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**Telital GS/GSM  
DUAL MODE USER TERMINAL**

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**TECHNICAL  
MANUAL**

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**Code: 1–vv0300361**

**Rev. 1**

**Jul. 19, 1999**

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**TECHNICAL MANUAL**  
**Telital GS/GSM**  
**DUAL MODE USER TERMINAL**

<b>REVISION INDEX</b>			
<b>REV MOD.</b>	<b>SUBJECT OF MODIFICATION</b>	<b>DATE</b>	<b>SIGNATURE</b>
1	Updated to HW revision 1	19.07.99	



## 1 INTRODUCTION

The Telital GS/GSM Dual Mode User Terminal is an handheld cellular radiotelephone operating under the terrestrial GSM 900 MHz / satellite Globalstar system at frequencies over 1,5GHz at public radiotelephone network.

The design and development of the Telital GS/GSM Dual Mode User Terminal is in line with the following documents:

TBR19 - Edito 5 – European digital cellular telecommunications system (Phase II); Attachment requirements for Global System for Mobile communications (GSM) mobile stations; access.

TBR20 - Edito 3 – European digital cellular telecommunications system (Phase II); Attachment requirements for Global System for Mobile communications (GSM) mobile stations; Telephony.

TBR41 - Edition 1 – Satellite Personal Communications Networks (S-PCN); Mobile Earth Stations (MESs), including handheld earth stations, for S-PCN in the 1,6/2,4 GHz bands under the Mobile Satellite Service (MSS); Terminal essential requirements.

Qualcomm specifications 80-25015-1 X6 date 07.09.97

This apparatus is composed of the following accessories:

- Universal Battery charger;
- Data Terminal Adapter;
- Car Kit.

These accessories are described on dedicated user manuals.

## 1.1 DIFFERENCES BETWEEN HW REVISION 0 AND HW REVISION 1

The differences between the HW release 0 and the HW release 1 are the following:

CS710C      Changed microphone from Electret to BOSUNG;

                 The following components are added: C166, C164.

CS680B      The following components are changed: C18, C19, R25, C113, R31, U11

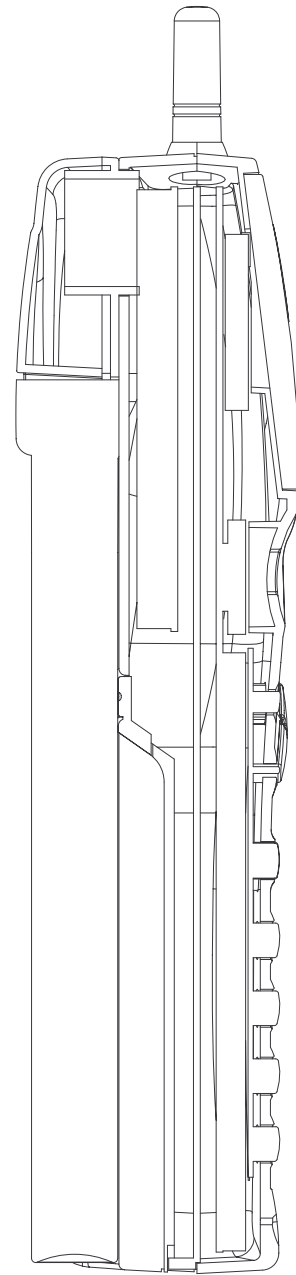
                 The following components are added: R133, C64, R130, TP42, TP43.

For a detailed description of changes see Parag.4 List of modifications.

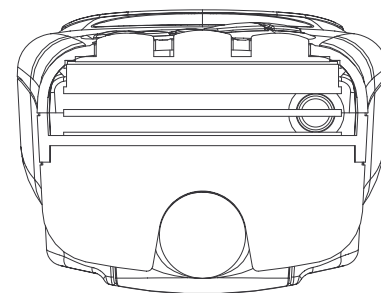
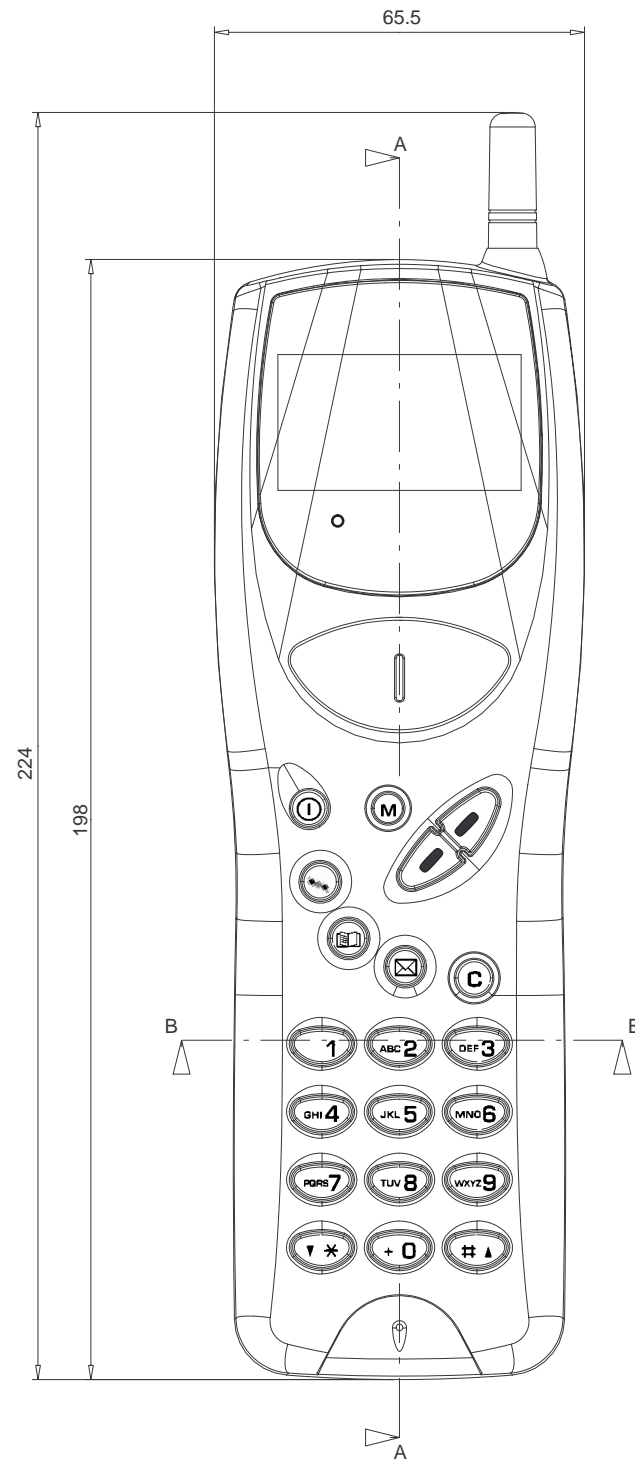
## **2 MECHANICAL VIEW**

### 2.1 Mechanical view Telital GS/GSM Dual Mode User Terminal

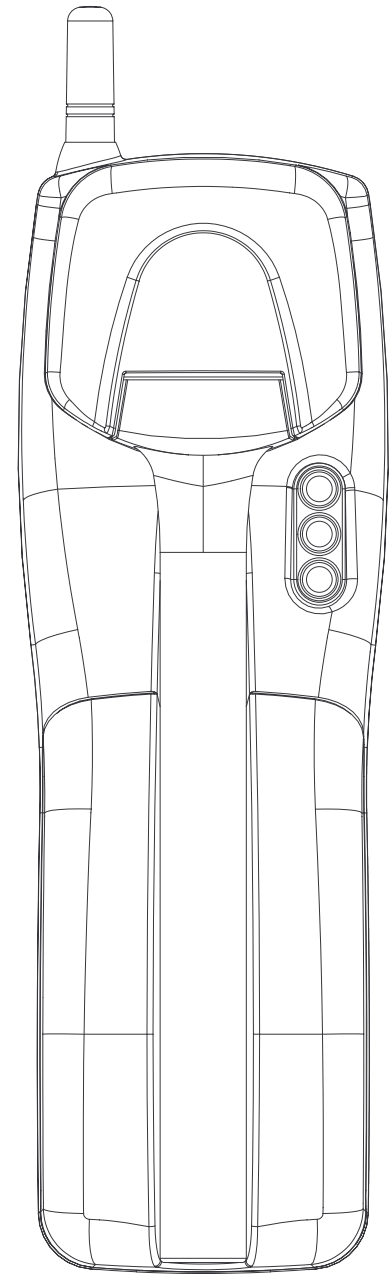
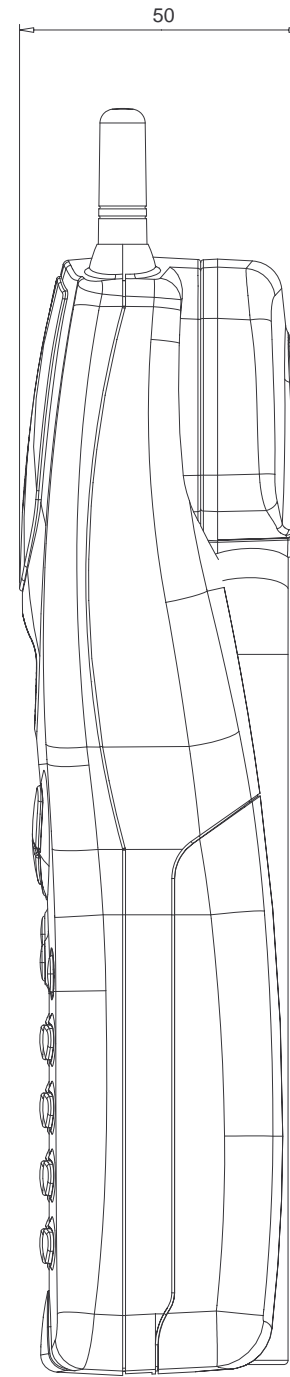
Il presente disegno a termini di legge non deve essere utilizzato per la costruzione del particolare né riprodotto o reso pubblico senza il nostro permesso scritto.




SECTION A-A



SECTION B-B



MODIFICA							Valido da:
DATA							
		Scala:	Materiale:			Foglio	N.fogli
		1:1				1	1
		Toll.gen.	Annotazioni:			Sostituisce il N.	
Dis. Lucà	Verif.	Denominazione dell'oggetto:				CODICE	
Progetto	Data	MECHANICAL VIEW TELITAL GS/GSM DMUT				40080NT10032	
0080	26.03.99						

### **3 TECHNICAL SPECIFICATIONS**

The scope of this document is to summarize the technical characteristics of the Telital GS/GSM Dual Mode User Terminal.

For detailed informations refer to TECHNICAL SPECIFICATION code 30080ST10010A.



### 3.1 Operating frequencies

#### 3.1.1 GSM

The GSM operating frequencies are:

TX frequencies: 890.2 ÷ 914.8 MHz

RX frequencies: 935.2 ÷ 959.8 MHz

The channel (ARFCN) are numbered from 1 to 124 and frequency offset between TX and RX frequency is 45 MHz.

#### 3.1.2 GLOBALSTAR

The satellite operating frequencies are the standard Globalstar frequencies.

TX frequencies: 1618.11 MHz

Bandwidth: 15.99MHz

Channel bandwidth: 1.23MHz

Minimum channel shift: 30KHz

Number of shift: 0 ÷ 511

Number of preferred channels: 13

Preferred channels: 4, 45, 86, 127, 168, 209, 250, 291, 332, 373, 414, 455, 496.

Rx frequencies: 2491.77 MHz

Bandwidth: 15.99MHz

Channel bandwidth: 1.23MHz

Minimum channel shift: 123KHz

Number of shift: 0 ÷ 127

Number of preferred channels: 13

Preferred channels: 3, 13, 23, 33, 43, 53, 63, 73, 83, 93, 103, 113, 123.

### 3.2 Transmitter output power

#### 3.2.1 GSM

a) RF power on 50 Ohm

The GSM section of the DMUT is a class 4 radiotelephone according to standard ETSI regulation that fix the limit at 2 Watts (+33dBm) on 50 Ohm;

In normal test conditions the transmitter nominal power range is between +31.5 dBm and +32.5 dBm on 50 Ohm.

With a supply voltage range between 6.7V and 8.4V and temperature range between -10°C and +55°C the transmitter power range is between +30.5 dBm and +32.5 dBm on 50 Ohm.

b) ERP power

Not supplied in the GSM specification.

The EIRP power will be measured in anechoic chamber.

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### 3.2.2 GLOBALSTAR

Output power >23 dBm  
+26 dBm

### 3.3 Reference sensitivity

#### 3.3.1 GSM

Sensitivity on 50 Ohm

The sensitivity is according to the GSM specification for the class 4 portable terminal;  
The standard ETSI regulation para 6 fix a limit of  $-102\text{dBm}$ .

The goal limit is  $\leq -104\text{ dBm}$  for an Rx Quality  $< 0.2 - 0.4\%$ .

#### 3.3.2 GLOBALSTAR

Ref. Qualcomm specifications 80-25015-1 X6.

### 3.4 Antenna

#### 3.4.1 GSM

The antenna for the GSM band is ALLGON 3576.2

#### 3.4.2 Globalstar

The antenna for the satellite Globalstar band is composed of more parts and is assembled on the telephone in way that can rotate on 4 positions.

The satellite antenna in its rotating stalk contains an LNA for the Rx section, the receiving part Rx and the transmitting part Tx.

An optical sensor assembled on the body of the telephone under the antenna rotor, activates the satellite transmission when the antenna is rotated in the positions 1, 2 and 3. In the intermediary positions the transmitter of the satellite section is always disabled.

In the position 0 the telephone works only on the GSM band.

The rotation of the antenna is prevented over the position 3.

### 3.5 Audio characteristics

#### 3.5.1 Microphone

The telephone uses a microphone PRIMO type EM131S2B2.  
This is inserted in a rubber gasket.

##### 3.5.1.1 Microphone sensitivity

The typical level is 3mV typical with a  $-4.7\text{dBPa}$  signal SPL at  $f=1\text{kHz}$

##### 3.5.1.1.1 Microphone electric level

The typical level is  $>570\text{mVrms}$  with signal AF of 3mV @  $f=1\text{kHz}$ .

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### 3.5.1.1.2 Microphone distortion

The typical level is <2% with range of frequency 300Hz to 3400Hz.

### 3.5.1.2 Buzzer

The Buzzer used into the DMUT is the MUT-03A STAR.

#### 3.5.1.2.1 Acoustic pressure of the buzzer

The value of acoustic pressure is -41dBV.

## 3.6 Device voltage supply

Nominal voltage	7.4 V
Working range	7 V ÷ 8.4 V
Power off voltage range:	6.8V

### 3.6.1 Power consumption

The following table lists the estimated current that flows from the 7.2V battery with a switching circuit efficiency  $\eta=0.85$ . The values are expressed in mA.

	GSM Baseband	G*Baseband	GSM Radio	G* Radio	Total
GSM Mode : RxTx @ Tx level=5	83	3.84	262	0.84	349.68
GSM Mode : idle	10.2	3.84	1.4	0.84	16.28
G* Mode : RxTx	60	219.6	1.56	664.44	945.0
G* Mode : idle @slot=1	10.2	129	1.56	97.44	238.2
G* Mode : idle @slot=0.2	10.2	26.4	1.56	19.44	57.6

### 3.6.2 Battery pack and battery life

The DMUT will be power supplied by a PP35 1350mAh battery pack composed of two Li Ion rechargeable serial elements.

#### 3.6.2.1 Battery life in GSM mode

Operative mode	Rx/Tx*	Idle
Battery life	3.86h	83h

\* @ Tx level=5

#### 3.6.2.2 Battery life in Globalstar mode







Operative mode	Rx/Tx	Idle
Battery life	1.43h	5.66h @slot = 1
		23.43h @slot = 0.2

In conversation:	5.5 hrs
In idle:	70 hrs

### 3.7 Keypad

The keypad is composed by 20 keys and lighted with 12 leds.

The key functions, related to the specific operative conditions, are shortly listed on the table below.

Key	Function
	END function to terminate a call;
	SEND function to answer an incoming call;
	Mode Switch to define the DMUT operating mode;
M	Function MENU to enter in the DMUT operative menu;
C	Character and number cancellation in edit mode;
	Note Book function;
	SMS menu;
	DMUT power ON/OFF;
# ^	Menu scroll-up function;
v *	Menu scroll-down function;
1...9	Alphanumeric keys

### 3.8 Display

Type SEK1054B5A EPSON LCD, FSTN, positive, reflective, graphic.

The display will be backlighted with six leds.

### 3.9 Data service

Use of a Data Terminal Adapter for the following functions:

Full emulation of analog modem to allows the compatibility with the existent data communication programs.

Class 1 (EIA/TIA 578) and class 2 (TR29.2) command for compatibility with fax.

Max data rate 9600 bit/s.

In Globalstar mode the DTA will support the data service as described on the Globalstar standard specifications.

### 3.10 Software functionality and user interface

The software installed in the DMUT supports all the functions in table.

<b>Radio interface</b>	Radio Protocol Phase 2
<b>Speech Coding</b>	Full Rating
<b>SIM</b>	SIM 3/5 volt SIM Toolkit compliant GSM 11.14

The functionalities supported by the user interface of the telephone are phase 2 and are listed as follows:

**Management of local security**, with SIM Lock, keyboard lock and security code request at power-up;

**Call control function**, with call duration, cost indication and UDUB function;

**Volume control and ringer setting function**, ringer and signaling tones with possibility of activation of alarm also with telephone powered off;

**Display management** with contrast level regulation and duration of backlight;

**Messages visualized setup** in ready state and its language, visualization of the IMEI and the software release of the telephone;

**Font Management** uppercase/lowercase and international (no Chinese);

**SIM related functions**, as the activation/deactivation of the numbers in notebook FDN, ADN and PIN. Extension to the PIN2 of the possibility of insertion of PUK2 in case of lock. The telephone supports besides the functionalities of class 2 of the SIM Application Toolkit with the implementation of the relative commands and procedures at MMI level. Implementation of two levels SIM lock.

**Tones Management** DTMF;

**Clock Management** with time and alert activation indications for the wake-up service and for the programmed telephone power-up;

**Indication of the call status** and service availability;

**Automatic call** of busy number and automatic answer;

**Visualization and selection** of the GSM providers;

**Management of the Supplementary Services (SS)** of Call Barring (with related indication, also for SMS), Call Forwarding (with related indication), Advice of Charge, Calling Line

Identification Presentation, Calling Line Identification Restriction, Unstructured SS Mobile Originated, Call Waiting, other party Call Waiting Indication, Call Hold, other party Hold / Retrieved Indication, Multi Party;

**Short Message Service** Mobile Terminated with signaling of new incoming SMS, reading and SIM full, Mobile Originated with writing, storing in SIM and dispatch, Cell Broadcast compatible with CB-DRX (discontinuous reception) for energy saving.

**Special Features**, as the list of the incoming not answered calls;

**Indications on the battery status** through predefined icon on the display with tabs showing the charge level, bitmap on graphic area indicating the state of charge in progress, best terminated or failed for damaged battery and indication of the battery pack temperature during the charge.

**Management of the language of menu interface.** It is possible to set the DMUT from the language menu up to 16 languages.

Currently the available languages are: Italian, English, German, French, Polish, Norwegian, Spanish, Greek, Hungarian, Czech, Portuguese.

The user interface of the telephone is structured in the following menus:

**Main menu** pressing the "M" key and divided in the following submenus: "Own number", "Missed calls", "Call divert", "Clock", "Settings", "Security", "GSM Networks", "Call control", "Information".

When a Proactive SIM is inserted, it is available the SIM Toolkit menu identified by number item 0 whose elements are determined by the service provider;

**SMS Menù**, accessible with the ☒ key, containing all related functions for the messages SMS management;

**Call related menù**, available only during a call, which allows the access to the call related Services and other possible functions only in this state.

**Phone book menu**, accessible pressing the "M" key and pressing again for a long time the same "M" key.

It makes available the functions for the transfer between ADN and FDN, the insertion of new records, the cancellation of the records and the visualization of the information related to the phonebook stored on the SIM;

**Customizable Menù.** At any level of the main menù it is associated a number that can be used to made a fast selection of a menu or submenu item.

### 3.10.1 Clock

The internal clock besides the normal visualization of the time, allows to set the alarm and the telephone power-up.

The clock is autonomously powered by a not rechargeable lithium battery with autonomy of about 5 years.

### 3.10.2 Vehicularization

For the vehicularization of the DMUT is used a CAR-KIT.

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### 3.11 Electrical interface

#### 3.11.1 Bottom connector

The 20 pin bottom connector SO2 HIROSE MQ168–QC–20P/4 allows the DMUT interfacement with the accessories as Car Kit, Battery charger, Data Terminal Adapter.

The four pins from 21 to 24 allows the connection of battery pack.

PIN	NAME	A/D	IN/OUT	DESCRIPTION
1	+VBATT	A	IN	+10.4V from battery charger
2	DM_TX	D	OUT	TX serial line debug monitor G*edge
3	DM_RX	D	IN	RX serial line debug monitor G* edge
4	DM_RTS	D	OUT	Request To Send debug monitor G*edge
5	DM_CTS	D	IN	Clear To Send debug monitor G*edge
6	DATA_GS_TX	D	OUT	Data transmission line in G* mode
7	DATA_GS_RX	D	IN	Data reception line in G*mode
8	GSM_TX	D	OUT	Data transmission and monitor line in GSM mode
9	GSM_RX	D	IN	Data reception and monitor line in GSM mode
10	AXE	D	IN	External device connection signal
11	SW_BATT	A	OUT	Power supplied to external device connected with AXE = 0 V
12	CAR_PCM_CLK	D	OUT	CLOCK PCM connection to CAR KIT
13	CAR_PCM_DOUT	D	OUT	Data OUT PCM connection to CAR KIT
14	CAR_PCM_DIN	D	IN	Data IN PCM connection to CAR KIT
15	CAR_PCM_SYNC	D	OUT	SYNC PCM connection to CAR KIT
16	GS/GSM	D	OUT	Signalling for the DMUT operative mode GSM or G*
17	ON–OFF	D	IN	Signal for DMUT remote power on
18	CAR_AUDIO_IN	D	IN	Analog audio from CAR KIT
19	CAR_AUDIO_OUT	–	——	Analog Audio to CAR KIT
20	GND	A	——	Ground
21	NTC	A	——	Pin used for reading the internal temperature of battery pack by an NTC or other sensor.
22	GND	A	——	Ground Battery pack
23	+VBATT	–	——	Positive Battery pack
24	SPARE	–	——	

Legend: **A**: Analog;      **D**: Digital 0 ÷ 3V CMOS

### 3.11.2 SIM

The DMUT uses a SIM card type "PLUG-IN".

The following table list the signals of SIM connector.

PIN	NAME	A/D	IN/OUT	DESCRIPTION
1	C1,CCVCC	A	IN	SIM 5Vcc power supply.
2	C2, RST	D	OUT	RESET command active high coming from uP and managed by the program protocols.
3	C3,CCLK	D	OUT	CLOCK supplied from uP for data management.
4	C5,GND	A	IN	SIM circuit ground termination.
5	C6,NC	—	—	Not Connected.
6	C7,I/O	D	IN/OUT	Input/output data for the SIM.

### 3.11.3 Test connector

This connector allows the connection of DMUT with test equipments for the maintenance, and production test.

ELCO connector Torson 2 x 5pins vertical SMD low profile.

P/N 23-5016-2005-10-081. The following table list the signals of test connector.

PIN	NOME	A/D	IN/OUT	DESCRIPTION
1	WAKEUP	D	IN	Signal for remote power on.
2	RST	D	IN	Reset
3	TXD1	D	OUT	Data transmission from 80386 serial line #1
4	RXD1	D	IN	Data reception to 80386 serial line #1
5	GND	A	—	Ground
6	DWLD	D	IN	Download in G* mode enabled
7	INT3	D	IN	Not used
8	GSM_TX_DATA	D	OUT	Data transmission and monitor line in GSM mode
9	GSM_RX_DATA	D	IN	Data reception and monitor line in GSM mode
10	+VBATT	A	—	Positive 7.4V power supply

Legenda: **A**: Analogico; **D**: Digitale 0 ÷ 3V CMOS

### 3.11.4 RF signals connector

The DMUT has three coaxial connectors to made the connection with the following:

- Band L external antenna (Tx satellite)
- Band S external antenna (Rx satellite)
- GSM external antenna (Tx /Rx)

### 3.11.5 DAI connector

Pads on pcb.



### **3.12 Physical characteristics**

#### **3.13 Dimensions**

Length: 224 mm  
Width: 65.5 mm  
Thickness: 50 mm

#### **3.14 Weight**

400g battery pack included.

3.15 Figures

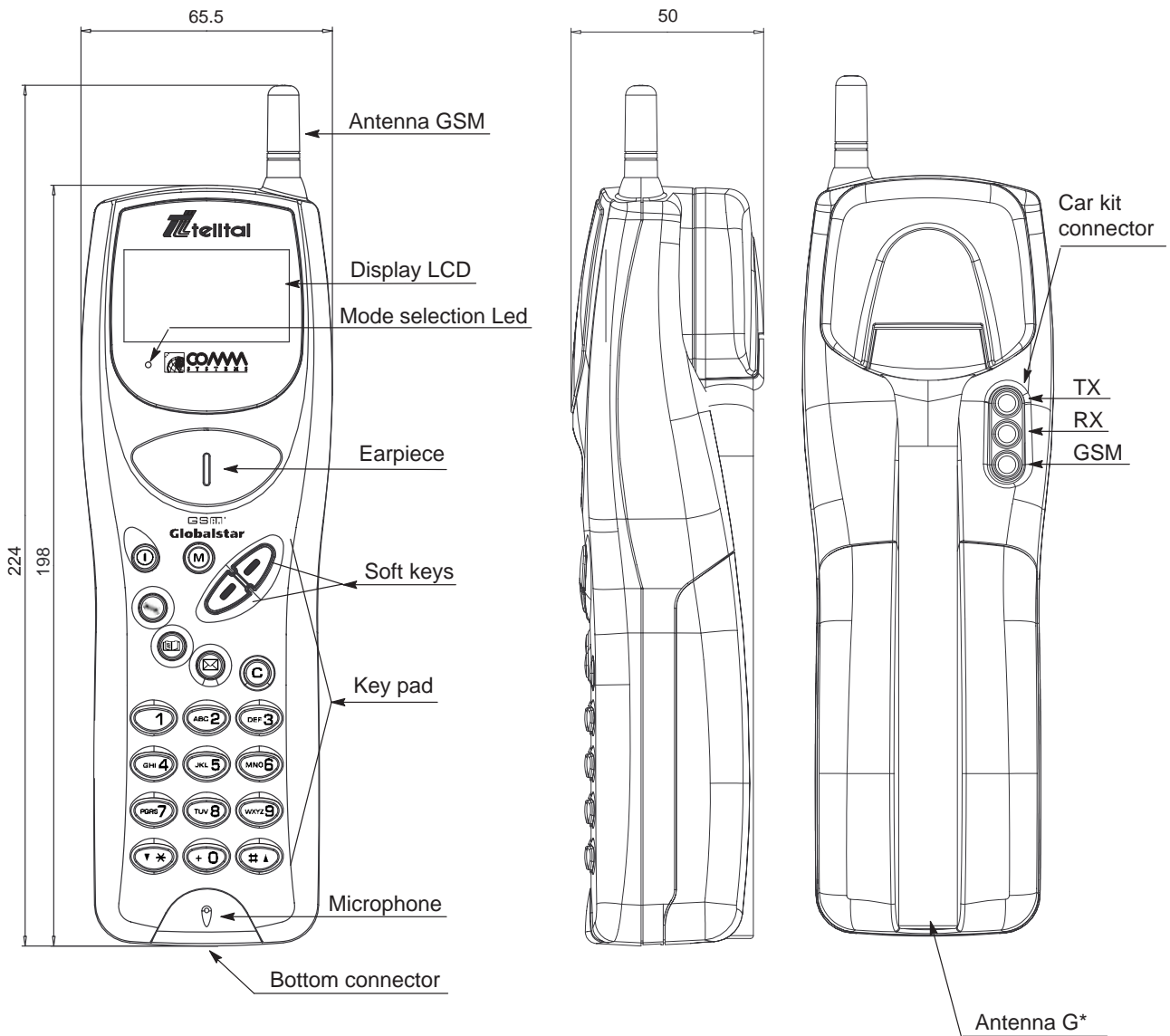


Figure 1 DMUT Assembly

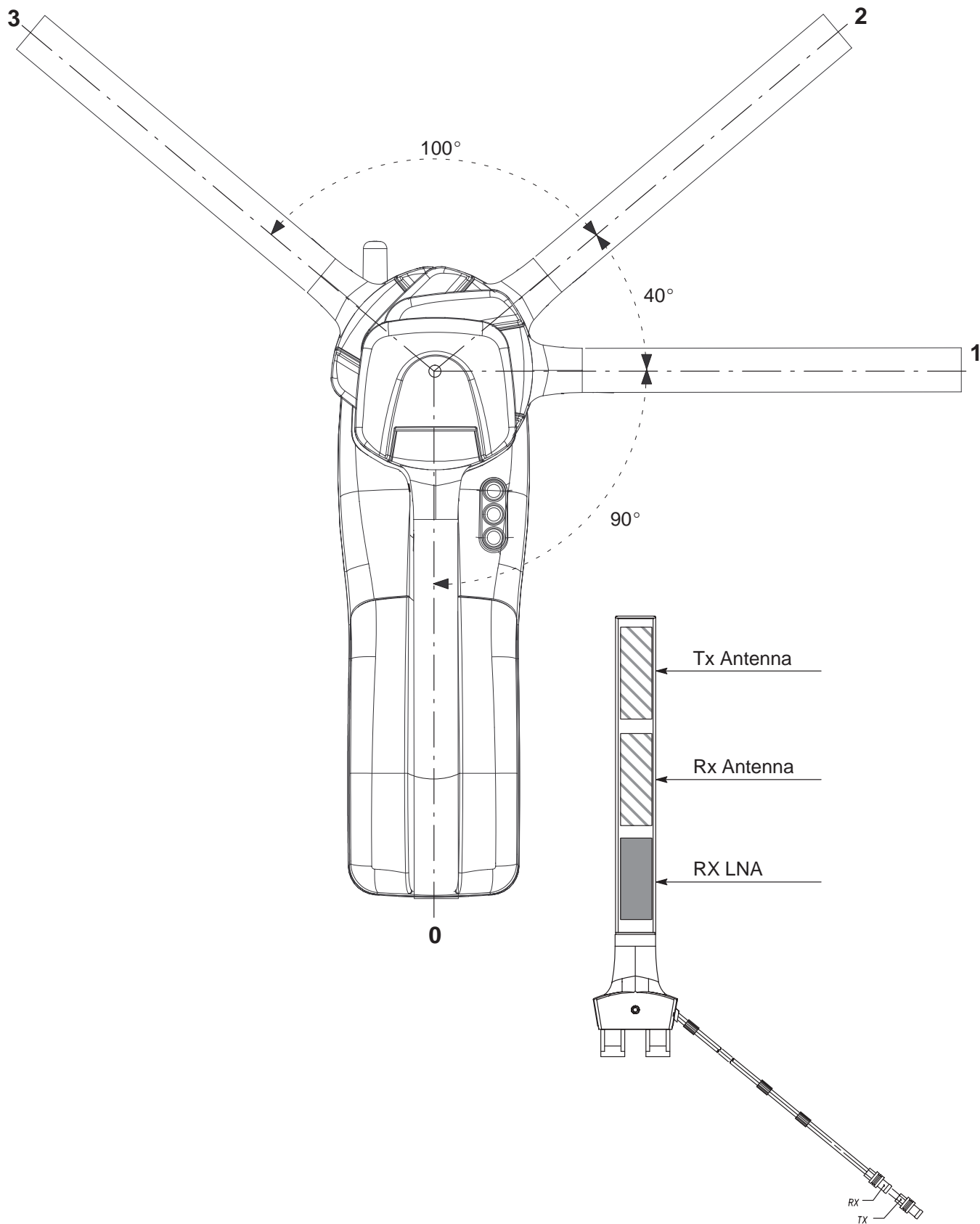


Figure 2 Globalstar Satellite antenna

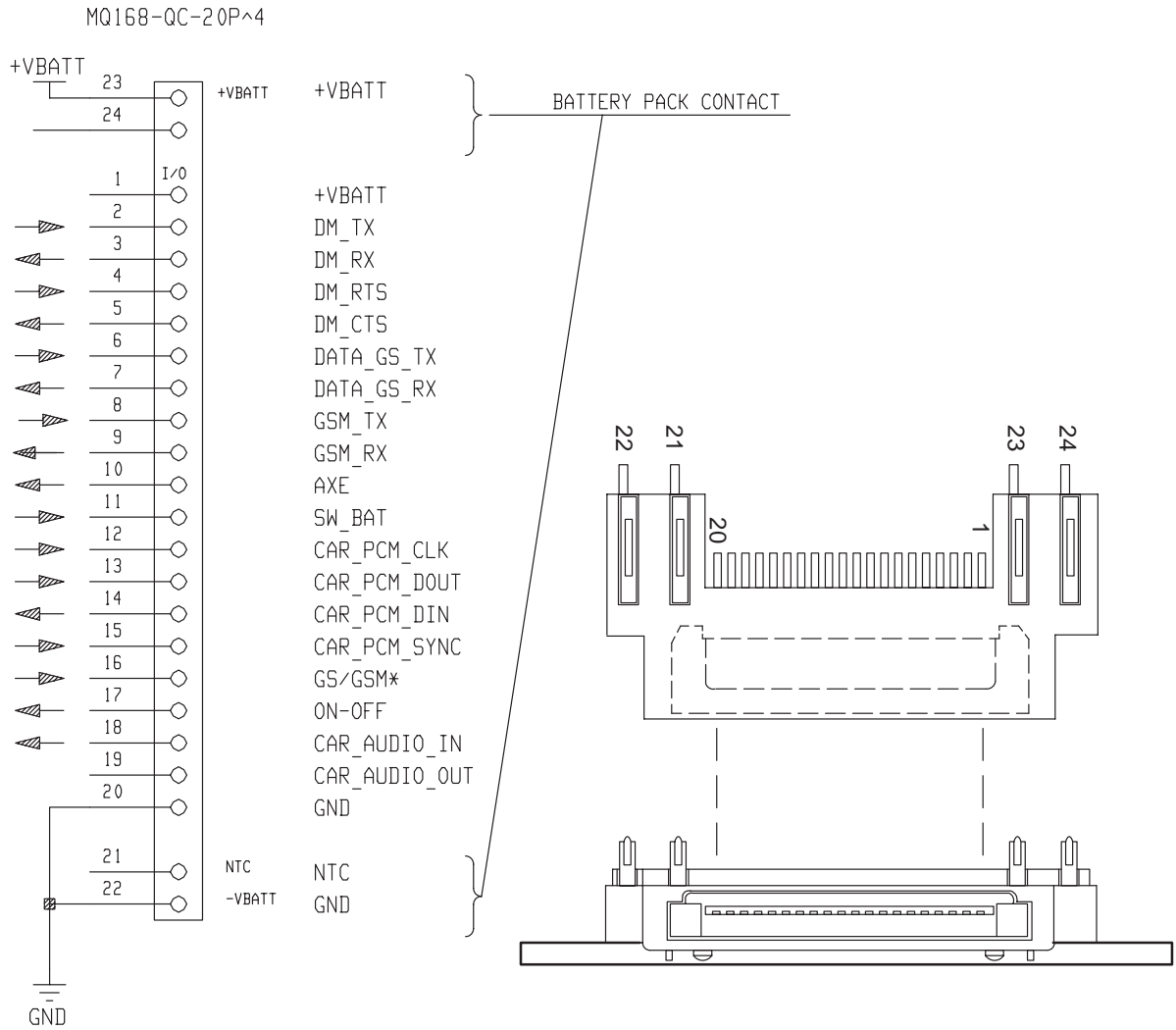


Figure 3 Bottom connector signals overview

#### 4 LIST OF MODIFICATIONS

List of modification of CS710c circuit board	2000100267
List of modification of CS680b circuit board	2000100256
List of modification of CS661c circuit board	2000100257
List of modification of CS760 circuit board	2000100201

## INDEX OF MODIFICATIONS CS710c

DESCRIPTION:			GSM RADIO & DISPLAY ASSY CS710c Ver.22.02.99		
CODE:			2-000100267		
N°	ASSY CODE	PROP MOD	ID	DATE	MODIFICATION DESCRIPTION
1	2000100267	2685	*a	29.06.99	Added C166 22pF added C164 "do not mount"
2	2000100267	2673	-	23.06.99	Change microphone from Electret to Bosung OB-22L40-C33

## INDEX OF MODIFICATIONS CS680b

DESCRIPTION:			BB GLOBALSTAR & GSM ASSY CS680b Ver.20.01.99		
CODE:			2-000100256		
N°	ASSY CODE	PROP MOD	ID	DATE	MODIFICATION DESCRIPTION
1	2000100256	2675	*a	23.06.99	Added R130 "Do not mount", added TP42, added TP43, Change C18 from "Do not mount" to 10pF, Change C19 from "Do not mount" to 10pF, Change value of R25 from 1.8K to 3.3K, Change connection of C113.
2	2000100256	2688	*b	30.06.99	Added R133, added C64, change value of R31 from 10K to 1.8K change U11 from TC4W53FU to ADG719BRT





### INDEX OF MODIFICATIONS CS760

<b>DESCRIPTION:</b>			OPTICAL SENSOR CS760 Ver.28.05.98		
<b>CODE:</b>			2-000100201		
N°	ASSY CODE	PROP MOD	ID	DATE	MODIFICATION DESCRIPTION

