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

**TECHNICAL
MANUAL**

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TECHNICAL MANUAL
Telital GS/GSM
DUAL MODE USER TERMINAL

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

TECHNICAL MANUAL

GS/GSM

DUAL MODE USER TERMINAL

INDEX

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

TBR20 - Editon 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

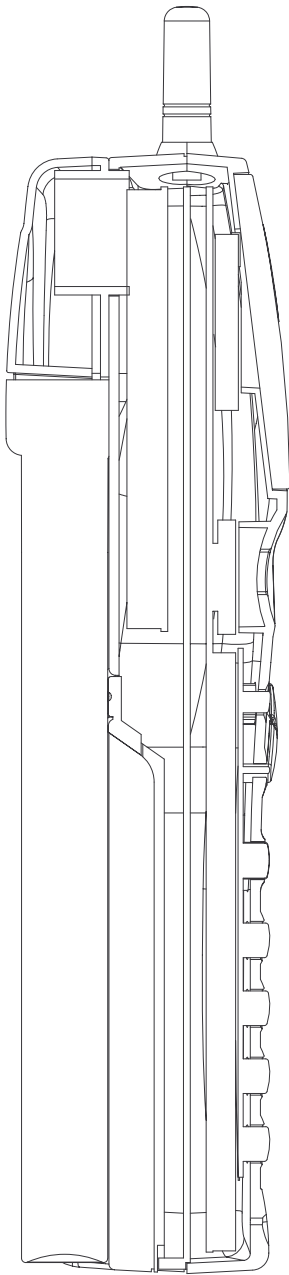
The following components are added: R133, C64, R130, TP42, TP43.

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

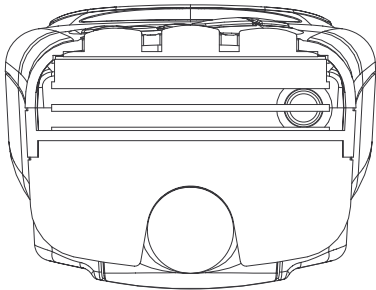
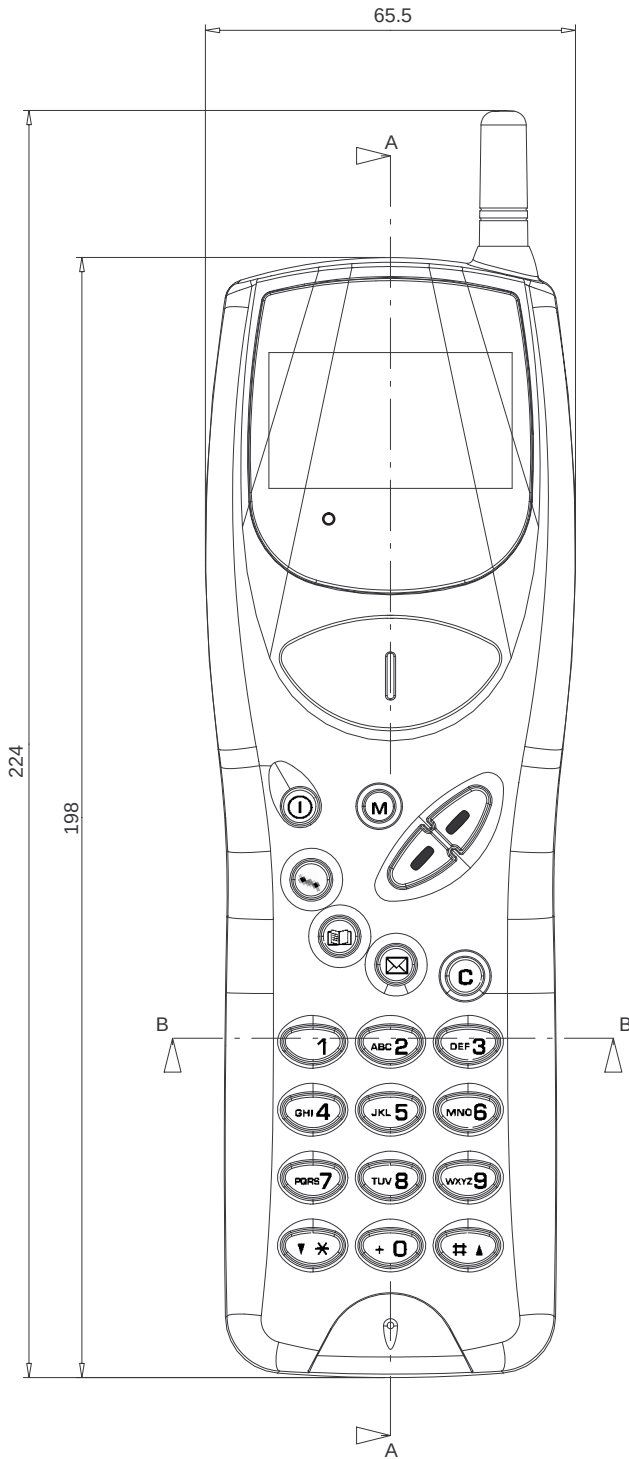
2 MECHANICAL VIEW

2.1 Mechanical view Telital GS/GSM Dual Mode User Terminal

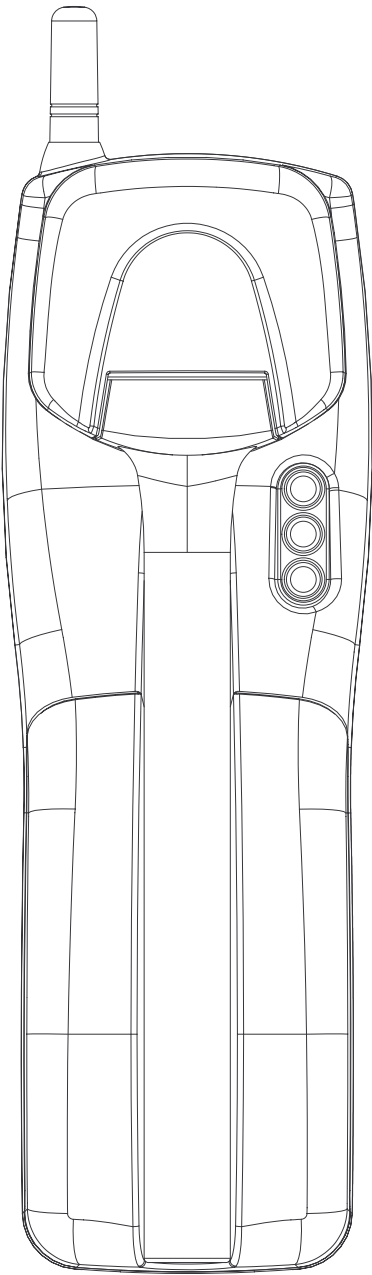
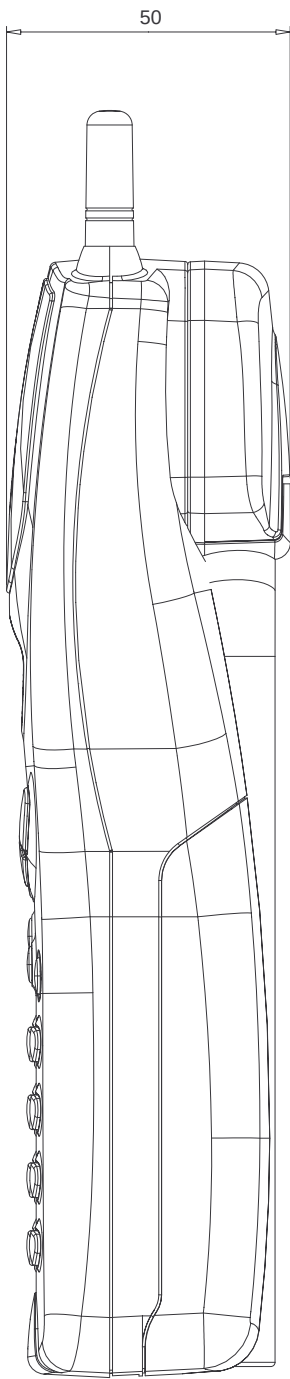
Il presente disegno a termini di legge non deve essere utilizzato per la costruzione del particolare ne' riprodotto o reso pubblico senza il nostro permesso scritto.



SECTION A-A



SECTION B-B



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

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.

3.2.2 GLOBALSTAR

Output power	>23 dBm +26 dBm
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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 -102dBm .

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 -4.7dBPa 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 @ $f=1\text{kHz}$.

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.

Radio interface	Radio Protocol Phase 2
Speech Coding	Full Rating
SIM	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 make 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.

