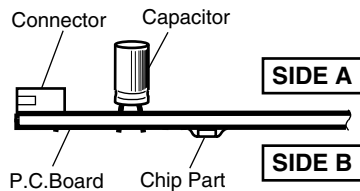
SIDE A

FU1200 (A,175,87) Fuse 2.5 A CEK1285
 FU1201 (A,116,123) Fuse 3.15 A CEK1259
 FU1204 (A,74,126) Fuse 3.15 A CEK1259
 FU1400 (A,77,127) Fuse 3 A CEK1286
 FU1820 (A,125,45) Fuse 750 mA(EW5) CEK1279



NOTE FOR PCB DIAGRAMS

- 1.The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
- 2.Viewpoint of PCB diagrams



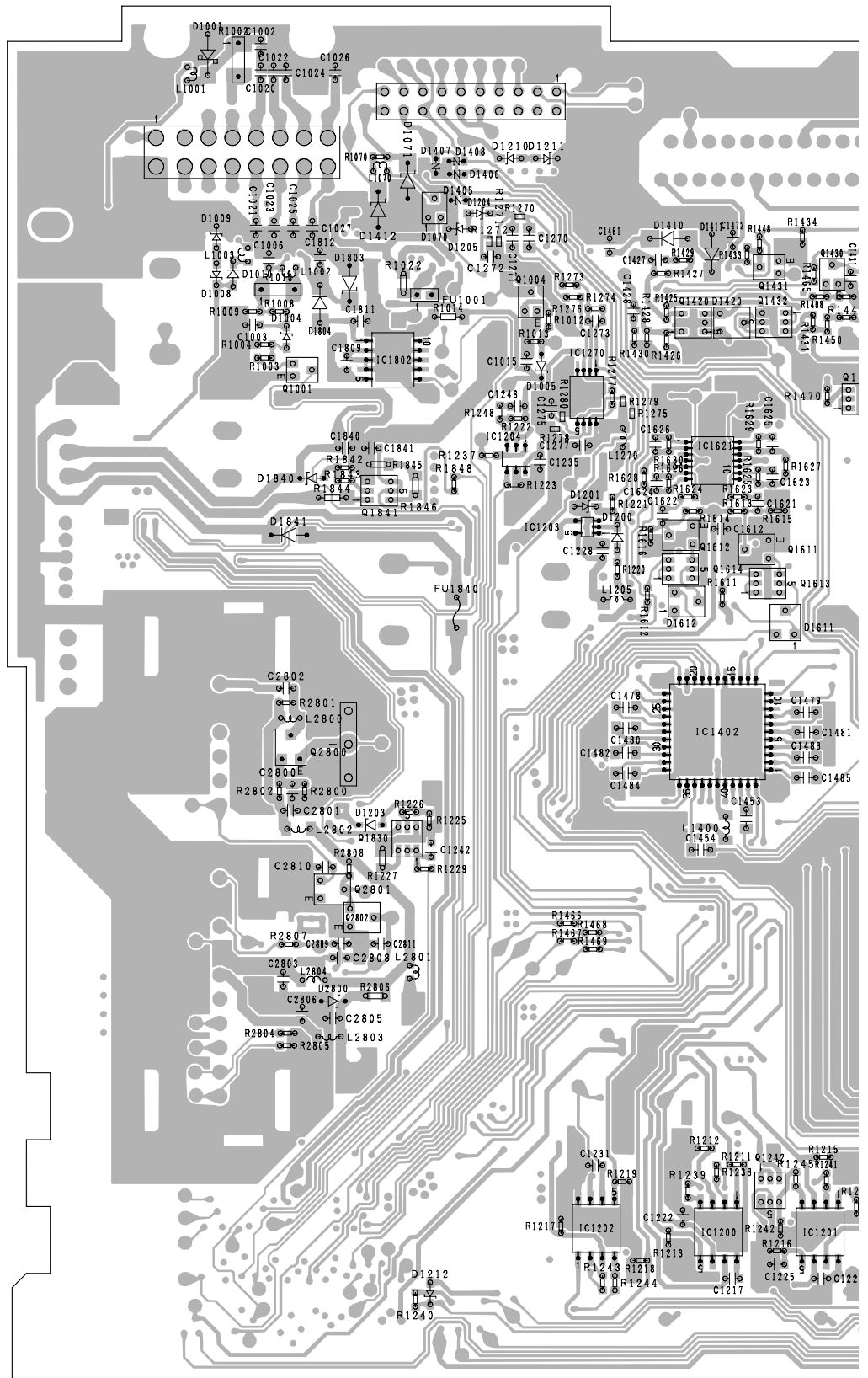
0 90 100 110 120 130 140 150 160 170

G CN5802

C

C AUDIO UNIT

A
B
C
D
E
F



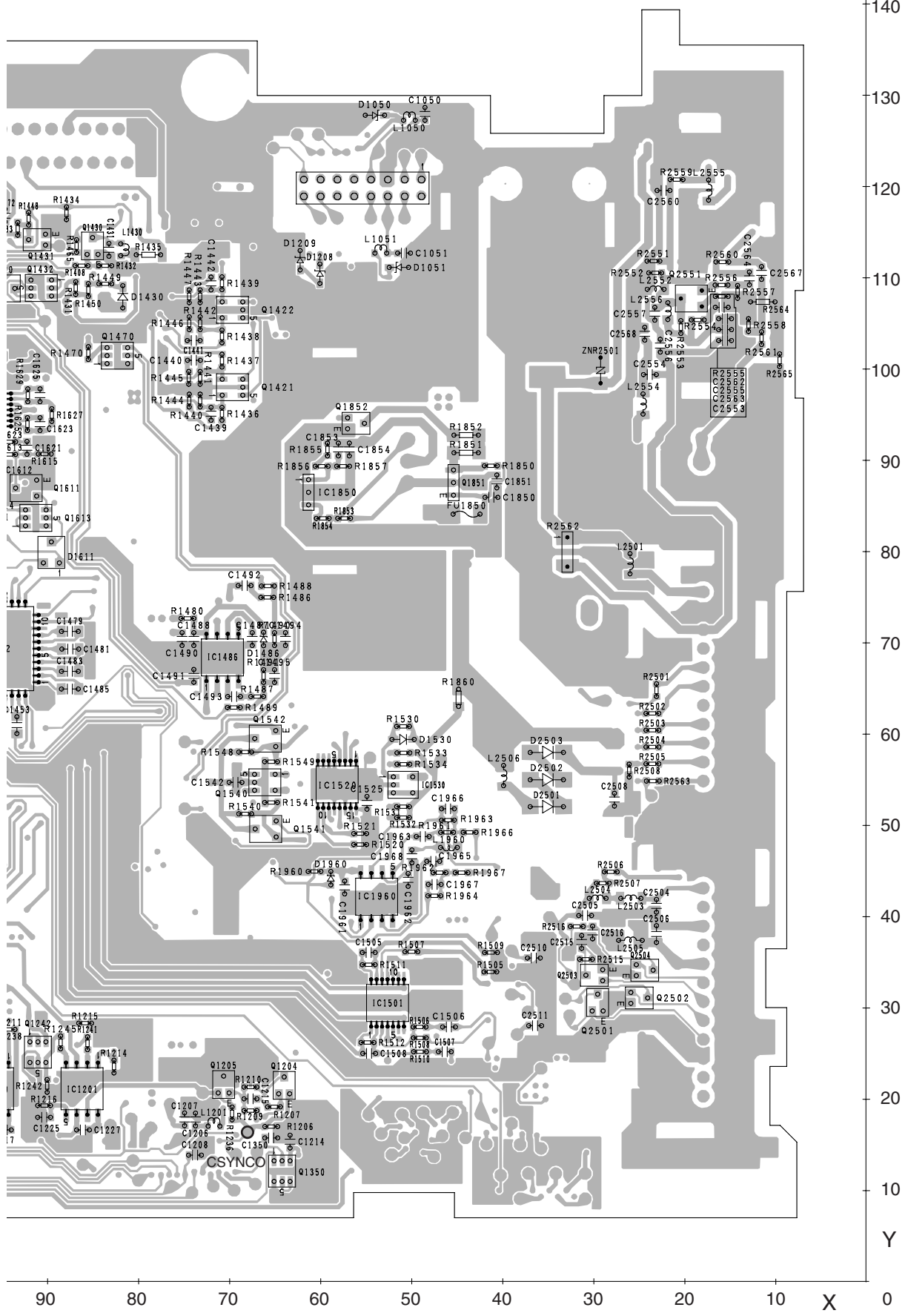
170 160 150 140 130 120 110 100 90

C

AVIC-Z1/UC

SIDE B

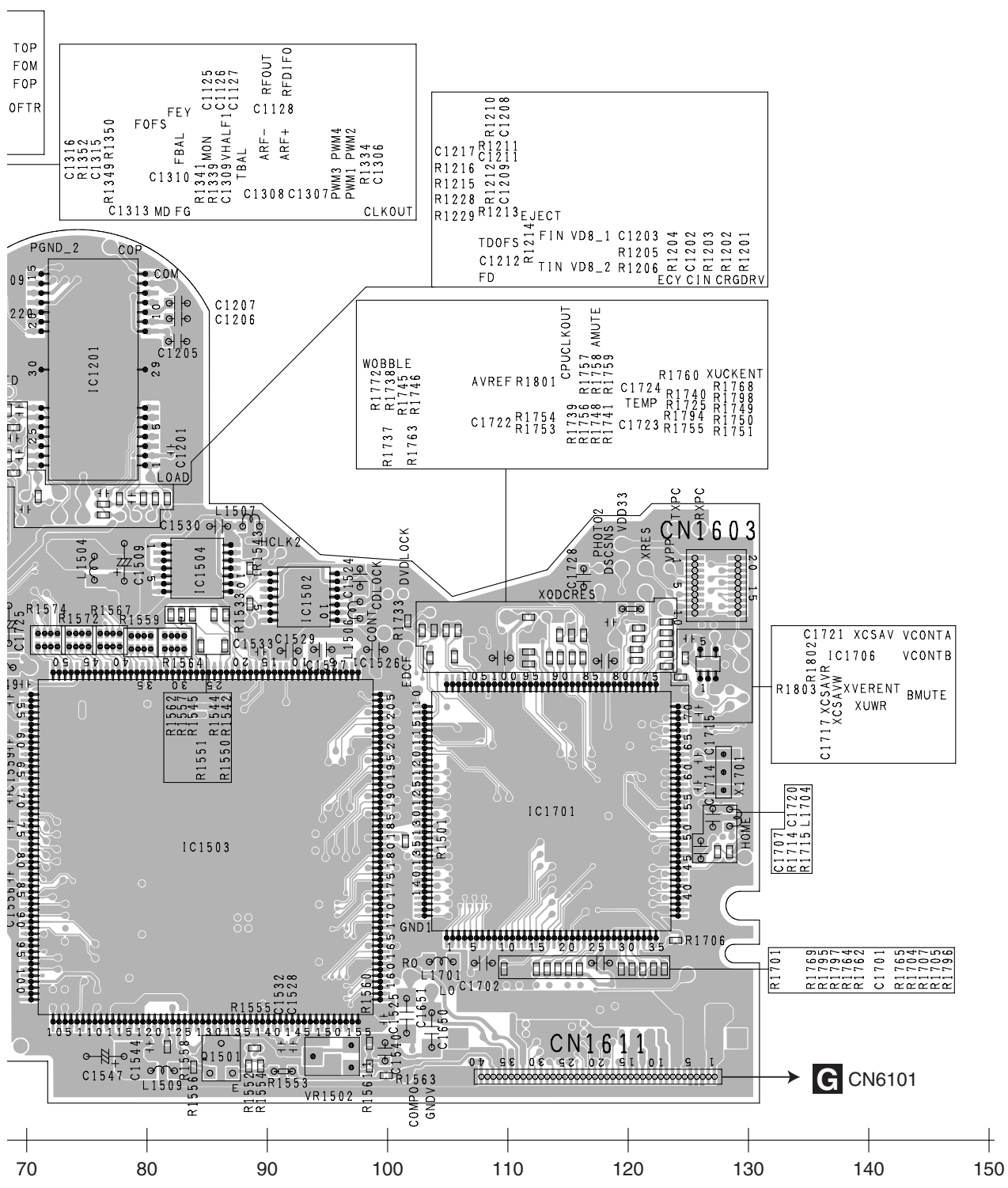
FU1001 (B,134,121) Fuse 750 mA CEK1279
 FU1840 (B,131,87) Fuse 2.5 A CEK1258
 FU1850 (B,47,91) Fuse 630 mA CEK1252



140
130
120
110
100
90
80
70
60
50
40
30
20
10
Y
F
E
D
C
B
A

C

→ PICKUP UNIT(SERVICE)



D DVD CORE UNIT(MS3)

A

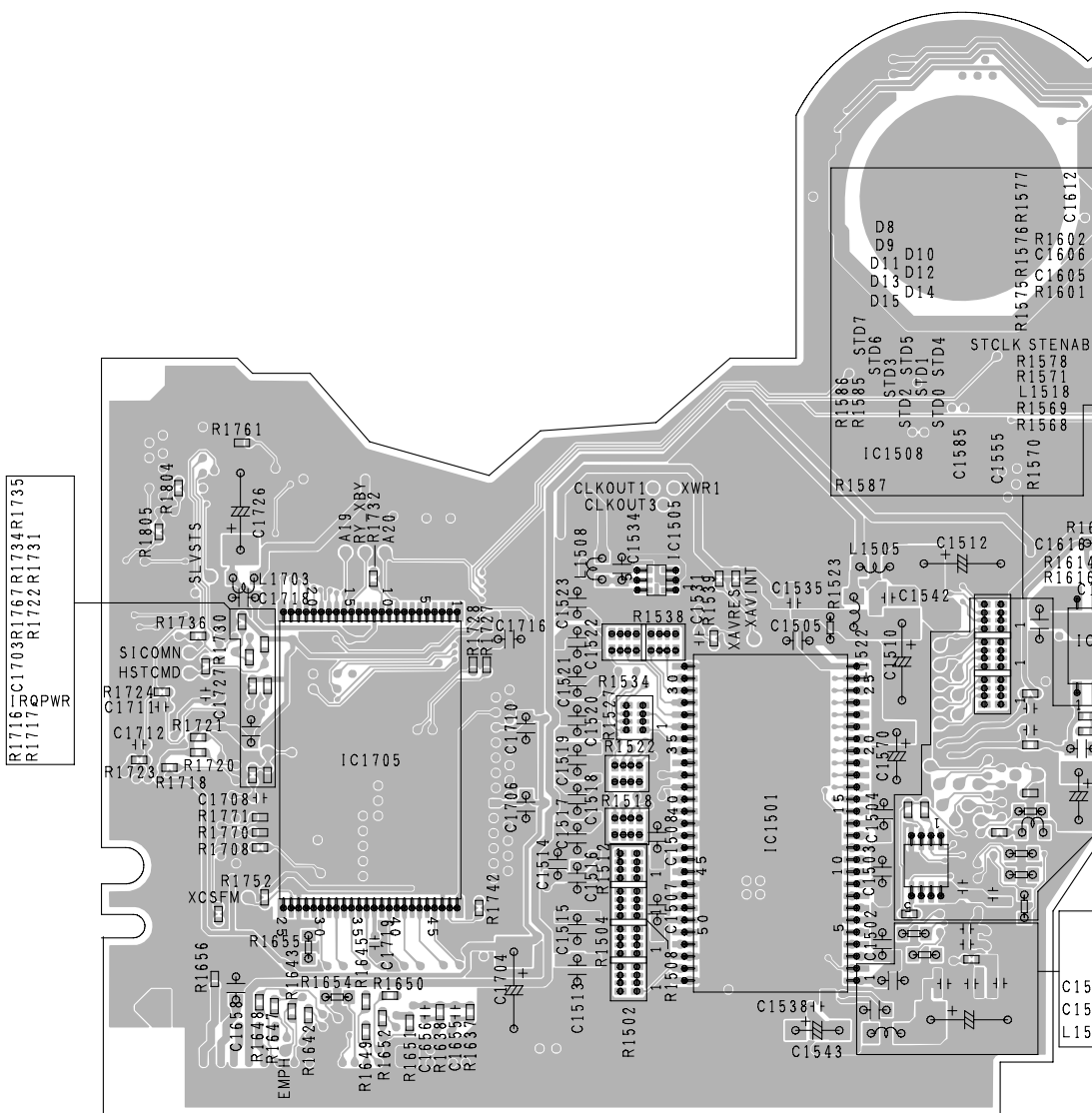
B

C

D

E

F

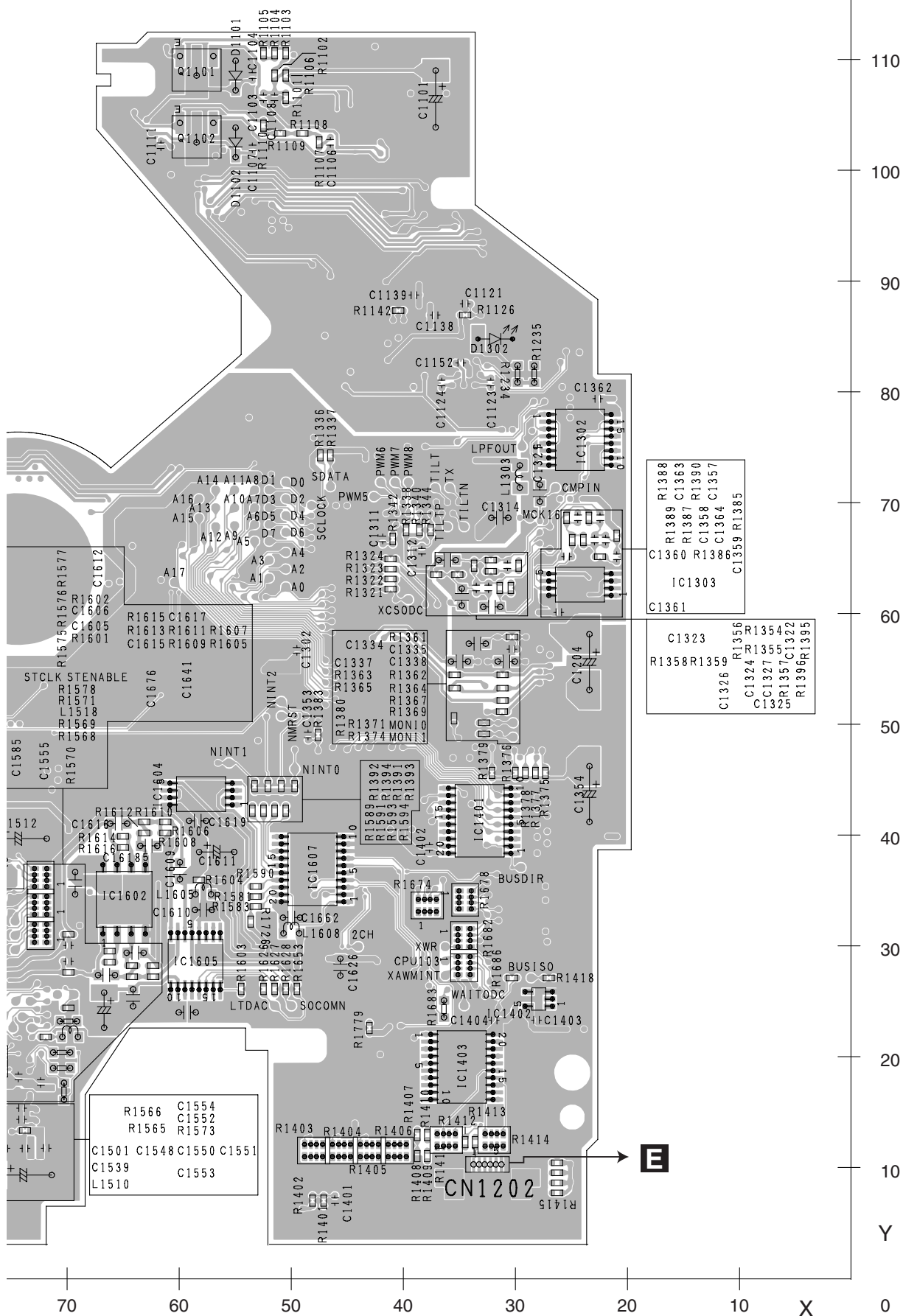


150 140 130 120 110 100 90 80 70

D

AVIC-Z1/UC

SIDE B



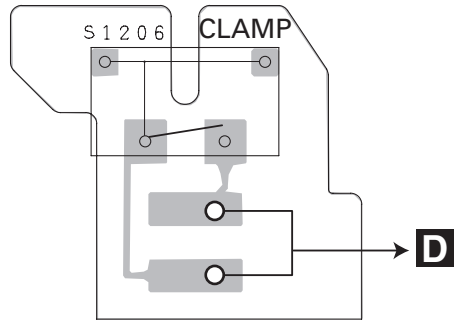
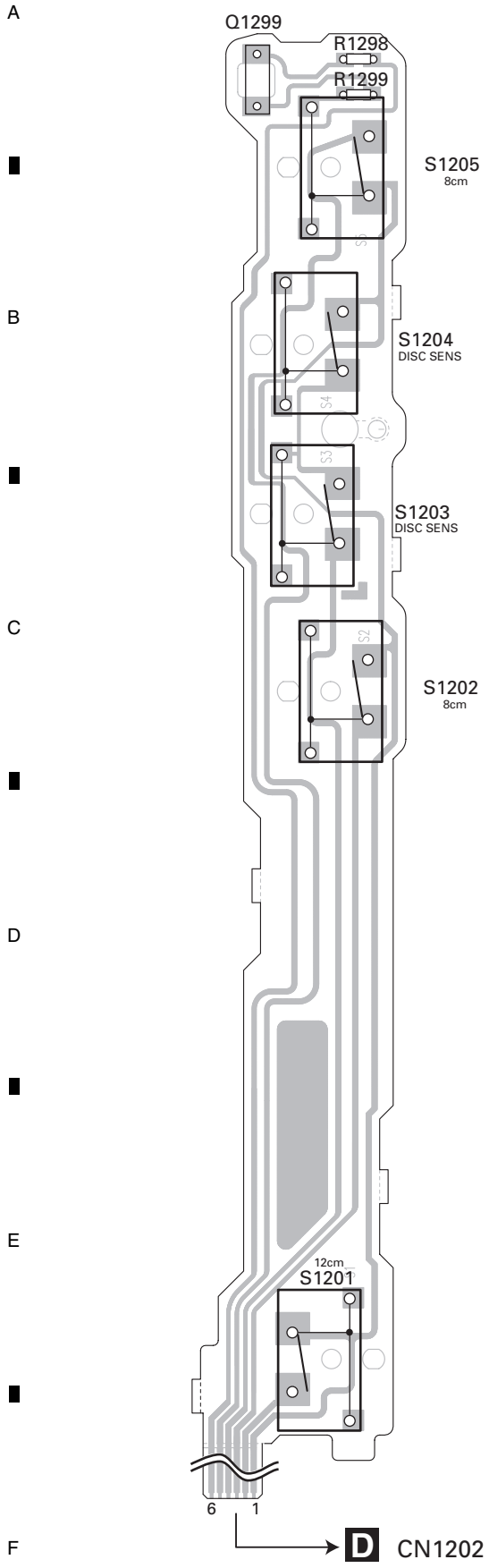
AVIC-Z1/UC

D

4.3 COMPOUND UNIT(A) AND COMPOUND UNIT(B)

E COMPOUND UNIT(A)

F COMPOUND UNIT(B)

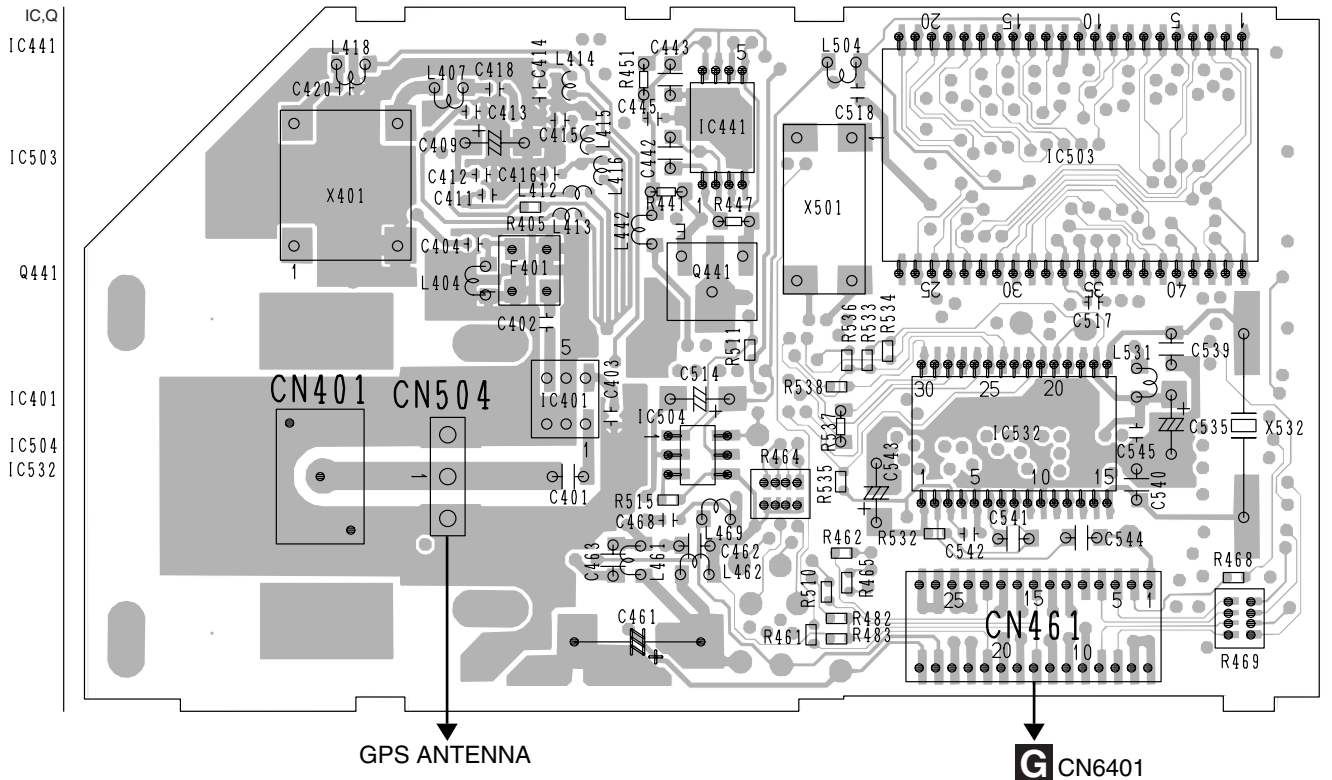


E F

4.4 GPS UNIT

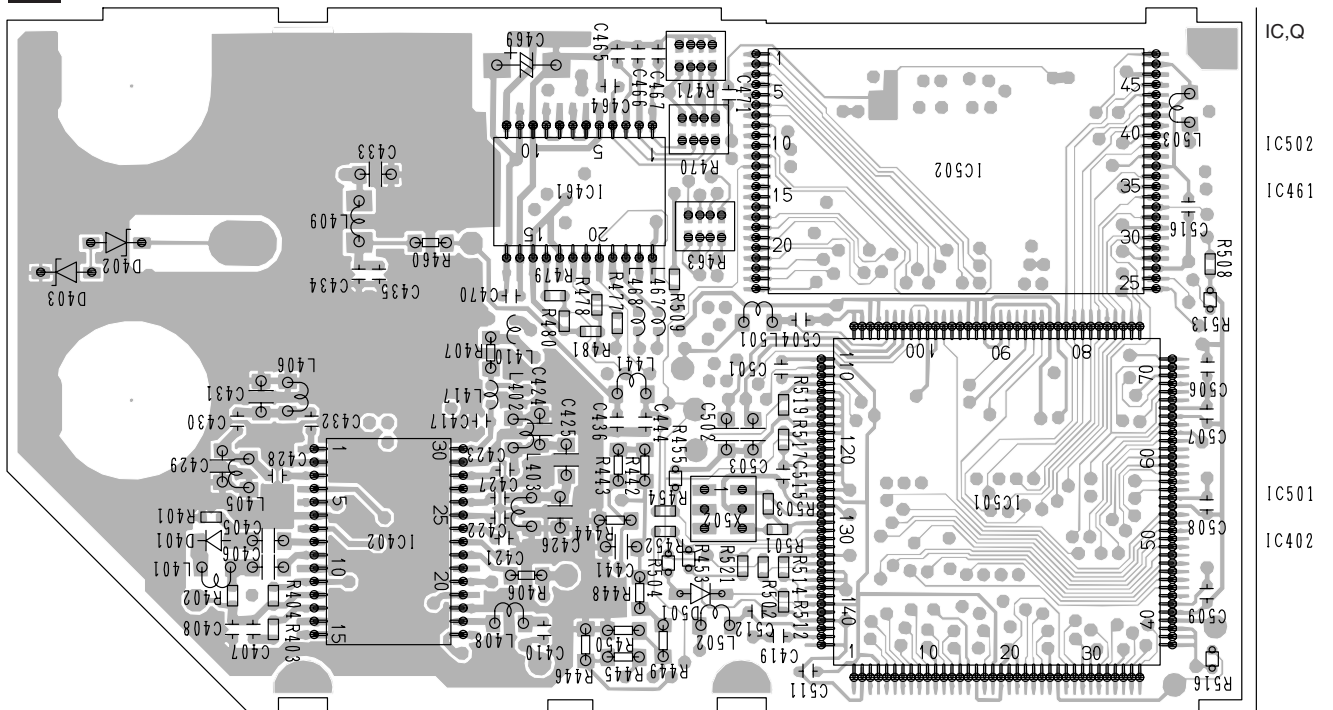
B GPS UNIT

SIDE A



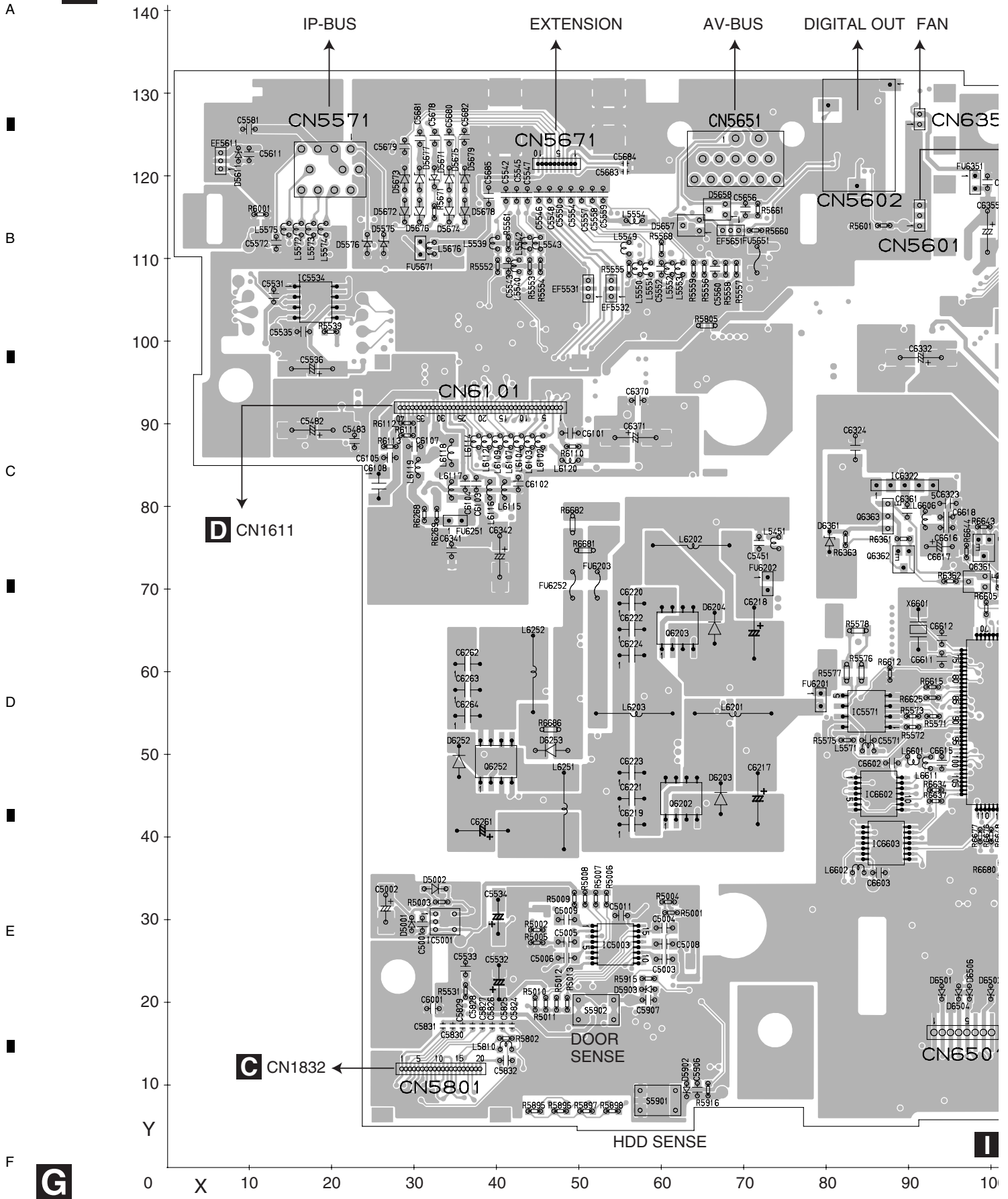
B GPS UNIT

SIDE B

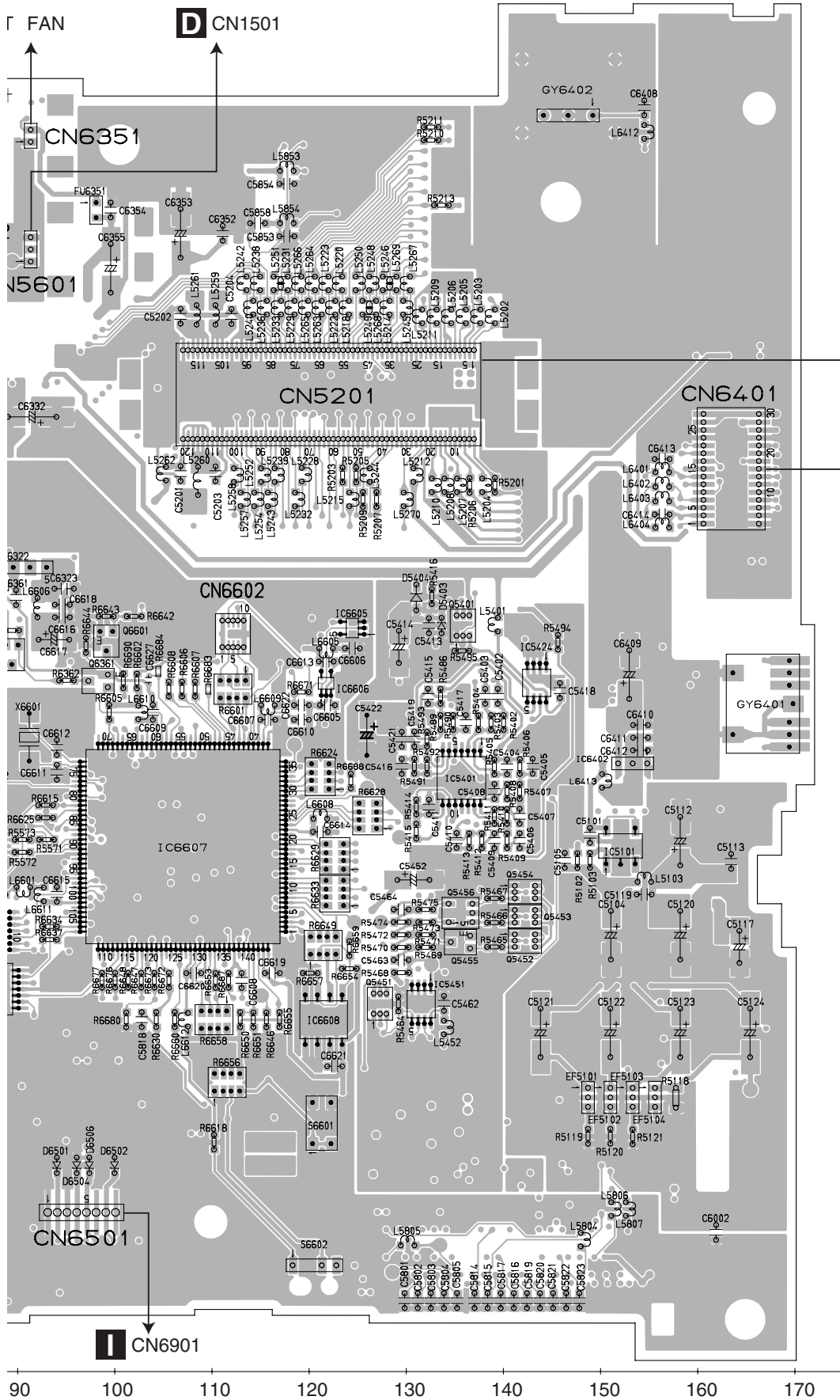


4.5 NAVI MOTHER PCB

G NAVI MOTHER PCB



SIDE A



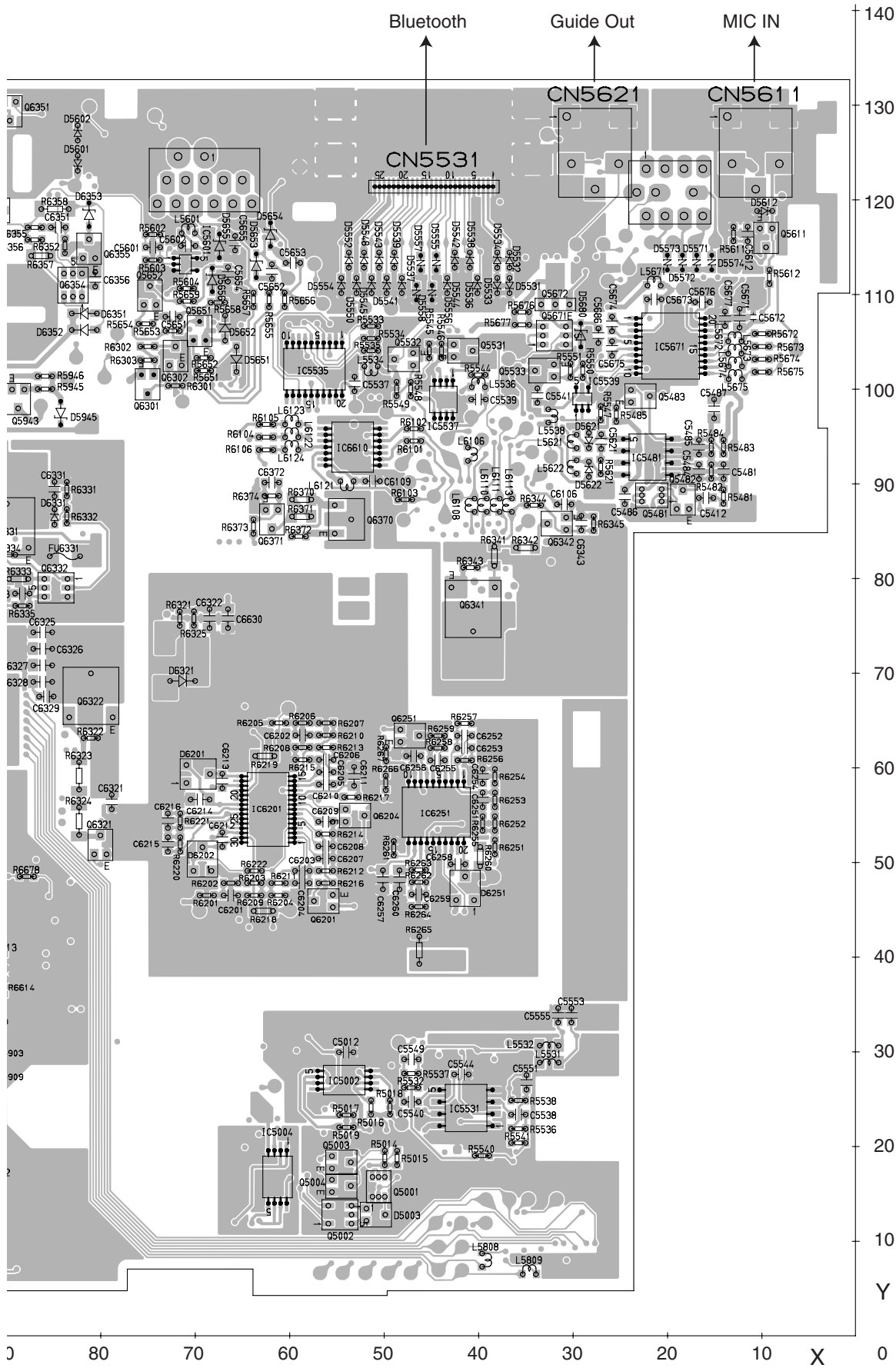
- FU 5651 (A,72,110) Fuse 4 A CEK1260
- FU 5671 (A,31,112) Fuse 1 A CEK1280
- FU 6201 (A,79,57) Fuse 2 A CEK1284
- FU 6202 (A,73,71) Fuse 3 A CEK1286
- FU 6203 (A,52,71) Fuse 4 A CEK1260

- FU 6251 (A,35,78) Fuse 2 A CEK1284
- FU 6252 (A,49,71) Fuse 2.5 A CEK1258
- FU 6351 (A,98,120) Fuse 1 A CEK1280

A CN4804

B CN461

G



A
B
C
D
E
F



4.6 HDD RELAY PCB

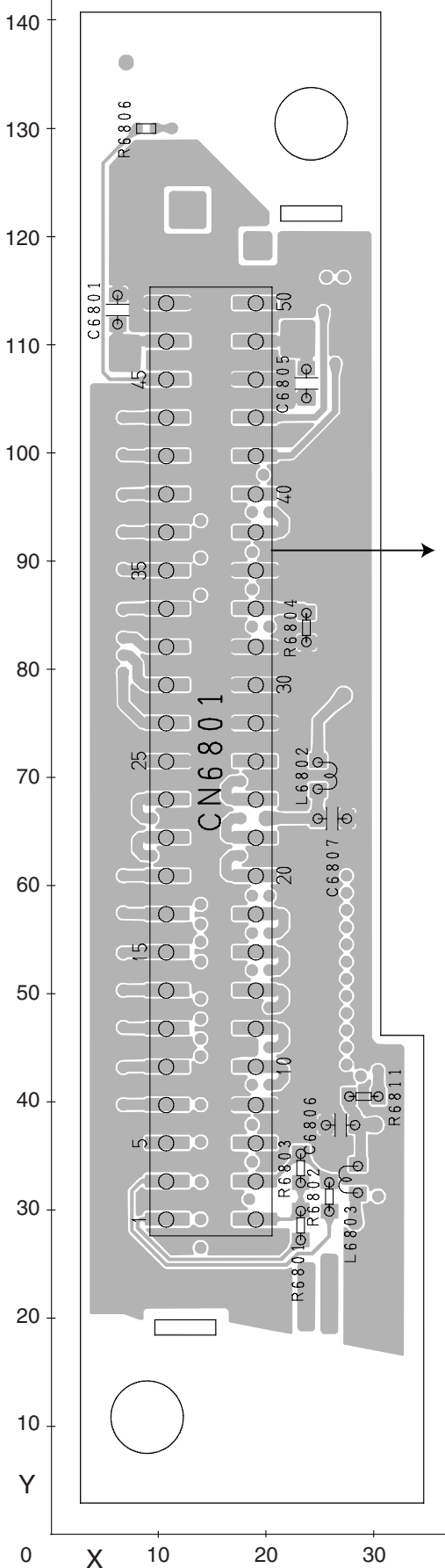
H HDD RELAY PCB

SIDE A

H HDD RELAY PCB

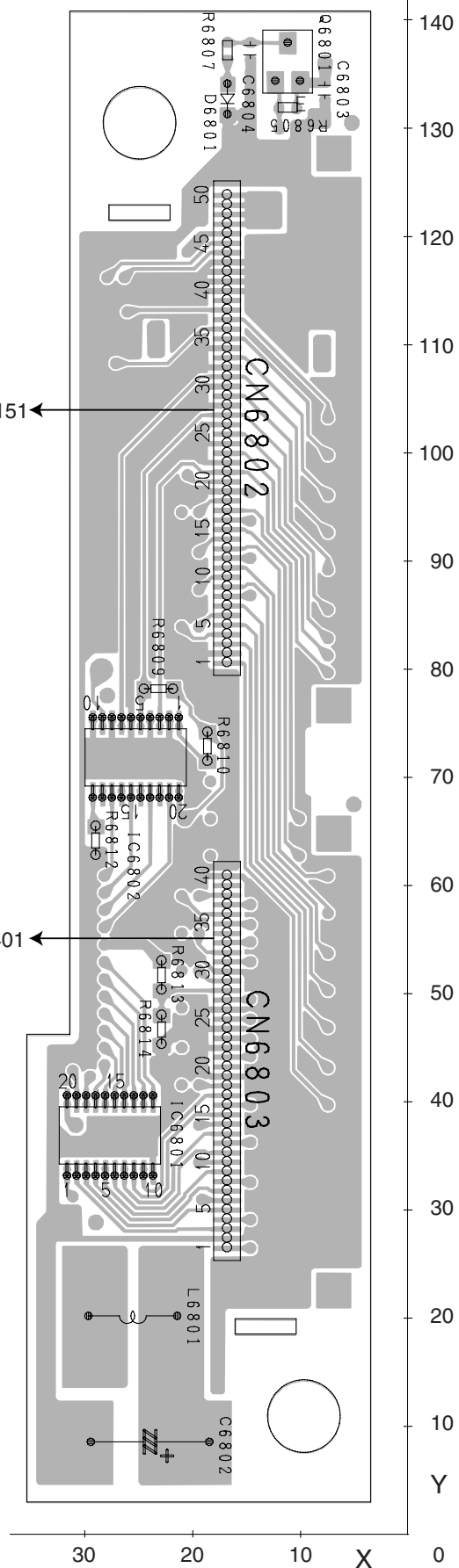
SIDE B

A
B
C
D
E
F



A CN4151

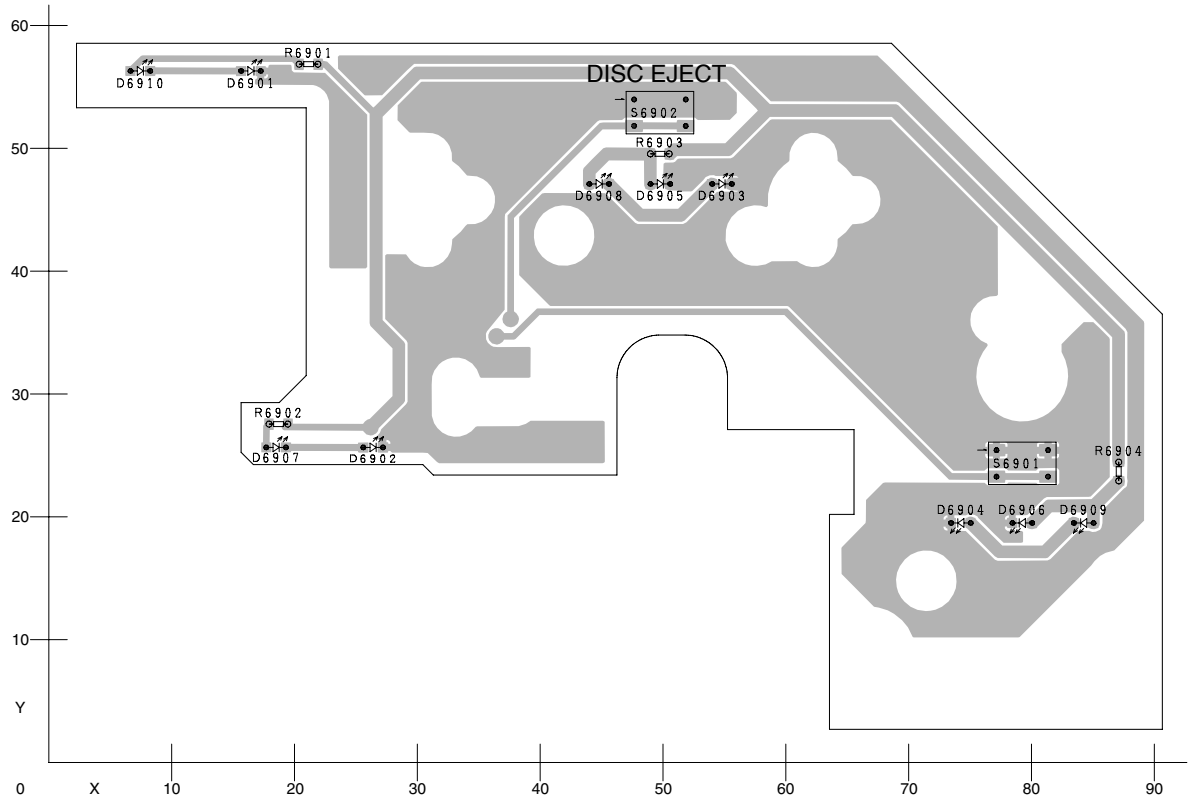
D CN1401



4.7 PANEL UNIT

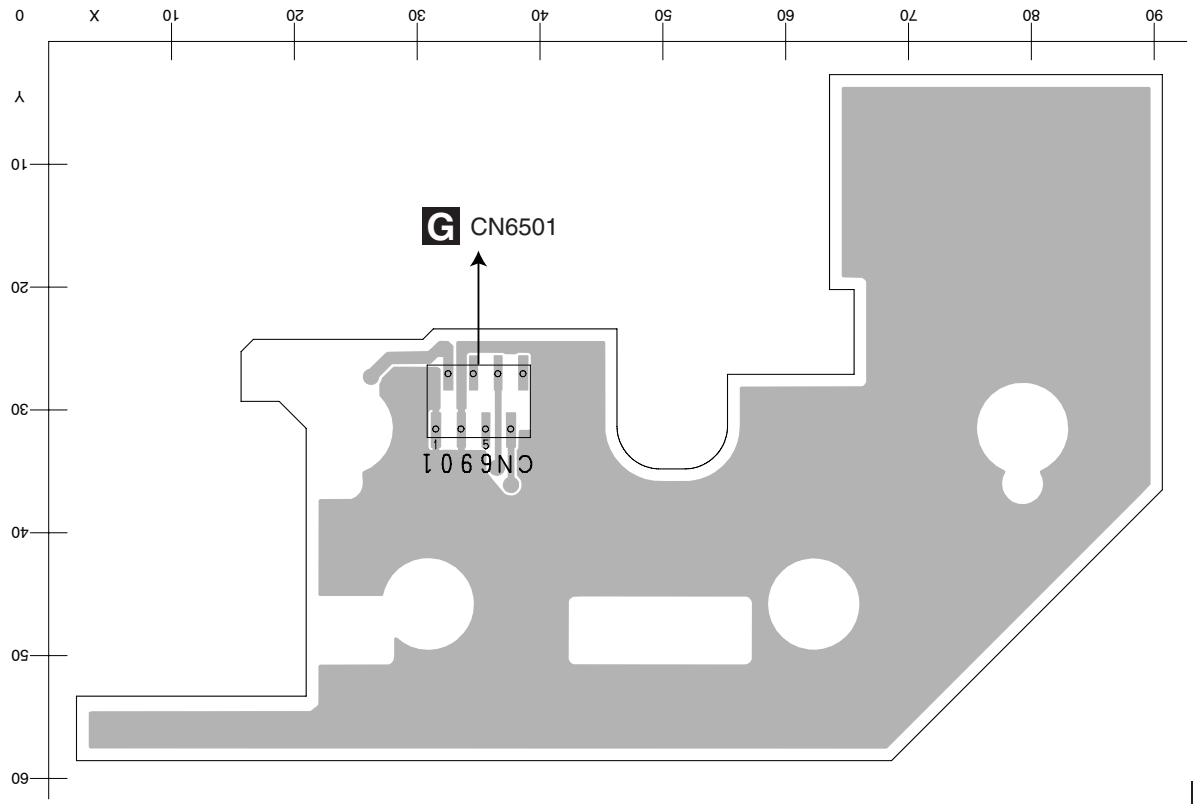
I PANEL UNIT

SIDE A



I PANEL UNIT

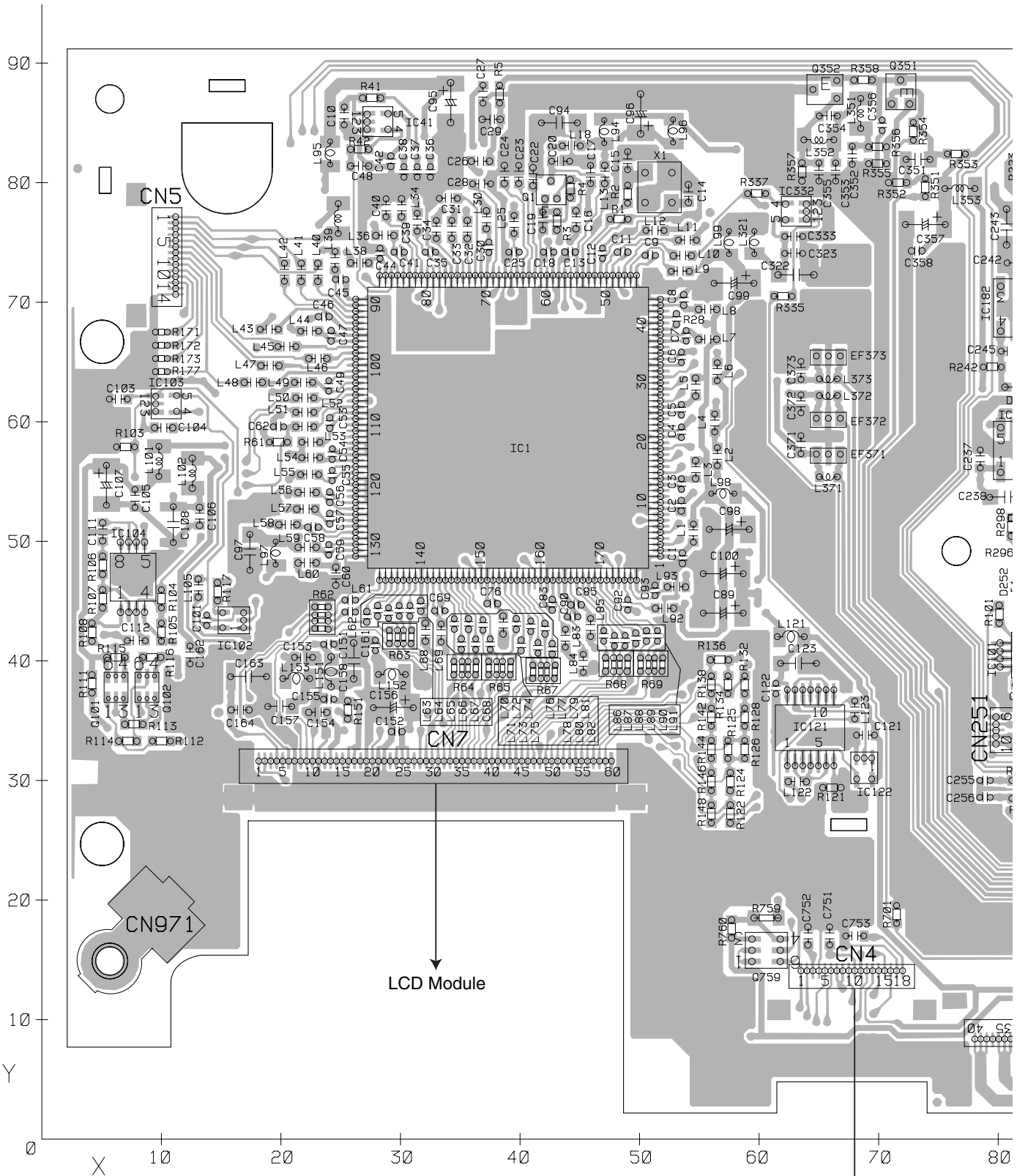
SIDE B



4.8 MONITOR UNIT

K MONITOR UNIT

A
B
C
D
E
F



LCD Module

1 2 3 4

SIDE A

A

FU 181 (A,108,10) Fuse 500 mA CEK1251
FU 841 (A,134,52) Fuse 1.25 A CEK1255

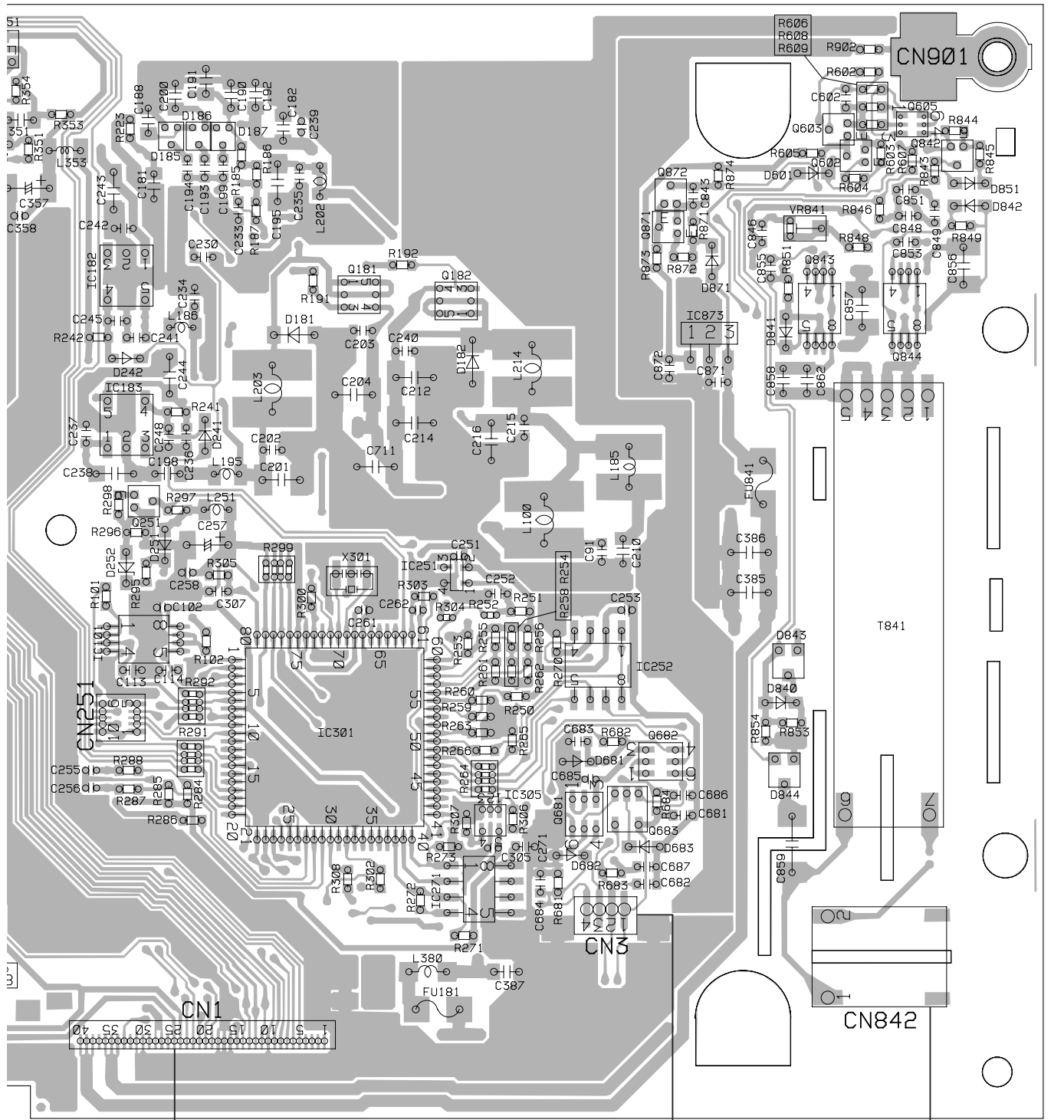
B

C

D

E

F



J

C CN1203

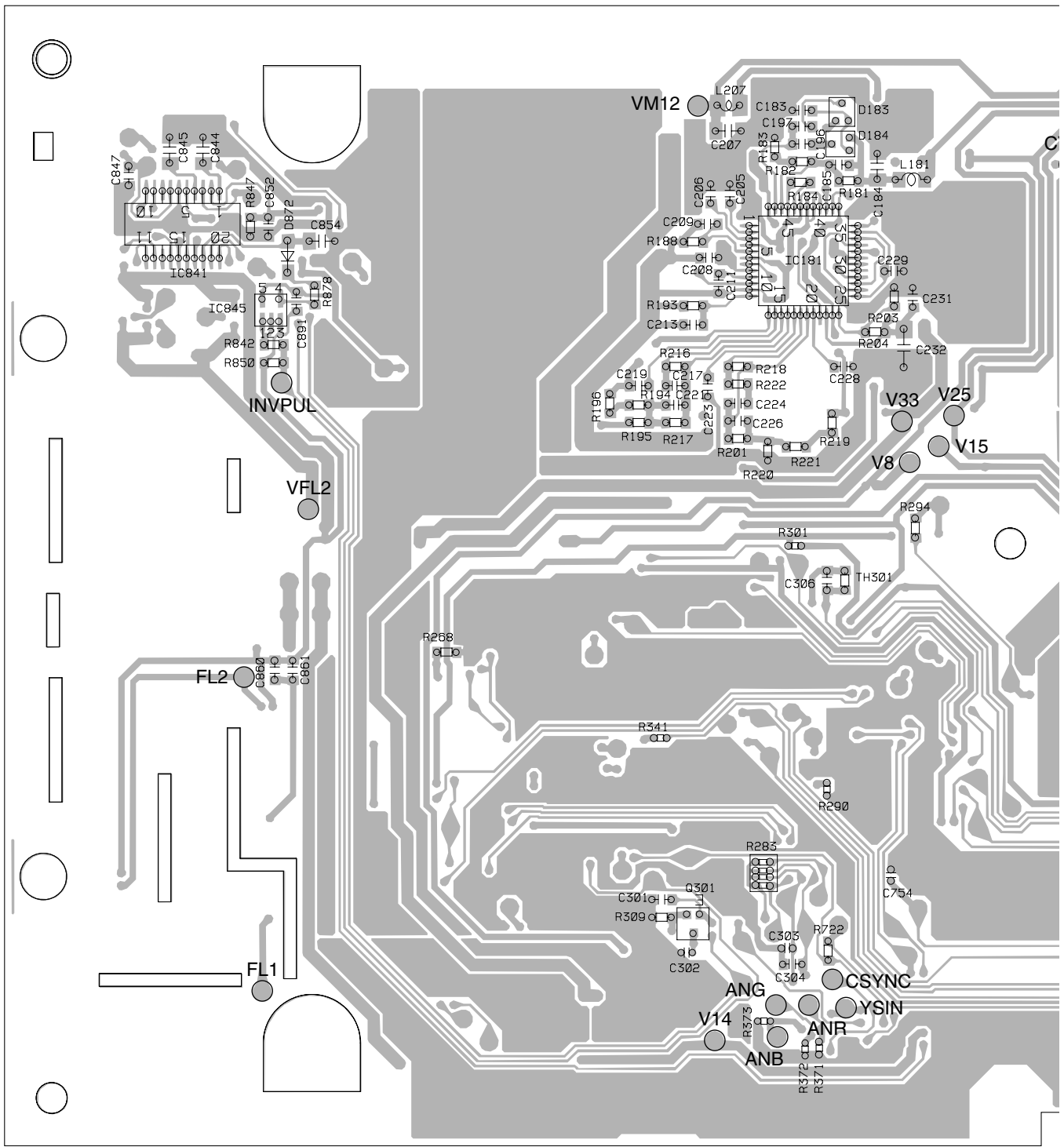
Touch Panel

Back Light

K

AVIC-Z1/UC

K MONITOR UNIT



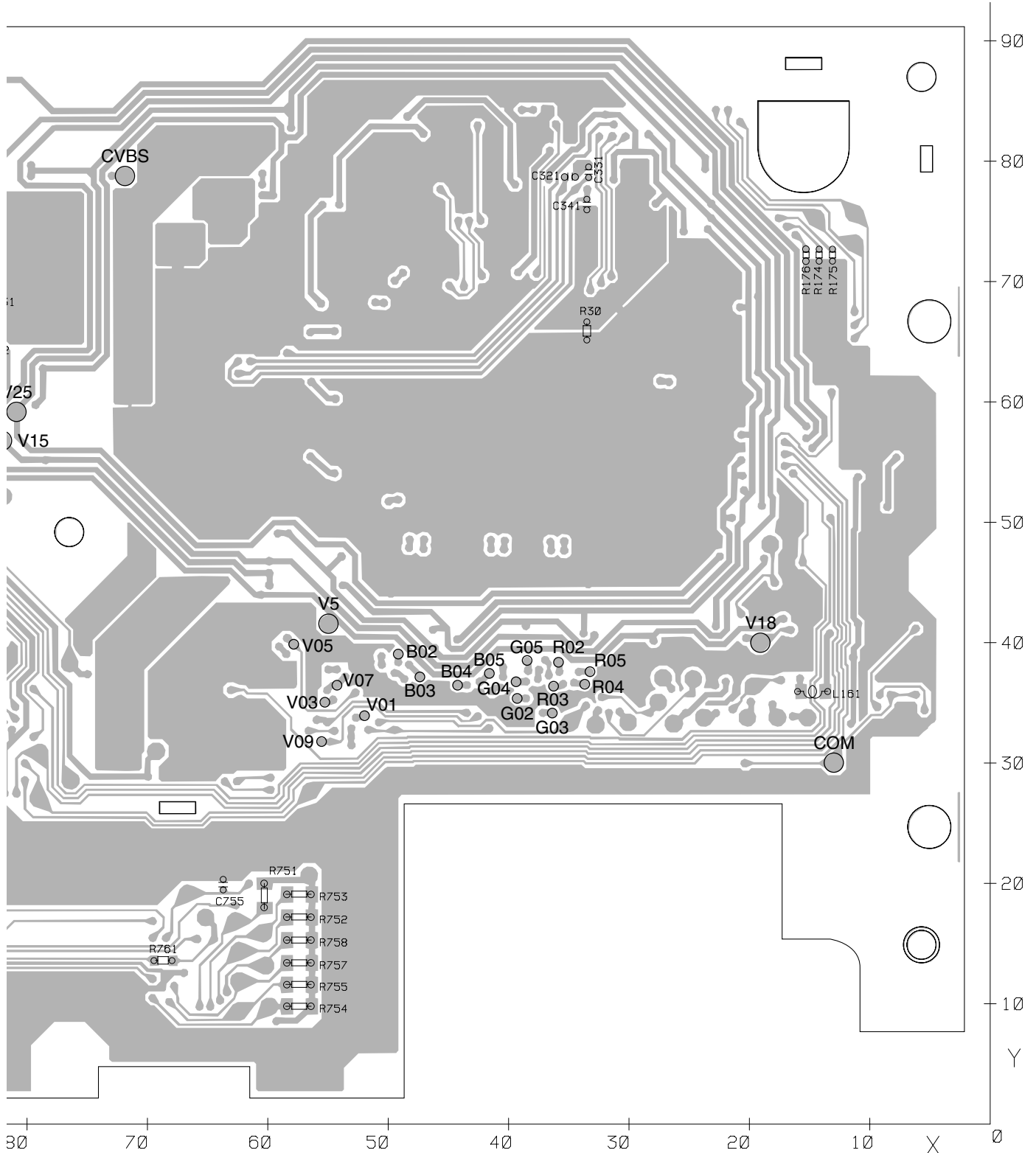
150 140 130 120 110 100 90 80

F



SIDE B

A



B

C

D

E

F



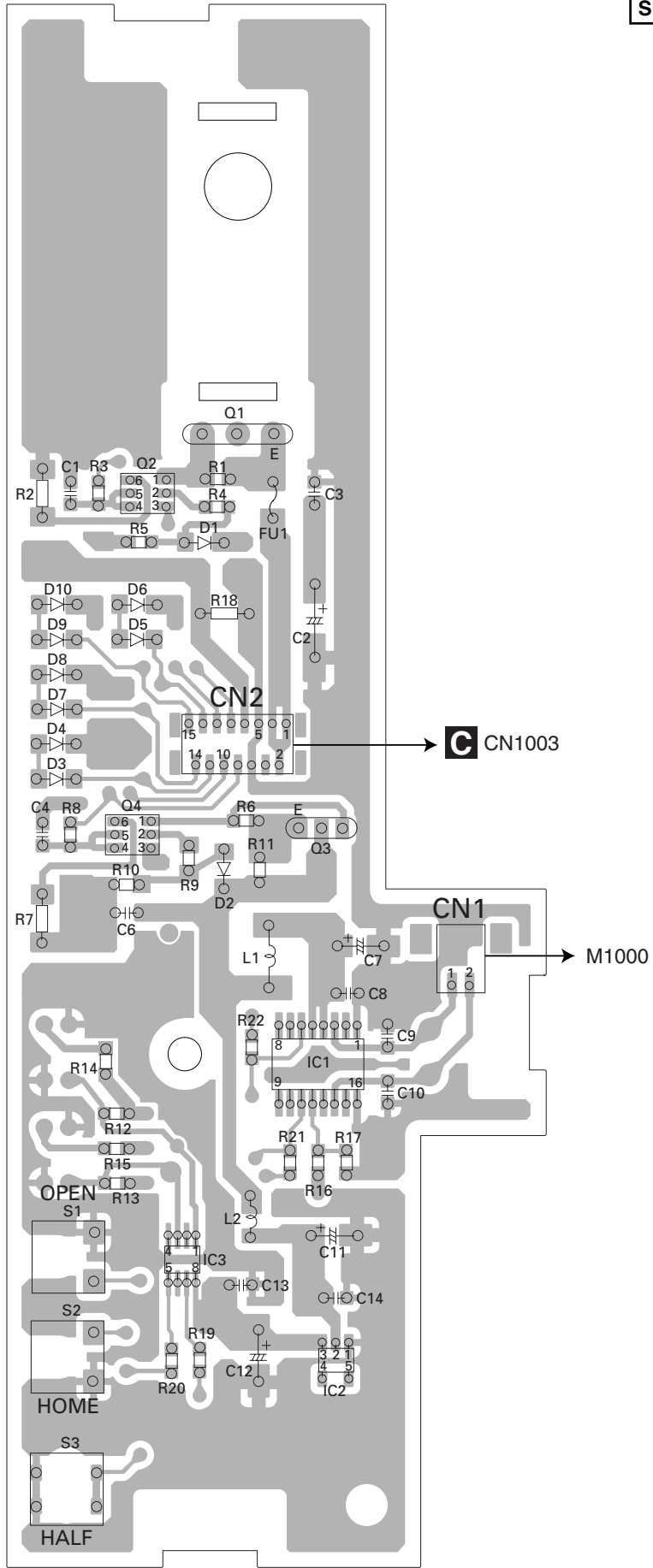
4.9 MAIN PCB UNIT

L MAIN PCB UNIT

SIDE A

A
B
C
D
E
F

IC,Q
Q1
Q2
Q3
Q4
IC1
IC3
IC2

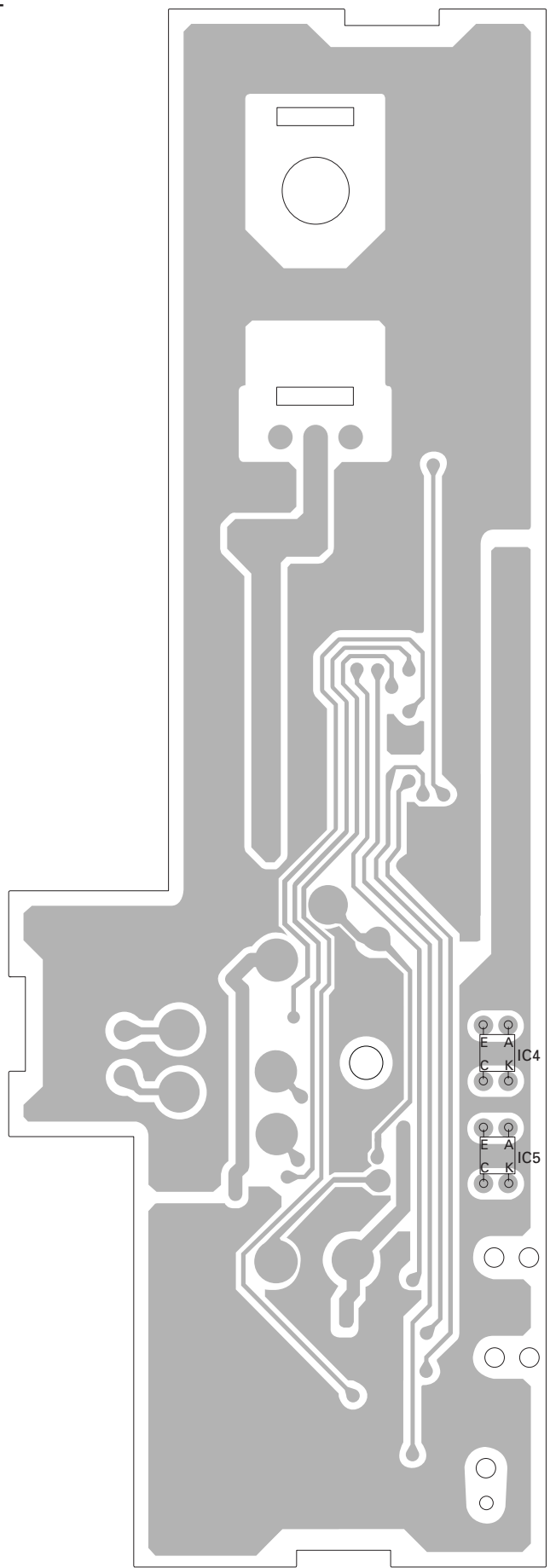


C CN1003

M1000

L MAIN PCB UNIT

SIDE B



IC,Q

IC4

IC5

A
B
C
D
E
F



4.10 KEYBOARD UNIT

1

2

3

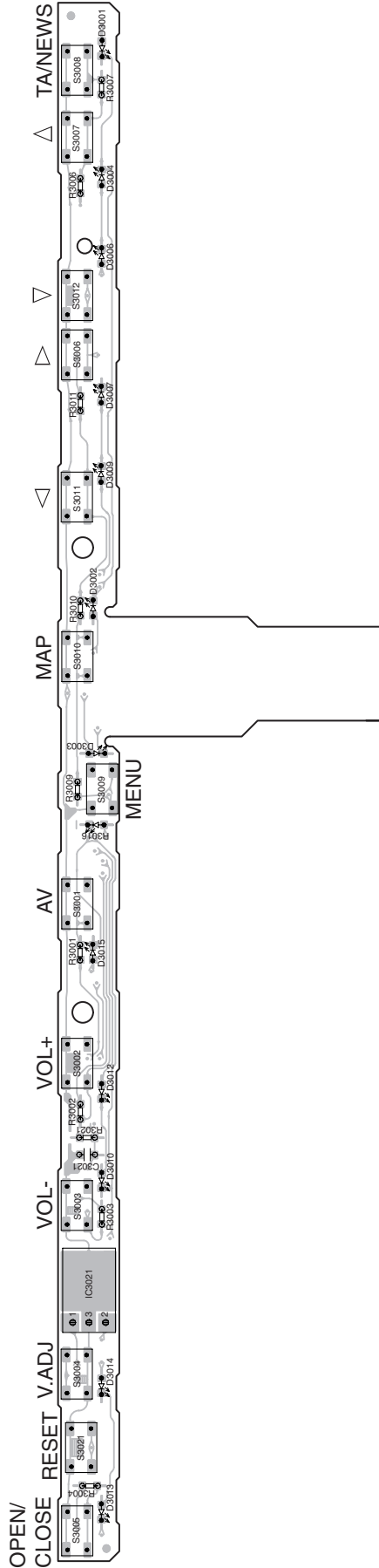
4

J KEYBOARD UNIT

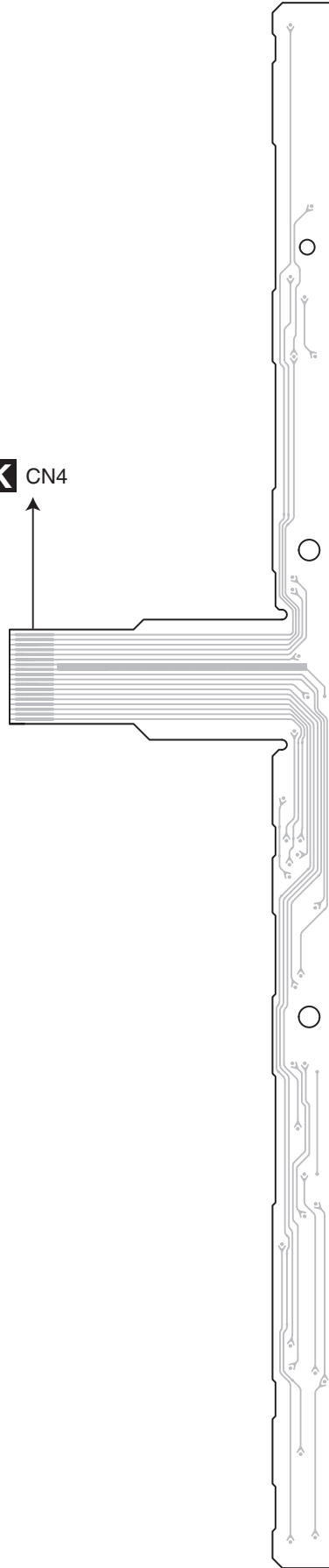
SIDE A

J KEYBOARD UNIT

SIDE B



K CN4



1

2

3

4

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OS○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
Unit Number : CWX3304(UC)		MISCELLANEOUS	
Unit Number : CWX3305(EW5)		IC 401 (A,24,15) IC	UPC2749T
Unit Name : GPS Unit		IC 402 (B,19,26) IC	UPB1027GS
Unit Number : CWN1583(UC)		IC 441 (A,31,29) IC	NJM2100V
Unit Number : CWN1633(EW5)		IC 461 (B,28,9) IC	ADC12H034CIMSAS1
Unit Name : Audio Unit		IC 501 (B,49,24) IC	PD3390A
Unit Number : CWX3301		IC 502 (B,47,8) IC(UC)	PEH026A
Unit Name : DVD Core Unit		IC 502 IC(EW5)	PEH027A
Unit Number : CWX3154		IC 503 (A,48,27) IC	M5M5V216ATP-70HI
Unit Name : Compound Unit(A)		IC 504 (A,30,13) IC	MAX6364PUT29
Unit Number : CWX3394		IC 532 (A,46,14) IC(EW5)	LC72720YVSS1
Unit Name : Compound Unit(B)		Q 441 (A,31,21) Transistor	2SB1132
Unit Number : CWN1581(UC)		D 401 (B,10,26) Diode	1SV314
Unit Number : CWN1631(EW5)		D 501 (B,34,29) Diode	RB751V-40
Unit Name : Navi Mother Unit		L 401 (B,10,27) Inductor	CTF1549
Unit Number : CWN1586		L 402 (B,25,21) Inductor	CTF1486
Unit Name : Panel Unit		L 403 (B,26,25) Inductor	CTF1486
Unit Number : CWN1585(UC)		L 404 (A,20,21) Inductor	LCSA3N3R1608
Unit Number : CWN1635(EW5)		L 405 (B,12,23) Inductor	LCYB22NJ1608
Unit Name : Keyboard Unit		L 406 (B,14,19) Inductor	LCYB22NJ1608
Unit Number : CWN1584(UC)		L 407 (A,18,31) Inductor	CTF1410
Unit Number : CWN1634(EW5)		L 408 (B,25,30) Inductor(UC)	CTF1556
Unit Name : Monitor Unit		L 408 Inductor(EW5)	CTF1410
Unit Number : CZW5026		L 409 (B,17,10) Inductor	LCYC1R0K2125
Unit Name : Main PCB Unit		L 410 (B,25,16) Inductor	CTF1547
		L 412 (A,24,25) Inductor	CTF1547
		L 413 (A,24,24) Inductor	CTF1547
		L 414 (A,24,31) Inductor	CTF1547
		L 415 (A,25,28) Inductor	CTF1547
		L 416 (A,25,27) Inductor	CTF1547
		L 417 (B,24,19) Inductor	CTF1547
		L 418 (A,13,32) Inductor	CTF1410
		L 441 (B,31,19) Inductor	CTF1410
		L 442 (A,28,24) Inductor	CTF1410
		L 461 (A,27,7) Inductor	CTF1410
		L 462 (A,30,7) Inductor	CTF1410
		L 467 (B,32,15) Inductor	CTF1547
		L 468 (B,31,15) Inductor	CTF1547
		L 469 (A,31,9) Inductor	CTF1410
		L 501 (B,37,15) Inductor	CTF1410
		L 502 (B,35,30) Inductor	CTF1410

B

Unit Number : CWX3304(UC)
Unit Number : CWX3305(EW5)
Unit Name : GPS Unit

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

L 503	(B,58,5)	Inductor	CTF1410
L 504	(A,37,32)	Inductor	CTF1410
A L 531	(A,52,16)	Inductor	CTF1410
X 401	(A,13,26)	TCXO 16.368 MHz	CWX2381
X 501	(A,36,25)	Radiator 32.768 kHz	CSS1319
X 502	(B,35,25)	Radiator 20.00 MHz	CSS1549
X 532	(A,57,14)	Radiator 4.332 MHz(EW5)	CSS1550
F 401	(A,22,22)	Filter	CTF1548

R 517	(B,38,21)	RS1/16SS103J
R 519	(B,38,19)	RS1/16SS473J
R 521	(B,36,27)	RS1/16SS473J
R 532	(A,42,9) (EW5)	RS1/16SS104J
R 533	(A,38,17) (UC)	RS1/16SS103J
R 533	(EW5)	RS1/16SS332J
R 534	(A,39,18)	RS1/16SS103J
R 535	(A,37,11)	RS1/16SS103J
R 536	(A,37,17)	RS1/16SS0R0J
R 537	(A,37,14) (EW5)	RS1/16S0R0J
R 538	(A,37,16) (EW5)	RS1/16SS0R0J

RESISTORS

R 401	(B,10,25)	RS1/16SS472J
R 402	(B,11,29)	RS1/16SS472J
R 403	(B,13,30)	RS1/16SS122J
R 404	(B,13,29)	RS1/16SS622J
R 405	(A,22,25)	RS1/16SS100J
R 406	(B,25,28)	RS1/16S271J
R 407	(B,24,17)	RS1/16S2R2J
R 441	(A,29,25)	RN1/16SC10R0D
R 442	(B,31,22)	RN1/16SE1501D
R 443	(B,30,22)	RN1/16SE2402D
R 444	(B,30,25)	RN1/16SE3302D
R 445	(B,30,32)	RN1/16SE4702D
R 446	(B,28,31)	RN1/16SE4702D
R 447	(A,32,24)	RS1/16S432J
R 448	(B,31,29)	RN1/16SE1002D
R 449	(B,32,31)	RN1/16SE2202D
R 450	(B,30,31)	RN1/16SE3302D
R 451	(A,27,31)	RS1/16S103J
R 452	(B,32,26)	RS1/16SS102J
R 454	(B,32,25)	RS1/16SS102J
R 460	(B,21,12)	RS1/16S0R0J
R 461	(A,36,4)	RS1/16SS102J
R 462	(A,37,8)	RS1/16SS102J
R 463	(B,34,11)	RAB4CQ102J
R 464	(A,34,11)	RAB4CQ333J
R 465	(A,37,6)	RS1/16SS102J
R 468	(A,56,7) (EW5)	RS1/16SS471J
R 469	(A,57,5) (EW5)	RAB4CQ471J
R 470	(B,34,6)	RAB4CQ471J
R 471	(B,34,2)	RAB4CQ104J
R 477	(B,30,15)	RS1/16SS222J
R 478	(B,29,15)	RS1/16SS222J
R 479	(B,27,14)	RS1/16SS222J
R 480	(B,27,15)	RS1/16SS332J
R 481	(B,29,16)	RS1/16SS332J
R 482	(A,37,5)	RS1/16SS223J
R 483	(A,37,4)	RS1/16SS473J
R 501	(B,38,26)	RS1/16SS0R0J
R 502	(B,37,27)	RS1/16SS102J
R 503	(B,37,24)	RS1/16SS154J
R 508	(B,59,13) (UC)	RS1/16SS103J
R 508	(EW5)	RS1/16SS472J
R 509	(B,33,13)	RS1/16SS473J
R 510	(A,36,6)	RS1/16SS102J
R 511	(A,33,18)	RS1/16SS103J
R 512	(B,38,29)	RS1/16SS473J
R 513	(B,59,14)	RS1/16SS103J
R 514	(B,38,27)	RS1/16SS473J
R 515	(A,29,10)	RS1/16SS473J

CAPACITORS

C 401	(A,24,12)	CCSRCH100D50
C 402	(A,23,19)	CCSSCH101J50
C 403	(A,26,14)	CKSSYB104K10
C 404	(A,19,23)	CCSSCH101J50
C 405	(B,13,26)	CCSRUJ220J50
C 406	(B,13,27)	CCSRUJ220J50
C 407	(B,12,30)	CKSSYB333K16
C 408	(B,11,30)	CKSSYB182K50
C 409	(A,20,28)	CSZS100M6R3
C 410	(B,26,31)	CKSSYB103K16
C 411	(A,20,25)	CKSSYB102K50
C 412	(A,19,26)	CKSSYB102K50
C 413	(A,19,29)	CKSSYB104K10
C 414	(A,22,30)	CKSSYB104K10
C 415	(A,23,29)	CKSSYB104K10
C 416	(A,23,26)	CKSSYB104K10
C 417	(B,23,20)	CKSSYB104K10
C 418	(A,20,31)	CKSSYB102K50
C 419	(B,38,31)	CKSSYB104K10
C 420	(A,13,31)	CKSSYB104K10
C 421	(B,24,26)	CKSSYB102K50
C 422	(B,24,25)	CKSSYB103K16
C 423	(B,24,23)	CKSSYB104K10
C 424	(B,26,21)	CCSRCH102J50
C 425	(B,27,22)	CCSRCH271J50
C 426	(B,27,25)	CCSRCH102J50
C 427	(B,24,24)	CKSSYB104K10
C 428	(B,13,23)	CKSSYB103K16
C 429	(B,11,22)	CCSRCH301J50
C 430	(B,11,20)	CCSSCH120J50
C 431	(B,12,19)	CCSRCH301J50
C 432	(B,15,20)	CKSSYB103K16
C 433	(B,18,8)	CCSRCH101J50
C 434	(B,17,13)	CKSSYB102K50
C 435	(B,18,13)	CKSSYB103K16
C 436	(B,30,20)	CKSSYB104K10
C 441	(B,30,26)	CKSRYB104K16
C 442	(A,29,27)	CCSRCH101J50
C 443	(A,29,31)	CKSRYB104K16
C 444	(B,31,20)	CKSSYB103K16
C 445	(A,28,29)	CKSSYB104K10
C 461	(A,27,3) 22 μ F/6.3 V	CCH1408
C 462	(A,30,8)	CKSRYB104K16
C 463	(A,26,7)	CKSRYB104K16
C 464	(B,30,4)	CKSSYB103K16
C 465	(B,30,2)	CKSSYB103K16