## **5 BLOCK DIAGRAMS**

5.1 HANDSET LAYOUT

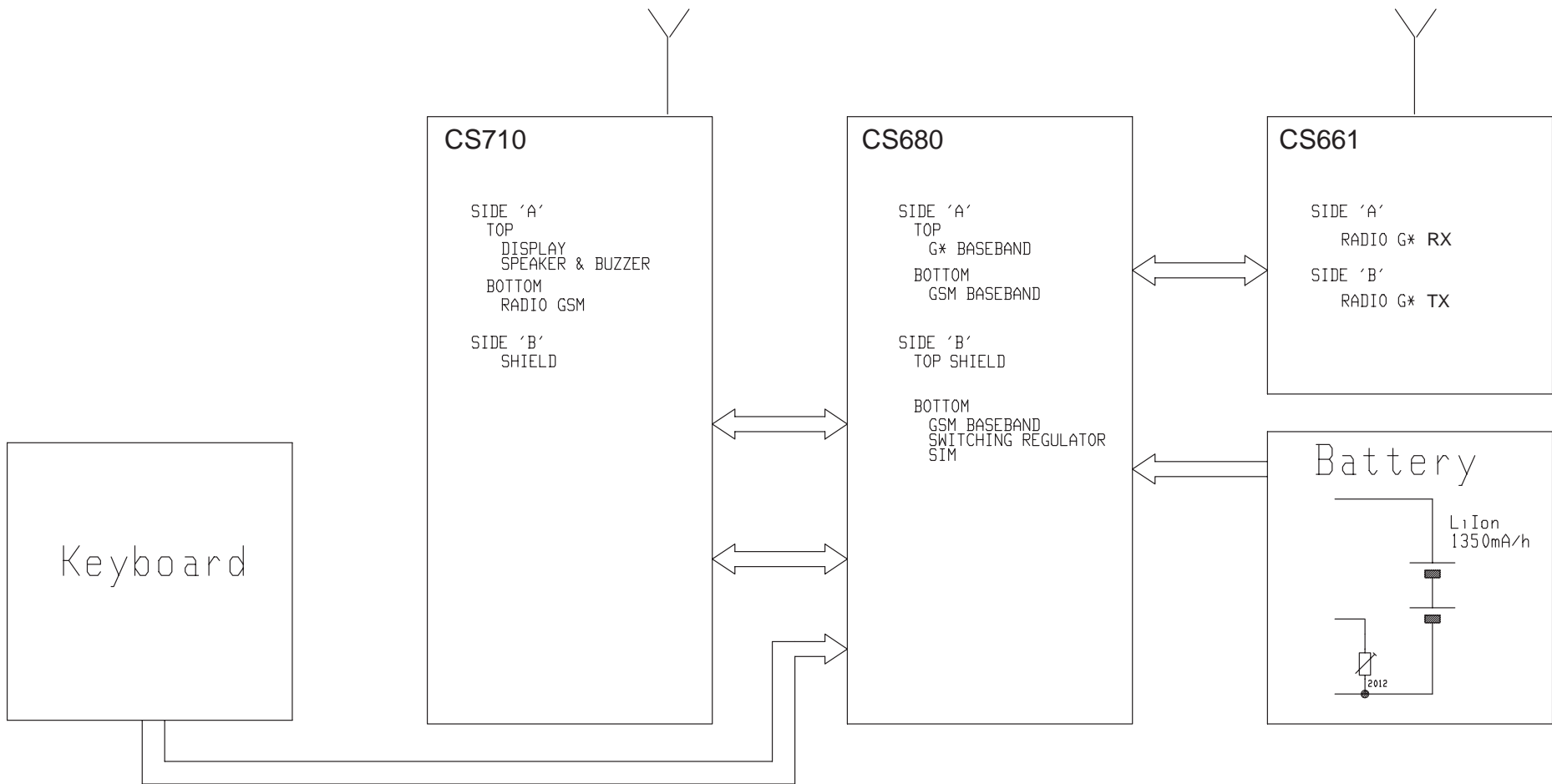
5.2 GSM SECTION

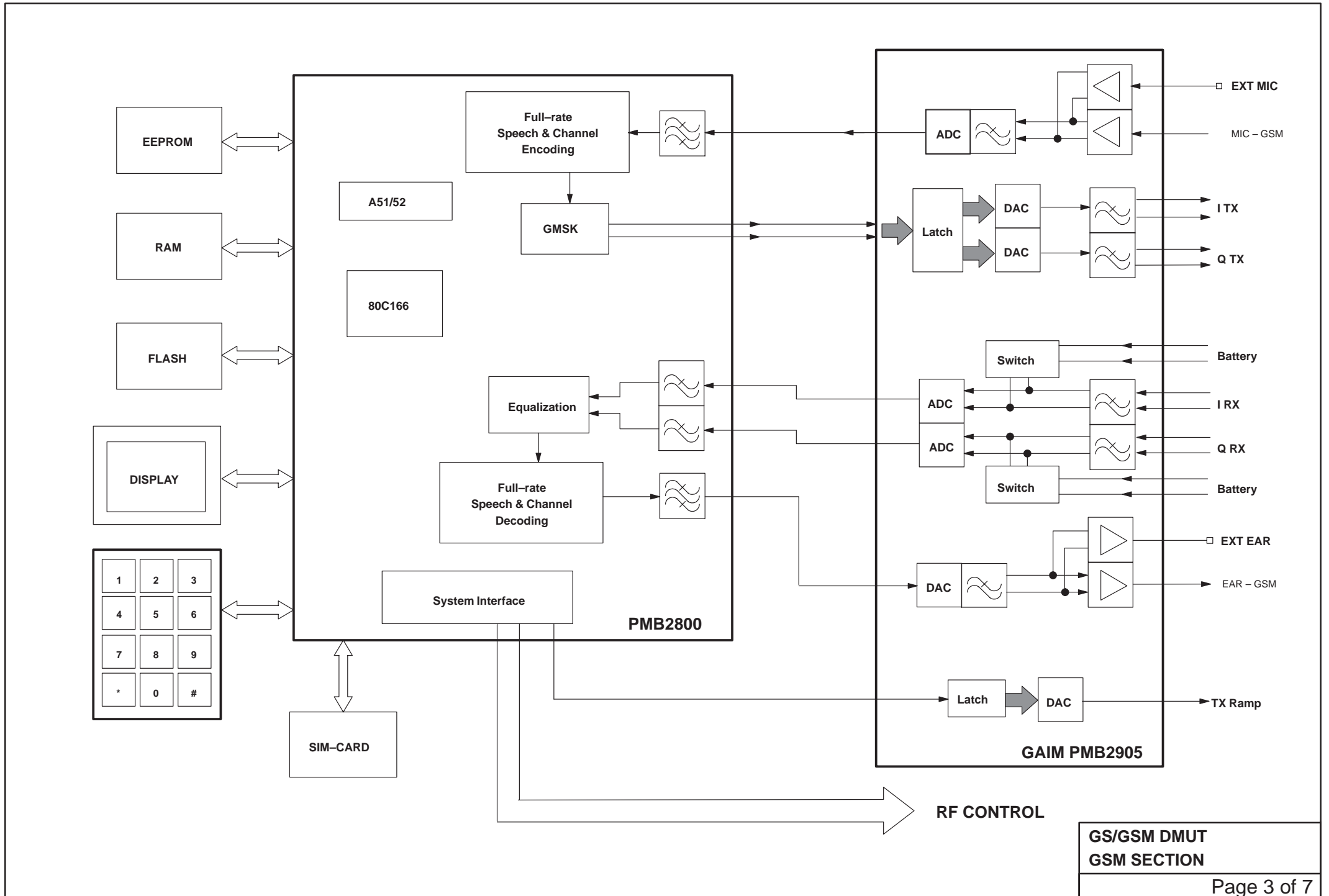
5.3 GSM RF LAYOUT

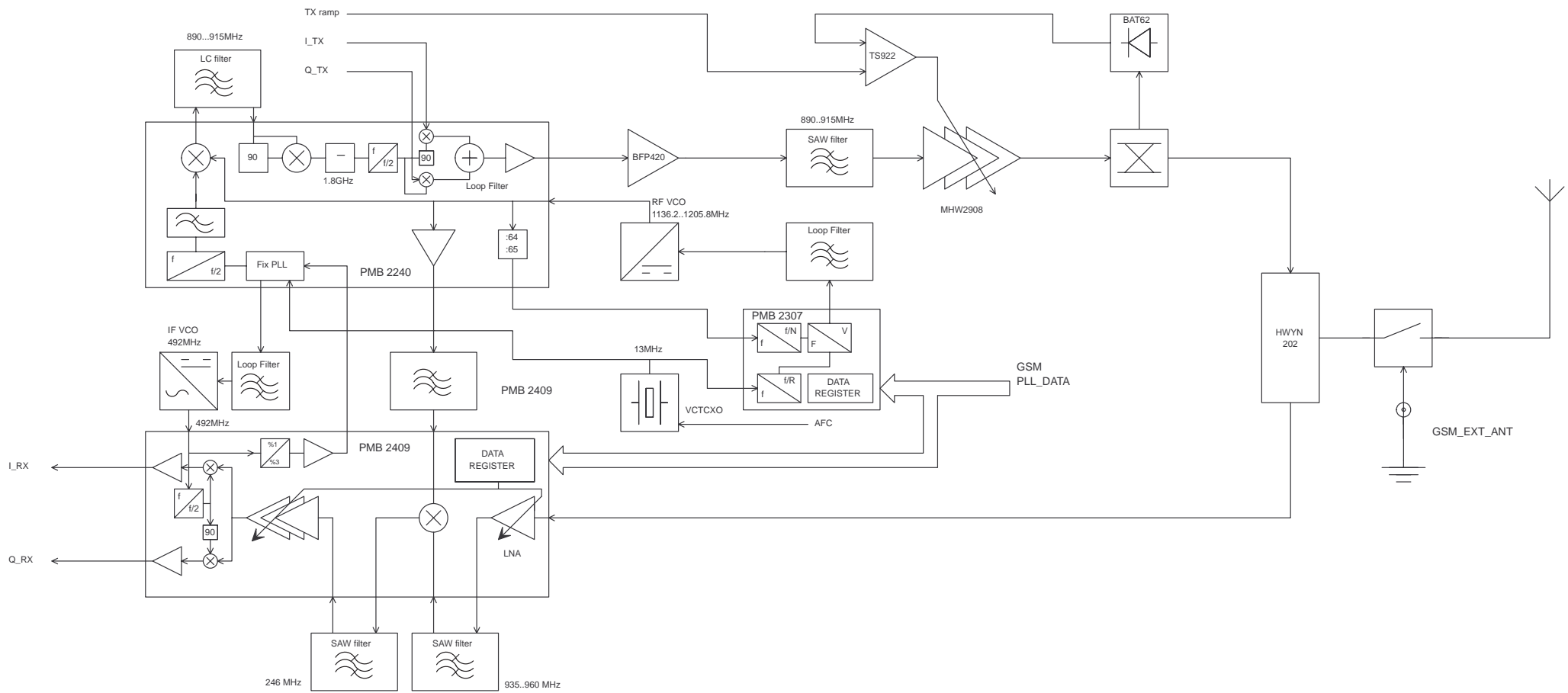
5.4 G\* SECTION

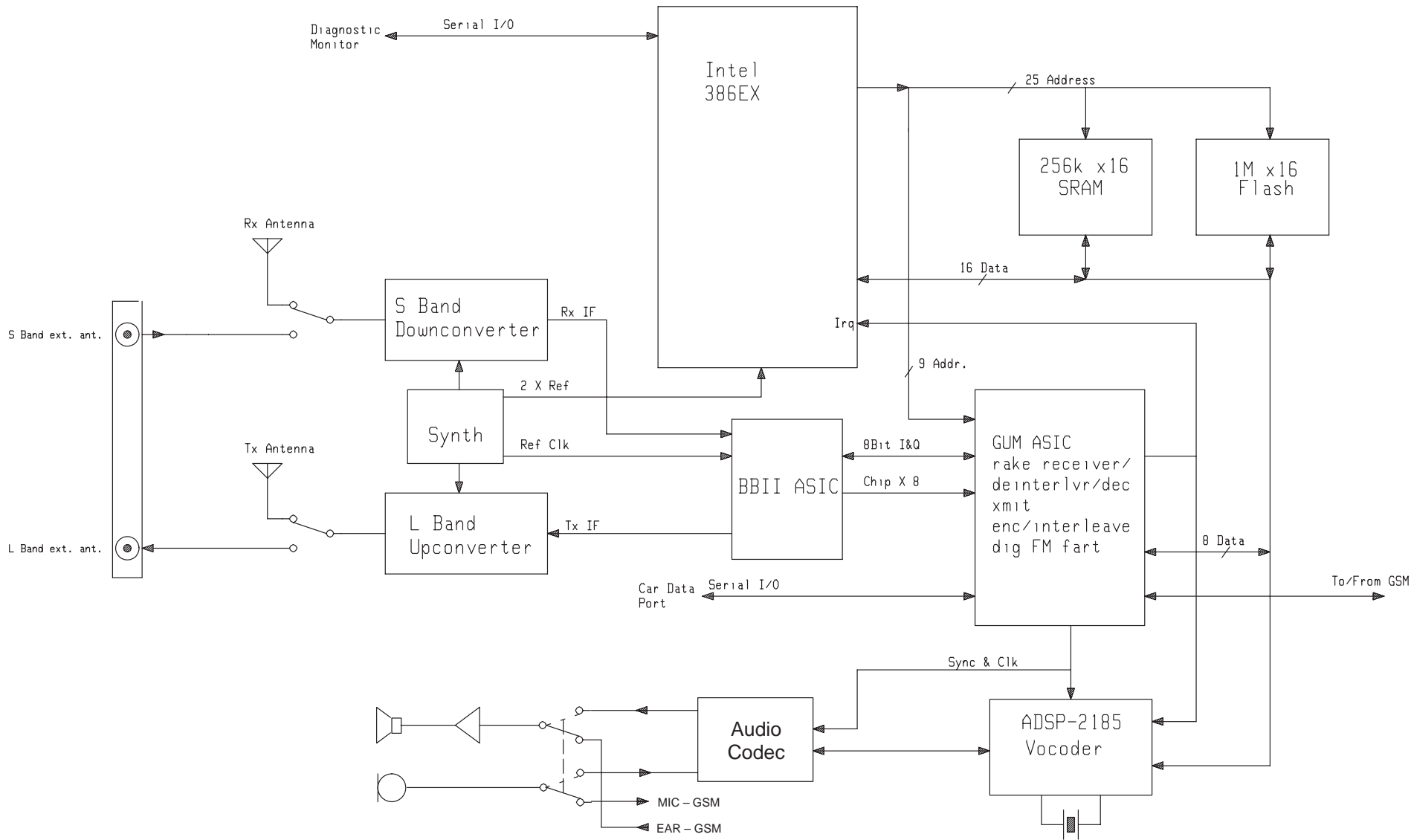
5.5 RF G\* SECTION

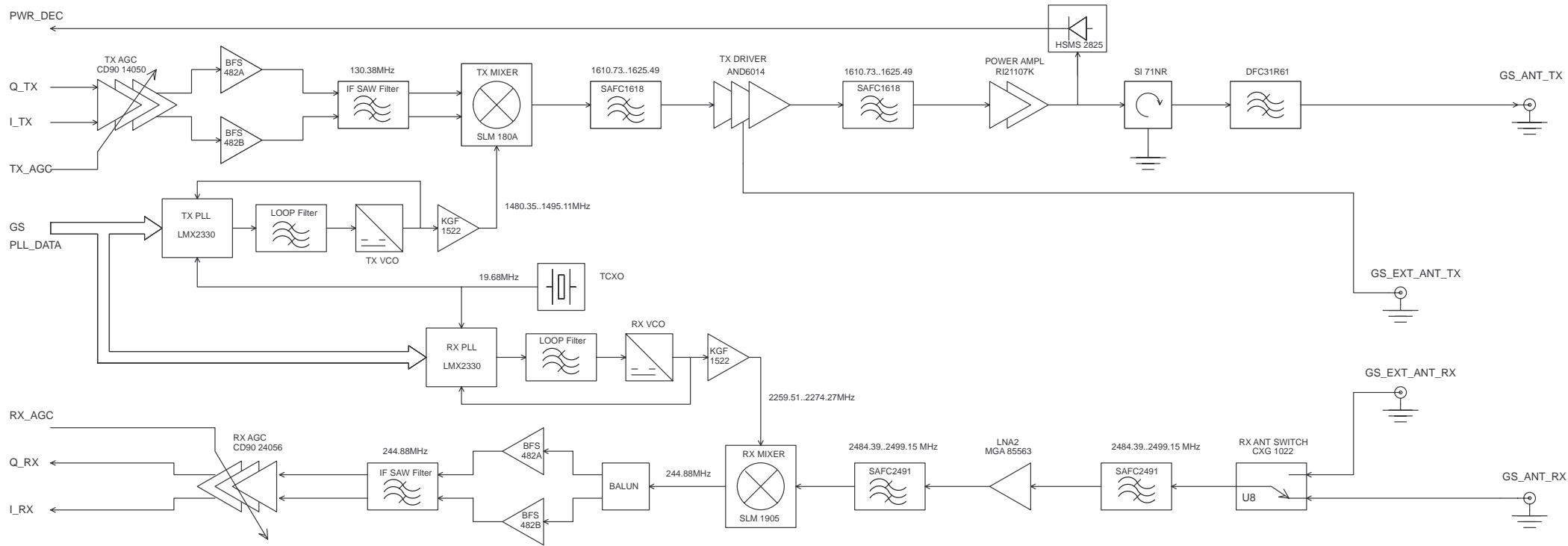
5.6 POWER SUPPLY LAYOUT

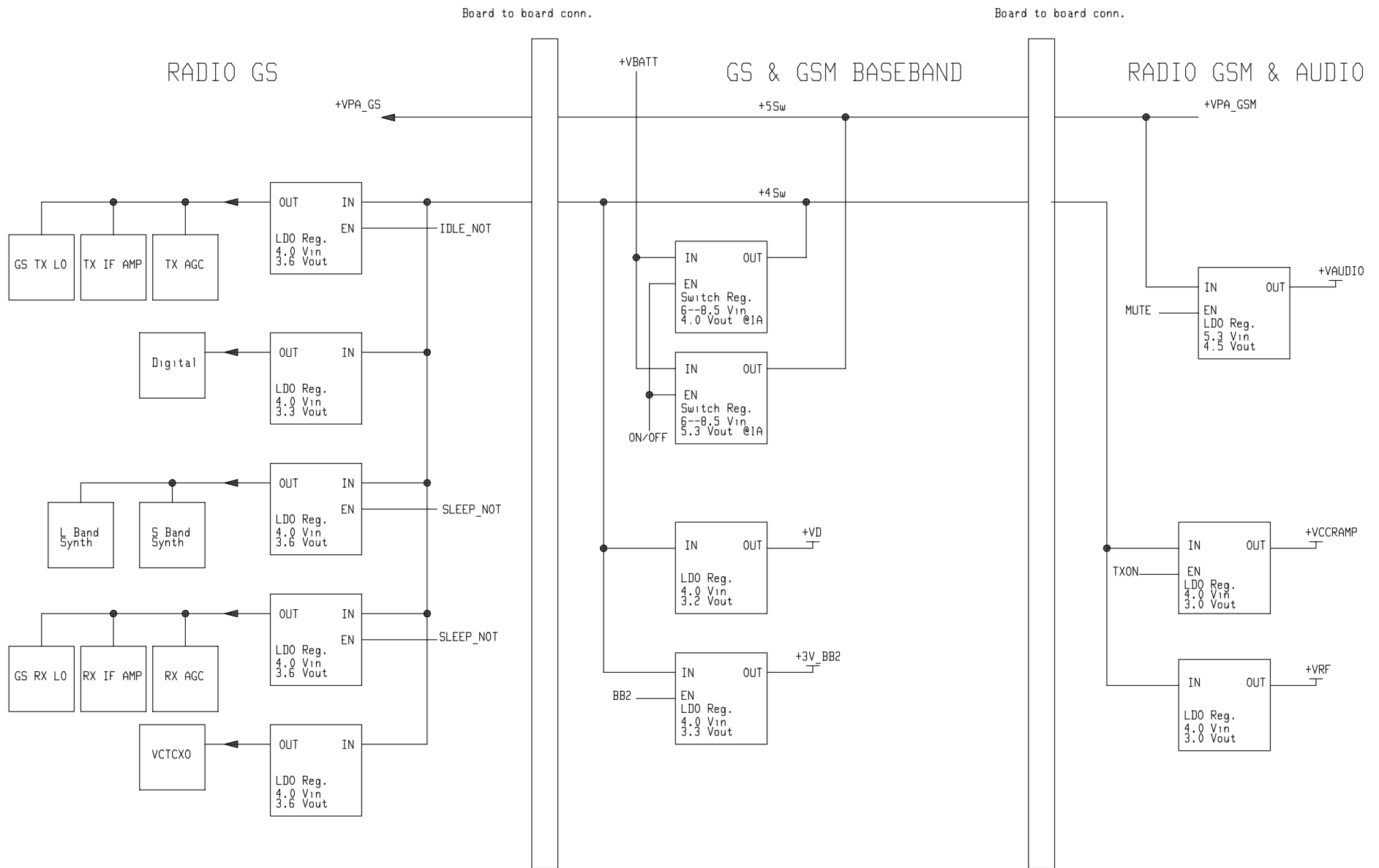












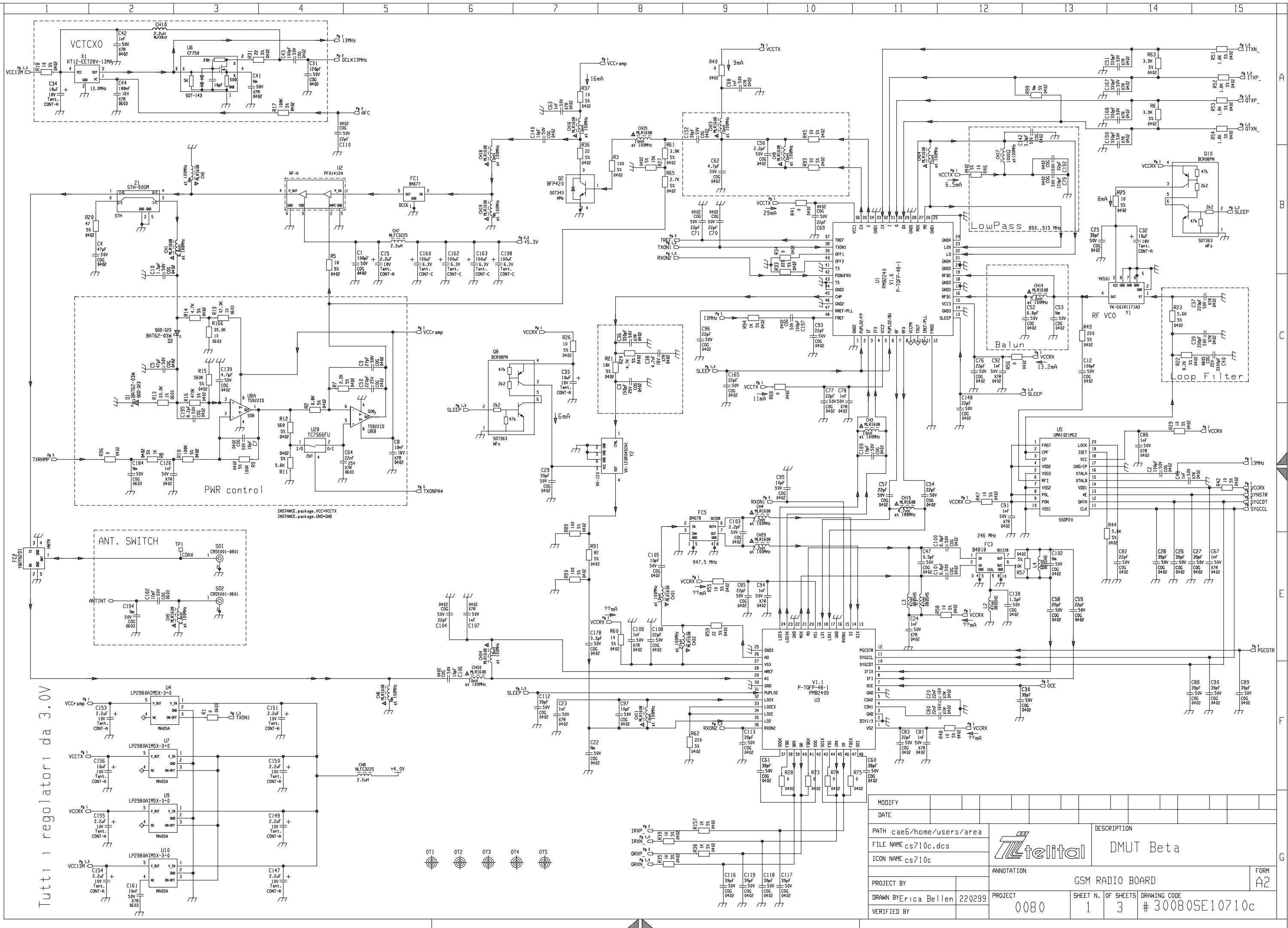


## 6 ELECTRIC DIAGRAMS

Electric diagram CS710c GSM Radio board page 1/3	30080SE10710c
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Electric diagram CS680b GSM uP, memory & RTC 2/15	30080SE10680b
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Electric diagram CS680b Keyboard & display connectors 5/15	30080SE10680b
Electric diagram CS680b SIM interface 6/15	30080SE10680b
Electric diagram CS680b GSM radio connector 7/15	30080SE10680b
Electric diagram CS680b Battery charge 8/15	30080SE10680b
Electric diagram CS680b Bottom connector 9/15	30080SE10680b
Electric diagram CS680b GS uP 10/15	30080SE10680b
Electric diagram CS680b GS uP 11/15	30080SE10680b
Electric diagram CS680b GUM ASIC 12/15	30080SE10680b
Electric diagram CS680b GS vocoder 13/15	30080SE10680b
Electric diagram CS680b BB2 ASIC 14/15	30080SE10680b
Electric diagram CS680b GS radio connector 15/15	30080SE10680b
Electric diagram CS661c Rx car kit switch & RF ampl. 1/9	30080SE10661c
Electric diagram CS661c Rx phase shifter, IF filter, AGC 2/9	30080SE10661c
Electric diagram CS661c Tx AGC and IF filter 3/9	30080SE10661c
Electric diagram CS661c Tx upconverter, driver 4/9	30080SE10661c
Electric diagram CS661c Tx power amplif, ADC multiplexer 5/9	30080SE10661c
Electric diagram CS661c RF synthesizer 6/9	30080SE10661c
Electric diagram CS661c General Power Supply 7/9	30080SE10661c
Electric diagram CS661c Tx drv. & power ampl. p.supp 8/9	30080SE10661c
Electric diagram CS661c BB connector & GSM ant. switch 9/9	30080SE10661c
Electric diagram CS760 Optical Sensor Board 1/1	30080SE10760

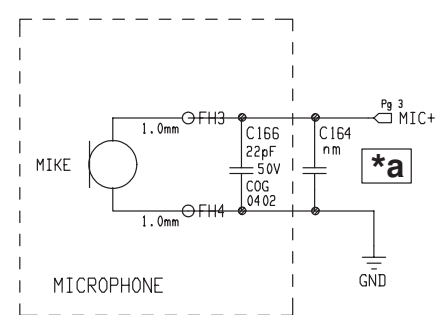
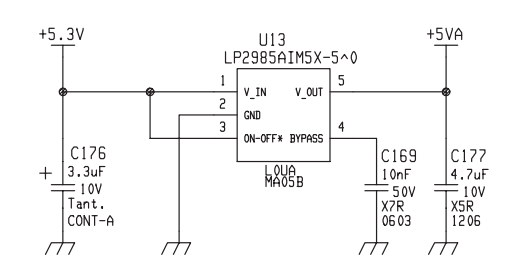
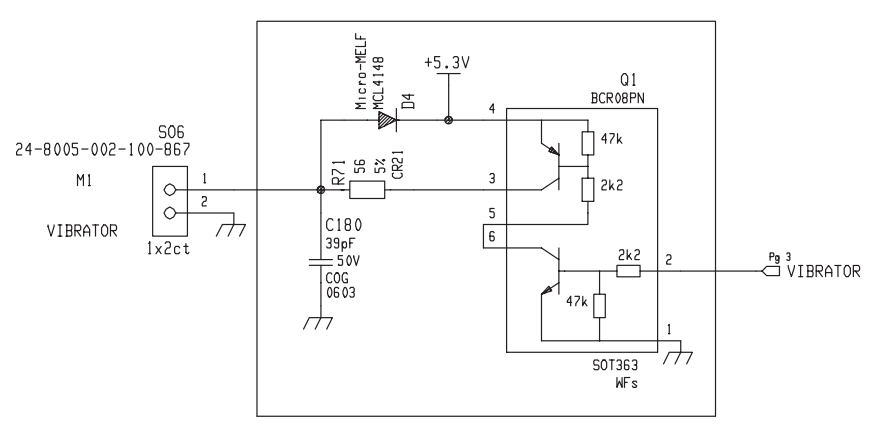
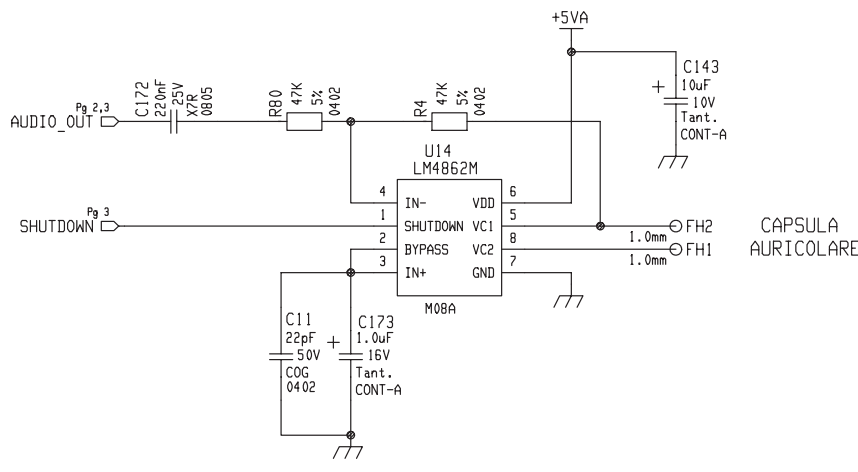
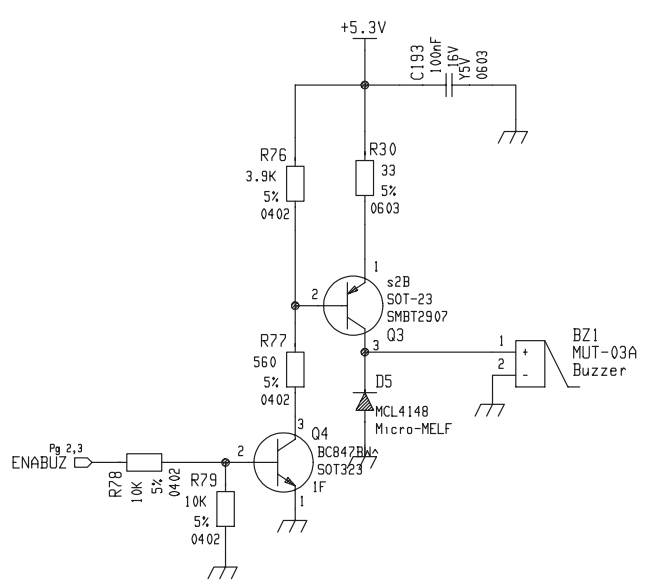
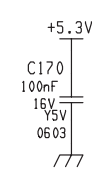
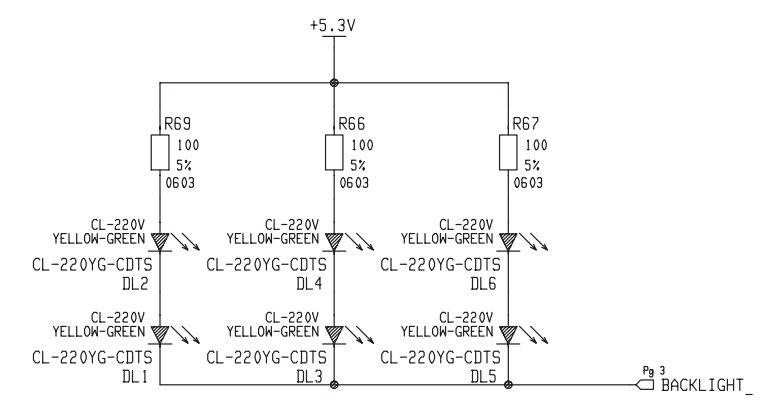
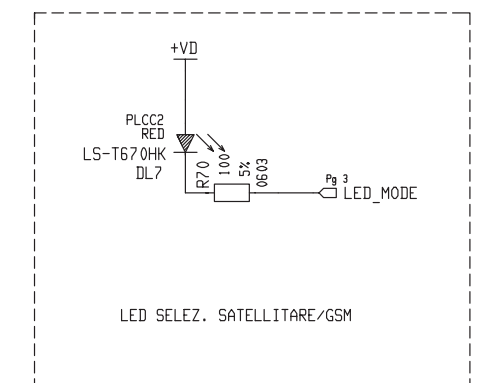
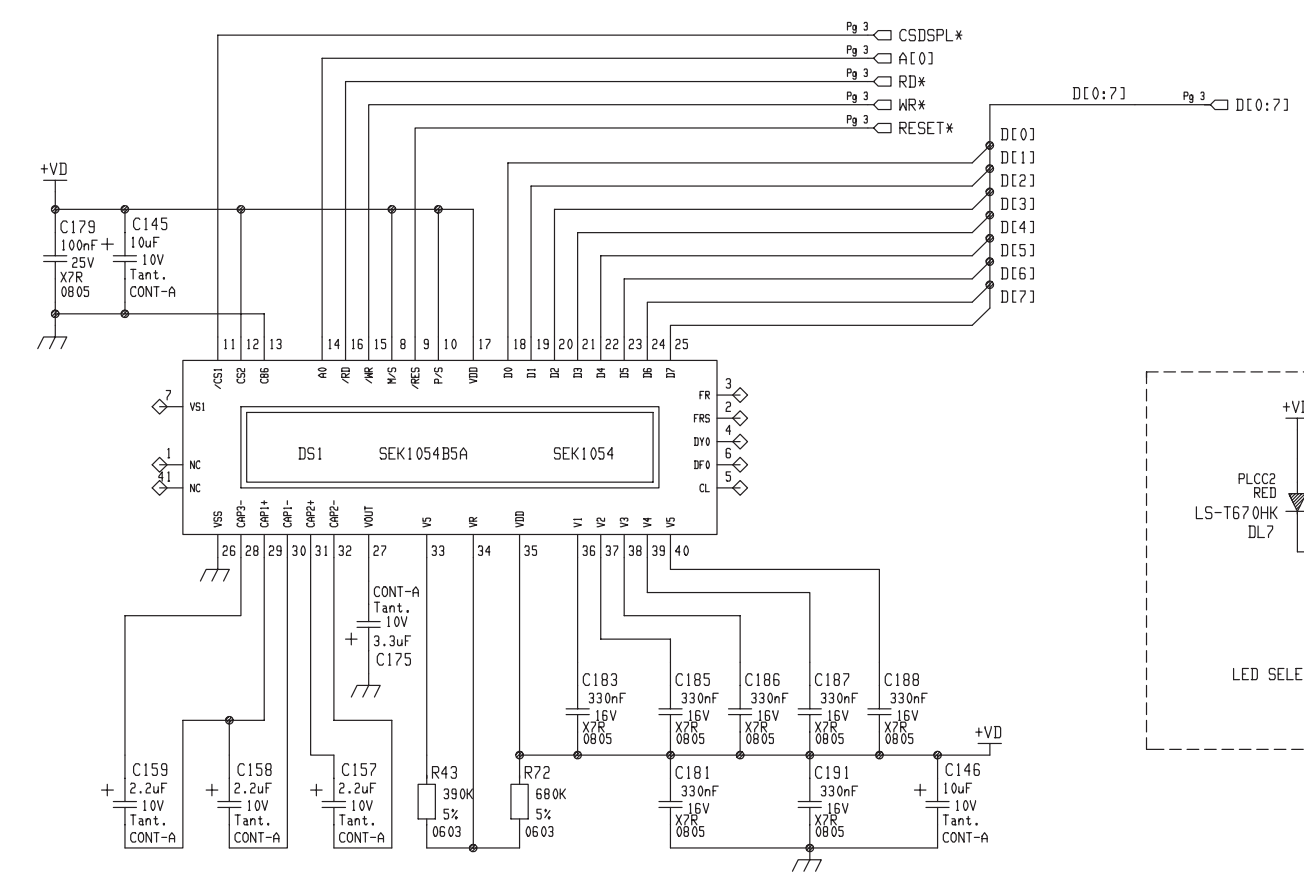
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VIETATE

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MODIFY				
DATE				
PATH	cae6/home/users/area	DESCRIPTION		
FILE NAME	cs710c.dcs	DMUT Beta		
ICON NAME	cs710c			
PROJECT BY		PROJECT		FORM
DRAWN BY	Erica Bellen	220299	0080	A2
VERIFIED BY				
		SHEET N.	OF SHEETS	DRAWING CODE
		1	3	# 30080SE10710c



MODIFY	2685	*a																			
DATE	29.06.99																				
PATH	cae6/home/users/area										DESCRIPTION										
FILE NAME	cs710c.dcs										DMUT Beta										
ICON NAME	cs710c																				
PROJECT BY											ANNOTATION										
DRAWN BY	Erica Bellen 220299										GSM RADIO BOARD										FORM
VERIFIED BY											PROJECT										
	0080										SHEET N. OF SHEETS										
											2 3										
											DRAWING CODE										
											#300805E10710c										
																					A3