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

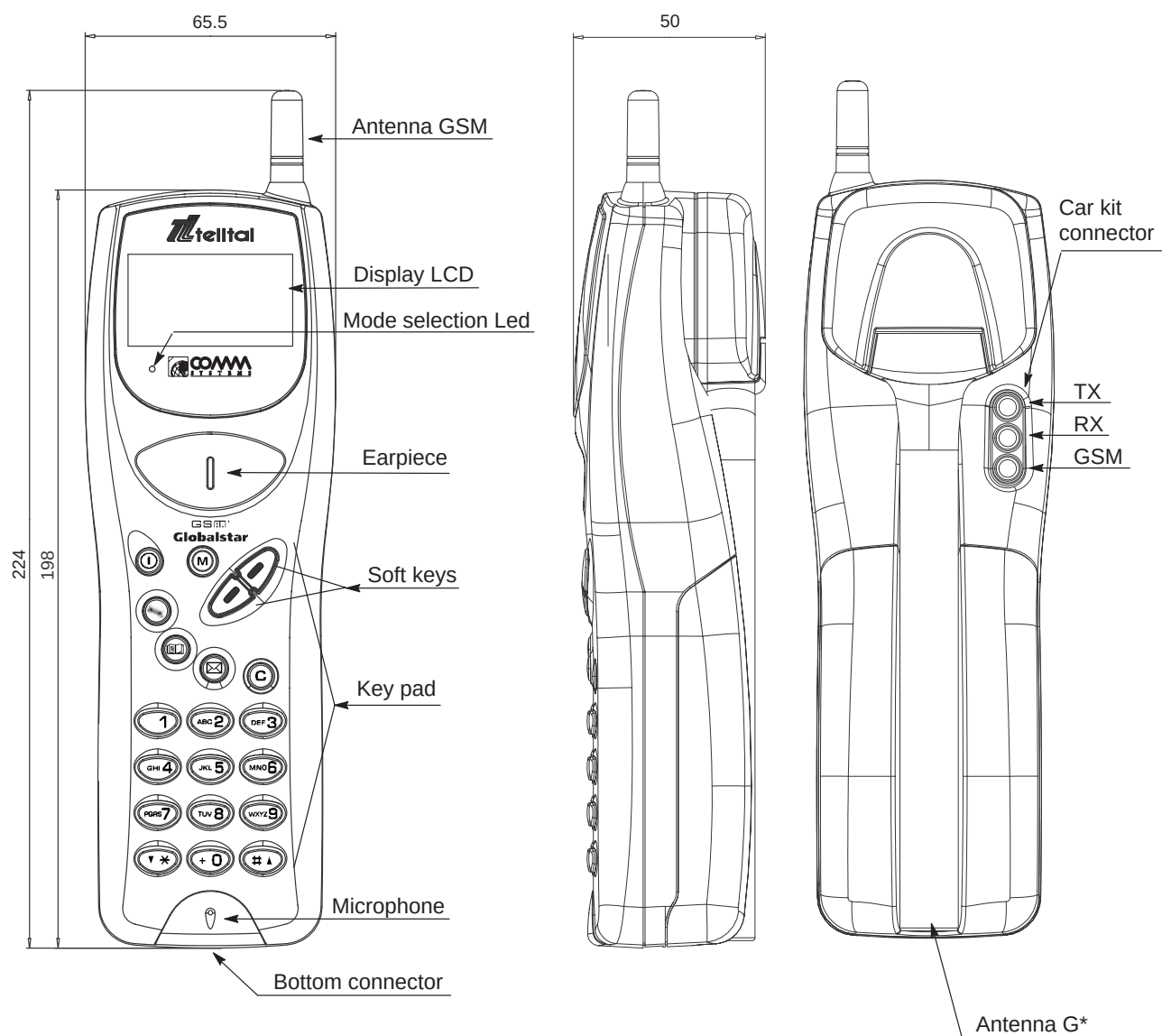


Figure 1 DMUT Assembly

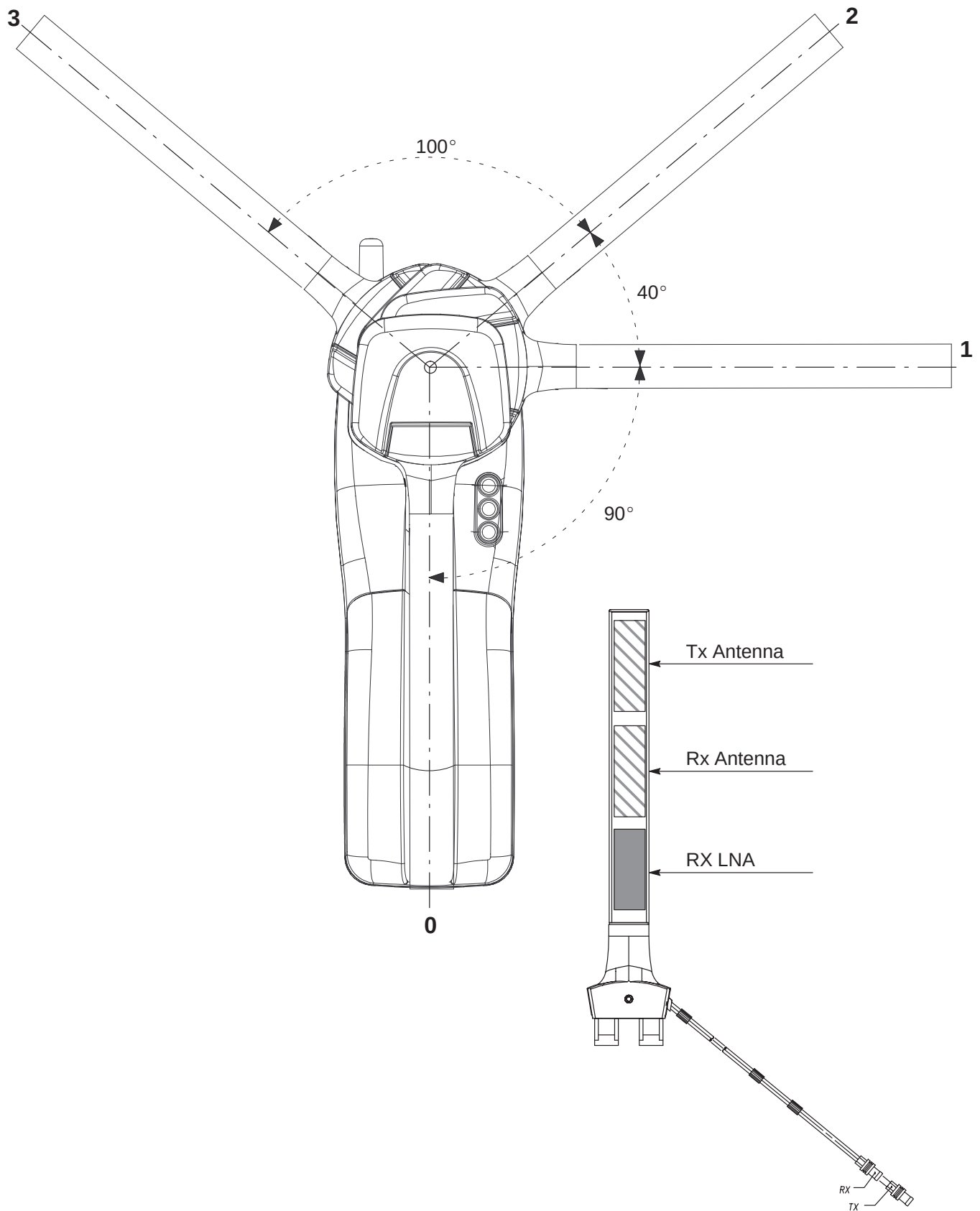


Figure 2 Globalstar Satellite antenna

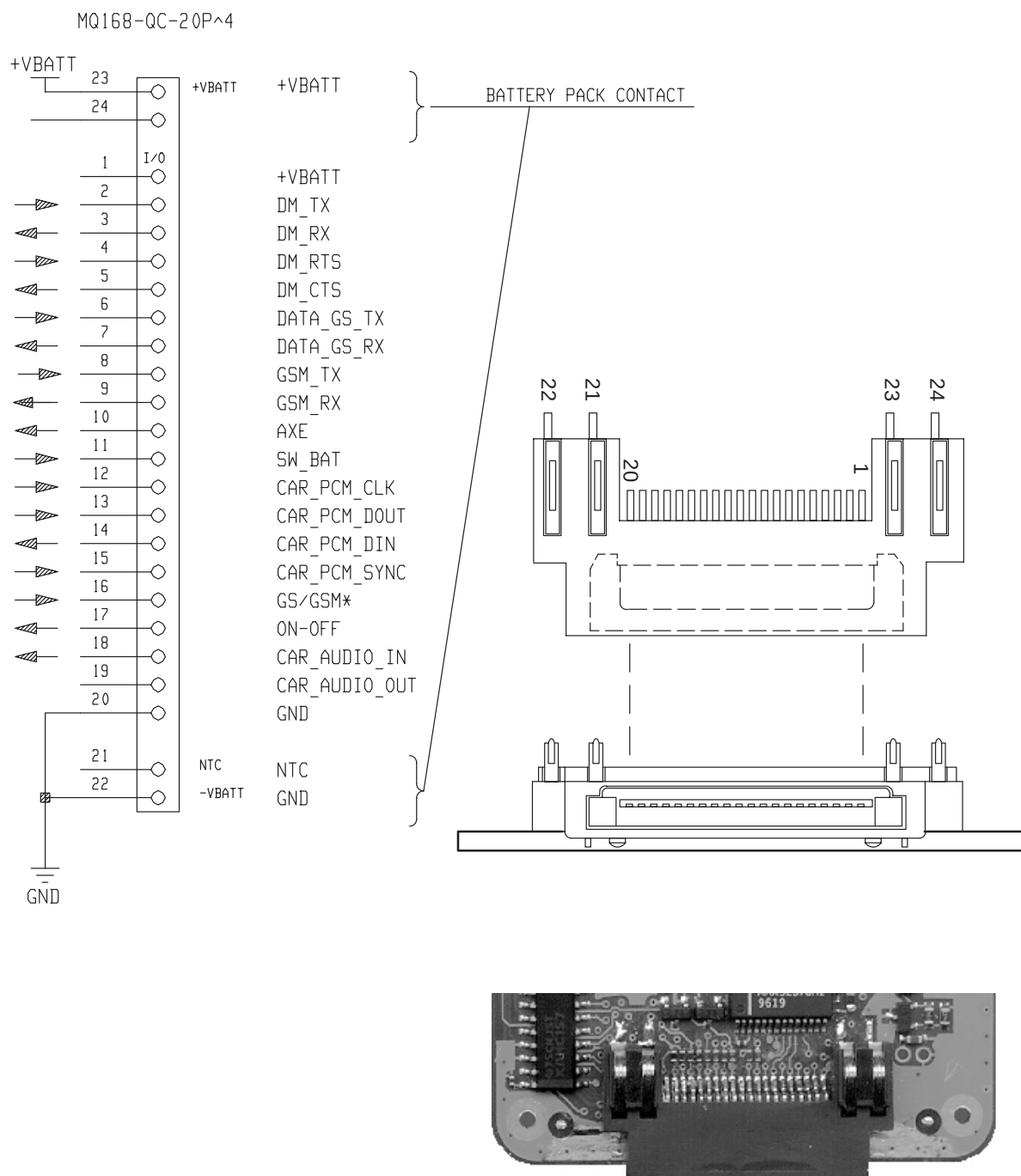


Figure 3 Bottom connector signals overview

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

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INDEX OF MODIFICATIONS CS680b

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INDEX OF MODIFICATIONS CS661c

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INDEX OF MODIFICATIONS CS760