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
C 466	(B,31,2)	CKSSYB103K16	Q 1006	(A,129,121) Transistor	DTC114EU
C 467	(B,32,2)	CKSSYB103K16	Q 1200	(A,114,14) Transistor	2SA1385-ZS1
C 468	(A,29,9)	CKSSYB104K10			
C 469	(B,25,3)	CSZS100M10	Q 1201	(A,123,15) Transistor	DTC114EU
			Q 1202	(A,73,28) Transistor	2SA1797
C 470	(B,25,14)	CKSSYB104K10	Q 1203	(A,85,29) Transistor	DTC114EU
C 471	(B,35,4)	CCSSCH101J50	Q 1204	(B,69,23) Transistor	2SC4081
C 501	(B,38,18)	CKSSYB104K10	Q 1205	(B,76,23) Transistor	2SA1577
C 502	(B,35,21)	CCSRCH150J50			
C 503	(B,37,21)	CCSRCH150J50	Q 1206	(A,126,60) Transistor	2SD1760F5
			Q 1207	(A,172,82) Transistor	2SB1185
C 504	(B,39,15)	CKSSYB104K10	Q 1242	(B,98,27) Transistor	IMD3A
C 506	(B,59,18)	CKSSYB104K10	Q 1350	(B,69,13) Transistor	IMD3A
C 507	(B,59,20)	CKSSYB104K10	Q 1420	(B,106,118) Transistor	FMG12
C 508	(B,59,24)	CKSSYB104K10			
C 509	(B,59,29)	CKSSYB104K10	Q 1421	(B,75,106) Transistor	FMG12
			Q 1422	(B,75,115) Transistor	FMG12
C 511	(B,39,33)	CKSSYB104K10	Q 1430	(B,92,123) Transistor	2SC4081
C 512	(B,37,30)	CKSSYB104K10	Q 1431	(B,98,123) Transistor	DTC114EU
C 514	(A,30,15)	CSZS100M6R3	Q 1432	(B,98,118) Transistor	IMD3A
C 515	(B,38,23)	CKSSYB104K10			
C 516	(B,58,10)	CKSSYB104K10	Q 1470	(B,89,110) Transistor	IMD3A
			Q 1521	(A,66,59) Transistor	DTC114EU
C 517	(A,49,20)	CKSSYB104K10	Q 1540	(B,71,59) Transistor	FMG12
C 518	(A,38,30)	CKSSYB104K10	Q 1541	(B,71,53) Transistor	2SC2412K
C 535	(A,53,14) (EW5)	CSZS100M6R3	Q 1542	(B,71,64) Transistor	2SC2412K
C 539	(A,53,18) (EW5)	CCSRCH100D50			
C 540	(A,52,11) (EW5)	CCSRCH100D50	Q 1611	(B,100,94) Transistor	DTC323TK
			Q 1612	(B,108,95) Transistor	DTC323TK
C 541	(A,46,8) (EW5)	CCSRCH561J50	Q 1613	(B,98,90) Transistor	IMD3A
C 542	(A,43,9) (EW5)	CKSSYB104K10	Q 1614	(B,108,92) Transistor	IMD3A
C 543	(A,39,11) (EW5)	CSZS100M6R3	Q 1821	(A,134,50) Transistor(EW5)	2SB1184F5
C 544	(A,49,9) (EW5)	CCSRCH331J50			
C 545	(A,52,14) (EW5)	CKSSYB104K10	Q 1822	(A,123,50) Transistor(EW5)	2SB1260
			Q 1823	(A,133,40) Transistor(EW5)	DTC114EU
			Q 1830	(B,136,64) Transistor	IMX1
			Q 1840	(A,172,104) Transistor	2SB1185
			Q 1841	(B,139,100) Transistor	IMX1
			Q 1850	(A,54,97) Transistor	2SB1185
			Q 1851	(B,47,95) Transistor	2SB1260
			Q 1852	(B,60,102) Transistor	DTC114EU
			Q 2501	(B,32,33) Transistor(EW5)	DTC124EU
			Q 2502	(B,27,33) Transistor(EW5)	DTC124EU
			Q 2503	(B,32,36) Transistor(EW5)	DTC124EU
			Q 2504	(B,26,37) Transistor(EW5)	DTC124EU
			Q 2550	(A,23,124) Transistor(EW5)	2SC3357
			Q 2551	(B,20,116) Transistor(EW5)	2SC3127
			Q 2800	(B,148,73) Transistor(EW5)	2SC3545
			Q 2801	(B,144,58) Transistor(EW5)	DTC144EK
			Q 2802	(B,141,55) Transistor(EW5)	DTC144EK
			D 1001	(B,157,146) Diode	PTZ18A
			D 1004	(B,149,116) Diode	UDZS5R1(B)
			D 1005	(B,122,113) Diode	HZU6R8(B2)
			D 1006	(A,151,128) Diode	PTZ27(B)
			D 1007	(A,139,102) Diode	KS926S2
			D 1008	(B,156,123) Diode	UDZS18(B)
			D 1009	(B,156,127) Diode	UDZS18(B)
			D 1010	(B,154,123) Diode	1SS355
			D 1011	(A,130,111) Diode	1SR154-400
			D 1013	(A,174,136) Diode	5KP22A
			D 1030	(A,53,115) Diode	1SS355
			D 1031	(A,51,115) Diode	1SS355
			D 1050	(B,58,138) Diode	UDZS5R6(B)
			D 1051	(B,55,120) Diode	UDZS5R6(B)
			D 1070	(B,133,130) Diode	DAN202U
			D 1071	(B,136,133) Diode	PTZ27(B)



Unit Number : CWN1583(UC)

Unit Number : CWN1633(EW5)

Unit Name : Audio Unit

MISCELLANEOUS

IC 1200	(B,104,22) IC	NJM2235M			
IC 1201	(B,93,22) IC	NJM2246M			
IC 1202	(B,116,23) IC	NJM2235M			
IC 1204	(B,125,103) IC	TK15405BMI			
IC 1270	(B,117,110) IC	NJM2137V			
IC 1401	(A,98,139) IC	PAL007B			
IC 1402	(B,104,75) IC	PML009A			
IC 1403	(A,172,93) IC	BA00CC0WT			
IC 1486	(B,76,74) IC	BA3121F			
IC 1501	(B,57,33) IC	NJM2060V			
IC 1520	(B,63,59) IC	TC4052BFT			
IC 1530	(B,55,59) IC	NJM2125F			
IC 1621	(B,104,103) IC	NJM2060V			
IC 1802	(B,138,114) IC	TPD1018F			
IC 1821	(A,142,53) IC(EW5)	M5237ML			
IC 1850	(B,64,93) IC	M5237ML			
IC 1900	(A,111,34) IC	NJM2505F			
IC 1901	(A,89,37) IC	NJM2505F			
IC 1940	(A,91,46) IC	BA3121F			
IC 1960	(B,58,45) IC	BA3121F			
IC 2501	(A,35,60) IC	NJM2391DL1-33			
Q 1001	(B,147,113) Transistor	2SC4116			
Q 1004	(B,123,120) Transistor	2SC4081			

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

D 1202	(A,135,66) Diode	UDZS5R6(B)	L 1960	(B,49,51) Inductor	LCYC2R2K2125
D 1203	(B,140,65) Diode	HZU8R2(B1)	L 2501	(B,28,85) Chip Coil	LCTAW4R7J2520
A D 1204	(B,129,129) Diode	UDZS6R8(B)	L 2502	(A,32,67) Inductor	LCTAW2R2J3225
D 1205	(B,131,127) Diode	UDZS6R8(B)	L 2503	(B,28,45) Inductor	LCTAW2R2J2520
D 1206	(A,67,120) Diode	UDZS6R8(B)	L 2504	(B,32,45) Chip Ferrite Bead	CTF1399
D 1207	(A,70,116) Diode	UDZS6R8(B)	L 2505	(B,28,40) Inductor	LCTAW2R2J3225
D 1208	(B,65,119) Diode	UDZS6R8(B)	L 2506	(B,43,60) Chip Coil	LCTAW1R0J2520
D 1209	(B,67,121) Diode	UDZS6R8(B)	L 2550	(A,21,133) Inductor(EW5)	LCTAWR12J2520
D 1210	(B,125,135) Diode	UDZS6R8(B)	L 2551	(A,24,130) Inductor(EW5)	LCYCR10K2125
D 1211	(B,122,135) Diode	UDZS6R8(B)	L 2552	(B,25,118) Inductor(EW5)	LCYCR10K2125
D 1401	(A,116,96) Diode	UDZS4R7(B)	L 2553	(A,23,116) Coil(EW5)	CTC1143
D 1405	(B,131,130) Diode	AVR-M1608C080MTAAB	L 2554	(B,26,104) Inductor(EW5)	LCTAW101J2520
D 1406	(B,131,133) Diode	AVR-M1608C080MTAAB	L 2555	(B,18,129) Inductor(EW5)	LCTAW101J2520
D 1407	(B,133,134) Diode	AVR-M1608C080MTAAB	L 2556	(B,23,115) Inductor(EW5)	LCYCR18K2125
D 1408	(B,131,135) Diode	AVR-M1608C080MTAAB	L 2557	(A,17,124) Coil(EW5)	CTC1142
D 1410	(B,109,126) Diode	1SR154-400	L 2558	(A,16,113) Coil(EW5)	CTC1139
D 1412	(B,139,130) Diode	PTZ27(B)	L 2800	(B,148,76) Inductor(EW5)	LCYCR22K2125
D 1420	(B,102,118) Diode	DAP202K	L 2801	(B,136,50) Chip Ferrite Bead(EW5)	CTF1557
D 1430	(B,88,117) Diode	MA111	L 2802	(B,148,65) Chip Coil(EW5)	LCTAW1R0J2520
D 1501	(A,74,35) Diode	UDZS4R7(B)	L 2803	(B,144,43) Inductor(EW5)	LCTAW2R2J2520
D 1530	(B,55,64) Diode	1SS355	L 2804	(B,146,49) Chip Coil(EW5)	LCTAW1R0J2520
D 1531	(A,55,58) Diode	EDZ4R3(B)	VR1200	(A,68,17) Semi-fixed 1 K Ω (OB)	CCP1390
D 1540	(A,79,61) Diode	DAP202U	Δ FU1001	(B,134,121) Fuse 750 mA	CEK1279
D 1541	(A,82,62) Diode	DAN202U	Δ FU1200	(A,175,87) Fuse 2.5 A	CEK1285
D 1611	(B,97,86) Diode	DAN202K	Δ FU1201	(A,116,123) Fuse 3.15 A	CEK1259
D 1612	(B,107,88) Diode	DAN202K	Δ FU1204	(A,74,126) Fuse 3.15 A	CEK1259
D 1803	(B,142,122) Diode	PTZ27(B)	Δ FU1400	(A,77,127) Fuse 3 A	CEK1286
D 1804	(B,145,120) Diode	1SR154-400	Δ FU1820	(A,125,45) Fuse 750 mA(EW5)	CEK1279
D 1840	(B,146,101) Diode	HZU7R5(B2)	Δ FU1840	(B,131,87) Fuse 2.5 A	CEK1258
D 1841	(B,149,95) Diode	RSX201L-30	Δ FU1850	(B,47,91) Fuse 630 mA	CEK1252
D 1905	(A,65,119) Diode	UDZS6R8(B)	Y 2600	(A,153,60) Tuner Unit(EW5)	CWE2023
D 1906	(A,64,117) Diode	UDZS6R8(B)	EF1201	(A,130,135) EMI Filter	CCG1067
D 2501	(B,38,56) Diode	1SR154-400	EF1202	(A,64,124) EMI Filter	CCG1067
D 2502	(B,38,59) Diode	1SR154-400	EF1203	(A,67,124) EMI Filter	CCG1067
D 2503	(B,38,62) Diode	1SR154-400	EF1402	(A,132,135) EMI Filter	CCG1067
D 2800	(B,144,47) Diode(EW5)	HZU3R3(B1)	EF1404	(A,135,135) EMI Filter	CCG1067
ZNR2501	(B,31,108) Surge Protector	RCCA-201Q31UA-PI	EF1421	(A,118,128) EMI Filter	CCG1067
L 1001	(B,159,144) Inductor	CTF1410	EF1422	(A,121,128) EMI Filter	CCG1067
L 1002	(B,149,123) Inductor	CTF1410	EF1423	(A,120,135) EMI Filter	CCG1067
L 1003	(B,153,125) Inductor	CTF1410	EF1424	(A,122,135) EMI Filter	CCG1067
L 1004	(A,162,119) Choke Coil 600 mH	CTH1213	EF1425	(A,124,135) EMI Filter	CCG1067
L 1030	(A,52,122) Inductor	CTF1556	EF1426	(A,127,135) EMI Filter	CCG1067
L 1050	(B,54,138) Inductor	CTF1334	RESISTORS		
L 1051	(B,57,122) Inductor	CTF1334	R 1001	(A,143,122)	RS1/4S102J
L 1070	(B,139,134) Inductor	LCTC2R2K1608	R 1002	(B,154,145)	RS1/4S103J
L 1200	(A,103,15) Inductor	CTH1256	R 1003	(B,151,114)	RS1/16S473J
L 1201	(B,77,18) Inductor	CTF1306	R 1004	(B,151,115)	RS1/16S104J
L 1202	(A,69,27) Inductor	CTF1410	R 1008	(B,150,119)	RS1/16S102J
L 1203	(A,103,39) Inductor	CTF1410	R 1009	(B,152,119)	RS1/16S472J
L 1204	(A,98,36) Inductor	CTF1410	R 1010	(B,150,121)	RS1/4S102J
L 1206	(A,116,39) Inductor	CTF1410	R 1012	(B,121,118)	RS1/16S223J
L 1207	(A,123,97) Inductor	LCTAW100J3225	R 1013	(B,123,116)	RS1/16S223J
L 1270	(B,114,106) Chip Ferrite Bead	CTF1399	R 1014	(B,132,118)	RS1/4SA472J
L 1400	(B,103,65) Inductor	LCTAW2R2J2520	R 1016	(A,130,115)	RS1/16S103J
L 1430	(B,88,122) Inductor	CTF1410	R 1017	(A,134,118)	RS1/4SA472J
L 1486	(A,81,74) Inductor	LCYC2R2K2125	R 1018	(A,134,114)	RS1/4SA102J
L 1487	(A,81,72) Inductor	LCYC2R2K2125	R 1030	(A,53,118)	RS1/10S103J
L 1540	(A,78,56) Inductor	LCTAW101J2520	R 1070	(B,139,135)	RS1/16S153J
L 1830	(A,41,10) Inductor	CTF1379			
L 1940	(A,96,55) Inductor	LCYC2R2K2125			

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
R 1200	(A,123,12)	RS1/4SA331J	R 1428	(B,111,116)	RS1/16S223J
R 1201	(A,127,13)	RS1/4SA331J	R 1429	(B,107,124)	RS1/16S471J
R 1202	(A,121,15)	RS1/16S153J	R 1430	(B,112,116)	RS1/16S471J
R 1203	(A,81,31)	RS1/4SA471J	R 1431	(B,94,118)	RS1/16S102J
R 1204	(A,84,33)	RS1/4SA471J	R 1432	(B,90,120)	RS1/16S103J
R 1205	(A,81,29)	RS1/16S153J	R 1433	(B,101,125)	RS1/16S103J
R 1206	(B,70,18)	RS1/16S391J	R 1434	(B,95,127)	RS1/16S103J
R 1207	(B,70,20)	RS1/16S0R0J	R 1435	(B,85,122)	RS1/4SA102J
R 1208	(A,65,15)	RS1/16S332J	R 1436	(B,76,103)	RS1/16S681J
R 1209	(B,73,20)	RS1/16S362J	R 1437	(B,76,109)	RS1/16S681J
R 1210	(B,73,23)	RS1/16S102J	R 1438	(B,76,112)	RS1/16S681J
R 1211	(B,102,30)	RS1/16S105J	R 1439	(B,76,118)	RS1/16S681J
R 1212	(B,105,31)	RS1/16S225J	R 1440	(B,79,104)	RS1/16S223J
R 1213	(B,109,22)	RS1/16S225J	R 1441	(B,79,107)	RS1/16S223J
R 1214	(B,89,25)	RS1/16S105J	R 1442	(B,79,114)	RS1/16S223J
R 1215	(B,93,30)	RS1/16S105J	R 1443	(B,79,117)	RS1/16S223J
R 1216	(B,97,20)	RS1/16S105J	R 1444	(B,80,104)	RS1/16S471J
R 1217	(B,120,23)	RS1/16S105J	R 1445	(B,80,107)	RS1/16S471J
R 1218	(B,112,19)	RS1/16S225J	R 1446	(B,80,114)	RS1/16S471J
R 1219	(B,114,28)	RS1/16S225J	R 1447	(B,80,117)	RS1/16S471J
R 1222	(B,125,108)	RS1/16S750J	R 1448	(B,99,126)	RS1/16S331J
R 1223	(B,125,101)	RS1/16S104J	R 1449	(B,90,118)	RS1/16S391J
R 1224	(A,135,61)	RS1/16S102J	R 1450	(B,92,117)	RS1/16S391J
R 1225	(B,134,66)	RS1/16S222J	R 1451	(A,101,58)	RS1/16S181J
R 1226	(B,136,66)	RS1/16S471J	R 1452	(A,111,60)	RS1/16S181J
R 1227	(B,139,62)	RS1/10S271J	R 1453	(A,100,58)	RS1/16S223J
R 1228	(A,175,84)	RS1/16S223J	R 1454	(A,111,61)	RS1/16S223J
R 1229	(B,134,60)	RS1/16S332J	R 1455	(A,99,58)	RS1/16S102J
R 1231	(A,66,117)	RS1/16S750J	R 1456	(A,109,62)	RS1/16S102J
R 1235	(A,85,18)	RS1/16S153J	R 1459	(A,96,122)	RS1/16S101J
R 1237	(B,128,104)	RS1/16S101J	R 1460	(A,92,121)	RS1/16S101J
R 1238	(B,104,29)	RS1/16S101J	R 1461	(A,90,121)	RS1/16S101J
R 1239	(B,107,27)	RS1/16S101J	R 1462	(A,86,120)	RS1/16S101J
R 1240	(B,135,15)	RS1/16S0R0J	R 1463	(A,124,131)	RS1/16S103J
R 1241	(B,92,28)	RS1/16S101J	R 1464	(A,123,131)	RS1/16S103J
R 1242	(B,97,23)	RS1/16S104J	R 1465	(B,94,123)	RS1/16S103J
R 1243	(B,116,17)	RS1/16S101J	R 1466	(B,119,55)	RS1/16S0R0J
R 1244	(B,114,17)	RS1/16S101J	R 1467	(B,119,53)	RS1/16S0R0J
R 1245	(B,96,28)	RS1/16S102J	R 1468	(B,117,54)	RS1/16S0R0J
R 1270	(B,124,129)	RS1/16SS750J	R 1469	(B,117,52)	RS1/16S0R0J
R 1271	(B,127,126)	RS1/16SS103J	R 1470	(B,92,110)	RS1/16S102J
R 1272	(B,128,126)	RS1/16SS103J	R 1480	(B,80,78)	RS1/16S220J
R 1273	(B,119,122)	RS1/16S4701D	R 1486	(B,71,81)	RS1/16S102J
R 1274	(B,119,120)	RS1/16S4701D	R 1487	(B,72,69)	RS1/16S102J
R 1275	(B,113,108)	RS1/16SS101J	R 1488	(B,71,82)	RS1/16S101J
R 1276	(B,117,119)	RS1/16S4701D	R 1489	(B,75,68)	RS1/16S101J
R 1277	(B,115,110)	RS1/16S4701D	R 1490	(B,70,76)	RS1/16S223J
R 1278	(B,121,107)	RS1/16SS102J	R 1491	(B,71,72)	RS1/16S223J
R 1279	(B,114,109)	RS1/16SS563J	R 1501	(A,74,39)	RS1/16S102J
R 1280	(B,120,108)	RS1/16SS473J	R 1506	(B,53,30)	RS1/16S103J
R 1290	(A,45,20)	RS1/16S0R0J	R 1507	(B,54,39)	RS1/16S104J
R 1401	(A,114,92)	RS1/16S102J	R 1508	(B,53,29)	RS1/16S103J
R 1402	(A,166,97)	RS1/4S0R0J	R 1510	(B,53,27)	RS1/16S103J
R 1404	(A,175,95)	RN1/16SE1002D	R 1511	(B,59,37)	RS1/16S0R0J
R 1405	(A,175,98)	RN1/16SE2701D	R 1512	(B,59,28)	RS1/16S103J
R 1406	(A,175,90)	RN1/16SE2201D	R 1513	(A,95,62)	RS1/16S0R0J
R 1408	(B,93,120)	RS1/16S473J	R 1514	(A,89,61)	RS1/16S0R0J
R 1425	(B,109,119)	RS1/16S821J	R 1515	(A,39,20)	RS1/16S0R0J
R 1426	(B,109,116)	RS1/16S821J	R 1520	(B,60,52)	RS1/16S473J
R 1427	(B,110,123)	RS1/16S223J	R 1521	(B,60,53)	RS1/16S473J

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

R 1530	(B,55,66)	RS1/16S102J			
R 1531	(B,55,56)	RS1/16S104J	R 1900	(A,111,38)	RS1/16S0R0J
R 1532	(B,55,55)	RS1/16S104J	R 1901	(A,86,38)	RS1/16S0R0J
A R 1533	(B,55,62)	RS1/16S104J	R 1904	(A,111,40)	RS1/16S750J
R 1534	(B,55,61)	RS1/16S104J	R 1906	(A,53,111)	RS1/16S473J
			R 1908	(A,69,115)	RS1/16S473J
R 1540	(B,74,55)	RS1/16S303J			
R 1541	(B,70,57)	RS1/16S104J	R 1940	(A,96,51)	RS1/16S220J
R 1542	(A,74,56)	RS1/16S471J	R 1941	(A,96,49)	RS1/16S102J
R 1543	(A,74,63)	RS1/16S471J	R 1942	(A,96,58)	RS1/16S102J
R 1544	(A,75,53)	RS1/16S821J	R 1943	(A,98,47)	RS1/16S223J
			R 1944	(A,86,51)	RS1/16S223J
R 1545	(A,75,65)	RS1/16S821J			
R 1546	(A,75,56)	RS1/16S104J	R 1946	(A,97,56)	RS1/16S101J
R 1547	(A,75,63)	RS1/16S104J	R 1947	(A,98,50)	RS1/16S101J
R 1548	(B,74,63)	RS1/16S303J	R 1948	(A,150,28)	RS1/16S0R0J
B R 1549	(B,70,61)	RS1/16S104J	R 1960	(B,65,48)	RS1/16S220J
			R 1961	(B,50,53)	RS1/16S102J
R 1551	(A,43,34)	RS1/16S104J			
R 1552	(A,51,31)	RS1/16S104J	R 1962	(B,50,48)	RS1/16S102J
R 1553	(A,44,36)	RS1/16S681J	R 1963	(B,49,54)	RS1/16S223J
R 1554	(A,53,31)	RS1/16S681J	R 1964	(B,51,45)	RS1/16S223J
R 1555	(A,52,38)	RS1/16S681J	R 1966	(B,47,53)	RS1/16S101J
			R 1967	(B,48,48)	RS1/16S101J
R 1556	(A,52,29)	RS1/16S681J			
R 1611	(B,103,89)	RS1/16S102J	R 2501	(B,25,70)	RS1/16S681J
R 1612	(B,111,89)	RS1/16S102J	R 2502	(B,25,67)	RS1/16S681J
R 1613	(B,102,98)	RS1/16S821J	R 2503	(B,25,65)	RS1/16S681J
C R 1614	(B,106,98)	RS1/16S821J	R 2504	(B,25,63)	RS1/16S681J
			R 2505	(B,25,61)	RS1/16S681J
R 1615	(B,97,98)	RS1/16S104J			
R 1616	(B,111,95)	RS1/16S104J	R 2506	(B,30,48)	RS1/16S681J
R 1621	(A,100,102)	RS1/16S472J	R 2508	(B,28,60)	RS1/16S223J
R 1622	(A,107,100)	RS1/16S472J	R 2515	(B,33,38) (EW5)	RS1/16S0R0J
R 1623	(B,102,99)	RS1/16S562J	R 2516	(B,34,42) (EW5)	RS1/16S0R0J
			R 2531	(A,40,44)	RS1/16S0R0J
R 1624	(B,107,99)	RS1/16S562J			
R 1625	(B,99,102)	RS1/16S472J	R 2532	(A,39,36)	RS1/16S0R0J
R 1626	(B,109,101)	RS1/16S472J	R 2535	(A,43,44)	RS1/16S0R0J
R 1627	(B,97,103)	RS1/16S472J	R 2536	(A,41,36)	RS1/16S0R0J
R 1628	(B,111,101)	RS1/16S472J	R 2550	(A,21,135) (EW5)	RS1/16S105J
			R 2551	(B,25,121) (EW5)	RS1/16S821J
D R 1629	(B,99,105)	RS1/16S472J			
R 1630	(B,109,105)	RS1/16S472J	R 2552	(B,25,120) (EW5)	RS1/16S330J
R 1821	(A,141,49) (EW5)	RS1/16S2702D	R 2553	(B,22,113) (EW5)	RS1/16S151J
R 1822	(A,143,49) (EW5)	RS1/16S4701D	R 2554	(B,20,114) (EW5)	RS1/16S681J
R 1823	(A,127,45) (EW5)	RS1/16S223J	R 2555	(B,17,117) (EW5)	RS1/16S152J
			R 2556	(B,17,118) (EW5)	RS1/16S680J
R 1824	(A,137,54) (EW5)	RS1/10S271J			
R 1825	(A,127,51) (EW5)	RS1/16S221J	R 2557	(B,15,117) (EW5)	RS1/16S151J
R 1826	(A,126,43) (EW5)	RS1/4SA331J	R 2558	(B,14,113) (EW5)	RS1/16S151J
R 1827	(A,130,43) (EW5)	RS1/4SA331J	R 2559	(B,22,131) (EW5)	RS1/16S332J
R 1840	(A,172,30) (UC)	RS1/16S0R0J	R 2560	(B,17,121) (EW5)	RS1/16S101J
R 1841	(A,172,26) (EW5)	RS1/16S0R0J	R 2561	(B,12,112) (EW5)	RS1/16S680J
			R 2562	(B,35,86) (UC)	RS1/4S0R0J
E R 1842	(B,143,102)	RS1/16S121J			
R 1843	(B,143,101)	RS1/16S471J	R 2563	(B,25,59) (EW5)	RS1/16S681J
R 1844	(B,144,99)	RS1/8S101J	R 2564	(B,12,116) (EW5)	RS1/8S0R0J
R 1845	(B,139,103)	RS1/10S680J	R 2800	(B,147,69) (EW5)	RS1/16S152J
R 1846	(B,135,101)	RS1/10S680J	R 2801	(B,149,78) (EW5)	RS1/16S151J
			R 2802	(B,150,69) (EW5)	RS1/16S681J
R 1847	(A,175,104)	RS1/16S223J			
R 1848	(B,131,101)	RS1/16S472J	R 2806	(B,140,47) (EW5)	RS1/10S391J
R 1850	(B,44,97)	RS1/16S153J	R 2807	(B,149,53) (EW5)	RS1/16S221J
R 1851	(B,47,98)	RS1/8S821J	R 2808	(B,142,61) (EW5)	RS1/16S473J
R 1852	(B,47,100)	RS1/8S821J			
F R 1853	(B,62,90)	RS1/16S221J			
R 1854	(B,64,90)	RS1/16S821J	C 1002	(B,152,147)	CKSRYB102K50
R 1855	(B,64,99)	RS1/16S2202D	C 1003	(B,152,117)	CKSRYB102K50
R 1856	(B,64,97)	RS1/16S2201D	C 1006	(B,151,124)	CKSRYB102K50
R 1857	(B,62,97)	RS1/16S4301D			

CAPACITORS

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 1011	(A,121,89)	2 200 µF/16 V	CCH1659(P35)	C 1273	(B,117,118)	CCSRCH5R0C50	
C 1013	(A,138,89)	10 000 µF/16 V	CCH1664(P30)	C 1275	(B,121,109)	CKSRYB105K10	
C 1015	(B,124,114)		CKSRYB102K50	C 1276	(A,119,118)	CEVW100M16	A
C 1017	(A,130,116)		CKSQYB105K16	C 1277	(B,118,105)	CKSRYB104K16	
C 1018	(A,134,112)		CKSRYB102K50	C 1350	(B,70,17)	CKSRYB104K50	
C 1019	(A,155,104)	3 300 µF/16 V	CCH1018(P30)	C 1401	(A,130,77)	CEVW220M16	
C 1020	(B,152,144)		CKSRYB392K50	C 1402	(A,116,94)	CKSRYB102K50	
C 1021	(B,152,128)		CKSRYB392K50	C 1403	(A,168,94)	CCSRCH102J50	
C 1022	(B,150,144)		CKSRYB392K50	C 1404	(A,162,98)	CKSQYF334Z25	
C 1023	(B,150,128)		CKSRYB392K50	C 1405	(A,117,100)	CEVW101M16	
C 1024	(B,149,144)		CKSRYB392K50	C 1419	(A,101,85)	CKSRYB104K25	
C 1025	(B,148,128)		CKSRYB392K50	C 1420	(A,110,74)	CEVW100M16	
C 1026	(B,144,144)		CKSRYB392K50	C 1421	(A,94,93)	CEVW100M16	
C 1027	(B,146,128)		CKSRYB392K50	C 1423	(A,100,98) 10 µF	CCG1138	B
C 1030	(A,53,120)		CKSQYF103Z50	C 1424	(A,105,96) 10 µF	CCG1138	
C 1050	(B,52,138)		CKSRYB102K50	C 1425	(A,99,78)	CEVW100M16	
C 1051	(B,55,122)		CKSRYB102K50	C 1426	(A,100,86)	CKSRYB104K25	
C 1071	(A,136,135)		CKSRYB102K50	C 1427	(B,110,124)	CKSRYB222K50	
C 1200	(A,92,21)		CEVW101M16	C 1428	(B,113,119)	CKSRYB222K50	
C 1201	(A,100,23)		CEVW101M16	C 1429	(A,107,82)	CEVW100M16	
C 1202	(A,114,24)		CKSRYB104K25	C 1430	(A,105,119)	CEVW330M10	
C 1203	(A,109,23)		CEVW101M16	C 1431	(B,90,122)	CKSRYB103K50	
C 1204	(A,121,29)		CKSRYB104K25	C 1432	(A,99,81)	CKSRYB104K25	
C 1205	(A,118,23)		CEVW101M16	C 1433	(A,102,72)	CKSRYB104K25	
C 1209	(A,84,20)		CKSRYB104K25	C 1434	(A,106,72)	CKSRYB104K25	C
C 1210	(A,80,24)		CEVW101M16	C 1435	(A,87,111)	CEVW100M16	
C 1211	(A,79,35)		CEVWNP100M10	C 1436	(A,79,112)	CEVW100M16	
C 1212	(A,109,45)		CEVWNP100M10	C 1437	(A,86,116)	CEVW100M16	
C 1213	(A,106,50)		CEVWNP100M10	C 1438	(A,79,117)	CEVW100M16	
C 1214	(B,68,16)		CKSRYB104K25	C 1439	(B,78,103)	CKSRYB222K50	
C 1215	(B,73,21)		CCSRCH5R0C50	C 1440	(B,80,109)	CKSRYB222K50	
C 1216	(A,69,25)		CKSRYB102K50	C 1441	(B,80,111)	CKSRYB222K50	
C 1217	(B,102,18)		CCSRCH101J50	C 1442	(B,78,118)	CKSRYB222K50	
C 1218	(A,68,22)		CEVW100M16	C 1443	(A,98,115)	CEVW470M16	
C 1219	(A,89,32)		CEVWNP100M10	C 1451	(A,90,65)	CKSQYB105K10	
C 1220	(A,103,44)		CEVWNP100M10	C 1452	(A,92,63)	CKSQYB105K10	D
C 1221	(A,103,34)		CEVW470M16	C 1453	(B,101,66)	CKSQYB475K10	
C 1222	(B,107,24)		CKSRYB104K25	C 1454	(B,105,62)	CKSQYB475K10	
C 1223	(A,125,33)		CEVWNP100M10	C 1457	(A,88,65)	CKSQYB104K16	
C 1225	(B,97,19)		CKSRYB104K25	C 1458	(A,96,64)	CKSQYB104K16	
C 1226	(A,95,31)		CEVW470M16	C 1459	(A,98,61)	CKSQYB475K10	
C 1227	(B,93,18)		CKSRYB104K25	C 1460	(A,109,65)	CKSQYB475K10	
C 1230	(A,117,34)		CEVW470M16	C 1461	(B,115,126)	CKSRYB104K25	
C 1231	(B,117,29)		CKSRYB104K25	C 1462	(A,90,129)	CKSRYB105K10	
C 1232	(A,124,111)		CEVW220M16	C 1463	(A,95,125)	CKSQYB105K16	
C 1233	(A,117,110)		CEVW101M16	C 1464	(A,91,123)	CKSQYB105K16	
C 1234	(A,134,33)		CEVWNP100M10	C 1465	(A,93,123)	CKSQYB105K16	E
C 1235	(B,122,103)		CKSRYB104K25	C 1466	(A,86,122)	CKSQYB105K16	
C 1236	(A,126,103)		CEVW101M16	C 1467	(A,95,129)	CKSRYB105K10	
C 1237	(A,127,67)		CEVW101M16	C 1468	(A,91,126)	CKSRYB105K10	
C 1238	(A,132,67)		CKSRYB104K25	C 1469	(A,91,127)	CKSRYB105K10	
C 1239	(A,135,64)		CKSRYB104K25	C 1470	(A,86,123)	CKSRYB105K10	
C 1240	(A,142,61)	100 µF/16 V	CCH1565	C 1471	(A,108,129)	CKSQYB225K10	
C 1241	(A,136,61)		CKSRYB105K10	C 1472	(B,102,126)	CKSRYB104K25	
C 1242	(B,134,62)		CKSRYB153K25	C 1473	(A,87,130)	CKSRYB104K25	
C 1250	(A,105,62)		CEVWNP100M10	C 1474	(A,106,127)	CKSQYB225K10	
C 1251	(A,80,40)		CEVWNP100M10	C 1475	(A,82,122)	CEVW100M16	F
C 1270	(B,123,127)	10 µF	CCG1171	C 1476	(A,111,65)	CKSQYB475K10	
C 1271	(B,125,127)	10 µF	CCG1171	C 1477	(A,100,61)	CKSQYB475K10	
C 1272	(B,127,125)		CKSRYB473K50	C 1478	(B,113,77)	CKSQYB475K10	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

C 1479	(B,94,77)	CKSQYB475K10	C 1842	(A,119,77)	CEHVW471M16
C 1480	(B,113,75)	CKSQYB475K10	C 1843	(A,141,110)	CEHVW331M16
A C 1481	(B,94,75)	CKSQYB475K10	C 1850	(B,44,93)	CKSRYP104K25
C 1482	(B,113,73)	CKSQYB475K10	C 1851	(B,44,95)	CKSRYP103K50
C 1483	(B,94,72)	CKSQYB475K10	C 1852	(A,45,92)	CEVW101M16
C 1484	(B,113,70)	CKSQYB475K10	C 1853	(B,62,99)	CKSRYP102K50
C 1485	(B,94,70)	CKSQYB475K10	C 1854	(B,61,99)	CKSRYP103K50
C 1486	(A,75,74)	CEVW220M16	C 1855	(A,45,100)	CEVW101M16
C 1487	(B,73,76)	CKSRYP105K10	C 1900	(A,112,38)	CKSQYB475K10
C 1488	(B,80,76)	CKSRYP104K50	C 1901	(A,109,38)	CKSQYB475K10
C 1489	(A,80,82)	CEVW220M16	C 1903	(A,67,114)	CKSQYB475K10
C 1490	(B,81,76)	CCSRCH471J50	C 1904	(A,64,113)	CKSQYB475K10
C 1491	(B,80,72)	CCSRCH471J50	C 1905	(A,52,111)	CKSRYP473K50
C 1492	(B,74,82)	CKSRYP105K10	C 1906	(A,92,37)	CKSRYP104K25
C 1493	(B,75,69)	CKSRYP105K10	C 1910	(A,113,34)	CKSRYP104K25
C 1494	(B,69,76)	CCSRCH471J50	C 1940	(A,96,46)	CKSRYP105K10
C 1495	(B,70,72)	CCSRCH471J50	C 1941	(A,91,53)	CEVW220M16
C 1501	(A,73,36)	CKSRYP102K50	C 1942	(A,93,49)	CKSRYP104K50
C 1502	(A,68,33)	CEVW101M16	C 1943	(A,91,42)	CKSRYP105K10
C 1503	(A,60,33)	CEVW101M16	C 1944	(A,83,46)	CEVW220M16
C 1504	(A,60,28)	CKSRYP104K25	C 1945	(A,93,58)	CKSRYP105K10
C 1506	(B,49,30)	CKSRYP105K10	C 1946	(A,97,47)	CCSRCH471J50
C 1507	(B,50,27)	CKSRYP105K10	C 1947	(A,85,51)	CCSRCH471J50
C 1508	(B,59,27)	CCSRCH101J50	C 1960	(A,60,47)	CEVW220M16
C 1517	(A,96,60)	CKSRYP105K10	C 1961	(B,62,46)	CKSRYP104K50
C 1520	(A,66,54) 10 µF	CCG1203	C 1962	(B,54,47)	CKSRYP105K10
C 1521	(A,66,56) 10 µF	CCG1203	C 1963	(B,52,52)	CKSRYP105K10
C 1522	(A,66,62) 10 µF	CCG1203	C 1964	(A,67,48)	CEVW220M16
C 1523	(A,66,63) 10 µF	CCG1203	C 1965	(B,51,50)	CKSRYP105K10
C 1525	(B,59,56)	CKSRYP104K50	C 1966	(B,49,56)	CCSRCH471J50
C 1530	(A,60,59)	CEVW100M16	C 1967	(B,51,47)	CCSRCH471J50
C 1531	(A,56,58)	CKSRYP103K50	C 2501	(A,35,73)	CKSRYP103K50
C 1540	(A,62,52)	CKSQYB475K10	C 2502	(A,42,69)	CEVW221M10
C 1541	(A,64,65)	CKSQYB475K10	C 2503	(A,35,68)	CKSRYP103K50
C 1542	(B,75,59)	CKSRYP103K50	C 2504	(B,25,44)	CKSRYP103K50
D C 1543	(A,71,55)	CEVW100M16	C 2506	(B,25,41) 10 µF	CCG1171
C 1544	(A,71,64)	CEVW100M16	C 2507	(A,33,42)	CEVW470M16
C 1551	(A,42,30)	CEVWNP100M10	C 2508	(B,30,57)	CKSRYP103K50
C 1552	(A,47,30)	CEVWNP100M10	C 2509	(A,30,52)	CKSRYP103K50
C 1554	(A,54,30)	CKSRYP562K50	C 2512	(A,35,51)	CEVW470M16
C 1555	(A,53,37)	CKSRYP562K50	C 2514	(A,51,69)	CEVW221M10
C 1556	(A,52,26)	CKSRYP272K50	C 2515	(B,34,40) (EW5)	CKSRYP102K50
C 1557	(A,55,39)	CKSRYP272K50	C 2516	(B,32,41) (EW5)	CKSRYP102K50
C 1621	(B,100,99)	CKSRYP105K10	C 2550	(A,24,133) (EW5)	CCSRCH270J50
C 1622	(B,109,97)	CKSRYP105K10	C 2551	(A,26,132) (EW5)	CCSRCH220J50
E C 1623	(B,98,102)	CCSRCH221J50	C 2552	(A,26,127) (EW5)	CCSRCH470J50
C 1624	(B,110,101)	CCSRCH221J50	C 2555	(B,16,114) (EW5)	CKSRYP103K50
C 1625	(B,98,105)	CCSRCH221J50	C 2556	(B,24,111) (EW5)	CCSRCH270J50
C 1626	(B,110,105)	CCSRCH221J50	C 2557	(B,25,115) (EW5)	CCSRCH150J50
C 1627	(A,107,103)	CKSRYP104K25	C 2558	(A,21,131) (EW5)	CCSRCH270J50
C 1628	(A,105,109)	CEVW101M16	C 2559	(A,23,127) (EW5)	CCSRCH330J50
C 1809	(B,143,113)	CKSRYP104K25	C 2560	(B,24,129) (EW5)	CKSRYP103K50
C 1811	(B,141,118)	CKSRYP102K50	C 2561	(A,22,110) (EW5)	CKSRYP103K50
C 1812	(B,145,124)	CKSRYP102K50	C 2562	(B,17,115) (EW5)	CKSRYP222K50
C 1821	(A,141,47) (EW5)	CCSRCH102J50	C 2563	(B,16,113) (EW5)	CKSRYP103K50
C 1822	(A,141,50) (EW5)	CCSRCH102J50	C 2564	(B,14,119) (EW5)	CKSRYP222K50
F C 1823	(A,137,43) (EW5)	CEVW101M16	C 2565	(A,15,119) (EW5)	CKSRYP222K50
C 1824	(A,117,52) (EW5)	CEVW101M16	C 2566	(A,14,129) (EW5)	CKSRYP103K50
C 1840	(B,143,105)	CKSRYP104K16	C 2567	(B,12,120) (EW5)	CKSRYP222K50
C 1841	(B,140,105)	CKSRYP103K50	C 2568	(B,26,112) (EW5)	CCSRCH220J50

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
C 2800	(B,148,69) (EW5)	CKSRYPB222K50	L 1510	(B,80,9) Inductor	CTF1409
C 2801	(B,148,67) (EW5)	CKSRYPB103K50	L 1518	(B,70,22) Inductor	CTF1385
			L 1520	(A,65,55) Chip Ferrite Bead	CTF1399
C 2802	(B,149,79) (EW5)	CCSRCH220J50			
C 2804	(A,145,35) (EW5)	CEVW100M16	L 1522	(B,82,36) Inductor	CTF1395
C 2805	(B,144,45) (EW5)	CKSRYPB473K50	L 1605	(B,58,35) Inductor	CTF1379
C 2806	(B,147,45) (EW5)	CKSRYPB103K50	L 1701	(A,105,15) Inductor	CTF1395
C 2807	(A,145,44) (EW5)	CEVW220M16	L 1702	(A,68,40) Inductor	CTF1409
			L 1703	(B,122,39) Inductor	CTF1473
C 2808	(B,143,51) (EW5)	CKSRYPB103K50			
C 2809	(B,143,53) (EW5)	CKSRYPB221K50	L 1704	(A,129,27) Inductor	CTF1473
C 2810	(B,145,61) (EW5)	CKSRYPB103K50	X 1501	(A,55,54) Radiator 27 MHz	CSS1609
C 2811	(B,139,53) (EW5)	CKSRYPB473K50	X 1701	(A,129,31) Ceramic Resonator 4.97 MHz	CSS1575
			VR1502	(A,96,7) Semi-fixed 2.2 kΩ(B)	CCP1444

D

Unit Number: CWX3301

Unit Name : DVD Core Unit

MISCELLANEOUS

IC 1101	(A,37,85) IC	AN8703FH
IC 1201	(A,76,64) IC	BA5985FM
IC 1202	(A,62,64) IC	AN8471SAT1
IC 1301	(A,38,58) IC	MNZS26EDCUB
IC 1401	(B,33,41) IC	TC74LCX245FTS1
IC 1402	(B,28,25) IC	TC7SH04FUS1
IC 1403	(B,35,19) IC	TC74LCX244FTS1
IC 1405	(A,38,18) IC	TC74LCX244FTS1
IC 1501	(B,87,22) IC	K4S641632H-TC75
IC 1502	(A,94,45) IC	TC74VCX74FT
IC 1503	(A,85,25) IC	MN677531KAUB
IC 1504	(A,85,48) IC	TC74VCX74FT
IC 1505	(B,95,39) IC	TC7PA04FU
IC 1507	(A,60,54) IC	SM8707FV
IC 1602	(B,65,34) IC	NJM2100M
IC 1604	(B,58,44) IC	NJM2100V
IC 1605	(B,59,29) IC	PCM1742KE
IC 1701	(A,114,28) IC	PE5511A
IC 1702	(A,59,38) IC	M5M5V216ATP-70HI
IC 1705	(B,114,27) IC	PD6527A
IC 1706	(A,127,40) IC	TC7SH08FUS1
Q 1101	(B,59,108) Transistor	2SB1260
Q 1102	(B,59,102) Transistor	2SB1260
Q 1103	(A,45,108) Transistor	UN2211
Q 1104	(A,48,109) Transistor	2SB709A
Q 1105	(A,51,109) Transistor	2SD601A
Q 1201	(A,30,19) Transistor	DTC124EU
Q 1501	(A,87,7) Transistor	2SA1037K
D 1101	(B,55,108) Diode	1SS355
D 1102	(B,55,102) Diode	1SS355
D 1301	(A,26,43) Diode	UDZS2R7(B)
D 1302	(B,32,84) Chip LED	CL205IRXTU
L 1301	(A,25,38) Inductor	CTF1409
L 1302	(A,24,41) Inductor	CTF1394
L 1303	(B,30,72) Inductor	CTF1395
L 1305	(A,23,76) Inductor	CTF1409
L 1504	(A,76,48) Inductor	CTF1394
L 1505	(B,80,39) Inductor	CTF1409
L 1506	(A,98,44) Inductor	CTF1473
L 1507	(A,89,51) Inductor	CTF1473
L 1508	(B,98,39) Inductor	CTF1473
L 1509	(A,82,6) Chip Ferrite Bead	CTF1399

RESISTORS

R 1101	(B,51,106)	RS1/16SS101J
R 1102	(B,52,108)	RS1/16SS3R9J
R 1103	(B,51,110)	RS1/16SS3R9J
R 1104	(B,52,110)	RS1/16SS3R9J
R 1105	(B,53,110)	RS1/16SS3R9J
R 1106	(B,51,108)	RS1/16SS330J
R 1107	(B,48,102)	RS1/16SS3R9J
R 1108	(B,49,103)	RS1/16SS3R9J
R 1109	(B,51,103)	RS1/16SS3R9J
R 1110	(B,53,104)	RS1/16SS3R9J
R 1111	(A,44,111)	RS1/16SS272J
R 1112	(A,46,111)	RS1/16SS472J
R 1113	(A,49,111)	RS1/16SS102J
R 1124	(A,29,86)	RS1/16SS273J
R 1125	(A,29,85)	RS1/16SS273J
R 1126	(B,35,87)	RS1/16SS224J
R 1130	(A,25,84)	RS1/16SS0R0J
R 1131	(A,29,84)	RS1/16SS0R0J
R 1132	(A,25,82)	RS1/16SS0R0J
R 1133	(A,28,83)	RS1/16S2402D
R 1134	(A,28,81)	RS1/16S1002D
R 1135	(A,26,81)	RS1/16S2702D
R 1140	(A,46,84)	RS1/16SS105J
R 1141	(A,45,86)	RS1/16SS105J
R 1142	(B,41,87)	RS1/16SS105J
R 1151	(A,35,94)	RS1/16SS103J
R 1152	(A,34,93)	RS1/16SS103J
R 1201	(A,82,54)	RS1/16SS221J
R 1202	(A,81,54)	RS1/16SS393J
R 1203	(A,80,54)	RS1/16SS303J
R 1205	(A,77,53)	RS1/16SS0R0J
R 1206	(A,77,52)	RS1/16SS102J
R 1209	(A,68,71)	RS1/16SS221J
R 1210	(A,69,61)	RS1/16SS393J
R 1211	(A,69,60)	RS1/16SS393J
R 1212	(A,69,57)	RS1/16SS393J
R 1213	(A,69,56)	RS1/16SS393J
R 1214	(A,71,54)	RS1/16SS221J
R 1215	(A,67,57)	RS1/16SS1R0J
R 1216	(A,67,58)	RS1/16SS1R0J
R 1218	(A,53,69)	RS1/16SS221J
R 1219	(A,52,73)	RS1/16SS221J
R 1220	(A,68,70)	RS1/16SS221J
R 1221	(A,30,16)	RS1/16SS822J
R 1222	(A,31,16)	RS1/16SS822J

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A	R 1223	(A,32,16)	RS1/16SS822J	R 1409	(B,38,11)	RS1/16SS820J
	R 1224	(A,30,14)	RS1/16SS563J	R 1410	(B,38,13)	RS1/16SS820J
	R 1225	(A,31,14)	RS1/16SS243J	R 1411	(B,36,13)	RAB4CQ0R0J
	R 1226	(A,32,14)	RS1/16SS473J	R 1412	(B,35,12)	RS1/16SS100J
	R 1227	(A,29,17)	RS1/16SS473J	R 1413	(B,34,12)	RS1/16SS820J
	R 1228	(A,67,56)	RS1/16SS1R0J	R 1414	(B,32,13)	RAB4CQ820J
	R 1229	(A,67,55)	RS1/16SS1R0J	R 1415	(B,26,8)	RS1/16SS103J
	R 1230	(A,64,59)	RS1/16SS1R0J	R 1418	(B,27,27)	RS1/16SS221J
	R 1232	(A,33,16)	RS1/16SS822J	R 1421	(A,33,19)	RS1/16SS221J
	R 1233	(A,33,14)	RS1/16SS243J	R 1423	(A,43,16)	RS1/16SS221J
B	R 1234	(B,30,81)	RS1/16S391J	R 1424	(A,43,19)	RS1/16SS221J
	R 1235	(B,28,81)	RS1/16S471J	R 1425	(A,30,43)	RAB4CQ221J
	R 1236	(A,65,70)	RS1/16SS513J	R 1426	(A,30,40)	RAB4CQ221J
	R 1237	(A,60,59)	RS1/16SS513J	R 1501	(A,102,25)	RS1/16SS220J
	R 1301	(A,26,40)	RS1/16SS222J	R 1502	(B,97,12)	RAB4CQ220J
	R 1321	(B,41,62)	RS1/16SS104J	R 1503	(A,55,50)	RS1/16S101J
	R 1322	(B,41,63)	RS1/16SS0R0J	R 1504	(B,97,15)	RAB4CQ220J
	R 1323	(B,41,64)	RS1/16SS221J	R 1505	(A,59,48)	RS1/16S101J
	R 1324	(B,41,65)	RS1/16SS221J	R 1508	(B,97,17)	RAB4CQ220J
	R 1334	(A,48,74)	RS1/16SS221J	R 1512	(B,97,20)	RAB4CQ220J
C	R 1336	(B,48,74)	RS1/16SS103J	R 1518	(B,97,22)	RAB4CQ220J
	R 1337	(B,47,74)	RS1/16SS103J	R 1522	(B,97,26)	RAB4CQ220J
	R 1338	(B,40,67)	RS1/16SS472J	R 1523	(B,83,35)	RS1/16S0R0J
	R 1339	(A,38,74)	RS1/16SS273J	R 1527	(B,96,29)	RAB4CQ220J
	R 1340	(B,39,67)	RS1/16SS472J	R 1533	(A,89,45)	RS1/16SS201J
	R 1341	(A,37,74)	RS1/16SS273J	R 1534	(B,97,34)	RAB4CQ220J
	R 1342	(B,41,67)	RS1/16SS273J	R 1538	(B,94,34)	RAB4CQ220J
	R 1344	(B,38,67)	RS1/16SS273J	R 1539	(B,91,35)	RS1/16SS221J
	R 1349	(A,31,73)	RS1/16SS562J	R 1542	(A,87,44)	RS1/16SS103J
	R 1350	(A,31,75)	RS1/16SS242J	R 1543	(A,89,48)	RS1/16SS680J
D	R 1352	(A,29,75)	RS1/16S2702D	R 1544	(A,86,44)	RS1/16SS0R0J
	R 1353	(A,23,69)	RS1/16SS102J	R 1545	(A,84,44)	RS1/16SS0R0J
	R 1360	(A,22,63)	RS1/16SS153J	R 1549	(A,49,37)	RS1/16SS0R0J
	R 1361	(B,30,58)	RS1/16SS105J	R 1550	(A,87,41)	RS1/16SS0R0J
	R 1362	(B,31,54)	RS1/16SS473J	R 1551	(A,85,41)	RS1/16SS0R0J
	R 1363	(B,35,54)	RS1/16SS101J	R 1552	(A,89,6)	RS1/16SS471J
	R 1364	(B,31,53)	RS1/16SS123J	R 1553	(A,92,6)	RS1/16S68R0D
	R 1365	(B,35,53)	RS1/16SS101J	R 1554	(A,90,6)	RS1/16SS471J
	R 1367	(B,31,52)	RS1/16SS473J	R 1555	(A,89,8)	RS1/16SS0R0J
	R 1369	(B,31,51)	RS1/16SS473J	R 1556	(A,84,6)	RS1/16SS750J
E	R 1375	(B,27,46)	RS1/16SS103J	R 1557	(A,83,44)	RS1/16SS0R0J
	R 1376	(B,30,46)	RS1/16SS103J	R 1558	(A,82,8)	RS1/16SS622J
	R 1377	(B,28,46)	RS1/16SS103J	R 1559	(A,80,42)	RAB4CQ0R0J
	R 1378	(B,29,46)	RS1/16SS103J	R 1560	(A,99,8)	RS1/16SS122J
	R 1379	(B,32,46)	RS1/16SS103J	R 1561	(A,99,6)	RS1/16SS162J
	R 1380	(B,36,50)	RS1/16SS103J	R 1562	(A,82,44)	RS1/16SS0R0J
	R 1383	(B,48,49)	RS1/16SS103J	R 1563	(A,100,5)	RS1/16SS4R7J
	R 1391	(B,51,44)	RS1/16SS103J	R 1564	(A,83,42)	RAB4CQ0R0J
	R 1392	(B,53,44)	RS1/16SS103J	R 1565	(B,77,14)	RS1/16S101J
	R 1393	(B,50,44)	RS1/16SS103J	R 1566	(B,78,15)	RS1/16S101J
F	R 1394	(B,52,44)	RS1/16SS471J	R 1567	(A,77,42)	RAB4CQ0R0J
	R 1395	(B,30,64)	RS1/16SS0R0J	R 1568	(B,71,19)	RS1/16S101J
	R 1396	(B,30,62)	RS1/16SS0R0J	R 1569	(B,71,20)	RS1/16S101J
	R 1401	(B,47,7)	RS1/16SS101J	R 1570	(B,71,17)	RS1/16S101J
	R 1403	(B,48,12)	RAB4CQ220J	R 1571	(B,70,23)	RS1/16S220J
	R 1404	(B,46,12)	RAB4CQ220J	R 1572	(A,75,42)	RAB4CQ0R0J
	R 1405	(B,43,12)	RAB4CQ220J	R 1573	(B,74,13)	RS1/16SS473J
	R 1406	(B,41,12)	RAB4CQ220J	R 1574	(A,72,42)	RAB4CQ0R0J
	R 1407	(B,39,13)	RS1/16SS220J	R 1575	(B,73,31)	RAB4CQ0R0J
	R 1408	(B,39,11)	RS1/16SS103J	R 1576	(B,73,34)	RAB4CQ0R0J

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
R 1577	(B,73,36)	RAB4CQ0R0J	R 1732	(B,114,39)	RS1/16SS0R0J
R 1578	(B,70,24)	RS1/16SS472J	R 1733	(A,102,43)	RS1/16SS104J
R 1579	(B,72,22)	RS1/16SS101J	R 1734	(B,122,33)	RS1/16SS221J
R 1587	(B,78,16)	RS1/16SS101J	R 1735	(B,122,36)	RS1/16SS104J
R 1595	(B,90,39)	RS1/16SS472J	R 1736	(B,125,35)	RS1/16SS104J
			R 1737	(A,104,40)	RS1/16SS104J
R 1596	(B,91,39)	RS1/16SS472J			
R 1597	(A,62,49)	RS1/16SS104J	R 1738	(A,104,43)	RS1/16SS104J
R 1598	(A,62,58)	RS1/16SS270J	R 1739	(A,114,40)	RS1/16SS330J
R 1601	(B,70,28)	RS1/16SS821J	R 1740	(A,122,43)	RS1/16SS0R0J
R 1602	(B,70,31)	RS1/16SS821J	R 1741	(A,117,40)	RS1/16SS0R0J
			R 1742	(B,107,17)	RS1/16SS473J
R 1603	(B,55,26)	RS1/16SS0R0J	R 1746	(A,106,43)	RS1/16SS104J
R 1604	(B,58,36)	RS1/16SS0R0J			
R 1605	(B,63,27)	RS1/16SS102J	R 1748	(A,116,40)	RS1/16SS104J
R 1606	(B,61,41)	RS1/16SS102J	R 1749	(A,124,42)	RS1/16SS103J
R 1607	(B,63,28)	RS1/16SS222J	R 1750	(A,124,41)	RS1/16SS473J
			R 1751	(A,124,40)	RS1/16SS103J
R 1608	(B,61,40)	RS1/16SS222J	R 1752	(B,121,18)	RS1/16SS104J
R 1609	(B,64,27)	RS1/16SS472J	R 1753	(A,112,40)	RS1/16SS104J
R 1610	(B,63,41)	RS1/16SS472J			
R 1611	(B,64,28)	RS1/16SS472J	R 1754	(A,112,41)	RS1/16SS104J
R 1612	(B,63,40)	RS1/16SS472J	R 1756	(A,115,40)	RS1/16SS104J
			R 1757	(A,115,42)	RS1/16SS472J
R 1613	(B,66,29)	RS1/16SS103J	R 1758	(A,116,42)	RS1/16SS104J
R 1614	(B,65,40)	RS1/16SS103J	R 1759	(A,117,42)	RS1/16SS104J
R 1615	(B,66,30)	RS1/16SS472J			
R 1616	(B,65,39)	RS1/16SS472J	R 1760	(A,121,44)	RS1/16S1002D
R 1626	(B,53,26)	RS1/16SS0R0J	R 1761	(B,122,48)	RS1/16SS105J
			R 1762	(A,117,14)	RS1/16SS473J
R 1627	(B,52,26)	RS1/16SS0R0J	R 1763	(A,106,40)	RS1/16SS104J
R 1628	(B,51,26)	RS1/16SS0R0J	R 1764	(A,116,14)	RS1/16SS104J
R 1637	(B,107,10)	RS1/16SS104J			
R 1638	(B,109,10)	RS1/16SS104J	R 1765	(A,120,14)	RS1/16SS104J
R 1642	(B,118,10)	RS1/16SS221J	R 1767	(B,122,32)	RS1/16SS104J
			R 1768	(A,124,43)	RS1/16SS473J
R 1643	(B,119,10)	RS1/16SS221J	R 1769	(A,113,14)	RS1/16SS104J
R 1645	(B,114,11)	RS1/16SS0R0J	R 1770	(B,121,22)	RS1/16SS473J
R 1647	(B,120,10)	RS1/16SS221J			
R 1648	(B,121,11)	RS1/16SS221J	R 1771	(B,121,23)	RS1/16SS473J
R 1649	(B,114,9)	RS1/16SS0R0J	R 1773	(B,124,16)	RS1/16SS103J
			R 1790	(A,50,40)	RS1/16SS473J
R 1650	(B,113,11)	RS1/16SS0R0J	R 1792	(A,50,41)	RS1/16SS0R0J
R 1651	(B,111,9)	RS1/16SS0R0J	R 1794	(A,121,41)	RS1/16SS222J
R 1653	(B,50,26)	RS1/16SS473J			
R 1656	(B,124,12)	RS1/16SS102J	R 1795	(A,114,14)	RS1/16SS104J
R 1701	(A,110,14)	RS1/16SS473J	R 1796	(A,124,14)	RS1/16SS473J
			R 1797	(A,115,14)	RS1/16SS104J
R 1704	(A,121,14)	RS1/16SS473J	R 1798	(A,124,42)	RS1/16SS104J
R 1706	(A,125,17)	RS1/16SS104J	R 1801	(A,112,44)	RS1/16SS104J
R 1707	(A,122,14)	RS1/16SS221J			
R 1708	(B,121,21)	RS1/16SS221J	R 1802	(A,125,40)	RS1/16SS104J
R 1714	(A,128,24)	RS1/16SS221J	R 1803	(A,125,39)	RS1/16SS104J
			R 1804	(B,127,45)	RS1/16SS102J
R 1715	(A,129,24)	RS1/16SS473J	R 1805	(B,128,42)	RS1/16SS102J
R 1716	(B,122,26)	RS1/16SS221J			
R 1717	(B,121,26)	RS1/16SS104J	CAPACITORS		
R 1718	(B,127,26)	RS1/16SS104J	C 1101	(B,37,106)	CSZSC470M16
R 1720	(B,125,27)	RS1/16SS104J	C 1102	(A,48,103)	CSZSR470M6R3
			C 1103	(B,53,106)	CKSSYB104K10
R 1721	(B,125,28)	RS1/16SS104J	C 1104	(B,54,108)	CKSSYB103K16
R 1722	(B,121,32)	RS1/16SS104J	C 1105	(A,44,103)	CSZSR101M6R3
R 1723	(B,129,27)	RS1/16SS104J			
R 1724	(B,128,31)	RS1/16SS222J	C 1106	(B,47,102)	CKSSYB104K10
R 1725	(A,122,42)	RS1/16SS223J	C 1107	(B,54,102)	CKSSYB103K16
			C 1108	(B,52,106)	CKSSYB104K10
R 1726	(B,54,32)	RS1/16SS104J	C 1109	(A,48,107)	CKSRYB473K25
R 1727	(B,106,33)	RS1/16SS104J	C 1110	(A,52,106)	CKSRYB473K25
R 1728	(B,107,33)	RS1/16SS104J			
R 1730	(B,125,33)	RS1/16SS221J	C 1111	(B,62,102)	CKSSYB103K16
R 1731	(B,121,34)	RS1/16SS104J			

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

	C 1112	(A,47,100)	CKSRYB105K10	C 1336	(A,24,59)	CKSSYB104K10
	C 1113	(A,47,99)	CKSRYB105K10	C 1337	(B,35,56)	CKSRYB102K50
	C 1114	(A,50,101)	CKSSYB103K16	C 1338	(B,31,56)	CKSRYB102K50
A	C 1121	(B,35,88)	CKSSYB221K50	C 1339	(A,22,56)	CKSRYB102K50
	C 1122	(A,28,80)	CKSRYB393K16	C 1340	(A,24,56)	CKSSYB104K10
	C 1124	(B,37,81)	CKSSYB221K50	C 1341	(A,22,55)	CCSSCH101J50
	C 1125	(A,38,77)	CKSSYB104K10	C 1342	(A,22,53)	CKSRYB391K50
	C 1126	(A,39,77)	CKSSYB104K10	C 1343	(A,22,51)	CKSRYB471K50
	C 1127	(A,40,77)	CKSSYB104K10	C 1344	(A,22,50)	CKSRYB331K50
	C 1128	(A,42,77)	CKSRYB472K50	C 1346	(A,24,50)	CKSRYB224K10
	C 1129	(A,44,82)	CKSSYB104K10	C 1347	(A,33,44)	CKSSYB104K10
	C 1132	(A,46,85)	CKSRYB561K50	C 1348	(A,37,44)	CKSSYB104K10
	C 1133	(A,46,87)	CKSRYB561K50	C 1349	(A,39,44)	CKSSYB104K10
	C 1134	(A,46,88)	CKSRYB273K16	C 1350	(A,42,44)	CKSSYB104K10
B	C 1135	(A,45,90)	CKSSYB473K10	C 1351	(A,46,44)	CKSSYB104K10
	C 1136	(A,45,90)	CKSSYB104K10	C 1352	(A,48,44)	CKSSYB104K10
	C 1137	(A,45,91)	CKSSYB104K10	C 1401	(B,46,7)	CCSSCH181J25
	C 1138	(B,37,87)	CKSSYB104K10	C 1402	(B,38,39)	CKSSYB104K10
	C 1139	(B,39,88)	CKSSYB104K10	C 1403	(B,28,23)	CKSSYB104K10
	C 1201	(A,82,58)	CKSSYB104K10	C 1404	(B,32,23)	CKSSYB104K10
	C 1204	(B,23,55)	CEVW101M16	C 1406	(A,43,21)	CKSSYB104K10
	C 1205	(A,83,67)	CKSRYB104K16	C 1501	(B,79,12)	CKSRYB224K10
	C 1206	(A,83,69)	CKSRYB103K50	C 1502	(B,80,14)	CKSRYB224K10
	C 1207	(A,83,70)	CKSRYB103K50	C 1503	(B,80,19)	CKSRYB224K10
C	C 1208	(A,70,61)	CCSSCH5R0C50	C 1504	(B,80,23)	CKSRYB224K10
	C 1209	(A,70,57)	CCSSCH470J50	C 1505	(B,86,35)	CKSRYB224K10
	C 1213	(A,55,68)	CKSRYB104K25	C 1507	(B,95,17)	CKSRYB224K10
	C 1214	(A,56,68)	CKSRYB104K25	C 1508	(B,95,22)	CKSRYB224K10
	C 1215	(A,57,59)	CKSSYB104K10	C 1510	(B,79,33)	CSZSC101M10
	C 1216	(A,55,61)	CSZSC470M16	C 1513	(B,100,13)	CKSRYB224K10
	C 1217	(A,67,59)	CKSRYB104K25	C 1514	(B,101,20)	CKSRYB224K10
	C 1218	(A,67,51)	CSZSC470M16	C 1515	(B,100,15)	CKSRYB224K10
	C 1221	(A,32,21)	CKSRYB104K25	C 1516	(B,100,19)	CKSRYB224K10
	C 1301	(A,53,49)	CKSSYB104K10	C 1517	(B,100,21)	CKSRYB224K10
	C 1302	(B,50,57)	CKSSYB104K10	C 1518	(B,100,24)	CKSRYB224K10
D	C 1303	(A,53,58)	CKSSYB224K6R3	C 1519	(B,100,27)	CKSRYB224K10
	C 1304	(A,53,63)	CKSSYB104K10	C 1520	(B,100,29)	CKSRYB224K10
	C 1305	(A,53,65)	CKSSYB224K6R3	C 1521	(B,100,32)	CKSRYB224K10
	C 1306	(A,49,74)	CKSSYB471K50	C 1522	(B,100,34)	CKSRYB224K10
	C 1307	(A,44,73)	CKSSYB104K10	C 1523	(B,100,37)	CKSRYB224K10
	C 1308	(A,42,73)	CKSRYB224K10	C 1524	(A,98,47)	CKSRYB224K10
	C 1309	(A,39,74)	CKSSYB104K10	C 1525	(A,100,10)	CKSSYB104K10
	C 1310	(A,36,74)	CKSSYB104K10	C 1526	(A,100,41)	CKSRYB224K10
	C 1311	(B,42,67)	CKSSYB103K16	C 1527	(A,95,41)	CKSRYB224K10
	C 1312	(B,38,65)	CKSSYB103K16	C 1528	(A,93,8)	CKSSYB104K10
E	C 1313	(A,33,73)	CKSSYB104K10	C 1529	(A,92,41)	CKSRYB224K10
	C 1314	(B,31,68)	CKSRYB224K10	C 1530	(A,86,51)	CKSRYB224K10
	C 1315	(A,30,74)	CKSRYB102K50	C 1531	(B,92,35)	CKSSYB471K50
	C 1316	(A,27,75)	CKSRYB393K16	C 1532	(A,92,8)	CKSSYB104K10
	C 1317	(A,26,72)	CKSSYB104K10	C 1533	(A,90,41)	CKSSYB104K10
	C 1318	(A,23,70)	CKSSYB103K16	C 1534	(B,97,39)	CKSRYB224K10
	C 1319	(A,22,70)	CKSSYB104K10	C 1535	(B,86,37)	CKSSYB104K10
	C 1320	(A,23,68)	CKSSYB103K16	C 1538	(B,84,10)	CKSSYB104K10
	C 1329	(A,24,63)	CKSSYB104K10	C 1539	(B,80,10)	CKSRYB105K10
	C 1330	(A,23,66)	CKSRYB183K25	C 1540	(A,100,7)	CKSRYB105K10
	C 1331	(A,22,64)	CCSSCH470J50	C 1542	(B,80,37)	CKSSYB104K10
F	C 1332	(A,23,62)	CKSRYB224K10	C 1543	(B,84,9)	CSZS4R7M16
	C 1333	(A,23,60)	CKSRYB224K10	C 1544	(A,81,8)	CKSSYB104K10
	C 1334	(B,33,57)	CKSRYB102K50	C 1547	(A,77,7)	CSZSR330M10
	C 1335	(B,30,57)	CKSSYB152K50	C 1548	(B,76,12)	CKSSYB104K10

Circuit Symbol and No.

C 1549 (A,70,38)
 C 1550 (B,74,12)
 C 1551 (B,72,12)
 C 1552 (B,74,14)

 C 1554 (B,74,15)
 C 1555 (B,73,18)
 C 1556 (A,69,22)
 C 1557 (A,69,26)
 C 1558 (A,69,29)

C 1559 (A,69,33)
 C 1560 (A,69,37)
 C 1562 (A,64,56)
 C 1563 (A,60,50)
 C 1564 (A,60,58)

C 1566 (A,57,56)
 C 1567 (A,57,52)
 C 1605 (B,70,29)
 C 1606 (B,70,30)
 C 1609 (B,60,37)

C 1610 (B,58,33)
 C 1611 (B,57,38)
 C 1612 (B,70,36)
 C 1615 (B,67,27)
 C 1616 (B,66,41)

C 1617 (B,64,29)
 C 1618 (B,63,39)
 C 1619 (B,59,41)
 C 1620 (B,59,24)
 C 1641 (B,64,25)

C 1650 (A,104,9)
 C 1651 (A,102,10)
 C 1676 (B,67,24)
 C 1701 (A,118,15)
 C 1702 (A,109,15)

C 1703 (B,122,29)
 C 1706 (B,104,24)
 C 1707 (A,127,24)
 C 1708 (B,121,24)
 C 1710 (B,104,29)

C 1711 (B,128,30)
 C 1712 (B,129,28)
 C 1713 (A,66,38)
 C 1716 (B,105,35)
 C 1717 (A,127,36)

C 1718 (B,122,37)
 C 1719 (B,114,15)
 C 1720 (A,128,27)
 C 1721 (A,126,42)
 C 1722 (A,110,40)

C 1723 (A,119,40)
 C 1724 (A,119,43)
 C 1727 (B,125,31)

E**Unit Number : CWX3154****Unit Name : Compound Unit(A)**

Q 1299 Photo-taransistor CPT231SCTD
 S 1201 Spring Switch(12 cm) CSN1069
 S 1202 Spring Switch(8 cm) CSN1069

Part No.

CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10

 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10

CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10
 CKSSYB104K10

CCSSCH7R0D50
 CCSSCH7R0D50
 CKSSYB471K50
 CKSSYB471K50
 CKSRYB104K16

CKSRYB224K10
 CSZSR100M16
 CKSQYB225K10
 CCSRCH471J50
 CCSRCH471J50

CCSRCH471J50
 CCSRCH471J50
 CKSRYB104K16
 CKSRYB104K16
 CKSRYB104K16

CKSYB475K16
 CKSYB475K16
 CSZSR100M10
 CKSRYB224K10
 CKSRYB224K10

CKSRYB224K10
 CKSRYB224K10
 CKSRYB224K10
 CKSRYB224K10
 CKSSYB471K50
 CKSRYB224K10

CKSSYB103K16
 CKSSYB103K16
 CKSRYB224K10
 CKSRYB224K10
 CKSSYB104K10

CKSRYB224K10
 CKSSYB104K10
 CKSRYB224K10
 CKSSYB104K10
 CKSRYB224K10

CKSRYB224K10
 CKSSYB103K16
 CKSSYB224K6R3

Circuit Symbol and No.

S 1203 Spring Switch(DISC SENS)
 S 1204 Spring Switch(DISC SENS)

 S 1205 Spring Switch(8 cm)
 R 1298
 R 1299

F**Unit Number : CWX3394****Unit Name : Compound Unit(B)**

S 1206 Switch(CLAMP) CSN1067

Navi Mother Unit**Consists of****Navi Mother PCB****HDD Relay PCB****GH****Unit Number : CWN1581(UC)****Unit Number : CWN1631(EW5)****Unit Name : Navi Mother Unit****MISCELLANEOUS**

IC 5001 (A,34,30) IC	NJM2125F
IC 5002 (B,54,27) IC	NJM2904V
IC 5003 (A,54,27) IC	TC4052BFT
IC 5004 (B,61,17) IC	NJM2904V
IC 5103 (B,162,34) IC	TC7SET08FUS1
IC 5104 (B,157,48) IC	BH7236AF
IC 5401 (A,136,61) IC	NJM3403AV
IC 5421 (B,137,61) IC	TC4W53FU
IC 5422 (B,143,71) IC	NJM2125F
IC 5423 (B,132,67) IC	NJM3403AV
IC 5424 (A,144,71) IC	TC4W53FU
IC 5451 (A,132,38) IC	TC4W53FU
IC 5452 (B,132,40) IC	NJM3403AV
IC 5481 (B,22,93) IC	TDA7052BT
IC 5531 (B,41,24) IC	BA3121F
IC 5535 (B,57,102) IC	TC74VHC541F5T1
IC 5537 (B,44,99) IC	TC7W04FU
IC 5539 (B,29,99) IC	TC7SET04FUS1
IC 5571 (A,85,55) IC	HA12241FP
IC 5601 (B,71,114) IC	TC7SET08FUS1
IC 5671 (B,20,105) IC	UPD4721GSS1
IC 5901 (B,102,30) IC	NJM2904M
IC 6201 (B,62,56) IC	TPS5102IDBT
IC 6251 (B,45,56) IC	TPS5103IDB
IC 6322 (A,90,88) IC	BD3931HFP
IC 6402 (A,153,61) IC	S-812C50AUA-C3E
IC 6601 (B,104,50) IC	TC74VHC32F5T1
IC 6602 (A,86,45) IC	TC74VHC32F5T1
IC 6603 (A,87,39) IC	TC74VHCT125AFTS1

IC 6604 (B,104,56) IC	TC7WH14FU
IC 6605 (A,125,76) IC	TC7S04FU
IC 6606 (A,122,71) IC	BD5335FVE
IC 6607 (A,107,54) IC(UC)	PE5539A

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

	IC 6607	IC(EW5)	PE5540A	Q 6501	(B,93,11) Transistor	UMD3N
	IC 6609	(B,112,53) IC	TC7WH08FU	Q 6601	(A,99,75) Transistor	2SA1576
A	IC 6610	(B,53,94) IC	TC74VHC125FTS1	Q 6602	(B,119,58) Transistor	2SC4081
	IC 6611	(B,162,15) IC	LM56BIMM	D 5001	(A,30,29) Diode	EDZ4R3(B)
	IC 6801	(B,22,7) IC	TC7MZ245FK	D 5002	(A,33,34) Diode	1SS355
	IC 6802	(B,42,8) IC	TC7MBL3244AFK	D 5003	(B,51,13) Diode	DAP202U
	Q 5001	(B,51,16) Transistor	UMD3N	D 5403	(A,134,77) Diode	EDZ4R3(B)
	Q 5002	(B,55,13) Transistor	FMG12	D 5404	(A,131,80) Diode	1SS355
	Q 5003	(B,55,18) Transistor	DTC114EU	D 5531	(B,37,111) Diode	EDZ6R8(B)
	Q 5004	(B,55,16) Transistor	DTC114EU	D 5532	(B,37,114) Diode	EDZ6R8(B)
	Q 5201	(B,109,85) Transistor	UMZ1N	D 5533	(B,38,111) Diode	EDZ6R8(B)
	Q 5401	(A,136,77) Transistor	UMD3N	D 5534	(B,38,114) Diode	EDZ6R8(B)
B	Q 5421	(B,140,57) Transistor	UMD3N	D 5536	(B,40,111) Diode	EDZ6R8(B)
	Q 5451	(A,127,38) Transistor	UMD3N	D 5537	(B,48,111) Diode	EDZ6R8(B)
	Q 5452	(A,142,44) Transistor	UMD3N	D 5538	(B,41,114) Diode	EDZ6R8(B)
	Q 5453	(A,142,47) Transistor	UMD3N	D 5539	(B,49,114) Diode	EDZ6R8(B)
	Q 5454	(A,142,49) Transistor	UMD3N	D 5541	(B,50,111) Diode	EDZ6R8(B)
	Q 5455	(A,136,44) Transistor	DTC323TU	D 5542	(B,43,114) Diode	EDZ6R8(B)
	Q 5456	(A,136,47) Transistor	FMG12	D 5543	(B,51,114) Diode	EDZ6R8(B)
	Q 5481	(B,22,89) Transistor	UMD3N	D 5544	(B,43,111) Diode	EDZ6R8(B)
	Q 5482	(B,18,89) Transistor	DTC323TU	D 5545	(B,51,111) Diode	EDZ6R8(B)
	Q 5483	(B,23,100) Transistor	DTC114EU	D 5548	(B,52,114) Diode	EDZ6R8(B)
C	Q 5531	(B,42,104) Transistor	2SC4081	D 5550	(B,53,111) Diode	EDZ6R8(B)
	Q 5532	(B,48,103) Transistor	2SC4081	D 5552	(B,54,114) Diode	EDZ6R8(B)
	Q 5533	(B,33,102) Transistor	2SC4081	D 5554	(B,55,111) Diode	EDZ6R8(B)
	Q 5611	(B,10,116) Transistor	2SC4081	D 5555	(B,45,114) Diode	AVR-M1608C080MTAAB
	Q 5651	(B,70,106) Transistor	2SA1576	D 5556	(B,45,111) Diode	AVR-M1608C080MTAAB
	Q 5652	(B,75,110) Transistor	2SC4081	D 5557	(B,46,114) Diode	AVR-M1608C080MTAAB
	Q 5671	(B,32,106) Transistor	IMD3A	D 5558	(B,47,111) Diode	AVR-M1608C080MTAAB
	Q 5672	(B,32,111) Transistor	2SD1767	D 5571	(B,17,114) Diode	AVR-M1608C080MTAAB
	Q 5901	(B,107,35) Transistor	DTC114WK	D 5572	(B,19,114) Diode	AVR-M1608C080MTAAB
	Q 5902	(B,93,33) Transistor	DTC114EU	D 5573	(B,20,114) Diode	AVR-M1608C080MTAAB
	Q 5921	(B,113,33) Transistor	2SA1576	D 5574	(B,15,114) Diode	AVR-M1608C080MTAAB
	Q 5941	(B,96,85) Transistor	2SC4081	D 5575	(A,26,112) Diode	UDZS18(B)
	Q 5942	(B,102,87) Transistor	2SC4081	D 5576	(A,24,112) Diode	UDZS18(B)
D	Q 5961	(B,102,95) Transistor	2SC4081	D 5601	(B,83,124) Diode	EDZ5R6(B)
	Q 6201	(B,57,46) Transistor	DTC114EU	D 5602	(B,83,127) Diode	EDZ5R6(B)
	Q 6202	(A,62,45) FET	SP8K2	D 5611	(A,9,123) Diode	EDZ6R8(B)
	Q 6203	(A,62,65) FET	SP8K2	D 5612	(B,10,119) Diode	EDZ6R8(B)
	Q 6204	(B,53,55) Transistor	DTC114EU	D 5621	(B,28,95) Diode	EDZ10(B)
	Q 6251	(B,47,64) Transistor	DTC114EU	D 5622	(B,28,92) Diode	EDZ10(B)
	Q 6252	(A,40,49) FET	SP8K2	D 5651	(B,66,103) Diode	1SS355
	Q 6301	(B,75,101) Transistor	2SA1576	D 5652	(B,67,107) Diode	1SS355
	Q 6302	(B,72,104) Transistor	DTC114EU	D 5653	(B,64,113) Diode	HZU12(B2)
	Q 6311	(B,92,100) Transistor	2SA1576	D 5654	(B,62,117) Diode	HZU12(B2)
E	Q 6312	(B,96,100) Transistor	DTC114EU	D 5655	(B,68,115) Diode	HZU12(B2)
	Q 6321	(B,80,52) Transistor	2SC4081	D 5656	(B,68,112) Diode	HZU12(B2)
	Q 6322	(B,81,70) Transistor	2SA1834F5	D 5657	(A,64,114) Diode	UMZ6R8N
	Q 6331	(B,90,88) Transistor	2SB1184F5	D 5658	(A,67,116) Diode	UMZ6R8N
	Q 6332	(B,85,79) Transistor	IMX1	D 5671	(A,32,120) Diode	UDZS6R8(B)
	Q 6341	(B,41,75) Transistor	2SA1834F5	D 5672	(A,29,116) Diode	UDZS20(B)
	Q 6342	(B,32,86) Transistor	2SC4081	D 5673	(A,29,120) Diode	UDZS20(B)
	Q 6351	(B,90,130) Transistor	DTA114EU	D 5674	(A,34,116) Diode	UDZS20(B)
	Q 6352	(B,95,129) Transistor	DTC114EU	D 5675	(A,34,120) Diode	UDZS20(B)
	Q 6353	(B,91,119) Transistor	2SA1587	D 5676	(A,31,116) Diode	UDZS20(B)
	Q 6354	(B,83,111) Transistor	IMX1	D 5677	(A,31,120) Diode	UDZS20(B)
F	Q 6355	(B,81,115) Transistor	DTC114EU	D 5678	(A,36,116) Diode	UDZS20(B)
	Q 6356	(B,98,115) Transistor	2SD1760F5	D 5679	(A,36,120) Diode	UDZS20(B)
	Q 6370	(B,54,87) Transistor	2SB1260	D 5680	(B,29,106) Diode	HZU8R2(B1)
	Q 6371	(B,62,87) Transistor	2SC4081	D 5801	(B,142,24) Diode	DAN202U

<u>Circuit Symbol and No.</u>			<u>Part No.</u>	<u>Circuit Symbol and No.</u>			<u>Part No.</u>
D 5901	(B,99,26)	Diode	1SS355	L 5246	(A,128,112)	Inductor	CTF1384
D 5921	(B,111,31)	Diode	1SS355	L 5247	(B,124,101)	Inductor	CTF1389
D 5941	(B,96,87)	Diode	HZU7R5(B3)	L 5248	(A,126,112)	Inductor	CTF1306
D 5942	(B,96,89)	Diode	RB500V-40	L 5249	(A,126,109)	Inductor	CTF1306
D 5943	(B,99,89)	Diode	EDZ20(B)	L 5250	(A,125,112)	Inductor	CTF1306
D 5944	(B,96,91)	Diode	RB500V-40	L 5251	(A,116,112)	Inductor	CTF1387
D 5961	(B,96,95)	Diode	UDZS8R2(B)	L 5252	(A,115,92)	Inductor	CTF1334
D 6201	(B,70,60)	Diode	RB400D	L 5253	(B,116,101)	Inductor	CTF1379
D 6202	(B,69,51)	Diode	RB400D	L 5254	(A,114,90)	Inductor	CTF1306
D 6203	(A,67,45)	Diode	RB060L-40	L 5256	(B,114,101)	Inductor	CTF1334
D 6204	(A,66,65)	Diode	RB060L-40	L 5257	(A,113,90)	Inductor	CTF1334
D 6251	(B,42,47)	Diode	RB400D	L 5258	(A,112,92)	Inductor	CTF1334
D 6252	(A,35,49)	Diode	RB060L-40	L 5259	(A,110,109)	Inductor	CTF1393
D 6253	(A,47,51)	Diode	1SR154-400	L 5260	(A,109,92)	Inductor	CTF1488
D 6331	(B,85,87)	Diode	EDZ7R5(B)	L 5261	(A,108,109)	Inductor	CTF1393
D 6351	(B,82,108)	Diode	RB500V-40	L 5262	(A,105,92)	Inductor	CTF1306
D 6352	(B,82,107)	Diode	RB500V-40	L 5263	(A,121,109)	Inductor	CTF1334
D 6353	(B,81,119)	Diode	HZU8R2(B1)	L 5264	(A,121,112)	Inductor	CTF1334
D 6354	(B,101,106)	Diode	HZU13(B1)	L 5265	(A,120,109)	Inductor	CTF1334
D 6401	(B,161,87)	Diode	EDZ5R6(B)	L 5266	(A,119,112)	Inductor	CTF1334
D 6501	(A,94,21)	Diode	EDZ12(B)	L 5267	(A,130,112)	Inductor	CTF1334
D 6502	(A,100,21)	Diode	EDZ5R6(B)	L 5268	(A,127,109)	Inductor	CTF1334
D 6504	(A,96,21)	Diode	EDZ5R6(B)	L 5269	(A,129,112)	Inductor	CTF1334
D 6506	(A,97,21)	Diode	EDZ5R6(B)	L 5270	(A,130,90)	Inductor	CTF1306
L 5102	(B,163,38)	Inductor	CTF1410	L 5401	(A,140,77)	Inductor	CTF1410
L 5103	(A,155,50)	Inductor	CTF1410	L 5402	(B,122,97)	Inductor	CTF1334
L 5104	(B,160,41)	Inductor	LCTAW680J3225	L 5421	(B,139,60)	Inductor	CTF1410
L 5202	(A,139,109)	Inductor	CTF1306	L 5451	(A,74,76)	Inductor	CTF1306
L 5203	(A,138,109)	Inductor	CTF1306	L 5452	(A,134,35)	Inductor	CTF1410
L 5204	(A,138,91)	Inductor	CTF1378	L 5531	(B,33,29)	Inductor	LCYC2R2K2125
L 5205	(A,136,109)	Inductor	CTF1306	L 5532	(B,33,31)	Inductor	LCYC2R2K2125
L 5206	(A,135,109)	Inductor	CTF1306	L 5534	(B,51,103)	Inductor	CTF1410
L 5207	(A,135,91)	Inductor	CTF1378	L 5536	(B,40,101)	Inductor	CTF1410
L 5208	(A,134,91)	Inductor	CTF1378	L 5538	(B,33,97)	Inductor	CTF1410
L 5209	(A,133,109)	Inductor	CTF1306	L 5539	(A,40,112)	Inductor	CTF1410
L 5210	(A,133,91)	Inductor	CTF1378	L 5540	(A,43,109)	Inductor	CTF1410
L 5211	(A,132,109)	Inductor	CTF1306	L 5542	(A,44,112)	Inductor	CTF1410
L 5212	(A,131,92)	Inductor	CTF1306	L 5543	(A,45,112)	Inductor	CTF1410
L 5214	(A,128,109)	Inductor	CTF1306	L 5549	(A,56,112)	Inductor	CTF1410
L 5215	(A,124,90)	Inductor	CTF1306	L 5550	(A,57,109)	Inductor	CTF1410
L 5217	(B,122,101)	Inductor	CTF1467	L 5551	(A,59,109)	Inductor	CTF1410
L 5218	(A,124,109)	Inductor	CTF1306	L 5552	(A,61,109)	Inductor	CTF1410
L 5220	(A,123,112)	Inductor	CTF1306	L 5553	(A,63,109)	Inductor	CTF1410
L 5222	(A,123,109)	Inductor	CTF1306	L 5554	(A,57,115)	Inductor	CTF1393
L 5223	(A,122,112)	Inductor	CTF1306	L 5571	(A,85,50)	Inductor	LCYC2R2K1608
L 5226	(B,121,101)	Inductor	CTF1334	L 5572	(A,16,114)	Inductor	CTF1334
L 5228	(A,119,92)	Inductor	CTF1334	L 5573	(A,18,114)	Inductor	CTF1334
L 5229	(A,119,109)	Inductor	CTF1334	L 5574	(A,19,114)	Inductor	CTF1334
L 5231	(A,118,112)	Inductor	CTF1334	L 5575	(A,15,114)	Inductor	CTF1334
L 5232	(A,119,90)	Inductor	CTF1306	L 5601	(B,71,117)	Inductor	CTF1379
L 5233	(A,117,109)	Inductor	CTF1334	L 5621	(B,30,95)	Inductor	CTF1558
L 5236	(A,116,109)	Inductor	CTF1334	L 5622	(B,30,92)	Inductor	CTF1558
L 5238	(A,115,112)	Inductor	CTF1334	L 5671	(B,22,111)	Inductor	CTF1410
L 5239	(A,117,92)	Inductor	CTF1334	L 5672	(B,13,105)	Inductor	CTF1334
L 5240	(A,114,109)	Inductor	CTF1334	L 5673	(B,13,104)	Inductor	CTF1334
L 5241	(B,117,101)	Inductor	CTF1334	L 5674	(B,13,103)	Inductor	CTF1334
L 5242	(A,114,112)	Inductor	CTF1334	L 5675	(B,13,101)	Inductor	CTF1334
L 5243	(A,116,90)	Inductor	CTF1306	L 5676	(A,32,112)	Inductor	CTF1463
L 5244	(A,126,92)	Inductor	CTF1306	L 5802	(B,142,21)	Inductor	CTF1334
L 5245	(A,130,109)	Inductor	CTF1306	L 5803	(B,148,20)	Inductor	CTF1334