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VIETATE

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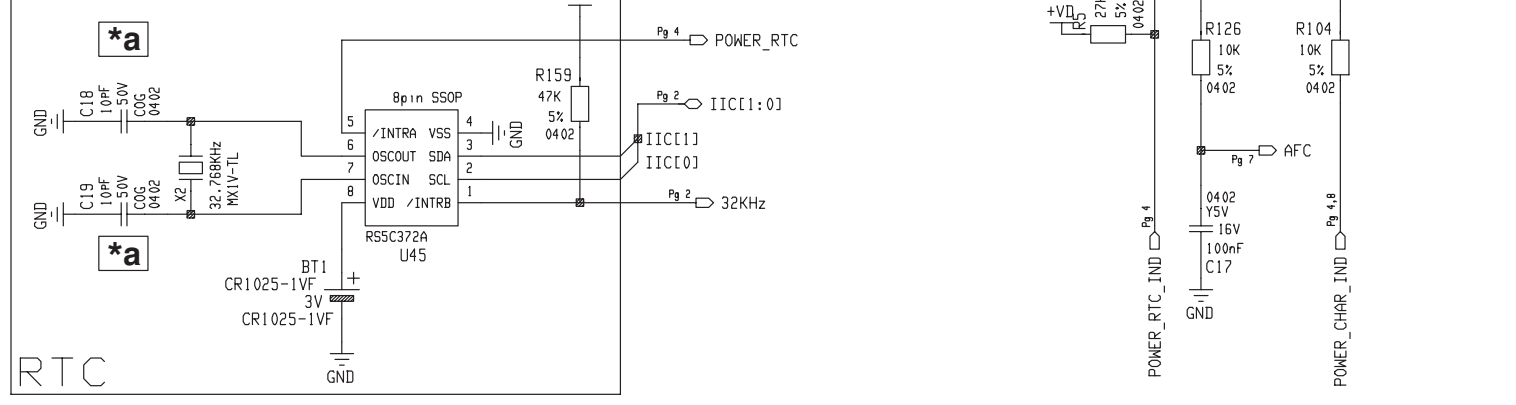
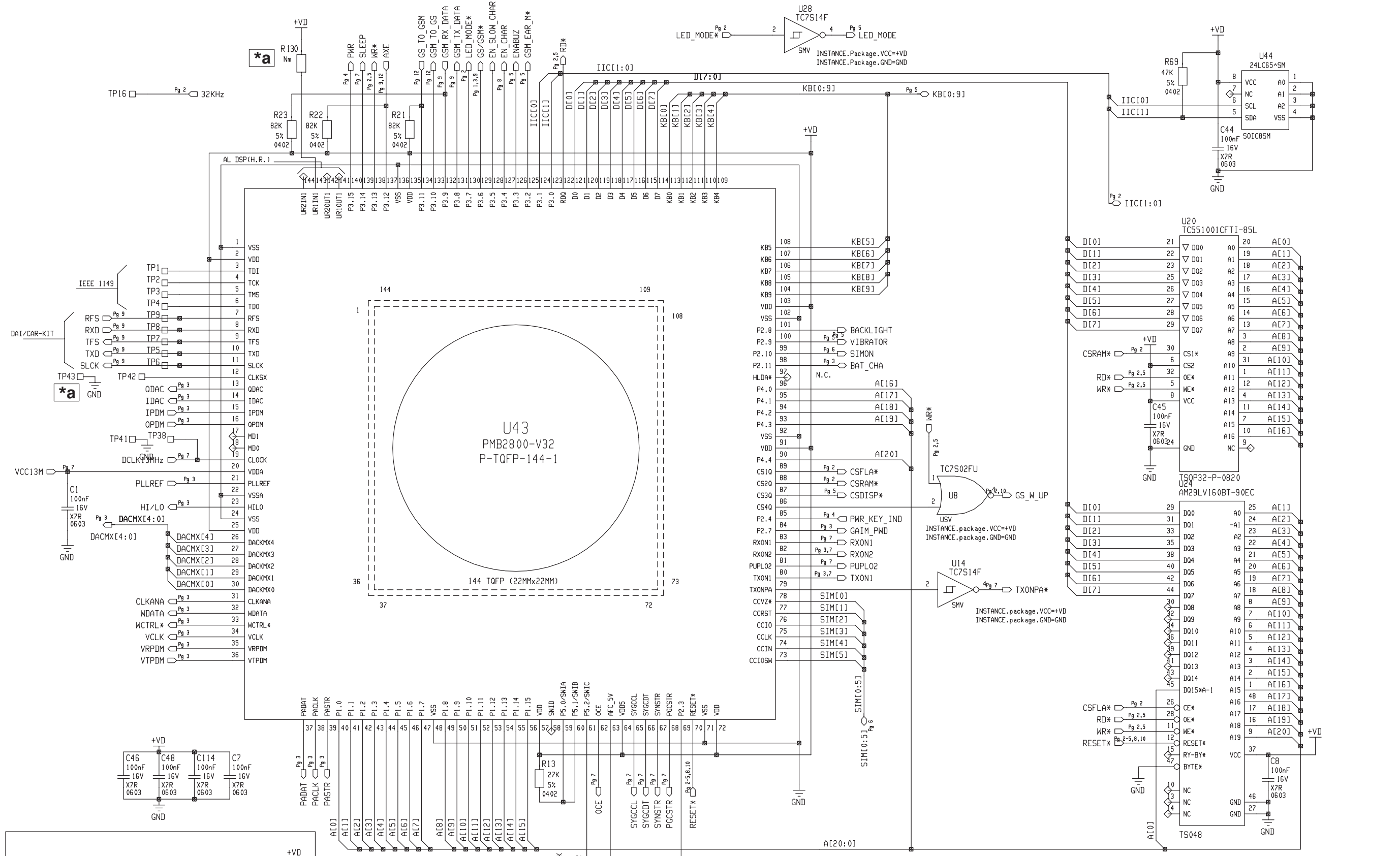




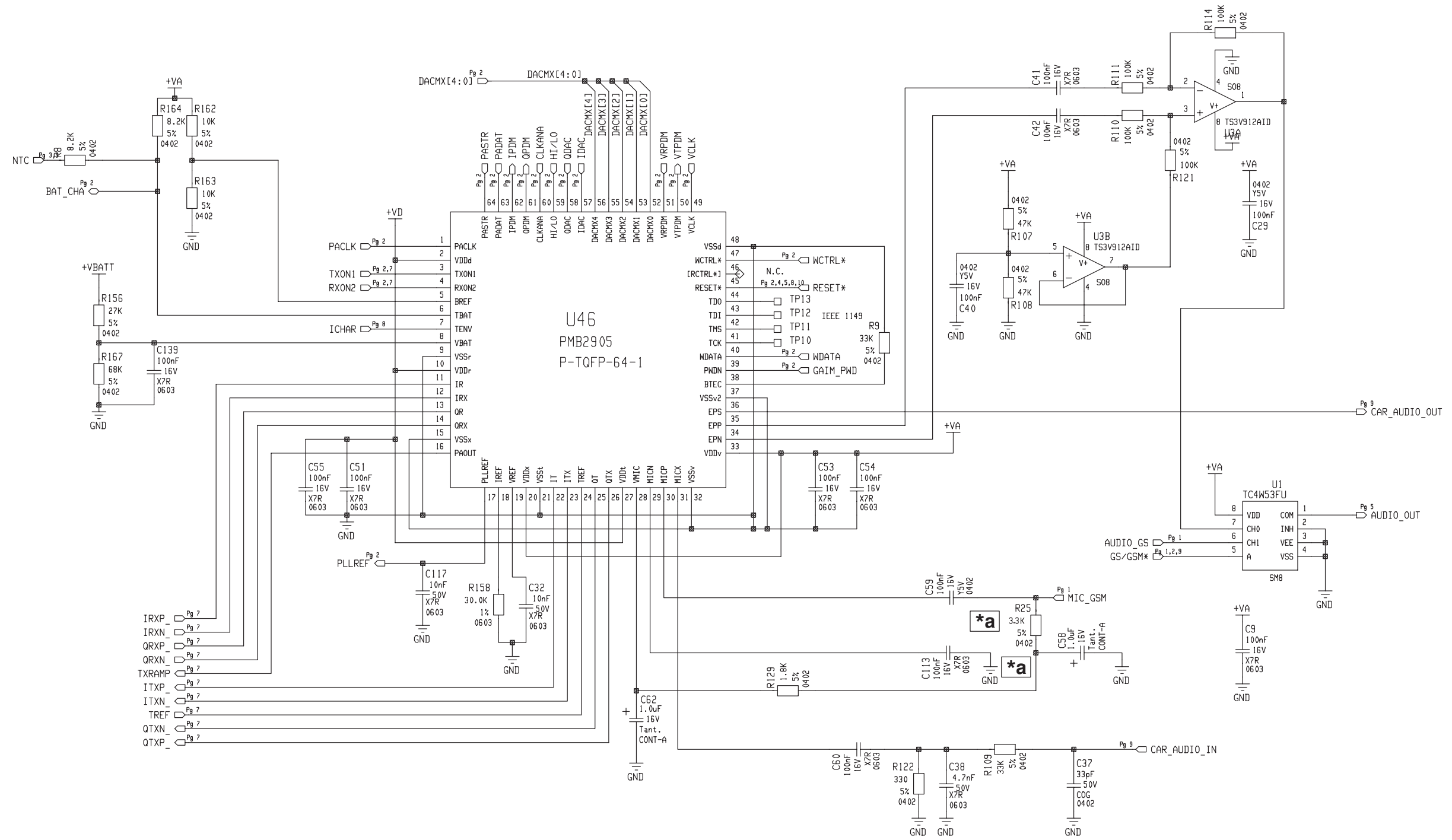


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 VIETATE

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MODIFY	2675	*a								
DATE	23.06.99									
PATH	cael1/home/users/area				DESCRIPTION					
FILE NAME	cs680b.dcs				DMUT Beta					
ICON NAME	cs680b									
PROJECT BYC.	Novati	200199	ANNOTATION		GSM uP, memory & RTC				FORM A3	
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	2	OF SHEETS	15	DRAWING CODE	# 30080SE10680b
VERIFIED BY										



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 RIPRODUZIONE E DIVULGAZIONE  
 VIETATE

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MODIFY	2675	*a							
DATE	23.06.99								
PATH	cael1/home/users/area		DESCRIPTION						
FILE NAME	cs680b.dcs		DMUT Beta						
ICON NAME	cs680b		ANNOTATION						
			GAIM						
PROJECT BY	C.Novati	200199	FORM						
			A3						
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	3	OF SHEETS	15	DRAWING CODE
VERIFIED BY									# 300805E10680b

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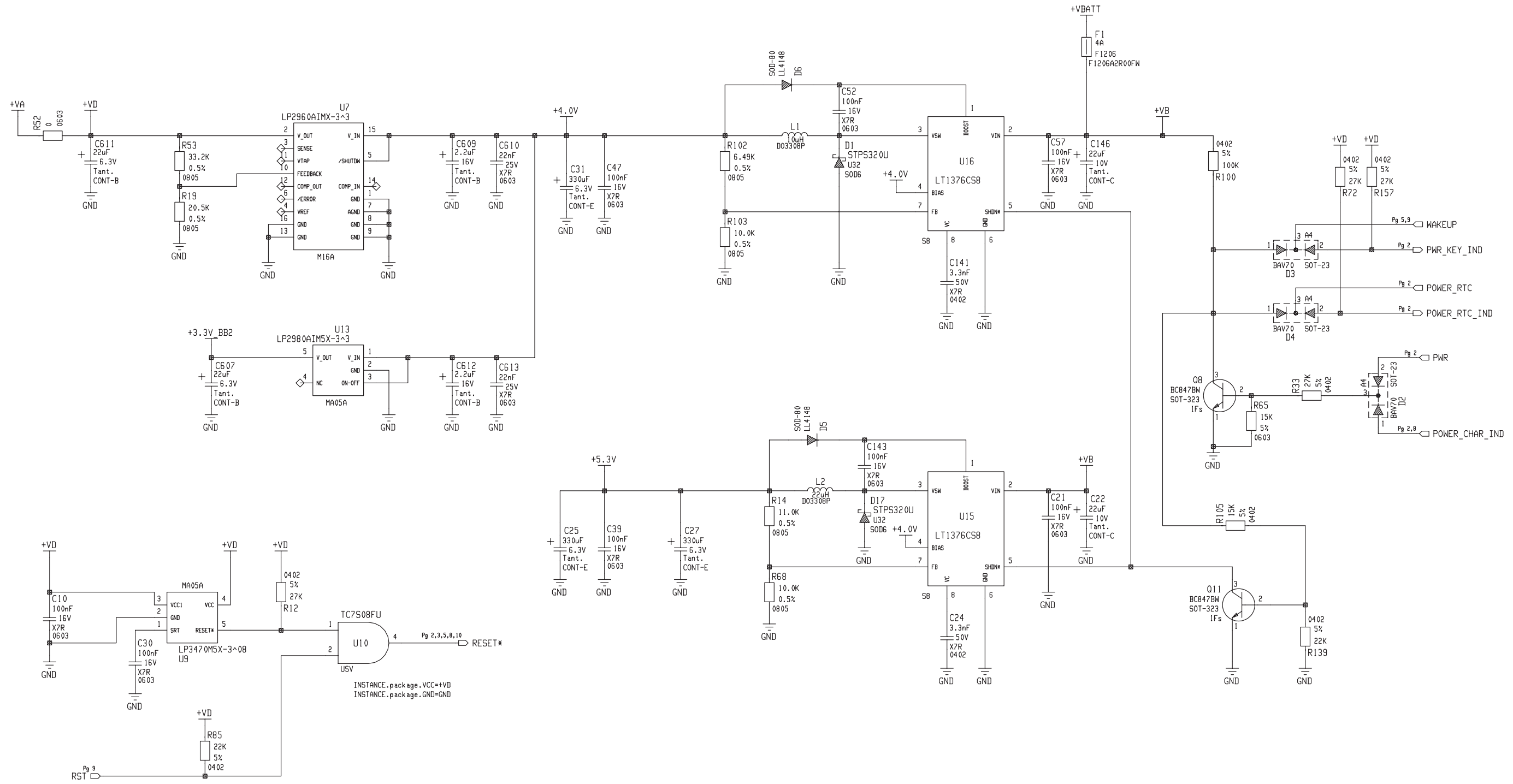
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 RIPRODUZIONE E DIVULGAZIONE  
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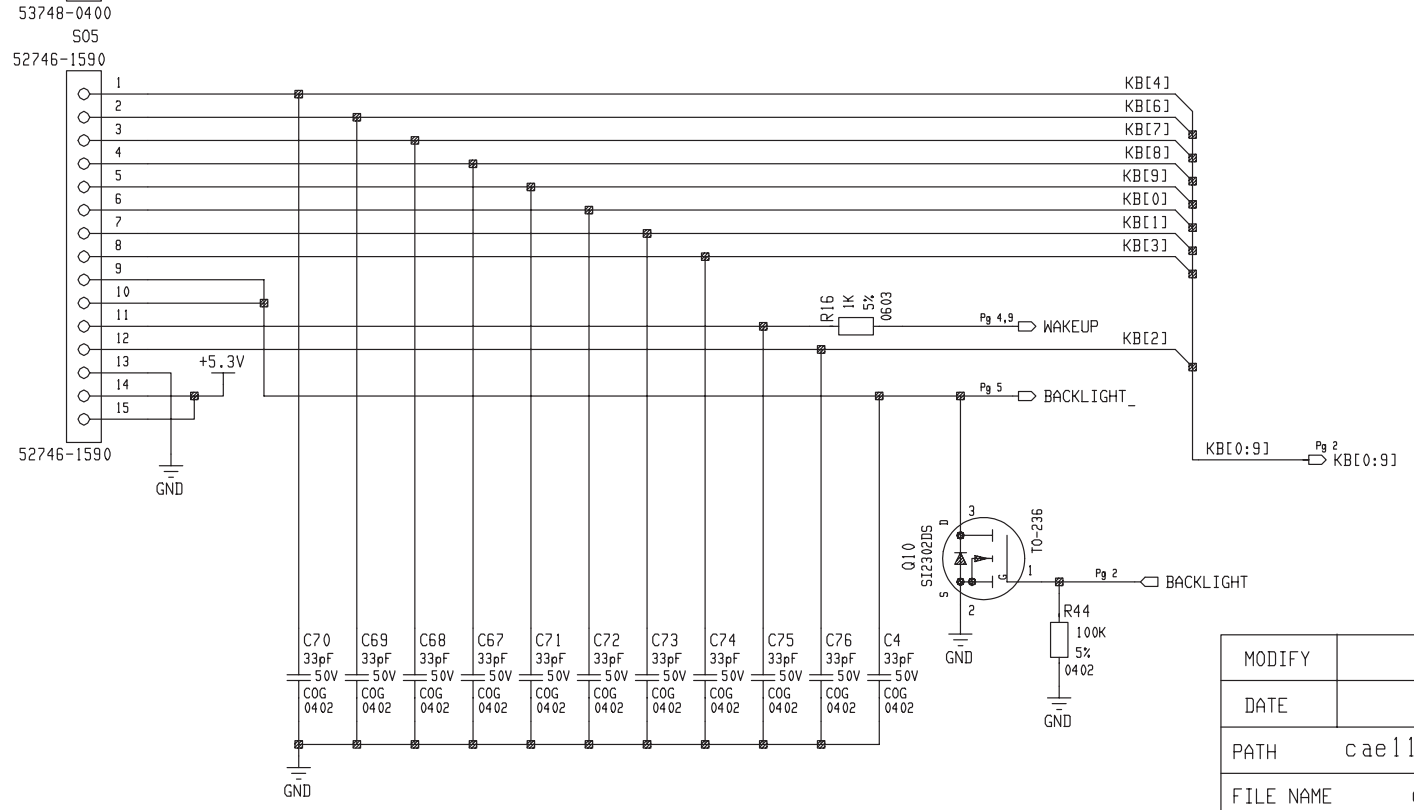
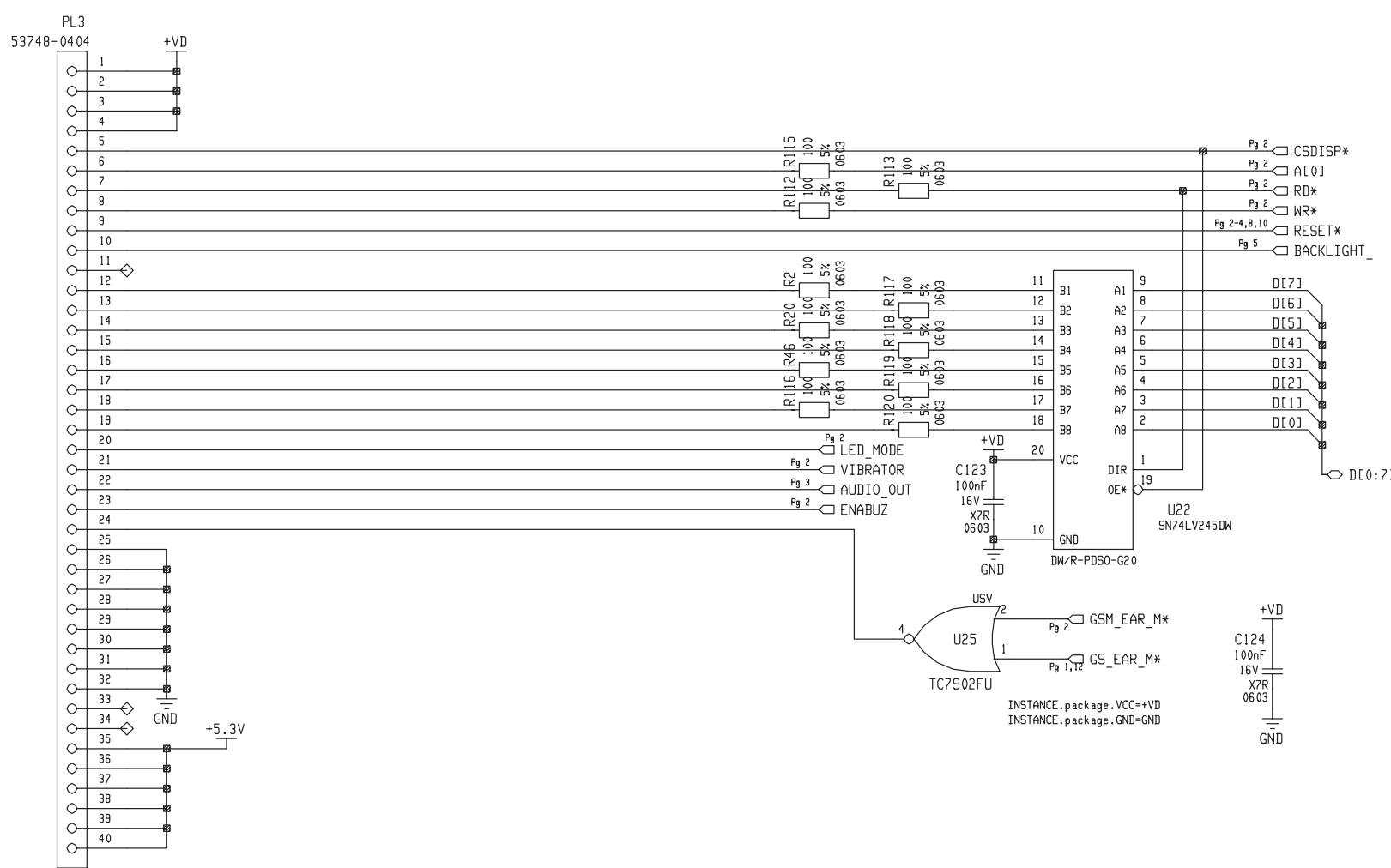
ALL RIGHTS RESERVED  
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MODIFY																
DATE																
PATH	caell/home/users/area						DESCRIPTION									
FILE NAME	cs680b.dcs						DMUT Beta									
ICON NAME	cs680b															
PROJECT BY	C.Novati	200199	ANNOTATION										FORM			
	Power Supply & Reset										A3					
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	4	OF SHEETS	15	DRAWING CODE							
VERIFIED BY			# 300805E10680b													



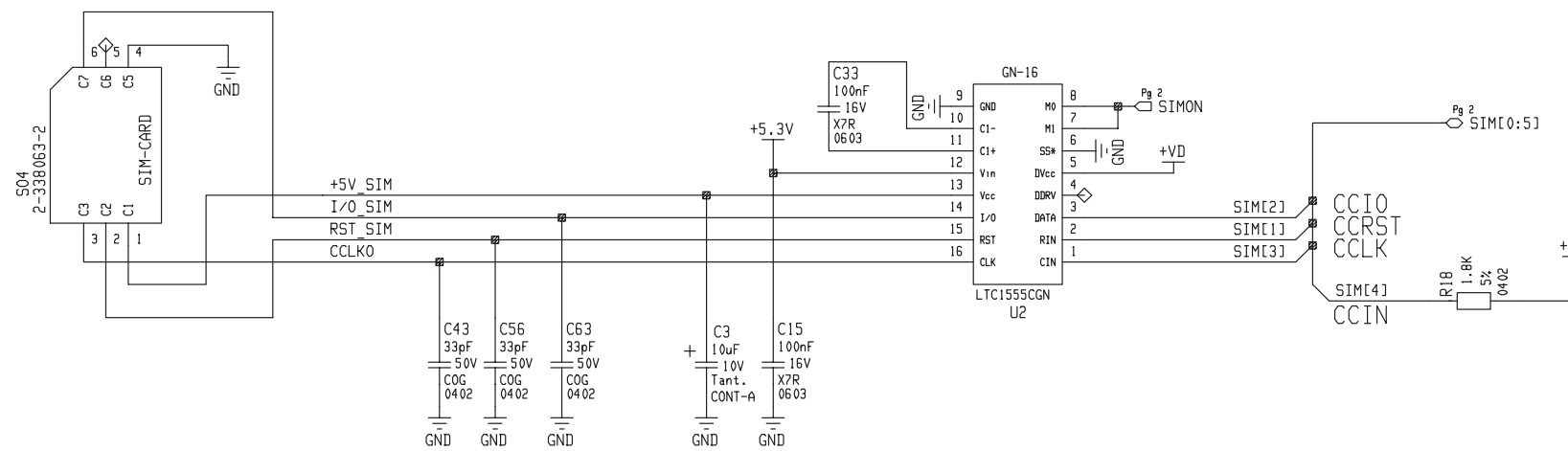
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MODIFY																		
DATE																		
PATH	caell/home/users/area							DESCRIPTION										
FILE NAME	cs680b.dcs							DMUT Beta										
ICON NAME	cs680b																	
PROJECT BY	C.Novati	200199	ANNOTATION												FORM			
		Keyboard & Display connectors												A3				
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	5	OF SHEETS	15	DRAWING CODE									
				# 300805E10680b														
VERIFIED BY																		

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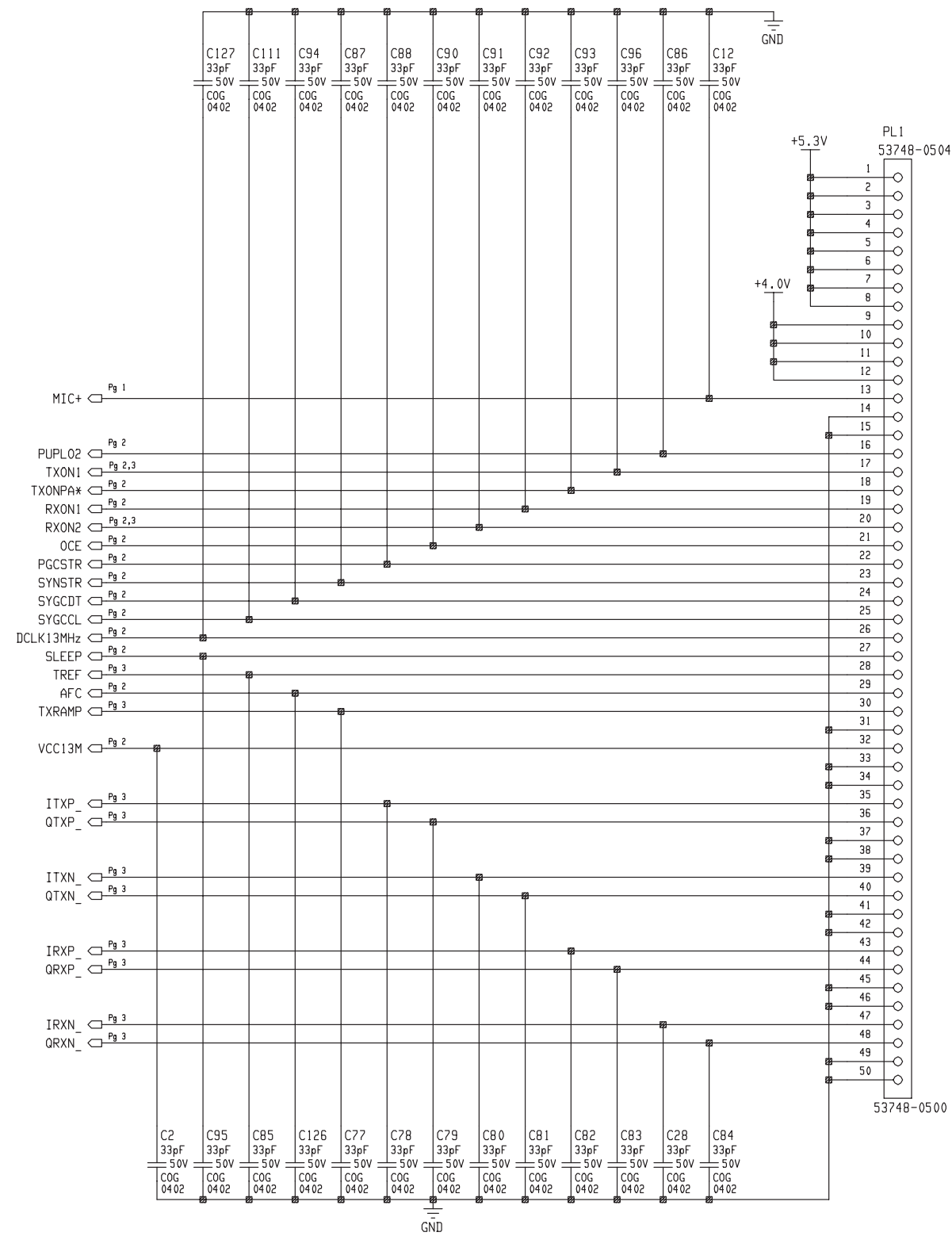


MODIFY																								
DATE																								
PATH	caell/home/users/area										DESCRIPTION													
FILE NAME	cs680b.dcs										DMUT Beta													
ICON NAME	cs680b																							
PROJECT BY	C.Novati					200199					ANNOTATION													
PROJECT BY	D.Tercich					200199					SIM interface													
VERIFIED BY											PROJECT		SHEET N.		OF SHEETS		DRAWING CODE							
											0080		6		15		# 300805E10680b							

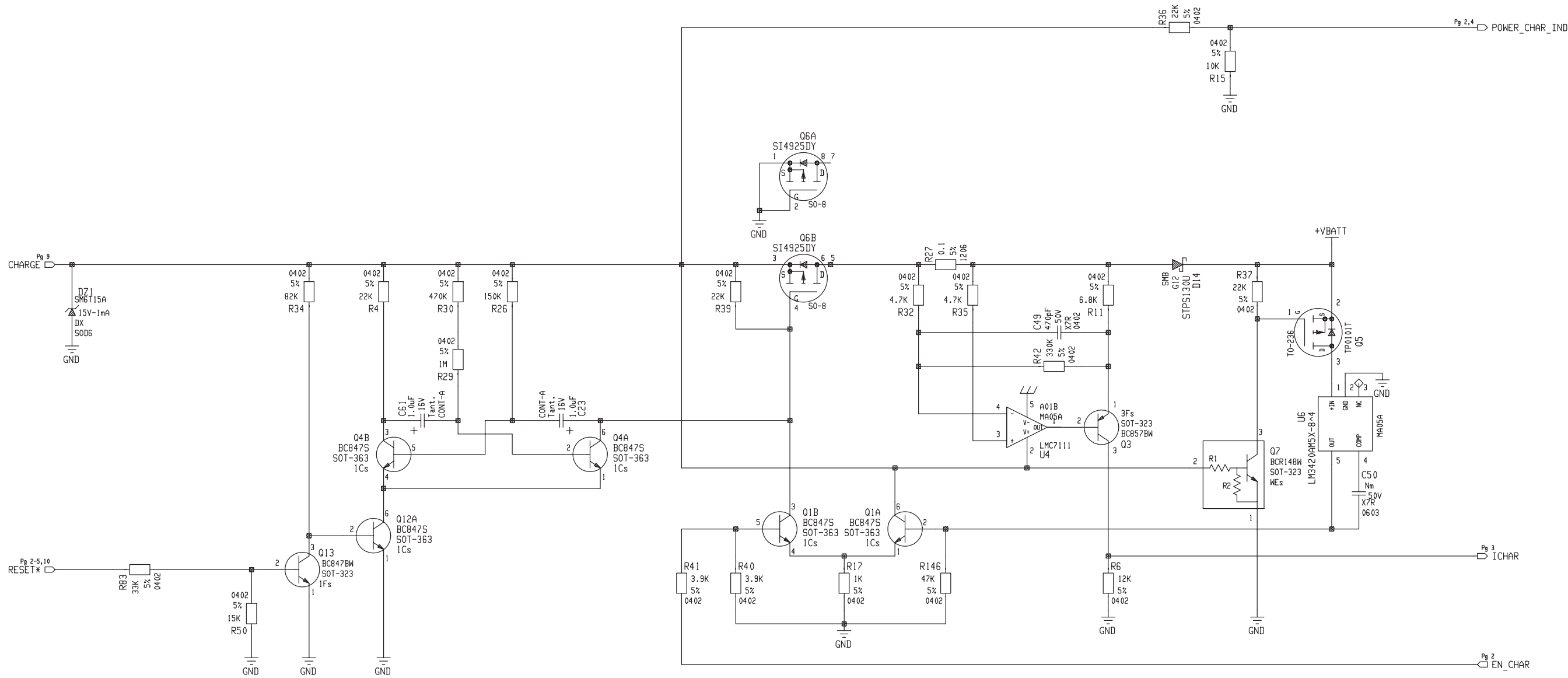
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# ALLA RADIO GSM



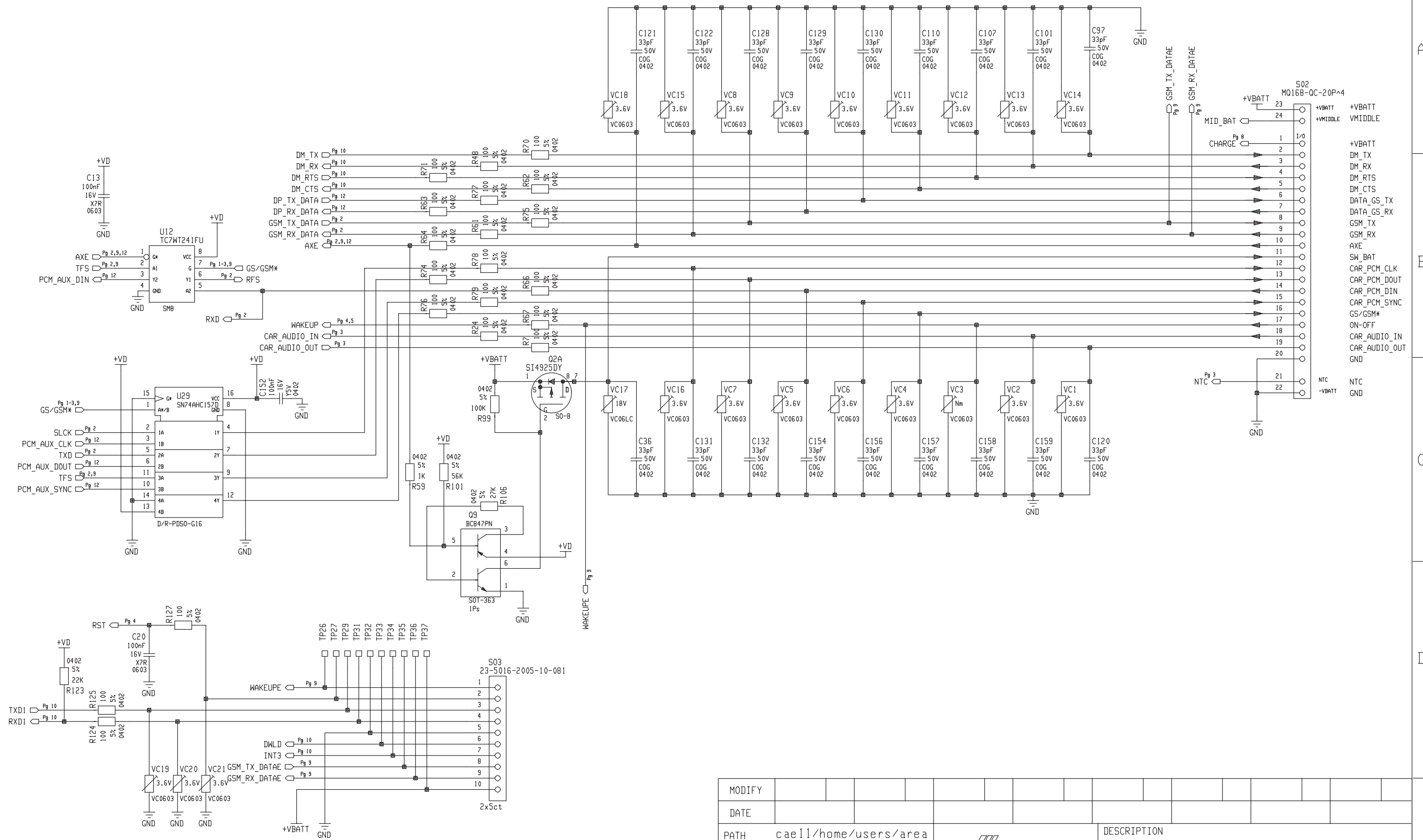
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DATE																		
PATH	cae11/home/users/area			DESCRIPTION														
FILE NAME	cs680b.dcs			DMUT Beta														
ICON NAME	cs680b																	
PROJECT BY	C.Novati	200199	ANNOTATION											FORM				
DRAWN BY	D.Tercich	200199	GSM radio connector											A3				
VERIFIED BY			PROJECT	0080	SHEET N.	7	OF SHEETS	15	DRAWING CODE	# 300805E10680b								



MODIFY																				
DATE																				
PATH	caell/home/users/area										DESCRIPTION									
FILE NAME	cs680b.dcs										DMUT Beta									
ICON NAME	cs680b																			
PROJECT BY	C. Novati		200199		ANNOTATION										FORM					
					Battery charge										A3					
DRAWN BY	D.Tercich		200199		PROJECT		SHEET N.		OF SHEETS		DRAWING CODE									
VERIFIED BY					0080		8		15		# 300805E10680b									