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5 BLOCK DIAGRAMS

5.1 HANDSET LAYOUT

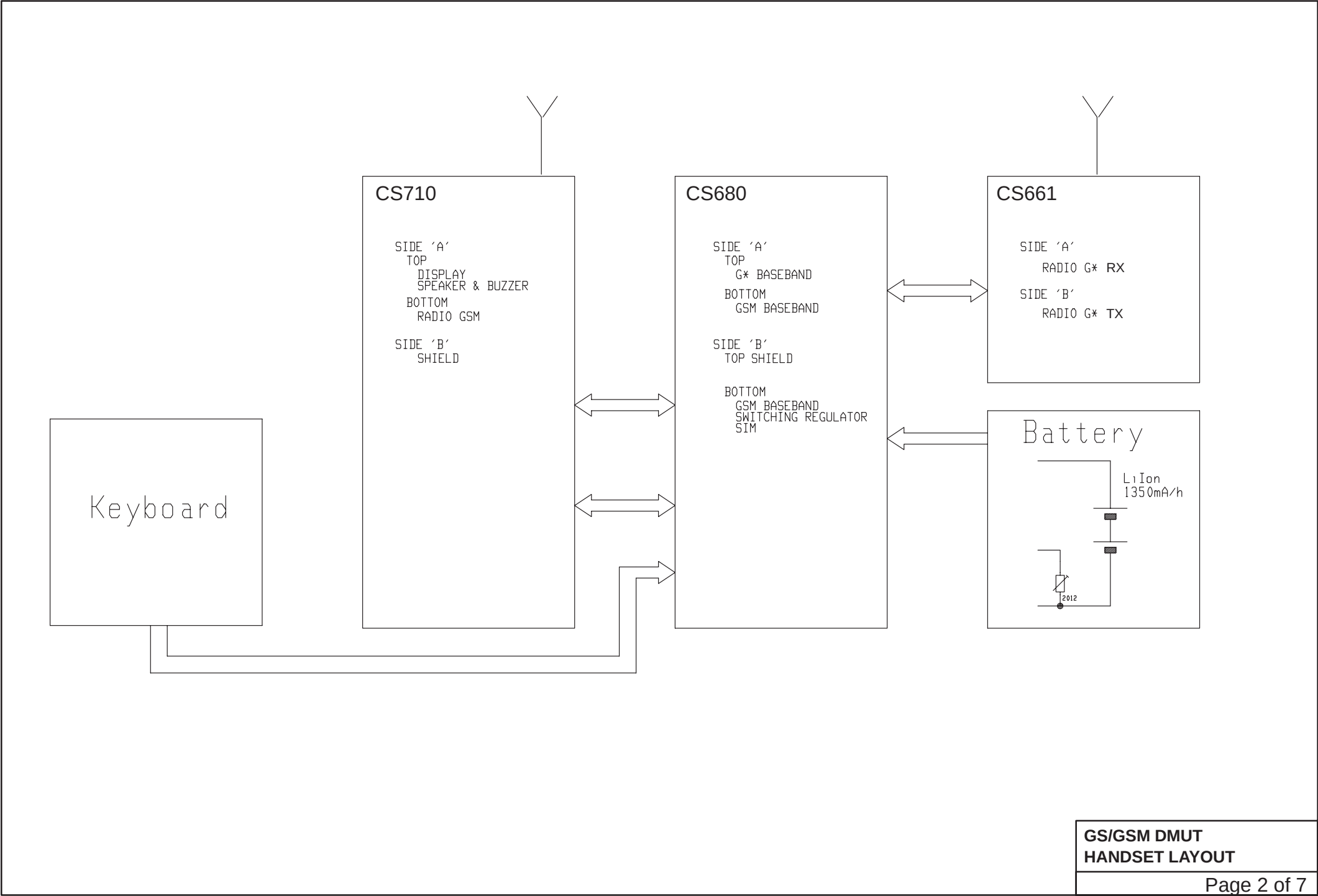
5.2 GSM SECTION

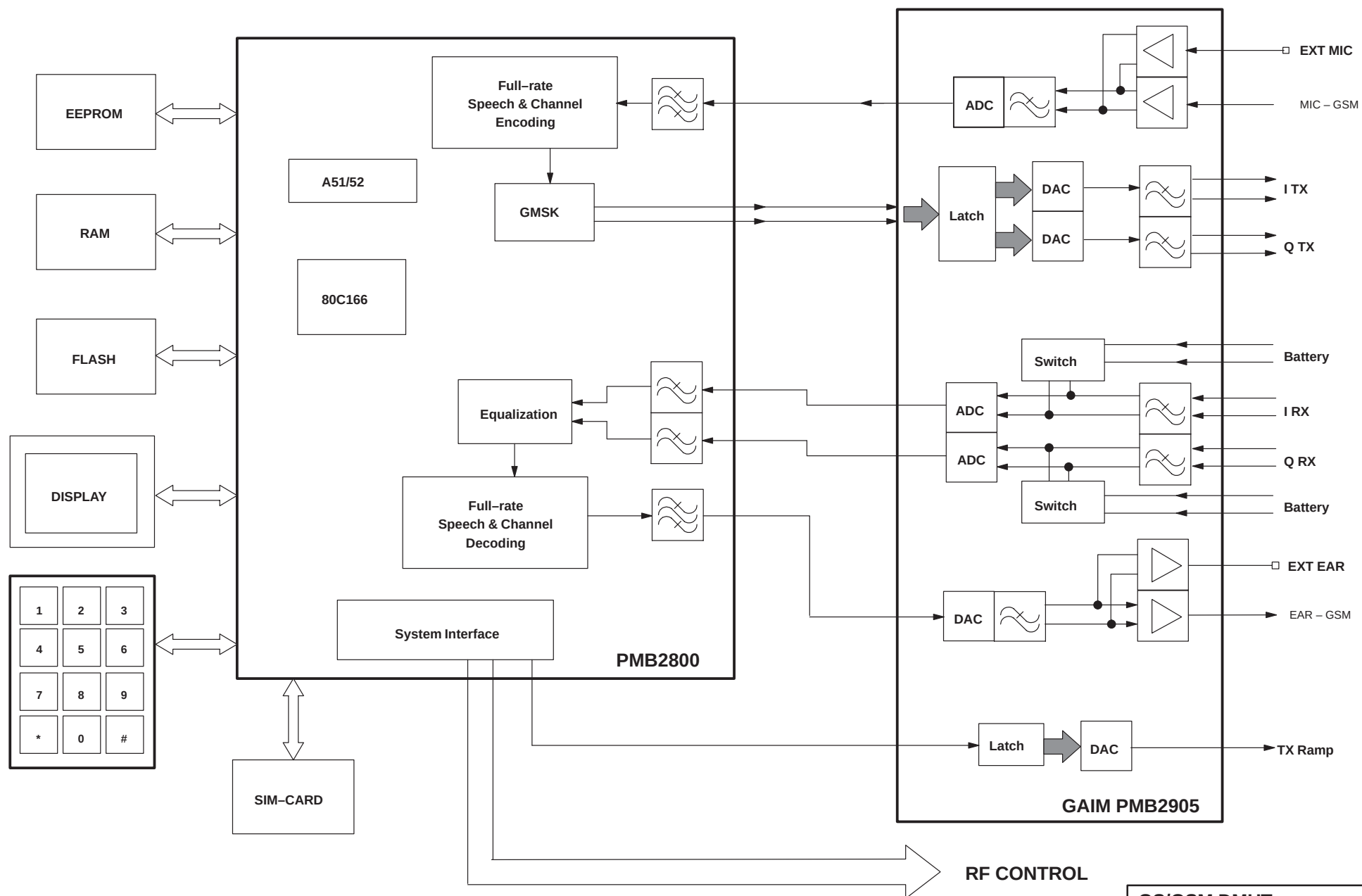
5.3 GSM RF LAYOUT

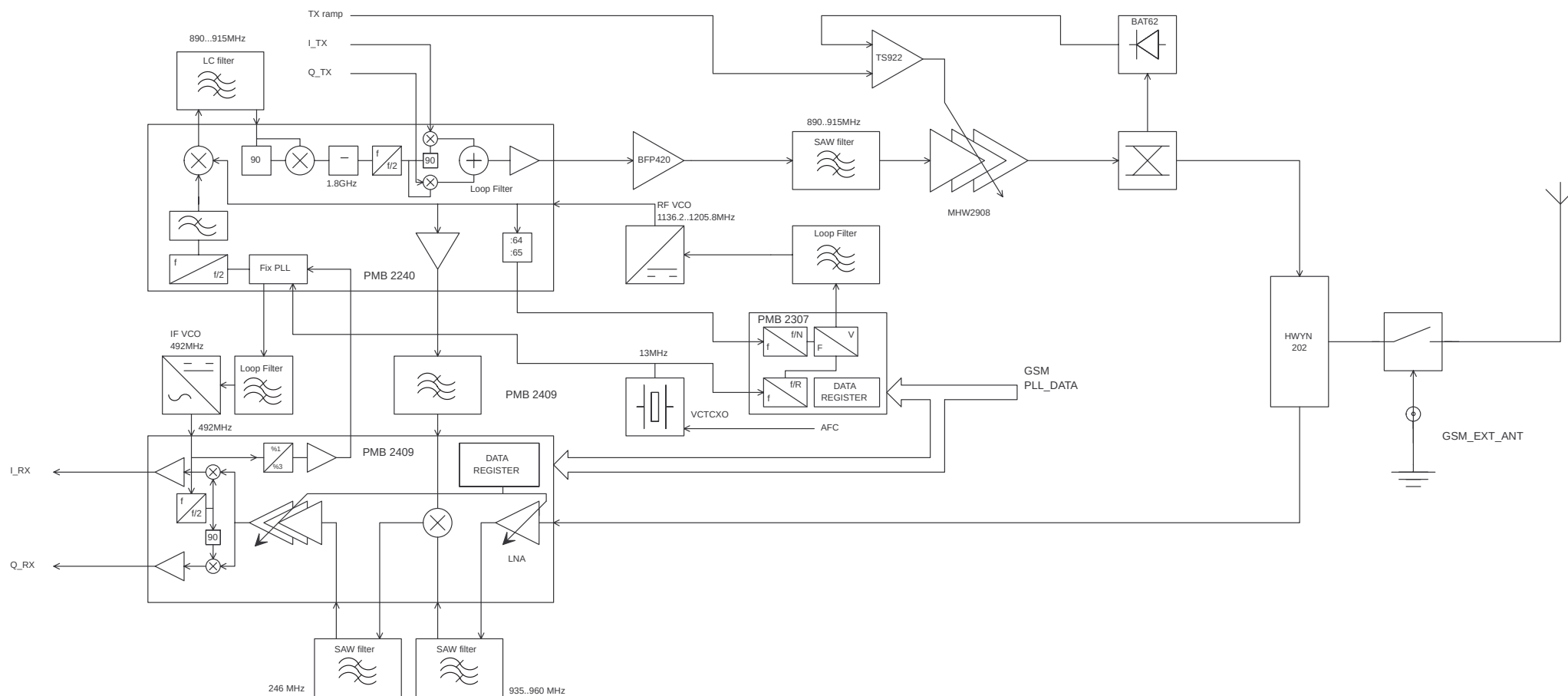
5.4 G* SECTION

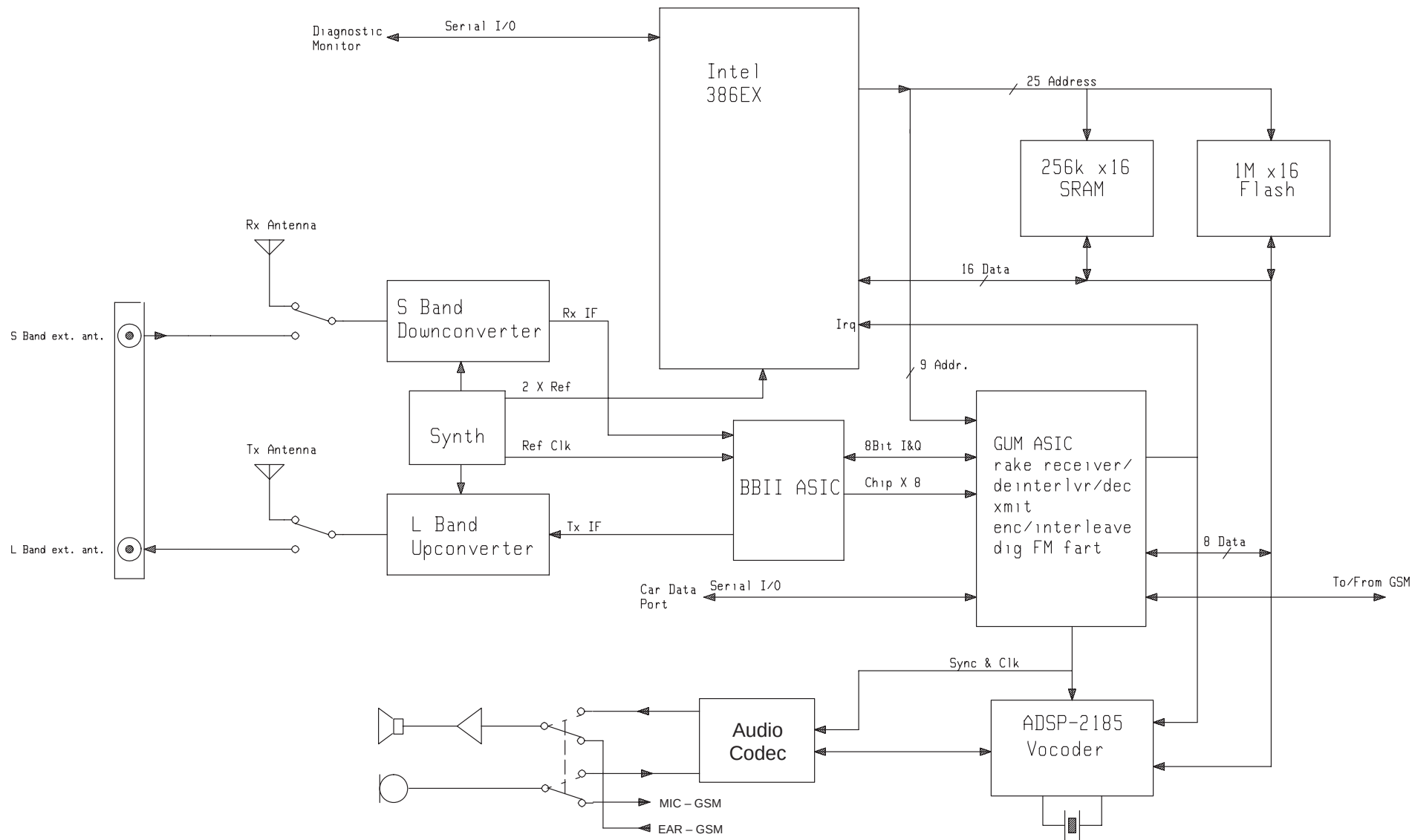
5.5 RF G* SECTION

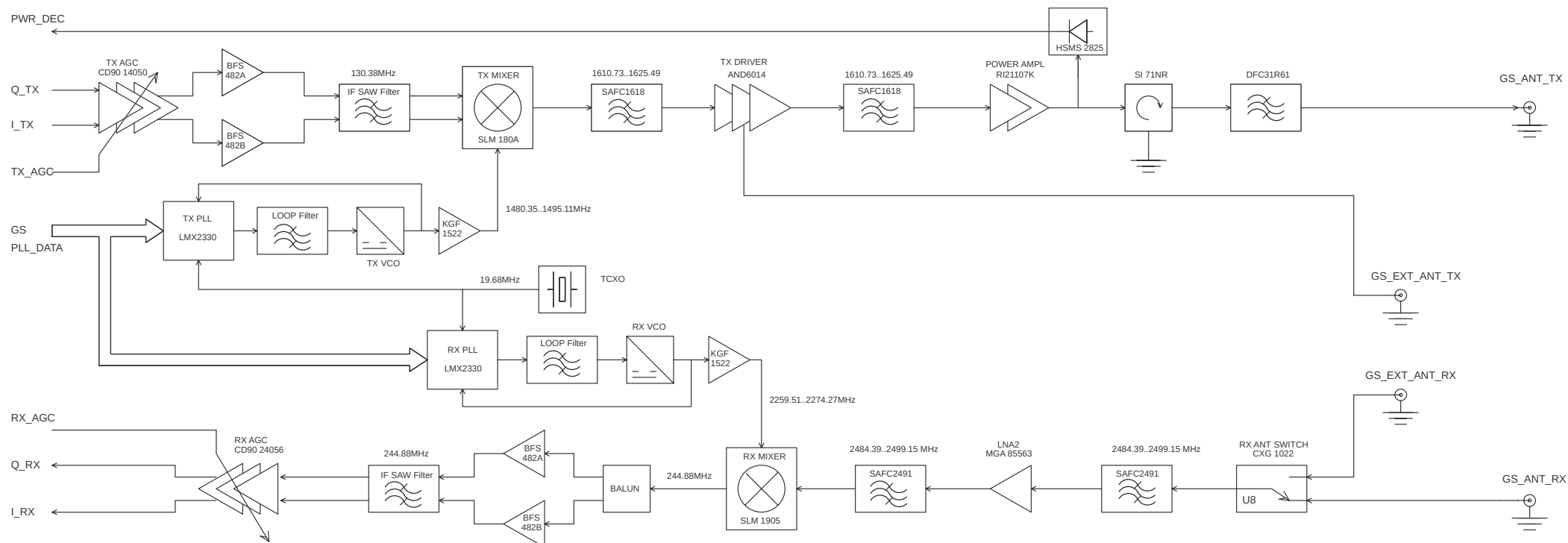
5.6 POWER SUPPLY LAYOUT

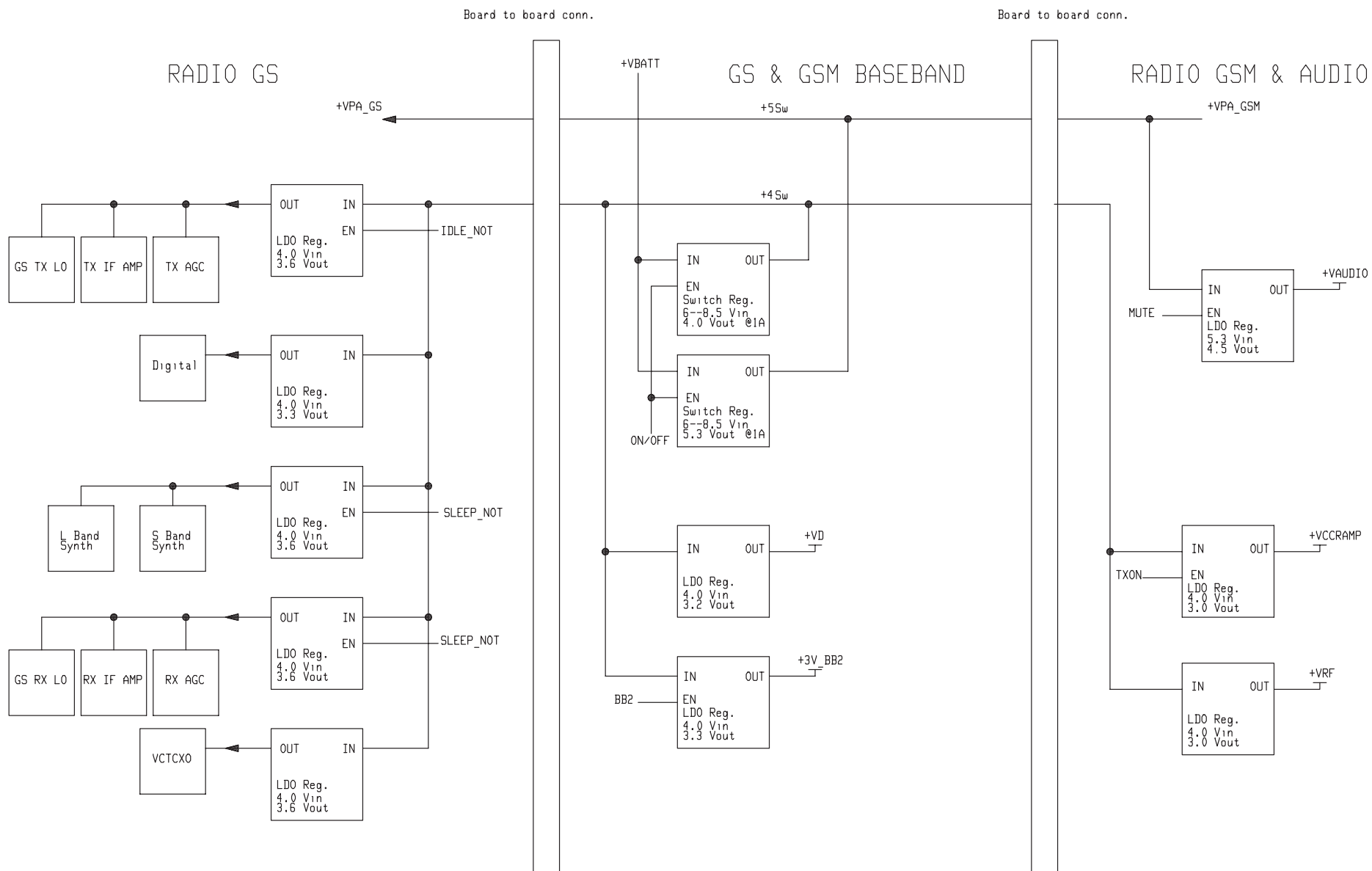






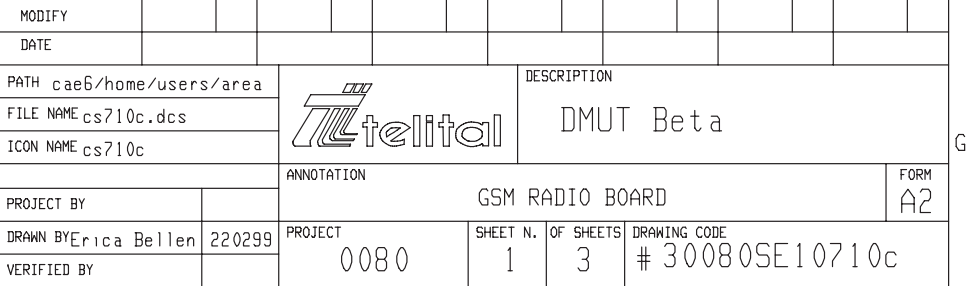


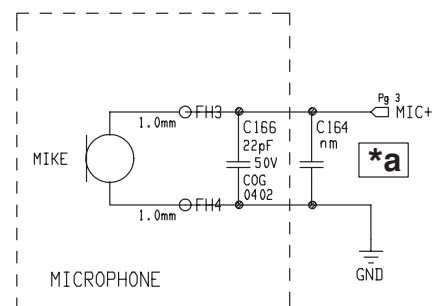
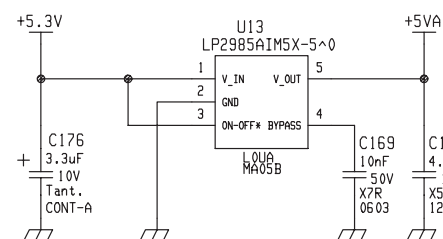
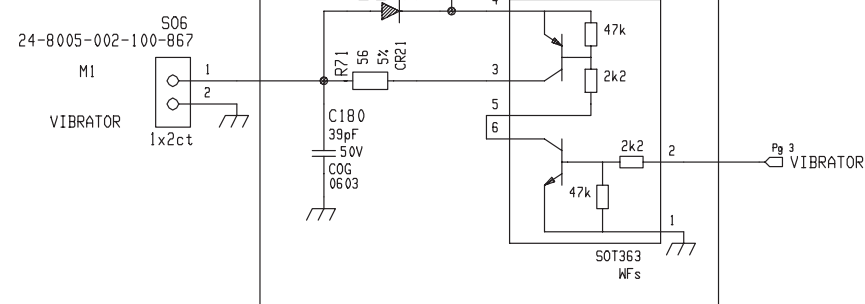
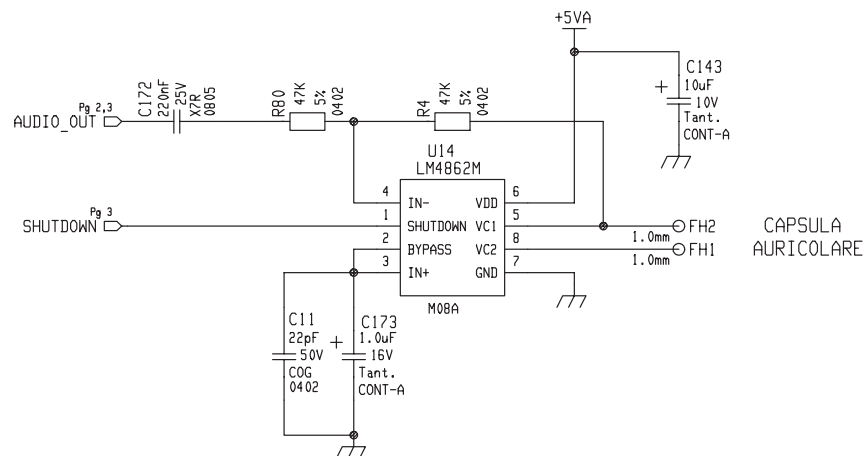
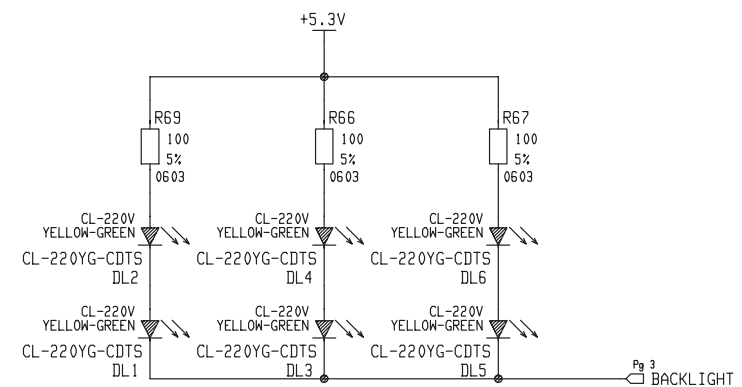
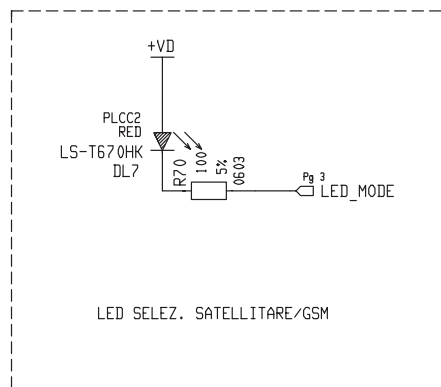




6 ELECTRIC DIAGRAMS

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Electric diagram CS661c Rx phase shifter, IF filter, AGC 2/9	30080SE10661c
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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





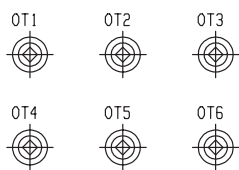
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PROJECT BY						GSM RADIO BOARD												A3				
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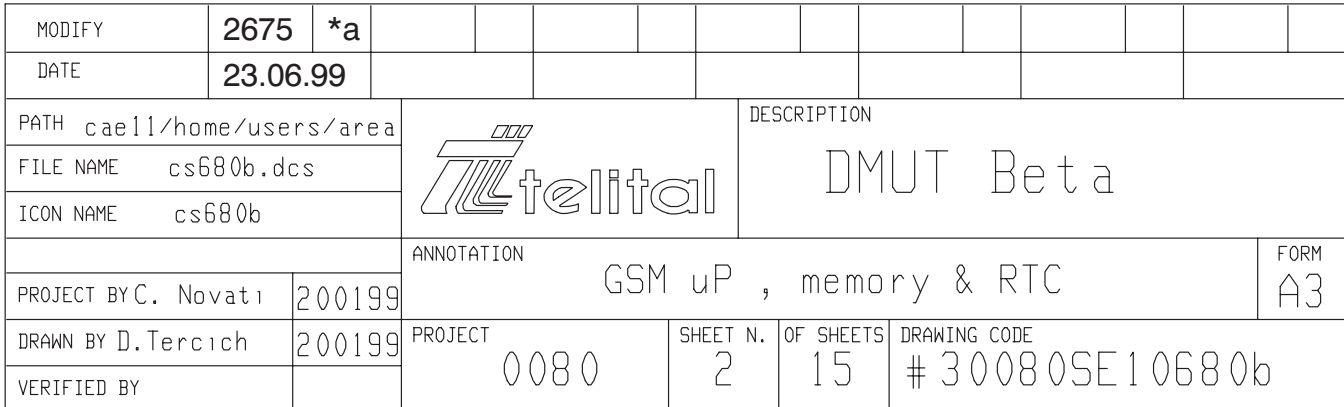


