
SERVICE MANUAL

COLOR MONITOR **Diamond Pro 930SB**

MODELS DPro930SB -BK(A)/(B)/-BK(B)

NEC-MITSUBISHI ELECTRIC VISUAL SYSTEMS CORPORATION

OCTOBER 2002

200307
08M530A3
08M540B3
08M530B3



WARNING

The SERVICE PERSONNEL should have the appropriate technical training, knowledge and experience necessary to:

- Be familiar with specialized test equipment, and
- Be careful to follow all safety procedures associated with high voltage CRT circuit designs to minimize danger to themselves and their coworkers.

To avoid electrical shocks, this equipment should be used with an appropriate power code and be connected only to a properly grounded AC outlet.

This equipment utilized a micro-gap power switch. Turn off the set by first pushing the front panel power switch. Next, remove the power cord from the AC outlet.

To prevent fire or shock hazards, do not expose this unit to rain or moisture.



This symbol warns the personnel that un-insulated voltage within the unit may have sufficient magnitude to cause electric shock.



This symbol alerts the personnel that important literature concerning the operation and maintenance of this unit has been included.

Therefore, it should be read carefully in order to avoid any problems.



PRODUCT SAFETY CAUTION

1. When parts replacement is required for servicing, always use the manufacturer's specified replacement.
2. Comply with all caution and safety-related notes on the product display chassis and picture tube.
3. When replacing the component, always be certain that all the components are put back in the place.
4. When servicing display monitor unit, it is required that the provided lead dress is used in the high voltage circuit area.
5. It is also recommended that shatter proof goggles are worn, when removing installing and handling the picture tube. People not equipped with the proper precautionary measures mentioned should keep the picture tube away from body while handling.
6. As for a connector, pick and extract housing with fingers properly since a disconnection and improper contacts may occur, when wires of the connector are led.
7. Use a proper screwdriver. If you use screwdriver that does not fit, you may damage the screws.

8. X-radiation precaution

This product contains critical electrical and mechanical parts essential for X-ray protection.

Normal anode voltage is 26.0 kV at zero beam picture tube current under AC 100-120V/220-240V input, and anode voltage must not exceed the voltages shown below under any operation condition.

To measure anode voltage set brightness for very dim picture, and use a high impedance volt meter between chassis and anode lead and measure high voltage.

If high voltage exceeds the specifications on the chassis schematic diagram, take the necessary corrective action.

Table MAXIMUM ANODE VOLTAGE

beam current	at 0 mA	at 0.6 mA	at 1.2 mA
A/B Ver.	31.0 kV	30.5 kV	30.5 kV

9. When you degauss the set with an external degaussing coil, you must keep strictly item “ * Notes about degaussing method “ of ADJUSTMENT Procedures.

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User's Manual

1. A Version



USER'S MANUAL




19"





Diamond Pro 930^{SB}
18" Viewable Image Size

www.mitsubishidisplay.com

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	WARNING	
<p>TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED.</p> <p>REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

	CAUTION	
<p>RISK OF ELECTRIC SHOCK • DO NOT OPEN</p>		
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		
	<p>This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.</p>	
	<p>This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.</p>	

Canadian Department of Communications Compliance Statement

DOC: This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
 C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to C.S.A. C22.2 No. 950.

FCC Information

1. Use the attached specified cables with the Diamond Pro 930^{SB}-BK color monitor so as not to interfere with radio and television reception.
 - (1) Please use the supplied power cord or equivalent to ensure FCC compliance.
 - (2) Shielded captive type signal cable.

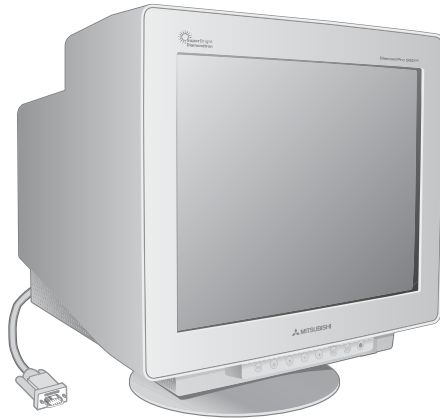
Use of other cables and adapters may cause interference with radio and television reception.
2. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult your dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

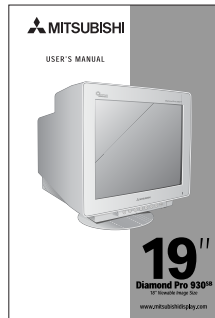
Contents

Your new Diamond Pro 930^{SB} monitor box* should contain the following:

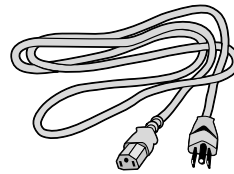
- Diamond Pro 930^{SB} Monitor with tilt/swivel base
- Power Cord
- Captive Signal Cable
- User's Manual



Captive Signal Cable



User's Manual



Power Cord

* Remember to save your original box and packing material to transport or ship the monitor.

Quick Start

To attach the Diamond Pro monitor to your system, follow these instructions:

1. Turn off the power to your computer.
2. If necessary, install the display card into your system. For more information, refer to the display card manual.
3. For the PC: Connect the 15-pin mini D-SUB of the captive signal cable to the connector of the display card in your system (**Figure A.1**). Tighten all screws.

For the Mac: Connect the Diamond Pro Macintosh cable adapter (not included) to the monitor connector on the Macintosh (**Figure B.1**). Attach the 15-pin mini D-SUB end of the captive signal cable to the Diamond Pro Macintosh cable adapter on the computer (**Figure B.1**). Tighten all screws.

NOTE: To obtain the Diamond Pro Macintosh cable adapter, call NEC-Mitsubishi Electronics Display of America, Inc. at (800) 632-4662.

4. For download information on the Windows® 95/98/Me/2000/XP INF file for your Diamond Pro monitor, refer to the **References** section of this User's Manual.
5. Connect one end of the power cord to the Diamond Pro monitor and the other end to the power outlet (**Figure C.1**).
6. Turn on the monitor (**Figure D.1**) and the computer.

NOTE: If you have any problems, please refer to the **Troubleshooting** section of this User's Manual.

Figure A.1

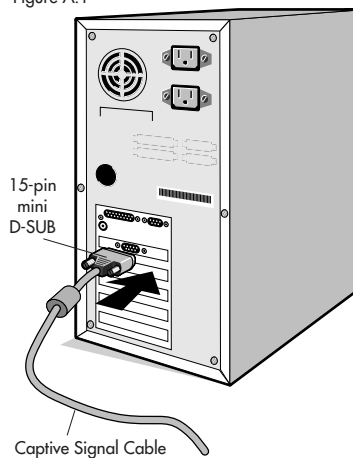
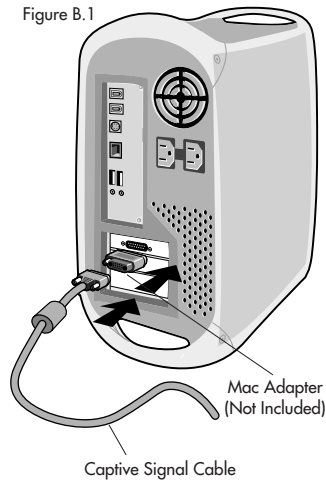


Figure B.1



3

Quick Start -continued

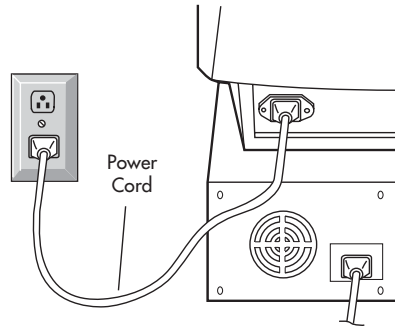


Figure C.1

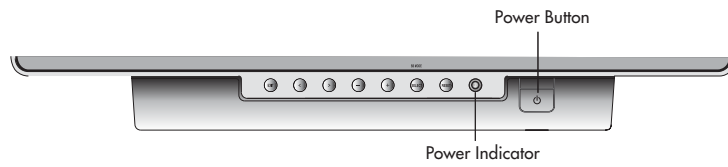


Figure D.1

Controls

OSD™ (On-Screen Display) control buttons on the front of the monitor function as follows:

	Main Menu	Sub-Menu
EXIT	Exits the OSD menu.	Exits to the OSD controls main menu.
NOTE: Deactivates the OSD menu and activates the OSD menu when the OSD is turned off.		
CONTROL ◀ / ▶	Moves the highlighted area left/right to select one of the sub-menu.	Moves the highlighted area left/right to select one of the controls.
NOTE: When the OSD menu is off, CONTROL acts as a Hot key for Brightness.		
CONTROL - / +	Has no function	Moves the bar in the – or + direction to decrease or increase the adjustment.
NOTE: CONTROL button will act as a "Hot Key" for Contrast when the OSM is off and Hot Key is on.		
SELECT/ SBMODE	While in OSD, this will enter the sub-menu. If OSD is off, this button will turn on the SuperBright function.	Has no function.
NOTE: When the OSD is off, it will act as the SuperBright (SB) function key. User can select between SB MODE OFF, SB MODE1, and SB MODE2. The first time this key is pressed, the current SB Mode is indicated. Within a 3 second window, if this key is selected again, the SB MODE will change to the next SB MODE. For example, the current mode is SB MODE OFF, the key is pressed twice within a 3 second time frame, the SB MODE will change to SB MODE1 and so on. The color temperature at each SB Mode is adjusted by appropriate color control except for the sRGB mode whose color setting cannot be adjusted. When the unit is turned off, it will reset to SB off mode.		
RESET	Resets all the controls within the highlighted menu to the factory setting.	Resets the highlighted control to the factory setting.
NOTE: When RESET is pressed in the main and sub-menu, a warning window will appear allowing you to select the reset function.		

Brightness/Contrast Controls

Brightness: Adjusts the overall image and background screen brightness.

Contrast: Adjusts the image brightness in relation to the background.

Degauss: Eliminates the buildup of stray magnetic fields which alter the correct scan of the electron beams and affect the purity of the screen colors, focus and convergence. When activated, your screen image will jump and waver a bit as the screen is demagnetized.

NOTE: Please allow a minimum of 20 minutes to elapse between uses of the Degauss Control.

Size and Position Controls

Left/Right: Moves the image horizontally (left or right).

Down/Up: Moves the image vertically (up or down).

Narrow/Wide: Decreases or increases the horizontal size of the image.

Short/Tall: Decreases or increases the vertical size of the image.

Controls –continued

Color Control/AccuColor® Control System

Color presets 1 through 5 selects the desired color setting. The bar is replaced by the color setting choice from 1, 2, 3, sRGB, 5. Each color setting is adjusted at the factory to the stated Kelvin degrees. If a setting is adjusted, the name of the setting will change from Kelvin to Custom. **NOTE:** sRGB does not allow you to adjust each color.

Red, Green, Blue: AccuColor Control System decreases or increases the monitor's red, green or blue color guns depending upon which is selected. The change in color will appear on screen and the direction (decrease or increase) will be shown by the bars.

sRGB mode: sRGB mode provides the suitable color managed picture image. You can not change Red, Green and Blue colors, brightness and contrast individually.

Color Temperature Adjustment: Adjusts the color temperature of the screen image.

Geometry Controls

Geometry Controls Menu

The **Geometry** controls allow you to adjust the curvature or angle of the sides of your display.

In/Out (pincushion): Decreases or increases the curvature of the sides either inward or outward.

Left/Right (pincushion balance): Decreases or increases the curvature of the sides either to the left or right.

Tilt (parallelogram): Decreases or increases the tilt of the sides either to the left or right.

Align (trapezoidal): Decreases or increases the bottom of the screen to be the same as the top.

Rotate (raster rotation): Rotates the entire display clockwise or counterclockwise.

Corner Correction: Allows you to adjust the geometry of the corners of your display — **Top or Bottom.**

Tools 1

Moiré Canceler: Moiré is a wavy pattern which can sometimes appear on the screen. The pattern is repetitive and superimposed as rippled images. When running certain applications, the wavy pattern is more evident than in others. To reduce moiré, adjust the level by using the -/+ CONTROL buttons.

Linearity: This selection allows you to adjust the spacing of the area on the screen. The purpose of this control is to ensure that a one-inch circle is a true one-inch circle wherever it is on the screen. The best way to determine the vertical linearity is as follows:

- Draw equally spaced horizontal lines using a drawing application that has a ruler.
- Use the **Vertical Balance** control to adjust the lines near the top and bottom of your screen.
- Use the **LINEARITY (VER.)** control to adjust the spacing between the lines near the center and top of your screen.

Convergence: Aligns all three colors (R,G,B) to form a single color (white). The purpose of this control is to ensure that a white line drawn on the screen is as crisp and clear as possible.

- Use the **CONVERGENCE (HOR.)** control to adjust the alignment of the white lines in the left/right direction.
- Use the **CONVERGENCE (VER.)** control to adjust the alignment of the white lines in the up/down direction.

Controls –continued

GlobalSync® Control: Eliminates picture impurities that may result from the earth's magnetic field. While in the sub-menus (**TL:** Top Left, **TR:** Top Right, **BL:** Bottom Left, or **BR:** Bottom Right) use the **-/+** control buttons to fine tune the GlobalSync corrections.

NOTE: Mitsubishi recommends that you perform GlobalSync correction while running a typical application such as a spreadsheet or text document.



Tools 2

Language: OSD controls menus are available in six languages.

OSD Position: You can choose where you would like the OSD controls menu to appear on your screen. Selecting OSD Position allows you to manually adjust the OSD controls menu left, right, up or down.

OSD Turn Off: The OSD controls menu will stay on as long as it is in use. In the OSD Turn Off sub-menu, you can select how long the monitor waits after the last touch of a button for the OSD controls menu to disappear. The preset choice is in 5 seconds step between 5–120 seconds.

OSD Lock Out: This control completely locks out access to all OSD controls functions except Brightness and Contrast. When attempting to activate OSD controls while in the lock out mode, a screen will appear indicating that OSD controls are locked out. To activate the OSD Lock Out function, press **SELECT**, then press **+** and hold down simultaneously. To deactivate the OSD Lock Out, press **SELECT**, then press **+** and hold down simultaneously.

IPM™ System Off Mode: Enable: The IPM System works normally and all stages of energy savings are utilized.

Disable: The Off Mode reset

NOTE: For standard systems and graphics boards, keep the factory setting at ENABLE.

NOTE: Don't keep the Diamond Pro monitor on when 'No Signal' is applied. This could cause image burn in on the screen due to the 'No Signal' message being displayed.

EdgeLock™ Control: Operating your monitor at a nonstandard timing may cause images to appear darker than normal or have color distortion. Use of the EdgeLock control will adjust images to their normal state.

Hot Key: This selection allows you to use **</>** as brightness control and **-/+** as contrast control.

Factory Preset: Selecting Factory Preset allows you a reset most OSD™ control settings back to the factory settings. A warning statement will appear to confirm that you do want to reset ALL settings. Individual settings can be reset by highlighting the control to be reset and pressing the **RESET** button.



Information

Display Mode: Indicates the current mode and frequency setting of the monitor.

Monitor Info: Indicates the model and serial numbers of your monitor.

Refresh Notifier: A message will advise you if the refresh rate of the signal being applied to the monitor by the computer is too low. For further information, please refer to your display card or system manual.

Recommended Use

Safety Precautions and Maintenance



FOR OPTIMUM PERFORMANCE, PLEASE NOTE THE FOLLOWING WHEN SETTING UP AND USING THE DIAMOND PRO COLOR MONITOR:



- **DO NOT OPEN THE MONITOR.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Keep the monitor away from high capacity transformers, electric motors and other devices such as external speakers or fans, which may create strong magnetic fields.
- If possible, position the monitor so that it is facing the east to minimize the effects of the earth's magnetic field.
- Changing the direction of the monitor while it is powered on may cause image discoloration. To correct this, turn the monitor off for 20 minutes before powering it back on.
- When operating the Diamond Pro 930^{SB} with its AC 100-240V worldwide power supply, use a power supply cord that matches the power supply voltage of the AC power outlet being used. The power supply cord you use must have been approved by and comply with the safety standards of your country.
- In UK, use a BS-approved power cord with molded plug having a black (5A) fuse installed for use with this monitor. If a power cord is not supplied with this monitor, please contact your supplier.

Cleaning Your Monitor

A special coating is provided on the glass (CRT) surface of this monitor to reduce a reflection and static electricity on the glass surface. Due to the delicate coating on the glass surface, use a lint-free, non-abrasive cloth (cotton or equivalent) and a non-alcohol, neutral, non-abrasive cleaning solution to minimize dust. If the screen requires more than a light cleaning, apply a soft neutral detergent and water directly to a soft cloth and use it upon wringing water, to clean the glass surface. Clean your monitor regularly.

CAUTION: The following agents will cause damage to the CRT when cleaning the glass surface: Benzene, thinner, acid/alkaline detergent, alcohol detergent, detergent with abrasive powder, detergent with anti-static agent, detergent for cleaning.

Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.
 - Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
 - The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
 - Handle with care when transporting. Save packaging for transporting.



CAUTION

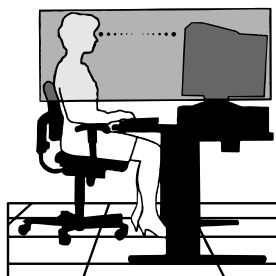
Recommended Use –continued



CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:



- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 16 inches and no further away than 24 inches from your eyes. The optimal distance is 20 inches.
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.
- Get regular eye checkups.



Ergonomics

To realize the maximum ergonomics benefits, we recommend the following:

- Adjust the Brightness until the background raster disappears
- Do not position the Contrast control to its maximum setting
- Use the preset Size and Position controls with standard signals
- Use the preset Color Setting and Sides Left/Right controls
- Use non-interlaced signals with a vertical refresh rate between 75-160Hz
- Do not use primary color blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast

For more detailed information on setting up a healthy work environment, write the American National Standard for Human Factors Engineering of Visual Display Terminal Workstations – ANSI-HFS Standard No. 100-1988 – The Human Factors Society, Inc. P.O. Box 1369, Santa Monica, California 90406.

Specifications

Monitor Specifications	Diamond Pro 930 ^{SB} Monitor	Notes
Picture Tube Viewable Image Size: Radius:	Diagonal: 19 inch 18 inch 50,000 mm	90° deflection, 0.24 mm grille pitch, medium short persistence phosphor, aperture grille CRT, multi-layered, anti-static screen coating, dark-tint screen and OptiClear® screen.
Input Signal	Video: Sync: ANALOG 0.7 Vp-p/75 Ohms Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL level)	
Display Colors	Analog input: Unlimited number of Colors	Depends on display card used.
Synchronization Range	Horizontal: Vertical: 30.0 kHz to 110.0 kHz 50 Hz to 160 Hz	Automatically Automatically
Resolutions Supported Resolution based on horizontal and vertical frequencies only	640 x 480 @ 60 to 160 Hz 800 x 600 @ 50 to 160 Hz 832 x 624 @ 50 to 160 Hz 1024 x 768 @ 50 to 132 Hz 1152 x 870 @ 50 to 118 Hz 1280 x 1024 @ 50 to 101 Hz 1600 x 1200 @ 50 to 87 Hz 1792 x 1344 @ 50 to 78 Hz 1800 x 1440 @ 50 to 73 Hz 1856 x 1392 @ 50 to 75 Hz 1920 x 1440 @ 50 to 73 Hz	Some systems may not support all modes listed. NEC-Mitsubishi Electronics Display cites recommended resolution at 85 Hz for optimal display performance.
Active Display Area (Factory Setting)	Horizontal: Vertical: 356 mm/14.0 inches 266 mm/10.5 inches	Dependent upon signal timing used, and does not include border area.
Active Display Area (Full Scan)	Horizontal: Vertical: 366 mm/14.4 inches 266 mm/10.5 inches	Dependent upon signal timing used, and does not include border area.
Power Supply	AC 100 - 240 V, 50-60 Hz	
Current Rating	2.2A @ 100-240 V	
Dimensions	442 mm (W) x 443 mm (H) x 447.5 mm (D) 17.4 inches (W) x 17.4 inches (H) x 17.6 inches (D)	
Weight	23.8 kg 52.5 lbs	
Environmental Considerations	Operating Temperature: Humidity: Feet: Storage Temperature: Humidity: Feet: +5°C to +35°C / +50°F to +90°F 10% to 90% 0 to 10,000 Feet -20°C to +60°C / -4°F to +140°F 10% to 90% 0 to 50,000 Feet	

NOTE: Technical specifications are subject to change without notice.

Features

SuperBright™ Diamondtron® CRT: This patented flat aperture grille CRT delivers an exceptional viewing experience with unprecedented brightness and contrast and a virtually flat image that reduces distortion and glare so that what you see on-screen is what you get on your printed output. The state-of-the-art Mitsubishi U-NX™ electron gun and tight 0.24mm grille pitch delivers precise focus for crisp, clear text and images.

SuperBright™ Mode: With the simple touch of a button, you can achieve up to two times the normal brightness level. This function enhances the crispness of images for clarity-conscious applications such as graphics, animation and video.

Super Bright Mode OFF: for text based images (normal use)

Super Bright Mode-1 ON: for images

Super bright Mode-2 ON: for moving image such as DVD movies

OptiClear® Screen Surface: Further reduces reflection and glare and increases contrast without sacrificing focus level, clarity or brightness.

Dual Dynamic Beam Focus: Provides precise, continuous focus adjustments of the electron beams and optimum image quality, even to the far edges of the screen.

AccuColor® Control System: Allows you to change between five color settings on your display to match your personal preference. The sRGB-enabled color matching setting found within AccuColor helps achieve a consistent color environment with other sRGB-enabled hardware and software applications.

On-Screen Display Controls (OSD) : Allows you to quickly and easily adjust all elements of your screen image via simple to use on-screen menus.

ErgoDesign® Features: Enhances human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSD controls for quick and easy image adjustments, tilt/swivel base for preferred angle of vision, space-conscious cabinet design and compliance with MPRII guidelines for lower emissions.

Plug and Play: The Microsoft® solution with the Windows® 95/98/Me/2000/XP operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

Intelligent Power Manager (IPM™) System: Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

Reduced Magnetic Field™ Technology: Reduces magnetic and alternating electric field emissions and static electricity, addressing ergonomic concerns regarding potential risks from extended computer monitor use.

Features —continued

Multiple Frequency Technology: Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required.

FullScan™ Capability: Allows you to use the entire screen area in most resolutions, significantly expanding image size.

GlobalSync®/Corner Purity Control: Allows you to easily adjust impurities in the four corners of your monitor.

Convergence Control: Allows you to adjust the horizontal and vertical convergence of the top and bottom area to ensure that a white line drawn on the screen is as crisp and clear as possible.

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Troubleshooting

No picture

- Display card should be completely seated in its slot.
- Power Button and computer power switch should be in the ON position.
- Signal cable should be completely connected to display card/computer.
- Check connector for bent or pushed-in pins.

Image is scrolling or unstable

- Signal cable should be completely attached to the computer.
- Check pin assignments and signal timings of the monitor and your display card with respect to recommended timings and pin assignments.
- If the Macintosh cable adapter is used, check for proper connection or make sure the display card is Macintosh compatible and that the card is properly seated in the computer.

LED on monitor is not lit (*no green, orange color can be seen*)

- Power Switch should be in the ON position and power cord should be connected.

LED on monitor is flashing and/or disappears

- Contact Customer Service at (800) 632-4662.

Picture is fuzzy or color looks blotchy

- If the picture is fuzzy, adjust the Moiré Canceler control. If the color looks blotchy, adjust the Brightness, Contrast or GlobalSync® controls, or use the EdgeLock™ control to change modes.
- Access the Degauss Control through OSD™ controls. Activate the Degauss Control.
CAUTION: A minimum interval of 20 minutes should elapse before the Degauss Control is used a second time when not switching between modes.

Picture bounces or a wavy pattern is present in the picture

- Move electrical devices that may be causing electrical interference away from the monitor.
- See inside cover of User's Manual for FCC information.

Edges of the display image are not square

- Use the OSD Geometry Controls to straighten the edges.
- If possible, position the front of the monitor facing east.

Display image is not centered, too small, or too large

- Use the OSD Size and Position Controls to adjust the image.

Thin lines appear on your screen

- Thin lines are normal for an aperture grille CRT and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white).

Black vertical lines are visible on the screen

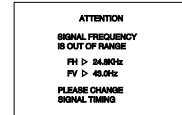
- Thin vertical black lines on one or both sides of the screen. This minor condition is caused by grille element overlap which can occur during shipping.
- Position an open white window over the affected area of the screen and maximize the brightness and contrast controls. This will cause localized heating of the overlap which will clear in a few minutes. Be sure to readjust the brightness and contrast controls back to the normal viewing level after this procedure.

Troubleshooting –continued

Attention message displayed

- Check the inputted signal.

NOTE: The attention message may display when power on the Diamond Pro monitor. In case that the attention message disappear after in a little while, there is no problem at the inputted signal.



Self check function

- Press any control button on the front of monitor when you see a problem on the screen.
- In case that all R, G and B colors are seen in the diagnosis message, the Diamond Pro monitor has no problem. In case that some color is lack in the message, the Diamond Pro monitor has a problem. Contact Customer Service.
- In case that no diagnosis message displayed with LED lit in green, power off the computer.
 - Check the signal cable and computer in case that the diagnosis message displayed.
 - Contact Customer Service in case that the diagnosis message still does not display.
- In case that no diagnosis message displayed with LED lit in orange.
 - Check the signal cable and computer.
 - Move the mouse or press any key on the keyboard.
- In case that no diagnosis message displayed with LED lit in green and orange.
 - Contact Customer Service.



References

NEC-Mitsubishi Monitor Customer Service & Support

Customer Service and Technical Support (800) 632-4662
Fax (801) 907-3939
Parts and Accessories/Macintosh Cable Adapter: (888) NEC-MITS
[888-632-6487]
Customer Service Policies & Processes: <http://www.necmitsubishi.com/css/ServicePolicies/ServicePolicies.htm>
Online Technical Support Knowledge Base: <http://www.necmitsubishi.com/css/knowledgebase.cfm>
Customer Service & Technical Support Email: <http://www.necmitsubishi.com/css/techform.htm>

Sales and Product Information

Sales Information Line (888) NEC-MITS [888-632-6487]
Canadian Customers (866) 771-0266, Ext#: 4037
Government Sales (800) 284-6320
Government Sales email gov@necmitsubishi.com

Rebate Status Information

NEC Rebate Status www.rebatesHQ.com or 866-765-5696
Mitsubishi Rebate Status www.rebatesHQ.com or 877-405-4692

Electronic Channels

World Wide Web: <http://www.necmitsubishi.com>
Product Registration: <http://www.necmitsubishi.com/productregistration>
European Operations: <http://www.nec-mitsubishi.com>

Windows® 95/98/Me/2000/XP INF File: <http://www.necmitsubishi.com> and select "Drivers and Downloads"

Limited Warranty

NEC-Mitsubishi Electronics Display of America, Inc. (hereinafter "NMD-A") warrants this Product to be free from defects in material and workmanship and, subject to the conditions set forth below, agrees to repair or replace (at NMD-A's sole option) any part of the enclosed unit which proves defective for a period of three (3) years from the date of first consumer purchase. Spare parts are warranted for ninety (90) days. Replacement parts or unit may be new or refurbished and will meet specifications of the original parts or unit.

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty is limited to the original purchaser of the Product and is not transferable. This warranty covers only NMD-A-supplied components. Service required as a result of third party components is not covered under this warranty. In order to be covered under this warranty, the Product must have been purchased in the U.S.A. or Canada by the original purchaser. This warranty only covers Product distribution in the U.S.A. or Canada by NMD-A. No warranty service is provided outside of the U.S.A. or Canada. Proof of Purchase will be required by NMD-A to substantiate date of purchase. Such proof of purchase must be an original bill of sale or receipt containing name and address of seller, purchaser, and the serial number of the product.

It shall be your obligation and expense to have the Product shipped, freight prepaid, or delivered to the authorized reseller from whom it was purchased or other facility authorized by NMD-A to render the services provided hereunder in either the original package or a similar package affording an equal degree of protection. All Products returned to NMD-A for service MUST have prior approval, which may be obtained by calling 1-800-632-4662. The Product shall not have been previously altered, repaired, or serviced by anyone other than a service facility authorized by NMD-A to render such service, the serial number of the product shall not have been altered or removed. In order to be covered by this warranty the Product shall not have been subjected to displaying of fixed images for long periods of time resulting in image persistence (afterimage effects), accident, misuse or abuse or operated contrary to the instructions contained in the User's Manual. Any such conditions will void this warranty.

NMD-A SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHER TYPES OF DAMAGES RESULTING FROM THE USE OF ANY NMD-A PRODUCT OTHER THAN THE LIABILITY STATED ABOVE. THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU.

This Product is warranted in accordance with the terms of this limited warranty. Consumers are cautioned that Product performance is affected by system configuration, software, the application, customer data, and operator control of the system, among other factors. While NMD-A Products are considered to be compatible with many systems, specific functional implementation by the customers of the Product may vary. Therefore, suitability of a Product for a specific purpose or application must be determined by consumer and is not warranted by NMD-A.

For the name of your nearest authorized NEC-Mitsubishi Electronics Display of America service facility, contact NEC-Mitsubishi Electronics Display of America at 1-800-632-4662.

TCO'95

Diamond Pro 930^{SB} Black Model

Congratulations! You have just purchased a TCO'95 approved and labeled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also, to the further development of environmentally adapted electronics products.



Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (Internal) and natural (external) environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

What does labelling involve?

This product meets the requirements for the TCO'95 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy. The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

TCO'95 is a co-operative project between TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

Environmental Requirements

Brominated flame retardants

Brominated flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. These are related to another group of environmental

TCO'95 -continued

toxins, PCBs, which are suspected to give rise to similar harm, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

TCO'95 demand requires that plastic components weighing more than 25 grams must not contain organically bound chlorine and bromine.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

TCO'95 requirement permits the inclusion of lead since no replacement has yet been developed.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The colour-generating layers of display screens must not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches, Mercury damages the nervous system and is toxic in high doses.

TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. It also demands that no mercury is present in any of the electrical or electronics components concerned with the display unit. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacturing of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

The relevant TCO'95 requirement; Neither CFCs nor HCFCs may be used during the manufacturing of the product or its packaging.

*Bio-accumulative is defined as substances which accumulate within living organisms.

**Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

To obtain complete information on the environmental criteria document, order from:

TCO Development Unit
SE-114 94 Stockholm
SWEDEN
FAX Number: +46 8 782 92 07
E-mail (Internet): development@tco.se

You may also obtain current information on TCO'95 approved and labelled products by visiting their website at: <http://www.tcodevelopment.com>

Mitsubishi Diamond Pro 930^{SB}

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To allow for design and specification improvements, the information in this document is subject to change at any time without notice. Reproduction of this document or portions thereof without prior approval of NEC-Mitsubishi Electronics Display of America is prohibited.

DECLARATION OF CONFORMITY

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

U.S. Responsible Party:	NEC-Mitsubishi Electronics Display of America, Inc.
Address:	1250 N. Arlington Heights Road Itasca, Illinois 60143
Tel. No.:	(630) 467-3000

Type of Product: Computer Monitor
Equipment Classification: Class B Peripheral
Models: N2901



We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.

Windows is a registered trademark of Microsoft Corporation. ENERGY STAR is a U.S. registered trademark. All other brands and product names are trademarks or registered trademarks of their respective owners.

As an ENERGY STAR® Partner, NEC-Mitsubishi Electronics Display of America, Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency. The ENERGY STAR emblem does not represent EPA endorsement of any product or service.



Part No. 15501391
Printed in China

2. B Version



User's Manual



Diamond Pro 930^{SB}

www.nec-mitsubishi.com

Declaration of the Manufacturer

We hereby certify that the
colour monitor Diamond Pro 930^{SB}
is in compliance with
Council Directive 73/23/EEC:
– EN 60950
Council Directive 89/336/EEC:
EN 55022
– EN 61000-3-2
– EN 61000-3-3
– EN 55024
and marked with







NEC-Mitsubishi Electric Visual
Systems Corporation
686-1, Nishioi Oi-Machi
Ashigarakami-gun
Kanagawa 258-8533, Japan

ENERGYSTAR Product

As an ENERGYSTAR Partner, NEC-Mitsubishi Electronics Display of America, Inc. has determined that this product meets the ENERGYSTAR guidelines for energy efficiency. The ENERGYSTAR emblem does not represent EPA endorsement of any product or service.

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Microsoft and Windows are registered trademarks of the Microsoft Corporation.
ENERGYSTAR is a U.S. registered trademark.
All other trademarks or registered trademarks are property of their respective owners.

	WARNING	
<p>TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED. REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

	CAUTION	
<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">RISK OF ELECTRIC SHOCK • DO NOT OPEN</div>		
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICE-ABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		
	<p>This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.</p>	
	<p>This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.</p>	

Canadian Department of Communications Compliance Statement

DOC: This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to C.S.A. C22.2 No. 950.

FCC Information

1. Use the attached specified cables with the Diamond Pro 930^{SB} colour monitor so as not to interfere with radio and television reception.
 - (1) Please use the supplied power cord or equivalent to ensure FCC compliance.
 - (2) Shielded captive type signal cable.
 Use of other cables and adapters may cause interference with radio and television reception.
2. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult your dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

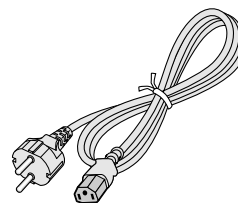
Contents

Your new Diamond Pro 930^{SB} monitor box* should contain the following:

- Diamond Pro 930^{SB} Monitor with tilt/swivel base
- Power Cord
- Captive Signal Cable
- User's Manual
- Sales Office List
- CD ROM with Setup Software, complete User's Manual and other helpful files.
To see the User's Manual, Acrobat Reader 4.0 must be installed on your PC.



Captive Signal Cable



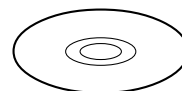
Power Cord



User's Manual



Sales Office List



CD-ROM

** Remember to save your original box and packing material to transport or ship the monitor.*

4 *User's Manual*

Quick Start

To attach the Diamond Pro 930^{SB} monitor to your system, follow these instructions:

1. Turn off the power to your computer.
2. If necessary, install the display card into your system. For more information, refer to the display card manual.
3. For the PC: Connect the 15-pin mini D-SUB of the captive signal cable to the connector of the display card in your system (**Figure A.1**). Tighten all screws.
For the Mac: Connect the Diamond Pro 930^{SB} Macintosh cable adapter (not included) to the monitor connector on the Macintosh (**Figure B.1**). Attach the 15-pin mini D-SUB end of the captive signal cable to the Diamond Pro 930^{SB} Macintosh cable adapter on the computer (**Figure B.1**). Tighten all screws.
4. Connect one end of the power cord to the Diamond Pro 930^{SB} monitor and the other end to the power outlet (**Figure C.1**).
5. Turn on the monitor (**Figure D.1**) and the computer.
6. The Windows 95/98/2000/Me/XP INF file for your monitor can be found on the CD-ROM, delivered with the monitor.

NOTE: If you have any problems, please refer to the **Troubleshooting** section of this User's Manual.

Figure A.1

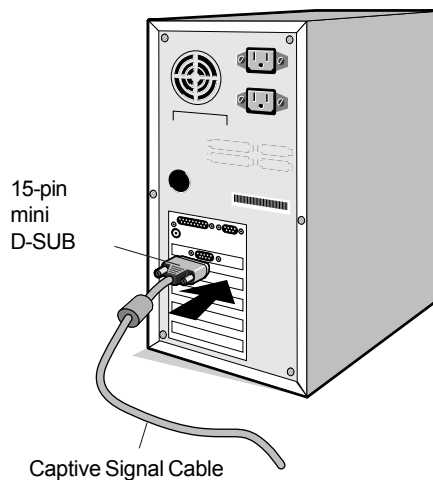
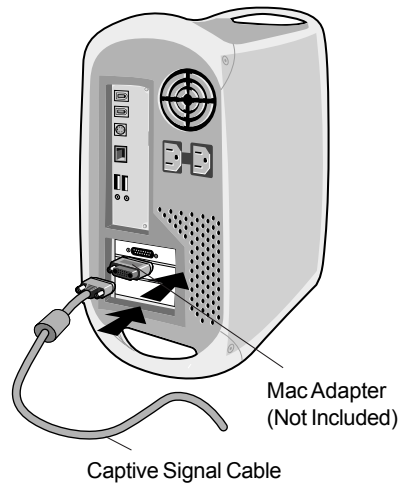


Figure B.1



Quick Start – *continued*

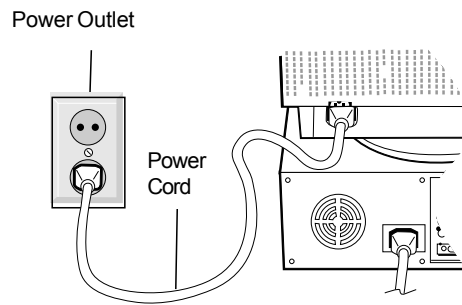


Figure C.1



Figure D.1

Controls

OSM (On-Screen Manager) control buttons on the front of the monitor function as follows:

To access OSM press any of the control buttons (EXIT, ◀, ▶, -, +).

	Main Menu	Sub-Menu
EXIT	Exits the OSM menu.	Exits to the OSM controls main menu.
NOTE: Deactivates the OSM menu and activates the OSM menu when the OSM is turned off.		
CONTROL ◀/▶	Moves the highlighted area left/right to select one of the sub-menus.	Moves the highlighted area left/right to select one of the controls.
NOTE: Deactivates the OSM menu and to adjust Brightness with Hot key set "ON"		
CONTROL -/+	Has no function.	Moves the bar in the - or + direction to decrease or increase the adjustment.
NOTE: Deactivates the OSM menu and to adjust Contrast with Hot key set "ON"		

SELECT/ SBMODE	Without OSD, switches SuperBright Mode ON/OFF With OSD, enters sub menu	Has no function.
---------------------------	--	------------------

NOTE: When the OSM is off, it will act as the SuperBright (SB) function key. User can select between SB MODE OFF, SB MODE1, and SB MODE2. The first time this key is pressed, the current SB Mode is indicated. Within a 3 second window, if this key is selected again, the SB MODE will change to the next SB MODE. For example, the current mode is SB MODE OFF, the key is pressed twice within a 3 second time frame, the SB MODE will change to SB MODE1 and so on. The color temperature at each SB Mode is adjusted by appropriate color control except for the sRGB mode whose color setting cannot be adjusted. When the unit is turned off, it will reset to SB off mode.

Super Bright Mode OFF: for text based images (normal use)
Super Bright Mode-1 ON: for images
Super bright Mode-2 ON: for moving image such as DVD movies

RESET	Resets all the controls within the highlighted menu to the factory setting.	Resets the highlighted control to the factory setting.
--------------	---	--

NOTE: When **RESET** is pressed in the main and sub-menu, a warning window will appear allowing you to cancel the reset function.

When Hot key function is set to "ON", accessing the OSD is only possible with the "EXIT" button.

Brightness/Contrast Controls

Brightness: Adjusts the overall image and background screen brightness.

Contrast: Adjusts the image brightness in relation to the background.

Degauss: Eliminates the buildup of stray magnetic fields which alter the correct scan of the electron beams and affect the purity of the screen colours, focus and convergence. When activated, your screen image will jump and waver a bit as the screen is demagnetized.

Caution: Please allow a minimum of 20 minutes to elapse between uses of the Degauss Control.

Controls – continued



Size and Position Controls

Left/Right: Moves the image horizontally (left or right).

Down/Up: Moves the image vertically (up or down).

Narrow/Wide: Decreases or increases the horizontal size of the image.

Short/Tall: Decreases or increases the vertical size of the image.



Color Control System

Colour presets selects the desired colour setting. The bar is replaced by the colour setting choice. Each colour setting is adjusted at the factory to the stated Kelvin. If a setting is adjusted, the name of the setting will change from Kelvin to Custom except sRGB mode.

Red, Green, Blue: Color Control System decreases or increases the monitor's red, green or blue colour guns depending upon which is selected. The change in colour will appear on screen and the direction (decrease or increase) will be shown by the bars.

sRGB mode: sRGB mode provides the suitable colour managed picture image. You can not change Red, Green and Blue colours, brightness and contrast individually.

Colour Temperature Adjustment: Adjusts the colour temperature of the screen image.



Geometry Controls

Geometry Controls Menu

The **Geometry** controls allow you to adjust the curvature or angle of the sides of your display.

Sides In/Out (pincushion): Decreases or increases the curvature of the sides either inward or outward.

Sides Left/Right (pincushion balance): Decreases or increases the curvature of the sides either to the left or right.

Sides Tilt (parallelogram): Decreases or increases the tilt of the sides either to the left or right.

Sides Align (trapezoidal): Decreases or increases the bottom of the screen to be the same as the top.

Rotate (raster rotation): Rotates the entire display clockwise or counterclockwise.

Corner Correction: Allows you to adjust the geometry of the corners of your display – **Top or Bottom.**



Tools 1

Moiré Canceler: Moiré is a wavy pattern which can sometimes appear on the screen. The pattern is repetitive and superimposed as rippled images. When running certain applications, the wavy pattern is more evident than in others. To reduce moiré, adjust the level by using **-/+ CONTROL** buttons.

Linearity: This selection allows you to adjust the spacing of the area on the screen. The purpose of this control is to ensure that a one-inch circle is a true one-inch circle wherever it is on the screen. The best way to determine the vertical linearity is as follows:

- Draw equally spaced horizontal lines using a drawing application that has a ruler.
- Use the **Vertical Balance** control to adjust the lines near the top and bottom of your screen.
- Use the **LINEARITY (VER.)** control to adjust the spacing between the lines near the center and top of your screen.

Convergence: Aligns all three colors (R,G,B) to form a single color (white). The purpose of this control is to ensure that a white line drawn on the screen is as crisp and clear as possible.

- Use the **CONVERGENCE (HOR.)** control to adjust the alignment of the lines in the up/down direction.
- Use the **CONVERGENCE (VER.)** control to adjust the alignment of the lines in the left/right direction.

Controls – continued

GlobalSync Control: Eliminates picture impurities that may result from the earth's magnetic field. While in the sub-menus (GLOBALSYNC, TOP LEFT, TOP RIGHT, BOTTOM LEFT or BOTTOM RIGHT), use the -/+ control buttons to fine tune the GlobalSync corrections.

NOTE: Mitsubishi recommends that you perform GlobalSync correction while running a typical application such as a spreadsheet or text document.



Tools 2

Language: OSM controls menus are available in 6 languages.

OSM Position: You can choose where you would like the OSM controls menu to appear on your screen. Selecting OSM Position allows you to manually adjust the OSM controls menu position from among Center, Top left, Top right, Bottom left and Bottom right.

OSM Turn Off: The OSM controls menu will stay on as long as it is in use. In the OSM Turn Off sub-menu, you can select how long the monitor waits after the last touch of a button for the OSM controls menu to disappear. The preset choices are 5 thru 120 seconds.

OSM Lock Out: This control completely locks out access to all OSM controls functions except Brightness and Contrast. When attempting to activate OSM controls while in the lock out mode, a screen will appear indicating that OSM controls are locked out. To activate the OSM Lock Out function, press SELECT and hold + down simultaneously. To deactivate the OSM Lock Out, press SELECT and hold + down simultaneously.

IPM System Off Mode:	Enable:	The IPM System works normally and all stages of energy savings are utilized.
	Disable:	The Off Mode of the IPM System is not used.

NOTE: For standard systems and graphics boards, keep the factory setting at ENABLE.

NOTE: Do not keep the monitor on when 'No Signal' is applied. This could cause image burn-in on the screen due to the 'No Signal' message being displayed.

EdgeLock Control: Operating your monitor at a nonstandard timing may cause images to appear darker than normal or have color distortion. Use of the EdgeLock control will adjust images to their normal state.

Hot Key: This selection allows you to use </> as brightness control and -/+ as contrast control. When Hot key function is set to "ON", accessing the OSD is only possible with the "EXIT" button.

Factory Preset: Selecting Factory Preset allows you a reset most OSM control settings back to the factory settings. A warning statement will appear to confirm that you do want to reset ALL settings. Individual settings can be reset by highlighting the control to be reset and pressing the **RESET** button.



Information

Display Mode: Indicates the current mode and frequency setting of the monitor.

Monitor Info: Indicates the model and serial numbers of your monitor.

Refresh Notifier: A message will advise you if the refresh rate of the signal being applied to the monitor by the computer is too low. For further information, please refer to your display card or system manual.

Recommended Use

Safety Precautions and Maintenance



FOR OPTIMUM PERFORMANCE, PLEASE NOTE
THE FOLLOWING WHEN SETTING UP AND USING THE
DIAMOND PRO 930^{SB} COLOUR MONITOR:



- DO NOT OPEN THE MONITOR. There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Keep the monitor away from high capacity transformers, electric motors and other devices such as external speakers or fans, which may create strong magnetic fields.
- If possible, position the monitor so that it is facing the east to minimize the effects of the earth's magnetic field.
- Changing the direction of the monitor while it is powered on may cause image discolouration. To correct this, turn the monitor off for 20 minutes before powering it back on.
- When operating the Diamond Pro 930^{SB} with the AC 100 - 240 V power source in EU countries except UK, use the power cord supplied.
For all other cases, use a power cord that matches the power supply voltage of the AC power outlet and that has been approved by and complies with the safety standards of your country.
- In UK, use a BS-approved power cord with molded plug having a black (5A) fuse installed for use with this monitor. If a power cord is not supplied with this monitor, please contact your supplier.

Cleaning Your Monitor

A special coating is provided on the glass (CRT) surface of this monitor to reduce a reflection and static electricity on the glass surface. Due to the delicate coating on the glass surface, use a lint-free, non-abrasive cloth (cotton or equivalent) and a non-alcohol, neutral, non-abrasive cleaning solution to minimize dust. If the screen requires more than a light cleaning, apply a soft neutral detergent and water directly to a soft cloth and use it upon wringing water, to clean the glass surface. Clean your monitor regularly.

CAUTION: The following agents will cause damage to the CRT when cleaning the glass surface:
Benzene, thinner, acid/alkaline detergent, alcohol detergent, detergent with abrasive powder, detergent with anti-static agent, detergent for cleaning.

Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.
 - Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
 - The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
 - Handle with care when transporting. Save packaging for transporting.



CAUTION

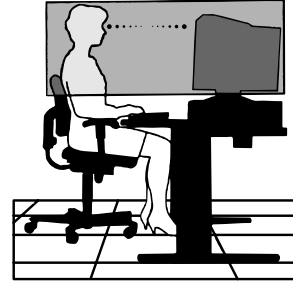
Recommended Use – continued



CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:



- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm and no further away than 60 cm from your eyes. The optimal distance is 50 cm.
- Rest your eyes periodically by focusing on an object at least 6 meter away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- Clean your monitor regularly. Use a lint-free, non-abrasive cloth and a non-alcohol, neutral, non-abrasive cleaning solution or glass cleaner to minimize dust.
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.
- Get regular eye checkups.



Ergonomics

To realize the maximum ergonomics benefits, we recommend the following:

- Adjust the Brightness until the background raster disappears
- Do not position the Contrast control to its maximum setting
- Use the preset Size and Position controls with standard signals
- Use the preset Colour Setting and Sides Left/Right controls
- Use non-interlaced signals with a vertical refresh rate between 75 - 160 Hz
- Do not use primary colour blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast

Specifications

Monitor Specifications	Diamond Pro 930 ^{SB} Monitor	Notes
Picture Tube Viewable Image Size:	Diagonal: 50 cm/19 inch 457 mm/18 inch	90° deflection, 0.24 mm grille pitch, medium short persistence phosphor, aperture grille CRT, multi-layered, anti-static screen coating, dark-tint screen and OptiClear screen.
Input Signal	Video: ANALOG 0.7 Vp-p/75 Ohms Sync: Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL Level) Sync on green	
Display Colours	Analog input: Unlimited number of Colours	Depends on display card used.
Synchronization	Horizontal: 30 kHz to 110 kHz	Automatically
Range	Vertical: 50.0 Hz to 110.0 Hz	Automatically
Resolutions Supported Resolution based on horizontal and vertical frequencies only	640 x 480 @ 60 to 160 Hz 800 x 600 @ 50 to 146 Hz 832 x 624 @ 50 to 141 Hz 1024 x 768 @ 50 to 116 Hz 1152 x 870 @ 50 to 103 Hz 1280 x 1024 @ 50 to 89 Hz 1600 x 1200 @ 50 to 76 Hz 1792 x 1344 @ 50 to 68 Hz 1920 x 1440 @ 50 to 73 Hz	Some systems may not support all modes listed. NEC-Mitsubishi Electronics Display cites recommended resolution at 85 Hz for optimal display performance
Active Display Area (Factory Setting)	Horizontal: 356 mm/14.0 inches Vertical: 266 mm/10.5 inches	Dependent upon signal timing used, and does not include border area.
Active Display Area (Full Scan)	366 mm/14.4 inches 266 mm/10.5 inches	Dependent upon signal timing used, and does not include border area.
Power Supply	AC 100 - 240 V, 50 - 60 Hz	
Current Rating	2.2 A @ 100 - 240 V	
Dimensions	442 mm (W) x 443 mm (H) x 447.5 mm (D) 17.4 inches (W) x 17.4 inches (H) x 17.6 inches (D)	
Weight	23.8 kg 50.01 lbs	
Environmental Considerations		
	Operating Temperature: +5 °C to +35 °C Humidity: 10 % to 90 % Altitude: 0 to 3,000 m Storage Temperature: -20 °C to +60 °C Humidity: 10 % to 90 % Altitude: 0 to 15,000 m	

NOTE: Technical specifications are subject to change without notice.

Features

SuperBright Diamondtron CRT: This patented flat aperture grille CRT delivers an exceptional viewing experience with unprecedented brightness and contrast and a virtually flat image that reduces distortion and glare so that what you see on-screen is what you get on your printed output. The state-of-the-art Mitsubishi U-NX-DBF electron gun and tight 0.24 mm grille pitch delivers precise focus for crisp, clear text and images.

SuperBright Mode : With the simple touch of a button, the brightness level of the Diamondtron CRT doubles. This function enhances the crispness of images for clarity-conscious applications such as graphics, animation and video.

Super Bright Mode OFF: for text based images (normal use)

Super Bright Mode-1 ON: for images

Super bright Mode-2 ON: for moving image such as DVD movies

OptiClear Screen Surface: Further reduces reflection and glare and increases contrast without sacrificing focus level, clarity or brightness.

Dual Dynamic Beam Focus: Provides precise, continuous focus adjustments of the electron beams and optimum image quality, even to the far edges of the screen.

Color Control System with sRGB: Allows you to change between five colour settings on your display to match your personal preference. The sRGB-enabled colour matching setting found within Color Control helps achieve a consistent colour environment with other sRGB-enabled hardware and software applications.

On Screen Manager (OSM) Controls: Allows you to quickly and easily adjust all elements of your screen image via simple to use on-screen menus.

ErgoDesign Features: Enhances human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSM controls for quick and easy image adjustments, tilt/swivel base for preferred angle of vision, space-conscious cabinet design and compliance with MPRII guidelines for lower emissions.

Plug and Play: The Microsoft solution with the Windows 95/98/Me/2000/XP operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

Intelligent Power Manager (IPM) System: Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

Reduced Magnetic Field Technology: Reduces magnetic and alternating electric field emissions and static electricity, addressing ergonomic concerns regarding potential risks from extended computer monitor use.

Multiple Frequency Technology: Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required.

FullScan Capability: Allows you to use the entire screen area in most resolutions, significantly expanding image size.

GlobalSync /Corner Purity Control: Mitsubishi's unique design automatically eliminates picture impurities that may result from stray magnetic fields (including the earth's permanent magnets, etc.) and now allows you to easily adjust impurities in the four corners of your monitor.

Convergence Control: Allows you to adjust the horizontal and vertical convergence to ensure that a white line drawn on the screen is as crisp and clear as possible.

Troubleshooting

No picture

- Display card should be completely seated in its slot.
- Power Button and computer power switch should be in the ON position.
- Signal cable should be completely connected to display card/computer.
- Check connector for bent or pushed-in pins.

Image is scrolling or unstable

- Signal cable should be completely attached to the computer.
- Check pin assignments and signal timings of the monitor and your display card with respect to recommended timings and pin assignments.
- If the Macintosh cable adapter is used, check for proper connection or make sure the display card is Macintosh compatible and that the card is properly seated in the computer.

LED on monitor is not lit (*no green, orange colour can be seen*)

- Power Switch should be in the ON position and power cord should be connected.

Picture is fuzzy or colour looks blotchy

- Adjust Brightness and Contrast Controls or adjust the Moiré Canceler control.
- Access the Degauss Control through OSM controls. Activate the Degauss Control.
CAUTION: A minimum interval of 20 minutes should elapse before the Degauss Control is used a second time when not switching between modes.

Picture bounces or a wavy pattern is present in the picture

- Move electrical devices that may be causing electrical interference away from the monitor.
- See inside cover of User's Manual for FCC information.

Edges of the display image are not square

- Use the OSM Geometry Controls to straighten the edges.
- If possible, position the front of the monitor facing east.

Display image is not centered, too small, or too large

- Use the OSM Size and Position Controls to adjust the image.

Thin lines appear on your screen

- Thin lines are normal for an aperture grille CRT and are not a malfunction.
These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white).