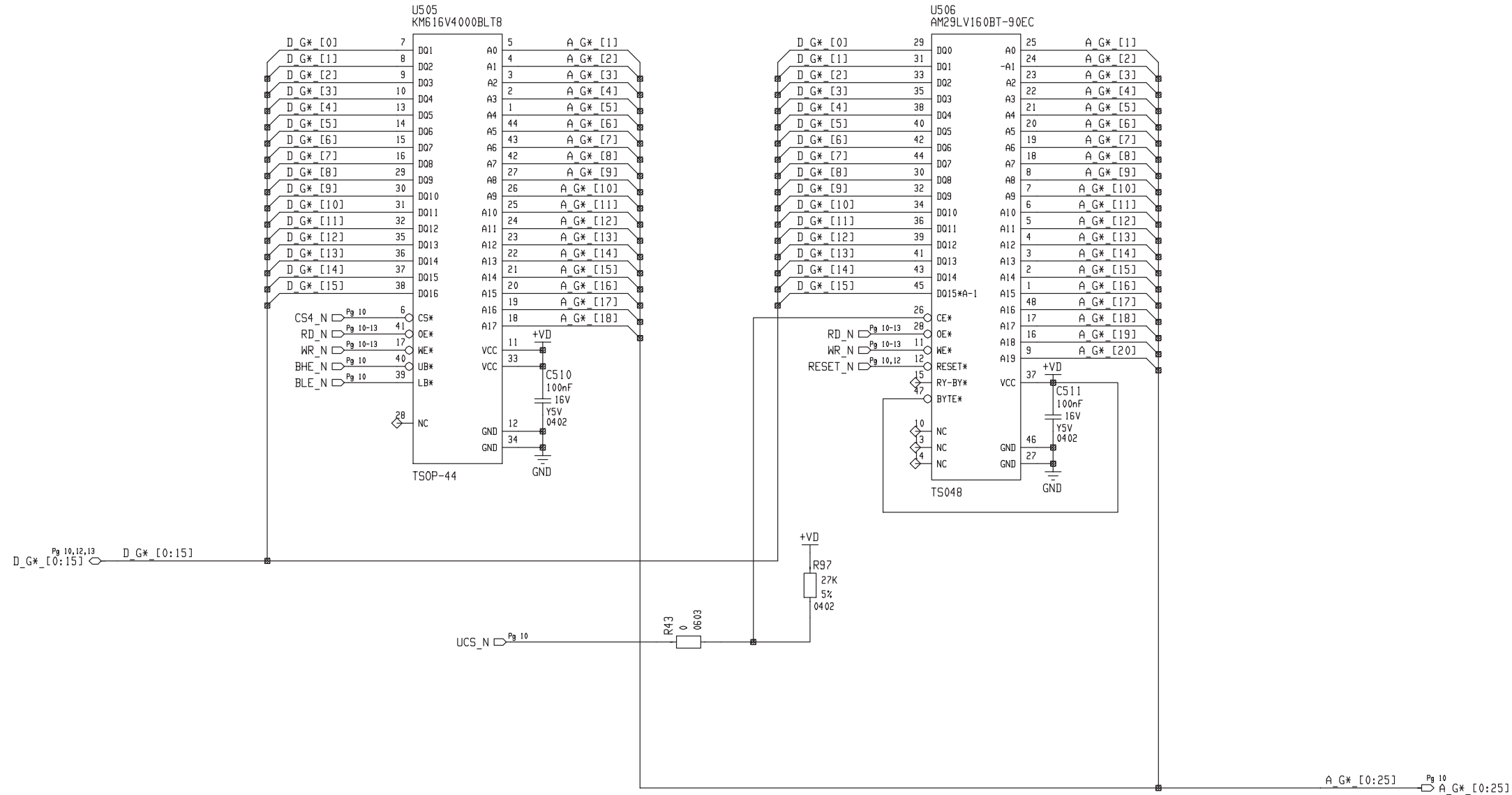
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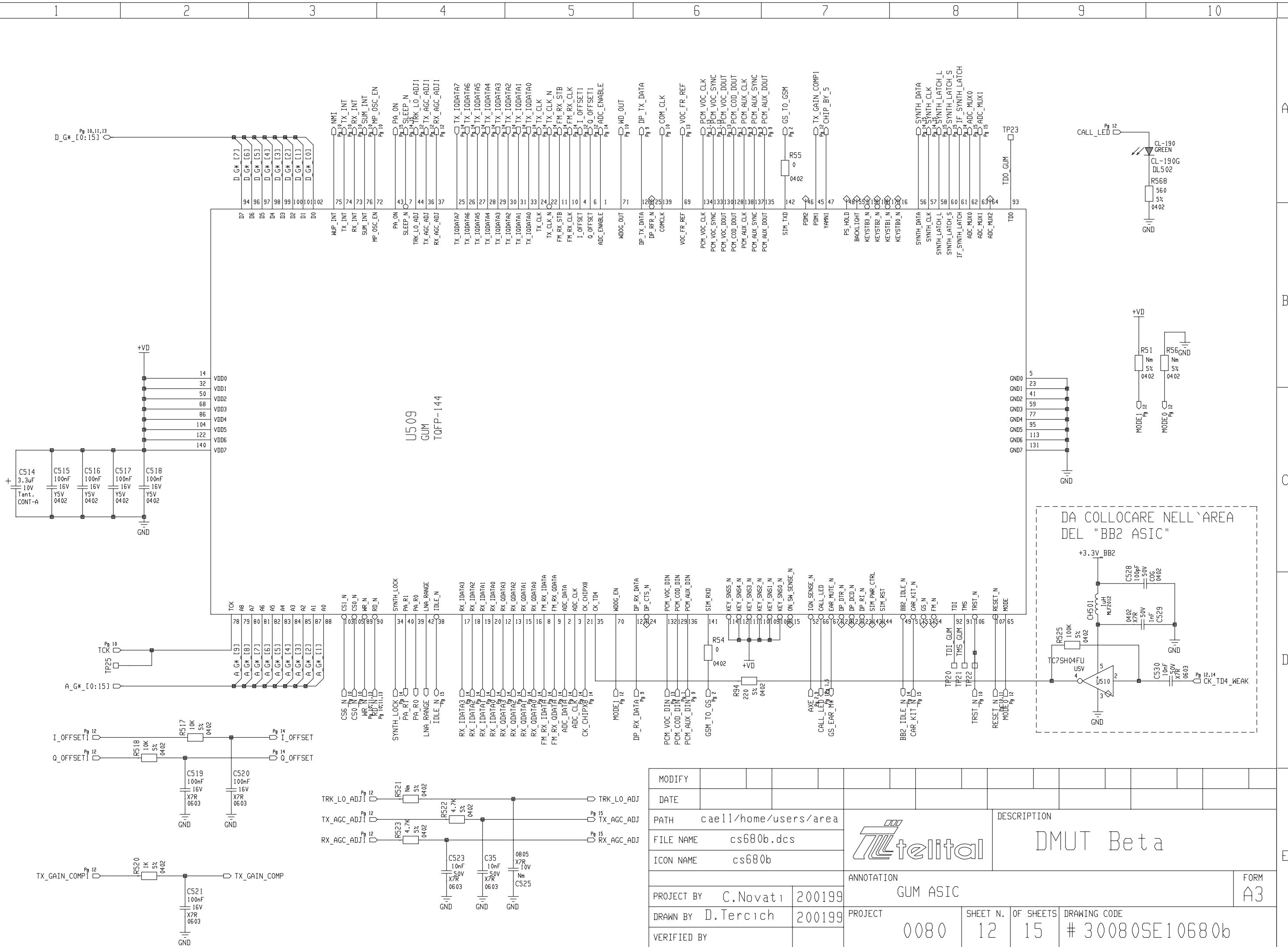


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DATE										
PATH	caell/home/users/area				DESCRIPTION					
FILE NAME	cs680b.dcs				DMUT Beta					
ICON NAME	cs680b									
				ANNOTATION				FORM		
PROJECT BY	C.Novati	200199	Bottom connector					A3		
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	9	OF SHEETS	15	DRAWING CODE	# 30080SE10680b
VERIFIED BY										





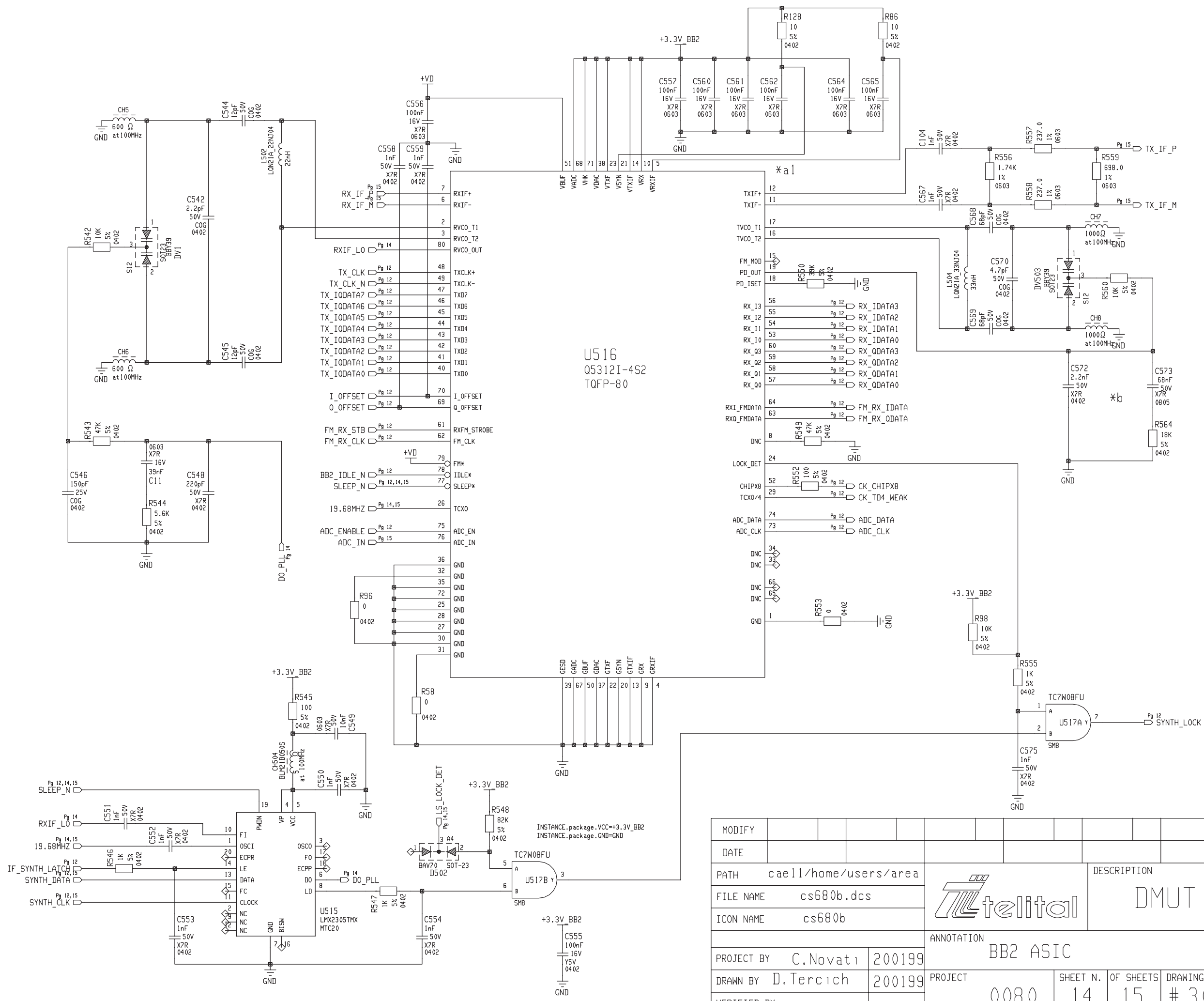
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FILE NAME	cs680b.dcs										 DMUT Beta											
ICON NAME	cs680b																					
PROJECT BY										ANNOTATION										FORM		
C.Novati					200199					GS Memory					A3							
DRAWN BY										PROJECT										SHEET N.	OF SHEETS	DRAWING CODE
D.Tercich										0080										11	15	# 300805E10680b
VERIFIED BY																						



MODIFY										
DATE										
PATH	caell/home/users/area					DESCRIPTION				
FILE NAME	cs680b.dcs					DMUT Beta				
ICON NAME	cs680b					FORM				
						A3				
PROJECT BY	C.Novati	200199	ANNOTATION			GUM ASIC				
DRAWN BY	D.Tercich	200199	PROJECT	0080	SHEET N.	12	OF SHEETS	15	DRAWING CODE	
VERIFIED BY									# 30080SE10680b	



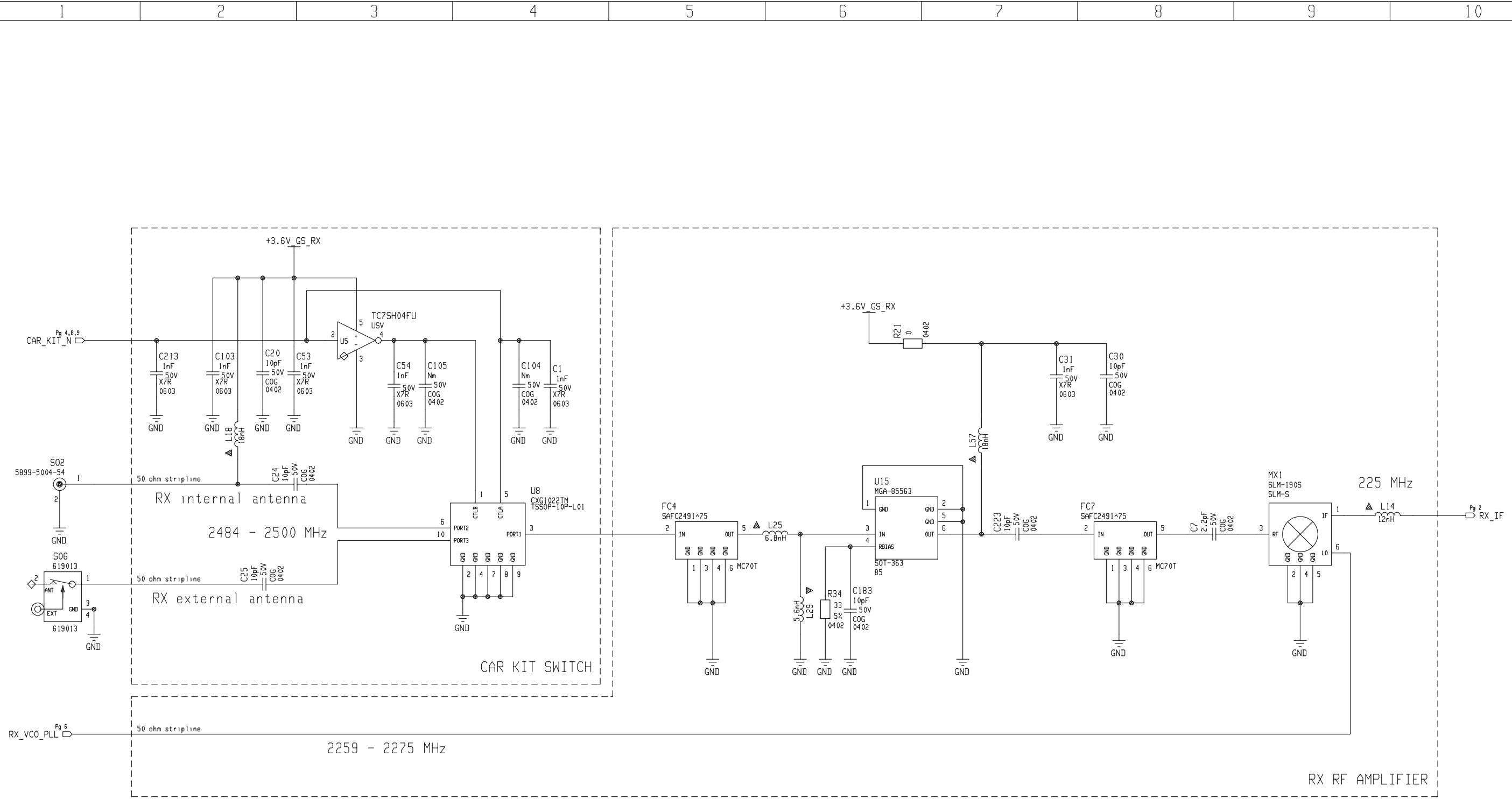





U516  
 Q5312I-4S2  
 TQFP-80

MODIFY													
DATE													
PATH	caell/home/users/area							DESCRIPTION DMUT Beta					
FILE NAME	cs680b.dcs												
ICON NAME	cs680b												
ANNOTATION												FORM A3	
PROJECT BY C.Novati 200199 BB2 ASIC													
DRAWN BY D.Tercich 200199		PROJECT		SHEET N. 14		OF SHEETS 15		DRAWING CODE					
VERIFIED BY				0080				# 30080SE10680b					

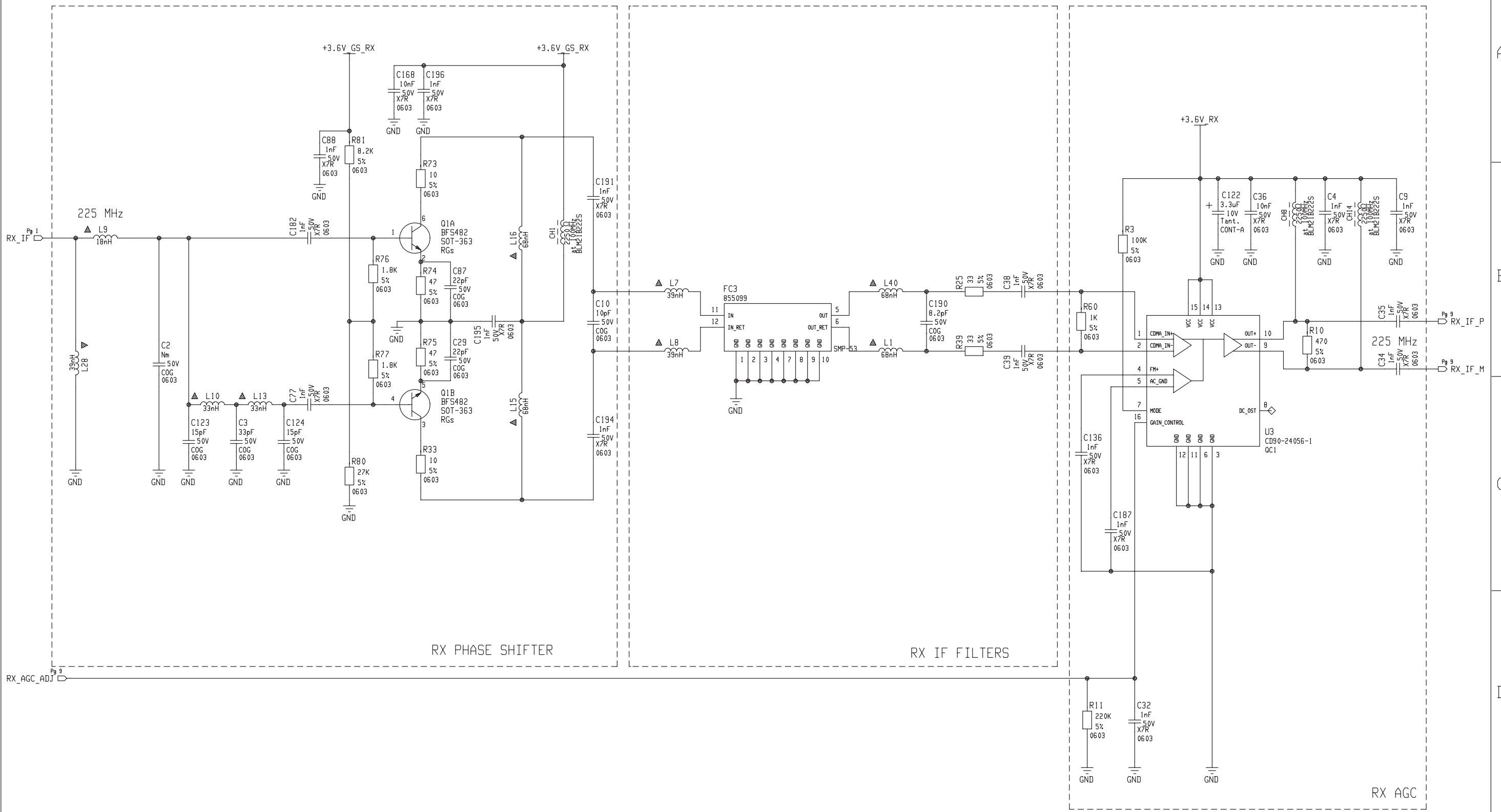




MODIFY									
DATE									
PATH cae11/home/users/area				DESCRIPTION					
FILE NAME cs661c.dcs				GLOBALSTAR RADIO BOARD					
ICON NAME cs661c									
PROJECT BY Momich D.		030898		ANNOTATION				FORM	
				RX CAR KIT SWITCH AND RF AMPLIFIER				A3	
DRAWN BY Serdi M.		080199		PROJECT		SHEET N. OF SHEETS		DRAWING CODE	
				0080		1 9		# 30080SE10661c	
VERIFIED BY Momich D.		150199							

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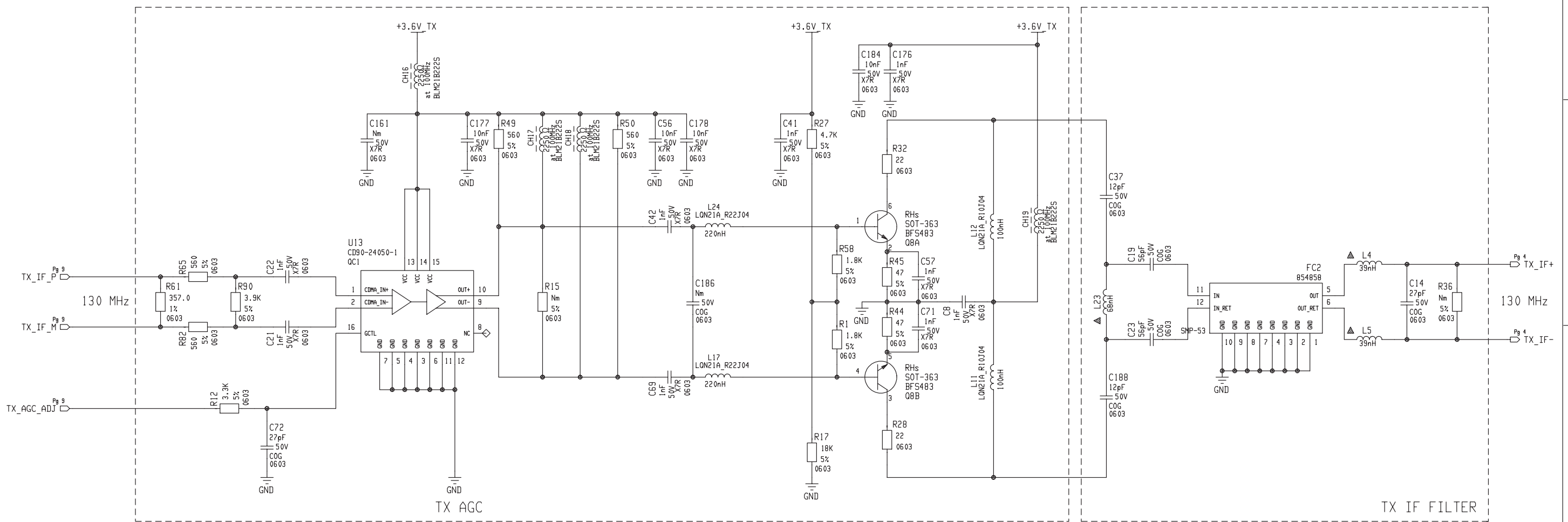
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MODIFY														
DATE														
PATH	caell/home/users/area							DESCRIPTION						
FILE NAME	cs661c.dcs							GLOBALSTAR RADIO BOARD						
ICON NAME	cs661c													
PROJECT BY	Momich D.	030898	ANNOTATION										FORM	
			RX PHASE SHIFTER, IF FITER, AGC										A3	
DRAWN BY	Serdi M.	080199	PROJECT	0080	SHEET N.	2	OF SHEETS	9	DRAWING CODE					
VERIFIED BY	Momich D.	150199	# 30080SE10661c											

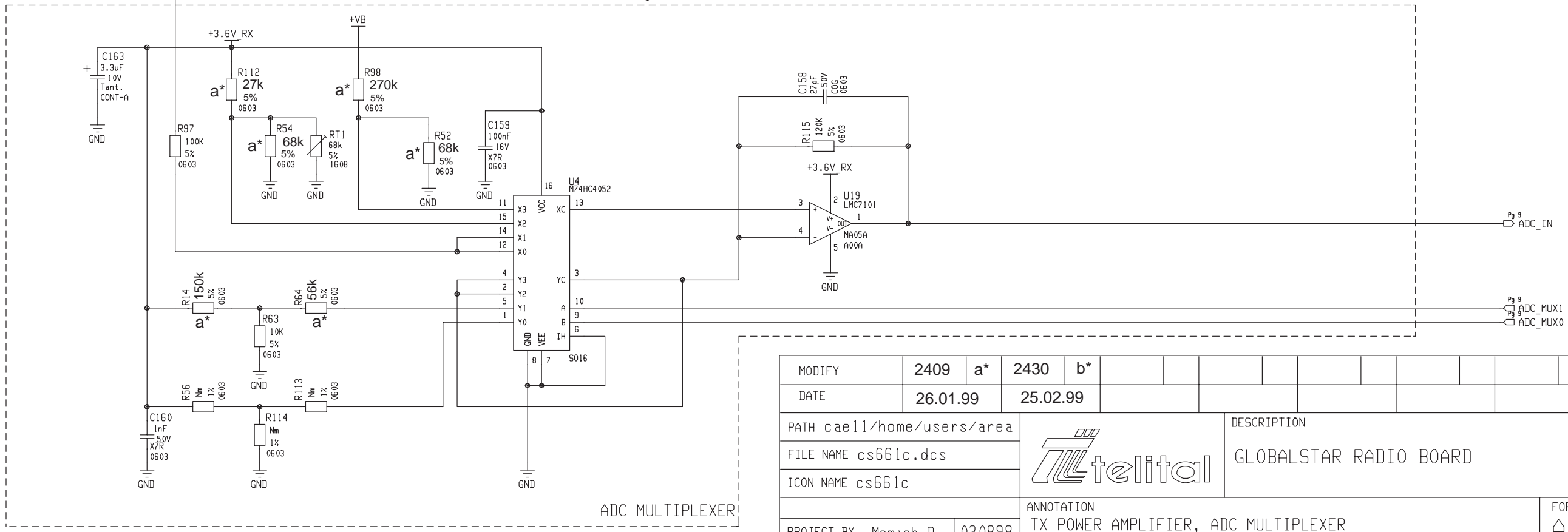
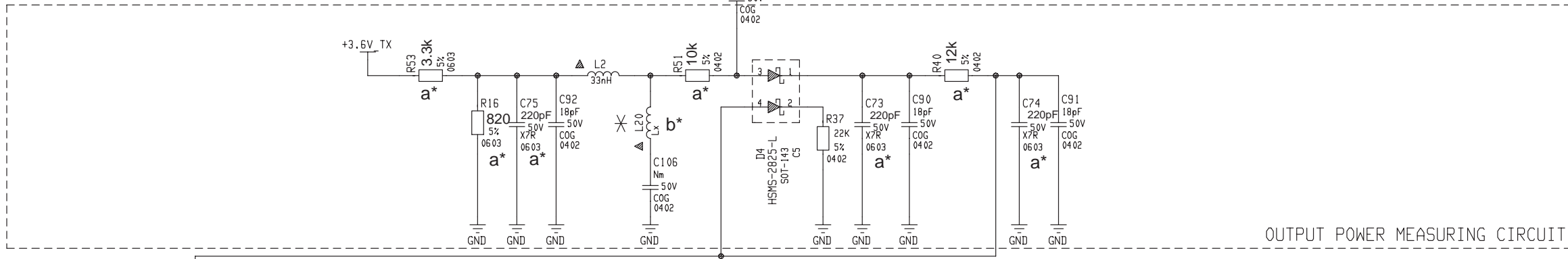
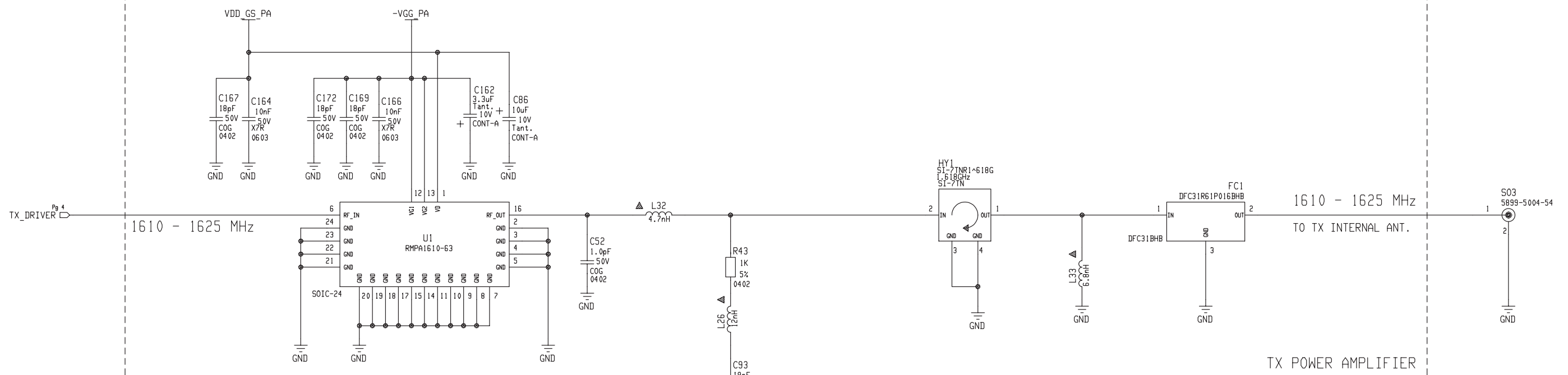
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MODIFY																						
DATE																						
PATH	caell/home/users/area												DESCRIPTION									
FILE NAME	cs661c.dcs												GLOBALSTAR RADIO BOARD									
ICON NAME	cs661c																					
PROJECT BY	Momich D.	030898	ANNOTATION										TX AGC AND IF FILTER								FORM	
DRAWN BY	Serdi M.	080199	PROJECT										0080	SHEET N.	3	OF SHEETS	9	DRAWING CODE				A3
VERIFIED BY	Momich D.	150199											# 30080SE10661c									

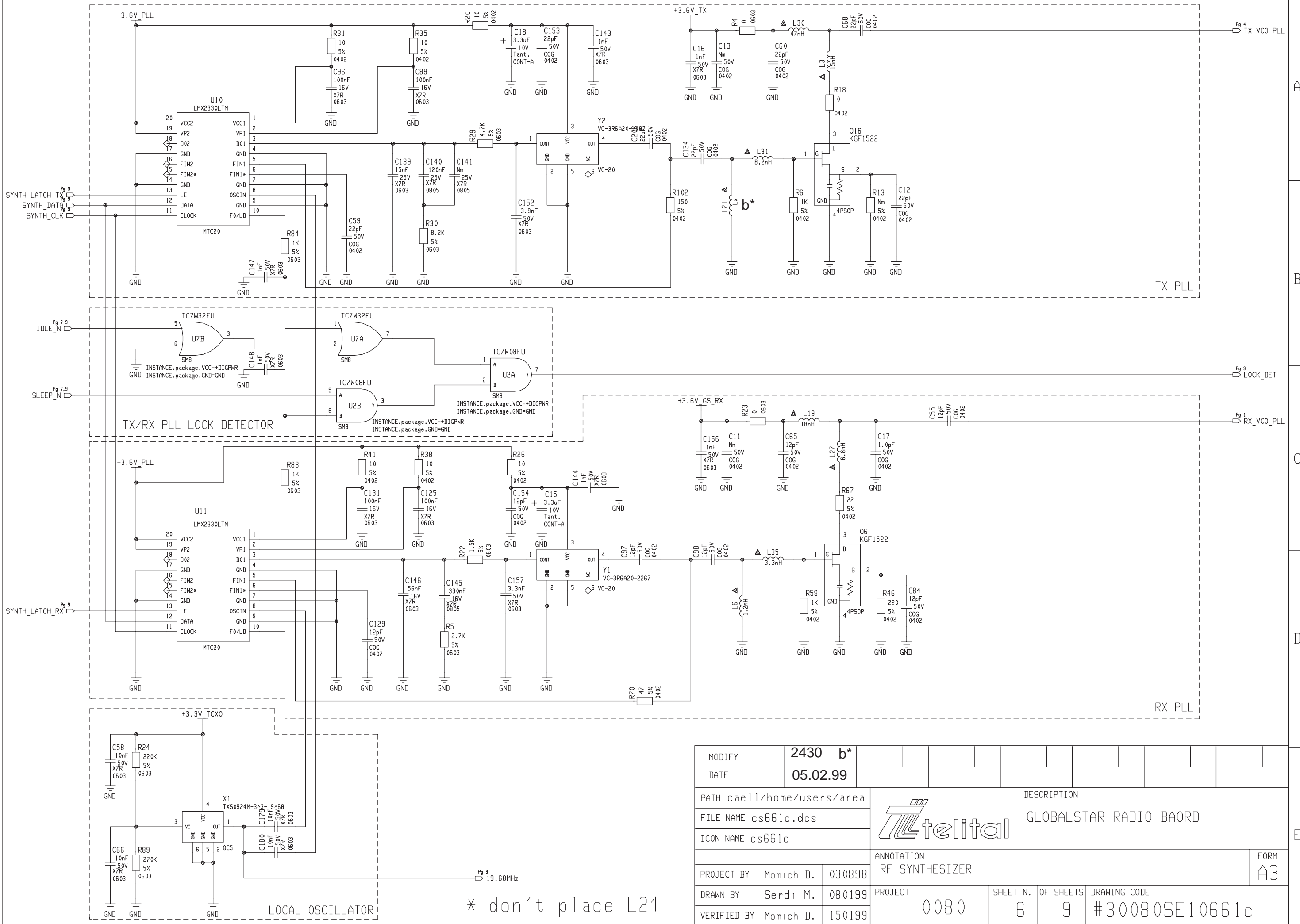




\* don't place L20

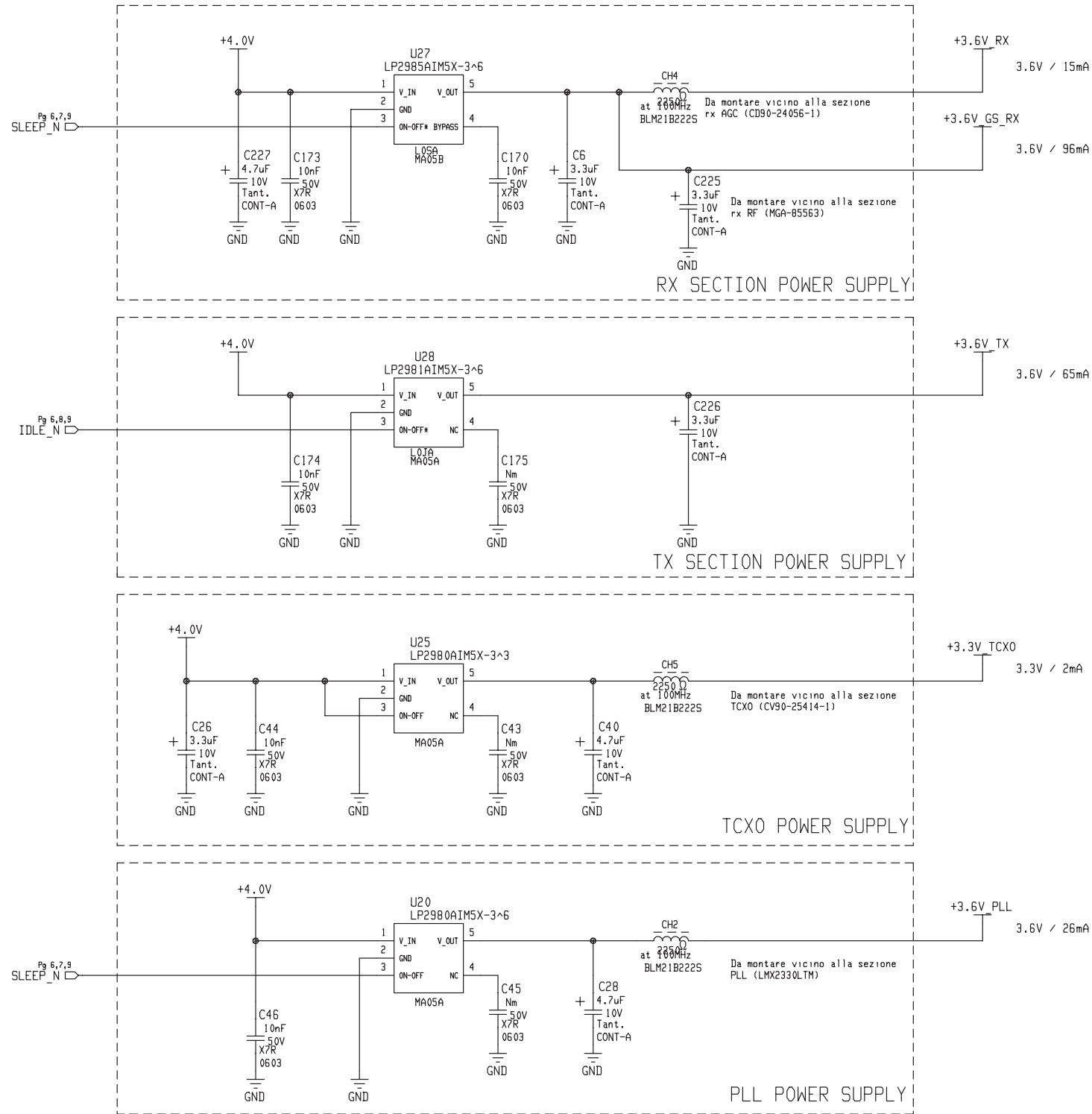
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DATE	26.01.99		25.02.99							
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FILE NAME	cs661c.dcs		GLOBALSTAR RADIO BOARD							
ICON NAME	cs661c									
PROJECT BY	Momich D.	030898	ANNOTATION							FORM
			TX POWER AMPLIFIER, ADC MULTIPLEXER							A3
DRAWN BY	Serdi M.	080199	PROJECT	0080	SHEET N.	5	OF SHEETS	9	DRAWING CODE	
VERIFIED BY	Momich D.	150199							#300805E10661c	