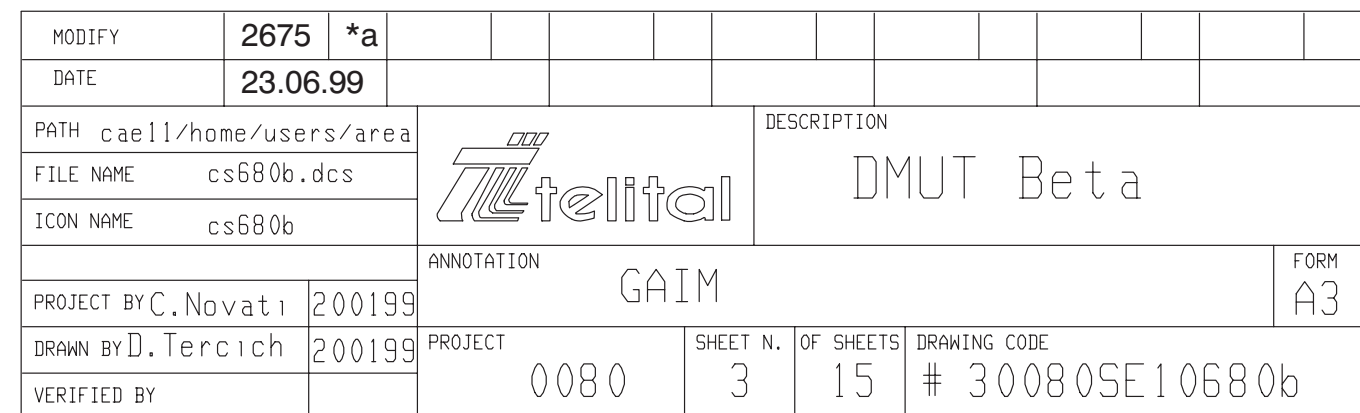
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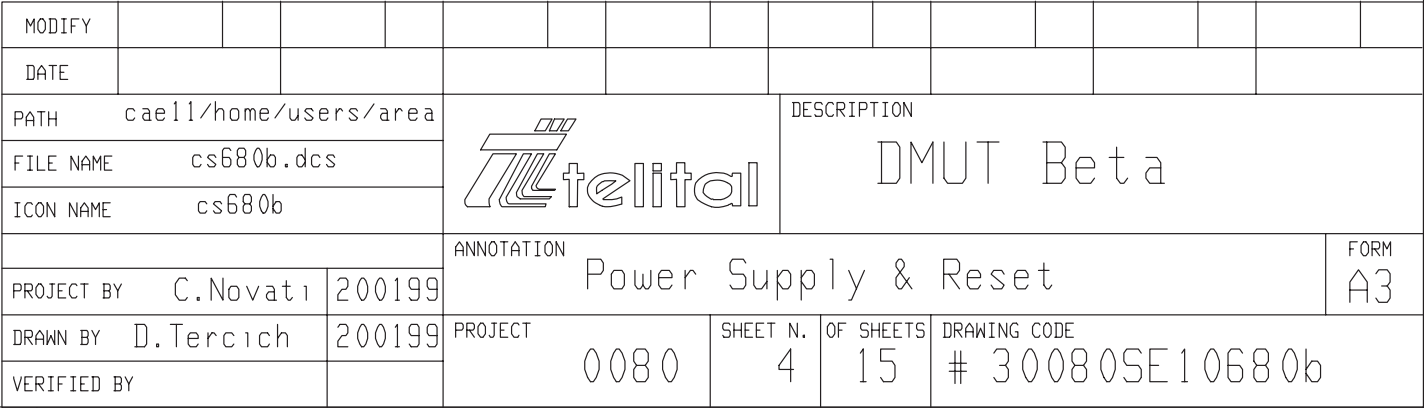


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FILE NAME cs680b.dcs							DMUT Beta					
ICON NAME cs680b												
			ANNOTATION									FORM
PROJECT BY C.Novati		200199	Microphone input & GS CODEC									A3
DRAWN BY D.Tercich		200199	PROJECT			SHEET N.		OF SHEETS		DRAWING CODE		
VERIFIED BY			0080			1		15		# 300805E10680b		

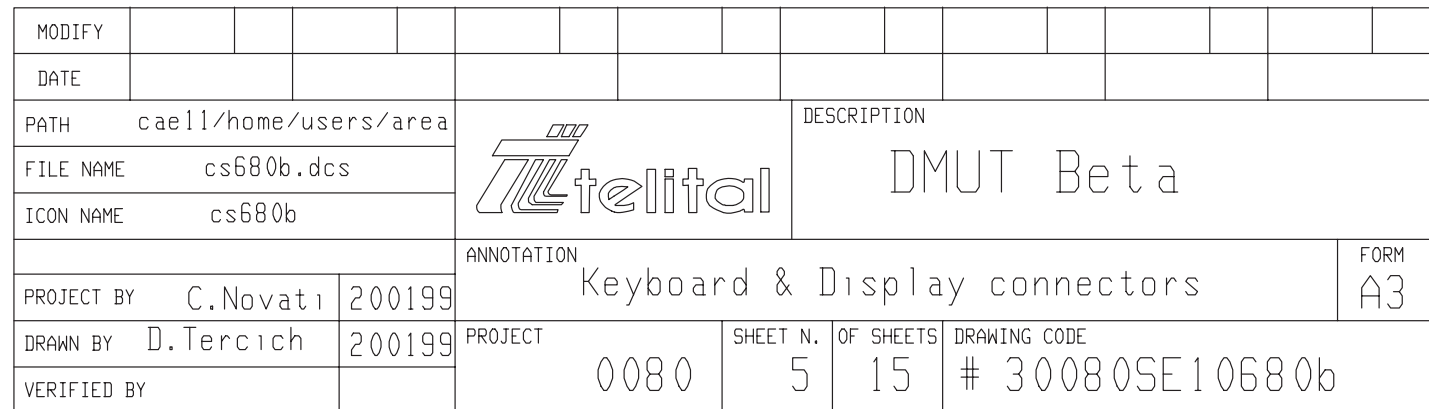


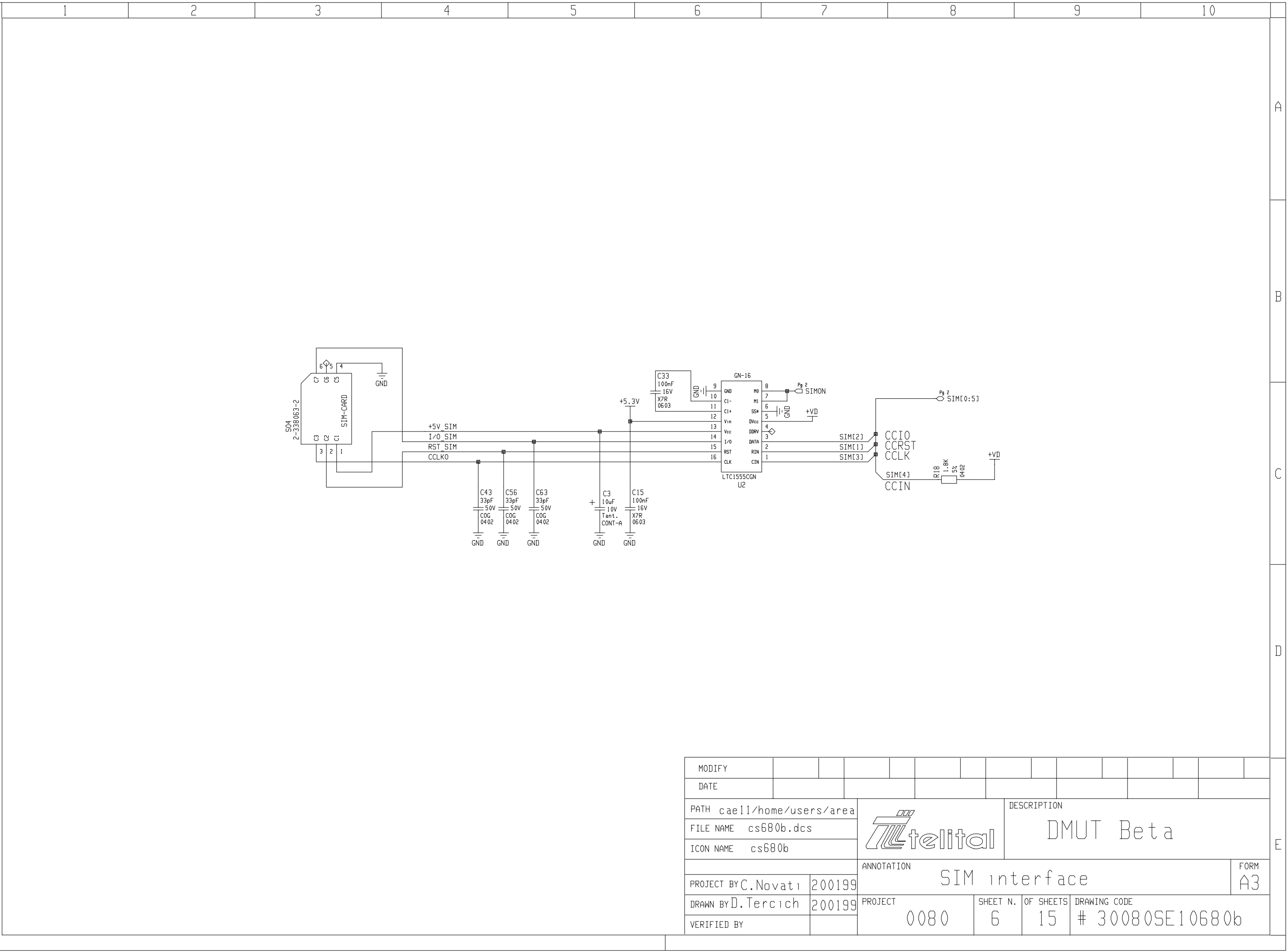


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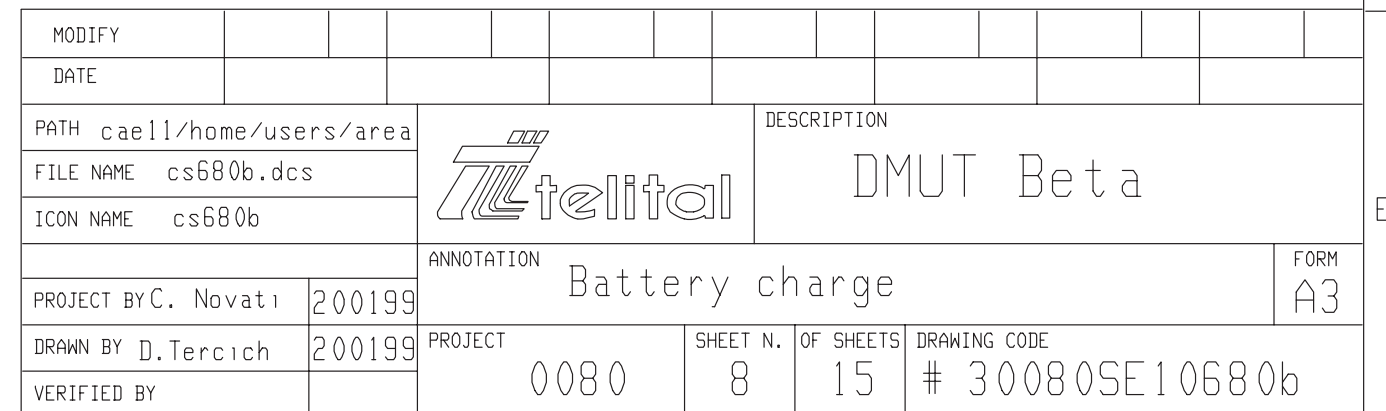
MODIFY															
DATE															
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FILE NAME cs680b.dcs							DMUT Beta								
ICON NAME cs680b															
			ANNOTATION												FORM
PROJECT BYC.Novati		200199	SIM interface												A3
DRAWN BYD.Tercich		200199	PROJECT				SHEET N.		OF SHEETS		DRAWING CODE				
VERIFIED BY			0080				6		15		# 30080SE10680b				

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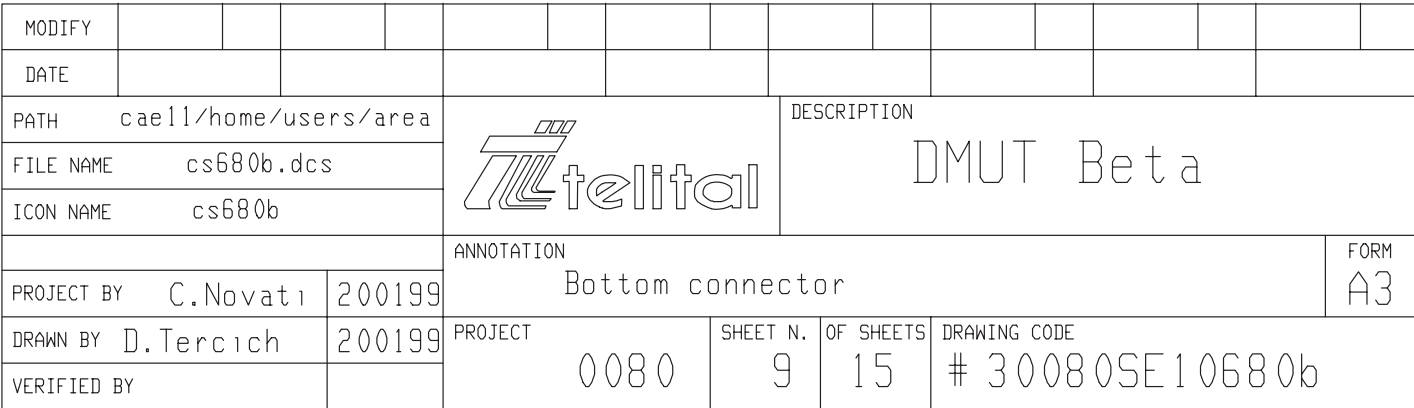


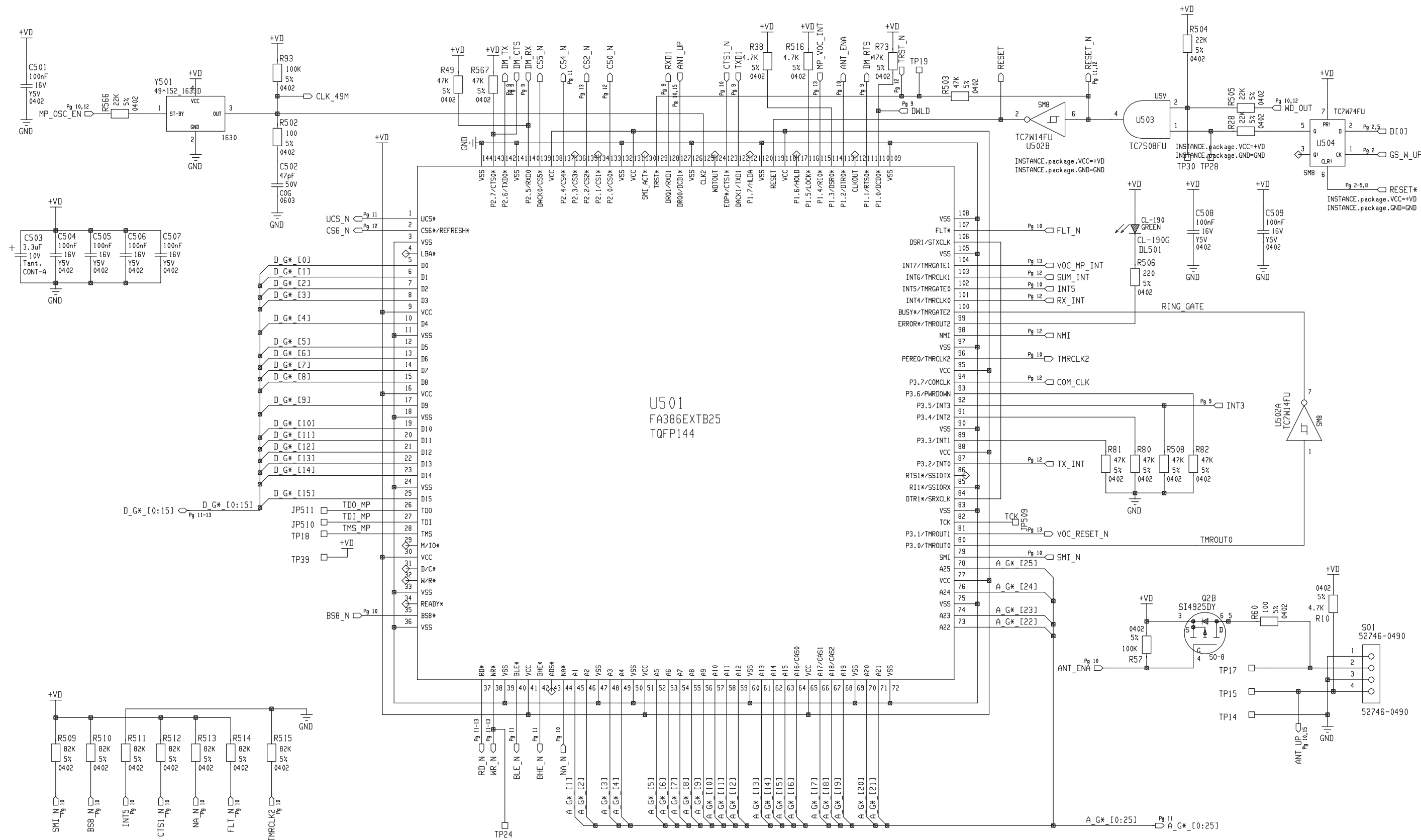
MODIFY																			
DATE																			
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FILE NAME cs680b.dcs								DMUT Beta											
ICON NAME cs680b																			
			ANNOTATION															FORM	
PROJECT BY C.Novati		200199	GSM radio connector															A3	
DRAWN BY D.Tercich		200199	PROJECT					SHEET N.		OF SHEETS		DRAWING CODE							
VERIFIED BY			0080					7		15		# 30080SE10680b							