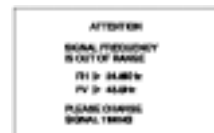
Black vertical lines are visible on the screen

- Thin vertical black lines on one or both sides of the screen. This minor condition is caused by grille element overlap which can occur during shipping.
- Position an open white window over the affected area of the screen and maximize the brightness and contrast controls. This will cause localized heating of the overlap which will clear in a few minutes. Be sure to readjust the brightness and contrast controls back to the normal viewing level after this procedure.

Attention message displayed

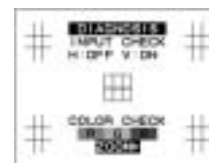
- Check the input signal.

NOTE: The attention message may display when power on the Diamond monitor. In case that the attention message disappears after a little while, there is no problem at the input signal.



Self check function

- Press any control button on the front of the monitor when you see a problem on the screen.
- In case that all R, G and B colours are seen in the diagnosis message, the Diamond monitor has no problem. In case that some colour is lacking in the message, the Diamond monitor has a problem. Contact Mitsubishi Customer Service.
- In case that no diagnosis message displayed with LED lit in green, power off the computer.
- Check the signal cable and computer in case that the diagnosis message displayed.
- Contact Mitsubishi Customer Service in case that the diagnosis message still does not display.
- In case that no diagnosis message displayed with LED lit in orange.
- Check the signal cable and computer.
- Move the mouse or press any key on the keyboard.
- In case that no diagnosis message displayed with LED lit in green and orange.
- Contact Customer Service.



TCO'99

Diamond Pro 930^{SB}

Congratulations! You have just purchased a TCO'99 approved and labeled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.



Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (Internal) and natural (external) environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy. The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

Environmental Requirements

Flame retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride and these are related to another group of environmental toxins, PCBs, which are suspected to give rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bioaccumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

TCO'99 – continued

TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound chlorine and bromine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

Cadmium**

Cadmium is present in rechargeable batteries and in the colourgenerating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

TCO'99 requirement states that batteries, the colourgenerating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches, Mercury damages the nervous system and is toxic in high doses.

TCO'99 requirement states that batteries may not contain any Mercury. It also demands that no mercury is present in any of the electrical or electronics components associated with the display unit.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

The relevant TCO'99 requirement; Neither CFCs nor HCFCs may be used during the manufacturing and assembly of the product or its packaging.

* Bio-accumulative is defined as substances which accumulate within living organisms.

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

To obtain complete information on the environmental criteria document, order from:

TCO Development Unit
SE-114 94 Stockholm
SWEDEN
FAX Number: +46 8 782 92 07
E-mail (Internet): development@tco.se

You may also obtain current information on TCO'99 approved and labelled products by visiting their website at: <http://www.tcodevelopment.com/>

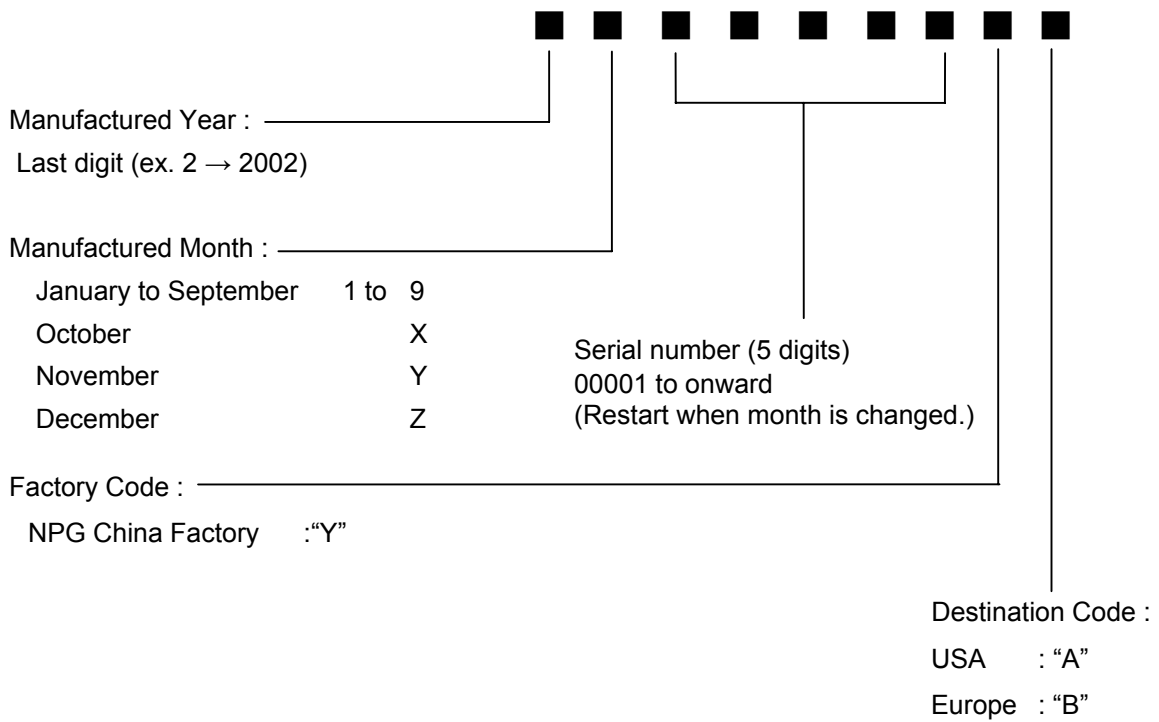


Serial Number Information

Refer to the serial number information shown below.

EX.) SERIAL NUMBER LABEL

Model	: DPro930SB
	: DPro930SB-BK
SERIAL NO. :	<input type="text"/>

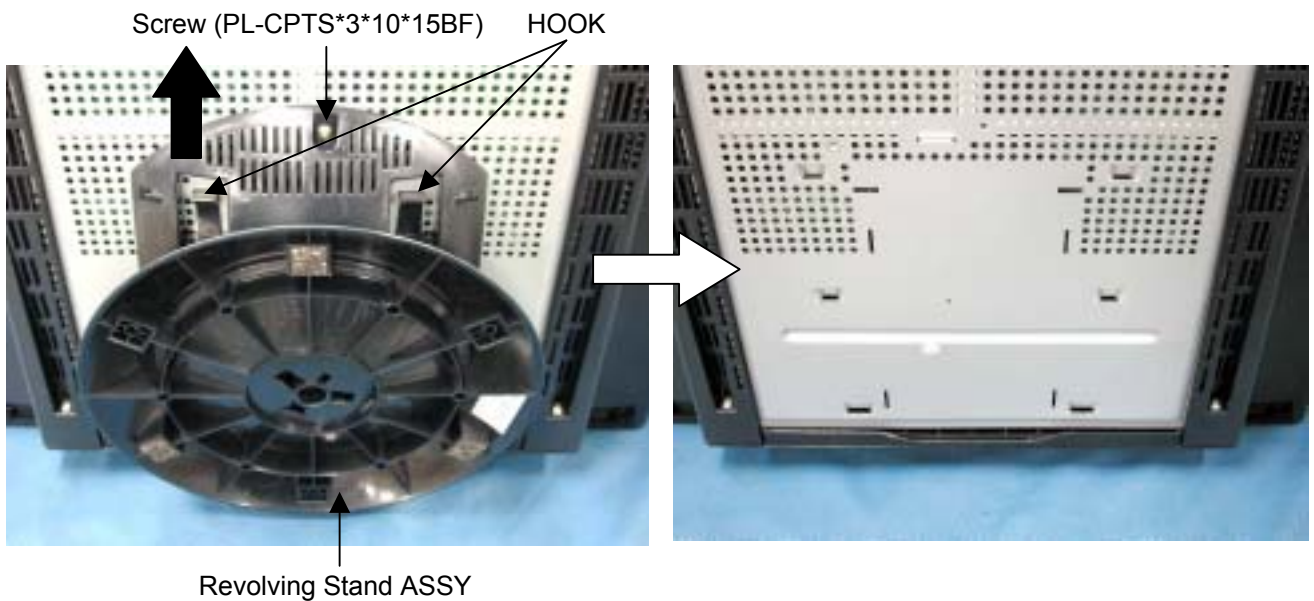


DISASSEMBLY

- Before you disassemble the set, turn off power and pull out the power plug.
- Use the appropriate screwdriver that fits the screw. If you use screwdriver that does not fit, you may break the screws.
- Assembly is the opposite process of Disassembly.
- Carefully discharge the CRT anode by shorting it to ground before removing anode cap.

Revolving Stand ASSY

1. Turn the monitor CRT face down on a clean static free surface to prevent scratching CRT face.
2. Remove the screw (PL-CPTS*3*10*15BF) and remove by pulling up the Hooks and lifting the Revolving Stand ASSY up to the side.



Cabinet Back

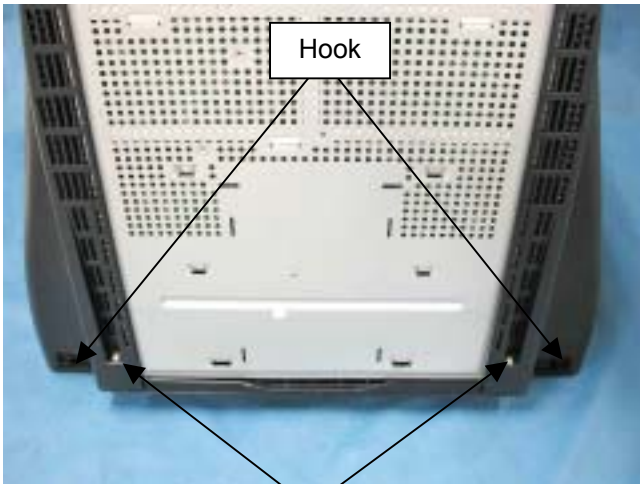
Please prepare jig for removal.

Please use as a jig what turned up about 20~30 mm of tapes for crack prevention and stuck them on the tip of a steel board with approx. a thickness of 0.5~ 0.8 mm a width of 15mm, and a length of 150 mm.

(As the example, we used ruler made from steel as shown in photograph.)

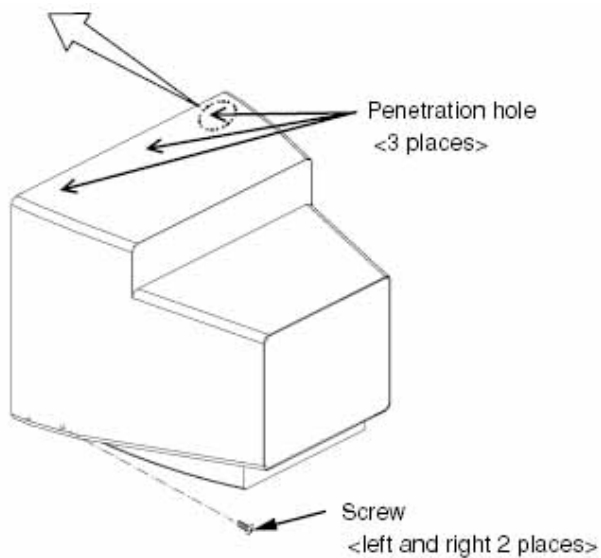


1. Remove the two screws (PL-CPTS*4*16*15BF) and unlock the two hooks.



Screws (PL-CPTS*4*16*15BF)

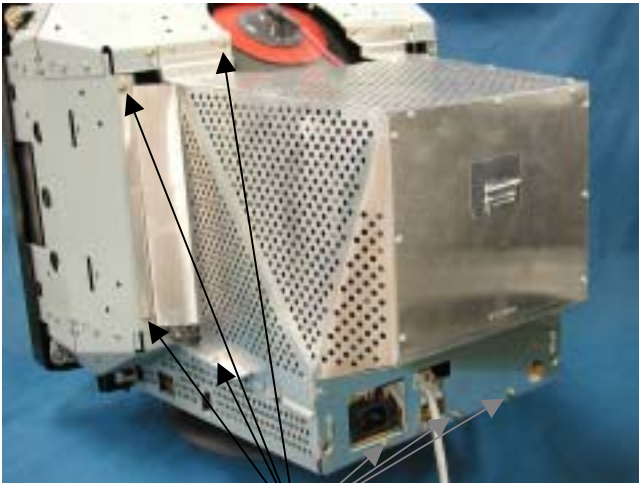
2. Hooks are removed by considering the penetration hole (three places) of the front upper part of Back Cover as a mark, inserting a jig from the direction of an end, and pushing in a jig downward.



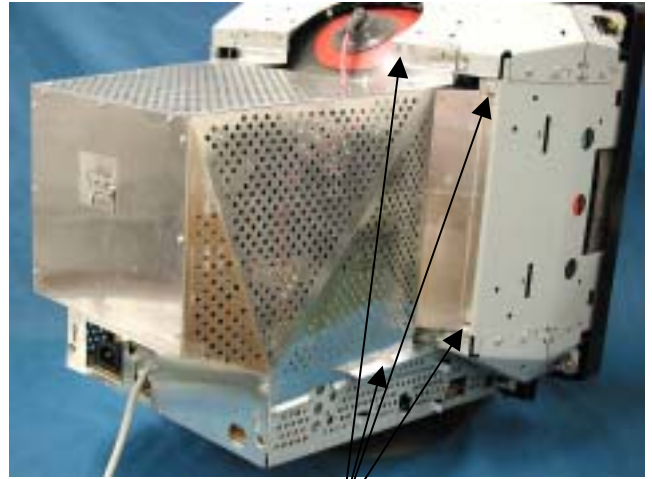
3. If one hook part place of an end is removed, the others are depressed with a jig to remove hooks simultaneously and also Back Cover is pulled back to remove.

Plate Shielding Assy

1. Remove the eleven screws (PL-CPTS*3*8*15BF).



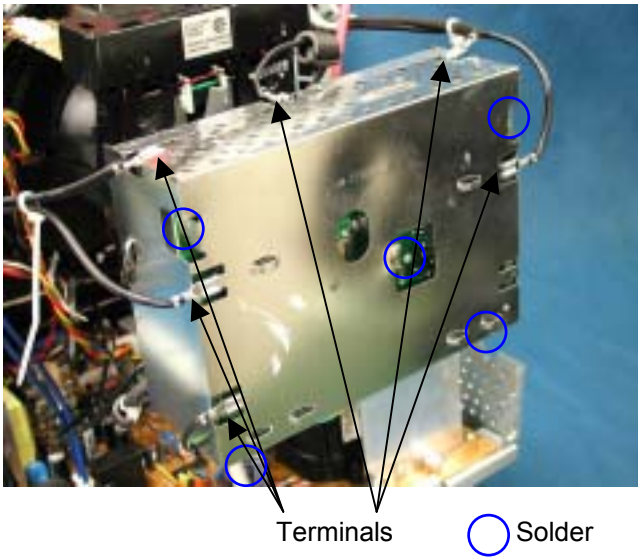
Screw (PL-CPTS*3*8*15BF)



Screw (PL-CPTS*3*8*15BF)

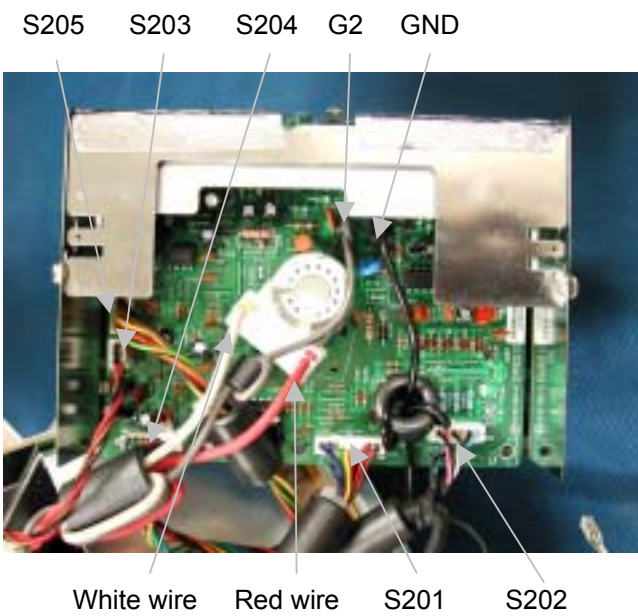
CRT BOARD

1. Remove the nine terminals and desolder the five points as shown.



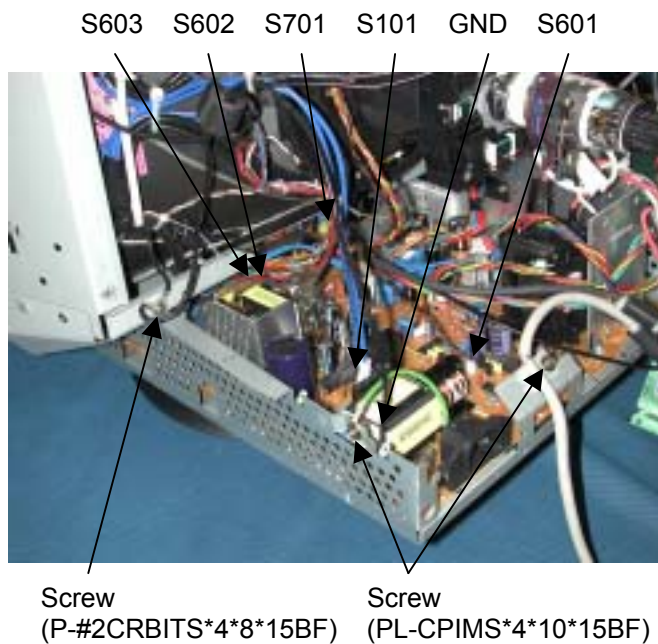
2. Disconnect the connectors "S201", "S202", "S203", "S204", "S205" and "GND".

3. Desolder the wires "White wire", "Red wire" and "G2".



MAIN BOARD

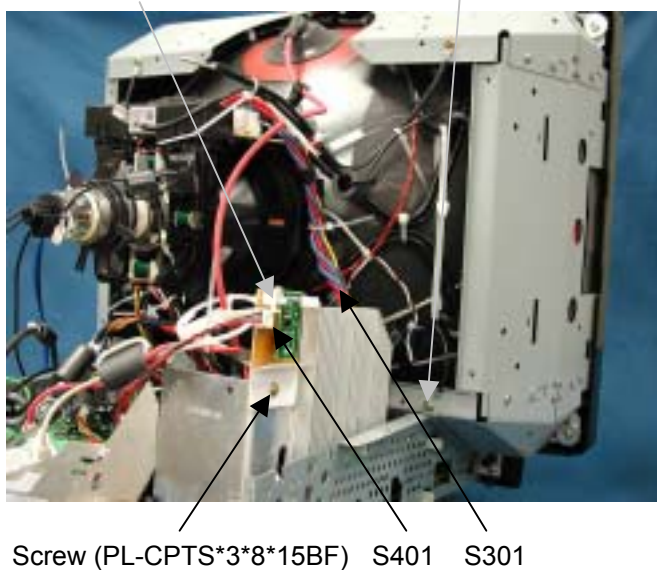
1. Disconnect the connectors "S601", "S602", "S603", "S101" and "GND".
2. Remove the screw (P-#2CRBITS*4*8*15BF) and two screws (PL-CPIMS*4*10*15BF).



3. Disconnect the connectors "S301" and "S401".
4. Remove the screw (P-#2CRBITS*4*8*15BF).
5. Remove the screw (PL-CPTS*3*8*15BF) and remove the SUB INSERT ASSY.
6. Remove the Anode cap from CRT.

NOTE: Carefully discharge the CRT anode by shorting it to ground before removing anode cap.

SUB INSERT ASSY Screw (P-#2CRBITS*4*8*15BF)



7. Remove the four screws (PL-CPTS*4*16*15BF) and remove the Chassis Base from Cabinet Front ASSY.

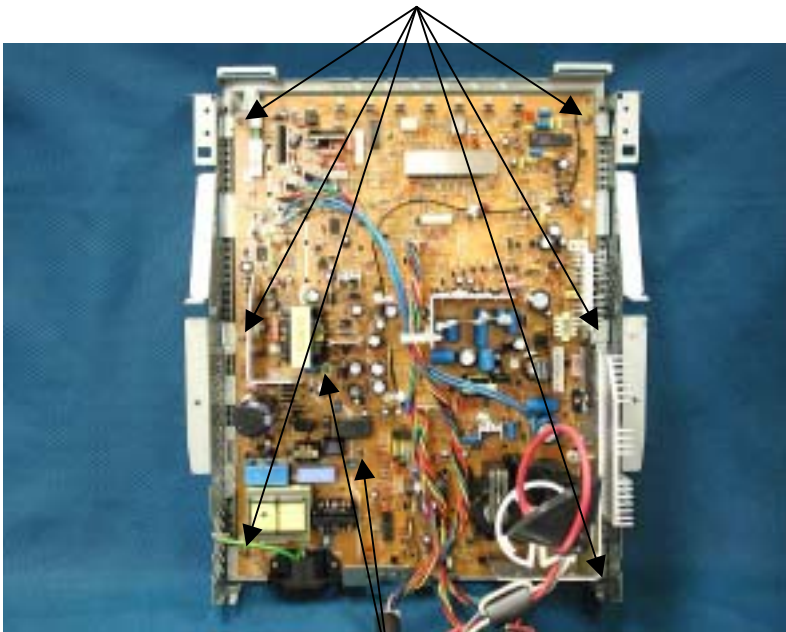


Screws (PL-CPTS*4*16*15BF)

8. Remove the six screws (PL-CPTS*3*8*15BF) and two screws (PL-CPIMS*3*10*15BF).

9. Remove the Main Board from Chassis Base.

Screw (PL-CPTS*3*8*15BF)



Screw (PL-CPIMS*3*10*15BF)

ADJUSTMENT PROCEDURES

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1. Adjustment & Inspection Tools

- (A) Color Analyzer (B) Signal Generator CHROMA 2235 or compatible
- (C) Multi Meter (D) Hi-Voltage Probe
- (E) Convergence Meter (F) Degaussing Probe
- (G) Power Meter (H) CRT Landing Meter
- (I) External degaussing signal generator

2. Timing Table (Factory Mode –17 Modes)

MODE	RESOLUTION	H-SYNC FREQ.	V-SYNC FREQ	H . POLARITY	V . POLARITY
1	VGA400	31.4kHz	70Hz	-	+
2	VGA640*480	31.4kHz	60Hz	-	-
3	640*480(75)	37.5kHz	75Hz	-	-
4	640*480(85)	43.2kHz	85Hz	-	-
5	800*600(75)	46.8kHz	75Hz	+	+
6	MACII 49K	49.7kHz	75Hz	-	-
7	800*600(85)	53.6kHz	85Hz	+	+
8	1024*768(75)	60.0kHz	75Hz	+	+
9	1024*768(85)	68.6kHz	85Hz	+	+
10	1280*1024(75)	79.9kHz	75Hz	+	+
11	1280*1024(85)	91.1kHz	85Hz	+	+
12	1600*1200(75)	93.7kHz	75Hz	+	+
13	1600*1200(85)	106.25kHz	85Hz	+	+
14	1792*1344(75)	106.27kHz	75Hz	-	+
15	1920*1440(60)	90.0kHz	65Hz	-	+
16	MACII 35K	35.0kHz	67Hz	-	-
17	MAC 1152*870	68.7kHz	75Hz	-	-

3. Normal Condition Definition

- (A) Input AC Voltage 110V/60Hz.
- (B) Set ABL (VR302) VR set to Max, all other VR's adjust to their Center Position.
- (C) Color temp 9300K.
- (D) Enter to Factory mode self test pattern. (IPM_OFF_MODE: Disable)
(Note: Do not over scan. Size should be H= 345±10mm, V=250±10mm).
- (E) If unable to adjust, change to mode 10 and adjust H/V size to 356*266mm.
- (F) Adjust Screen VR (G2) to Y=100±10cd/m².
- (G) Warm up time more than 60 minutes.

4. Hot Key Operation

- (A) Factory Mode and Self test pattern : power on + '+' key + '-' key.
- (B) Diagnosis Mode: no sync power on + "Select" key.
- (C) Exit Self test pattern: Power on + "Exit" key.
- (D) Factory Menu

TAB 1) BRIGHTNESS / CONTRAST



- : Brightness
- : Contrast
- : Contrast SBM Minimum

TAB 2) POSITION / SIZE



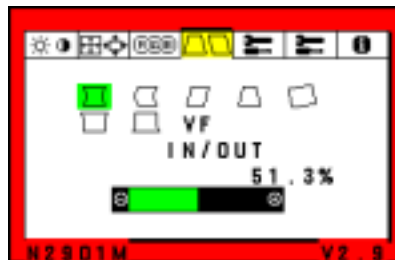
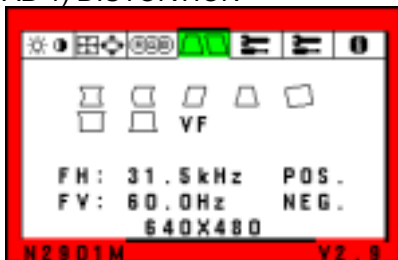
- : Left / Right (H.Position)
- : Down / Up (V.Position)
- : Narrow / Wide (H.Size)
- : Short / Tall (V.Size)
- VG**: Vertical GAIN(Vertical Sub Size)
- VO**: Vertical Offset
- HL**: Horizontal Linearity
- CP**: Corner Purity Off

TAB 3) COLOR ADJUST



- 1: 9300K
- 2: 8200K
- 3: 7500K
- 5: 5000K
- sRGB: sRGB
- : N/A
- R** : Red Gain
- G** : Green Gain
- B** : Blue Gain
- RB** : Red Bias
- GB** : Green Bias
- BB** : Blue Bias
- : Brightness
- : Contrast

TAB 4) DISTORTION



- : In / Out (Side Pincushion)
- : Left / Right (Pin Balance)
- : Tilt (Parallelogram)
- : Align (Trapezoid)
- : Rotate
- : Top Corner
- : Bottom Corner
- VF** : Vertical Focus

TAB 5) TOOLS 1



- :Moire canceller
- :Linearity(VER.)
- :Linearity balance
- :Convergence(HOR.)
- :Convergence(VER.)
- : Global Sync (Top Left)
- : Global Sync(Top Right)
- : Global Sync(Bottom Left)
- : Global Sync(Bottom Right)
- * Global Sync : Corner purity

TAB 6) TOOLS 2



TOOL 2 is as same as user mode

TAB 7) INFORMATION



DS :Destination

TAB 8) Purity



- :C_Time01 (Top Left):Gain
- :C_Time01 (Top Right):Gain
- :C_Time01(Bottom Left):Gain
- :C_Time01(Bottom Right):Gain
- T2 : Corner Time02
- TR : Corner Time Reference
- P1 : Corner Temp. 01 (Gain)
- P2 : Corner Temp. 02
- PR : Corner Temp. Reference
- BH : HP_SN_BH (Gain)
- SN : H_MAGNETIC_SN
- ZR : H_ZERO_SN

5. B+ Check

- (A) Mode: No.1
- (B) Pattern: All Black. (Brightness set to cut off)
- (C) Adjust VR101 to make 13.9V of D153 cathode voltage.
- (D) Check power source should be 79.5V \pm 1V, 6.9V \pm 0.2V, 26.5V \pm 1V, -14.1V \pm 0.5V, 13.9V \pm 0.1V.
- (E) After aging, Check 13.9V \pm 0.1V of D153 cathode again.

6. X-RAY Test

- (A) Mode: No.1
- (B) Pattern: Normal Crosshatch (Brightness set to cut off)
- (C) Test
 - Apply a jumper wire between TP1 and TP2 then power on, Monitor should be active in x-ray protector.

7. H. V. Adjustment

- (A) Mode: No.11
- (B) Pattern: Full Black (Brightness set to cut off)
- (C) Adjust VR301 to make the high voltage has 26.0 \pm 0.1kV.
- (D) After aging, Check high voltage has 26.0 \pm 0.1kV again.

8. H-Raster Center Adjustment

- (A) Mode: No.13
- (B) Pattern: Full Black
- (C) Adjust the Brightness Control so that the background is visible.
- (D) Adjust VR501 to make the raster mostly near center background position.
- (E) $|a-b| < 2.0\text{mm}$. (a: Bezel-Raster of left side, b: Bezel-Raster of right side)

9. Preset Adjustment

- (A) Mode No.11
- (B) Pattern: Cross hatch
- (C) Enter to Factory mode. Set VG (Vertical Gain): 80.9% and VO (Vertical Offset): 46.6%.
Set Linearity (VER):33.3% and Vertical Balance:46.6%.
- (D) Adjust H-phase, V-center, H-size, V-size, Pincushion, Trapezoid, Bow, Parallelogram Top-corner, Bottom-corner, and rotation to make Picture Position Center and Picture Size 356*266mm.
- (E) If V-size can't over scan, Change mode to MODE 1(VGA400), adjust VG in Factory mode to make V-size can over scan 5mm for each top and down side when V size set to 100% on OSM.
- (F) Change Mode to No.1, Adjust VR503 to 5~10mm over scan with keeping H-size=100%.

(G) Change Mode to No.1, Check V size to do about 10mm over scan with keeping V size=100%, If size is not enough, Re-adjust VG to 5~10mm over scan with keeping v size=100%.

10. G2 Initial Setting

- (A) Mode No. 11
- (B) Pattern: Full Black
- (C) Adjust screen VR to make G2 voltage $650V \pm 10V$.

11. White Balance Adjustment

(A) Setting Aging Condition:

- 1) Enter Factory Mode,
- 2) Mode: No.11, Full White pattern and adjust size to $H=350 \pm 10\text{mm}$, $V=260 \pm 10\text{mm}$.
- 3) Warm up 60 min.
- 4) Perform an External Degauss.

(B) Cut Off Adjustment

- 1. Select the color Mode 9300K.
- 2. Cut Off Adjustment : Video Signal Off (0.Vp-p), Brightness set to 52.9%, Contrast to maximum and R/G/B Bias set to 36.0%.
- 3. Adjust Screen VR (G2) $Y=0.2\text{cd/m}^2 \pm 0.02\text{cd/m}^2$.
- 4. Adjust R. Bias, B. Bias to make $X=0.283 \pm 0.005$, $Y=0.297 \pm 0.005$, with readjust G2 to keep the brightness between $0.2 \text{cd/m}^2 \pm 0.02\text{cd/m}^2$.
- 5. Change brightness setting to 100%, Check $Y=3.8 \pm 0.5\text{cd/m}^2$.

(C) "9300K, 5000K MODE" White Balance Adjustment

- 1. 9300K (Select color Mode 9300K)
 - 1) Brightness set to 50%, Contrast to maximum and CON_SBM_MIN set to 67.7%.
 - 2) Set pattern to 50*50mm white block Pattern.
 - 3) Adjust 2 channel gain control to $x=0.283 \pm 0.005$, $y=0.297 \pm 0.005$ and keep one channel with 100%.
 - 4) Adjust CON_SBM_MIN to meet following spec.
 - 9300K $x=0.283 \pm 0.005\text{cd/m}^2$
 - $y=0.297 \pm 0.005\text{cd/m}^2$
 - $Y=135 \pm 2\text{cd/m}^2$

2. 5000K (Select color Mode 5000K)

- 1) Brightness set to 50% and Contrast to maximum.
- 2) Set pattern to 50*50mm white block Pattern.
- 3) Adjust 2 channel gain control to $x=0.345 \pm 0.005$, $y=0.359 \pm 0.005$ and keep one channel with 100%.
- 4) Adjust R, G, B gain to meet following spec.

$$\begin{aligned} 5000K \quad x &= 0.345 \pm 0.005 \text{cd/m}^2 \\ y &= 0.359 \pm 0.005 \text{cd/m}^2 \\ Y &> 100 \text{cd/m}^2 \end{aligned}$$

(D) "sRGB MODE" White Balance Adjustment (Select color Mode sRGB)

- 1) Brightness set to 50% and Contrast to maximum.
- 2) Set pattern to 50*50mm white block Pattern.
- 3) Adjust 3 channel gain control to $x=0.313 \pm 0.005$, $y=0.329 \pm 0.005$.
- 4) Adjust contrast to meet following spec.

$$\begin{aligned} \text{sRGB} \quad x &= 313 \pm 0.005 \text{cd/m}^2 \\ y &= 329 \pm 0.005 \text{cd/m}^2 \\ Y &= 87 \pm 1 \text{cd/m}^2 (27\text{FL}) \end{aligned}$$

(E) "SB1, 2 MODE" White Balance Adjustment (Select the color Mode SB1, 2 MODE)

- 1) Select the color mode "SB2 MODE" by "Select" key when OSM is off in 9300K.
- 2) Brightness set to 50% and Contrast to maximum.
- 3) Set pattern to 50*50mm white block, Adjust contrast to $Y=235 \pm 5 \text{cd/m}^2$.
- 4) Change to "SB1 MODE" by select key when OSM is off.
- 5) Brightness set to 50% and Contrast to maximum.
- 6) Set pattern to 50*50mm white block, Adjust contrast to $Y=235 \pm 5 \text{cd/m}^2$.
- 7) Adjust Brightness to $Y=200 \pm 3 \text{cd/m}^2$ (Keep contrast position).

(F) ABL Adjustment and Brightness Preset

- 1) SB mode off, Color set to 9300K. Full White Pattern.
- 2) Brightness, contrast control to max., Adjust VR302 to $Y=105 \pm 2 \text{cd/m}^2$ (30.5FL).
- 3) Brightness preset: set to 50%.

12. Focus Adjustment

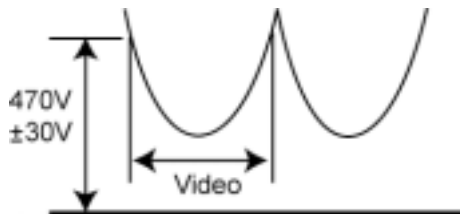
(A) Mode: No.11, 9300K

(B) Pattern: Green Crosshatch, Brightness just cut off, Contrast maximum.

(C) Adjust V- Parabola Vp-p by OSM V-Focus control in Factory Mode. V focus: 60% of control bar.

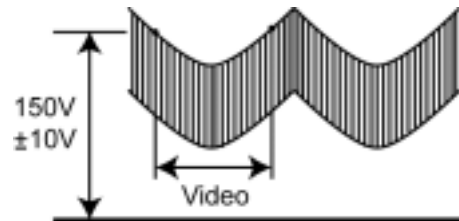
(D) Check T302 output Vp-p. H-para(R330)=470Vp-p \pm 30V, V-para=130 \pm 10V.

H-para=470V \pm 30V



Horizontal

V-para=130V \pm 10V



Vertical

(E) Adjust F1 VR of FBT (lower side VR) for the vertical line to become fine line.

(F) Adjust F2 VR of FBT (higher side VR) for the horizontal line to become fine line.

(G) Receive Focus adjustment pattern.

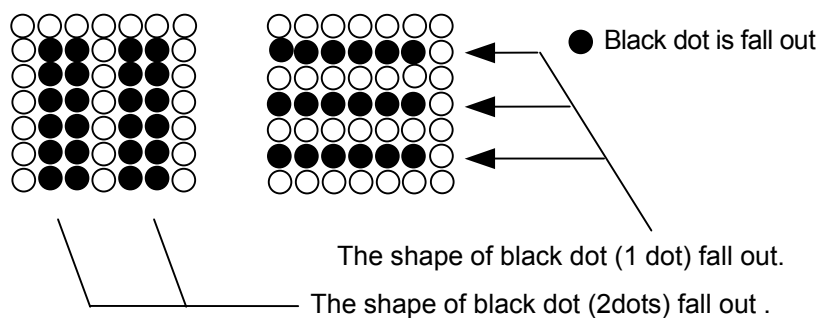
(H) Adjust F1 VR if vertical black line is not falling out.

(I) Adjust F2 VR if horizontal black line is not falling out.

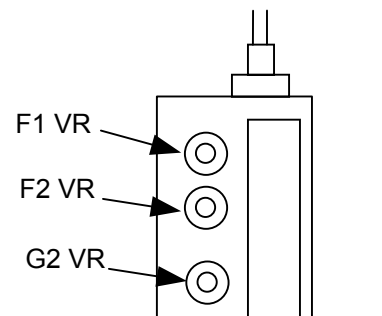
(J) Use the video card "Matrox G550" or equivalent, and receive specified Microsoft Excel "Work sheet" (1280*1024(85)).

Make sure that there is no double line for horizontal at whole area.

*Note: Focus adjustment must be finished at F1 VR.



FOCUS ADJUSTMENT PATTERN



Focus VR

13. Purity Adjustment

(A) Receive signal 12 (Cross hatch pattern).

(B) The CRT face should be facing east and degauss the entire unit by external degaussing coil.

(C) Make sure the single color purity.

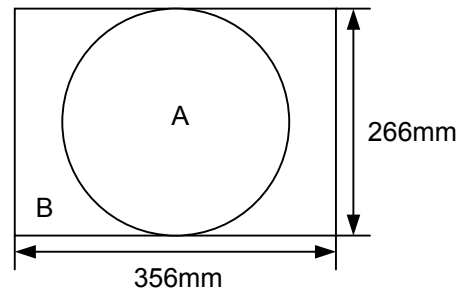
If not, readjust CPC magnet and touch up using correction magnets.

14. Convergence Adjustment

- (A) Receive signal 11
- (B) Pattern: Cross hatch.
- (C) Adjust H-CONVERGENCE, V-CONVERGENCE by OSM in Factory Mode to both around 50%.
- (D) Use the convergence meter to check whether within the spec. If it cannot be within the spec, adjust Yoke coil and VR to make be follow the spec.

Zone A :X, Y \leq 0.25mm (within the 266mm diameter circle)

Zone B :X, Y \leq 0.3mm (within 356*266mm)



- (5) After convergence adjustment, readjust Focus to best performance.

15. Power Saving Function Inspection

- (A) Mode: No.13
- (B) Pattern: Full white
- (C) Input: Maximum rating voltage
- (D) Inspection
 1. It should be into power off Mode when the both horizontal sync and vertical sync are disabled after 5 seconds. Check the LED color "Orange" and the power consumption must be less than 4W.
 2. It should be recovered the normal Mode when the both horizontal sync and vertical sync are enabled. Check the picture is normal and LED color "Green".

16. Magnetic Field Allowance Inspection (At tube axis direction check)

- (A) Mode: No.11, Full White (crosshatch reverse) pattern.
- (B) Check the screen size is adjusted "356*266mm".
- (C) After connect degauss coil to External degaussing signal generator, start at the same time both "GEGAUSS (+)" pushing and External degaussing signal generator running.
- (D) As following procedure, confirm "landing error on screen" by visual check.
 - 1) Set Full Red Pattern (Crosshatch Reverse)
 - 2) Set magnetic field to "Bh=0.00mT".
 - 3) Start at the same time both "DEGAUSS (+)" pushing and External degaussing signal generator running.
 - 4) Uneven color is not observed by visual check. When uneven color observes, it should be rejected.
 - 5) Set magnetic field to "Bh=+0.03mT".

- 6) Start at the same time both "DEGAUSS (+)" pushing and External degaussing signal generator running.
- 7) Uneven color is not observed by visual check. When uneven color observes, it should be rejected.
- 8) Set magnetic field to "Bh=-0.03mT".
- 9) Start at the same time both "DEGAUSS (+)" pushing and External degaussing signal generator running.
- 10) Uneven color is not observed by visual check. When uneven color observes, it should be rejected.
- 11) Set magnetic field to "Bh=0.00mT".
- 12) Start at the same time both "DEGAUSS (+)" pushing and External degaussing signal generator running.
- 13) Uneven color is not observed by visual check. When uneven color observes, it should be rejected.
- 14) Using same inspection procedure as above, check Blue color.
- 15) Using same inspection procedure as above, check Green color.
- 16) After finish above inspection, connect degauss coil to MAIN BOARD S101.

17. Distortion Adjustment

Factory mode setting


* After completion of adjustment exit the factory mode and data will be saved.

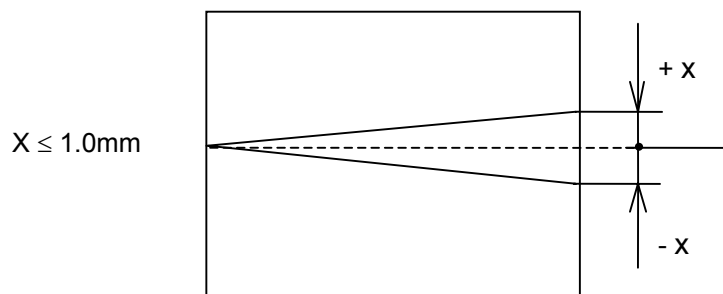
Signal: All signals Cross hatch

Perform the adjust for signal No.13 in step 1 ~ 3.


Perform the adjust for above all signal in step 4 ~ 5.

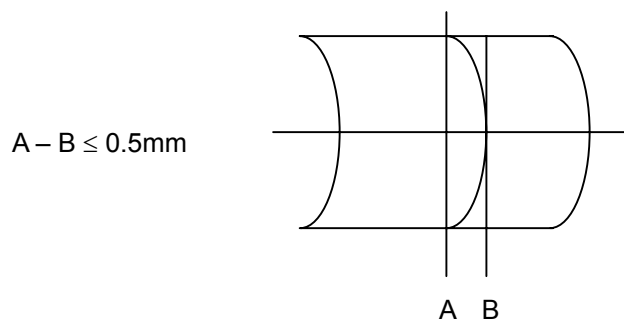
1. Rotation Adjustment

- (1) Receive signal 13 (Cross hatch)
- (2) Select the “” icon in OSM TAB 4.
- (3) Make sure that the picture tilt meets the following standards.




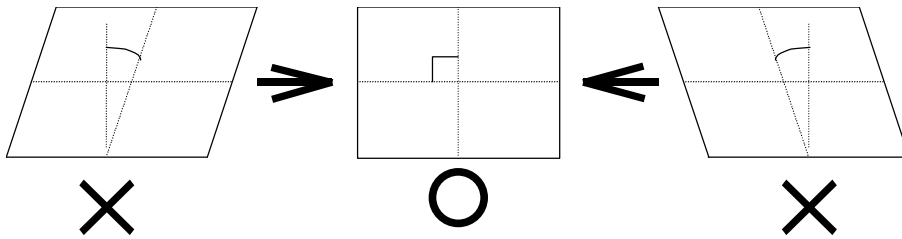
2. Pincushion Balance Adjustment

- (1) Select the “” icon in OSM TAB 4.
- (2) Make sure that the Pincushion Balance meets the following standards.




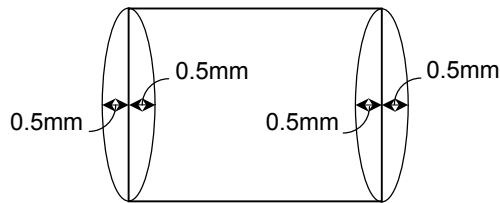
3. Parallelogram distortion Adjustment

- (1) Select the “” icon in OSM TAB 4.
- (2) Adjust “+”, “-” SW so that the vertical line and horizontal line at the screen’s center fall at right angles.
(less than 90 ± 0.5 degree)




4. Side Pincushion Adjustment

- (1) Select the “” icon in OSM TAB 4.
- (2) Make sure that the side pincushion distortion meets the following standards.



5. Trapezoid Distortion Adjustment

- (1) Select the “” icon in OSM TAB 4.
- (2) Make sure that the trapezoid distortion meets the following standards.

$$|(AB - CD)| \leq 1.0\text{mm}$$
$$|(AC - BD)| \leq 1.0\text{mm}$$



18. Setting Before Shipment

- (A) Color Temp: 9300K (SB mode off).
- (B) OSM position: Center of the screen
- (C) Brightness: Preset (50%)
- (D) H Moire: Minimum
- (E) Refresh Notice: OFF
- (F) OSM turn off time: 45 sec
- (G) IPM off mode: Enable
- (H) Language: English for A,B,C,R Version, Japanese for J Version.
- (I) OSM Lock: OFF
- (J) Edge Lock: Back
- (K) Hot Key: "OFF"
- (L) C_PURITY_OFF: 0%
- (M) C_TIME_TL: 10
- (N) C_TIME_TR: 0C
- (O) C_TIME_BL: 10
- (P) C_TIME_BR: 0C
- (Q) C_TIME_02: 23
- (R) C_TIME_REF: 14
- (S) C_TEMP01: 08
- (T) C_TEMP02: 09
- (U) C_TEMP_REF: 27
- (V) HP_SN_BH: 0F
- (W) H_MAG_SN: 0B

19. Adjustment Magnetic Field

Vertical: +40uT, Horizontal: ± 0 uT(Neutral)

* Notes About Degaussing Method

Follow the degaussing procedure as below. (To prevent intertwinement of aperture grille.)

- 1) Use stick type degaussing probe at demagnetizing CRT.
Do not use ring type degaussing probe.
- 2) In order to remove a magnetization from front, top, bottom and side of CRT, and bottom chassis.
Do not switch off the degaussing probe abruptly. Move the degaussing probe slowly when degaussing.

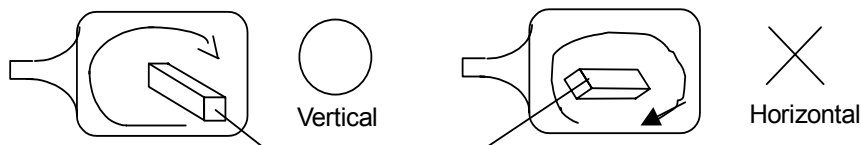
Note: If switch off the degaussing probe near the set, the set will be magnetized.

3) Degaussing method

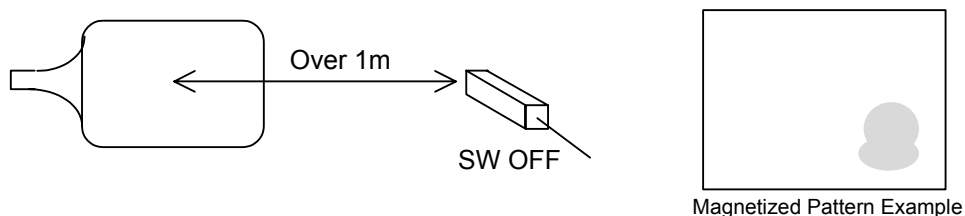
When switch on the degaussing probe, keep distance between panel surface and degaussing probe more than 50cm. Move the degaussing probe vertically facing to the panel surface.

Keep distance of panel surface and degaussing probe to more than 15mm.

Starting from edge of CRT, move the degaussing probe toward CRT center in circular motion, spending 6 to 7 seconds. (Rounding about 4 or 5 times.)



- 4) After sufficiently degaussing the CRT, move the degaussing probe slowly away from the panel surface while rotating from corner to center, taking more than 3 seconds. Turn off SW more than 1m away from the CRT. Degauss again if the unit is magnetized.



20. Timing Sheet

Preset Mode No.	1	2	3	4	5	6
	VGA	VGA	VESA	VESA	VESA	(MAC)
Signal Name	640*400	640*480	640*480 (75)	640*480 (85)	800*600 (75)	832*624 (75)
Resolution	640*400	640*480	640*480	640*480	800*600	832*624
Dot Clock (MHz)	25.175	25.175	31.500	36.000	49.500	57.283
fh (kHz)	31.47	31.469	37.50	43.269	46.875	49.725
fv (Hz)	70.09	59.940	75.00	85.008	75.00	74.550
Total (dot)	800	800	840	832	1056	1152
(uS)	31.78	31.778	26.667	23.111	21.333	20.111
Disp (dot)	640	640	640	640	800	832
(uS)	25.42	25.422	20.317	17.778	16.162	14.523
Front (dot)	16	16	16	56	16	32
(uS)	0.64	0.636	0.508	1.556	0.323	0.559
Sync Pulse (dot)	96	96	64	56	80	64
(uS)	3.18	3.813	2.032	1.556	1.616	1.117
Back (dot)	48	48	120	80	160	224
(uS)	1.91	1.907	3.810	2.222	3.232	3.910
Total (H)	449	525	500	509	625	667
(mS)	14.268	16.683	13.333	11.764	13.333	13.414
Disp (H)	400	480	480	480	600	624
(mS)	12.711	15.253	12.800	11.093	12.800	12.549
Front (H)	12	10	1	1	1	1
(mS)	0.381	0.318	0.027	0.023	0.021	0.020
Sync Pulse (H)	2	2	3	3	3	3
(mS)	0.064	0.064	0.080	0.069	0.064	0.060
Back (H)	35	33	16	25	21	39
(mS)	1.112	1.049	0.427	0.578	0.448	0.784
Interlace	NON	NON	NON	NON	NON	NON
Polarity (H/V)	NEG/POS	NEG/NEG	NEG/NEG	NEG/NEG	POS/POS	NEG/NEG
Composite Sync						
Composite Video						
Character Font	7*9	7*9	7*9	7*9	7*9	7*9
Serration	OFF	OFF	OFF	OFF	OFF	OFF
EQP	OFF	OFF	OFF	OFF	OFF	OFF

Preset Mode No.	7	8	9	10	11	12
	VESA	VESA	VESA	VESA	VESA	VESA
Signal Name	800*600 (85)	1024*768 (75)	1024*768 (85)	1280*1024 (75)	1280*1024 (85)	1600*1200 (75)
Resolution	800*600	1024*768	1024*768	1280*1024	1280*1024	1280*1024
Dot Clock (MHz)	56.250	78.750	94.5	135.0	157.5	202.5
fh (kHz)	53.674	60.023	68.677	79.976	91.146	93.75
fv (Hz)	85.061	75.029	85	75.025	85.024	75
Total (dot)	1048	1312	1376	1688	1728	2160
(uS)	18.631	16.660	14.561	12.504	10.971	10.667
Disp (dot)	800	1024	1024	1280	1280	1600
(uS)	14.222	13.003	10.836	9.481	8.127	7.901
Front (dot)	32	16	48	16	64	64
(uS)	0.569	0.203	0.508	0.119	0.406	0.316
Sync Pulse (dot)	64	96	96	144	160	192
(uS)	1.138	1.219	1.016	1.067	1.016	0.948
Back (dot)	152	176	208	248	224	304
(uS)	2.702	2.235	2.201	1.873	1.422	1.501
Total (H)	631	800	808	1066	1072	1250
(mS)	11.756	13.328	11.765	13.329	11.761	13.33
Disp (H)	600	768	768	1024	1024	1200
(mS)	11.179	12.795	11.183	12.804	11.235	12.800
Front (H)	1	1	1	1	1	1
(mS)	0.019	0.017	0.015	0.013	0.011	0.011
Sync Pulse (H)	3	3	3	3	3	3
(mS)	0.056	0.050	0.044	0.038	0.033	0.032
Back (H)	27	28	36	38	44	46
(mS)	0.503	0.466	0.524	0.475	0.483	0.491
Interlace	NON	NON	NON	NON	NON	NON
Polarity (H/V)	POS/POS	POS/POS	POS/POS	POS/POS	POS/POS	POS/POS
Composite Sync						
Composite Video						
Character Font	7*9	7*9	7*9	7*9	7*9	7*9
Serration	OFF	OFF	OFF	OFF	OFF	OFF
EQP	OFF	OFF	OFF	OFF	OFF	OFF

Preset Mode No.	13	14	15	16	17
	VESA	VESA	VESA	MAC	MAC
Signal Name	1600*1200 (85)	1792*1344 (75)	1920*1440 (60)	640*480 (67)	1152*870 (75)
Resolution	1600*1200	1792*1344	1920*1440	640*480	1152*870
Dot Clock (MHz)	229.5	261.0	234.0	30.24	100
Fh (kHz)	106.250	106.27	90.0	35.0	68.681
Fv (Hz)	85.0	74.997	60	66.67	75.062
Total (dot)	2160	2456	2600	864	1456
(uS)	9.412	9.410	11.11	28.57	14.560
Disp (dot)	1600	1792	1920	640	1152
(uS)	6.972	6.866	8.205	21.16	11.52
Front (dot)	64	96	128	64	32
(uS)	0.279	0.368	0.547	2.12	0.320
Sync Pulse (dot)	192	216	208	64	128
(uS)	0.837	0.828	0.889	2.12	1.280
Back (dot)	304	352	344	96	144
(uS)	1.325	1.349	1.470	3.17	1.440
Total (H)	1250	1417	1500	525	915
(mS)	11.765	13.334	16.667	15.000	13.322
Disp (H)	1200	1344	1440	480	870
(mS)	11.294	12.647	16.000	13.714	12.667
Front (H)	1	1	1	3	3
(mS)	0.009	0.009	0.011	0.086	0.044
Sync Pulse (H)	3	3	3	3	3
(mS)	0.028	0.028	0.033	0.086	0.044
Back (H)	46	69	56	39	39
(mS)	0.433	0.649	0.622	1.114	0.568
Interlace	NON	NON	NON	NON	NON
Polarity (H/V)	POS/POS	NEG/POS	NEG/POS	NEG/NEG	NEG/NEG
Composite Sync				YES	YES
Composite Video					
Character Font	7*9	7*9	7*9	7*9	7*9
Serration	OFF	OFF	OFF	ON	ON
EQP	OFF	OFF	OFF	OFF	OFF

INSPECTION

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1.Scope

1.1 Introduction

This document defines the design and performance requirements for a 19 inch (18inch Viewable), color display monitor. This monitor uses a 19 inch Flat AG Trio (Aperture Grille) type CRT. This monitor is capable of maximum resolution of 1920 x 1440 pixels at 73 Hz non-interlaced mode, and is capable of horizontal frequencies between 30.0kHz and 110.0kHz.

The manufacture assumes the responsibilities for the design and assembly of the power supply and deflection circuits and the integration of these components with the CRT/yoke assembly and all mechanical parts, to meet the requirements of this specification.

The following list shows the model name, Cabinet color, Audio function and market.