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

L 5804 (A,148,13) Inductor CTF1334
L 5805 (A,130,13) Inductor CTF1334

L 6607 (B,111,56) Inductor CTF1410
L 6608 (A,121,57) Inductor CTF1410

A L 5806 (A,151,17) Inductor CTF1306
L 5807 (A,153,17) Inductor CTF1306
L 5808 (B,40,8) Inductor CTF1306
L 5809 (B,35,7) Inductor CTF1306
L 5810 (A,41,14) Inductor CTF1306

L 6609 (A,116,69) Inductor CTF1410
L 6610 (A,102,68) Inductor CTF1410
L 6611 (A,93,49) Inductor CTF1410
L 6612 (A,108,36) Inductor CTF1410
L 6613 (B,159,18) Inductor CTF1410

L 5853 (A,118,124) Inductor CTF1306
L 5854 (A,118,118) Inductor CTF1306
L 5901 (B,108,31) Inductor CTF1334
L 5902 (B,100,33) Inductor CTF1334
L 5903 (B,92,30) Inductor CTF1334

L 6801 (B,12,8) Inductor CTH1261
L 6802 (A,41,8) Inductor CTF1410
L 6803 (A,19,6) Inductor CTF1410
X 6601 (A,91,65) Resonator 18.874 MHz CSS1622
S 5901 (A,60,8) Spring Switch(HDD SENSE) CSN1055

B L 5904 (B,97,35) Inductor CTF1334
L 6102 (A,46,88) Inductor CTF1386
L 6103 (A,44,88) Inductor CTF1306
L 6104 (A,43,88) Inductor CTF1306
L 6106 (B,41,93) Inductor CTF1380

S 5902 (A,52,19) Spring Switch(DOOR SENSE) CSN1055
△FU5651 (A,72,110) Fuse 4 A CEK1260
△FU5671 (A,31,112) Fuse 1 A CEK1280
△FU6201 (A,79,57) Fuse 2 A CEK1284
△FU6202 (A,73,71) Fuse 3 A CEK1286

L 6107 (A,42,88) Inductor CTF1467
L 6108 (B,41,88) Inductor CTF1334
L 6109 (A,40,88) Inductor CTF1306
L 6110 (B,39,88) Inductor CTF1306
L 6111 (B,38,88) Inductor CTF1306

△FU6203 (A,52,71) Fuse 4 A CEK1260
△FU6251 (A,35,78) Fuse 2 A CEK1284
△FU6252 (A,49,71) Fuse 2.5 A CEK1258
△FU6331 (B,84,83) Fuse 1 A CEK1254
△FU6351 (A,98,120) Fuse 1 A CEK1280

C L 6112 (A,39,88) Inductor CTF1306
L 6113 (B,37,88) Inductor CTF1306
L 6114 (A,38,88) Inductor CTF1306
L 6115 (A,41,82) Inductor CTF1393
L 6116 (A,39,82) Inductor CTF1393

GY6402 (A,147,131) Gyro sensor CSX1107
GY6401 (A,167,69) Gyro sensor CSX1105
EF5101 (A,149,28) EMI Filter CCG1082
EF5102 (A,151,28) EMI Filter CCG1082
EF5103 (A,153,28) EMI Filter CCG1082

L 6117 (A,35,82) Inductor CTF1661
L 6118 (A,35,87) Inductor CTF1488
L 6119 (A,30,85) Inductor CTF1393
L 6120 (A,49,86) Inductor CTF1393
L 6121 (B,54,91) Inductor CTF1410

EF5104 (A,156,28) EMI Filter CCG1067
EF5531 (A,51,107) EMI Filter CCG1067
EF5532 (A,54,107) EMI Filter CCG1067
EF5611 (A,6,122) EMI Filter CCG1161
EF5651 (A,68,114) EMI Filter CCG1067

D L 6122 (B,60,95) Inductor CTF1386
L 6123 (B,60,97) Inductor CTF1386
L 6124 (B,60,94) Inductor CTF1386
L 6201 (A,69,55) Inductor CTH1255
L 6202 (A,64,75) Inductor CTH1257

EF5800 (B,107,114) EMI Filter CCG1172
EF5801 (B,107,118) EMI Filter CCG1172

RESISTORS

L 6203 (A,57,55) Inductor CTH1253
L 6251 (A,48,43) Inductor CTH1255
L 6252 (A,44,60) Inductor CTH1257
L 6401 (A,156,93) Inductor(EW5) CTF1334
L 6402 (A,156,91) Inductor(EW5) CTF1334

R 5001 (A,61,31) RS1/16S472J
R 5002 (A,45,29) RS1/16S472J
R 5003 (A,33,32) RS1/16S102J
R 5004 (A,61,32) RS1/16S473J
R 5005 (A,45,27) RS1/16S473J

E L 6403 (A,156,90) Inductor(EW5) CTF1334
L 6404 (A,156,87) Inductor(EW5) CTF1334
L 6405 (B,166,85) Inductor CTF1334
L 6406 (B,165,85) Inductor CTF1334
L 6407 (B,167,102) Inductor CTF1394

R 5006 (A,53,33) RS1/16S104J
R 5007 (A,52,33) RS1/16S104J
R 5008 (A,51,33) RS1/16S104J
R 5009 (A,49,33) RS1/16S104J
R 5010 (A,45,20) RS1/16S104J

L 6408 (B,160,102) Inductor CTF1394
L 6409 (B,163,102) Inductor CTF1394
L 6410 (B,155,68) Inductor CTF1334
L 6412 (A,155,128) Inductor CTF1334
L 6413 (A,150,61) Inductor CTF1334

R 5011 (A,46,20) RS1/16S104J
R 5012 (A,47,20) RS1/16S104J
R 5013 (A,49,20) RS1/16S104J
R 5014 (B,50,19) RS1/16S473J
R 5015 (B,49,19) RS1/16S473J

F L 6501 (B,95,17) Inductor CTF1379
L 6502 (B,102,11) Inductor CTF1379
L 6601 (A,91,50) Inductor CTF1410
L 6602 (A,84,36) Inductor CTF1410
L 6603 (B,106,46) Inductor CTF1410

R 5016 (B,51,24) RS1/16S0R0J
R 5017 (B,54,23) RS1/16S0R0J
R 5101 (B,155,56) RS1/16S222J
R 5102 (A,148,53) RS1/16S0R0J
R 5104 (B,153,59) RS1/16S181J

L 6604 (B,106,54) Inductor CTF1410
L 6605 (A,122,74) Inductor CTF1410
L 6606 (A,92,79) Inductor CTF1393

R 5105 (B,152,59) RS1/16S181J
R 5106 (B,150,59) RS1/16S181J
R 5107 (B,162,56) RS1/16S222J

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
R 5108	(B,159,56)	RS1/16S0R0J	R 5444	(B,126,68)	RS1/16S101J
R 5110	(B,162,32)	RS1/16S101J	R 5445	(B,140,54)	RS1/16S104J
R 5111	(B,155,31)	RS1/16S101J	R 5446	(B,126,66)	RS1/16S393J
R 5112	(B,150,42)	RS1/10S750J	R 5447	(B,128,66)	RS1/16S683J
R 5113	(B,152,42)	RS1/10S750J	R 5448	(B,129,63)	RS1/16S154J
R 5114	(B,154,42)	RS1/10S750J	R 5449	(B,129,61)	RS1/16S101J
R 5115	(B,155,42)	RS1/10S750J	R 5451	(B,128,48)	RS1/16S102J
R 5118	(A,158,28)	RS1/10S750J	R 5452	(B,129,48)	RS1/16S102J
R 5119	(A,149,24)	RS1/16S750J	R 5453	(B,129,46)	RS1/16S153J
R 5120	(A,151,24)	RS1/16S750J	R 5454	(B,132,46)	RS1/16S683J
R 5121	(A,153,24)	RS1/16S750J	R 5455	(B,128,42)	RS1/16S562J
R 5125	(B,158,33)	RS1/16S0R0J	R 5456	(B,128,46)	RS1/16S0R0J
R 5201	(A,139,91)	RS1/16S681J	R 5457	(B,125,37)	RS1/16S104J
R 5202	(B,129,101)	RS1/16S241J	R 5458	(B,128,39)	RS1/16S564J
R 5203	(A,124,92)	RS1/16S431J	R 5459	(B,130,35)	RS1/16S101J
R 5204	(B,125,101)	RS1/16S0R0J	R 5460	(B,136,42)	RS1/16S682J
R 5205	(A,125,92)	RS1/16S0R0J	R 5461	(B,139,39)	RS1/16S183J
R 5206	(A,137,91)	RS1/16S0R0J	R 5462	(B,135,39)	RS1/16S683J
R 5207	(A,127,90)	RS1/16S0R0J	R 5463	(B,134,35)	RS1/16S101J
R 5208	(B,126,101)	RS1/16S0R0J	R 5464	(A,129,38)	RS1/16S473J
R 5209	(A,126,90)	RS1/16S0R0J	R 5465	(A,139,44)	RS1/16S0R0J
R 5210	(A,133,127)	RS1/16S681J	R 5466	(A,139,46)	RS1/16S0R0J
R 5211	(A,133,128)	RS1/16S681J	R 5467	(A,139,49)	RS1/16S0R0J
R 5213	(A,134,120)	RS1/16S222J	R 5468	(A,130,41)	RS1/16S473J
R 5214	(B,120,101)	RS1/16SS104J	R 5469	(A,132,44)	RS1/16S105J
R 5215	(B,118,101)	RS1/16S103J	R 5470	(A,130,44)	RS1/16S102J
R 5216	(B,106,86)	RS1/16S103J	R 5471	(A,132,45)	RS1/16S472J
R 5217	(B,112,84)	RS1/16S473J	R 5472	(A,130,45)	RS1/16S152J
R 5218	(B,112,86)	RS1/16S473J	R 5473	(A,132,46)	RS1/16S472J
R 5402	(A,140,67)	RS1/16S104J	R 5474	(A,130,46)	RS1/16S472J
R 5403	(A,139,67)	RS1/16S104J	R 5475	(A,132,47)	RS1/16S472J
R 5404	(A,138,67)	RS1/16S104J	R 5476	(B,135,48)	RS1/16S333J
R 5405	(A,139,62)	RS1/16S104J	R 5477	(B,134,48)	RS1/16S683J
R 5406	(A,142,62)	RS1/16S102J	R 5478	(B,135,46)	RS1/16S154J
R 5407	(A,142,60)	RS1/16S104J	R 5479	(B,136,46)	RS1/16S101J
R 5408	(A,140,60)	RS1/16S104J	R 5481	(B,14,89)	RS1/16S821J
R 5409	(A,140,55)	RS1/16S683J	R 5482	(B,15,92)	RS1/16S104J
R 5410	(A,140,57)	RS1/16S473J	R 5483	(B,14,94)	RS1/16S1003D
R 5411	(A,139,57)	RS1/16S101J	R 5484	(B,15,94)	RS1/16S1202D
R 5412	(A,138,55)	RS1/16S682J	R 5485	(B,26,98)	RS1/16S101J
R 5413	(A,137,55)	RS1/16S332J	R 5486	(A,134,69)	RS1/16S102J
R 5414	(A,131,58)	RS1/16S682J	R 5489	(A,134,67)	RS1/16S104J
R 5415	(A,131,56)	RS1/16S0R0J	R 5490	(A,135,67)	RS1/16S104J
R 5416	(A,133,80)	RS1/16S102J	R 5491	(A,131,62)	RS1/16S683J
R 5421	(B,146,73)	RS1/16S223J	R 5492	(A,132,62)	RS1/16S473J
R 5422	(B,147,70)	RS1/16S223J	R 5493	(A,132,65)	RS1/16S101J
R 5423	(B,136,78)	RS1/16S104J	R 5494	(A,146,75)	RS1/16S104J
R 5424	(B,134,75)	RS1/16S104J	R 5495	(A,136,74)	RS1/16S104J
R 5425	(B,136,73)	RS1/16S104J	R 5531	(A,36,21)	RS1/16S220J
R 5426	(B,133,73)	RS1/16S104J	R 5532	(B,47,26)	RS1/16S102J
R 5427	(B,136,69)	RS1/16S101J	R 5533	(B,51,107)	RS1/16S103J
R 5429	(B,136,54)	RS1/16S104J	R 5534	(B,51,106)	RS1/16S103J
R 5430	(B,137,54)	RS1/16S104J	R 5535	(B,51,104)	RS1/16S103J
R 5432	(B,133,61)	RS1/16S303J	R 5536	(B,36,22)	RS1/16S102J
R 5433	(B,136,66)	RS1/16S104J	R 5537	(B,47,28)	RS1/16S223J
R 5434	(B,138,66)	RS1/16S101J	R 5538	(B,36,25)	RS1/16S223J
R 5435	(B,137,69)	RS1/16S104J	R 5539	(A,20,101)	RS1/16S153J
R 5441	(B,128,73)	RS1/16S104J	R 5540	(B,40,19)	RS1/16S101J
R 5442	(B,131,73)	RS1/16S473J	R 5541	(B,36,21)	RS1/16S101J
R 5443	(B,128,68)	RS1/16S393J	R 5544	(B,40,102)	RS1/16S103J

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

	R 5545 (B,45,104)	RS1/16S103J	R 5906 (B,95,30)	RS1/16S513J
	R 5546 (B,44,104)	RS1/16S223J	R 5907 (B,96,28)	RS1/16S513J
A	R 5547 (B,27,98)	RS1/16S103J	R 5908 (B,100,35)	RS1/16S102J
	R 5548 (B,47,100)	RS1/16S103J	R 5909 (B,92,28)	RS1/16S102J
	R 5549 (B,49,100)	RS1/16S223J	R 5910 (B,95,28)	RS1/16S564J
	R 5550 (B,29,102)	RS1/16S103J	R 5911 (B,102,26)	RS1/16S822J
	R 5551 (B,30,102)	RS1/16S223J	R 5912 (B,102,25)	RS1/16S202J
			R 5913 (B,97,36)	RS1/16S203J
	R 5552 (A,40,109)	RS1/16S390J		
	R 5553 (A,44,109)	RS1/16S390J	R 5914 (B,100,36)	RS1/16S333J
	R 5554 (A,45,109)	RS1/16S390J	R 5915 (A,58,23)	RS1/16S271J
	R 5555 (A,56,109)	RS1/16S102J	R 5916 (A,66,9)	RS1/16S271J
	R 5556 (A,65,109)	RS1/16S27R0D	R 5921 (B,117,33)	RS1/16S102J
			R 5922 (B,115,33)	RS1/16S103J
B	R 5557 (A,69,109)	RS1/16S27R0D		
	R 5558 (A,68,109)	RS1/16S153J	R 5923 (B,110,33)	RS1/16S103J
	R 5559 (A,64,109)	RS1/16S153J	R 5941 (B,99,87)	RS1/16S473J
	R 5561 (A,41,112)	RS1/16S471J	R 5942 (B,102,91)	RS1/16S103J
	R 5568 (A,60,112)	RS1/16S471J	R 5943 (B,99,86)	RS1/16S104J
			R 5944 (B,99,91)	RS1/16S103J
	R 5571 (A,93,55)	RS1/16S472J		
	R 5572 (A,91,53)	RS1/16S102J	R 5961 (B,99,95)	RS1/16S473J
	R 5573 (A,91,55)	RS1/16S101J	R 5962 (B,99,96)	RS1/16S104J
	R 5575 (A,83,52)	RS1/16S102J	R 6001 (A,11,116)	RS1/16S0R0J
	R 5576 (A,84,60)	RS1/10S101J	R 6101 (B,47,95)	RS1/16S0R0J
			R 6102 (B,47,96)	RS1/16S0R0J
C	R 5577 (A,83,60)	RS1/10S101J		
	R 5578 (A,84,65)	RS1/10S620J	R 6103 (B,48,89)	RS1/16S0R0J
	R 5601 (A,87,114)	RS1/16S221J	R 6104 (B,63,95)	RS1/16S151J
	R 5602 (B,75,117)	RS1/16S621J	R 6105 (B,63,97)	RS1/16S151J
	R 5603 (B,75,114)	RS1/16S473J	R 6106 (B,63,94)	RS1/16S151J
			R 6110 (A,49,87)	RS1/16S6R8J
	R 5604 (B,71,111)	RS1/16S121J		
	R 5612 (B,9,112)	RS1/16S473J	R 6111 (A,29,89)	RS1/16S0R0J
	R 5621 (B,27,92)	RS1/16S101J	R 6113 (A,27,87)	RS1/16S0R0J
	R 5651 (B,69,102)	RS1/16S473J	R 6201 (B,69,47)	RS1/16S0R0J
	R 5652 (B,69,104)	RS1/16S473J	R 6202 (B,66,48)	RS1/16S3300D
			R 6203 (B,64,48)	RS1/16S2701D
	R 5653 (B,72,106)	RS1/16S473J		
	R 5654 (B,75,107)	RS1/16S473J	R 6204 (B,61,47)	RS1/16S1601D
D	R 5655 (B,62,110)	RS1/16S0R0J	R 6205 (B,61,65)	RS1/16S0R0J
	R 5656 (B,61,110)	RS1/16S0R0J	R 6206 (B,59,65)	RS1/16S3300D
	R 5657 (B,64,110)	RS1/16S0R0J	R 6207 (B,56,65)	RS1/16S3001D
			R 6208 (B,59,62)	RS1/16S1001D
	R 5658 (B,68,109)	RS1/16S473J		
	R 5659 (B,71,110)	RS1/16S0R0J	R 6209 (B,64,47)	RS1/16S101J
	R 5660 (A,71,114)	RS1/16S473J	R 6210 (B,56,64)	RS1/16S102J
	R 5661 (A,72,116)	RS1/16S473J	R 6211 (B,61,48)	RS1/16S332J
	R 5671 (A,32,116)	RS1/16S681J	R 6212 (B,56,49)	RS1/16S104J
			R 6213 (B,56,62)	RS1/16S152J
	R 5672 (B,10,106)	RS1/16S681J		
	R 5673 (B,10,105)	RS1/16S681J	R 6214 (B,56,53)	RS1/16S1103D
	R 5674 (B,10,103)	RS1/16S681J	R 6215 (B,59,61)	RS1/16S104J
E	R 5675 (B,10,102)	RS1/16S681J	R 6216 (B,56,48)	RS1/16S8203D
	R 5676 (B,36,108)	RS1/16S471J	R 6217 (B,54,57)	RS1/16S100J
			R 6218 (B,63,45)	RS1/10S150J
	R 5677 (B,36,107)	RS1/16S471J		
	R 5802 (A,41,16)	RS1/16S102J	R 6219 (B,63,61)	RS1/10S150J
	R 5803 (B,144,27)	RS1/16S0R0J	R 6220 (B,72,52)	RS1/16S224J
	R 5804 (B,141,27)	RS1/16S681J	R 6221 (B,72,55)	RS1/16S224J
	R 5805 (A,66,102)	RS1/10S0R0J	R 6222 (B,64,49)	RS1/16S473J
			R 6251 (B,38,52)	RS1/16S0R0J
	R 5808 (B,115,126)	RS1/10S0R0J		
	R 5895 (A,45,7) (UC)	RS1/16S0R0J	R 6252 (B,38,54)	RS1/16S4700D
	R 5896 (A,48,7) (EW5)	RS1/16S0R0J	R 6253 (B,38,57)	RS1/16S4701D
	R 5901 (B,107,31)	RS1/16S104J	R 6254 (B,38,59)	RS1/16S1002D
F	R 5902 (B,102,35)	RS1/16S473J	R 6255 (B,40,54)	RS1/16S101J
	R 5903 (B,107,29)	RS1/16S563J	R 6256 (B,42,61)	RS1/16S152J
	R 5904 (B,102,36)	RS1/16S513J	R 6257 (B,42,65)	RS1/16S104J
	R 5905 (B,97,30)	RS1/16S104J	R 6258 (B,44,62)	RS1/16S1103D

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 6259	(B,44,64)	RS1/16S8203D		R 6613	(B,90,40)	RS1/16S104J	
R 6260	(B,40,51)	RS1/10S100J		R 6614	(B,90,37)	RS1/16S104J	
R 6262	(B,46,48)	RS1/16S184J		R 6615	(A,93,58)	RS1/16S302J	
R 6263	(B,46,49)	RS1/16S100J		R 6616	(B,99,46)	RS1/16S104J	A
R 6264	(B,46,46)	RS1/16S105J		R 6617	(B,100,61)	RS1/16S104J	
R 6265	(B,46,41)	RS1/4SA561J		R 6619	(B,166,16)	RS1/16S4702D	
R 6267	(B,50,62)	RS1/16S0R0J		R 6620	(B,166,14)	RS1/16S1302D	
R 6268	(A,31,79)	RS1/16S0R0J		R 6624	(A,121,61)	RAB4C681J	
R 6301	(B,72,101)	RS1/16S222J		R 6626	(B,121,61)	RAB4C473J	
R 6302	(B,75,105)	RS1/16S682J		R 6627	(B,126,57) (EW5)	RAB4C223J	
R 6303	(B,75,103)	RS1/16S332J		R 6628	(A,126,57) (EW5)	RAB4C681J	
R 6311	(B,95,98)	RS1/16S103J		R 6629	(A,123,53)	RAB4C471J	
R 6314	(B,92,98)	RS1/16S103J		R 6630	(A,104,36)	RS1/16S0R0J	
R 6321	(B,72,76)	RS1/16S392J		R 6632	(B,96,47)	RS1/16S104J	B
R 6322	(B,81,63)	RS1/16S103J		R 6633	(A,123,49)	RAB4C681J	
R 6323	(B,82,59)	RS1/4SA470J		R 6634	(A,93,46)	RS1/16S220J	
R 6324	(B,82,55)	RS1/4SA470J		R 6637	(A,93,44)	RS1/16S220J	
R 6325	(B,70,76)	RS1/16S102J		R 6638	(B,117,60)	RS1/16S473J	
R 6331	(B,84,90)	RS1/16S121J		R 6639	(B,117,57)	RS1/16S473J	
R 6332	(B,84,87)	RS1/16S471J		R 6640	(B,121,55)	RS1/16S104J	
R 6333	(B,89,80)	RS1/10S221J		R 6641	(B,121,54)	RS1/16S104J	
R 6334	(B,90,83)	RS1/16S223J		R 6642	(A,102,78)	RS1/16S472J	
R 6335	(B,88,77)	RS1/16S562J		R 6643	(A,99,78)	RS1/16S472J	
R 6341	(B,38,83)	RS1/10S820J		R 6644	(A,97,75)	RS1/16S473J	
R 6342	(B,35,84)	RS1/10S820J		R 6645	(B,110,42)	RS1/16S104J	C
R 6343	(B,41,81)	RS1/16S103J		R 6646	(A,116,36)	RS1/16S104J	
R 6344	(B,34,88)	RS1/16S103J		R 6647	(A,103,40)	RS1/16S220J	
R 6345	(B,28,86)	RS1/16S103J		R 6648	(A,101,40)	RS1/16S220J	
R 6351	(B,92,129)	RS1/16S472J		R 6649	(A,122,44)	RAB4C0R0J	
R 6352	(B,84,115)	RS1/16S472J		R 6650	(A,113,36)	RS1/16S104J	
R 6353	(B,94,123)	RS1/16S103J		R 6653	(A,110,40)	RS1/16S102J	
R 6354	(B,94,124)	RS1/16S512J		R 6654	(A,124,41)	RS1/16S473J	
R 6355	(B,87,117)	RS1/16S224J		R 6655	(A,117,36)	RS1/16S104J	
R 6356	(B,87,116)	RS1/16S472J		R 6656	(A,112,30)	RAB4C104J	
R 6357	(B,86,114)	RS1/10S221J		R 6658	(A,110,36)	RAB4C104J	
R 6358	(B,85,119)	RS1/4SA471J		R 6660	(A,106,36)	RS1/16S104J	D
R 6370	(B,59,89)	RS1/10S221J		R 6662	(B,121,49)	RS1/16S104J	
R 6371	(B,59,87)	RS1/10S221J		R 6664	(B,121,46)	RS1/16S104J	
R 6372	(B,59,85)	RS1/16S103J		R 6666	(B,121,44)	RS1/16S104J	
R 6373	(B,64,86)	RS1/16S103J		R 6668	(B,121,41)	RS1/16S104J	
R 6374	(B,62,89)	RS1/16S103J		R 6670	(B,100,58)	RS1/16S104J	
R 6401	(B,161,90)	RS1/16S104J		R 6671	(A,119,70)	RS1/16S102J	
R 6402	(B,161,85)	RS1/16S1001D		R 6672	(A,106,40)	RS1/16S471J	
R 6403	(B,155,73)	RS1/16S151J		R 6673	(A,104,40)	RS1/16S471J	
R 6404	(B,155,72)	RS1/16S104J		R 6674	(B,97,42)	RS1/16S104J	
R 6405	(B,160,85)	RS1/16S1101D		R 6676	(A,100,40)	RS1/16S220J	
R 6406	(B,159,85)	RS1/16S1001D		R 6677	(A,99,40)	RS1/16S220J	E
R 6501	(B,95,11)	RS1/16S102J		R 6678	(B,88,49)	RS1/16S104J	
R 6504	(B,98,11)	RS1/16S102J		R 6680	(A,101,36)	RS1/16S104J	
R 6602	(A,102,71) (EW5)	RS1/16S223J		R 6681	(A,51,75)	RS1/10S0R0J	
R 6603	(B,108,57)	RS1/16S104J		R 6683	(A,110,70) (EW5)	RS1/16SS681J	
R 6604	(B,113,69)	RAB4C104J		R 6684	(A,105,72) (EW5)	RS1/16SS681J	
R 6605	(A,99,68)	RS1/16S104J		R 6685	(B,134,54)	RS1/16S103J	
R 6606	(A,107,70)	RS1/16S471J		R 6686	(A,47,53)	RS1/10S0R0J	
R 6607	(A,108,70)	RS1/16S471J		R 6687	(A,112,40)	RS1/16S102J	
R 6608	(A,106,70)	RS1/16S471J		R 6688	(A,124,61)	RS1/16S102J	
R 6609	(B,92,53)	RS1/16S104J		R 6689	(B,131,59)	RS1/16S103J	F
R 6610	(B,94,53)	RS1/16S104J		R 6690	(A,101,71)	RS1/16S102J	
R 6611	(B,103,68)	RS1/16S104J		R 6691	(B,95,49)	RS1/16S101J	
R 6612	(A,88,60)	RS1/16S104J		R 6803	(A,20,9)	RS1/16S0R0J	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

R 6804 (A,48,9)
R 6810 (B,42,12)
R 6812 (B,37,6)

RS1/16S0R0J
RS1/16S473J
RS1/16S0R0J

C 5422 (A,126,65)
C 5423 (B,134,78)

CEVW220M16
CKSRYP105K10

A

R 6813 (B,30,10)

RS1/16S103J

C 5424 (B,146,70)
C 5425 (B,136,75)
C 5426 (B,134,73)
C 5427 (B,132,73)
C 5428 (B,139,62)

CKSRYP105K10
CCSRCH391J50
CCSRCH102J50
CCSRCH560J50
CKSRYP104K50

CAPACITORS

C 5001 (A,31,29)
C 5002 (A,27,31)
C 5003 (A,60,25) 10 μ F
C 5004 (A,60,29) 10 μ F
C 5005 (A,48,27) 10 μ F

CKSRYP103K50
CEVW100M16
CCG1203
CCG1203
CCG1203

C 5429 (B,134,58)
C 5430 (B,137,66)
C 5431 (B,138,69)
C 5441 (B,129,73)
C 5442 (B,129,68)

CKSRYP105K10
CCSRCH470J50
CKSRYP105K10
CKSRYP104K50
CCSRCH101J50

B

C 5006 (A,48,25) 10 μ F
C 5008 (A,60,27) 10 μ F
C 5009 (A,48,30) 10 μ F
C 5011 (A,55,30)
C 5012 (B,54,30)

CCG1203
CCG1203
CCG1203
CKSRYP104K50
CKSRYP104K50

C 5443 (B,128,63)
C 5444 (B,129,66)
C 5445 (B,128,61)
C 5451 (A,72,76)
C 5452 (A,131,51)

CCSRCH471J50
CCSRCH680J50
CKSRYP105K10
CKSRYP104K50
CEVW220M6R3

C 5101 (A,149,55)
C 5102 (B,156,56)
C 5104 (A,151,45)
C 5105 (A,146,53)
C 5106 (B,163,36)

CKSRYP334K10
CCSRCH5R0C50
CEVW470M16
CKSRYP103K50
CKSRYP104K50

C 5453 (B,147,73)
C 5454 (B,130,48)
C 5455 (B,130,46)
C 5456 (B,126,42)
C 5457 (B,125,39)

CKSRYP104K50
CKSRYP473K50
CKSRYP473K50
CKSRYP104K50
CKSRYP222K50

C

C 5107 (B,150,56)
C 5108 (B,152,56)
C 5109 (B,153,56)
C 5110 (B,161,56)
C 5112 (A,158,55)

CKSRYP104K50
CKSRYP104K50
CKSRYP104K50
CCSRCH470J50
CEVW470M16

C 5458 (B,126,39)
C 5459 (B,135,42)
C 5460 (B,138,39)
C 5461 (B,136,39)
C 5462 (A,134,38)

CCSRCH391J50
CKSRYP104K50
CKSRYP682K50
CCSRCH331J50
CKSRYP104K50

C 5113 (A,164,52)
C 5116 (B,158,42)
C 5117 (A,164,44)
C 5119 (A,155,49)
C 5120 (A,158,45)

CKSRYP103K50
CCSRCH220J50
CEVW100M16
CKSRYP103K50
CEVW470M16

C 5463 (A,130,42)
C 5464 (A,130,47)
C 5465 (B,136,48)
C 5466 (B,134,46)
C 5467 (B,138,46)

CKSRYP105K10
CKSRYP474K10
CCSRCH471J50
CCSRCH680J50
CKSRYP105K10

D

C 5121 (A,144,35)
C 5122 (A,151,35)
C 5123 (A,158,35)
C 5124 (A,166,35)
C 5201 (A,107,92)

CEVW221M4
CEVW221M4
CEVW221M4
CEVW221M4
CKSRYP104K50

C 5481 (B,14,92)
C 5482 (A,18,89)
C 5483 (A,23,88)
C 5484 (B,17,92)
C 5485 (B,17,94)

CKSRYP332K50
CEVW101M16
CKSRYP104K50
CKSRYP105K10
CKSRYP105K10

C 5202 (A,107,109)
C 5203 (A,110,92)
C 5204 (A,112,109)
C 5205 (B,106,83)
C 5402 (A,140,69)

CKSRYP104K50
CKSRYP104K50
CKSRYP104K50
CKSRYP104K50
CKSRYP105K10

C 5531 (A,13,106)
C 5532 (A,40,22)
C 5533 (A,36,24)
C 5534 (A,40,30)
C 5535 (A,17,101)

CKSRYP103K50
CEVW220M16
CKSRYP104K50
CEVW220M16
CKSRYP103K50

E

C 5403 (A,138,69)
C 5404 (A,140,62)
C 5405 (A,143,62)
C 5406 (A,142,55)
C 5407 (A,142,57)

CKSRYP105K10
CCSRCH100D50
CKSRYP103K50
CKSRYP104K50
CCSRCH151J50

C 5536 (A,18,97)
C 5537 (B,53,101)
C 5538 (B,36,24)
C 5539 (B,40,99)
C 5540 (B,47,25)

CEVW101M10
CKSRYP104K50
CKSRYP105K10
CKSRYP104K50
CKSRYP105K10

C 5408 (A,139,60)
C 5409 (A,139,55)
C 5410 (A,135,55)
C 5411 (A,132,58)
C 5412 (B,16,89)

CCSRCH151J50
CKSRYP105K10
CKSRYP105K10
CCSRCH101J50
CKSRYP474K10

C 5541 (B,34,100)
C 5542 (A,41,118)
C 5543 (A,41,109)
C 5544 (B,42,28)
C 5545 (A,42,118)

CKSRYP104K50
CCSRCH121J50
CCSRCH121J50
CKSRYP105K10
CCSRCH121J50

F

C 5413 (A,132,77)
C 5414 (A,129,75)
C 5415 (A,132,69)
C 5416 (A,130,62)
C 5417 (A,136,67)

CKSRYP103K50
CEVW100M16
CKSRYP103K50
CKSRYP104K50
CCSRCH471J50

C 5546 (A,45,118)
C 5547 (A,44,118)
C 5548 (A,46,118)
C 5549 (B,47,29)
C 5550 (A,48,118)

CCSRCH121J50
CCSRCH121J50
CCSRCH121J50
CCSRCH471J50
CCSRCH121J50

C 5418 (A,146,70)
C 5419 (A,131,65)
C 5421 (A,130,65)

CKSRYP104K50
CCSRCH471J50
CKSRYP104Z25

C 5551 (B,35,27)
C 5552 (A,60,109)
C 5553 (B,30,34)

CCSRCH471J50
CCSRCH121J50
CCSRCH471J50

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 5554	(A,49,118)	CCSRCH121J50		C 6219	(A,56,42) 10 µF	CCG1223	
C 5555	(B,32,34)	CCSRCH471J50		C 6220	(A,56,68) 10 µF	CCG1223	
C 5558	(A,52,118)	CKSRYP104K50		C 6221	(A,56,45) 10 µF	CCG1223	A
C 5571	(A,85,52)	CKSRYP472K50		C 6222	(A,56,65) 10 µF	CCG1223	
C 5572	(A,13,112)	CKSRYP104K50		C 6251	(B,40,57)	CKSRYP103K50	
C 5581	(A,10,126)	CKSRYP104K50		C 6252	(B,42,64)	CCSRCH101J50	
C 5601	(B,75,115)	CCSRCH150J50		C 6253	(B,42,62)	CKSRYP104K50	
C 5602	(B,71,115)	CKSRYP104K50		C 6254	(B,40,59)	CKSRYP103K50	
C 5612	(B,12,117)	CKSRYP103K50		C 6255	(B,44,61) 47 pF	CCG1231	
C 5621	(B,27,95)	CKSRYP222K50		C 6256	(B,47,61)	CKSRYP105K10	
C 5651	(B,72,108)	CKSRYP103K50		C 6257	(B,50,48)	CKSQYB475K10	
C 5656	(A,70,116)	CKSRYP473K50		C 6258	(B,42,50)	CKSRYP474Z16	
C 5671	(B,12,108)	CKSQYB475K6R3		C 6259	(B,46,47)	CKSRYP104K50	
C 5672	(B,11,108)	CKSSYP103K16		C 6260	(B,48,48) 4.7 µF	CCG1222	B
C 5673	(B,22,110)	CKSRYP105K10		C 6261	(A,38,41) 220 µF/10 V	CCH1409	
C 5674	(B,26,107)	CKSRYP105K10		C 6262	(A,36,61) 10 µF	CCG1223	
C 5675	(B,26,105)	CKSRYP105K10		C 6263	(A,36,58) 10 µF	CCG1223	
C 5676	(B,16,110)	CKSRYP105K10		C 6264	(A,36,55) 10 µF	CCG1223	
C 5677	(B,14,108)	CKSRYP105K10		C 6311	(B,94,100)	CKSRYP104K50	
C 5685	(A,39,118)	CKSQYF104Z50		C 6321	(B,79,57)	CKSRYP104K50	
C 5686	(B,27,106)	CKSRYP104K50		C 6322	(B,69,76) 10 µF	CCG1203	
C 5832	(A,41,13) (EW5)	CCSRCH101J50		C 6323	(A,95,81)	CKSQYB105K16	
C 5851	(B,104,111)	CKSRYP104K50		C 6324	(A,84,87)	CKSYB105K25	
C 5852	(B,92,117)	CKSRYP104K50		C 6325	(B,86,75) 10 µF	CCG1220	
C 5901	(B,102,33)	CKSRYP104K50		C 6329	(B,86,68)	CKSRYP103K50	C
C 5902	(B,96,30)	CKSRYP102K50		C 6331	(B,85,90)	CKSRYP104K50	
C 5903	(B,93,28)	CKSRYP104K50		C 6332	(A,92,98)	CEVW101M16	
C 5904	(B,93,36)	CKSRYP103K50		C 6333	(B,88,79)	CKSRYP103K50	
C 5905	(B,93,30)	CKSRYP823K16		C 6341	(A,35,75)	CKSRYP103K50	
C 5906	(A,64,9)	CKSRYP103K50		C 6342	(A,40,74)	CEVW101M16	
C 5907	(A,58,20)	CKSRYP103K50		C 6343	(B,29,86)	CKSRYP105K10	
C 6001	(A,32,19)	CKSRYP103K50		C 6351	(B,85,117)	CKSRYP104K50	
C 6002	(A,162,14)	CKSRYP103K50		C 6352	(A,111,117)	CKSRYP103K50	
C 6101	(A,49,89) 10 µF	CCG1192		C 6353	(A,107,117)	CEVW470M16	
C 6102	(A,43,83)	CKSRYP104Z25		C 6354	(A,100,120)	CKSRYP103K50	
C 6103	(A,38,83)	CKSRYP104Z25		C 6355	(A,100,114)	CEVW101M16	D
C 6104	(A,36,83)	CKSRYP104Z25		C 6356	(B,81,112)	CKSRYP472K50	
C 6105	(A,27,86)	CKSRYP104Z25		C 6370	(A,57,93)	CKSRYP103K50	
C 6106	(B,31,88)	CKSRYP104Z25		C 6371	(A,57,88)	CEVW101M16	
C 6107	(A,30,87)	CKSRYP104Z25		C 6372	(B,62,90)	CKSRYP105K10	
C 6108	(A,26,83) 10 µF	CCG1223		C 6401	(B,158,72) 10 µF	CCG1203	
C 6109	(B,51,91)	CKSRYP104K50		C 6402	(B,168,102)	CKSRYP102K50	
C 6201	(B,66,47)	CKSRYP682K50		C 6403	(B,162,102)	CKSRYP102K50	
C 6202	(B,59,64)	CKSRYP682K50		C 6404	(B,165,102)	CKSRYP102K50	
C 6203	(B,59,49)	CCSRCH101J50		C 6405	(B,155,70)	CKSRYP103K50	
C 6204	(B,59,48)	CKSRYP224K16		C 6406	(B,155,69)	CKSRYP105K10	E
C 6205	(B,56,60)	CCSRCH221J50		C 6408	(A,155,130)	CKSRYP104K50	
C 6206	(B,56,61)	CKSRYP104K50		C 6409	(A,153,72)	CEVW101M16	
C 6207	(B,56,51)	CKSRYP223K50		C 6410	(A,154,66)	CKSRYP104K50	
C 6208	(B,56,52) 47 pF	CCG1231		C 6411	(A,154,65)	CKSRYP105K10	
C 6209	(B,56,55)	CKSRYP105K10		C 6412	(A,154,64)	CKSRYP105K10	
C 6210	(B,56,58)	CKSRYP223K50		C 6501	(B,96,17)	CKSRYP104K50	
C 6211	(B,53,59) 4.7 µF	CCG1222		C 6502	(B,93,17)	CCSRCH101J50	
C 6212	(B,67,53)	CKSRYP474Z16		C 6504	(B,101,17)	CCSRCH101J50	
C 6213	(B,67,59)	CKSRYP474Z16		C 6505	(B,99,17)	CKSRYP103K50	
C 6214	(B,70,57)	CKSQYB475K10		C 6507	(B,99,11)	CKSRYP103K50	
C 6215	(B,73,52)	CKSRYP104K50		C 6508	(B,97,11)	CKSRYP103K50	F
C 6216	(B,73,55)	CKSRYP104Z25		C 6601	(B,104,46)	CKSRYP104K50	
C 6217	(A,72,45) 330 µF/6.3 V	CCH1366		C 6602	(A,88,49)	CKSRYP104K50	
C 6218	(A,71,65) 330 µF/6.3 V	CCH1366		C 6603	(A,86,36)	CKSRYP104K50	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

C 6604 (B,104,54) CKSRYB104K50
 C 6605 (A,122,69) CKSRYB153K50

S 3001 Push Switch CSG1155
 S 3002 Push Switch CSG1155

A C 6606 (A,125,74) CKSRYB104K50
 C 6607 (A,116,67) CKSRYB104K50
 C 6608 (A,113,40) CKSRYB104K50
 C 6609 (A,104,68) CKSRYB104K50
 C 6610 (A,119,67) CKSRYB105K10

S 3003 Push Switch CSG1155
 S 3004 Push Switch CSG1155
 S 3005 Push Switch CSG1155
 S 3006 Push Switch CSG1155
 S 3007 Push Switch CSG1155

C 6611 (A,94,62) CCSRCH7R0D50
 C 6612 (A,94,64) CCSRCH6R0D50
 C 6613 (A,122,73) CKSRYB104K50
 C 6614 (A,121,55) CKSRYB104K50
 C 6615 (A,94,49) CKSRYB104K50

S 3008 Push Switch CSG1155
 S 3009 Push Switch CSG1155
 S 3010 Push Switch CSG1155
 S 3011 Push Switch CSG1155
 S 3012 Push Switch CSG1155

B C 6616 (A,95,78) CKSRYB104K50
 C 6617 (A,94,75) CSZSR100M16
 C 6618 (A,95,79) CKSRYB104K50
 C 6619 (A,116,41) CKSRYB104K50
 C 6620 (A,108,41) CKSRYB104K50

S 3021 Push Switch CSG1155

RESISTORS

C 6622 (A,119,69) CKSRYB104K50
 C 6623 (B,113,56) CKSRYB104K50
 C 6624 (B,162,18) CKSRYB104K50
 C 6625 (B,168,16) CKSRYB104K50
 C 6626 (B,115,52) CCSRCH101J50

R 3001 RS1/16S822J
 R 3002 RS1/16S302J
 R 3003 RS1/16S103J
 R 3004 RS1/16S303J
 R 3006 RS1/16S103J

C 6801 (A,65,19) CKSRYB104K50
 C 6802 (B,6,9) 330 μ F/10 V CCH1623
 C 6805 (A,61,9) CKSRYB104K50
 C 6806 (A,22,7) CKSRYB105K10
 C 6807 (A,38,8) CKSRYB105K10

R 3007 RS1/16S303J
 R 3009 RS1/16S512J
 R 3010 RS1/16S103J
 R 3011 RS1/16S303J
 R 3016 LED(UC) Sddb16001A
 R 3016 LED(EW5) CL-196HR-CD
 R 3021 RS1/16S470J

CAPACITORS

C 3021 CKSRYB104K25

K**Unit Number: CWN1584(UC)****Unit Number: CWN1634(EW5)****Unit Name : Monitor Unit****MISCELLANEOUS**

IC 1 (A,40,59) IC TC90A96AFG-P
 IC 41 (A,29,85) IC TC7SH08FUS1
 IC 101 (A,84,40) IC NJM2100V
 IC 102 (A,17,43) IC TC7SET04FUS1
 IC 103 (A,12,61) IC TC7S66FU
 IC 104 (A,9,46) IC NJM082BV
 IC 121 (A,66,34) IC TC74VHC04FTS1
 IC 122 (A,70,30) IC TC7SET04FUS1
 IC 181 (B,94,71) IC BD6171KV
 IC 182 (A,83,69) IC S-1132B25-U5
 IC 183 (A,83,57) IC S-1132B15-U5
 IC 251 (A,109,45) IC S-80835CNNB-B8U
 IC 252 (A,121,38) IC BR93L56FJ-W
 IC 301 (A,100,32) IC PE5538A
 IC 305 (A,112,25) IC TC7SH08FUS1
 IC 332 (A,64,77) IC TC7SH08FUS1
 IC 841 (B,142,74) IC OZ964ISN
 IC 845 (B,136,67) IC TC7SH08FUS1
 IC 873 (A,130,64) IC TA78L05F
 Q 1 (A,44,79) Transistor 2SC4617

I**Unit Number: CWN1586****Unit Name : Panel Unit**

D 6901 LED Sddb16001A(CA)
 D 6905 LED Sddb16001A(CA)
 D 6910 LED Sddb16001A(CA)
 D S 6902 Push Switch(DISC) CSG1155
 R 6901 RS1/16S241J
 R 6903 RS1/16S202J

J**Unit Number: CWN1585(UC)****Unit Number: CWN1635(EW5)****Unit Name : Keyboard Unit****MISCELLANEOUS**

IC 3021 IC SBX3050-01
 D 3001 LED Sddb16001A(CA)
 D 3002 LED Sddb16001A(CA)
 D 3003 LED(UC) Sddb16001A(CA)
 D 3003 LED(EW5) CL-196HR-CD(AB)
 D 3004 LED Sddb16001A(CA)
 D 3006 LED Sddb16001A(CA)
 D 3007 LED Sddb16001A(CA)
 D 3009 LED Sddb16001A(CA)
 D 3010 LED Sddb16001A(CA)
 D 3012 LED Sddb16001A(CA)
 D 3013 LED Sddb16001A(CA)
 D 3014 LED Sddb16001A(CA)
 D 3015 LED Sddb16001A(CA)

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
Q 101	(A,8,37) Transistor	UMX2N		L 40	(A,24,72) Inductor	CTF1306	
Q 102	(A,10,37) Transistor	UMT2N		L 41	(A,23,72) Inductor	CTF1306	
Q 181	(A,102,67) FET	RSQ035P03		L 42	(A,22,72) Inductor	CTF1306	
Q 182	(A,109,67) FET	RSQ035P03		L 43	(A,20,67) Inductor	CTF1306	A
Q 251	(A,84,51) Transistor	2SC4617		L 44	(A,24,67) Inductor	CTF1306	
Q 301	(B,103,19) Transistor	2SC4617		L 45	(A,22,66) Inductor	CTF1306	
Q 351	(A,73,87) Transistor	2SC4081		L 46	(A,24,65) Inductor	CTF1306	
Q 352	(A,67,87) Transistor	2SA1576		L 47	(A,20,64) Inductor	CTF1306	
Q 602	(A,141,79) Transistor	2SC4617		L 48	(A,19,63) Inductor	CTF1306	
Q 603	(A,140,81) Transistor	2SC4617		L 49	(A,23,63) Inductor	CTF1306	
Q 605	(A,146,81) Transistor	UMX2N		L 50	(A,23,61) Inductor	CTF1306	
Q 681	(A,120,26) Transistor	XN4381		L 51	(A,23,60) Inductor	CTF1306	
Q 682	(A,126,30) Transistor	XN4381		L 52	(A,23,59) Inductor	CTF1306	
Q 683	(A,123,26) Transistor	FMG12		L 53	(A,24,58) Inductor	CTF1306	
Q 842	(A,149,79) Transistor	2SA1774		L 54	(A,24,56) Inductor	CTF1306	B
Q 843	(A,138,66) FET	TS8M1		L 55	(A,24,55) Inductor	CTF1306	
Q 844	(A,145,66) FET	TS8M1		L 56	(A,24,54) Inductor	CTF1306	
Q 871	(A,126,73) Transistor	2SC4617		L 57	(A,23,52) Inductor	CTF1306	
Q 872	(A,127,75) Transistor	2SC4617		L 58	(A,22,51) Inductor	CTF1306	
D 181	(A,96,64) Diode	RB160M-30		L 59	(A,24,49) Inductor	CTF1306	
D 182	(A,111,62) Diode	RSX201L-30		L 60	(A,24,48) Inductor	CTF1306	
D 183	(B,91,82) Diode	RB548W		L 61	(A,27,45) Ferrite Bead	CTF1528	
D 184	(B,91,80) Diode	RB548W		L 62	(A,27,44) Ferrite Bead	CTF1528	
D 185	(A,87,80) Diode	RB548W		L 63	(A,29,43) Ferrite Bead	CTF1528	
D 186	(A,89,80) Diode	RB548W		L 64	(A,29,44) Ferrite Bead	CTF1528	C
D 187	(A,91,80) Diode	RB548W		L 65	(A,30,43) Ferrite Bead	CTF1528	
D 241	(A,89,56) Diode	RB500V-40		L 66	(A,31,44) Ferrite Bead	CTF1528	
D 242	(A,83,62) Diode	RB500V-40		L 67	(A,32,44) Ferrite Bead	CTF1528	
D 601	(A,138,77) Diode	UDZS8R2(B)		L 68	(A,33,42) Inductor	CTF1306	
D 681	(A,119,30) Diode	UDZS5R6(B)		L 69	(A,35,42) Inductor	CTF1306	
D 682	(A,119,23) Diode	UDZS5R6(B)		L 70	(A,36,43) Ferrite Bead	CTF1528	
D 683	(A,124,23) Diode	1SS355		L 71	(A,36,41) Ferrite Bead	CTF1528	
D 840	(A,135,35) Diode	HZU6R2(B3)		L 72	(A,37,43) Ferrite Bead	CTF1528	
D 841	(A,136,64) Diode	HZU6R2(B3)		L 73	(A,38,41) Ferrite Bead	CTF1528	
D 842	(A,150,75) Diode	HZU6R2(B3)		L 74	(A,38,42) Ferrite Bead	CTF1528	
D 843	(A,136,38) Diode	MA147		L 75	(A,39,41) Ferrite Bead	CTF1528	D
D 844	(A,136,29) Diode	MA147		L 76	(A,40,42) Inductor	CTF1306	
D 851	(A,150,76) Diode	1SS355		L 77	(A,41,43) Ferrite Bead	CTF1528	
D 871	(A,130,70) Diode	UDZS6R2(B)		L 78	(A,41,41) Ferrite Bead	CTF1528	
D 872	(B,134,71) Diode	RB751V-40		L 79	(A,42,42) Ferrite Bead	CTF1528	
L 1	(A,56,50) Inductor	CTF1306		L 80	(A,43,41) Ferrite Bead	CTF1528	
L 2	(A,58,57) Inductor	CTF1306		L 81	(A,43,42) Ferrite Bead	CTF1528	
L 3	(A,56,55) Inductor	CTF1306		L 82	(A,44,40) Ferrite Bead	CTF1528	
L 4	(A,58,59) Inductor	CTF1306		L 83	(A,45,41) Inductor	CTF1306	
L 5	(A,56,62) Inductor	CTF1306		L 84	(A,47,39) Inductor	CTF1306	
L 6	(A,58,64) Inductor	CTF1306		L 85	(A,47,42) Inductor	CTF1306	
L 7	(A,57,66) Inductor	CTF1306		L 86	(A,48,42) Ferrite Bead	CTF1528	E
L 8	(A,57,69) Inductor	CTF1306		L 87	(A,49,41) Ferrite Bead	CTF1528	
L 9	(A,55,72) Inductor	CTF1306		L 88	(A,50,41) Ferrite Bead	CTF1528	
L 10	(A,55,73) Inductor	CTF1306		L 89	(A,51,41) Ferrite Bead	CTF1528	
L 11	(A,55,75) Inductor	CTF1306		L 90	(A,52,42) Ferrite Bead	CTF1528	
L 12	(A,53,75) Inductor	CTF1306		L 91	(A,53,42) Ferrite Bead	CTF1528	
L 13	(A,48,80) Inductor	CTF1306		L 92	(A,53,44) Inductor	CTF1306	
L 18	(A,46,83) Inductor	CTF1306		L 93	(A,54,46) Inductor	CTF1306	
L 25	(A,41,76) Inductor	CTF1306		L 94	(A,48,84) Inductor	CTF1635	
L 30	(A,39,76) Inductor	CTF1306		L 95	(A,25,82) Inductor	CTF1635	
L 34	(A,33,76) Inductor	CTF1306		L 96	(A,54,84) Inductor	CTF1635	
L 36	(A,30,75) Inductor	CTF1306		L 97	(A,21,48) Inductor	CTF1635	F
L 38	(A,28,73) Inductor	CTF1306		L 98	(A,58,53) Inductor	CTF1635	
L 39	(A,26,73) Inductor	CTF1306		L 99	(A,59,74) Inductor	CTF1635	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

L 100	(A,116,49)	Choke Coil 18 μ H	CTH1250
L 101	(A,11,56)	Inductor	LCKAW101J2520
L 102	(A,14,55)	Inductor	LCKAW101J2520
A L 105	(A,14,46)	Inductor	CTF1306
L 121	(A,64,41)	Inductor	CTF1635
L 122	(A,65,29)	Inductor	CTF1306
L 123	(A,69,35)	Inductor	CTF1306
L 151	(A,26,39)	Inductor	DTL1096
L 152	(A,31,38)	Inductor	CTF1635
L 153	(A,23,38)	Inductor	CTF1635
L 161	(B,16,35)	Inductor	DTL1096
L 171	(A,26,76)	Inductor	LCKAW101J2520
L 181	(B,86,77)	Inductor	DTL1096
L 185	(A,123,54)	Choke Coil 10 μ H	CTH1249
B L 186	(A,88,65)	Inductor	CTF1635
L 195	(A,91,53)	Inductor	CTF1635
L 203	(A,95,60)	Choke Coil 68 μ H	CTH1318
L 207	(B,100,83)	Inductor	CTF1635
L 214	(A,115,62)	Choke Coil 18 μ H	CTH1250
L 251	(A,90,50)	Inductor	CTF1635
L 321	(A,61,75)	Inductor	CTF1635
L 351	(A,70,85)	Chip Coil(UC)	LCTAW270J2520
L 351		Chip Coil(EW5)	LCTAW220J2520
L 352	(A,66,83)	Chip Coil(UC)	LCTAW390J2520
L 352		Chip Coil(EW5)	LCTAW270J2520
C L 353	(A,78,79)	Inductor	LCKAW101J2520
L 371	(A,67,55)	Inductor	CTF1630
L 372	(A,67,62)	Inductor	CTF1630
L 373	(A,67,63)	Inductor	CTF1630
L 380	(A,107,13)	Inductor	CTF1488
T 841	(A,144,43)	Transformer	CTT1119
TH301	(B,91,46)	Thermistor	CCX1051
X 1	(A,53,79)	Crystal Resonator 42 MHz	CSS1604
X 301	(A,101,45)	Radiator 12.58 MHz	CSS1601
VR841	(A,137,73)	Semi-fixed 10 k Ω (B)	CCP1423
Δ FU181	(A,108,10)	Fuse 500 mA	CEK1251
D Δ FU841	(A,134,52)	Fuse 1.25 A	CEK1255

RESISTORS

R 1	(A,50,76)	RS1/16S105J
R 2	(A,50,78)	RS1/16S391J
R 3	(A,44,76)	RS1/16S152J
R 4	(A,46,79)	RS1/16S331J
R 5	(A,40,87)	RS1/16S0R0J
R 41	(A,29,87)	RS1/16S0R0J
R 42	(A,28,82)	RS1/16S101J
E R 61	(A,21,58)	RS1/16S333J
R 62	(A,25,43)	RAB4CQ221J
R 63	(A,31,41)	RAB4CQ221J
R 64	(A,37,39)	RAB4CQ221J
R 65	(A,40,39)	RAB4CQ221J
R 67	(A,43,39)	RAB4CQ221J
R 68	(A,49,39)	RAB4CQ221J
R 69	(A,52,39)	RAB4CQ221J
R 101	(A,81,43)	RS1/16S101J
R 102	(A,89,40)	RS1/16S101J
R 103	(A,8,57)	RS1/16S472J
F R 104	(A,11,45)	RS1/16S223J
R 106	(A,6,47)	RS1/16S3302F
R 107	(A,6,45)	RS1/16S5602F

R 108	(A,6,42)	RS1/16S101J
R 111	(A,6,38)	RS1/16S153J
R 112	(A,11,33)	RS1/16S153J
R 113	(A,9,34)	RS1/16S0R0J
R 114	(A,9,33)	RS1/16S0R0J
R 115	(A,8,40)	RS1/16S100J
R 116	(A,11,40)	RS1/16S100J
R 117	(A,16,45)	RS1/16S681J
R 122	(A,59,27)	RS1/16S27R0D
R 124	(A,59,29)	RS1/16S10R0D
R 125	(A,59,32)	RS1/16S6800D
R 126	(A,60,32)	RS1/16S1000D
R 128	(A,60,35)	RS1/16S82R0F
R 132	(A,60,37)	RS1/16S56R0D
R 134	(A,59,37)	RS1/16S47R0D
R 136	(A,58,40)	RS1/16S36R0D
R 138	(A,57,37)	RS1/16S33R0F
R 142	(A,57,35)	RS1/16S27R0D
R 144	(A,57,32)	RS1/16S1800D
R 146	(A,57,29)	RS1/16S82R0F
R 148	(A,57,27)	RS1/16S12R0F
R 151	(A,27,35)	RS1/16S102J
R 171	(A,11,67)	RS1/16SS104J
R 172	(A,11,66)	RS1/16SS104J
R 173	(A,11,65)	RS1/16SS104J
R 174	(B,16,72)	RS1/16SS473J
R 175	(B,14,72)	RS1/16SS473J
R 176	(B,17,72)	RS1/16SS472J
R 177	(A,11,64)	RS1/16SS473J
R 181	(B,90,77)	RS1/16S3303D
R 182	(B,94,78)	RS1/16S1802F
R 183	(B,96,80)	RS1/16S821J
R 184	(B,94,77)	RS1/16S5102D
R 185	(A,92,79)	RS1/16S2202F
R 186	(A,93,77)	RS1/16S1802F
R 187	(A,93,74)	RS1/16S1002F
R 188	(B,103,72)	RS1/16S563J
R 191	(A,98,69)	RS1/16S150J
R 192	(A,105,70)	RS1/16S150J
R 193	(B,103,67)	RS1/16S273J
R 194	(B,107,59)	RS1/16S1600D
R 195	(B,107,58)	RS1/16S1001D
R 196	(B,109,60)	RS1/16S2700D
R 201	(B,99,57)	RS1/16S682J
R 203	(B,87,68)	RS1/16S5100F
R 204	(B,88,65)	RS1/16S2001F
R 216	(B,104,62)	RS1/16S333J
R 217	(B,104,58)	RS1/16S102J
R 218	(B,99,62)	RS1/16S684J
R 219	(B,92,58)	RS1/16S6801F
R 220	(B,97,56)	RS1/16S1001D
R 221	(B,95,56)	RS1/16S201J
R 222	(B,99,61)	RS1/16S182J
R 241	(A,87,58)	RS1/16S684J
R 242	(A,81,64)	RS1/16S474J
R 251	(A,115,42)	RS1/16S103J
R 252	(A,112,42)	RS1/16S0R0J
R 253	(A,110,40)	RS1/16S473J
R 254	(A,114,40) (EW5)	RS1/16S473J
R 256	(A,115,40)	RS1/16S473J

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 258	(A,114,37) (UC)	RS1/16S473J		R 757	(B,59,13)	RS1/10S152J	
R 260	(A,111,35)	RS1/16S473J		R 758	(B,59,15)	RS1/10S152J	
R 261	(A,113,37)	RS1/16S473J		R 759	(A,62,18) (UC)	RS1/10S751J	A
R 263	(A,111,32)	RS1/16S473J		R 759	(EW5)	RS1/10S561J	
R 264	(A,112,29)	RAB4CQ102J		R 760	(A,59,17)	RS1/16S0R0J	
				R 761	(B,70,13)	RS1/16S822J	
R 268	(B,122,40)	RS1/16S0R0J		R 842	(B,135,64)	RS1/16S103J	
R 270	(A,117,40)	RS1/16S473J		R 843	(A,148,77)	RS1/16S183J	
R 271	(A,110,16)	RS1/16S102J		R 844	(A,149,81)	RS1/16S473J	
R 283	(B,97,23)	RAB4CQ473J		R 845	(A,151,79)	RS1/16S472J	
R 284	(A,88,28)	RS1/16S272J		R 846	(A,143,74)	RS1/16S513J	
R 285	(A,86,28)	RS1/16S272J		R 847	(B,137,73)	RS1/16S105J	
R 286	(A,88,25)	RS1/16S471J		R 848	(A,142,71)	RS1/16S563J	
R 287	(A,83,28)	RS1/16S470J		R 849	(A,150,73)	RS1/16S103J	
R 288	(A,83,29)	RS1/16S470J		R 850	(B,135,63)	RS1/16S105J	B
R 291	(A,88,30)	RAB4CQ471J		R 851	(A,136,68)	RS1/16S103J	
R 292	(A,88,35)	RAB4CQ471J		R 853	(A,136,33)	RS1/16S561J	
R 294	(B,85,50)	RS1/16S0R0J		R 871	(A,128,73)	RS1/16S103J	
R 296	(A,84,48)	RS1/16S473J		R 872	(A,128,70)	RS1/16S104J	
R 297	(A,87,50)	RS1/16S473J		R 873	(A,125,70)	RS1/16S473J	
R 298	(A,82,51)	RS1/16S223J		R 874	(A,130,77)	RS1/16S105J	
R 299	(A,95,45)	RAB4CQ123J		R 878	(B,132,68)	RS1/16S153J	
R 300	(A,98,43)	RS1/16S473J					
R 301	(B,95,48)	RS1/16SS0R0J		<u>CAPACITORS</u>			
R 302	(A,103,21)	RS1/16S471J		C 1	(A,55,48)	CKSSYF104Z16	C
R 303	(A,107,43)	RS1/16S101J		C 2	(A,55,52)	CKSSYF104Z16	
R 304	(A,109,42)	RS1/16SS0R0J		C 3	(A,55,54)	CKSSYF104Z16	
R 305	(A,90,45)	RS1/16S153J		C 4	(A,55,59)	CKSSYF104Z16	
R 306	(A,114,26)	RS1/16S473J		C 5	(A,55,60)	CKSSYF104Z16	
R 307	(A,110,25)	RS1/16S103J					
R 308	(A,101,21)	RS1/16S104J		C 6	(A,55,65)	CKSSYF104Z16	
R 309	(B,105,19)	RS1/16S103J		C 7	(A,55,67)	CKSSYF104Z16	
R 335	(A,63,70)	RS1/16S0R0J		C 8	(A,55,70)	CKSSYF104Z16	
R 337	(A,61,79)	RS1/16S101J		C 9	(A,52,73)	CKSSYF104Z16	
R 351	(A,75,79)	RS1/16S0R0J		C 11	(A,50,74)	CKSSYF104Z16	
R 352	(A,73,79)	RS1/16S104J					
R 353	(A,78,82)	RS1/16S153J		C 12	(A,48,74)	CKSSYF104Z16	
R 354	(A,74,84)	RS1/16S104J		C 13	(A,46,74)	CKSSYF104Z16	
R 355	(A,71,81)	RS1/16S681J		C 14	(A,55,79)	CCSRCH9R0D50	D
R 356	(A,71,82)	RS1/16S471J		C 15	(A,50,81)	CCSRCH9R0D50	
R 357	(A,65,80)	RS1/16S272J		C 16	(A,46,76)	CKSRYB103K50	
R 358	(A,70,88)	RS1/16S391J					
R 602	(A,142,85)	RS1/16S621J		C 17	(A,47,80)	CCSRCH181J50	
R 603	(A,143,79)	RS1/16S103J		C 18	(A,44,74)	CKSSYF104Z16	
R 604	(A,141,77)	RS1/16S104J		C 19	(A,43,76)	CCSRCH4R0D50	
R 605	(A,138,79)	RS1/16S473J		C 20	(A,45,81)	CKSRYF104Z16	
				C 22	(A,42,80)	CKSRYB104K25	
R 606	(A,143,84)	RS1/16S621J					
R 607	(A,146,78)	RS1/16S821J		C 23	(A,41,80)	CKSRYB104K25	
R 608	(A,143,82)	RS1/16S101J		C 24	(A,40,80)	CKSRYB104K25	E
R 609	(A,143,81)	RS1/16S101J		C 25	(A,41,74)	CKSSYF104Z16	
R 681	(A,118,20)	RS1/16S104J		C 26	(A,38,81)	CKSRYB104K25	
				C 27	(A,38,87)	CKSRYB104K25	
R 682	(A,122,32)	RS1/16S104J					
R 683	(A,122,21)	RS1/16S102J		C 28	(A,38,79)	CKSRYB104K25	
R 684	(A,125,27)	RS1/16S102J		C 30	(A,39,74)	CKSSYF104Z16	
R 701	(A,73,18)	RS1/16S103J		C 31	(A,35,78)	CKSRYB104K25	
R 722	(B,92,17)	RS1/16S470J		C 32	(A,37,76)	CKSRYB104K25	
				C 33	(A,36,76)	CKSRYB104K25	
R 751	(B,62,18)	RS1/10S152J					
R 752	(B,59,17)	RS1/10S751J		C 34	(A,34,76)	CKSRYB104K25	
R 753	(B,59,19)	RS1/10S751J		C 35	(A,34,74)	CKSSYF104Z16	
R 754	(B,59,9)	RS1/10S751J		C 36	(A,34,80)	CKSSYF104Z16	F
R 755	(B,59,11)	RS1/10S751J		C 37	(A,33,80)	CKSSYF104Z16	
				C 38	(A,32,80)	CKSSYF104Z16	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

C 39	(A,31,77)	CKSRYB104K25	C 164	(A,18,35)	CKSRYB104K25
C 40	(A,30,77)	CKSRYB104K25	C 181	(A,85,76)	CKSQYF105Z25
C 41	(A,31,74)	CKSSYF104Z16	C 182	(A,96,81)	CKSQYF105Z25
A C 42	(A,31,81)	CKSSYF104Z16	C 183	(B,94,82)	CKSRYB104K25
C 44	(A,30,74)	CKSSYF104Z16	C 184	(B,88,78)	CKSQYF105Z25
C 45	(A,26,71)	CKSSYF104Z16	C 188	(A,85,81)	CKSQYF105Z25
C 46	(A,25,68)	CKSSYF104Z16	C 190	(A,91,83)	CKSQYF225Z16
C 47	(A,26,67)	CKSSYF104Z16	C 191	(A,89,84)	CKSQYF225Z16
C 48	(A,28,81)	CCSRCH331J50	C 192	(A,93,83)	CKSQYF105Z25
C 49	(A,25,62)	CKSSYF104Z16	C 193	(A,89,78)	CKSRYF474Z16
C 53	(A,25,59)	CKSSYF104Z16	C 194	(A,88,78)	CKSRYF474Z16
C 54	(A,26,57)	CKSSYF104Z16	C 195	(A,95,76)	CKSYF475Z16
C 55	(A,26,55)	CKSSYF104Z16	C 196	(B,94,80)	CKSRYB472K50
C 56	(A,25,53)	CKSSYF104Z16	C 197	(B,94,81)	CKSRYB472K50
B C 57	(A,25,51)	CKSSYF104Z16	C 198	(A,86,53)	CKSQYF105Z25
C 58	(A,24,51)	CKSSYF104Z16	C 199	(A,91,78)	CKSRYF474Z16
C 59	(A,25,49)	CKSSYF104Z16	C 200	(A,87,83)	CKSQYF105Z25
C 60	(A,26,47)	CKSRYF105Z10	C 201	(A,95,53) 33 μ F/10 V	CCH1586
C 62	(A,21,59)	CKSSYF104Z16	C 202	(A,95,55)	CKSRYB104K25
C 68	(A,33,44)	CKSSYF104Z16	C 203	(A,102,65)	CKSRYB103K50
C 69	(A,35,44)	CKSSYF104Z16	C 204	(A,101,59) 10 μ F	CCG1223
C 76	(A,39,44)	CKSSYF104Z16	C 205	(B,100,76)	CKSRYB103K50
C 83	(A,44,44)	CKSSYF104Z16	C 206	(B,101,76)	CKSRYB105K6R3
C 85	(A,46,44)	CKSSYF104Z16	C 207	(B,100,81)	CKSQYF105Z25
C 89	(A,58,43)	CSZSR330M10	C 208	(B,101,71)	CKSRYB102K50
C 90	(A,46,43)	CKSSYF104Z16	C 209	(B,101,74)	CKSRYB104K25
C 91	(A,121,47)	CKSRYB104K25	C 210	(A,123,47)	CKSQYF105Z25
C 92	(A,50,44)	CKSSYF104Z16	C 211	(B,101,69)	CKSRYB105K6R3
C 93	(A,53,45)	CKSSYF104Z16	C 212	(A,106,61) 10 μ F	CCG1223
C 94	(A,45,84)	CKSYF105Z16	C 213	(B,103,66)	CKSRYB104K25
C 95	(A,36,86)	CSZSR330M10	C 214	(A,106,57) 10 μ F	CCG1223
C 96	(A,51,85)	CSZSR330M10	C 215	(A,115,57)	CKSRYB104K25
C 97	(A,19,49)	CSZS100M16	C 216	(A,112,56) 68 μ F/6.3 V	CCH1440
C 98	(A,59,50)	CSZSR220M10	C 217	(B,104,61)	CCSRCH101J50
C 99	(A,59,71)	CSZSR220M10	C 219	(B,107,61)	CKSRYB103K50
D C 100	(A,58,47)	CSZSR330M10	C 221	(B,104,59)	CCSRCH331J50
C 101	(A,15,43)	CKSSYF104Z16	C 223	(B,101,61)	CKSRYB393K16
C 102	(A,86,42)	CKSSYF104Z16	C 224	(B,99,60)	CKSRYB103K25
C 103	(A,8,61)	CKSRYB105K6R3	C 226	(B,99,58)	CKSRYB473K25
C 104	(A,12,59)	CKSRYB104K25	C 228	(B,91,62)	CKSRYB393K16
C 105	(A,9,53)	CKSRYB104K25	C 229	(B,87,70)	CKSRYB393K16
C 106	(A,15,52)	CKSRYB104K25	C 230	(A,89,70)	CKSRYB102K50
C 107	(A,7,54)	CSZSR220M16	C 231	(B,85,68)	CKSRYB104K25
C 108	(A,12,51) 4.7 μ F	CCG1111	C 232	(B,86,64)	CSZS100M16
C 111	(A,6,50)	CKSRYB105K6R3	C 233	(A,92,74)	CKSRYB105K6R3
E C 112	(A,9,41)	CKSRYF104Z16	C 234	(A,88,67)	CKSRYB104K25
C 121	(A,70,33)	CKSRYF104Z16	C 235	(A,97,77)	CKSRYB103K50
C 122	(A,63,37)	CKSSYF104Z16	C 236	(A,88,56)	CKSRYF105Z10
C 123	(A,65,39)	CSZS100M16	C 237	(A,80,56)	CKSRYB104K25
C 151	(A,25,41)	CKSSYF104Z16	C 238	(A,82,53)	CSZS100M10
C 152	(A,31,34)	CKSSYF104Z16	C 239	(A,97,81)	CKSSYF104Z16
C 153	(A,23,40)	CKSRYB104K25	C 240	(A,105,63)	CKSRYB103K50
C 154	(A,24,35)	CKSRYB104K25	C 241	(A,84,64)	CKSRYF105Z10
C 155	(A,25,36)	CKSSYF104Z16	C 242	(A,83,73)	CKSRYB104K25
C 156	(A,31,36)	CSZSR330M10	C 243	(A,82,76)	CSZS100M10
C 157	(A,21,36)	CKSQYF334Z25	C 244	(A,86,61)	CSZS100M16
F C 158	(A,27,39)	CSZS100M16	C 245	(A,82,65)	CKSRYB104K25
C 161	(A,29,41)	CKSSYF104Z16	C 248	(A,86,56)	CKSRYB104K25
C 162	(A,14,40)	CKSRYB104K25	C 251	(A,110,47)	CKSSYF104Z16
C 163	(A,19,38) 4.7 μ F	CCG1111	C 252	(A,113,44)	CKSRYB103K50

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 253	(A,123,42)	CKSSYF104Z16		L Unit Number : CZW5026 Unit Name : Main PCB Unit			
C 257	(A,90,47)	CSZSR330M10					
C 258	(A,88,45)	CKSSYF104Z16					
C 261	(A,102,42)	CKSSYF104Z16					
C 301	(B,105,21)	CKSRYB105K6R3					
C 302	(B,103,17)	CKSSYF104Z16					
C 303	(B,95,17)	CKSSYF104Z16					
C 304	(B,95,16)	CKSRYB104K50					
C 305	(A,112,23)	CKSSYF104Z16					
C 307	(A,90,44)	CKSRYB104K25					
C 322	(A,64,72)	CSZS100M10					
C 323	(A,64,74)	CKSRYF104Z16					
C 333	(A,64,75)	CKSRYF104Z16					
C 351	(A,75,81) 10 μF	CCG1171					
C 352	(A,69,82) (UC)	CCSRCH680J50					
C 352	(EW5)	CCSRCH470J50					
C 353	(A,68,80) (UC)	CCSRCH101J50					
C 353	(EW5)	CCSRCH680J50					
C 354	(A,67,85) (UC)	CCSRCK2R0C50					
C 354	(EW5)	CCSRCH5R0C50					
C 355	(A,66,80) (UC)	CCSRCH680J50					
C 355	(EW5)	CCSRCH470J50					
C 356	(A,72,84)	CKSSYF104Z16					
C 357	(A,75,76)	CSZSR330M10					
C 385	(A,133,44) 10 μF	CCG1223					
C 386	(A,133,47) 10 μF	CCG1223					
C 387	(A,113,13)	CKSQYF224Z25					
C 602	(A,141,83)	CKSRYB104K25					
C 681	(A,128,26)	CKSRYB102K50					
C 682	(A,125,20)	CKSRYB102K50					
C 683	(A,119,32)	CKSRYB102K50					
C 684	(A,116,20)	CKSRYB102K50					
C 685	(A,120,29)	CKSSYF104Z16					
C 686	(A,128,27)	CKSRYB102K50					
C 687	(A,125,22)	CKSRYB102K50					
C 751	(A,67,16)	AVR-M1608C080MTAAB					
C 752	(A,65,16)	AVR-M1608C080MTAAB					
C 753	(A,69,16)	AVR-M1608C080MTAAB					
C 754	(B,87,23)	CKSSYF104Z16					
C 755	(B,65,19)	CKSSYB102K50					
C 843	(A,128,75)	CKSRYB104K25					
C 844	(B,141,79)	CKSQYB105K10					
C 845	(B,143,79)	CKSQYB474K16					
C 846	(A,134,72)	CKSRYF105Z10					
C 847	(B,147,77)	CKSRYF104Z50					
C 848	(A,146,74)	CKSRYB562K50					
C 849	(A,148,74)	CKSRYB152K50					
C 852	(B,136,73)	CKSRYB103K50					
C 853	(A,145,72)	CKSRYB473K50					
C 854	(B,132,72)	CFHXSQ221J50					
C 855	(A,135,70)	CKSRYB473K50					
C 856	(A,150,70) 10 μF	CCG1223					
C 857	(A,142,66) 10 μF	CCG1223					
C 858	(A,135,61)	CKSQYB105K10					
C 859	(A,136,24) 15 pF	CCG1194					
C 861	(B,134,39)	CKSRYB153K50					
C 862	(A,137,61)	CKSQYB105K10					
C 871	(A,130,60)	CKSRYF104Z50					
C 872	(A,126,62)	CKSRYF105Z10					
C 891	(B,134,68)	CKSRYF104Z50					



Unit Number : CZW5026
Unit Name : Main PCB Unit

MISCELLANEOUS

IC 1	IC	BA6288FS
IC 2	IC	S-812C50AMC-C3E
IC 3	IC	TC7W14FU
IC 4	Photo-interrupter	GP2L24B
IC 5	Photo-interrupter	GP2L24B
Q 1	Transistor	2SB1185
Q 2	Transistor	IMX1
D 1	Diode	HZU6R2(B2)
L 2	Inductor	LCTAW2R2J2520
△FU1	Fuse 2 A	CEK1304

RESISTORS

R 1	RS1/16S223J
R 2	RS1/8S271J
R 3	RS1/16S332J
R 4	RS1/16S471J
R 5	RS1/16S222J
R 11	RS1/10S0R0J
R 12	RS1/16S222J
R 13	RS1/16S222J
R 14	RS1/16S821J
R 15	RS1/16S821J
R 19	RS1/16S102J
R 20	RS1/16S102J
R 21	RS1/16S102J
R 22	RS1/16S102J

CAPACITORS

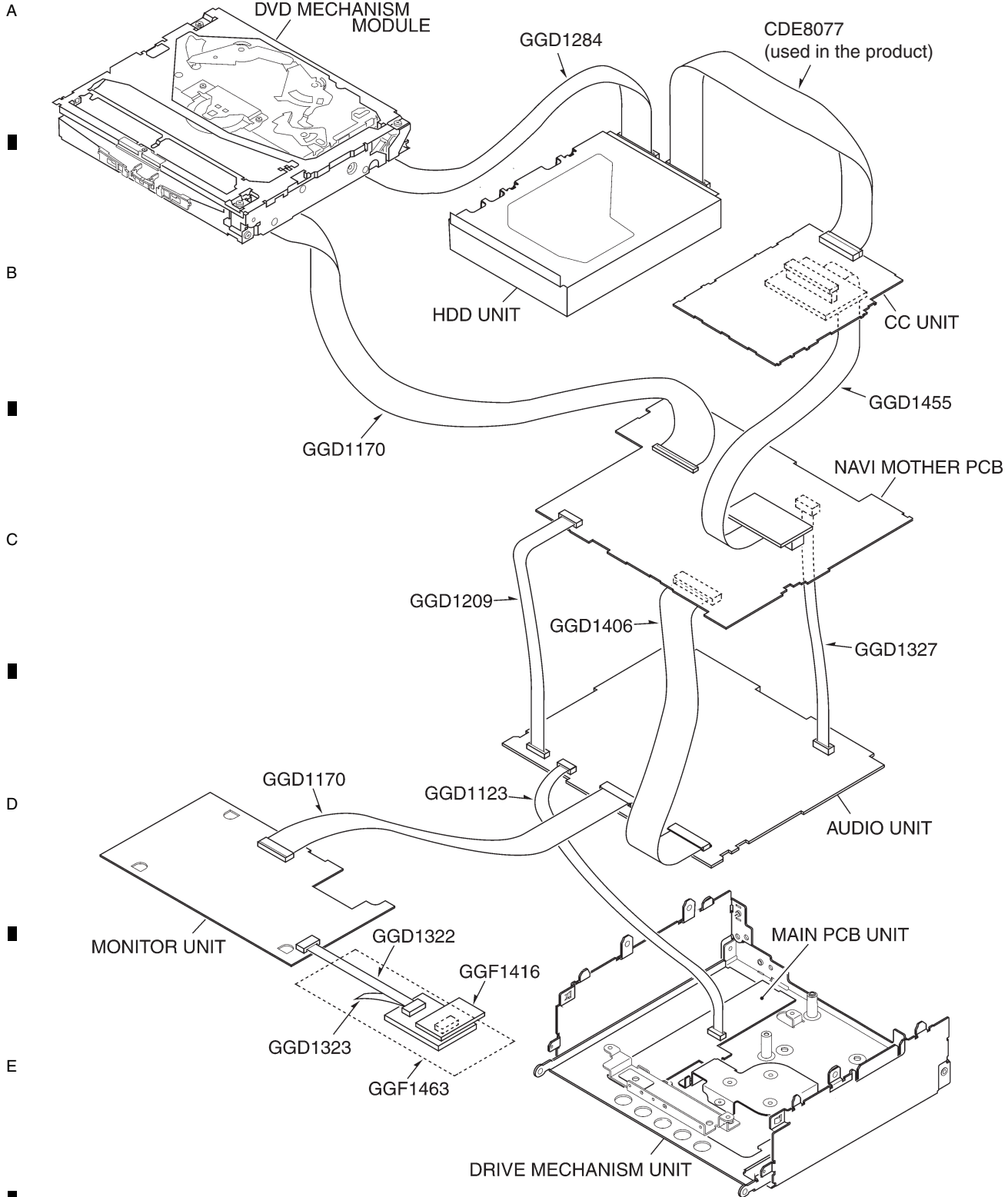
C 1	39 μF/16 V	CKSRYB153K50
C 2		CZC5169
C 3		CKSRYB105K10
C 7		CEVW100M16
C 8		CKSRYB104K50
C 9		CKSRYB473K50
C 10		CKSRYB473K50
C 11		CEVW100M16
C 12	CEVW100M16	
C 13	CKSRYB104K50	
C 14	CKSRYB104K50	

Miscellaneous Parts List

M 1	Pickup Unit(Service)(DP5)	CXX1945
M 2	Motor Unit(LOADING)	CXC4315
M 3	Motor Unit(CARRIAGE)	CXC4314
	Motor(SPINDLE)	CXM1308

6. ADJUSTMENT

6.1 JIG CONNECTION DIAGRAM



● Jigs List

Jig No.	Name	Remarks
GGD1455	122-Pin Extension Cable	Navi Mother PCB <-> CC Unit
GGD1170	40-Pin FFC	DVD Mechanism Module <-> Navi Mother PCB
GGD1284	40-Pin FFC BBR	DVD Mechanism Module <-> HDD Unit
GGD1327	20-Pin Extension Cord	Navi Mother PCB <-> Audio Unit
GGD1406	80-Pin FFC	Navi Mother PCB <-> Audio Unit
GGD1209	20-Pin FFC	Navi Mother PCB <-> Audio Unit
GGD1123	15-Pin FFC	Audio Unit <-> Main PCB Unit
GGD1170	40-Pin FFC	Audio Unit <-> Monitor Unit
GGF1416	Jig for Monitor Adjustment	For OSD display
GGF1463	Conversion PCB for OSD display	GGF1416 Conversion
GGD1322	GGF1463 for repair	For repair
GGD1323	GGF1463 for repair	For repair

A

B

C

D

E

F

6.2 DVD ADJUSTMENT



A

● Skew adjustment

If any of the following replacements have been performed on the system, adjustments for pick up, must be conducted:

1. Pick up unit replacement
2. Spindle motor replacement
3. Carriage chassis replacement
4. Pick up unit main shaft replacement
5. Pick up unit sub-shaft replacement

B

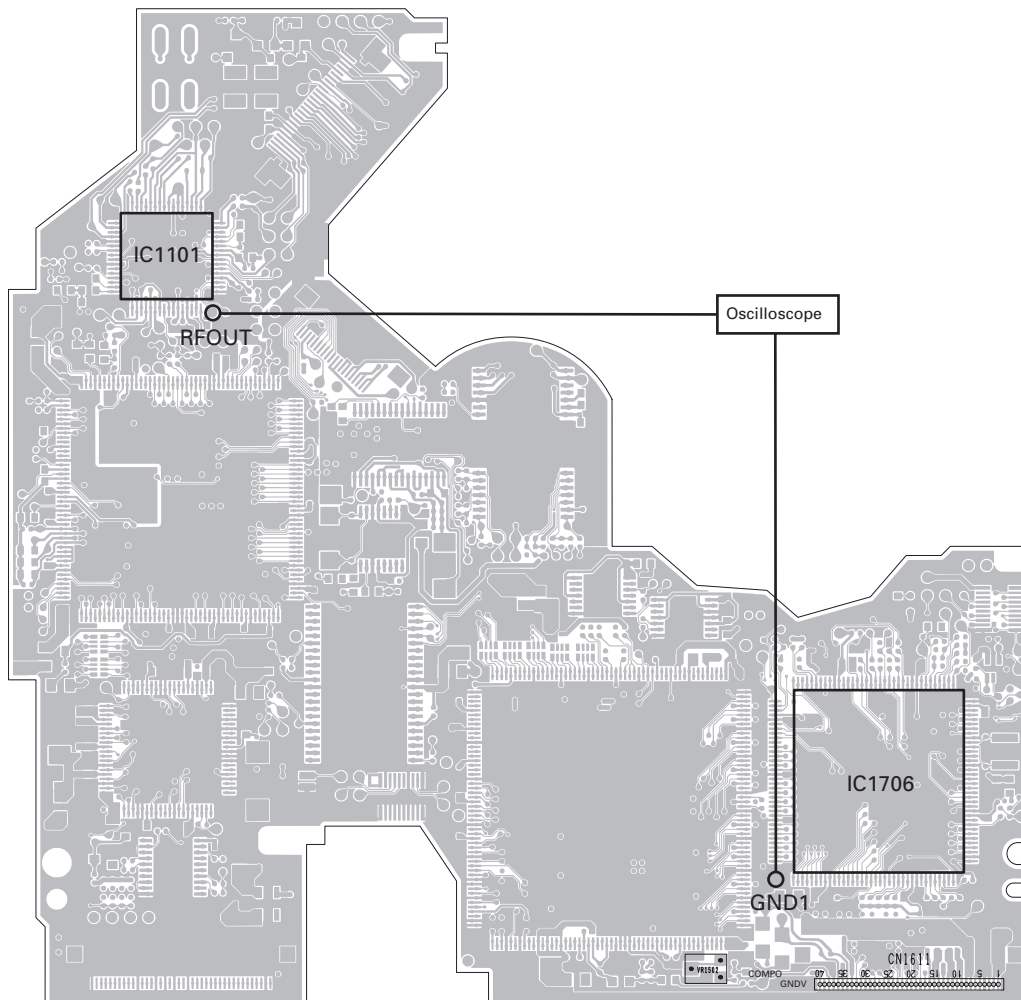
Measurement device and tools : Oscilloscope
Allen key wrench
Screw rock(GYL1001)

Disk used : GGV1018
Measurement reference : GND1
Measurement point : RFOUT

Skew adjustment connection diagram

C

- DVD core unit (MS3)



F

Symptoms in case of poor adjustment: Error efficiency deteriorated: 10^{-3} (Optimum value: 10^{-4} or lower)
 High jitter of the RF signal RF waveform deformed
 Unstable operation in tracking closing and servo control

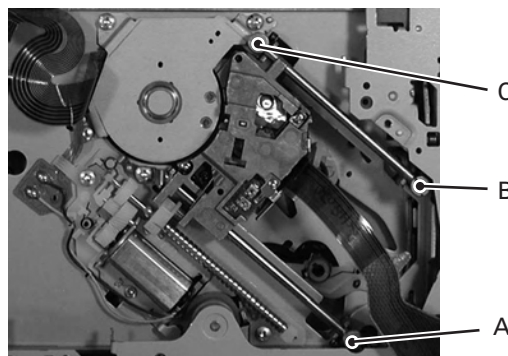
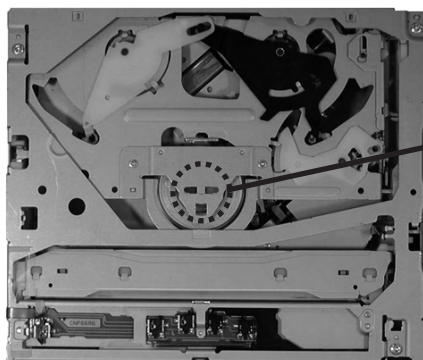
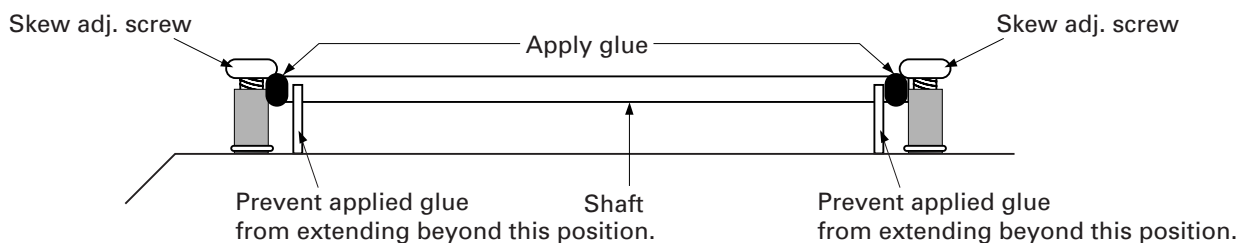
Caution: Avoid exposing your eyes to laser beams for a long time.

Preparation for adjustment: Clean both ends of the shafts.

Use brand new skew screws supplied with the service kit GXX1259.