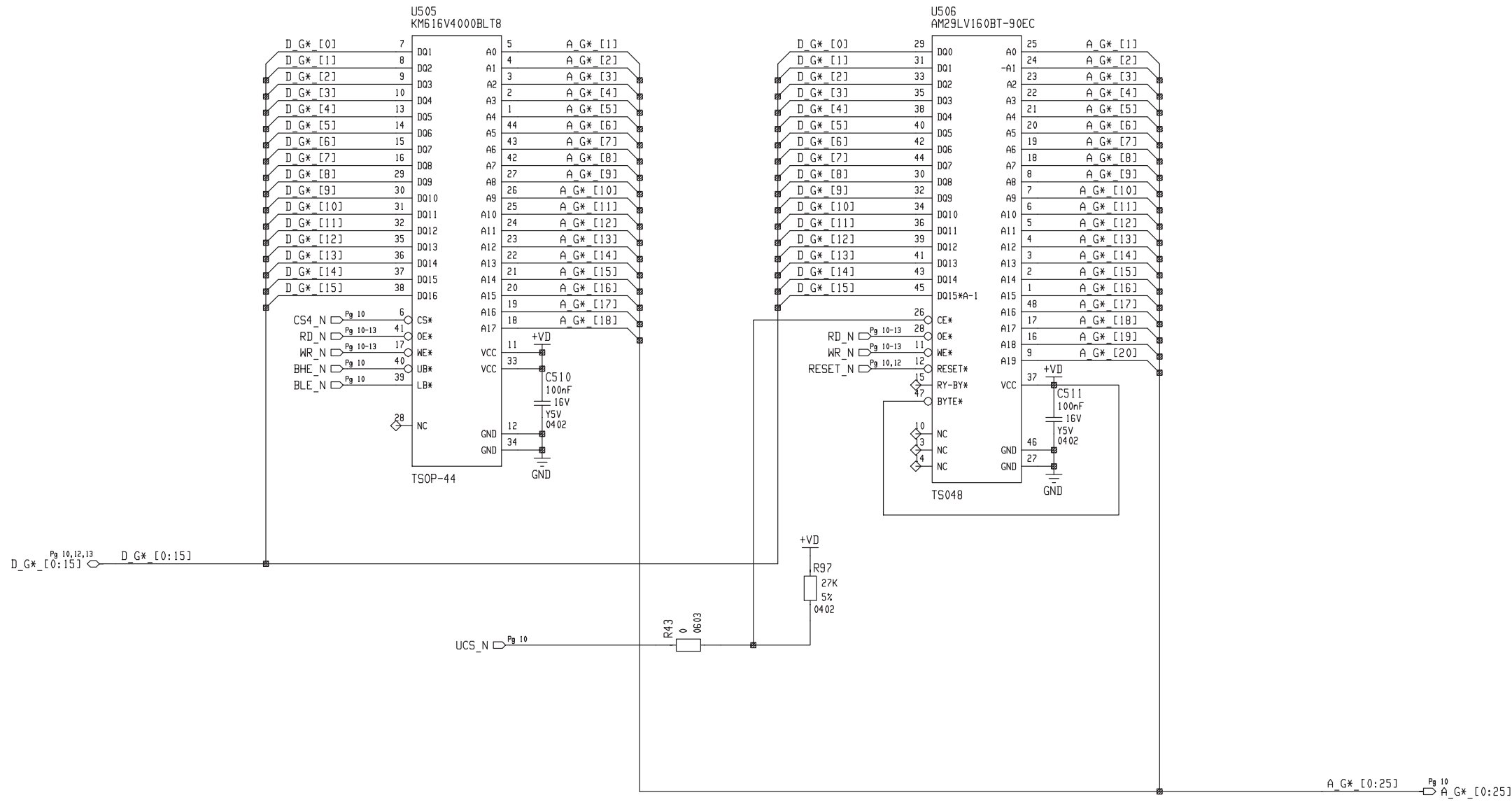
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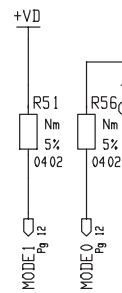
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[illegible]

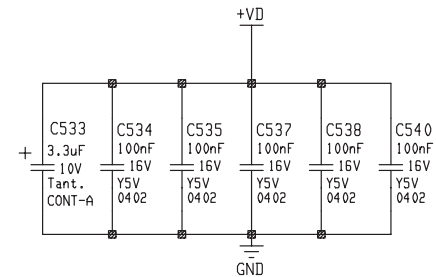


MODIFY																																	
DATE																																	
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FILE NAME	cs680b.dcs																																
ICON NAME	cs680b																																
											ANNO															FORM							
PROJECT BY											C.Novati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

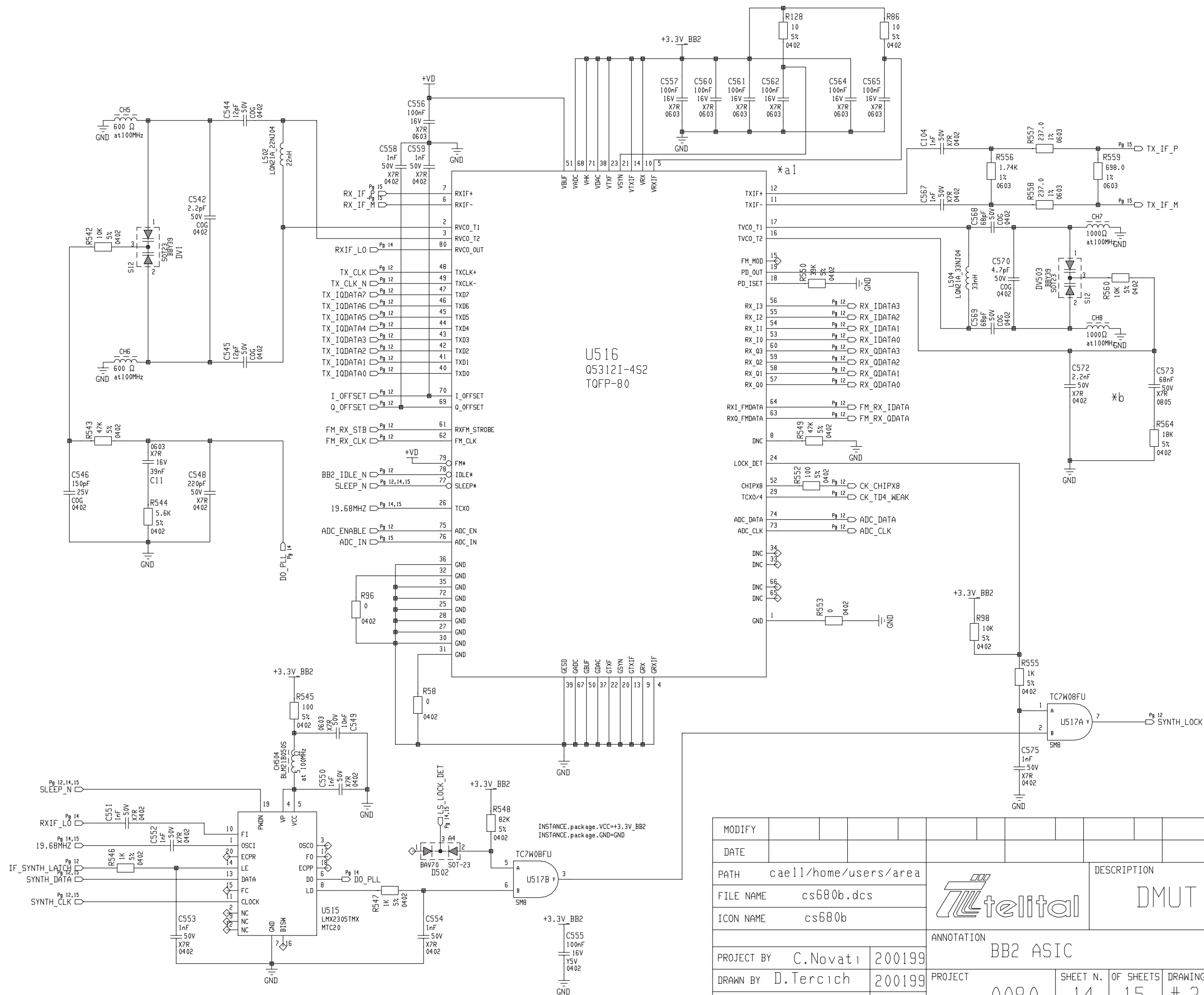


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PATH				caell/home/users/area								DESCRIPTION											
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ICON NAME				cs680b																			
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PROJECT BY		C.Novati		200199		GUM ASIC				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

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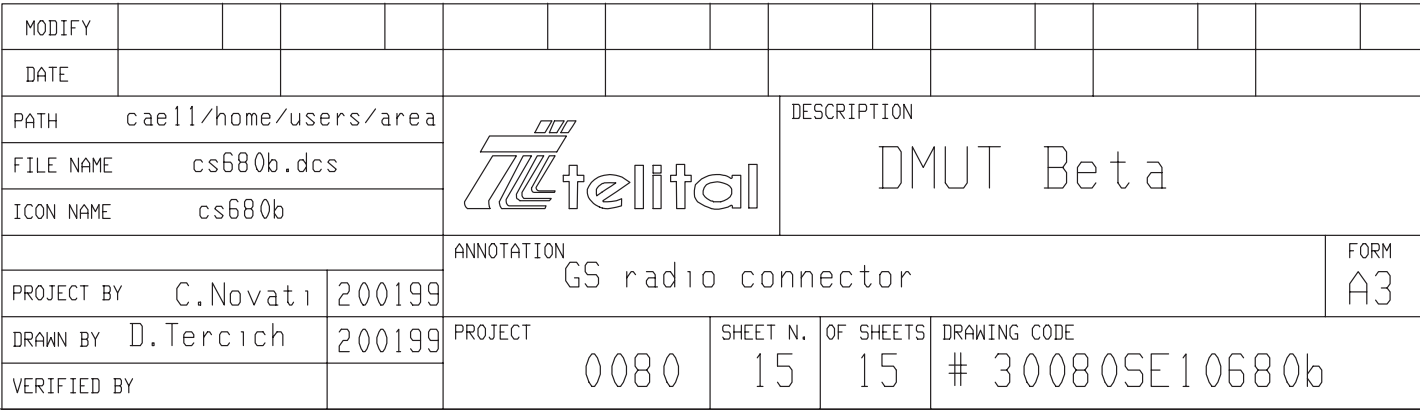


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ICON NAME	cs680b																			
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PROJECT BY		C.Novati		200199		GS Vocoder										A3				
DRAWN BY		D.Tercich		200199		PROJECT			SHEET N.		OF SHEETS		DRAWING CODE							
VERIFIED BY						0080			13		15		# 30080SE10680b							

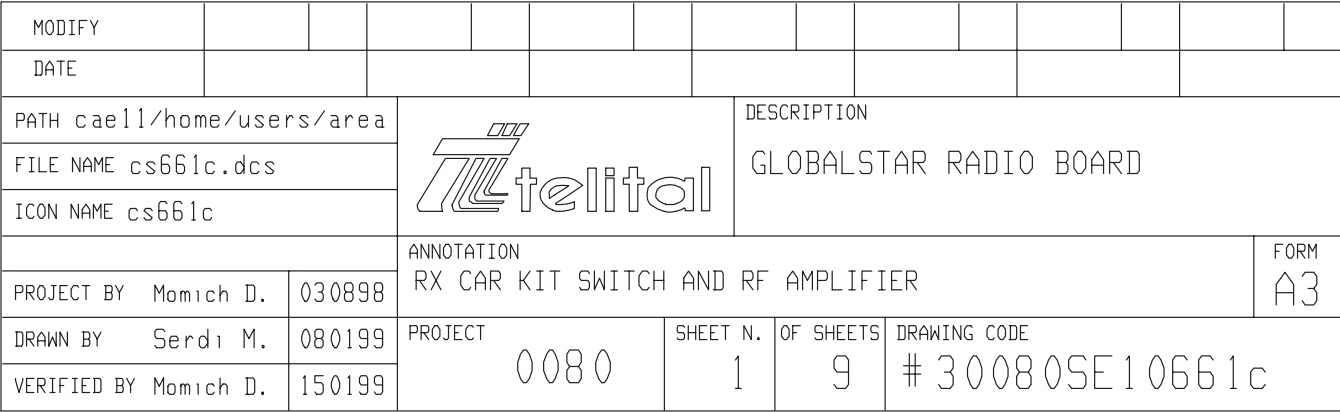


MODIFY																		
DATE																		
PATH	caell/home/users/area								DESCRIPTION DMUT Beta									
FILE NAME	cs680b.dcs																	
ICON NAME	cs680b																	
				ANNOTATION												FORM		
PROJECT BY	C.Novati		200199		BB2 ASIC												A3	
DRAWN BY	D.Tercich		200199		PROJECT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

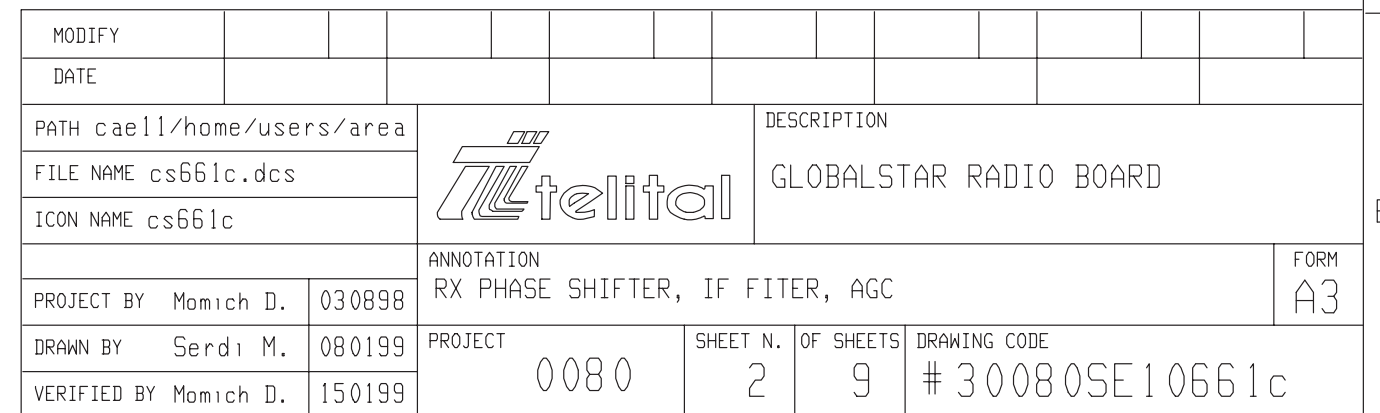
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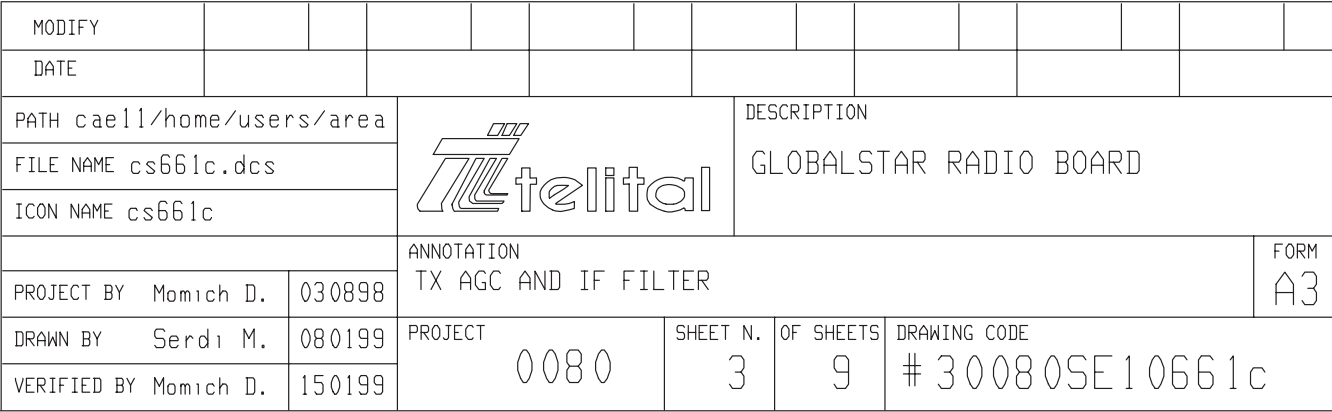