MODEL NAME	Cabinet color	Audio Base	MARKET	Ver.
DPro930SB-BK(A)	B/B	No	USA/Canada	Aver.
DPro930SB(B)	DAS / LG	No	Europe	Bver.
DPro930SB-BK(B)	DAS / B	No	Europe	Bver.

- * "B" : Dark Roof Gray
- "DAS" : Dark Aluminum Silver
- "LG" : Light Gray

1.2 General Description

NO	Item		Spec.	REMARKS
1	CRT	Vendor / Model No.	Mitsubishi / M46LVT62X41	
		Type	Diamondtron U2 (Aperture Grille)	
		Size	48cm / 45.7cm Diagonal Viewable Image (19" / 18" Diagonal Viewable Image)	
		Grill Spacing (Phosphor Spacing)	Approx. 0.24mm (Approx. 0.25mm)	Aperture Grille
		Phosphor Type	B22	
		Face-plate	S-AAS Coating (Sputer)	
		Electron Gun Type	U-NX-DBF	
2	SCANNING	Horizontal Freq	30.0k - 110.0kHz	
		Vertical Freq	50 - 160Hz	
3	SIGNAL INPUT	Video	Analog	0.7Vp-p
		Sync	Composite Sync	TTL Pos / Neg
			Separate Sync	TTL Pos / Neg
		Termination (Impedance)	Video	75 ohm to GND
Sync.	2.2K ohm to GND or more			
4	VIDEO	Clock frequency	290MHz	
5	SCREEN CHARACTERISTICS	Display Resolution (Maximum)	1920×1440 73Hz (Maximum) 1280×1024 85Hz (recommend)	
		Display Size	Preset	356 mm (H) * 266 mm (V)
			Full Scan	366 mm (H) * 274 mm (V)
		Misconvergence	Center: 0.25 mm , Corner : 0.30 mm	
		Brightness (Full White)	100cd/m ² at 9300K (Cont:MAX Bri:Preset)	
6	CONTROL (User Controls)	Front	Power SW Exit, Left, Right, -, +, Select, Reset Note: User can change Super Bright Mode by pressing a Select key.	7 control buttons
		OSM	Brightness , Contrast , Degauss H.Size, V.Size, H.Position, V.Position Color Control (9300K, 8200K, 7500K, sRGB, 5000K) Color Temperature Adjust, Color Gain Adjust Geometry : 7ways (Side Pin In/Out , Side Pin Left/Right , Parallelogram, Trapezoid, Rotation, TopPin In/Out, BottomPin In/Out) Moire Canceler (Horizontal), Linearity (Vertical), Vertical Balance Convergence Adjust (H), Convergence Adjust (V) Global Sync (TL/TR/BL/BR) Language select (6:E/G/F/SP/IT/JA), OSM position, OSM turn off, OSM lock out, IPM System, Clamp Pulse Position, Hot Key, Factory Preset Display mode, Monitor info., Refresh notifiere, URL indication Diagnosis indication	
7	CONNECTOR	Power Input	Power Cord (Length:1.8m, Color: Haze Gray)	
		Signal Input	Mini 15pin D-sub (Length:1.8m, Color:Haze Gray)	
8	POWER SUPPLY	Operating Range	AC100-240VAC	
		Power Consumption (Max.)	106W 2.2A@100-240VAC Power save < 4W	
9	ENVIRONMENTAL CONDITION	Operating temperature	5- 35 °C	
		Relative humidity	10 - 90 % (without condensation)	
10	WEIGHT		Net : 23.8kg / 52.5lbs, Gross : 27.8kg / 61.3lbs	
11	DIMENSIONS	Cabinet with Tilt / Swivel stand	Net : W 442mm (17.4"), H 443mm (17.4"), D 447.5mm (17.6")	
		Carton	Gross: W 550mm (21.7"), H 580mm (22.8"), D 585mm (23.0")	
12	REGULATION	Safety	UL1950(UL), CSA C22.2 No.950(C-UL), EN60950(TUV-GS), CCIB, PCBC, GOST, PSB	
		EMC	FCC-B, DOC-B, EN55022-B, EN61000-3-2,-3-3, EN55024(IEC61000-4-2,-4-3,-4-4,-4-5,-4-6,-4-8,-4-11),	
		X-Ray	DHHS, Red Act, PTB pr EN50279(MPR-III), TCO'99(except Aver. Black), TCO95(for Aver. Black)	
		VLF / ELF		
		Power Management	International Energy Star Office Equipment Program	
		Ergonomics	TUV-GS (ISO9241-3, ISO9241-7, ISO9241-8), TCO'99, TCO95(for Aver. Black)	
		Miscellaneous	TCO'99(except Aver. Black), TCO95(for Aver. Black)	
13	OTHERS	Others	WHQL (Win ME, Win 2000, Win XP), DDC/CI	
		Plug & Play	DDC2B (Support 9pin-5V), DDC/CI	
14	FEATURE		Self Diagnosis, GTF, Super Bright Mode	

1.3 Regulations

GEOGRAPHICAL REGION	REGULATIONS						
	SAFETY	EMC	X-RAY	ELF/MLF*	Power Management*	Ergonomics	Miscellaneous And others
DPro930SB-BK (A)	UL C-UL TUV/GS	FCC-B DOC-B EN55022-B EN55024 EN61000-3-2 EN61000-3-3	DHHS Red Act	MPR-III TCO'95 (Black)	Energy Star TCO'95 (Black)	TUV-GS (IS9241-3 IS9241-7 IS9241-8) TCO'95 (Black)	CE Marking WHQL (Win ME, Win 2000, Win XP)
DPro930SB (B) DPro930SB-BK (B)	UL C-UL TUV-GS PCBC Gost	FCC-B DOC-B EN55022-B EN55024 EN61000-3-2 EN61000-3-3	DHHS Red Act PTB	MPR-III TCO'99	Energy Star TCO'99	TUV-GS (IS9241-3 IS9241-7 IS9241-8) TCO'99	CE Marking WHQL (Win ME, Win 2000, Win XP)

1.4 Regulation Information & Marking Location

Marking Location		Regulation	Information
A ver.	B ver.		
(1)	(1)	UL	UL1950 3rd Edition (or UL60950 3 rd edition)
(1)	(1)	C-UL	CAN/CSA-C22.2 NO.950:1995 (or CAN/CSA-C22.2 No.60950:2000)
(1)	(1), (2)	TUV-GS	EN60950 : 1992 & AD1/AD2/AD3/AD4/AD11(or EN60950:2000), EK1-ITB 2000, ISO9241-3: 1992, ISO9241-7: 1998, ISO9241-8: 1997
(1),(2),(3)	(1),(2),(3)	FCC	47 CFR Chapter I Part15 Subpart B, Class B
-	-	DOC	Interference-Causing Equipment Standard ICES-003 Issue 3, Class B
-	-	DHHS	21CFR Chapter I Subchapter J
-	-	Red Act	Radiation Emitting Devices Act
-	-	PTB	German X-ray
-	-	MPR-III	prEN50297
(1),(2),(3)	-	TCO'95	Requirements for environmental labeling of personal computers
-	(1),(2),(3)	TCO'99	Requirements and test methods for environmental labeling of display (CRT) and Ecology
(1),(2)	(1),(2),(3)	CE-Marking	EN60950: 1992 & AD1/AD2/AD3/AD4/AD11(or EN60950 : 2000) EN55022: 1998 Class B, EN55024: 1998(IEC61000-4-2,-4-3,-4-4,-4-5,-4-6,-4-8,-4-11) EN61000-3-2 : 1995 & AD1/AD2, EN61000-3-3 : 1995
(1),(2)	(1),(2)	Energy Star	International Energy Star office Equipment Program
-	(1),(2),(3)	PCBC	Poland Safety
-	(1),(2),(3)	Gost	Russian Safety
(2)	(2)	WHQL	Microsoft Windows® Hardware Quality Labs

Note:

- (1) This mark is printed on the “ Rating Label ”.
- (2) This mark is printed on the “ Carton Box ”.
- (3) This mark is printed on the “ User’s Manual ”.

2. CRT Specifications

Vendor	Mitsubishi
CRT Model No.	M46LVT62X41
Type	Diamondtron u2 (Aperture Grille)
Size	48cm/45.7cm Diagonal View able Image (19"/18" Diagonal Viewable Image)
Dot pitch	0.24mm
Phosphor Spacing	0.25mm
Deflection Angle	90 degree
Phosphor Type	B22
Electron Gun Type	U-NX-DBF type
Light Transmission at Center (Approx.)	Approx.43.0% (Include Face-plate coating)
Face-plate	S-ARAS Coating (Sputer) (Anti-reflection and Anti-static)
Useful Screen dimensions	366 x 274mm
Face-plate Curvature	H: R=50000mm , V: R=80000mm
Phosphor Color Coordinate	R: X=0.626 , Y=0.338 G: X=0.278 , Y=0.601 (Typical) B: X=0.150 , Y=0.068

3. Electric Specifications

3.1 Deflection Circuit

Horizontal	Scanning Frequency	30 – 110 kHz
	Back Porch	≥ 1.1 μsec
	Blanking	≥ 2.3 μsec
	H-sync Width	≥ 0.8 μsec
Vertical	Scanning frequency	50 – 160 Hz
	V-sync + V-back Porch	≥ 420 μsec
	V-sync Width	2H ≤ Vs ≤ 8H or 100 μsec
	V-Total Line	≥ 256H+ V-sync Width

3.2 Signal Input

Video Input Signal	R.G.B analog
Sync. Input Signal	External composite sync. TTL (P or N) External HD/VD separate sync. TTL (P or N)
Video Input Impedance	75 ohm to ground
Sync. Input Impedance	2.2k ohm to grand or more.
Signal Level	Video signal : 0.70V p-p ±5% Composite sync. :TTL level (>2.5V) Separate H/V-sync. :TTL level (>2.5V)

3.3 Video Performance

Video Clock Frequency	290MHz (Input signal)
Pulse Rise and Fall time	6.0nsec (typ.) 10 to 90% at 30Vp-p

The rise and fall time of the input video signal is 2.0nsec or less.

The pulse rise or fall time is determined using the formula :

$$Ta = \sqrt{Tm^2 - (Ts^2 + Tp^2 + Tsc^2)}$$

Where : Ta = Amplifier rise / fall time

Tm= Measured rise / fall time

Ts = Input signal rise / fall time

Tp = Probe effect on rise / fall time = 2.2 x RI x Cp

RI = Amplifier output resistance (ohm)

Cp = Total probe capacitance (F)

Tsc= Scope rise / fall time = 0.35 / Scope bandwidth (MHz)

3.4 Power Supply

Input Voltage	100 - 240 VAC \pm 10%
Frequency	50/60Hz \pm 3Hz
Power Consumption (Max.) Condition (Monitor):	100W 100 - 240VAC, 2.2A Condition: Input voltage:100-240VAC Signal: No.14 (1600x1200 (85Hz), (All white)) Contrast: Max, Brightness: Max, SB Mode: ON (SB Mode 2) H/V size: full scan Others: Preset
(Typical) Condition (Monitor):	102W @ 120V /60Hz 98W @ 230V /50Hz Condition: Signal: No.13 (1280x1024 (85Hz), (All white)) Contrast: Max, Brightness: Cutoff SB Mode: OFF All user control : Preset
AC leakage current	Except Japan \leq 3.5mA (259V), Japan \leq 0.20mA (105V)
Inrush current	\leq 42A 0-peak at 240VAC on cold starting \leq 100A 0-peak at 240VAC on hot starting

3.5 Power Saving

	H-sync	V-sync	Video	Power Consumption	Recovery Time	LED Indicator
ON Mode	On	On	Active	106W (Max.)	-	Green
Off Mode	Off	On	Blank	\leq 4W	3 - 5 sec	Orange
	On	Off	Blank			
	Off	Off	Blank			

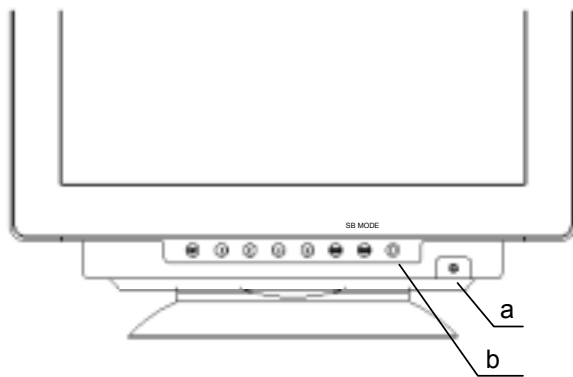
3.6 Degaussing

Auto Degaussing	The monitor has an automatic degaussing function which activates when the unit is turned on.
Manual Degaussing	This activates degaussing at the user's discretion after the unit is operating

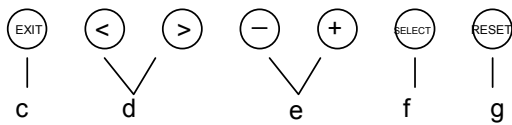
The Monitor requires minimum of 15 minutes between manual degaussing operations.

4. Functions

4.1 Front Controls



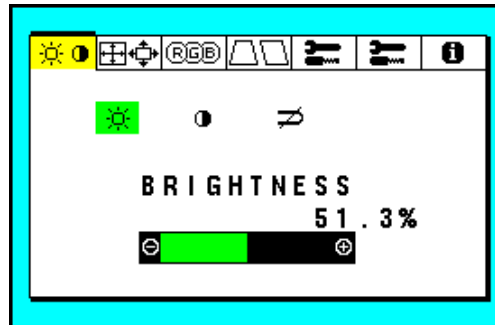
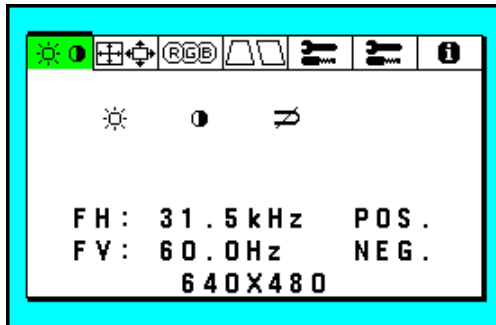
- a : POWER SWITCH
- b : POWER INDICATOR
- c : EXIT BUTTON
- d : ITEM SELECT BUTTONS
- e : FUNCTION ADJUST BUTTONS
- f : SELECT & SB MODE BUTTON
- g : RESET BUTTON



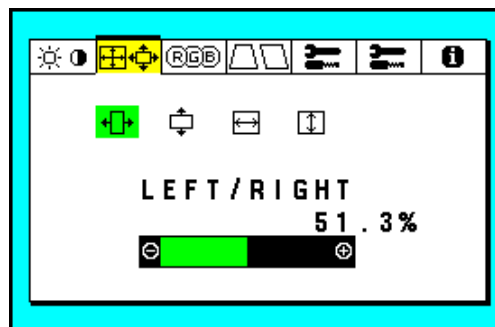
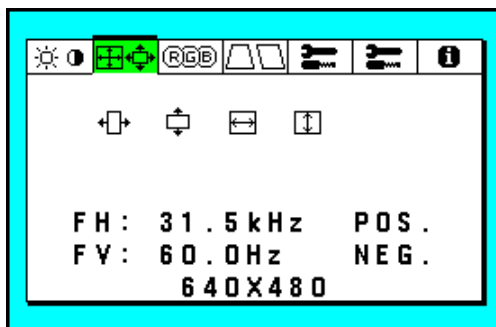
4.2 OSM (On-Screen Manager) Function

4.2.1 OSM Menu

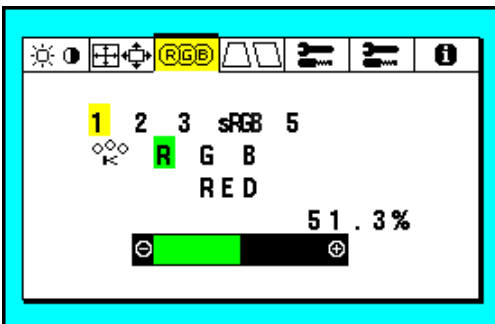
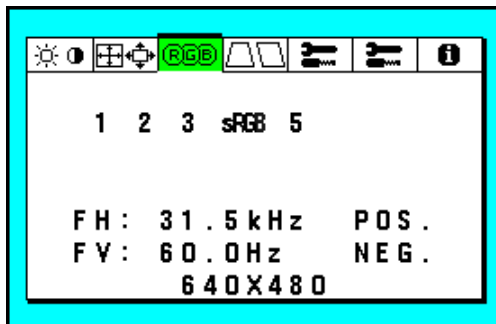
Tab 1



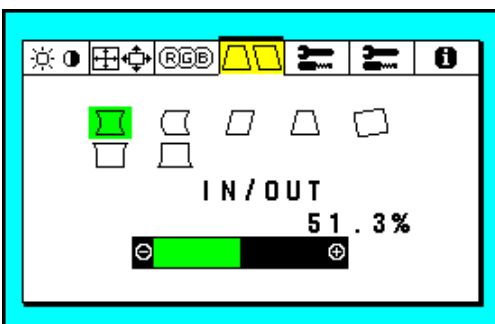
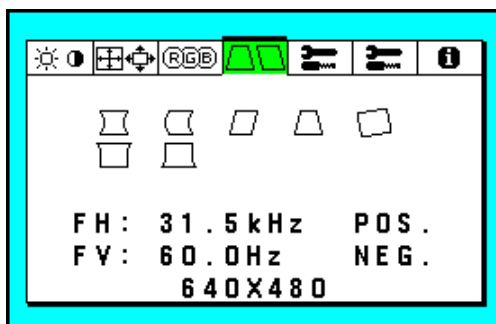
Tab 2



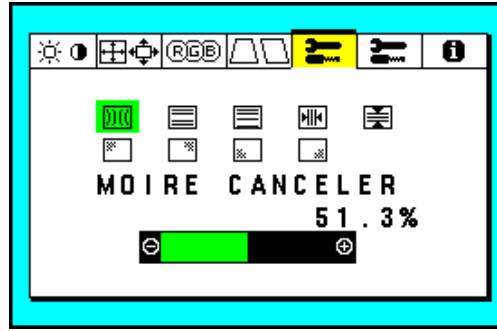
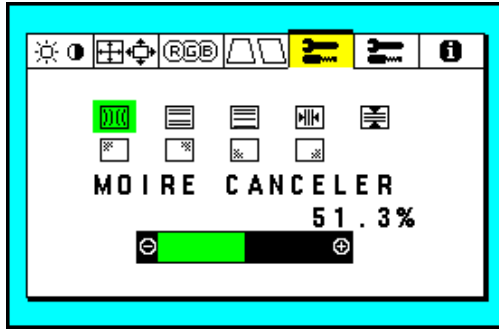
Tab 3



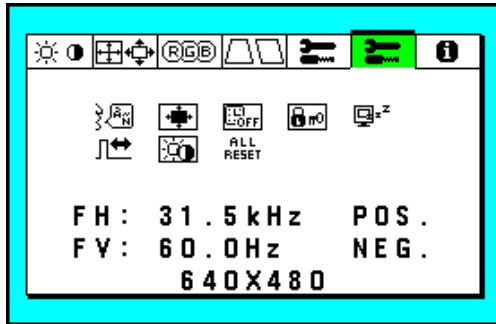
Tab 4



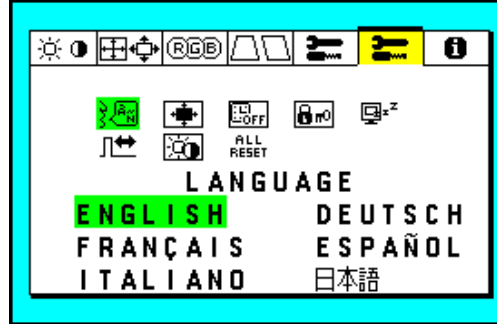
Tab 5



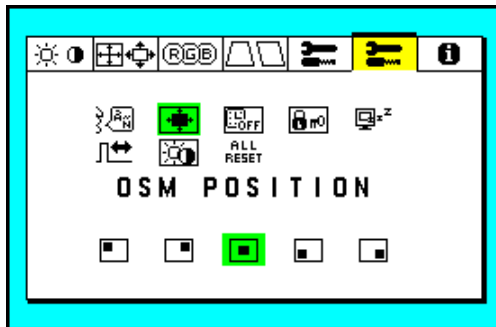
Tab 6



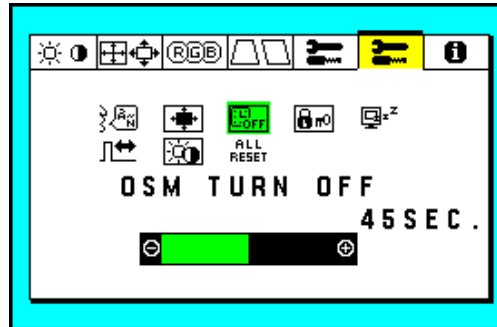
Tab 6 (Language)



Tab 6 (OSM Position)



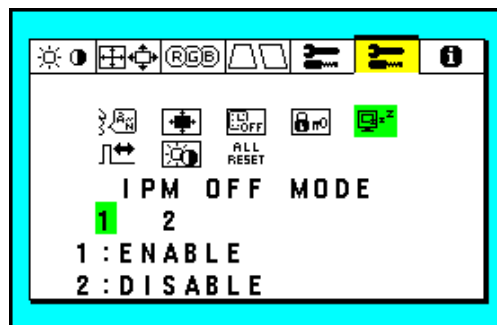
Tab 6 (OSM Turn off)



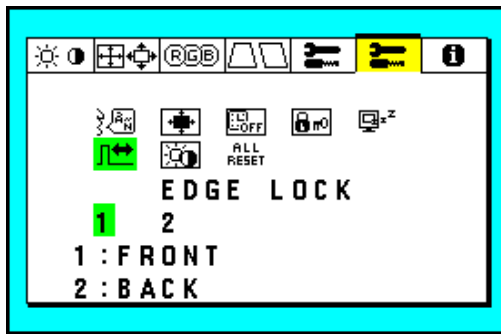
Tab 6 (OSM Lock)



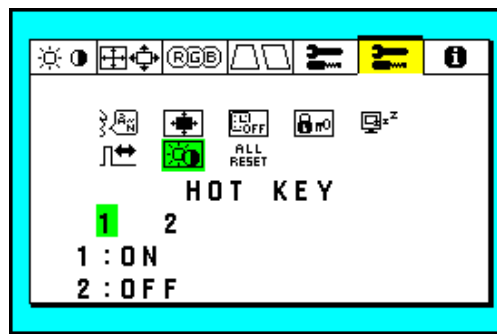
Tab 6 (IPM OFF Mode)



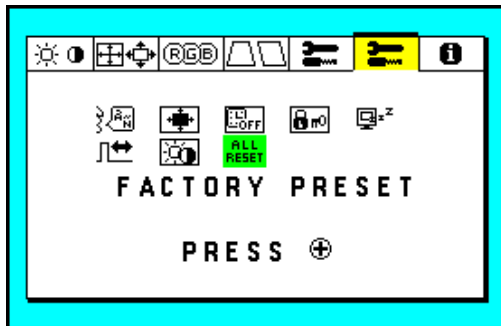
Tab 6 (Edge Lock)



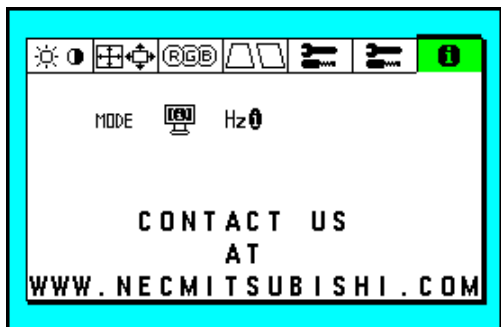
Tab 6 (Hot Key)



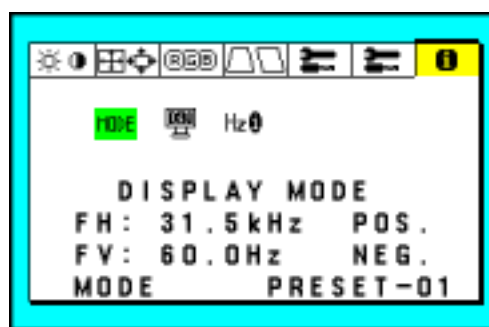
Tab 6 Factory Preset



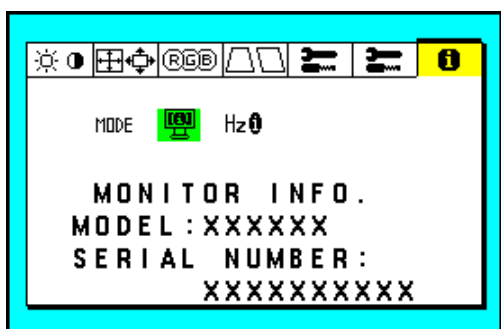
Tab 7 (URL indication)



Tab 7 (Display Mode)



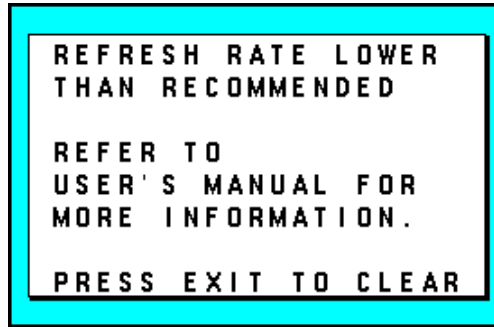
Tab 7 (Monitor info.)



Tab 7 (Refresh Notifier)



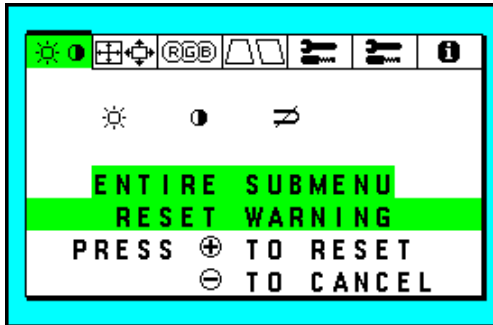
Refresh Notifier



Item Reset



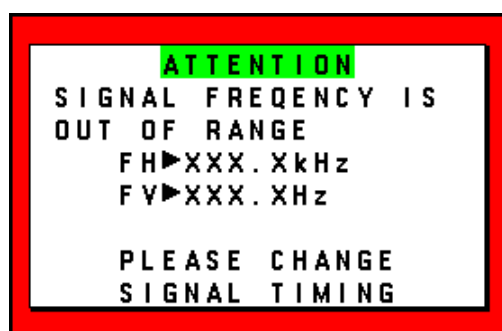
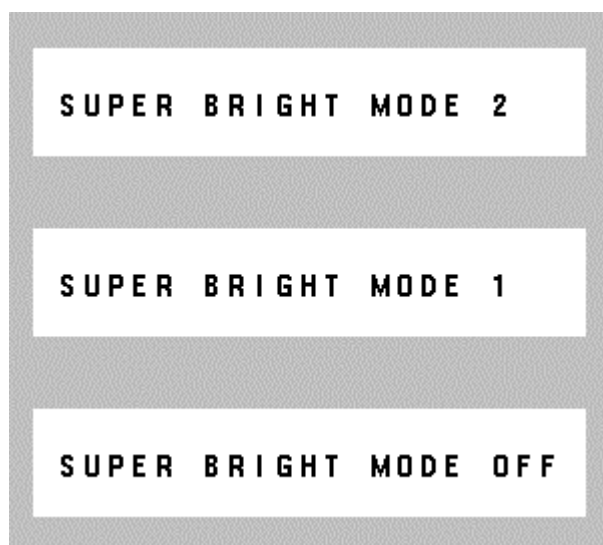
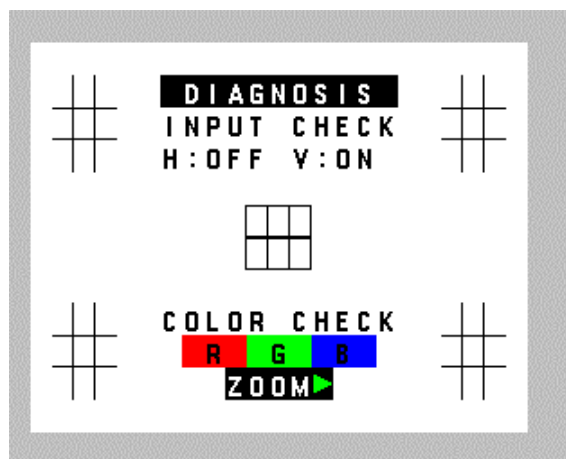
Tab Reset

















Factory Preset



Others



4.2.2 OSM Item Variability & Default Position.

Tab	Item		Default	Item Reset	Push"+"	Push"-"
1	Brightness	0-100%	50% (Normal, SB mode2) Adjusted (SB mode1)	Yes	Up	Down
	Contrast	0-100%	Aver :100% Bver :85%	Yes	Up	Down
	Degauss	-	-	-	Operate	-
2	Left/Right (H.Posi)	0-100%	Adjusted	Yes	Right	Left
	Down/Up (V.Posi)	0-100%	Adjusted	Yes	Up	Down
	Narrow/Wide (H.Size)	0-100%	Adjusted	Yes	Large	Small
	Short/Tall (V.Size)	0-100%	Adjusted	Yes	Large	Small
3	Color Number	1(9300K)	1(9300K)	Yes	-	-
		2(8200K)		Yes	-	-
		3(7500K)		Yes	-	-
		4(sRGB)		Yes	-	-
		5(5000K)		Yes	-	-
	Color Temperature	5000K-9300K	1:9300K 2:8200K 3:7500K 5:5000K	Yes	High	Low
R/G/B gain control	0-100%	Adjusted	Yes	Up	Down	
4	In/Out (Side_Pin)	0-100%	Adjusted	Yes		
	Left/Right (SidePin Balance)	0-100%	Adjusted	Yes		
	Tilt (Parallelogram)	0-100%	Adjusted	Yes		
	Align (Trapezoidal)	0-100%	Adjusted	Yes		
	Rotate	0-100%	Adjusted	Yes		
	Top (Top comer)	0-100%	Adjusted	Yes		
	Bottom(Bottom comer)	0-100%	Adjusted	Yes		
5	Moire Canceler (Hor.)	0-100%	0%	Yes	Increase	Decrease
	Linearity	0-100%	Adjusted	Yes		
	Linearity Balance	0-100%	Adjusted	Yes		
	Convergence (Hor.)	0-100%	Adjusted	Yes	Right (Red)	Left (Red)
	Convergence (Ver.)	0-100%	Adjusted	Yes	Up (Red)	Down (Red)
	Global Sync (TL)	0-100%	Adjusted	Yes		
	Global Sync (TR)	0-100%	Adjusted	Yes		
	Global Sync (BL)	0-100%	Adjusted	Yes		
Global Sync (BR)	0-100%	Adjusted	Yes			
6	Language	English / German / French / Spanish / Italian / Japanese	English	No	-	-
	OSM Position	5 position	Center	Yes	Cursor move to +/-	
	OSM Turn off	5-120 sec.	45sec	Yes	Turn off Time longer	Turn off Time shorter
	OSM Lock	OFF/ON	OFF	No	Lock on: "Select" + "+"key	
	IPM OFF Mode	Enable/ Disable	1 (Enable)	No	Cursor move to +/-	
	EDGE LOCK	Front/Back	Back	Yes	Cursor move to +/-	
	HOT KEY	OFF/ON	OFF	No	Cursor move to +/-	
	Factory Preset	-	-	-	All Reset	

7	URL indication	WWW.NECMITSUBISHI.COM			
	Display Mode	FH : Horizontal Frequency & Polarity FV : Vertical Frequency & Polarity			
	Monitor Info.	Model Name & Serial Number			
	Refresh Notifier	OFF/ON	OFF	-	Cursor move to +/-

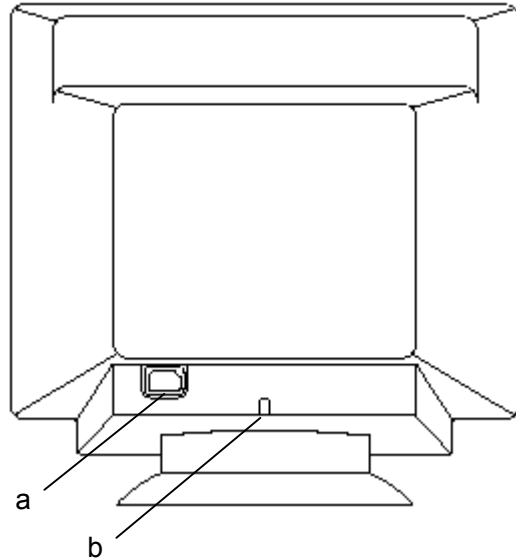
Default show factory shipping condition.

4.3 Back Panel

a: AC POWER CONNECTOR (3P IEC Plug)

b: SIGNAL INPUT CONNECTOR captive type (D-SUB 15P)

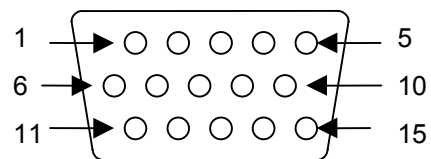
Signal Cable: Length:1800 ±50mm, Color: Hazegray (NEC#8508)



4.4 Connector Pin Assignment

1) Signal Input Connector (mini D-sub 15P captive cable)

Pin	Signal
1	Red-video
2	Green-video
3	Blue-video
4	Gnd
5	DDC Gnd
6	Red Gnd
7	Green Gnd
8	Blue Gnd
9	DDC +5V
10	Sync Gnd
11	Gnd
12	Serial data
13	H-sync or Composite sync
14	V-sync(v-clock)
15	Serial clock



Signal Cable Connector

4.5 DDC (Display Data Channel) Functions

VESA DDC 2B (EDID data only)

VESA DDC/CI

(Support 9pin-5V)

4.6 Preset Timing

Factory-presets: 17 see Appendix 1 for detail timing parameters.

(Signal No. 1 to No.17 are adjustment Signals.)

User-presets : 10

Preset Timing Discrimination

Horizontal Frequency	$\geq 1\text{kHz}$
Vertical Frequency	$\geq 1\text{Hz}$

* The monitor is able to discriminate input signals by at least one of above parameters.

4.7 Self Diagnosis Function

Monitor show the abnormal condition by using LED Blink.

Contents of Information	LED Blink
X-ray protector operate	
High voltage circuit no operate	
High voltage adjustment data is broken	
Deflection circuit no operate	
Beam protector circuit operate	
Heater power voltage is abnormal	
Power supply (secondary) short-circuit	
Internal I2C bus line is abnormal	
No H/V sync	Orange LED continuous on

Notes: LED off(0.5sec)
 LED orange on(0.5sec) LED orange on(2sec)

“LED Blink” is repeated until the monitor is turned off.

5. Display Quality

5.1 Basic Test Conditions

AC Voltage	120VAC 60Hz or 230VAC 50Hz
Video Signal	No.13, 1280 x 1024 (85Hz) (fH=91.1kHz fV=85Hz) Video signal $0.70 \pm 0.01V_{p-p}$
Picture	Reverse cross hatch pattern
Warm Up	More than 30 min. with full white picture
Temperature	20 – 25 degree C
Relative Humidity	40 - 80 %
Magnetic Field	BH=0.000mT, BV=0.040mT (Northern Hemisphere) BH=0.000mT, BV=-0.040mT (Southern Hemisphere)
Contrast & Brightness	Contrast maximum and Brightness default position (Cut off)
Display Size	356 x 266 mm for 4:3 aspect ratio
Ambient light	200 ± 50 lx
Luminance Meter	Minolta CA100 or Equivalent

If no description, the test below are applied under the Basic Test Condition.
Unless specified, the monitor is set at the factory default setting.

5.2 Picture Size and Position

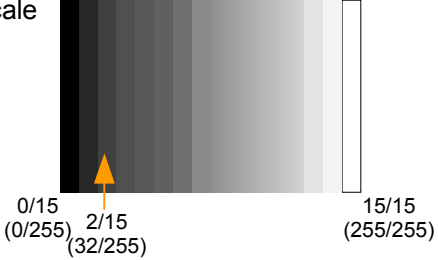
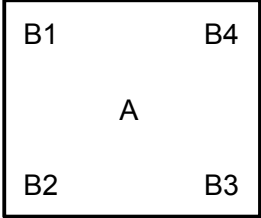
Adjustment Signal: Signal No.1 to 17	Size Horizontal : $356\text{mm} \pm 4.0$ mm Vertical : $266\text{mm} \pm 4.0$ mm Position Horizontal : $ X_{Left} - X_{Right} \leq 4.0\text{mm}$ Vertical : $ X_{Top} - X_{Bottom} \leq 4.0\text{mm}$ The picture should adjust underscan.
Figure	<p>The diagram shows a rectangular bezel with a video area inside. The bezel dimensions are 356 mm in width and 266 mm in height. The video area is centered within the bezel. Adjustment points are labeled XLeft, XRight, XTop, and XBottom. The bezel is labeled 'Bezel' and the video area is labeled 'Video'.</p>

5.2.1 Size and Position Control Ranges

Signal No.1 to 17 Size Control Ranges	The horizontal and vertical size control should be controllable to "FullScan" at the maximum position.
Signal No.1 to 17 Position Control Ranges	Image position can be controlled to the center position of the bezel opening.

5.3 Luminance (Brightness)

Signal No.13 (VESA1280*1024@85Hz)

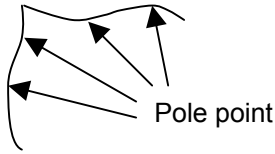
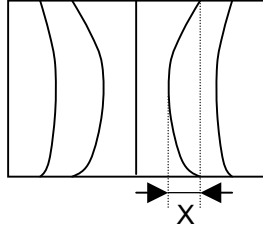
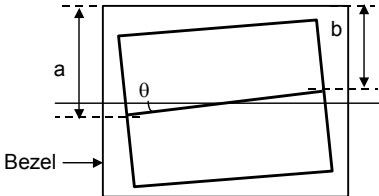
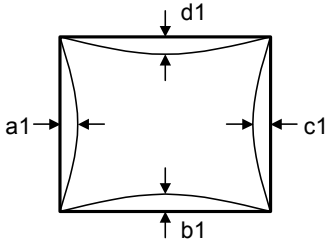
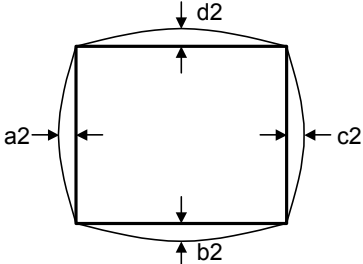
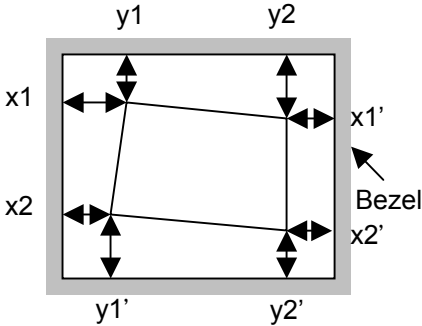
<p>5.3.1 Luminance at CRT center (Full white pattern)</p>	<p>Contrast : Max. Brightness : default position (Cut off) $90\text{cd/m}^2 \leq \text{Full White} \leq 110 \text{ cd/m}^2$ (at 9300K + 8 M.P.C.D.)</p>
<p>5.3.2 Luminance at CRT center (Window pattern) (H:33%,V:33%)</p>	<p>SB Mode : OFF Contrast : Max. Brightness : default position (Cut off) $120 \text{ cd/m}^2 \leq \text{Window pattern} \leq 150 \text{ cd/m}^2$ (at 9300K + 8 M.P.C.D.)</p> <p>SB Mode 1 Contrast : Max. Brightness : default position (Adjust to 0.8 cd/m^2 at 2/15 gray (32/255 gray)*1) Window pattern = $200 \text{ cd/m}^2 \pm 15 \text{ cd/m}^2$ (at 9300K + 8 M.P.C.D.)</p> <p>SB Mode 2 Contrast : Max. Brightness : default position (Cut off) Window pattern = $240 \text{ cd/m}^2 + 15/-30 \text{ cd/m}^2$ (at 9300K + 8 M.P.C.D.)</p> <p>*1 Gray scale </p>
<p>5.3.3 Luminance Variation (Full white pattern)</p> <p>Contrast : MAX Brightness : Adjust to 100cd/m^2</p>	$120\% \geq \frac{B_i}{A} \times 100 \geq 80\%$ 
<p>5.3.4 Back Raster Luminance (Full black pattern)</p>	<p>Brightness : default position (Cut off) Raster $\leq 0.20 \text{ cd/m}^2$ Raster must not visible at minimum Brightness control. Brightness : MAX position $2.0 \text{ cd/m}^2 \leq \text{Raster} \leq 6.0 \text{ cd/m}^2$</p>

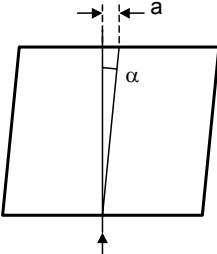
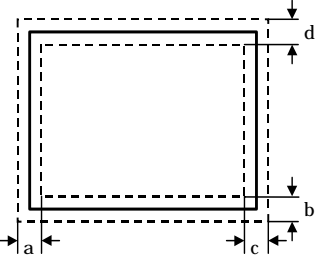
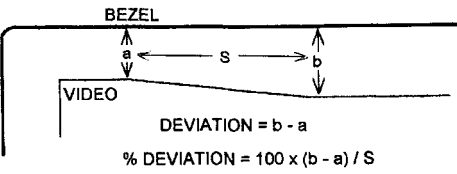
5.4 Color

Signal No.13 (VESA1280*1024@85Hz)

<p>5.4.1 Color Temperature (Window pattern) (H:33%,V:33%)</p> <p>Contrast : 100cd/m² Brightness : Cut off</p>	<p>Color-1: 9300K + 8 M.P.C.D. Xref=0.283 ± 0.015 Yref=0.297 ± 0.015</p> <p>Color-2: 8200K X=0.290 ± 0.015 Y=0.313 ± 0.015</p> <p>Color-3: 7500K X=0.300 ± 0.015 Y=0.315 ± 0.015</p> <p>Color-4: sRGB (Luminance: 80 +20/-10 cd/m²) X=0.313 ± 0.015 Y=0.329 ± 0.015</p> <p>Color-5: 5000K X=0.345 ± 0.015 Y=0.359 ± 0.015</p>						
<p>5.4.2 White Uniformity (Full white pattern)</p> <p>Contrast : 100cd/m² Brightness : Cut off</p>	<p>White color temperature (x, y) at B1,B2,B3,B4 is as follows.</p> <table border="1" data-bbox="762 779 1003 976"> <tr> <td>B1</td> <td>B4</td> </tr> <tr> <td></td> <td>A</td> </tr> <tr> <td>B2</td> <td>B3</td> </tr> </table> <p>A(x ref, y ref) x ≤ x ref ± 0.015 y ≤ y ref ± 0.015</p>	B1	B4		A	B2	B3
B1	B4						
	A						
B2	B3						
<p>5.4.3 Color Tracking of Contrast control (Window pattern) (H:33%,V:33%)</p>	<p>X = Xref ± 0.015 Y = Yref ± 0.015</p> <p>Color setting : 9300K Contrast Control: <u>from 20cd/m² to MAX</u> Brightness : Cut off</p>						
<p>5.4.4 Color Tracking of brightness control (Window pattern) (H:33%,V:33%)</p>	<p>X = Xref ± 0.015 Y = Yref ± 0.015</p> <p>Color setting : 9300K Contrast Control: 20cd/m² Brightness : <u>from Man. to Mix.</u></p>						
<p>5.4.5 sRGB color quality (Full white pattern)</p>	<p>RED : x=0.640 +0.020/-0.035 Y=0.330 +0.030/-0.020</p> <p>Green: x=0.300 +0.020/-0.035 Y=0.600 +0.020/-0.020</p> <p>Blue: x=0.150 +0.015/-0.015 Y=0.060 +0.030/-0.015</p> <p>White: x(sRGB)=0.3127 ± 0.020 y(sRGB)=0.3290 ± 0.020 x(sRGB)-y(sRGB) < 0.020</p> <p>Brightness:Y=80 +20/-10 cd/m²</p> <p>Gamma: S-g=2.2 ± 0.2</p>						

5.5 Geometric Distortion

<p>5.5.1 Partial Distortion The number of pole point each side All Preset Signals</p> <p>Top and Bottom side: Less than 3 point Left and right side: Less than 2point</p>	
<p>5.5.2 Inner Distortion All Preset Signals With Crosshatch</p> <p>$f_h \geq 38\text{kHz}$: $x \leq 0.5 \text{ mm}$ $f_h < 38\text{kHz}$: $x \leq 1.0 \text{ mm}$</p>	
<p>5.5.3 Raster Rotation/Tilt All Preset Signals</p> <p>$a - b \leq 1.0 \text{ mm}$ or $-0.5 \text{ degree} \leq \theta \leq +0.5 \text{ degree}$</p>	
<p>5.5.4 Pincushion All Preset Signals</p> <p>Top : $d1 \leq 1.5 \text{ mm}$ Bottom : $b1 \leq 1.5 \text{ mm}$ $d1-b1 \leq 1.5 \text{ mm}$ Left side : $a1 \leq 1.5 \text{ mm}$ Right side : $c1 \leq 1.5 \text{ mm}$ $a1-c1 \leq 1.5 \text{ mm}$</p>	
<p>5.5.5 Barrel All Preset Signals</p> <p>Top : $d2 \leq 1.5\text{mm}$ Bottom : $b2 \leq 1.5 \text{ mm}$ Left side : $a2 \leq 1.5 \text{ mm}$ Right side : $c2 \leq 1.5 \text{ mm}$</p>	
<p>5.5.6 Trapezoid</p> <p>$\Delta y \leq 1.5 \text{ mm}$ $\Delta x \leq 1.1 \text{ mm}$</p> <p>$\Delta x = x1 - x2$ $\Delta y = y1 - y2$</p>	

<p>5.5.7. Parallelogram All Preset Signals</p> <p>$-0.8\text{mm} \leq a \leq +0.8\text{mm}$ or $-0.2 \text{ degree} \leq \alpha \leq +0.2 \text{ degree}$</p>	
<p>5.5.8 Overall Distortion All Preset Signals</p> <p>Top : $d \leq 1.5\text{mm}$ Bottom : $b \leq 1.5\text{mm}$ Left side : $a \leq 1.5\text{mm}$ Right side : $c \leq 1.5\text{mm}$</p>	
<p>5.5.9 Video Boundary Geometry All Preset Signals</p> <p>$S \leq 50\text{mm} : b-a \leq 0.5 \text{ mm}$ $S > 50\text{mm} : b-a \leq 0.01 \times S \text{ mm}$</p>	

5.6 Linearity

Linearity	<p>H: $\leq 15\%(31-43k)$, $\leq 12\%(43-55k)$, $\leq 10\%(55k-)$, adjacent: $\leq 6\%$</p> <p>V: $\leq 10\%$, adjacent: $\leq 5\%$</p>
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* at preset timings

* With Green-Crosshatch (17 lines horizontally by 13 lines vertically) applied.

* The formula used to calculate linearity is:

$$\frac{X_{\max} - X_{\min}}{(X_{\max} + X_{\min})/2} \times 100\% \qquad \frac{Y_{\max} - Y_{\min}}{(Y_{\max} + Y_{\min})/2} \times 100\%$$

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16
Y1																
Y2																
Y3																
Y4																
Y5																
Y6																
Y7																
Y8																
Y9																
Y10																
Y11																
Y12																

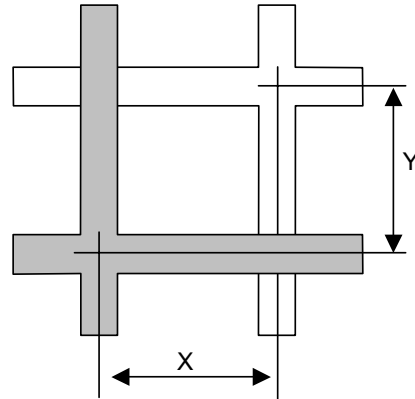
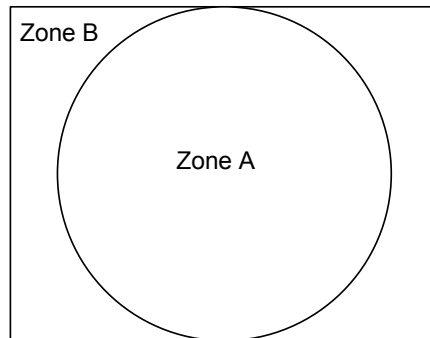
$$X1=X2=X3=\dots=X16$$

$$Y1=Y2=Y3=\dots=Y12$$

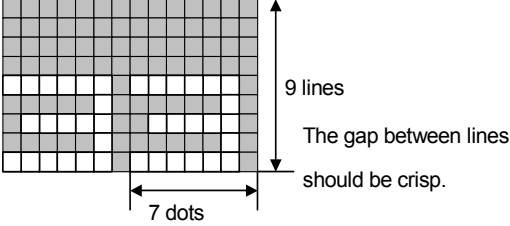
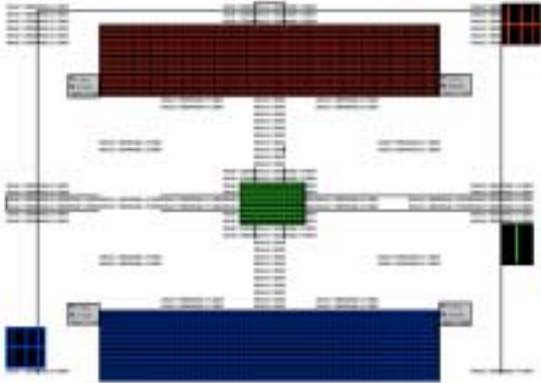
5.7 Misconvergence

Misconvergence	Zone A: $X, Y \leq 0.25$ mm within the 266 mm diameter circle
	Zone B: $X, Y \leq 0.30$ mm within 356 mm x 266 mm

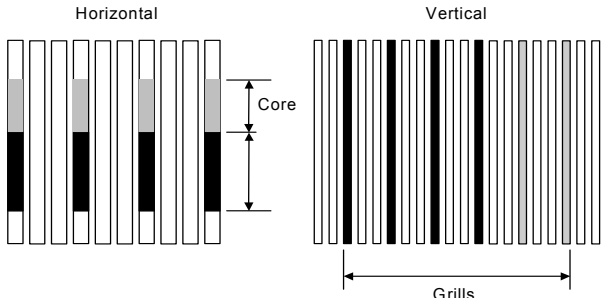
- * With White Crosshatch (17 lines horizontally by 13 lines vertically) applied.
- * Zone A is a circular area with 266mm diameter at the center.
- * Zone B is a rectangular area (356mm x 266mm) outside of the Zone A.
- * Use worst case horizontal/vertical misconvergence between any two primary colors.