Procedures:

1. Place the DVD mechanism module upside down.
 To avoid the disc from being robbed when it is turned upside down, first put a coin of about 1.5 mm on the table, then turn the disc upside down and set it so that the ① in the figure comes to the point immediately above the coin.
2. After replacing the pickup (by referring to the procedures of "Removing the Pickup."), roughly adjust the three skew screws through visual check so that the pickup is mounted in parallel to the CRG chassis around the inner and outer tracks.
3. Connect an oscilloscope as shown in the connecting diagram.
4. Turn on the power of the product. Load the test disc (GGV1018).
5. In the front-end test mode, set the disc type to DVD layer 1. Then, turn on the power. Move the pickup toward the inner tracks.
6. Turn on the laser diodes.
7. With the focus servo closed, complete all automatic adjustments. Close the tracking servo, and then complete all automatic adjustments.
- 8 Follow the next procedures, from 8-1 to 8-5, and adjust the (three) skew screws.
- 8-1 Move the pickup toward the inner track and turn the skew adjustment screw C so that the RF level of oscilloscope becomes the maximum.
 (Tangential adjustment at the inner track position: Adjust the flatness of the disc at the inner track position with the adjustment screw C)
- 8-2 Move the pickup toward the outer track and turn the skew adjustment screw B so that the RF level becomes the maximum.
 (Tangential adjustment at the outer track position: Adjust the flatness of the disc at the outer track position with the adjustment screw B)
- 8-3 Leave the pickup at the outer track position and turn the skew adjustment screws A and B in the same direction alternately one quarter at a time (A•B•A•B •••) so that the RF level becomes the maximum.
 (Radial adjustment at the outer track position: Keeping the flatness at the outer track position, adjust the flatness of the whole disk with the adjustment screws A and B)
- 8-4 Move the pickup toward the inner track and turn the skew adjustment screw C so that the RF level becomes the maximum.
 (Tangential adjustment at the inner track position: Adjust the flatness of the disc at the inner track position with the adjustment screw C)
- 8-5 Repeat the steps from 8-2 to 8-4 three times, and adjust at the position where the RF level becomes the maximum.
9. Turn off the power in the test mode. After confirming that the disc has stopped, eject the disc.
10. Adjust with a screw rock the shaft and skew adjustment screw to the same state as initial one.



● Back end section check flow chart

A

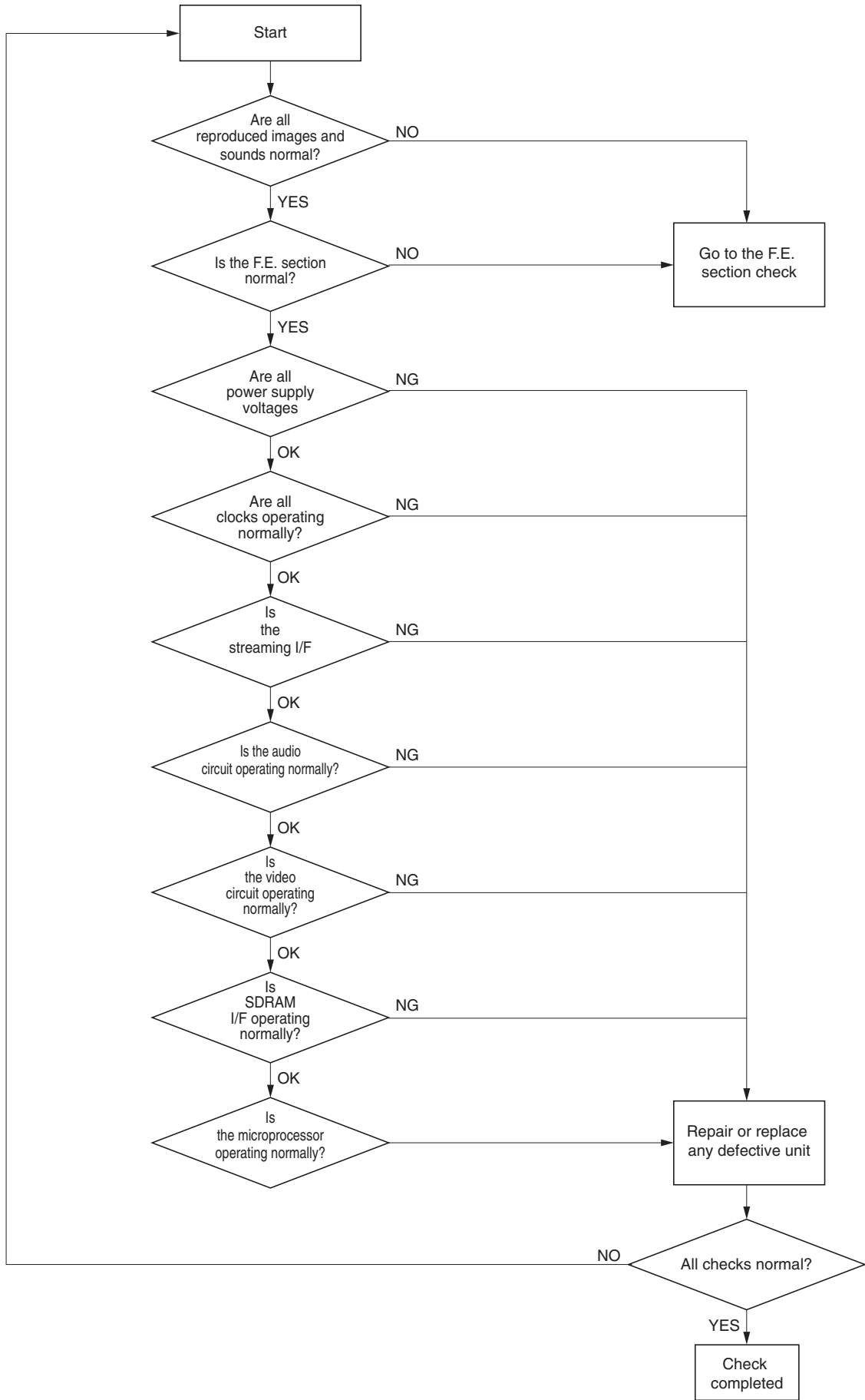
B

C

D

E

F



Check 1: Are all power supply voltages normal?

Reproduce DVD-REF-A1 Title 1.

Verify the voltage of the sensing pin.

If results are not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components.

NO.	Verification location	Rated value	Unit
1	VD8-PGND	8 ± 0.4	V
2	VD33-GND	3.3 ± 0.3	V
3	SRVDD33-GND	3.3 ± 0.3	V
4	VCC5-GND	5 ± 0.25	V
5	AVCC5-GND	5 ± 0.3	V
6	VCC33-GND	3.3 ± 0.15	V
7	VCC18-GND	1.8 ± 0.15	V
8	VCC25-GND	2.5 ± 0.2	V

A Check 2: Are all clocks operating normally?

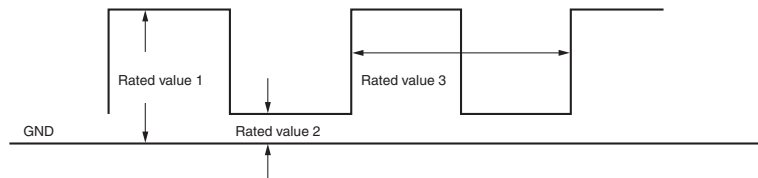
Reproduce DVD-REF-A1 Title 1.

Checks are to be conducted with a GND reference.

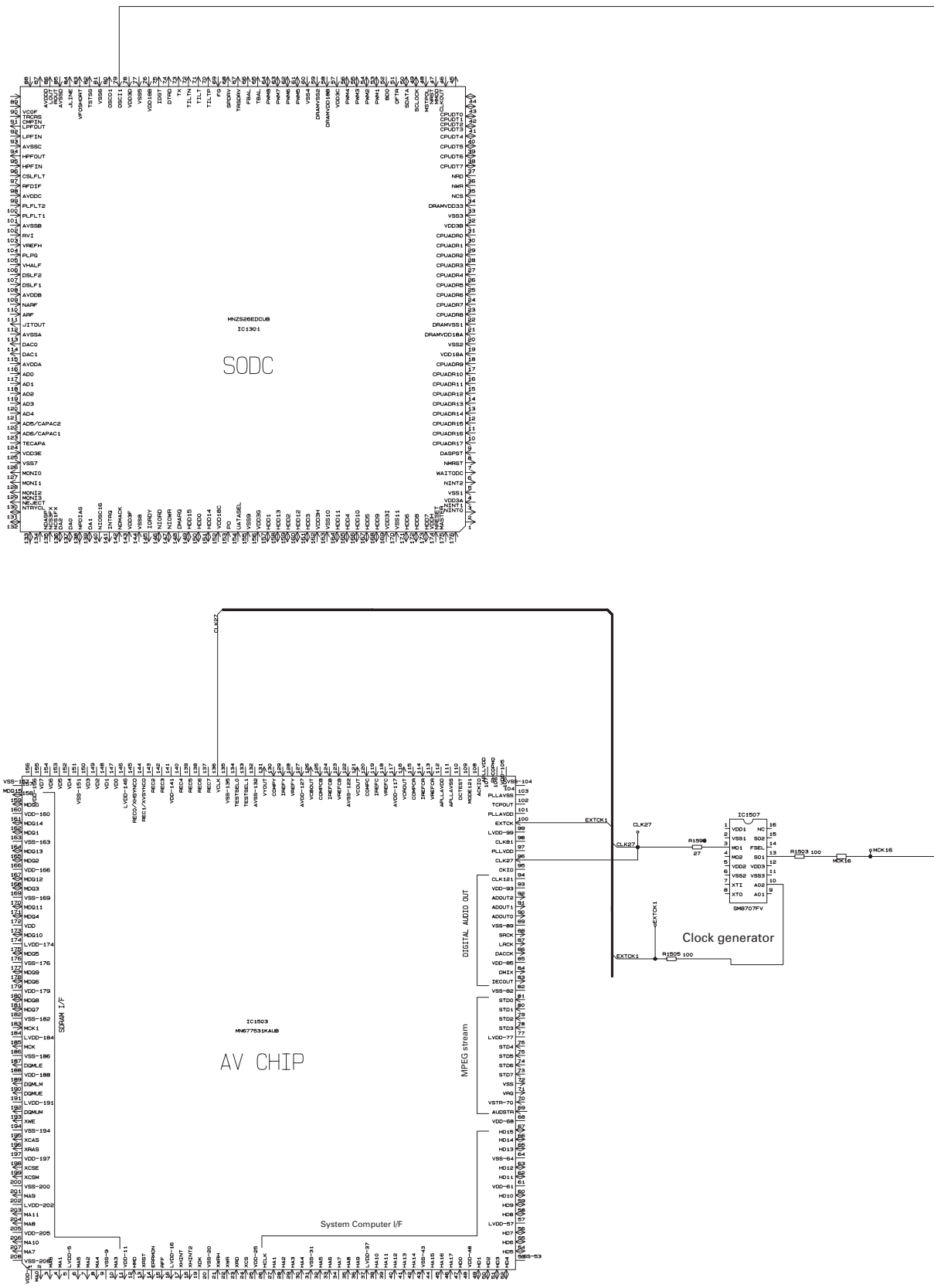
If locations listed under "verification location 2", can be verified, there will be no need to perform verifications for the locations listed under "verification location 1."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in the vicinity of IC1507.

NO.	Verification location 1 (contact measurements)	Verification location 2	Media	Rated value1	Rated value 2	Rated value 3
1	CLK27	IC1503 96pin	ALL	2.65V~VCC33	GND~0.65V	27MHz±50ppm
2	EXTCK1	IC1503 100pin	DVD	2.65V~VCC33	GND~0.65V	36.8640MHz±100ppm
3	EXTCK1	IC1503 100pin	CD	2.65V~VCC33	GND~0.65V	33.8688MHz±100ppm
4	MCK16	IC1301 79pin	ALL	2.33~VCC33	GND~0.99V	16.9344MHz±100ppm
5	MCK33	IC1601 3,33pin	ALL	2.33~VCC33	GND~0.10V	33.8688MHz~40.0000MHz



Clock rated values



A

Check 3: Is the streaming I/F operating normally?

Reproduce DVD-REF-A1 Title 1.

Checks are to be conducted with a GND reference.

If the locations listed under "verification location 2" can be verified, then there is no need to conduct verifications for the locations listed under "verification location 1."

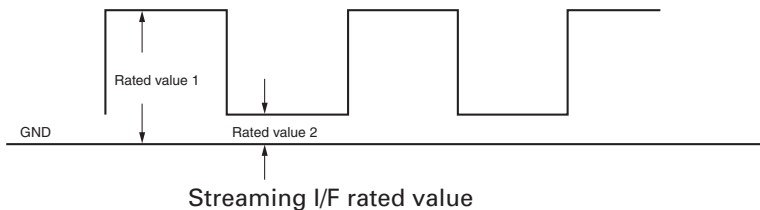
If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of "output" "input" of the checked location.

B

NO.	Verification location 1 (contact measurements)	Verification location2	Verification Media	Rated value 1	Rated value 2	Reference waveform	Others
1	STD0	IC1503 81pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD8 at R1425
2	STD1	IC1503 80pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD9 at R1425
3	STD2	IC1503 79pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD10 at R1425
4	STD3	IC1503 78pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD11 at R1425
5	STD4	IC1503 76pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD12 at R1426
6	STD5	IC1503 75pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD13 at R1426
7	STD6	IC1503 74pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD14 at R1426
8	STD7	IC1503 73pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD15 at R1426
9	STCLK	IC1503 70pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name ODA2 at IC1405
10	STVALID	IC1503 69pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name OINTRQ at IC1405
11	MASTER	IC1301 176pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name STENABLE at IC1405

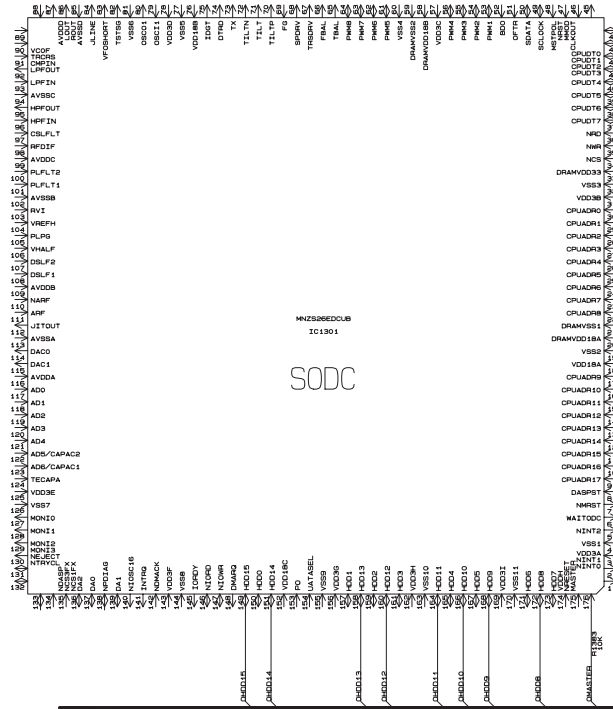
C

D



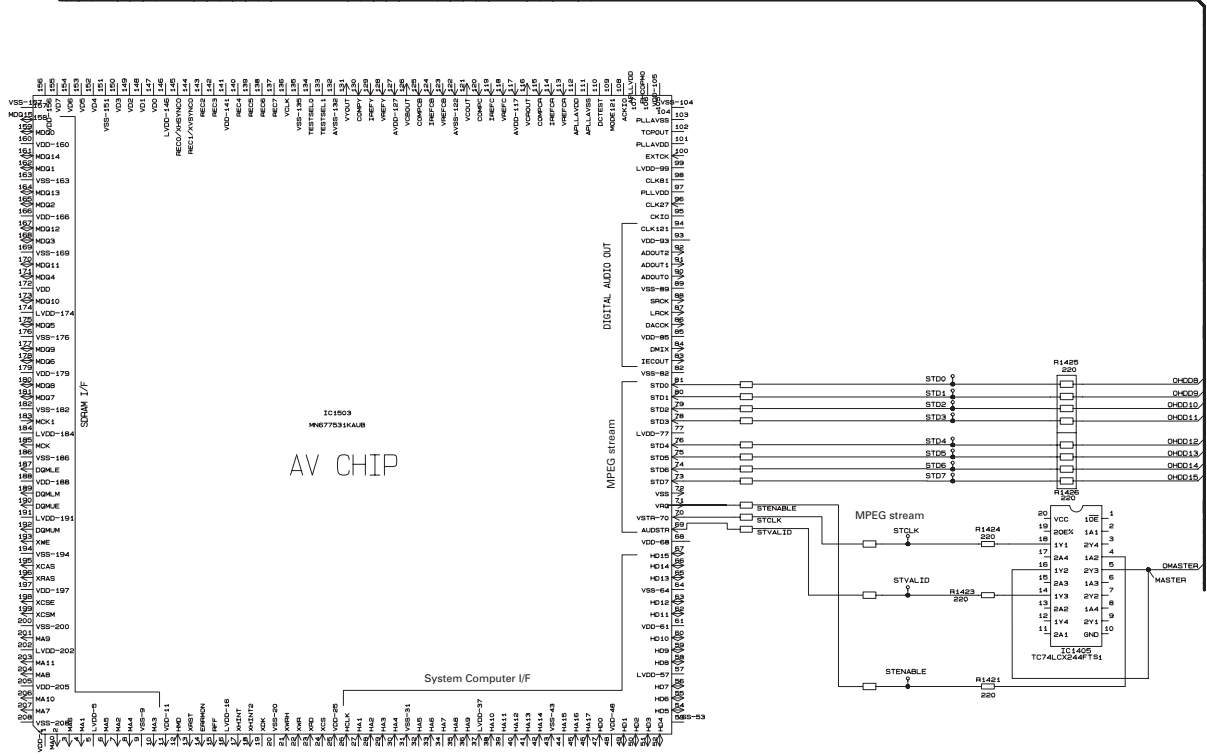
E

F



A

B



C

D

E

Check 4: Is the audio circuit operating normally?

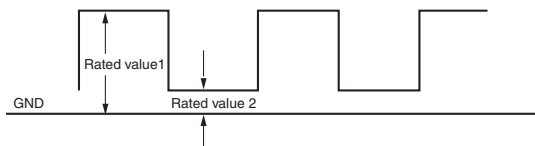
Reproduce DVD-REF-A1 Title 2 Chapter (48V/16-bit/1 kHz/0dB). Verify the circuit described in Figure 2.

Checks are to be conducted using GNDAU1 (sensing pins) as a reference.

If the locations, listed under "verification location 2", can be verified, there is no need to conduct verifications for the locations listed under "verification location 1."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in the vicinity of the main components.

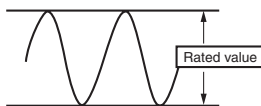
NO.	Verification location 1	Verification location 2	Rated value 1	Rated value 2	Reference waveform
1	AOUT0	IC1503 90pin	2.0V and over	0.8V and lower	Waveform 3
2	SRCK	IC1605 1pin	2.0V and over	0.8V and lower	Waveform 3
3	LRCK	IC1605 3pin	2.0V and over	0.8V and lower	Waveform 3



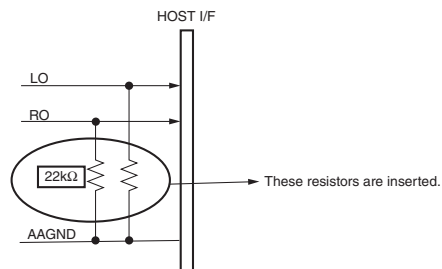
Three serial output rated values

Checks are conducted with the measurement circuit below.

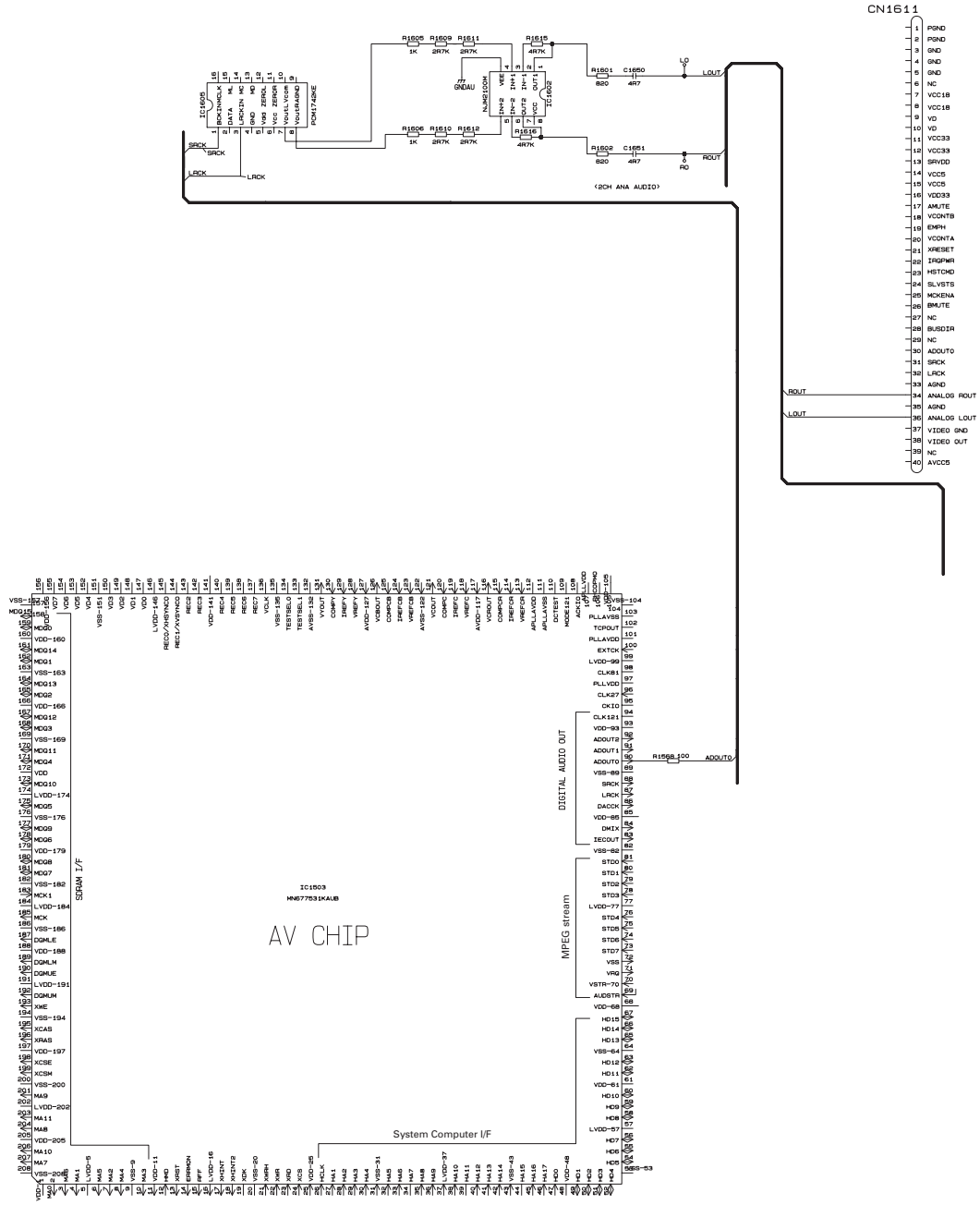
NO.	Verification location 1	Verification location 2	Rated value	Reference waveform
4	LO	CN1611 36pin	1100±150mV	Waveform 4
5	RO	CN1611 34pin	1100±150mV	Waveform 4



Analog audio outputs (LO and RO) rated values



LO and RO output measurement circuit



Check 5: Is the video circuit operated normally?

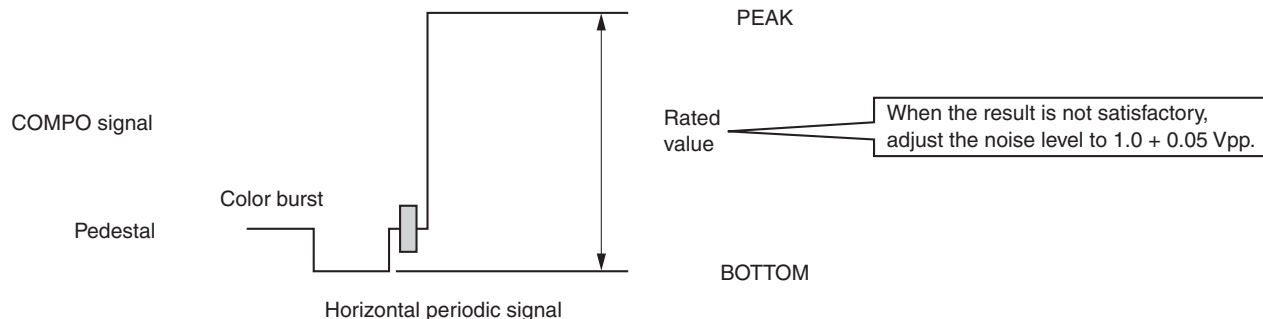
Reproduce DVD-REF-A1 Title 2 Chapters (White 100IRE).

- A Monitor the output with the oscilloscope, by setting the COMPO signal to a GND reference. Set the Trigger mode to the TV trigger, and the Trigger line to line-150.

NO.	Verification location (sensing pin)	Rated value	Reference waveform
1	COMPO	1.0±0.05Vpp	Waveform 5

If the result is not satisfactory, check to see if there are any problems with resin flux cored solder, parts and components, in the vicinity of line-150 (the section marked ⑤ in the circuit diagram) and peripheral components.

B



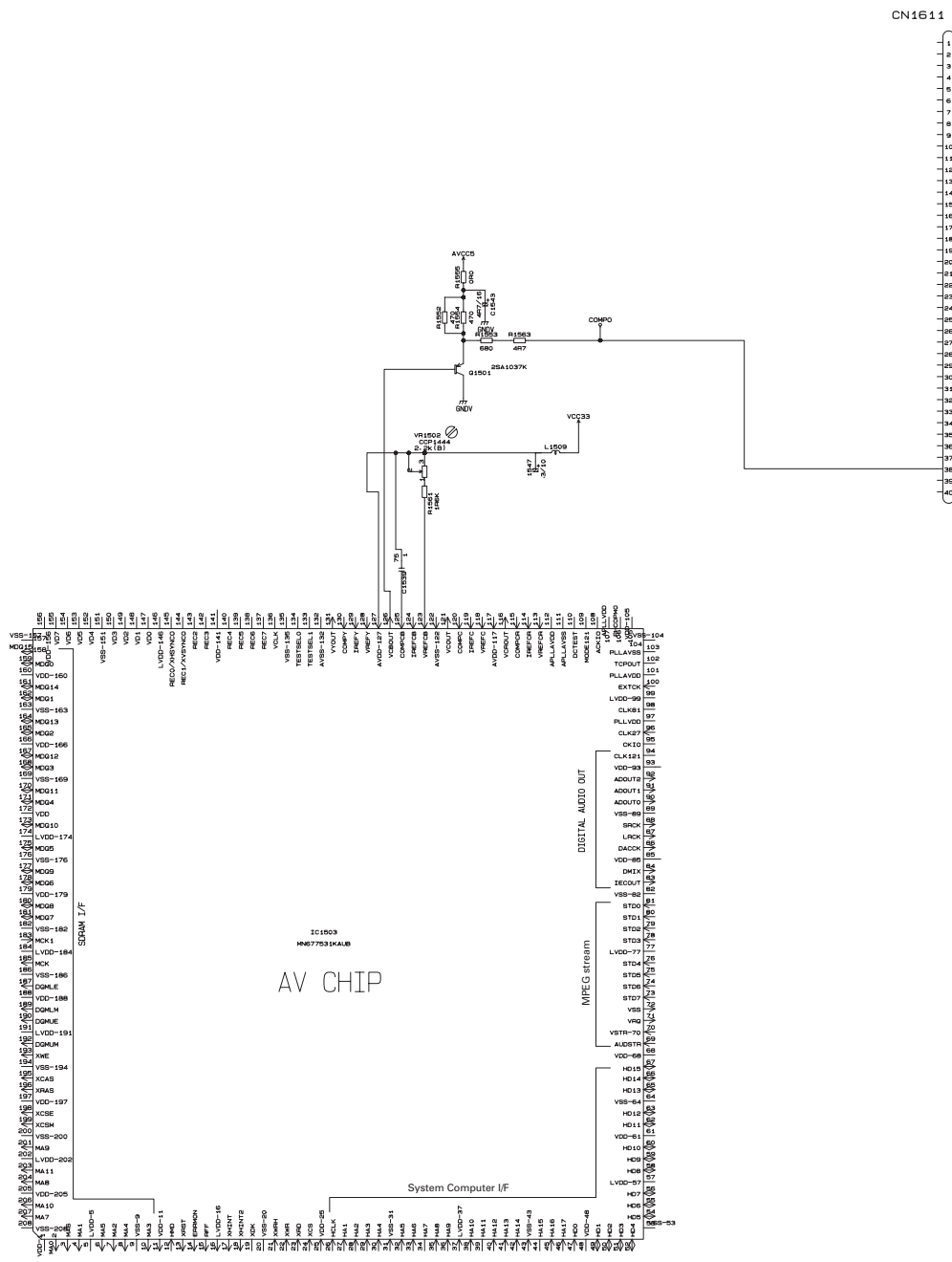
C

Composite signal 100% output waveform

D

E

F



Check 6: Is SDRAM I/F operating normally?

Reproduce DVD-REF-A1 Title 1.

A Check the conductivity of both the "Verification location 1" and the "Verification location2."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of "output "input" of the checked location.

NO.	Signal name	Verification location 1	Verification location 2	Rated value
1	MA0	IC1501 23pin	IC1503 2pin	22Ω ± 5%
2	MA1	IC1501 24pin	IC1503 4pin	22Ω ± 5%
3	MA2	IC1501 25pin	IC1503 7pin	22Ω ± 5%
4	MA3	IC1501 26pin	IC1503 10pin	22Ω ± 5%
5	MA4	IC1501 29pin	IC1503 8pin	22Ω ± 5%
6	MA5	IC1501 30pin	IC1503 6pin	22Ω ± 5%
7	MA6	IC1501 31pin	IC1503 3pin	22Ω ± 5%
8	MA7	IC1501 32pin	IC1503 207pin	22Ω ± 5%
9	MA8	IC1501 33pin	IC1503 204pin	22Ω ± 5%
10	MA9	IC1501 34pin	IC1503 201pin	22Ω ± 5%
11	MA10	IC1501 22pin	IC1503 206pin	22Ω ± 5%
12	MA11	IC1501 20pin	IC1503 203pin	22Ω ± 5%
13	MDQ0	IC1501 2pin	IC1503 159pin	22Ω ± 5%
14	MDQ1	IC1501 4pin	IC1503 162pin	22Ω ± 5%
15	MDQ2	IC1501 5pin	IC1503 165pin	22Ω ± 5%
16	MDQ3	IC1501 7pin	IC1503 168pin	22Ω ± 5%
17	MDQ4	IC1501 8pin	IC1503 171pin	22Ω ± 5%
18	MDQ5	IC1501 10pin	IC1503 175pin	22Ω ± 5%
19	MDQ6	IC1501 11pin	IC1503 178pin	22Ω ± 5%
20	MDQ7	IC1501 13pin	IC1503 181pin	22Ω ± 5%
21	MDQ8	IC1501 42pin	IC1503 180pin	22Ω ± 5%
22	MDQ9	IC1501 44pin	IC1503 177pin	22Ω ± 5%
23	MDQ10	IC1501 45pin	IC1503 173pin	22Ω ± 5%
24	MDQ11	IC1501 47pin	IC1503 170pin	22Ω ± 5%
25	MDQ12	IC1501 48pin	IC1503 167pin	22Ω ± 5%
26	MDQ13	IC1501 50pin	IC1503 164pin	22Ω ± 5%
27	MDQ14	IC1501 51pin	IC1503 161pin	22Ω ± 5%
28	MDQ15	IC1501 53pin	IC1503 158pin	22Ω ± 5%
29	MCK	IC1501 38pin	IC1503 185pin	22Ω ± 5%
30	XWE	IC1501 16pin	IC1503 193pin	22Ω ± 5%
31	XCAS	IC1501 17pin	IC1503 195pin	22Ω ± 5%
32	XRAS	IC1501 18pin	IC1503 196pin	22Ω ± 5%
33	XCSCM	IC1501 19pin	IC1503 199pin	22Ω ± 5%
34	XCSE	IC1501 35pin	IC1503 198pin	22Ω ± 5%
35	DQMUM	IC1501 39pin	IC1503 192pin	22Ω ± 5%
36	DQMLM	IC1501 15pin	IC1503 189pin	22Ω ± 5%
37	DQMUE	IC1501 21pin	IC1503 190pin	22Ω ± 5%

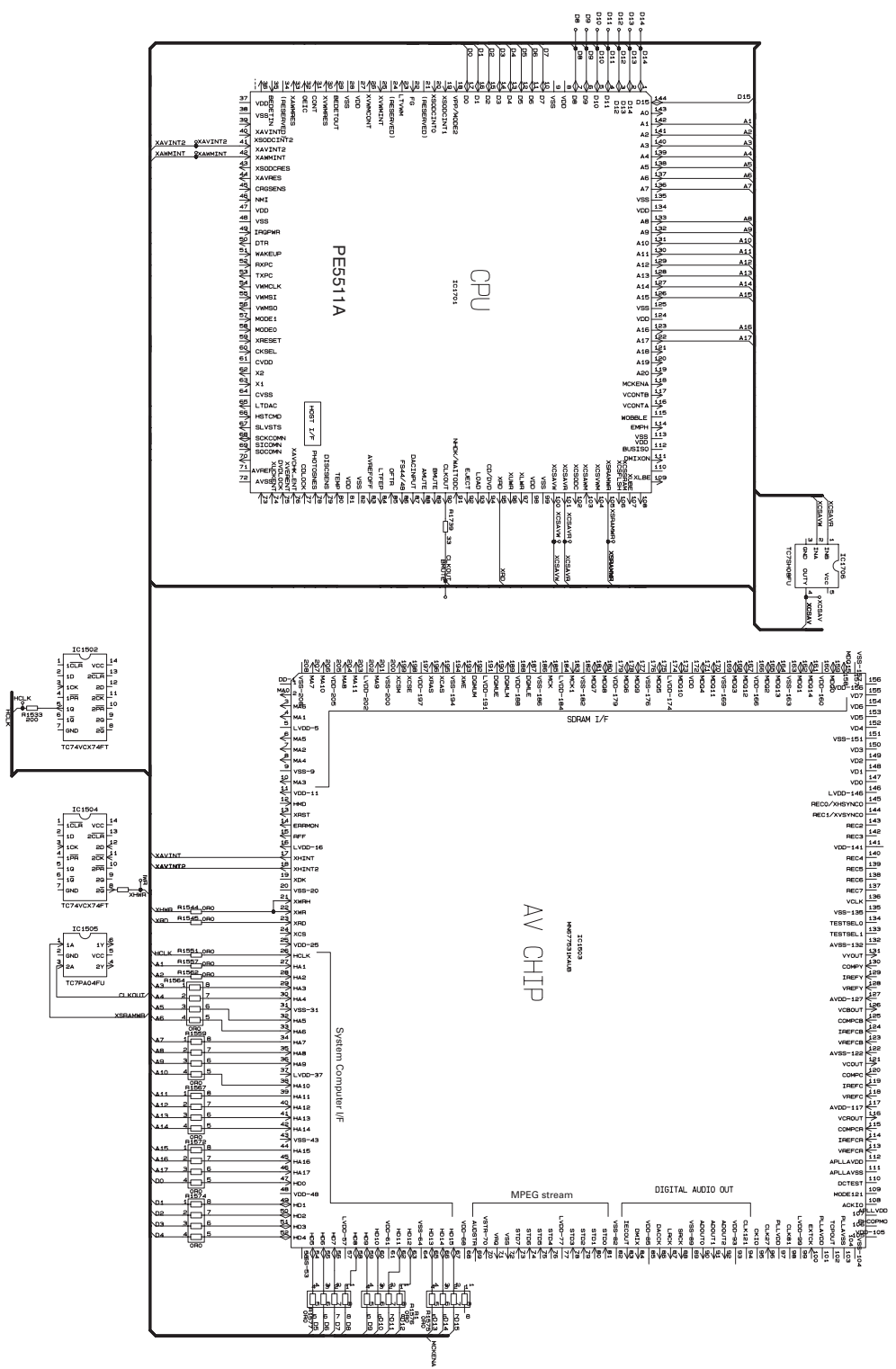
Check 7: Is the microprocessor operating normally?

Check the conductivity of both the "Verification location 1" and the "Verification location2."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of "output – input" of the checked location.

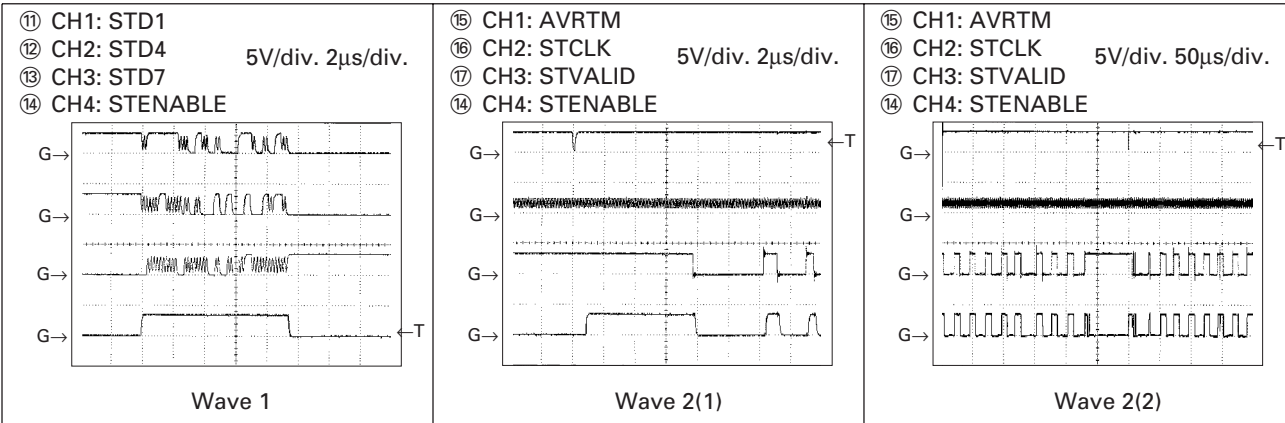
NO.	Signal name	Verification location 1	Verification location 2	Verification Media	Rated value	Others
1	A1	IC1701 142pin	IC1503 27pin	ALL	0Ω	
2	A2	IC1701 141pin	IC1503 28pin	ALL	0Ω	
3	A3	IC1701 140pin	IC1503 29pin	ALL	0Ω	
4	A4	IC1701 139pin	IC1503 30pin	ALL	0Ω	
5	A5	IC1701 138pin	IC1503 32pin	ALL	0Ω	
6	A6	IC1701 137pin	IC1503 33pin	ALL	0Ω	
7	A7	IC1701 136pin	IC1503 34pin	ALL	0Ω	
8	A8	IC1701 133pin	IC1503 35pin	ALL	0Ω	
9	A9	IC1701 132pin	IC1503 36pin	ALL	0Ω	
10	A10	IC1701 131pin	IC1503 38pin	ALL	0Ω	
11	A11	IC1701 130pin	IC1503 39pin	ALL	0Ω	
12	A12	IC1701 129pin	IC1503 40pin	ALL	0Ω	
13	A13	IC1701 128pin	IC1503 41pin	ALL	0Ω	
14	A14	IC1701 127pin	IC1503 42pin	ALL	0Ω	
15	A15	IC1701 126pin	IC1503 44pin	ALL	0Ω	
16	A16	IC1701 123pin	IC1503 45pin	ALL	0Ω	
17	A17	IC1701 122pin	IC1503 46pin	ALL	0Ω	
18	D0	IC1701 17pin	IC1503 47pin	ALL	0Ω	
19	D1	IC1701 16pin	IC1503 49pin	ALL	0Ω	
20	D2	IC1701 15pin	IC1503 50pin	ALL	0Ω	
21	D3	IC1701 14pin	IC1503 51pin	ALL	0Ω	
22	D4	IC1701 13pin	IC1503 52pin	ALL	0Ω	
23	D5	IC1701 12pin	IC1503 54pin	ALL	0Ω	
24	D6	IC1701 11pin	IC1503 55pin	ALL	0Ω	
25	D7	IC1701 10pin	IC1503 56pin	ALL	0Ω	
26	D8	IC1701 7pin	IC1503 58pin	ALL	0Ω	
27	D9	IC1701 6pin	IC1503 59pin	ALL	0Ω	
28	D10	IC1701 5pin	IC1503 60pin	ALL	0Ω	
29	D11	IC1701 4pin	IC1503 62pin	ALL	0Ω	
30	D12	IC1701 3pin	IC1503 63pin	ALL	0Ω	
31	D13	IC1701 2pin	IC1503 65pin	ALL	0Ω	
32	D14	IC1701 1pin	IC1503 66pin	ALL	0Ω	
33	D15	IC1701 144pin	IC1503 67pin	ALL	0Ω	
34	XCSAVR	IC1701 101pin	IC1706 1pin	ALL	0Ω	
35	XCSAVW	IC1701 100pin	IC1706 2pin	ALL	0Ω	
36	XCSAV	IC1706 4pin	IC1503 24pin	ALL	0Ω	
37	XAVINT	IC1701 42pin	IC1503 17pin	ALL	0Ω	
38	XAVINT2	IC1701 41pin	IC1503 18pin	ALL	0Ω	
39	XRD	IC1701 95pin	IC1503 23pin	ALL	0Ω	
40	CLKOUT	IC1701 90pin	IC1505 3pin	ALL	33Ω	Dividing circuitFor verification location 2, include also IC1502 pin-3
41	HCLK	IC1502 5pin	IC1503 26pin	ALL	200Ω ± 5 %	
42	XSRAMWR	IC1701 105pin	IC1505 1pin	ALL	0Ω	
43	XHWR	IC1504 8pin	IC1503 21pin	ALL	68Ω ± 5 %	

A
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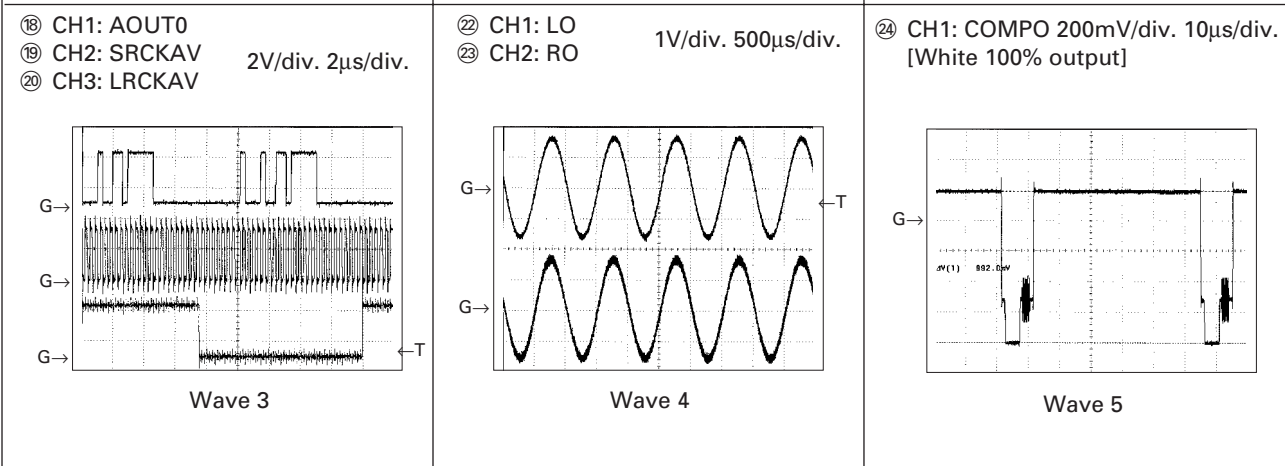


Note:1 The encircled number denote measuring pointes in the circuit diagram.
 2 Reference voltage VHALF : 1.65V

A



B



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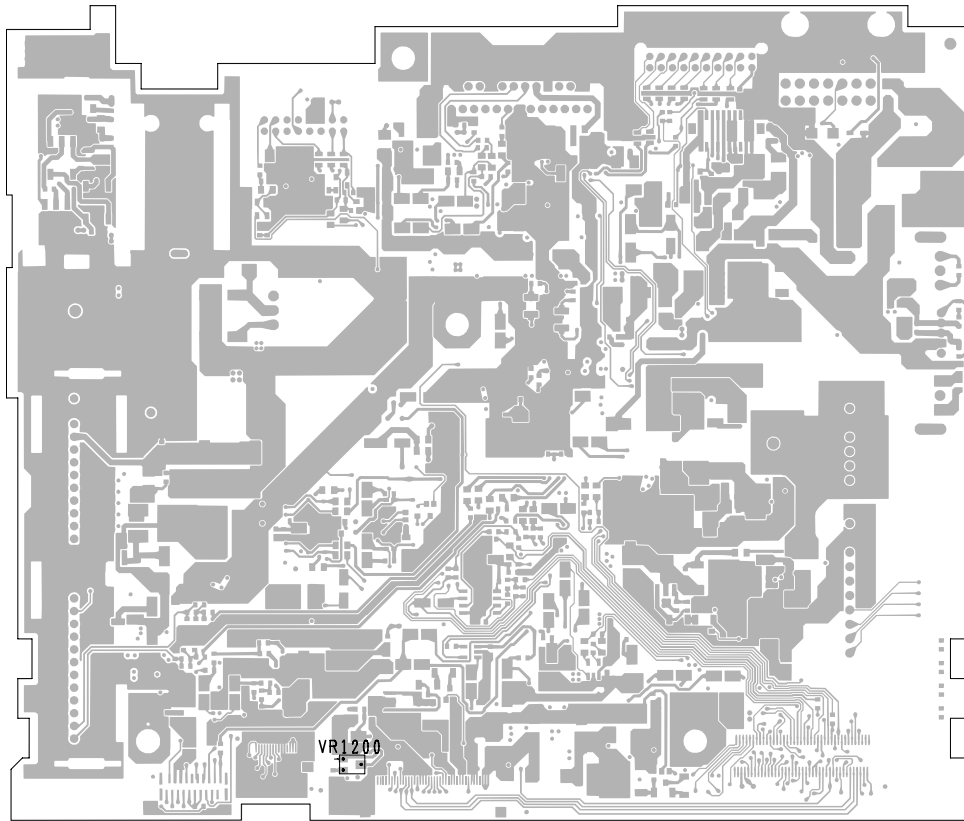
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6.3 VIDEO LEVEL ADJUSTMENT

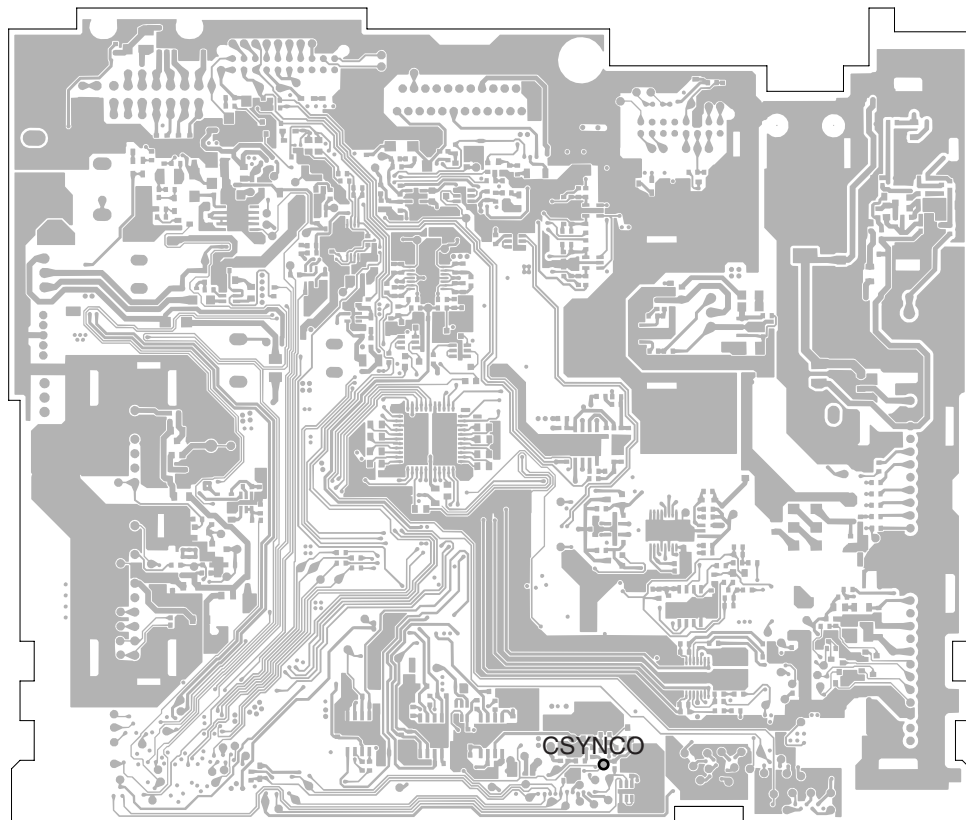


● Adjustment Point

Audio Unit(SIDE A)



Audio Unit(SIDE B)



A

B

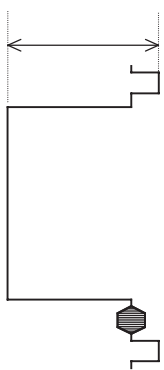
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Audio Unit Adjustment Specification

Order	Items	Modes	Input signal (Input test pin, specifications, and other measurement conditions)	Output signal (test pin for measurement, description of circuit)	Measuring instrument	Specification (Other precautions)	Name of adjustment element
1	Checking and inspection of video images	Video image					
1-1	Adjustment of video level		100% white (1Vp-p) signal should be added to TP-DVDV and video output for the monitor should be set to DVD.	Measurement point : TP • CSYNCO (Termination at 10k Ω or greater) 	Oscilloscope	1.0 + 0.02 - 0.05Vp-p	VR1200

[When adjustment is improper] Video image sources will have black or white regions on the screen. (DVD, AV, TV etc.)

6.4 PLL ADJUSTMENT



<How to adjust VR of PLL area>

[Purpose] When parts shown below are replaced, adjustment is required.
IC4001 inside the CC unit • Part replacement on PLL circuit area block on the CC unit.

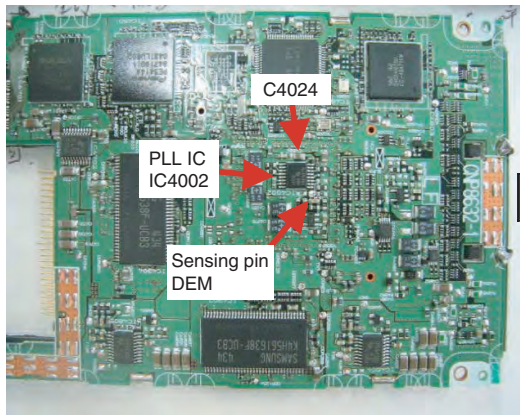
[The sign of insufficient adjustment]
Distortion of the screen

- [Method] (Please refer to the pictures below.)
- 1 With HDD unconnected, connect the navigation unit to the product and apply power.
(The caution "HDD is unconnected." will appear in 10 seconds.)
 - 2 Confirm that the voltage on both sides of C4024 (B side) attached to IC4002 power supply terminal pin No.16 is within $3.3 \pm 0.1V$.
 - 3 Control the potential of the sensing pin DEM (B side) at the IC4002 DEMOUT terminal (10 pin) to within $1.5 \pm 0.1V$ while adjusting the VR4001(A side).

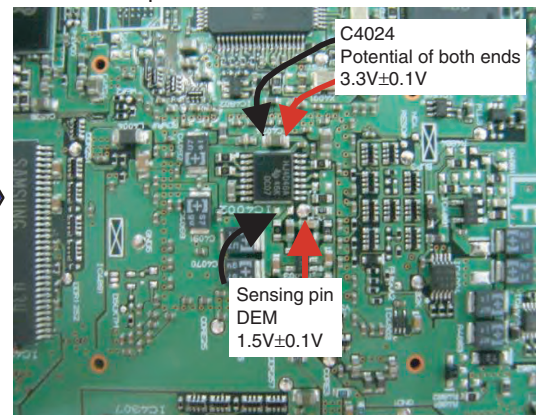
Be aware that extension of a CC unit, etc may cause the potential of 3.3 V to go beyond the limit.

[Concerns] When parts are replaced in IC4001(NAVICORE)/PLL circuit area, adjustment is required.
Other cases than that also require confirmation.

B side of the CC unit

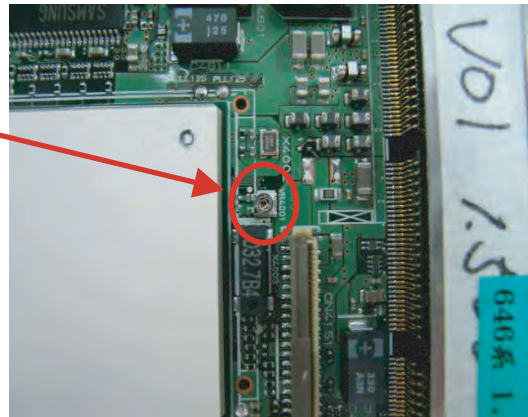
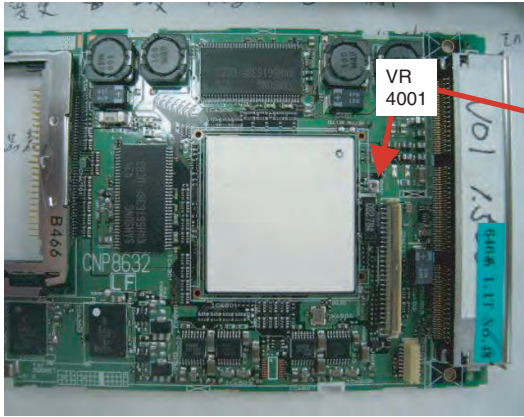


The scale-up of B side of the CC unit

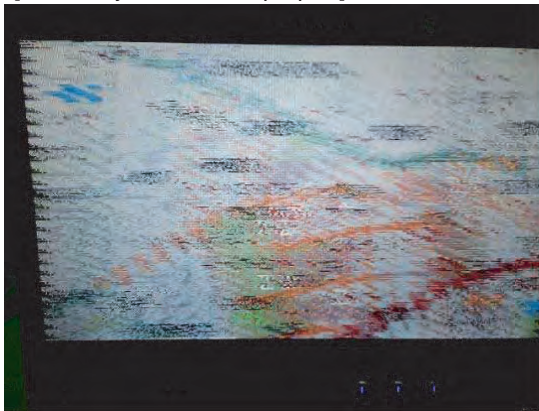


A side of the CC unit

The scale-up of A side of the CC unit



[When adjustment is improper.]Distortion of the navigation screen

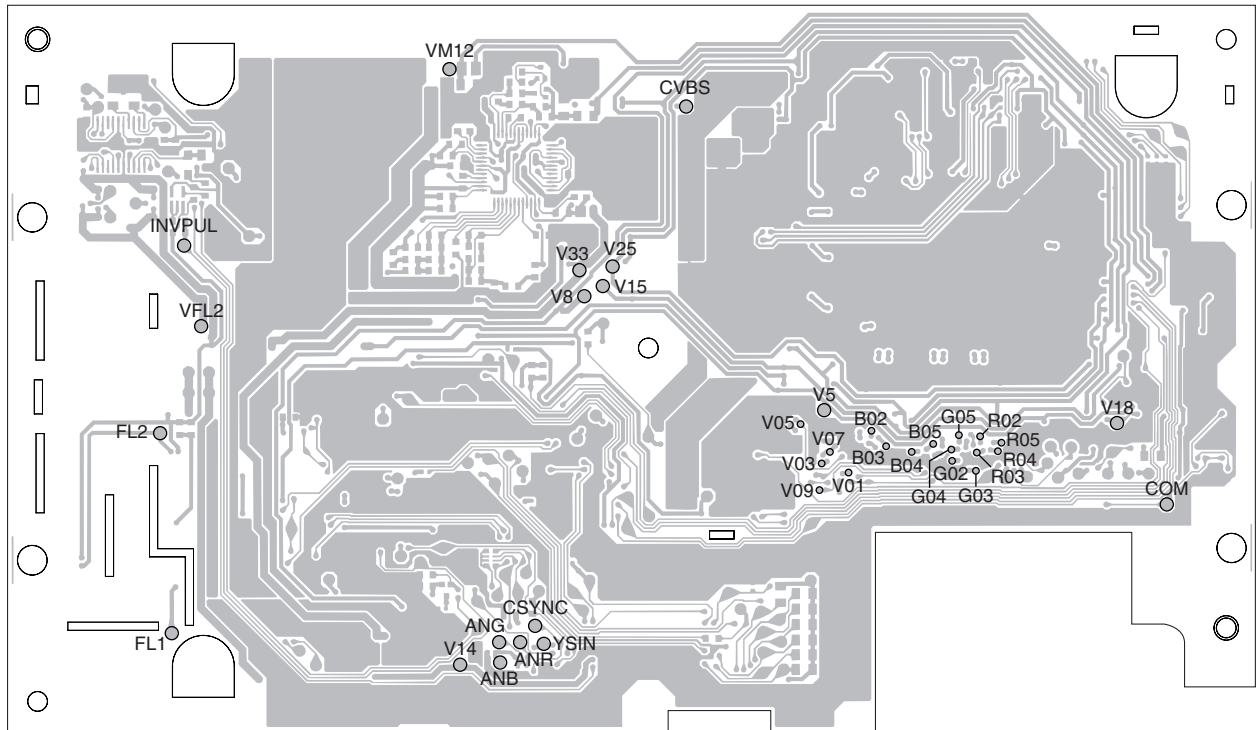


6.5 MONITOR UNIT ADJUSTMENT



● Adjustment Point

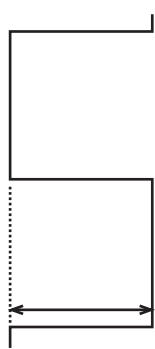
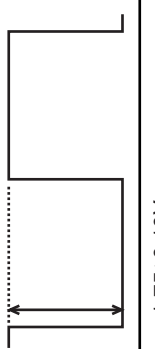
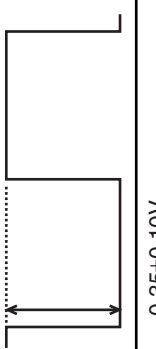
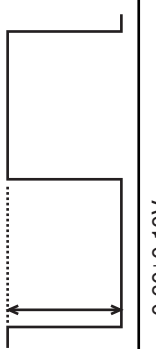
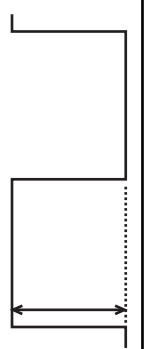
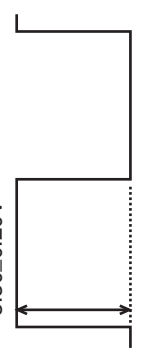
Monitor Unit(SIDE B)



Adjustment of Monitor Unit Area

Important: Power for IC 1 (TC90A96AFG-P) is off, make sure that DC voltage should not be applied to each terminal of IC. However, IIC lines (SDA and SCL) are exceptional and 5V or less can be applied to them.

No.	Adjustment items	Input signal	Measurement point	Adjustment point	Details	Remarks
1	Confirming 3.3V power supply voltage	14.4V for TP V14	TP V33		V33=3.3±0.25V	Nothing appears on the monitor.
2	Confirming 2.5V power supply voltage	Ditto	TP V25		V25=2.5±0.15V	Nothing appears on the monitor.
3	Confirming 1.5V power supply voltage	Ditto	TP V15		V15=1.5±0.08V	Nothing appears on the monitor.
4	Confirming 5V power supply voltage	Ditto	TP V5		V5=4.9±0.30V	The screen becomes brighter or darker, etc.
5	Confirming 8V power supply voltage	Ditto	TP V8		V8=8.0±0.50V	The color becomes lighter or horizontal lines are seen on the monitor screen.
6	Confirming 18.5V power supply voltage	Ditto	TP V18		V18=18.5±0.80V	Nothing appears on the monitor.
7	Confirming -12V power supply voltage	Ditto	TP VM12		VM12=-12.0±0.60V	Nothing appears on the screen.

No.	Adjustment items	Input signal	Measurement point	Adjustment point	Details	Remarks
8	Adjustment of amplitude Vcom amplifier output	No definition	TP COM	EEP-ROM's COM_AC data		Measure at LCD panel connection [Symptoms that occur when adjustment is improper] • Halation on the screen. • Irradiation on the screen
9	Confirmation of amplitude of gradation voltage (V1)	No definition	TP V01			Measure at LCD panel connection
10	Confirmation of amplitude of gradation voltage (V3)	No definition	TP V03			Measure at LCD panel connection
11	Confirmation of amplitude of gradation voltage (V5)	No definition	TP V05			Measure at LCD panel connection
12	Confirmation of amplitude of gradation voltage (V7)	No definition	TP V07			Measure at LCD panel connection
13	Confirmation of amplitude of gradation voltage (V9)	No definition	TP V09			Measure at LCD panel connection

No.	Adjustment items	Input signal	Measurement points	Adjustment points	Details	Remarks
14	Preparation for video image confirmation	TP CSYNC synchronous signal input				0-3.3V logic level input (Synchronous area 0V)
15	Confirmation of RGB digital output	Input white 100% signal to TRANR, ANG and ANB (0.70Vpp ± 1%)	TP B02-B05 TP G02-G05 TP R02-R05			When OSD is displayed in EEPROM adjustment mode, in which "L" output is mixed the area with letters, ignore it.
16	Adjustment of composite level	Composite image 10STEP signal input to TP CVBS. (1.0Vpp ± 1%)	DAC Jig output	Register setting of SA13h D5-0		[Symptoms of improper adjustment] • Halation occurs on TV/Video screen • TV/Video screen gets dim
17	Confirmation of YS operation	Signal input to TR YSIN 0-3.3V			Confirm YS operation	
18	Confirmation of YS_OFFSET Setting	No definition		Register setting of SA2Fh D3-0	Set [YS DELAY] to 8 in EEPROM adjustment mode.	Check EEPROM setting value after it is written.
19	Video image confirmation	Composite image lamp signal input to TP CVBS (Monochrome)	Screen		Check if the gradation changes smoothly and there is no colored part on the whole screen.	This is done to check if the double window IC digital out is not "BRIDGE" or OPEN.

SA:*:h in the list is a sub-address of TC90A96FG

Adjustment of Backlight Inverter

No	Adjustment items	Input signal	Measurement points	Adjustment points	Details	Remarks
1	Backlight basic drive frequency adjustment	TP: 14.4±0.2V for V14 TP: 14.4±0.2V for VFL TP: GND INVPUL	TP : FL1, FL2	VR841	47.9-48.1kHz	Connect 100kΩ between TP FL1 and FL2. Monitor waveform or TPFL2 after voltage dividing. Do not monitor TP FL1 directly. (High pressure may cause damage to measuring equipment) [Symptoms that occur because of improper adjustment] • Backlight does not come on. Noise occurs at AM certain frequency.
2	Confirmation 1 of frequency switching	Tune into AM530kHz. (UC) Tune into AM531kHz. (EW)	TP : FL1, FL2		49.2±1.0kHz	Confirm that the frequency of the waveform measured by No.1 will be 49.2kHz.
3	Confirmation 2 of frequency switching	Tune into AM540kHz.	TP : FL1, FL2		52.4±1.0kHz	Confirm that the frequency of the waveform measured by No.1 will be 52.4kHz.

Flicker Adjustment (When performing an adjustment in the product form)

No.	Adjustment items	Measurement points	Adjustment points	Details	Remarks
1	Aging			Leaving it in operation for over 30 minutes. (at room temperatures)	
2	Flickering adjustment Test mode calling			Start the product in test mode. → Select "Monitor Test Mode". → Select "regulation mode(for service)"	
3	Confirm screen display	Screen		Back ground : Pattern for adjusting flicker Text display : SERVICE MODE COM DC * * [FACTORY * *]	Pattern for flicker adjustment Image with alternate black (50%) and white (50%) horizontal scanning lines. Values for * * vary depending on the product conditions.
4	Flicker adjustment	Screen	COM DC	Use the right and left buttons to change value to the level where flicker on the screen is minimized.	[Symptom occurring when adjustment is improper.] • The screen flickers.
5	End			End by pressing the return button	Operable using a Raku-Navi remote control unit.

Flicker adjustment (When performing on the LCD module)

No.	Adjustment item	Indication signal	Measurement points	Adjustment points	Details	Remarks
1	Aging	No definition			Perform either of the two ways: leaving it in operation status for over 30 minutes (at room temperatures) or leaving it for over 5 minutes (50±5°C) while no applying current.	
2	Flicker adjustment	Pattern for flicker adjustment	Screen	COM DC setting value (COM DC output of the monitor microcomputer)	Adjust so that the flickering on the screen will be minimized.	Pattern for flicker adjustment Image with alternate black (50%) and white (50%) horizontal scanning lines. Inverse video signal can be also entered into TP CVBS. (However, adjustment using RGB is given higher priority.) [Symptom occurring when adjustment is improper.] • The screen flickers

● EEPROM adjustment mode

[Operation Specification]

- For displaying OSD, install a jig (GGF1416 and GGF1463) for monitor adjustment onto Service OSD connector for CN5.
- When ACC is turned ON with [EPRTES/EPTESA] terminal in Low status, shift to [Flicker adjustment mode] will occur.
- Switch the setting modes with the [map] key.
 [Flicker adjustment mode] → [Line adjustment 1 mode] → [Line adjustment 2 mode] → [Line adjustment 3 mode] →
 → [Line adjustment 4 mode] → [Line adjustment 5 mode] → [Line adjustment 6 mode] → [Line adjustment 7 mode] →
 → [Line adjustment 8 mode] → [Line adjustment 9 mode] → [Line adjustment 10 mode] → [Dimmer parameter setting
 mode] → [Flicker adjustment mode]
- Select items to be adjusted using the [↓] [↑] keys.
- Adjust items selected using the [←] [→] keys.

- ※ It is possible to shift to the adjustment mode also while performing the monitor adjustment using a test disc.
- ※ After set values are written in EEPROM, they are read out and displayed.
 Writing and reading shall be performed in 16 bit unit. Settings have different bit numbers item by item.
- ※ Values for CS (checksum) calculation have 8 Bit XOR when they are changed and writing will be done.
 After this CS values are written into EEPROM, they are read out and displayed.
 When the written values are different from the read-out ones, the read-out ones should be colored differently.
- ※ When the service adjustment mode is involved, this test mode does not start.
 (Shift to the service adjustment mode)

[Display specification of each mode]

Examples of actual OSD display are shown within the heavy line frame.

Numerical values in the adjusted values to be written are the segment that changes according to the adjustment for each screen.

The adjustment details and the item display are items for design review and line adjustment.

■ Flicker adjustment mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
Common inverse output center value	[0-255]	COM DC	92		

※ ■ Note 1: Details of [COM DC] shall be reflected on the common inverse output center reference value.
(Common inverse output center reference value is treated as an initial value to be set in the line.)

■ Line adjustment 1 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
Bright	[0-255]	BRIGHT	150	NOT	EEPROM
RGB simultaneous contrast	[0-255]	CONTRAST	168	NOT	EEPROM
Common inverse output frequency adjusted value	[0-255]	COM AMPAJ	150		
R output DC offset	[0-15]	ROUT BIAS	8		
G output DC offset	[0-15]	GOUT BIAS	8		
B output DC offset	[0-15]	BOUT BIAS	8		
Main Y contrast	[0-63]	RGB CNTRST	34		
Sub Y Contrast	[0-63]	CMP CNTRST	26		
		DTR ON	61		
				CS	FFFF

It is set as ON.

Monitor Microcomputer 5 pin [COM AC] Output voltage (V) = 4.8 (V) X [BRIGHT] Value/255

- In order to correct variation in hardware, common inverse output frequencies should be adjusted in the line.
- [COM AMPAJ] is an initial value set in the line and memorized in EEPROM bank 1.
- While the product is in normal operation, [BRIGHT] value is decided by [COM AMPAJ] and this value controls the 5-pin [COM AC] output of the monitor microprocessor.
- In the single monitor operation test mode, the user-configurable "color density" is not reflected in "BRIGHT" value.
- When [COM AMPAJ] is adjusted, [BRIGHT] changes according to it.
([COM AMPAJ] has the same value kept in memory as [BRIGHT] value at the time of "black density" step 0.)
- When the test mode starts in the stage of the product, the user configurable "color density" will be reflected in "BRIGHT" value.
Even if "BRIGHT" value is changed in the test mode, it will not be reflected in the user setting value.

※ ■ Note 1: Contents of [BRIGHT] and [CONTRAST] are reference values (adjustable) for adjusting the other items and are not memorized in EEPROM.

※ ■ Note 2: Be aware that [R, G, BOUT BIAS] and [RGB, CMP CNTRST] have different indicated values/EEPROM written values and double window IC (TC90A96FG-P) register setting values.
(As the double window IC register value and the screen output are not related linearly, software is used for conversion.)

[R,G,BOUT BIAS]

Indicated value (=Adjusted value) (DEC)	EEPROM written value (DEC)	Double screen IC register value (BIN)	
15	15	0111	(MAX)
14	14	0110	
•	•	•	
•	•	•	
9	9	0001	
8	8	0000	(TYP)
7	7	1111	
•	•	•	
•	•	•	
1	1	1001	
0	0	1000	(MIN)

[RGB,CMP CNTRST]

Indicated value (=Adjusted value) (DEC)	EEPROM written value (DEC)	Double screen IC register value (BIN)	
63	63	011111	(MAX)
62	62	011110	
•	•	•	
•	•	•	
33	33	000001	
32	32	000000	(TYP)
31	31	111111	
•	•	•	
•	•	•	
1	1	100001	
0	0	100000	(MIN)

■ Line adjustment 2 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)	
				LINE2
RGB & YS horizontal alignment	[0-255]	DOT H POSIT	63	
YS sampling phase 1	[0-15]	YS SAMPL	8	
AD sampling phase B	[0-15]	B SAMPL	8	
AD sampling phase G	[0-15]	G SAMPL	8	
AD sampling phase R	[0-15]	R SAMPL	8	
YS internal delay adjustment	[0-15]	YS DELAY	8	
				CS FFFF

※ ■ Note 1: Be aware that [YS, R, G, B SAMPL] and [YS DELAY] have different indicated values/EEPROM written values and double window IC(TC90A96FG-P) register set values.
(As the double window IC register values and the screen output are not related linearly, software is used for conversion.)

A

Indicated value (=Adjusted value) (DEC)	EEPROM written value (DEC)	Double screen IC register value (BIN)	
15	15	0111	(MAX)
14	14	0110	
•	•	•	
•	•	•	
9	9	0001	
8	8	0000	(TYP)
7	7	1111	
•	•	•	
•	•	•	
1	1	1001	
0	0	1000	(MIN)

B

■ Line adjustment 3 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)	
				LINE3
Dot search threshold	[0-255]	TH DOT	112	
YS search threshold	[0-4]	TH YS	3	
Phase search threshold	[0-255]	TH PHASE	112	
Xdisp	[0-63]	X DISP	32	
YSdisp	[0-4]	YS DISP	2	
				CS FFFF

C

D

■ Line adjustment 4 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)	
				LINE4
Main horizontal enhancer gain	[0-3]	M H GAIN	0	
Main horizontal enhancer limiter	[0-3]	M H LIMIT	0	
Main horizontal enhancer f0	[0-1]	M H F0	0	
Main vertical enhancer gain	[0-3]	M V GAIN	0	
Main vertical enhancer loopback	[0-3]	M V ORI	0	
Main vertical enhancer coring	[0-3]	M V CORE	0	
				CS FFFF

E

F

■ Line adjustment 5 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE5
Sub horizontal enhancer gain	[0-3]	S H GAIN	1		
Sub horizontal enhancer limiter	[0-3]	S H LIMIT	1		
Sub horizontal enhancer f0	[0-1]	S H F0	1		
Sub vertical enhancer gain	[0-3]	S V GAIN	2		
Sub vertical enhancer loopback	[0-3]	S V ORI	1		
Sub vertical enhancer coring	[0-3]	S V CORE	2		
				CS	FFFF

■ Line adjustment 6 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE6
Brightness R	[0-63]	BRIGHT R	16		
Brightness G	[0-63]	BRIGHT G	16		
Brightness B	[0-63]	BRIGHT B	16		
γ correction ON/OFF		GAMMA	OFF		
RGB simultaneous γ 1 inflection point	[0-63]	GAMMA 1	0		
RGB simultaneous γ 2 inflection point	[0-31]	GAMMA 2	4		
RGB simultaneous γ 3 inflection point	[0-31]	GAMMA 3	1		
RGB simultaneous γ gradient A	[0-7]	GAMMASLP A	4		
RGB simultaneous γ gradient B	[0-7]	GAMMASLP B	1		
RGB simultaneous γ gradient C	[0-7]	GAMMASLP C	1	CS	FFFF

- ※ ■ Note 1: Be aware that [BRIGHT R, G, B] have different indicated values/EEPROM written values and double window IC(TC90A96FG-P) register set values.
(As the double window IC register values and the screen output are not related linearly, software is used for conversion.)

[BRIGHT R,G,B]

Indicated value (=Adjusted value) (DEC)	EEPROM written value (DEC)	Double screen IC register value (BIN)	
63	63	011111	(MAX)
62	62	011110	
•	•	•	
•	•	•	
33	33	000001	
32	32	000000	(TYP)
31	31	111111	
•	•	•	
•	•	•	
1	1	100001	
0	0	100000	(MIN)

■ Line adjustment 7 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE7
Main PLL 0	[0-255]	MAIN PLL 0	158		
Main PLL 1	[0-255]	MAIN PLL 1	13		
Main PLL 2	[0-255]	MAIN PLL 2	204		
Main PLL 3	[0-255]	MAIN PLL 3	4		
				CS	FFFF

■ Line adjustment 8 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE8
Sub PLL 0 for TV	[0-255]	SUB PLL 0 TV	140		
Sub PLL 1 for TV	[0-255]	SUB PLL 1 TV	136		
Sub PLL 0 for others	[0-255]	SUB PLL 0	140		
Sub PLL 1 for others	[0-255]	SUB PLL 1	141		
Sub PLL 2 for TV	[0-255]	SUB PLL 2 TV	100		
Sub PLL 3 for TV	[0-255]	SUB PLL 3 TV	68		
PLL 2 for others	[0-255]	SUB PLL 2	152		
PLL 3 for others	[0-255]	SUB PLL 3	135		
				CS	FFFF

■ Line adjustment 9 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE9
SA46 UPPER	[0-255]	SA46H UPPER	0		
SA46 LOWER	[0-255]	SA46H LOWER	0		
SA47 UPPER	[0-255]	SA47H UPPER	0		
SA47 LOWER	[0-255]	SA47H LOWER	0		
SA48 UPPER	[0-255]	SA48H UPPER	0		
SA48 LOWER	[0-255]	SA48H LOWER	0		
SA49 UPPER	[0-255]	SA49H UPPER	0		
SA49 LOWER	[0-255]	SA49H LOWER	0		
SA4A UPPER	[0-255]	SA4AH UPPER	0		
SA4A LOWER	[0-255]	SA4AH LOWER	0	CS	FFFF

■ Line adjustment 10 mode

Settings	Adjustment range	Item display	Adjusted value Written value (DEC)		
					LINE10
SA4B UPPER	[0-255]	SA4BH UPPER	0		
SA4B LOWER	[0-255]	SA4BH LOWER	0		
SA4C UPPER	[0-255]	SA4CH UPPER	0		
SA4C LOWER	[0-255]	SA4CH LOWER	0		
SA4D UPPER	[0-255]	SA4DH UPPER	0		
SA4D LOWER	[0-255]	SA4DH LOWER	0		
SA4E UPPER	[0-255]	SA4EH UPPER	0		
SA4E LOWER	[0-255]	SA4EH LOWER	0		
SA4F UPPER	[0-255]	SA4FH UPPER	0		
SA4F LOWER	[0-255]	SA4FH LOWER	0	CS	FFFF

■ Parameter setting mode for DIMMER

Settings	Adjustment range	Item display	Adjusted value: Written value (HEX)		
Backlight output max value	[0-255]	BL MAX	C4		DIMMER
Backlight output min value	[0-255]	BL MIN	59		
Dimmer threshold value (High)	[0-255]	REF H	C0		
Dimmer threshold value (Low)	[0-255]	REF L	60		
Outside light point (High)	[0-255]	LUM H	E2		
Outside light point (Middle)	[0-255]	LUM M	87		
Outside light point (Low)	[0-255]	LUM L	52		
Backlight point (High)	[0-255]	BL H	C4		
Backlight point (Middle)	[0-255]	BL M	C4		
Backlight point (Low)	[0-255]	BL L	68	CS	FFFF

※ ■ Note 1: Data on the dimmer points (coordinates) is memorized in EEPROM, however, it is not used in CS calculation because it is user-configurable.

● Adjustment mode for services

[Operation specification]

- Turn ACC on with [SRV/SRVA] terminal Low, and [Adjustment mode for services] will start.
- In the order of ACC OFF→ON (BUP OFF→ON), cancel [Adjustment mode for services].
- Use [↑] [→] keys for adjustment.

※ It is possible to move to the adjustment mode from 6.6 Monitor Test Mode or 6.7 Test Disc Monitor adjustment.
 ※ Set values are read out after they are written in EEPROM and the read-out values shall be displayed.
 Writing and reading shall be done in 16 bit unit.

Examples of actual OSD display are shown inside the heavy line frame.
 Numeric values in the common inverse output center value are changed by adjustment.
 (The example inside the heavy line frame shows MAX value.)
 The FACTORY numerical value is the default for using in the line for adjustment.
 (Rewritable in EEPROM setting mode)

※ This default value is not a set value for each product, however setting to this value will work out OK in most cases.

■ Adjustment mode for services

Settings	Adjustment range	Item display	Adjusted value: Written value (DEC)		
Common inverse output center value	[0-255]	COM DC	92		
Common inverse output center set value (Factory value)	[0-255]	[FACTORY	92]		

※ ■ Note 1: CS display is not performed

6.6 TEST MODE

06 Overseas Navigation Test Mode Ver 1.00

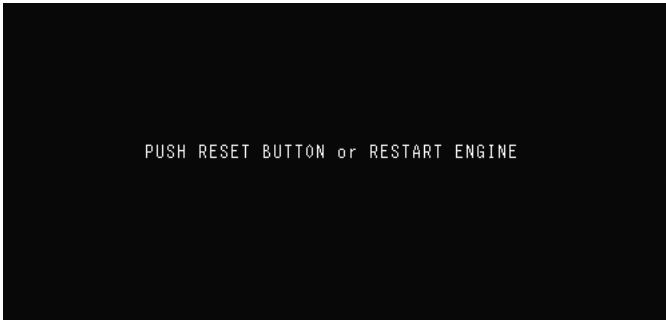
1. Test mode startup procedure

1. Press the RESET and EJECT buttons simultaneously while +Battery, ACC ON.
2. Release only the RESET button.
3. Release the EJECT button when the password input screen is displayed.
4. Input the password.
5. Test mode menu will be displayed when the password matches.

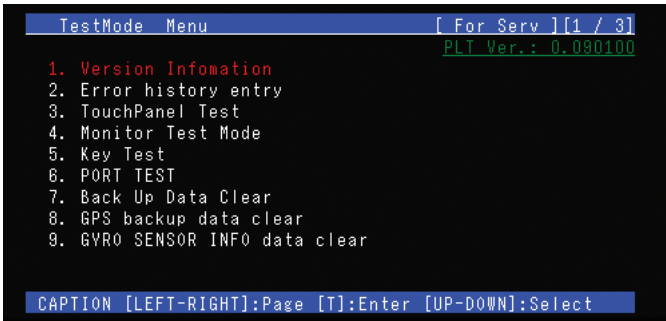
<<Password for Service Division>>

Input the password from the keys in the order of [P.LIST▲]→[P.LIST▲]→[P.LIST▼]→[P.LIST▼]→[TRFC(TA/NEWS)]

Password input screen



When the password is OK



When the password is NG

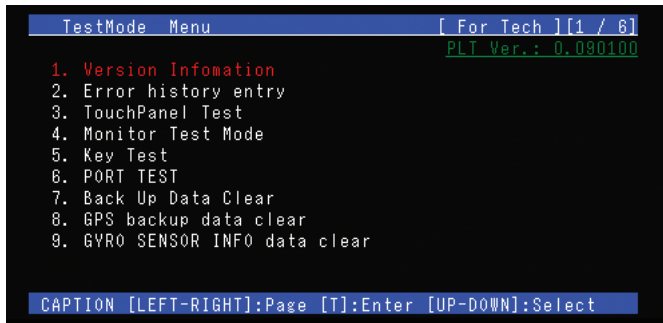
The password input screen remains.

2. Test mode menu selection procedure

Select an optional menu using the main unit keys [P.LIST▲] and [P.LIST▼] and execute it by the [TRFC(TA/NEWS)] key. Move through the page using the main unit key [TRK].

3. Test mode menu

[PAGE 1]



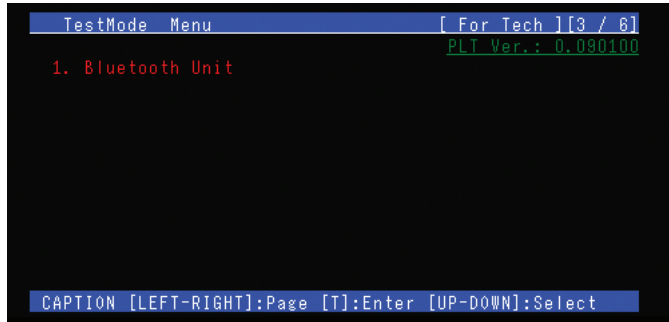
No	Test item	Description of test
1	Version Infomation	Display of various data ◆ Navigation platform, navigation platform recovery image, boot loader, CPU core, application program and GPS program versions ◆ Navigation destination data, TV model information, information for GPS destination, hard disk version data, volume data ◆ Machine microcontroller (core application), monitor microcontroller (version, ROM COLLE), system microcontroller (version, ROM COLLE) data
2	Error history entry	Display of error history for driver and system software contained in RAM/FLASH, display of forced reset error history, serial output switching for copying, deleting and debugging
3	TouchPanel Test	Test on touch panel coordinates
4	Monitor Test Mode	Adjustment of regulation and calibration
5	Key Test	Test on main unit keys
6	PORT TEST	Display of CF card door sensor, illumination, parking, reversing and vehicle speed pulse conditions
7	Back Up Data Clear	Initialization of the backup variable used in device driver/class library and system restart at completion
8	GPS backup data clear	Initialization of backup variables used in GPS
9	GYRO SENSOR INFO data clear	Deletion of learned values in gyro sensor

[PAGE 2]



No	Test item	Description of test
1	GPS assessment	Display of GPS conditions
2	SENSOR test	Display of G sensor, gyro value, power supply voltage value, temperature and attachment conditions
3	RGB Test	Display in order of red (FULL)→green (FULL)→blue (FULL)→white (FULL)→color pattern
4	CD-ROM Read Test	CD-ROM decoder testing
5	ServMecha	Various tests on the machine
6	HDD Test	HDD data display, read and write test
7	File Maintenance	File Maintenance
8	Drive maintenance	Drive data display, scan disk (volume verification)
9	MODE SETUP	HDD setup
10	Profram forced write	Forced rewriting of PLT (platform), APL (application) software, GPS (GPS) program

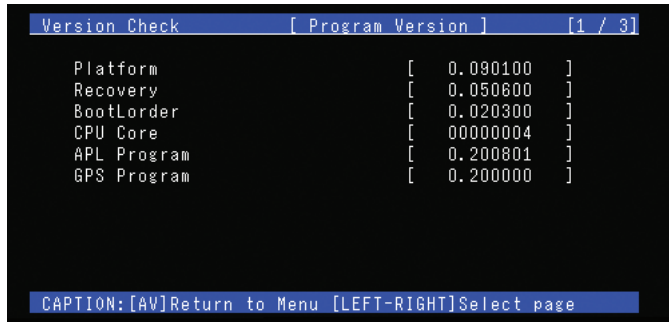
[PAGE 3]



No	Test item	Description of test
1	Bluetooth Unit	Bluetooth unit test and firmware updating are implemented.

Specifications of 06 Overseas Navigation Test Mode Version Display

Version information screen [PAGE 1]



<<Key operation>>

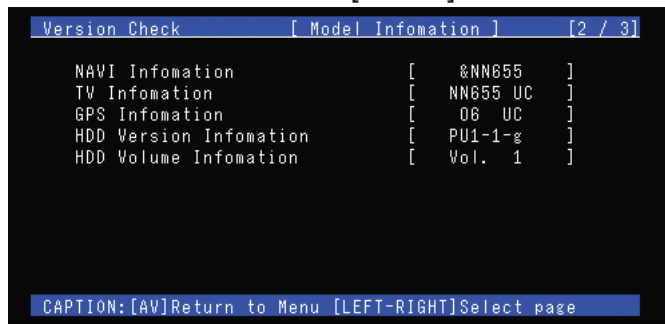
[TRK>]****Proceeds to the next page.

[AV]*****Escapes from the version information display screen and returns to the menu screen.

Description of items

No	Item	Item description	Information displayed	File name
1	Platform	Displays the version for the system software OS block (FLASH).	[* .*****]→Version for system software OS block (FLASH) [UNKNOWN]→Version acquisition failure or no program	EU060PLT.EXE
2	Recovery	Displays the version of the recovery software in system software OS block (FLASH).	[* .*****]→Version of the recovery software in system software OS block (FLASH) [UNKNOWN]→Version acquisition failure or no program	EU060PLT.EXE
3	BootLorder	Displays the version of the boot loader block (FLASH).	[* .*****]→Version of the boot loader block [NG]→Version acquisition failure or no program	
4	CPU Core	Displays the CPU version	[*****]→Version of the CPU core block [NG]→Version acquisition failure	
5	APL Program	Displays the version of application program (HDD)	[* .*****]→Version of the application program [UNKNOWN]→Version acquisition failure	EU060APL.EXE
6	GPS Program	Displays the version of GPS program (GIDRA).	[* .*****]→Version of the GPS program [UNKNOWN]→Version acquisition failure	EU060GPS.EXE

■ Version information screen [PAGE 2]



<<Key operation>>

[TRK>] Proceeds to the next page.

[AV] Escapes from the version information display screen and returns to the menu screen.

Description of items

No	Item	Item description	Information displayed
1	NAVI Information	Displays the navigator destination information.	[&NN***]→Navigation model information [UNKNOWN]→Information acquisition failure
2	TV Information	Displays the TV model information.	[NN655 UC]→NN655 [NN656 EW]→NN656 [UNKNOWN]→Information acquisition failure
3	GPS Information	Displays the GPS destination information.	[06 UC]→NN655GPS unit is connected. [06 EW]→NN656GPS unit is connected. [UNKNOWN]→Information acquisition failure
4	HDD Version Information	Displays the hard disk version	[***-*-*]→Hard disk version [UNKNOWN]→Information acquisition failure
5	HDD Volume Information	Displays the volume information.	[Vol.*]→Volume information [Vol.0]→Information acquisition failure

Version information screen [PAGE 3]



<<Key operation>>

[TRK>] Proceeds to the next page

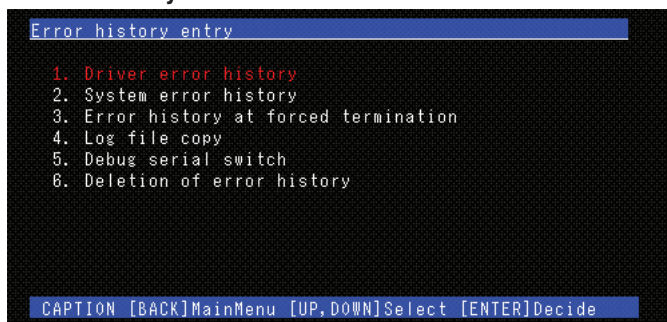
[AV] Escapes the version information display screen and returns to the menu screen.