\* don't place L21

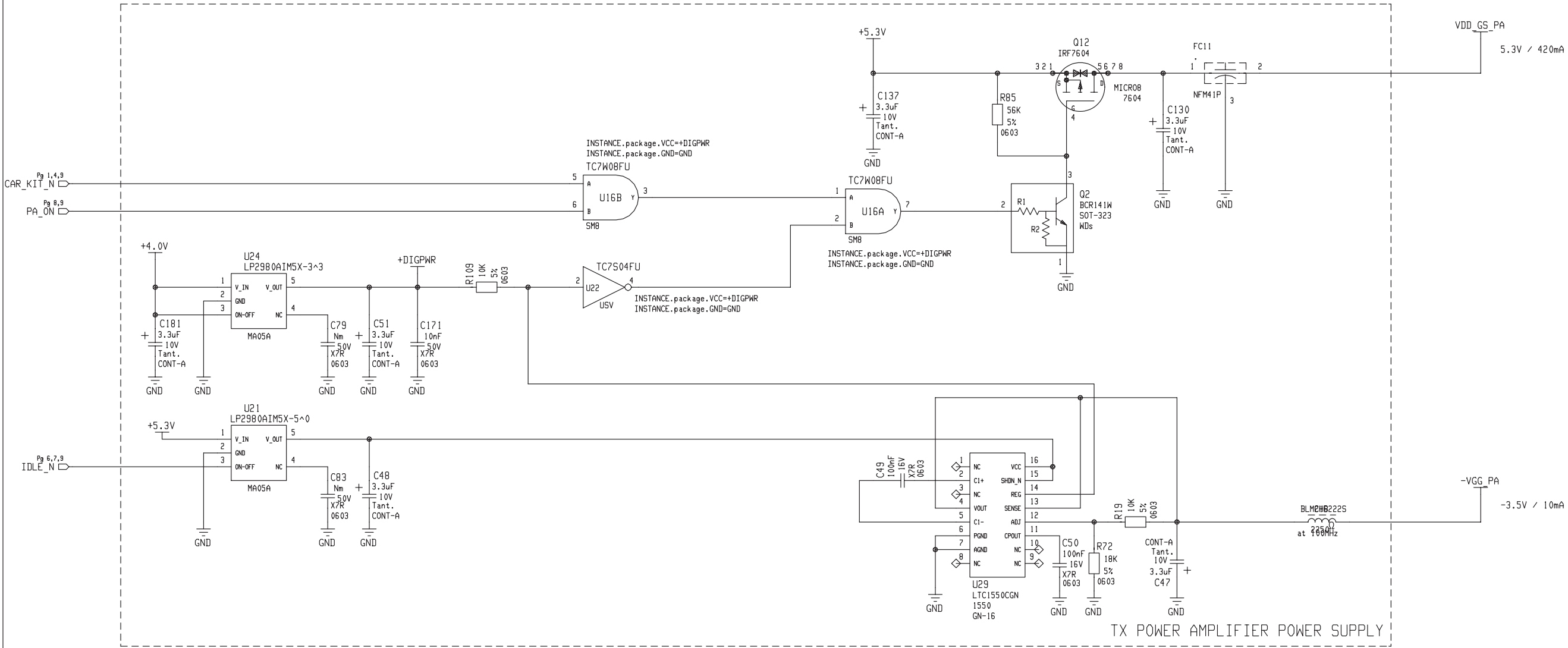
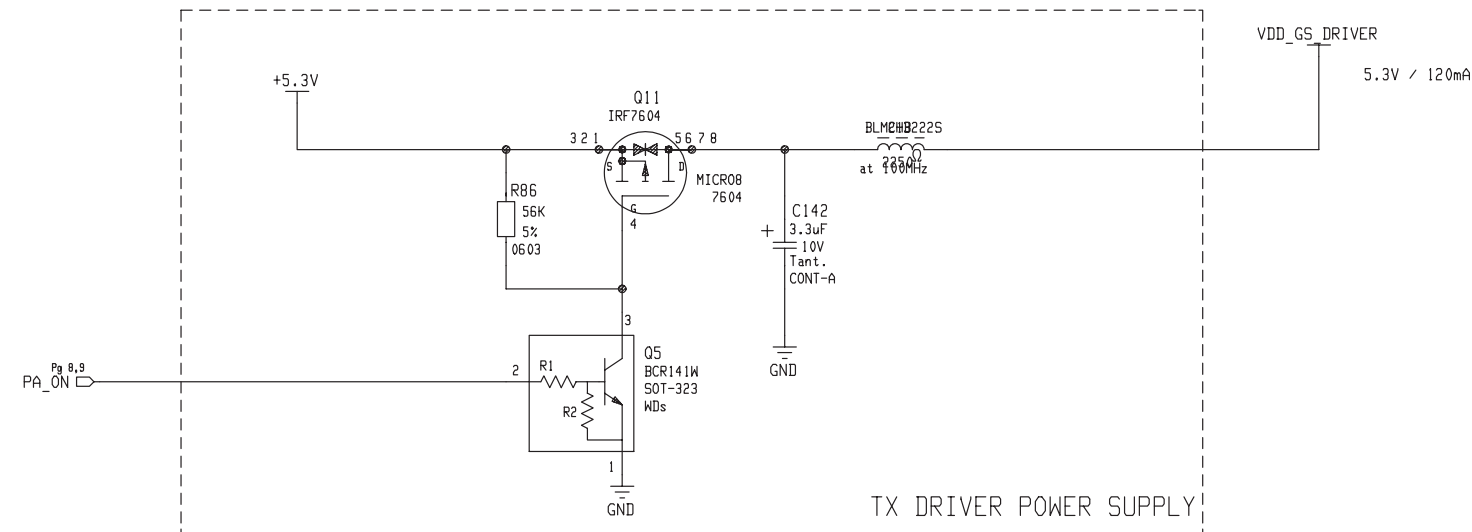
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DATE	05.02.99										
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FILE NAME	cs661c.dcs				GLOBALSTAR RADIO BAORD						
ICON NAME	cs661c										
PROJECT BY	Momich D.	030898	ANNOTATION		RF SYNTHESIZER						
DRAWN BY	Serdı M.	080199	PROJECT		0080	SHEET N.	6	OF SHEETS	9	DRAWING CODE	#300805E10661c
VERIFIED BY	Momich D.	150199									



MODIFY																					
DATE																					
PATH	cae11/home/users/area											DESCRIPTION									
FILE NAME	cs661c.dcs											GLOBALSTAR RADIO BOARD									
ICON NAME	cs661c																				
PROJECT BY	Momich D.	030898	ANNOTATION																		
			GENERAL POWER SUPPLY																		
PROJECT	0080											FORM A3									
DRAWN BY	Serdi M.	080199	DRAWING CODE																		
			# 30080SE10661c																		
VERIFIED BY	Momich D.	150199	SHEET N. OF SHEETS																		
			7 9																		

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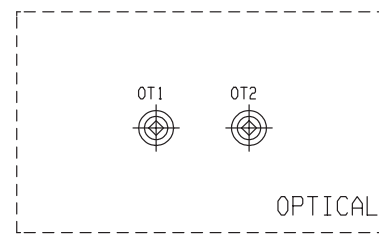
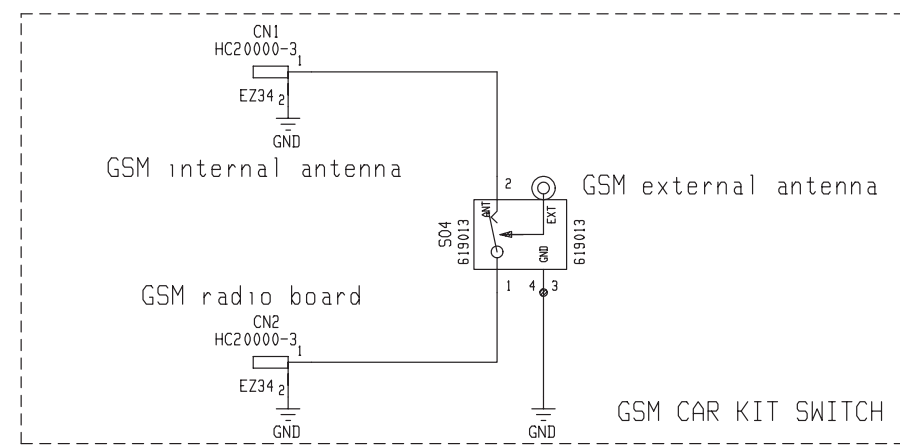
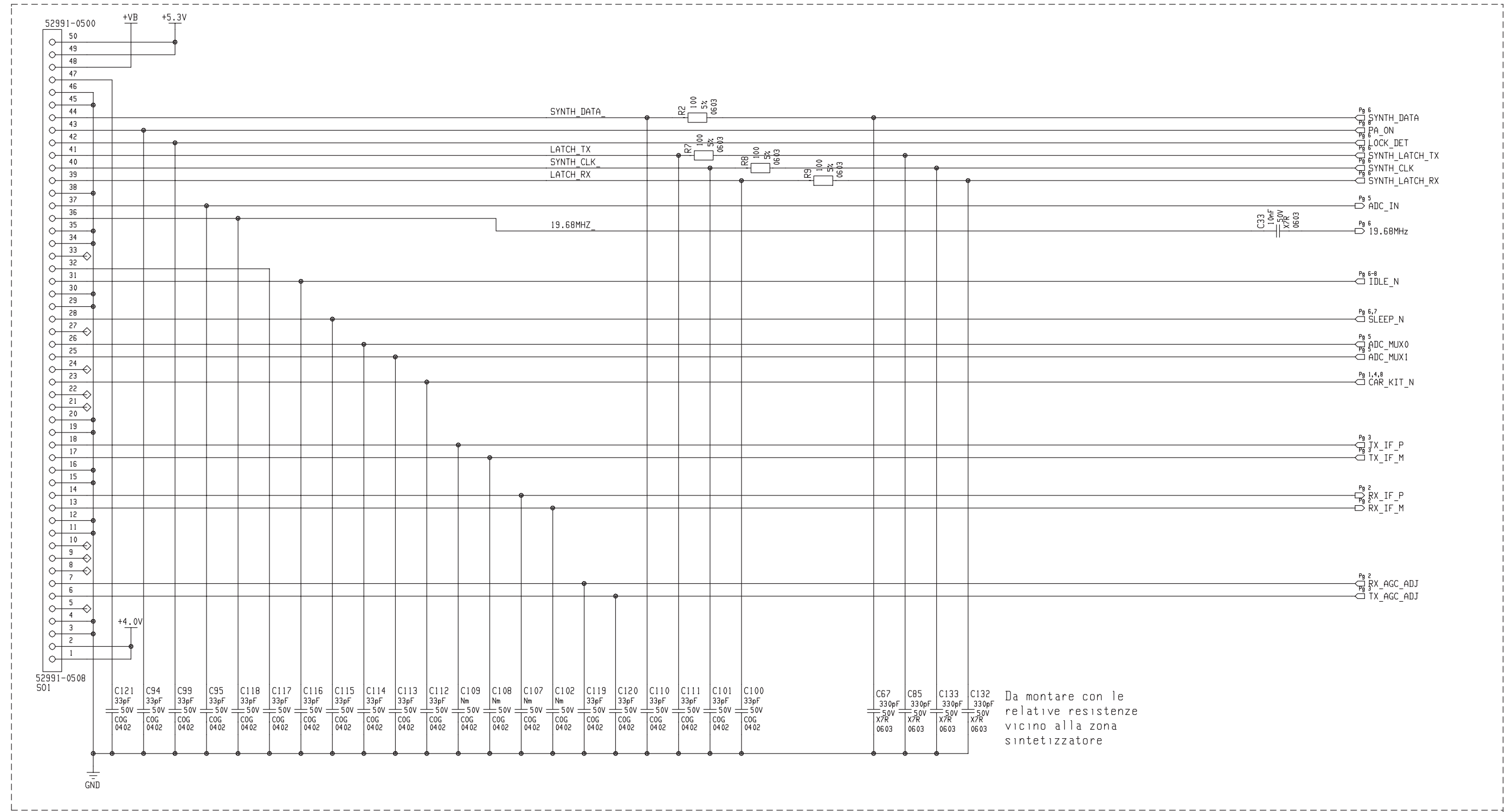



MODIFY																	
DATE																	
PATH	caell/home/users/area										DESCRIPTION						
FILE NAME	cs661c.dcs										GLOBALSTAR RADIO BOARD						
ICON NAME	cs661c																
PROJECT BY	Momich D.	030898	ANNOTATION														
			TX DRIVER AND POWER AMPLIFIER POWER SUPPLY														
PROJECT	0080		SHEET N.	8	OF SHEETS	9	DRAWING CODE										FORM
VERIFIED BY	Momich D.	150199	# 30080SE10661c														A3



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VIETATE

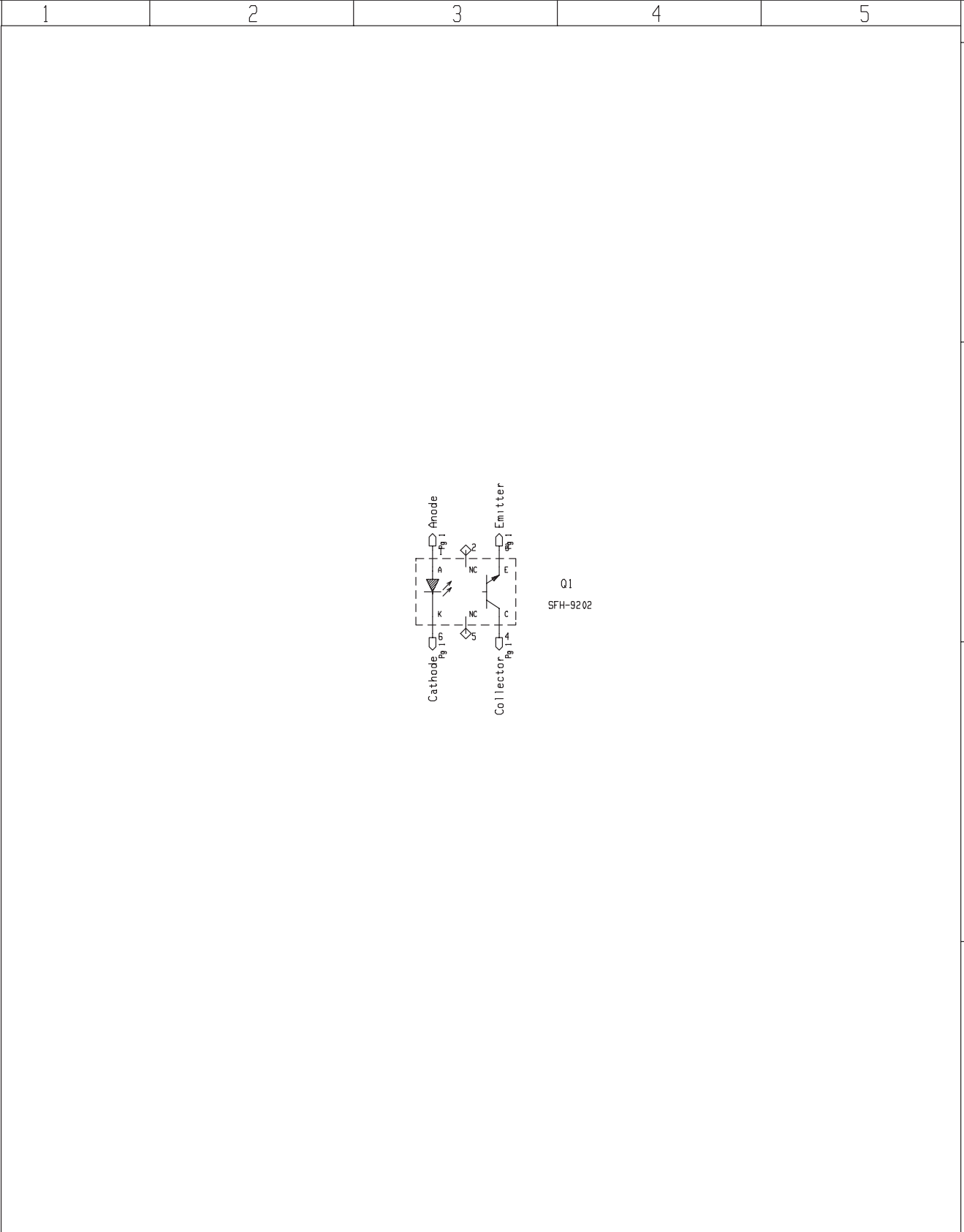
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MODIFY																				
DATE																				
PATH	caell/home/users/area														DESCRIPTION					
FILE NAME	cs661c.dcs														GLOBALSTAR RADIO BOARD					
ICON NAME	cs661c																			
PROJECT BY	Momich D.	030898	ANNOTATION														FORM			
DRAWN BY	Serdi M.	080199	BASE BAND BOARD CONNECTOR AND GSM ANTENNA SWITCH														A3			
VERIFIED BY	Momich D.	150199	PROJECT	0080	SHEET N.	9	OF SHEETS	9	DRAWING CODE											# 30080SE10661c

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DATE														
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PATH /home/users/area				DESCRIPTION										
FILE NAME cs760.dcs				OPTICAL SENSOR BOARD										
ICON NAME cs760														
		ANNOTATION										FORM		
PROJECT BY Novati C.		280598	GLOBALSTAR - GSM SYSTEM								A4			
DRAWN BY Bellen E.		280598	PROJECT	SHEET N.	OF SHEETS	DRAWING CODE								
VERIFIED BY			0080	1	1	# 30080SE10760								

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## 7 PARTS LIST

Bill of materials GSM Radio & display assy cs710c	code: 2-000100267
Bill of materials BB Globalstar & GSM assy cs680b	code: 2-000100256
Bill of materials Radio GS assy cs661c	code: 2-000100257
Bill of materials Optical Sensor cs760	code: 2-000100201

Data di stampa 29/03/99

Data creazione distinta 22/02/99

Data di validita' 29/03/99

Data ultima modifica 22/02/99

Revisione Validita'

Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM	
Assieme 01 2000100267						MODULO RADIO&DISP GSM CS710C VERS 22.02.99			Nr.progetto: 0080
1	01	2000400267	MODULO RADIO&DISP GSM CS710C VERS 22.02.99 LATO PTH		PZ	1,00000	rif. dis. 1		
.2	01	2000200267	MODULO RADIO&DISP GSM CS710C VERS 22.02.99 LATO PRIM SMD		PZ	1,00000	rif. dis. 1		
..3	01	2000300267	MODULO RADIO&DISP GSM CS710C VERS 22.02.99 LATO SEC SMD		PZ	1,00000	rif. dis. 1		
...4	01	1ff0100710c	BASETTA C/S RADIO & DISP GSM VERS 22.02.99		PZ	1,00000	rif. dis. 1		
...4	01	1vv0200268fpe	ETICHETTA ACRILATO BIANCO H6 L20 3 PISTE	TT.26.0002	PZ	1,00000	rif. dis. 2		
...4	01	1ff0600089ml	CONN F CSTP 50 VIE VERT SMD P-0.5	52991-0508	PZ	1,00000	SO4		
...4	01	1ff0600129ml	CONN F CSTP 40 VIE VERT SMD P-0.5	52991-0408	PZ	1,00000	SO3		
..3	01	1aa0100106ky	RES SMD 0 OHM JUMPER1/16W 0603	CJ10-000-D	PZ	1,00000	R1		
..3	01	1aa0100111ky	RES SMD 33 R 5% 1/16W 0603	CR10-330J-T	PZ	1,00000	R30		
..3	01	1aa0100113ky	RES SMD 100 R 5% 1/16W 0603	CR10-101J-T	PZ	4,00000	R66 R67 R69 R70		
..3	01	1aa0100203ky	RES SMD 56 R 5% 1/10W 0805	CR21-560J-T	PZ	1,00000	R71		
..3	01	1aa0100361ky	RES SMD 10 R 5% 1/16W 0402	CR05-100J-H	PZ	13,00000	R5 R18 R25 R26 R29 R37 R42 R46 R47 R48 R55 R58 R60		
..3	01	1aa0100362ky	RES SMD 22 R 5% 1/16W 0402	CR05-220J-H	PZ	3,00000	R31 R36 R59		
..3	01	1aa0100364ky	RES SMD 33 R 5% 1/16W 0402	CR05-330J-H	PZ	2,00000	R45 R93		
..3	01	1aa0100365ky	RES SMD 47 R 5% 1/16W 0402	CR05-470J-H	PZ	1,00000	R20		
..3	01	1aa0100370ky	RES SMD 220 R 5% 1/16W 0402	CR05-221J-H	PZ	3,00000	R33 R49 R62		
..3	01	1aa0100373ky	RES SMD 560 R 5% 1/16W 0402	CR05-561J-H	PZ	2,00000	R12 R77		
..3	01	1aa0100374ky	RES SMD 1 K 5% 1/16W 0402	CR05-102J-H	PZ	6,00000	R8 R35 R38 R39 R94 R157		
..3	01	1aa0100375ky	RES SMD 1.8 K 5% 1/16W 0402	CR05-182J-H	PZ	4,00000	R51 R52 R53 R54		
..3	01	1aa0100376ky	RES SMD 2.7 K 5% 1/16W 0402	CR05-272J-H	PZ	1,00000	R65		
..3	01	1aa0100377ky	RES SMD 4.7 K 5% 1/16W 0402	CR05-472J-H	PZ	2,00000	R14 R24		
..3	01	1aa0100378ky	RES SMD 5.6 K 5% 1/16W 0402	CR05-562J-H	PZ	3,00000	R11 R23 R44		
..3	01	1aa0100379ky	RES SMD 6.8 K 5% 1/16W 0402	CR05-682J-H	PZ	1,00000	R2		
..3	01	1aa0100380ky	RES SMD 10 K 5% 1/16W 0402	CR05-103J-H	PZ	4,00000	R21 R57 R78 R79		
..3	01	1aa0100382ky	RES SMD 15 K 5% 1/16W 0402	CR05-153J-H	PZ	1,00000	R27		
..3	01	1aa0100388ky	RES SMD 47 K 5% 1/16W 0402	CR05-473J-H	PZ	2,00000	R4 R80		

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
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Assieme	01	2000100267	MODULO RADIO&DISP GSM CS710C VERS 22.02.99				Nr.progetto: 0080	
..3	01	1aa0100390ky	RES SMD 100 K 5% 1/16W 0402	CR05-104J-H	PZ	3,00000	R9 R10 R17	
..3	01	1aa0100394ky	RES SMD 470 K 5% 1/16W 0402	CR05-474J-H	PZ	1,00000	R16	
..3	01	1aa0100395ky	RES SMD 560 K 5% 1/16W 0402	CR05-564J-H	PZ	1,00000	R15	
..3	01	1aa0100398ky	RES SMD 100 R 5% 1/16W 0402	CR05-101J-H	PZ	3,00000	R3 R89 R90	
..3	01	1aa0100400ky	RES SMD 3.9 K 5% 1/16W 0402	CR05-392J-H	PZ	4,00000	R6 R61 R63 R76	
..3	01	1aa0100406ky	RES SMD 8.2 K 5% 1/16W 0402	CR05-822J-H	PZ	1,00000	R22	
..3	01	1aa0100407ky	RES SMD 0 OHM JUMPER1/16W 0402	CJ05-000J-H	PZ	10,00000	R28 R34 R40 R41 R56 R68 R73 R74 R75 R96	
..3	01	1aa0100432ky	RES SMD 20.0 K 1% 1/16W 0603	CR10-2002F-T	PZ	1,00000	R13	
..3	01	1aa0100462ky	RES SMD 39.0 K 1% 1/16W 0603	CR10-3902F-T	PZ	1,00000	R166	
..3	01	1aa0100463ky	RES SMD 47.0 K 1% 1/16W 0603	CR10-4702F-T	PZ	1,00000	R19	
..3	01	1aa0100465ky	RES SMD 2.2 K 5% 1/16W 0402	CR05-222J-H	PZ	1,00000	R7	
..3	01	1aa0100485ky	RES SMD 82 R 5% 1/16W 0402	CR05-820J-H	PZ	1,00000	R91	
..3	01	1aa0100555ky	RES SMD 390 K 5% 1/16W 0603	CR10-394J-T	PZ	1,00000	R43	
..3	01	1aa0100556ky	RES SMD 680 K 5% 1/16W 0603	CR10-684J-T	PZ	1,00000	R72	
..3	01	1bb0100072av	COND CER SMD 39 pF COG 0603 5% 50V	06035A390JAT4A	PZ	1,00000	C180	
..3	01	1bb0100083ky	COND CER SMD 10 nF X7R 0603 10% 50V	CM105X7R103K50AL	PZ	2,00000	C161 C169	
..3	01	1bb0100084ky	COND CER SMD 22 nF X7R 0603 10% 25V	CM105X7R223K25AL	PZ	1,00000	C64	
..3	01	1bb0100117av	COND CER SMD 12 pF COG 0603 5% 50V	06035A120JAT2L	PZ	1,00000	C182	
..3	01	1bb0100166ky	COND CER SMD 100 nF X7R 0805 10% 25V	CM21X7R104K25AT	PZ	1,00000	C179	
..3	01	1bb0100185av	COND CER SMD 100 nF Y5V 0603 20% 16V	0603YG104MAT2L	PZ	2,00000	C170 C193	
..3	01	1bb0100188ky	COND CER SMD 1.5pF COG 0402 +-0.25pF 50V	CM05CG1R5C50AH	PZ	2,00000	C10 C138	
..3	01	1bb0100190ky	COND CER SMD 10 pF COG 0402 +-0.5pF 50V	CM05CG100D50AH	PZ	6,00000	C95 C97 C105 C106 C140 C189	
..3	01	1bb0100192ky	COND CER SMD 22 pF COG 0402 5% 50V	CM05CG220J50AH	PZ	64,00000	C6 C11 C13 C14 C16 C17 C18 C19 C21 C35	
							C45 C46 C49 C54 C55 C57 C58 C59 C65 C66	
							C69 C70 C71 C72 C73 C74 C75 C76 C77 C82	
							C83 C84 C85 C93 C96 C98 C99 C104 C108	
							C110 C111 C114 C115 C120 C121 C122 C123	



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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100267							Nr.progetto: 0080	
			MODULO RADIO&DISP GSM CS710C VERS 22.02.99					
							C124 C125 C127 C128 C129 C130 C131 C132	
							C133 C134 C135 C136 C137 C141 C148 C165	
							C192	
..3	01	1bb0100193ky	COND CER SMD 27 pF COG 0402	5%	50V	CM05CG270J50AH	PZ 1,00000 C9	
..3	01	1bb0100195ky	COND CER SMD 39 pF COG 0402	5%	50V	CM05CG390J50AH	PZ 18,00000 C25 C26 C27 C28 C29 C30 C60 C61 C88 C89	
							C90 C112 C113 C116 C117 C118 C119 C152	
..3	01	1bb0100196ky	COND CER SMD 47 pF COG 0402	5%	50V	CM05CG470J50AH	PZ 2,00000 C4 C5	
..3	01	1bb0100199ky	COND CER SMD 100 pF COG 0402	5%	50V	CM05CG101J50AH	PZ 5,00000 C1 C2 C12 C43 C197	
..3	01	1bb0100200ky	COND CER SMD 220 pF X7R 0402	10%	50V	CM05X7R221K50AH	PZ 1,00000 C37	
..3	01	1bb0100202ky	COND CER SMD 1 nF X7R 0402	10%	50V	CM05X7R102K50AH	PZ 16,00000 C23 C24 C42 C48 C63 C67 C68 C78 C81 C86	
							C91 C92 C94 C107 C109 C126	
..3	01	1bb0100204ky	COND CER SMD 10 nF X7R 0402	10%	16V	CM05X7R103K16AH	PZ 1,00000 C8	
..3	01	1bb0100205ky	COND CER SMD 220 nF X7R 0805	10%	25V	CM21X7R224K25AT	PZ 1,00000 C172	
..3	01	1bb0100206ky	COND CER SMD 330 nF X7R 0805	10%	16V	CM21X7R334K16AT	PZ 7,00000 C181 C183 C185 C186 C187 C188 C191	
..3	01	1bb0100208ky	COND CER SMD 100 nF X7R 0603	10%	16V	CM105X7R104K16AT	PZ 1,00000 C44	
..3	01	1bb0100210ky	COND CER SMD 150 pF COG 0402	5%	25V	CM05CG151J25VAH	PZ 1,00000 C3	
..3	01	1bb0100211ky	COND CER SMD 4.7nF X7R 0402	10%	16V	CM05X7R472K16AH	PZ 1,00000 C38	
..3	01	1bb0100220ky	COND CER SMD 18 pF COG 0402	5%	50V	CM05CG180J50AH	PZ 1,00000 C7	
..3	01	1bb0100222ky	COND CER SMD 4.7pF COG 0402	+- .25pF	50V	CM05CG47R2C50AH	PZ 2,00000 C62 C139	
..3	01	1bb0100223ky	COND CER SMD 0.5pF COG 0402	+-0.25pF	50V	CM05CG0R5C50AH	PZ 1,00000 C47	
..3	01	1bb0100224ky	COND CER SMD 2.2pF COG 0402	+-0.25pF	50V	CM05CG2R2C50AH	PZ 2,00000 C56 C103	
..3	01	1bb0100226ky	COND CER SMD 6.8pF COG 0402	+-0.5pF	50V	CM05CG6R8D50AH	PZ 3,00000 C52 C100 C101	
..3	01	1bb0100229ky	COND CER SMD 22 nF X7R 0402	10%	16V	CM05X7R223K16H	PZ 2,00000 C20 C80	
..3	01	1bb0100230ky	COND CER SMD 8.2pF COG 0402	+-0.5pF	50V	CM05CG8R2D50AH	PZ 1,00000 C195	
..3	01	1bb0100232ky	COND CER SMD 120 pF COG 0402	5%	50V	CM05CG121J50AH	PZ 2,00000 C31 C79	
..3	01	1bb0100235ky	COND CER SMD 3.3pF COG 0402	+-0.25pF	50V	CM05CG3R3C50AH	PZ 2,00000 C142 C178	
..3	01	1bb0100237ky	COND CER SMD 330 pF X7R 0402	10%	50V	CM05X7R331K50AH	PZ 6,00000 C36 C39 C51 C167 C168 C190	

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100267			MODULO RADIO&DISP GSM CS710C VERS 22.02.99			Nr.progetto: 0080		
..3	01	1bb0100260ky	COND CER SMD 3.3nF COG 0805 5% 25V	CM21CG332J25AT	PZ	1,00000	C40	
..3	01	1bb0100266ky	COND CER SMD 4.7uF X5R 1206 10% 10V	CM316X5R475K10AT	PZ	1,00000	C177	
..3	01	1bb0100297ky	COND CER SMD 220 pF COG 0402 5% 25V	CM05CG221J25VAH	PZ	1,00000	C50	
..3	01	1bb0500011ky	COND TANT SMD 2.2 uF 10V 20% Asize	TAJA225M010S	PZ	11,00000	C15 C147 C149 C150 C151 C153 C154 C155 C157 C158 C159	
..3	01	1bb0500051ky	COND TANT SMD 10 uF 10V 20% Asize	TAJA106M010R	PZ	7,00000	C32 C33 C34 C143 C145 C146 C156	
..3	01	1bb0500060ky	COND TANT SMD 1.0 uF 16V 20% Asize	TAJA105M016R	PZ	1,00000	C173	
..3	01	1bb0500075av	COND TANT SMD 100 uF 6.3V 20% Csize TPS LOW ESR	TPS-C107M006R0150	PZ	4,00000	C160 C162 C163 C198	
..3	01	1bb0500078ky	COND TANT SMD 3.3 uF 10V 20% Asize	TAJA335M010R	PZ	2,00000	C175 C176	
..3	01	1cc0100045td	INDUT SMD 2.2 uH 10% Qmin30 30mA	MLF2012A2R2KL	PZ	1,00000	CH10	
..3	01	1cc0100060td	INDUT SMD 5.6 nH +-0.5nH Qmin 8 500mA	MLR1608M5N6DT	PZ	1,00000	CH14	
..3	01	1cc0100061td	INDUT SMD 6.8 nH +-0.5nH Qmin 8 500mA	MLR1608M6N8DT	PZ	2,00000	CH1 CH5	
..3	01	1cc0100063td	INDUT SMD 10 nH 10% Qmin 8 300mA	MLR1608M10NKT	PZ	9,00000	CH3 CH9 CH11 CH16 CH18 CH23 CH30 CH31 CH35	
..3	01	1cc0100065td	INDUT SMD 15 nH 10% Qmin 8 300mA	MLR1608M15NKT	PZ	1,00000	CH24	
..3	01	1cc0100068td	INDUT SMD 4.7 nH +-0.3nH Qmin 8 500mA	MLR1608M4N7ST	PZ	1,00000	CH15	
..3	01	1cc0100074td	INDUT SMD 27 nH 10% Qmin 8 300mA	MLR1608M27NKT	PZ	1,00000	CH32	
..3	01	1cc0100090td	INDUT SMD 2.2 nH +-0.3nH Qmin 8 500mA	MLR1608M2N2ST	PZ	2,00000	CH4 CH29	
..3	01	1cc0100128mu	INDUT SMD EMI SUPPRESSOR 0.85 R 100mA	BLM11B102SPT	PZ	1,00000	CH17	
..3	01	1cc0100134td	INDUT SMD 18 nH 10% Qmin 8 300mA	MLR1608M18NKT	PZ	1,00000	CH34	
..3	01	1cc0100137td	INDUT SMD 2.2 uH 20% Qref5 340mA	NLFC322522T-2R2M	PZ	2,00000	CH7 CH8	
..3	01	1cc0100144co	INDUT SMD 47 nH 5% Qmin60 500mA SIZE 0805	0805HS-470TJBC	PZ	3,00000	L1 L2 L3	
..3	01	1cc0100146co	INDUT SMD 68 nH 5% Qmin60 500mA SIZE 0805	0805HS-680TJBC	PZ	1,00000	L4	
..3	01	1dd0100118na	CI ANALOG M08A 400 mW AUDIO POWER AMPLIFIER	LM4862MX	PZ	1,00000	U14	
..3	01	1dd0100131na	CI ANALOG MA05A MK L02A ULTRA LOW-DROPOUT VOLTAGE REG	LP2980AIM5X-3.0	PZ	4,00000	U4 U7 U9 U10	
..3	01	1dd0100133si	CI ANALOG P-TQFP-48-1 GSM/PNC/PCS-RECEIVER	PMB2409 V1.1	PZ	1,00000	U3	
..3	01	1dd0100134si	CI ANALOG P-TQFP-48 GSM PCN TRANSMITTER FOR COMM	PMB2240 V1.6	PZ	1,00000	U1	

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme	01	2000100267	MODULO RADIO&DISP GSM CS710C VERS 22.02.99				Nr.progetto: 0080	
..3	01	1dd0100145sg	CI ANALOG TS922IDT SO8 RAIL-TO-RAIL DUAL OPERAT AMPL	TS922IDT	PZ	1,00000	U8	
..3	00	1dd0100150to	CI ANALOG TC7S66FU-TE85L USV SINGLE ANALOG SWITCH	TC7S66FU-TE85L	PZ	1,00000	U28	
..3	01	1dd0100158ph	CI ANALOG UMA1021M/C2 LOW-VOLT FREQ SINTHES. SSOP20	UMA1021M/C2	PZ	1,00000	U5	
..3	01	1dd0100204na	CI ANALOG LP2985 5V MA05B 150 mA ULTRA LOW-DROPOUT REGULATOR	LP2985AIM5X-5.0	PZ	1,00000	U13	2444
..3	01	1dd0500022hc	MODULO RF PF01412A 890-915MHz RF-K SMD V/DD MAX10V Pout 4.5W	PF01412A-TB	PZ	1,00000	U2	
..3	01	1ff0400034smk	CONN RF COASSIALE F DA C/S SMD SERIE TC-3 (3GHz)	CRS5001-0801	PZ	2,00000	SO1 SO2	
..3	01	1ff06001411cc	CONN F CSTP 2 VIE VERT SMD P-1.27 46NYLON	24-8005-002-100-867	PZ	1,00000	SO6	
..3	01	1kk0400010str	BUZZER MAGNETICO SMD 3 V	MUT-03A	PZ	1,00000	BZ1	
..3	01	1110500017si	FILTRO SAW TX LOW-LOSS BF677 DCC6 890-915MHz SMD GSM	B39901-B4677-Z610	PZ	1,00000	FC1	
..3	01	1110500019si	FILTRO SAW IF LOW-LOSS B4818 QCC12B 246MHz SMD GSM	B39251-B4818-Z910	PZ	1,00000	FC3	
..3	01	1110500025si	FILTRO SAW RX LOW-LOSS 947.5 MHz	B39951-B4678-Z810	PZ	1,00000	FC5	
..3	01	1111000004hc	DUPLEXER SAW TX902.5MHz/RX947.5MHz BW <sub>2</sub> 2.5MHz SMD GSM	HWYN201	PZ	1,00000	FC2	
..3	01	1111200003hc	ACCOPPIATORE DIREZIONAL RF SMD 800-1000MHZ STH	STH-90SM	PZ	1,00000	Z1	
..3	01	1mm0300018ky	MODULO VCO 492MHz SMD 2.6V	VK-120R0492A1	PZ	1,00000	Y2	
..3	01	1mm0300019ky	MODULO VCTCXO KT12 13.0MHz SMD 2.85V	KT12-EET28V-13.000M-TA	PZ	1,00000	X1	
..3	01	1mm0300021ky	MODULO VCO 1136-1206MHz SMD 2.6V YK-501R1171A3W	YK-501R1171A3W	PZ	1,00000	Y1	
..3	01	1nn0100037si	TRANS NPN BFP420 SOT343	Q62702-F1591	PZ	1,00000	Q2	
..3	01	1nn0100048ph	TRANS NPN BC847BW SOT323 45V 100mA	BC847BW	PZ	1,00000	Q4	
..3	01	1nn0200017si	TRANS PNP+NPN BCR08PN SOT363 MK WFs 50V 0.1A	Q62702-C2486	PZ	3,00000	Q1 Q8 Q10	
..3	01	1nn0200023si	TRANS PNP SMBT2907 SOT23 40V 600mA 330mW	Q68000-A6501	PZ	1,00000	Q3	
..3	01	1nnqf27500si	TRANS GASFET CF750 SOT143 MK MXMMIC 8v 0.08A	Q62702-F1391	PZ	1,00000	U6	
..3	01	1pp0100038ctd	DIODO LED GIALLO VERDE SMD CL-220YG-C D-TS	CL-220YG-CD-TS	PZ	6,00000	DL1 DL2 DL3 DL4 DL5 DL6	
..3	01	1pp0100039si	DIODO LED ROSSO LS T670-HK P-LCC-2 2.5/12.5mcd/10mA 635nm	Q62703Q2309	PZ	1,00000	DL7	
..3	01	1yy0300019tmc	DIODO SEGN MCL4148 MICRO-MELF VR/75V FC 0.2A 0.5W	MCL4148TR	PZ	2,00000	D4 D5	
..3	01	1yy0700002si	DIODO SCHOT BAT62-03W SOD323 MK 40V	Q62702-A1028	PZ	2,00000	D1 D2	
..3	01	1xxxx99002	COMPONENTE DA NON MONTARE		PZ	11,00000	C184 C22 C53 C87 C102 C41 C194 R99 CH2 CH6 CH19	