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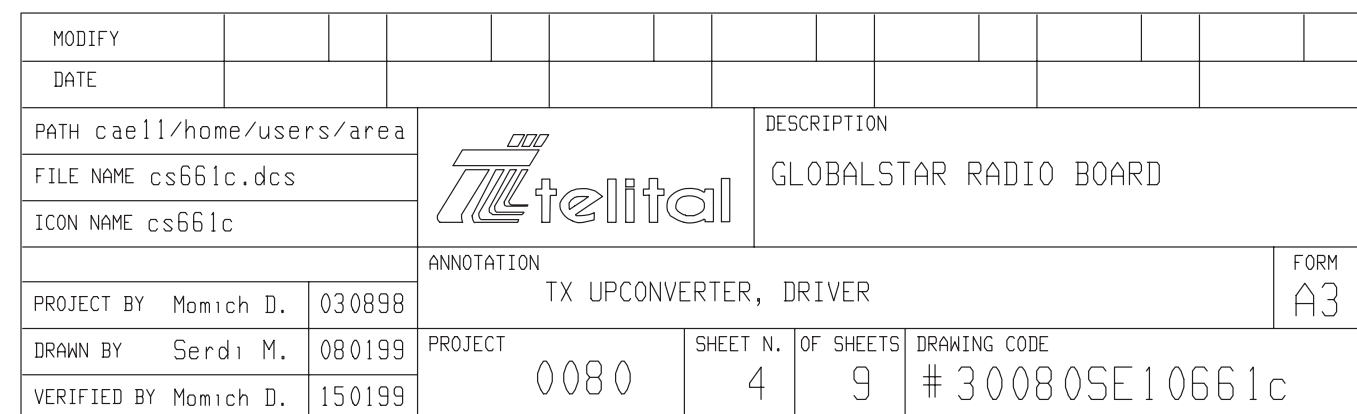


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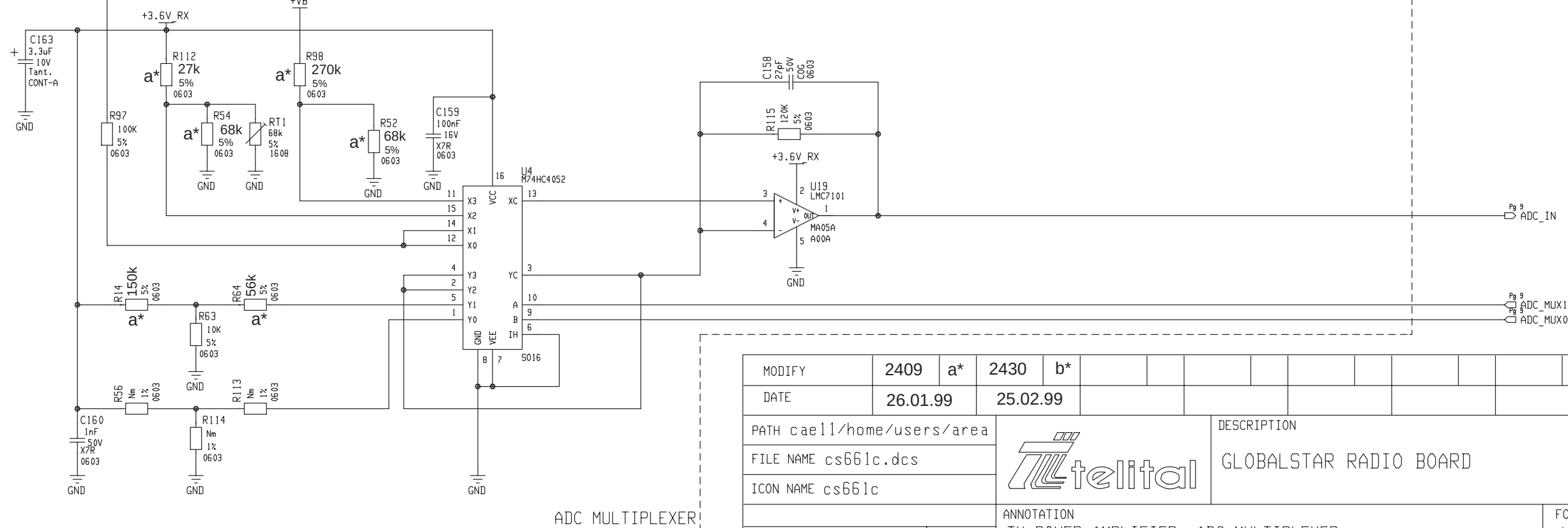
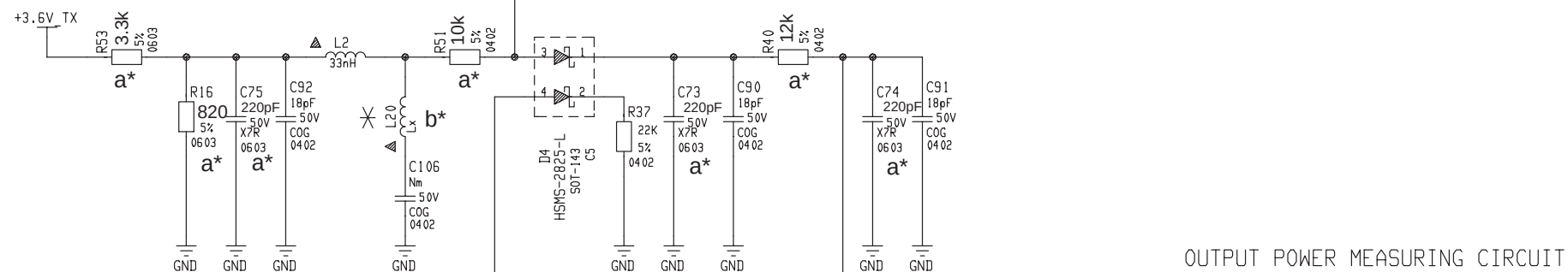
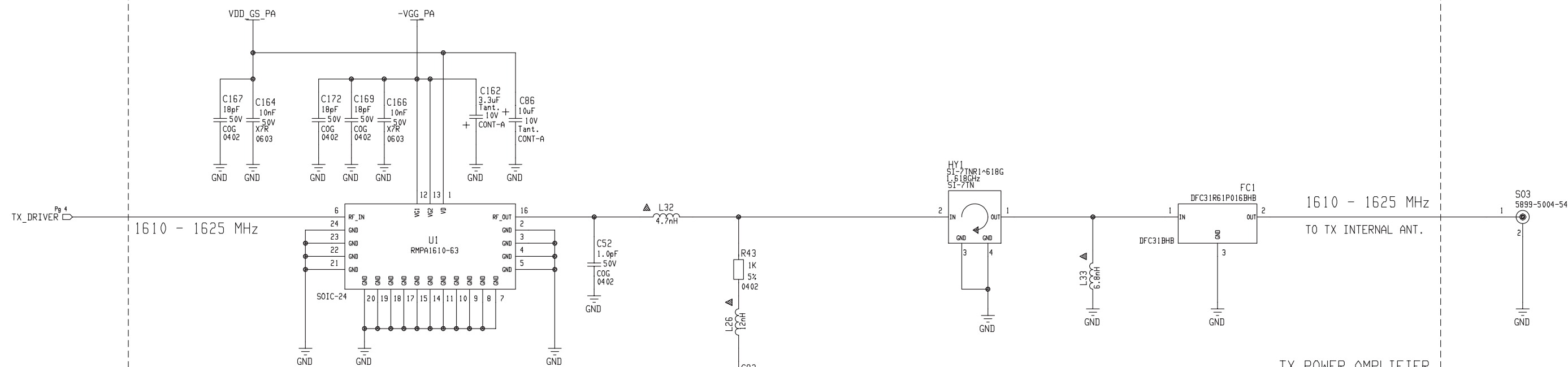




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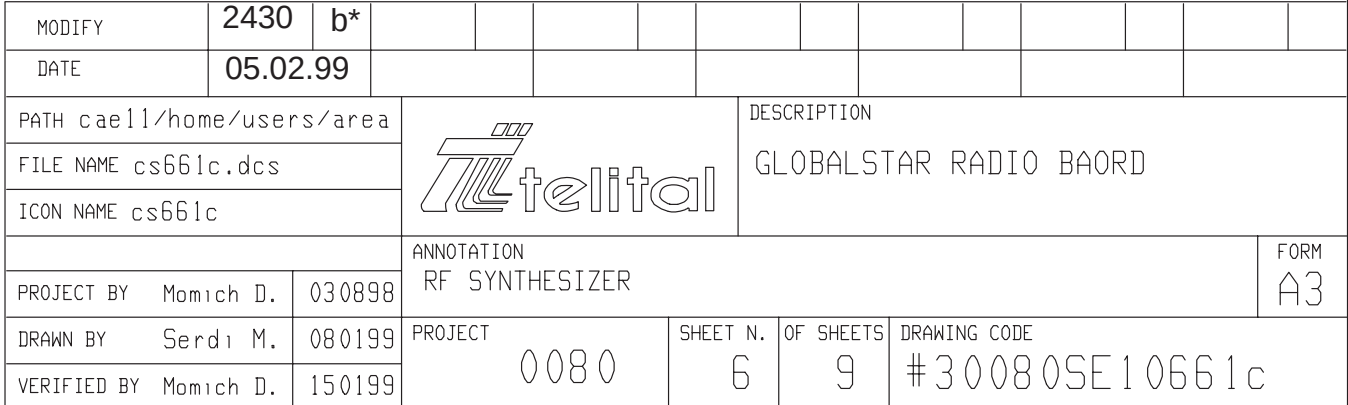
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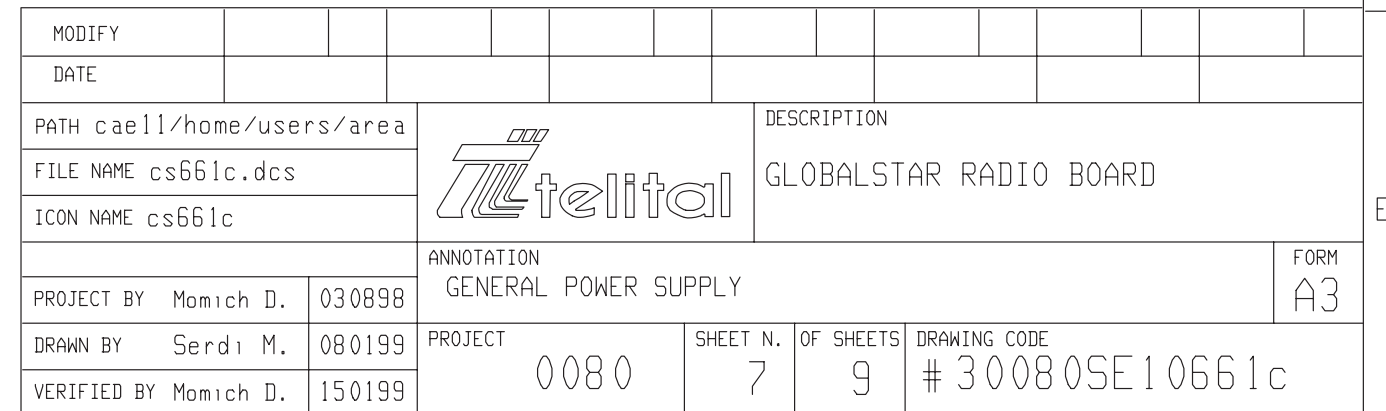
- * don't place L20

MODIFY	2409	a*	2430	b*								
DATE	26.01.99		25.02.99									
PATH cae11/home/users/area						DESCRIPTION						
FILE NAME cs661c.dcs						GLOBALSTAR RADIO BOARD						
ICON NAME cs661c												
				ANNOTATION TX POWER AMPLIFIER, ADC MULTIPLEXER								FORM A3
PROJECT BY Momich D.		030898		PROJECT 0080		SHEET N.		OF SHEETS		DRAWING CODE		
DRAWN BY Serdi M.		080199				5		9		#30080SE10661c		
VERIFIED BY Momich D.		150199										

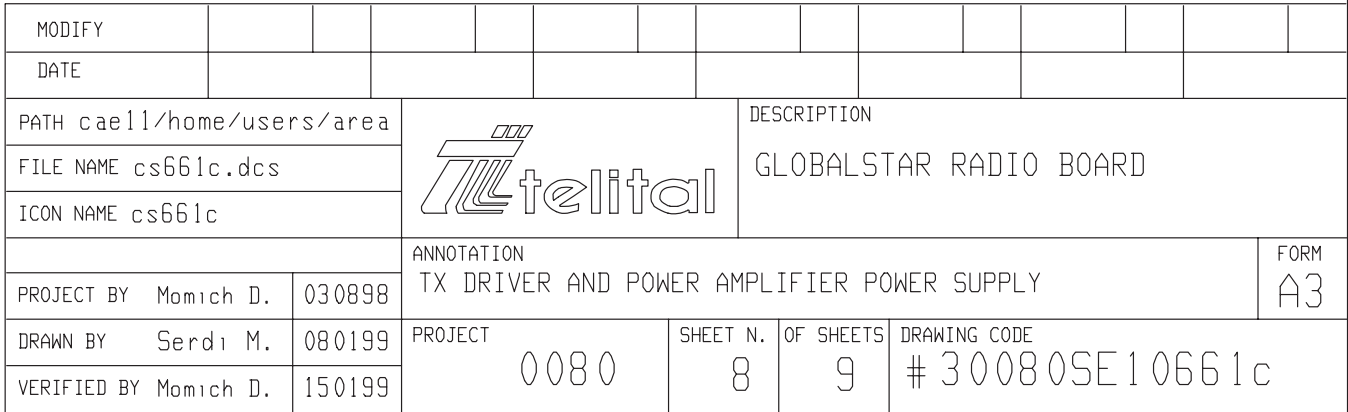
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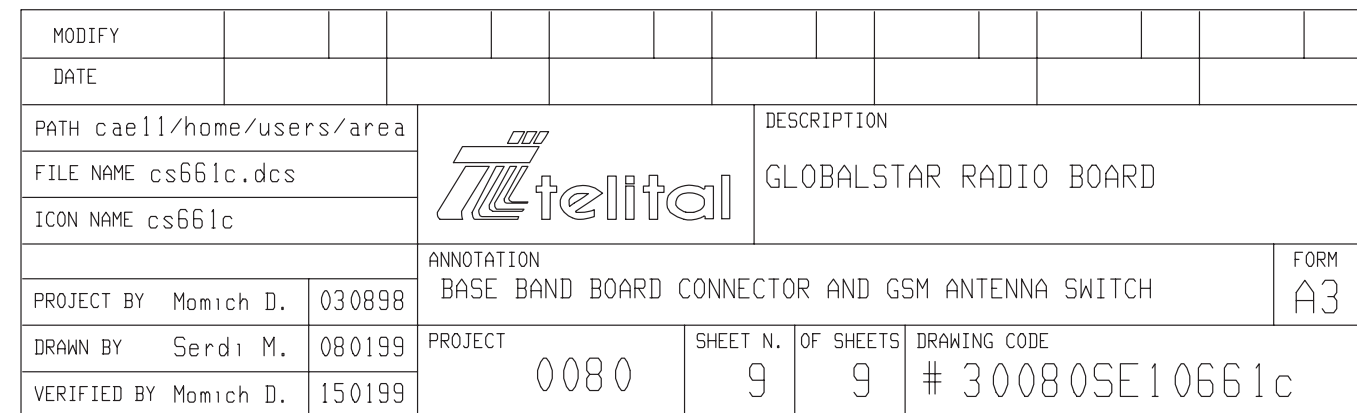
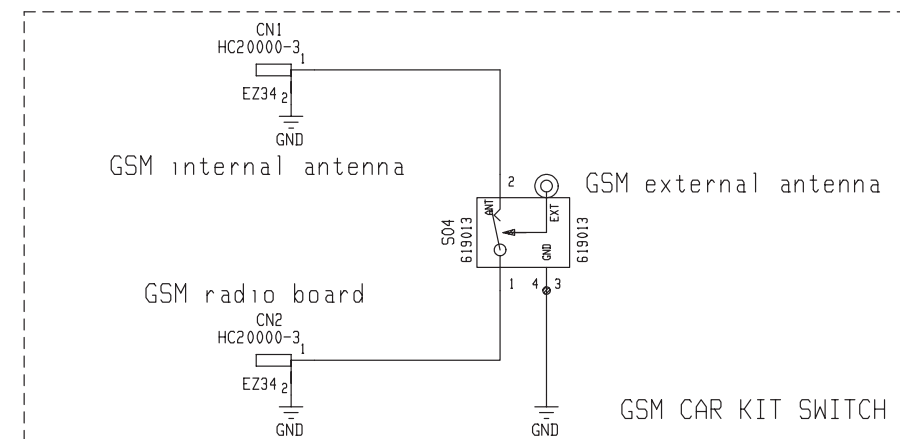
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TUTTI I DIRITTI RISERVATI
RIPRODUZIONE E DIVULGAZIONE
VIETATE