Description of items

No	Item	Description of item	Information display
1	Mecha uCom Core	Displays the core version for machine microcontroller.	[**.**]→Core version for machine microcontroller [UNKNOWN]→Communication with machine microcontroller is not established.
	Mecha uCom APL	Displays the application version for machine microcontroller.	[**.**]→Application version for machine microcontroller [UNKNOWN]→Communication with machine microcontroller is not established.
2	System uCom VERSION	Displays the version for system microcontroller.	[**.**]→Version of the system microcontroller [UNKNOWN]→Communication with the system microcontroller is not established.
	System uCom ROMCOLLE	Displays the ROM COLLE version for system microcontroller.	[**.**]→ROM COLLE version for system microcontroller [- - - - -]→No ROM COLLE version
3	Monitor uCom VERSION	Displays the version of the monitor microcontroller.	[**.**]→Version of the monitor microcontroller [UNKNOWN]→Communication with system microcontroller is not established.
	Monitor uCom ROMCOLLE	Displays the ROM COLLE version for monitor microcontroller.	[**.**]→ROM COLLE version for monitor microcontroller [- - - - -]→No ROM COLLE version

Specifications of 06 Overseas Navigation Test Mode Error History Entry Screen

● Error history menu screen



Select error history, history deletion, file copy or debug serial switch.

Select driver error/system error to move to reading drive selection screen.

Select error history at forced reset to move to forced reset error log display screen.

Select log file copy to move to media selection screen.

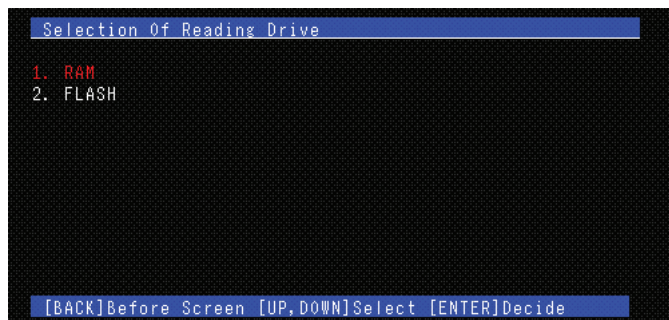
Select debug serial switch to move to debug serial switch screen.

Select deletion of error history to move to deletion of error history screen.

1. Reading drive selection screen (driver error, system error)
2. Forced termination error log display screen (forced termination error history)
3. Media selection screen (log file copy)
4. Debug serial switch screen (debug serial switch)
5. Deletion of error history selection screen (deletion of error history)

A

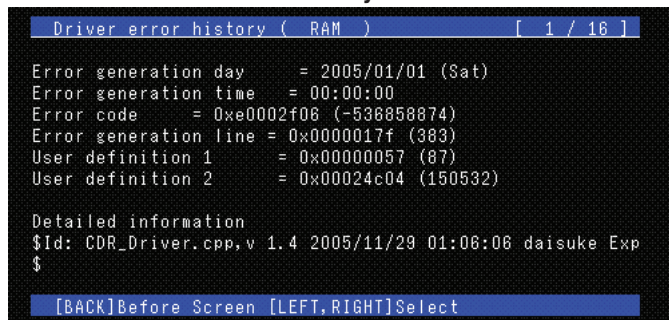
● Drive selection screen



B

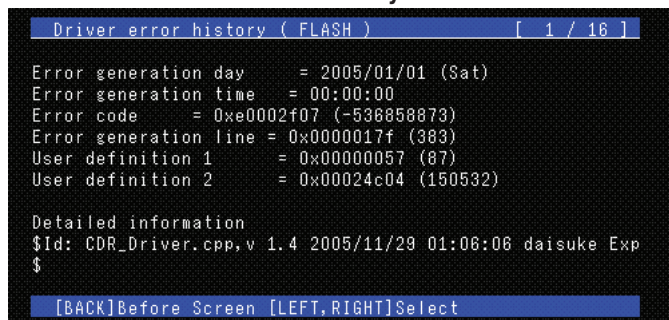
1. Driver error
2. System error

● RAM drive driver error history screen



C

● FLASH drive driver error history screen



D

E

F

● RAM drive system error history screen

A

```
System error history ( RAM ) [ 1 / 1 ]

Tick number : 0x00003a6a

Error record real data

05/01/01 00:00:00 Warning 0x08000000! AV.EXE(76EDBF92) NEv
entHandler::DispatchEvent inf:0(0x00000000), 2176(0x000000
80), 200(0x000000c8)

[BACK]Before Screen [LEFT,RIGHT]Select
```

[Description]

B

◆ Tick number : Counter value for beginning count from OS startup. 1 count is equivalent to 10msec.

● FLASH drive system error history screen

C

```
System error history ( FLASH ) [ 1 / 1 ]

Tick number : 0x00003a6a

Error record real data

05/01/01 00:00:00 Warning 0x08000000! AV.EXE(76EDBF92) NEv
entHandler::DispatchEvent inf:0(0x00000000), 2176(0x000000
80), 200(0x000000c8)

[BACK]Before Screen [LEFT,RIGHT]Select
```

● Error history at forced reset

D

```
Compulsion reset error log ( 1/18)

DateTime          2005/01/01(SAT)00:00:00
Progress Time     0h 00m 39s 863ms
AccOff            0N
ApplicationVersion 0.010101
PlatformVersion  0.020710
Model             NM855
SPC               0xffffffff
Kind              JIT

[BACK]Before Screen [RIGHT,LEFT]History Select
```

[Description]

E

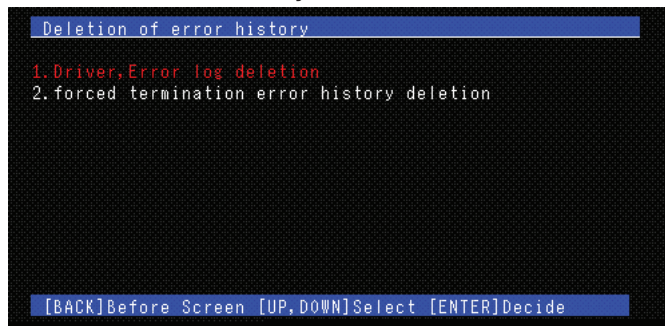
- ◆ DateTime : Date and time of forced reset
- ◆ Progress Time : Time from forced reset to startup
- ◆ AccOff : When there is a forced reset during AccOff process→ON Other cases→OFF
- ◆ ApplicationVersion : Application version
- ◆ PlatformVersion : Platform version
- ◆ Model : Model name
- ◆ SPC : Retreat program counter : Command address in case of exceptions (for CPU watchdog only)
- ◆ Kind : Type of forced reset (JIT/CL/CPUWDT)

Press [Return] key to return to the menu.

[←→] to display history.

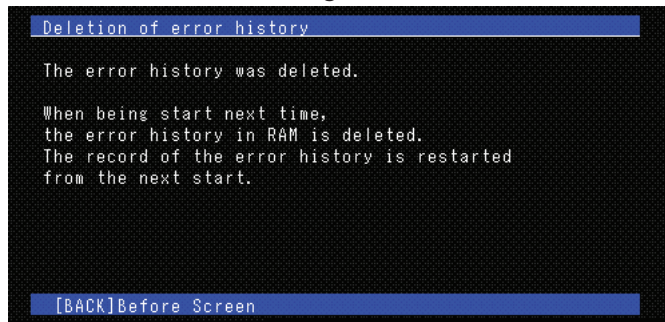
F

● Deletion of error history screen



1. Deletion of driver, and error log
2. Deletion of forced reset error history

● Deletion of driver/error log screen

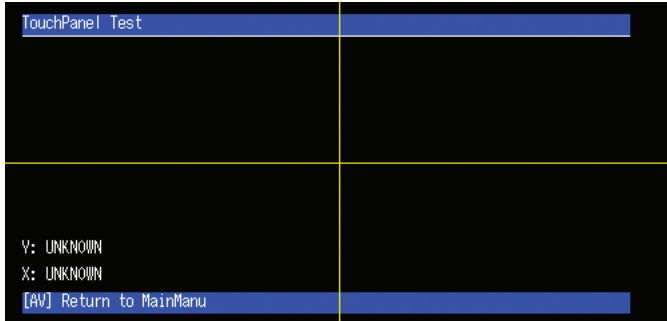


● Deletion of error history at forced reset screen



Test Mode Touch Panel Test Operation Specifications

A ● Touch panel test

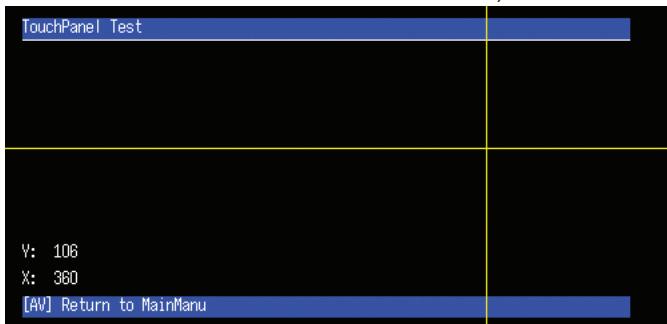


B ● Description of operation

[AV] (main unit) key : Returns to the test mode main menu.

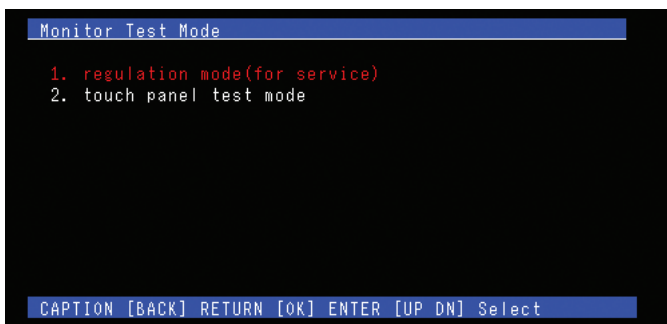
Touch panel : The coordinates of the pressed point will be displayed by 2-axis horizontal and vertical lines.

• By pressing an optional point on screen, the coordinates of the pressed point are displayed by 2-axis horizontal and vertical lines. (In the initial condition after starting the test and before pressing the panel, the value display says "UNKNOWN" and the lines are at the "center.")



D Test Mode Monitor Test Mode Operation Specifications

E ● Monitor test mode menu



1. regulation mode(for service)

– Adjustment mode for service: Adjustable monitor setting value can be changed.

2. touch panel test mode

– Touch panel test mode: Settings related to touch panel such as calibration can be provided.

• Description of operation

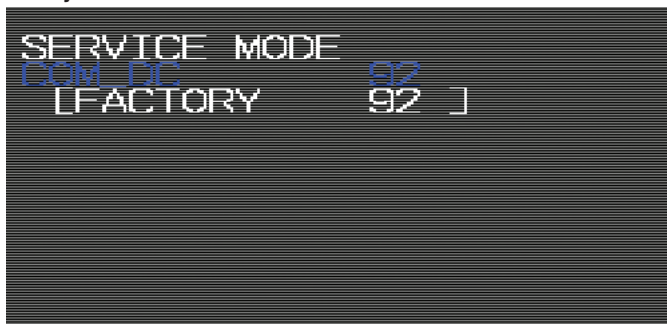
[AV] (main unit) key : Returns to test mode main menu.

[TI] (main unit) key : Selects the item.

[P.LIST ↑ ↓] (main unit) key : Moves the cursor (selected line: red).

F

● Adjustment mode for service



COM DC

– Common inversion output center value: Line setting default value = 92

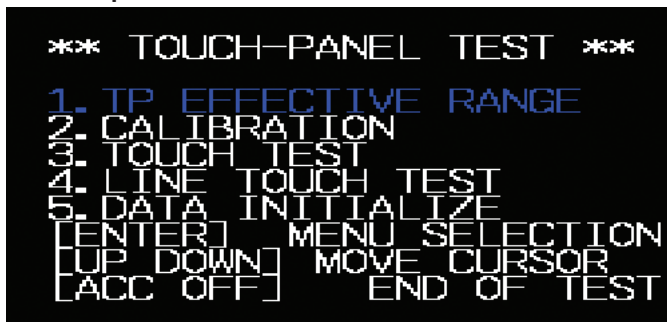
• Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

[TRK ←] (main unit) key : Moves DOWN the setting value.

[TRK →] (main unit) key : Moves UP the setting value.

● Touch panel test mode menu



1. TP EFFECTIVE RANGE

– Outermost rim test: Tests the outermost rim of the touch panel screen.

2. CALIBRATION

– Calibration: Calibration setting can be provided by pressing the cursor on screen successively.

3. TOUCH TEST

– Touch panel confirmation: Displays the status before and after pressing the touch panel.

4. LINE TOUCH TEST

– Line touch panel test: OK/NG judgment for touch panel is made by pressing the cursor on screen.

5. DATA INITIALIZE

– Data initialization: Returns the outermost rim and calibration data to the initial values.

• Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

[Navigation] (main unit) key : Selects the item.

[P.LIST ↑ ↓] (main unit) key : Moves the cursor (selected line: blue).

● Outermost rim test

A



- Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

B

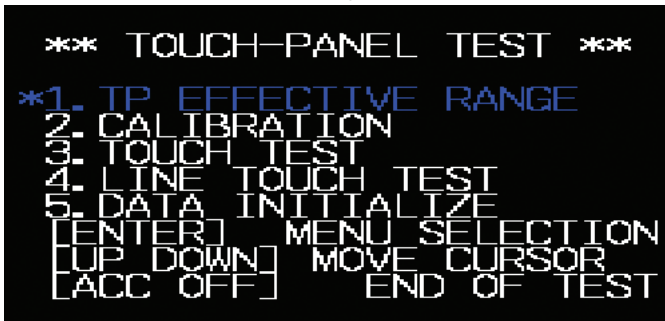
[Navigation] (main unit) key : Terminates setting.

Touch panel : Outermost rim is set up by touching the range than can be pressed (outer rim).

- "OK" is displayed for about 2 seconds when it is successful and "NG" when it fails, and the system returns to the touch panel test mode menu.

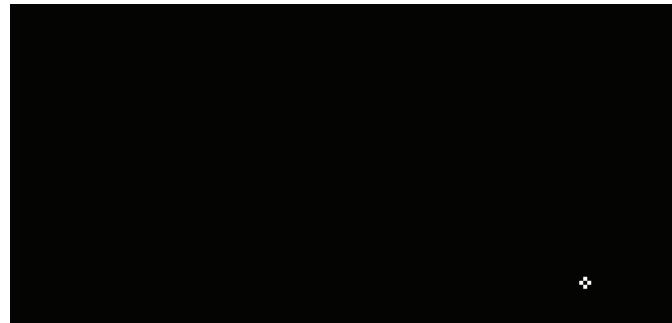
- When successful, "*" is displayed on the left of "1. TP EFFECTIVE RANGE" of the touch panel test mode menu.

C



● Calibration

D



- Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

[Navigation] (main unit) key : Escapes from setting.

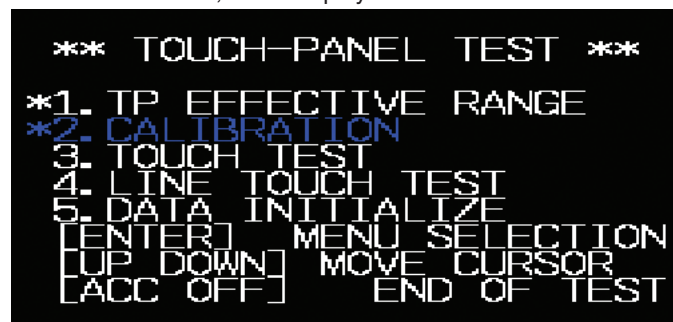
E

Touch panel : Calibration is set up by pressing the cursor on screen successively.

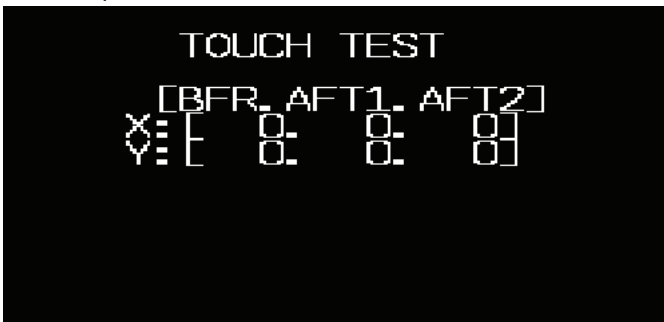
- "FINISHED" is displayed for about 2 seconds when touching at 17 points has been completed and "NG" when it is closed by pressing the [Navigation] key during calibration, and the system returns to the touch panel test mode menu.

- When successful, "*" is displayed on the left of "2. CALIBRATION" of the touch panel test mode menu.

F



● Touch panel confirmation



• Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

[Navigation] (main unit) key : Returns to touch panel test mode menu.

Touch panel : An optional point on screen is pressed.

- The coordinates for the pressed point are displayed as values and cursor.

[BFR] : The value of the A/D value from the touch panel.

These values are not indicated the X-Y coordinate on the monitor.

[AFT1] : After compensation by Factory setting.

[AFT2] : After compensation by User setting.



● Line touch panel test



• Description of operation

[AV] (main unit) key : Returns to monitor test mode menu.

[Navigation] (main unit) key : Escapes from the test.

Touch panel : Test is executed by pressing the cursor on screen successively.

- "Cursor turns red" if the displayed cursor position cannot be pressed, and it moves to the "next cursor" when it is pressed properly.
- "OK" is displayed for about 2 seconds when touching is completed at 17 points and "NG" when it is closed by pressing the [Navigation] key during test, and it returns to the touch panel test mode menu.
- When successful, "*" is displayed on the left of "4. LINE TOUCH TEST" of the touch panel test mode menu.

```

*** TOUCH-PANEL TEST ***
*1. TP EFFECTIVE RANGE
*2. CALIBRATION
 3. TOUCH TEST
*4. LINE TOUCH TEST
 5. DATA INITIALIZE
[ENTER] MENU SELECTION
[UP DOWN] MOVE CURSOR
[LACC OFF] END OF TEST

```

● Data initialization

```

TP DATA INITIALIZE
* RANGE INIT
* CALIB INIT
  USER RANGE INIT
  USER CALIB INIT
  RETURN TO MENU
[ENTER] USE FUNCTION
[UP DOWN] MOVE CURSOR

```

RANGE INIT

– Initialization of outermost rim setting: Initializes the outermost rim setting obtained in monitor test mode.

CALIB INIT

– Initialization of calibration correction: Initializes the calibration correction obtained in monitor test mode.

USER RANGE INIT

– Initialization of user setting outermost rim: Initializes the outermost rim set up by the user.

USER CALIB INIT

– Initialization of user calibration correction: Initializes the calibration correction set up by the user.

RETURN TO MENU

– Return to menu: The system returns to the touch panel test mode menu.

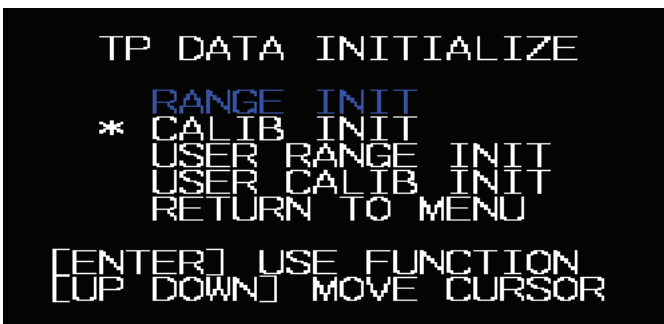
• Description of operation

[AV] (main unit) key: Returns to monitor test mode menu.

[Navigation] (main unit) key: Executes the item.

[P.LIST ↑ ↓] (main unit) key: Moves the cursor (selected line: blue).

- If "*" is shown on the right of an item, the item has already been set up or corrected. Match the cursor there and execute initialization to eliminate "*" (ex.: initialization of outermost rim).



A

Test mode port test specifications

● Port test screen

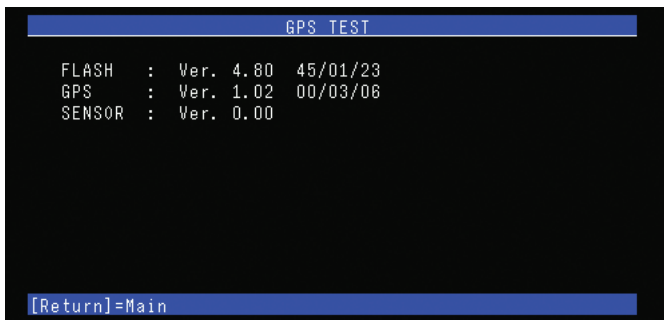


C

The status of each port is displayed as Hi / Low. The car speed pulse indicates the pulse number within the time unit.

Test Mode GPS Evaluation System Startup Screen Specifications

● Execution screen



D

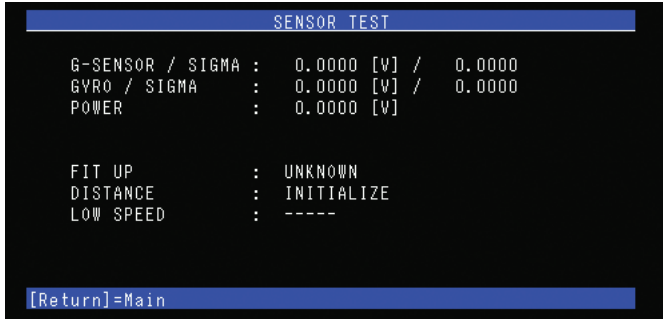
E

FLASH	Displays the version of DRAGON FLASH ROM.
GPS	Displays the version of GPS.
SENSOR	Displays the version of the sensor.

F

Specification of sensor test screen

● Test screen

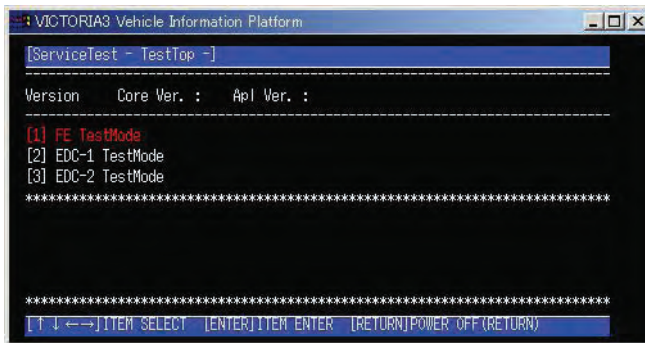


G-SENSOR	Display of G sensor voltage value		
GYRO	Display of GYRO voltage value		
POWER	Display of power supply voltage value		
FIT UP	Display of attachment status		
	Display	Status	
	• NG	Attachment position NG	
	• OK	Attachment position OK (third best)	
	• OK(Better)	Attachment position OK (second best)	
• OK(Best)	Attachment position OK (best)		
DISTANCE	Display of distance calculation status		
	Display	Status	
	• INITIALIZE	Sensor in initial learning	
	• GPS	GPS distance (pulse unconnected with a model without G sensor)	
	• G-SENSOR	G sensor distance (simple hybrid)	
	• ND-PG1	ND-PG1 distance	
• SPEED PULSE	Vehicle speed pulse distance		
LOW SPEED	Displays the minimum output speed for low-speed vehicle (depends on the DISTANCE status).		
	DISTANCE status	SPEED PULSE status	Display
	SPEED PULSE	Learning low vehicle speed pulse	CHECK
		Low vehicle speed pulse OK	OK
		Low vehicle speed pulse NG	NG xx [km/h]
OTHERS		-----	

Test Mode Operation Specification Document for Mecha Service

1. About the test for Mecha service

[Mecha ServiceTest - TestTop -] screen



Mecha Version: Version of the macha used

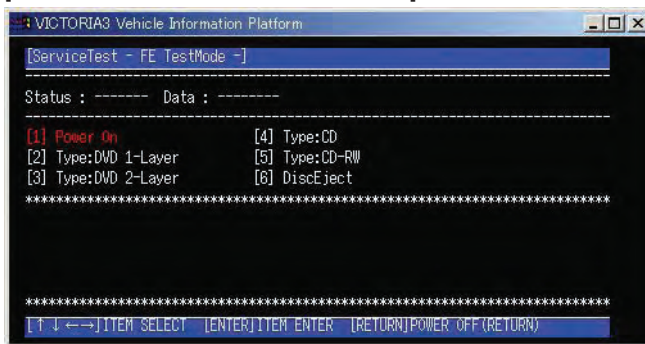
- [1] FE TestMode ***** FE test mode startup
- [2] EDC-1 TestMode *** EDC-1 mode (DVD only): EDC test is executed successively.
- [3] EDC-2 TestMode ** EDC-2 mode (DVD only): EDC test is executed by the unit of blocks.

※ By pressing [Return] button on this screen, the system escapes from Mecha service test mode.
Though it may take some time in this case, do not press any key until the screen changes.

2. About FE test

※ If an error is displayed in Data, please turn the POWER OFF or restart the test mode.

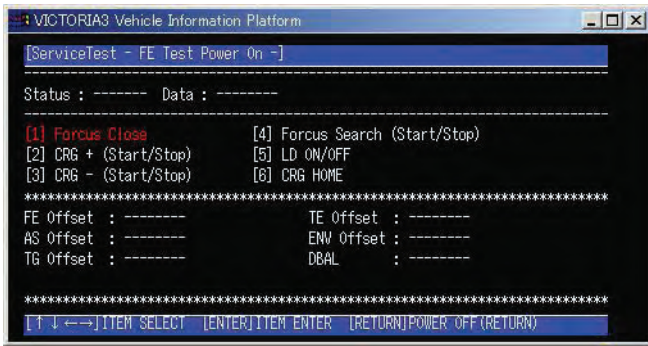
[Mecha ServiceTest - FE TestMode -] screen



- [1] Power On ***** Execution of FE test (Power on after choosing inserted disc type.)
- [2] Type:DVD 1-Layer ** DVD 1-layer
- [3] Type:DVD 2-Layer ** DVD 2-layer
- [4] Type:CD ***** CD
- [5] Type:CD-RW ***** CD-RW
- [6] DiscEject ***** Disc ejection

[Mecha ServiceTest - FE Test Power On -] screen

A



B

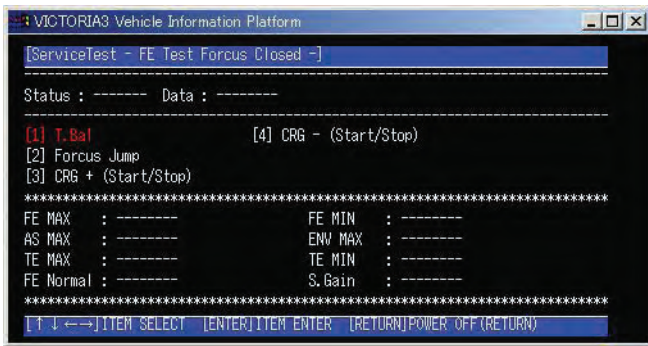
- [1] Forcus Close Closes Focus.
- [2] CRG + (Start/Stop) Moves the carriage to the rim or stops the carriage.
- [3] CRG - (Start/Stop) Moves the carriage to the center or stops the carriage.
- [4] Forcus Search(Start/Stop) .. Implements or stops focus search.
 ※ To close focus after focus search, turn the POWER OFF once and then turn the POWER ON again.
- [5] LD-ON/OFF Implements LD-ON/OFF.
 ※ The system will turn LD-OFF automatically if no there is no operation for 10 seconds after LD-ON. If LD-ON is not executed within 10 seconds even during focus search, LD-OFF will be executed in 9 seconds even if focus search is executed after LD-ON.
- [6] CRG HOME Returns the carriage to home position.

C

- FE Offset : FE offset coefficient
- AS Offset : AS offset coefficient
- TG Offset : TG offset coefficient
- TE Offset : TE offset coefficient
- ENV Offset : ENV offset coefficient
- DBAL : DBAL coefficient

[Mecha ServiceTest - FE Test Focus Closed -] screen

D



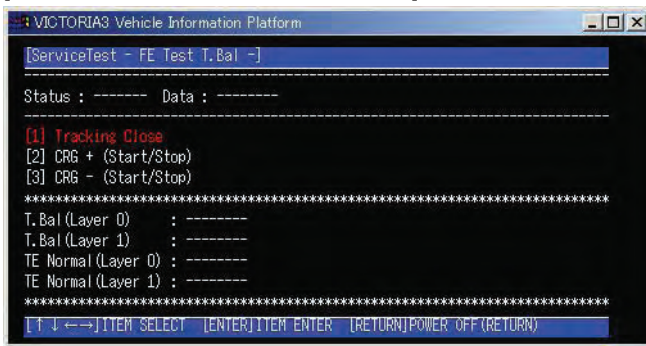
E

- [1] T.Bal Adjusts the tracking balance.
- [2] Forcus Jump Focus jump
- [3] CRG + (Start/Stop) .. Moves the carriage to the rim or stops the carriage.
- [4] CRG - (Start/Stop) .. Moves the carriage to the center or stops the carriage.

F

- FE MAX : FE MAX level
- AS MAX : AS MAX level
- FE Normal : FE normalization coefficient
- TE MAX : TE MAX level
- FE MIN : FE MIN level
- ENV MAX : ENV MAX level
- TE MIN : TE MIN level
- S.Gain : Spindle gain coefficient

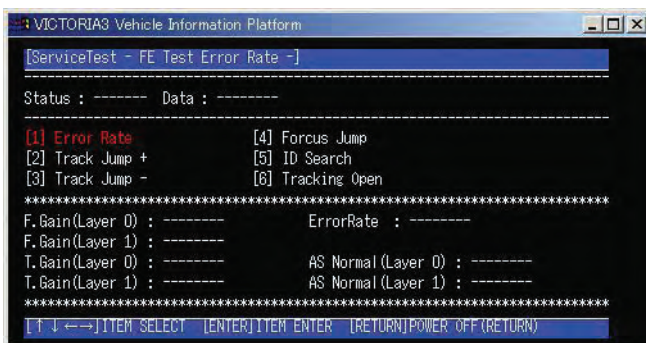
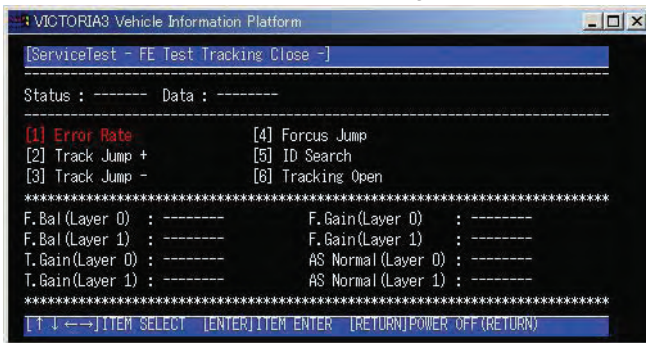
[Mecha ServiceTest - FE Test T.Bal -] screen



- [1] Tracking Close Closes the tracking
 [2] CRG + (Start/Stop) ... Moves the carriage to the rim or stops the carriage.
 [3] CRG - (Start/Stop) ... Moves the carriage to the center or stops the carriage.

T.Bal (Layer 0) : TBAL coefficient (layer 0)
 T.Bal (Layer 1) : TBAL coefficient (layer 1)
 TE Normal (Layer 0) : TE normalization coefficient (layer 0)
 TE Normal (Layer 1) : TE normalization coefficient (layer 1)

[Mecha ServiceTest - FE Test Tracking Close -] screen



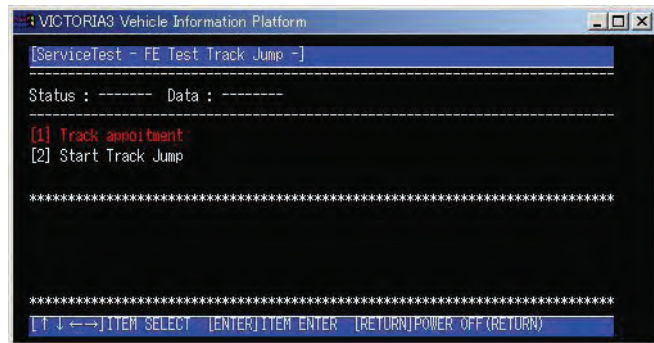
- [1] Error Rate Implements measurement of error rate (no other operation is possible for approximately 10 seconds).
 [2] Track Jump + Jumps by the specified number of tracks (in outer direction)
 [3] Track Jump - Jumps by the specified number of tracks (in inner direction)
 [4] Focus Jump Implements focus jump (DVD only)
 [5] ID Search Specifies ID Search (DVD only)
 [6] Tracking Open ... Opens tracking (Focus closed status: Returns to [Mecha ServiceTest - FE Test Focus Closed -] screen.)

※ Play speed was fixed → L0 layer DVDx1.3-1.6CAV, CDx4CLV L1 layer DVDx1.3-1.6CAV

F.Bal (0) : FBAL coefficient (layer 0)
 F.Bal (1) : FBAL coefficient (layer 1)
 T.Gain (0) : Tracking gain coefficient (layer 0)
 T.Gain (1) : Tracking gain coefficient (layer 1)
 F.Gain (0) : Focus gain coefficient (layer 0)
 F.Gain (1) : Focus gain coefficient (layer 1)
 AS Normal (0) : AS normalization adjustment value (layer 0)
 AS Normal (1) : AS normalization adjustment value (layer 1)

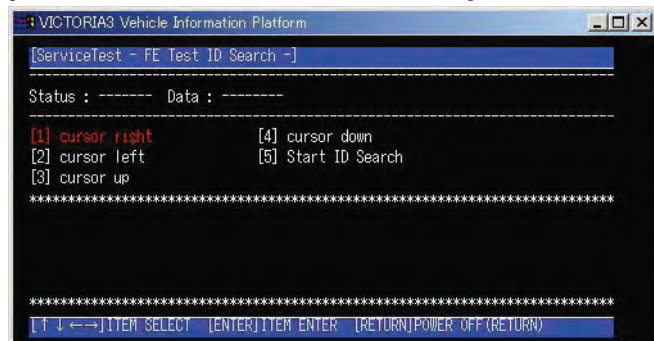
ErrorRate : Error rate

[Mecha ServiceTest - FE Test Track Jump -] screen



[1] Track appointment *** Specification of track number (Mecha switches the 7 (DVD type), 5 (CD type) pattern cyclically.)
 [2] Start Track Jump *** Starts tracking jump (returns to [Mecha ServiceTest - FE Test Tracking Close -] screen).

[Mecha ServiceTest - FE Test ID Search -] screen



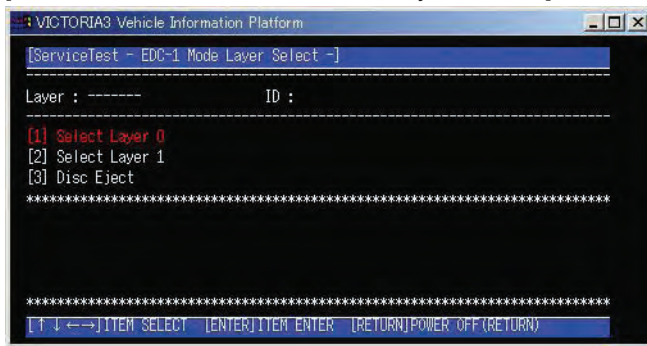
[1] cursor right ***** Moves the cursor to the right.
 [2] cursor left ***** Moves the cursor to the left.
 [3] cursor up ***** Moves the cursor up.
 [4] cursor down ***** Moves the cursor down.
 [5] Start ID search *** Starts ID search (returns to [Mecha ServiceTest - FE Test Tracking Close -] screen).

3. About EDC test

EDC-1 Mode : Implements EDC test successively.
 EDC-2 Mode : Implements EDC test by the unit of blocks.

Operation procedure is similar for EDC-1 and EDC-2.

[Mecha ServiceTest - EDC-1 mode Layer Select -] screen

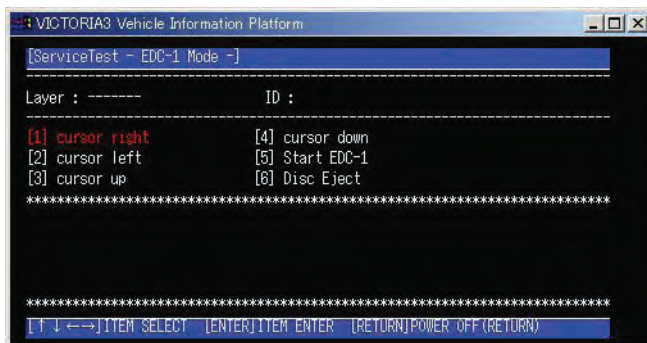


Layer : Currently tested layer
ID : Currently tested ID

- [1] Select Layer 0 ... Selects layer 0
- [2] Select Layer 1 ... Selects layer 1
- [3] Disc Eject Ejects the disc.

※The system escapes from the Mecha service test mode by pressing [Return] on this screen.
Though it may take some time in this case, do not press any key until the screen changes.

[Mecha ServiceTest - EDC-1 mode -]



Layer : Currently tested layer
ID : Currently tested ID

- [1] cursor right Moves the cursor to the right.
- [2] cursor left Moves the cursor to the left.
- [3] cursor up Moves the cursor up.
- [4] cursor down Moves the cursor down.
- [5] Start EDC-1 Starts EDC test.
- [6] Disc Eject Ejects the disc.

4. Flow of test mode for Mecha service

Flow of test mode for Mecha service

1) Precautions

This product uses 5V and 3.3V as standard voltages. The electrical potential that is the reference for signals, is not GND, but VREF (approximately 2.2V) and VHALF (approximately 1.65V).

During product adjustments, if the reference voltage is mistakenly taken as GND, and a grounding contact is made, not only would it be impossible to measure the accurate electrical potential, but also the servo motor would malfunction, resulting in the application of a strong impact on the pick up. The following precautionary measures should be strictly adhered to, in order to avoid such problems.

The reference voltage and GND should not be confused when using the minus probe of a measurement device. When an oscilloscope is being used special care should be taken to make sure that the reference voltage is not connected to the probe of ch1 (on the minus side), while the probe of ch2 (on the minus side), is connected to GND. Further, since the body frame of most measurement devices have the same electrical potential as the minus side of the probe, the body frame of the measurement device should be set to floating ground.

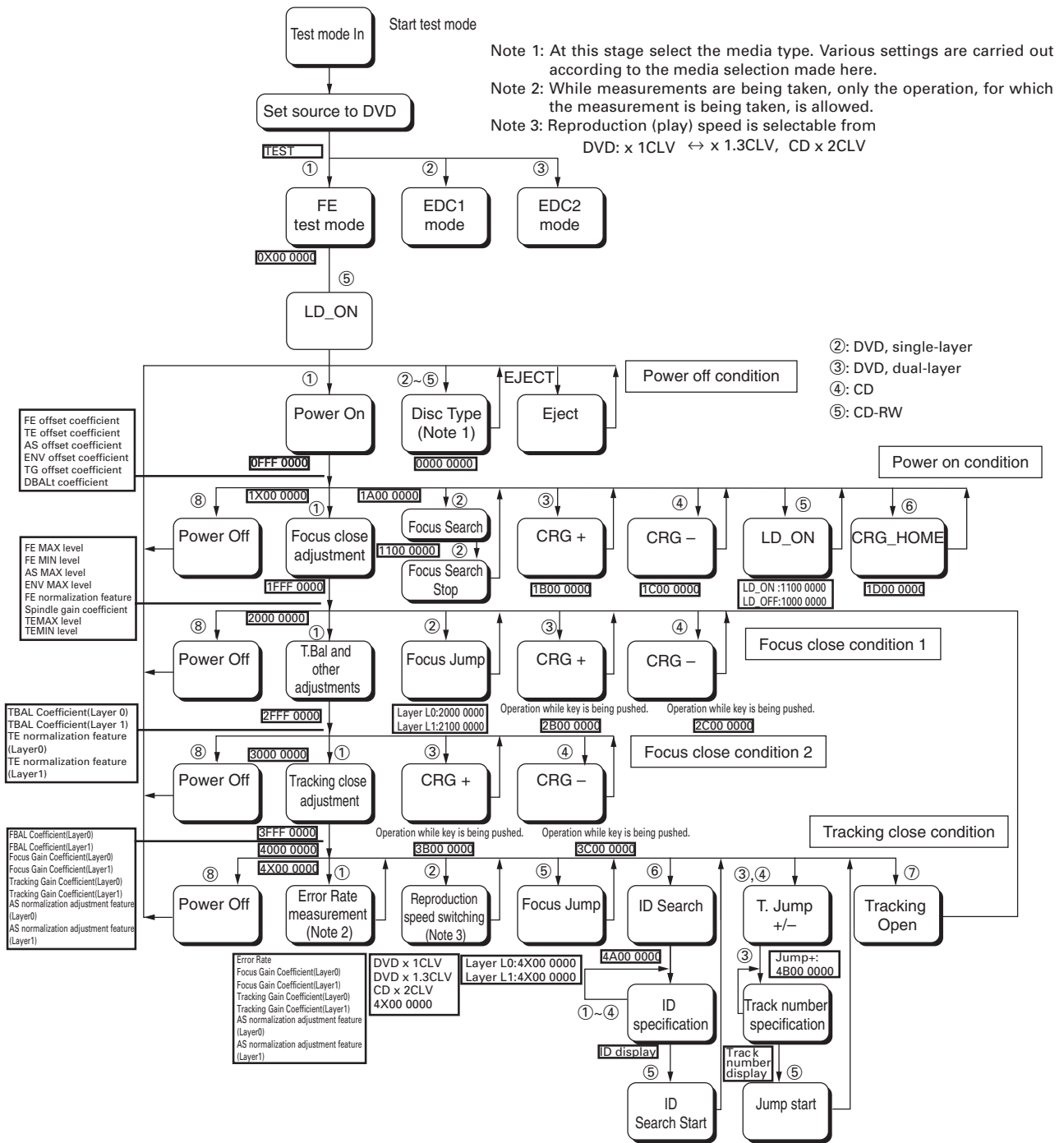
If the reference voltage is connected to GND by mistake, turn the regulator OFF immediately, or turn the power OFF.

- Remove the filters and wires used for measurements only after the regulator has been turned OFF.
- After the power supply is turned on, regulator ON the following adjustment and measurement are promptly done.
- Whenever the product is in the test mode, the software will not take any protective action. For this reason, special care should be taken to make sure that no mechanical or electrical shock could be applied to the product when taking measurements in the test mode.
- Whenever the EJECT key is pressed to eject the disk, no other keys, other than the EJECT key, should be pressed until the disk eject action has been completed.
- Press the EJECT key only after the disk has stopped completely.
- If the product hangs up turn the power OFF immediately.
- Laser diodes may be damaged, if the volume switch for the laser power adjustment of the pick up unit, is turned.

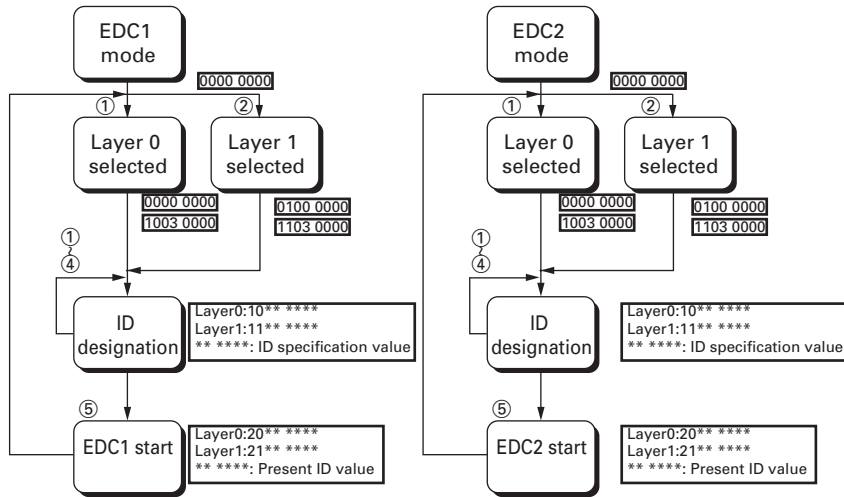
Attention)

- Test mode starting procedure
ACC ON while pressing the BAND and ESC keys together.
- Test mode stopping procedure
ACC and Backup OFF.

● Front-End test mode flow chart



A



B

F-close and F-search cannot be executed, unless LD-ON is set.

[If F-close isn't executed within 9 seconds after LD-ON, it switches to LD-OFF automatically.

And even if F-search is executed within 9 seconds after LD-ON, it also switches to LD-OFF.]

Please carry out F-close after carrying out power-off at once and carrying out power-on again, when carrying out F-close after performing F-search.

The track number designation is selected from the track numbers already prepared for selection. Switching to cyclic operation is made at step ③, and the decision is finalized (entered) in step ④.

C

For CD: Tracks 1, 4, 10, 11 and 32.

For DVD: Tracks 1, 4, 10, 11, 32, 64 and 100.

Method for designating an ID address:

- A number of digits are determined through commands ① and ②. Numerical UP/DOWN operations are performed through commands ③ and ④. The decision is finalized (entered) with command ⑤.

Display

Error Code List

D

Error status from DVD microcomputer	Contents	Display
0X50	Mecha. error	No display
0X40	No disc	No display
0X30	The temperature is abnormal	Thermal Protection in Motion
0X20	Read error	Error-02-XX
0XE2	Non-playable disc	NON-PLAYABLE DISC
0X90	Different region disc	DIFFERENT REGION DISC
0XFF	Undefined error	Error-FF

Error code of read error(Part of XX)

E

Error Code	Contents	Display
0X99	Data cannot read	Please confirm the disc
0X80	The address cannot be found	Please confirm the disc
0X90	Focus error	Please confirm the disc
0X91	Spindle lock NG	DVD is stopping because mechanism detected abnormality
0X92	Carriage home NG	DVD is stopping because mechanism detected abnormality
0X93	FOK error	Please confirm the disc
0X94	ID/Subcode cannot be read	Please confirm the disc
0X95	High spindle rotation	DVD is stopping because mechanism detected abnormality
0X96	Row spindle rotation	DVD is stopping because mechanism detected abnormality
0X98	TOC cannot be found	Please confirm the disc
0X9A	AV chip error	DVD is stopping because mechanism detected abnormality
0X9B	RecaveryNG(BE)	DVD is stopping because mechanism detected abnormality
0X9C	Play state error	
0X9D	Disc data error	
0X9E	Surface error (Disc distinction is improper)	

F

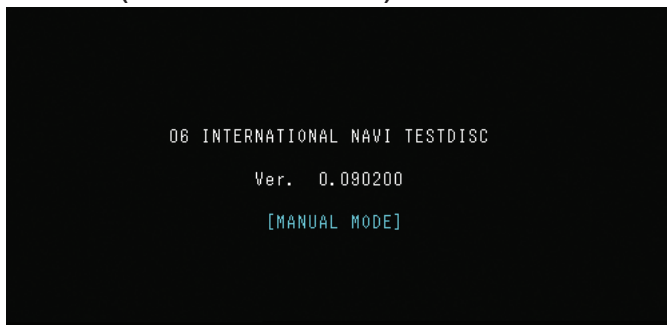
6.7 TEST DISC

1. Start/Shutdown

1-1. Start

After inserting the test disc, the title "06 INTERNATIONAL NAVI TESTDISC:GGV1194" will appear.
After the title is displayed, the main menu will be displayed.

Test Disc (Manual Check Version) Title Screen



1-2. Shutdown

No operation is required.

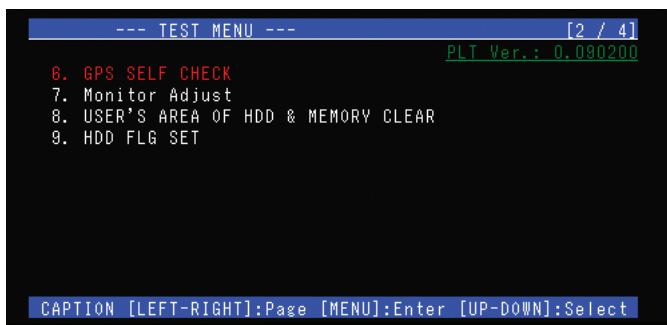
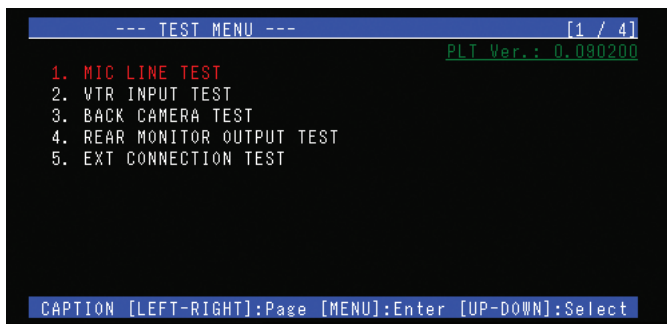
2. Key operation

- How to operate the MANUAL MODE [Manual Check Version] is as follows:
 1. Use the remote control for operation
 2. Use [←][→] keys to select the menu screen.
 3. Use [↑] [↓] keys to select the test items and select [MENU] key and move to the testing screen.
 4. Use [AV] key to return to the menu screen.

* Please refer to explanation on each screen for details.

3. Line test (Common testing items for service)

Menu screen



A

```

--- TEST MENU --- [3 / 4]
PLT Ver.: 0.090200
10. SOFT VERSION INFORMATION
11. DATA COMMUNICATION TEST [SHORT]
12. DATA COMMUNICATION TEST [OPEN]
13. TELEPHONE CONTROL LINE TEST
14. AUTO ANTENNA CONTROL TEST
15. TMC tuner error rate check

CAPTION [LEFT-RIGHT]:Page [MENU]:Enter [UP-DOWN]:Select

```

B

```

--- TEST MENU --- [4 / 4]
PLT Ver.: 0.090200
16. USER'S AREA OF HDD CLEAR
17. RGB OF PICTURE TEST
18. GPS INFORMATION
19. AUDIO TEST
20. File Maintenance
21. GRAPHICS TEST
22. Back Up Data Clear

CAPTION [LEFT-RIGHT]:Page [MENU]:Enter [UP-DOWN]:Select

```

3-1(4-1). Microphone Input Line Test(not for service)

C

```

1. MIC LINE TEST

TELVC          H          MEMMUT          L
GUIDEMUTE      L          LPFSW          L
AMUTE          L          GAIN(0-7)       7

[MAP]:TELVC Port H/L Toggle Switch.
[T]:GUIDEMUTE Port H/L Toggle Switch.
[PHONE MENU(Remocon)]:AMUTE Port H/L Toggle Switch.
[OFF_HOOK(Remocon)]:MEMMUT Port H/L Toggle Switch.
[ON_HOOK(Remocon)]:LPFSW Port H/L Toggle Switch.
[LEFT(Remocon)]:Lower Gain Level.
[RIGHT(Remocon)]:Raiser Gain Level.

[AV]:Return to main menu.

```

D

- Signals are relayed in the following order:
MICIN→ADC-L→Inside ASIC→DAC-L→Jig→ADC-R→Inside ASIC→DAC-R→SP line
Put audio signals into MICIN and test the audio output and input level.
- Using [MAP] key, conduct a toggle operation of "H"/"L" on TELVC(TEL/NOISE) terminal.
- Using [T] key, conduct a toggle operation of "H"/"L" in GUIDEMUTE(ONSEIMUTE) terminal.
- Using [PHONE MENU] key (Steering Remote Controller <CD-SR1>), perform a toggle operation of "H"/"L" in AMUTE (GUIDEMUTE) terminal.
- Using [OFF HOOK] key (Steering Remote Controller <CD-SR1>), perform a toggle operation of "H"/"L" in MEMMUT (MEMMUTE) terminal.
- Using [ON HOOK] key (Steering Remote Controller <CD-SR1>), perform a toggle operation of "H"/"L" in LPFSW terminal.
- Perform Gain UP using [→] and Gain Down [←].
- After test is completed, use [AV] key to return to the main menu.

E

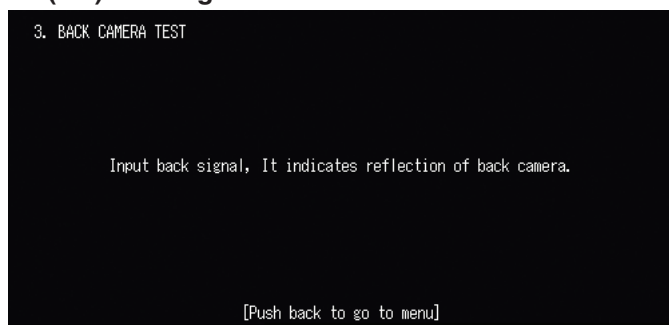
F

3-2(4-2). Testing of External Input



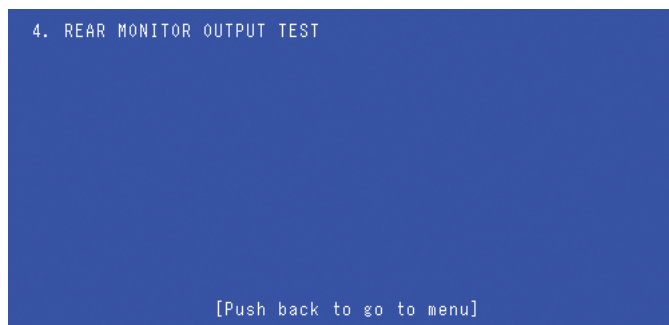
- When starting the test, set VTR 1 input ON and switch the source to VTR.
When finishing the test, set the VTR 1 input OFF and switch the source to OFF.
- During the test, input parking brake signals (GND).
- Video image of VTR1 appears on the screen.
- After the test is completed, use [AV] key to go back to the main menu.

3-3(4-3). Testing of Back Camera



- The purpose is to confirm that by inputting the reverse gear signal, camera video image become available in the setting of monitoring images from the rear view camera.
- When starting the test, set the back camera input ON and set it OFF when it is completed.
- During the test, keep sending back-signals.
- After test is completed, use [AV] key to go back to the main menu.

3-4(4-4). Testing of Rear Monitor Output



- Confirm that a navigation video image is output on the rear monitor.
- When starting the test, set the rear monitor output ON and set the rear monitor output Off when finishing it.
- After test is completed, use [AV] key to go back to the main menu.

3-5(4-5). External connection test

A

```

5. EXT CONNECTION TEST
PARKING BRAKE SIGNAL      OFF
REVERSE GEAR SIGNAL      LOW
CAR SPEED SIGNAL          0
GYRO                      *****
GYRO VOLTAGE      2.487V OK  DELTA SIGMA      1.38 OK
BATTERY VOLTAGE          13.7V
G SENSOR                *****
G SENSOR VOLTAGE 2.530V OK  DELTA SIGMA      1.01 OK
REMOTE CONTROLLER      NO KEY

[Push back to go to menu]

```

B

```

5. EXT CONNECTION TEST
PARKING BRAKE SIGNAL      OFF
REVERSE GEAR SIGNAL      LOW
CAR SPEED SIGNAL          0
GYRO                      *****
GYRO VOLTAGE      2.481V OK  DELTA SIGMA      1.09 NG
BATTERY VOLTAGE          13.8V
G SENSOR                ---
G SENSOR VOLTAGE 1.953V NG  DELTA SIGMA      0.64 NG
REMOTE CONTROLLER      NO KEY

[Push back to go to menu]

```

C

- The status of the items shown above will be renewed every around 0.5 second.
- When the gyro is in operation, beep sound comes out while G sensor is in action.
 Gyro under operating conditions : Low pitched sound (440Hz)
 G sensor in action : High pitched sound (660Hz)

D

E

F

- OK/NG judgment conditions
 - ◆OK/NG judgment of Gyro output values
(Determine differences between Gyro output value and Offset standard values and make OK/NG judgment.)
 - Offset standard value : 2.5[V]
 - Within ± 0.15 [V] : Output voltage OK (OK display)
 - Within $\pm 0.15 - \pm 0.30$ [V] : Secular change tolerance (USABLE display)
 - ± 0.30 [V] or greater : Output voltage NG (NG display)
 - ◆OK/NG judgment of G sensor output values
(Determine differences between G sensor output values and Offset standard values and make OK/NG judgment.)
 - Offset standard value : 2.674[V]
 - Within ± 0.25 [V] : Output voltage OK (OK display)
 - Within $\pm 0.25 - \pm 0.40$ [V] : Secular change tolerance (USABLE display)
 - ± 0.40 [V] or greater : Output voltage NG (NG display)
 - ◆OK/NG judgment of temperature sensor output values
(Check temperature [°C] of the temperature sensor to make OK/NG judgment)
 - -40.0 [°C] - 85.0 [°C] : Temperature sensor OK (OK display)
 - Other than above : Temperature sensor NG (NG display)

※USABLE range is OK range of parts with secular change considered. (The screen displays USABLE.)

※OK range is criteria to judge if they are within OK range at the time of shipping inspection.

※Service division is expected to determine parts to be OK items when they are Usable.

- After the test, use [AV] key to return to the main menu.

When some errors occur to each inspection item, the following error messages are displayed.

<Error List>		
Inspection item	Displayed message	Error details
Parking brake	-	-
Reverse Pulse Gyro Gyro voltage Back up voltage G sensor G sensor voltage Temperature of Temperature sensor	GPS UN-CONNECT	When communication between the navigation system and GPS unit is not established for some reason, this will be displayed. This can be mainly because something is wrong with the hardware. Something can be wrong with the navigation system itself, serial interface (including poor serial connection), and GPS unit.
	COMMAND ERROR	When no API response is returned from GPS unit, this will be displayed. Following incidents can be causes for it. <ul style="list-style-type: none"> • Timeout occurs just because something is wrong with serial interface (poor contact), or data gets garbled and looks like another response. • When a response different from the requested API is returned because of malfunction of GPS unit and another request for API is already requested, the time-out response to the first request is determined to be incorrect one. • Navigation system performs so slow that it cannot handle the response within the time limit even though a response is returned from GPS unit, or GPS unit cannot handle the same kind of situation within the time limit. (The time limit is 1.5 sec.) • Others
Remote control key	-	-

3-6(4-6). GPS reception Check

6. GPS SELF CHECK

```

                2006/01/17 17:34:30
USING SATELLITES NO.
03 11 15 18 19 22 27
ANTENNA CONNECTION          OK
SIGNAL LEVEL                10.9
  
```

[Push back to go to menu]

- Conditions for GPS signal reception are shown below:
- Test OK criteria:
 - Antenna connection is OK.
 - Data can be acquired from more than one satellite.
 - Time is displayed.
- When all the conditions are satisfied, the background color turns blue.
- After inspection, use [AV] key to go back to the main menu.

<Error List>

Displayed messages	Error details
GPS UN-CONNECTING	When communication between the navigation system and GPS unit is not established for some reason, this will be displayed. This can be mainly because something is wrong with the hardware. Something can be wrong with the navigation system itself, serial interface (including poor serial connection), and GPS unit.
COMMAND ERROR INVALID DATA	When no API response is returned from GPS unit, this will be displayed. Following incidents can be causes for it. <ul style="list-style-type: none"> • Timeout occurs just because something is wrong with serial interface (poor contact), or data gets garbled and looks like another response. • When a response different from the requested API is returned because of malfunction of GPS unit and another request for API is already requested, the time-out response to the first request is determined to be incorrect one. • Navigation system performs so slow that it cannot handle the response within the time limit even though a response is returned from GPS unit, or GPS unit cannot handle the same kind of situation within the time limit. (The time limit is 1.5 sec.) • Others

3-7(4-7). Monitor adjustment

Monitor Adjust

1. regulation mode(for service)
2. touch panel test mode
3. EEPROM regulation mode

CAPTION [BACK] RETURN [OK] ENTER [UP DN] Select

- Perform monitor adjustment as follows:
 1. Adjustment mode for service : Monitor setting values are adjustable.
 2. Touch panel test mode : Touch panel related settings such as calibration can be performed.
 3. EEPROM adjustment mode : This mode is not used for service.
- Please refer to the description of "Monitor test mode" of Test mode for details.

3-8(4-8). Clearing of all HDD user region & Main memory

※SENSOR STUDY is cleared in this inspection.

```

8. USER'S AREA OF HDD & MEMORY CLEAR

Push POS The following items are executed. Is it good?

CLEAR USER'S AREA OF HDD
CLEAR SENSOR STUDY

[Push back to go to menu]

```

A

- Push down "MAP" key, clearing will start.
- Clear Sensor. (clear SENSOR STUDY data on HDD (USER \ SYSTEM \ GPS related) and SENSOR STUDY data region of GPS unit.)
- Clear HDD user data area. (MSV, USER \ RW, USER \ RW \ HOLD, USER \ SETUP, USER \ RACKUP shall be deleted.)
- After the inspection screen is displayed, use [MAP] key to perform the process described above.

B

```

8. USER'S AREA OF HDD & MEMORY CLEAR

CLEAR USER'S AREA OF HDD OK
CLEAR SENSOR STUDY OK

[Push back to go to menu]

```

C

- After clearing is completed, the executing result is displayed.
- After clearing is completed, use [AV] key to go back to the main menu.

```

8. USER'S AREA OF HDD & MEMORY CLEAR

CLEAR USER'S AREA OF HDD OK
CLEAR SENSOR STUDY OK

USER\BACKUP\INISTATE [Delete file not found]
USER\RW\INISTATE [Delete file not found]
USER\SETUP\INISTATE [Delete file not found]
MSV\INISTATE [Delete file not found]

[Push back to go to menu]

```

D

- Once HDD user area is cleared, no folders exist until the next restart and no folders to be deleted are found. Then the results above will be displayed.
- Although there are no files to be deleted, processing is completed normally.

E

F

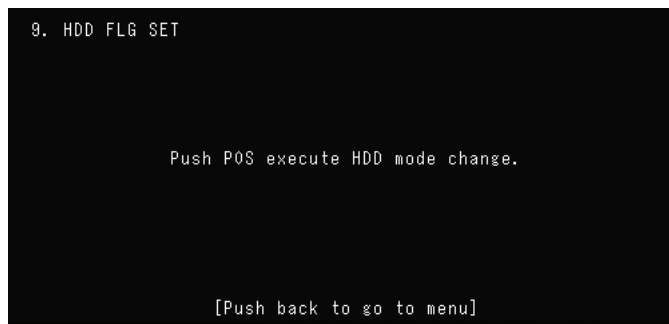
<Clearing of HDD user area Error list>
Shown below are errors which occur when HDD user area is cleared.

Displayed errors	Error factors
Delete file not found	When no files or directory to be deleted are found, this will be displayed. However, this is not an error as HDD has no files to delete.
Atapi device error	When something is wrong with the device, this will be displayed.
CRC error, UnCorrectable error	When it fails in reading and writing data, this will be displayed.
It failed to find Drive.	When no drive is specified or HDD driver cannot be opened, this will be displayed.
Drive format error	When format command is not executed successfully, this will be displayed.
Error	This will be displayed in the case of errors other than those mentioned above.

<Clearing of Main Memory Error list>
Shown below are errors which occur when Main Memory (Clearing of SENSOR STUDY) is cleared.

Displayed errors	Error factors
CLEAR ONLY SENSOR STUDY OF HDD. GPS NONCONNECT.	This is displayed when GPS is not connected (when GPS is out of order).
It failed to clear SENSOR STUDY.	This is displayed when SENSOR STUDY CLEAR COMMAND does not work. (Both HDD and GPS cannot be cleared.)
It failed to communicate with GPS unit.	This is displayed when time-out occurs while communicating with GPS unit.

3-9(4-9). HDD shipping flag setting



- Set HDD to the shipping status. Contents of HDD will not be damaged.
- Push down "MAP" key, and HDD shipping flag setting (HDD mode change) will start.
- After setting HDD shipping flag, use [AV] key to go back to the main menu.

<Error list>
Shown below are errors that take place at the time of HDD shipping flag NG (HDD mode change NG).
※Error codes are all decimal numbers.

Displayed errors	Error factors
It failed to open HDD device.	This error occurs because it fails to open HDD device.
Parameter error of HDD mode change.	This error occurs because the parameter is incorrect. (Error code : 87)
It was refused to request HDD mode change.	This error occurs because the parameter is incorrect. (Error code : 5)
It was timeout to request HDD mode change.	This error occurs because the request take so long that timeout occurs. (Error code : 1053)
It failed HDD mode change. [0x*****]	This is displayed when mode change fails to be executed. [*****] represents error codes value. [Example] • NG occurs because HDD is unconnected. (Error code : 55)

3-10(4-10). Soft Version Display

```

10. SOFT VERSION INFORMATION [1 / 2]

NAVI Infomation  &NN655
Platform         0.090200 Mecha CORE   44.01
APL Program      0.200902 Mecha APL    8.33
GPS Program      1.000000 Region Code  1
GPS Info         NN655 UC   HDD Version  PU1-1-g
System uCom      7.01      System ROMCOLLE -----
Monitor uCom     6.01      Monitor ROMCOLLE -----

[right-left] Page Select
[Push back to go to menu]

```

A

```

10. SOFT VERSION INFORMATION [2 / 2]

Recovery         0.050600
BootLorder       0.020300
CPU Core         4.000000
TV Infomation    NN655 UC
HDD Vol Version  Vol. 1

[right-left] Page Select
[Push back to go to menu]

```

B

- Software version will be displayed.
- Using [←→] key, pages can be turned.
- Use [↓] key to move to the next item.
- ROM's location for each microcomputer is indicated as "-----", ROM's location is not indicated.
- After the inspection is completed, use [AV] key to go back to the main menu.

C

3-11(4-11). Data communication test (Short)(not for service)

```

11. DATA COMMUNICATION TEST [SHORT]

[MAP]:Check Start

[Push back to go to menu]

```

D

- Perform SIO connection short check.
- Use [MAP] key to start the test.

```

11. DATA COMMUNICATION TEST [SHORT]

SERIAL I/O #2 (XM)           OK
SERIAL I/O #4 (DEBUG)       OK
SERIAL I/O #8 (TEL)         OK

[Push back to go to menu]

```

E

SERIAL I/O #2(XM) is displayed
UC model only.

- When loopback for CH2, CH4, CH8 is OK, all the test channels are supposed to be OK and the screen above will be displayed.
- After the test is completed, use [AV] key to go back to the main menu.

F

3-12(4-12). Data communication (Open check)

A

```
12. DATA COMMUNICATION TEST [OPEN]
```

```
[MAP]:Check Start
```

```
[Push back to go to menu]
```

- Perform SIO connection open check.
- Do not connect anything to the terminal of each channel. It is OK when the terminal is open.
- Use [MAP] key to start the test.

B

```
12. DATA COMMUNICATION TEST [OPEN]
```

```
SERIAL I/O #2 (XM)           OK
```

```
SERIAL I/O #4 (DEBUG)       OK
```

```
SERIAL I/O #8 (TEL)         OK
```

SERIAL I/O #2(XM) is displayed
UC model only.

```
[Push back to go to menu]
```

C

- When open-checking of CH2, CH4, and CH8 turned out OK, and the test channels are all OK, the screen above will be displayed.
- After the test, use [AV] key to go back to the main menu.

3-13(4-13). Telephone Control Line Test

D

```
13. TELEPHONE CONTROL LINE TEST
```

```
-- input --
```

```
/CB          17pin    H
```

```
/CE          19pin    H
```

```
-- output --
```

```
Output line mute signal switched 0.5s interval.
```

```
UNIT         8pin    L
```

```
CD           7pin    L
```

```
CNT1        9pin    L
```

```
CNT2       10pin    L
```

```
/CJ         20pin    H
```

```
[Push back to go to menu]
```

- This is a telephone control line test. Output line signal is switched at 0.5 second interval.
- After the test is completed, use [AV] key to go back to the main menu.

E

3-14(4-14). Auto Antenna Control Test

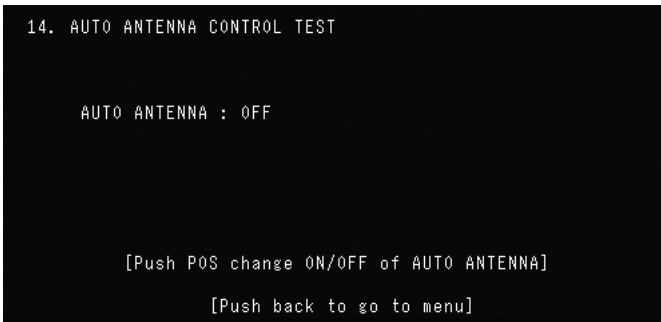
F

```
14. AUTO ANTENNA CONTROL TEST
```

```
AUTO ANTENNA : ON
```

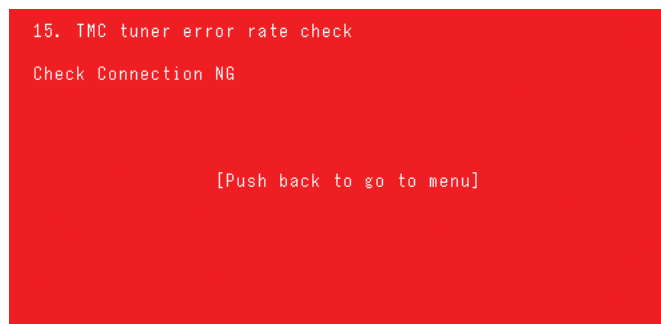
```
[Push POS change ON/OFF of AUTO ANTENNA]
```

```
[Push back to go to menu]
```



- When this test starts, NAVI link setting of AUTO ANTENNA will also function.
- Push down [MAP] key, and ON/OFF of the auto antenna can be switched.
- After the test is completed, use [AV] key to go back to the main menu.
- When getting back to the main menu, restore AM/FM link setting to Auto ANTENNA (initial setting).

3-15(4-15). TMC Tuner Error Measurement Check(EW only)

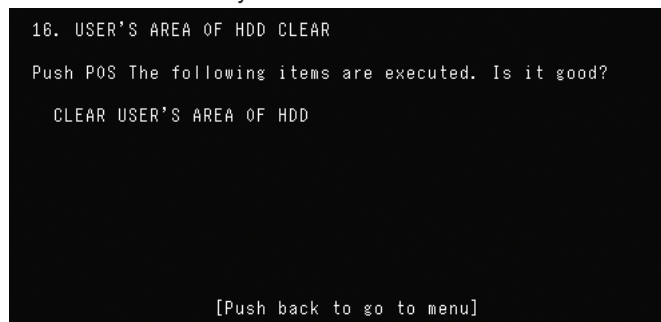


- TMC tuner error rate check is performed in this item.
Default frequency is 87.5MHz.
After checking 500 block, if the error occurs less than 10%, the test results is "OK".
- Use [AV] key to go back to the main menu.

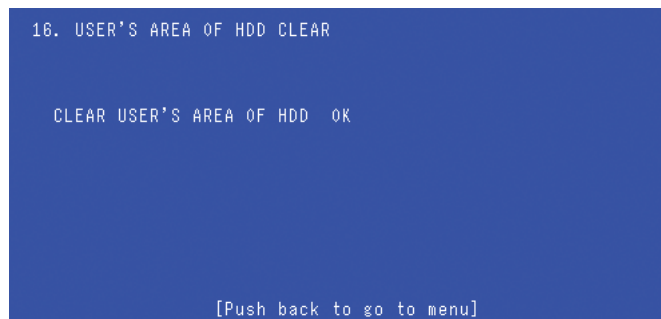
4. Testing for Services

4-16. Clearing of all HDD user region

※ Sensor Study will not be cleared in this test.



- Push "MAP" key, and clearing will be started.
- Clear HDD user data region. (MSV, USER \ RW, USER \ RW \ HOLD, USER \ SETUP, USER \ BACKUP will be cleared.)
- After the testing screen is displayed, use [MAP] key to carry out the steps above.



- After the execution of clearing, the screen above will be displayed.
- Use [AV] key to go back to the menu screen.

16. USER'S AREA OF HDD CLEAR

CLEAR USER'S AREA OF HDD OK

```

USER\BACKUP\INISTATE [Delete file not found]
USER\RW\INISTATE [Delete file not found]
USER\SETUP\INISTATE [Delete file not found]
MSV\INISTATE [Delete file not found]

```

[Push back to go to menu]

- Once HDD user area is cleared, no folders exist until the next restart and no folders to be deleted are found. Then the results above will be displayed.
- Although there are no files to be deleted, processing is completed normally.

<HDD user region clearing Error list>
Shown below are errors that occur when clearing HDD user region.

Displayed errors	Error factors
Delete file not found	When no files or directory to be deleted are found, this will be displayed. However, this is not an error as HDD has no files to delete.
Atapi device error	When something is wrong with the device, this will be displayed.
CRC error, UnCorrectable error	When it fails in reading and writing data, this will be displayed.
It failed to find Drive.	When no drive is specified or HDD driver cannot be opened, this will be displayed.
Drive format error	When format command is not executed successfully, this will be displayed.
Error	This will be displayed in the case of errors other than those mentioned above.

4-17. Image RGB



- Perform a bridge test on RGB.
- Switch screens using [←] [→] keys.
- Make drawings by following the pattern of R100%→G100%→B100%→W(WHITE)100%.
- 4 windows will be displayed in total. Normally no characters are displayed.
- The rear monitor will have the same screen.
- Use [AV] key to go back to the menu screen.

4-18. GPS information

18. GPS INFORMATION

```

3D T8 H 0.9 V 1.4      2006/01/17 18:44:10
                     WEEK 334 (WED)

```

```

SV                      Delay
03 08 11 19 20 22 27 28    0.5
Lat                      Lon          Alt
N 35 55 55.2      E 139 28 17.0      +89

```

```

Vel Head Climb Laxis Saxis Angle
0.0  0.0  0.0  40   27   174.4

```

```

Position Sv Stat Ver & Diag Err Info
[Push back to go to menu]

```

- Push [MENU] key with the cursor at "Position", "GPS information" will appear.

```

18. GPS INFORMATION

 3D T7 H 1.6 V 2.0      2006/01/17 18:42:23

SV  Azi Ev  SNR  Flag  Acc  SV  Azi Ev  SNR  Flag  Acc
27 254 34  3.8  UV--  2  28 313 18  2.8  UV--  3
 3   75 29  3.8  UV--  4  19  33 59  4.6  UV--  3
 8  289 31  3.7  UV--  3
11 234 68  5.0  UVC-  2
20 174 10  2.4  --Cm  f
22  46 13  4.1  UV--  2

  Position  Sv Stat  Ver & Diag  Err Info
  [Push back to go to menu]

```

- Push [MENU] key with the cursor at "Sv Stat", "Status information" will be displayed.
- When this item is selected, this screen will be displayed by default.

```

18. GPS INFORMATION

Ver.5.13 12/27/05 Model 0x31
Antenna Short OK Channel 12
Antenna Open OK Almanac OK
Tuning Volts OK Backup Error OK
RTC Test Mode OFF RTC Error OK
Osc Offset: -1619Hz
Last Fix: N 35 55 55.2 E 139 28 17.0 +89

2006/01/17 18:43:02

  Position  Sv Stat  Ver & Diag  Err Info
  [Push back to go to menu]

```

- Push [MENU] key with the cursor at "Ver & Diag", "Diag information" will be displayed.

```

18. GPS INFORMATION
# Count Number Week Time
1 2 25 0 --:--:-- (---)
2 1 48 1 --:--:-- (---)
3 2 25 0 --:--:-- (---)
4 1 48 1 --:--:-- (---)
5 1 2 328 18:11:53 (THU)
6 2 5 328 18:11:53 (THU)
7 0 0 0 --:--:-- (---)
8 0 0 0 --:--:-- (---)
9 0 0 0 --:--:-- (---)
10 0 0 0 --:--:-- (---)

  Position  Sv Stat  Ver & Diag  Err Info
  [Push back to go to menu]

```

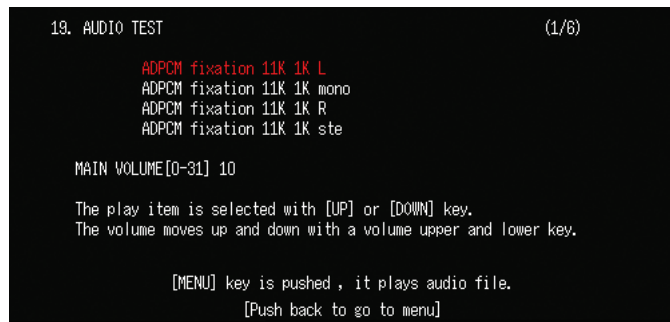
- Push [MENU] key with the cursor at "Err Info", "Error information" will be displayed.

<Error List>		
Screen names for each error message	Displayed messages	Error details
Position	GET_POS_ERROR	Data is invalid. GPS is unconnected.
	GET_TIME2_ERROR	GPS is unconnected. Command error
Sv Stat	GET_POS_ERROR	Data is invalid. GPS is unconnected.
	GET_TIME2_ERROR	GPS is unconnected. Command error
	GET_SV_STATUS2_ERROR	GPS is unconnected. Command error
Ver&Diag	GET_VERS_ERROR	GPS is unconnected. Command error
	GET_DIAG_ERROR	GPS is unconnected. Command error
	GET_TIME2_ERROR	GPS is unconnected. Command error
Err Info	GET_ERR_ERROR	GPS is unconnected.

<Error details>	
Error details	Error factors
A	<p>GPS unconnected</p> <p>When communication between the navigation system and GPS unit is not established for some reason, this will be displayed. This can be mainly because something is wrong with the hardware. Something can be wrong with the navigation system itself, serial interface (including poor serial connection), and GPS unit.</p>
B	<p>Command error</p> <p>When no API response is returned from GPS unit, this will be displayed. Following incidents can be causes for it.</p> <ul style="list-style-type: none"> • Timeout occurs just because something is wrong with serial interface (poor contact), or data gets garbled and looks like another response. • When a response different from the requested API is returned because of malfunction of GPS unit and another request for API is already requested, the time-out response to the first request is determined to be incorrect one. • Navigation system performs so slow that it cannot handle the response within the time limit even though a response is returned from GPS unit, or GPS unit cannot handle the same kind of situation within the time limit. (The time limit is 1.5 sec.) • Others
C	<p>Invalid error</p> <p>When connection to GPS unit is established, however, routine communication cannot be received for some reason, this will be displayed. Following incidents can be causes for it.</p> <ul style="list-style-type: none"> • After confirming the connection, GPS unit is reset before routine communication is started. • Connection is only confirmed when serial contact is poor. • Others

4-19. Sound Reproduction Test

Sound file selecting screen



- Sound file can be reproduced.
- Use [←] [→] key to change the volume.
- Use [MENU] key to reproduce the selected sound.
- When sound reproduction stops, use [AV] key to go back to the menu screen.

<Sound File List>	
File identification	File contents
ADPCM fixation 11K 1K L	1KHz sine-wave sampled at 11KHz is reproduced. Sounds are output only from L side (Mobile phone side)
ADPCM fixation 11K 1K mono	1KHz sine-wave sampled at 11KHz is reproduced. Sounds are output in mono mode.
ADPCM fixation 11K 1K R	1KHz sine-wave sampled at 11KHz is reproduced. Sounds are output only from R side (Speaker)
ADPCM fixation 11K 1K ste	1KHz sine-wave sampled at 11KHz is reproduced. Sounds are output in stereo.
ADPCM fixation 19K 1K L	1KHz sine-wave sampled at 19KHz is reproduced. Sounds are output only from L side (Mobile phone side)
ADPCM fixation 19K 1K mono	1KHz sine-wave sampled at 19KHz is reproduced. Sounds are output in mono.
ADPCM fixation 19K 1K R	1KHz sine-wave sampled at 19KHz is reproduced. Sounds are output only from R side (Speaker side).
ADPCM fixation 19K 1K ste	1KHz sine-wave sampled at 19KHz is reproduced. Sounds are output in stereo.
ADPCM fixation 22K 1K L	1KHz sine-wave sampled at 22KHz is reproduced. Sounds are output only from L side (Mobile phone).
ADPCM fixation 22K 1K mono	1KHz sine-wave sampled at 22KHz is reproduced. Sounds are output only in mono.
ADPCM fixation 22K 1K R	1KHz sine-wave sampled at 22KHz is reproduced. Sounds are output only from R side (Speaker side).
ADPCM fixation 22K 1K ste	1KHz sine-wave sampled at 22KHz is reproduced. Sounds are output in stereo.
mono fixation 11K music	A music file sampled at 11KHz is reproduced. Sounds are output in mono.
mono fixation 19K music	A music file sampled at 19KHz is reproduced. Sounds are output in mono.
mono fixation 22K music	A music file sampled at 22KHz is reproduced. Sounds are output in mono.
mono fixation 11K narration	Narration sampled at 11KHz is reproduced. Sounds are output in mono.
mono fixation 19K narration	Narration sampled at 19KHz is reproduced. Sounds are output in mono.
mono fixation 22K narration	Narration sampled at 22KHz is reproduced. Sounds are output in mono.
ste 11K music	A music file sampled at 11KHz is reproduced. Sounds are output in stereo.
ste 19K music	A music file sampled at 19KHz is reproduced. Sounds are output in stereo.
ste 22K music	A music file sampled at 22KHz is reproduced. Sounds are output in stereo.
ste 11K narration	Narration sampled at 11KHz is reproduced. Sounds are output in stereo.
ste 19K narration	Narration sampled at 19KHz is reproduced. Sounds are output in stereo.
ste 22K narration	Narration sampled at 22KHz is reproduced. Sounds are output in stereo.

4-20. File Maintenance

A

```

File Maintenance
Path:
>LDATA <DIR>
SDATA <DIR>
MSV <DIR>
USER <DIR>
DVDCD <DIR>
CARD <DIR>
FLASH <DIR>
USB <DIR>

[up/down]move cursor [right/left]move page [map]menu

```

B

4-21. Graphics Test

C

```

21. GRAPHICS TEST

1. PLAIN
2. COLOR BAR
3. CYCLE LINE 1
4. CYCLE LINE 2
5. SIDE STRIPE 1
6. SIDE STRIPE 2
7. NATURAL PICTURE

The check item is selected with [UP] or [DOWN] key.
[MENU] key is pushed, it executes the selected item.
[Push back to go to menu]

```

- Use [↑] [↓] keys to select patterns and [MENU] key to display images.
- Pattern

1. PLAIN

.....Use [←] [→] keys to display blue, red, pink, green, light blue, yellow, white and black.

2. COLOR BAR

.....Bars colored, white, yellow, light blue, green, pink, red, blue and black are displayed from left.

3. CYCLE LINE 1

4. CYCLE LINE 2

5. SIDE STRIPE 1

6. SIDE STRIPE 2

7. NATURAL PICTURE

- Use [AV] key to menu screen.

E

F



- Select "7. NATURAL PICTURE", the image above will be displayed.

4-22. Initialization of backup variables

```
22. Back Up Data Clear
Push [POS], Initialization begins.

ATTENTION!
It resets system after initialization. Please notes it.

[Push back to go to menu]
```

- Initialize backup variables for system reset.
- After displaying the testing screen, use [MAP] key to execute the test.
- After initialization, restart the system.
- Use [AV] key to return to the menu screen.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

How to remove the case in the monitor area.

Be sure to remove the case from downside. It cannot be removed from the upper side.
Insert the smallest flathead screw driver of the precision screw drivers into under the 4 claws.
When inserting the screw driver into the clearance between the case (sheet metal) and the grille,
put it 45 degrees diagonally under the case to prevent it from touching the grille, then they will be easily loosened.

Cautions

- Be careful not to confuse screws.
- Before disassembling, make sure to remove the HDD Assembly exclusive for Service.
- The HDD Assembly (CXX2121 and CXX2122) exclusive for Service is a precision apparatus. So, handle it carefully and avoid shock and static electricity.

● Preparation for Removing the Monitor Assy

To remove the Monitor Assy block, it must always be moved to the OPEN position.

1. Rotate the gear using a screwdriver, etc. ($\phi 2.8$ or smaller) from the slit on the bottom surface of the main unit (Fig.1) in the direction of the arrow, and move the Monitor Assy to OPEN position.

Note)

Though the gear is heavy, please turn carefully not to inflict too much force. Turning with excessive force may cause damage in the rack or gear in the driving section.

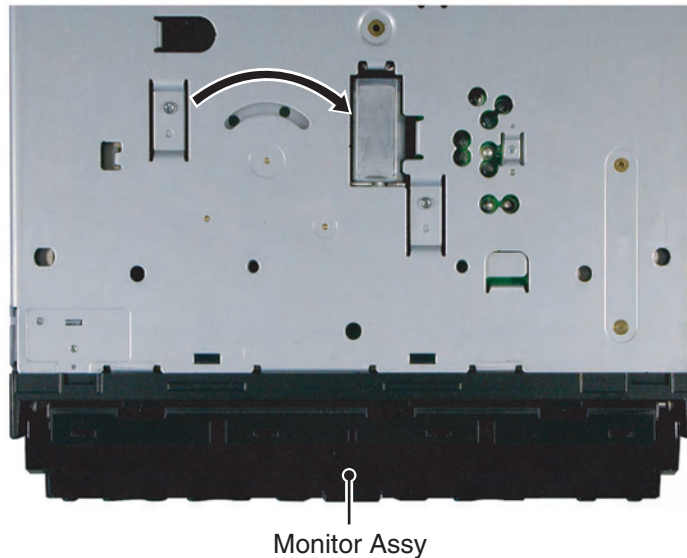


Fig.1

● Removing the Monitor Assy

- 1** Remove the two screws. (Fig.2)

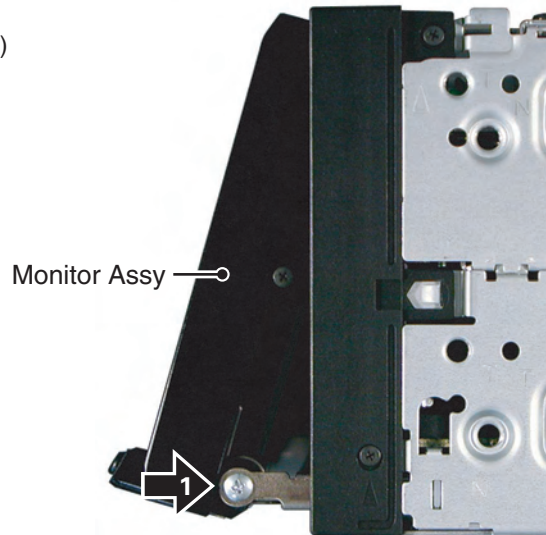


Fig.2

- (2) Remove the screw to remove the Cover.
Do not pull the connecting flexible cable. (Fig.3)
- (3) Remove the flexible cable from the connector to remove the Monitor Assy. Push the lid of the connector up with the top of precision screwdriver (minus), and then remove the flexible cable. Take much care not to pull the connector forcedly or break it open because it is easy to be damaged. And also, use the precision screwdriver in the same way in the installation. (Fig.3)

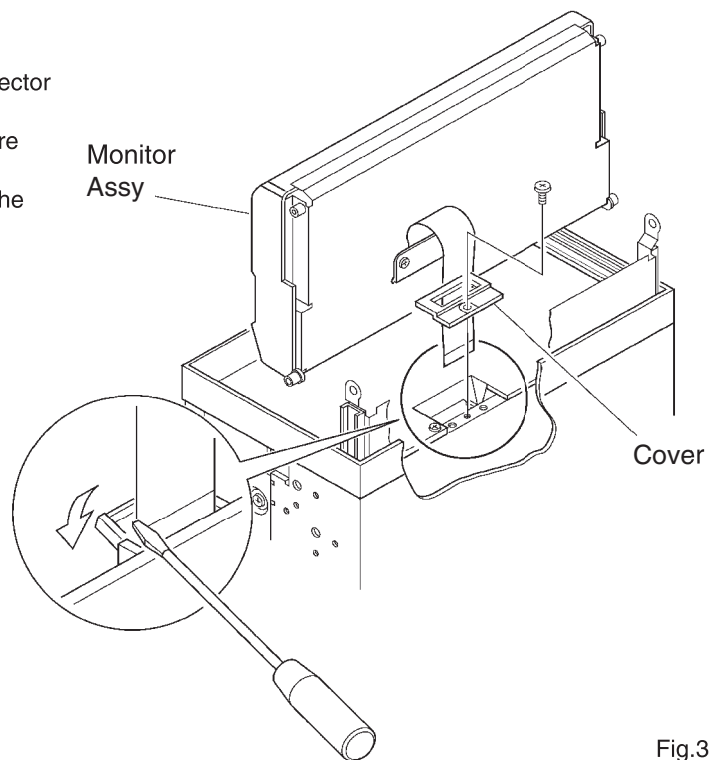


Fig.3

● Removing the Case Unit (Fig.4)

A

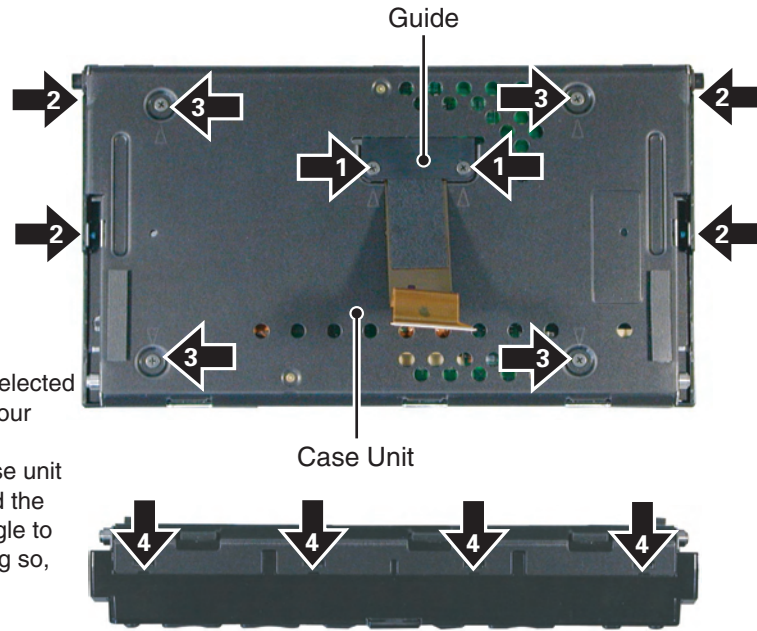
➡ 1 Remove the two screws and then remove the Guide.