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
-----						Nr.progetto: 0080		
Assieme	01	2000100267	MODULO RADIO&DISP GSM CS710C	VERS 22.02.99				
.2	01	1gg4200054	SUPPORTO VIBRATORE	DIS1270	PZ	1,00000	rif. dis. 2	
.2	01	1ee0700003sam	MOTORE DC SM-0613A2 1.3VDC	60mA CON FILI AWG32 L35+CONNET SM-0613A2	PZ	1,00000	M1	
.2	01	1pp0300010psn	LCD MODULO DOT MATRIX 97x32	PIXEL GRAFICO+SIMBOLI SEK1054B5A	PZ	1,00000	DS1	
.2	01	2000800187	DIFFUSORE PER LCD ASSIEMATO		PZ	1,00000	rif. dis. 3	
.3	01	1gg9000022	DIFFUSORE LCD	DIS1063 POLICARBONATO TRASPARENTE	PZ	1,00000	rif. dis. 1	
.3	01	1vv0200277	ETICHETTA RIFLETT.DIFF.LCD	PV 150 PVC BIANCO MAT ICI SP0.2MM DIS1143	PZ	1,00000	rif. dis. 2	
.3	01	1vv0200271	ETICHETTA BIADESIVA	468 MP TRASPARENTE (3M) DIS1125	PZ	6,00000	rif. dis. 3	
.2	01	1kk0100015kr	CAPSULA AUDIO DINAMICA 150ohm	CON FILI L 25mm PRESTAGNATI KR-201W-25	PZ	1,00000	rif. dis. 4	
.2	01	1hh2500003	ISOLATORE A DISCO BIADESIVO	0753 D-11MM	PZ	1,00000	rif. dis. 5	
.2	01	1hh2200056	CONTATTO ANTENNA	RAME-BERILIO SEMICRUDDO DORATO DIS1349	PZ	1,00000	rif. dis. 6	
.2	01	1kk0200012pc	MICROFONO ELECTRET CONDENSER	+1nF+2x20mm FILO EM131S2B2	PZ	1,00000	rif. dis. 7	
.2	01	1gg1500048	PROTEZIONE PER MICROFONO	DIS1098 EPDM 45 SHORE	PZ	1,00000	rif. dis. 8	
.2	01	1gg3200046	SCHERMO MODULO RADIO	DIS1229	PZ	1,00000	rif. dis. 9	
.2	01	1hh0700025tps	VITE ACCIAIO	TC CR M 1.6x 4 ZINCATO NERO B911604002	PZ	7,00000	rif. dis.10	

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381,00000

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Assieme 01 2000100256			MODULO BB G* & BB GSM CS680B VERS 20.01.99			Nr.progetto: 0080		
1	01	2000400256	MODULO BB G* & BB GSM CS680B VERS 20.01.99 LATO PTH		PZ	1,00000	rif. dis. 1	
.2	01	2000200256	MODULO BB G* & BB GSM CS680B VERS 20.01.99 LATO PRIM SMD		PZ	1,00000	rif. dis. 1	
..3	01	2000300256	MODULO BB G* & BB GSM CS680B VERS 20.01.99 LATO SEC SMD		PZ	1,00000	rif. dis. 1	
...4	01	1ff0100680b	BASETTA C/S BB G* & BB GSM VERS 20.01.99		PZ	1,00000	rif. dis. 1	
...4	01	1vv0200268fpe	ETICHETTA ACRILATO BIANCO H6 L20 3 PISTE	TT.26.0002	PZ	1,00000	rif. dis. 2	
...4	01	1aa0100106ky	RES SMD 0 OHM JUMPER1/16W 0603	CJ10-000-D	PZ	1,00000	R52	
...4	01	1aa0100139ky	RES SMD 15 K 5% 1/16W 0603	CR10-153J-D	PZ	1,00000	R65	
...4	01	1aa0100374ky	RES SMD 1 K 5% 1/16W 0402	CR05-102J-H	PZ	1,00000	R59	
...4	01	1aa0100377ky	RES SMD 4.7 K 5% 1/16W 0402	CR05-472J-H	PZ	1,00000	R10	
...4	01	1aa0100380ky	RES SMD 10 K 5% 1/16W 0402	CR05-103J-H	PZ	2,00000	R162 R163	
...4	01	1aa0100382ky	RES SMD 15 K 5% 1/16W 0402	CR05-153J-H	PZ	1,00000	R105	
...4	01	1aa0100384ky	RES SMD 22 K 5% 1/16W 0402	CR05-223J-H	PZ	3,00000	R85 R139 R566	
...4	01	1aa0100385ky	RES SMD 27 K 5% 1/16W 0402	CR05-273J-H	PZ	5,00000	R12 R33 R72 R106 R157	
...4	01	1aa0100388ky	RES SMD 47 K 5% 1/16W 0402	CR05-473J-H	PZ	2,00000	R107 R108	
...4	01	1aa0100390ky	RES SMD 100 K 5% 1/16W 0402	CR05-104J-H	PZ	8,00000	R57 R93 R99 R100 R110 R111 R114 R121	
...4	01	1aa0100398ky	RES SMD 100 R 5% 1/16W 0402	CR05-101J-H	PZ	21,00000	R7 R24 R48 R60 R61 R62 R63 R64 R66 R67 R70 R71 R74 R75 R76 R77 R78 R79 R125 R127 R502	
...4	01	1aa0100406ky	RES SMD 8.2 K 5% 1/16W 0402	CR05-822J-H	PZ	2,00000	R8 R164	
...4	01	1aa0100454ky	RES SMD 56 K 5% 1/16W 0402	CR05-563J-H	PZ	1,00000	R101	
...4	01	1aa0100470ky	RES SMD 20.5 K0.5% 1/10W 0805	CR21-2052D-T	PZ	1,00000	R19	
...4	01	1aa0100471ky	RES SMD 33.2 K0.5% 1/10W 0805	CR21-3322D-T	PZ	1,00000	R53	
...4	01	1aa0100472ky	RES SMD 6.49K0.5% 1/10W 0805	CR21-6491D-T	PZ	1,00000	R102	
...4	01	1aa0100473ky	RES SMD 10.0 K0.5% 1/10W 0805	CR21-1002D-T	PZ	2,00000	R68 R103	
...4	01	1aa0100475ky	RES SMD 11.0 K0.5% 1/10W 0805	CR21-1102D-T	PZ	1,00000	R14	
...4	01	1aa0800006av	VARISTORE SMD 3.6 VDC	VC060303A100T	PZ	3,00000	VC19 VC20 VC21	
...4	01	1aafw73212av	FUSIB SMD 2 A 32V 1206	F1206A2R00FWTR	PZ	1,00000	F1	

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100256			MODULO BB G* & BB GSM CS680B VERS 20.01.99			Nr.progetto: 0080		
...	4	01 1bb0100084ky	COND CER SMD 22 nF X7R 0603 10% 25V	CM105X7R223K25AL	PZ	1,00000	C613	
...	4	01 1bb0100194ky	COND CER SMD 33 pF COG 0402 5% 50V	CM05CG330J50AH	PZ	28,00000	C43 C56 C63 C576 C577 C578 C579 C580 C581 C582 C583 C584 C585 C586 C587 C588 C589 C590 C593 C594 C595 C596 C601 C602 C603 C604 C605 C606	
...	4	01 1bb0100203ky	COND CER SMD 3.3nF X7R 0402 10% 50V	CM05X7R332K50AH	PZ	2,00000	C24 C141	
...	4	01 1bb0100208ky	COND CER SMD 100 nF X7R 0603 10% 16V	CM105X7R104K16AT	PZ	17,00000	C8 C9 C10 C13 C15 C20 C21 C30 C33 C39 C41 C42 C45 C47 C52 C57 C143	
...	4	01 1bb0100228ky	COND CER SMD 100 nF Y5V 0402 -20+80% 16V	CM05Y5V104Z16VAH	PZ	4,00000	C29 C40 C152 C501	
...	4	01 1bb0500025ky	COND TANT SMD 2.2 uF 16V 20% Bsize	TAJB225M016R	PZ	1,00000	C609	
...	4	01 1bb0500051ky	COND TANT SMD 10 uF 10V 20% Asize	TAJA106M010R	PZ	1,00000	C3	
...	4	01 1bb0500053ky	COND TANT SMD 22 uF 6.3V 20% Bsize	TAJB226M006R	PZ	1,00000	C611	
...	4	01 1bb0500066av	COND TANT SMD 22 uF 10V 20% Csize	TAJC226M010R	PZ	2,00000	C22 C146	
...	4	01 1bb0500080av	COND TANT SMD 330 uF 6.3V 20% Esize TPS LOW ESR	TPS-E337M006S0100	PZ	3,00000	C25 C27 C31	
...	4	01 1cc0100155co	INDUT SMD 10 uH 20% DCR.09 ISAT 2.4A DO3308SERIES	DO3308P-103	PZ	1,00000	L1	
...	4	01 1cc0100156co	INDUT SMD 22 uH 20% DCR.19 ISAT 1.6A DO3308SERIES	DO3308P-223	PZ	1,00000	L2	
...	4	01 1dd0100099sg	CI ANALOG TS3V912-AIDT SO8 DUAL OPERATIONAL AMPLIFIER		PZ	1,00000	U3	
...	4	01 1dd0100155na	CI ANALOG LP3470M5X-3.08 MA05A POWER ON RESET CIRCUIT	LP3470M5X-3.08	PZ	1,00000	U9	
...	4	00 1dd0100157li	CI ANALOG LTC1555CGN GN16 STEP UP/DOWN CHARGE PUMP CONVERTER	LTC1555CGN-30430	PZ	1,00000	U2	
...	4	01 1dd0100164na	CI ANALOG LP2960AI M16A 0.5A LOW-DROPOUT REGULATORS	LP2960AIMX-3.3	PZ	1,00000	U7	
...	4	00 1dd0100170li	CI ANALOG LT1376CS8 S8 STEP DOWN SWITCHING REGULATOR	LT1376CS8	PZ	2,00000	U15 U16	
...	4	01 1dd0200020to	CI DG TC7S08FU TE85L SSOP5-PA MK E2 2-INPUT AND GATE		PZ	1,00000	U10	
...	4	01 1dd0200026to	CI DG TC4W53FU TE12 SSOP8-P MK 4W53 2-CHANNEL MULTIP/DEMULT.		PZ	1,00000	U1	
...	4	01 1dd0200070tx	CI DG D/R-PDSO-G16 QUADR 2-L TO 1-L DATA SEL/MPX	SN74AHC157DR	PZ	1,00000	U29	
...	4	01 1dd0200078to	CI DG CMOS NON INVERTED THREE STATE OUTPUT SM8	TC7WT241FU	PZ	1,00000	U12	
...	4	01 1dd0300056to	CI MEM TC551001CFTI-85L TSOP32 P0820 131.072WORDSx8BIT SR(EL)	TC551001CFTI-85L	PZ	1,00000	U20	
...	4	01 1dd0300075ad	CI MEM AM29LV160BT 90EC TS048 16MEGABIT SECTOR FLASH MEMORY	AM29LV160BT-90EC	PZ	1,00000	U24	

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme	01	2000100256	MODULO BB G* & BB GSM CS680B VERS 20.01.99				Nr.progetto: 0080	
...	4	01 1ff0600088ml	CONN M CSTP 50 VIE VERT SMD P-0.5	53748-0504	PZ	1,00000	PL501	
...	4	01 1ff0600113hi	CONN F CSTP 20 VIE + 4 VIE DC SMD (QUALCOMM CODE CV90-25378)	MQ168-QC-20P/4	PZ	1,00000	S02	
...	4	01 1ff0600135ml	CONN F CSTP 4 VIE ORIZ ZIF FFC/FPC P-0.5 H-2 CONTAT SOTTO	52746-0490	PZ	1,00000	S01	
...	4	01 1ff0600136lcc	CONN F CSTP 2x5 VIE VERT SMD P-1.27 H-2.21 LOW PROFILE	23-5016-2005-10-081	PZ	1,00000	S03	
...	4	01 1ff1500004am	CONN PER SIM-CARD 6 CT SMT	2-338063-2	PZ	1,00000	S04	
...	4	01 1mm0100040nd	QUARZO 49.152 MHZ CASE 1630D SMD CRYSTAL CLOCK OSCILLATOR	1633D-A49.152	PZ	1,00000	Y501	
...	4	01 1nn0100047si	TRANS NPN+PNP BC847PN SOT363	Q62702-C2374	PZ	1,00000	Q9	
...	4	01 1nn0500009tmc	TRANS MOSFET P Si4925DY S08 DUAL P-CHANNEL 30-V(D-S)	Si4925DY-T1	PZ	1,00000	Q2	
...	4	01 1nnqa28472si	TRANS NPN BC847BW SOT323 MK1Fs 45V 100mA B-250	Q62702-C2305	PZ	2,00000	Q8 Q11	
...	4	01 1yy0300017tmc	DIODO SEGN LL4148-GS08 SOD80 70V 0.3A 0.5W		PZ	2,00000	D5 D6	
...	4	01 1yy0700007sg	DIODO SCHOT STPS320U SOD6 MK U32 20V 3A		PZ	2,00000	D1 D17	
...	4	01 1yy0700019sg	DIODO SCHOT STPS130U SMB MK G12 30V 1A	STPS130U	PZ	1,00000	D14	
...	4	01 1yy0800006sg	DIODO STR SM6T15A SOD6 V/BR 14.3MIN IPP 28A TRANSIL	SM6T15A	PZ	1,00000	DZ1	
...	4	01 1yyda30070si	DIODO SEGN BAV70 SOT23 MK JJ 70V I/F 330 mA	Q68000-A6622	PZ	3,00000	D2 D3 D4	
...	4	01 1xxxz99002	COMPONENTE DA NON MONTARE		PZ	4,00000	C597 C598 C599 C600	
...	3	01 1aa0100106ky	RES SMD 0 OHM JUMPER1/16W 0603	CJ10-000-D	PZ	2,00000	R43 R95	
...	3	01 1aa0100113ky	RES SMD 100 R 5% 1/16W 0603	CR10-101J-T	PZ	11,00000	R2 R20 R46 R112 R113 R115 R116 R117 R118 R119 R120	
...	3	01 1aa0100117ky	RES SMD 330 R 5% 1/16W 0603	CR10-331J-T	PZ	4,00000	R47 R84 R87 R88	
...	3	01 1aa0100123ky	RES SMD 1 K 5% 1/16W 0603	CR10-102J-D	PZ	1,00000	R16	
...	3	01 1aa0100135ky	RES SMD 10 K 5% 1/16W 0603	CR10-103J-D	PZ	2,00000	R1 R31	
...	3	01 1aa0100145ky	RES SMD 33 K 5% 1/16W 0603	CR10-333J-D	PZ	1,00000	R3	
...	3	01 1aa0100151ky	RES SMD 100 K 5% 1/16W 0603	CR10-104J-D	PZ	1,00000	R45	
...	3	01 1aa0100361ky	RES SMD 10 R 5% 1/16W 0402	CR05-100J-H	PZ	2,00000	R86 R128	
...	3	01 1aa0100370ky	RES SMD 220 R 5% 1/16W 0402	CR05-221J-H	PZ	2,00000	R94 R506	
...	3	01 1aa0100373ky	RES SMD 560 R 5% 1/16W 0402	CR05-561J-H	PZ	1,00000	R568	
...	3	01 1aa0100374ky	RES SMD 1 K 5% 1/16W 0402	CR05-102J-H	PZ	5,00000	R17 R520 R546 R547 R555	

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Assieme 01 2000100256			MODULO BB G* & BB GSM CS680B VERS 20.01.99			Nr.progetto: 0080		
..3	01	1aa0100375ky	RES SMD 1.8 K 5% 1/16W 0402	CR05-182J-H	PZ	3,00000	R18 R25 R129	
..3	01	1aa0100377ky	RES SMD 4.7 K 5% 1/16W 0402	CR05-472J-H	PZ	7,00000	R32 R35 R38 R516 R522 R523 R532	
..3	01	1aa0100378ky	RES SMD 5.6 K 5% 1/16W 0402	CR05-562J-H	PZ	1,00000	R544	
..3	01	1aa0100379ky	RES SMD 6.8 K 5% 1/16W 0402	CR05-682J-H	PZ	1,00000	R11	
..3	01	1aa0100380ky	RES SMD 10 K 5% 1/16W 0402	CR05-103J-H	PZ	9,00000	R15 R98 R104 R126 R517 R518 R531 R542 R560	
..3	01	1aa0100381ky	RES SMD 12 K 5% 1/16W 0402	CR05-123J-H	PZ	1,00000	R6	
..3	01	1aa0100382ky	RES SMD 15 K 5% 1/16W 0402	CR05-153J-H	PZ	1,00000	R50	
..3	01	1aa0100383ky	RES SMD 18 K 5% 1/16W 0402	CR05-183J-H	PZ	1,00000	R564	
..3	01	1aa0100384ky	RES SMD 22 K 5% 1/16W 0402	CR05-223J-H	PZ	17,00000	R4 R28 R36 R37 R39 R85 R90 R123 R504 R505 R527 R528 R533 R534 R535 R536 R537	
..3	01	1aa0100385ky	RES SMD 27 K 5% 1/16W 0402	CR05-273J-H	PZ	4,00000	R5 R13 R97 R156	
..3	01	1aa0100386ky	RES SMD 33 K 5% 1/16W 0402	CR05-333J-H	PZ	3,00000	R9 R83 R109	
..3	01	1aa0100387ky	RES SMD 39 K 5% 1/16W 0402	CR05-393J-H	PZ	1,00000	R550	
..3	01	1aa0100388ky	RES SMD 47 K 5% 1/16W 0402	CR05-473J-H	PZ	13,00000	R49 R69 R73 R80 R81 R82 R146 R159 R503 R508 R543 R549 R567	
..3	01	1aa0100389ky	RES SMD 68 K 5% 1/16W 0402	CR05-683J-H	PZ	1,00000	R167	
..3	01	1aa0100390ky	RES SMD 100 K 5% 1/16W 0402	CR05-104J-H	PZ	2,00000	R44 R525	
..3	01	1aa0100394ky	RES SMD 470 K 5% 1/16W 0402	CR05-474J-H	PZ	1,00000	R30	
..3	01	1aa0100396ky	RES SMD 1 M 5% 1/16W 0402	CR05-105J-H	PZ	1,00000	R29	
..3	01	1aa0100398ky	RES SMD 100 R 5% 1/16W 0402	CR05-101J-H	PZ	3,00000	R124 R545 R552	
..3	01	1aa0100399ky	RES SMD 82 K 5% 1/16W 0402	CR05-823J-H	PZ	12,00000	R21 R22 R23 R34 R509 R510 R511 R512 R513 R514 R515 R548	
..3	01	1aa0100400ky	RES SMD 3.9 K 5% 1/16W 0402	CR05-392J-H	PZ	2,00000	R40 R41	
..3	01	1aa0100407ky	RES SMD 0 OHM JUMPER1/16W 0402	CJ05-000J-H	PZ	5,00000	R54 R55 R58 R96 R553	
..3	01	1aa0100453ky	RES SMD 330 K 5% 1/16W 0402	CR05-334J-H	PZ	1,00000	R42	
..3	01	1aa0100455ky	RES SMD 150 K 5% 1/16W 0402	CR05-154J-H	PZ	1,00000	R26	



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Assieme	01	2000100256	MODULO BB G* & BB GSM CS680B VERS 20.01.99				Nr.progetto: 0080	
..3	01	1aa0100467ky	RES SMD 0.1 R 5% 1/2W 1206	LR32-R100J-T	PZ	1,00000	R27	
..3	01	1aa0100476ky	RES SMD 237 R 1% 1/16W 0603	CR10-2370F-T	PZ	2,00000	R557 R558	
..3	01	1aa0100478ky	RES SMD 698 R 1% 1/16W 0603	CR10-6980F-T	PZ	1,00000	R559	
..3	01	1aa0100480ky	RES SMD 1.0 K 1% 1/16W 0603	CR10-102F-T	PZ	1,00000	R92	
..3	01	1aa0100481ky	RES SMD 1.74K 1% 1/16W 0603	CR10-1741F-T	PZ	1,00000	R556	
..3	01	1aa0100482ky	RES SMD 10.0 K 1% 1/16W 0603	CR10-103F-T	PZ	1,00000	R91	
..3	01	1aa0100486ky	RES SMD 30.0 K 1% 1/16W 0603	CR10-303F-T	PZ	1,00000	R158	
..3	01	1aa0100494ky	RES SMD 330 R 5% 1/16W 0402	CR05-331J-H	PZ	1,00000	R122	
..3	01	1aa0800004av	VARISTORE SMD 18V/DC L-1.6xW-0.8xSP-0.9	VC06LC18X500	PZ	1,00000	VC17	
..3	01	1aa0800006av	VARISTORE SMD 3.6 VDC	VC060303A100T	PZ	16,00000	VC1 VC2 VC4 VC5 VC6 VC7 VC8 VC9 VC10 VC11 VC12 VC13 VC14 VC15 VC16 VC18	
..3	01	1bb0100073av	COND CER SMD 47 pF COG 0603 5% 50V	06035A470JAT2L	PZ	1,00000	C502	
..3	01	1bb0100082av	COND CER SMD 4.7nF X7R 0603 10% 50V	06035C472KAT2L	PZ	2,00000	C14 C38	
..3	01	1bb0100084ky	COND CER SMD 22 nF X7R 0603 10% 25V	CM105X7R223K25AL	PZ	1,00000	C610	
..3	01	1bb0100155av	COND CER SMD 10 nF X7R 0603 10% 50V	06035C103KAT2A	PZ	6,00000	C32 C35 C117 C523 C530 C549	
..3	01	1bb0100184av	COND CER SMD 68 nF X7R 0805 10% 50V	08055C683KAT2L	PZ	1,00000	C573	
..3	01	1bb0100191ky	COND CER SMD 12 pF COG 0402 5% 50V	CM05CG120J50AH	PZ	2,00000	C544 C545	
..3	01	1bb0100194ky	COND CER SMD 33 pF COG 0402 5% 50V	CM05CG330J50AH	PZ	56,00000	C2 C4 C12 C16 C28 C36 C37 C67 C68 C69 C70 C71 C72 C73 C74 C75 C76 C77 C78 C79 C80 C81 C82 C83 C84 C85 C86 C87 C88 C90 C91 C92 C93 C94 C95 C96 C97 C101 C107 C110 C111 C120 C121 C122 C126 C127 C128 C129 C130 C131 C132 C154 C156 C157 C158 C159	
..3	01	1bb0100198ky	COND CER SMD 68 pF COG 0402 5% 50V	CM05CG680J50AH	PZ	2,00000	C568 C569	
..3	01	1bb0100199ky	COND CER SMD 100 pF COG 0402 5% 50V	CM05CG101J50AH	PZ	1,00000	C528	
..3	01	1bb0100200ky	COND CER SMD 220 pF X7R 0402 10% 50V	CM05X7R221K50AH	PZ	1,00000	C548	

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Assieme 01 2000100256			MODULO BB G* & BB GSM CS680B VERS 20.01.99			Nr.progetto: 0080		
..3	01	1bb0100201ky	COND CER SMD 470 pF X7R 0402 10% 50V	CM05X7R471K50AH	PZ	1,00000	C49	
..3	01	1bb0100202ky	COND CER SMD 1 nF X7R 0402 10% 50V	CM05X7R102K50AH	PZ	11,00000	C104 C529 C550 C551 C552 C553 C554 C558 C559 C567 C575	
..3	01	1bb0100208ky	COND CER SMD 100 nF X7R 0603 10% 16V	CM105X7R104K16AT	PZ	30,00000	C1 C5 C6 C7 C26 C34 C44 C46 C48 C51 C53 C54 C55 C60 C98 C113 C114 C123 C124 C139 C519 C520 C521 C556 C557 C560 C561 C562 C564 C565	
..3	01	1bb0100209ky	COND CER SMD 2.2nF X7R 0402 10% 50V	CM05X7R222K50AH	PZ	1,00000	C572	
..3	01	1bb0100210ky	COND CER SMD 150 pF COG 0402 5% 25V	CM05CG151J25VAH	PZ	1,00000	C546	
..3	01	1bb0100220ky	COND CER SMD 18 pF COG 0402 5% 50V	CM05CG180J50AH	PZ	2,00000	C531 C532	
..3	01	1bb0100222ky	COND CER SMD 4.7pF COG 0402 +- .25pF 50V	CM05CG4R7C50AH	PZ	1,00000	C570	
..3	01	1bb0100224ky	COND CER SMD 2.2pF COG 0402 +-0.25pF 50V	CM05CG2R2C50AH	PZ	1,00000	C542	
..3	01	1bb0100228ky	COND CER SMD 100 nF Y5V 0402 -20+80% 16V	CM05Y5V104Z16VAH	PZ	20,00000	C17 C59 C504 C505 C506 C507 C508 C509 C510 C511 C515 C516 C517 C518 C534 C535 C537 C538 C540 C555	
..3	01	1bb0100293ky	COND CER SMD 39 nF X7R 0603 10% 16V	CM105X7R393K16AT	PZ	1,00000	C11	
..3	01	1bb0500025ky	COND TANT SMD 2.2 uF 16V 20% Bsize	TAJB225M016R	PZ	1,00000	C612	
..3	01	1bb0500051ky	COND TANT SMD 10 uF 10V 20% Asize	TAJA106M010R	PZ	1,00000	C99	
..3	01	1bb0500053ky	COND TANT SMD 22 uF 6.3V 20% Bsize	TAJB226M006R	PZ	1,00000	C607	
..3	01	1bb0500060ky	COND TANT SMD 1.0 uF 16V 20% Asize	TAJA105M016R	PZ	4,00000	C23 C58 C61 C62	
..3	01	1bb0500078ky	COND TANT SMD 3.3 uF 10V 20% Asize	TAJA335M010R	PZ	3,00000	C503 C514 C533	
..3	01	1cc0100043td	INDUT SMD 1 uH 20% Qmin25 50mA	MLF2012A1R0ML	PZ	1,00000	CH501	
..3	01	1cc0100128mu	INDUT SMD EMI SUPPRESSOR 0.85 R 100mA	BLM11B102SPT	PZ	2,00000	CH7 CH8	
..3	01	1cc0100153mu	INDUT SMD 22 nH 5% Qmin30 720mA	LQN21A22NJ04	PZ	1,00000	L502	
..3	01	1cc0100154mu	INDUT SMD 33 nH 5% Qmin40 570mA	LQN21A33NJ04	PZ	1,00000	L504	
..3	01	1cc0100191mu	INDUT SMD EMI SUPPRESSOR 0.65 R 200mA	BLM11B601SPT	PZ	2,00000	CH5 CH6	
..3	01	1cc1h01050mu	INDUT SMD 0.2 R/DC BLM21B050S PT 0.5A IMPED 5R A 100MHZ		PZ	1,00000	CH504	

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Assieme	01	2000100256	MODULO BB G* & BB GSM CS680B VERS 20.01.99				Nr.progetto: 0080	
..3	00	1dd0100121na	CI ANALOG MTC20 PLL FREQ SYNTH FOR RF PERS COM	LMX2305TMX	PZ	1,00000	U515	
..3	01	1dd0100151na	CI ANALOG MA05A CMOS OP.AMP RAIL TO RAIL IN OUT	LMC7111BIM5X	PZ	1,00000	U4	
..3	01	1dd0100162na	CI ANALOG LM3420-8.4 MA05A LITHIUM-ION BAT CHARGE CONTROL	LM3420AM5X-8.4	PZ	1,00000	U6	
..3	01	1dd0100163na	CI ANALOG LP2980AI MA05A 50mA ULTRA LOW-DROPOUT REGULATOR	LP2980AIM5X-3.3	PZ	1,00000	U13	
..3	01	1dd0200017to	CI DG TC7S14F TE85L SSOP5-P MK EA SCHMITT INVERTER		PZ	2,00000	U14 U28	
..3	01	1dd0200020to	CI DG TC7S08FU TE85L SSOP5-PA MK E2 2-INPUT AND GATE		PZ	1,00000	U503	
..3	01	1dd0200021to	CI DG TC7S02FU TE85L SSOP5-PA MK E3 2-INPUT NOR GATE		PZ	2,00000	U8 U25	
..3	01	1dd0200026to	CI DG TC4W53FU TE12 SSOP8-P MK 4W53 2-CHANNEL MULTIP/DEMULT.		PZ	1,00000	U11	
..3	01	1dd0200028to	CI DG TC7W08FU TE12L SSOP8-P MK 7W08 DUAL 2-INPUT AND GATE		PZ	1,00000	U517	
..3	01	1dd0200032to	CI DG TC7W14FU TE12L SSOP8P MK 7W14 SCHMITT INVERTER		PZ	1,00000	U502	
..3	01	1dd0200033to	CI DG TC7W74FU TE12L SSOP8P MK 7W74 D-TY FLIPFLOP/PRESET & CLR		PZ	1,00000	U504	
..3	01	1dd0200065to	CI DG TC7SH04FU SSOP5-P-A MK H5 HIGH SPEED CMOS INVERTER	TC7SH04FU	PZ	2,00000	U510 U514	
..3	01	1dd0200067to	CI DG SSOP-P-A MK H4 CMOS 2-INPUT OR GATE	TC7SH32FU	PZ	1,00000	U512	
..3	01	1dd0200071rch	CI DG RS5C372A 8PIN SSOP I2C-BUS INTERF REAL TIME CLOCK	RS5C372A-E2	PZ	1,00000	U45	
..3	01	1dd0200073tx	CI DG SN74LV245DW R-PDSO-G20 OCTAL BUS TRANSCEIVER	SN74LV245DW	PZ	1,00000	U22	
..3	01	1dd0200080to	CI DG CMOS 2-INPUT NOR GATE USV	TC7SH02FU	PZ	1,00000	U513	
..3	01	1dd0300036mcc	CI MEM 24LC65TI/SM SOIC8SM 64K 2.5V CMOS SMART SER.EEPROM		PZ	1,00000	U44	
..3	01	1dd0300052ss	CI MEM TSOP-44 256Kx16BIT LOW POWER CMOS SRAM	KM616V4000BLT8	PZ	1,00000	U505	
..3	01	1dd0300075ad	CI MEM AM29LV160BT 90EC TS048 16MEGABIT SECTOR FLASH MEMORY	AM29LV160BT-90EC	PZ	1,00000	U506	
..3	01	1dd0400036qlc	CI uP TQFP-144 GLOBALSTAR USER MODEM ASIC	80-70049-1 X1	PZ	1,00000	U509	
..3	01	1dd0400037tx	CI uP DW/R-PDSO-G20 3-V VOICE-BAND AUDIO PROCESSOR	TLV320AC36IDW	PZ	1,00000	U21	
..3	01	1dd0400038si	CI uP PMB2800 v3.2 w2 P-TQFP- 144-1 GOLD BB PROCES HI-GOLD	Q67257H63	PZ	1,00000	U43	
..3	01	1dd0400039si	CI uP PMB2905 v5.2 P-TQFP-64-1 GSM ANALOG INTERFACE MODULE	Q67007A7006	PZ	1,00000	U46	
..3	01	1dd0400042nlg	CI uP ADSP-2185L TQFP100 DSP MICROCOMPUTER	ADSP-2185LBST-133	PZ	1,00000	U511	
..3	01	1dd0400043in	CI uP FA80386EXTB25 TQFP-144 386 EX EMBEDDED MICROPROCESSOR	FA80386EXTB25	PZ	1,00000	U501	
..3	01	1dd0400052qlc	CI uP TQFP-80 ANALOG BASEBAND PROCESSOR	Q5312I-4S2TR	PZ	1,00000	U516	
..3	01	1ff0600088ml	CONN M CSTP 50 VIE VERT SMD P-0.5	53748-0504	PZ	1,00000	PL1	

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Revisione Validita'

Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
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Assieme	01	2000100256	MODULO BB G* & BB GSM CS680B VERS 20.01.99				Nr.progetto: 0080	
..3	01	1ff0600123ml	CONN F CSTP 15 VIE ORIZ ZIF FFC/FPC P-0.5 H-2 CONTAT.SOTTO	52746-1590	PZ	1,00000	SO5	
..3	01	1ff0600128ml	CONN M CSTP 40 VIE VERT SMD P-0.5	53748-0404	PZ	1,00000	PL3	
..3	01	1mm0100028mcy	QUARZO 32.768 KHz CASE SMD P-2.5 6.1x2 10pF30ppm	MX1V-TL 32.768KHz	PZ	1,00000	X2	
..3	01	1mm0100033nd	QUARZO 16.667 MHZ CASE CP12A SMD	CP12A-16.667MHZ	PZ	1,00000	X501	
..3	01	1nn0100043si	TRANS NPN BCR148W SOT323	Q62702-C2291	PZ	1,00000	Q7	
..3	01	1nn0100045si	TRANS NPN BC847S SOT363	Q62702-C2372	PZ	3,00000	Q1 Q4 Q12	
..3	01	1nn0500004tmc	TRANS MOSFET P TP0101T SOT23 M K PO R/DS0.650HM V/DS-12V0.23W	TP0101T-T1	PZ	1,00000	Q5	
..3	01	1nn0500009tmc	TRANS MOSFET P Si4925DY SO8 DUAL P-CHANNEL 30-V(D-S)	Si4925DY-T1	PZ	1,00000	Q6	
..3	01	1nn0600012sc	TRANS MOSFET N SI2302DS TO-236 V/DS20V R/DS .085R	SI2302DS-T1	PZ	1,00000	Q10	
..3	01	1nnqa28472si	TRANS NPN BC847BW SOT323 MK1Fs 45V 100mA B-250	Q62702-C2305	PZ	1,00000	Q13	
..3	01	1nnqa28572si	TRANS PNP BC857BW SOT323 MK2Fs 45V 100mA B-250	Q62702-C2294	PZ	1,00000	Q3	
..3	01	1pp0100037ctd	DIODO LED VERDE SMD COLORATO 5.0-20.0 mcd/20mA 567nm DIFFUS	CL-190G-CD-T	PZ	2,00000	DL501 DL502	
..3	01	1yyda30070si	DIODO SEGN BAV70 SOT23 MK JJ 70V I/F 330 mA	Q68000-A6622	PZ	1,00000	D502	
..3	01	1yydv03901ph	DIODO VARICAP BBY39 SOT23 MK SI21.6-2.0pF Vr 28V(DUE DIODI)		PZ	2,00000	DV1 DV503	
..3	01	1xxzz99002	COMPONENTE DA NON MONTARE		PZ	8,00000	C50 C525 C18 C19 R51 R56 R521 VC3	
..2	01	1gg3200048	SCHERMO BB GSM G*	DIS1348	PZ	1,00000	rif. dis. 2	
..2	01	1qq0100025tbt	BATTERIA 3V 32mAh LITIO A BOTTONE PER CS D-10.0xH-2.5MM	CR1025-1VF	PZ	1,00000	BT1	

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528,00000

\*\*\* FINE STAMPA \*\*\*

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Revisione Validita'

Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100257			MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99			Nr.progetto: 0080		
1	01	2000400257	MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99 LATO PTH		PZ	1,00000	rif. dis. 1	2430
.2	01	2000200257	MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99 LATO PRIM SMD		PZ	1,00000	rif. dis. 1	
..3	01	2000300257	MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99 LATO SEC SMD		PZ	1,00000	rif. dis. 1	
...4	01	1ff0100661c	BASETTA C/S RADIO GLOBALSTAR VERS 15.01.99		PZ	1,00000	rif. dis. 1	
...4	01	1vv0200268fpe	ETICHETTA ACRILATO BIANCO H6 L20 3 PISTE	TT.26.0002	PZ	1,00000	rif. dis. 2	
...4	01	1aa0100106ky	RES SMD 0 OHM JUMPER1/16W 0603	CJ10-000-D	PZ	1,00000	R4	2406
...4	01	1aa0100110ky	RES SMD 22 R 5% 1/16W 0603	CR10-220J-T	PZ	2,00000	R28 R32	2406
...4	01	1aa0100113ky	RES SMD 100 R 5% 1/16W 0603	CR10-101J-T	PZ	1,00000	R7	
...4	01	1aa0100120ky	RES SMD 560 R 5% 1/16W 0603	CR10-561J-D	PZ	4,00000	R49 R50 R65 R82	
...4	01	1aa0100122ky	RES SMD 820 R 5% 1/16W 0603	CR10-821J-T	PZ	1,00000	R16	2409
...4	01	1aa0100123ky	RES SMD 1 K 5% 1/16W 0603	CR10-102J-D	PZ	3,00000	R42 R83 R84	
...4	01	1aa0100126ky	RES SMD 1.8 K 5% 1/16W 0603	CR10-182J-T	PZ	2,00000	R1 R58	
...4	01	1aa0100129ky	RES SMD 3.3 K 5% 1/16W 0603	CR10-332J-T	PZ	2,00000	R12 R53	2409
...4	01	1aa0100130ky	RES SMD 3.9 K 5% 1/16W 0603	CR10-392J-T	PZ	1,00000	R90	
...4	01	1aa0100131ky	RES SMD 4.7 K 5% 1/16W 0603	CR10-472J-D	PZ	2,00000	R27 R29	
...4	01	1aa0100134ky	RES SMD 8.2 K 5% 1/16W 0603	CR10-822J-T	PZ	1,00000	R30	
...4	01	1aa0100135ky	RES SMD 10 K 5% 1/16W 0603	CR10-103J-D	PZ	2,00000	R19 R109	
...4	01	1aa0100141ky	RES SMD 18 K 5% 1/16W 0603	CR10-183J-T	PZ	2,00000	R17 R72	
...4	01	1aa0100148ky	RES SMD 56 K 5% 1/16W 0603	CR10-563J-D	PZ	2,00000	R85 R86	
...4	01	1aa0100154ky	RES SMD 220 K 5% 1/16W 0603	CR10-224J-T	PZ	1,00000	R24	
...4	01	1aa0100155ky	RES SMD 270 K 5% 1/16W 0603	CR10-274J-T	PZ	1,00000	R89	
...4	01	1aa0100241ky	RES SMD 47 R 5% 1/16W 0603	CR10-470J-T	PZ	2,00000	R44 R45	
...4	01	1aa0100369ky	RES SMD 150 R 5% 1/16W 0402	CR05-151J-H	PZ	1,00000	R102	
...4	01	1aa0100374ky	RES SMD 1 K 5% 1/16W 0402	CR05-102J-H	PZ	2,00000	R6 R43	
...4	01	1aa0100380ky	RES SMD 10 K 5% 1/16W 0402	CR05-103J-H	PZ	1,00000	R51	2409
...4	01	1aa0100381ky	RES SMD 12 K 5% 1/16W 0402	CR05-123J-H	PZ	1,00000	R40	2409
...4	01	1aa0100384ky	RES SMD 22 K 5% 1/16W 0402	CR05-223J-H	PZ	1,00000	R37	2409

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Revisione Validita'

Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100257			MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99			Nr.progetto: 0080		
...	4	01 1aa0100407ky	RES SMD 0 OHM JUMPER1/16W 0402	CJ05-000J-H	PZ	1,00000	R18	
...	4	01 1aa0100490ky	RES SMD 357 R 1% 1/16W 0603	CR10-3570F-T	PZ	1,00000	R61	
...	4	01 1bb0100070av	COND CER SMD 27 pF COG 0603 5% 50V	06035A270JAT2L	PZ	2,00000	C14 C72	
...	4	01 1bb0100081av	COND CER SMD 1 nF X7R 0603 10% 50V	06035C102KAT4A	PZ	13,00000	C8 C16 C21 C22 C41 C42 C57 C69 C71 C143 C147 C148 C176	2409
...	4	01 1bb0100117av	COND CER SMD 12 pF COG 0603 5% 50V	06035A120JAT2L	PZ	2,00000	C37 C188	
...	4	01 1bb0100155av	COND CER SMD 10 nF X7R 0603 10% 50V	06035C103KAT2A	PZ	20,00000	C33 C56 C58 C63 C64 C66 C78 C80 C81 C82 C138 C164 C166 C171 C174 C177 C178 C179 C180 C184	
...	4	01 1bb0100158av	COND CER SMD 220 pF COG 0603 5% 50V	06035A221JAT2L	PZ	3,00000	C73 C74 C75	2409
...	4	01 1bb0100187ky	COND CER SMD 1.0pF COG 0402 +-0.25pF 50V	CM05CG1R0C50AH	PZ	1,00000	C52	
...	4	01 1bb0100192ky	COND CER SMD 22 pF COG 0402 5% 50V	CM05CG220J50AH	PZ	7,00000	C12 C59 C60 C68 C134 C153 C206	
...	4	01 1bb0100208ky	COND CER SMD 100 nF X7R 0603 10% 16V	CM105X7R104K16AT	PZ	4,00000	C49 C50 C89 C96	
...	4	01 1bb0100220ky	COND CER SMD 18 pF COG 0402 5% 50V	CM05CG180J50AH	PZ	15,00000	C5 C61 C62 C70 C76 C90 C91 C92 C93 C126 C127 C128 C167 C169 C172	
...	4	01 1bb0100242av	COND CER SMD 56 pF COG 0603 5% 50V	06035A560JAT4A	PZ	2,00000	C19 C23	
...	4	01 1bb0100245av	COND CER SMD 330 pF X7R 0603 10% 50V	06035C331KAT4A	PZ	1,00000	C85	
...	4	01 1bb0100247av	COND CER SMD 3.9 nF X7R 0603 10% 50V	06035C392KAT4A	PZ	1,00000	C152	
...	4	01 1bb0100268ky	COND CER SMD 15 nF X7R 0603 10% 25V	CM105X7R153K25AT	PZ	1,00000	C139	
...	4	01 1bb0100286av	COND CER SMD 120 nF X7R 0805 10% 25V	08053C124KAT2A	PZ	1,00000	C140	
...	4	01 1bb0500051ky	COND TANT SMD 10 uF 10V 20% Asize	TAJA106M010R	PZ	1,00000	C86	
...	4	01 1bb0500078ky	COND TANT SMD 3.3 uF 10V 20% Asize	TAJA335M010R	PZ	10,00000	C18 C47 C48 C51 C130 C137 C142 C162 C181 C226	
...	4	01 1cc0100095mu	INDUT SMD 100 nH 5% Qmin40 540mA	LQN21AR10J04	PZ	2,00000	L11 L12	
...	4	01 1cc0100096mu	INDUT SMD 220 nH 5% Qmin35 240mA	LQN21AR22J04	PZ	2,00000	L17 L24	
...	4	01 1cc0100129mu	INDUT SMD EMI SUPPRESSOR 0.8 R 200mA	BLM21B222SP	PZ	7,00000	CH3 CH5 CH6 CH16 CH17 CH18 CH19	
...	4	01 1cc0100130mu	INDUT SMD EMI SUPPRESSOR 50 V 2 A	NFM41P11C204T1	PZ	1,00000	FC11	

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Revisione Validita'

Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100257						MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99		Nr.progetto: 0080
...	4	01 1cc0100164mu	INDUT SMD 6.8 nH +/-5% Qmin12 300mA	LQG11A6N8J00T1	PZ	1,00000	L33	
...	4	01 1cc0100165mu	INDUT SMD 8.2 nH +/-5% Qmin12 300mA	LQG11A8N2J00T1	PZ	1,00000	L31	
...	4	01 1cc0100166mu	INDUT SMD 15 nH +/-5% Qmin12 300mA	LQG11A15NJ00T1	PZ	1,00000	L3	
...	4	01 1cc0100168mu	INDUT SMD 33 nH +/-5% Qmin12 300mA	LQG11A33NJ00T1	PZ	2,00000	L2 L22	
...	4	01 1cc0100169mu	INDUT SMD 39 nH +/-5% Qmin12 300mA	LQG11A39NJ00T1	PZ	2,00000	L4 L5	
...	4	01 1cc0100170mu	INDUT SMD 47 nH +/-5% Qmin12 300mA	LQG11A47NJ00T1	PZ	1,00000	L30	
...	4	01 1cc0100171mu	INDUT SMD 68 nH +/-5% Qmin12 300mA	LQG11A68NJ00T1	PZ	1,00000	L23	
...	4	01 1cc0100190mu	INDUT SMD 12 nH +/-5% Qmin12 300mA	LQG11A12NJ00T1	PZ	1,00000	L26	
...	4	01 1cc0100201mu	INDUT SMD 4.7 nH +/-0.3nH Qmin12 300mA	LQG11A4N7S00T1	PZ	1,00000	L32	
...	4	01 1dd01001361i	CI ANALOG LTC1550CGN GN-16 LOW NOISE SWT REG VOLT INVERT	LTC1550CGN-TR	PZ	1,00000	U29	
...	4	00 1dd0100137na	CI ANALOG MTC20 PLL FREQ SYNTH FOR RF PERS COM	LMX2330LTMX	PZ	1,00000	U10	
...	4	01 1dd0100139ryt	CI ANALOG 1600-1630MHz MMIC PA QUALCOMM CODE CV90-25670-1	RMPA1610-63	PZ	1,00000	U1	
...	4	01 1dd0100140qlc	CI ANALOG QC1 TX AGC AMPLIFIER CDMA/FM CD90-24050-1	Q5505I-1M-TR	PZ	1,00000	U13	
...	4	01 1dd0100148ndc	CI ANALOG AND6014 QC4 STEP AMP QUALCOMM CODE CV90-22627-4	AND6014	PZ	1,00000	U6	
...	4	01 1dd0100163na	CI ANALOG LP2980AI MA05A 50mA ULTRA LOW-DROPOUT REGULATOR	LP2980AIM5X-3.3	PZ	1,00000	U24	
...	4	01 1dd0100175na	CI ANALOG LP2980AI MA05A 50mA ULTRA LOW-DROPOUT REGULATOR	LP2980AIM5X-5.0	PZ	1,00000	U21	
...	4	01 1dd0100196na	CI ANALOG LP2981 MA05A MK L0JA 100mA ULTRA LOW-DROPOUT REGUL	LP2981AIM5X-3.6	PZ	1,00000	U28	
...	4	01 1dd0200024to	CI DG TC7S04FU TE85L SSOP5-PA MK E5 INVERTER		PZ	1,00000	U22	
...	4	01 1dd0200028to	CI DG TC7W08FU TE12L SSOP8-P MK 7W08 DUAL 2-INPUT AND GATE		PZ	2,00000	U2 U16	
...	4	01 1dd0200030to	CI DG TC7W32FU TE12 SSOP8-P MK 7W32 DUAL 2-INPUT OR GATE		PZ	1,00000	U7	
...	4	01 1ff0400037am	CONN RF DA C/S SMD CON SWITCH	0-619013-1	PZ	3,00000	SO4 SO5 SO6	
...	4	01 1ff0400042mcm	CONN RF OSX F C/S VERT 5899-5004-54	5899-5004-54	PZ	2,00000	SO2 SO3	
...	4	01 1110200014mu	FILTRO DIELE 1610.0MHz BW 16MHz SMD QUALCOMM CODE CV90-25422-2	DFC31R61P016BHB	PZ	1,00000	FC1	
...	4	01 1110500022swt	FILTRO SAW TX 130.38MHz QUALCOMM CODE CV90-25680-1	854858	PZ	1,00000	FC2	
...	4	01 1110500024mu	FILTRO SAW TX S-BAND 1618.25MH QUALCOMM CODE CV90-25235-1	SAFC1618.25	PZ	2,00000	FC5 FC6	
...	4	01 1110900001hc	CIRCOLATORE 1618MHz	SI-7TNR1.618G-T	PZ	1,00000	HY1	
...	4	01 1111300003hc	DOUBLE BALANCED MIXER SLM-A IF 130.38 MHz	SLM-180A	PZ	1,00000	MX2	

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Assieme	01	2000100257	MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99				Nr.progetto: 0080	
...	4	01 1mm0300013tw	MODULO VCTCXO 19.68MHz SMD	TXS0924M-3.3/19.68	PZ	1,00000	X1	
...	4	01 1mm0300014fu	MODULO VCO TX 1500MHz 3.8V SMD QUALCOMM CODE CV90-25237-1	VC-3R6A20-1487	PZ	1,00000	Y2	
...	4	01 1nn0100038si	TRANS NPN BCR141W SOT323	Q62702-C2288	PZ	2,00000	Q2 Q5	
...	4	01 1nn0100046si	TRANS NPN BFS483 SOT363	Q62702-F1574	PZ	1,00000	Q8	
...	4	01 1nn0400001ok	TRANS GASFET 4PSOP 3v 5mA	KGf1522	PZ	1,00000	Q16	
...	4	01 1nn0500007ir	TRANS MOSFET P MICRO8 V/DS-20V R/DS .09R	IRF7604TR	PZ	2,00000	Q11 Q12	
...	4	01 1yy0700013hp	DIODO SCHOT HSMS-2825-L31 SOT-143-L	HSMS-2825-L31	PZ	1,00000	D4	
...	4	01 1xxxx99002	COMPONENTE DA NON MONTARE		PZ	14,00000	C13 C27 C79 C83 C106 C141 C161 C175 C186 L20 L21 R13 R15 R36	2430
...	3	01 1aa0100106ky	RES SMD 0 OHM JUMPER1/16W 0603	CJ10-000-D	PZ	1,00000	R23	
...	3	01 1aa0100108ky	RES SMD 10 R 5% 1/16W 0603	CR10-100J-D	PZ	2,00000	R33 R73	
...	3	01 1aa0100111ky	RES SMD 33 R 5% 1/16W 0603	CR10-330J-T	PZ	2,00000	R25 R39	
...	3	01 1aa0100113ky	RES SMD 100 R 5% 1/16W 0603	CR10-101J-T	PZ	3,00000	R2 R8 R9	
...	3	01 1aa0100119ky	RES SMD 470 R 5% 1/16W 0603	CR10-471J-D	PZ	1,00000	R10	
...	3	01 1aa0100123ky	RES SMD 1 K 5% 1/16W 0603	CR10-102J-D	PZ	1,00000	R60	
...	3	01 1aa0100125ky	RES SMD 1.5 K 5% 1/16W 0603	CR10-152J-T	PZ	1,00000	R22	
...	3	01 1aa0100126ky	RES SMD 1.8 K 5% 1/16W 0603	CR10-182J-T	PZ	2,00000	R76 R77	
...	3	01 1aa0100128ky	RES SMD 2.7 K 5% 1/16W 0603	CR10-272J-T	PZ	1,00000	R5	
...	3	01 1aa0100134ky	RES SMD 8.2 K 5% 1/16W 0603	CR10-822J-T	PZ	1,00000	R81	
...	3	01 1aa0100135ky	RES SMD 10 K 5% 1/16W 0603	CR10-103J-D	PZ	1,00000	R63	
...	3	01 1aa0100144ky	RES SMD 27 K 5% 1/16W 0603	CR10-273J-T	PZ	2,00000	R80 R112	2409
...	3	01 1aa0100148ky	RES SMD 56 K 5% 1/16W 0603	CR10-563J-D	PZ	1,00000	R64	2409
...	3	01 1aa0100149ky	RES SMD 68 K 5% 1/16W 0603	CR10-683J-T	PZ	2,00000	R52 R54	2409
...	3	01 1aa0100151ky	RES SMD 100 K 5% 1/16W 0603	CR10-104J-D	PZ	2,00000	R3 R97	
...	3	01 1aa0100152ky	RES SMD 150 K 5% 1/16W 0603	CR10-154J-T	PZ	1,00000	R14	2409
...	3	01 1aa0100154ky	RES SMD 220 K 5% 1/16W 0603	CR10-224J-T	PZ	1,00000	R11	
...	3	01 1aa0100155ky	RES SMD 270 K 5% 1/16W 0603	CR10-274J-T	PZ	1,00000	R98	2409



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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
Assieme 01 2000100257			MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99			Nr.progetto: 0080		
..3	01	1aa0100241ky	RES SMD 47 R 5% 1/16W 0603	CR10-470J-T	PZ	2,00000	R74 R75	
..3	01	1aa0100249ky	RES SMD 120 K 5% 1/16W 0603	CR10-124J-T	PZ	1,00000	R115	
..3	01	1aa0100361ky	RES SMD 10 R 5% 1/16W 0402	CR05-100J-H	PZ	6,00000	R20 R26 R31 R35 R38 R41	
..3	01	1aa0100362ky	RES SMD 22 R 5% 1/16W 0402	CR05-220J-H	PZ	1,00000	R67	
..3	01	1aa0100364ky	RES SMD 33 R 5% 1/16W 0402	CR05-330J-H	PZ	1,00000	R34	
..3	01	1aa0100365ky	RES SMD 47 R 5% 1/16W 0402	CR05-470J-H	PZ	1,00000	R70	
..3	01	1aa0100370ky	RES SMD 220 R 5% 1/16W 0402	CR05-221J-H	PZ	1,00000	R46	
..3	01	1aa0100374ky	RES SMD 1 K 5% 1/16W 0402	CR05-102J-H	PZ	1,00000	R59	
..3	01	1aa0100407ky	RES SMD 0 OHM JUMPER1/16W 0402	CJ05-000J-H	PZ	1,00000	R21	
..3	01	1aa0600010mu	RES NTC SMD 68 K 5% 1608	NTH5G1M41B683J04TH	PZ	1,00000	RT1	
..3	01	1bb0100067av	COND CER SMD 10 pF COG 0603 5% 50V	06035A100JAT2L	PZ	1,00000	C10	
..3	01	1bb0100068av	COND CER SMD 15 pF COG 0603 5% 50V	06035A150JAT2L	PZ	2,00000	C123 C124	
..3	01	1bb0100070av	COND CER SMD 27 pF COG 0603 5% 50V	06035A270JAT2L	PZ	1,00000	C158	
..3	01	1bb0100071av	COND CER SMD 33 pF COG 0603 5% 50V	06035A330JAT4A	PZ	1,00000	C3	
..3	01	1bb0100081av	COND CER SMD 1 nF X7R 0603 10% 50V	06035C102KAT4A	PZ	25,00000	C1 C4 C9 C31 C32 C34 C35 C38 C39 C53 C54 C77 C88 C103 C136 C144 C156 C160 C182 C187 C191 C194 C195 C196 C213	
..3	01	1bb0100094av	COND CER SMD 8.2pF COG 0603 +-0.5 pF 50V	06035A8R2DAT2L	PZ	1,00000	C190	
..3	01	1bb0100155av	COND CER SMD 10 nF X7R 0603 10% 50V	06035C103KAT2A	PZ	6,00000	C36 C44 C46 C168 C170 C173	
..3	01	1bb0100187ky	COND CER SMD 1.0pF COG 0402 +-0.25pF 50V	CM05CG1R0C50AH	PZ	1,00000	C17	
..3	01	1bb0100190ky	COND CER SMD 10 pF COG 0402 +-0.5pF 50V	CM05CG100D50AH	PZ	6,00000	C20 C24 C25 C30 C183 C223	
..3	01	1bb0100191ky	COND CER SMD 12 pF COG 0402 5% 50V	CM05CG120J50AH	PZ	7,00000	C55 C65 C84 C97 C98 C129 C154	
..3	01	1bb0100194ky	COND CER SMD 33 pF COG 0402 5% 50V	CM05CG330J50AH	PZ	17,00000	C94 C95 C99 C100 C101 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121	
..3	01	1bb0100206ky	COND CER SMD 330 nF X7R 0805 10% 16V	CM21X7R334K16AT	PZ	1,00000	C145	
..3	01	1bb0100208ky	COND CER SMD 100 nF X7R 0603 10% 16V	CM105X7R104K16AT	PZ	3,00000	C125 C131 C159	

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Assieme 01 2000100257			MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99			Nr.progetto: 0080		
..3	01	1bb0100217av	COND CER SMD 56 nF X7R 0603 10% 16V	0603YC563KAT2A	PZ	1,00000	C146	
..3	01	1bb0100224ky	COND CER SMD 2.2pF COG 0402 +-0.25pF 50V	CM05CG2R2C50AH	PZ	1,00000	C7	
..3	01	1bb0100245av	COND CER SMD 330 pF X7R 0603 10% 50V	06035C331KAT4A	PZ	3,00000	C67 C132 C133	
..3	01	1bb0100255ky	COND CER SMD 3.3 nF X7R 0603 10% 50V	CM105X7R332K50AT	PZ	1,00000	C157	
..3	01	1bb0100289ky	COND CER SMD 22 pF COG 0603 5% 50V	CM105CG220J50VAT	PZ	2,00000	C29 C87	
..3	01	1bb0500050ky	COND TANT SMD 4.7 uF 10V 20% Asize	TAJA475M010R	PZ	3,00000	C28 C40 C227	
..3	01	1bb0500078ky	COND TANT SMD 3.3 uF 10V 20% Asize	TAJA335M010R	PZ	6,00000	C6 C15 C26 C122 C163 C225	
..3	01	1cc0100129mu	INDUT SMD EMI SUPPRESSOR 0.8 R 200mA	BLM21B222SPT	PZ	5,00000	CH1 CH2 CH4 CH8 CH14	
..3	01	1cc0100162mu	INDUT SMD 3.3 nH +/-0.3nH Qmin12 300mA	LQG11A3N3S00T1	PZ	1,00000	L35	
..3	01	1cc0100163mu	INDUT SMD 5.6 nH +/-0.3nH Qmin12 300mA	LQG11A5N6S00T1	PZ	1,00000	L29	
..3	01	1cc0100164mu	INDUT SMD 6.8 nH +/-5% Qmin12 300mA	LQG11A6N8J00T1	PZ	2,00000	L25 L27	
..3	01	1cc0100167mu	INDUT SMD 18 nH +/-5% Qmin12 300mA	LQG11A18NJ00T1	PZ	4,00000	L9 L18 L19 L57	
..3	01	1cc0100168mu	INDUT SMD 33 nH +/-5% Qmin12 300mA	LQG11A33NJ00T1	PZ	2,00000	L10 L13	
..3	01	1cc0100169mu	INDUT SMD 39 nH +/-5% Qmin12 300mA	LQG11A39NJ00T1	PZ	3,00000	L7 L8 L28	
..3	01	1cc0100171mu	INDUT SMD 68 nH +/-5% Qmin12 300mA	LQG11A68NJ00T1	PZ	4,00000	L1 L15 L16 L40	
..3	01	1cc0100184mu	INDUT SMD 1.2 nH +/-0.3nH Qmin12 300mA	LQG11A1N2S00T1	PZ	1,00000	L6	
..3	01	1cc0100190mu	INDUT SMD 12 nH +/-5% Qmin12 300mA	LQG11A12NJ00T1	PZ	1,00000	L14	
..3	00	1dd0100137na	CI ANALOG MTC20 PLL FREQ SYNTH FOR RF PERS COM	LMX2330LTMX	PZ	1,00000	U11	
..3	01	1dd0100138na	CI ANALOG MA05A LOW POWER OP.AMP RAIL TO RAIL	LMC7101AIM5X	PZ	1,00000	U19	
..3	01	1dd0100141qlc	CI ANALOG QC1 RX AGC AMPLIFIER CD90-24056-1	Q5500I-1M-TR	PZ	1,00000	U3	
..3	01	1dd0100146hp	CI ANALOG MGA-85563-TR1 S0T363 LOW NOISE GAAS MMIC AMPLIFIER	MGA-85563-TR1	PZ	1,00000	U15	
..3	01	1dd0100163na	CI ANALOG LP2980AI MA05A 50mA ULTRA LOW-DROPOUT REGULATOR	LP2980AIM5X-3.3	PZ	1,00000	U25	
..3	01	1dd0100200na	CI ANALOG LP2985AI MA05B 150mA ULTRA LOW-DROPOUT REGULATOR	LP2985AIM5X-3.6	PZ	1,00000	U27	
..3	01	1dd0100201na	CI ANALOG LP2980AI MA05A 50mA ULTRA LOW-DROPOUT REGULATOR	LP2980AIM5X-3.6	PZ	1,00000	U20	
..3	01	1dd0200065to	CI DG TC7SH04FU SSOP5-P-A MK H5 HIGH SPEED CMOS INVERTER	TC7SH04FU	PZ	1,00000	U5	
..3	01	1dd0200074sg	CI DG M74HC4052M1R SO16 4 DUAL CHAN ANOLOG MULTI/DEMULTIPLEX	M74HC4052M1R	PZ	1,00000	U4	
..3	01	1dd0500021sy	MOD RF SPDT ANTENNA SWITCH TSSOP-10P-L01 SMD	CXG1022TM	PZ	1,00000	U8	

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-----						Nr.progetto: 0080		
Assieme	01	2000100257	MODULO RADIO GLOBALSTAR CS661C VERS 15.01.99					
..3	01	1ff0600089ml	CONN F CSTP 50 VIE VERT SMD P-0.5	52991-0508	PZ	1,00000	SO1	
..3	01	1110500021swt	FILTRO SAW RX 224.88MHz QUALCOMM CODE CV90-25644-1	855099	PZ	1,00000	FC3	
..3	01	1110500023mu	FILTRO SAW RX S-BAND 2491.75MH QUALCOMM CODE CV90-25223-1	SAFC2491.75	PZ	2,00000	FC4 FC7	
..3	01	1111300001hc	SINGLE BALANCED MIXER SLM190 IF 100-400 MHz	SLM-190S	PZ	1,00000	MX1	
..3	01	1mm0300015fu	MODULO VCO RX 2280MHz 3.8V SMD QUALCOMM CODE CV90-25236-1	VC-3R6A20-2267	PZ	1,00000	Y1	2435
..3	01	1nn0100040si	TRANS NPNx2 BFS482 SOT363	Q62702-F1573	PZ	1,00000	Q1	
..3	01	1nn0400001ok	TRANS GASFET 4PSOP 3v 5mA	KGF1522	PZ	1,00000	Q6	
..3	01	1xzzz99002	COMPONENTE DA NON MONTARE		PZ	13,00000	C2 C11 C43 C45 C102 C104 C105 C107 C108 C109 R56 R113 R114	
..2	01	1gg3200047	SCHERMO MODULO RADIO PER SATELLITARE	DIS1228	PZ	1,00000	rif. dis. 2	
..2	01	1hh0700025tps	VITE ACCIAIO TC CR M 1.6x 4 ZINCATO NERO	B911604002	PZ	3,00000	rif. dis. 3	

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386,00000

\*\*\* FINE STAMPA \*\*\*

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Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM
------	----	----------------	-------------	-----------------------	----	-----------	--------------------	-----

Assieme	01	2000100201	BASSETTA SENSORE OTTICO	CS760 VERS 28.05.98			Nr.progetto: 0080	
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1	01	1ff0100760	BASSETTA C/S OPT SENSOR BOARD	VERS 28.05.98		PZ	1,00000 rif. dis. 1	
---	----	------------	-------------------------------	---------------	--	----	---------------------	--

1	01	1pp0700001si	SENSORE OTTICO SFH-9202 SMD	LIGHT REFLECTION SWITCH	Q62702-P5039	PZ	1,00000 Q1	
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2,00000

\*\*\* FINE STAMPA \*\*\*

## 8 PHOTOS AND ASSEMBLIES

### Photos

Telital GS/GSM Dual Mode User Terminal Final assembly front view

Telital GS/GSM Dual Mode User Terminal Final assembly rear view

Telital GS/GSM Dual Mode User Terminal Final assembly lateral view

GSM Radio & Display assy CS710c

BB Globalstar & GSM assy CS680b

Radio G\* assy CS661c

Optical Sensor CS760

### Modules assembly

Assembly GSM Radio & Display assy CS710c code: 2-000100267

Assembly BB Globalstar & GSM assy CS680b code: 2-000100256

Assembly Radio G\* assy CS661c code: 2-000100257

Assembly Optical Sensor CS760 code: 2-000100201

Telital GS/GSM Dual Mode User Terminal Final assembly front view



Telital GS/GSM Dual Mode User Terminal Final assembly rear view

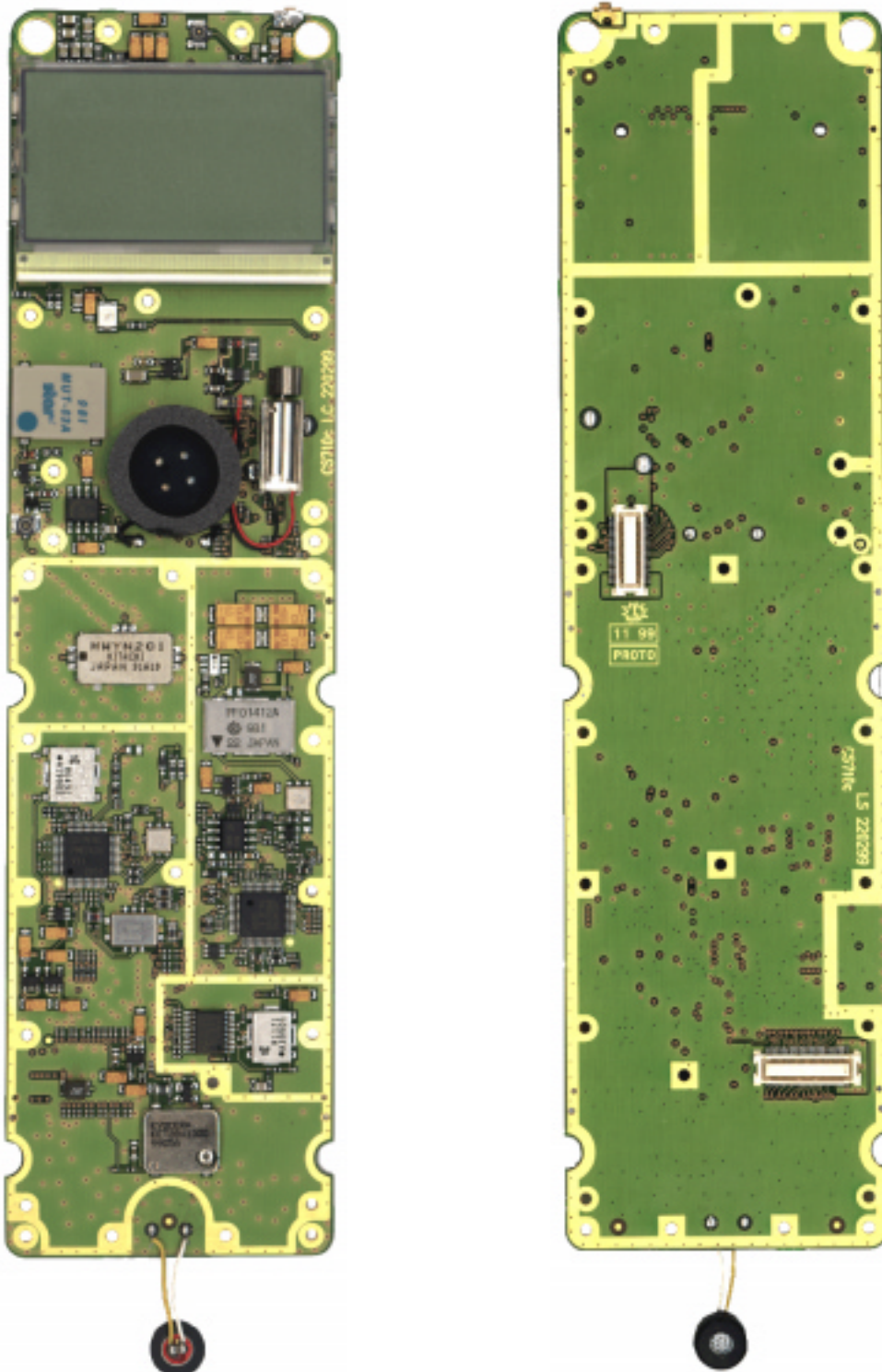


Telital GS/GSM Dual Mode User Terminal Final assembly lateral view

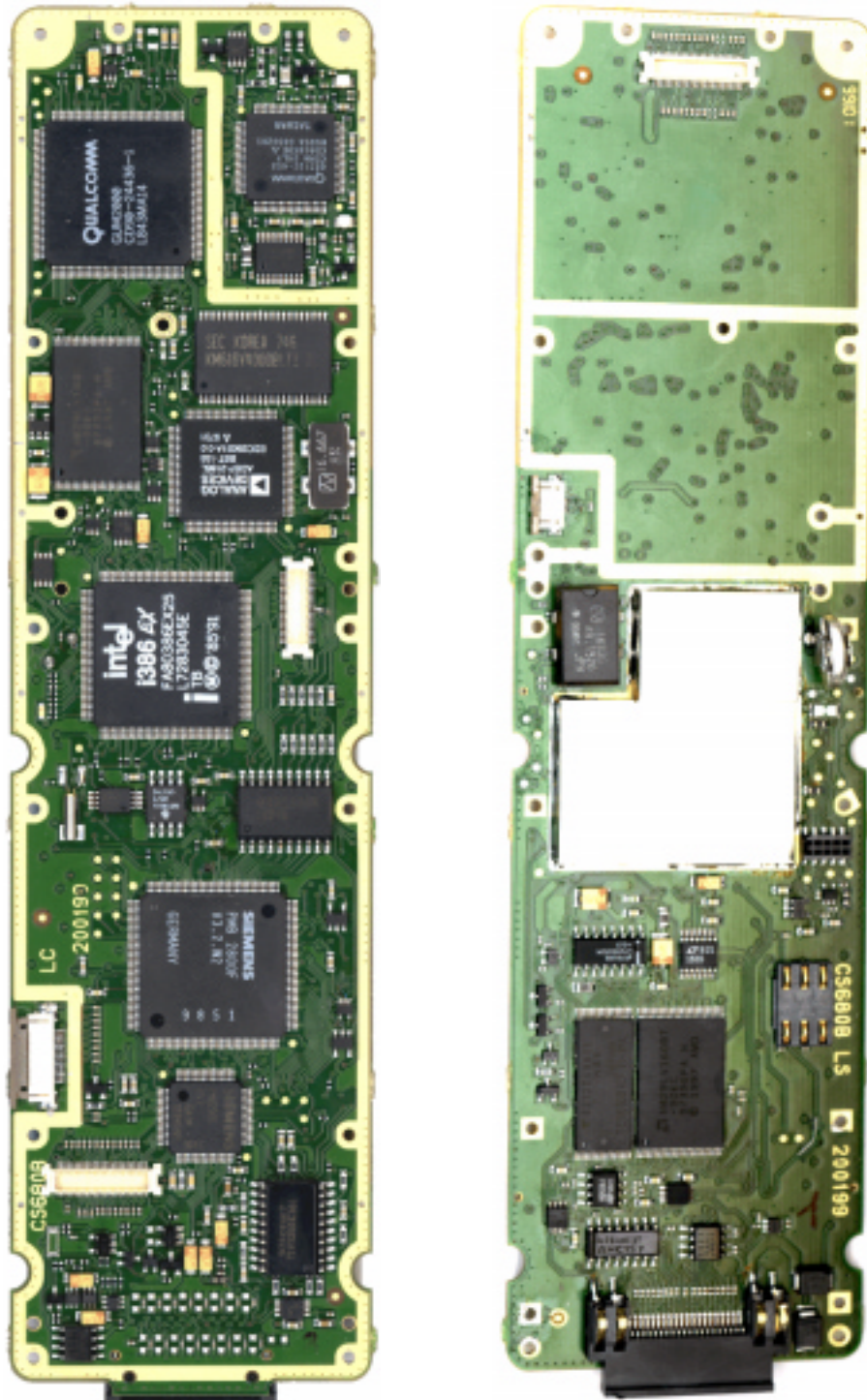




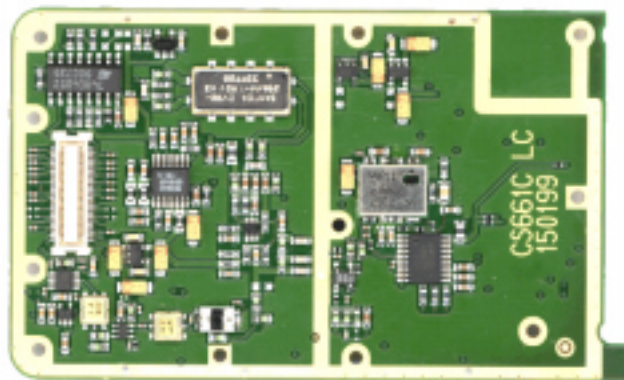
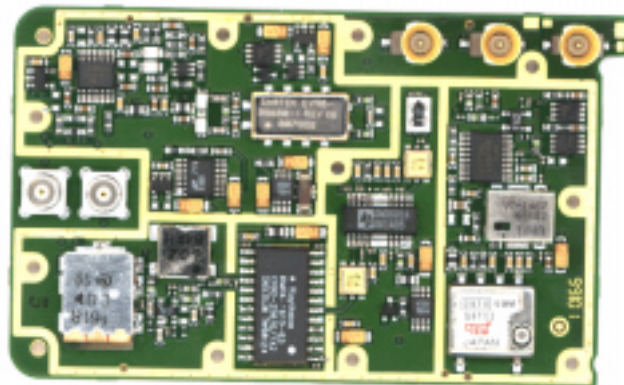
GSM Radio & Display assy CS710c