[illegible]

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

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTCL30)		PAG. 1		
							Data creazione distinta 22/02/99		
Data di stampa 29/03/99							Data ultima modifica 22/02/99		
Data di validita' 29/03/99							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 S04		
...4	01	1ff0600129ml	CONN F CSTP 40 VIE VERT SMD P-0.5		52991-0408	PZ	1,00000 S03		
..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		

Revisione Validita'

Assieme 01 2000100267 MODULO RADIO&DISP GSM CS710C VERS 22.02.99 Nr.progetto: 0080

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

TELITAL SpA		ESPLOSIONE CON RIFERIMENTI SCHEMA							(da ATBTCL30)		PAG. 3																
											Data creazione distinta 22/02/99																
Data di stampa 29/03/99											Data ultima modifica 22/02/99																
Data di validita' 29/03/99											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																	
																		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	CM05CG47C50AH	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											
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..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							

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTel30)		PAG. 4		Data creazione distinta 22/02/99														
Data di stampa 29/03/99													Data ultima modifica 22/02/99												
Data di validita' 29/03/99													Revisione					Validita'							
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	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													

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTel30)		PAG. 5		
							Data creazione distinta 22/02/99		
Data di stampa 29/03/99							Data ultima modifica 22/02/99		
Data di validita' 29/03/99							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		
..3	01	1dd0100145sg	CI ANALOG TS922IDT S08 RAIL-T0-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	S01 S02	
..3	01	1ff0600141lcc	CONN F CSTP 2 VIE VERT SMD P-1.27 46NYLON		24-8005-002-100-867	PZ	1,00000	S06	
..3	01	1kk0400010str	BUZZER MAGNETICO SMD 3 V		MUT-03A	PZ	1,00000	BZ1	
..3	01	1ll0500017si	FILTRO SAW TX LOW-LOSS BF677 DCC6 890-915MHz SMD GSM		B39901-B4677-Z610	PZ	1,00000	FC1	
..3	01	1ll0500019si	FILTRO SAW IF LOW-LOSS B4818 QCC12B 246MHz SMD GSM		B39251-B4818-Z910	PZ	1,00000	FC3	
..3	01	1ll0500025si	FILTRO SAW RX LOW-LOSS 947.5 MHz		B39951-B4678-Z810	PZ	1,00000	FC5	
..3	01	1ll1000004hc	DUPLEXER SAW TX902.5MHz/RX947 .5MHz BW2.5MHz SMD GSM		HWYN201	PZ	1,00000	FC2	
..3	01	1ll1200003hc	ACCOPIATORE 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 VCTCX0 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	1xxzz99002	COMPONENTE DA NON MONTARE			PZ	11,00000	C184 C22 C53 C87 C102 C41 C194 R99 CH2	
							CH6 CH19		

Data creazione distinta 22/02/99

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Data di stampa 29/03/99

Data di validita' 29/03/99

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

.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 SEMICRUDO 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

381,00000

*** FINE STAMPA ***

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTel30)		PAG. 1		
							Data creazione distinta 22/01/99		
Data di stampa 29/03/99							Data ultima modifica 22/01/99		
Data di validita' 29/03/99							Revisione	Validita'	
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		
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	

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTCL30)		PAG. 2		
									Data creazione distinta 22/01/99		
Data di stampa 29/03/99									Data ultima modifica 22/01/99		
Data di validita' 29/03/99									Revisione Validita'		
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 C0G 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	D03308SERIES	D03308P-103	PZ	1,00000 L1	
...	4	01 1cc0100156co	INDUT SMD	22	uH 20% DCR.19	ISAT 1.6A	D03308SERIES	D03308P-223	PZ	1,00000 L2	
...	4	01 1dd0100099sg	CI ANALOG	TS3V912-AIDT	S08	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-PDS0-G16		QUADR 2-L TO 1-L DATA SEL/MPX		SN74AHC157DR	PZ	1,00000 U29	
...	4	01 1dd0200078to	CI DG	CM0S 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	

TELITAL SpA		ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTCL30)		PAG. 3		
Data di stampa 29/03/99		Data creazione distinta 22/01/99						
Data di validita' 29/03/99		Data ultima modifica 22/01/99						
		Revisione Validita'						
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 1xxzz99002	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	

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA			(da ATBTCL30)			PAG. 4								
									Data creazione distinta 22/01/99								
Data di stampa 29/03/99									Data ultima modifica 22/01/99								
Data di validita' 29/03/99									Revisione Validita'								
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									
..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								

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTel30)		PAG. 5		
Data di stampa 29/03/99			Data creazione distinta 22/01/99								
Data di validita' 29/03/99			Data ultima modifica 22/01/99								
			Revisione		Validita'						
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				
..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

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTel30)		PAG. 6		
Data di stampa 29/03/99									Data creazione distinta 22/01/99		
Data di validita' 29/03/99									Data ultima modifica 22/01/99		
									Revisione	Validita'	
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				
..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	

TELITAL SpA		ESPLOSIONE CON RIFERIMENTI SCHEMA (da ATBTCL30)			PAG. 7	
Data di stampa 29/03/99		Data creazione distinta 22/01/99				
Data di validita' 29/03/99		Data ultima modifica 22/01/99				
		Revisione		Validita'		
Liv.	Cv	Codice Telital	Descrizione	C.Costrut./Nr.Disegno	Um	Quantita' Riferimento schema
						PdM
Assieme 01 2000100256						Nr.progetto: 0080
MODULO BB G* & BB GSM CS680B VERS 20.01.99						
..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-PDS0-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-PDS0-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

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTCL30)		PAG. 8		
							Data creazione distinta 22/01/99		
Data di stampa 29/03/99							Data ultima modifica 22/01/99		
Data di validita' 29/03/99							Revisione Validita'		
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		
..3	01	1ff0600123ml	CONN F CSTP 15 VIE ORIZ ZIF FFC/FPC P-0.5 H-2 CONTAT.SOTTO		52746-1590	PZ	1,00000	S05	
..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 S08 DUAL P-CHANNEL 30-V(D-S)		Si4925DY-T1	PZ	1,00000	Q6	
..3	01	1nn0600012sc	TRANS MOSFET N SI2302DS T0-236 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 S121.6-2.0pF Vr 28V(DUE DIODI)			PZ	2,00000	DV1 DV503	
..3	01	1xzzz99002	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	

							528,00000		
*** FINE STAMPA ***									

*** FINE STAMPA ***

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTel30)		PAG. 1		
							Data creazione distinta 28/01/99		
Data di stampa 29/03/99							Data ultima modifica 09/02/99		
Data di validita' 29/03/99							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
*** SEQUE ***									

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTCL30)		PAG. 2		
Data di stampa 29/03/99									Data creazione distinta 28/01/99		
Data di validita' 29/03/99									Data ultima modifica 09/02/99		
									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				BLM21B222SPT	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	

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA			(da ATBTel30)		PAG. 3		
								Data creazione distinta 28/01/99		
Data di stampa 29/03/99								Data ultima modifica 09/02/99		
Data di validita' 29/03/99								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 1dd0100136li	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	S04 S05 S06	
...	4	01 1ff0400042mcm	CONN RF OSX F C/S	VERT	5899-5004-54	5899-5004-54	PZ	2,00000	S02 S03	
...	4	01 1ll0200014mu	FILTRO DIEL 1610.0MHz	BW 16MHz	SMD QUALCOMM CODE CV90-25422-2	DFC31R61P016BHB	PZ	1,00000	FC1	
...	4	01 1ll0500022swt	FILTRO SAW TX 130.38MHz		QUALCOMM CODE CV90-25680-1	854858	PZ	1,00000	FC2	
...	4	01 1ll0500024mu	FILTRO SAW TX S-BAND 1618.25MH		QUALCOMM CODE CV90-25235-1	SAFC1618.25	PZ	2,00000	FC5 FC6	
...	4	01 1ll0900001hc	CIRCOLATORE 1618MHz			SI-7TNR1.618G-T	PZ	1,00000	HY1	
...	4	01 1ll1300003hc	DOUBLE BALANCED MIXER SLM-A		IF 130.38 MHz	SLM-180A	PZ	1,00000	MX2	

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTCL30)		PAG. 4		
							Data creazione distinta 28/01/99		
Data di stampa 29/03/99							Data ultima modifica 09/02/99		
Data di validita' 29/03/99							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 1mm0300013tw	MODULO VCTCX0 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	MICR08 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 1xxzz99002	COMPONENTE DA NON MONTARE			PZ	14,00000	C13 C27 C79 C83 C106 C141 C161 C175	2430
						C186 L20 L21 R13 R15 R36			
...	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

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTCL30)		PAG. 5		
Data di stampa 29/03/99									Data creazione distinta 28/01/99		
Data di validita' 29/03/99									Data ultima modifica 09/02/99		
									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		
..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	JUMPER	1/16W 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

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA				(da ATBTCL30)		PAG. 6		Data creazione distinta 28/01/99	
Data di stampa 29/03/99									Data ultima modifica		09/02/99	
Data di validita' 29/03/99									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					
..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	C0G	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 C0G	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 S016	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	

TELITAL SpA			ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTCL30)		PAG. 7		
							Data creazione distinta 28/01/99		
Data di stampa 29/03/99							Data ultima modifica 09/02/99		
Data di validita' 29/03/99							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			
..3	01	1ff0600089ml	CONN F CSTEP 50 VIE VERT SMD	P-0.5	52991-0508	PZ	1,00000	S01	
..3	01	1ll0500021swt	FILTRO SAW RX 224.88MHZ	QUALCOMM CODE CV90-25644-1	855099	PZ	1,00000	FC3	
..3	01	1ll0500023mu	FILTRO SAW RX S-BAND 2491.75MH	QUALCOMM CODE CV90-25223-1	SAFC2491.75	PZ	2,00000	FC4 FC7	
..3	01	1ll1300001hc	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	1xxzz99002	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	

							386,00000		
*** FINE STAMPA ***									

TELITAL SpA		ESPLOSIONE CON RIFERIMENTI SCHEMA		(da ATBTel30)		PAG. 1		
Data di stampa 29/03/99						Data creazione distinta 01/06/98		
Data di validita' 29/03/99						Data ultima modifica 01/06/98		
						Revisione	Validita'	
Liv.	Cv Codice Telital	Descrizione		C.Costrut./Nr.Disegno	Um	Quantita'	Riferimento schema	PdM

Assieme	01 2000100201	BASETTA SENSORE OTTICO	CS760 VERS 28.05.98			Nr.progetto: 0080		
1	01 1ff0100760	BASETTA 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		

						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



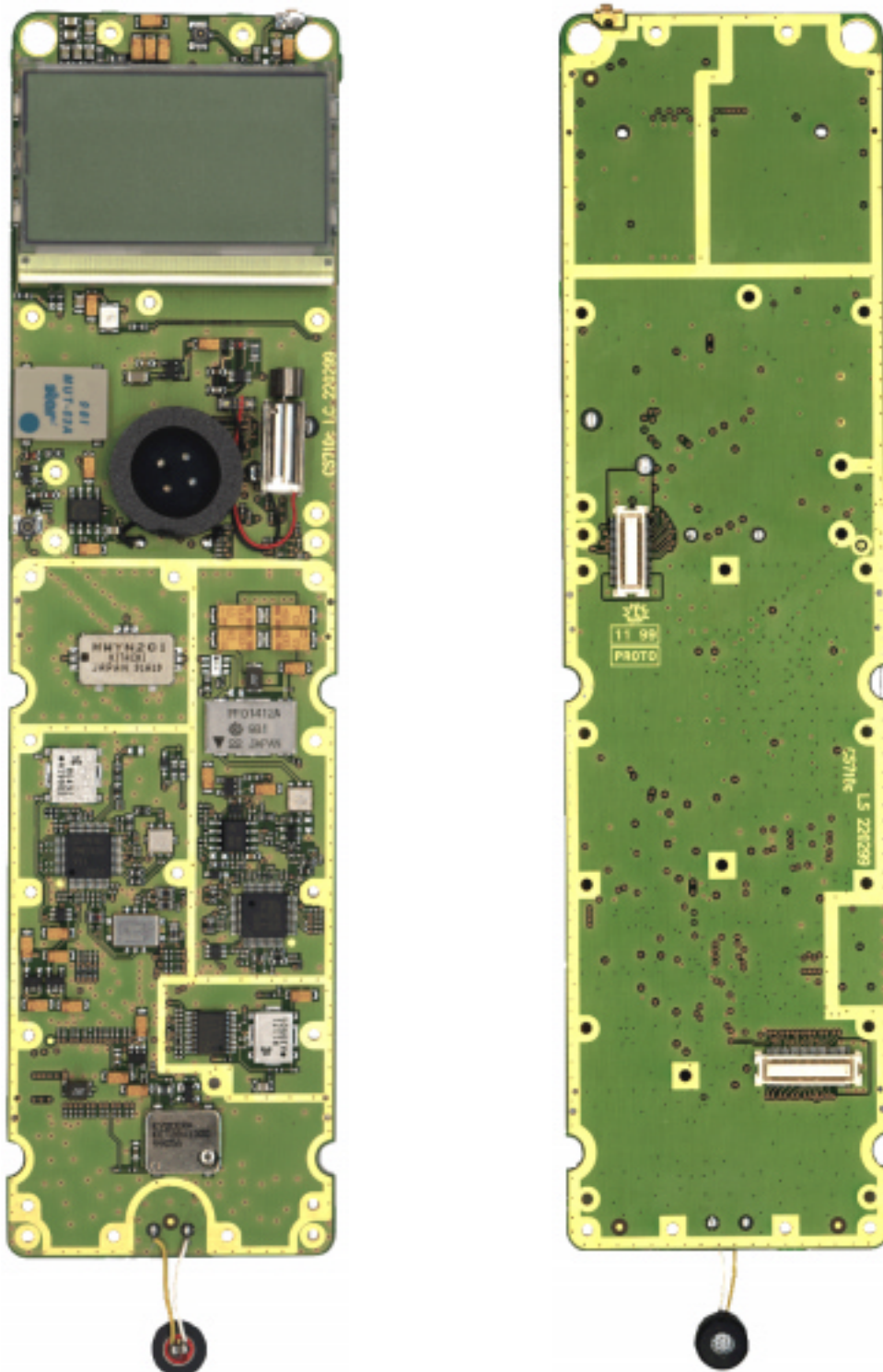
Telital GS/GSM Dual Mode User Terminal Final assembly rear view