➡ 2 Remove the four screws.

➡ 3 Remove the five screws and then remove the Case Unit.

➡ 4 Insert a flat screwdriver (2mm in width) selected among precision-type screwdrivers into four tabs shown below. When inserting the screwdriver into the gap between the case unit and the grill, push the screwdriver toward the case unit approximately at 45 degree angle to avoid it from contacting the grill. By doing so, you can open the unit easily.

B



Caution:
When assembling the case unit, be careful not to nip (damage) the touch-panel's tail (left side) and FFC with back of the case.

Fig.4

C

● Removing the Monitor Unit (Fig.5)

➡ 1 Remove the five screws.

Disconnect the connector and then remove the Monitor Unit.

About handling of touch panel
When replacing the touch panel (hereafter, "panel") located below the LCD panel, pay attention to the following.

- The panel is made of glass. So, be careful not to break or damage it.
- Do not leave your fingerprints on the panel display.
- The four sides and corners of the glass panel are sharp. So, handle it carefully to avoid any injury

D

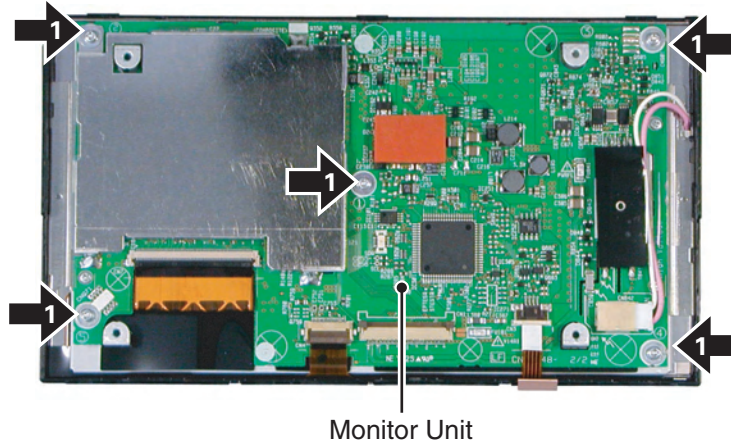


Fig.5

E

F

● Removing the DVD Mechanism Module (Fig.6)

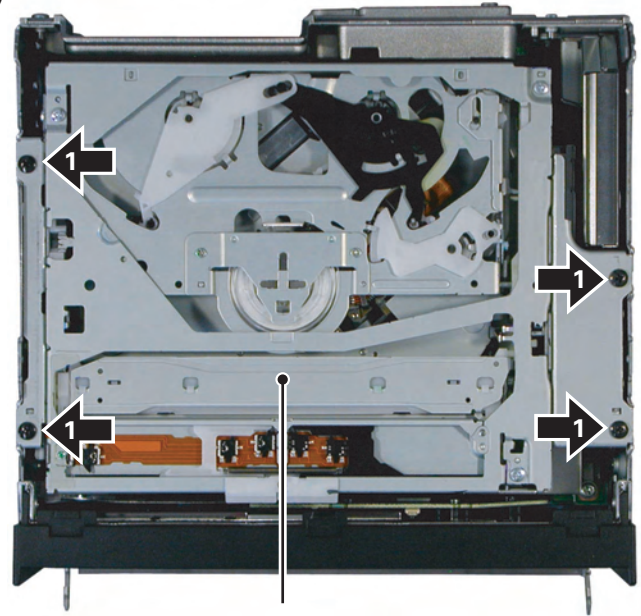
- 1** Remove the four screws.

Disconnect the connector and then remove the DVD Mechanism Module.

Caution:

When assembling or disassembling the DVD mechanism module, be sure to hold the external side.

When lifting the DVD mechanism module, lift it from the front side to avoid a burden on the connected connector.

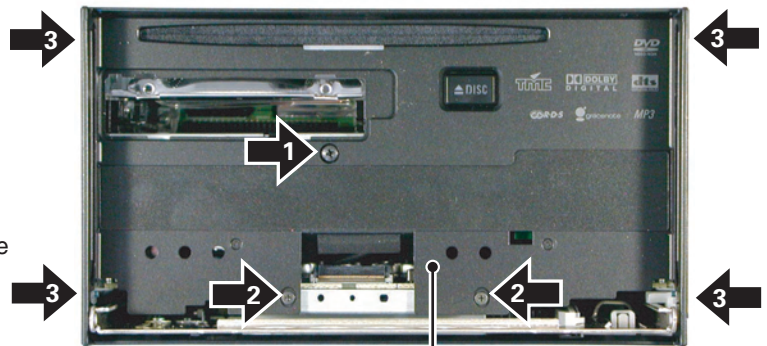


DVD Mechanism Module

Fig.6

● Removing the Panel Unit (Fig.7)

- 1** Remove the screw.
- 2** Remove the two screws.
- 3** Remove the four screws and then remove the Panel Unit.



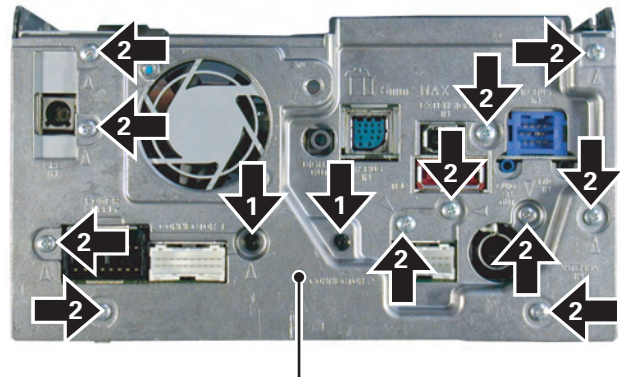
Panel Unit

Fig.7

● Removing the Heat Sink (Fig.8)

- 1** Remove the two screws.
- 2** Remove the eleven screws.

Disconnect the connector and then remove the Heat Sink.



Heat Sink

Fig.8

● Removing the Hard Disk Unit (Fig.9)

1. Insert tweezers into holes (four places) near the circumference of shield top surface, and lift the shield gradually with the tweezers.

1 Remove the four screws.

Disconnect the connector and then remove the Hard Disk Unit.

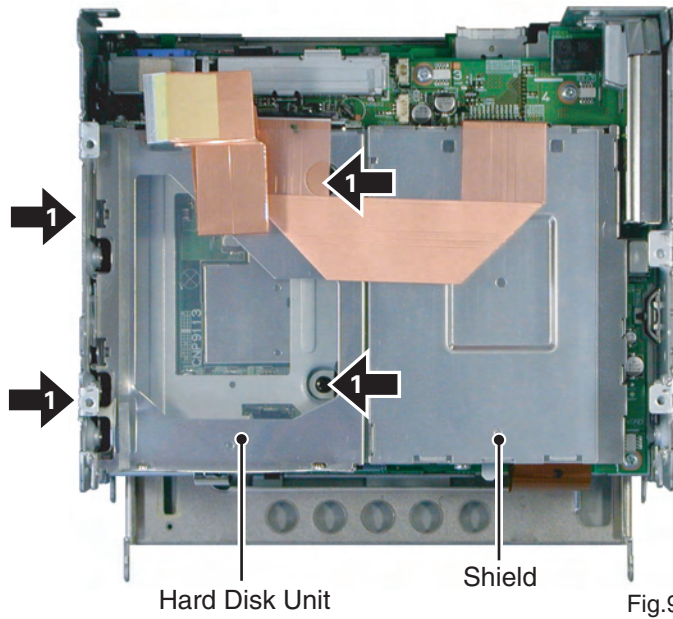


Fig.9

● Removing the CC Unit (Fig.10)

1 Remove the three screws and then remove the CC Unit.

● Removing the Navi Mother PCB (Fig.10)

2 Remove the screw.

3 Remove the six screws.

Disconnect the connector and then remove the Navi Mother PCB.

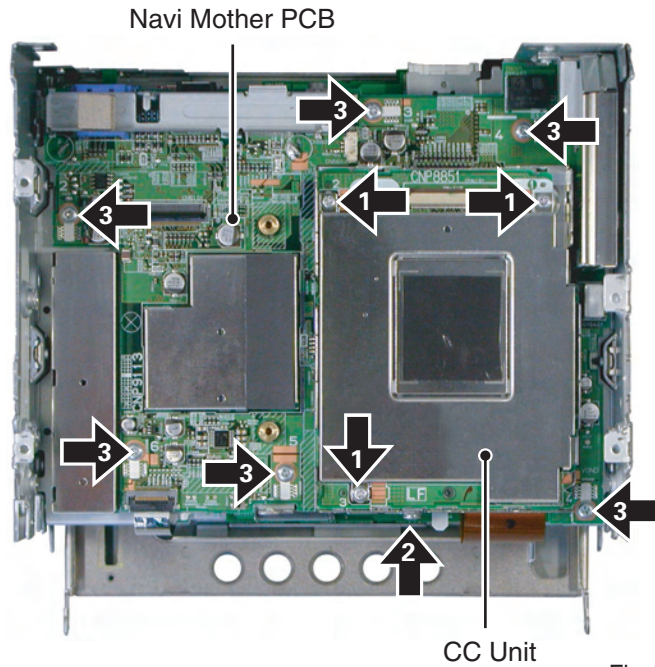


Fig.10

● Removing the Chassis Unit (Fig.11)

- ➔ 1 Remove the three screws and then remove the Chassis Unit.

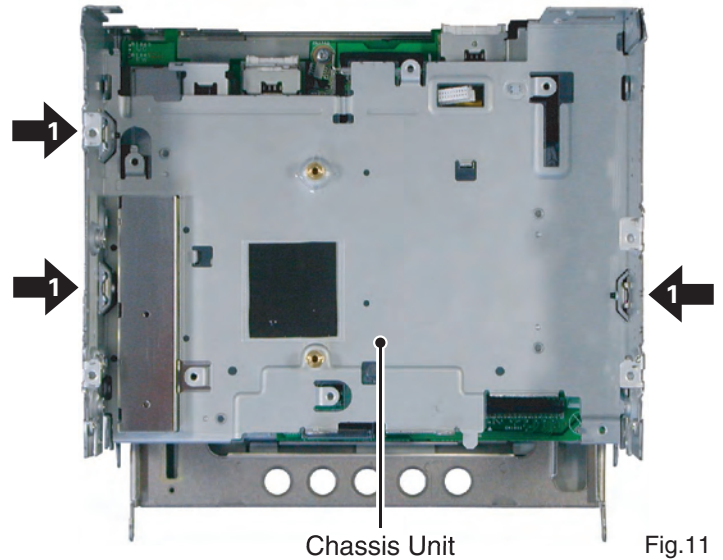


Fig.11

● Removing the Audio Unit (Fig.12)

- ➔ 1 Remove the screw.
- ➔ 2 Straighten the tab at location indicated.
- ➔ 3 Remove the four screws and then remove the Audio Unit.

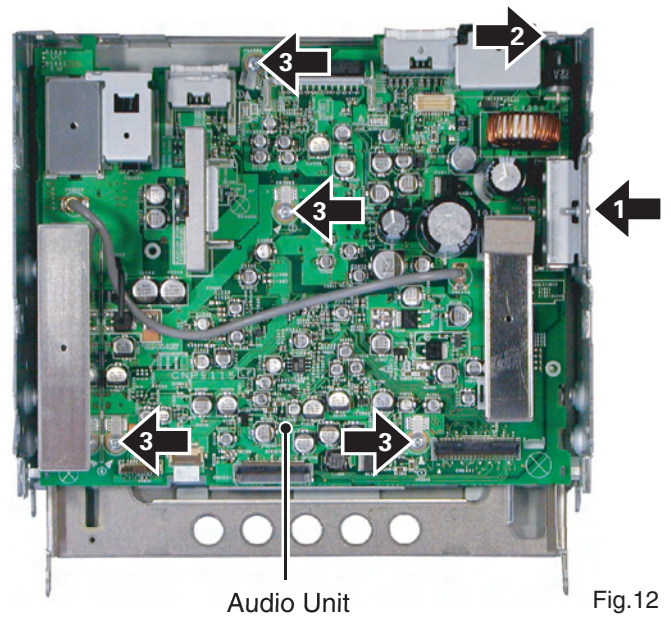


Fig.12

● Removing the Main PCB Unit (Fig.13)

- ➔ 1 Straighten the tabs at two locations indicated.
- ➔ 2 Remove the screw and then remove the Main PCB Unit.

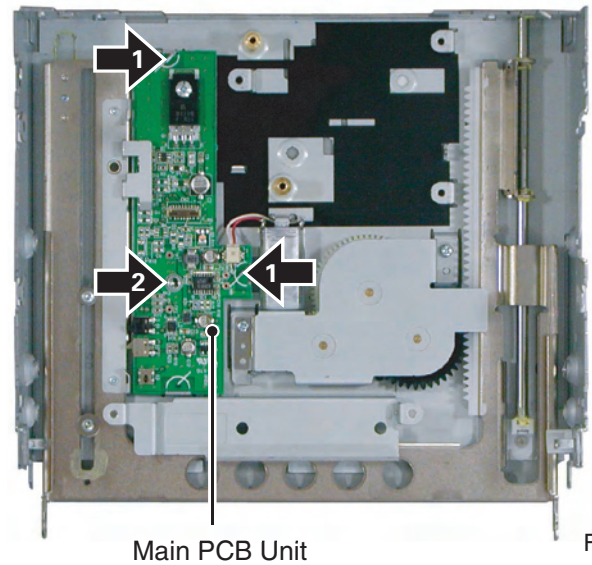
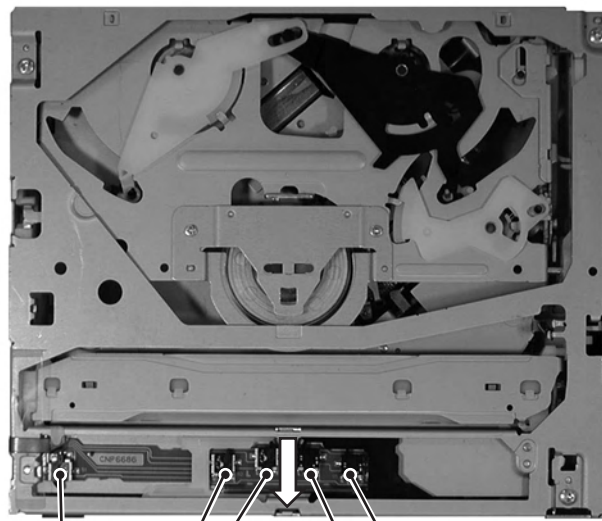


Fig.13

● Precautions on handling the mechanism module

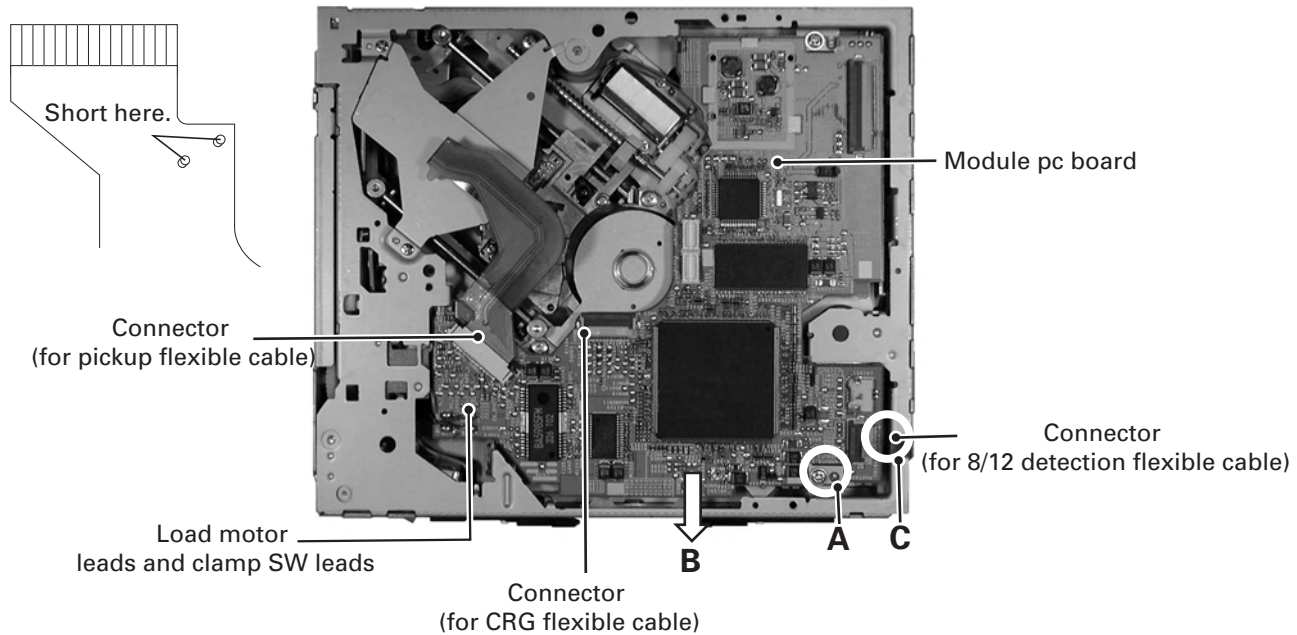
- 1. Hold the upper and main frames.
- 2. Do not hold the front portion of the upper frame. It is a delicate part.
- 3. Do not touch the switches on the top panel.
- 4. Be careful not to catch the flexible cables.



Do not touch here. Do not touch here.
Do not hold this delicate portion.

● Removing the module pc board

- 1. Set the mechanism to the lock position (disc load standby position).
- 2. Place the mechanism module upside down.
- 3. Short the two lands on the pickup flexible cable as shown below.
- 4. Be sure to disconnect the pickup flexible cable and the CRG flexible cable from the connectors to protect them from damages.
- 5. Remove solder from the load motor leads and clamp SW leads.
- 6. Loosen the two fixing screws. Lift the position A of the module pc board lightly and move it in the direction B to remove it. Be careful not to damage the flexible cable C.
- 7. Disconnect the 8/12 detection flexible-cable from the connector.



● Removing the pickup unit

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. While holding the pickup case, remove the skew screw (main).
3. Lifting the end of the pickup rack, slide the main shaft, and remove the pickup unit.

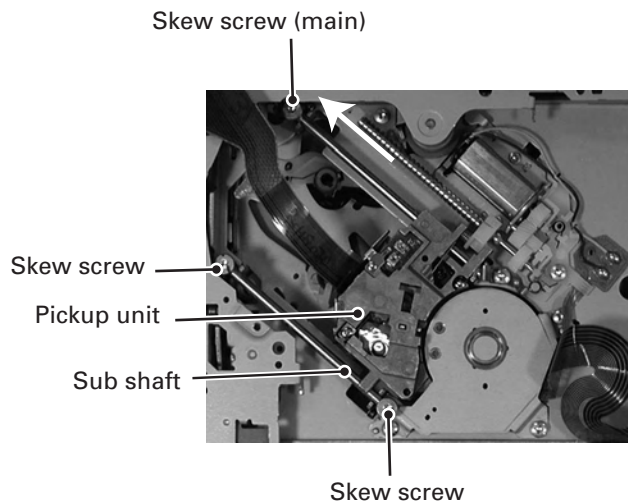
Notes:

Replacing the pickup unit requires the skew adjustment.

Remove glue from both ends of the main and sub shafts, and skew stud.

Do not reuse the old skew screw. Be sure to use a brand-new skew screw supplied with a new pickup unit.

Fix the skew screw with glue (GYL1001) after adjustment.

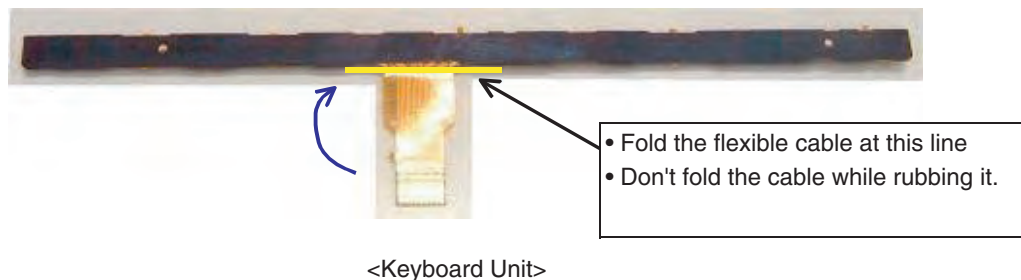


Notice of Exchange the Keyboard unit

- How to fold the flexible cable

The Keyboard unit of the service parts is not folded.

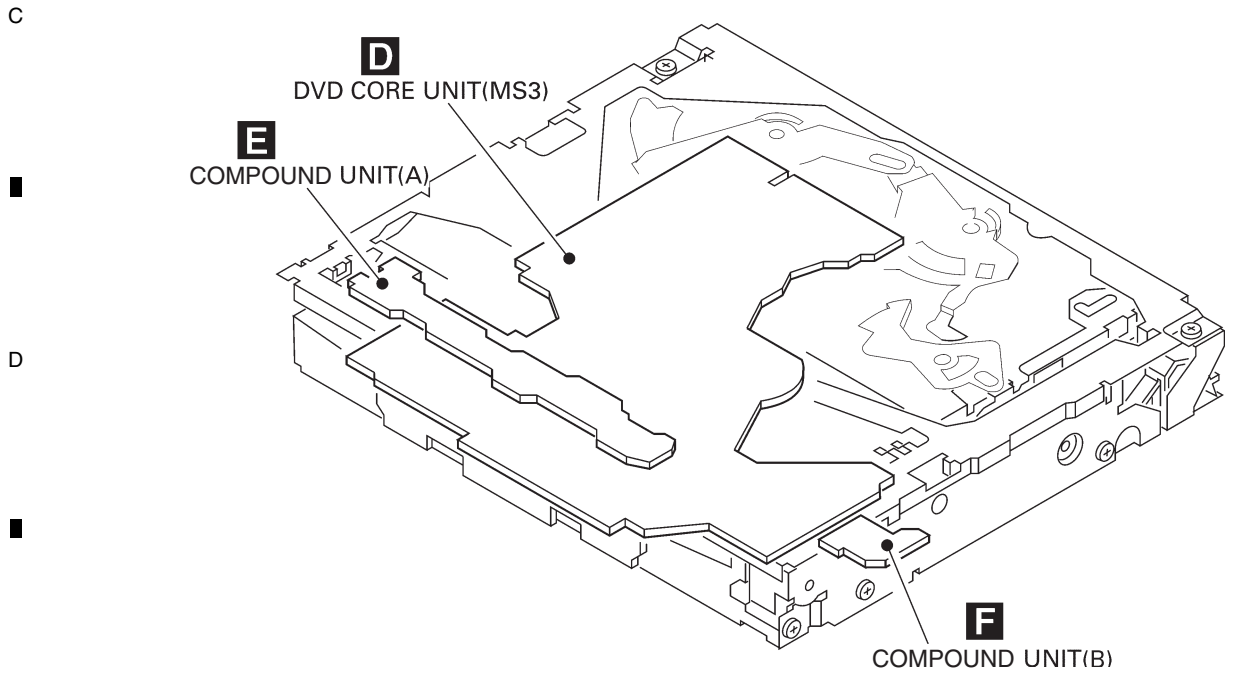
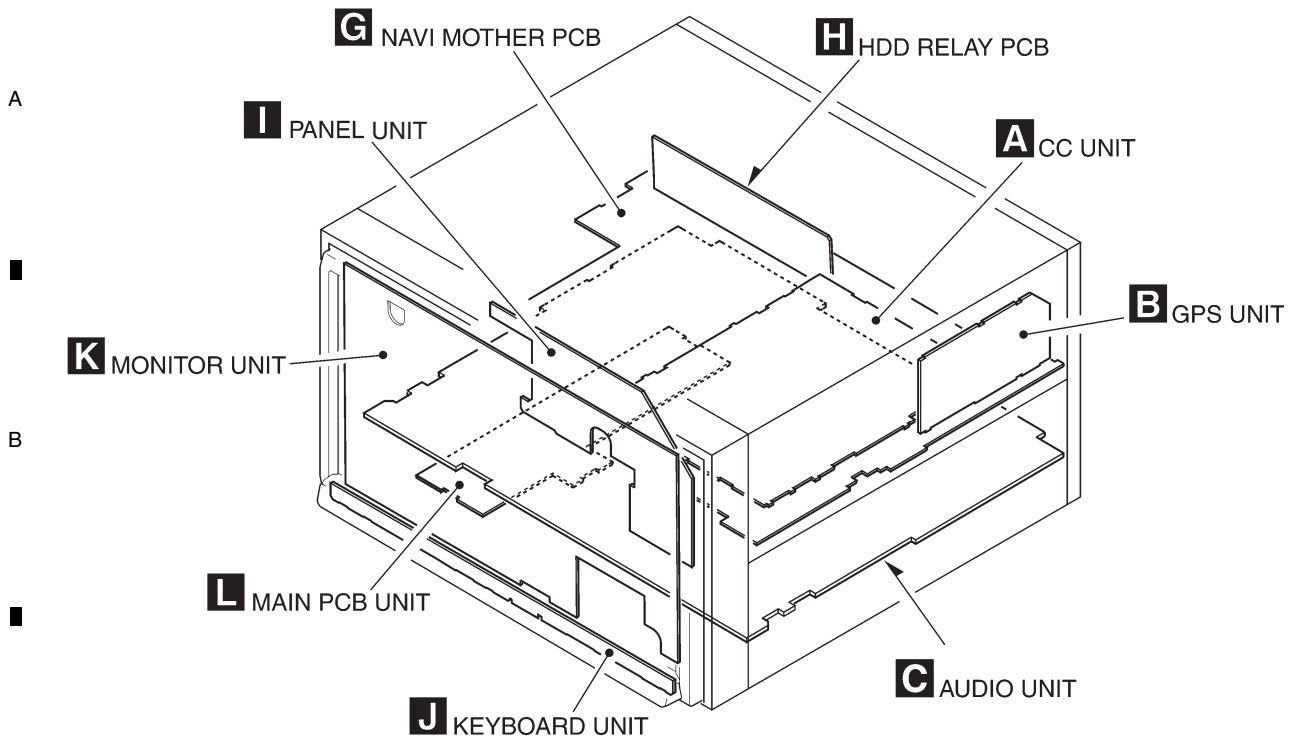
Please see the following picture and fold the flexible cable at 90 degrees.



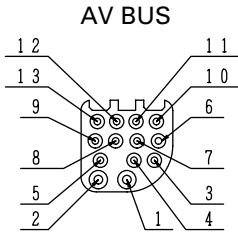
Please check the following item after exchange the Keyboard unit

- 1 Lighting check of all LED device.
- 2 Operation check of the all switches.
- 3 Remote control receiver function check

7.1.2 PCB LOCATIONS

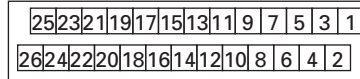


7.1.3 CONNECTOR FUNCTION DESCRIPTION



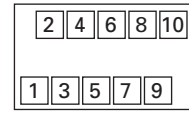
- 1 : VIDEO GND
- 2 : COMP VIDEO
- 3 : (REMPW)
- 4 : IP-SEL1
- 5 : IP-SEL2
- 6 : LED-V
- 7 : GND
- 8 : BEEP MUTE
- 9 : BEEP-
- 10 : REMOUT
- 11 : NEW AV SENS
- 12 : AV ON
- 13 : BEEP+

BLUETOOTH

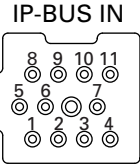
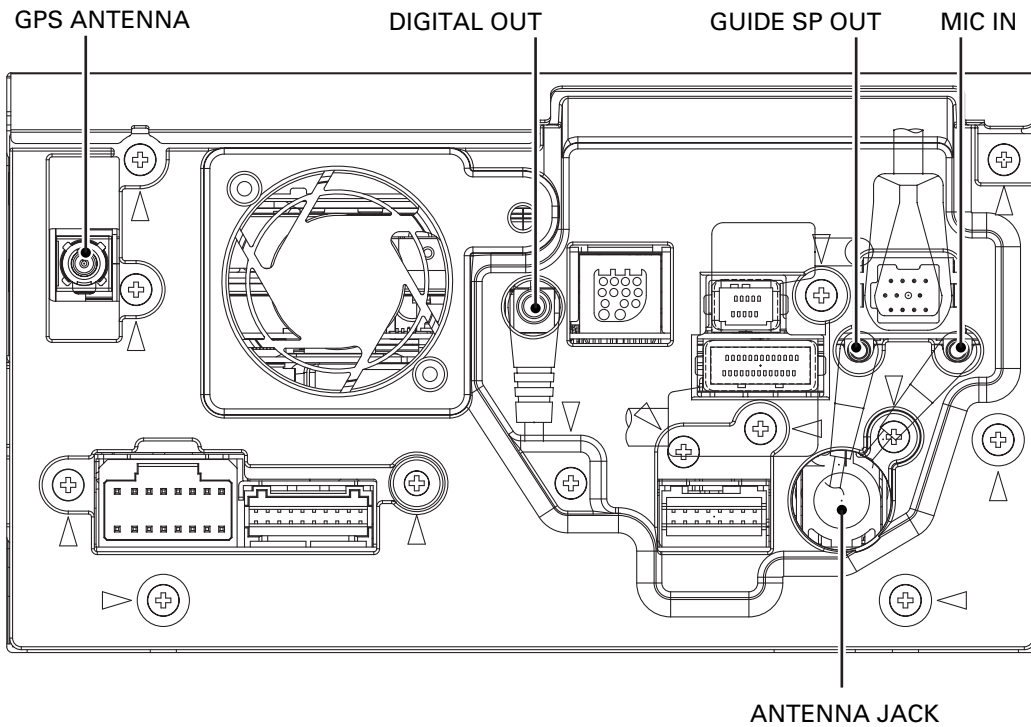


- 1 : DT2-
- 2 : T-A
- 3 : R-A
- 4 : PDC/CDMA/FOMA
- 5 : AGND
- 6 : UNIT
- 7 : CD
- 8 : UNB/CC
- 9 : CNT1
- 10 : CNT2
- 11 : AVPL
- 12 : GNDL
- 13 : AVPR
- 14 : GNDR
- 15 : TCHC/
- 16 : /BA
- 17 : /CB
- 18 : /BB
- 19 : /CE
- 20 : /CJ
- 21 : NC
- 22 : SYNC CLOCK
- 23 :
- 24 :
- 25 :
- 26 : GND

EXTENSION

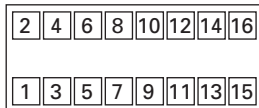


- 1 : GTOEX
- 2 : EXTOG
- 3 : GND
- 4 : CTOEX
- 5 : EXTOC
- 6 : HYOKA
- 7 : CTOTA
- 8 : TATOC
- 9 : VTA
- 10 : TAGND



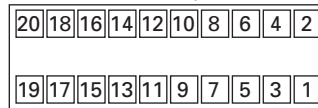
- 1 : IPBUS+
- 2 : IPBUSG
- 3 : IPLG
- 4 : NC
- 5 : IPBUS-
- 6 : IPRG
- 7 : IPL+
- 8 : ASENBO
- 9 : IPR+
- 10 : IPR-
- 11 : IPL-

VEHICLE I/F

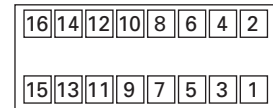


- 1 : BUP
- 2 : GND
- 3 : ILM
- 4 : ANT
- 5 : ACC
- 6 : SPEED
- 7 : REV
- 8 : PKB
- 9 : FL-
- 10 : RR-
- 11 : FL+
- 12 : RR+
- 13 : FR-
- 14 : RL-
- 15 : FR+
- 16 : RL+

AV I/O



- 1 : POSWL
- 2 : GNDA
- 3 : POSWR
- 4 : GNDA
- 5 : RL
- 6 : GNDA
- 7 : RR
- 8 : GNDA
- 9 : FL
- 10 : GNDA
- 11 : FR
- 12 : GNDA
- 13 : VIN
- 14 : GNDV
- 15 : VTR_L
- 16 : GNDL
- 17 : VTR_R
- 18 : GNDR
- 19 : BREM
- 20 : TELMUTE

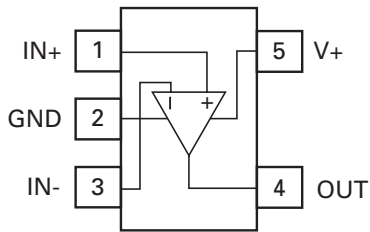


- 1 :
- 2 : NC
- 3 : NC
- 4 : NC
- 5 : GND
- 6 : WREM AN
- 7 : WREM SEL
- 8 : GUIDEON
- 9 : GNDA
- 10 : ROUT
- 11 : GNDA
- 12 : LOUT
- 13 : GNDV
- 14 : VOUT
- 15 : BCVGND
- 16 : BCV

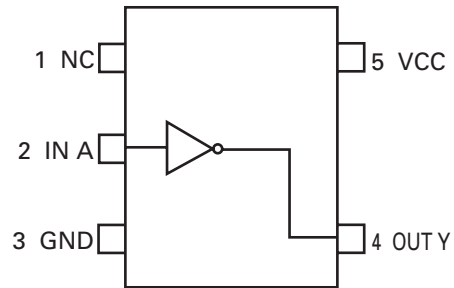
7.2 IC

NJM2730F	BA00CC0WT	TC7WH14FU
TC7SH04FUS1	PAL007B	BD5335FVE
TC7SH32FUS1	NJM2505F	TC74LCX245FTS1
TC7PA53FU	BH7236AF	TC7MZ245FK
TC7WH34FK	NJM3403AV	LM56BIMM
NJM2125F	TPS2051AD	TC74VHC04FTS1
TC74LCX244FTS1	TC74VHC541FTS1	S-1132B25-U5
K4S641632H-TC75	TC7SET04FUS1	S-1132B15-U5
PD6527A	HA12241FP	TC7MBL3244AFK
UPB1027GS	UPD4721GSS1	BR93L56FJ-W
ADC12H034CIMSAS1	BD3931HFP	OZ9641SN
LC72720YVSS1	TC74VHC32FTS1	
TK15405BMI	TC74VHCT125AFTS1	
NJM2060V	TC74VHC125FTS1	

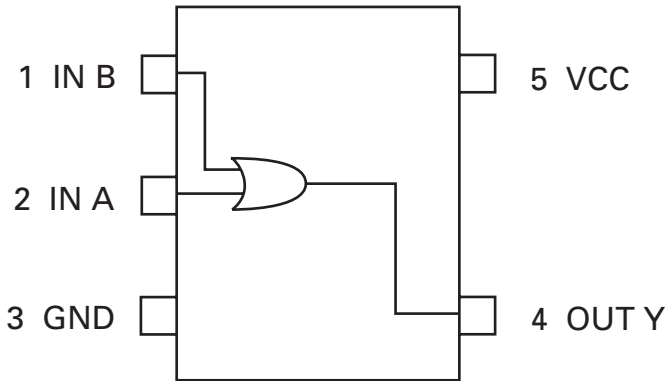
NJM2730F



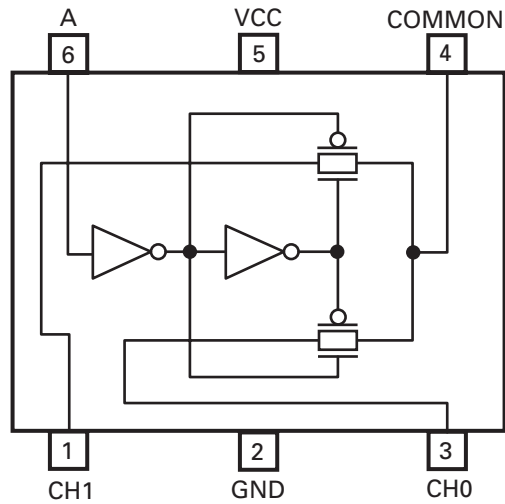
TC7SH04FUS1



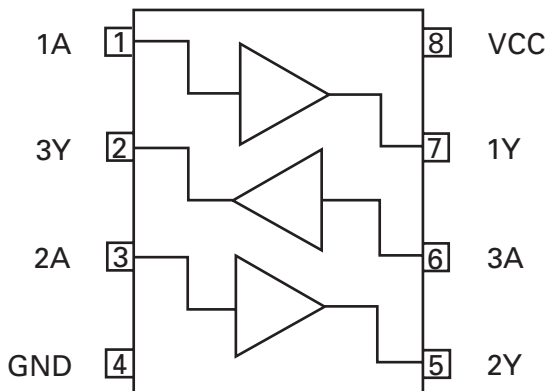
TC7SH32FUS1



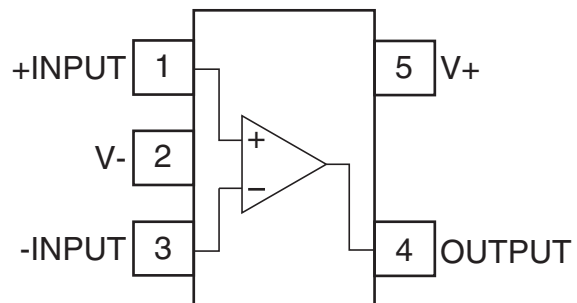
TC7PA53FU



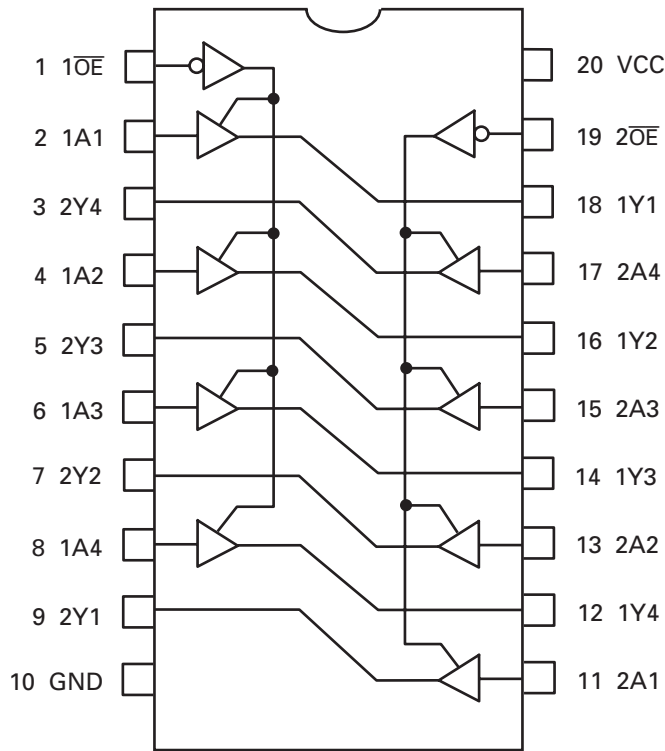
TC7WH34FK



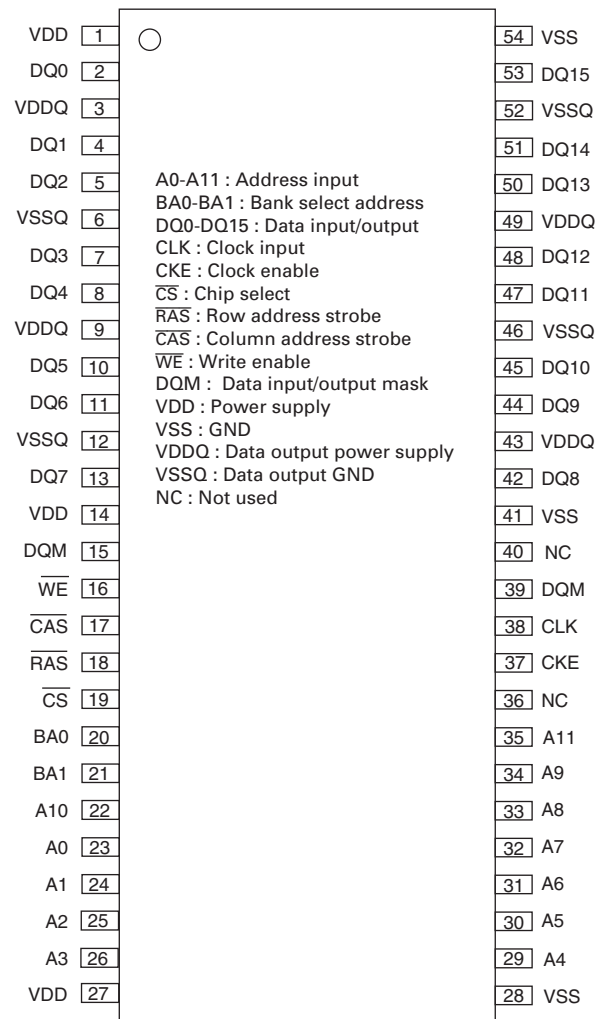
NJM2125F



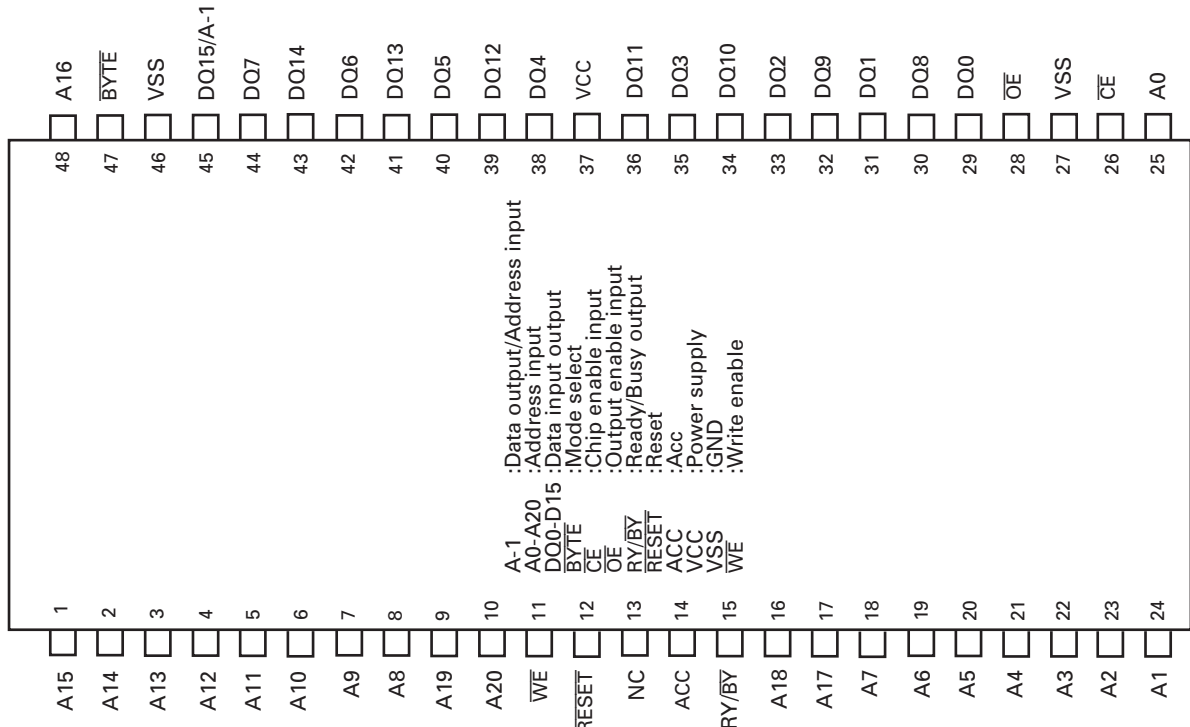
TC74LCX244FTS1



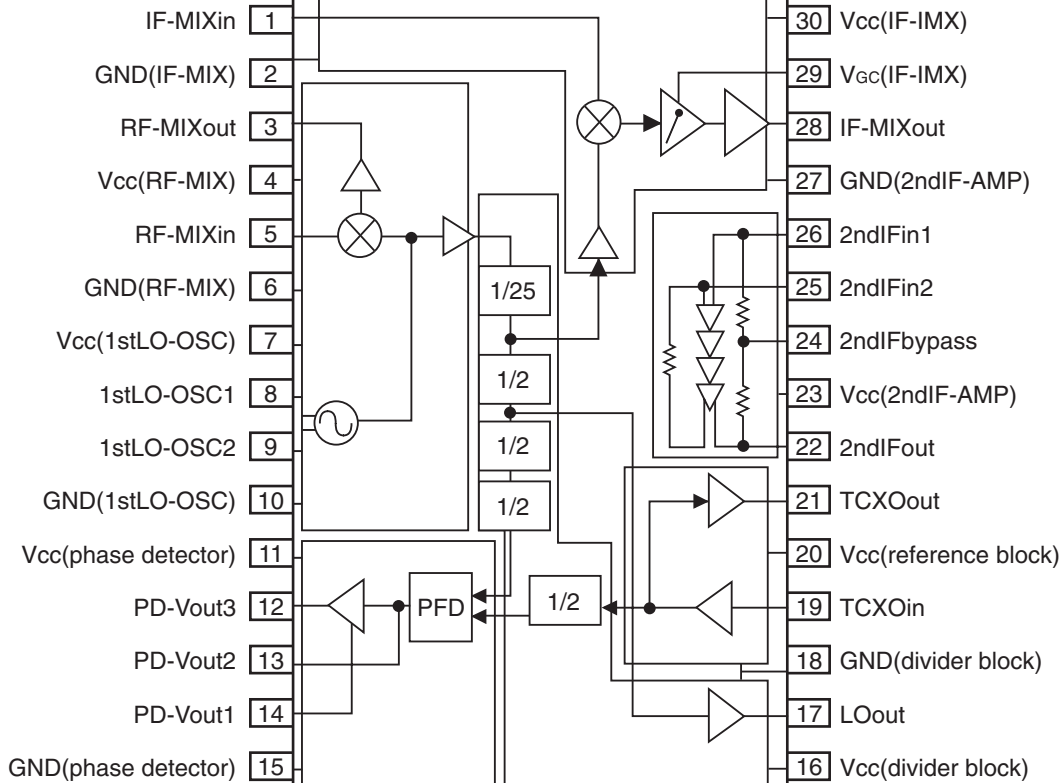
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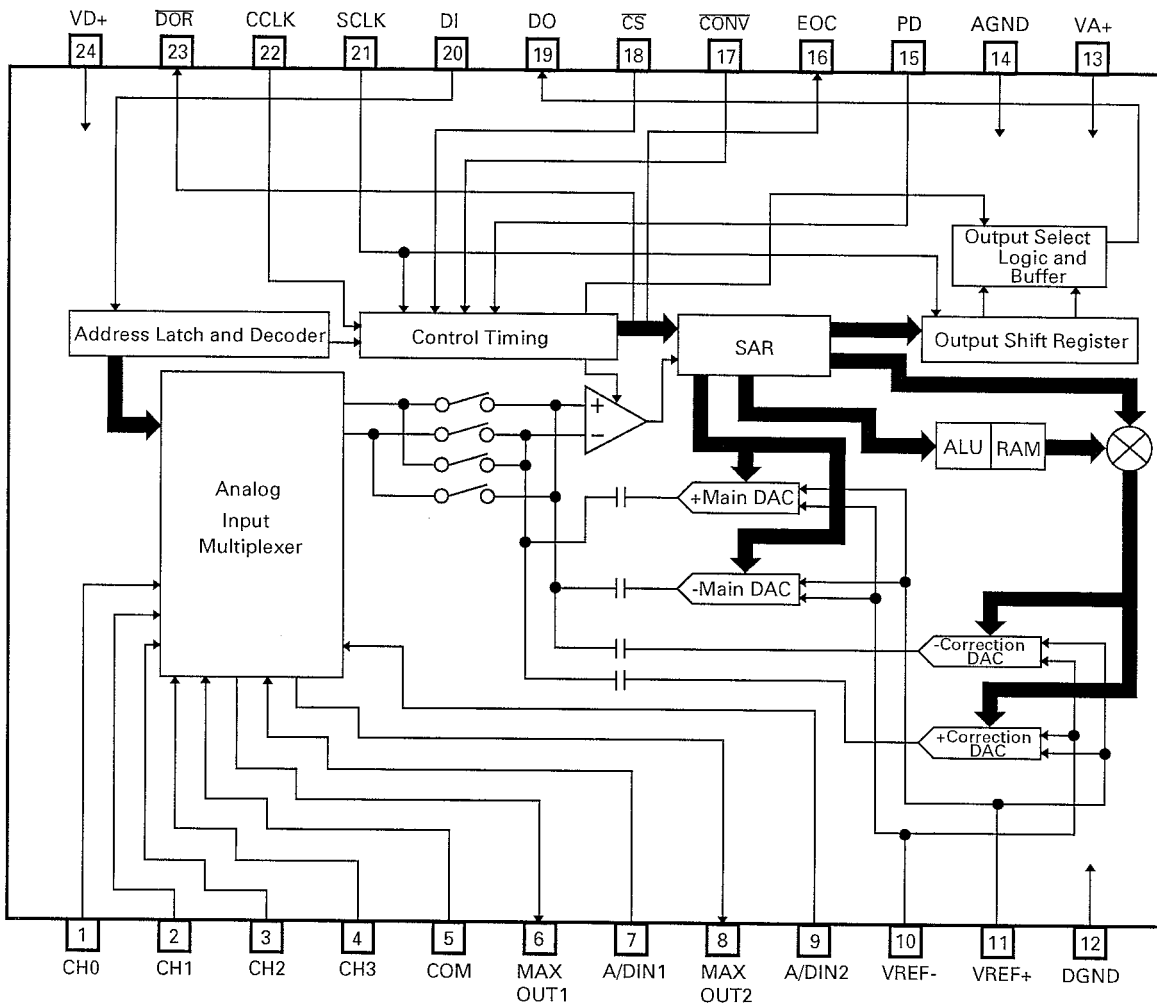
PD6527A



UPB1027GS



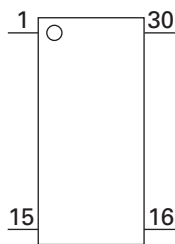
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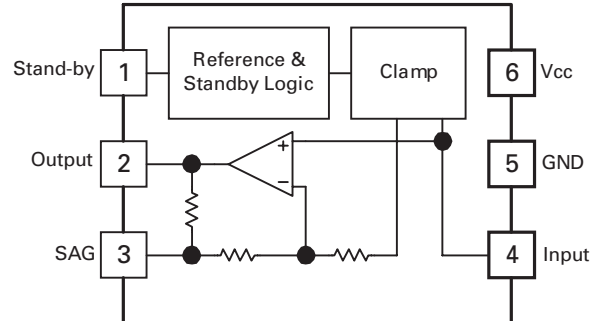
● Pin Functions(LC72720YVSS1)

Pin No.	Pin Name	I/O	Function and Operation
1	VREF	O	Reference voltage output
2	MPXIN	I	Base band (multiplexed) signal input
3	Vdda		Analog system power supply (+ 5 V)
4	NC		Not used
5	Vssa		Analog system GND
6	FLOUT	O	Sub carrier output (filter output)
7	CIN	I	Sub carrier input (comparator input)
8	NC		Not used
9	T1	I	Test input (connect to GND)
10	T2	I	Test input (stand-by control)
11	T3	O	RDS clock output
12	NC		Not used
13	T4	O	RDS data output
14	T5	O	Soft-decision control data output
15	XOUT	O	Crystal oscillator output
16	XIN	I	Crystal oscillator input
17	Vddd		Digital system power supply (+ 5 V)
18	Vssd		Digital system GND
19	NC		Not used
20	T6	O	Error status, regenerated carrier and error block count outputs
21	T7	O	Error correction status, SK detection and error block count outputs
22	SYNC	O	Block synchronization detection output
23	NC		Not used
24	RDS-ID	O	RDS detection output
25	DO	O	Data output
26	CL	I	Clock input
27	NC		Not used
28	DI	I	Data input
29	CE	I	Chip enable input
30	SYR	I	Synchronization and RAM address reset input

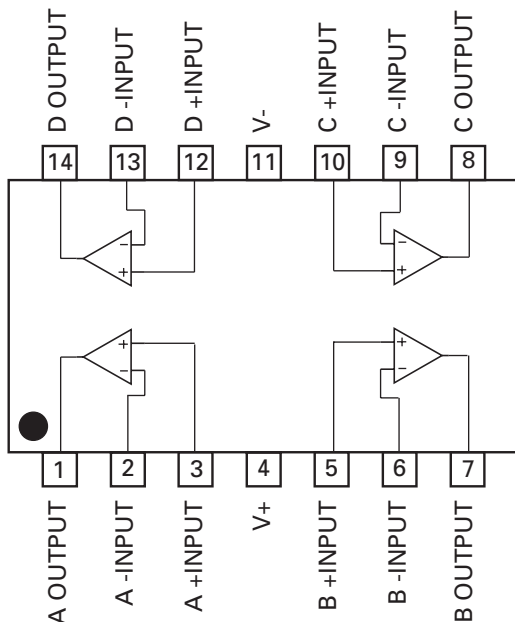
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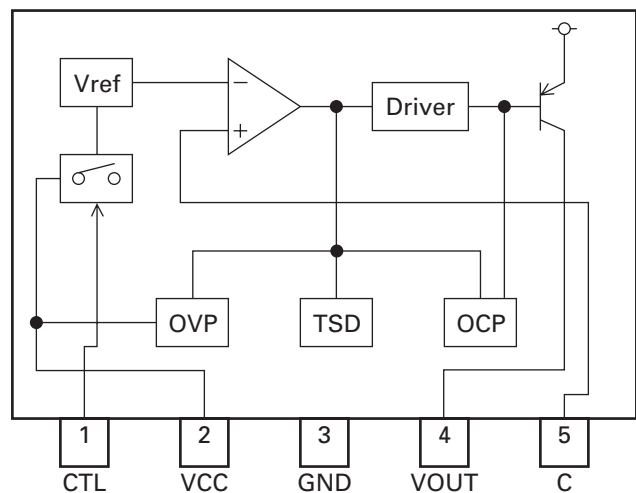
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NJM2060V



BA00CC0WT



PAL007B

A

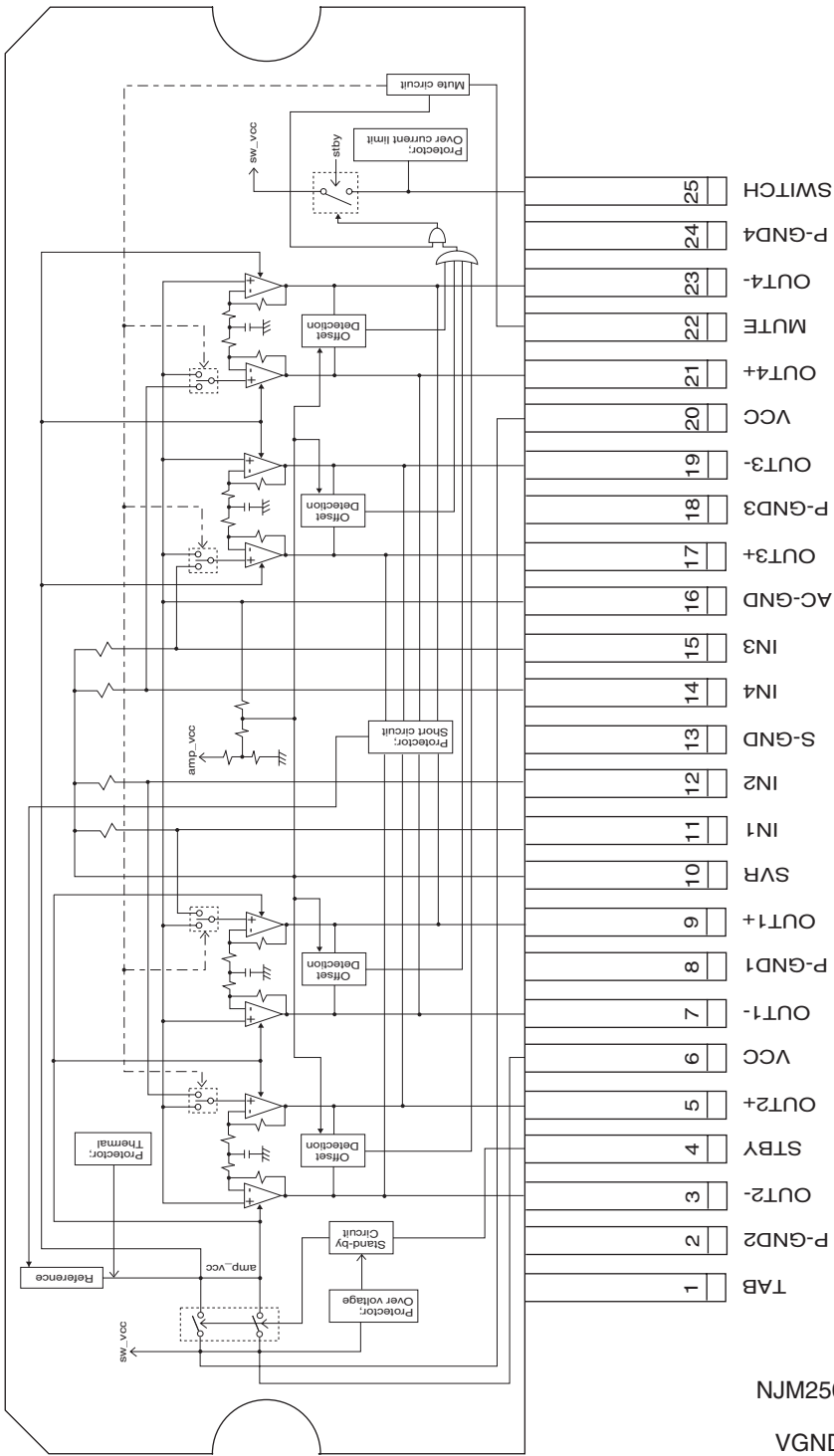
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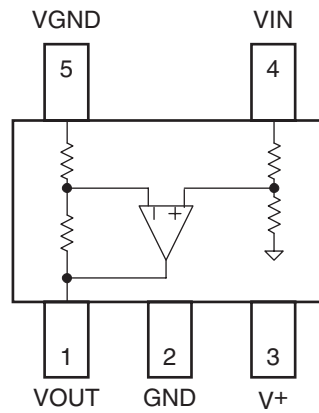
E

F

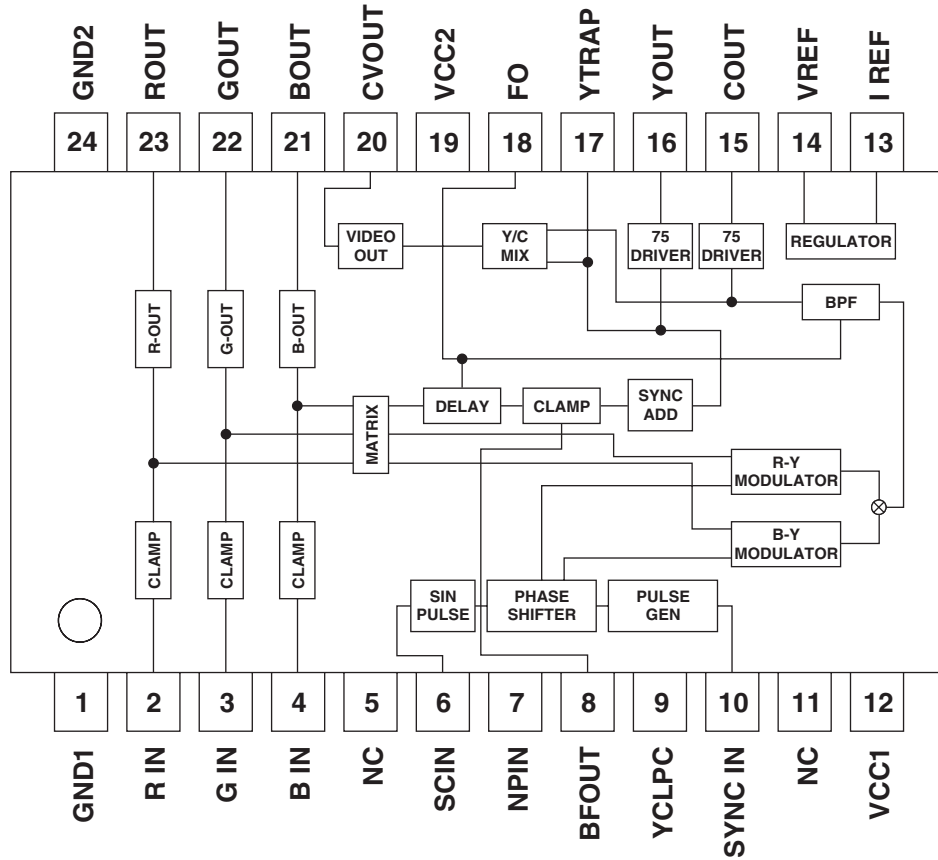


- 25 SWITCH
- 24 P-GND4
- 23 OUT4-
- 22 MUTE
- 21 OUT4+
- 20 VCC
- 19 OUT3-
- 18 P-GND3
- 17 OUT3+
- 16 AC-GND
- 15 IN3
- 14 IN4
- 13 S-GND
- 12 IN2
- 11 IN1
- 10 SVR
- 9 OUT1+
- 8 P-GND1
- 7 OUT1-
- 6 VCC
- 5 OUT2+
- 4 STBY
- 3 OUT2-
- 2 P-GND2
- 1 TAB

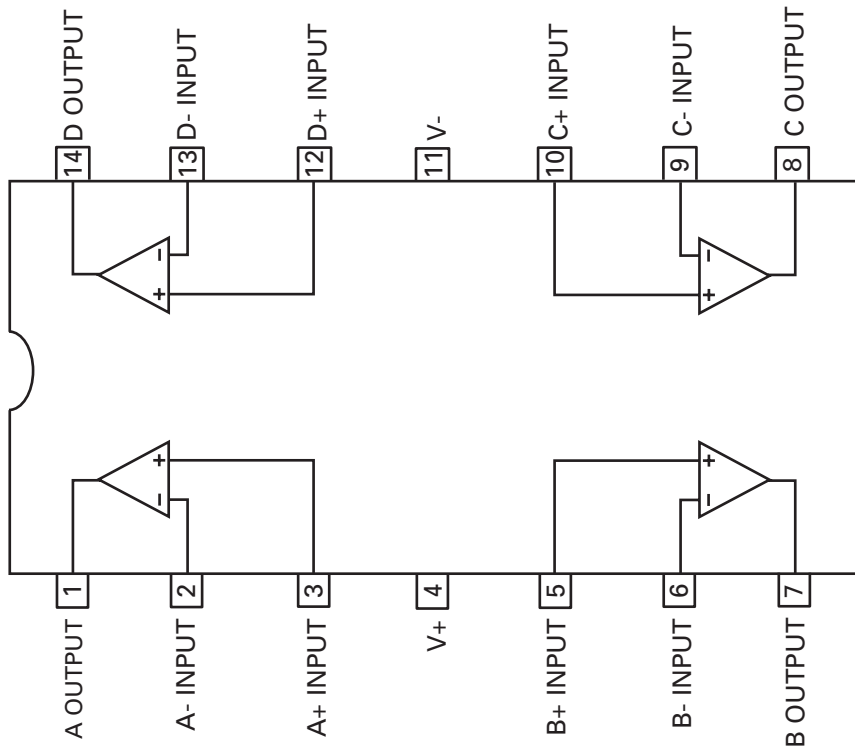
NJM2505F



BH7236AF

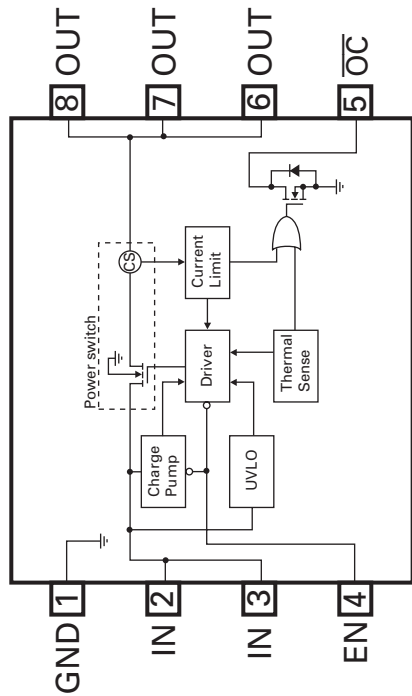


NJM3403AV

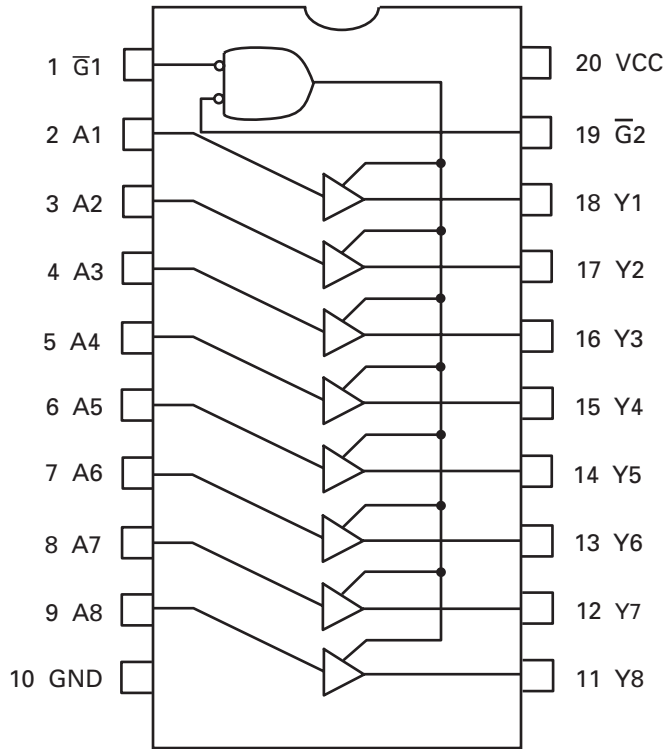


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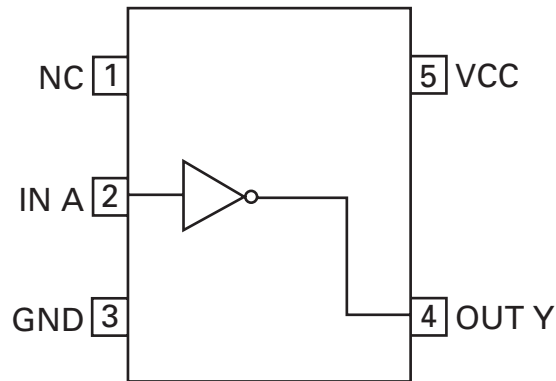
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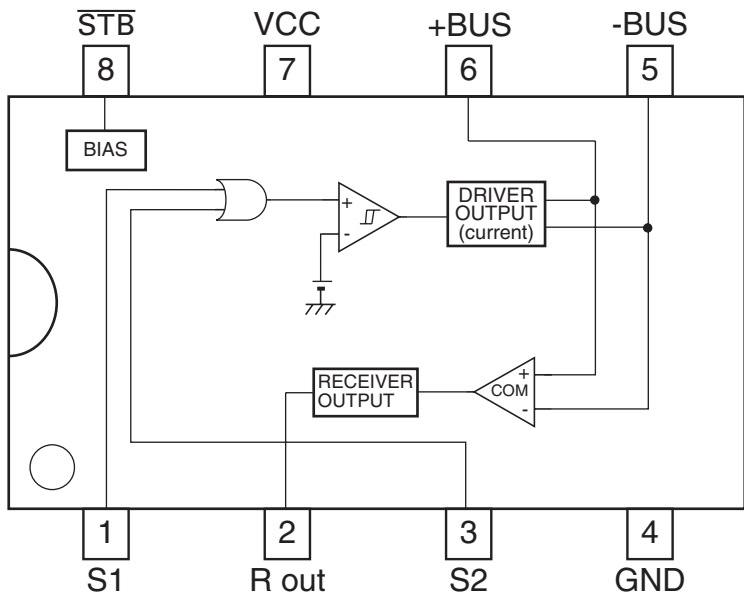
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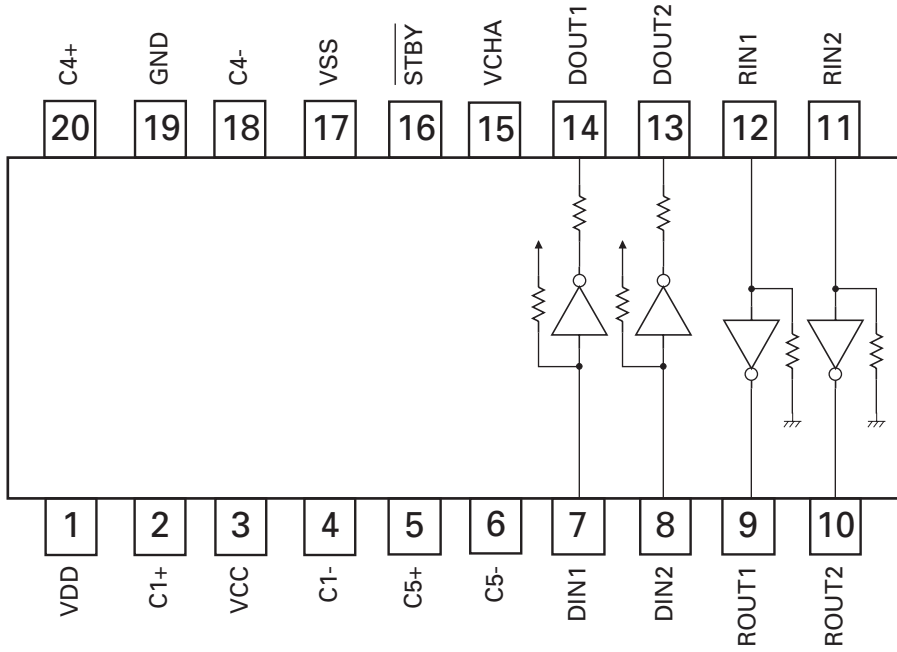
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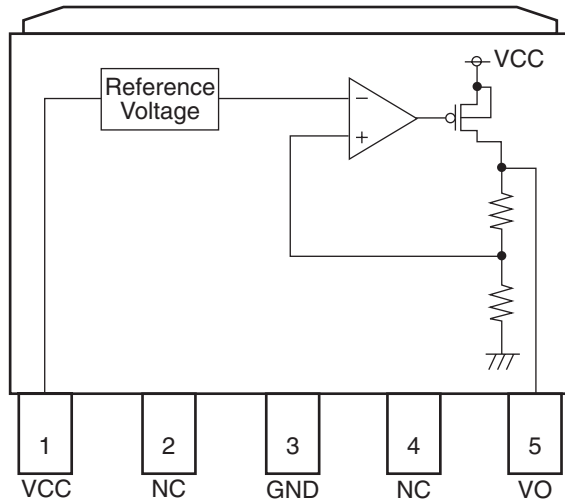
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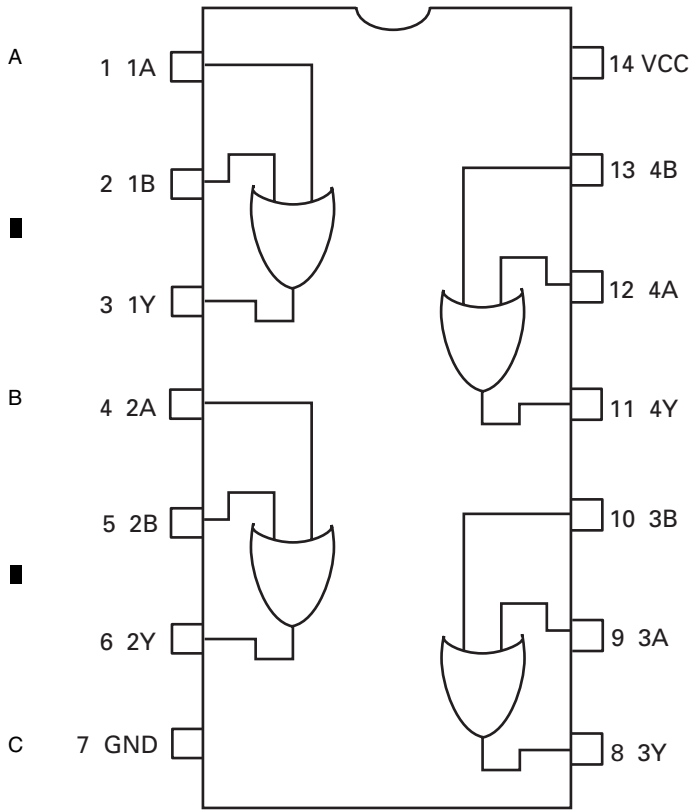
UPD4721GSS1



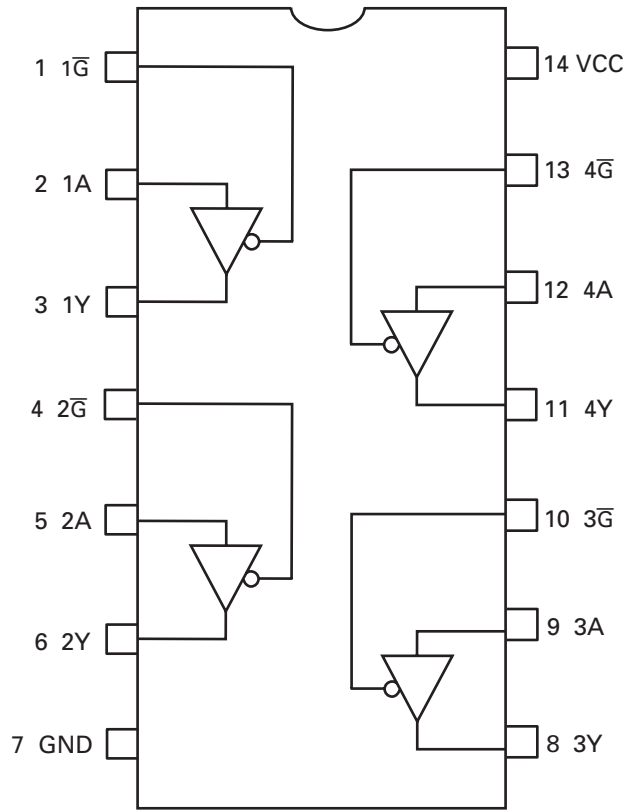
BD3931HFP



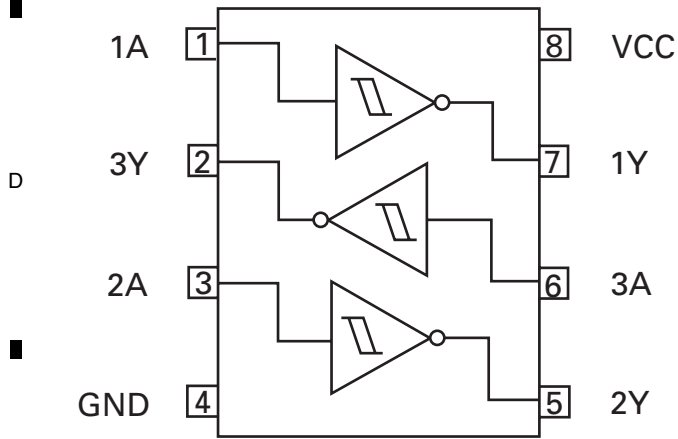
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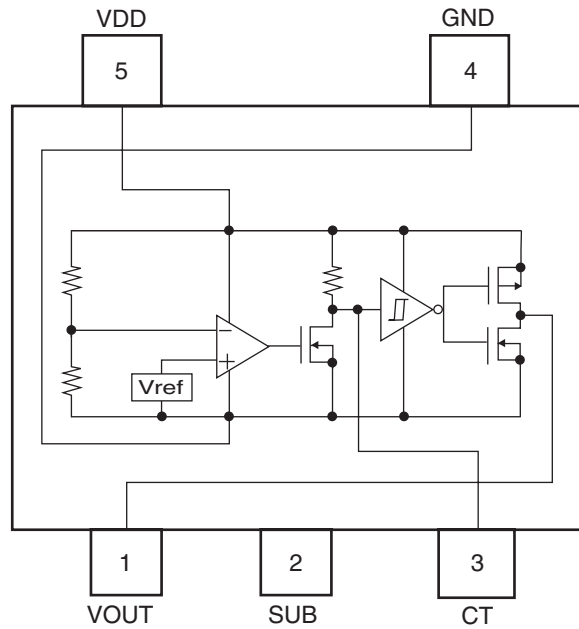
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TC74VHC125FTS1



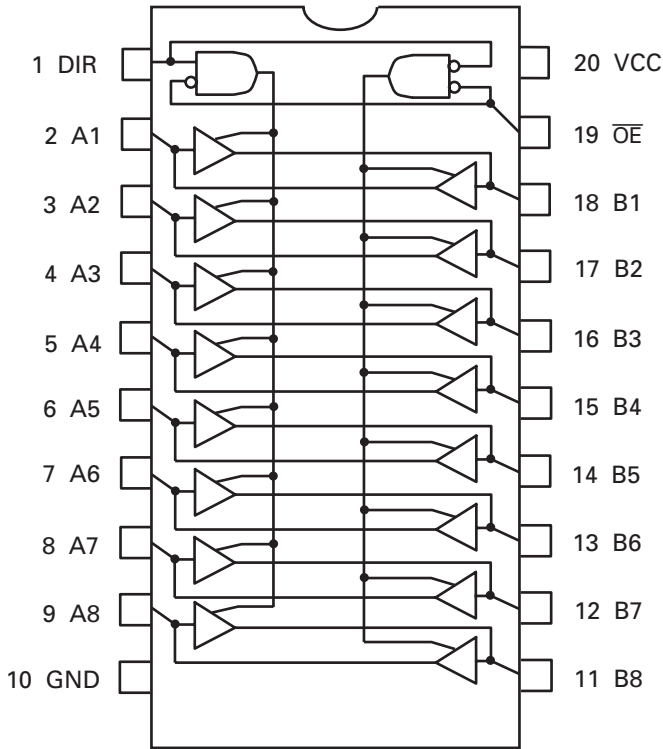
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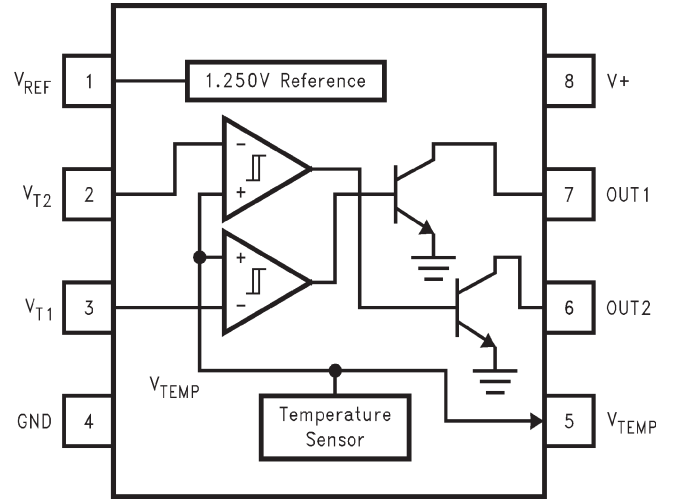
BD5335FVE



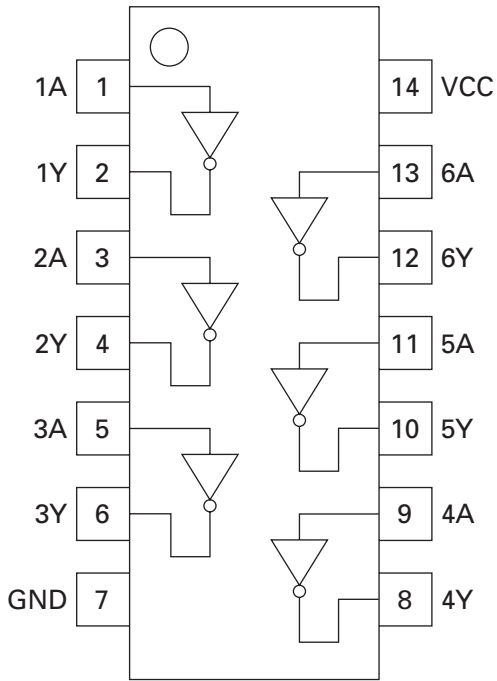
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TC7MZ245FK



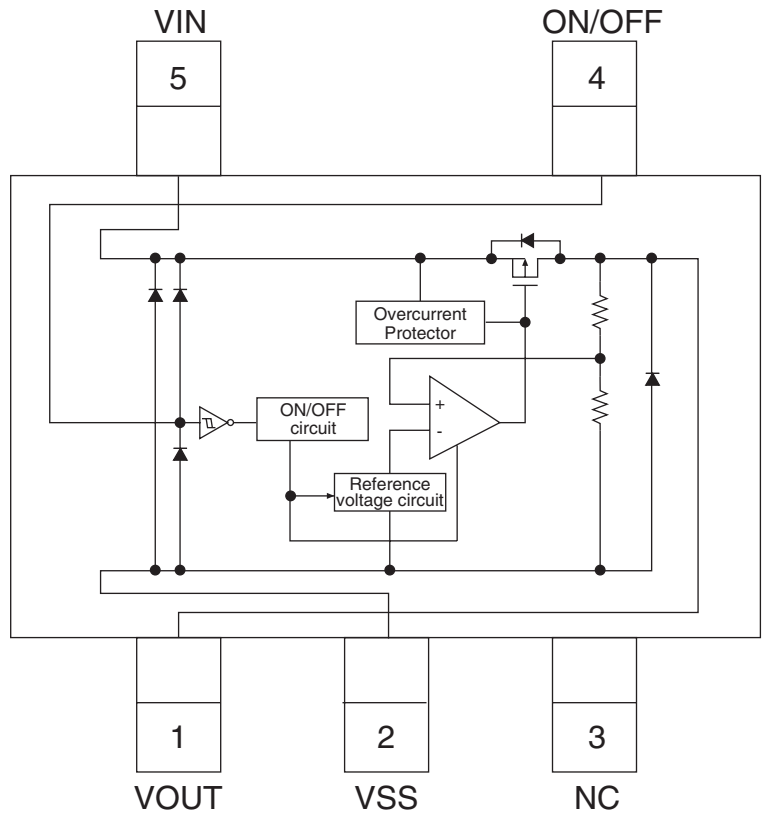
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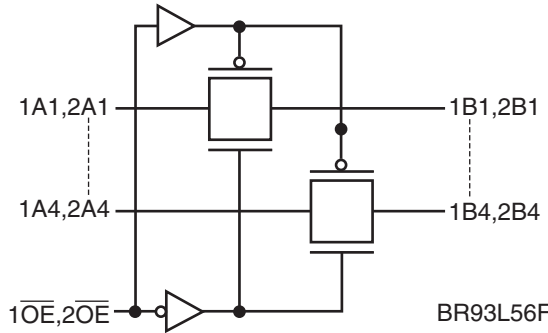
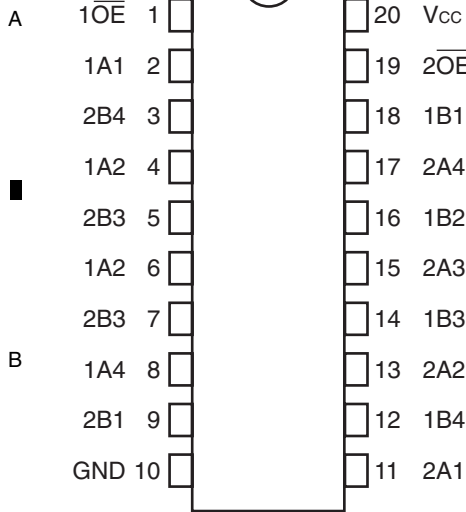
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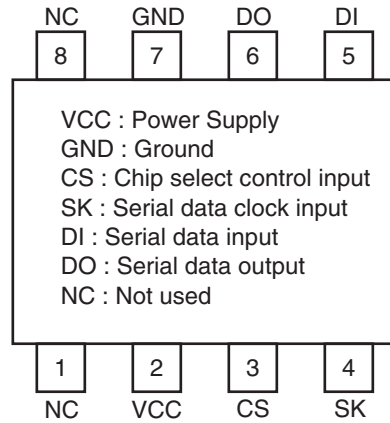
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S-1132B15-U5



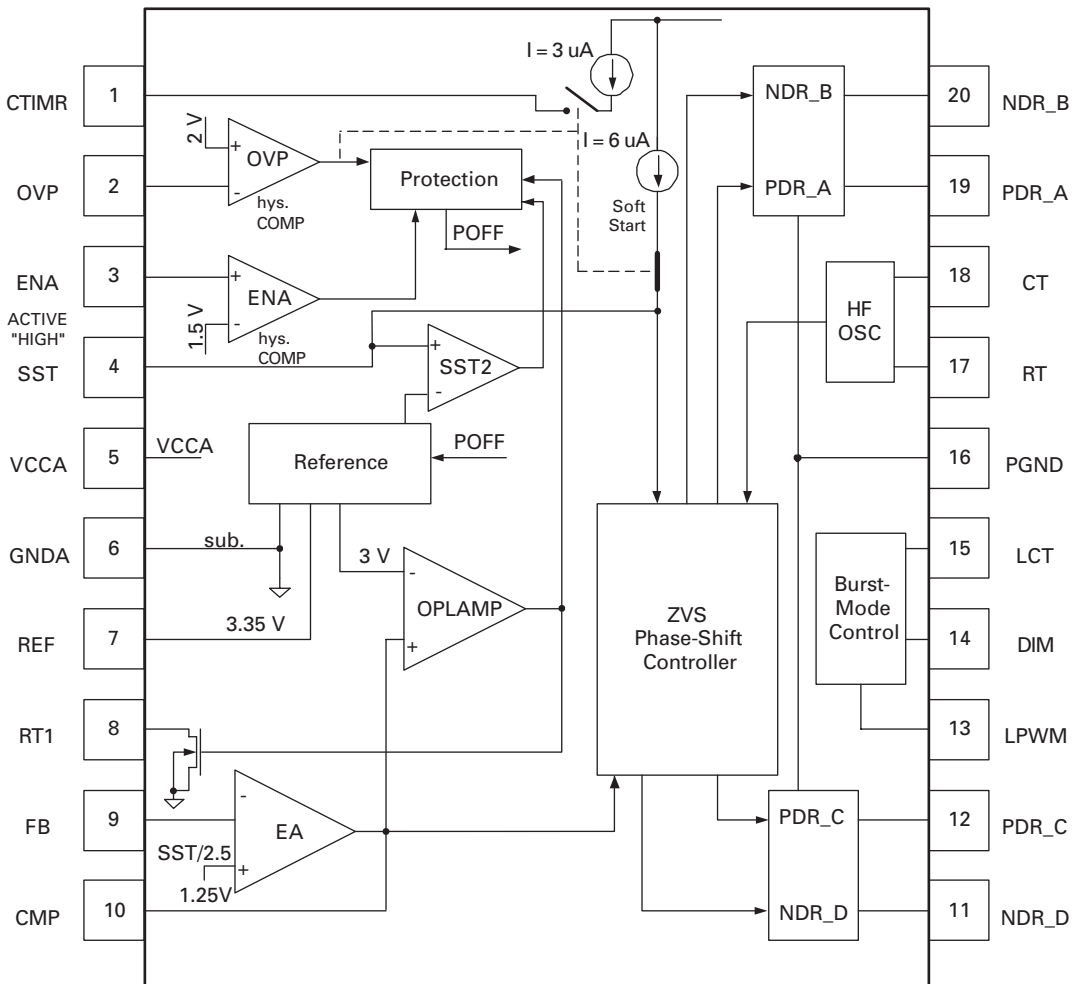
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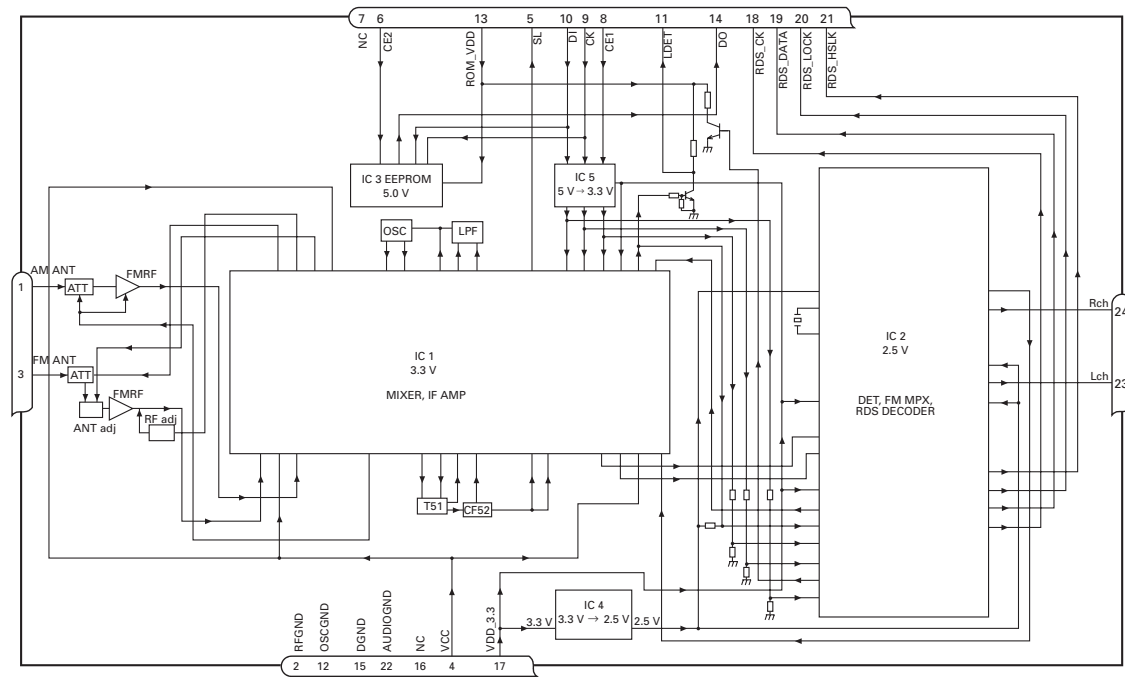
BR93L56FJ-W



OZ9641SN



● FM/AM Tuner Unit



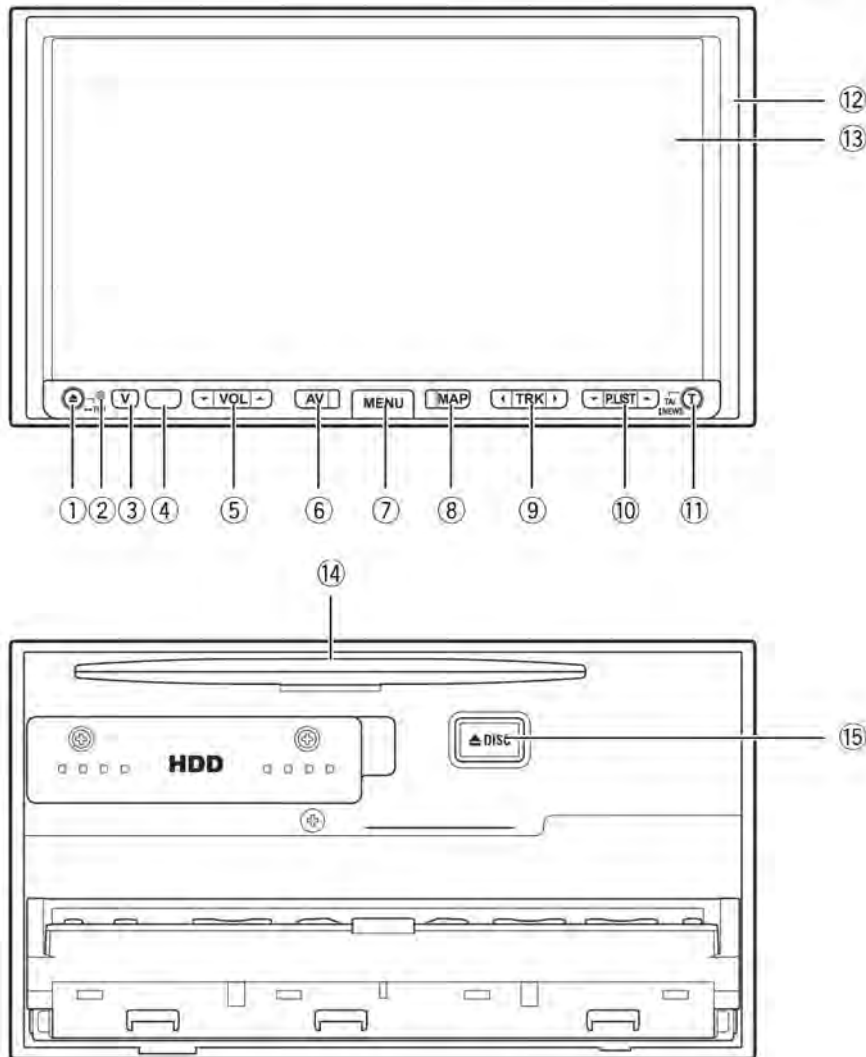
No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground Ground of antenna block
3	FMANT	I	FM antenna input Input of FM antenna 75 Ω Surge absorber (DSP-201M-S00B) is necessary.
4	VCC		power supply The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level Output of FM/AM signals level
6	CE2	I	chip enable-2 Chip enable for EEPROM "Low" active
7	NC		non connection Not used
8	CE1	I	chip enable-1 Chip enable for AF•RF "High" active
9	CK	I	clock Clock
10	DI	I	data in Data input
11	LDET	O	lock detector "Low" active
12	OSCGND		osc ground Ground of oscillator block
13	ROM_VDD		power supply Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out Data output
15	DGND		digital ground Ground of digital block
16	NC		non connection Not used
17	VDD_3.3		power supply The power supply for digital block. 3.3 V \pm 0.2 V
18	RDS_CK	O	RDS clock Output of RDS clock(2.5 V)
19	RDS_DATA	O	RDS data Output of RDS data(2.5 V)
20	RDS_LOCK	O	RDS lock Output unit "High" active(2.5 V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock Output unit "High" active(2.5 V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOGND		audio ground Ground of audio block
23	L ch	O	L channel output FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output FM stereo "R-ch" signal output or AM audio output

8. OPERATIONS

How to Use the Navigation System and Names of the Parts

Checking Part Names and Functions

This section gives information about the names of the parts and main features using the buttons.