5.8 Focus

<p>Focus</p> <p>Signal No.13</p> <p>Contrast : Max. Brightness: Cut off</p>	<p>Resolution: 1600 x 1280 (75Hz)</p> <p>Character: 7 x 9 pixel "☐"</p> <p>Color : White</p> <p>Judgment: "☐" character are readable with clearly at the whole screen.</p>  <p>Use the video card "Matrox G550" and receive Microsoft Excel "Work sheet" (1280*1024(85)).</p> <p>Make sure that there is no double line for horizontal.</p>
	<p>Resolution: 1280 x 1024 (85Hz) (Use the PC)</p> <p>Video card: Equivalent Matrox G450 or G550</p> <p>Application: Microsoft Excel</p> <p>Font: Arial</p> <p>Font Size: 8</p> <p>Character: ##&&%\$##</p>  <p>Judgment: Make sure that the horizontal line of Excel not become double line and characters are fine on all area. The character are readable with clearly at the whole screen.</p>

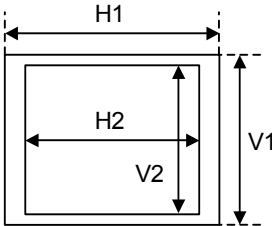

5.9 Halo

<p>Halo</p> <p>Signal No.13</p> <p>Contrast : Max.</p> <p>Brightness: Preset</p>	<p>Character: Crosshatch</p> <p>Judgment:</p> <p>Each color (Red, Blue) line do not form halos.</p> <p>Vertical lines : halos + core are less than 7 grills(R), 7 grills(B)</p> <p>Horizontal lines : core : halos = 1 : less than 1.5</p> <div style="text-align: center;">  </div>
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5.10 Picture Quality

<p>5.10.1 Video ringing & Overshoot</p> <p>All Preset signals</p> <p>Contrast : Min. to Max.</p> <p>Brightness : Preset</p>	<p>Character: Crosshatch (Normal and Inverse)</p> <p>Judgment:</p> <p>There is no noticeable the video ringing and the overshoot on all area.</p>
<p>5.10.2 Raster ringing</p> <p>All Preset signals</p> <p>Contrast : Min. to Max.</p> <p>Brightness : Preset</p>	<p>Character: Full white</p> <p>Judgment:</p> <p>There is no raster ringing in the picture area.</p>
<p>5.10.3 Picture noise, Jitter and Picture vibration</p> <p>All Preset signals</p> <p>Contrast : Min. to Max.</p> <p>Brightness : Preset</p>	<p>Judgment:</p> <p>There is no noticeable the picture noise, the jitter and the picture vibration on all area at all picture condition.</p>

5.11 Raster Regulation

<p>Raster Size Regulation All Preset Signals (Full White pattern)</p>	<p>Judgment:</p> <ol style="list-style-type: none"> The total horizontal and vertical size of the picture shall not change more than 1.0mm, when displaying a flat field, and adjusting the brightness from 30 to 110 cd/m². The picture size should not vary 1% in the horizontal and vertical direction by Input voltage change in 90-132VAC and 198-264VAC. <p>Size Change Spec.</p> $\frac{ H1-H2 }{H2} \leq 1.0\%$ $\frac{ V1-V2 }{V2} \leq 1.0\%$ 
<p>Dynamic Raster Regulation All preset signal</p>	<p>Pattern Judgment</p>  <p>White window V: 33% H: 100%</p> <p>$f_h \geq 46\text{kHz}: A-B \leq 0.5\text{mm}$ $f_h < 46\text{kHz}: A-B \leq 1.0\text{mm}$</p>

5.12 Purity

<p>Purity Signal No.13 Contrast : Max. Brightness: Cut off</p>	<p>Resolution: 1280 x 1024 (85Hz) Full each color pattern</p> <p>Magnetic field Without for Australia</p> <ol style="list-style-type: none"> Vertical : 20 ~ 60 uT , Horizontal : 0uT Vertical : 40 uT , Horizontal : -30~+30 uT <p>For Australia</p> <ol style="list-style-type: none"> Vertical : -60 ~ -20 uT , Horizontal : 0uT Vertical : -40 uT , Horizontal : -30~+30 uT <p>Judgment No visually noticeable color irregularity after degauss by OSM.</p>
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5.13 Warm-up Drift

<p>Warm-up drift</p> <p>Contrast : Max. Brightness: Preset</p>	<p>Display pattern: Window pattern (H:33%,V:33%) Crosshatch (Back: White, Line: Black)</p> <p>Aging condition: Crosshatch (Back: White, Line: Black)</p> <p>Measure the luminance, the size, the position, the distortion and the color temperature after 30 second (data A) and 2 hours (data B) from turn on power supply. Compare data A and data B.</p> <p>Criteria</p> <ul style="list-style-type: none"> Luminance Variation: $\leq 10\%$ Size Variation: $\leq 5\text{mm}$ Position Variation: $\leq 3\text{mm}$ each side Distortion Variation(Over all): $\leq 1\text{mm}$ Color temperature Variation: ≤ 0.010 <p>There is no noticeable above variation between after <u>30 minutes</u> and after <u>2 hours</u> from turn on power supply.</p>
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5.14 Temperature Drift

<p>Warm-up drift</p> <p>Contrast : Max. Brightness: Preset</p>	<p>Display pattern: Window pattern (H:33%,V:33%) Crosshatch (Back: White, Line: Black)</p> <p>Ambient temperature:</p> <ul style="list-style-type: none"> (1) 20 to 0 degree C (2) 20 to 40 degree C <p>Measure the variation of the luminance, the size, the position, the distortion and the color temperature when ambient temperature is changed.</p> <p>Criteria</p> <ul style="list-style-type: none"> Luminance Variation: $\leq 10\%$ Size Variation: $\leq 5\text{mm}$ Position Variation: $\leq 3\text{mm}$ each side Distortion Variation(Over all): $\leq 1\text{mm}$ Color temperature Variation: ≤ 0.010
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6. CRT Limits of Screen and Faceplate Blemish

6.1 CRT Face Plate Defect

6.1.1 Inspection condition

- 1) Adjust each gun to provide approximately 34cd/m² of 9300K+27M.P.C.D. (or 6550K+727M.P.C.D.) light at the center of the screen. Ambient light level at the tube face should be approximately 10 luxes.
- 2) When the tube is not operating, the screen should be viewed under high-level source incandescent light of approximately 200 luxes measured at the faceplate surface.
- 3) The screen should be viewed distance of 60 cm for both cases.
- 4) View white and R, G, B individual color, and faceplate appearances.

6.1.2 Quality Zone

The screen quality area is divided into the following two quality zones.

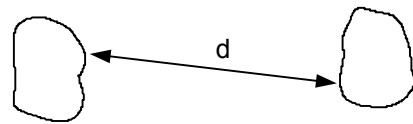
Zone A : Inside of the central rectangle of horizontal 360mm by vertical 270mm on the screen.

Zone B : Outside of this rectangle on the screen.

6.1.3 Screen and Faceplate Blemish Acceptance Criteria

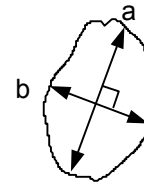
1) Screen blemish

a. Minimum separation of defects : d



b. Average diameter of defects :

Turn of $(a + b) / 2$ (a: length, b: width)



c. Acceptance criteria for screen blemishes

Black spot, missing aperture

Average diameter (mm)	A	B	A + B	Minimum distance :d
0.51 ~	0	0	0	-
0.31 ~ 0.50	0	0	0	-
0.15 ~ 0.30	6 (note 1)	6 (note 1)	10 (note 1)	10mm

Discoloration, stain, Missing phosphor, etc.

Average diameter (mm)	A	B	A + B	Minimum distance
0.51 ~ 0.75	0	1	-	20mm
00.15 ~ 0.50	2	3	-	20mm

Note 1: Applied for each color independently.

2) Face Plate Defect

a. Blisters, opaque spots and elongated closed blisters

Average diameter (*1) (mm)	Allowable number (pcs)			Minimum Separation (mm)
	Zone A	Zone B	Total	
0.76	0	0	0	30
0.51 ~ 0.75	0	1	1	
0.26 ~ 0.50	2	3	5	
0.11 ~ 0.25	-	-	-	(*2)

Note (*1) Average diameter is smaller one of the following two expressions.

$(a+b)/2$ or $a/20+2b$ (a: length, b: width)

Note (*2) Less than 5pcs. In area of 10mm diameter.

b. Flaw

Flaw Width (mm)	Specification Length
0.16 ~	Rejected
0.11 ~ 0.15	Less than 13mm
0.06 ~ 0.10	Less than 26mm
~ 0.05	Unlimited

c. Other glass defect

Flaw, crack and chip must be visually noticeable.

See the limitation sample regarding iron rust and striae, etc.

6.2 AR-film Blemishes

6.2.1 Inspection Conditions

- 1) Place a CRT on the test table and illuminate the CRT screen surface by a fluorescent lamp.
- 2) The luminance on the CRT surface shall be set between 1000 and 1500 lux.
- 3) Those not recognized with the naked eye at the viewing distance of 40cm from the CRT surface are not considered to be defects.

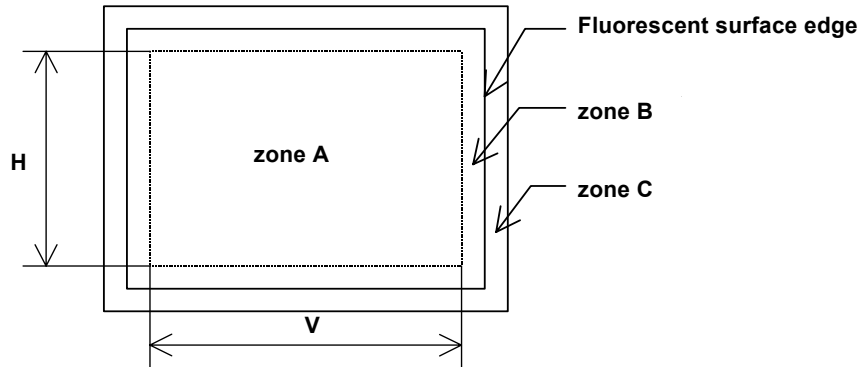
6.2.2 Quality Zone

The screen is divided into following 3 zones.

Zone A: Inside of the central rectangle of horizontal 360mm by 270mm on the screen.

Zone B: The area between outside the rectangle and the edge of the phosphor screen.

Zone C: The area outside the edge of the phosphor screen.



6.2.3 Acceptance Criteria for K Coating Blemishes

a. Scratch (Glass and coating)

Width (mm)	Specification Length (Zone A + Zone B)
0.16 ~	Rejected
0.11 ~ 0.15	Maximum length 13mm
0.06 ~ 0.10	Maximum length 26mm
~ 0.05	Unlimited

Note 1: Even though width of scratch is more than 0.16mm, regard scratch whose contrast is weak extremely as stain and apply standard of 6.2.3 a.

Note 2: Do not recognize flaws which injures goods prices though it is not especially stipulated as for zone C.

b. Opaque flaws (ex. Stain) and coating peeling

Do not apply the following standard to zone C.

Classify flaws by contrast and judge it by size every the contrast.

Definition of contrast

High contrast : The foreign substance which shuts off light from fluorescence surface.

Middle contrast : A semitransparent foreign substance and stain.
(ex. coating material which has been changed)

Low contrast : Stain and dust which do not reflect light from fluorescence surface and can be distinguished by its appearance.

Note : Ignore the light spot with no interference color.

(However, Non of them with its size in excess of 3.75 mm is acceptable, that damages the product quality.)

Standards

Average diameter classified by a contrast (Note 1) (mm)			Allowable number		Allowable Length (mm)
High contrast	Middle contrast	Low contrast	Zone A	Zone B	
~ 0.10	~ 0.20	~ 0.50	Ignore	Ignore	-
0.11 ~ 0.25	0.21 ~ 0.50	0.51 ~ 1.25	2 [4]	4 [5]	20
0.26 ~ 0.50	0.51 ~ 1.00	1.26 ~ 2.50	1 [4]	2 [4]	40
0.51 ~ 0.75	1.01 ~ 1.50	2.51 ~ 3.75	0 [4]	1 [4]	80

Values inside [] represent acceptable number in low contrast.

See the table in the next page for total defect number, which is acceptable in low contrast.

Note 1: Convert $(a+b)/2$ or $a/20 + 2b$ small value into average diameter. (a: length, b: width)

Total number of a low contrast flaws	Zone A	Zone B
Standard classified by zones	6	8
Total (zone A + zone B)	10	

Note 1: Acceptable interval shall be larger one in the case that defects have different interval.

Note 2: There is no standard regarding zone C. Therefore, no defect is accepted that may deteriorate the value of products. Defect level by consultation. Discuss is necessary.

Note 3: Tolerance of defect size is approx. 10%.

6.2.4 Irregularity of Reflected Color

Irregularity of reflected color that is easily visible should not be recognized. (K coat)

Irregularity of reflected color that influences Raster easily should not be recognized. (AR Film)

6.2.5 Dirt, Cloudiness, No Uniformity and Other Defects

The defects shall not be recognized when the green raster is produced over the screen. If necessary, the limit sample is provided.

7. Inspection of PLUG & PLAY Communication and OSM "MONITOR INFORMATION" for Model Name/ Serial Number

7.1 System Connection

This system should be connected as shown below.

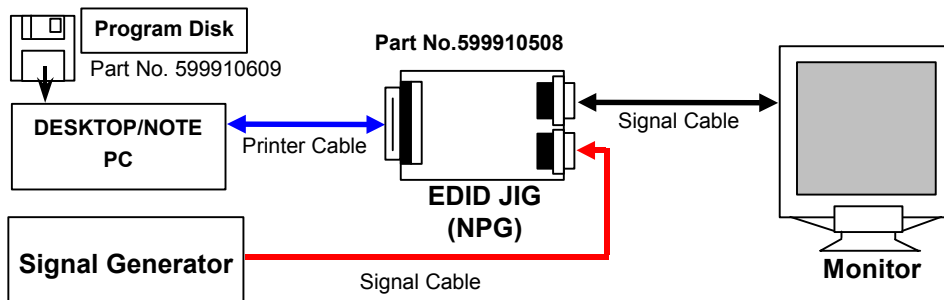


Photo 1 EDID JIG(NPG)

7.2 Input Signal

Horizontal sync frequency: Not specified.

Vertical sync frequency: Not specified.

7.3 Programs Required

NPGV241.EXE

DPRO.BAT

DPRO.TXT

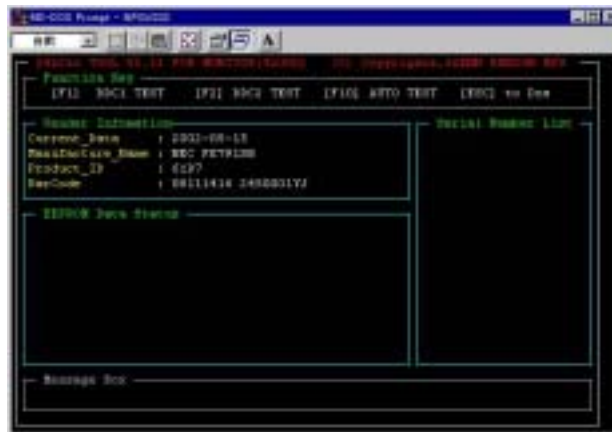
7.4 Inspection Procedures

- Factory Mode: power on + '+' key + '-' key.
- Copy the above-mentioned programs in an adequate directory.
- Set up the MO-DOS mode. (DOS Prompt of Windows95/98 is also acceptable.)
- Execute the DPRO.BAT from the command line.
- "MONITOR INFO." of the OSM is indicated, and a model name and a serial number are confirmed. When the model name and the serial number are not written in or it differs, h or later is performed.
- Press the F2 key to start the inspection of DDC2B. As a result of inspection, when EDID data is not written in or it differs, h or later is performed.

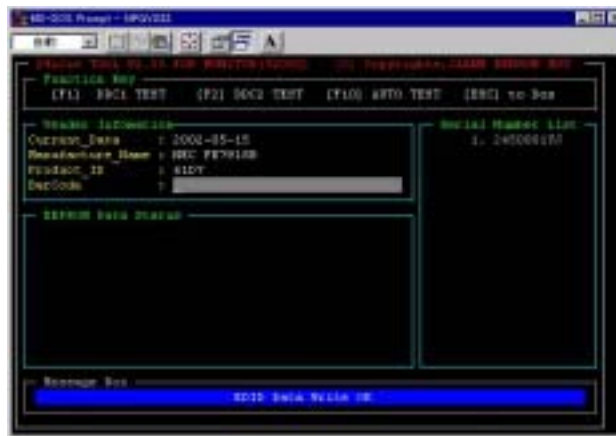
g. Check the serial number of the set and enter an input of the following code from the keyboard.

08M530A3 Serial Number (Model Code + 1 Space + Serial No.)

Example: 08M530A3 2900001YA



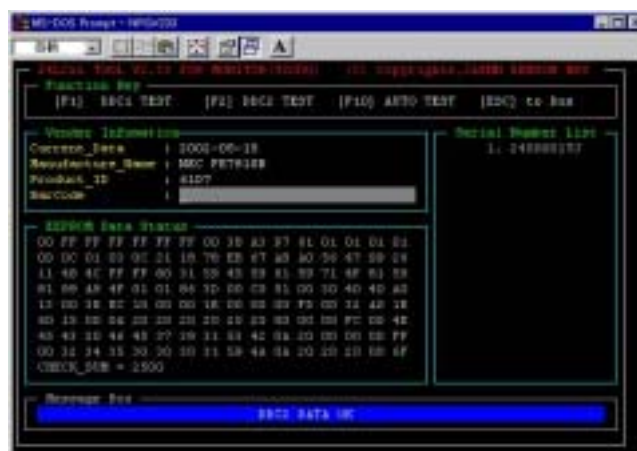
h. Press the Enter key. Then, the EDID data, OSM model name, and the serial number begin to be written in.



i. Display "MONITOR INFO." of the OSM, and confirm that the model name and serial number have been correctly written.

j. Press the F2 key to start the inspection of DDC2B.

After the completion of inspection, the contents of EDID are displayed. If an error should occur, the related error message will be displayed in the bottom area of the screen. Refer to Paragraph 7.5 in regard to the meaning of this error message.



7.5 Error Messages

- IIC Communication Error
Communication disabled
- EDID Check Sum Error
Entry of false EDID
- DDC2 Does Not Find Head Data
DDC2 Communication disabled

7.6 EDID Data File

The EDID data file text is shown below. When you write or inspect EDID for this monitor, the following table can be used.

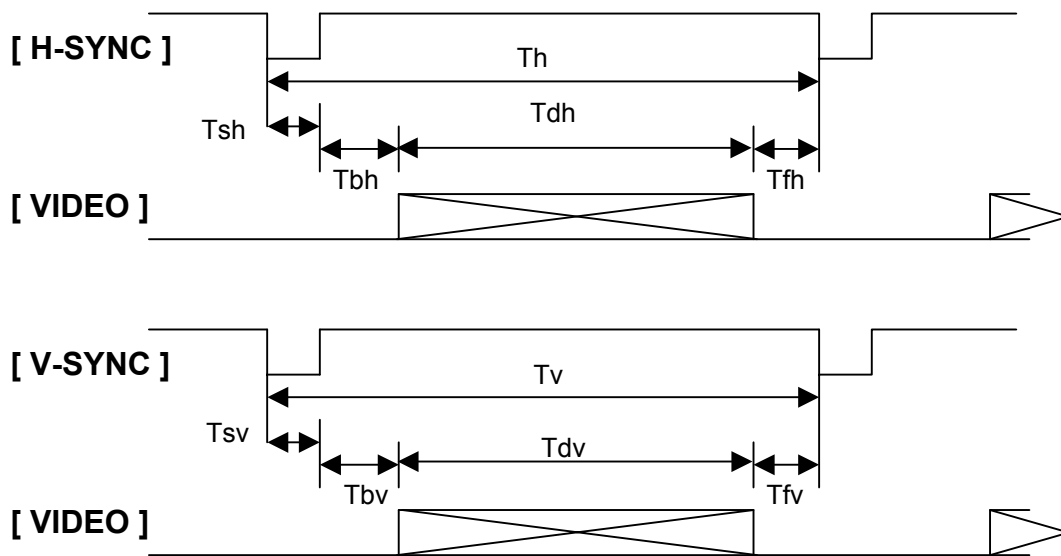
File name : DPRO.TXT

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	34	AC	3D	46	01	01	01	01
10	1C *1	0C *2	01	03	0C	25	1B	78	EB	13	88	A1	57	49	9B	26
20	12	48	4C	FF	FF	80	31	59	45	59	61	59	71	4F	81	59
30	81	99	A9	59	D1	40	86	3D	00	C0	51	00	30	40	40	A0
40	13	00	64	0A	11	00	00	1E	00	00	00	FD	00	32	A0	1E
50	6E	1D	00	0A	20	20	20	20	20	20	00	00	00	FC	00	44
60	50	72	6F	39	33	30	53	42	0A	20	20	20	00	00	00	FF
70	00	30 *3	32 *3	30 *3	30 *3	30 *3	30 *3	30 *3	59 *3	41 *3	0A *3	20 *3	20 *3	20 *3	00	E3 *4

Table 7.6 Data list

- *1 : address 10h Manufactured month x 4
- *2 : address 11h Manufactured year - 1990
- *3 : address 71h ~ 7Dh Input serial number (ASCII code)
Add 0Ah after serial number.
Add 20th remaining address.
- *4 : address 7Fh Checksum. The sum of entire 128byte shall be equal to 00h.

Appendix 1 Preset Timing Chart



Preset Signal

No	Signal Name	Clock (MHz)	Fh (kHz)	Fv (Hz)	T_h (uSec)	T_{sh} (uSec)	T_{fh} (uSec)	T_{bh} (uSec)	T_{dh} (uSec)	T_v (mSec)	T_{sv} (mSec)	T_{fv} (mSec)	T_{bv} (mSec)	T_{dv} (mSec)	Hs	Vs	Separate or Composite
1	VGA 640*480 (60)	25.175	31.469	59.940	31.778 (800)	3.813 (96)	0.636 (16)	1.907 (48)	25.422 (640)	16.683 (525)	0.064 (2)	0.381 (10)	1.049 (33)	15.253 (480)	-	-	Separate
2	VESA 640*480 (75)	31.500	37.500	75.000	26.667 (840)	2.032 (64)	0.508 (16)	3.810 (120)	20.317 (640)	13.333 (500)	0.080 (3)	0.027 (1)	0.427 (16)	12.800 (480)	-	-	Separate
3	VESA 640*480 (85)	36.000	43.269	85.008	23.111 (832)	1.556 (56)	0.556 (56)	2.222 (80)	17.778 (640)	11.764 (509)	0.069 (3)	0.023 (1)	0.578 (25)	11.093 (480)	-	-	Separate
4	VGA 720*400 (70)	28.322	31.469	70.087	31.777 (900)	3.813 (108)	0.636 (18)	1.907 (54)	25.422 (720)	14.268 (449)	0.064 (2)	0.318 (12)	1.112 (35)	12.711 (400)	-	+	Separate
5	Mac 640*480	30.240	35.000	66.667	28.571 (864)	2.116 (64)	2.116 (64)	3.175 (96)	21.164 (640)	15.000 (525)	0.086 (3)	0.086 (3)	1.114 (39)	13.714 (480)	-	-	Composite
6	VESA 800*600 (75)	49.500	46.875	75.000	21.333 (1056)	1.616 (80)	0.323 (16)	3.232 (160)	16.162 (800)	13.333 (625)	0.064 (3)	0.021 (1)	0.448 (21)	12.800 (600)	+	+	Separate
7	VESA 800*600 (85)	56.250	53.674	85.061	18.631 (1048)	1.138 (64)	0.569 (32)	2.702 (152)	14.222 (800)	11.756 (631)	0.056 (3)	0.019 (1)	0.503 (27)	11.179 (600)	+	+	Separate
8	MAC 832*624	57.283	49.725	74.550	20.111 (1152)	1.117 (64)	0.559 (32)	3.910 (224)	14.524 (832)	13.414 (667)	0.060 (3)	0.020 (1)	0.784 (39)	12.549 (624)	-	-	Composite
9	VESA 1024*768 (75)	78.750	60.023	75.029	16.660 (1312)	1.219 (96)	0.203 (16)	2.235 (176)	13.003 (1024)	13.328 (800)	0.050 (3)	0.017 (1)	0.466 (28)	12.795 (768)	+	+	Separate
10	VESA 1024*768 (85)	94.500	68.677	84.997	14.561 (1376)	1.016 (96)	0.508 (48)	2.201 (208)	10.836 (1024)	11.765 (808)	0.044 (3)	0.015 (1)	0.524 (36)	11.183 (768)	+	+	Separate
11	Mac 1152*870	100.00	68.681	75.062	14.560 (1456)	1.280 (128)	0.320 (32)	1.440 (144)	11.520 (1152)	13.322 (915)	0.044 (3)	0.044 (3)	0.568 (39)	12.667 (870)	-	-	Composite
12	VESA 1280*1024 (75)	135.00	79.976	75.025	12.504 (1688)	1.067 (144)	0.119 (16)	1.837 (248)	9.481 (1280)	13.329 (1066)	0.038 (3)	0.013 (1)	0.475 (38)	12.804 (1024)	+	+	Separate
13	VESA 1280*1024 (85)	157.50	91.146	85.024	10.970 (1728)	1.016 (160)	0.406 (64)	1.420 (224)	8.130 (1280)	11.761 (1072)	0.033 (3)	0.011 (1)	0.483 (44)	11.761 (1024)	+	+	Separate
14	VESA 1600*1200 (75)	202.50	93.750	75.000	10.667 (2160)	0.948 (192)	0.306 (64)	1.501 (304)	7.901 (1600)	13.330 (1250)	0.032 (3)	0.011 (1)	0.491 (46)	12.800 (1200)	+	+	Separate
15	VESA 1600*1200 (85)	229.50	106.250	85.000	9.412 (2160)	0.837 (192)	0.279 (64)	1.325 (304)	6.972 (1600)	11.765 (1250)	0.028 (3)	0.009 (1)	0.433 (46)	11.294 (1200)	+	+	Separate
16	VESA 1792*1344 (75)	261.00	106.270	74.997	9.410 (2456)	0.828 (216)	0.368 (96)	1.349 (352)	6.866 (1792)	13.334 (1417)	0.028 (3)	0.009 (1)	0.649 (69)	12.647 (1344)	-	+	Separate
17	VESA 1920*1440 (60)	234.00	90.000	60.000	11.111 (2600)	0.889 (208)	0.547 (128)	1.470 (344)	8.205 (1920)	16.667 (1500)	0.033 (3)	0.011 (1)	0.622 (56)	16.000 (1400)	-	+	Separate

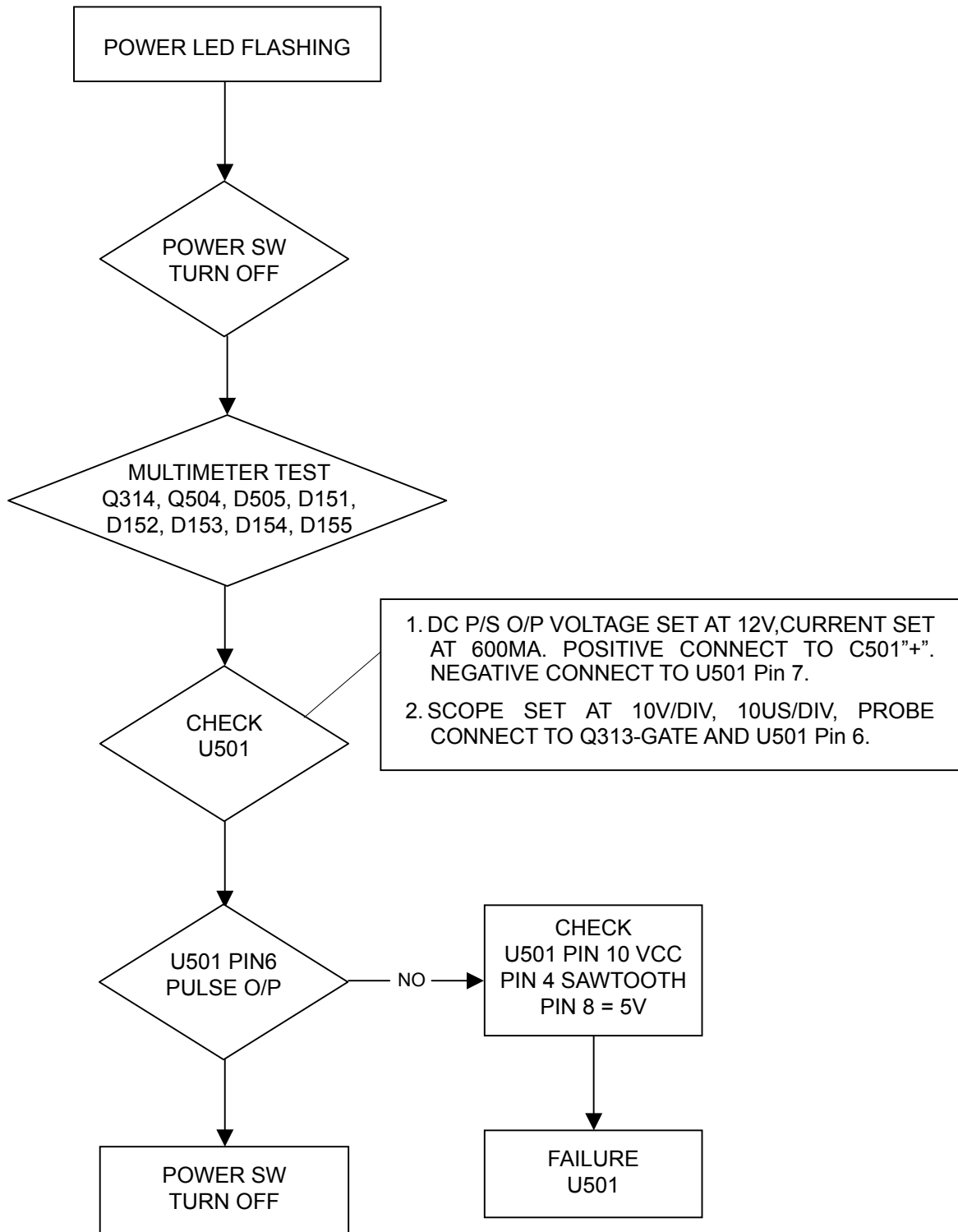
TROUBLE SHOOTING

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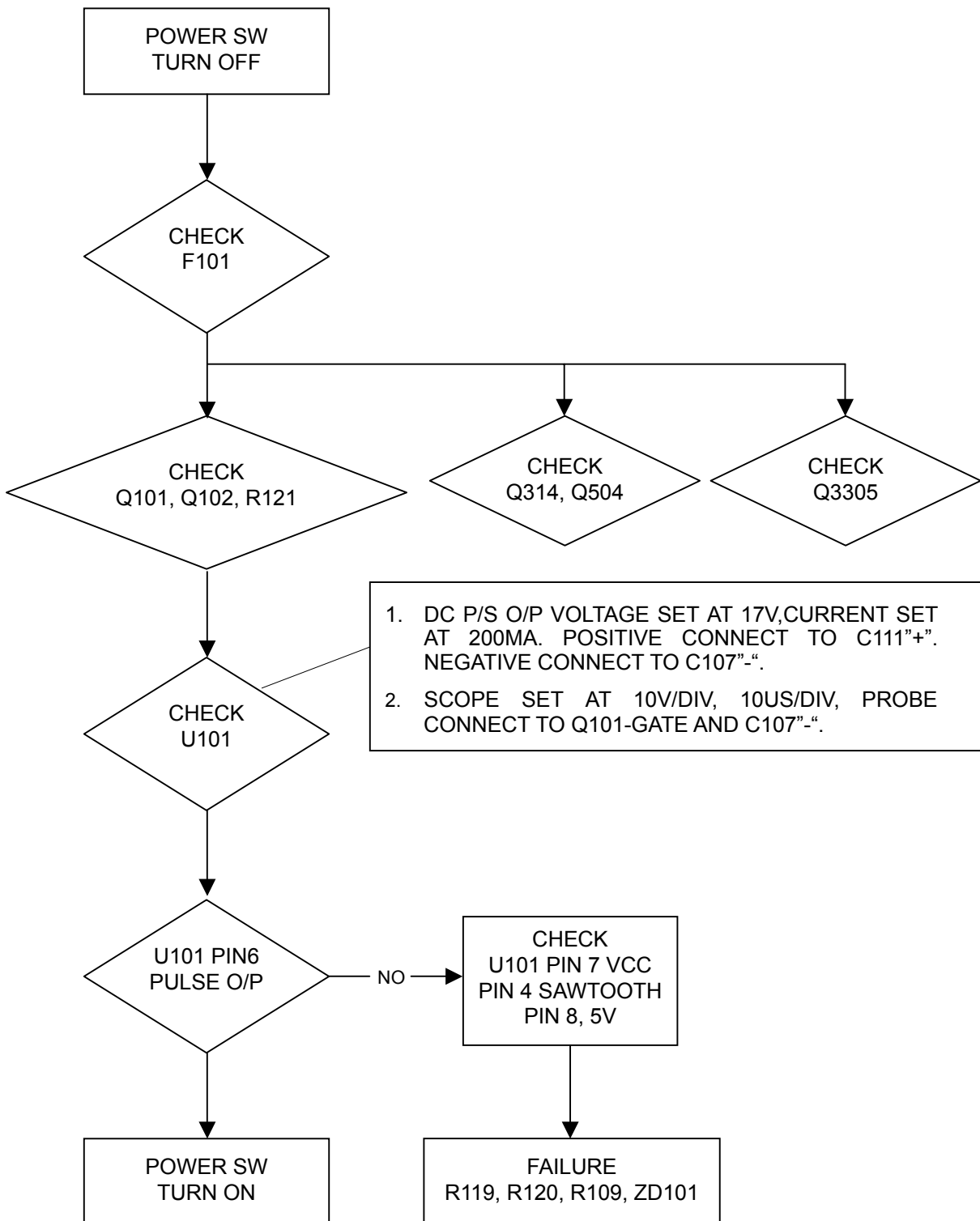
Refer to User's Manual trouble shooting section before using this chart.

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2. NO OPERATION, POWER LED OFF	6-3
3. VIDEO NOISE, NO SYNC	6-4
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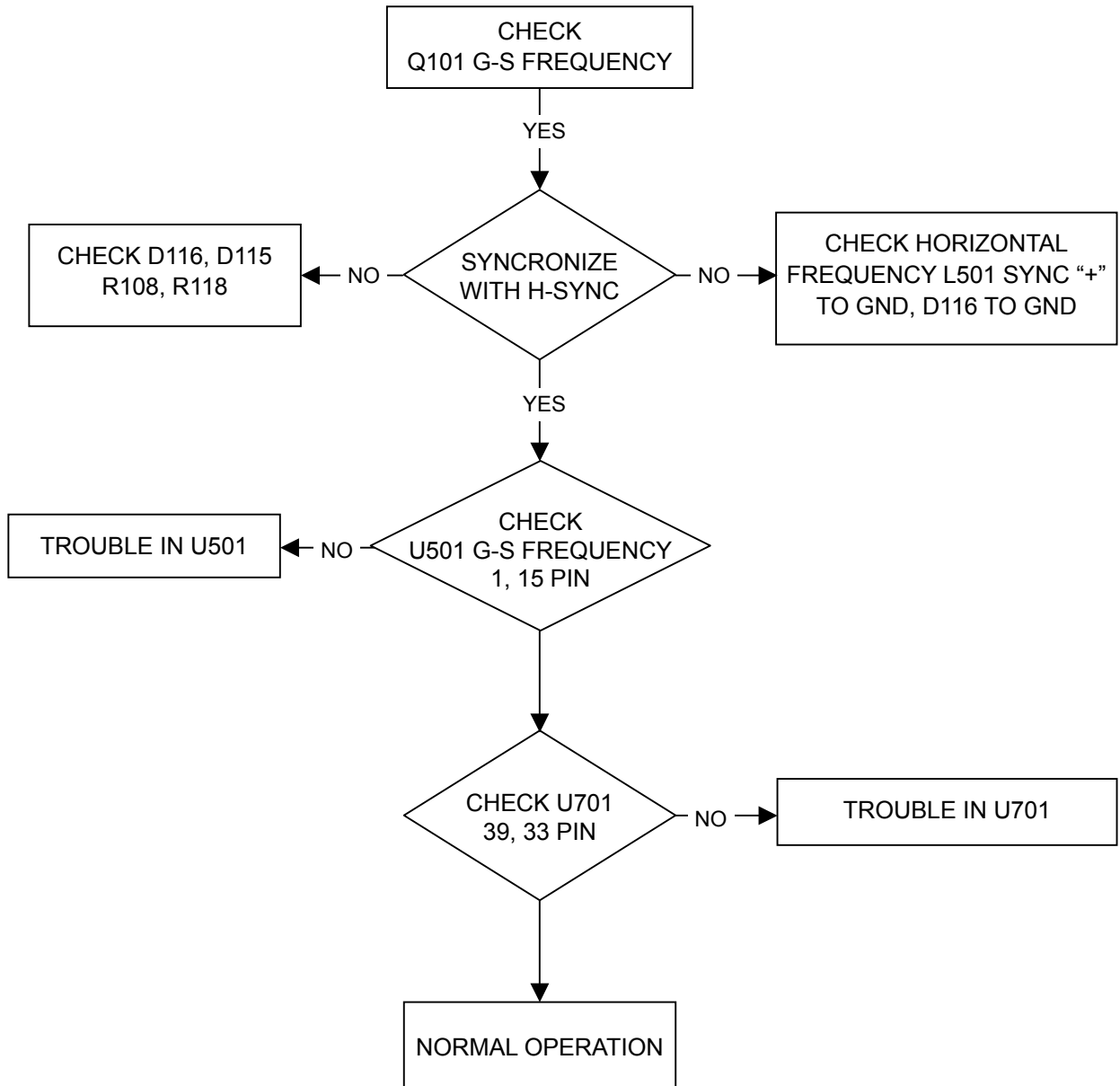
1. NO OPERATION, POWER LED FLASHING