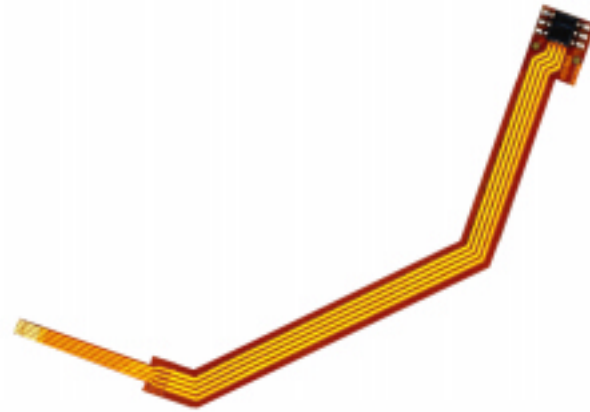
BB Globalstar & GSM assy CS680b



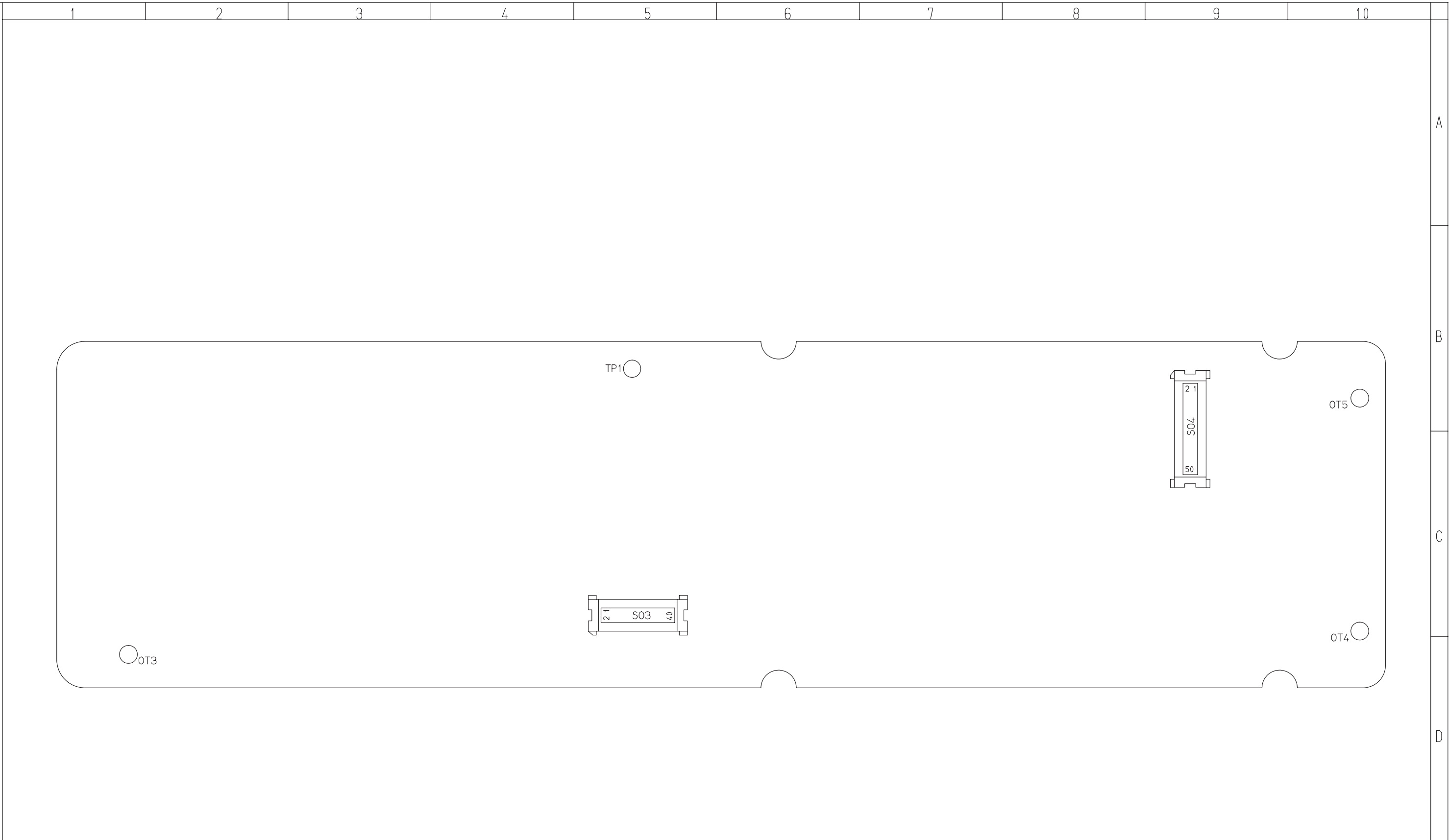
Radio G\* assy CS661c Primary layer




Optical Sensor CS760







MODIFY																				
DATE																				
PATH	cae6/home/users/erica										 DESCRIPTION SILKSCREEN MASK CS710C									
FILE NAME	cs710c-p																			
	cs710c-p.sks										ANNOTATION COMPONENTS SIDE 2 = LAYER 6									
PROJECT BY																				FORM A3
DRAWN BY	Bellen E.		220299		PROJECT					SHEET N.		OF SHEETS		DRAWING CODE						
VERIFIED BY					0080					2		2		# CS710C.SM						













TUTTI I DIRITTI RISERVATI  
 RIPRODUZIONE E DIVULGAZIONE  
 VIETATE

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1

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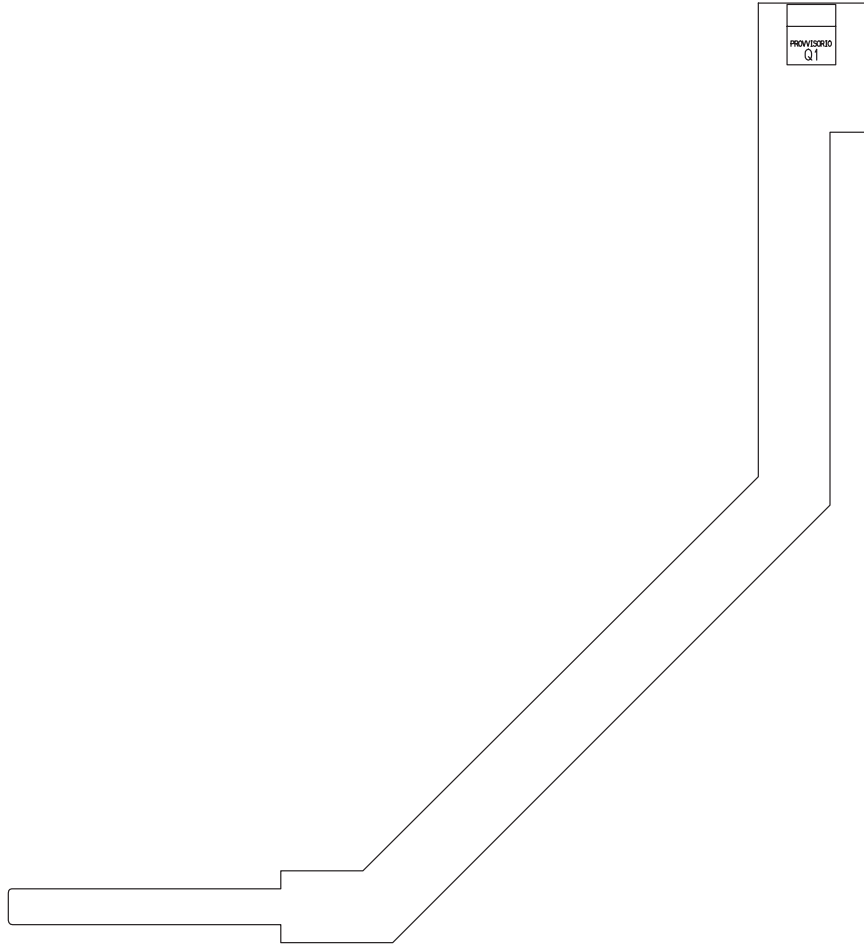
5


A

B

C

D



MODIFY														
DATE														
PATH cae2/home/users/erica					DESCRIPTION									
FILE NAME	cs760-p				SILKSCREEN MASK									
FILE GERBER	cs760-p.skp				CS760									
PROJECT BY		ANNOTATION										FORM		
		COMPONENTS SIDE 1 = LAYER 1										A4		
DRAWN BY	Bellen E.	280598	PROJECT	0080	SHEET N.	1	OF SHEETS	1	DRAWING CODE					CS760.SM
VERIFIED BY														

E

## **9 USER GUIDE**

Telital DMUT User Guide

9.1 General

This guide provides all the necessary information for the correct use of the GS-GSM DMUT.

Figure 1 show the DMUT with a brief description of keys function.

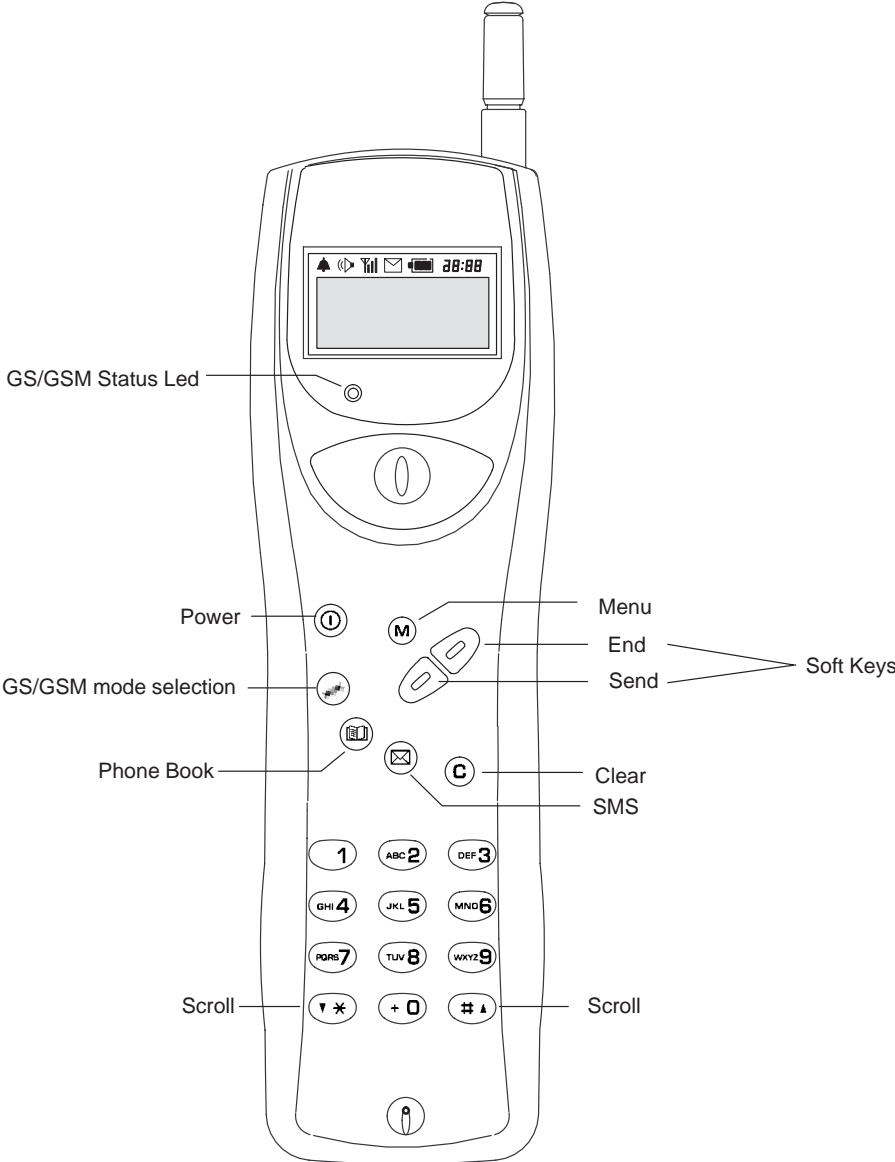


Figure 1

### 9.1.1 Display and indications

The display show all status and menu of GS–GSM DMUT during the operations. Icons and bitmaps tells to the user all situations and operating modes, telephone numbers, messages, battery charge status, time and other useful informations (see fig. 2).

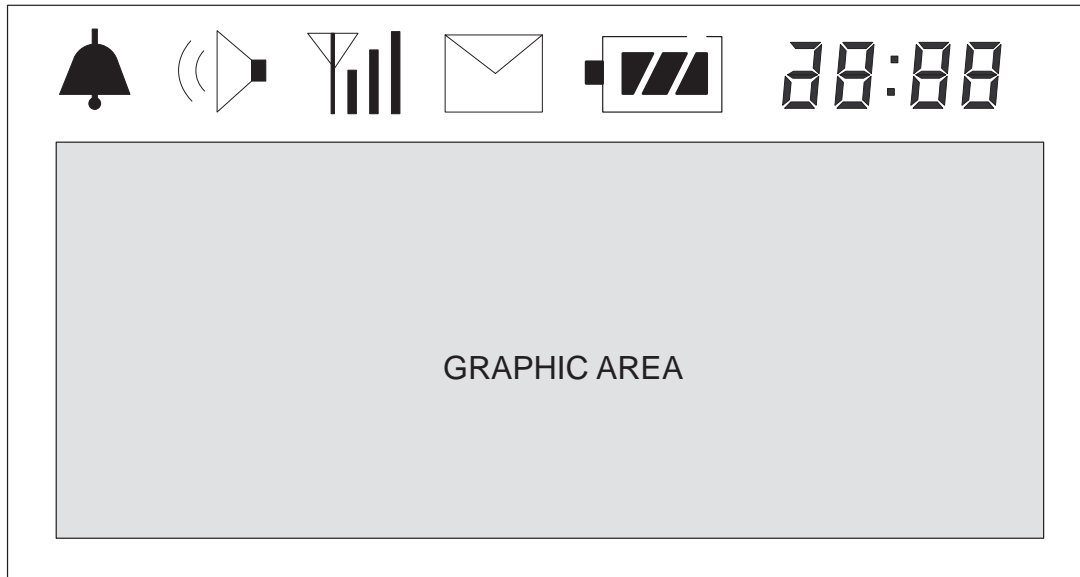


Figure 2

#### 9.1.1.1 Icons



This icon indicates a programmed alarm.  
This icon blinking, indicates an alarm time–out



This icon indicates an Hands–free device (car kit) connected.



This icon indicates the received signal intensity both in GS and GSM mode. The number of active bar indicates the signal intensity.



This icon displayed in the graphic area indicates an active conversation.



This icon indicates the SMS function activation and voice mailbox messages presence.



This icon indicates the battery charge status.



Clock

### 9.1.1.2 Status indications

The status of the dual mode telephone will be given by a led on the front panel and icons on LCD display graphic area.



LED status ON = GS operating mode;


LED status OFF = GSM operating mode;


Icon on Display for the "GS Maintenance Required" indication;

Icon on Display for the "GS Lock" indication.

### 9.1.2 Battery charger

The DMUT have a rechargeable Lithium ion battery pack and a battery charger. When the battery charge level becomes low, the icon  shows this status and when the icon  empty is blinking, is necessary to connect the battery charger to the DMUT.

The graphic symbol  is shown when the telephone is operating during a battery charge operation.

The bitmap  is shown during a battery charge operation with the DMUT turned off.

### 9.1.3 Car kit


The car kit option allows to connect the DMUT to the vehicle with battery charge and hands free functionality.

### 9.1.4 Operation

#### 9.1.4.1 Minimal functionality

The following operations allows to turn on the DMUT, place a call and then turn off the DMUT.

 Insert your plug-in SIM card into the slot

 Press **Ⓚ** (POWER) for 1 second to switch on the unit  
If PIN is enabled:

PIN>  
SOS

If inserted PIN is correct the unit starts network auto search.  
In G\* mode the following will be displayed:

▽  
Searching GW  
...

In GSM mode the following will be displayed:

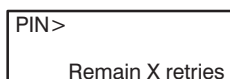
▽  
Net Search  
\*\* GS/GSM DMUT \*\*

at the end of the search the following will be displayed:



where the first line indicates the antenna icon (flashing during network auto search) followed by radio signal intensity (up to 4 bars) and the second line the name of the network operator, or the gateway ID and then the service provider name in G\* mode.

If inserted PIN is wrong the following will be displayed:



where X on the second line indicates the number of possibilities left to retry correct PIN entering.

If the wrong PIN is entered for three times the following will be displayed:



☞ Key in \* 05 \*, the 8 PUK digits provided by the network operator, press \* (new PIN) \* (new PIN) and then #.

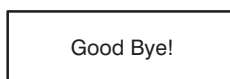
**Warning:** If you cannot remember your PUK code or you enter a wrong one for 10 times, you have no other possibility but that of contacting the network operator who issued your SIM card.


If you inserted the correct PUK appears a success graphic symbol that indicates that PUK is valid and then the operative mask.

Now you can place and receive calls.


☞ To switch off the unit: press and release  (POWER).

The following "Good Bye" graphic screen will be displayed:





☞ To place a call: dial the number and press  (SEND).  
 Mistakes in digiting have to be corrected by pressing shortly " C " key.  
 If you keep " C " key pressed for longer time, all digits will be cancelled.


☞ Emergency calls can be placed also if the SIM card is not inserted.

☞ To receive a call: Press  (SEND) or any other key if programmed in the menu.  
 When using the handset: pick up the handset.

☞ To end a call: Press  (END).

☞ To adjust listening level: Press  \* and #  long during conversation.




- ☞ Mute function: Keep pressed  (POWER) for more than 1 second during conversation.
- ☞ Keypad lock: Keep # pressed for 2 seconds: selected function will be displayed by lock symbol. Keep press the same key for 2 seconds and press the key "5" to unlock keypad.

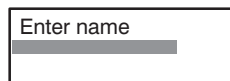





## 9.1.5 Phone book

### 9.1.5.1 Storing a number




- ☞ Key in the number to be stored. By pressing "C" the last digit will be cancelled; if you press "C" for longer time all digits will be cancelled.
- ☞ Press .

The following screen will be displayed:

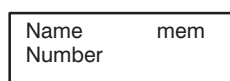


- ☞ Key in the name: keep the alphanumeric key pressed until the desired letter appears on the display.  
  
Key "1" contains the space and special characters, whereas key "\*" switches between capital and small letters.
- ☞ Press  (SEND) to store your selection in the first free memory location and press  (SEND) to confirm.
- ☞ Press  (END) to exit from phone book without save any number.


### 9.1.5.2 Recalling a number from phone book

- ☞ Press XX and #, where XX is the desired memory location number,  
  
or:
- ☞ Press  and with  \* or #  scroll through all the allocated memories in alphabetical order or by telephone number order or by memory location order. The search criteria is defined by pressing the "M" key corresponding to ">>"symbol on display.

The following screen will be displayed during a phone book operations:



By pressing "C" the last character will be cancelled, and if you keep "C" pressed for longer time all characters will be cancelled.

- ☞ When the desired location appears on the display, press  (SEND) to place the call.




When recalling a memory location not available on the SIM card the following will be displayed:

No record  
New record?

**ADN Memories:** Available memory locations in SIM card. Available quantity depends on the SIM card you have chosen.

**FDN Memories:** Also contained in the SIM card with same features as ADN memories. Activation of FDN memories must be performed from the menu and by entering the PIN2 code which is not always supplied by the network operator.

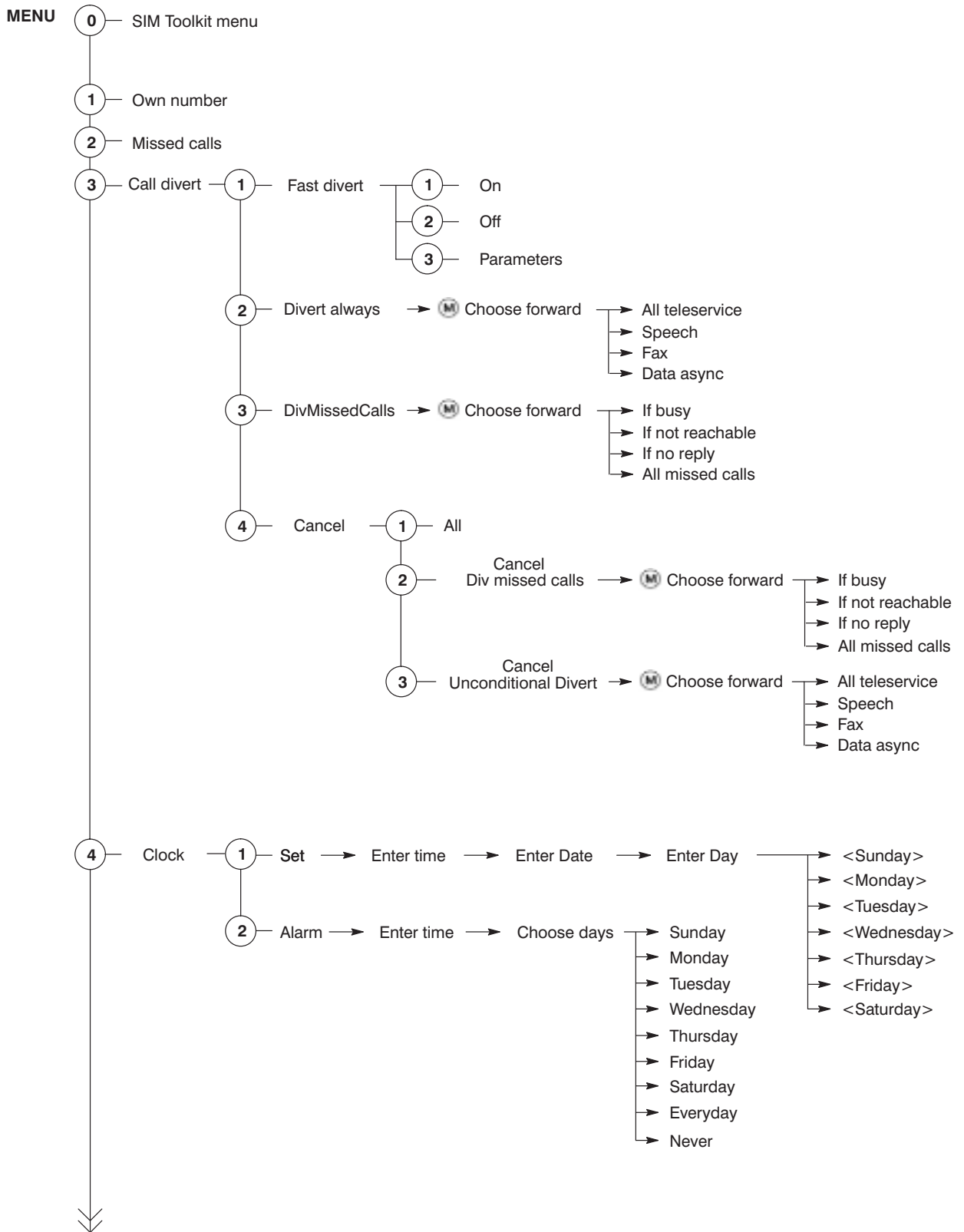
### 9.1.6 Function menu

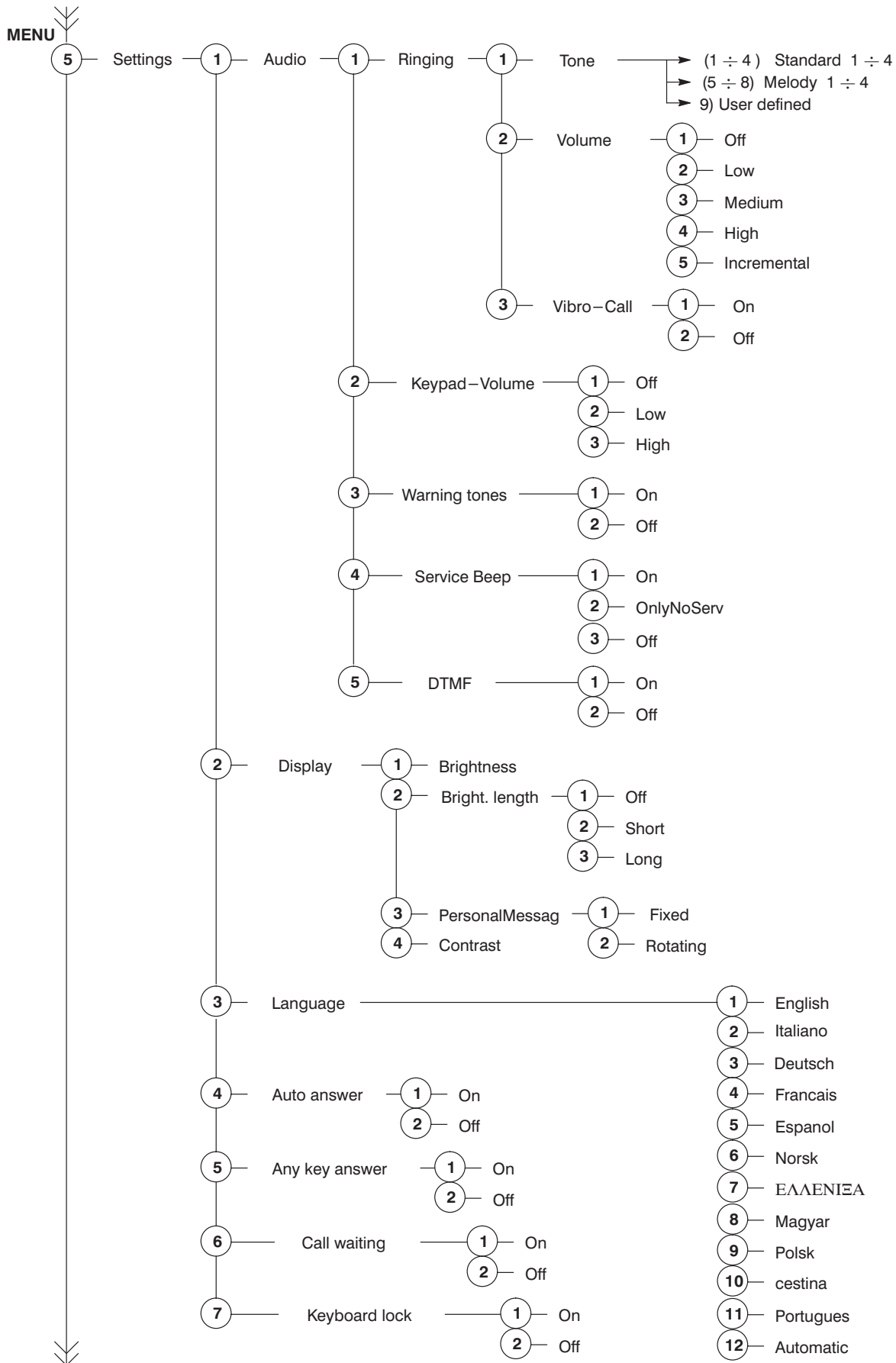
- ☞ Press "M" key followed by the number key corresponding with the desired menu number or,
- ☞ Press "M" key to going to the menu.
- ☞ Press  $\blacktriangledown$  \* and #  $\blacktriangle$  or press the "M" key to browse the menus.
- ☞ Confirm the access on the desired menu by pressing  (SEND) key.
- ☞ To exit from menu without save the settings press  (END) key.
- ☞ To exit from menu and save the settings press  (SEND) key.

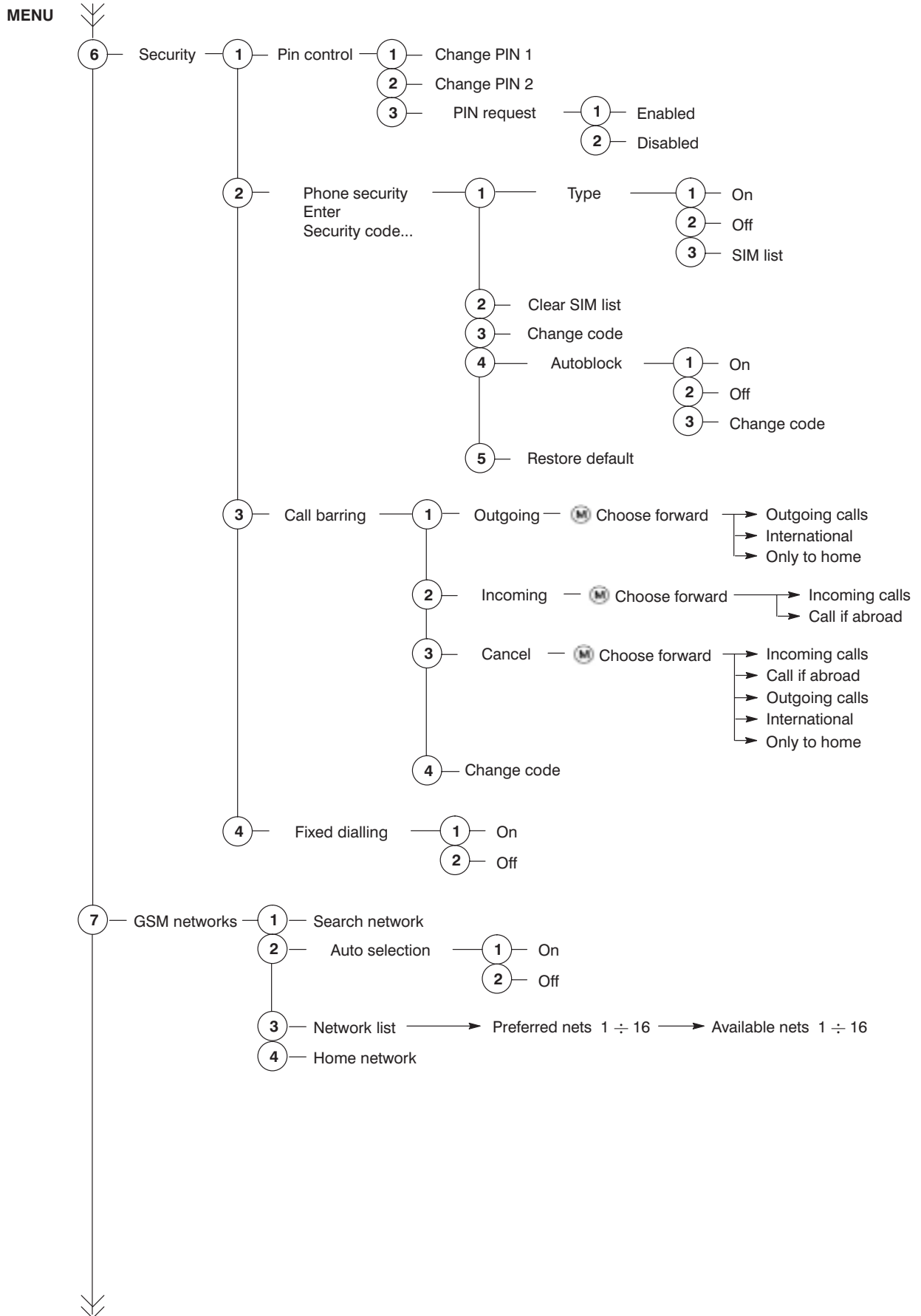
If a "Proactive" SIM is inserted into a DMUT, a menu item 0 will be displayed. By selecting this item, access will be given to the SIM Toolkit services supplied by the network operator.

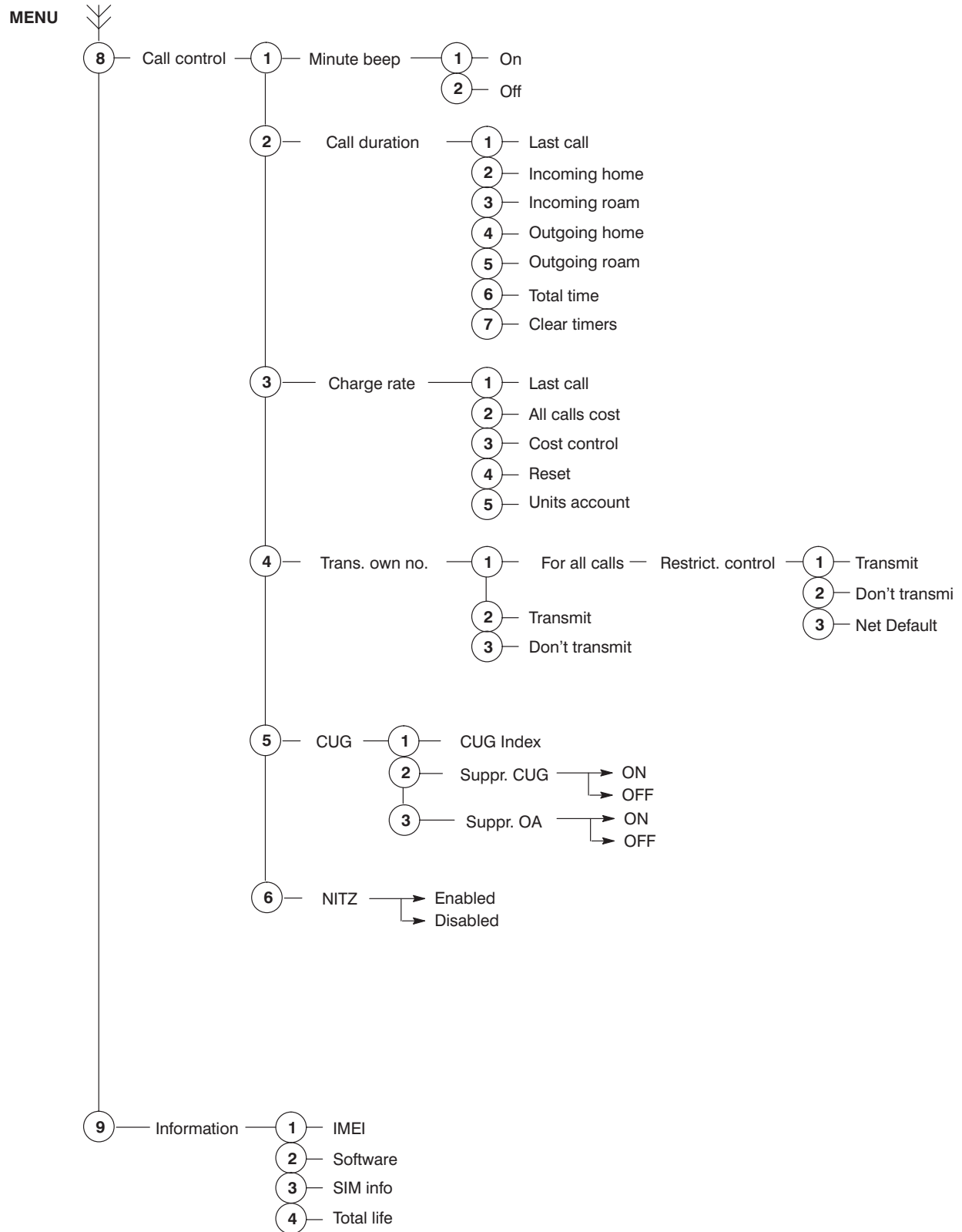
After 3 minutes of inactivity on the menu operations, the operative condition will be automatically restored.

The following diagrams show the function menu structure.




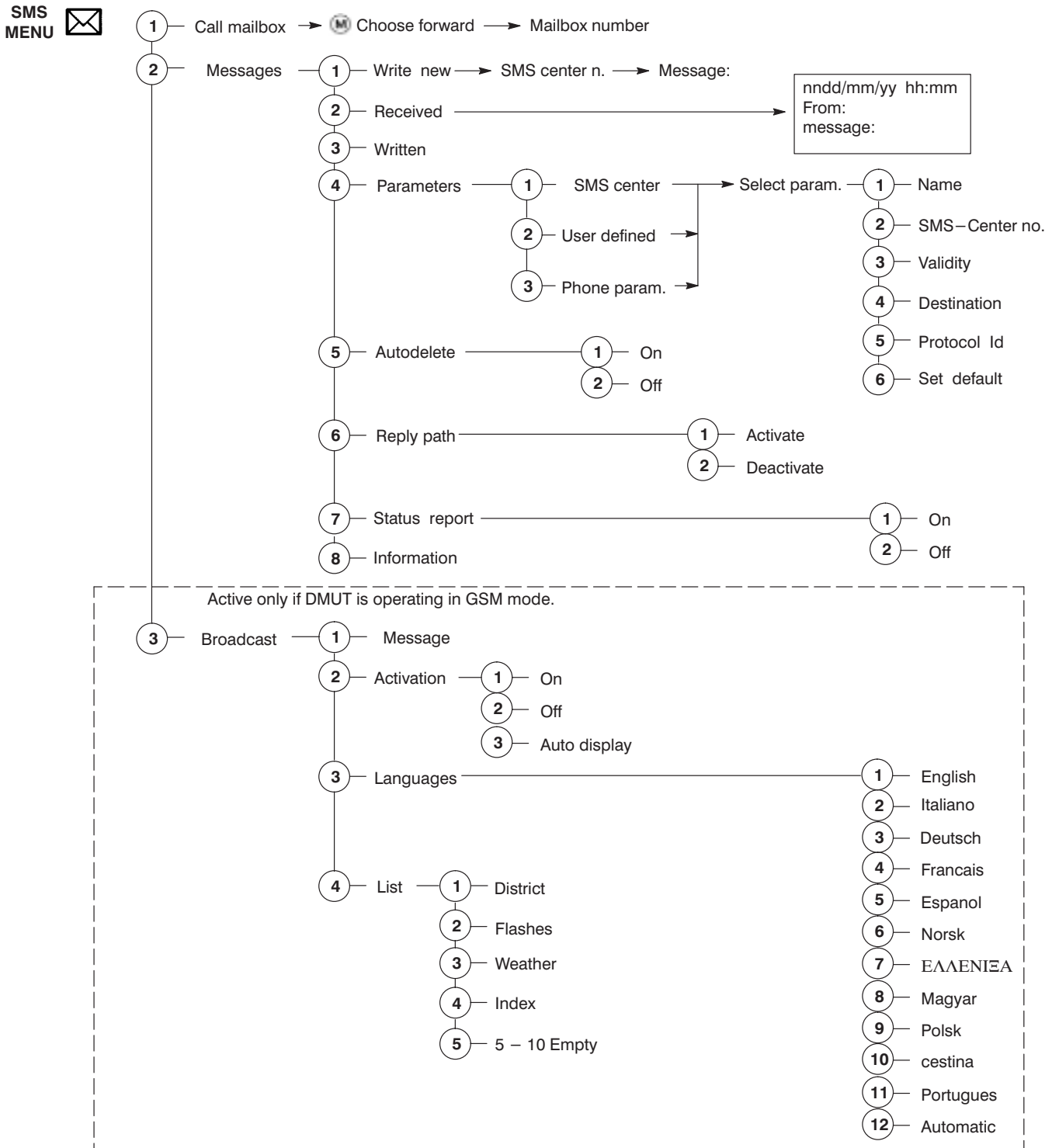






9.1.6.1 SMS menu

Pressing the  is available the SMS (Short Message Service) menu. This menu allows to send and receive short text messages (SMS), to receive messages from the network operator and other supported services. The following diagram show the SMS menu structure.



### 9.1.6.2 Globalstar Menu

Pressing the  key is available the Globalstar menu.

This menu partially active only in idle mode, allows to manually select the way of operating at power on of the DMUT.

The following diagram show the MS menu structure.