① OPEN CLOSE button

Press to open or close the LCD panel and access the disc loading slot.

Press and hold to display the screen angle adjustment screen where you can adjust the angle of the LCD panel.

② RESET button

Press to recover from an errors or another. You can clear the customised settings related to the AV source.

③ **V button**

Press to enter the **PICTURE ADJUSTMENT** mode.

☞ Operating the Picture Adjustment → Operation Manual

Press and hold to turn off the back light of the LCD panel. To turn on the back light, press this button again.

④ **Signal receptor**

This area receives signals from a remote control (sold separately).

⑤ **VOL (▲/▼) button**

Pressing on the ▲ side of the button to increase the volume of the audio source while pressing on the ▼ side of it to decrease the volume of the audio source.

You can not adjust the sounds of the navigation features (e.g. guidance voice) and phone volume.

⑥ **AV button**

Press to switch the screen to the audio operation screen. If you press the **AV** button again, the source switches.

☐ Press and hold the **AV** button to turn off the source.

⑦ **MENU button**

Press to display a navigation menu of the navigation system.

Press and hold to display Phone Menu when the Bluetooth unit is connected to this navigation system.

⑧ **MAP button**

Press to view the navigation map screen. Also, when the map is scrolling, pressing this button returns you to the display of the map of your surroundings. Use to switch the view mode of the navigation when the map of your surroundings is displayed.

⑨ **TRK (◀/▶) button**

Pressing this button when the built-in DVD drive source is selected skips a track or a chapter. Press and hold to fast forward/fast reverse a track or a chapter.

☐ Various operations are possible depending on the Audio source.

⑩ **P.LIST (▲/▼) button**

Changes the discs in the magazine during the multi-CD player (sold separately) operation. Switches preset channels during the Radio operation.

☐ Various operations are possible depending on the Audio source.

⑪ **TA /NEWS button**

Press to turn traffic announcements function on or off. Press and hold to turn NEWS function on or off.

⑫ **LCD panel**

⑬ **LCD screen**

⑭ **Disc loading slot**

Insert a disc to play.

⑮ **EJECT button**

Press to eject the disc from the disc loading slot.

About the Power Supply of the Navigation System

How to turn the power on or off

The power to this navigation system turns on or off in conjunction with the ignition switch (ACC) of the vehicle. There is no power switch.

How to turn off the screen for a while

Touch and hold the **V** button to turn off the screen for a while, and the navigation system enters the standby mode.

☐ To cancel the standby mode, press the **V** button again, or touch the screen.

Hardware buttons



(1) OPEN CLOSE button

Press to access the DVD loading slot. Press and hold to display the angle adjustment screen.

(2) V button

Press to enter the PICTURE ADJUSTMENT mode.

(3) VOL (▼/▲) button

You can adjust the volume of Audio source.

(4) AV button

Press to switch the screen to the audio operation screen. If you press the AV button again, the audio source switches.

(5) MENU button

Press to display a navigation menu.

(6) MAP button

Press to view the navigation map screen or press to switch view mode.

(7) TRK (◀/▶) button

Pressing this button when the built-in DVD drive source is selected skips a track or a chapter. Press and hold to fast forward/fast reverse a track or a chapter.

(8) PLIST (▼/▲) button

Switches preset channels during the Radio operation.

(9) T button*

Preset button for XM Instant Traffic and SIRIUS traffic channel. Hold down to assign preset and you can recall that later.

*: XM satellite radio tuner (GEX-P10XMT or GEX-P920XM) or SIRIUS satellite radio tuner (SIR-PNR2) is required, together with an active subscription separately.

Switching the screen



AV screen

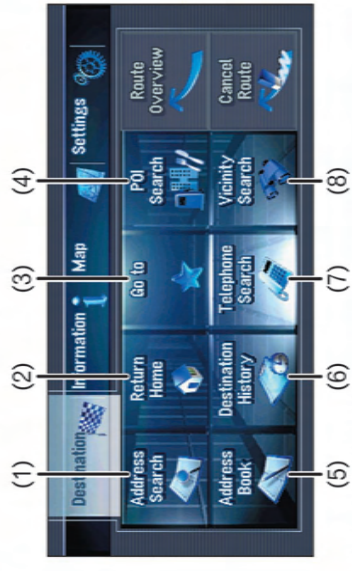


Navigation map

Search function overview

This navigation system has multiple methods for entering your destination.

Press the **MENU** button to display the navigation menu.



- (1) Search by address
- (2) Shortcut key for home address
- (3) Shortcut key for favorite destination
- (4) Search for POIs in the database
- (5) Select a destination from your registered point
- (6) Select a previously routed destination
- (7) Search destination by business telephone number
- (8) Search for POIs in your vicinity

Search result list for vicinity search



POI.....Restaurants, Hotels, Gas Stations, and other stores and businesses

Searching your destination by address

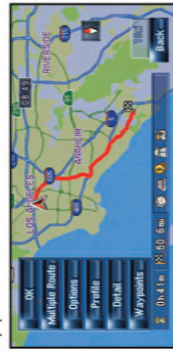
- 1 Press the **MENU** button and then touch **“Address Search”**.
- 2 Select state or province by **OK** and then input the house number and touch **“OK”**.



- 3 Input the street name.

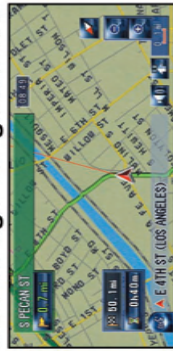


- 4 Select the street name from list. After some steps for narrowing down your destination, the route calculation carried out and the route confirmation screen appears.



If you want to get another recommended route, by **“Multiple route”** and choose the best one.

- 5 Touch **“OK”** to decide your route, and then the navigation starts.
- 6 Begin driving in accordance with navigation guidance.



This navigation systems gives you route guidance both visually and by voice.

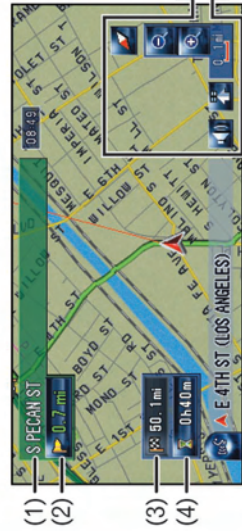
Setting the voice guidance volume

Press or touch in the following order.



MENU button → **Settings** tab → **Volume**

Basic operation on the map screen



Mute the navigation voice
Touch

Short-cut Menu
Touch

Zoom in or zoom out
Touch or

Scrolling the map

Touch where you would like to scroll to on the map screen.

- (1) Next street
- (2) Distance to the next guidance point
- (3) Distance to your destination
- (4) Estimated time of arrival (in default)

Searching your destination by address

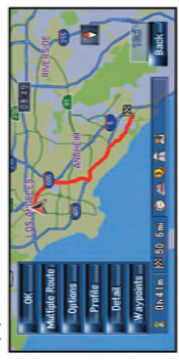
- 1 Press the **MENU** button and then touch **“Address Search”**.
- 2 Select state or province by touching **CA** and then input the house number and touch **“OK”**.
- 4 Select the street name from list.



Setting the voice guidance volume

Press or touch in the following order. **MENU** button → **Settings** tab → **Volume**

After some steps for narrowing down your destination, the route calculation carried out and the route confirmation screen appears.



If you want to get another recommended route, by **“Multiple route”** and choose the best one.

- 3 Input the street name.



- 5 Touch **“OK”** to decide your route, and then the navigation starts.
- 6 Begin driving in accordance with navigation guidance.



This navigation systems gives you route guidance both visually and by voice.

Basic operation on the map screen



Scrolling the map

Touch where you would like to scroll to on the map screen.

- (1) Next street
- (2) Distance to the next guidance point
- (3) Distance to your destination
- (4) Estimated time of arrival (in default)

Traffic information on the map

Traffic conditions can be overlaid on the map. GEX-P10XMT XM Digital Satellite Data & Audio Receiver (sold separately) is required, together with an active subscription for the XM NavTraffic service.



(1) Traffic event

- Stopped traffic
- Stop and go traffic
- Closed/blocked roads
- Other event (e.g., accident)

(2) Traffic flow

The following items represent the traffic flow for the road.

- 5-15 mph (8-24 km/h)
- 20-40 mph (32-64 km/h)
- 45 mph or faster (72 km/h or faster)

The icon indicates that the average speed of the road is over 45 mph (72 km/h).

Changing the AV source

1 Touch the source icon.



2 Touch the desired AV source.



- (1) You can switch the AV source for rear display in the following order:
“MIRROR” (Same as front) – **“DVD”** (DVD drive) – **“AV”** (AV input)

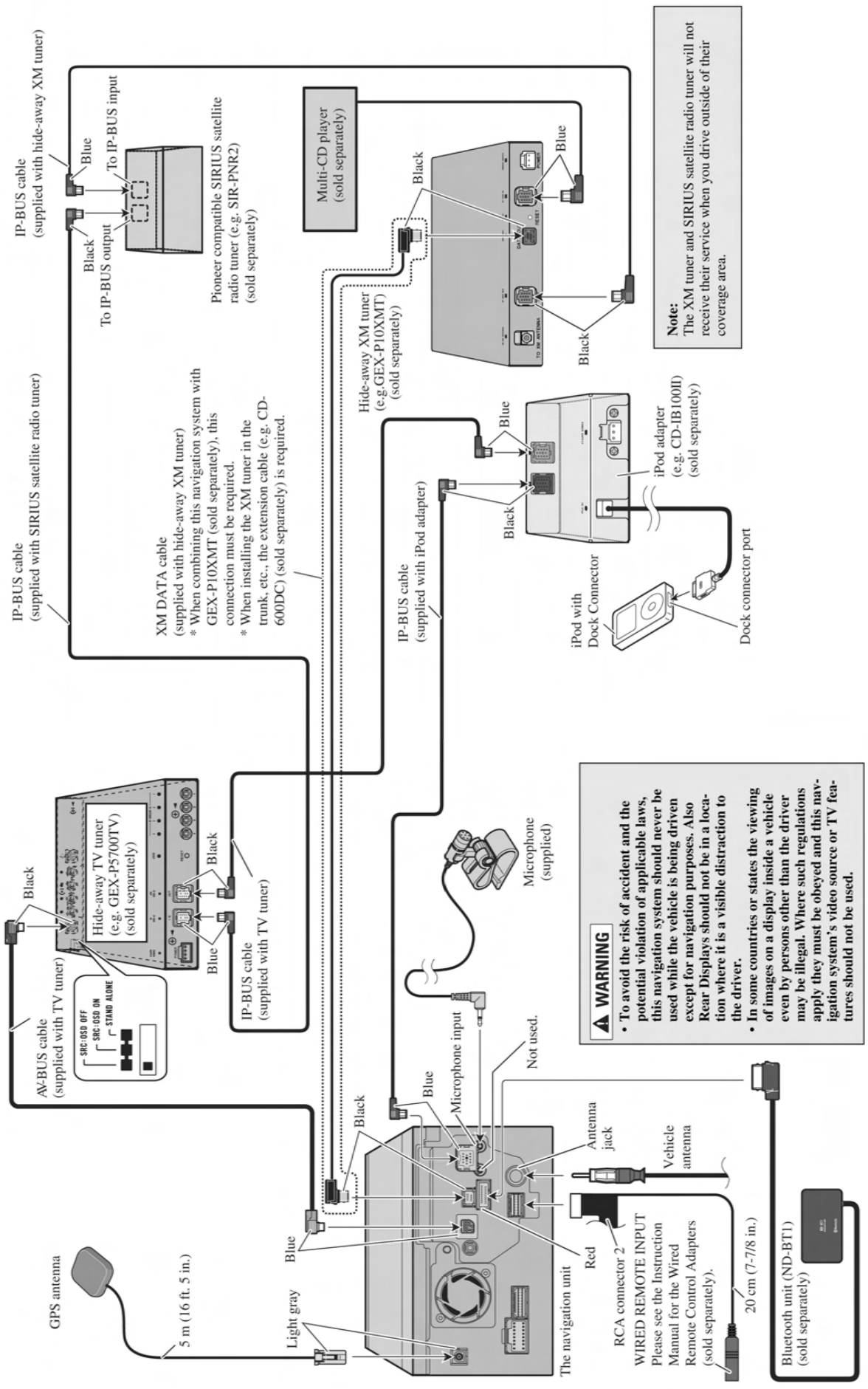
Operation of Music Library

First, you need to play a CD for recording into the built-in hard disk drive. (The recording is carried out by 4 times speed in parallel with playing that CD.) After the recording, you can find and select the song easily from a playlist.

- (4) (3)



- (1) Search a song by album name, artist name, genre, customized playlist.
 (2) Touch and hold to memorize that song as “My Mix” playlist.
 (3) Information of current song
 (4) “Group” playing now.



AVIC-Z1/UC

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AVIC-Z1/UC

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● Jigs List

Jig No.	Name	Remarks
GGD1455	122-Pin Extension Cable	Navi Mother PCB <-> CC Unit
GGD1170	40-Pin FFC	DVD Mechanism Module <-> Navi Mother PCB
GGD1284	40-Pin FFC BBR	DVD Mechanism Module <-> HDD Unit
GGD1327	20-Pin Extension Cord	Navi Mother PCB <-> Audio Unit
GGD1406	80-Pin FFC	Navi Mother PCB <-> Audio Unit
GGD1209	20-Pin FFC	Navi Mother PCB <-> Audio Unit
GGD1123	15-Pin FFC	Audio Unit <-> Main PCB Unit
GGD1170	40-Pin FFC	Audio Unit <-> Monitor Unit
GGF1416	Jig for Monitor Adjustment	For OSD display
GGF1463	Conversion PCB for OSD display	GGF1416 Conversion
GGD1322	GGF1463 for repair	For repair
GGD1323	GGF1463 for repair	For repair
GGK1068	Torques screwdriver	T8(For HDD COVER)
GGV1194	Test Disc	

● Grease List

Name	Jig No.	Remarks
Grease	GEM1045	
Grease	GEM1043	
Grease	GEM1024	
Grease	GEM1050	



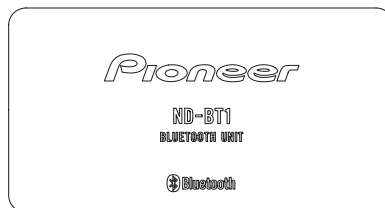
Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
DVD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

Pioneer *sound.vision.soul*

Service Manual



ND-BT1/E5

ORDER NO.
CRT3684

BLUETOOTH UNIT

ND-BT1 /E5



For details, refer to "Important Check Points for Good Servicing".

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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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K-ZZD.MAR. 2006 Printed in Japan

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SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

● Service Precaution

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

ND-BT1/E5

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[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

	SAFETY INFORMATION	2
	1. SPECIFICATIONS	5
A	2. EXPLODED VIEWS AND PARTS LIST	6
	2.1 PACKING	6
	2.2 EXTERIOR	7
	3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	8
	3.1 BLOCK DIAGRAM	8
	3.2 BLUETOOTH ASSY	10
	4. PCB CONNECTION DIAGRAM	12
	4.1 BLUETOOTH ASSY	12
	5. ELECTRICAL PARTS LIST	16
	6. ADJUSTMENT	18
	6.1 BLUETOOTH TEST MODE	18
	7. GENERAL INFORMATION	22
B	7.1 DIAGNOSIS	22
	7.1.1 DISASSEMBLY	22
	7.1.2 CONNECTOR FUNCTION DESCRIPTION	23
	7.2 IC	24
	8. OPERATIONS	26

C

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E

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1. SPECIFICATIONS

General

Max. Current Consumption0.25 A

Dimensions (W x H x D)89 mm x 16 mm x 48 mm
(3-1/2 x 5/8 x 1-7/8 in.)

Weight.....0.16 kg (0.33 lbs)

Bluetooth

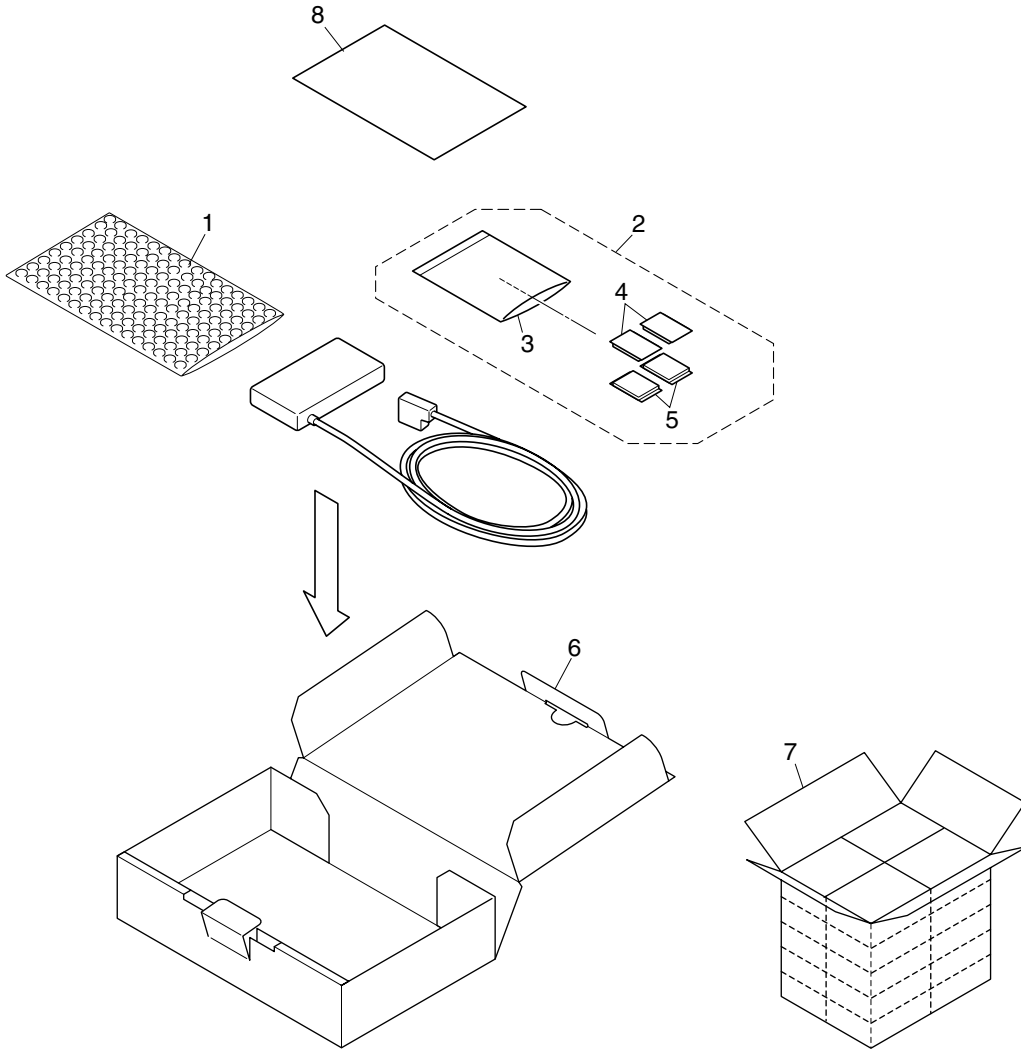
VersionBluetooth 1.1 certified

Maximum Output Power+4 dBm (Power Class 2)

2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
 • The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 • Screw adjacent to ∇ mark on the product are used for disassembly.
 • For the applying amount of lubricants or glue, follow the instructions in this manual.
 (In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



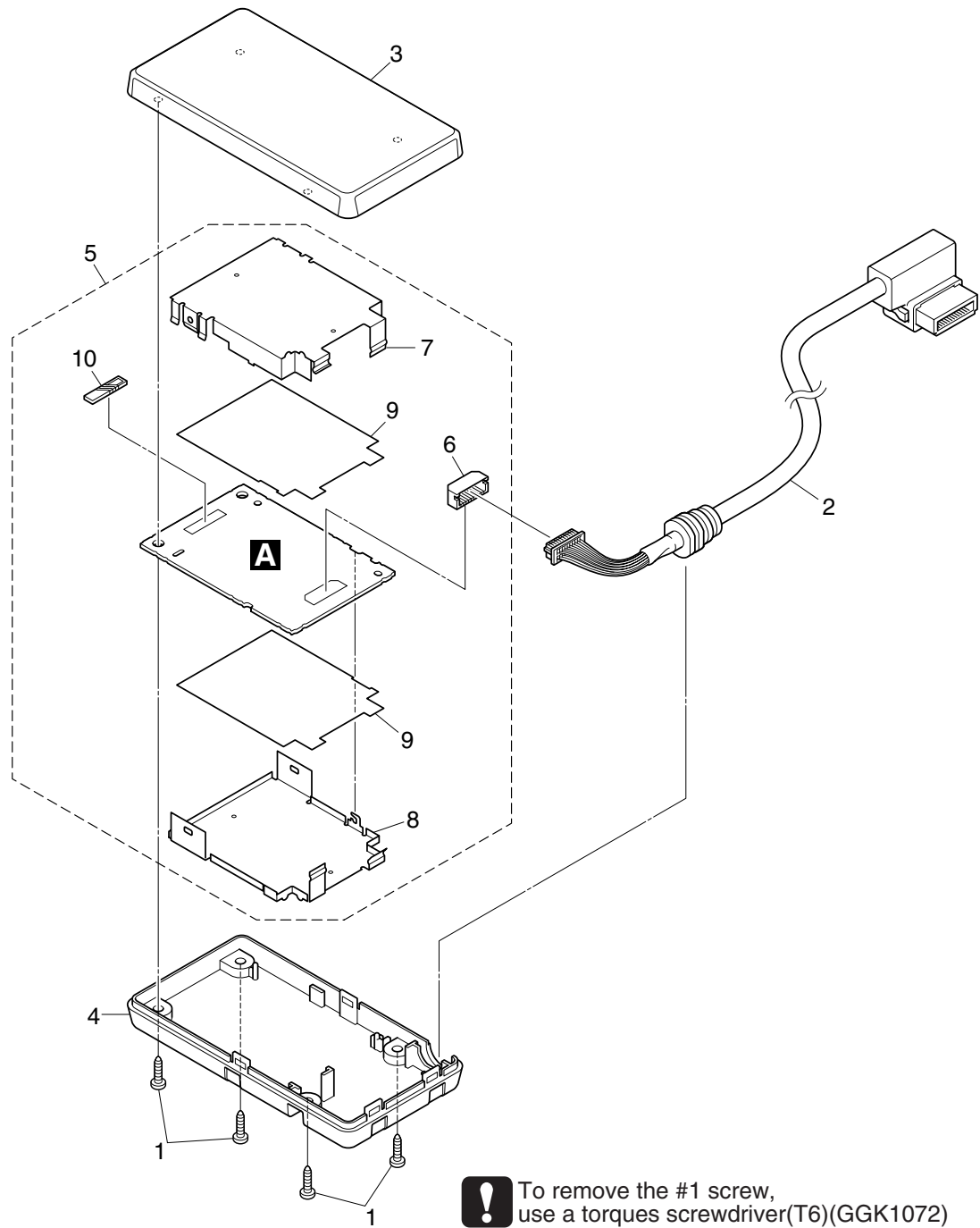
PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Air Cushioned Bag	CEG1081	6	Carton	CHG5904
2	Accessories Assy	CEA5378	7	Contain Box	CHL5904
* 3	Polyethylene Bag	CEG1158	8	Owner's Manual	CRD4118
4	Fastener	CNM9866			
5	Fastener	CNM9867			

Owner's Manual

Part No.	Language
CRD4118	English, Spanish, German, French, Italian, Dutch, Russian

2.2 EXTERIOR



! To remove the #1 screw, use a torque screwdriver(T6)(GGK1072)

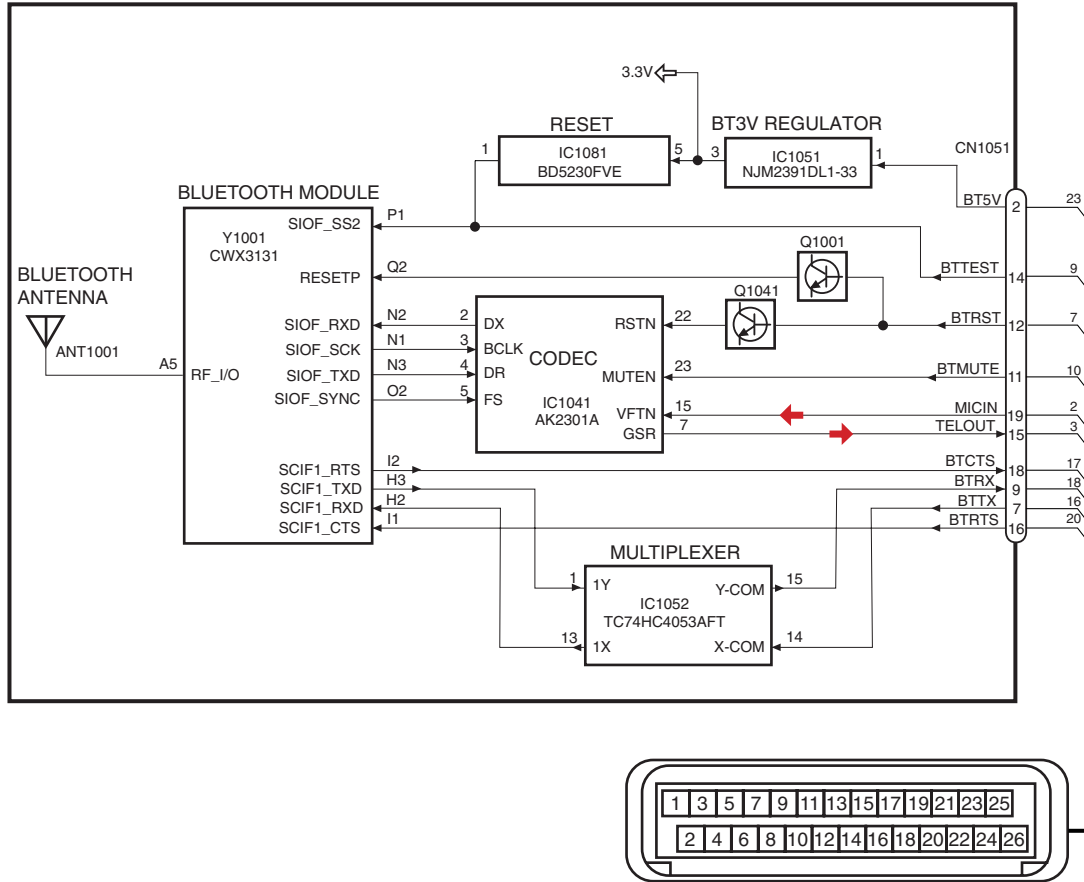
EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BPZ20T100FTB
2	Cord Assy	CDE7963
3	Cover	CNS8686
4	Case	CNS8741
5	Bluetooth Assy	CWN1211
6	Connector(CN1051)	CKS5270
7	Shield	CND3026
8	Shield	CND3027
9	Insulator	CNM9813
10	Antenna(ANT1001)	CTX1095

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A BLUETOOTH ASSY



■

5

■

6

■

7

■

8

■

A

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B

■

C

■

D

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E

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F

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6

ND-BT1/E5

■

7

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8

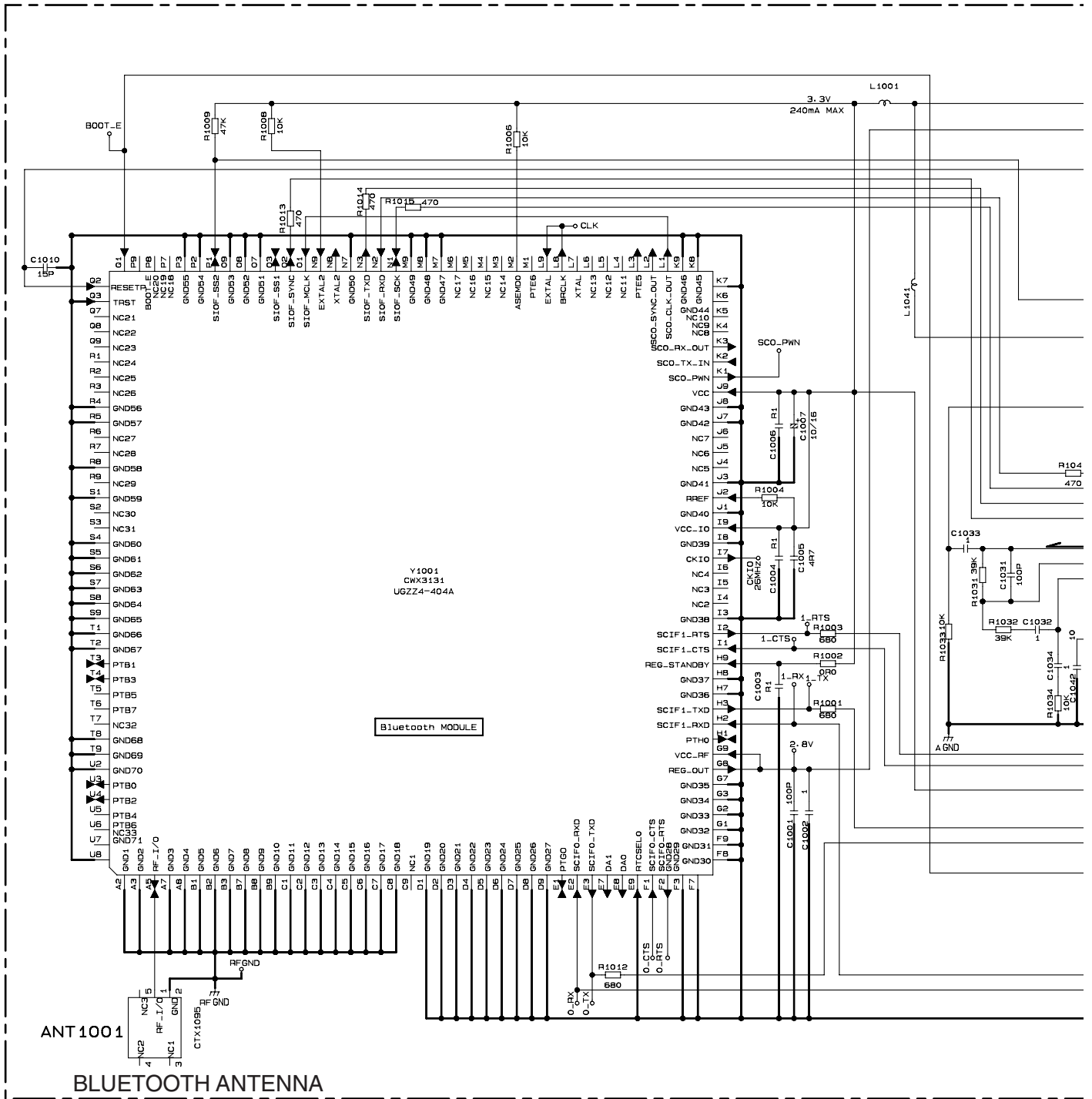
9

■

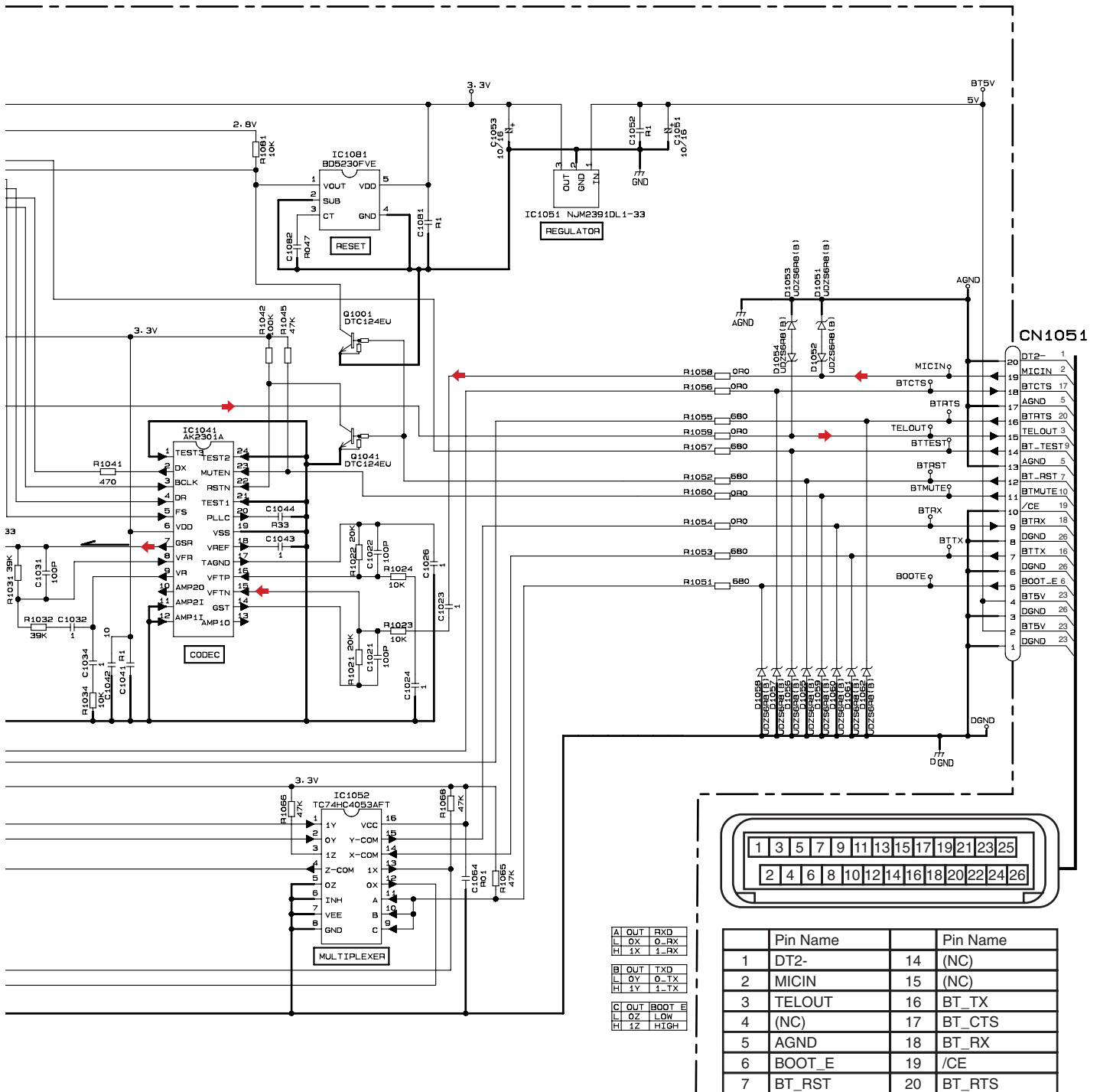
3.2 BLUETOOTH ASSY

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A BLUETOOTH ASSY



NO1
—|—



NOTE :

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- |— Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
 2.2 → 2R2
 0.022 → R022

A	OUT	RXD
L	OX	0_RX
H	1X	1_RX
B	OUT	TXD
L	OY	0_TX
H	1Y	1_TX
C	OUT	BOOT_E
L	OZ	LOW
H	1Z	HIGH

Pin Name	Pin Name
1 DT2-	14 (NC)
2 MICIN	15 (NC)
3 TELOUT	16 BT_TX
4 (NC)	17 BT_CTS
5 AGND	18 BT_RX
6 BOOT_E	19 /CE
7 BT_RST	20 BT_RTS
8 (NC)	21 (NC)
9 BT_TEST	22 (NC)
10 BT_MUTE	23 BT5V
11 (NC)	24 (NC)
12 (NC)	25 (NC)
13 (NC)	26 DGND
	GNDE GND



4. PCB CONNECTION DIAGRAM

4.1 BLUETOOTH ASSY

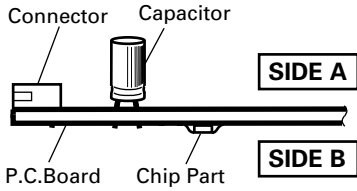
A

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.

For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



B

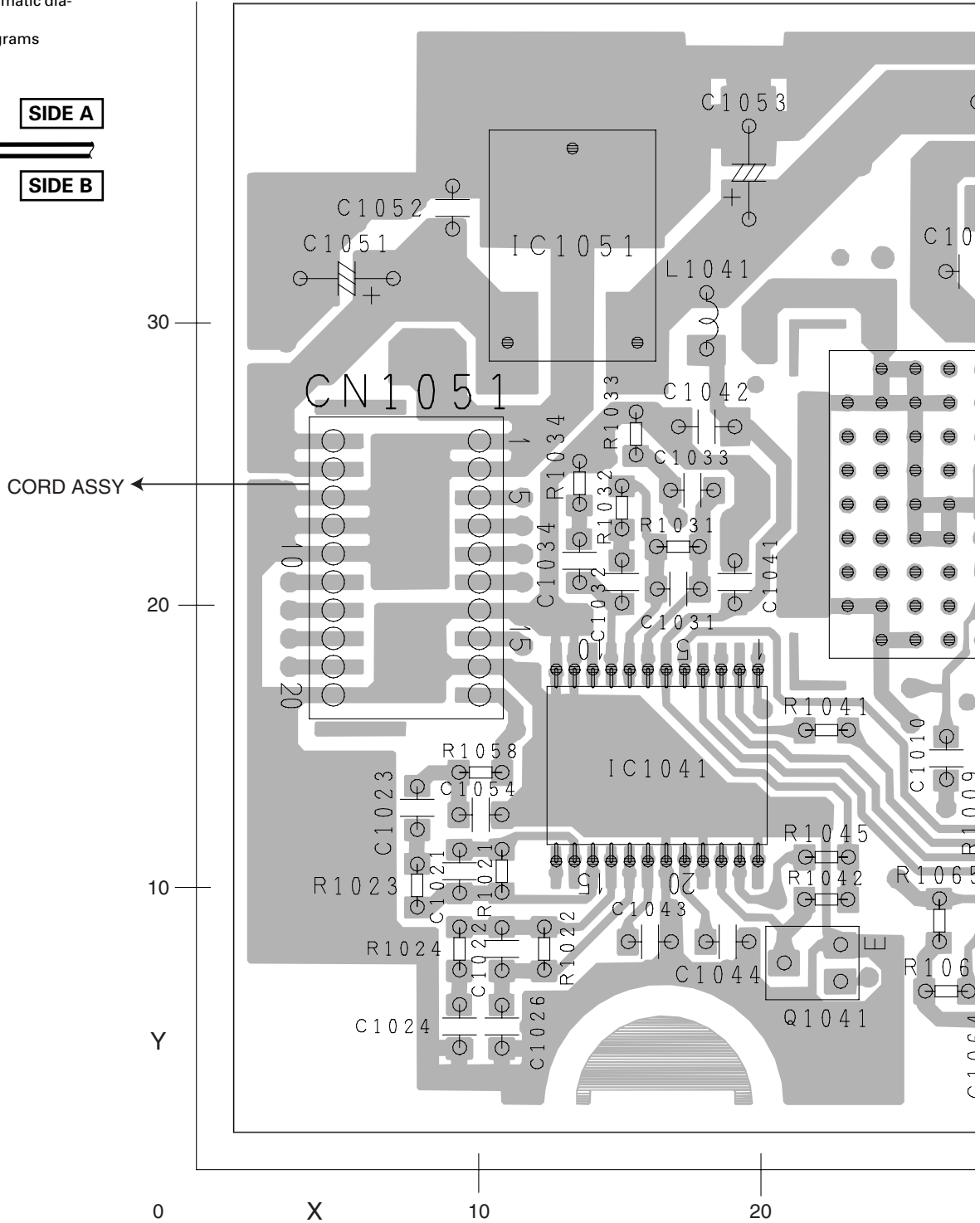
C

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A BLUETOOTH ASSY

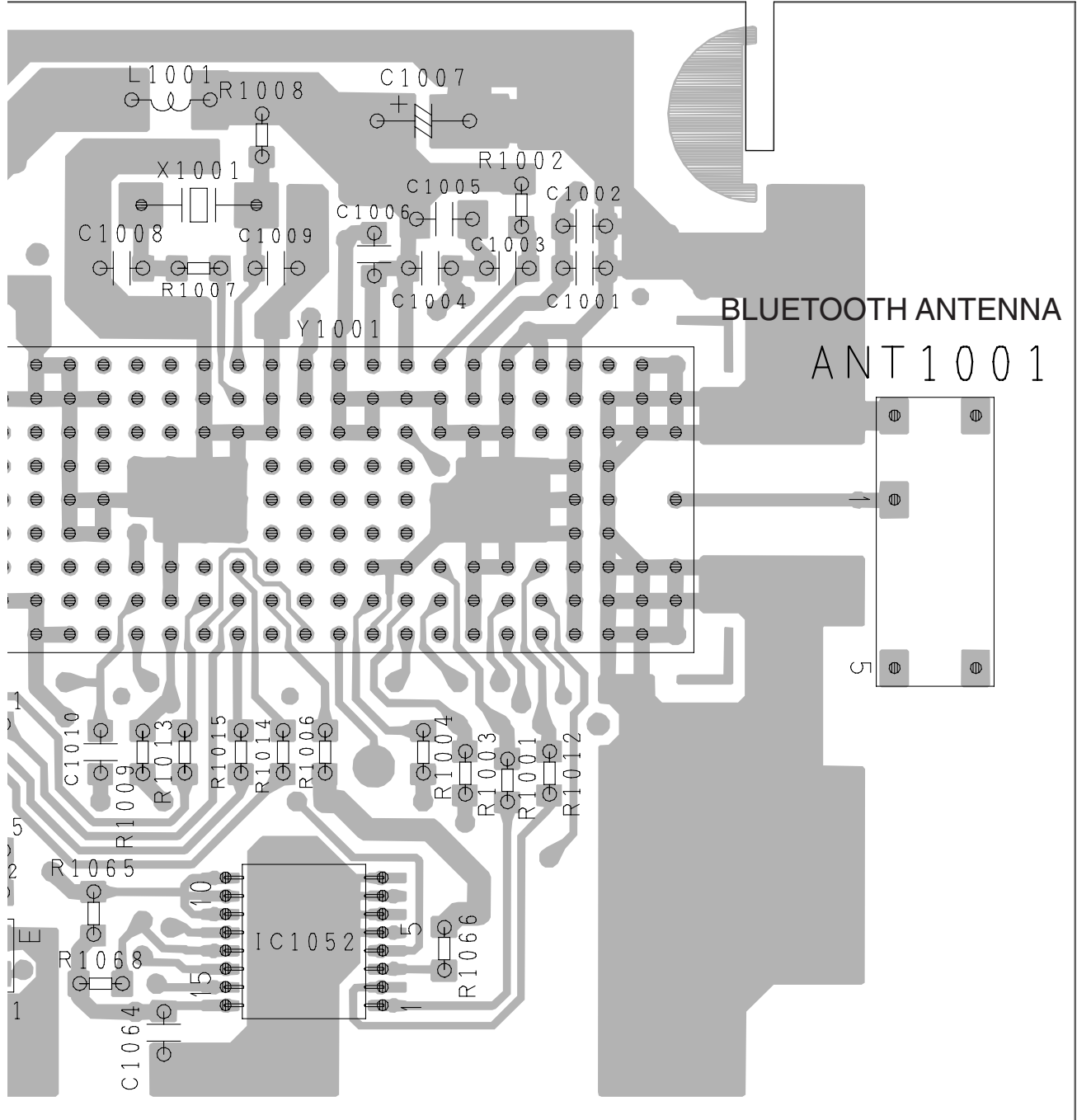


A

ND-BT1/E5

SIDE A

A
B
C
D
E
F



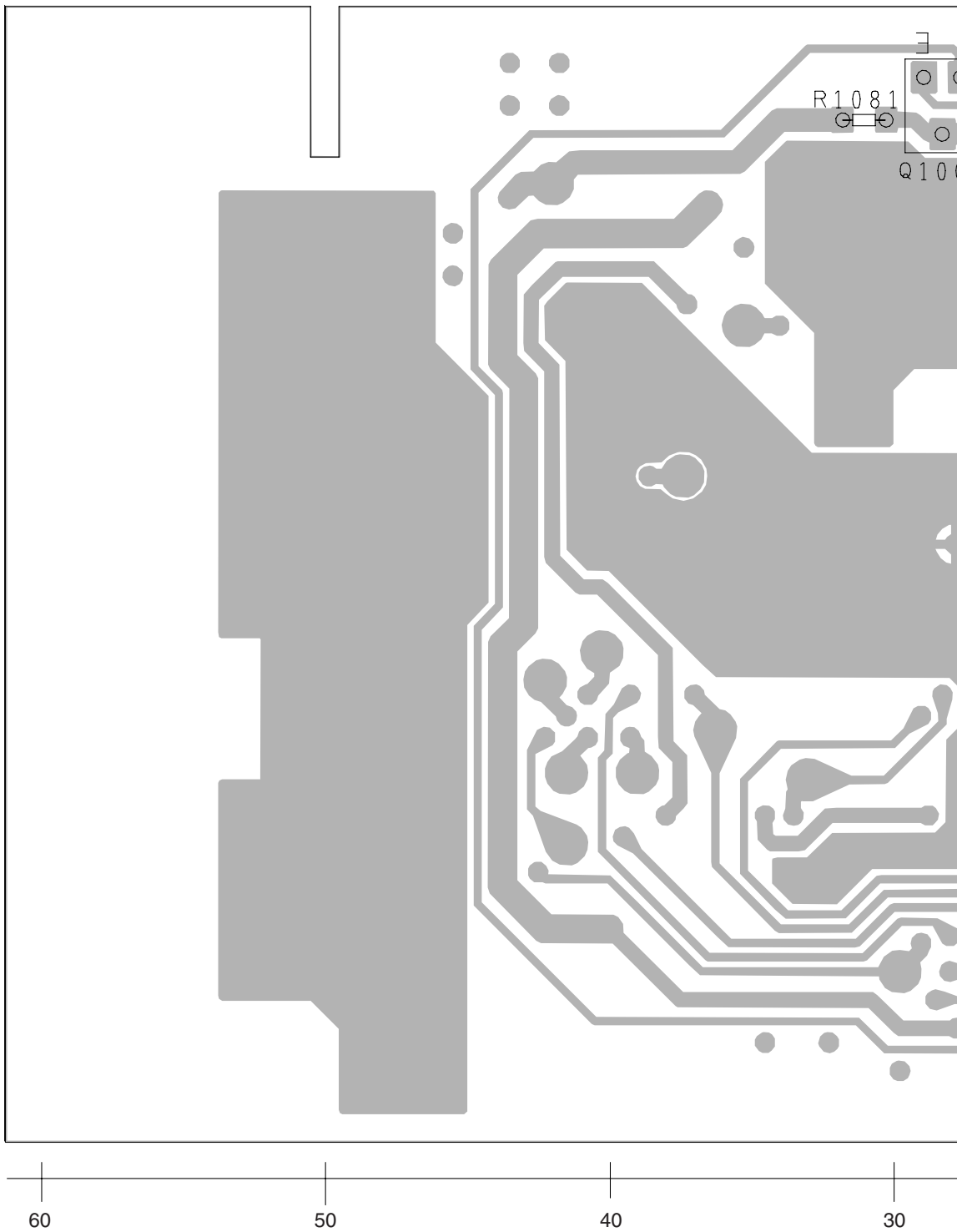
30

40

50

60

A BLUETOOTH ASSY



A

B

C

D

E

F

A

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
Unit Number: CWN1211		R 1008 (A,32,37)	RS1/16S103J
Unit Name : Bluetooth Assy		R 1009 (A,28,15)	RS1/16S473J
		R 1012 (A,43,14)	RS1/16S681J
		R 1013 (A,30,15)	RS1/16S471J
		R 1014 (A,33,15)	RS1/16S471J

A		R 1015 (A,32,15)	RS1/16S471J
Unit Number: CWN1211		R 1021 (A,11,11)	RS1/16S203J
Unit Name : Bluetooth Assy		R 1022 (A,12,8)	RS1/16S203J
		R 1023 (A,8,10)	RS1/16S103J
		R 1024 (A,9,8)	RS1/16S103J

MISCELLANEOUS

IC 1041 (A,16,14) IC	AK2301A	R 1031 (A,17,22)	RS1/16S393J
IC 1051 (A,13,34) IC	NJM2391DL1-33	R 1032 (A,15,23)	RS1/16S393J
IC 1052 (A,34,8) IC	TC74HC4053AFT	R 1033 (A,16,26)	RS1/16S103J
IC 1081 (B,23,38) IC	BD5230FVE	R 1034 (A,14,24)	RS1/16S103J
Q 1001 (B,28,38) Transistor	DTC124EU	R 1041 (A,22,16)	RS1/16S471J
Q 1041 (A,22,7) Transistor	DTC124EU	R 1042 (A,22,10)	RS1/16S104J
D 1051 (B,7,14) Diode	UDZS6R8(B)	R 1045 (A,22,11)	RS1/16S473J
D 1052 (B,11,14) Diode	UDZS6R8(B)	R 1051 (B,11,30)	RS1/16S681J
D 1053 (B,16,17) Diode	UDZS6R8(B)	R 1052 (B,9,33)	RS1/16S681J
D 1054 (B,16,20) Diode	UDZS6R8(B)	R 1053 (B,17,29)	RS1/16S681J
D 1055 (B,6,33) Diode	UDZS6R8(B)	R 1054 (B,23,29)	RS1/16S0R0J
D 1056 (B,14,34) Diode	UDZS6R8(B)	R 1055 (B,21,33)	RS1/16S681J
D 1057 (B,8,25) Diode	UDZS6R8(B)	R 1056 (B,7,26)	RS1/16S0R0J
D 1058 (B,11,28) Diode	UDZS6R8(B)	R 1057 (B,13,36)	RS1/16S681J
D 1059 (B,19,26) Diode	UDZS6R8(B)	R 1058 (A,10,14)	RS1/16S0R0J
D 1060 (B,21,29) Diode	UDZS6R8(B)	R 1059 (B,17,22)	RS1/16S0R0J
D 1061 (B,15,29) Diode	UDZS6R8(B)	R 1060 (B,20,25)	RS1/16S0R0J
D 1062 (B,19,35) Diode	UDZS6R8(B)	R 1065 (A,26,9)	RS1/16S473J
L 1001 (A,29,38) Inductor	LCTAW1R0J3225	R 1066 (A,39,8)	RS1/16S473J
L 1041 (A,18,30) Inductor	LCYC2R2K2125	R 1068 (A,27,6)	RS1/16S473J
Y 1001 (A,35,24) BT Module	CWX3131	R 1081 (B,31,37)	RS1/16S103J
ANT1001 (A,56,21) Antenna	CTX1095		

RESISTORS

R 1001 (A,41,14)	RS1/16S681J
R 1002 (A,42,34)	RS1/16S0R0J
R 1003 (A,40,14)	RS1/16S681J
R 1004 (A,38,15)	RS1/16S103J
R 1006 (A,35,15)	RS1/16S103J

CAPACITORS

C 1001 (A,44,32)	CCSRCH101J50
C 1002 (A,44,33)	CKSRYB105K10
C 1003 (A,41,32)	CKSRYB104K16
C 1004 (A,38,32)	CKSRYB104K16
C 1005 (A,39,34)	CKSQYB475K6R3
C 1006 (A,36,32)	CKSRYB104K16
C 1007 (A,38,37)	CEVW100M16
C 1010 (A,27,15)	CCSRCH150J50

<u>Circuit Symbol and No.</u>		<u>Part No.</u>
C 1021	(A,9,11)	CCSRCH101J50
C 1022	(A,11,8)	CCSRCH101J50
C 1023	(A,8,13)	CKSRYB105K10
C 1024	(A,9,5)	CKSRYB105K10
C 1026	(A,11,5)	CKSRYB105K10
C 1031	(A,17,21)	CCSRCH101J50
C 1032	(A,15,21)	CKSRYB105K10
C 1033	(A,18,24)	CKSRYB105K10
C 1034	(A,14,22)	CKSRYB105K10
C 1041	(A,19,21)	CKSRYB104K16
C 1042	(A,18,26) 10 μ F	CCG1171
C 1043	(A,16,8)	CKSRYB105K10
C 1044	(A,19,8)	CKSRYB334K10
C 1051	(A,5,32)	CEVW100M16
C 1052	(A,9,34)	CKSRYB104K16
C 1053	(A,20,35)	CEVW100M16
C 1056	(B,13,30)	CCSRCH101J50
C 1064	(A,29,5)	CKSRYB103K50
C 1081	(B,25,37)	CKSRYB104K16
C 1082	(B,21,37)	CKSRYB473K50

A

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6. ADJUSTMENT

6.1 BLUETOOTH TEST MODE

● Bluetooth Test Mode (when using BT Built-in mobile phone)

0. Specifications for BT Built-in mobile phone

A mobile phone supporting Bluetooth Ver.1.1 and mounting HFP and OPP is required.
Models with which connection has been verified are recommended.

*HFP : Hands-Free Profile, OPP : Object Push Profile

Recommended mobile phone model;
for AVIC-HD1BT/EW5 (ND-BT1/E5)
- SonyEricsson S700i/K750i

for AVIC-Z1/UC + ND-BT1/E5
- AUDIOVOX SMT5600

Notes: SMT5600 is not possible to transfer whole address book at a time.
It can be transferred one by one on this model.

1. Caution

*This is a precaution for the case where the mobile phone is actually connected at the serviced site.

For AVIC-HD1BT/EW5 and AVIC-Z1/UC, up to 5 sets of Bluetooth units can be registered.

When more than 5 sets are tried to be registered, the 6th set and beyond will be overwritten. (Overwriting will be made by selecting the model number to be overwritten.)

In the case of overwriting, be careful as the device information stored by the user will be deleted.

2. Outline of functions

When checking the operation using the BT built-in mobile phone, check the connection under the normal operation.

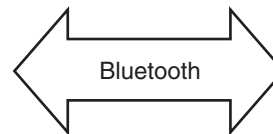
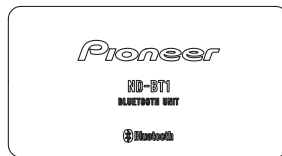
- Checking of Bluetooth connection (authentication connection and voice connection)
- Checking of Bluetooth antenna sensitivity (connection)

3. Configuration diagram

AVIC-HD1BT/EW5, AVIC-Z1/UC




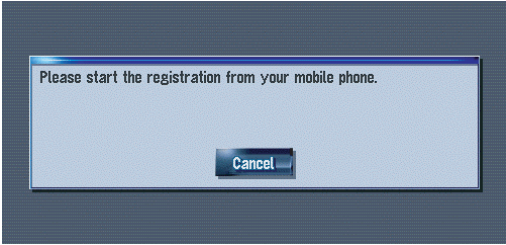
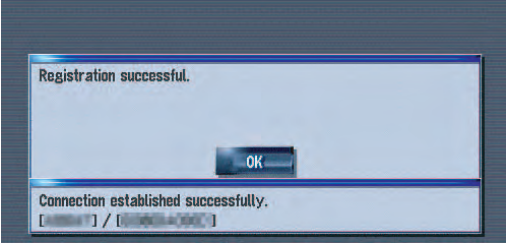
ND-BT1/E5



Mobile Phone



4. Procedure for checking

Display	Operation Method																
 <p>Connection Status</p> <table border="1"> <tr><td>Speed Pulse</td><td>: 0</td></tr> <tr><td>GPS Aerial</td><td>: NOK </td></tr> <tr><td>Phone Connection Status</td><td>: OK </td></tr> <tr><td>Installation Position</td><td>: OK</td></tr> <tr><td>Handbrake</td><td>: On</td></tr> <tr><td>Power Voltage</td><td>: 11.9V</td></tr> <tr><td>Illumination</td><td>: Off</td></tr> <tr><td>Back Signal</td><td>: Low</td></tr> </table> <p>Back</p>	Speed Pulse	: 0	GPS Aerial	: NOK	Phone Connection Status	: OK	Installation Position	: OK	Handbrake	: On	Power Voltage	: 11.9V	Illumination	: Off	Back Signal	: Low	<p>ND-BT1/E5 will be connected to the connectable product, and start.</p> <p>Select [Menu]→[Settings]→[Hardware]→[Connection Status].</p> <p>Make sure on the left screen that the items under Phone Connection Status are indicating [OK]. In this case, because registration of the BT telephone has not been completed, level indication of the antenna bar is not displayed even though the status is indicated as OK. * In the case of NOK, possible case is poor connection between ND-BT1/E5 and navigation product or failure of the wired section of ND-BT1/E5.</p>
Speed Pulse	: 0																
GPS Aerial	: NOK																
Phone Connection Status	: OK																
Installation Position	: OK																
Handbrake	: On																
Power Voltage	: 11.9V																
Illumination	: Off																
Back Signal	: Low																
<p style="text-align: center;">↓</p> 	<p>Select [Menu]→[Info/Phone]→[Phone Menu]→[Phone Settings]→[Registration]→[Mobile].</p> <p>Search for the Bluetooth device and enter the passkey by operating the mobile telephone.</p> <p>* In case the device name is not displayed in Bluetooth device search, the possible cause is the failure of the wireless section of ND-BT1/E5.</p>																
<p style="text-align: center;">↓</p> 	<p>When the connection with the BT telephone is completed, the screen as shown on the left will be displayed.</p> <p>Antenna bar will be displayed on the [Connection Status] screen.</p> <p>When the connection is successfully established, conduct speech test and check the voice transmission and reception.</p>																

Bluetooth Test Mode (using spectrum analyzer)

1. Cautions

If there is a spectrum analyzer supporting 2.4 GHz at the service site, confirmation of transmission carrier becomes possible.
Since ND-BT1/E5 cannot operate singly, the AVIC-HD1/EW5 or AVIC-Z1/UC is required.

Carrier existence is checked by removing the product case and applying the probe onto the "ANT" land of the base unit.

Since it is done by probe connection, the level cannot be confirmed accurately.

2. Function outline

Simple operation check on Bluetooth is executed in test mode using a spectrum analyzer supporting 2.4 GHz.

Output check on Bluetooth unit

3. Configuration diagram

AVIC-HD1/EW5, AVIC-Z1/UC



ND-BT1/E5

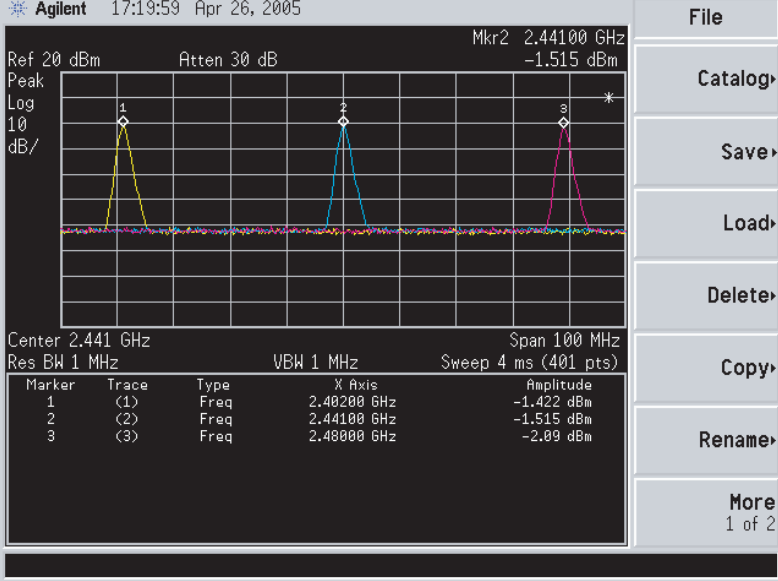


Spectrum analyzer supporting 2.4 GHz



4. Procedure for test mode startup

Display	Operation Method										
<p style="text-align: center;">↓</p>	<p>Enter the test mode using a product connectable to ND-BT1/E5.</p> <p>When the test screen is displayed, select [Bluetooth Unit Test] from the menu.</p> <table> <tr> <td>1) Loop Back(TX)</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>2) Page Scan</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>3) Inquiry Scan</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>4) Local TX</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>5) Local TX(No Modulated)</td> <td>Test (Not used for servicing.)</td> </tr> </table> <p>5) Select Local TX(No Modulated) Test.</p>	1) Loop Back(TX)	Test (Not used for servicing.)	2) Page Scan	Test (Not used for servicing.)	3) Inquiry Scan	Test (Not used for servicing.)	4) Local TX	Test (Not used for servicing.)	5) Local TX(No Modulated)	Test (Not used for servicing.)
1) Loop Back(TX)	Test (Not used for servicing.)										
2) Page Scan	Test (Not used for servicing.)										
3) Inquiry Scan	Test (Not used for servicing.)										
4) Local TX	Test (Not used for servicing.)										
5) Local TX(No Modulated)	Test (Not used for servicing.)										

Display	Operation Method																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test 1) TX Frequency [00:2402MHz] 2) RX Frequency [00] [OK]Select [Ret]Return [Up Down]Change Item</pre>	<p>Bring the cursor to [TX Frequency], and push [OK] button.</p>																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test 1) TX Frequency [00:2402MHz] 00:2402MHz 2) RX Frequency [00] 27:2441MHz 4E:2480MHz [OK]Select [Ret]Return [Up Down]Change Item</pre>	<p>As the selectable frequencies will be displayed on the right side of the screen, bring the cursor by using up/down cursor and push [OK] button.</p> <p>00 : 2 402 MHz (default value) 27 : 2 441 MHz 4E : 2 480 MHz</p>																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test 1) TX Frequency [00:2402MHz] 2) RX Frequency [00] OK [OK]Exec [Ret]Return [Menu]Parameter Change</pre>	<p>Press [Ret] key to return to the top screen of Local TX (No Modulated) Test.</p> <p>* On the top screen, " [OK] Exec " is displayed on the lower left position of the screen.</p> <p>Push [OK] button on the top screen, and take measurement using a spectrum analyzer.</p> <p>Apply a probe to [ANT] land on the PCB, and check if any carrier is displayed at the designated frequency band. Furthermore, make sure that carrier is displayed at each of the three bands.</p>																				
 <p>Agilent 17:19:59 Apr 26, 2005</p> <p>Ref 20 dBm Atten 30 dB Mkr2 2.44100 GHz -1.515 dBm</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.40200 GHz</td> <td>-1.422 dBm</td> </tr> <tr> <td>2</td> <td>(2)</td> <td>Freq</td> <td>2.44100 GHz</td> <td>-1.515 dBm</td> </tr> <tr> <td>3</td> <td>(3)</td> <td>Freq</td> <td>2.48000 GHz</td> <td>-2.09 dBm</td> </tr> </tbody> </table> <p>Center 2.441 GHz Span 100 MHz Res BW 1 MHz VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>File Catalog Save Load Delete Copy Rename More 1 of 2</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.40200 GHz	-1.422 dBm	2	(2)	Freq	2.44100 GHz	-1.515 dBm	3	(3)	Freq	2.48000 GHz	-2.09 dBm	
Marker	Trace	Type	X Axis	Amplitude																	
1	(1)	Freq	2.40200 GHz	-1.422 dBm																	
2	(2)	Freq	2.44100 GHz	-1.515 dBm																	
3	(3)	Freq	2.48000 GHz	-2.09 dBm																	

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (Fig.1)

- 1 Remove the four screws by tolcs driver (GGK1072) and then remove the Case.

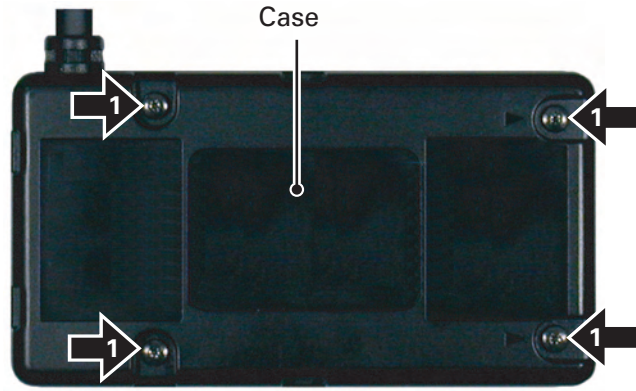


Fig.1

● Removing the Bluetooth Assy (Fig.2)

- 1 Remove the solder.
- Remove the Bluetooth Assy.

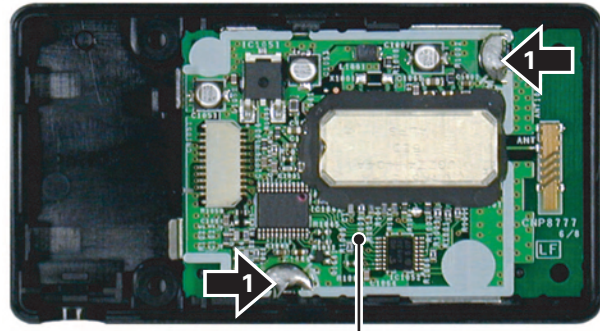
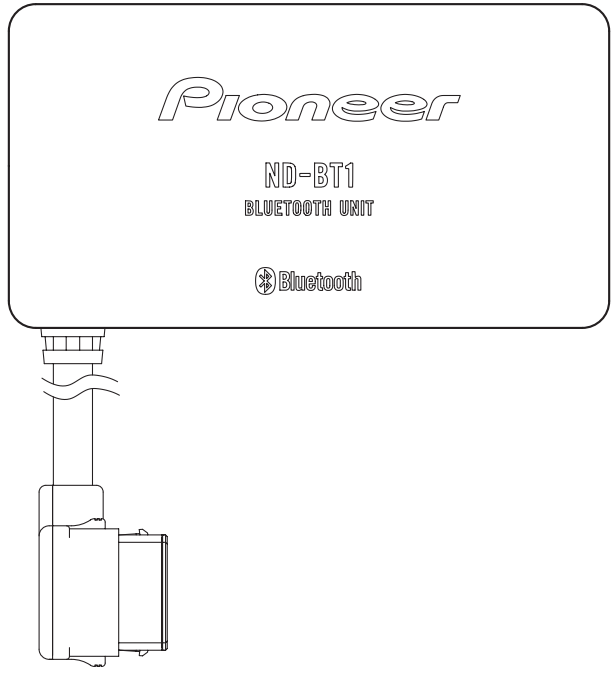
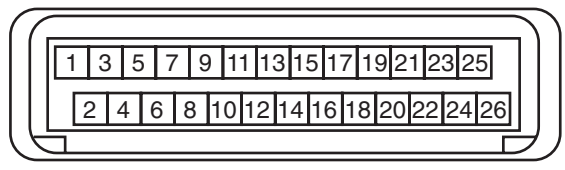


Fig.2



TO NAVIGATION UNIT

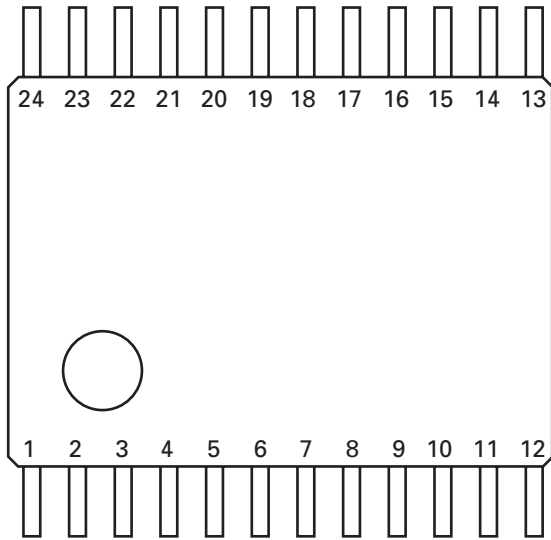


	Pin Name		Pin Name
1	DT2-	14	(NC)
2	MICIN	15	(NC)
3	TELOUT	16	BT_TX
4	(NC)	17	BT_CTS
5	AGND	18	BT_RX
6	BOOT_E	19	/CE
7	BT_RST	20	BT_RTS
8	(NC)	21	(NC)
9	BT_TEST	22	(NC)
10	BT_MUTE	23	BT5V
11	(NC)	24	(NC)
12	(NC)	25	(NC)
13	(NC)	26	DGND
		GNDE	GND

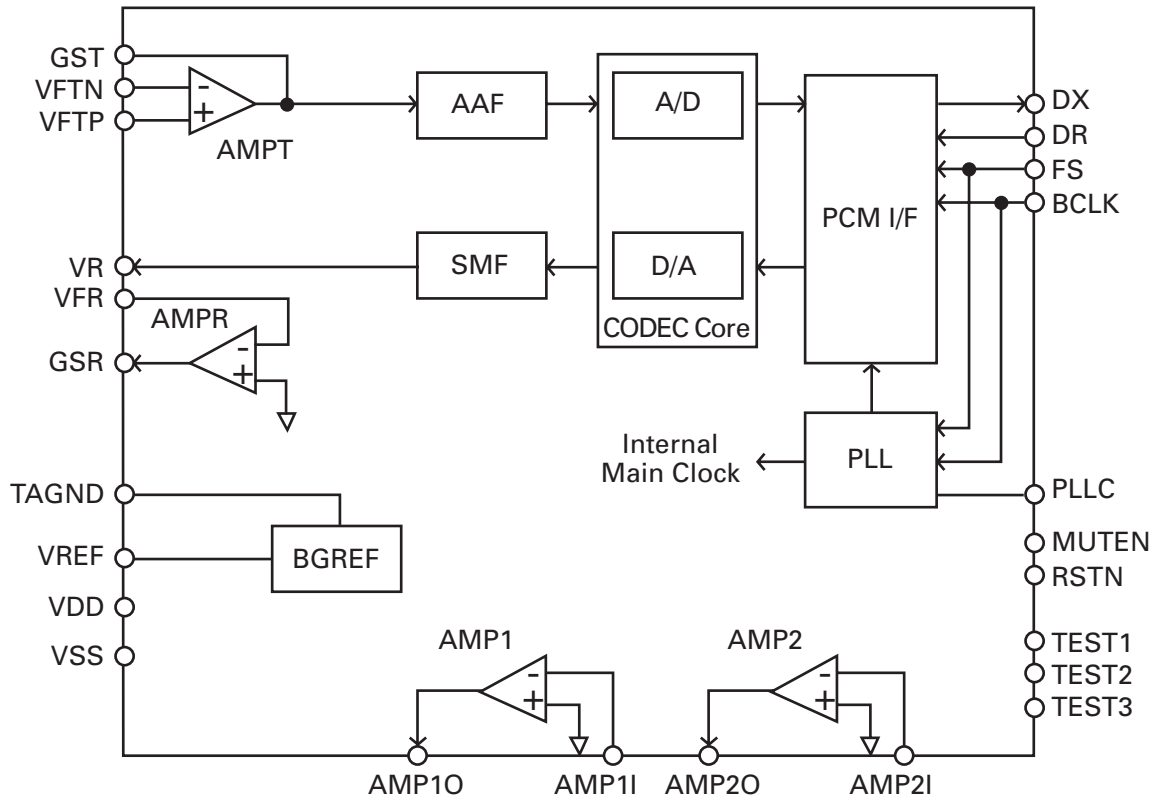
7.2 IC

AK2301A

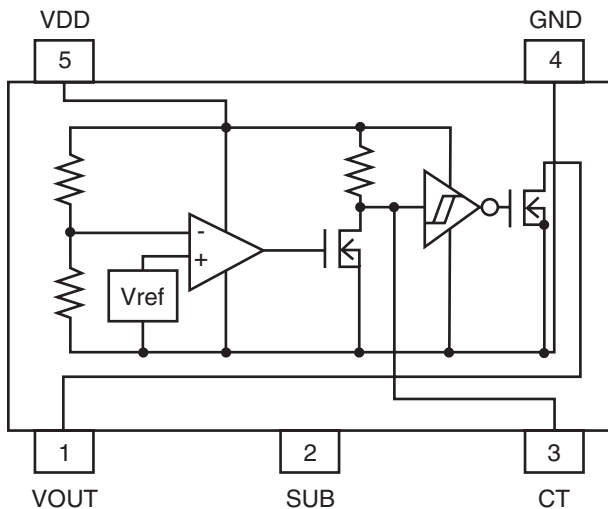
● Pin Layout



● Block Diagram



BD5230FVE



A
B
C
D
E
F

8. OPERATIONS

About this unit

This unit is used to connect a Bluetooth enabled cellular phone to a Pioneer HDD Navigation System.

About Bluetooth



Bluetooth is a short-range wireless radio connectivity technology that is developed as a cable replacement for cellular phones, handheld PCs and other devices. Bluetooth operates in 2.4 GHz frequency range and transmits voice and data at speeds up to 1 megabit per second. Bluetooth was launched by a special interest group (SIG) that comprises of Ericsson Inc., Intel Corp., Nokia Corp., Toshiba and IBM in 1998, and it is currently developed by nearly 2 000 companies worldwide.

- The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Pioneer Corporation is under license. Other trademarks and trade names are those of their respective owners.

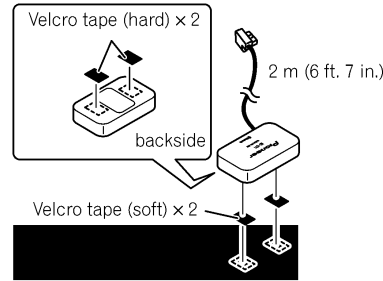
Operating environment

This unit should be used within the temperature ranges shown below.

Operating temperature range : -10 to +60 °C
(14 to 140 °F)
EN300328 ETC test temperature : -20 and +55 °C
(-4 and 131 °F)

- The line-of-sight distance between this unit and your cellular phone must be 10 meters or less in sending and receiving voice and data via Bluetooth technology. However, the transmission distance may become shorter than the estimated distance, depending on the environment in use.
- There are some Bluetooth enabled cellular phones that can be incompatible with this unit due to their Bluetooth version.
- The performance test of this unit with all Bluetooth enabled cellular phones is not conducted. Also, it is not guaranteed that this unit can be connected to all Bluetooth enabled cellular phones.
- About the Bluetooth profile and its overview
It is required that the Bluetooth enabled cellular phone to be connected to this unit is implemented with the same profile.
HFP (Hands Free Profile): the profile used for hands-free calling
OPP (Object Push Profile): the profile used for transferring data such as address books

Installation notes



- This unit may be installed in relatively unnoticeable positions such as the passenger seat floor, however, before fixing the unit, check the reception condition of the Bluetooth unit with the setup-status monitor of navigation system.
- Referring to Operation Manual included in navigation system, check the connection and fine-tune the reception of this unit.
- Thoroughly wipe off the surface before affixing the velcro tape.
- Do not install the unit where it may (i) obstruct the driver's vision, (ii) impair the performance of any of the vehicle's operating systems or safety features, including air bags, hazard lamp buttons or (iii) impair the driver's ability to safely operate the vehicle.
- When disconnecting a connector, pull the connector itself. Do not pull the lead, as you may pull it out of the connector.
- Do not install the unit in places where it may become subject to high temperatures or humidity, such as:
 - * Places close to a heater outlet.
 - * Places exposed to direct sunlight, such as on top of the dashboard or the rear shelf.
- Places that may be splashed by rain, for example close to the door.
- Use supplied velcro tapes to secure the unit so that it doesn't move. It is extremely dangerous if cords are exposed on the floor as they may become entangled with the brake pedal etc. Hide cords so that they do not get in the way when you are driving.
- Do not disassemble or modify this unit. To do so may cause a fault.

■

5

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6

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7

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8

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A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

ND-BT1/E5

■

7

■

8

■

● Jigs List

Name	Jig No.	Remarks
Torques screwdriver	GGK1072	Torques screwdriver(T6)

A

B

C

D

E

F

Service Manual

ORDER NO.
CRT3056

DVD MECHANISM MODULE(MS3)

CX-3016

- This service manual describes the operation of the DVD mechanism modules incorporated in the models listed below.
- When performing repairs use this manual together with the specific manual for the model under repair.
- The DVD mechanism MS3 has VIDEO-type and ROM-type models. This manual covers the operations for both models.

Model	Service Manual	DVD Mechanism Module
AVH-P6500DVD/UC	CRT3038	CXK6310
DVH-P5000MP/UC	CRT3074	CXK6312
AVH-P7500DVD/UC	CRT3039	CXK6300

CONTENTS

- 1. CIRCUIT DESCRIPTIONS2
- 2. MECHANISM DESCRIPTIONS.....15
- 3. DISASSEMBLY20

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

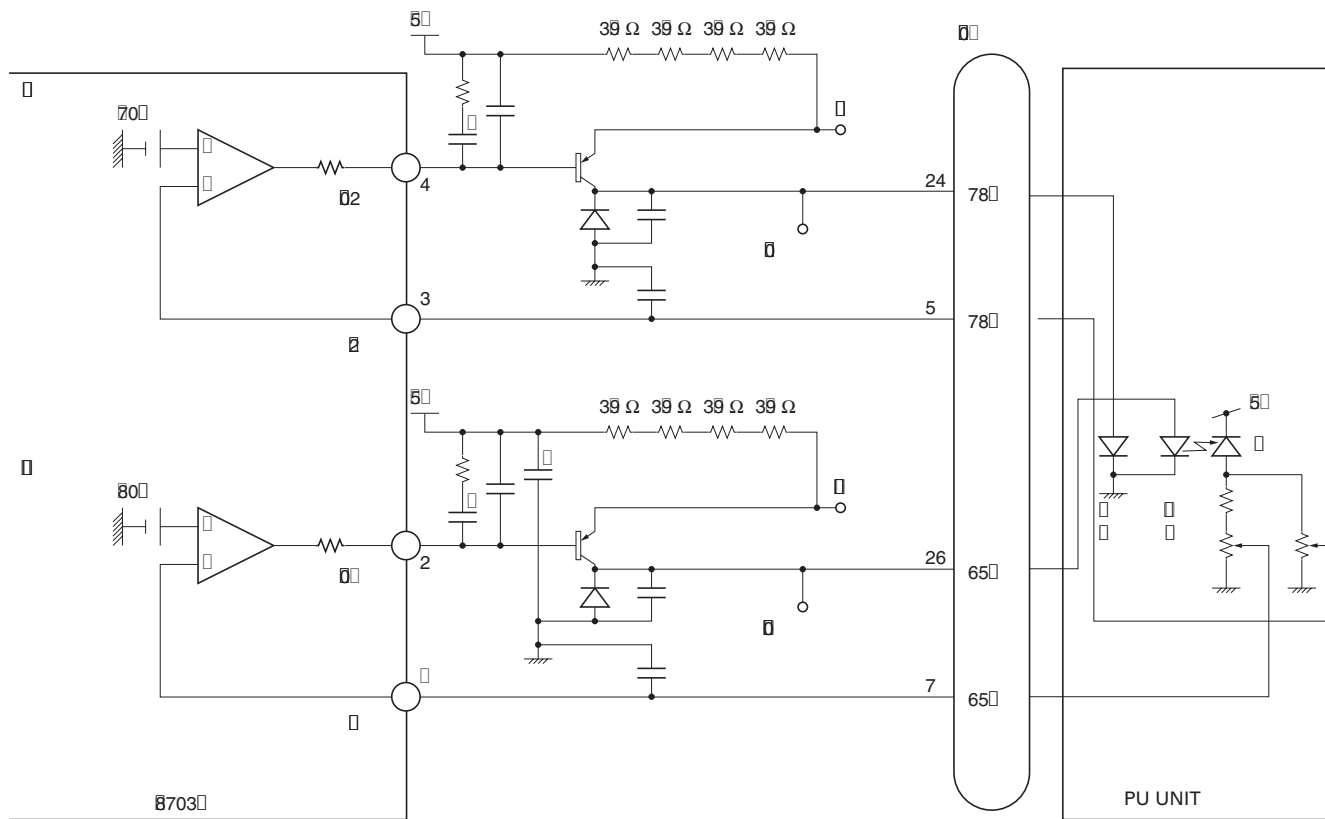
1.Circuit descriptions

1.1 Front-end processor (FEP) section (AN8703FH: IC1101)

The IC1101 generates servo signals for focus and tracking operations, processes the RF signal, and controls the laser power of the pickup.