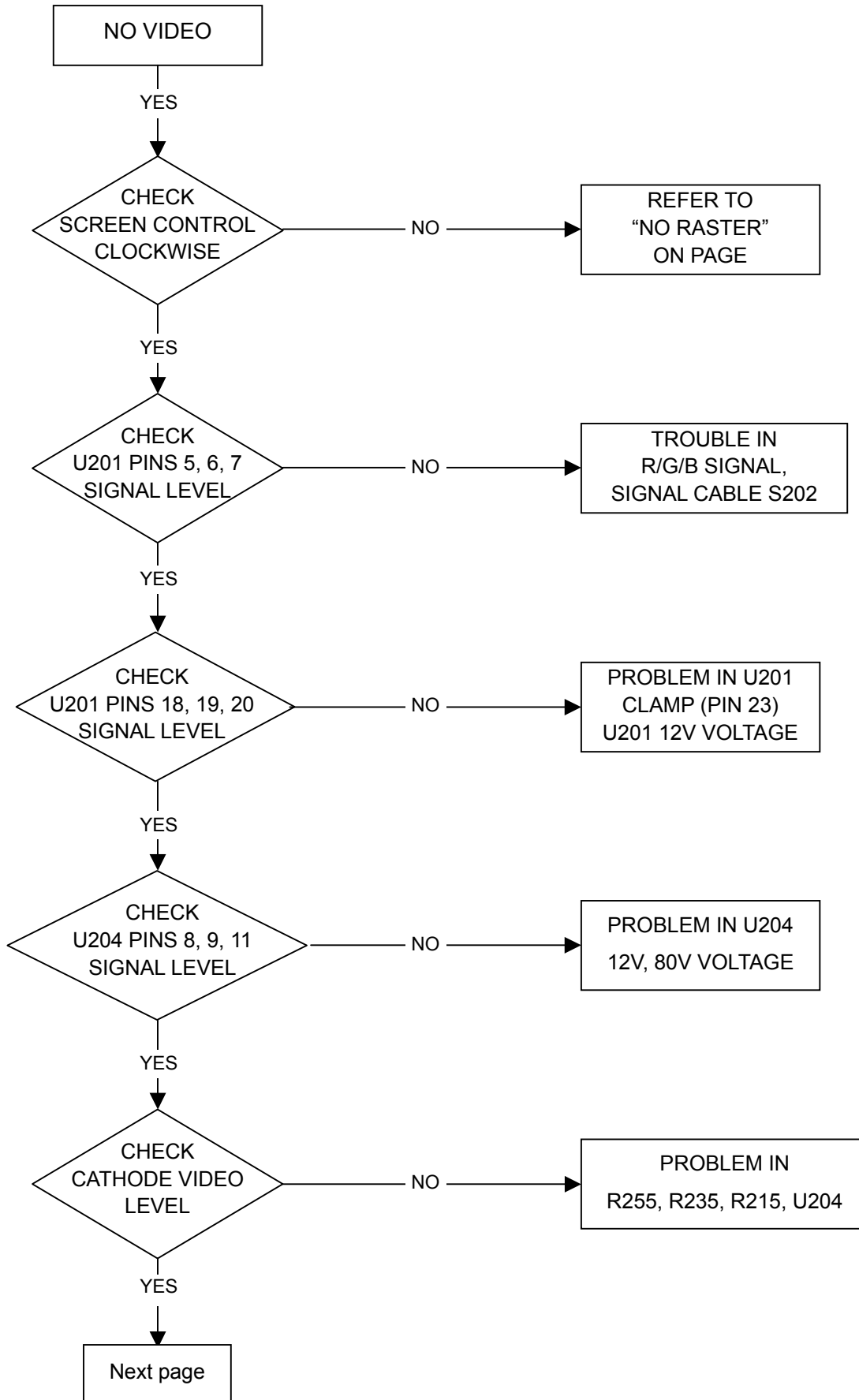
2. NO OPERATION, POWER LED OFF

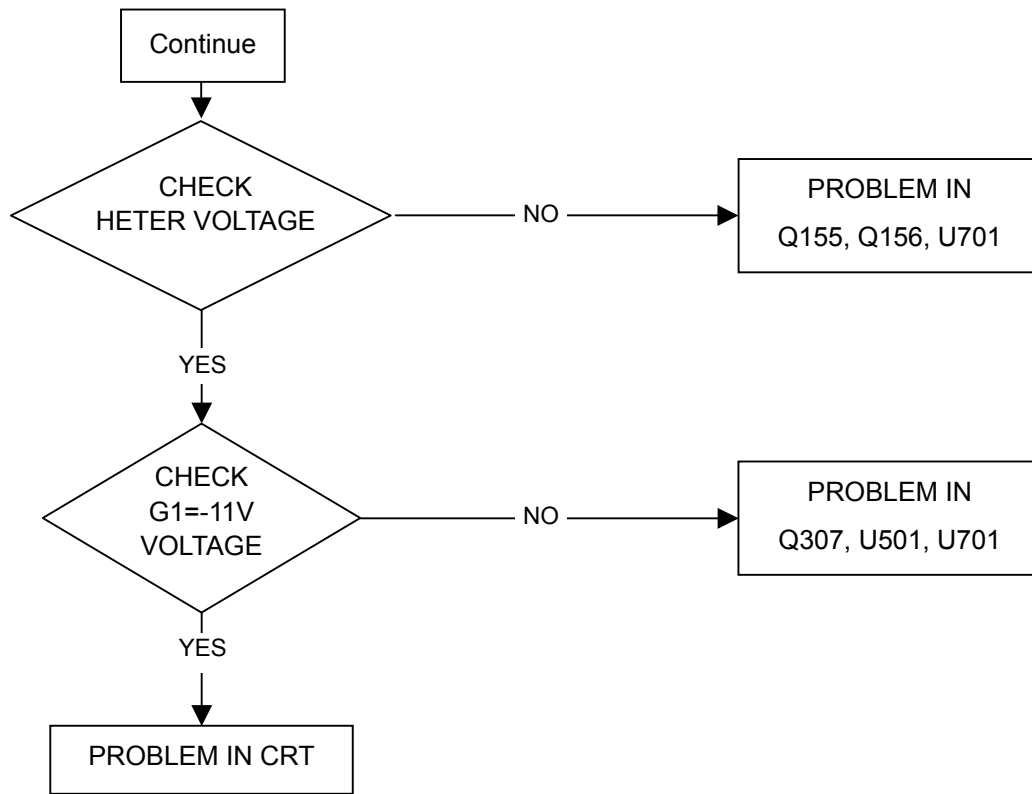


3. VIDEO NOISE, NO SYNC

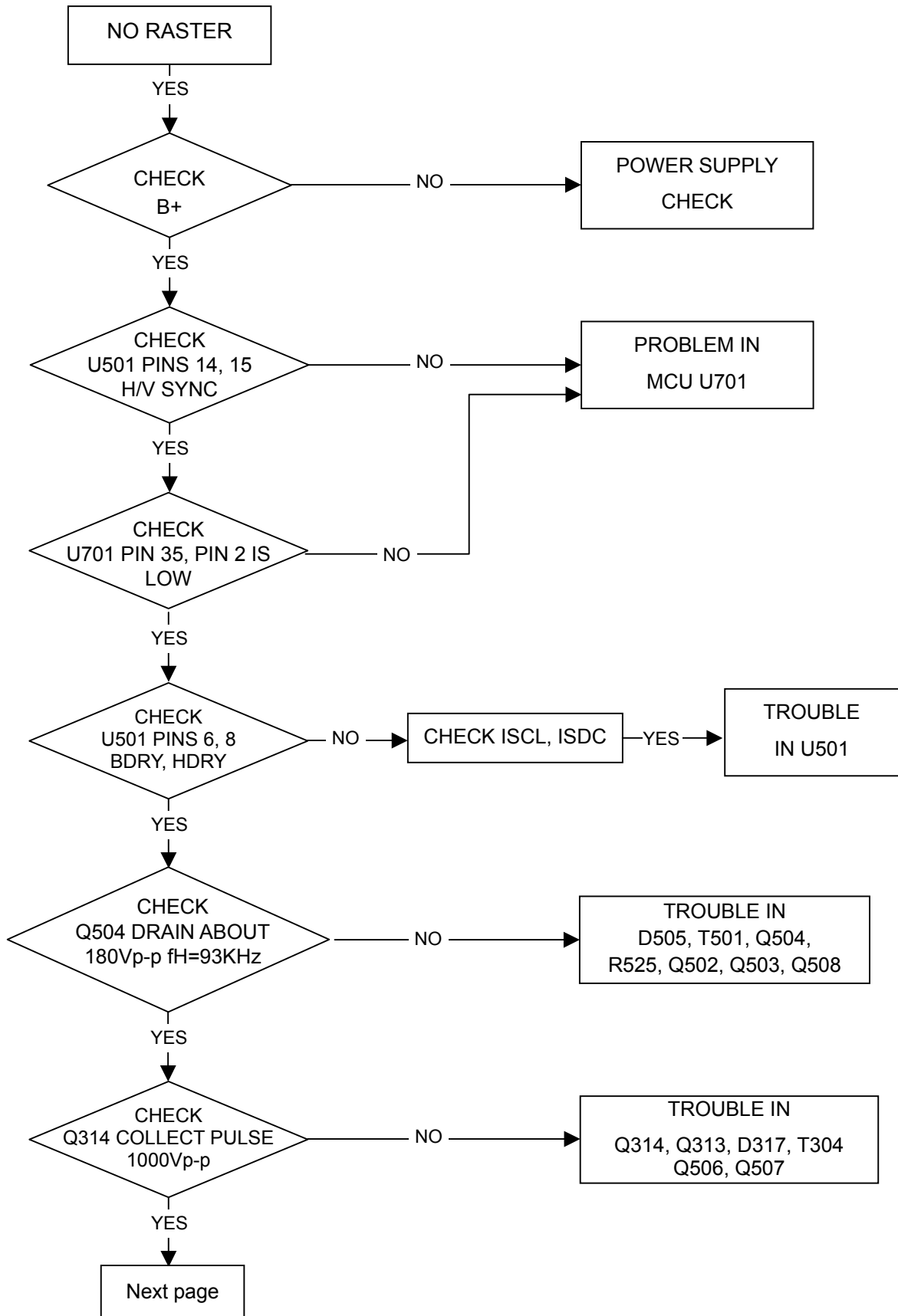


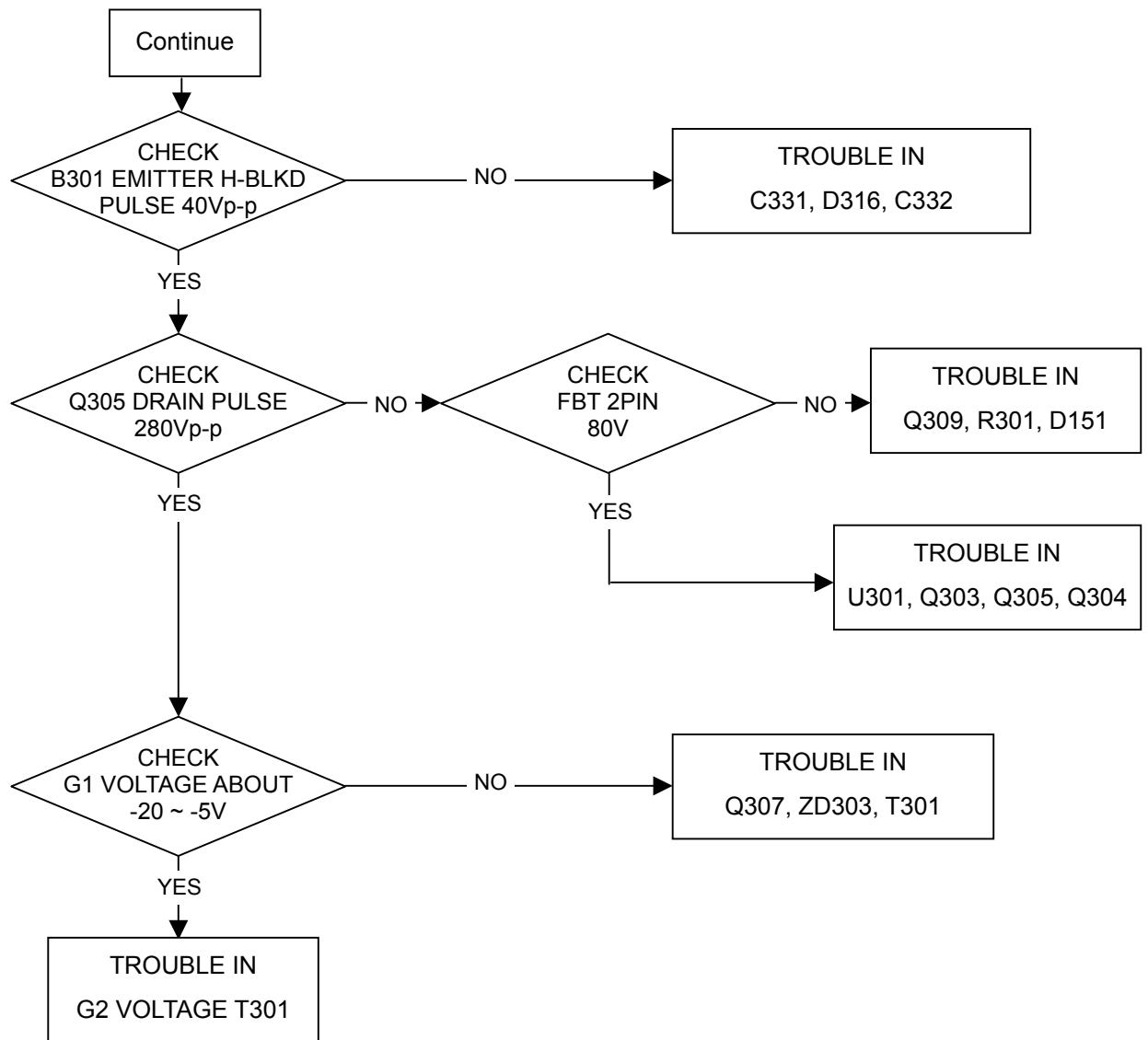
4. NO VIDEO



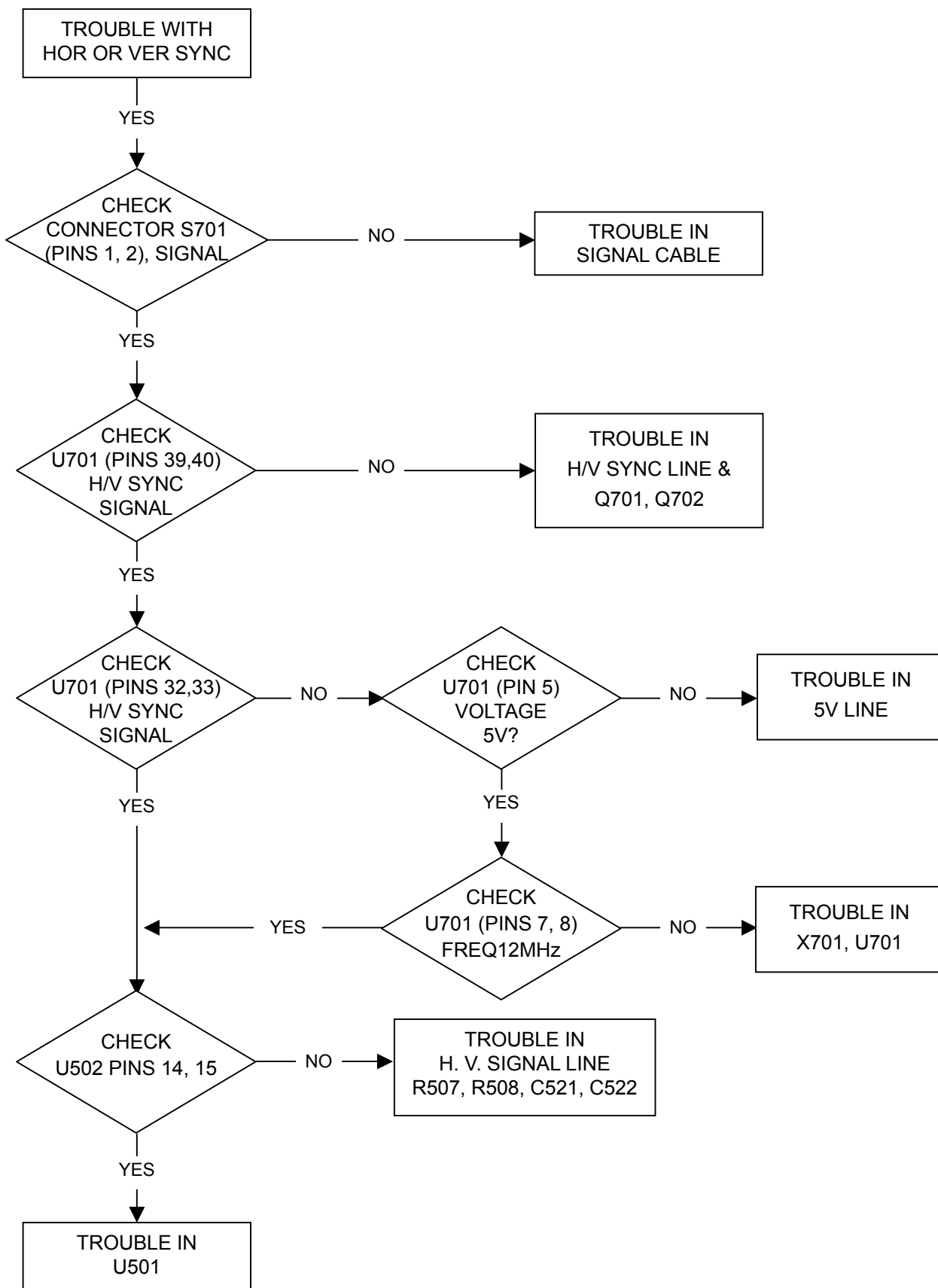


5. NO RASTER

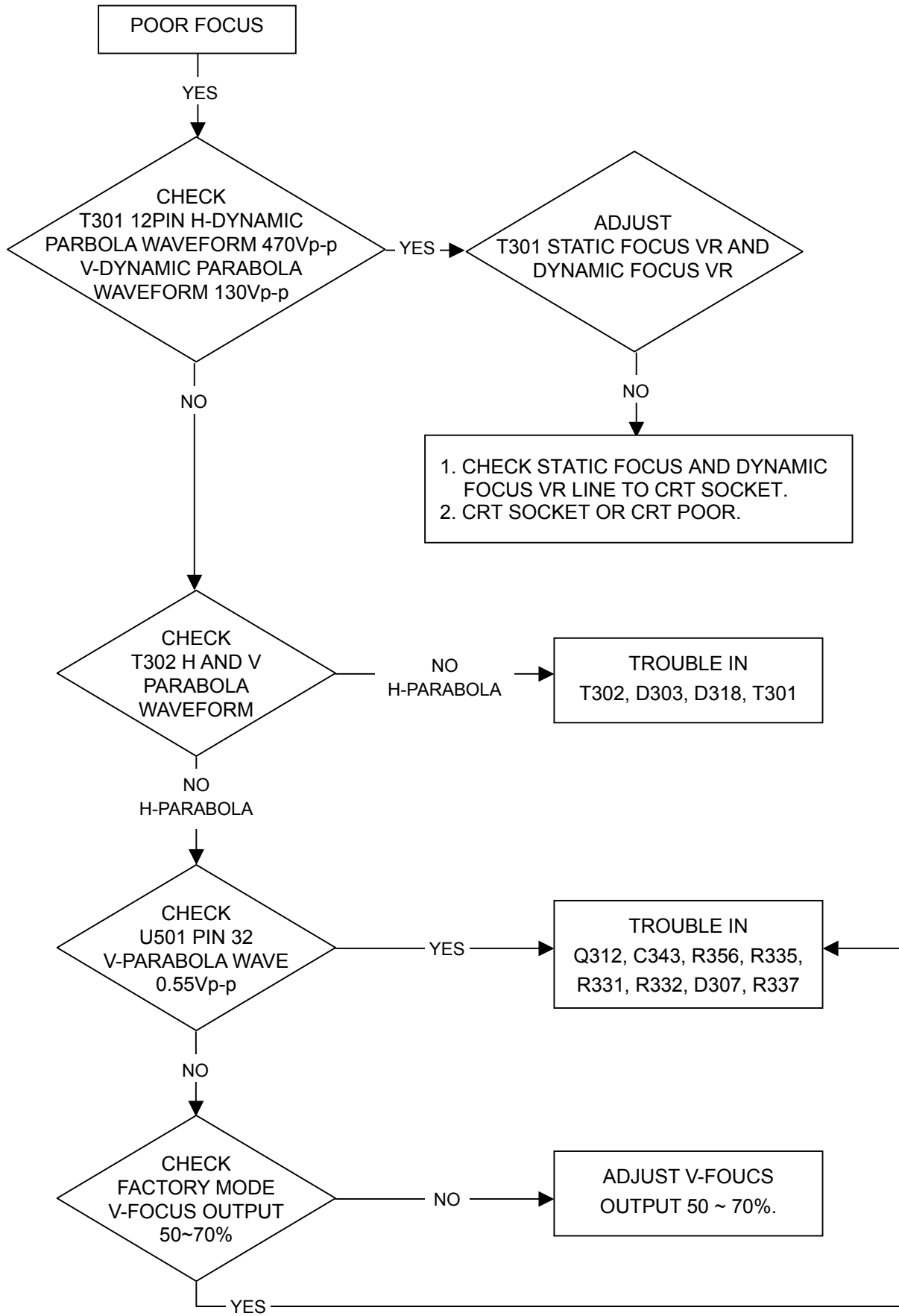




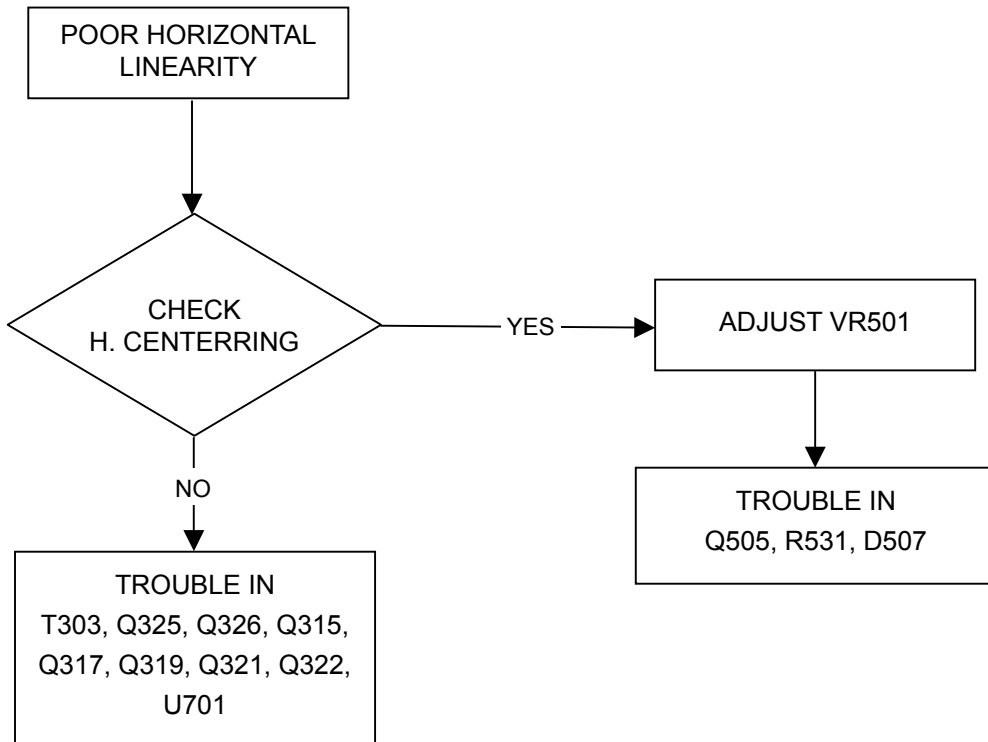
6. H. V. SYNC TROUBLE



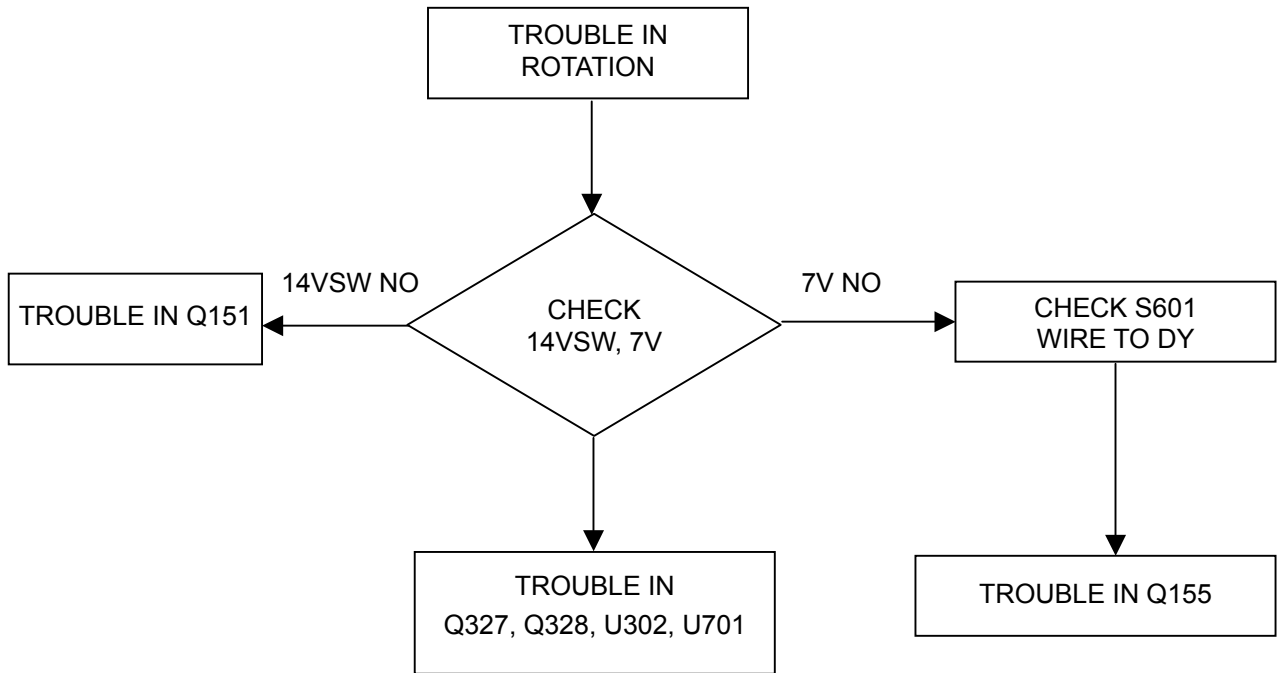
7. POOR FOCUS



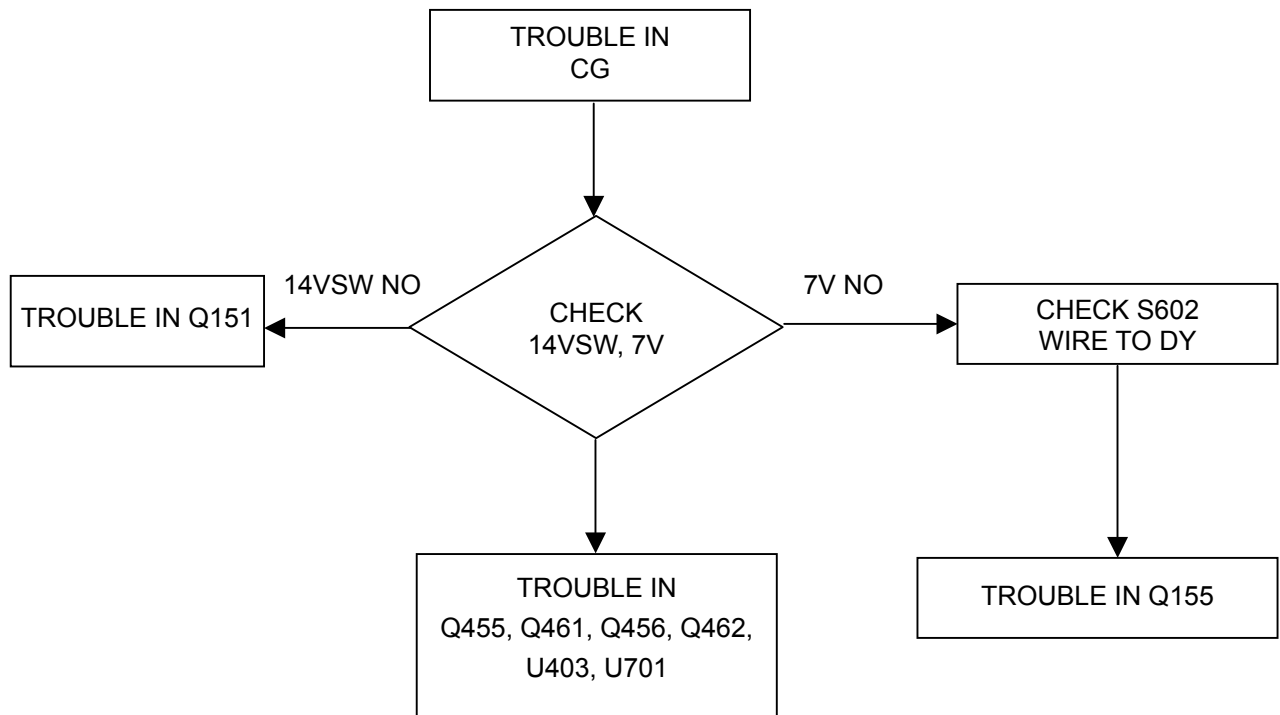
8. POOR HORIZONTAL LINEARITY



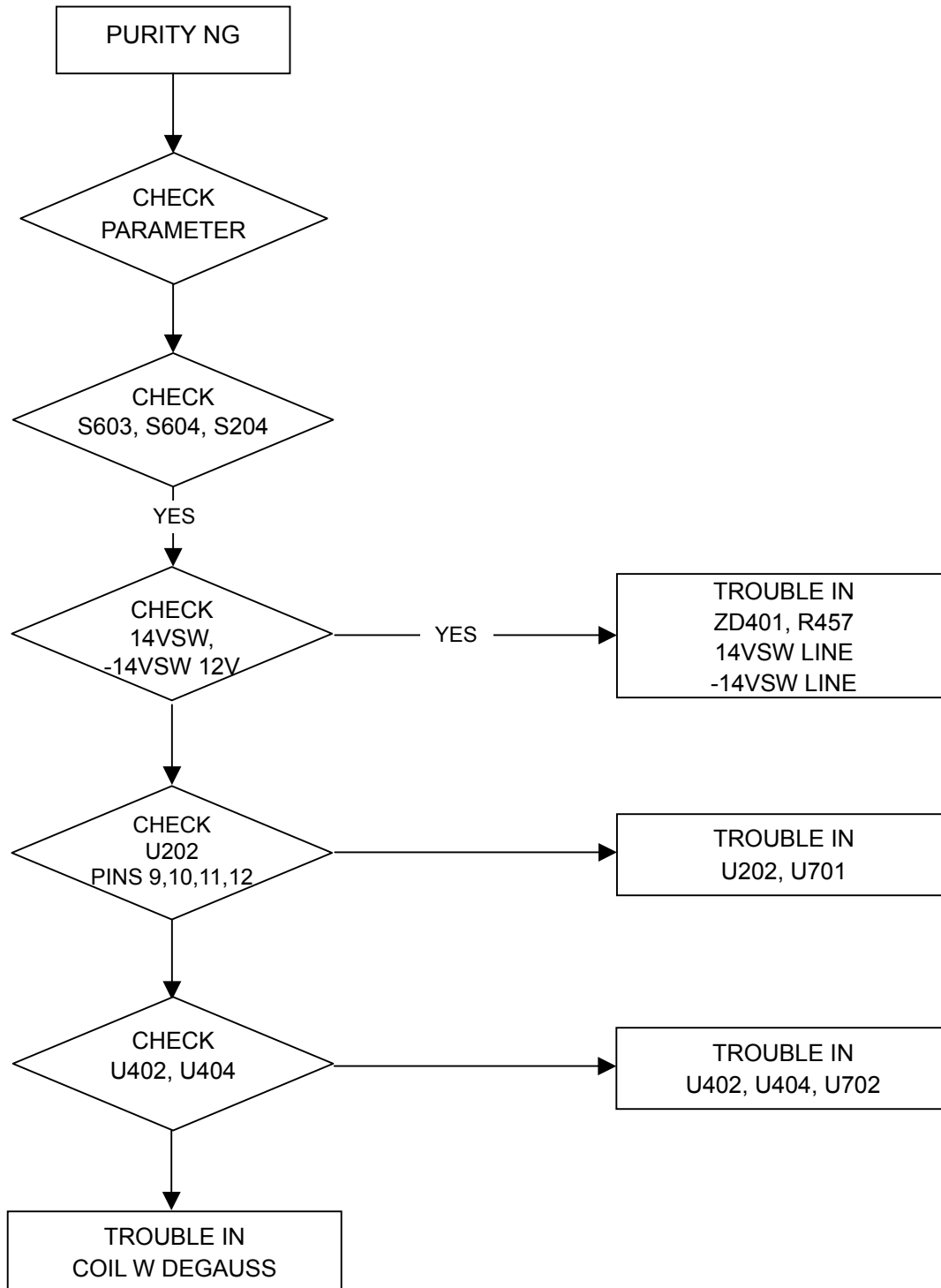
9. ROTATION PROBLEM



10. CG PROBLEM



11. PURITY PROBLEM



PARAMETER

C-TIME-TL	:10	C-TEMP 01	:08
C-TIME-TR	:0C	C-TEMP 02	:09
C-TIME-BL	:10	C-TEMP-REF	:27
C-TIME-BR	:0C	HP-SN-BH	:0F
C-TIME-02	:23	H-MAG-SN	:0B
C-TIME-REF	:14	H-ZERO-SN	:14~17

12. SELF DIAGNOSIS FUNCTION

This monitor has SELF DIAGNOSIS function as below table, when turn on monitor, please check LED blink times.

12.1 X-ray Protector Operate

On this condition, please check around T301 (FBT).

U701 detect pin 3. Normally this pin is low level.

When operate X-ray circuit, U701 pin 3 become high level.

12.2 High Voltage Circuit No Operate

U701 detect pin 15. Normally this pin is high level.

When operate this function, U701 pin 15 become low level.

Please check T301, Q305, Q304, Q306, Q303, U301.

12.3 Deflection Circuit No Operate

U701 detect pin 1. Normally this pin is low level.

When operate this function, U501 pin 17 output high DC level, so U701 judge that deflection circuit no operate. This condition is two cases.

One is really no operation of deflection circuit. Please check deflection output such as Q313, Q314 and DC-DC PWM circuit such as Q504.

The other is X-ray protector operation of U501 pin 2. In this case, please check around T301.

12.4 Beam Protector circuit Operate

U701 detect pin 13. Normally this pin is high level.

When operate this function, U701 pin 13 become low level.

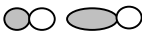




12.5 Internal I2C bus line is abnormal

U701 check I2C bus line pin 9, 10.


When operate this function, U701 can not communicate some I2C bus semiconductor.


There are U702, U501, U202, U201.

LED Indicator

Contents of Information	LED Blink
X-ray protector operate	
High voltage circuit no operate	
Deflection circuit no operate	
Beam protector circuit operate	
Internal I2C bus line is abnormal	

Notes:

 LED off(0.5sec)

 LED orange on(0.5sec)

 LED orange on(2sec)

“LED blink” will be repeated from a moment that CPU detect an abnormal condition to power switch is turned off.

CIRCUIT DESCRIPTION

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1.2 Harmonics	7-2
1.3 EMI	7-2
1.4 AC Rectifier and Smoothing Capacitor	7-2
1.5 Degaussing circuit	7-2
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1. Power Supply Circuit

1.1 Outline

This power supply unit adopts the switching mode technology, and is an off-line mode type unit that provided several different DC outputs. The scanning frequency is available in different values ranging from 31 kHz to 110 kHz. Moreover, it is capable to operate at an AC input voltage of 100V ~ 240V and an AC frequency of 50-60 Hz \pm 3Hz.

The block diagram is the functional construction schematics, that shows the major functions of this power supply unit.

1.2 Harmonics

L131 is a harmonic choke circuit that reduces the harmonic peak currents, for the purpose of fulfilling the requirement items of IEC 1000-3-2.

1.3 EMI

The EMI circuit has a 2-stage construction, with the first stage consisting of the common mode choke unit and one X-capacitor, and the second stage consisting of the common mode choke unit and four Y-capacitors.

R101 is the bleed resistor of the X-capacitor. When the power supply switch is turned OFF, this resistor carries out the emergency charging of the capacitor C101.

The EMI is the circuit that prevents the monitor switching noise from being generated, there by minimizing the negative influence on the other electronic equipment.

1.4 AC Rectifier and Smoothing Capacitor

The AC input is rectified by means of the full-bridge rectifier, that consists of the diodes D101 to D104.

The AC voltage is converted into the DC voltage by passing through the next stage, that consists of the smoothing capacitor C107.

TH101 is a NTC thermistor for the power supply at the in-rush current limit.

1.5 Degaussing circuit

The degaussing circuit consists of the PTC thermistor TH102, the degaussing coil and the relay RL181.

The relay is controlled by means of the +14V control signal coming from the CPU.

1.6 Transformer and energy induction

1) When the PWM controls IC KA3842A chip, a driving pulse is generated at the gate of the transistor Q101, and Q101 turns ON. The current returns from the "plus" (+) side of the energy-supplying capacitor C107 to the "minus" (-) side of the same capacitor C107, passing through the transformer Q101 DS.

During the ON cycle, the energy is stored in the transformer T101. The transistor Q101 turns OFF when the driving pulse disappears from Q101. As a result, all voltages of the dot ends of the winding flow to the positive direction and reach the fly-back rectifier. At that point of time, the diodes of the rectifier of the secondary side turn ON, a temporary energy is induced at the secondary side, and the ON cycle of the driving pulse is repeated.

- 2) The power supply MOS FET Q101 carries out the ON/OFF operation of the control unit, by means of U101 KA3842A. KA3842A is a PWM (pulse width modulation) IC chip, with 16 V starting voltage and 10 V cut-off voltage.

The following list shows the pin layout of KA3842A pulse width modulation IC chip.

Pin 1: Feedback	Pin 2: Compensation
Pin 3: Current sensor	Pin 4: Oscillator
Pin 5: Ground (GND)	Pin 6: Pulse output
Pin 7: VCC	Pin 8: VREF (5.1 V)

3) Overcurrent protection

R120 is a sensor resistor, and it has the function of increasing the current of this loop when the output of the secondary side is either in the overloaded state or is insufficient.

Since the current passing through the R120 sensor resistor has voltage dropping effect, the operation of the output pulse is stopped when a voltage lower than 1 Volt is detected at the pin number 3 of the KA3842A 3chip, and the switch of the power supply MOS FET is kept in the “break” state until the VCC voltage is charged up to 16 Volts, and the operation of U101 KA3842A is resumed. When it is not clearly known whether there is voltage shortage or not, however, this circuit repeats the ON/OFF switching, and the power supply LED lights up.

4) Starting circuit

The resistor R102 and R103 and the transistor Q102 and diode D105 and resistor R104, R105 are for the starting operation. When the circuit starts its operation, the power supply transformer T101 supplies the auxiliary 12 Volt power to the control IC chip U101 via pins 6 and 7 of the winding transformer T101.

5) Synchronization circuit

The synchronization signal is induced from the choke (L501), and carries out the synchronization with the power supply frequency. The frequency range is from 31 kHz to 110 kHz, and the component elements of the synchronization circuit are D116, R125, D115, R108 and R118.

6) Feedback circuit

The feedback circuit loop induces the 12 V voltage through the pin 6 and the pin 7 of the power supply transformer. That voltage is connected with the pin 3 of the IC chip U101 by passing through T101 - pin1, R107, D110, C112, R114, R116, VR101, U101 - pin2 and passing next through is a regular loop.

7) Snubber circuit

The snubber circuit has the function of clamping the ON/OFF spikes of the power supply MOS-FET, and its component elements D118, C109, R122 make up a snubber that turns OFF the power supply MOS-FET.

8) Secondary rectifier and smoothing rectifier

The secondary rectifier is a harmonic rectifier consisting of D151. The capacitors C151 and C157 are the smoothing rectifier working on the 80 Volt DC output. There are also other DC outputs, such as 80 Volt (D151), 27 Volt (D152), 14 Volt (D153), 7 Volt (D155) and -14 Volt (D154).

1.7 Power saving

Suspend mode : Every DC voltage operation of the CRT is reduce to 2 Volt.

OFF mode : The color of the power LED101 switches from green to orange.

- 1) When the power switch is turned ON when there is nothing being entered in the video cable. At that time, if the video is shifted from the free-run mode to the suspend mode, the transistor Q151 turns OFF and the operation returns to the OFF mode within a few seconds.
- 2) As for the sequence of steps that turn the operation to the OFF mode, if the keyboard is not touched for a given period of time that a preset in advance, the CPU outputs the LOW level signal to the transistor Q152, then Q151 turns OFF. As a result the power is shut out at that state.
- 3) When the user touches the keyboard in the OFF mode, the operation is resumed, the video signals V-SYNC and H-SYNC turn ON the CPU, then the transistor Q151 and Q152 turn ON. As a result the operation returns to the ON state.

1.8 DC/DC

The DC/DC voltage is DC 27 volts, and since the set-up voltage is variable from 40 volts to 143 volts, it is variable depending on the horizontal synchronism. The frequency band is variable from 31 kHz to 110 kHz. The voltage is fed back from the C330.

- 1) DC/DC is a step-up circuit, and consists mainly of the choke T501, the transistor Q504, the diode D505 and U501.
- 2) When the PWM controls U501 IC TDA4856, a driving pulse is generated at the gate of the transistor Q504, and the transistor Q504 turns ON. During the ON cycle, the energy is stored in the choke T501.

The transistor Q504 turns OFF when the driving pulse disappears from the gate of the transistor Q504.

As a result, the voltage at the dot terminal of the winding flows in the positive direction and goes to the fly-back rectifier. The energy stored in the choke T501 is entered in the T302, passing through the choke T501, the diode D505 and the capacitor C523.

- 3) The feedback is detected by the C331 via diode D315, the capacitor C330, the resistor R349, resistor R350, VR503 and is connected to the U501 pin 5.

This is loop is the regular type one.

- 4) The frequency of the synchronization signal coming from video H-SYNC is variable from 31 kHz to 110 kHz. The circuit consists of the R517.
- 5) The soft start circuit consists of the resistor R518, the capacitor C513, the diode D501 and the Q501.

2. Video Circuit & OSD

The video amplifier system is consist of the Pre-Amplifier, the Video-Power-Amplifier, and the cutoff-Voltage circuit.

- a) The U201 (LM1267) is a three channel video pre-amplifier IC, that controlled by MCU IIC bus for the features of contrast, output DC level, 3 SUB gain controls (R-Gain, G-Gain, B-Gain).
- b) U201 PIN 23 need a positive pulse for clamping and PIN 24 also need a positive pulse for blanking.
- c) The OSD mixer processes are on pin 1, 2, 3, and the OSD -SEL on pin 4.
- d) The Video-Power-Amplifier U204 (LM2463) is a three channel hybrid IC which functions as a cascade type transistor amplifier to reach the high bandwidth performance.
- e) The Cutoff- Adjusting circuit is consist of U203 to provide the function of background white-balance.
- f) The U202 (MTV030N-46) is a OSD generator outputs the R. G. B. and FBLK signals that MCU shows the monitor's status and the user adjusting indications. This IC is synchronized by horizontal and vertical sync input on pin 5 and pin 14.

3. Micro Controller System

- a) The MCU U701 (MTV212) provides the following functions:
 - 1) Output 4 PWM to adjust the voltage controlled functions such as CG-H, CG-V, ROTATION, H-LIN.
 - 2) When MCU detected the power saving signal, two outputs pin 28 and pin 29 will change the Hi/Lo state to control the power saving circuit.
 - 3) There still has 5 CS outputs used to control the S-correction capacitor for horizontal deflection stage.
 - 4) MCU have 3 A/D converters and control CRT purity auto compensation by using 3 ADC. There is timer sensor, temperature sensor, and magnetic sensor. MCU detect 3 factors and calculate then output data to corner coil via U202 DAC.
- b) The U702 is an EEPROM IC which stores the parameters of each mode and the user adjusting result and also DDC data. It is controlled by IIC bus from MCU.

Mode	State	Input				Output								
		Sync		Sync		Mute	PS		CS					
		H	V	H	V		1	2	0	1	2	3	4	
User/ Factory	ON	Pulses	Pulses	Pulse	Pulse	L	H	H	Depend on fH					
	Stand By	No Pulses	Pulses	L	L	H	L	Pulse	L	H	L	H	L	
	Suspend	Pulses	No Pulses	L	L	H	L	Pulse	L	H	L	H	L	
	PMS_OFF	No Pulses	No Pulses	L	L	H	L	Pulse	L	H	L	H	L	

4. Vertical Deflection

- a) Vertical deflection Saw-tooth waveform is provided by U501, pin 12, 13 and amplified by U401 TDA4863.
- b) A voltage multiplier connected to pin 3, consists of D401, C411 to avoid flyback scanning line appeared during the vertical flyback period.
- c) U401 pin 5 is output to drive vertical yoke.

5. Horizontal Deflection

- a) U501 is a horizontal signal processing IC. Horizontal Driver signal is output from pin 8 of U501 TDA4856 and through Q506, Q507 to drive Q313 and T304.
- b) T304 is an on/off type driver transformer. It functions to convert primary energy to secondary, and drive the horizontal output transistor Q314.
- c) Horizontal linearity compensation circuit:
- 1) The main component is that T303 is Linearity coil and Q325, Q326 is amplified.
 - 2) The control voltage is from U701 PIN 31.
 - 3) C362 is the Cs capacitor, and Q315 controls C334, Q317 controls C336, Q319 controls C338, Q321 controls C340, Q323 controls C341. The U701 pin 11, 16, 17, 18, 19 controls the Q315, Q317, Q319, Q323 and Q321 respectively. So different frequency has different combination to meet the requirement.

No	Signal	fH(kHz)	fH	CS3	CS0	CS4	CS2	CS1	HL DAC(%) H.LINEAR
1,3	VGA350/400/480	31.469	31k < < 34K	1	0	0	0	1	30.1
4	640*480(Mac13)	35	34k < < 36.5k	1	0	0	1	1	50
17	640*480(75)	37.5	36.5k < < 40k	0	0	1	1	1	30.1
2	640*480(85)	43.269	40k < < 44k	0	0	0		0	30.1
5	800*600(75)	46.875	44k < < 49k	0	1	0	0	0	50.1
7	832*624(Mac16)	49.725	49k < < 52k	0	0	1	0	0	30
6	800*600(85)	53.674	52k < < 58k	0	1	1	0	0	50
8	1024*768(75)	60.023	58k < < 62.5k	0	0	0	0	0	50
			62.5k < < 67k	1	0	0	1	0	
9	1024*768(85)	68.677	67k < < 74k	0	1	0	1	0	25
10	1152*870(Mac21)	68.681		0	1	0	1	0	25
11	1280*1024(75)	79.976	74k < < 83k	0	0	1	1	0	35.2
16	1920*1440(60)	90	83k < < 98k	0	1	1	1	0	25
12	1280*1024(85)	91.146		0	1	1	1	0	25
13	1600*1200(75)	93.75		0	1	1	1	0	25
14	1600*1200(85)	106.25		1	1	1	1	0	25
15	1792*1344(75)	106.27	98k < < 110k	1	1	1	1	0	25

6. High Voltage & FBT Secondary

- a) High voltage control circuit synchronize horizontal deflection pulse. U301 control and stabilize high voltage by detecting high voltage via VR301. The polarity of Q306 OUTPUT is reverse of Q305 output.
- b) Focus and screen voltage are come from FBT bleeder.
- c) G1 bias is controlled through R323, R390, R324, Q307 and ZD303.
- d) Q307 is controlled by MCU pin 2 Mute 1, and it will blank the picture during mode change.
- e) Q401 is the blanking buffer to G1 to blank the retrace line of picture.
- f) X-ray protection circuit has two ways. One is detected by using U501, the other is detected by U701 MCU.
- R511, R532, R533 and C502 are the x-ray protection circuit. Once the HV rises abnormally, U501 will shut down itself, all the horizontal deflection is stopped by then. R357, R358 also x-ray protection circuit. Once the HV abnormally, MCU do shut down it self through U701 3 pin.
- g) R301, C354, R352, Q309 and R318 are the overcurrent protection circuit, once the FBT over current, U501 is shut down.

7. Dynamic Focus

- a) H-Focus: T302 is H-Dynamic Focus amplified.
- b) V-Focus: U501 pin 32 output waveform through R356 and C343 to get a parabolic waveform. This waveform is amplified by Q312 and input into T302.
- c) H-Focus and V-Focus are into T302 to get a combined waveform that will input to FBT.

8. Others

8.1 ROTATION CORRECTION CIRCUIT

The out put of rotation data is supplied from U701 36pin with PWM to U302.

The Q327 and Q328 is push-pull construction and when Emitter of Q327 voltage is more than 6.9V, the rotation current is supplied to rotation coil via Q327. When Emitter of Q328 voltage is less than 6.9V, the rotation current is supplied from heater circuit via Q328.

ROTATION CONTROL CURRENT is supplied -100~100mA based on control.

8.2 CONVERGENCE CORRECTION CIRCUIT

The output of CONVERGENCE data is supplied from U701 26/27pin with PWM to U403.

The Q455 (Q456) and Q461 (Q462) is push-pull construction and when Emitter of Q455 (Q456) voltage is more than 6.9V, the CG-V (CG-H) current is supplied to convergence coil via Q455 (Q456). When Emitter of Q461 (Q462) is less than 6.9V, the CG-V (CG-H) current is supplied from heater circuit via Q461 (Q462).

CONVERGENCE CONTROL CURRENT is supplied -50~50 mA based on control.

8.3 PURITY CORRECTION CIRCUIT

The output of purity data is supplied from U202 9~12 pin with PWM to U402 and U404.

U402 and U404 amplify and output 4 CORNER COIL.

PURITY CONTROL CURRENT is supplied -120~120 mA based on control.

REPLACEMENT PARTS LIST(For U.S.)

The components specified for Model Dpro930SB-BK(A)

SYMBOL	Part No for NPG	DESCRIPTION
*** ICS ***		
U101	DD002600	IC LINEAR KA3842A 8P
U201	80016621	IC LM1267
U202	EH110051	IC MTV030N-46 20PIN
U203	80010891	IC LM2480
U204	EH110071	IC LM2463
U301	80016141	IC TL494
U302	80002321	IC KIA324P
U401	80016641	IC TDA4863
U402	80014501	IC LA6510
U403	80010251	IC LM358N/KIA358P
U404	80014501	IC LA6510
U501	80007131	IC TDA4856
U701	EH110081	IC MCU MTV212MN32 FP912SB
U702	80009941	IC ATMEL EEPROM AT24C08B
U703	EH110041	IC 74HC165

*** TRANSISTORS ***		
Q101	EF100113	FET N 2SK2843(SC) 600V/10
Q102	80005251	TR NPN KSP44 TO-92(T)
Q103	80014321	TR NPN KRC102M TO-92(T)
Q104	EAA09456	TR NPN 2SC945 TO-92(T)
Q105	EAA09456	TR NPN 2SC945 TO-92(T)
Q131	EAA09456	TR NPN 2SC945 TO-92(T)
Q132	EAA09456	TR NPN 2SC945 TO-92(T)
Q151	EB307720	TR PNP 2SB772 TO-126
Q152	80014321	TR NPN KRC102M TO-92(T)
Q153	80016661	TR 2SD882
Q155	EB307720	TR PNP 2SB772 TO-126
Q156	EAA09456	TR NPN 2SC945 TO-92(T)
Q157	80016661	TR 2SD882
Q181	EAA09456	TR NPN 2SC945 TO-92(T)
Q201	EAA18157	TR NPN 2SC1815GR TO-92(T)
Q271	EBA07336	TR PNP 2SA733P TO-92(T)
Q302	EC000411	TR 2N3904 NPN
Q303	80014321	TR NPN KRC102M TO-92(T)
Q304	EAA23690	TR NPN PH2369 TO-92(T)
Q305	80008081	TR N 2SK2996
Q306	EF206300	FET N IRF630 TO-220 3P
Q307	EBA04230	TR PNP BF423 TO-92(T)
Q309	EBA04230	TR PNP BF423 TO-92(T)
Q312	80005251	TR NPN KSP44 TO-92(T)

SYMBOL	Part No for NPG	DESCRIPTION
Q313	EF206301	FET N YTAF630 TO-220F
Q314	80008151	TR NPN 2SC5587 TO-3P
Q315	EF206301	FET N YTAF630 TO-220F
Q316	80014321	TR NPN KRC102M TO-92(T)
Q317	80003311	FET N YTAF640 TO-220F
Q318	80014321	TR NPN KRC102M TO-92(T)
Q319	80003311	FET N YTAF640 TO-220F
Q320	80014321	TR NPN KRC102M TO-92(T)
Q321	EF206301	FET N YTAF630 TO-220F
Q322	80014321	TR NPN KRC102M TO-92(T)
Q323	EF206301	FET N YTAF630 TO-220F
Q324	80014321	TR NPN KRC102M TO-92(T)
Q325	EAA09456	TR NPN 2SC945 TO-92(T)
Q326	80016661	TR 2SD882
Q327	EAA32055	TR NPN KTC3205-Y TO-92L/T
Q328	80002631	TR PNP KTA1273Y
Q329	80014321	TR NPN KRC102M TO-92(T)
Q330	EAA09456	TR NPN 2SC945 TO-92(T)
Q401	EAA04220	TR NPN BF422 TO-92(T)
Q455	EAA09456	TR NPN 2SC945 TO-92(T)
Q456	EAA09456	TR NPN 2SC945 TO-92(T)
Q461	EBA07336	TR PNP 2SA733P TO-92(T)
Q462	EBA07336	TR PNP 2SA733P TO-92(T)
Q501	EAA09456	TR NPN 2SC945 TO-92(T)
Q502	EAA09456	TR NPN 2SC945 TO-92(T)
Q503	EAA09456	TR NPN 2SC945 TO-92(T)
Q504	80003311	FET N YTAF640 TO-220F
Q505	EA243705	TR NPN KC4370A
Q506	EAA09456	TR NPN 2SC945 TO-92(T)
Q507	EBA07336	TR PNP 2SA733P TO-92(T)
Q508	EBA07336	TR PNP 2SA733P TO-92(T)
Q509	EAA09456	TR NPN 2SC945 TO-92(T)
Q701	EAA23690	TR NPN PH2369 TO-92(T)
Q702	EAA09456	TR NPN 2SC945 TO-92(T)
Q703	EBA07336	TR PNP 2SA733P TO-92(T)

*** DIODES ***

D101	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D102	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D103	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D104	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D105	EJ044148	DIODE T" 1N4148"
D106	EJ044148	DIODE T" 1N4148"
D107	EJ044148	DIODE T" 1N4148"
D108	80003841	DIODE 1A/20V UF4003 DG41
D109	EJAC0005	DIODE/T 1A 1N4002
D110	80003841	DIODE 1A/20V UF4003 DG41
D111	EJ044148	DIODE T" 1N4148"

SYMBOL	Part No for NPG	DESCRIPTION
D112	EJ044148	DIODE T" 1N4148"
D113	EJ044148	DIODE T" 1N4148"
D115	EJ044148	DIODE T" 1N4148"
D116	EJ044148	DIODE T" 1N4148"
D117	EJ044148	DIODE T" 1N4148"
D118	80003821	DIODE 1A/1KV UF4007 D041
D120	EJ044148	DIODE T" 1N4148"
D131	EJAC0010	DIODE/T 1A 1N4007
D132	EJ044148	DIODE T" 1N4148"
D150	EJA05819	DIODE STKY/T 1A/40V 1N581
D151	80016531	DIODE 3A/600V RL4A (SANKE
D152	EJ100091	DI RL3 3.5A 350V STRAIGHT
D153	80016701	DIODE 3A/200V SF33 (CHENM
D154	80016701	DIODE 3A/200V SF33 (CHENM
D155	80016681	DIODE SR360
D181	EJ044148	DIODE T" 1N4148"
D203	EJAC0018	DIODE/T 1A 1N4937
D210	EJ044148	DIODE T" 1N4148"
D211	EJ044148	DIODE T" 1N4148"
D212	80000451	DIODE/T 1/2W 1SS83
D213	80000451	DIODE/T 1/2W 1SS83
D214	80000451	DIODE/T 1/2W 1SS83
D230	EJ044148	DIODE T" 1N4148"
D231	EJ044148	DIODE T" 1N4148"
D232	80000451	DIODE/T 1/2W 1SS83
D233	80000451	DIODE/T 1/2W 1SS83
D234	80000451	DIODE/T 1/2W 1SS83
D250	EJ044148	DIODE T" 1N4148"
D251	EJ044148	DIODE T" 1N4148"
D252	80000451	DIODE/T 1/2W 1SS83
D253	80000451	DIODE/T 1/2W 1SS83
D254	80000451	DIODE/T 1/2W 1SS83
D271	EJ044148	DIODE T" 1N4148"
D272	EJ044148	DIODE T" 1N4148"
D303	EJ044148	DIODE T" 1N4148"
D304	80000451	DIODE/T 1/2W 1SS83
D305	EJAE0001	DIODE/T 1A SR106
D306	80016531	DIODE 3A/600V RL4A (SANKE
D307	80009741	DIODE/T UF4005
D308	80003841	DIODE 1A/20V UF4003 DG41
D309	EJA00018	DIODE/T 1A UF4006
D310	EJ044148	DIODE T" 1N4148"
D311	EJ044148	DIODE T" 1N4148"
D312	80003841	DIODE 1A/20V UF4003 DG41
D313	80003821	DIODE 1A/1KV UF4007 D041
D314	EJ044148	DIODE T" 1N4148"
D315	80004711	ROHM DIODE 1SS244
D316	80003841	DIODE 1A/20V UF4003 DG41

SYMBOL	Part No for NPG	DESCRIPTION
D317	EJB00004	DIODE/A 5TUZ47
D318	80003821	DIODE 1A/1KV UF4007 D041
D319	EJ044148	DIODE T" 1N4148"
D320	EJA00018	DIODE/T 1A UF4006
D321	80003841	DIODE 1A/20V UF4003 DG41
D322	80009741	DIODE/T UF4005
D323	EJA00018	DIODE/T 1A UF4006
D401	EJB00017	DIODE/A 1A IN4936
D402	EJ044148	DIODE T" 1N4148"
D501	EJ044148	DIODE T" 1N4148"
D502	EJ044148	DIODE T" 1N4148"
D503	EJ044148	DIODE T" 1N4148"
D505	80016531	DIODE 3A/600V RL4A (SANKE
D506	EJ044148	DIODE T" 1N4148"
D507	80003841	DIODE 1A/20V UF4003 DG41
D508	80003551	DIODE 200V/1.6A RG2Z
D509	EJAC0018	DIODE/T 1A 1N4937
D510	EJ044148	DIODE T" 1N4148"
D704	EJ044148	DIODE T" 1N4148"
D705	EJ044148	DIODE T" 1N4148"
D706	EJ044148	DIODE T" 1N4148"
D707	EJ044148	DIODE T" 1N4148"
D708	EJ044148	DIODE T" 1N4148"
D709	EJ044148	DIODE T" 1N4148"
D710	EJ044148	DIODE T" 1N4148"
D711	EJ044148	DIODE T" 1N4148"
D712	EJ044148	DIODE T" 1N4148"
D713	EJ044148	DIODE T" 1N4148"
LED101	80000131	LED L-59GH/1GYC
ZD101	EKA0200B	ZEN DIODE 1/2W(T) HZS20.2
ZD102	EKA0180B	ZEN DIODE 1/2W(T) 18V
ZD131	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD151	EKA00605	ZEN DIODE 1/2W(T) HZS6B3
ZD301	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD302	EKA00508	ZEN DIODE 1/2W(T) HZ5C3
ZD303	EKA00906	ZEN DIODE 1/2W(T) 9C1
ZD304	EKA00507	ZEN DIODE 1/2W(T) 5C2
ZD401	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD501	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD701	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD702	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD703	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD704	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD705	EKA00607	ZEN DIODE 1/2W(T) 6C2

*** TRANSFORMERS ***

T101	HE100091	TRANS POWER 200UH N1902
T301	HH910021	FBT19 110K CHUN PENG N290

SYMBOL	Part No for NPG	DESCRIPTION
T302	HE300011	TRANS DF X'FM EI-22 N2901
T304	HE200011	TRANS HDDRIVE X'FM EI-19

*** VARIABLE RESISTORS ***

VR101	FF300501	VR CARBON 6MM 500H/B
VR301	FF310223	VR CARBON 6MM 22K
VR302	FF310223	VR CARBON 6MM 22K
VR501	FF310502	VR CARBON 6MM 5K
VR503	FF300102	VR CARBON 6MM 1K

*** RELAYS & SWITCHES ***

SW101	JC800121	SW POWER DC 30V 0.1A SPUN
SW701	80000251	TACT SW 1P 100G+-50
SW702	80000251	TACT SW 1P 100G+-50
SW703	80000251	TACT SW 1P 100G+-50
SW704	80000251	TACT SW 1P 100G+-50
SW705	80000251	TACT SW 1P 100G+-50
SW706	80000251	TACT SW 1P 100G+-50
SW707	80000251	TACT SW 1P 100G+-50

*** PWB ASSYS ***

MAININ	AM0M52MM	MAIN INSERT ASSY
CRTIN	AC0M52MM	CRT INSERT ASSY
SUBIN	AS0M52MM	SUB INSERT ASSY

*** COILS & FILTERS ***

B101	HC006003	BEAD 3.5X8/T
B102	HC005002	BEAD 3.5X4.7/T
B103	HC005002	BEAD 3.5X4.7/T
B104	80000991	BEAD WBR6H-3T-R7K-B5
B105	80000561	BEAD 3.5*6*0.8/T
B201	HC005002	BEAD 3.5X4.7/T
B202	HC006003	BEAD 3.5X8/T
B203	HC006003	BEAD 3.5X8/T
B204	HC006003	BEAD 3.5X8/T
B301	HC006002	BEAD 3.5X4.7/T
B302	HC006003	BEAD 3.5X8/T
B303	HC006003	BEAD 3.5X8/T
L101	HA100041	CORE EMI COMMON CHOKE25MH
L131	HA200031	HARMONIC CHOKE EE42 60MH
L151	HB000008	CHOKE COIL 100UH 8X10
L201	HB000008	CHOKE COIL 100UH 8X10
L202	HB000008	CHOKE COIL 100UH 8X10
L203	HB013100	PACKING COIL T 10UH K
L210	HB013228	PEAKING COIL/T 0.22UH K
L211	HB013278	PACKING COIL /T 0.27UH K
L230	HB013278	PACKING COIL /T 0.27UH K
L231	HB013278	PACKING COIL /T 0.27UH K

SYMBOL	Part No for NPG	DESCRIPTION
L250	HB013228	PEAKING COIL/T 0.22UH K
L251	HB013188	PEAKING COIL/T 0.18UH K
L301	80016071	CHOCK COIL 14UH P75
L501	80016081	CHOCK COIL 8.0MH (DRWW16*
RL181	80003761	REPLY 12V 6P OSA-SS-212DM
T303	HA300011	L LINER N2901
T501	80016801	CHOKE COIL 45UH N1901

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

CABLE	80016302	SIGNAL CABLE P75
CRTS	80005711	ISDW02S41 CRT SOCKET
DEGC	HA690041	L DEGAUSS N2902
F101	80001521	FUSE 3.15A/250V 50T
P101	JD512001	AC SOCKET 3P
PWRC	80001631	POWER CORD2P2MCOLORSG8508
RL131	80005831	RELAY 12V 8 P MI-SS-212D
SG301	80002201	SPAKER GAP 1.5KV
TH101	80004371	THERMISTOR NTCR N15SP006L
TH102	80013341	THERMISTOR PTCR 4.5OHM(90
TH701	80014781	TH NRD3103K400K03FMT
X701	EM012004	X'TAL 49U 12MHZ

*** APPEARANCE PARTS ***

CABB	10102761	CABINET BACK
CABF	10102461	CABINET FRONT ASSY
CHASS	12000831	CHASSIS BASE
PANEL	11700551	PANEL(DPRO930SBBK(A))
REVS	11001021	REVOLVING STAND ASSY(MC-0

*** PRINTED & PACKING MATERIALS ***

BAGP2	13700021	BAG POLYETHYLENE
CART	13202041	CARTON BOX DPRO930SBBK(A)
MANUW	15501391	OWNERS MANUAL DPRO930SB(A
NAME	15001731	RATING LABEL DPRO930SBBK(
NAVCAR	15900251	NAVISET CARTON BOX FLYER
PEBAG	13700301	PE BAG(500*480*850+WARNIN
PLYB	13400771	POLYLON(B)
PLYT	13400761	POLYLON(T)

*** RESISTORS ***

J152	FA040101	CARBON 1/8W(T) 5% 100OHM
J153	FA040101	CARBON 1/8W(T) 5% 100OHM
R101	FA330684	CARBON 1/2W(T) 5% 680K
R102	FA330333	CARBON 1/2W(T) 5% 33K
R103	FA330333	CARBON 1/2W(T) 5% 33K
R104	FA240564	CARBON 1/4W(T) 5% 560K
R105	FA240564	CARBON 1/4W(T) 5% 560K
R106	FB244708	METAL 1/4W(T) 1% 4.7H

SYMBOL	Part No for NPG	DESCRIPTION
R107	FB240010	METAL 1/4W(T) 1% 1OHM
R108	FA040100	CARBON 1/8W(T) 5% 10OHM
R109	FA240470	CARBON 1/4W 5% 47OHM
R110	FA240103	CARBON 1/4W(T) 5% 10K
R111	FA240103	CARBON 1/4W(T) 5% 10K
R112	FA240563	CARBON 1/4W(T) 5% 56K
R113	FA240242	CARBON 1/4W(T) 5% 2.4K
R114	FA330273	CARBON 1/2W(T) 5% 27KH
R115	FA240222	CARBON 1/4W(T) 5% 2.2K
R116	FB244651	METAL 1/4W(T) 1% 4.65K
R117	FA240203	CARBON 1/4W(T) 5% 20K
R118	FA330330	CARBON 1/2W(T) 5% 33H
R119	FA330102	CARBON 1/2W(T) 5% 1K
R120	FC240138	WOUND RES 3W/M(A)5% 0.13H
R121	FB560338	MOF 2W/M(A) 5% 0.33H
R122	FB570683	MOF 2W/M(B) 5% 68K
R123	FA240473	CARBON 1/4W 5% 47KOHM
R124	FA240222	CARBON 1/4W(T) 5% 2.2K
R125	FA330102	CARBON 1/2W(T) 5% 1K
R126	FA040472	CARBON 1/8W(T) 5% 4.7K
R127	FA330220	CARBON 1/2W(T) 5% 22H
R128	FA330564	CARBON 1/2(T) 5% 560K
R129	FA330564	CARBON 1/2(T) 5% 560K
R131	FA330434	CARBON 1/2W(T) 5% 430K
R132	FA330434	CARBON 1/2W(T) 5% 430K
R133	FA040513	CARBON 1/8W(T) 5% 51K
R135	FA330203	CARBON 1/2W(T) 5% 20K
R137	FA040103	CARBON 1/8W(T) 5% 10K
R138	FA240681	CARBON 1/4W(T) 5% 680OHM
R139	FA040103	CARBON 1/8W(T) 5% 10K
R148	FA240162	CARBON 1/4W(T) 5% 1.6K
R151	FA240823	CARBON 1/4W(T) 5% 82K
R153	FA040104	CARBON 1/8W(T) 5% 100K
R154	FA240103	CARBON 1/4W(T) 5% 10K
R155	FA330751	CARBON 1/2W(T) 5% 750H
R156	FA240103	CARBON 1/4W(T) 5% 10K
R157	FA240103	CARBON 1/4W(T) 5% 10K
R158	FA330751	CARBON 1/2W(T) 5% 750H
R161	FA040102	CARBON 1/8W(T) 5% 1K
R162	FA240511	CARBON 1/4W(T) 5% 510H
R163	FA040472	CARBON 1/8W(T) 5% 4.7K
R164	FA330109	CARBON 1/2W (T) 5% 1OHM
R165	FA330102	CARBON 1/2W(T) 5% 1K
R166	FA040220	CARBON 1/8W(T) 5% 22H
R167	FA040103	CARBON 1/8W(T) 5% 10K
R181	FA040392	CARBON 1/8W(T) 5% 3.9K
R201	FA040562	CARBON 1/8W(T) 5% 5.6K
R202	FA040334	CARBON 1/8W(T) 5% 330K

SYMBOL	Part No for NPG	DESCRIPTION
R203	FA040332	CARBON 1/8W(T) 5% 3.3K
R204	FA040472	CARBON 1/8W(T) 5% 4.7K
R205	FA040101	CARBON 1/8W(T) 5% 100OHM
R206	FA040102	CARBON 1/8W(T) 5% 1K
R207	FA040101	CARBON 1/8W(T) 5% 100OHM
R208	FA040101	CARBON 1/8W(T) 5% 100OHM
R209	FA040101	CARBON 1/8W(T) 5% 100OHM
R210	FA040101	CARBON 1/8W(T) 5% 100OHM
R211	FA040330	CARBON 1/8W(T) 5% 330OHM
R212	FA040751	CARBON 1/8W(T) 5% 750H
R213	FB247509	METAL 1/4W(T) 1% 75OHM
R215	FA360560	R CARBON 1/2W/M(T) 5% 56
R216	FA240105	CARBON 1/4W(T) 5% 1M
R217	FA040102	CARBON 1/8W(T) 5% 1K
R218	FG100010	R FUSE 1/4W 75 J (A)
R230	FA040101	CARBON 1/8W(T) 5% 100OHM
R231	FA040330	CARBON 1/8W(T) 5% 330OHM
R232	FA040681	CARBON 1/8W(T) 5% 680OHM
R233	FB247509	METAL 1/4W(T) 1% 75OHM
R235	FA360560	R CARBON 1/2W/M(T) 5% 56
R236	FA240105	CARBON 1/4W(T) 5% 1M
R237	FA040102	CARBON 1/8W(T) 5% 1K
R238	FG100010	R FUSE 1/4W 75 J (A)
R250	FA040101	CARBON 1/8W(T) 5% 100OHM
R251	FA040330	CARBON 1/8W(T) 5% 330OHM
R252	FA040561	CARBON 1/8W(T) 5% 560OHM
R253	FB247509	METAL 1/4W(T) 1% 75OHM
R255	FA360560	R CARBON 1/2W/M(T) 5% 56
R256	FA240105	CARBON 1/4W(T) 5% 1M
R257	FA040102	CARBON 1/8W(T) 5% 1K
R258	FG100010	R FUSE 1/4W 75 J (A)
R270	FA040472	CARBON 1/8W(T) 5% 4.7K
R271	FA040473	CARBON 1/8W(T) 5% 47K
R272	FA040472	CARBON 1/8W(T) 5% 4.7K
R273	FA040681	CARBON 1/8W(T) 5% 680OHM
R274	FA040681	CARBON 1/8W(T) 5% 680OHM
R275	FA040102	CARBON 1/8W(T) 5% 1K
R276	FA330101	CARBON 1/2W(T) 5% 100OHM
R277	FA240334	CARBON 1/4W(T) 5% 330K
R278	FA040102	CARBON 1/8W(T) 5% 1K
R279	FB241002	METAL 1/4W(T) 1% 10K
R27A	FA040473	CARBON 1/8W(T) 5% 47K
R280	FB470279	MOF 1W/M(A) 5% 2.7H
R281	FA040102	CARBON 1/8W(T) 5% 1K
R282	FA040101	CARBON 1/8W(T) 5% 100OHM
R283	FA040472	CARBON 1/8W(T) 5% 4.7K
R284	FA040101	CARBON 1/8W(T) 5% 100OHM
R285	FA040103	CARBON 1/8W(T) 5% 10K

SYMBOL	Part No for NPG	DESCRIPTION
R286	FA040123	CARBON 1/8W(T) 5% 12K
R287	FA040102	CARBON 1/8W(T) 5% 1K
R288	FA040102	CARBON 1/8W(T) 5% 1K
R289	FA040103	CARBON 1/8W(T) 5% 10K
R293	FA040102	CARBON 1/8W(T) 5% 1K
R294	FA040102	CARBON 1/8W(T) 5% 1K
R295	FA040103	CARBON 1/8W(T) 5% 10K
R296	FA040103	CARBON 1/8W(T) 5% 10K
R297	FA040103	CARBON 1/8W(T) 5% 10K
R298	FA040103	CARBON 1/8W(T) 5% 10K
R299	FA040101	CARBON 1/8W(T) 5% 100OHM
R301	FB470338	MOF 1W/M(A) 5% 0.33H
R302	FA040102	CARBON 1/8W(T) 5% 1K
R304	FA040333	CARBON 1/8W(T) 5% 33K
R305	FA040472	CARBON 1/8W(T) 5% 4.7K
R306	FA040432	CARBON 1/8W(T) 5% 4.3K
R307	FA040222	CARBON 1/8W(T) 5% 2.2K
R308	FA040222	CARBON 1/8W(T) 5% 2.2K
R310	FA040472	CARBON 1/8W(T) 5% 4.7K
R311	FA040102	CARBON 1/8W(T) 5% 1K
R316	FA040683	CARBON 1/8W(T)5% 68K OHM
R317	FA040512	CARBON 1/8W(T) 5% 5.1K
R318	FA040104	CARBON 1/8W(T) 5% 100K
R320	FA040102	CARBON 1/8W(T) 5% 1K
R321	FA040103	CARBON 1/8W(T) 5% 10K
R322	FA040123	CARBON 1/8W(T) 5% 12K
R323	FA240823	CARBON 1/4W(T) 5% 82K
R324	FA240113	CARBON 1/4W(T)5% 11K OHM
R325	FA040332	CARBON 1/8W(T) 5% 3.3K
R326	FA040103	CARBON 1/8W(T) 5% 10K
R327	FA040123	CARBON 1/8W(T) 5% 12K
R328	FA040103	CARBON 1/8W(T) 5% 10K
R329	FA330105	CARBON 1/2W (T) 5% 1M
R330	FA330102	CARBON 1/2W(T) 5% 1K
R331	FB560563	MOF 2W/M(A) 5% 56K
R332	FB560563	MOF 2W/M(A) 5% 56K
R333	FA240105	CARBON 1/4W(T) 5% 1M
R334	FA040103	CARBON 1/8W(T) 5% 10K
R335	FA040331	CARBON 1/8W(T) 5% 330H
R336	FA040223	CARBON 1/8W(T) 5% 22K
R337	FB470100	MOF 1W/M(A) 5% 100HM
R338	FA040103	CARBON 1/8W(T) 5% 10K
R339	FB480471	MOF 1W/M(B) 5% 470H
R340	FB570101	MOF 2W/M(B) 5% 100H
R342	FA040100	CARBON 1/8W(T) 5% 100HM
R344	FA040103	CARBON 1/8W(T) 5% 10K
R345	FA040331	CARBON 1/8W(T) 5% 330H
R346	FA330101	CARBON 1/2W(T) 5% 100OHM

SYMBOL	Part No for NPG	DESCRIPTION
R347	FA360270	CARBON 1/2W/M(T) 5% 27H
R348	FK010010	R MOF 5W 1.2J (Al)
R349	FB241003	METAL 1/4W(T) 1% 100K
R350	FA040562	CARBON 1/8W(T) 5% 5.6K
R351	FA040103	CARBON 1/8W(T) 5% 10K
R352	FA040103	CARBON 1/8W(T) 5% 10K
R353	FA040103	CARBON 1/8W(T) 5% 10K
R354	FA040103	CARBON 1/8W(T) 5% 10K
R355	FA040223	CARBON 1/8W(T) 5% 22K
R356	FA040102	CARBON 1/8W(T) 5% 1K
R357	FB241113	METAL 1/4W(T) 1% 111K
R358	FB241002	METAL 1/4W(T) 1% 10K
R359	FA040103	CARBON 1/8W(T) 5% 10K
R360	FA040101	CARBON 1/8W(T) 5% 100OHM
R361	FA040101	CARBON 1/8W(T) 5% 100OHM
R362	FA040103	CARBON 1/8W(T) 5% 10K
R363	FA040101	CARBON 1/8W(T) 5% 100OHM
R364	FA040101	CARBON 1/8W(T) 5% 100OHM
R366	FA040101	CARBON 1/8W(T) 5% 100OHM
R367	FA040103	CARBON 1/8W(T) 5% 10K
R368	FA360102	CARBON 1/2W/M(T) 5% 1K
R369	FA240102	CARBON 1/4W 5% 1KOHM
R370	FA040131	CARBON 1/8W(T) 5% 130H
R371	FA240222	CARBON 1/4W(T) 5% 2.2K
R372	FA040104	CARBON 1/8W(T) 5% 100K
R373	FA040104	CARBON 1/8W(T) 5% 100K
R374	FA040470	CARBON 1/8W(T) 5% 47OHM
R375	FA040472	CARBON 1/8W(T) 5% 4.7K
R376	FA040472	CARBON 1/8W(T) 5% 4.7K
R377	FA040122	CARBON 1/8W(T) 5% 1.2K
R378	FA040103	CARBON 1/8W(T) 5% 10K
R379	FA240155	CARBON 1/4W(T) 5% 1.5M
R380	FA240155	CARBON 1/4W(T) 5% 1.5M
R382	FB710339	MOF 3W/M(A) 5% 3.3OHM
R385	FB245102	METAL 1/4W(T) 1% 51K
R386	FA040123	CARBON 1/8W(T) 5% 12K
R388	FB242202	METAL 1/4W(T) 1% 22K
R389	FA040621	CARBON 1/8W(T) 5% 620 H
R390	FA240563	CARBON 1/4W(T) 5% 56K
R392	FA040103	CARBON 1/8W(T) 5% 10K
R402	FA330271	CARBON 1/2W(T)5% 270H
R403	FB470010	MOF 1W/M(A) 5% 1H
R404	FA240229	CARBON 1/4W(T) 5% 2.2H
R405	FB275601	METAL 1/4W/M(T) 1% 5.6K
R406	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R407	FB470758	MOF 1W/M(A) 5% 0.75H
R408	FA330271	CARBON 1/2W(T)5% 270H
R409	FB275601	METAL 1/4W/M(T) 1% 5.6K

SYMBOL	Part No for NPG	DESCRIPTION
R410	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R411	FA240222	CARBON 1/4W(T) 5% 2.2K
R412	FA040103	CARBON 1/8W(T) 5% 10K
R413	FA040472	CARBON 1/8W(T) 5% 4.7K
R414	FA040332	CARBON 1/8W(T) 5% 3.3K
R415	FA040104	CARBON 1/8W(T) 5% 100K
R451	FB246203	METAL 1/4W(T) 1% 620K
R452	FB241003	METAL 1/4W(T) 1% 100K
R453	FB246203	METAL 1/4W(T) 1% 620K
R454	FB247501	METAL 1/4W(T) 1% 7.5K
R455	FB243602	METAL 1/4W(T) 1% 36K
R456	FB241003	METAL 1/4W(T) 1% 100K
R457	FA040271	CARBON 1/8W(T) 5% 270H
R460	FB246203	METAL 1/4W(T) 1% 620K
R461	FB241003	METAL 1/4W(T) 1% 100K
R462	FB246203	METAL 1/4W(T) 1% 620K
R463	FB241003	METAL 1/4W(T) 1% 100K
R464	FA330910	CARBON 1/2W(T) 5% 91H
R467	FA040512	CARBON 1/8W(T) 5% 5.1K
R468	FA040512	CARBON 1/8W(T) 5% 5.1K
R469	FA040470	CARBON 1/8W(T) 5% 47OHM
R470	FA040470	CARBON 1/8W(T) 5% 47OHM
R471	FA040133	CARBON 1/8W(T) 5% 13K
R472	FA040432	CARBON 1/8W(T) 5% 4.3K
R473	FA040102	CARBON 1/8W(T) 5% 1K
R474	FA040122	CARBON 1/8W(T) 5% 1.2K
R475	FA040432	CARBON 1/8W(T) 5% 4.3K
R476	FA040332	CARBON 1/8W(T) 5% 3.3K
R479	FA330910	CARBON 1/2W(T) 5% 91H
R480	FB570390	MOF 2W/M(B) 5% 39H
R481	FB560390	MOF 2W/M(A) 5% 39H
R482	FB560390	MOF 2W/M(A) 5% 39H
R483	FB560390	MOF 2W/M(A) 5% 39H
R484	FA040122	CARBON 1/8W(T) 5% 1.2K
R485	FA040102	CARBON 1/8W(T) 5% 1K
R501	FA040101	CARBON 1/8W(T) 5% 100OHM
R502	FA040101	CARBON 1/8W(T) 5% 100OHM
R503	FA040223	CARBON 1/8W(T) 5% 22K
R504	FA040222	CARBON 1/8W(T) 5% 2.2K
R505	FB242611	METAL 1/4W(T) 1% 2.61K
R506	FB246040	METAL 1/4W(T) 1% 604OHM
R507	FA040101	CARBON 1/8W(T) 5% 100OHM
R508	FA040101	CARBON 1/8W(T) 5% 100OHM
R509	FA040103	CARBON 1/8W(T) 5% 10K
R510	FA040103	CARBON 1/8W(T) 5% 10K
R511	FB241802	METAL 1/4W(T) 1% 18K
R512	FA040153	CARBON 1/8W(T) 5% 15K
R513	FA240102	CARBON 1/4W 5% 1KOHM

SYMBOL	Part No for NPG	DESCRIPTION
R514	FA040103	CARBON 1/8W(T) 5% 10K
R515	FA040103	CARBON 1/8W(T) 5% 10K
R516	FA040473	CARBON 1/8W(T) 5% 47K
R517	FA240103	CARBON 1/4W(T) 5% 10K
R518	FA040222	CARBON 1/8W(T) 5% 2.2K
R519	FA040103	CARBON 1/8W(T) 5% 10K
R520	FA040472	CARBON 1/8W(T) 5% 4.7K
R521	FA240102	CARBON 1/4W 5% 1KOHM
R522	FA040683	CARBON 1/8W(T)5% 68K OHM
R523	FA040220	CARBON 1/8W(T) 5% 22H
R524	FA040103	CARBON 1/8W(T) 5% 10K
R525	FB560278	MOF 2W/M(A) 5% 0.27H
R526	FA040222	CARBON 1/8W(T) 5% 2.2K
R527	FA040103	CARBON 1/8W(T) 5% 10K
R528	FB710561	MOF 3W/M(A) 5% 560OHM
R529	FA040103	CARBON 1/8W(T) 5% 10K
R530	FB480109	MOF 1W/M(B) 5% 1H
R531	80002031	FUSEABLE RES 1/2W(A)0.22H
R532	FB248202	METAL 1/4W(T) 1% 82K
R533	FB242102	METAL 1/4W(T) 1% 21K
R534	FA040103	CARBON 1/8W(T) 5% 10K
R535	FA040104	CARBON 1/8W(T) 5% 100K
R536	80011181	RES FUSEABLE 1/2W/A(M)22H
R539	FA040222	CARBON 1/8W(T) 5% 2.2K
R540	FA040102	CARBON 1/8W(T) 5% 1K
R701	FA040103	CARBON 1/8W(T) 5% 10K
R702	FA040472	CARBON 1/8W(T) 5% 4.7K
R703	FA040101	CARBON 1/8W(T) 5% 100OHM
R704	FA040101	CARBON 1/8W(T) 5% 100OHM
R705	FA040103	CARBON 1/8W(T) 5% 10K
R706	FA040472	CARBON 1/8W(T) 5% 4.7K
R707	FA240105	CARBON 1/4W(T) 5% 1M
R708	FA040472	CARBON 1/8W(T) 5% 4.7K
R709	FA040472	CARBON 1/8W(T) 5% 4.7K
R710	FA040472	CARBON 1/8W(T) 5% 4.7K
R711	FA040103	CARBON 1/8W(T) 5% 10K
R712	FA040472	CARBON 1/8W(T) 5% 4.7K
R713	FA040104	CARBON 1/8W(T) 5% 100K
R714	FA040102	CARBON 1/8W(T) 5% 1K
R715	FA040472	CARBON 1/8W(T) 5% 4.7K
R716	FA040472	CARBON 1/8W(T) 5% 4.7K
R717	FA040472	CARBON 1/8W(T) 5% 4.7K
R719	FA040101	CARBON 1/8W(T) 5% 100OHM
R721	FA040101	CARBON 1/8W(T) 5% 100OHM
R722	FA040103	CARBON 1/8W(T) 5% 10K
R723	FA040101	CARBON 1/8W(T) 5% 100OHM
R724	FA040103	CARBON 1/8W(T) 5% 10K
R725	FA040103	CARBON 1/8W(T) 5% 10K

SYMBOL	Part No for NPG	DESCRIPTION
R726	FA040103	CARBON 1/8W(T) 5% 10K
R727	FA040472	CARBON 1/8W(T) 5% 4.7K
R728	FA040103	CARBON 1/8W(T) 5% 10K
R729	FA040472	CARBON 1/8W(T) 5% 4.7K
R730	FA040472	CARBON 1/8W(T) 5% 4.7K
R731	FA040472	CARBON 1/8W(T) 5% 4.7K
R732	FA040101	CARBON 1/8W(T) 5% 100OHM
R733	FA040101	CARBON 1/8W(T) 5% 100OHM
R734	FA040102	CARBON 1/8W(T) 5% 1K
R735	FA040471	CARBON 1/8W(T) 5% 470OHM
R736	FA040102	CARBON 1/8W(T) 5% 1K
R737	FA040472	CARBON 1/8W(T) 5% 4.7K
R738	FA040103	CARBON 1/8W(T) 5% 10K
R739	FA040103	CARBON 1/8W(T) 5% 10K
R740	FA040472	CARBON 1/8W(T) 5% 4.7K
R741	FA040103	CARBON 1/8W(T) 5% 10K
R742	FA040103	CARBON 1/8W(T) 5% 10K
R743	FA040103	CARBON 1/8W(T) 5% 10K
R745	FA040393	CARBON 1/8W(T) 5% 39K
R746	FA040182	CARBON 1/8W(T) 5% 1.8K
R747	FA040182	CARBON 1/8W(T) 5% 1.8K
R748	FA040472	CARBON 1/8W(T) 5% 4.7K
R749	FA040472	CARBON 1/8W(T) 5% 4.7K
R750	FA040103	CARBON 1/8W(T) 5% 10K
R751	FB244701	METAL 1/4W(T) 1% 4.7K
R752	FA040472	CARBON 1/8W(T) 5% 4.7K
R753	FB242201	METAL 1/4W(T) 1% 2.2K
R754	FA040103	CARBON 1/8W(T) 5% 10K
R756	FA040472	CARBON 1/8W(T) 5% 4.7K
R757	FA040472	CARBON 1/8W(T) 5% 4.7K
R759	FA040472	CARBON 1/8W(T) 5% 4.7K
R760	FA040392	CARBON 1/8W(T) 5% 3.9K
R762	FA040511	CARBON 1/8W(T) 5% 510OHM
R764	FA040132	CARBON 1/8W(T) 5% 1.3K

*** CAPACITORS ***

C102	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C103	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C104	GJ047400	SAFETY X-CAP 0.47U/275V M
C105	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C106	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C107	GKA337E5	POWER ELECT 85C 330U/400V
C108	GA347625	ELECT 85°C/T 47U/16V M
C109	GB7103H3	CERAMIC Y5P(B)/T0.01U/1KV
C110	GA310655	ELECT 85°C/T 10U/50V M
C111	GAA22745	ELECT 85C/A 220U/35V M
C112	GA310655	ELECT 85°C/T 10U/50V M
C113	GA310655	ELECT 85°C/T 10U/50V M

SYMBOL	Part No for NPG	DESCRIPTION
C114	GA310655	ELECT 85°C/T 10U/50V M
C115	GF222252	MEF CAP BOX 0.0022U/50V J
C116	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C117	GB615152	CERAMIC SL/T 150P/50V J
C118	GB747153	CC Y5P(B)/T 470P/50V K
C119	GF233252	MEF CAP BOX 0.0033U/50V J
C120	GA347755	ELECT 85OC/T 470U/50V M
C121	GF210452	MEF CAP BOX 0.1U/50V J
C131	GA3105E5	ELECT 85OC/T 1U/400V M
C132	GA310555	ELECT 85°C/T 1U/50V M
C135	GJC222E5	SAFE Y-CAP/D 2200P/400V M
C151	GAI10775	ELECT 105 C/T 100U/100V M
C152	GA347755	ELECT 85OC/T 470U/50V M
C153	GAB10835	ELECT 105°C/A1000U/25V M
C154	GA322735	C,ELEC 220UF 25V M
C155	GAA10825	ELECT 85°C/A 1000U/16V M
C157	GAA10775	ELECT 85C/ A 100U/100V M
C158	GAA47735	ELECT 85C/A 470U/25V M
C159	GA347635	ELECT 85°C/T 47U/25V M
C160	GA322735	C,ELEC 220UF 25V M
C162	GA315725	ELECT 85OC/T 150U/16V M
C163	GB7221F3	CERAMIC Y5P(B)/T 220P/500
C181	GA310655	ELECT 85°C/T 10U/50V M
C182	GA347635	ELECT 85°C/T 47U/25V M
C202	GE210352	CQ PEI/T 0.01U/50V J
C203	GE210352	CQ PEI/T 0.01U/50V J
C205	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C206	GA310655	ELECT 85°C/T 10U/50V M
C207	GB910358	CC Z5V(F)/T 0.01U/50V Z
C209	GA310655	ELECT 85°C/T 10U/50V M
C210	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C211	GB910358	CC Z5V(F)/T 0.01U/50V Z
C212	GA410575	ELECT NP/T 1U/100V M
C213	GA210575	C,ELEC 1UF 100V M
C214	GB712152	CERAMIC Y5P(B)/T 120P/50V
C230	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C231	GB910358	CC Z5V(F)/T 0.01U/50V Z
C232	GA410575	ELECT NP/T 1U/100V M
C233	GA210575	C,ELEC 1UF 100V M
C234	GB712152	CERAMIC Y5P(B)/T 120P/50V
C250	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C251	GB910358	CC Z5V(F)/T 0.01U/50V Z
C252	GA410575	ELECT NP/T 1U/100V M
C253	GA210575	C,ELEC 1UF 100V M
C254	GB712152	CERAMIC Y5P(B)/T 120P/50V
C270	GB656052	CERAMIC SL/T 56P/50V
C272	GA247625	ELECT 105°C/T 47U/16V M
C273	GB910358	CC Z5V(F)/T 0.01U/50V Z

SYMBOL	Part No for NPG	DESCRIPTION
C274	GB7102F3	CC Y5P(B)/T 1000P/500V K
C275	GB7222F3	CERAMIC Y5P(B) 2200P/500V
C276	GA222675	ELECT 105°C/T 22U/100V M
C277	GAA10575	ELECT 85C/A 1U/100V M
C278	GB7102F3	CC Y5P(B)/T 1000P/500V K
C279	GF222462	MEF CAP BOX 0.22U/63V J
C27A	GB618152	CERAMIC SL/T 180P/50V J
C27E	GB618152	CERAMIC SL/T 180P/50V J
C280	GF222472	MEF CAP BOX 0.22U/100V J
C282	GA310555	ELECT 85°C/T 1U/50V M
C283	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C284	GB7102F3	CC Y5P(B)/T 1000P/500V K
C285	GB9332H3	CC Z5V(F)/T 3300P/1KV Z
C286	GB9472H3	CERAMIC Z5V(F)/T 4700P/1K
C287	GB910358	CC Z5V(F)/T 0.01U/50V Z
C288	GF222462	MEF CAP BOX 0.22U/63V J
C289	GA347625	ELECT 85°C/T 47U/16V M
C290	GB910358	CC Z5V(F)/T 0.01U/50V Z
C292	GB782153	CERAMIC Y5P(B)/T 820P/50V
C293	GA310655	ELECT 85°C/T 10U/50V M
C294	GB6101F2	CERAMIC SL/T 100P 500V K
C295	GA210675	ELECT 105OC/T 10U/100V M
C296	GA210675	ELECT 105OC/T 10U/100V M
C297	GB7101F3	CERAMIC 100P/500V
C298	GA347555	ELECT 85°C/T 4.7U/50V M
C299	GA347555	ELECT 85°C/T 4.7U/50V M
C29A	GA347555	ELECT 85°C/T 4.7U/50V M
C29C	GA347555	ELECT 85°C/T 4.7U/50V M
C29E	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C29G	GB7102F3	CC Y5P(B)/T 1000P/500V K
C303	GB710253	CC Y5P(B)/T 1000P/50V K
C304	GF210452	MEF CAP BOX 0.1U/50V J
C305	GB768153	CERAMIC Y5P(B)/T 680P/50V
C306	GF210352	MEF CAP BOX 0.01U/50V J
C307	GB556052	CERAMIC NPO(CH)/T 56P/50V
C308	GFE102H2	PLASTIC PMS/A 1000P/1KV J
C309	GF222452	MEF CAP BOX 0.22U/50V J
C310	GF210562	MEF CAP BOX 1UF 63V J
C311	GA3105D5	ELECT 85OC/T 1U/350V M
C312	GA347655	C,ELEC 47UF 50V M
C313	GAA47585	ELECT 85°C/A 4.7U/250V M
C314	GA322555	ELECT 85°C/T 2.2U/50V M
C316	GB910358	CC Z5V(F)/T 0.01U/50V Z
C317	GB7272H3	CERAMIC Y5P(B)/T 2700P/1K
C320	GAA22775	ELECT 85OC/A 220U/100V M
C321	GA347635	ELECT 85°C/T 47U/25V M
C322	GAB10835	ELECT 105°C/A1000U/25V M
C323	GA310555	ELECT 85°C/T 1U/50V M

SYMBOL	Part No for NPG	DESCRIPTION
C324	GB7471F3	CC Y5P(B)/T 470P/500V K
C326	GB910358	CC Z5V(F)/T 0.01U/50V Z
C327	GF210462	MEF CAP BOX 0.1U/63V J
C328	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C329	GF210272	MEF CAP BOX 0.001U/100V J
C330	GF210252	MEF CAP BOX 0.001U/50V J
C331	GFB10482	PLASTIC MPP/A 0.10U/250VJ
C332	GFE512P2	C FILM 5100P 2.5KV J PMS/
C333	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C334	GFD27482	PLASTIC PMM/A 0.27U/250V
C335	GA310555	ELECT 85°C/T 1U/50V M
C336	GFD51482	PLASTIC PMM/A 0.51U/250V
C337	GA347555	ELECT 85°C/T 4.7U/50V M
C338	GFB12582	PLASTIC MPP/A 0.12U/250V
C339	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C340	GFD154E2	PLASTIC PMM/A 0.15U/400V
C341	GFD683E2	PLASTIC PMM/A 0.068U/400V
C342	GA310555	ELECT 85°C/T 1U/50V M
C343	GA310655	ELECT 85°C/T 10U/50V M
C344	GA310555	ELECT 85°C/T 1U/50V M
C345	GB7331H3	CC Y5P(B)/T 330P/1KV K
C347	GE410252	PLASTIC PPN/T 0.001UF/50V
C348	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C349	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C350	GA310725	ELECT 85°C/T 100U/16V M
C351	GB7101H3	CERAMIC 100P/1KV
C352	GB7101H3	CERAMIC 100P/1KV
C353	GA322815	ELECT 85C/T 2200U/10V M
C354	GA347625	ELECT 85°C/T 47U/16V M
C356	GA347555	ELECT 85°C/T 4.7U/50V M
C357	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C358	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C359	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C360	GF222452	MEF CAP BOX 0.22U/50V J
C361	GF282252	MEF CAP BOX 0.0082U/50V J
C362	GFD204E2	PLASTIC PMM/ 0.2U/400V J
C363	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C364	GB7102F3	CC Y5P(B)/T 1000P/500V K
C401	GAA47735	ELECT 85C/A 470U/25V M
C402	GB722253	CC Y5P(B)/T 2200P/50V K
C403	GAA47735	ELECT 85C/A 470U/25V M
C404	GF222472	MEF CAP BOX 0.22U/100V J
C405	GB722253	CC Y5P(B)/T 2200P/50V K
C406	GB722253	CC Y5P(B)/T 2200P/50V K
C407	GB710253	CC Y5P(B)/T 1000P/50V K
C408	GF210352	MEF CAP BOX 0.01U/50V J
C409	GA310555	ELECT 85°C/T 1U/50V M
C410	GFB10482	PLASTIC MPP/A 0.10U/250VJ

SYMBOL	Part No for NPG	DESCRIPTION
C411	GA310745	ELECT 85C/T 100U/35VM
C412	GB710253	CC Y5P(B)/T 1000P/50V K
C415	GB710253	CC Y5P(B)/T 1000P/50V K
C416	GB710253	CC Y5P(B)/T 1000P/50V K
C452	GA310555	ELECT 85°C/T 1U/50V M
C453	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C454	GA310555	ELECT 85°C/T 1U/50V M
C455	GA347555	ELECT 85°C/T 4.7U/50V M
C456	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C457	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C458	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C459	GA322725	ELECT 85°C/T 220U/16V M
C461	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C462	GA310555	ELECT 85°C/T 1U/50V M
C464	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C465	GA310555	ELECT 85°C/T 1U/50V M
C466	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C467	GA310555	ELECT 85°C/T 1U/50V M
C468	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C472	GAA10735	ELECT 85C/A 100U/25V M
C473	GF222452	MEF CAP BOX 0.22U/50V J
C474	GF222452	MEF CAP BOX 0.22U/50V J
C486	GA347555	ELECT 85°C/T 4.7U/50V M
C501	GA347725	ELECT 85C/T 470U/16VM
C502	GA333625	ELECT 85°C/T 33U/16V M
C503	GB610052	CERAMIC SL/T 10P/50V J
C504	GF215452	MEF CAP BOX 0.15U/50V J
C505	GF210452	MEF CAP BOX 0.1U/50V J
C506	GE382252	PLASTIC 0.0082U/50V
C507	GF247452	MEF CAP BOX 0.47U/50V J
C508	GE410351	PLASTIC PPN/T 0.01UF/50V
C509	GF247252	MEF CAP BOX 0.0047U/50V J
C510	GF210352	MEF CAP BOX 0.01U/50V J
C511	GB768153	CERAMIC Y5P(B)/T 680P/50V
C512	GF210352	MEF CAP BOX 0.01U/50V J
C513	GA347555	ELECT 85°C/T 4.7U/50V M
C514	GE410252	PLASTIC PPN/T 0.001UF/50V
C515	GAA10845	ELECT 85C/A 1000U/35V M
C516	GB7221H3	CERAMIC Y5P(B)/T 220P/1KV
C518	GA310725	ELECT 85°C/T 100U/16V M
C519	GA310725	ELECT 85°C/T 100U/16V M
C520	GF222452	MEF CAP BOX 0.22U/50V J
C521	GB610153	CERAMIC SL/T 100P/50V K
C522	GB610153	CERAMIC SL/T 100P/50V K
C523	GFD47482	PLASTIC MPPS/A 0.47U/250V
C524	GB722253	CC Y5P(B)/T 2200P/50V K
C525	GA410655	ELECT NP/T 10U/50V M
C701	GE210352	CQ PEI/T 0.01U/50V J

SYMBOL	Part No for NPG	DESCRIPTION
C702	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C703	GA310725	ELECT 85°C/T 100U/16V M
C704	GB633052	CERAMIC SL/T 33P/50V J
C705	GB633052	CERAMIC SL/T 33P/50V J
C706	GB610152	CERAMIC SL/T 100P/50V J
C709	GB722153	CERAMIC Y5P(B)/T 220P/50V
C710	GB722153	CERAMIC Y5P(B)/T 220P/50V
C716	GE210252	C,PLASTIC 0.001UF 50V J
C717	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C719	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C720	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C721	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C722	GB610153	CERAMIC SL/T 100P/50V K

REPLACEMENT PARTS LIST (For Europe)

The components specified for Model DPro930SB(B)

SYMBOL	Part No for NPG	DESCRIPTION
*** ICS ***		
U101	DD002600	IC LINEAR KA3842A 8P
U201	80016621	IC LM1267
U202	EH110051	IC MTV030N-46 20PIN
U203	80010891	IC LM2480
U204	EH110071	IC LM2463
U301	80016141	IC TL494
U302	80002321	IC KIA324P
U401	80016641	IC TDA4863
U402	80014501	IC LA6510
U403	80010251	IC LM358N/KIA358P
U404	80014501	IC LA6510
U501	80007131	IC TDA4856
U701	EH110081	IC MCU MTV212MN32 FP912SB
U702	80009941	IC ATMEL EEPROM AT24C08B
U703	EH110041	IC 74HC165

*** TRANSISTORS ***		
Q101	EF100113	FET N 2SK2843(SC) 600V/10
Q102	80005251	TR NPN KSP44 TO-92(T)
Q103	80014321	TR NPN KRC102M TO-92(T)
Q104	EAA09456	TR NPN 2SC945 TO-92(T)
Q105	EAA09456	TR NPN 2SC945 TO-92(T)
Q131	EAA09456	TR NPN 2SC945 TO-92(T)
Q132	EAA09456	TR NPN 2SC945 TO-92(T)
Q151	EB307720	TR PNP 2SB772 TO-126
Q152	80014321	TR NPN KRC102M TO-92(T)
Q153	80016661	TR 2SD882
Q155	EB307720	TR PNP 2SB772 TO-126
Q156	EAA09456	TR NPN 2SC945 TO-92(T)
Q157	80016661	TR 2SD882
Q181	EAA09456	TR NPN 2SC945 TO-92(T)
Q201	EAA18157	TR NPN 2SC1815GR TO-92(T)
Q271	EBA07336	TR PNP 2SA733P TO-92(T)
Q302	EC000411	TR 2N3904 NPN
Q303	80014321	TR NPN KRC102M TO-92(T)
Q304	EAA23690	TR NPN PH2369 TO-92(T)
Q305	80008081	TR N 2SK2996
Q306	EF206300	FET N IRF630 TO-220 3P
Q307	EBA04230	TR PNP BF423 TO-92(T)
Q309	EBA04230	TR PNP BF423 TO-92(T)
Q312	80005251	TR NPN KSP44 TO-92(T)

SYMBOL	Part No for NPG	DESCRIPTION
Q313	EF206301	FET N YTAF630 TO-220F
Q314	80008151	TR NPN 2SC5587 TO-3P
Q315	EF206301	FET N YTAF630 TO-220F
Q316	80014321	TR NPN KRC102M TO-92(T)
Q317	80003311	FET N YTAF640 TO-220F
Q318	80014321	TR NPN KRC102M TO-92(T)
Q319	80003311	FET N YTAF640 TO-220F
Q320	80014321	TR NPN KRC102M TO-92(T)
Q321	EF206301	FET N YTAF630 TO-220F
Q322	80014321	TR NPN KRC102M TO-92(T)
Q323	EF206301	FET N YTAF630 TO-220F
Q324	80014321	TR NPN KRC102M TO-92(T)
Q325	EAA09456	TR NPN 2SC945 TO-92(T)
Q326	80016661	TR 2SD882
Q327	EAA32055	TR NPN KTC3205-Y TO-92L/T
Q328	80002631	TR PNP KTA1273Y
Q329	80014321	TR NPN KRC102M TO-92(T)
Q330	EAA09456	TR NPN 2SC945 TO-92(T)
Q401	EAA04220	TR NPN BF422 TO-92(T)
Q455	EAA09456	TR NPN 2SC945 TO-92(T)
Q456	EAA09456	TR NPN 2SC945 TO-92(T)
Q461	EBA07336	TR PNP 2SA733P TO-92(T)
Q462	EBA07336	TR PNP 2SA733P TO-92(T)
Q501	EAA09456	TR NPN 2SC945 TO-92(T)
Q502	EAA09456	TR NPN 2SC945 TO-92(T)
Q503	EAA09456	TR NPN 2SC945 TO-92(T)
Q504	80003311	FET N YTAF640 TO-220F
Q505	EA243705	TR NPN KC4370A
Q506	EAA09456	TR NPN 2SC945 TO-92(T)
Q507	EBA07336	TR PNP 2SA733P TO-92(T)
Q508	EBA07336	TR PNP 2SA733P TO-92(T)
Q509	EAA09456	TR NPN 2SC945 TO-92(T)
Q701	EAA23690	TR NPN PH2369 TO-92(T)
Q702	EAA09456	TR NPN 2SC945 TO-92(T)
Q703	EBA07336	TR PNP 2SA733P TO-92(T)

*** DIODES ***

D101	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D102	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D103	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D104	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D105	EJ044148	DIODE T" 1N4148"
D106	EJ044148	DIODE T" 1N4148"
D107	EJ044148	DIODE T" 1N4148"
D108	80003841	DIODE 1A/20V UF4003 DG41
D109	EJAC0005	DIODE/T 1A 1N4002
D110	80003841	DIODE 1A/20V UF4003 DG41
D111	EJ044148	DIODE T" 1N4148"

SYMBOL	Part No for NPG	DESCRIPTION
D112	EJ044148	DIODE T" 1N4148"
D113	EJ044148	DIODE T" 1N4148"
D115	EJ044148	DIODE T" 1N4148"
D116	EJ044148	DIODE T" 1N4148"
D117	EJ044148	DIODE T" 1N4148"
D118	80003821	DIODE 1A/1KV UF4007 D041
D120	EJ044148	DIODE T" 1N4148"
D131	EJAC0010	DIODE/T 1A 1N4007
D132	EJ044148	DIODE T" 1N4148"
D150	EJA05819	DIODE STKY/T 1A/40V 1N581
D151	80016531	DIODE 3A/600V RL4A (SANKE
D152	EJ100091	DI RL3 3.5A 350V STRAIGHT
D153	80016701	DIODE 3A/200V SF33 (CHENM
D154	80016701	DIODE 3A/200V SF33 (CHENM
D155	80016681	DIODE SR360
D181	EJ044148	DIODE T" 1N4148"
D203	EJAC0018	DIODE/T 1A 1N4937
D210	EJ044148	DIODE T" 1N4148"
D211	EJ044148	DIODE T" 1N4148"
D212	80000451	DIODE/T 1/2W 1SS83
D213	80000451	DIODE/T 1/2W 1SS83
D214	80000451	DIODE/T 1/2W 1SS83
D230	EJ044148	DIODE T" 1N4148"
D231	EJ044148	DIODE T" 1N4148"
D232	80000451	DIODE/T 1/2W 1SS83
D233	80000451	DIODE/T 1/2W 1SS83
D234	80000451	DIODE/T 1/2W 1SS83
D250	EJ044148	DIODE T" 1N4148"
D251	EJ044148	DIODE T" 1N4148"
D252	80000451	DIODE/T 1/2W 1SS83
D253	80000451	DIODE/T 1/2W 1SS83
D254	80000451	DIODE/T 1/2W 1SS83
D271	EJ044148	DIODE T" 1N4148"
D272	EJ044148	DIODE T" 1N4148"
D303	EJ044148	DIODE T" 1N4148"
D304	80000451	DIODE/T 1/2W 1SS83
D305	EJAE0001	DIODE/T 1A SR106
D306	80016531	DIODE 3A/600V RL4A (SANKE
D307	80009741	DIODE/T UF4005
D308	80003841	DIODE 1A/20V UF4003 DG41
D309	EJA00018	DIODE/T 1A UF4006
D310	EJ044148	DIODE T" 1N4148"
D311	EJ044148	DIODE T" 1N4148"
D312	80003841	DIODE 1A/20V UF4003 DG41
D313	80003821	DIODE 1A/1KV UF4007 D041
D314	EJ044148	DIODE T" 1N4148"
D315	80004711	ROHM DIODE 1SS244
D316	80003841	DIODE 1A/20V UF4003 DG41

SYMBOL	Part No for NPG	DESCRIPTION
D317	EJB00004	DIODE/A 5TUZ47
D318	80003821	DIODE 1A/1KV UF4007 D041
D319	EJ044148	DIODE T" 1N4148"
D320	EJA00018	DIODE/T 1A UF4006
D321	80003841	DIODE 1A/20V UF4003 DG41
D322	80009741	DIODE/T UF4005
D323	EJA00018	DIODE/T 1A UF4006
D401	EJB00017	DIODE/A 1A IN4936
D402	EJ044148	DIODE T" 1N4148"
D501	EJ044148	DIODE T" 1N4148"
D502	EJ044148	DIODE T" 1N4148"
D503	EJ044148	DIODE T" 1N4148"
D505	80016531	DIODE 3A/600V RL4A (SANKE
D506	EJ044148	DIODE T" 1N4148"
D507	80003841	DIODE 1A/20V UF4003 DG41
D508	80003551	DIODE 200V/1.6A RG2Z
D509	EJAC0018	DIODE/T 1A 1N4937
D510	EJ044148	DIODE T" 1N4148"
D704	EJ044148	DIODE T" 1N4148"
D705	EJ044148	DIODE T" 1N4148"
D706	EJ044148	DIODE T" 1N4148"
D707	EJ044148	DIODE T" 1N4148"
D708	EJ044148	DIODE T" 1N4148"
D709	EJ044148	DIODE T" 1N4148"
D710	EJ044148	DIODE T" 1N4148"
D711	EJ044148	DIODE T" 1N4148"
D712	EJ044148	DIODE T" 1N4148"
D713	EJ044148	DIODE T" 1N4148"
LED101	80000131	LED L-59GH/1GYC
ZD101	EKA0200B	ZEN DIODE 1/2W(T) HZS20.2
ZD102	EKA0180B	ZEN DIODE 1/2W(T) 18V
ZD131	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD151	EKA00605	ZEN DIODE 1/2W(T) HZS6B3
ZD301	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD302	EKA00508	ZEN DIODE 1/2W(T) HZ5C3
ZD303	EKA00906	ZEN DIODE 1/2W(T) 9C1
ZD304	EKA00507	ZEN DIODE 1/2W(T) 5C2
ZD401	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD501	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD701	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD702	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD703	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD704	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD705	EKA00607	ZEN DIODE 1/2W(T) 6C2

*** TRANSFORMERS ***

T101	HE100091	TRANS POWER 200UH N1902
T301	HH910021	FBT19 110K CHUN PENG N290

SYMBOL	Part No for NPG	DESCRIPTION
T302	HE300011	TRANS DF X'FM EI-22 N2901
T304	HE200011	TRANS HDDRIVE X'FM EI-19

*** VARIABLE RESISTORS ***

VR101	FF300501	VR CARBON 6MM 500H/B
VR301	FF310223	VR CARBON 6MM 22K
VR302	FF310223	VR CARBON 6MM 22K
VR501	FF310502	VR CARBON 6MM 5K
VR503	FF300102	VR CARBON 6MM 1K

*** RELAYS & SWITCHES ***

SW101	JC800121	SW POWER DC 30V 0.1A SPUN
SW701	80000251	TACT SW 1P 100G+-50
SW702	80000251	TACT SW 1P 100G+-50
SW703	80000251	TACT SW 1P 100G+-50
SW704	80000251	TACT SW 1P 100G+-50
SW705	80000251	TACT SW 1P 100G+-50
SW706	80000251	TACT SW 1P 100G+-50
SW707	80000251	TACT SW 1P 100G+-50

*** PWB ASSYS ***

MAININ	AM0M52MM	MAIN INSERT ASSY
CRTIN	AC0M52MM	CRT INSERT ASSY
SUBIN	AS0M52MM	SUB INSERT ASSY

*** COILS & FILTERS ***

B101	HC006003	BEAD 3.5X8/T
B102	HC005002	BEAD 3.5X4.7/T
B103	HC005002	BEAD 3.5X4.7/T
B104	80000991	BEAD WBR6H-3T-R7K-B5
B105	80000561	BEAD 3.5*6*0.8/T
B201	HC005002	BEAD 3.5X4.7/T
B202	HC006003	BEAD 3.5X8/T
B203	HC006003	BEAD 3.5X8/T
B204	HC006003	BEAD 3.5X8/T
B301	HC006002	BEAD 3.5X4.7/T
B302	HC006003	BEAD 3.5X8/T
B303	HC006003	BEAD 3.5X8/T
L101	HA100041	CORE EMI COMMON CHOKE25MH
L102	HA100051	CORE EMI COMMON CHOKE UU1
L131	HA200031	HARMONIC CHOKE EE42 60MH
L151	HB000008	CHOKE COIL 100UH 8X10
L201	HB000008	CHOKE COIL 100UH 8X10
L202	HB000008	CHOKE COIL 100UH 8X10
L203	HB013100	PACKING COIL T 10UH K
L210	HB013228	PEAKING COIL/T 0.22UH K
L211	HB013278	PACKING COIL /T 0.27UH K
L230	HB013278	PACKING COIL /T 0.27UH K

SYMBOL	Part No for NPG	DESCRIPTION
L231	HB013278	PACKING COIL /T 0.27UH K
L250	HB013228	PEAKING COIL/T 0.22UH K
L251	HB013188	PEAKING COIL/T 0.18UH K
L301	80016071	CHOCK COIL 14UH P75
L501	80016081	CHOCK COIL 8.0MH (DRWW16*
RL181	80003761	REPLY 12V 6P OSA-SS-212DM
T303	HA300011	L LINER N2901
T501	80016801	CHOKE COIL 45UH N1901

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

CABLE	80016302	SIGNAL CABLE P75
CRTS	80005711	ISDW02S41 CRT SOCKET
DEGC	HA690041	L DEGAUSS N2902
F101	80001521	FUSE 3.15A/250V 50T
P101	JD512001	AC SOCKET 3P
PWRCE	80001651	POWER CORD 3P 1.8M EUROPE
PWRCU	80008691	POWER CORD 3P 1.8M U.K. N
RL131	80005831	RELAY 12V 8 P MI-SS-212D
SG301	80002201	SPAKER GAP 1.5KV
TH101	80004371	THERMISTOR NTCR N15SP006L
TH102	80013341	THERMISTOR PTCR 4.5OHM(90
TH701	80014781	TH NRD3103K400K03FMT
X701	EM012004	X'TAL 49U 12MHZ

*** APPEARANCE PARTS ***

CABB	10102221	CABINET BACK
CABF	10102031	CABINET FRONT ASSY
CHASS	12000831	CHASSIS BASE
PANEL	11700561	PANEL(DPRO930SB(B))
REVS	11000991	REVOLVING STAND ASSY

*** PRINTED & PACKING MATERIALS ***

BAGP2	13700021	BAG POLYETHYLENE
CART	13202051	CARTON BOX DPRO930SBBK(B)
CD	19700083	INSTRUCTION CO-ROM DP SER
LABELC	15201621	LABEL CARTON (NE)
MANUW	15501401	OWNERS MANUAL DPRO930SB(B)
NAME	15001751	RATING LABEL DPRO930SB(B)
NAVCAR	15900251	NAVISET CARTON BOX FLYER
PEBAG	13700301	PE BAG(500*480*850+WARNIN
PLYB	13400771	POLYLON(B)
PLYT	13400761	POLYLON(T)
SALES	15900261	SALES OFFICE LIST (MITSUB

*** RESISTORS ***

J152	FA040101	CARBON 1/8W(T) 5% 100OHM
J153	FA040101	CARBON 1/8W(T) 5% 100OHM
R101	FA330684	CARBON 1/2W(T) 5% 680K

SYMBOL	Part No for NPG	DESCRIPTION
R102	FA330333	CARBON 1/2W(T) 5% 33K
R103	FA330333	CARBON 1/2W(T) 5% 33K
R104	FA240564	CARBON 1/4W(T) 5% 560K
R105	FA240564	CARBON 1/4W(T) 5% 560K
R106	FB244708	METAL 1/4W(T) 1% 4.7H
R107	FB240010	METAL 1/4W(T) 1% 10HM
R108	FA040100	CARBON 1/8W(T) 5% 100HM
R109	FA240470	CARBON 1/4W 5% 470HM
R110	FA240103	CARBON 1/4W(T) 5% 10K
R111	FA240103	CARBON 1/4W(T) 5% 10K
R112	FA240563	CARBON 1/4W(T) 5% 56K
R113	FA240242	CARBON 1/4W(T) 5% 2.4K
R114	FA330273	CARBON 1/2W(T) 5% 27KH
R115	FA240222	CARBON 1/4W(T) 5% 2.2K
R116	FB244651	METAL 1/4W(T) 1% 4.65K
R117	FA240203	CARBON 1/4W(T) 5% 20K
R118	FA330330	CARBON 1/2W(T) 5% 33H
R119	FA330102	CARBON 1/2W(T) 5% 1K
R120	FC240138	WOUND RES 3W/M(A)5% 0.13H
R121	FB560338	MOF 2W/M(A) 5% 0.33H
R122	FB570683	MOF 2W/M(B) 5% 68K
R123	FA240473	CARBON 1/4W 5% 47KOHM
R124	FA240222	CARBON 1/4W(T) 5% 2.2K
R125	FA330102	CARBON 1/2W(T) 5% 1K
R126	FA040472	CARBON 1/8W(T) 5% 4.7K
R127	FA330220	CARBON 1/2W(T) 5% 22H
R128	FA330564	CARBON 1/2(T) 5% 560K
R129	FA330564	CARBON 1/2(T) 5% 560K
R131	FA330434	CARBON 1/2W(T) 5% 430K
R132	FA330434	CARBON 1/2W(T) 5% 430K
R133	FA040513	CARBON 1/8W(T) 5% 51K
R135	FA330203	CARBON 1/2W(T) 5% 20K
R137	FA040103	CARBON 1/8W(T) 5% 10K
R138	FA240681	CARBON 1/4W(T) 5% 680OHM
R139	FA040103	CARBON 1/8W(T) 5% 10K
R148	FA240162	CARBON 1/4W(T) 5% 1.6K
R151	FA240823	CARBON 1/4W(T) 5% 82K
R153	FA040104	CARBON 1/8W(T) 5% 100K
R154	FA240103	CARBON 1/4W(T) 5% 10K
R155	FA330751	CARBON 1/2W(T) 5% 750H
R156	FA240103	CARBON 1/4W(T) 5% 10K
R157	FA240103	CARBON 1/4W(T) 5% 10K
R158	FA330751	CARBON 1/2W(T) 5% 750H
R161	FA040102	CARBON 1/8W(T) 5% 1K
R162	FA240511	CARBON 1/4W(T) 5% 510H
R163	FA040472	CARBON 1/8W(T) 5% 4.7K
R164	FA330109	CARBON 1/2W (T) 5% 10HM
R165	FA330102	CARBON 1/2W(T) 5% 1K

SYMBOL	Part No for NPG	DESCRIPTION
R166	FA040220	CARBON 1/8W(T) 5% 22H
R167	FA040103	CARBON 1/8W(T) 5% 10K
R181	FA040392	CARBON 1/8W(T) 5% 3.9K
R201	FA040562	CARBON 1/8W(T) 5% 5.6K
R202	FA040334	CARBON 1/8W(T) 5% 330K
R203	FA040332	CARBON 1/8W(T) 5% 3.3K
R204	FA040472	CARBON 1/8W(T) 5% 4.7K
R205	FA040101	CARBON 1/8W(T) 5% 100OHM
R206	FA040102	CARBON 1/8W(T) 5% 1K
R207	FA040101	CARBON 1/8W(T) 5% 100OHM
R208	FA040101	CARBON 1/8W(T) 5% 100OHM
R209	FA040101	CARBON 1/8W(T) 5% 100OHM
R210	FA040101	CARBON 1/8W(T) 5% 100OHM
R211	FA040330	CARBON 1/8W(T) 5% 330OHM
R212	FA040751	CARBON 1/8W(T) 5% 750H
R213	FB247509	METAL 1/4W(T) 1% 75OHM
R215	FA360560	R CARBON 1/2W/M(T) 5% 56
R216	FA240105	CARBON 1/4W(T) 5% 1M
R217	FA040102	CARBON 1/8W(T) 5% 1K
R218	FG100010	R FUSE 1/4W 75 J (A)
R230	FA040101	CARBON 1/8W(T) 5% 100OHM
R231	FA040330	CARBON 1/8W(T) 5% 330OHM
R232	FA040681	CARBON 1/8W(T) 5% 680OHM
R233	FB247509	METAL 1/4W(T) 1% 75OHM
R235	FA360560	R CARBON 1/2W/M(T) 5% 56
R236	FA240105	CARBON 1/4W(T) 5% 1M
R237	FA040102	CARBON 1/8W(T) 5% 1K
R238	FG100010	R FUSE 1/4W 75 J (A)
R250	FA040101	CARBON 1/8W(T) 5% 100OHM
R251	FA040330	CARBON 1/8W(T) 5% 330OHM
R252	FA040561	CARBON 1/8W(T) 5% 560OHM
R253	FB247509	METAL 1/4W(T) 1% 75OHM
R255	FA360560	R CARBON 1/2W/M(T) 5% 56
R256	FA240105	CARBON 1/4W(T) 5% 1M
R257	FA040102	CARBON 1/8W(T) 5% 1K
R258	FG100010	R FUSE 1/4W 75 J (A)
R270	FA040472	CARBON 1/8W(T) 5% 4.7K
R271	FA040473	CARBON 1/8W(T) 5% 47K
R272	FA040472	CARBON 1/8W(T) 5% 4.7K
R273	FA040681	CARBON 1/8W(T) 5% 680OHM
R274	FA040681	CARBON 1/8W(T) 5% 680OHM
R275	FA040102	CARBON 1/8W(T) 5% 1K
R276	FA330101	CARBON 1/2W(T) 5% 100OHM
R277	FA240334	CARBON 1/4W(T) 5% 330K
R278	FA040102	CARBON 1/8W(T) 5% 1K
R279	FB241002	METAL 1/4W(T) 1% 10K
R27A	FA040473	CARBON 1/8W(T) 5% 47K
R280	FB470279	MOF 1W/M(A) 5% 2.7H

SYMBOL	Part No for NPG	DESCRIPTION
R281	FA040102	CARBON 1/8W(T) 5% 1K
R282	FA040101	CARBON 1/8W(T) 5% 100OHM
R283	FA040472	CARBON 1/8W(T) 5% 4.7K
R284	FA040101	CARBON 1/8W(T) 5% 100OHM
R285	FA040103	CARBON 1/8W(T) 5% 10K
R286	FA040123	CARBON 1/8W(T) 5% 12K
R287	FA040102	CARBON 1/8W(T) 5% 1K
R288	FA040102	CARBON 1/8W(T) 5% 1K
R289	FA040103	CARBON 1/8W(T) 5% 10K
R293	FA040102	CARBON 1/8W(T) 5% 1K
R294	FA040102	CARBON 1/8W(T) 5% 1K
R295	FA040103	CARBON 1/8W(T) 5% 10K
R296	FA040103	CARBON 1/8W(T) 5% 10K
R297	FA040103	CARBON 1/8W(T) 5% 10K
R298	FA040103	CARBON 1/8W(T) 5% 10K
R299	FA040101	CARBON 1/8W(T) 5% 100OHM
R301	FB470338	MOF 1W/M(A) 5% 0.33H
R302	FA040102	CARBON 1/8W(T) 5% 1K
R304	FA040333	CARBON 1/8W(T) 5% 33K
R305	FA040472	CARBON 1/8W(T) 5% 4.7K
R306	FA040432	CARBON 1/8W(T) 5% 4.3K
R307	FA040222	CARBON 1/8W(T) 5% 2.2K
R308	FA040222	CARBON 1/8W(T) 5% 2.2K
R310	FA040472	CARBON 1/8W(T) 5% 4.7K
R311	FA040102	CARBON 1/8W(T) 5% 1K
R316	FA040683	CARBON 1/8W(T)5% 68K OHM
R317	FA040512	CARBON 1/8W(T) 5% 5.1K
R318	FA040104	CARBON 1/8W(T) 5% 100K
R320	FA040102	CARBON 1/8W(T) 5% 1K
R321	FA040103	CARBON 1/8W(T) 5% 10K
R322	FA040123	CARBON 1/8W(T) 5% 12K
R323	FA240823	CARBON 1/4W(T) 5% 82K
R324	FA240113	CARBON 1/4W(T)5% 11K OHM
R325	FA040332	CARBON 1/8W(T) 5% 3.3K
R326	FA040103	CARBON 1/8W(T) 5% 10K
R327	FA040123	CARBON 1/8W(T) 5% 12K
R328	FA040103	CARBON 1/8W(T) 5% 10K
R329	FA330105	CARBON 1/2W (T) 5% 1M
R330	FA330102	CARBON 1/2W(T) 5% 1K
R331	FB560563	MOF 2W/M(A) 5% 56K
R332	FB560563	MOF 2W/M(A) 5% 56K
R333	FA240105	CARBON 1/4W(T) 5% 1M
R334	FA040103	CARBON 1/8W(T) 5% 10K
R335	FA040331	CARBON 1/8W(T) 5% 330H
R336	FA040223	CARBON 1/8W(T) 5% 22K
R337	FB470100	MOF 1W/M(A) 5% 10OHM
R338	FA040103	CARBON 1/8W(T) 5% 10K
R339	FB480471	MOF 1W/M(B) 5% 470H