For servo signal processing, the IC contains a focus operational amplifier, a focus balance adjustment circuit, a three-beam tracking operational amplifier, a phase-difference tracking detection circuit, a tracking balance adjustment circuit, and an envelope detection circuit.

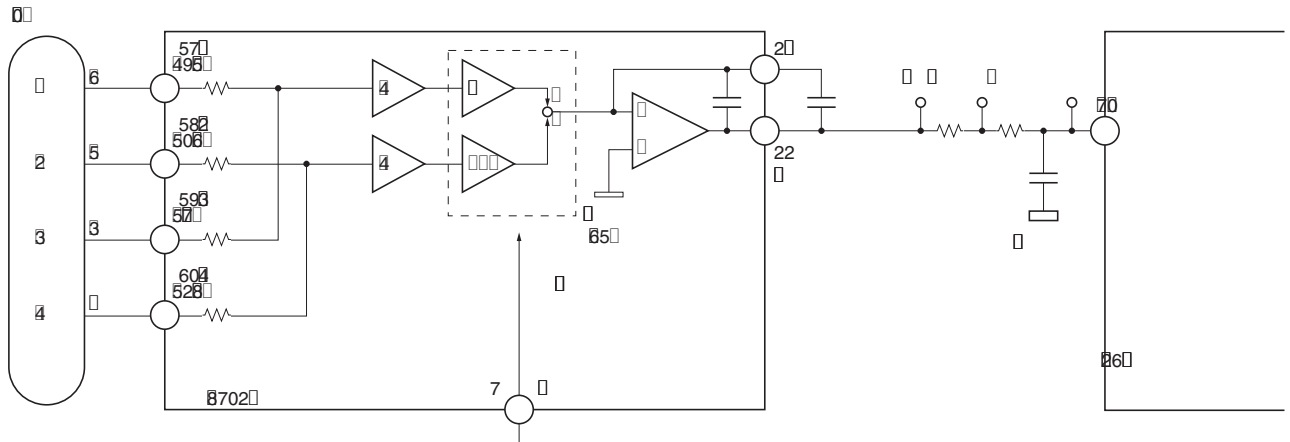
For the RF signal processing, the AGC and equalizer functions are contained in the IC.



1.1.1 APC circuit

The light output of laser diodes (LD) has largely negative thermal characteristics. If they are driven with a constant current, the laser power level will not be constant. The APC circuit is designed to control the current so that the laser power becomes constant through the monitor diode (MD). The IC AN8703FH contains two APC circuits, one for DVDs and the other for CDs. The LD current values for DVDs can be calculated by dividing the voltage between the DVDLD1 (or CDLD1 for CDs) and 5V line by 15.6 ohms (3.9 ohms x 4): approximately 26mA and 44mA for DVDs and CDs respectively.

1.1.2 Focus error (FE) generating circuit



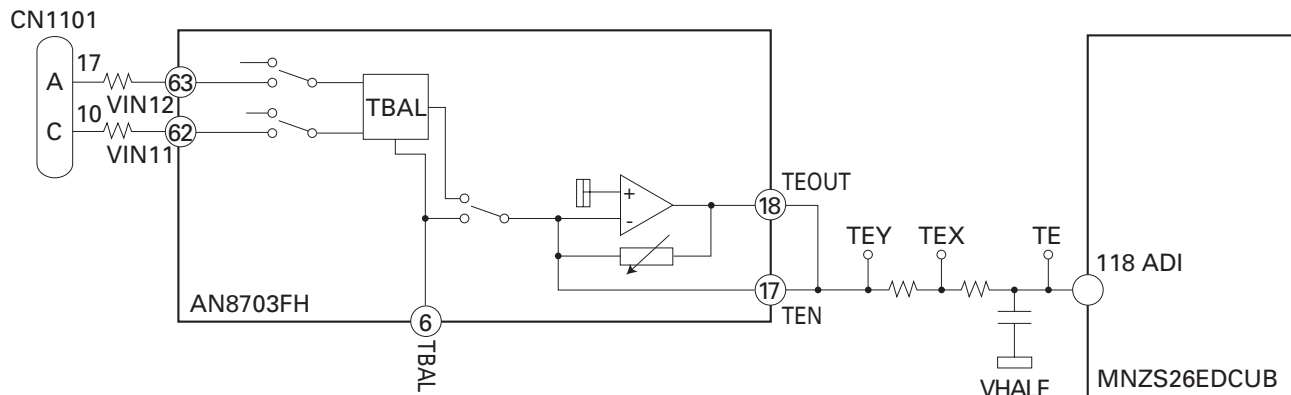
The pin numbers and names in the brackets are for CDs. The circuits for CDs and DVDs are identical, except for the input terminals of the signals B1 through B4.

Focus error (FE) generating circuit

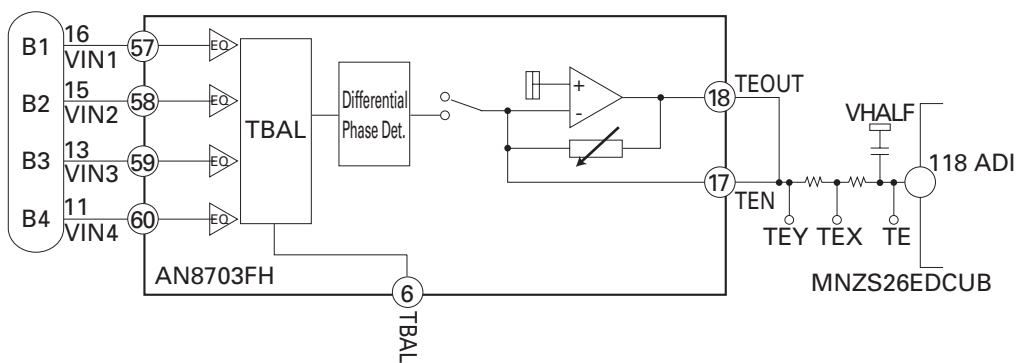
The signals B1 through B4, obtained by dividing the output in the pickup, are applied to the FE generating circuit. Inside the circuit, the $(B1 + B3)$ and $(B2 + B4)$ signals are generated via the internal resistors, fed into the variable amplifier for the focus balance adjustment, and finally the FE signal is generated by amplifying the $\{(B1 + B3) - (B2 + B4)\}$ signal.

1.1.3 Tracking error (TE) generating circuit

- CD (three-beam TE)



- DVD (phase difference TE)



Tracking error (TE) generating circuit

For DVDs, the TE signal is generated by utilizing the phase difference between the (B2 + B4) and (B1 + B3) signals (the phase difference method).

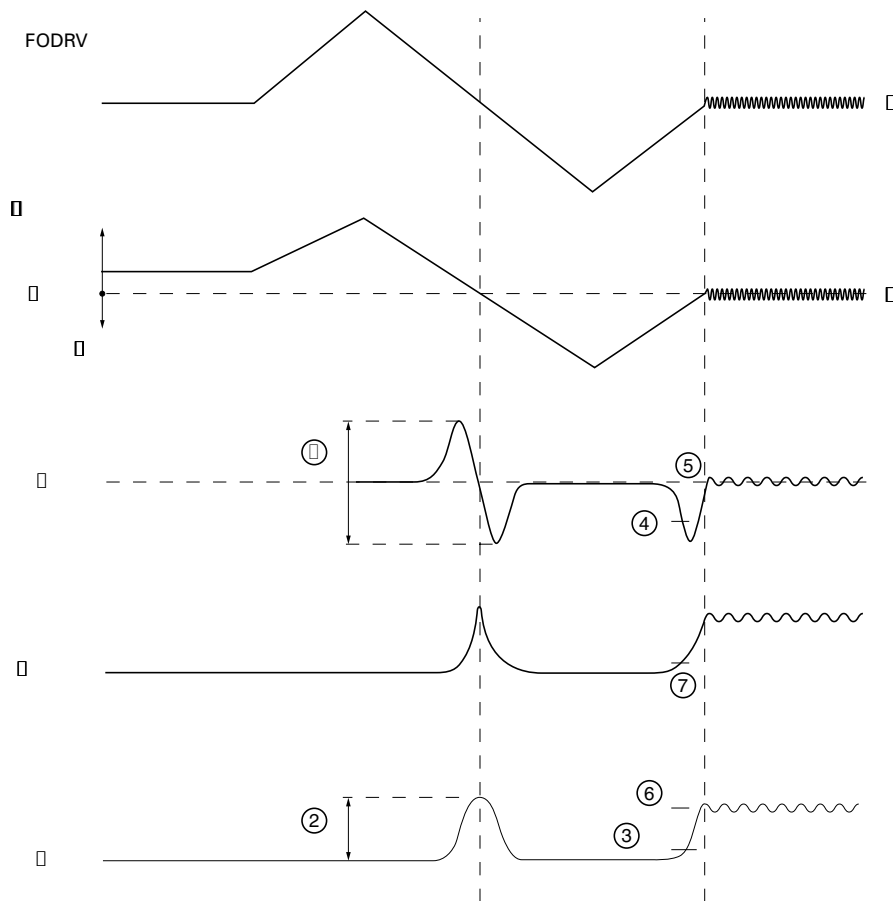
For CDs, the A and C signals are applied to the TE generating circuit via the external resistors. Inside the circuit the signals are fed to the variable amplifier for the tracking balance adjustment, and finally the TE signal is obtained by amplifying the (A - C) signal (the three-beam method).

1.2 Optical disc controller (SODC) section (MNZS26EDCUB: IC1301)

The IC1301, an optical disc controller (SODC) for DVD-ROM/DVD players, is one of a signal processing LSI conforming to the DVD standards.

This IC works as a servo controller for the focus, tracking and traverse operations, a spindle motor controller, a seek controller, a digital signal processor for DVD-ROM/RAM reproduction (8/6 demodulation and error correction), and a digital signal processor for CD-ROMs (error correction). In the DSC (Disc Servo Controller) employing an arithmetic processor as a core, analog circuits such as A/D and D/A converters and PLL, and digital circuits including a PWM converter and a cycle timer are contained. In the CIRC, a digital signal processor for CD-DA and CD-ROMs (EFM demodulation and error correction), a spindle motor digital servo processor, and a 1-bit D/A converter with a digital filter (with a secondary low-pass filter, differential OP amplifier output) are prepared. This LSI has easily realized a complete CD/DVD-ROM system.

1.2.1 Focus close



After a focus close command is issued, the following procedures are performed irrespective of DVDs and CDs:

1. Measuring and optimizing the signal levels

The pickup lens initially moves away from the disc, and then toward the disc. When the pickup lens passes the focal point, the FE, AS and RFENV signal levels are measured to optimize the FE and AS signal levels (1 and 2 shown in the above diagram).

2. Focus closing

Next, the pickup lens moves away from the disc to detect the focus closing levels for FE and AS signals. The focus loop filter operates to close the focus loop (3 through 6 in the above diagram).

3. Verifying focus close completion

The focus close completion is verified by observing the AS and RFENV signal levels (6 and 7 in the above diagram).

In the test mode, focus search is used to verify the FE, AS and RFENV signal levels and the focus drive voltage.

1.2.2 Tracking close

After a tracking-close command is issued, the following procedures are performed irrespective of DVDs and CDs:

1. Tracking brake

A half cycle of the track-cross (TKC) signal is measured. If the measured cycle falls within the prescribed range, then a brake pulse signal is output. The direction of the brake pulse depends on the relation in phase between the OFTR signal and TKC signal (which is obtained by converting the TE signal into a binary signal). When it is confirmed that the stability in lens operation against the disc has been obtained, the brake pulse output will be terminated, and the operation will proceed to the track-closing mode. If it is not confirmed, the brake pulse output will be terminated 10msec. after the brake pulse signal is output, then the operation will automatically proceed to the track-closing mode.

2. Tracking closing

The tracking drive-hold process is performed with the OFTR signal.

3. Verifying tracking close completion

The success or failure in tracking close depends on the number of tracks that the pickup crosses within the prescribed period. That is, when the number is the prescribed one or less, the system senses that the tracking close is completed. The time limit for the tracking close verification process is 20msec. The retry operation will be carried out with the command from the microcomputer if the verification has not been completed within the time limit.

1.2.3 Track jump

This system performs track jumps by selecting the following three modes depending on the number of tracks to be skipped: Interval jump, multi jump and traverse jump.

1. Interval jump

In this mode, a single-track jump is performed repeatedly. This mode is used for fine seek operation when the pickup has approached the target track or adjacent tracks are targeted.

2. Multi jump

This mode performs the pickup track-count movement by counting both edges of the TKC signal to jump the target number of tracks.

3. Traverse seek

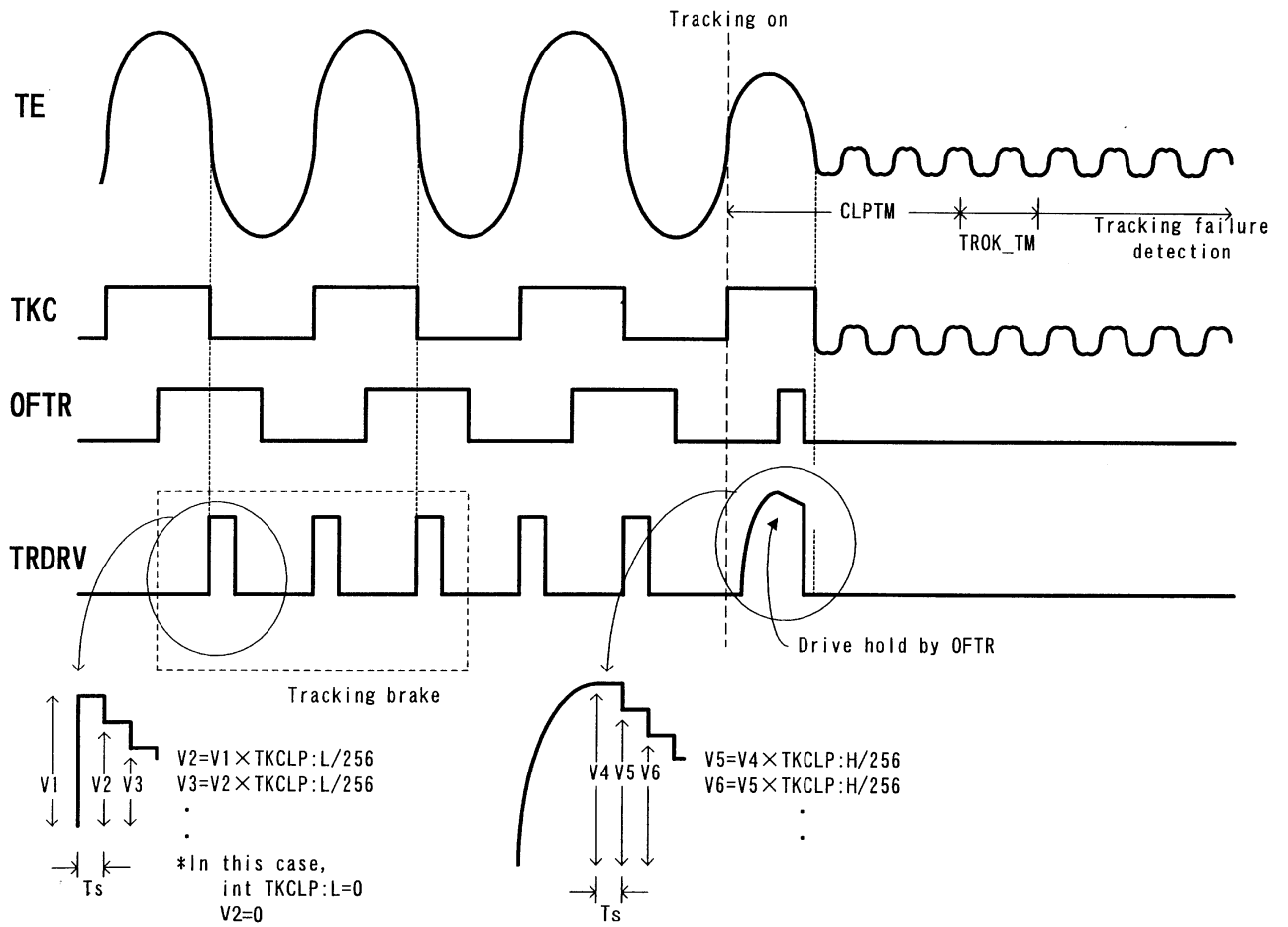
In this mode, the time is measured with the TKC signal to control the pickup speed. During the movement of the pickup, its vibration is minimized.

The track-jump mode settings for DVDs and CDs are shown below:

Target number of tracks	Track jump mode
1~10	Interval jump
11~100	Multi jump
101~500	Combination of multi jump and interval jump
501~	Traverse seek

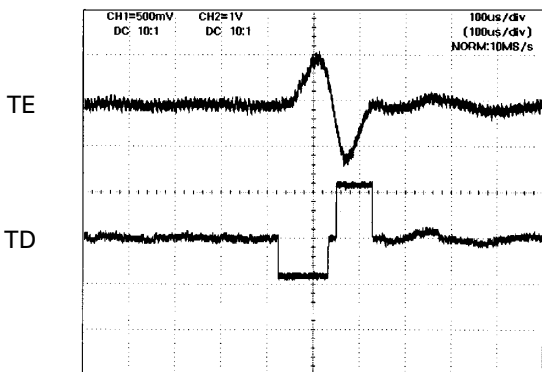
The waveform in each of the track-jump modes is shown in the following pages.

Tracking-on process

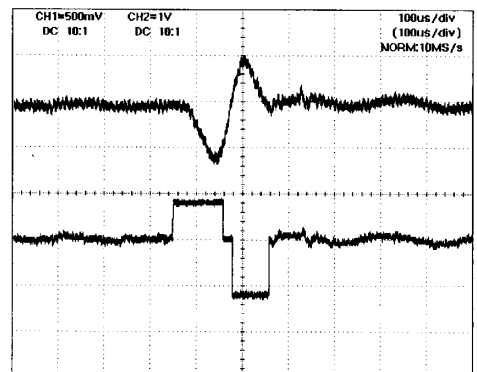


Interval jump (one track)

Toward outer tracks

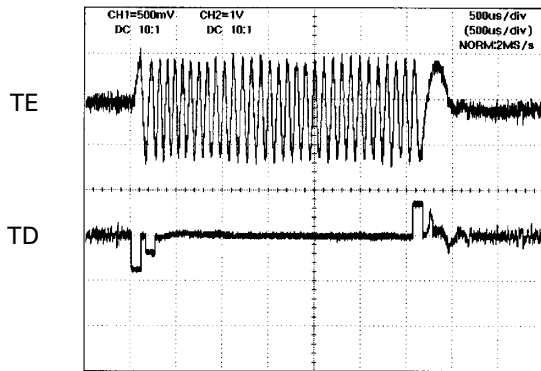


Toward inner tracks

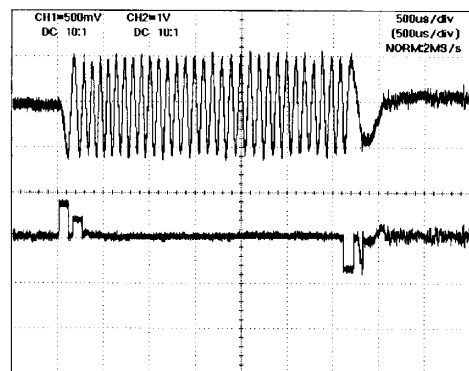


Multi jump (32 tracks)

Toward outer tracks

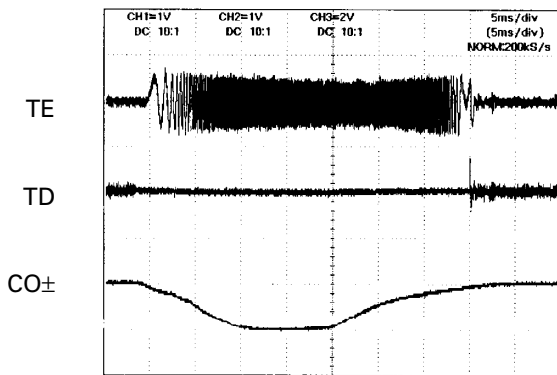


Toward inner tracks

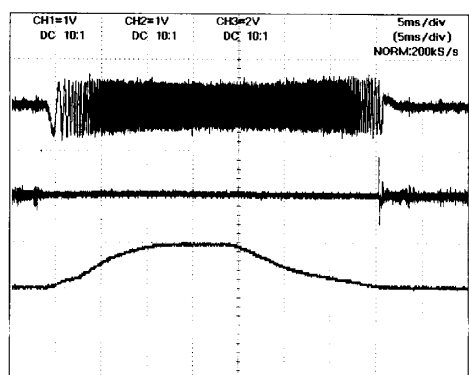


Traverse seek (501 tracks)

Toward outer tracks

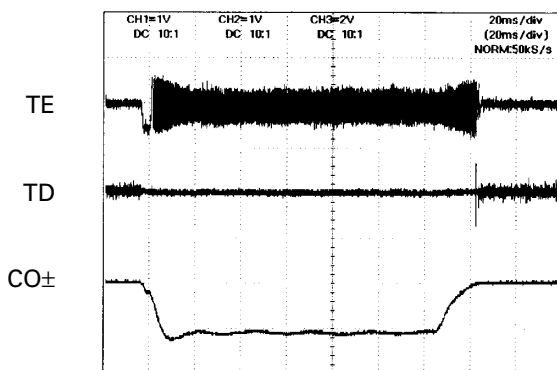


Toward inner tracks

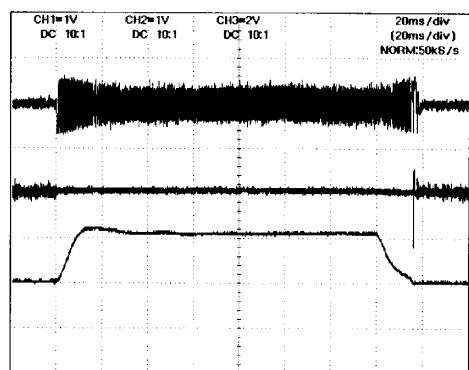


Traverse seek (5,000 tracks)

Toward outer tracks

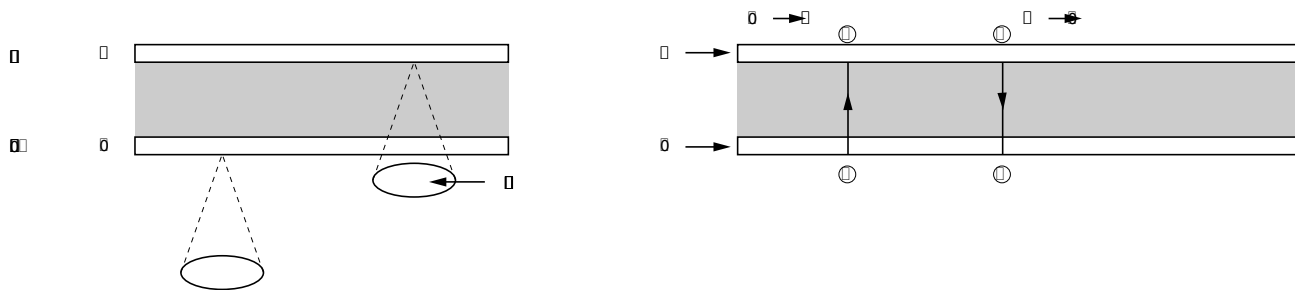


Toward inner tracks



1.2.4 Focus jump

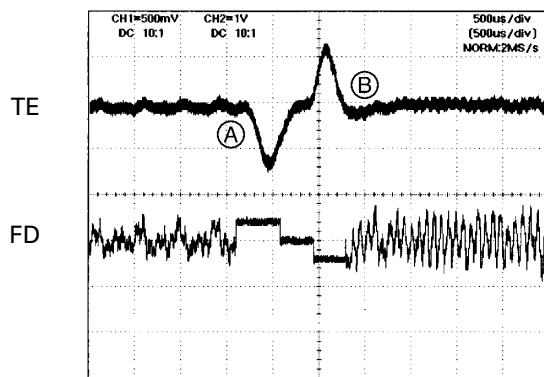
Focus jump is used for single-sided, double-layered or double-sided, double-layered discs. The layer closest to the objective lens is called layer 0 (L0), and the other layer is layer 1 (L1).



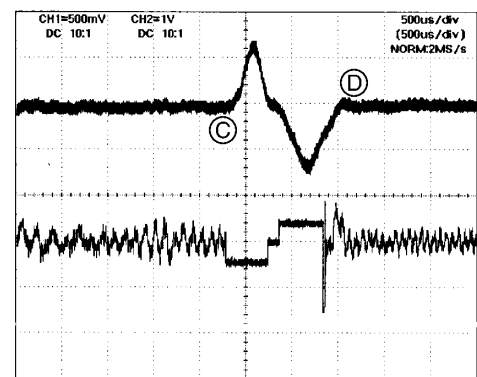
The waveforms in the focus jump mode are shown below:

Focus jump waveform

L0→L1



L1→L0



The focus-jump operation flow is described below:

1. The tracking loop is unlocked on the layer that is being played.
2. A jump command is issued to jump to the targeted layer.
3. The tracking loop closes on the targeted layer and reproduction starts.

The detailed processes after a jump command is issued are as follows:

1. The pickup lens is accelerated towards the target layer until the FE signal detects the focus jump acceleration completion level. If the acceleration timeout occurs before the acceleration completion level is detected, the acceleration is forcibly terminated.
2. No drive voltage is applied until the FE signal detects the deceleration starting level, and the lens is kept moving by the inertia.
3. With the deceleration starting level detected, the lens starts decelerating, and continues it until the deceleration completion level is detected. If the deceleration timeout occurs before the deceleration completion level is detected, the deceleration is forcibly terminated.

1.3 Automatic adjustment functions

This system automatically performs all circuit adjustments by combined operations of the ICs AN8703FH (FEP) and MNZS26EDCUB (SODC). Each automatic adjustment function is explained below:

1.3.1 FE, TE and AS offset cancel

The analog signals FE, TE and AS, generated by the FEP, are A/D-converted by the A/D converter inside the SODC. When the power is turned on, the offset cancel works to cancel the input offset of the A/D converter.

1.3.2 Data slice balance (DBAL) adjustment

The DBAL adjustment is made to adjust the data-slice level that is used when the RF signal from the FEP is converted to a binary signal in the SODC. When the power is turned on, the test signal of the constant frequency is output from the SODC and the jitter component of the signal is adjusted to the minimum.

•In the same manner as the above, the PLL balance (PBAL) adjustment is made to optimize the current level balance between the P-ch and N-ch sides of the chargeable pump.

1.3.3 FE regulating adjustment

The FE signal level measured when the focus loop is closed is A/D-converted in the SODC. Then it is adjusted so that it becomes 190LSB at the input stage of the digital equalizer.

1.3.4 Spindle gain learning

The time is measured that is required for the spindle motor to start rotating in the stop mode and reach the prescribed rotation. The measured time is used to adjust the SPDL gain, thereby absorbing the variation in the motor torque.

1.3.5 Tracking balance (TBAL) adjustment

In the focus close and tracking open mode, the lens is vibrated in the tracking direction. The tracking balance is adjusted so that the DC offset becomes zero (the balance point) by using the Newton-Raphson's method.

1.3.6 Tracking error amplitude learning

In the focus close and tracking open mode, the lens is vibrated in the tracking direction. After A/D-converted in the ADSC, the amplitude level of the TE signal is adjusted so that it becomes 190LSB at the input stage of the digital equalizer.

1.3.7 Focus balance (FBAL) adjustment

In the tracking close mode, the focusing position is adjusted by minimizing the RFENV.

1.3.8 Focus gain and tracking gain adjustments

In the tracking close mode, some disturbance signal is applied to the servo loops. The focus and tracking gains are adjusted to the target gain cross points.

1.3.9 AS regulating adjustment

In the tracking close mode, the AS signal level is sampled the prescribed times. After A/D-converted in the ADSC, this signal is adjusted so that it becomes 64LSB at the input stage of the digital equalizer.

For each automatic adjustment, the adjustment results can be displayed in the test mode for verification.

Condition	Coefficient name	DVD	CD
Power-on	FE offset	FC44 - 03BC	FABB - 0545
	TE offset	EF90 - 1070	F435 - 0BCB
	AS offset	FBBB - 0745	F8BB - 0745
Focus close	Spindle gain	01CF - 048D	01CF - 048D
	FE maximum	1767 - 462B	15C2 - 485A
	FE minimum	B9D5 - E899	B7A6 - EA3E
	AS maximum	1006 - 2AD5	0E96 - 26FD
	FE regulation	014E - 044E	0142 - 04AB
Focus close (after TBAL)	TE maximum	199E - 4776	147C - 43D6
	TE minimum	B88A - E662	BC2A - EB84
	TE regulation	00F7 - 03AE	00EF - 0428
Tracking close	Focus gain	0100 - 0400	0100 - 0400
	Tracking gain	0100 - 0400	0100 - 0400
	AS regulation	0170 - 04BF	0192 - 05D0

Notes:

The coefficient values are indicated in the hexadecimal system.

The specifications shown above are for the production line.

The used discs are DVD-REF-A1 and TCD-782 for DVDs and CDs respectively.

1.4 Back-end section

As described before, in the front-end processor and optical disc controller, the data is read out from a disc, and processed for demodulation and error correction.

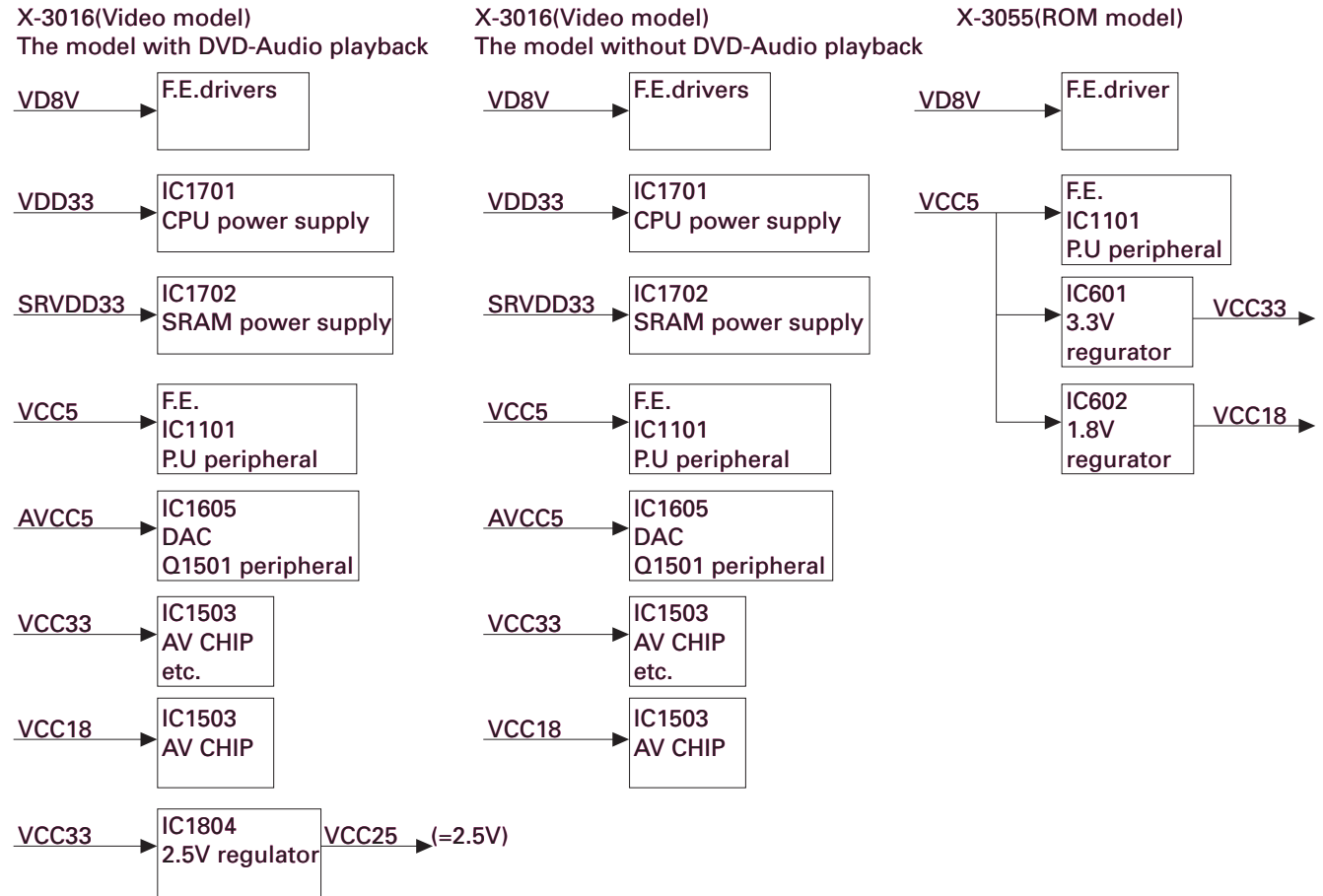
Here in the back-end section, through the MPEG decoding, compressed audio decoding and other processing, the data is output as video and audio signals.

The back-end section, including the microcomputer, its peripheral circuits, and power supply, is explained below:

1.4.1 Back-end power supply

The back-end power supply for each model is shown below.

The video-type model with DVD-Audio reproduction function has the 2.5V internal regulator, but the video-type model without DVD-Audio reproduction function does not. The ROM-type has a different power supply circuit from those for the video-type models.



Power supply configuration

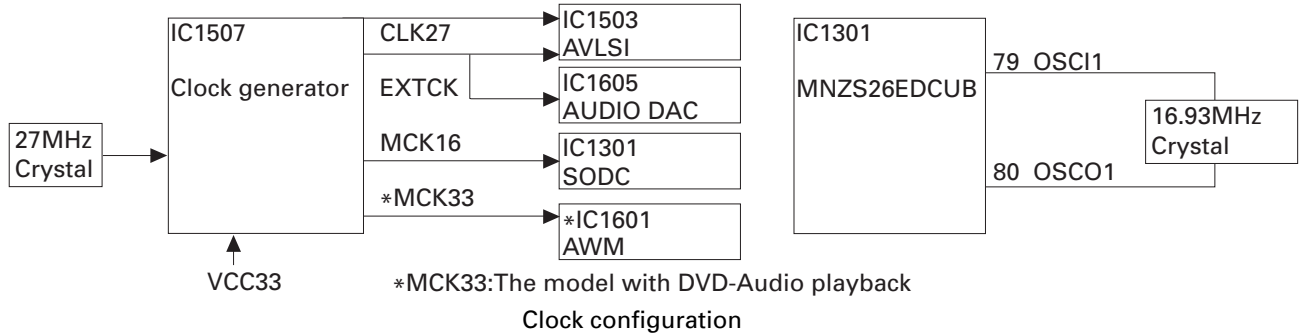
1.4.2 Back-end clock section

For the Video-type models:

An oscillating crystal of 27MHz is used to generate the 27MHz buffer-out (CLK27), audio section clock (EXTCK), and front-end section clock (MCK16) signals by the IC1507.

For the ROM-type model:

An oscillating crystal of 16.93MHz is used to generate the front-end section clock (MCK16) signal by the IC1301.

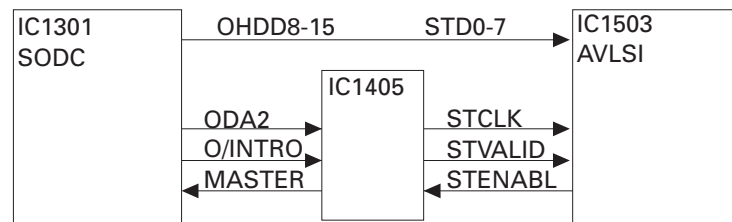


1.4.3 Back-end stream I/F section (only for the video-type models)

This section functions as an interface to transfer the data read out in the front-end section, between the SODC and the back-end section.

For DVDs, this section transfers MPEG data, which is generally called MPEG stream. Therefore, the I/F section is called stream I/F.

Note that the signals are given different names between the IC1301 SODC and IC1503 AVLSI.



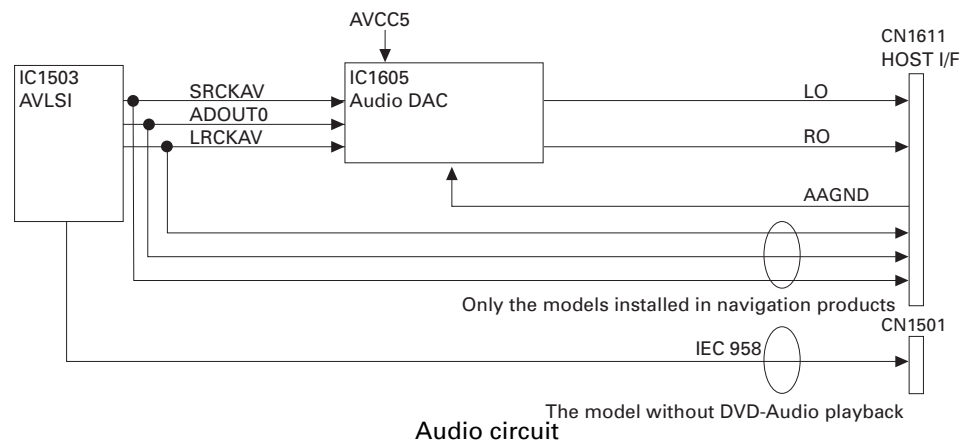
Streaming I/F

1.4.4 Back-end audio circuit section (only for the video-type models)

The three serial audio signals, output from the AVLSI, are applied to the IC1605 (Audio DAC), where they are converted into analog audio signals. These analog signals are output from the HOST I/F.

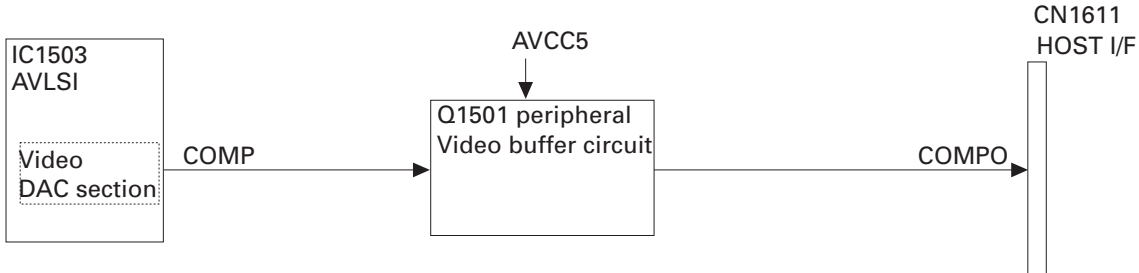
Only for the models installed in navigation products, after output from the AVLSI, the same serial signals are directly put out from the HOST I/F.

The IEC958 (audio/digital out) is available only for the model without DVD-Audio playback function.



1.4.5 Back-end video circuit section (only for the video-type models)

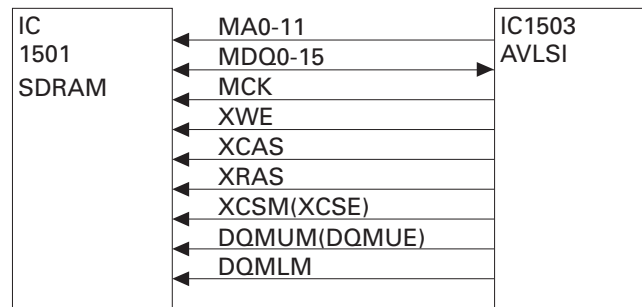
The composite video signal from the video DAC circuit inside the AVLSI is output from the HOST I/F via the video buffer circuit.



Video circuit

1.4.6 Back-end SDRAM I/F section (only for the video-type models)

For the SDRAM, which functions as the communication I/F between the AVLSI and the memory, a 64Mbit IC has employed to secure the MPEG stream data buffer.

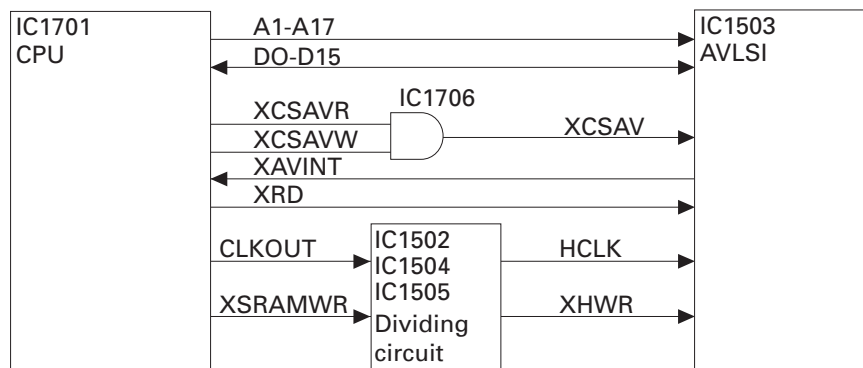


SDRAM interface

1.4.7 Back-end microcomputer I/F section (only for the video-type models)

This section works as a communication interface between the AVLSI and the CPU.

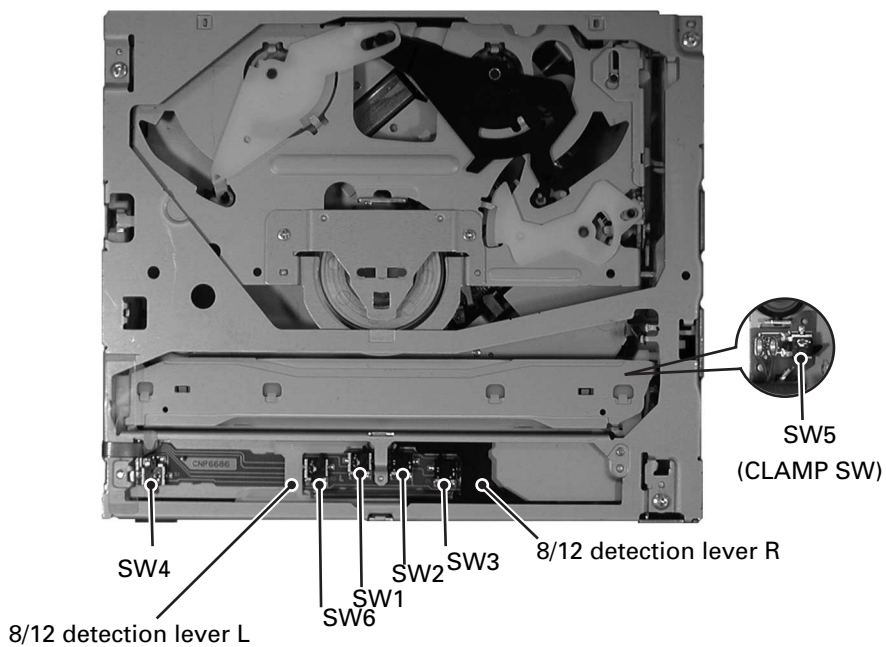
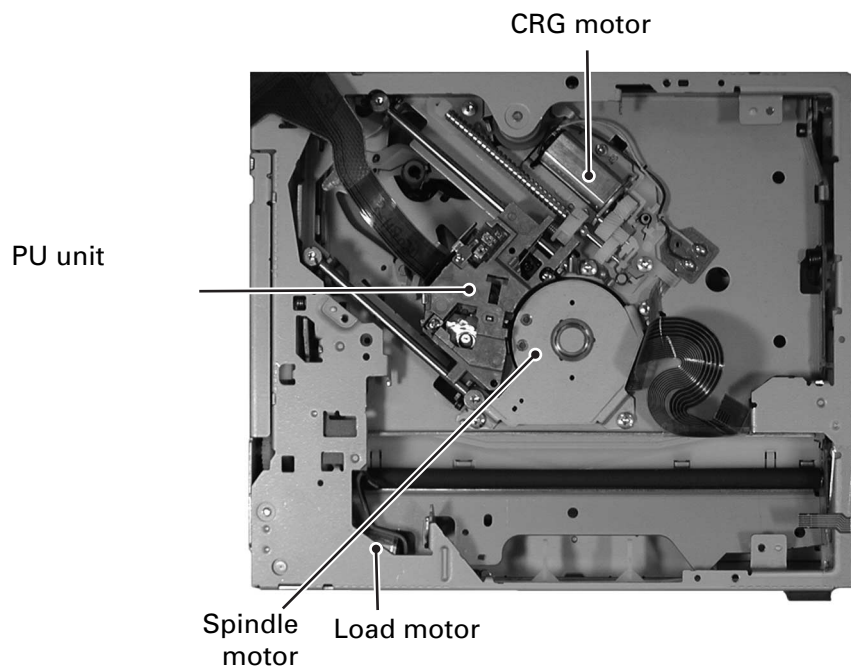
In order to match the operating frequency for the CPU with that for the AVLSI, a frequency dividing circuit is inserted as shown below.



Microcomputer interface

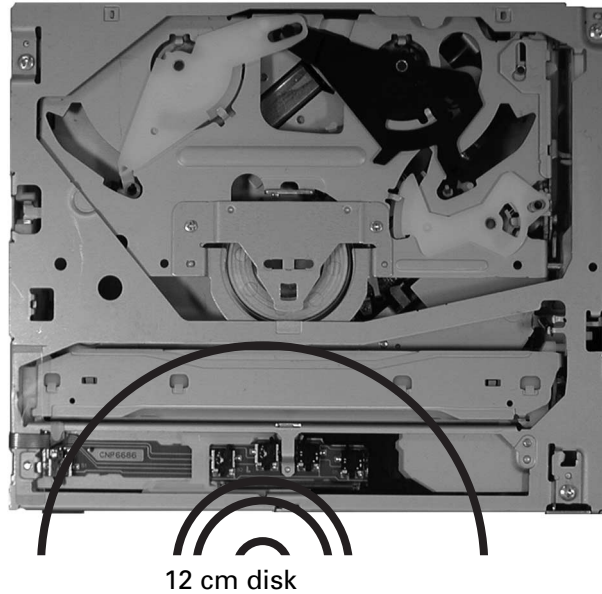
2. Mechanism descriptions

Configuration

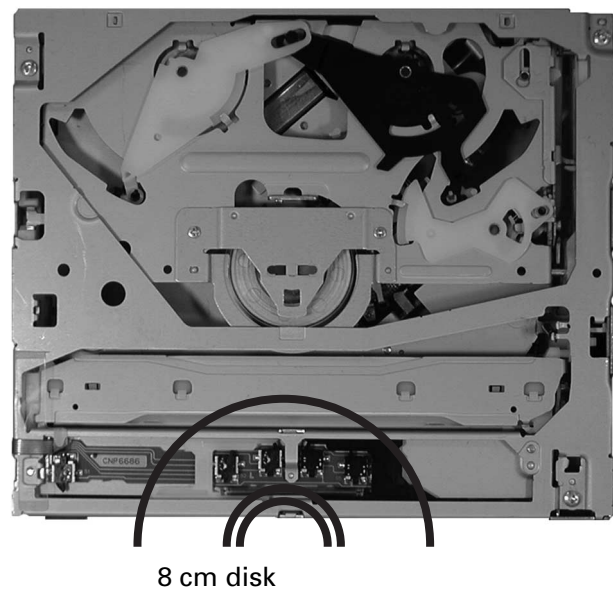
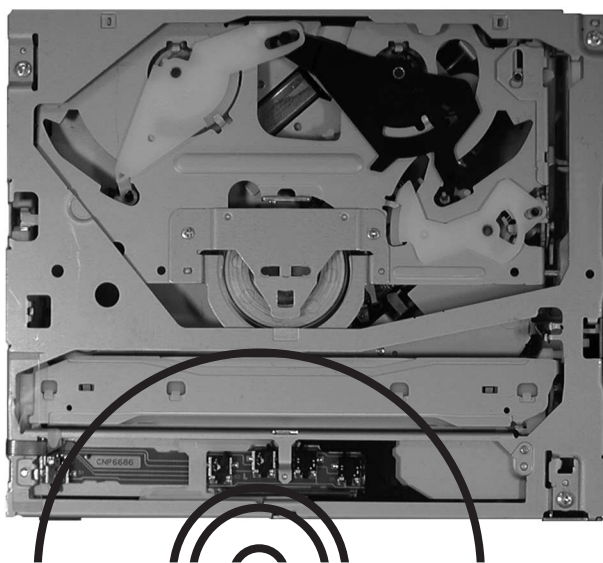


2.1 Disc loading operation

1. When a disc is inserted, the 8/12-detection levers R and L slide. Either of the switches SW1 and SW2 is shifted from ON to OFF, which triggers the operation of the loading motor.
2. For a 12cm disc, the switch SW3 is turned OFF and SW4 is ON during disc transportation. The microcomputer senses that a 12cm disc is loaded.

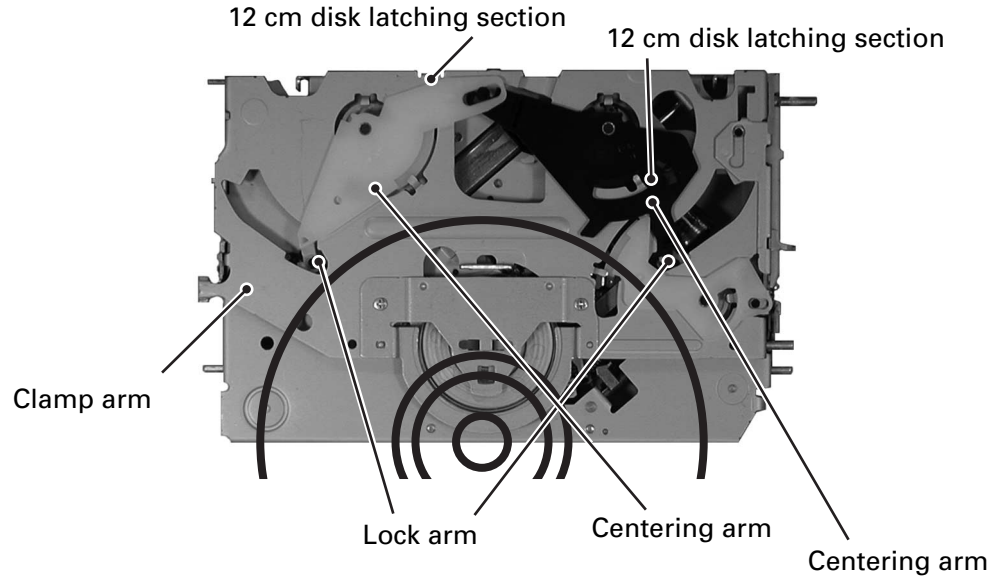


3. For an 8cm disc, neither the switch SW3 nor SW4 will be shifted to the above states (SW3: OFF, SW4:ON) during disc transportation. The operation mode proceeds to the clamp operation. The microcomputer senses that an 8cm disc is loaded.

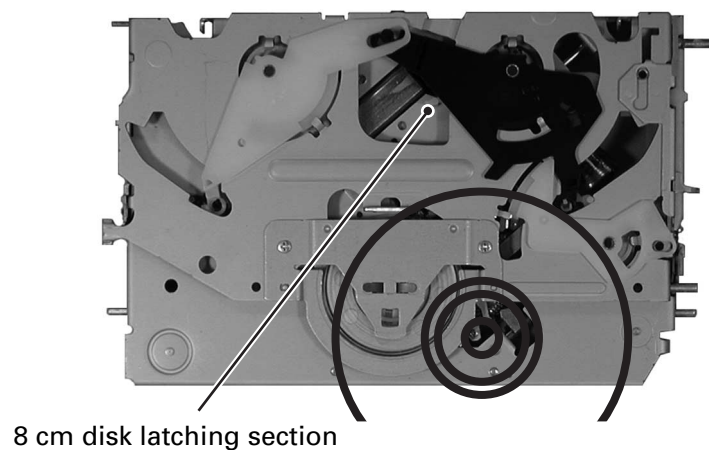


2.2 Disc centering mechanism

1. With a 12cm disc loaded, the disc pushes both of the lock arms R and L to open the centering arms R and L. Then, the clamp arm or the stopper of the centering arm R stops the disc for centering. The operation mode proceeds to the clamp operation.

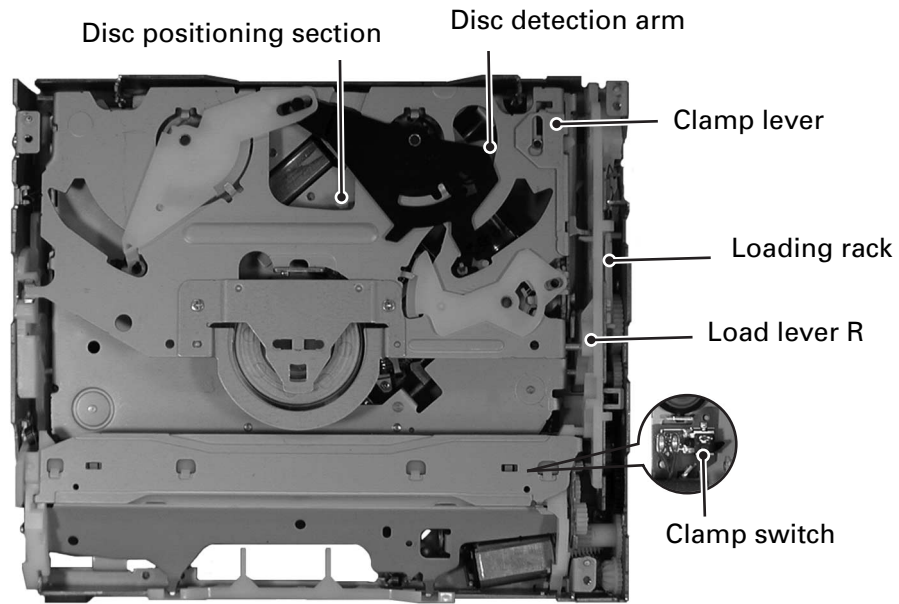


2. With an 8cm disc loaded, the disc pushes either of the lock arms R and L. The lock arms R and L are connected each other via the centering arms R and L. The lock arms R and L will be kept locked unless the disc pushes them at the same time. Therefore, the lock arm blocks the disc for centering. During disc centering, the disc pushes out the disc detection arm. When the detection arm completes moving, the disc stops. The operation mode proceeds to the clamp operation.

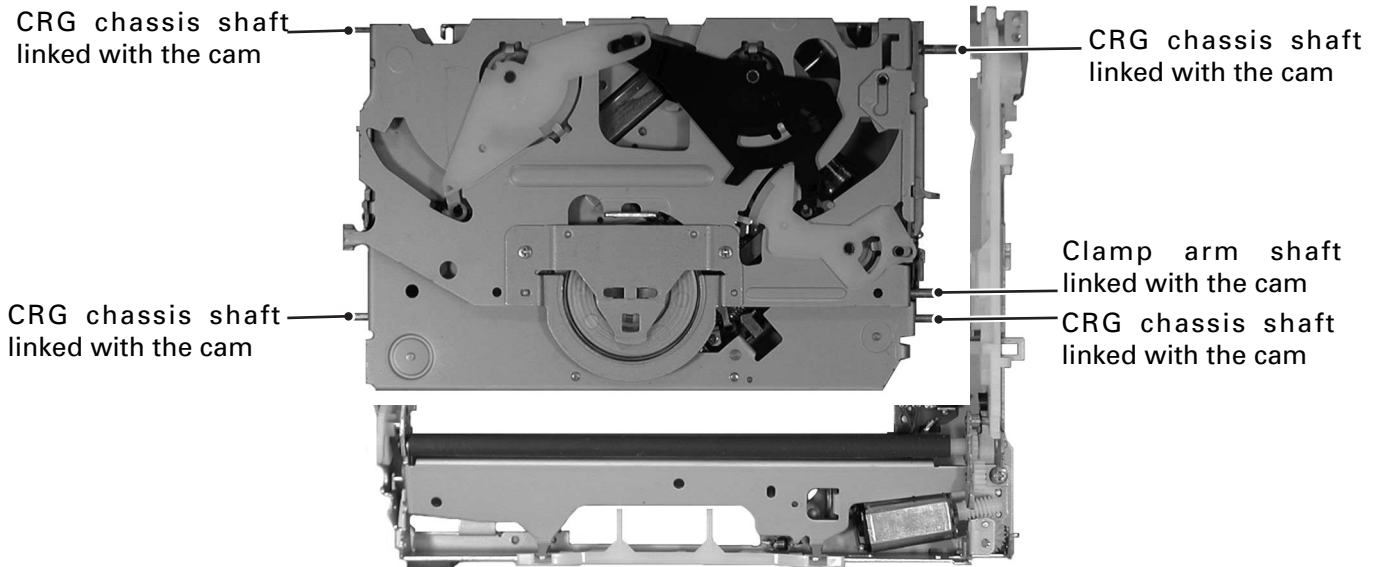


2.3 Clamp operation

1. When an 8 or 12 cm disc is centered over the spindle, the disc detection arm moves the clamp lever. The loading rack driven by the clamp lever is engaged with the lever driving gear, which triggers the disc clamp operation.



2. When pressed by the loading rack, the load lever R moves toward the front side, and the roller shaft, which is connected to the cam of the load lever R, moves downward. The roller shaft is connected to the cam of the cam ring also. Therefore, the drive of the roller shaft is transferred to the load lever L via the cam ring. The load lever L moves toward the front side. The load lever cams are released from the three shafts for the CRG chassis unit and the clamp arm shaft. When the load lever R turns on the clamp switch, the clamp operation ends.



2.4 Eject operation

1. When the loading motor turns in reverse, the disc eject operation begins.
2. With a 12cm disc loaded, when the SW4 is shifted from OFF to ON, and then OFF again, the eject operation ends.
3. With an 8cm disc loaded, when the SW3 or SW 6 is shifted from ON to OFF, and then both switches are turned ON, the eject operation ends.

3. Disassembly

● Precautions on handling the mechanism module

1. Hold the upper and main frames.
2. Do not hold the front portion of the upper frame. It is a delicate part.
3. Do not touch the switches on the top panel.
4. Be careful not to catch the flexible cables.

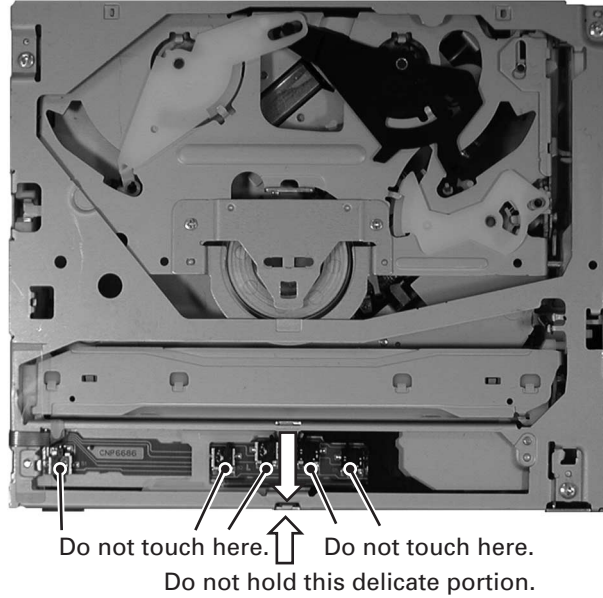


Fig. 1

● Removing the module pc board (fig.2 and 3)

1. Set the mechanism to the lock position (disc load standby position).
2. Place the mechanism module upside down.
3. Short the two lands on the pickup flexible cable as shown below.
4. Be sure to disconnect the pickup flexible cable and the CRG flexible cable from the connectors to protect them from damages.
5. Remove solder from the load motor leads and clamp SW leads.
6. Loosen the two fixing screws. Lift the position A of the module pc board lightly and move it in the direction B to remove it. Be careful not to damage the flexible cable C.
7. Disconnect the 8/12 detection flexible-cable from the connector.

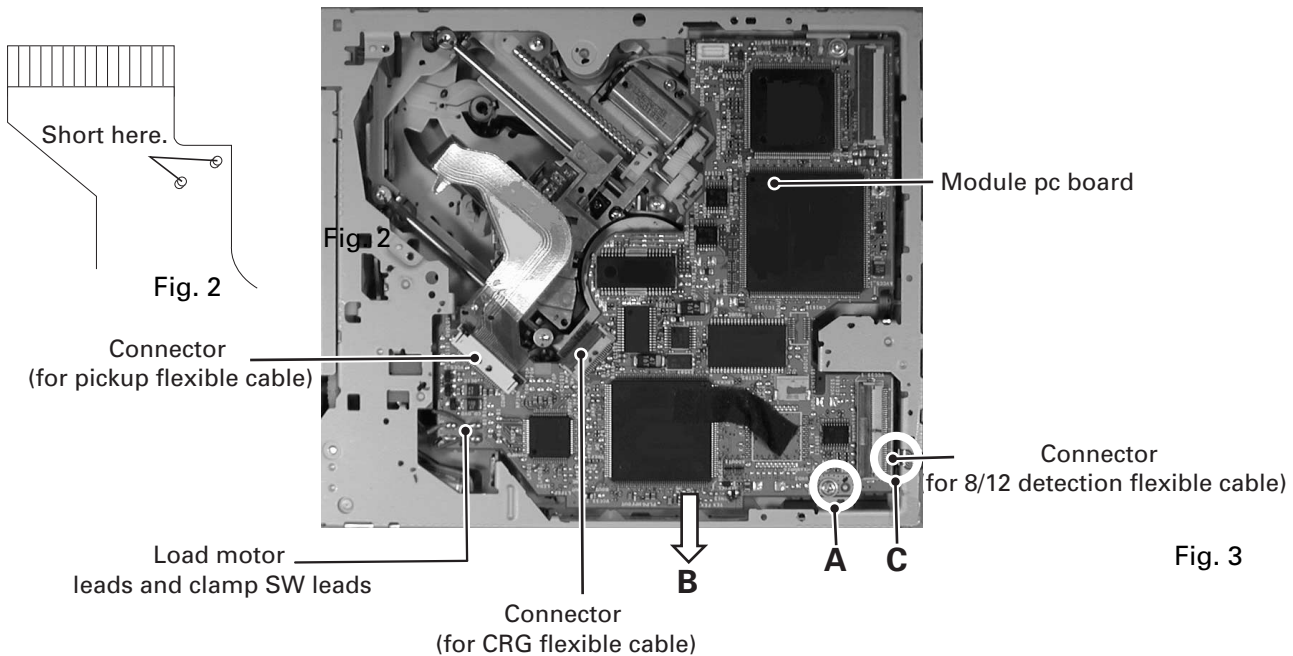


Fig. 3

● Removing the pickup unit (fig. 4)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. While holding the pickup case, remove the skew screw (main).
3. Lifting the end of the pickup rack, slide the main shaft, and remove the pickup unit.

Notes:

Replacing the pickup unit requires the skew adjustment.

Remove glue from both ends of the main and sub shafts, and skew stud.

Do not reuse the old skew screw. Be sure to use a brand-new skew screw supplied with a new pickup unit.

Fix the skew screw with glue (GYL1001) after adjustment.

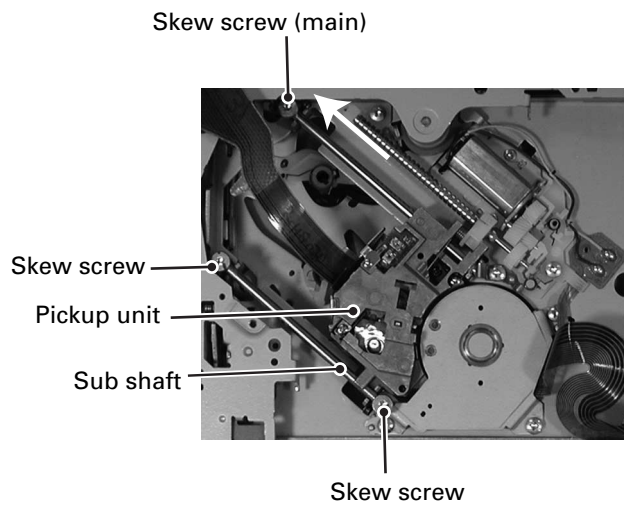


Fig. 4

● Removing the CRG motor ASSY (fig.5)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. Release the CRG motor leads from the resin guide and remove the CRG flexible cable from the land.
3. Remove the fixing screw, and remove the feed screw holder together with the 2-stage gear.
4. Remove the fixing two screws and CRG motor ASSY.

Caution: When replacing the CRG motor ASSY, be careful not to damage the gears, especially the 2-stage gear that is very delicate. When lifting the pickup rack to install the motor, be careful not to damage the gear teeth.

● Removing the spindle motor (fig.5)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. Release the CRG motor leads from the resin guide and remove the CRG flexible cable from the land.
3. Remove the three fixing screws for the SPDL motor. Be careful not to deform the CRG chassis when replacing the SPDL motor.

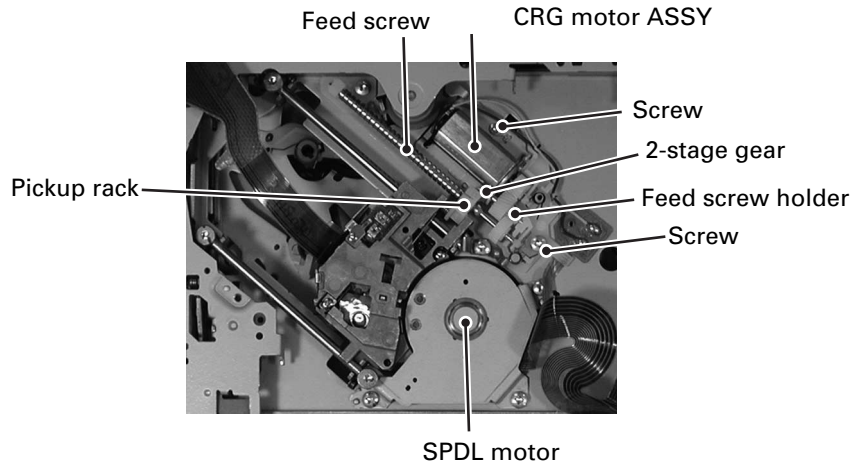


Fig. 5

● Removing the upper frame ASSY (fig. 6)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. Remove the spring.
3. Remove the four screws and remove the upper frame ASSY.

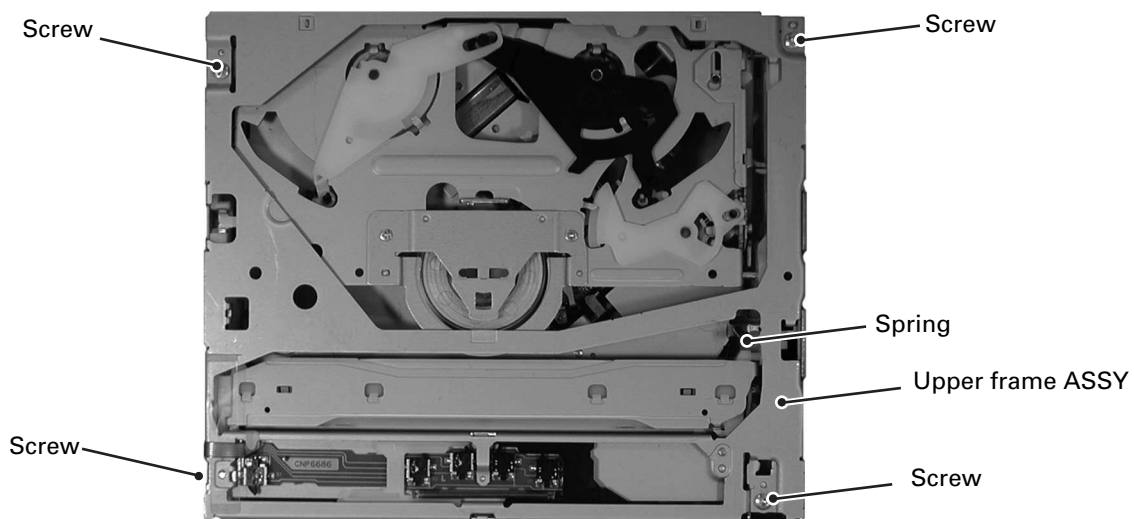


Fig. 6

● Removing the load gear ASSY (fig. 7)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
3. Remove the two screws and remove the load gear ASSY.
4. Remove the loading rack and the spring.

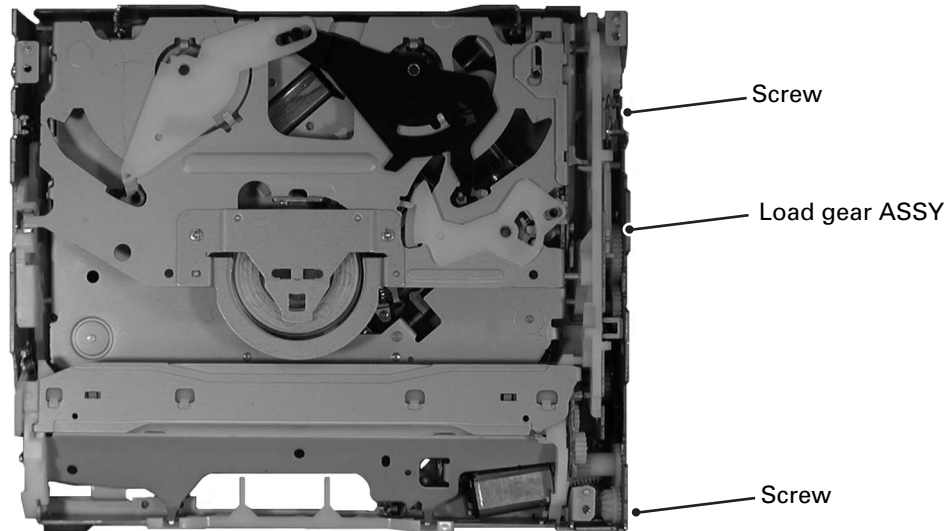


Fig. 7

● Setting the quasi-clamp mode by driving the loading motor (fig. 8)

1. While driving the loading motor in the clamping direction, pull the clamp lever toward the front side.
2. Even after the clamp lever pushes the loading rack (clamp mode), keep the clamp lever pulled lightly. Prevent the clamp lever bar ring from coming into the clamp spring. If not, ejection will not be impossible.
3. After the clamp operation ends, stop the operation before the objection of the loading rack touches the load lever R. (fig. 10)

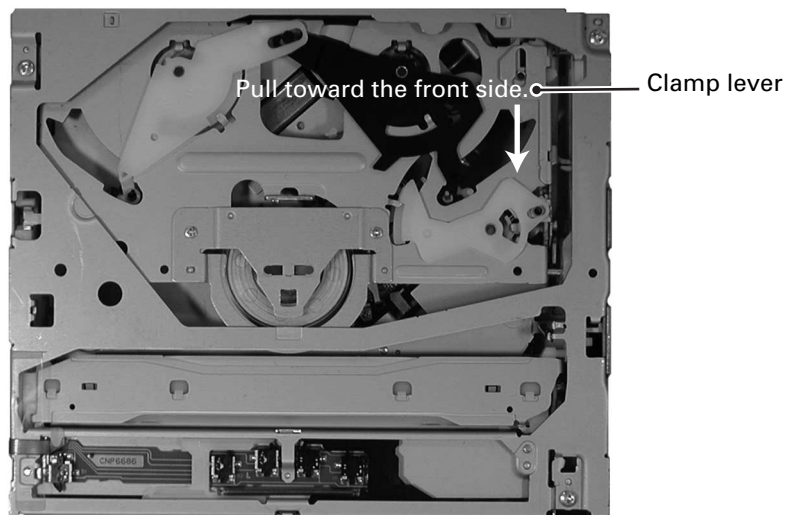
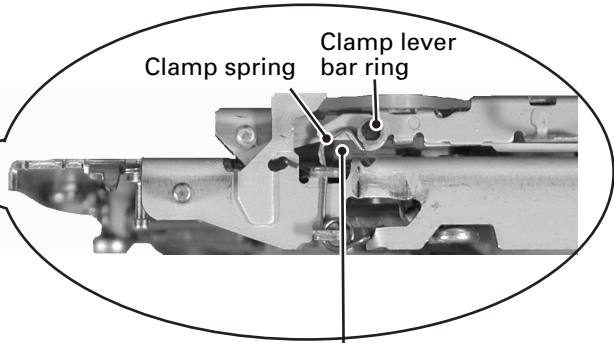
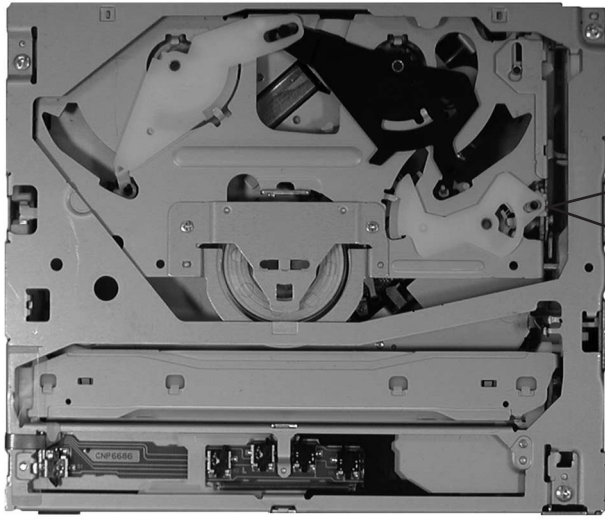


Fig. 8



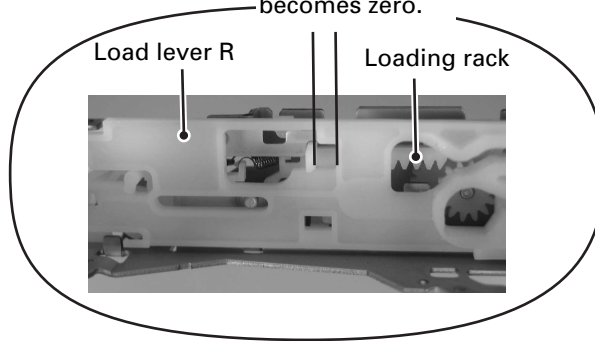
Clamp spring
Clamp lever bar ring



Prevent the clamp lever bar ring from coming into the clamp spring (the above condition is NG)

Fig. 9

Stop before this clearance becomes zero.



Load lever R
Loading rack

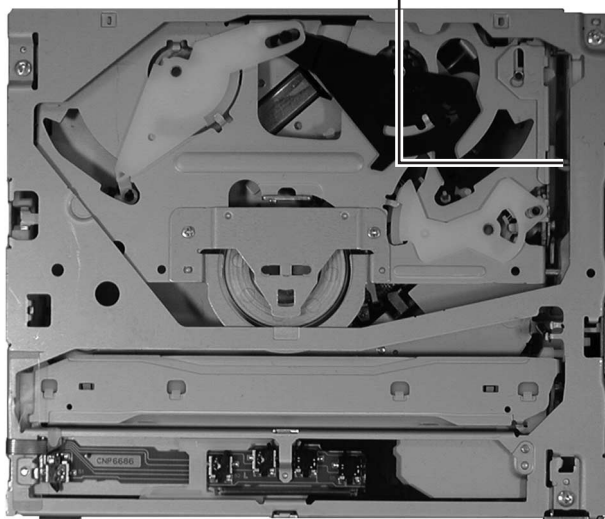


Fig. 10

● Setting the quasi-clamp mode manually (fig. 11)

1. Remove the module pc board in accordance with the procedure of "Removing the module printed circuit board."
2. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
3. Remove the load gear ASSY in accordance with the procedure of "Removing the load gear ASSY."
4. While pulling the clamp lever toward the front side, pull the fixed portion of the load lever R toward the front side until the mode enters the clamp position.

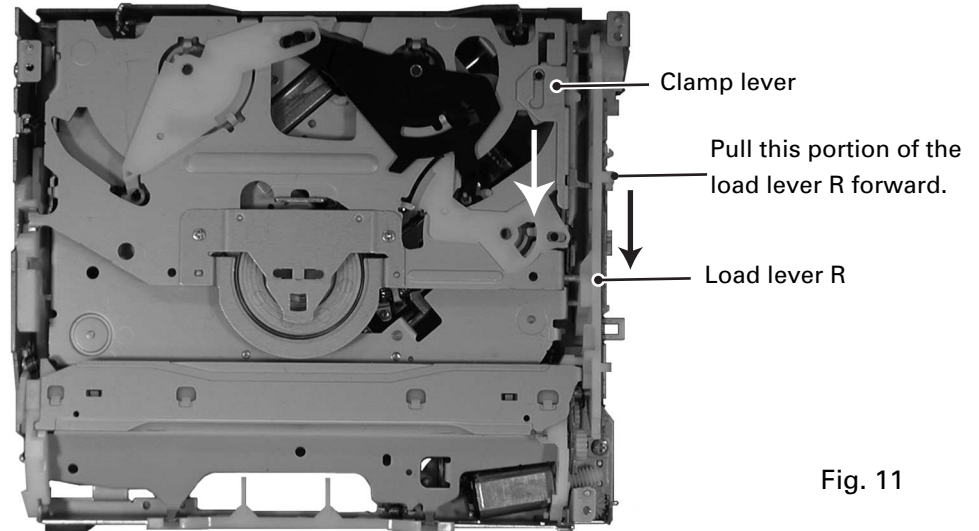


Fig. 11

● Removing the load motor ASSY (fig. 12)

1. Remove the module pc board in accordance with the procedure of "Removing the module printed circuit board."
2. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
3. Remove the load gear ASSY in accordance with the procedure of "Removing the load gear ASSY."
4. Enter the quasi-clamp mode in accordance with the procedure of "Setting the quasi-clamp mode manually."
5. Remove the screw. Slide the load motor ASSY to pull it out.

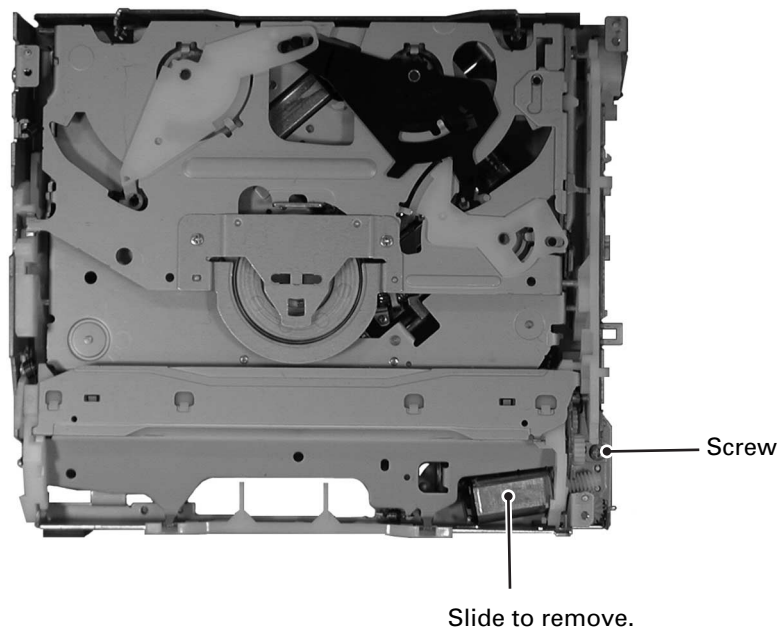


Fig. 12

● Removing the CRG ASSY (fig. 13)

1. Enter the quasi-clamp mode in accordance with the procedure of "Setting the quasi-clamp mode by driving the loading motor."
2. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
3. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
4. Remove the four springs.
5. Lift the CRG ASSY until the shafts come from the dampers, and then remove it.

● Removing the disc guide ASSY (fig. 13)

1. Enter the quasi-clamp mode in accordance with the procedure of "Setting the quasi-clamp mode by driving the loading motor."
2. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
3. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
4. Remove the two disc guide springs. While lifting the disc guide and keeping the lifting angle around 45 degrees, slide the guide in the left side to remove it.

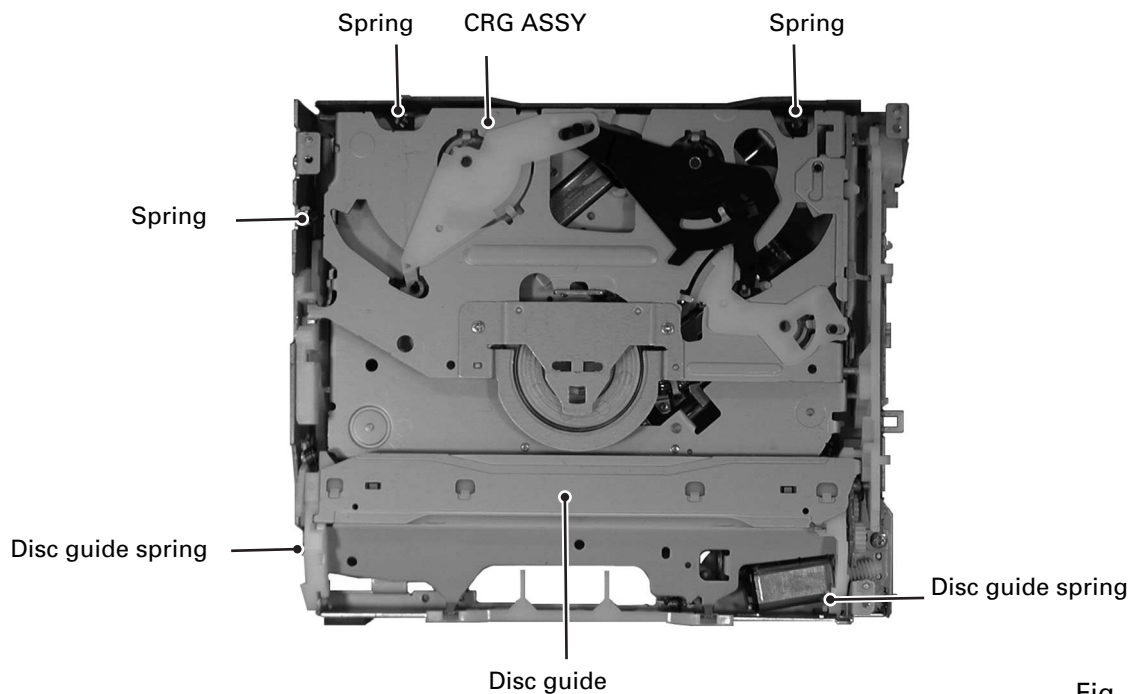


Fig. 13

● Removing the roller ASSY (fig. 14)

1. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
2. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
3. Remove the tension spring.
4. Remove the load gear ASSY in accordance with the procedure of "Removing the load gear ASSY."
5. Enter the quasi-clamp mode in accordance with the procedure of "Setting the quasi-clamp mode manually."
6. Remove the disc guide ASSY in accordance with the procedure of "Removing the disc guide ASSY."
7. Remove the CRG ASSY in accordance with the steps 4 and 5 in the procedure of "Removing the CRG ASSY."
8. By pushing the fixed portion of the load lever R, move the load lever R to the rear side completely.
9. Remove the load levers R and L. Unhook the end of the roller arm spring R from the load lever R.
10. While lifting the roller ASSY to the highest position, slide it to the right side. Lightly bend the whole slot guide by pushing the ends with your fingers and remove the roller ASSY.

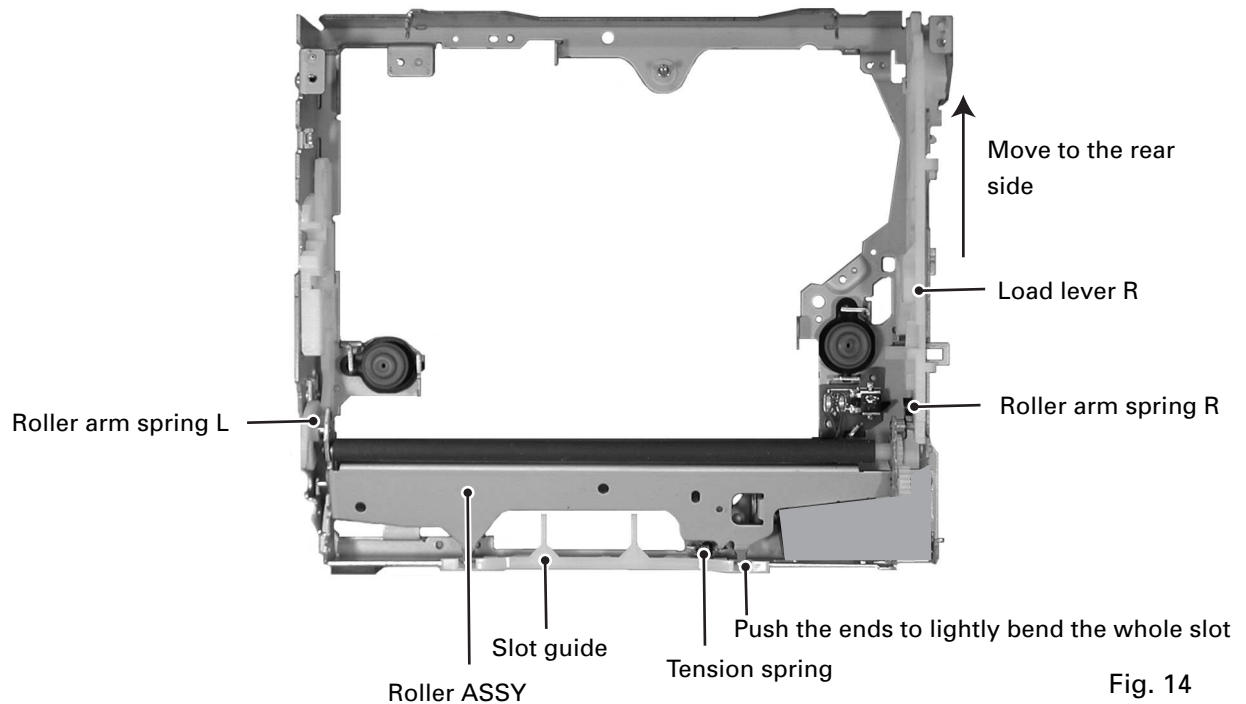


Fig. 14

● Removing the dampers (fig. 15)

1. Enter the quasi-clamp mode in accordance with the procedure of "Setting the quasi-clamp mode by driving the loading motor."
2. Remove the module pc board in accordance with the procedure of "Removing the module pc board."
3. Remove the upper frame ASSY in accordance with the procedure of "Removing the upper frame ASSY."
4. Remove the three springs.
5. Remove the CRG SSSY in accordance with the steps 4 and 5 in the procedure of "Removing the CRG assembly."
6. Release each of the three dampers from the clinches as follows:
 - 6.1 By using a pair of pliers, hold the portion A and turn them in the direction B. While making a gap in the portion C, release the damper from the clinches.
 - 6.2 Insert a flat-type screwdriver into the portion D. Slightly raise the plate and release the damper from the clinches.
7. Remove the CRG motor ASSY in accordance with the steps 2 through 4 in the procedure of "Removing the CRG motor ASSY."
8. Remove the dampers.

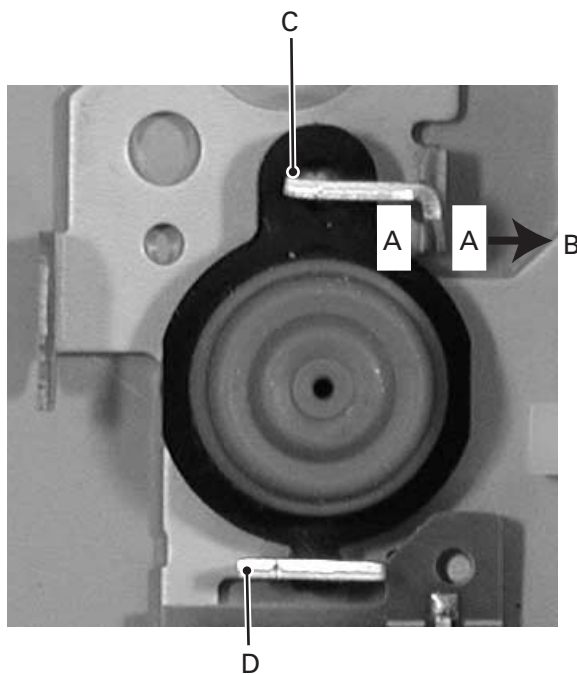


Fig. 15