SYMBOL	Part No for NPG	DESCRIPTION
R340	FB570101	MOF 2W/M(B) 5% 100H
R342	FA040100	CARBON 1/8W(T) 5% 100OHM
R344	FA040103	CARBON 1/8W(T) 5% 10K
R345	FA040331	CARBON 1/8W(T) 5% 330H
R346	FA330101	CARBON 1/2W(T) 5% 100OHM
R347	FA360270	CARBON 1/2W/M(T) 5% 27H
R348	FK010010	R MOF 5W 1.2J (Al)
R349	FB241003	METAL 1/4W(T) 1% 100K
R350	FA040562	CARBON 1/8W(T) 5% 5.6K
R351	FA040103	CARBON 1/8W(T) 5% 10K
R352	FA040103	CARBON 1/8W(T) 5% 10K
R353	FA040103	CARBON 1/8W(T) 5% 10K
R354	FA040103	CARBON 1/8W(T) 5% 10K
R355	FA040223	CARBON 1/8W(T) 5% 22K
R356	FA040102	CARBON 1/8W(T) 5% 1K
R357	FB241113	METAL 1/4W(T) 1% 111K
R358	FB241002	METAL 1/4W(T) 1% 10K
R359	FA040103	CARBON 1/8W(T) 5% 10K
R360	FA040101	CARBON 1/8W(T) 5% 100OHM
R361	FA040101	CARBON 1/8W(T) 5% 100OHM
R362	FA040103	CARBON 1/8W(T) 5% 10K
R363	FA040101	CARBON 1/8W(T) 5% 100OHM
R364	FA040101	CARBON 1/8W(T) 5% 100OHM
R366	FA040101	CARBON 1/8W(T) 5% 100OHM
R367	FA040103	CARBON 1/8W(T) 5% 10K
R368	FA360102	CARBON 1/2W/M(T) 5% 1K
R369	FA240102	CARBON 1/4W 5% 1KOHM
R370	FA040131	CARBON 1/8W(T) 5% 130H
R371	FA240222	CARBON 1/4W(T) 5% 2.2K
R372	FA040104	CARBON 1/8W(T) 5% 100K
R373	FA040104	CARBON 1/8W(T) 5% 100K
R374	FA040470	CARBON 1/8W(T) 5% 47OHM
R375	FA040472	CARBON 1/8W(T) 5% 4.7K
R376	FA040472	CARBON 1/8W(T) 5% 4.7K
R377	FA040122	CARBON 1/8W(T) 5% 1.2K
R378	FA040103	CARBON 1/8W(T) 5% 10K
R379	FA240155	CARBON 1/4W(T) 5% 1.5M
R380	FA240155	CARBON 1/4W(T) 5% 1.5M
R382	FB710339	MOF 3W/M(A) 5% 3.3OHM
R385	FB245102	METAL 1/4W(T) 1% 51K
R386	FA040123	CARBON 1/8W(T) 5% 12K
R388	FB242202	METAL 1/4W(T) 1% 22K
R389	FA040621	CARBON 1/8W(T) 5% 620 H
R390	FA240563	CARBON 1/4W(T) 5% 56K
R392	FA040103	CARBON 1/8W(T) 5% 10K
R402	FA330271	CARBON 1/2W(T)5% 270H
R403	FB470010	MOF 1W/M(A) 5% 1H
R404	FA240229	CARBON 1/4W(T) 5% 2.2H

SYMBOL	Part No for NPG	DESCRIPTION
R405	FB275601	METAL 1/4W/M(T) 1% 5.6K
R406	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R407	FB470758	MOF 1W/M(A) 5% 0.75H
R408	FA330271	CARBON 1/2W(T)5% 270H
R409	FB275601	METAL 1/4W/M(T) 1% 5.6K
R410	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R411	FA240222	CARBON 1/4W(T) 5% 2.2K
R412	FA040103	CARBON 1/8W(T) 5% 10K
R413	FA040472	CARBON 1/8W(T) 5% 4.7K
R414	FA040332	CARBON 1/8W(T) 5% 3.3K
R415	FA040104	CARBON 1/8W(T) 5% 100K
R451	FB246203	METAL 1/4W(T) 1% 620K
R452	FB241003	METAL 1/4W(T) 1% 100K
R453	FB246203	METAL 1/4W(T) 1% 620K
R454	FB247501	METAL 1/4W(T) 1% 7.5K
R455	FB243602	METAL 1/4W(T) 1% 36K
R456	FB241003	METAL 1/4W(T) 1% 100K
R457	FA040271	CARBON 1/8W(T) 5% 270H
R460	FB246203	METAL 1/4W(T) 1% 620K
R461	FB241003	METAL 1/4W(T) 1% 100K
R462	FB246203	METAL 1/4W(T) 1% 620K
R463	FB241003	METAL 1/4W(T) 1% 100K
R464	FA330910	CARBON 1/2W(T) 5% 91H
R467	FA040512	CARBON 1/8W(T) 5% 5.1K
R468	FA040512	CARBON 1/8W(T) 5% 5.1K
R469	FA040470	CARBON 1/8W(T) 5% 47OHM
R470	FA040470	CARBON 1/8W(T) 5% 47OHM
R471	FA040133	CARBON 1/8W(T) 5% 13K
R472	FA040432	CARBON 1/8W(T) 5% 4.3K
R473	FA040102	CARBON 1/8W(T) 5% 1K
R474	FA040122	CARBON 1/8W(T) 5% 1.2K
R475	FA040432	CARBON 1/8W(T) 5% 4.3K
R476	FA040332	CARBON 1/8W(T) 5% 3.3K
R479	FA330910	CARBON 1/2W(T) 5% 91H
R480	FB570390	MOF 2W/M(B) 5% 39H
R481	FB560390	MOF 2W/M(A) 5% 39H
R482	FB560390	MOF 2W/M(A) 5% 39H
R483	FB560390	MOF 2W/M(A) 5% 39H
R484	FA040122	CARBON 1/8W(T) 5% 1.2K
R485	FA040102	CARBON 1/8W(T) 5% 1K
R501	FA040101	CARBON 1/8W(T) 5% 100OHM
R502	FA040101	CARBON 1/8W(T) 5% 100OHM
R503	FA040223	CARBON 1/8W(T) 5% 22K
R504	FA040222	CARBON 1/8W(T) 5% 2.2K
R505	FB242611	METAL 1/4W(T) 1% 2.61K
R506	FB246040	METAL 1/4W(T) 1% 604OHM
R507	FA040101	CARBON 1/8W(T) 5% 100OHM
R508	FA040101	CARBON 1/8W(T) 5% 100OHM

SYMBOL	Part No for NPG	DESCRIPTION
R509	FA040103	CARBON 1/8W(T) 5% 10K
R510	FA040103	CARBON 1/8W(T) 5% 10K
R511	FB241802	METAL 1/4W(T) 1% 18K
R512	FA040153	CARBON 1/8W(T) 5% 15K
R513	FA240102	CARBON 1/4W 5% 1KOHM
R514	FA040103	CARBON 1/8W(T) 5% 10K
R515	FA040103	CARBON 1/8W(T) 5% 10K
R516	FA040473	CARBON 1/8W(T) 5% 47K
R517	FA240103	CARBON 1/4W(T) 5% 10K
R518	FA040222	CARBON 1/8W(T) 5% 2.2K
R519	FA040103	CARBON 1/8W(T) 5% 10K
R520	FA040472	CARBON 1/8W(T) 5% 4.7K
R521	FA240102	CARBON 1/4W 5% 1KOHM
R522	FA040683	CARBON 1/8W(T)5% 68K OHM
R523	FA040220	CARBON 1/8W(T) 5% 22H
R524	FA040103	CARBON 1/8W(T) 5% 10K
R525	FB560278	MOF 2W/M(A) 5% 0.27H
R526	FA040222	CARBON 1/8W(T) 5% 2.2K
R527	FA040103	CARBON 1/8W(T) 5% 10K
R528	FB710561	MOF 3W/M(A) 5% 560OHM
R529	FA040103	CARBON 1/8W(T) 5% 10K
R530	FB480109	MOF 1W/M(B) 5% 1H
R531	80002031	FUSEABLE RES 1/2W(A)0.22H
R532	FB248202	METAL 1/4W(T) 1% 82K
R533	FB242102	METAL 1/4W(T) 1% 21K
R534	FA040103	CARBON 1/8W(T) 5% 10K
R535	FA040104	CARBON 1/8W(T) 5% 100K
R536	80011181	RES FUSEABLE 1/2W/A(M)22H
R539	FA040222	CARBON 1/8W(T) 5% 2.2K
R540	FA040102	CARBON 1/8W(T) 5% 1K
R701	FA040103	CARBON 1/8W(T) 5% 10K
R702	FA040472	CARBON 1/8W(T) 5% 4.7K
R703	FA040101	CARBON 1/8W(T) 5% 100OHM
R704	FA040101	CARBON 1/8W(T) 5% 100OHM
R705	FA040103	CARBON 1/8W(T) 5% 10K
R706	FA040472	CARBON 1/8W(T) 5% 4.7K
R707	FA240105	CARBON 1/4W(T) 5% 1M
R708	FA040472	CARBON 1/8W(T) 5% 4.7K
R709	FA040472	CARBON 1/8W(T) 5% 4.7K
R710	FA040472	CARBON 1/8W(T) 5% 4.7K
R711	FA040103	CARBON 1/8W(T) 5% 10K
R712	FA040472	CARBON 1/8W(T) 5% 4.7K
R713	FA040104	CARBON 1/8W(T) 5% 100K
R714	FA040102	CARBON 1/8W(T) 5% 1K
R715	FA040472	CARBON 1/8W(T) 5% 4.7K
R716	FA040472	CARBON 1/8W(T) 5% 4.7K
R717	FA040472	CARBON 1/8W(T) 5% 4.7K
R719	FA040101	CARBON 1/8W(T) 5% 100OHM

SYMBOL	Part No for NPG	DESCRIPTION
R721	FA040101	CARBON 1/8W(T) 5% 100OHM
R722	FA040103	CARBON 1/8W(T) 5% 10K
R723	FA040101	CARBON 1/8W(T) 5% 100OHM
R724	FA040103	CARBON 1/8W(T) 5% 10K
R725	FA040103	CARBON 1/8W(T) 5% 10K
R726	FA040103	CARBON 1/8W(T) 5% 10K
R727	FA040472	CARBON 1/8W(T) 5% 4.7K
R728	FA040103	CARBON 1/8W(T) 5% 10K
R729	FA040472	CARBON 1/8W(T) 5% 4.7K
R730	FA040472	CARBON 1/8W(T) 5% 4.7K
R731	FA040472	CARBON 1/8W(T) 5% 4.7K
R732	FA040101	CARBON 1/8W(T) 5% 100OHM
R733	FA040101	CARBON 1/8W(T) 5% 100OHM
R734	FA040102	CARBON 1/8W(T) 5% 1K
R735	FA040471	CARBON 1/8W(T) 5% 470OHM
R736	FA040102	CARBON 1/8W(T) 5% 1K
R737	FA040472	CARBON 1/8W(T) 5% 4.7K
R738	FA040103	CARBON 1/8W(T) 5% 10K
R739	FA040103	CARBON 1/8W(T) 5% 10K
R740	FA040472	CARBON 1/8W(T) 5% 4.7K
R741	FA040103	CARBON 1/8W(T) 5% 10K
R742	FA040103	CARBON 1/8W(T) 5% 10K
R743	FA040103	CARBON 1/8W(T) 5% 10K
R745	FA040393	CARBON 1/8W(T) 5% 39K
R746	FA040182	CARBON 1/8W(T) 5% 1.8K
R747	FA040182	CARBON 1/8W(T) 5% 1.8K
R748	FA040472	CARBON 1/8W(T) 5% 4.7K
R749	FA040472	CARBON 1/8W(T) 5% 4.7K
R750	FA040103	CARBON 1/8W(T) 5% 10K
R751	FB244701	METAL 1/4W(T) 1% 4.7K
R752	FA040472	CARBON 1/8W(T) 5% 4.7K
R753	FB242201	METAL 1/4W(T) 1% 2.2K
R754	FA040103	CARBON 1/8W(T) 5% 10K
R756	FA040472	CARBON 1/8W(T) 5% 4.7K
R757	FA040472	CARBON 1/8W(T) 5% 4.7K
R759	FA040472	CARBON 1/8W(T) 5% 4.7K
R760	FA040392	CARBON 1/8W(T) 5% 3.9K
R762	FA040511	CARBON 1/8W(T) 5% 510OHM
R764	FA040132	CARBON 1/8W(T) 5% 1.3K

*** CAPACITORS ***

C102	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C103	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C104	GJ047400	SAFETY X-CAP 0.47U/275V M
C105	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C106	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C107	GKA337E5	POWER ELECT 85C 330U/400V
C108	GA347625	ELECT 85°C/T 47U/16V M

SYMBOL	Part No for NPG	DESCRIPTION
C109	GB7103H3	CERAMIC Y5P(B)/T0.01U/1KV
C110	GA310655	ELECT 85°C/T 10U/50V M
C111	GAA22745	ELECT 85C/A 220U/35V M
C112	GA310655	ELECT 85°C/T 10U/50V M
C113	GA310655	ELECT 85°C/T 10U/50V M
C114	GA310655	ELECT 85°C/T 10U/50V M
C115	GF222252	MEF CAP BOX 0.0022U/50V J
C116	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C117	GB615152	CERAMIC SL/T 150P/50V J
C118	GB747153	CC Y5P(B)/T 470P/50V K
C119	GF233252	MEF CAP BOX 0.0033U/50V J
C120	GA347755	ELECT 85OC/T 470U/50V M
C121	GF210452	MEF CAP BOX 0.1U/50V J
C131	GA3105E5	ELECT 85OC/T 1U/400V M
C132	GA310555	ELECT 85°C/T 1U/50V M
C135	GJC222E5	SAFE Y-CAP/D 2200P/400V M
C151	GAI10775	ELECT 105 C/T 100U/100V M
C152	GA347755	ELECT 85OC/T 470U/50V M
C153	GAB10835	ELECT 105°C/A1000U/25V M
C154	GA322735	C,ELEC 220UF 25V M
C155	GAA10825	ELECT 85°C/A 1000U/16V M
C157	GAA10775	ELECT 85C/ A 100U/100V M
C158	GAA47735	ELECT 85C/A 470U/25V M
C159	GA347635	ELECT 85°C/T 47U/25V M
C160	GA322735	C,ELEC 220UF 25V M
C162	GA315725	ELECT 85OC/T 150U/16V M
C163	GB7221F3	CERAMIC Y5P(B)/T 220P/500
C181	GA310655	ELECT 85°C/T 10U/50V M
C182	GA347635	ELECT 85°C/T 47U/25V M
C202	GE210352	CQ PEI/T 0.01U/50V J
C203	GE210352	CQ PEI/T 0.01U/50V J
C205	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C206	GA310655	ELECT 85°C/T 10U/50V M
C207	GB910358	CC Z5V(F)/T 0.01U/50V Z
C209	GA310655	ELECT 85°C/T 10U/50V M
C210	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C211	GB910358	CC Z5V(F)/T 0.01U/50V Z
C212	GA410575	ELECT NP/T 1U/100V M
C213	GA210575	C,ELEC 1UF 100V M
C214	GB712152	CERAMIC Y5P(B)/T 120P/50V
C230	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C231	GB910358	CC Z5V(F)/T 0.01U/50V Z
C232	GA410575	ELECT NP/T 1U/100V M
C233	GA210575	C,ELEC 1UF 100V M
C234	GB712152	CERAMIC Y5P(B)/T 120P/50V
C250	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C251	GB910358	CC Z5V(F)/T 0.01U/50V Z
C252	GA410575	ELECT NP/T 1U/100V M

SYMBOL	Part No for NPG	DESCRIPTION
C253	GA210575	C,ELEC 1UF 100V M
C254	GB712152	CERAMIC Y5P(B)/T 120P/50V
C270	GB656052	CERAMIC SL/T 56P/50V
C272	GA247625	ELECT 105°C/T 47U/16V M
C273	GB910358	CC Z5V(F)/T 0.01U/50V Z
C274	GB7102F3	CC Y5P(B)/T 1000P/500V K
C275	GB7222F3	CERAMIC Y5P(B) 2200P/500V
C276	GA222675	ELECT 105°C/T 22U/100V M
C277	GAA10575	ELECT 85C/A 1U/100V M
C278	GB7102F3	CC Y5P(B)/T 1000P/500V K
C279	GF222462	MEF CAP BOX 0.22U/63V J
C27A	GB618152	CERAMIC SL/T 180P/50V J
C27E	GB618152	CERAMIC SL/T 180P/50V J
C280	GF222472	MEF CAP BOX 0.22U/100V J
C282	GA310555	ELECT 85°C/T 1U/50V M
C283	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C284	GB7102F3	CC Y5P(B)/T 1000P/500V K
C285	GB9332H3	CC Z5V(F)/T 3300P/1KV Z
C286	GB9472H3	CERAMIC Z5V(F)/T 4700P/1K
C287	GB910358	CC Z5V(F)/T 0.01U/50V Z
C288	GF222462	MEF CAP BOX 0.22U/63V J
C289	GA347625	ELECT 85°C/T 47U/16V M
C290	GB910358	CC Z5V(F)/T 0.01U/50V Z
C292	GB782153	CERAMIC Y5P(B)/T 820P/50V
C293	GA310655	ELECT 85°C/T 10U/50V M
C294	GB6101F2	CERAMIC SL/T 100P 500V K
C295	GA210675	ELECT 105OC/T 10U/100V M
C296	GA210675	ELECT 105OC/T 10U/100V M
C297	GB7101F3	CERAMIC 100P/500V
C298	GA347555	ELECT 85°C/T 4.7U/50V M
C299	GA347555	ELECT 85°C/T 4.7U/50V M
C29A	GA347555	ELECT 85°C/T 4.7U/50V M
C29C	GA347555	ELECT 85°C/T 4.7U/50V M
C29E	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C29G	GB7102F3	CC Y5P(B)/T 1000P/500V K
C303	GB710253	CC Y5P(B)/T 1000P/50V K
C304	GF210452	MEF CAP BOX 0.1U/50V J
C305	GB768153	CERAMIC Y5P(B)/T 680P/50V
C306	GF210352	MEF CAP BOX 0.01U/50V J
C307	GB556052	CERAMIC NPO(CH)/T 56P/50V
C308	GFE102H2	PLASTIC PMS/A 1000P/1KV J
C309	GF222452	MEF CAP BOX 0.22U/50V J
C310	GF210562	MEF CAP BOX 1UF 63V J
C311	GA3105D5	ELECT 85OC/T 1U/350V M
C312	GA347655	C,ELEC 47UF 50V M
C313	GAA47585	ELECT 85°C/A 4.7U/250V M
C314	GA322555	ELECT 85°C/T 2.2U/50V M
C316	GB910358	CC Z5V(F)/T 0.01U/50V Z

SYMBOL	Part No for NPG	DESCRIPTION
C317	GB7272H3	CERAMIC Y5P(B)/T 2700P/1K
C320	GAA22775	ELECT 85OC/A 220U/100V M
C321	GA347635	ELECT 85°C/T 47U/25V M
C322	GAB10835	ELECT 105°C/A1000U/25V M
C323	GA310555	ELECT 85°C/T 1U/50V M
C324	GB7471F3	CC Y5P(B)/T 470P/500V K
C326	GB910358	CC Z5V(F)/T 0.01U/50V Z
C327	GF210462	MEF CAP BOX 0.1U/63V J
C328	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C329	GF210272	MEF CAP BOX 0.001U/100V J
C330	GF210252	MEF CAP BOX 0.001U/50V J
C331	GFB10482	PLASTIC MPP/A 0.10U/250V J
C332	GFE512P2	C FILM 5100P 2.5KV J PMS/
C333	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C334	GFD27482	PLASTIC PMM/A 0.27U/250V
C335	GA310555	ELECT 85°C/T 1U/50V M
C336	GFD51482	PLASTIC PMM/A 0.51U/250V
C337	GA347555	ELECT 85°C/T 4.7U/50V M
C338	GFB12582	PLASTIC MPP/A 0.12U/250V
C339	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C340	GFD154E2	PLASTIC PMM/A 0.15U/400V
C341	GFD683E2	PLASTIC PMM/A 0.068U/400V
C342	GA310555	ELECT 85°C/T 1U/50V M
C343	GA310655	ELECT 85°C/T 10U/50V M
C344	GA310555	ELECT 85°C/T 1U/50V M
C345	GB7331H3	CC Y5P(B)/T 330P/1KV K
C347	GE410252	PLASTIC PPN/T 0.001UF/50V
C348	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C349	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C350	GA310725	ELECT 85°C/T 100U/16V M
C351	GB7101H3	CERAMIC 100P/1KV
C352	GB7101H3	CERAMIC 100P/1KV
C353	GA322815	ELECT 85C/T 2200U/10V M
C354	GA347625	ELECT 85°C/T 47U/16V M
C356	GA347555	ELECT 85°C/T 4.7U/50V M
C357	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C358	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C359	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C360	GF222452	MEF CAP BOX 0.22U/50V J
C361	GF282252	MEF CAP BOX 0.0082U/50V J
C362	GFD204E2	PLASTIC PMM/ 0.2U/400V J
C363	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C364	GB7102F3	CC Y5P(B)/T 1000P/500V K
C401	GAA47735	ELECT 85C/A 470U/25V M
C402	GB722253	CC Y5P(B)/T 2200P/50V K
C403	GAA47735	ELECT 85C/A 470U/25V M
C404	GF222472	MEF CAP BOX 0.22U/100V J
C405	GB722253	CC Y5P(B)/T 2200P/50V K

SYMBOL	Part No for NPG	DESCRIPTION
C406	GB722253	CC Y5P(B)/T 2200P/50V K
C407	GB710253	CC Y5P(B)/T 1000P/50V K
C408	GF210352	MEF CAP BOX 0.01U/50V J
C409	GA310555	ELECT 85°C/T 1U/50V M
C410	GFB10482	PLASTIC MPP/A 0.10U/250VJ
C411	GA310745	ELECT 85C/T 100U/35VM
C412	GB710253	CC Y5P(B)/T 1000P/50V K
C415	GB710253	CC Y5P(B)/T 1000P/50V K
C416	GB710253	CC Y5P(B)/T 1000P/50V K
C452	GA310555	ELECT 85°C/T 1U/50V M
C453	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C454	GA310555	ELECT 85°C/T 1U/50V M
C455	GA347555	ELECT 85°C/T 4.7U/50V M
C456	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C457	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C458	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C459	GA322725	ELECT 85°C/T 220U/16V M
C461	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C462	GA310555	ELECT 85°C/T 1U/50V M
C464	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C465	GA310555	ELECT 85°C/T 1U/50V M
C466	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C467	GA310555	ELECT 85°C/T 1U/50V M
C468	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C472	GAA10735	ELECT 85C/A 100U/25V M
C473	GF222452	MEF CAP BOX 0.22U/50V J
C474	GF222452	MEF CAP BOX 0.22U/50V J
C486	GA347555	ELECT 85°C/T 4.7U/50V M
C501	GA347725	ELECT 85C/T 470U/16VM
C502	GA333625	ELECT 85°C/T 33U/16V M
C503	GB610052	CERAMIC SL/T 10P/50V J
C504	GF215452	MEF CAP BOX 0.15U/50V J
C505	GF210452	MEF CAP BOX 0.1U/50V J
C506	GE382252	PLASTIC 0.0082U/50V
C507	GF247452	MEF CAP BOX 0.47U/50V J
C508	GE410351	PLASTIC PPN/T 0.01UF/50V
C509	GF247252	MEF CAP BOX 0.0047U/50V J
C510	GF210352	MEF CAP BOX 0.01U/50V J
C511	GB768153	CERAMIC Y5P(B)/T 680P/50V
C512	GF210352	MEF CAP BOX 0.01U/50V J
C513	GA347555	ELECT 85°C/T 4.7U/50V M
C514	GE410252	PLASTIC PPN/T 0.001UF/50V
C515	GAA10845	ELECT 85C/A 1000U/35V M
C516	GB7221H3	CERAMIC Y5P(B)/T 220P/1KV
C518	GA310725	ELECT 85°C/T 100U/16V M
C519	GA310725	ELECT 85°C/T 100U/16V M
C520	GF222452	MEF CAP BOX 0.22U/50V J
C521	GB610153	CERAMIC SL/T 100P/50V K

SYMBOL	Part No for NPG	DESCRIPTION
C522	GB610153	CERAMIC SL/T 100P/50V K
C523	GFD47482	PLASTIC MPPS/A 0.47U/250V
C524	GB722253	CC Y5P(B)/T 2200P/50V K
C525	GA410655	ELECT NP/T 10U/50V M
C701	GE210352	CQ PEI/T 0.01U/50V J
C702	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C703	GA310725	ELECT 85°C/T 100U/16V M
C704	GB633052	CERAMIC SL/T 33P/50V J
C705	GB633052	CERAMIC SL/T 33P/50V J
C706	GB610152	CERAMIC SL/T 100P/50V J
C709	GB722153	CERAMIC Y5P(B)/T 220P/50V
C710	GB722153	CERAMIC Y5P(B)/T 220P/50V
C716	GE210252	C,PLASTIC 0.001UF 50V J
C717	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C719	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C720	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C721	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C722	GB610153	CERAMIC SL/T 100P/50V K

REPLACEMENT PARTS LIST (For Europe)

The components specified for Model DPro930SB-BK(B)

SYMBOL	Part No for NPG	DESCRIPTION
*** ICS ***		
U101	DD002600	IC LINEAR KA3842A 8P
U201	80016621	IC LM1267
U202	EH110051	IC MTV030N-46 20PIN
U203	80010891	IC LM2480
U204	EH110071	IC LM2463
U301	80016141	IC TL494
U302	80002321	IC KIA324P
U401	80016641	IC TDA4863
U402	80014501	IC LA6510
U403	80010251	IC LM358N/KIA358P
U404	80014501	IC LA6510
U501	80007131	IC TDA4856
U701	EH110081	IC MCU MTV212MN32 FP912SB
U702	80009941	IC ATMEL EEPROM AT24C08B
U703	EH110041	IC 74HC165

*** TRANSISTORS ***		
Q101	EF100113	FET N 2SK2843(SC) 600V/10
Q102	80005251	TR NPN KSP44 TO-92(T)
Q103	80014321	TR NPN KRC102M TO-92(T)
Q104	EAA09456	TR NPN 2SC945 TO-92(T)
Q105	EAA09456	TR NPN 2SC945 TO-92(T)
Q131	EAA09456	TR NPN 2SC945 TO-92(T)
Q132	EAA09456	TR NPN 2SC945 TO-92(T)
Q151	EB307720	TR PNP 2SB772 TO-126
Q152	80014321	TR NPN KRC102M TO-92(T)
Q153	80016661	TR 2SD882
Q155	EB307720	TR PNP 2SB772 TO-126
Q156	EAA09456	TR NPN 2SC945 TO-92(T)
Q157	80016661	TR 2SD882
Q181	EAA09456	TR NPN 2SC945 TO-92(T)
Q201	EAA18157	TR NPN 2SC1815GR TO-92(T)
Q271	EBA07336	TR PNP 2SA733P TO-92(T)
Q302	EC000411	TR 2N3904 NPN
Q303	80014321	TR NPN KRC102M TO-92(T)
Q304	EAA23690	TR NPN PH2369 TO-92(T)
Q305	80008081	TR N 2SK2996
Q306	EF206300	FET N IRF630 TO-220 3P
Q307	EBA04230	TR PNP BF423 TO-92(T)
Q309	EBA04230	TR PNP BF423 TO-92(T)
Q312	80005251	TR NPN KSP44 TO-92(T)

SYMBOL	Part No for NPG	DESCRIPTION
Q313	EF206301	FET N YTAF630 TO-220F
Q314	80008151	TR NPN 2SC5587 TO-3P
Q315	EF206301	FET N YTAF630 TO-220F
Q316	80014321	TR NPN KRC102M TO-92(T)
Q317	80003311	FET N YTAF640 TO-220F
Q318	80014321	TR NPN KRC102M TO-92(T)
Q319	80003311	FET N YTAF640 TO-220F
Q320	80014321	TR NPN KRC102M TO-92(T)
Q321	EF206301	FET N YTAF630 TO-220F
Q322	80014321	TR NPN KRC102M TO-92(T)
Q323	EF206301	FET N YTAF630 TO-220F
Q324	80014321	TR NPN KRC102M TO-92(T)
Q325	EAA09456	TR NPN 2SC945 TO-92(T)
Q326	80016661	TR 2SD882
Q327	EAA32055	TR NPN KTC3205-Y TO-92L/T
Q328	80002631	TR PNP KTA1273Y
Q329	80014321	TR NPN KRC102M TO-92(T)
Q330	EAA09456	TR NPN 2SC945 TO-92(T)
Q401	EAA04220	TR NPN BF422 TO-92(T)
Q455	EAA09456	TR NPN 2SC945 TO-92(T)
Q456	EAA09456	TR NPN 2SC945 TO-92(T)
Q461	EBA07336	TR PNP 2SA733P TO-92(T)
Q462	EBA07336	TR PNP 2SA733P TO-92(T)
Q501	EAA09456	TR NPN 2SC945 TO-92(T)
Q502	EAA09456	TR NPN 2SC945 TO-92(T)
Q503	EAA09456	TR NPN 2SC945 TO-92(T)
Q504	80003311	FET N YTAF640 TO-220F
Q505	EA243705	TR NPN KC4370A
Q506	EAA09456	TR NPN 2SC945 TO-92(T)
Q507	EBA07336	TR PNP 2SA733P TO-92(T)
Q508	EBA07336	TR PNP 2SA733P TO-92(T)
Q509	EAA09456	TR NPN 2SC945 TO-92(T)
Q701	EAA23690	TR NPN PH2369 TO-92(T)
Q702	EAA09456	TR NPN 2SC945 TO-92(T)
Q703	EBA07336	TR PNP 2SA733P TO-92(T)

*** DIODES ***

D101	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D102	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D103	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D104	EJB20001	DIODE/A 3A 1N5406 (FAGOR)
D105	EJ044148	DIODE T" 1N4148"
D106	EJ044148	DIODE T" 1N4148"
D107	EJ044148	DIODE T" 1N4148"
D108	80003841	DIODE 1A/20V UF4003 DG41
D109	EJAC0005	DIODE/T 1A 1N4002
D110	80003841	DIODE 1A/20V UF4003 DG41
D111	EJ044148	DIODE T" 1N4148"

SYMBOL	Part No for NPG	DESCRIPTION
D112	EJ044148	DIODE T" 1N4148"
D113	EJ044148	DIODE T" 1N4148"
D115	EJ044148	DIODE T" 1N4148"
D116	EJ044148	DIODE T" 1N4148"
D117	EJ044148	DIODE T" 1N4148"
D118	80003821	DIODE 1A/1KV UF4007 D041
D120	EJ044148	DIODE T" 1N4148"
D131	EJAC0010	DIODE/T 1A 1N4007
D132	EJ044148	DIODE T" 1N4148"
D150	EJA05819	DIODE STKY/T 1A/40V 1N581
D151	80016531	DIODE 3A/600V RL4A (SANKE
D152	EJ100091	DI RL3 3.5A 350V STRAIGHT
D153	80016701	DIODE 3A/200V SF33 (CHENM
D154	80016701	DIODE 3A/200V SF33 (CHENM
D155	80016681	DIODE SR360
D181	EJ044148	DIODE T" 1N4148"
D203	EJAC0018	DIODE/T 1A 1N4937
D210	EJ044148	DIODE T" 1N4148"
D211	EJ044148	DIODE T" 1N4148"
D212	80000451	DIODE/T 1/2W 1SS83
D213	80000451	DIODE/T 1/2W 1SS83
D214	80000451	DIODE/T 1/2W 1SS83
D230	EJ044148	DIODE T" 1N4148"
D231	EJ044148	DIODE T" 1N4148"
D232	80000451	DIODE/T 1/2W 1SS83
D233	80000451	DIODE/T 1/2W 1SS83
D234	80000451	DIODE/T 1/2W 1SS83
D250	EJ044148	DIODE T" 1N4148"
D251	EJ044148	DIODE T" 1N4148"
D252	80000451	DIODE/T 1/2W 1SS83
D253	80000451	DIODE/T 1/2W 1SS83
D254	80000451	DIODE/T 1/2W 1SS83
D271	EJ044148	DIODE T" 1N4148"
D272	EJ044148	DIODE T" 1N4148"
D303	EJ044148	DIODE T" 1N4148"
D304	80000451	DIODE/T 1/2W 1SS83
D305	EJAE0001	DIODE/T 1A SR106
D306	80016531	DIODE 3A/600V RL4A (SANKE
D307	80009741	DIODE/T UF4005
D308	80003841	DIODE 1A/20V UF4003 DG41
D309	EJA00018	DIODE/T 1A UF4006
D310	EJ044148	DIODE T" 1N4148"
D311	EJ044148	DIODE T" 1N4148"
D312	80003841	DIODE 1A/20V UF4003 DG41
D313	80003821	DIODE 1A/1KV UF4007 D041
D314	EJ044148	DIODE T" 1N4148"
D315	80004711	ROHM DIODE 1SS244
D316	80003841	DIODE 1A/20V UF4003 DG41

SYMBOL	Part No for NPG	DESCRIPTION
D317	EJB00004	DIODE/A 5TUZ47
D318	80003821	DIODE 1A/1KV UF4007 D041
D319	EJ044148	DIODE T" 1N4148"
D320	EJA00018	DIODE/T 1A UF4006
D321	80003841	DIODE 1A/20V UF4003 DG41
D322	80009741	DIODE/T UF4005
D323	EJA00018	DIODE/T 1A UF4006
D401	EJB00017	DIODE/A 1A IN4936
D402	EJ044148	DIODE T" 1N4148"
D501	EJ044148	DIODE T" 1N4148"
D502	EJ044148	DIODE T" 1N4148"
D503	EJ044148	DIODE T" 1N4148"
D505	80016531	DIODE 3A/600V RL4A (SANKE
D506	EJ044148	DIODE T" 1N4148"
D507	80003841	DIODE 1A/20V UF4003 DG41
D508	80003551	DIODE 200V/1.6A RG2Z
D509	EJAC0018	DIODE/T 1A 1N4937
D510	EJ044148	DIODE T" 1N4148"
D704	EJ044148	DIODE T" 1N4148"
D705	EJ044148	DIODE T" 1N4148"
D706	EJ044148	DIODE T" 1N4148"
D707	EJ044148	DIODE T" 1N4148"
D708	EJ044148	DIODE T" 1N4148"
D709	EJ044148	DIODE T" 1N4148"
D710	EJ044148	DIODE T" 1N4148"
D711	EJ044148	DIODE T" 1N4148"
D712	EJ044148	DIODE T" 1N4148"
D713	EJ044148	DIODE T" 1N4148"
LED101	80000131	LED L-59GH/1GYC
ZD101	EKA0200B	ZEN DIODE 1/2W(T) HZS20.2
ZD102	EKA0180B	ZEN DIODE 1/2W(T) 18V
ZD131	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD151	EKA00605	ZEN DIODE 1/2W(T) HZS6B3
ZD301	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD302	EKA00508	ZEN DIODE 1/2W(T) HZ5C3
ZD303	EKA00906	ZEN DIODE 1/2W(T) 9C1
ZD304	EKA00507	ZEN DIODE 1/2W(T) 5C2
ZD401	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD501	EKA01201	ZEN DIODE 1/2W(T) 12A2
ZD701	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD702	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD703	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD704	EKA00607	ZEN DIODE 1/2W(T) 6C2
ZD705	EKA00607	ZEN DIODE 1/2W(T) 6C2

*** TRANSFORMERS ***

T101	HE100091	TRANS POWER 200UH N1902
T301	HH910021	FBT19 110K CHUN PENG N290

SYMBOL	Part No for NPG	DESCRIPTION
T302	HE300011	TRANS DF X'FM EI-22 N2901
T304	HE200011	TRANS HDDRIVE X'FM EI-19

*** VARIABLE RESISTORS ***

VR101	FF300501	VR CARBON 6MM 500H/B
VR301	FF310223	VR CARBON 6MM 22K
VR302	FF310223	VR CARBON 6MM 22K
VR501	FF310502	VR CARBON 6MM 5K
VR503	FF300102	VR CARBON 6MM 1K

*** RELAYS & SWITCHES ***

SW101	JC800121	SW POWER DC 30V 0.1A SPUN
SW701	80000251	TACT SW 1P 100G+-50
SW702	80000251	TACT SW 1P 100G+-50
SW703	80000251	TACT SW 1P 100G+-50
SW704	80000251	TACT SW 1P 100G+-50
SW705	80000251	TACT SW 1P 100G+-50
SW706	80000251	TACT SW 1P 100G+-50
SW707	80000251	TACT SW 1P 100G+-50

*** PWB ASSYS ***

MAININ	AM0M52MM	MAIN INSERT ASSY
CRTIN	AC0M52MM	CRT INSERT ASSY
SUBIN	AS0M52MM	SUB INSERT ASSY

*** COILS & FILTERS ***

B101	HC006003	BEAD 3.5X8/T
B102	HC005002	BEAD 3.5X4.7/T
B103	HC005002	BEAD 3.5X4.7/T
B104	80000991	BEAD WBR6H-3T-R7K-B5
B105	80000561	BEAD 3.5*6*0.8/T
B201	HC005002	BEAD 3.5X4.7/T
B202	HC006003	BEAD 3.5X8/T
B203	HC006003	BEAD 3.5X8/T
B204	HC006003	BEAD 3.5X8/T
B301	HC006002	BEAD 3.5X4.7/T
B302	HC006003	BEAD 3.5X8/T
B303	HC006003	BEAD 3.5X8/T
L101	HA100041	CORE EMI COMMON CHOKE25MH
L102	HA100051	CORE EMI COMMON CHOKE UU1
L131	HA200031	HARMONIC CHOKE EE42 60MH
L151	HB000008	CHOKE COIL 100UH 8X10
L201	HB000008	CHOKE COIL 100UH 8X10
L202	HB000008	CHOKE COIL 100UH 8X10
L203	HB013100	PACKING COIL T 10UH K
L210	HB013228	PEAKING COIL/T 0.22UH K
L211	HB013278	PACKING COIL /T 0.27UH K
L230	HB013278	PACKING COIL /T 0.27UH K

SYMBOL	Part No for NPG	DESCRIPTION
L231	HB013278	PACKING COIL /T 0.27UH K
L250	HB013228	PEAKING COIL/T 0.22UH K
L251	HB013188	PEAKING COIL/T 0.18UH K
L301	80016071	CHOCK COIL 14UH P75
L501	80016081	CHOCK COIL 8.0MH (DRWW16*
RL181	80003761	REPLY 12V 6P OSA-SS-212DM
T303	HA300011	L LINER N2901
T501	80016801	CHOKE COIL 45UH N1901

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

CABLE	80016302	SIGNAL CABLE P75
CRTS	80005711	ISDW02S41 CRT SOCKET
DEGC	HA690041	L DEGAUSS N2902
F101	80001521	FUSE 3.15A/250V 50T
P101	JD512001	AC SOCKET 3P
PWRCE	80001651	POWER CORD 3P 1.8M EUROPE
PWRCU	80008691	POWER CORD 3P 1.8M U.K. N
RL131	80005831	RELAY 12V 8 P MI-SS-212D
SG301	80002201	SPAKER GAP 1.5KV
TH101	80004371	THERMISTOR NTCR N15SP006L
TH102	80013341	THERMISTOR PTCR 4.5OHM(90
TH701	80014781	TH NRD3103K400K03FMT
X701	EM012004	X'TAL 49U 12MHZ

*** APPEARANCE PARTS ***

CABB	10102761	CABINET BACK
CABF	10102461	CABINET FRONT ASSY
CHASS	12000831	CHASSIS BASE
PANEL	11700561	PANEL(DPRO930SB(B))
REVS	11001021	REVOLVING STAND ASSY(MC-0

*** PRINTED & PACKING MATERIALS ***

BAGP2	13700021	BAG POLYETHYLENE
CART	13202051	CARTON BOX DPRO930SBBK(B)
CD	19700083	INSTRUCTION CO-ROM DP SER
LABELC	15201681	LABEL CARTON (NE)
LABLK	15201501	LABEL(BLACK FOR CATON)
MANUW	15501401	OWNERS MANUAL DPRO930SB(B
NAME	15001741	RATING LABEL DPRO930SBBK(
NAVCAR	15900251	NAVISET CARTON BOX FLYER
PEBAG	13700301	PE BAG(500*480*850+WARNIN
PLYB	13400771	POLYLON(B)
PLYT	13400761	POLYLON(T)
SALES	15900261	SALES OFFICE LIST (MITSUB

SYMBOL	Part No for NPG	DESCRIPTION
*** RESISTORS ***		
J152	FA040101	CARBON 1/8W(T) 5% 100OHM
J153	FA040101	CARBON 1/8W(T) 5% 100OHM
R101	FA330684	CARBON 1/2W(T) 5% 680K
R102	FA330333	CARBON 1/2W(T) 5% 33K
R103	FA330333	CARBON 1/2W(T) 5% 33K
R104	FA240564	CARBON 1/4W(T) 5% 560K
R105	FA240564	CARBON 1/4W(T) 5% 560K
R106	FB244708	METAL 1/4W(T) 1% 4.7H
R107	FB240010	METAL 1/4W(T) 1% 10HM
R108	FA040100	CARBON 1/8W(T) 5% 100HM
R109	FA240470	CARBON 1/4W 5% 47OHM
R110	FA240103	CARBON 1/4W(T) 5% 10K
R111	FA240103	CARBON 1/4W(T) 5% 10K
R112	FA240563	CARBON 1/4W(T) 5% 56K
R113	FA240242	CARBON 1/4W(T) 5% 2.4K
R114	FA330273	CARBON 1/2W(T) 5% 27KH
R115	FA240222	CARBON 1/4W(T) 5% 2.2K
R116	FB244651	METAL 1/4W(T) 1% 4.65K
R117	FA240203	CARBON 1/4W(T) 5% 20K
R118	FA330330	CARBON 1/2W(T) 5% 33H
R119	FA330102	CARBON 1/2W(T) 5% 1K
R120	FC240138	WOUND RES 3W/M(A)5% 0.13H
R121	FB560338	MOF 2W/M(A) 5% 0.33H
R122	FB570683	MOF 2W/M(B) 5% 68K
R123	FA240473	CARBON 1/4W 5% 47KOHM
R124	FA240222	CARBON 1/4W(T) 5% 2.2K
R125	FA330102	CARBON 1/2W(T) 5% 1K
R126	FA040472	CARBON 1/8W(T) 5% 4.7K
R127	FA330220	CARBON 1/2W(T) 5% 22H
R128	FA330564	CARBON 1/2(T) 5% 560K
R129	FA330564	CARBON 1/2(T) 5% 560K
R131	FA330434	CARBON 1/2W(T) 5% 430K
R132	FA330434	CARBON 1/2W(T) 5% 430K
R133	FA040513	CARBON 1/8W(T) 5% 51K
R135	FA330203	CARBON 1/2W(T) 5% 20K
R137	FA040103	CARBON 1/8W(T) 5% 10K
R138	FA240681	CARBON 1/4W(T) 5% 680OHM
R139	FA040103	CARBON 1/8W(T) 5% 10K
R148	FA240162	CARBON 1/4W(T) 5% 1.6K
R151	FA240823	CARBON 1/4W(T) 5% 82K
R153	FA040104	CARBON 1/8W(T) 5% 100K
R154	FA240103	CARBON 1/4W(T) 5% 10K
R155	FA330751	CARBON 1/2W(T) 5% 750H
R156	FA240103	CARBON 1/4W(T) 5% 10K
R157	FA240103	CARBON 1/4W(T) 5% 10K
R158	FA330751	CARBON 1/2W(T) 5% 750H
R161	FA040102	CARBON 1/8W(T) 5% 1K

SYMBOL	Part No for NPG	DESCRIPTION
R162	FA240511	CARBON 1/4W(T) 5% 510H
R163	FA040472	CARBON 1/8W(T) 5% 4.7K
R164	FA330109	CARBON 1/2W (T) 5% 10HM
R165	FA330102	CARBON 1/2W(T) 5% 1K
R166	FA040220	CARBON 1/8W(T) 5% 22H
R167	FA040103	CARBON 1/8W(T) 5% 10K
R181	FA040392	CARBON 1/8W(T) 5% 3.9K
R201	FA040562	CARBON 1/8W(T) 5% 5.6K
R202	FA040334	CARBON 1/8W(T) 5% 330K
R203	FA040332	CARBON 1/8W(T) 5% 3.3K
R204	FA040472	CARBON 1/8W(T) 5% 4.7K
R205	FA040101	CARBON 1/8W(T) 5% 100OHM
R206	FA040102	CARBON 1/8W(T) 5% 1K
R207	FA040101	CARBON 1/8W(T) 5% 100OHM
R208	FA040101	CARBON 1/8W(T) 5% 100OHM
R209	FA040101	CARBON 1/8W(T) 5% 100OHM
R210	FA040101	CARBON 1/8W(T) 5% 100OHM
R211	FA040330	CARBON 1/8W(T) 5% 330HM
R212	FA040751	CARBON 1/8W(T) 5% 750H
R213	FB247509	METAL 1/4W(T) 1% 75OHM
R215	FA360560	R CARBON 1/2W/M(T) 5% 56
R216	FA240105	CARBON 1/4W(T) 5% 1M
R217	FA040102	CARBON 1/8W(T) 5% 1K
R218	FG100010	R FUSE 1/4W 75 J (A)
R230	FA040101	CARBON 1/8W(T) 5% 100OHM
R231	FA040330	CARBON 1/8W(T) 5% 330HM
R232	FA040681	CARBON 1/8W(T) 5% 680OHM
R233	FB247509	METAL 1/4W(T) 1% 75OHM
R235	FA360560	R CARBON 1/2W/M(T) 5% 56
R236	FA240105	CARBON 1/4W(T) 5% 1M
R237	FA040102	CARBON 1/8W(T) 5% 1K
R238	FG100010	R FUSE 1/4W 75 J (A)
R250	FA040101	CARBON 1/8W(T) 5% 100OHM
R251	FA040330	CARBON 1/8W(T) 5% 330HM
R252	FA040561	CARBON 1/8W(T) 5% 560OHM
R253	FB247509	METAL 1/4W(T) 1% 75OHM
R255	FA360560	R CARBON 1/2W/M(T) 5% 56
R256	FA240105	CARBON 1/4W(T) 5% 1M
R257	FA040102	CARBON 1/8W(T) 5% 1K
R258	FG100010	R FUSE 1/4W 75 J (A)
R270	FA040472	CARBON 1/8W(T) 5% 4.7K
R271	FA040473	CARBON 1/8W(T) 5% 47K
R272	FA040472	CARBON 1/8W(T) 5% 4.7K
R273	FA040681	CARBON 1/8W(T) 5% 680OHM
R274	FA040681	CARBON 1/8W(T) 5% 680OHM
R275	FA040102	CARBON 1/8W(T) 5% 1K
R276	FA330101	CARBON 1/2W(T) 5% 100OHM
R277	FA240334	CARBON 1/4W(T) 5% 330K

SYMBOL	Part No for NPG	DESCRIPTION
R278	FA040102	CARBON 1/8W(T) 5% 1K
R279	FB241002	METAL 1/4W(T) 1% 10K
R27A	FA040473	CARBON 1/8W(T) 5% 47K
R280	FB470279	MOF 1W/M(A) 5% 2.7H
R281	FA040102	CARBON 1/8W(T) 5% 1K
R282	FA040101	CARBON 1/8W(T) 5% 100OHM
R283	FA040472	CARBON 1/8W(T) 5% 4.7K
R284	FA040101	CARBON 1/8W(T) 5% 100OHM
R285	FA040103	CARBON 1/8W(T) 5% 10K
R286	FA040123	CARBON 1/8W(T) 5% 12K
R287	FA040102	CARBON 1/8W(T) 5% 1K
R288	FA040102	CARBON 1/8W(T) 5% 1K
R289	FA040103	CARBON 1/8W(T) 5% 10K
R293	FA040102	CARBON 1/8W(T) 5% 1K
R294	FA040102	CARBON 1/8W(T) 5% 1K
R295	FA040103	CARBON 1/8W(T) 5% 10K
R296	FA040103	CARBON 1/8W(T) 5% 10K
R297	FA040103	CARBON 1/8W(T) 5% 10K
R298	FA040103	CARBON 1/8W(T) 5% 10K
R299	FA040101	CARBON 1/8W(T) 5% 100OHM
R301	FB470338	MOF 1W/M(A) 5% 0.33H
R302	FA040102	CARBON 1/8W(T) 5% 1K
R304	FA040333	CARBON 1/8W(T) 5% 33K
R305	FA040472	CARBON 1/8W(T) 5% 4.7K
R306	FA040432	CARBON 1/8W(T) 5% 4.3K
R307	FA040222	CARBON 1/8W(T) 5% 2.2K
R308	FA040222	CARBON 1/8W(T) 5% 2.2K
R310	FA040472	CARBON 1/8W(T) 5% 4.7K
R311	FA040102	CARBON 1/8W(T) 5% 1K
R316	FA040683	CARBON 1/8W(T)5% 68K OHM
R317	FA040512	CARBON 1/8W(T) 5% 5.1K
R318	FA040104	CARBON 1/8W(T) 5% 100K
R320	FA040102	CARBON 1/8W(T) 5% 1K
R321	FA040103	CARBON 1/8W(T) 5% 10K
R322	FA040123	CARBON 1/8W(T) 5% 12K
R323	FA240823	CARBON 1/4W(T) 5% 82K
R324	FA240113	CARBON 1/4W(T)5% 11K OHM
R325	FA040332	CARBON 1/8W(T) 5% 3.3K
R326	FA040103	CARBON 1/8W(T) 5% 10K
R327	FA040123	CARBON 1/8W(T) 5% 12K
R328	FA040103	CARBON 1/8W(T) 5% 10K
R329	FA330105	CARBON 1/2W (T) 5% 1M
R330	FA330102	CARBON 1/2W(T) 5% 1K
R331	FB560563	MOF 2W/M(A) 5% 56K
R332	FB560563	MOF 2W/M(A) 5% 56K
R333	FA240105	CARBON 1/4W(T) 5% 1M
R334	FA040103	CARBON 1/8W(T) 5% 10K
R335	FA040331	CARBON 1/8W(T) 5% 330H

SYMBOL	Part No for NPG	DESCRIPTION
R336	FA040223	CARBON 1/8W(T) 5% 22K
R337	FB470100	MOF 1W/M(A) 5% 10OHM
R338	FA040103	CARBON 1/8W(T) 5% 10K
R339	FB480471	MOF 1W/M(B) 5% 470H
R340	FB570101	MOF 2W/M(B) 5% 100H
R342	FA040100	CARBON 1/8W(T) 5% 100OHM
R344	FA040103	CARBON 1/8W(T) 5% 10K
R345	FA040331	CARBON 1/8W(T) 5% 330H
R346	FA330101	CARBON 1/2W(T) 5% 100OHM
R347	FA360270	CARBON 1/2W/M(T) 5% 27H
R348	FK010010	R MOF 5W 1.2J (Al)
R349	FB241003	METAL 1/4W(T) 1% 100K
R350	FA040562	CARBON 1/8W(T) 5% 5.6K
R351	FA040103	CARBON 1/8W(T) 5% 10K
R352	FA040103	CARBON 1/8W(T) 5% 10K
R353	FA040103	CARBON 1/8W(T) 5% 10K
R354	FA040103	CARBON 1/8W(T) 5% 10K
R355	FA040223	CARBON 1/8W(T) 5% 22K
R356	FA040102	CARBON 1/8W(T) 5% 1K
R357	FB241113	METAL 1/4W(T) 1% 111K
R358	FB241002	METAL 1/4W(T) 1% 10K
R359	FA040103	CARBON 1/8W(T) 5% 10K
R360	FA040101	CARBON 1/8W(T) 5% 100OHM
R361	FA040101	CARBON 1/8W(T) 5% 100OHM
R362	FA040103	CARBON 1/8W(T) 5% 10K
R363	FA040101	CARBON 1/8W(T) 5% 100OHM
R364	FA040101	CARBON 1/8W(T) 5% 100OHM
R366	FA040101	CARBON 1/8W(T) 5% 100OHM
R367	FA040103	CARBON 1/8W(T) 5% 10K
R368	FA360102	CARBON 1/2W/M(T) 5% 1K
R369	FA240102	CARBON 1/4W 5% 1KOHM
R370	FA040131	CARBON 1/8W(T) 5% 130H
R371	FA240222	CARBON 1/4W(T) 5% 2.2K
R372	FA040104	CARBON 1/8W(T) 5% 100K
R373	FA040104	CARBON 1/8W(T) 5% 100K
R374	FA040470	CARBON 1/8W(T) 5% 470OHM
R375	FA040472	CARBON 1/8W(T) 5% 4.7K
R376	FA040472	CARBON 1/8W(T) 5% 4.7K
R377	FA040122	CARBON 1/8W(T) 5% 1.2K
R378	FA040103	CARBON 1/8W(T) 5% 10K
R379	FA240155	CARBON 1/4W(T) 5% 1.5M
R380	FA240155	CARBON 1/4W(T) 5% 1.5M
R382	FB710339	MOF 3W/M(A) 5% 3.3OHM
R385	FB245102	METAL 1/4W(T) 1% 51K
R386	FA040123	CARBON 1/8W(T) 5% 12K
R388	FB242202	METAL 1/4W(T) 1% 22K
R389	FA040621	CARBON 1/8W(T) 5% 620 H
R390	FA240563	CARBON 1/4W(T) 5% 56K

SYMBOL	Part No for NPG	DESCRIPTION
R392	FA040103	CARBON 1/8W(T) 5% 10K
R402	FA330271	CARBON 1/2W(T)5% 270H
R403	FB470010	MOF 1W/M(A) 5% 1H
R404	FA240229	CARBON 1/4W(T) 5% 2.2H
R405	FB275601	METAL 1/4W/M(T) 1% 5.6K
R406	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R407	FB470758	MOF 1W/M(A) 5% 0.75H
R408	FA330271	CARBON 1/2W(T)5% 270H
R409	FB275601	METAL 1/4W/M(T) 1% 5.6K
R410	FB271801	METAL 1/4W/M(T) 1% 1.8K F
R411	FA240222	CARBON 1/4W(T) 5% 2.2K
R412	FA040103	CARBON 1/8W(T) 5% 10K
R413	FA040472	CARBON 1/8W(T) 5% 4.7K
R414	FA040332	CARBON 1/8W(T) 5% 3.3K
R415	FA040104	CARBON 1/8W(T) 5% 100K
R451	FB246203	METAL 1/4W(T) 1% 620K
R452	FB241003	METAL 1/4W(T) 1% 100K
R453	FB246203	METAL 1/4W(T) 1% 620K
R454	FB247501	METAL 1/4W(T) 1% 7.5K
R455	FB243602	METAL 1/4W(T) 1% 36K
R456	FB241003	METAL 1/4W(T) 1% 100K
R457	FA040271	CARBON 1/8W(T) 5% 270H
R460	FB246203	METAL 1/4W(T) 1% 620K
R461	FB241003	METAL 1/4W(T) 1% 100K
R462	FB246203	METAL 1/4W(T) 1% 620K
R463	FB241003	METAL 1/4W(T) 1% 100K
R464	FA330910	CARBON 1/2W(T) 5% 91H
R467	FA040512	CARBON 1/8W(T) 5% 5.1K
R468	FA040512	CARBON 1/8W(T) 5% 5.1K
R469	FA040470	CARBON 1/8W(T) 5% 470HM
R470	FA040470	CARBON 1/8W(T) 5% 470HM
R471	FA040133	CARBON 1/8W(T) 5% 13K
R472	FA040432	CARBON 1/8W(T) 5% 4.3K
R473	FA040102	CARBON 1/8W(T) 5% 1K
R474	FA040122	CARBON 1/8W(T) 5% 1.2K
R475	FA040432	CARBON 1/8W(T) 5% 4.3K
R476	FA040332	CARBON 1/8W(T) 5% 3.3K
R479	FA330910	CARBON 1/2W(T) 5% 91H
R480	FB570390	MOF 2W/M(B) 5% 39H
R481	FB560390	MOF 2W/M(A) 5% 39H
R482	FB560390	MOF 2W/M(A) 5% 39H
R483	FB560390	MOF 2W/M(A) 5% 39H
R484	FA040122	CARBON 1/8W(T) 5% 1.2K
R485	FA040102	CARBON 1/8W(T) 5% 1K
R501	FA040101	CARBON 1/8W(T) 5% 100OHM
R502	FA040101	CARBON 1/8W(T) 5% 100OHM
R503	FA040223	CARBON 1/8W(T) 5% 22K
R504	FA040222	CARBON 1/8W(T) 5% 2.2K

SYMBOL	Part No for NPG	DESCRIPTION
R505	FB242611	METAL 1/4W(T) 1% 2.61K
R506	FB246040	METAL 1/4W(T) 1% 604OHM
R507	FA040101	CARBON 1/8W(T) 5% 100OHM
R508	FA040101	CARBON 1/8W(T) 5% 100OHM
R509	FA040103	CARBON 1/8W(T) 5% 10K
R510	FA040103	CARBON 1/8W(T) 5% 10K
R511	FB241802	METAL 1/4W(T) 1% 18K
R512	FA040153	CARBON 1/8W(T) 5% 15K
R513	FA240102	CARBON 1/4W 5% 1KOHM
R514	FA040103	CARBON 1/8W(T) 5% 10K
R515	FA040103	CARBON 1/8W(T) 5% 10K
R516	FA040473	CARBON 1/8W(T) 5% 47K
R517	FA240103	CARBON 1/4W(T) 5% 10K
R518	FA040222	CARBON 1/8W(T) 5% 2.2K
R519	FA040103	CARBON 1/8W(T) 5% 10K
R520	FA040472	CARBON 1/8W(T) 5% 4.7K
R521	FA240102	CARBON 1/4W 5% 1KOHM
R522	FA040683	CARBON 1/8W(T)5% 68K OHM
R523	FA040220	CARBON 1/8W(T) 5% 22H
R524	FA040103	CARBON 1/8W(T) 5% 10K
R525	FB560278	MOF 2W/M(A) 5% 0.27H
R526	FA040222	CARBON 1/8W(T) 5% 2.2K
R527	FA040103	CARBON 1/8W(T) 5% 10K
R528	FB710561	MOF 3W/M(A) 5% 560OHM
R529	FA040103	CARBON 1/8W(T) 5% 10K
R530	FB480109	MOF 1W/M(B) 5% 1H
R531	80002031	FUSEABLE RES 1/2W(A)0.22H
R532	FB248202	METAL 1/4W(T) 1% 82K
R533	FB242102	METAL 1/4W(T) 1% 21K
R534	FA040103	CARBON 1/8W(T) 5% 10K
R535	FA040104	CARBON 1/8W(T) 5% 100K
R536	80011181	RES FUSEABLE 1/2W/A(M)22H
R539	FA040222	CARBON 1/8W(T) 5% 2.2K
R540	FA040102	CARBON 1/8W(T) 5% 1K
R701	FA040103	CARBON 1/8W(T) 5% 10K
R702	FA040472	CARBON 1/8W(T) 5% 4.7K
R703	FA040101	CARBON 1/8W(T) 5% 100OHM
R704	FA040101	CARBON 1/8W(T) 5% 100OHM
R705	FA040103	CARBON 1/8W(T) 5% 10K
R706	FA040472	CARBON 1/8W(T) 5% 4.7K
R707	FA240105	CARBON 1/4W(T) 5% 1M
R708	FA040472	CARBON 1/8W(T) 5% 4.7K
R709	FA040472	CARBON 1/8W(T) 5% 4.7K
R710	FA040472	CARBON 1/8W(T) 5% 4.7K
R711	FA040103	CARBON 1/8W(T) 5% 10K
R712	FA040472	CARBON 1/8W(T) 5% 4.7K
R713	FA040104	CARBON 1/8W(T) 5% 100K
R714	FA040102	CARBON 1/8W(T) 5% 1K

SYMBOL	Part No for NPG	DESCRIPTION
R715	FA040472	CARBON 1/8W(T) 5% 4.7K
R716	FA040472	CARBON 1/8W(T) 5% 4.7K
R717	FA040472	CARBON 1/8W(T) 5% 4.7K
R719	FA040101	CARBON 1/8W(T) 5% 100OHM
R721	FA040101	CARBON 1/8W(T) 5% 100OHM
R722	FA040103	CARBON 1/8W(T) 5% 10K
R723	FA040101	CARBON 1/8W(T) 5% 100OHM
R724	FA040103	CARBON 1/8W(T) 5% 10K
R725	FA040103	CARBON 1/8W(T) 5% 10K
R726	FA040103	CARBON 1/8W(T) 5% 10K
R727	FA040472	CARBON 1/8W(T) 5% 4.7K
R728	FA040103	CARBON 1/8W(T) 5% 10K
R729	FA040472	CARBON 1/8W(T) 5% 4.7K
R730	FA040472	CARBON 1/8W(T) 5% 4.7K
R731	FA040472	CARBON 1/8W(T) 5% 4.7K
R732	FA040101	CARBON 1/8W(T) 5% 100OHM
R733	FA040101	CARBON 1/8W(T) 5% 100OHM
R734	FA040102	CARBON 1/8W(T) 5% 1K
R735	FA040471	CARBON 1/8W(T) 5% 470OHM
R736	FA040102	CARBON 1/8W(T) 5% 1K
R737	FA040472	CARBON 1/8W(T) 5% 4.7K
R738	FA040103	CARBON 1/8W(T) 5% 10K
R739	FA040103	CARBON 1/8W(T) 5% 10K
R740	FA040472	CARBON 1/8W(T) 5% 4.7K
R741	FA040103	CARBON 1/8W(T) 5% 10K
R742	FA040103	CARBON 1/8W(T) 5% 10K
R743	FA040103	CARBON 1/8W(T) 5% 10K
R745	FA040393	CARBON 1/8W(T) 5% 39K
R746	FA040182	CARBON 1/8W(T) 5% 1.8K
R747	FA040182	CARBON 1/8W(T) 5% 1.8K
R748	FA040472	CARBON 1/8W(T) 5% 4.7K
R749	FA040472	CARBON 1/8W(T) 5% 4.7K
R750	FA040103	CARBON 1/8W(T) 5% 10K
R751	FB244701	METAL 1/4W(T) 1% 4.7K
R752	FA040472	CARBON 1/8W(T) 5% 4.7K
R753	FB242201	METAL 1/4W(T) 1% 2.2K
R754	FA040103	CARBON 1/8W(T) 5% 10K
R756	FA040472	CARBON 1/8W(T) 5% 4.7K
R757	FA040472	CARBON 1/8W(T) 5% 4.7K
R759	FA040472	CARBON 1/8W(T) 5% 4.7K
R760	FA040392	CARBON 1/8W(T) 5% 3.9K
R762	FA040511	CARBON 1/8W(T) 5% 510OHM
R764	FA040132	CARBON 1/8W(T) 5% 1.3K

*** CAPACITORS ***

C102	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C103	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C104	GJ047400	SAFETY X-CAP 0.47U/275V M

SYMBOL	Part No for NPG	DESCRIPTION
C105	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C106	GJH102E5	SAFE Y-CAP/S 1000P/400V M
C107	GKA337E5	POWER ELECT 85C 330U/400V
C108	GA347625	ELECT 85°C/T 47U/16V M
C109	GB7103H3	CERAMIC Y5P(B)/T0.01U/1KV
C110	GA310655	ELECT 85°C/T 10U/50V M
C111	GAA22745	ELECT 85C/A 220U/35V M
C112	GA310655	ELECT 85°C/T 10U/50V M
C113	GA310655	ELECT 85°C/T 10U/50V M
C114	GA310655	ELECT 85°C/T 10U/50V M
C115	GF222252	MEF CAP BOX 0.0022U/50V J
C116	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C117	GB615152	CERAMIC SL/T 150P/50V J
C118	GB747153	CC Y5P(B)/T 470P/50V K
C119	GF233252	MEF CAP BOX 0.0033U/50V J
C120	GA347755	ELECT 85OC/T 470U/50V M
C121	GF210452	MEF CAP BOX 0.1U/50V J
C131	GA3105E5	ELECT 85OC/T 1U/400V M
C132	GA310555	ELECT 85°C/T 1U/50V M
C135	GJC222E5	SAFE Y-CAP/D 2200P/400V M
C151	GAI10775	ELECT 105 C/T 100U/100V M
C152	GA347755	ELECT 85OC/T 470U/50V M
C153	GAB10835	ELECT 105°C/A1000U/25V M
C154	GA322735	C,ELEC 220UF 25V M
C155	GAA10825	ELECT 85°C/A 1000U/16V M
C157	GAA10775	ELECT 85C/ A 100U/100V M
C158	GAA47735	ELECT 85C/A 470U/25V M
C159	GA347635	ELECT 85°C/T 47U/25V M
C160	GA322735	C,ELEC 220UF 25V M
C162	GA315725	ELECT 85OC/T 150U/16V M
C163	GB7221F3	CERAMIC Y5P(B)/T 220P/500
C181	GA310655	ELECT 85°C/T 10U/50V M
C182	GA347635	ELECT 85°C/T 47U/25V M
C202	GE210352	CQ PEI/T 0.01U/50V J
C203	GE210352	CQ PEI/T 0.01U/50V J
C205	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C206	GA310655	ELECT 85°C/T 10U/50V M
C207	GB910358	CC Z5V(F)/T 0.01U/50V Z
C209	GA310655	ELECT 85°C/T 10U/50V M
C210	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C211	GB910358	CC Z5V(F)/T 0.01U/50V Z
C212	GA410575	ELECT NP/T 1U/100V M
C213	GA210575	C,ELEC 1UF 100V M
C214	GB712152	CERAMIC Y5P(B)/T 120P/50V
C230	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C231	GB910358	CC Z5V(F)/T 0.01U/50V Z
C232	GA410575	ELECT NP/T 1U/100V M
C233	GA210575	C,ELEC 1UF 100V M

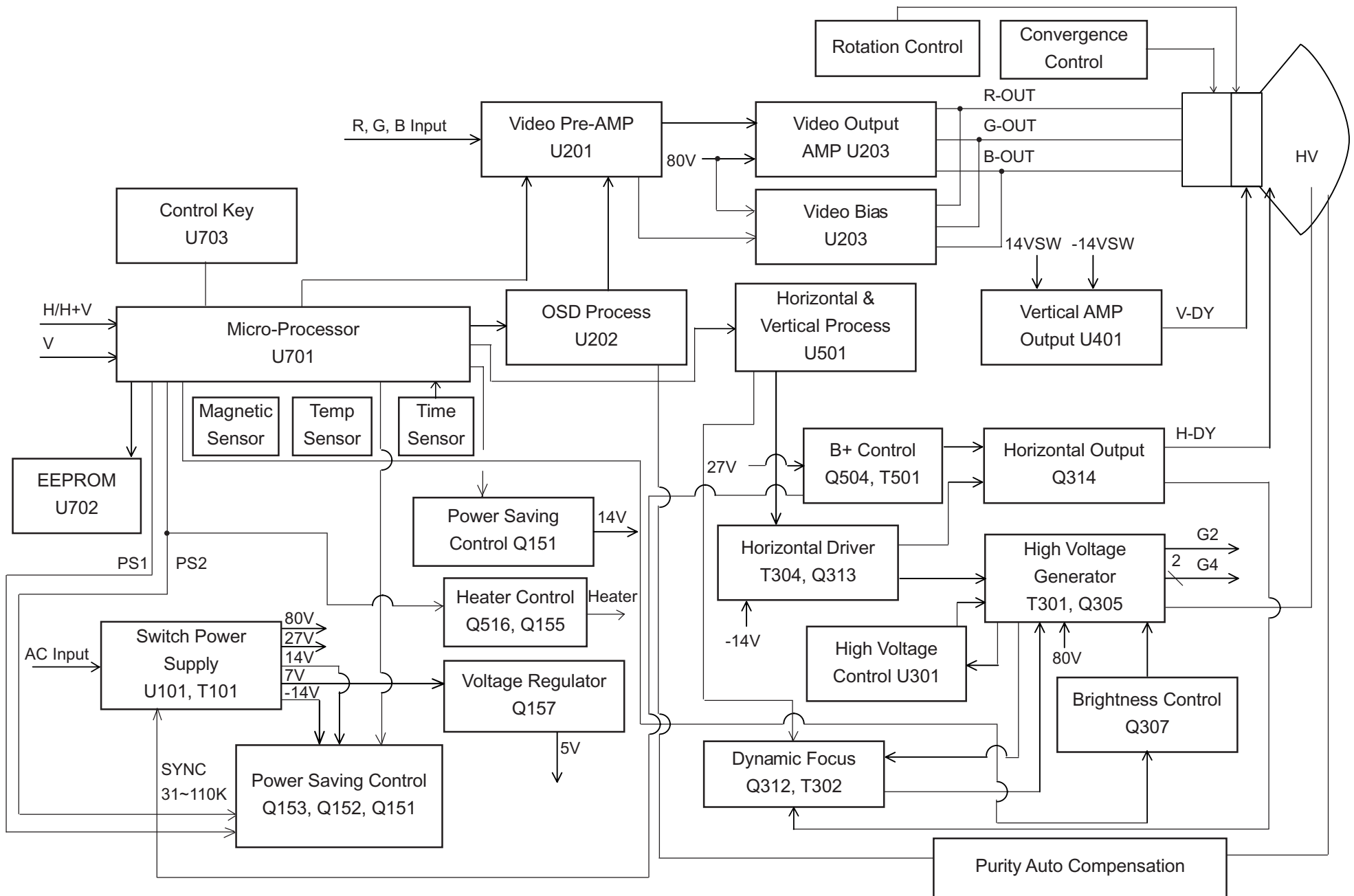
SYMBOL	Part No for NPG	DESCRIPTION
C234	GB712152	CERAMIC Y5P(B)/T 120P/50V
C250	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C251	GB910358	CC Z5V(F)/T 0.01U/50V Z
C252	GA410575	ELECT NP/T 1U/100V M
C253	GA210575	C,ELEC 1UF 100V M
C254	GB712152	CERAMIC Y5P(B)/T 120P/50V
C270	GB656052	CERAMIC SL/T 56P/50V
C272	GA247625	ELECT 105°C/T 47U/16V M
C273	GB910358	CC Z5V(F)/T 0.01U/50V Z
C274	GB7102F3	CC Y5P(B)/T 1000P/500V K
C275	GB7222F3	CERAMIC Y5P(B) 2200P/500V
C276	GA222675	ELECT 105°C/T 22U/100V M
C277	GAA10575	ELECT 85C/A 1U/100V M
C278	GB7102F3	CC Y5P(B)/T 1000P/500V K
C279	GF222462	MEF CAP BOX 0.22U/63V J
C27A	GB618152	CERAMIC SL/T 180P/50V J
C27E	GB618152	CERAMIC SL/T 180P/50V J
C280	GF222472	MEF CAP BOX 0.22U/100V J
C282	GA310555	ELECT 85°C/T 1U/50V M
C283	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C284	GB7102F3	CC Y5P(B)/T 1000P/500V K
C285	GB9332H3	CC Z5V(F)/T 3300P/1KV Z
C286	GB9472H3	CERAMIC Z5V(F)/T 4700P/1K
C287	GB910358	CC Z5V(F)/T 0.01U/50V Z
C288	GF222462	MEF CAP BOX 0.22U/63V J
C289	GA347625	ELECT 85°C/T 47U/16V M
C290	GB910358	CC Z5V(F)/T 0.01U/50V Z
C292	GB782153	CERAMIC Y5P(B)/T 820P/50V
C293	GA310655	ELECT 85°C/T 10U/50V M
C294	GB6101F2	CERAMIC SL/T 100P 500V K
C295	GA210675	ELECT 105OC/T 10U/100V M
C296	GA210675	ELECT 105OC/T 10U/100V M
C297	GB7101F3	CERAMIC 100P/500V
C298	GA347555	ELECT 85°C/T 4.7U/50V M
C299	GA347555	ELECT 85°C/T 4.7U/50V M
C29A	GA347555	ELECT 85°C/T 4.7U/50V M
C29C	GA347555	ELECT 85°C/T 4.7U/50V M
C29E	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C29G	GB7102F3	CC Y5P(B)/T 1000P/500V K
C303	GB710253	CC Y5P(B)/T 1000P/50V K
C304	GF210452	MEF CAP BOX 0.1U/50V J
C305	GB768153	CERAMIC Y5P(B)/T 680P/50V
C306	GF210352	MEF CAP BOX 0.01U/50V J
C307	GB556052	CERAMIC NPO(CH)/T 56P/50V
C308	GFE102H2	PLASTIC PMS/A 1000P/1KV J
C309	GF222452	MEF CAP BOX 0.22U/50V J
C310	GF210562	MEF CAP BOX 1UF 63V J
C311	GA3105D5	ELECT 85OC/T 1U/350V M

SYMBOL	Part No for NPG	DESCRIPTION
C312	GA347655	C,ELEC 47UF 50V M
C313	GAA47585	ELECT 85°C/A 4.7U/250V M
C314	GA322555	ELECT 85°C/T 2.2U/50V M
C316	GB910358	CC Z5V(F)/T 0.01U/50V Z
C317	GB7272H3	CERAMIC Y5P(B)/T 2700P/1K
C320	GAA22775	ELECT 85OC/A 220U/100V M
C321	GA347635	ELECT 85°C/T 47U/25V M
C322	GAB10835	ELECT 105°C/A1000U/25V M
C323	GA310555	ELECT 85°C/T 1U/50V M
C324	GB7471F3	CC Y5P(B)/T 470P/500V K
C326	GB910358	CC Z5V(F)/T 0.01U/50V Z
C327	GF210462	MEF CAP BOX 0.1U/63V J
C328	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C329	GF210272	MEF CAP BOX 0.001U/100V J
C330	GF210252	MEF CAP BOX 0.001U/50V J
C331	GFB10482	PLASTIC MPP/A 0.10U/250VJ
C332	GFE512P2	C FILM 5100P 2.5KV J PMS/
C333	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C334	GFD27482	PLASTIC PMM/A 0.27U/250V
C335	GA310555	ELECT 85°C/T 1U/50V M
C336	GFD51482	PLASTIC PMM/A 0.51U/250V
C337	GA347555	ELECT 85°C/T 4.7U/50V M
C338	GFB12582	PLASTIC MPP/A 0.12U/250V
C339	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C340	GFD154E2	PLASTIC PMM/A 0.15U/400V
C341	GFD683E2	PLASTIC PMM/A 0.068U/400V
C342	GA310555	ELECT 85°C/T 1U/50V M
C343	GA310655	ELECT 85°C/T 10U/50V M
C344	GA310555	ELECT 85°C/T 1U/50V M
C345	GB7331H3	CC Y5P(B)/T 330P/1KV K
C347	GE410252	PLASTIC PPN/T 0.001UF/50V
C348	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C349	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C350	GA310725	ELECT 85°C/T 100U/16V M
C351	GB7101H3	CERAMIC 100P/1KV
C352	GB7101H3	CERAMIC 100P/1KV
C353	GA322815	ELECT 85C/T 2200U/10V M
C354	GA347625	ELECT 85°C/T 47U/16V M
C356	GA347555	ELECT 85°C/T 4.7U/50V M
C357	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C358	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C359	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C360	GF222452	MEF CAP BOX 0.22U/50V J
C361	GF282252	MEF CAP BOX 0.0082U/50V J
C362	GFD204E2	PLASTIC PMM/ 0.2U/400V J
C363	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C364	GB7102F3	CC Y5P(B)/T 1000P/500V K
C401	GAA47735	ELECT 85C/A 470U/25V M

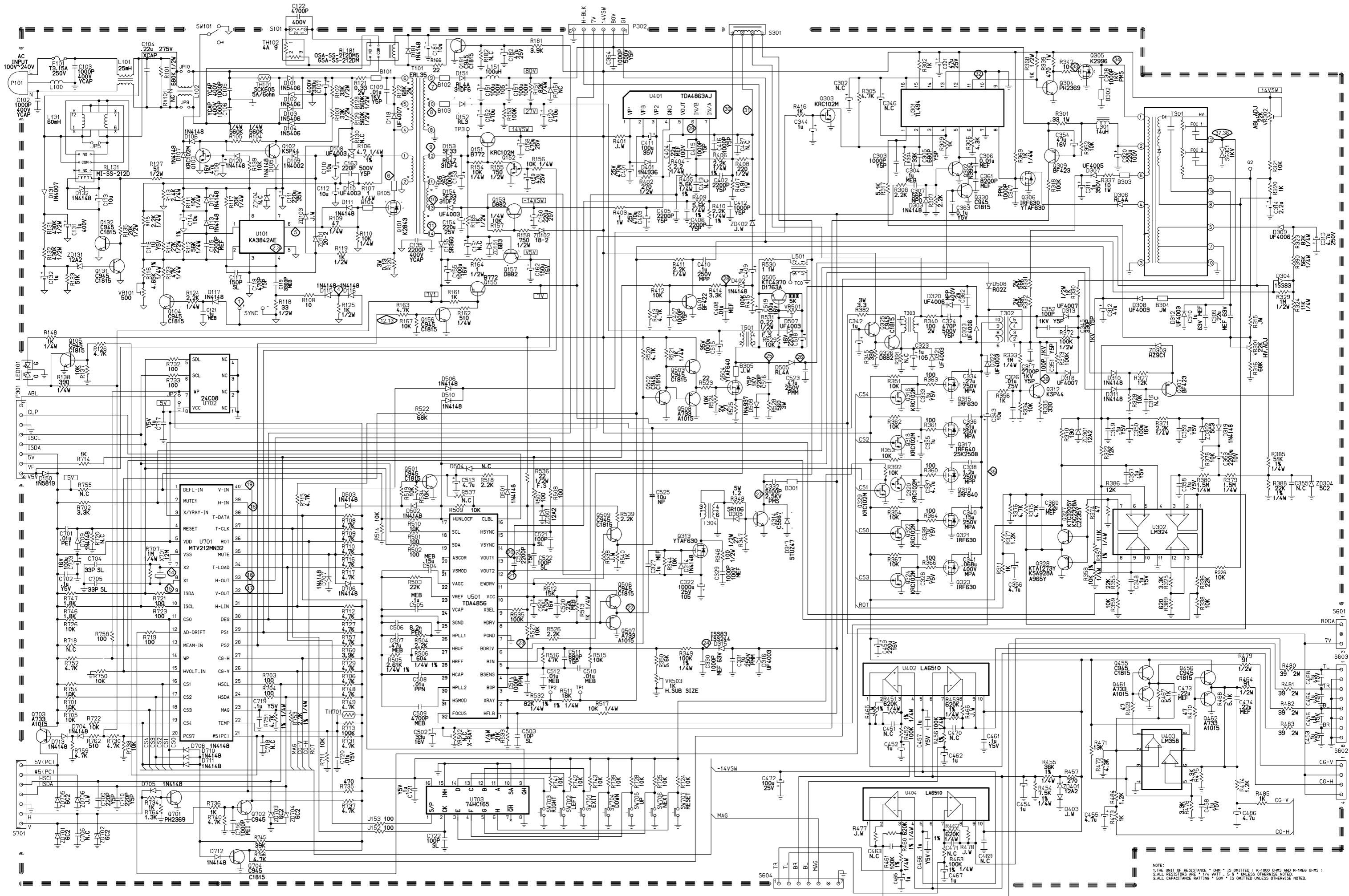
SYMBOL	Part No for NPG	DESCRIPTION
C402	GB722253	CC Y5P(B)/T 2200P/50V K
C403	GAA47735	ELECT 85C/A 470U/25V M
C404	GF222472	MEF CAP BOX 0.22U/100V J
C405	GB722253	CC Y5P(B)/T 2200P/50V K
C406	GB722253	CC Y5P(B)/T 2200P/50V K
C407	GB710253	CC Y5P(B)/T 1000P/50V K
C408	GF210352	MEF CAP BOX 0.01U/50V J
C409	GA310555	ELECT 85°C/T 1U/50V M
C410	GFB10482	PLASTIC MPP/A 0.10U/250VJ
C411	GA310745	ELECT 85C/T 100U/35VM
C412	GB710253	CC Y5P(B)/T 1000P/50V K
C415	GB710253	CC Y5P(B)/T 1000P/50V K
C416	GB710253	CC Y5P(B)/T 1000P/50V K
C452	GA310555	ELECT 85°C/T 1U/50V M
C453	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C454	GA310555	ELECT 85°C/T 1U/50V M
C455	GA347555	ELECT 85°C/T 4.7U/50V M
C456	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C457	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C458	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C459	GA322725	ELECT 85°C/T 220U/16V M
C461	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C462	GA310555	ELECT 85°C/T 1U/50V M
C464	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C465	GA310555	ELECT 85°C/T 1U/50V M
C466	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C467	GA310555	ELECT 85°C/T 1U/50V M
C468	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C472	GAA10735	ELECT 85C/A 100U/25V M
C473	GF222452	MEF CAP BOX 0.22U/50V J
C474	GF222452	MEF CAP BOX 0.22U/50V J
C486	GA347555	ELECT 85°C/T 4.7U/50V M
C501	GA347725	ELECT 85C/T 470U/16VM
C502	GA333625	ELECT 85°C/T 33U/16V M
C503	GB610052	CERAMIC SL/T 10P/50V J
C504	GF215452	MEF CAP BOX 0.15U/50V J
C505	GF210452	MEF CAP BOX 0.1U/50V J
C506	GE382252	PLASTIC 0.0082U/50V
C507	GF247452	MEF CAP BOX 0.47U/50V J
C508	GE410351	PLASTIC PPN/T 0.01UF/50V
C509	GF247252	MEF CAP BOX 0.0047U/50V J
C510	GF210352	MEF CAP BOX 0.01U/50V J
C511	GB768153	CERAMIC Y5P(B)/T 680P/50V
C512	GF210352	MEF CAP BOX 0.01U/50V J
C513	GA347555	ELECT 85°C/T 4.7U/50V M
C514	GE410252	PLASTIC PPN/T 0.001UF/50V
C515	GAA10845	ELECT 85C/A 1000U/35V M
C516	GB7221H3	CERAMIC Y5P(B)/T 220P/1KV

SYMBOL	Part No for NPG	DESCRIPTION
C518	GA310725	ELECT 85°C/T 100U/16V M
C519	GA310725	ELECT 85°C/T 100U/16V M
C520	GF222452	MEF CAP BOX 0.22U/50V J
C521	GB610153	CERAMIC SL/T 100P/50V K
C522	GB610153	CERAMIC SL/T 100P/50V K
C523	GFD47482	PLASTIC MPPS/A 0.47U/250V
C524	GB722253	CC Y5P(B)/T 2200P/50V K
C525	GA410655	ELECT NP/T 10U/50V M
C701	GE210352	CQ PEI/T 0.01U/50V J
C702	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C703	GA310725	ELECT 85°C/T 100U/16V M
C704	GB633052	CERAMIC SL/T 33P/50V J
C705	GB633052	CERAMIC SL/T 33P/50V J
C706	GB610152	CERAMIC SL/T 100P/50V J
C709	GB722153	CERAMIC Y5P(B)/T 220P/50V
C710	GB722153	CERAMIC Y5P(B)/T 220P/50V
C716	GE210252	C,PLASTIC 0.001UF 50V J
C717	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C719	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C720	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C721	GB210458	CERAMIC Y5V/T 0.1U/50V Z
C722	GB610153	CERAMIC SL/T 100P/50V K

BLOCK DIAGRAM (FP912SB / DPro930SB)

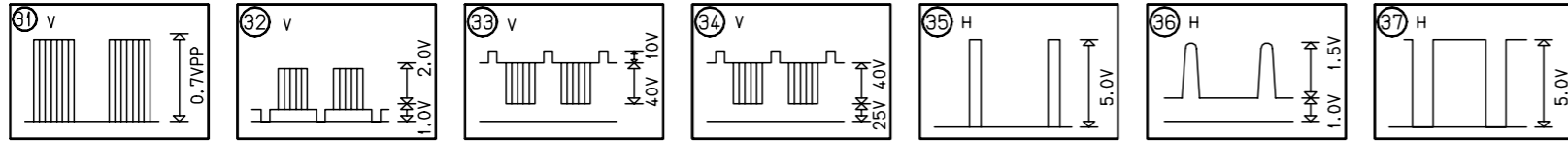


SCHEMATIC DIAGRAM MAIN PWB

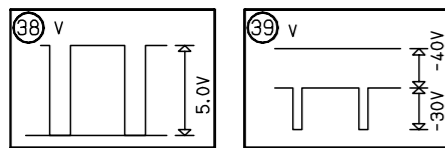
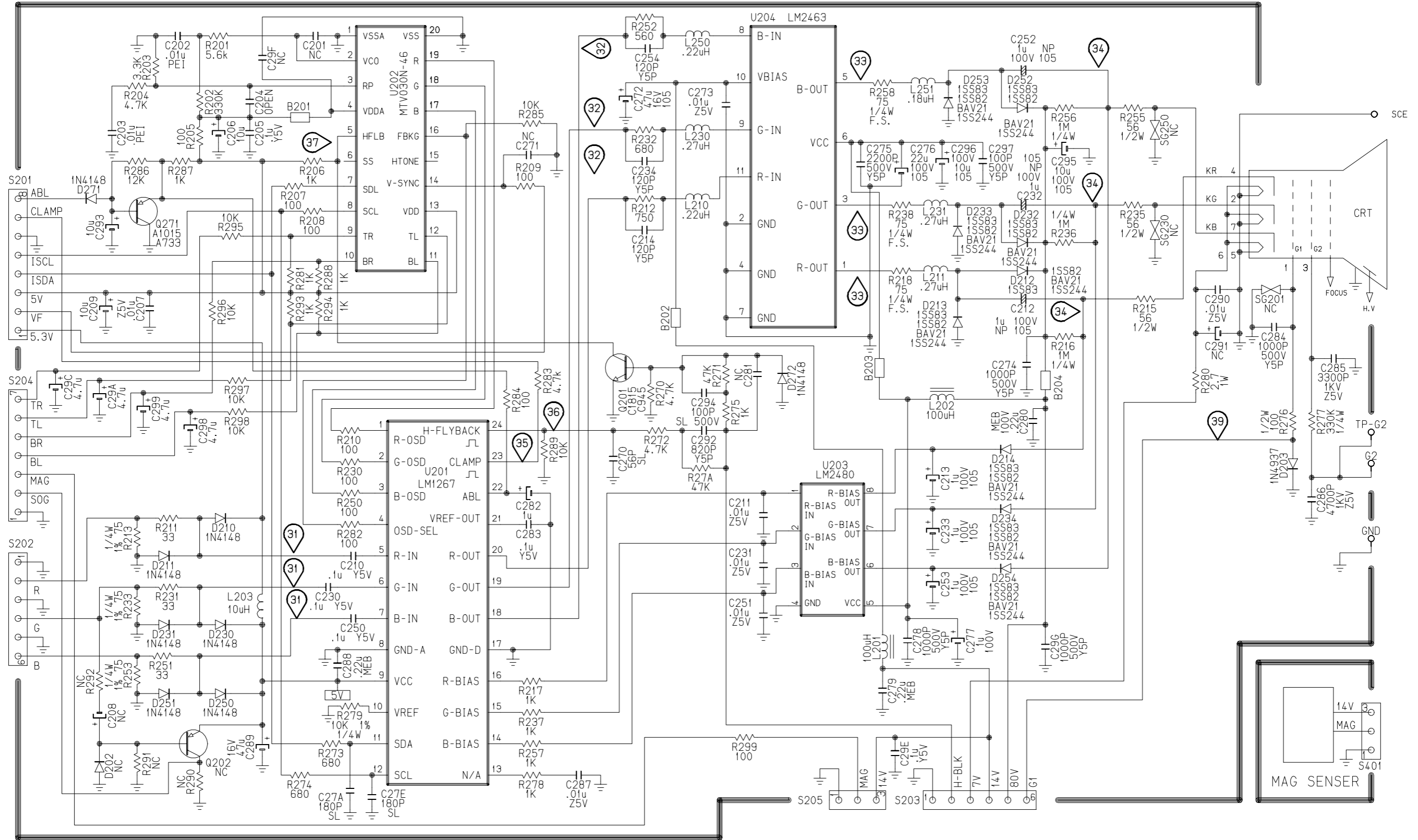


NOTE:
 1. THE UNIT OF RESISTANCE * OHM * IS OMITTED 1-K=1000 OHMS AND M=MEG OHMS 1
 2. ALL RESISTORS ARE 1/4 WATT 5% UNLESS OTHERWISE NOTED.
 3. ALL CAPACITANCE RATING 50V UNLESS OTHERWISE NOTED.

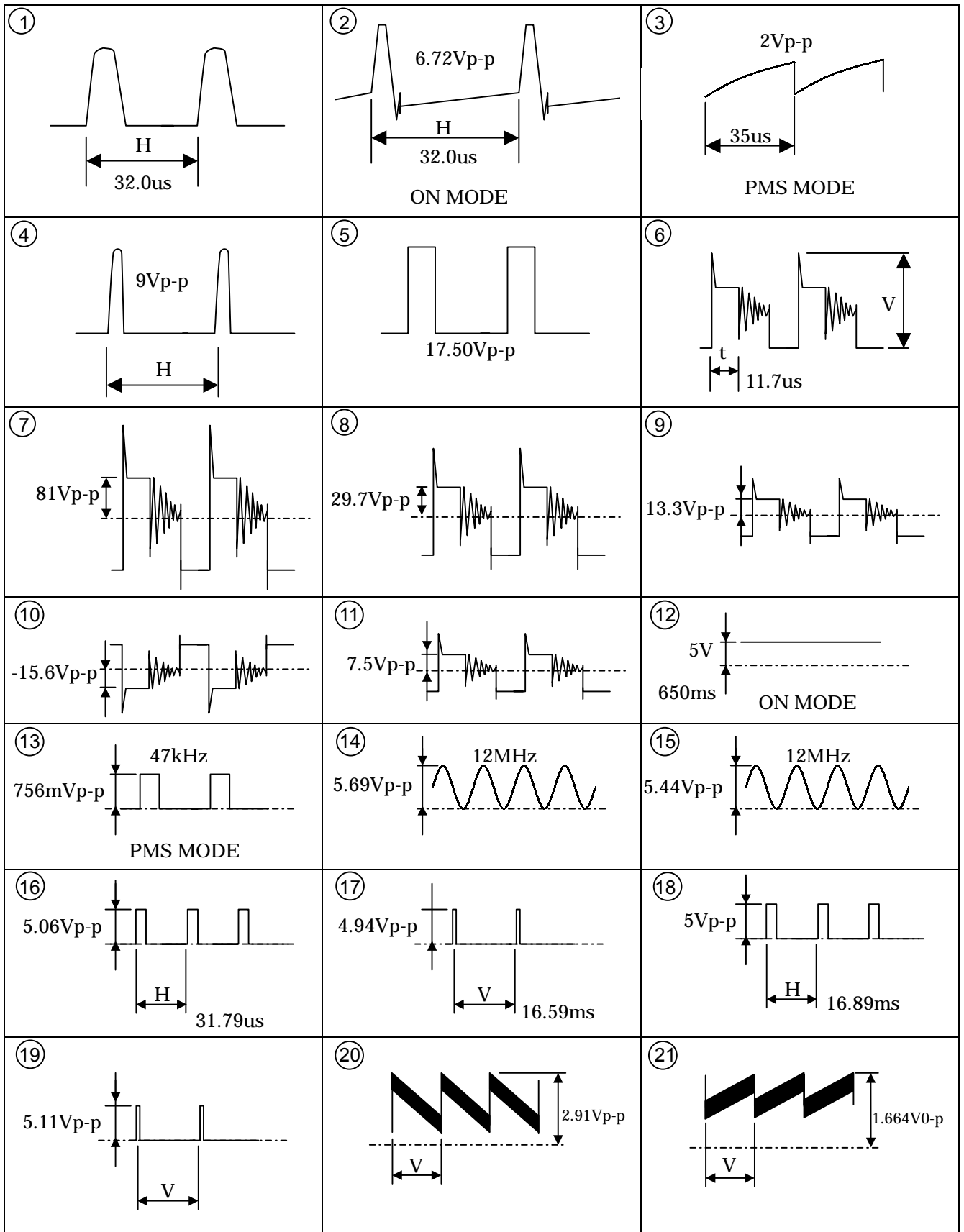
SCHEMATIC DIAGRAM CRT PWB

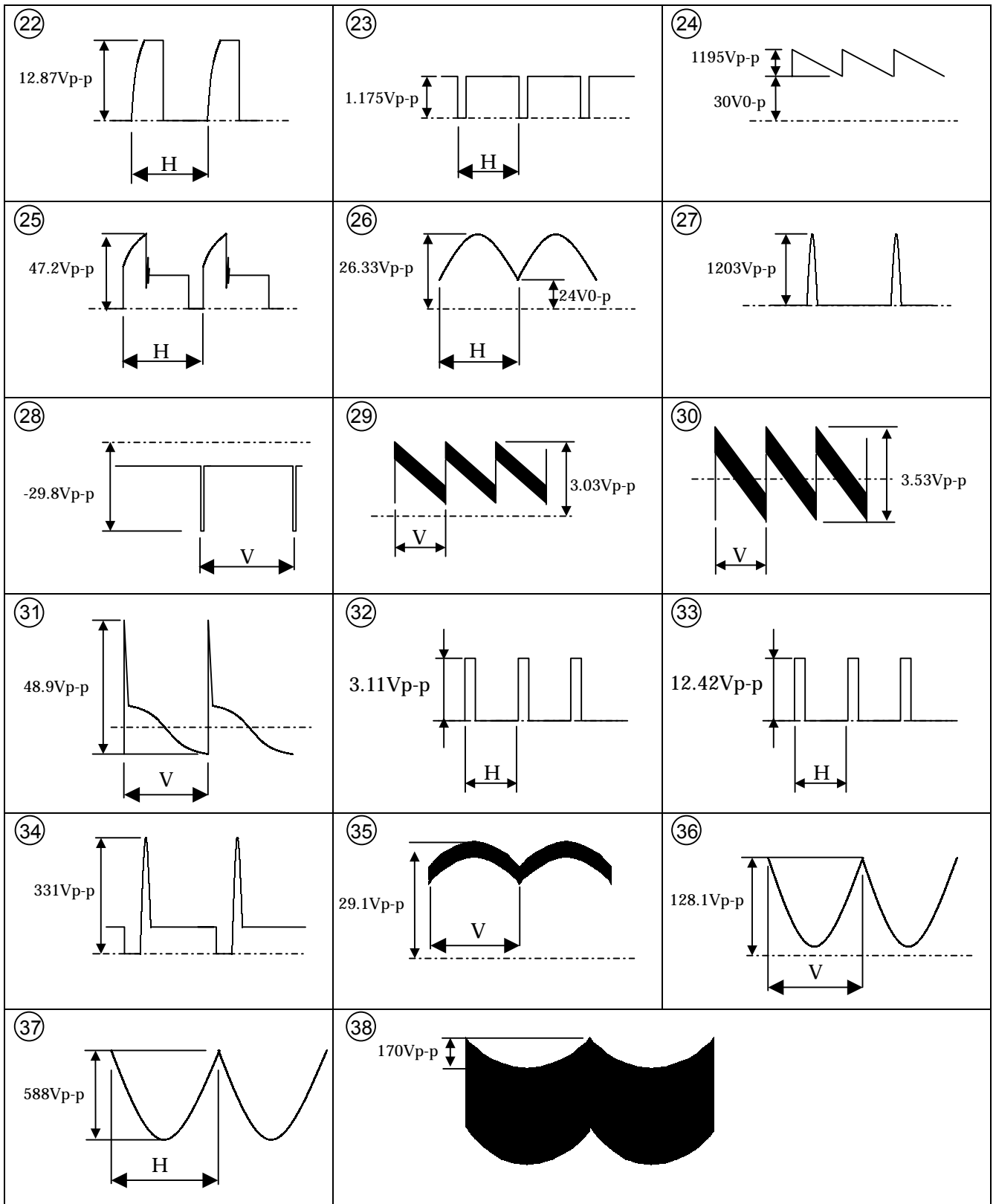


NOTE:
 1. THE UNIT OF RESISTANCE * OHM * IS OMITTED (K=1000 OHMS AND M=1MEG OHMS)
 2. ALL RESISTORS ARE * 1/8 WATT , 5% * UNLESS OTHERWISE NOTED.
 3. ALL CAPACITANCE RATING * 50V * IS OMITTED UNLESS OTHERWISE NOTED.
 4. CAPACITOR VALUES ARE IN FIFARAD, $\mu F(10^{-6})$, $nF(10^{-9})$, $pF(10^{-12})$
 5. VOLTAGES AND WAVEFORMS ARE MEASURED UNDER THE "H" CHARACTER SIGNALS IN THE CONDITIONS OF THE CONTRAST CONTROL IS MAXIMUM, THE BRIGHTNESS CONTROL IS CUT OFF AND ALL OTHER CONTROLS ARE NORMAL OPERATION.
 6. H--HORIZONTAL RATE, V--VERTICAL RATE.
 7. VOLTAGES AND WAVEFORMS ARE MEASURED UNDER THE FOLLOWING SYNC. AND VIDEO EXCEPT WHERE OTHERWISE INDICATED.
 AC INPUT : 100V
 SYNC : HORIZONTAL RATE 31.5KHz TTL LEVEL NEGATIVE
 VERTICAL RATE 60Hz TTL LEVEL NEGATIVE
 VIDEO : ANALOG 0.7Vpp POSITIVE



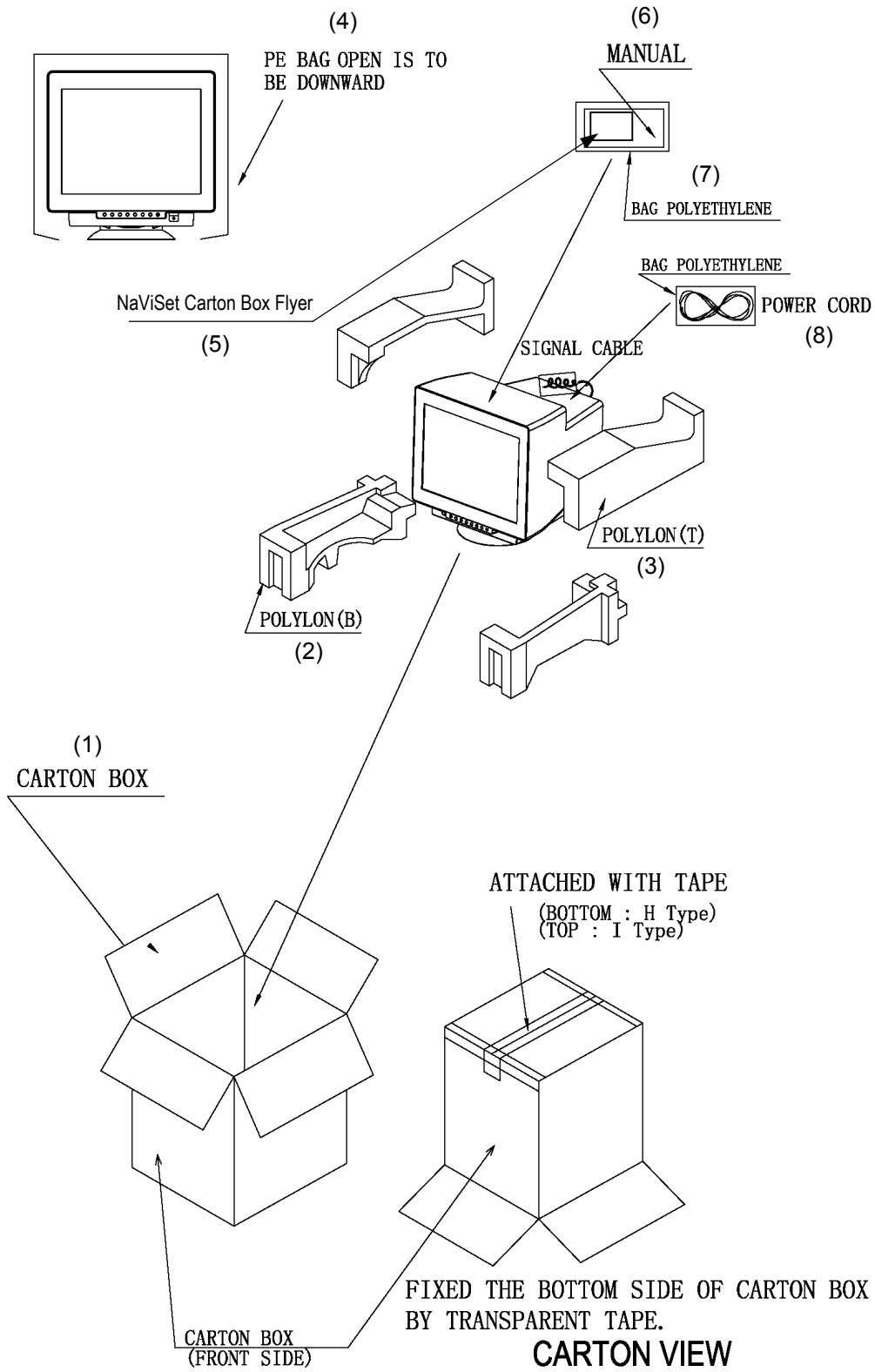
WAVE FORM MAIN PWB





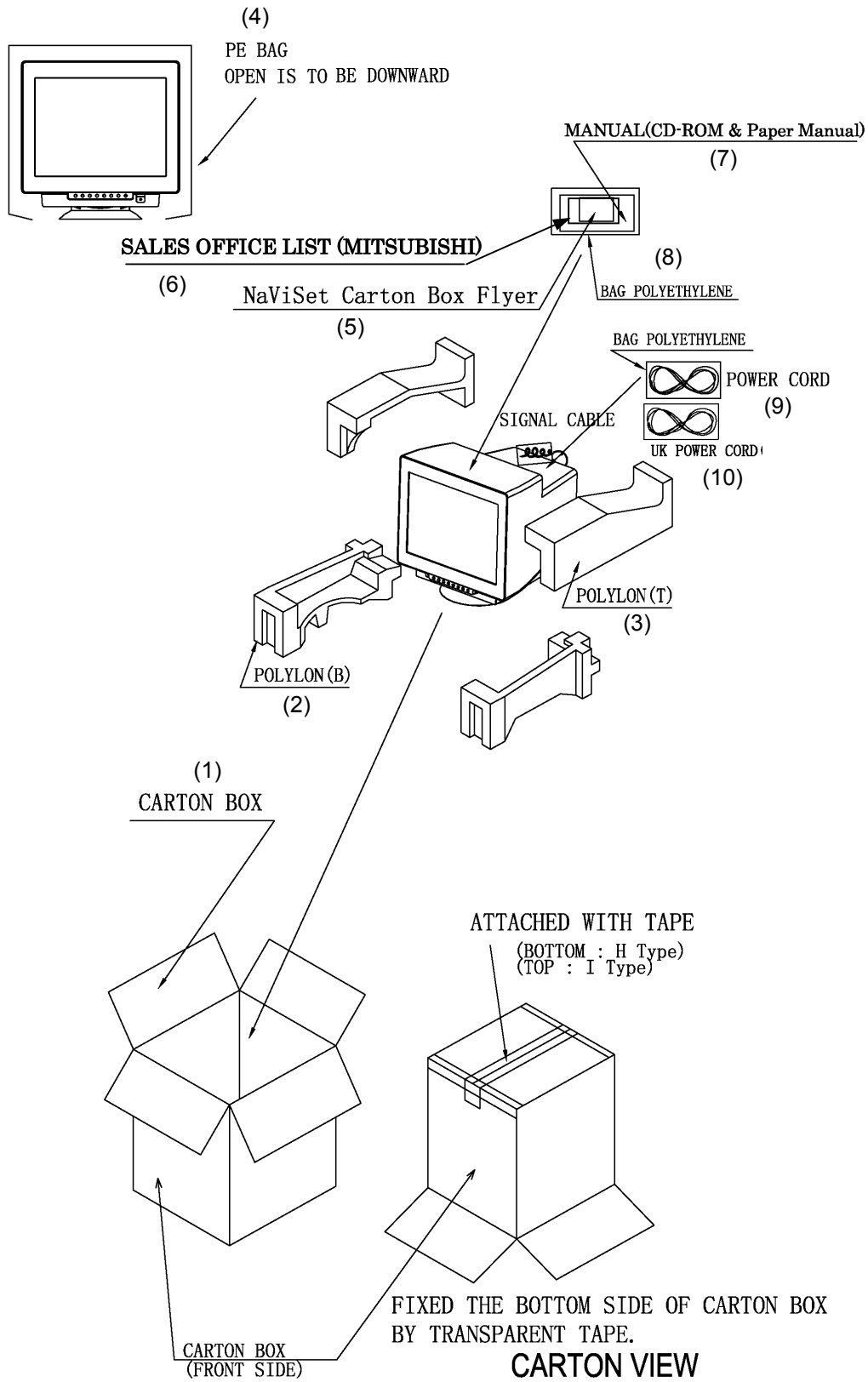
Packing specification

A version



ITEM	DESCRIPTION	Part No for NPG
(1)	CARTON BOX DPRO930BBK(A)	13202041
(2)	POLYLON(B)	13400771
(3)	POLYLON(T)	13400761
(4)	PE BAG(500*480*850+WARNIN	13700301
(5)	NAVISET CARTON BOX FLYER	15900251
(6)	OWNERS MANUAL DPRO930SB(A	15501391
(7)	BAG POLYETHYLENE	13700021
(8)	POWER CORD2P2MCOLORSG8508	80001631

B version



ITEM	DESCRIPTION	Part No for NPG
(1)	CARTON BOX DPRO930BBK(B)	13202051
(2)	POLYLON(B)	13400771
(3)	POLYLON(T)	13400761
(4)	PE BAG(500*480*850+WARNIN	13700301
(5)	NAVISET CARTON BOX FLYER	15900251
(6)	SALES OFFICE LIST (MITSUB	15900261
(7)	OWNERS MANUAL DPRO930SB(B	15501401
(8)	BAG POLYETHYLENE	13700021
(9)	POWER CORD 3P 1.8M EUROPE	80001651
(10)	POWER CORD 3P 1.8M U.K. N	80008691