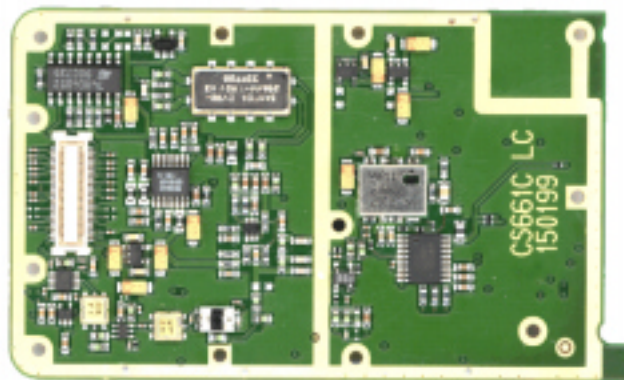
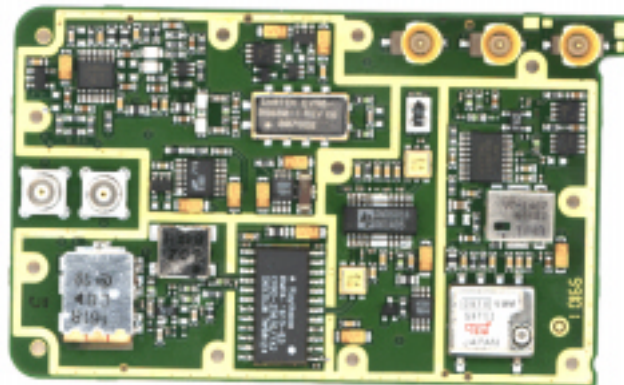
Telital GS/GSM Dual Mode User Terminal Final assembly lateral view



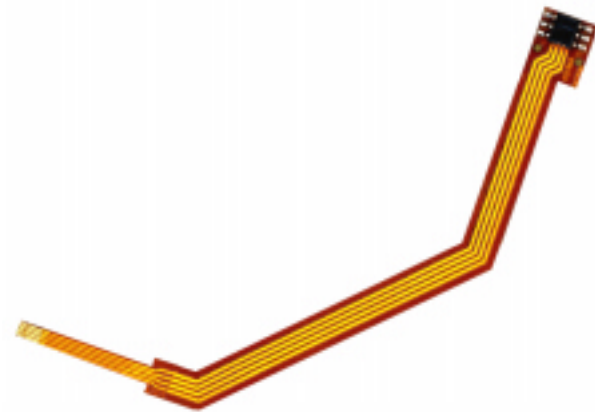
GSM Radio & Display assy CS710c

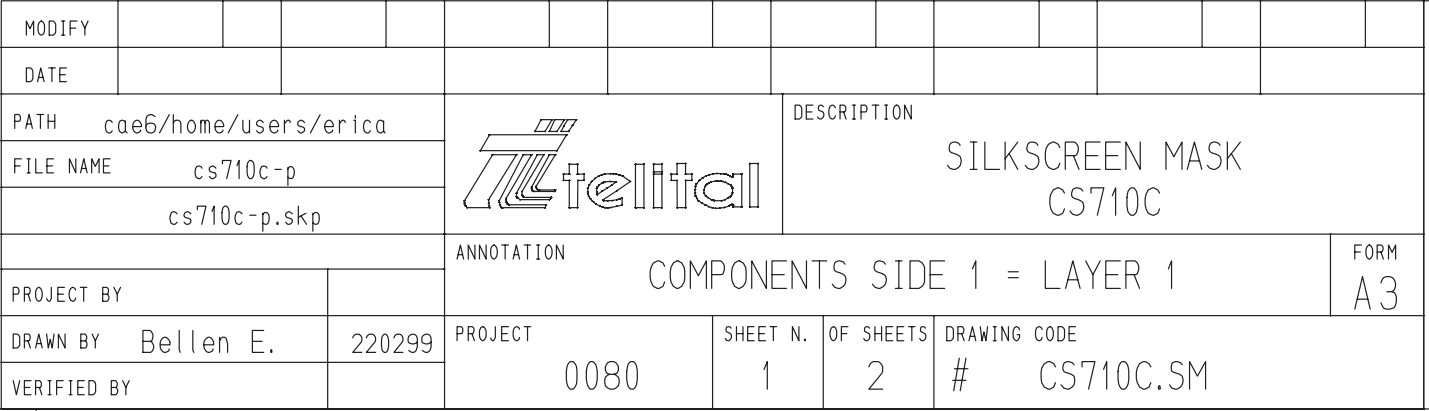


Radio G* assy CS661c Primary layer



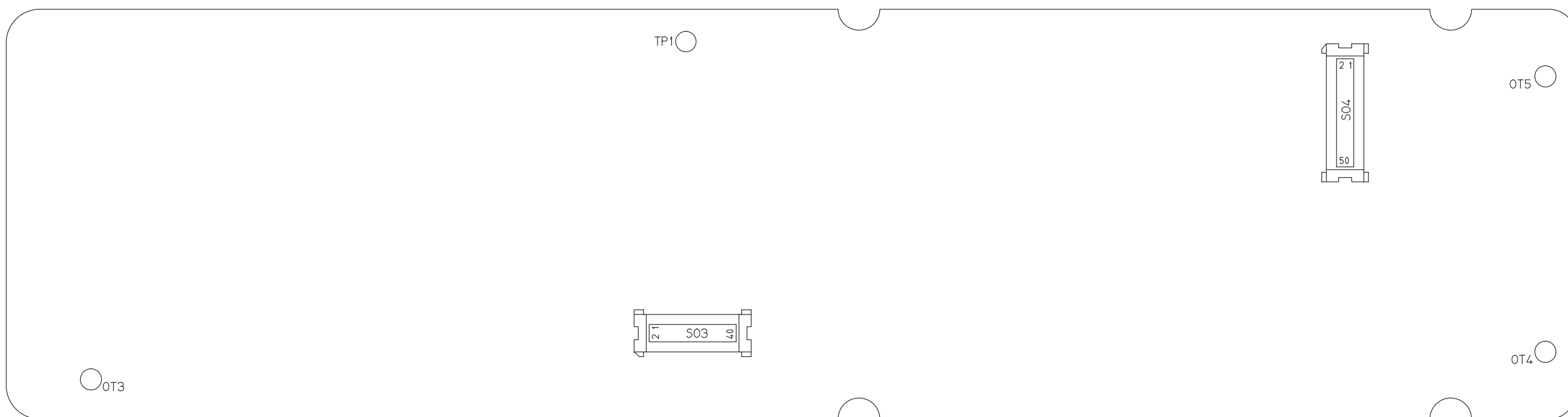
Optical Sensor CS760



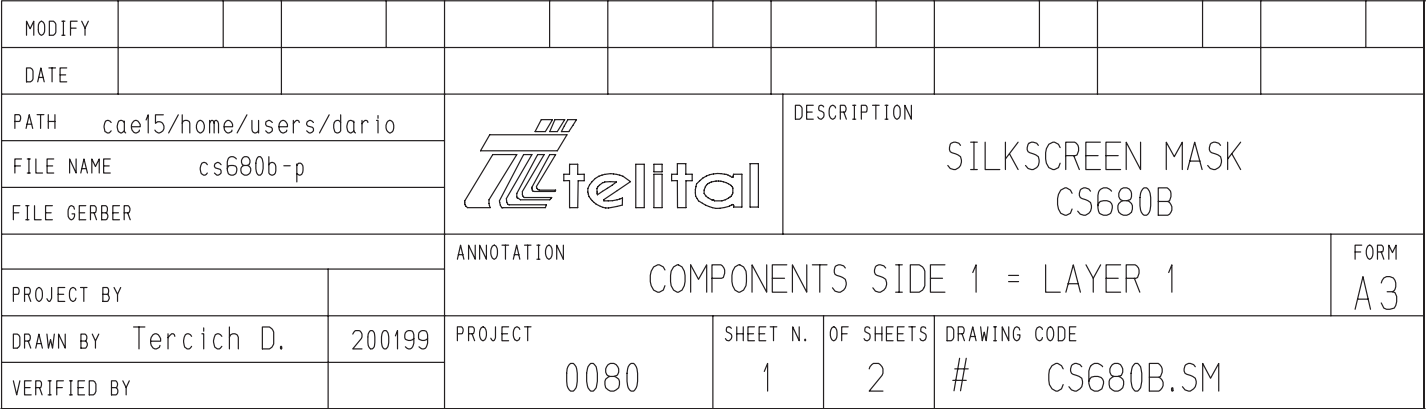


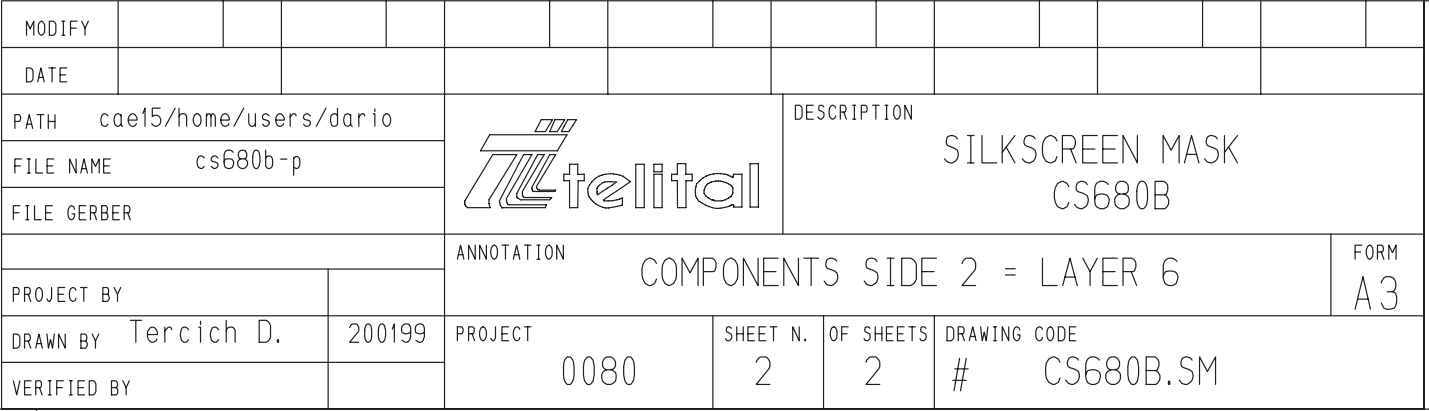
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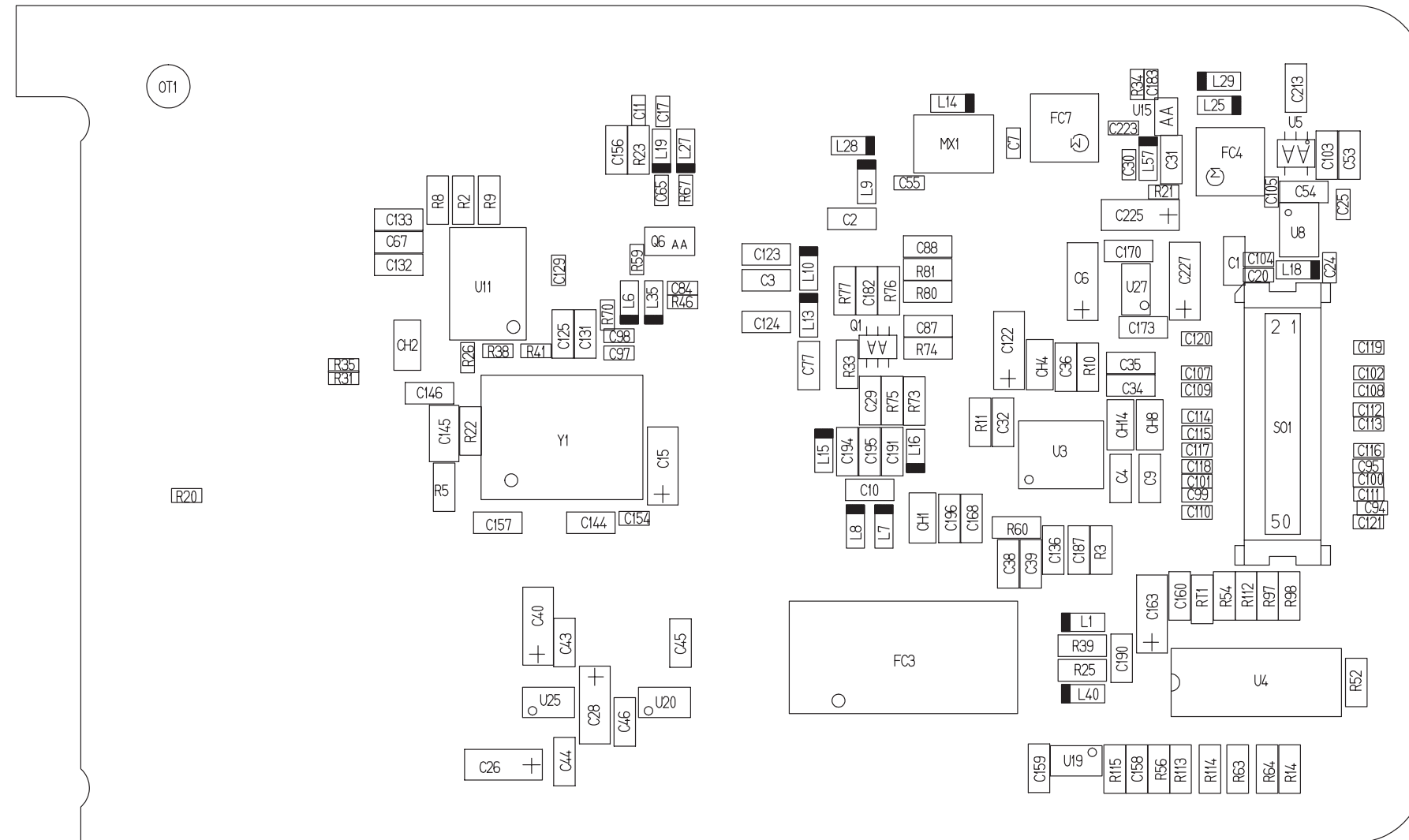
ALL RIGHTS RESERVED



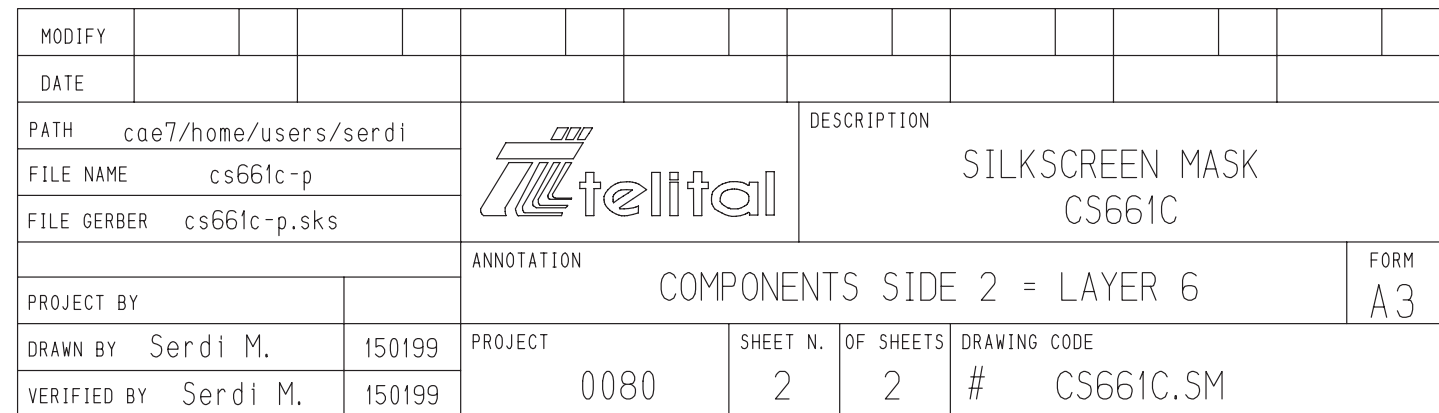
MODIFY																
DATE																
PATH	cae6/home/users/erica								DESCRIPTION SILKSCREEN MASK CS710C							
FILE NAME	cs710c-p															
	cs710c-p.sks															
				ANNOTATION COMPONENTS SIDE 2 = LAYER 6											FORM A3	
PROJECT BY																
DRAWN BY	Bellen E.		220299		PROJECT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





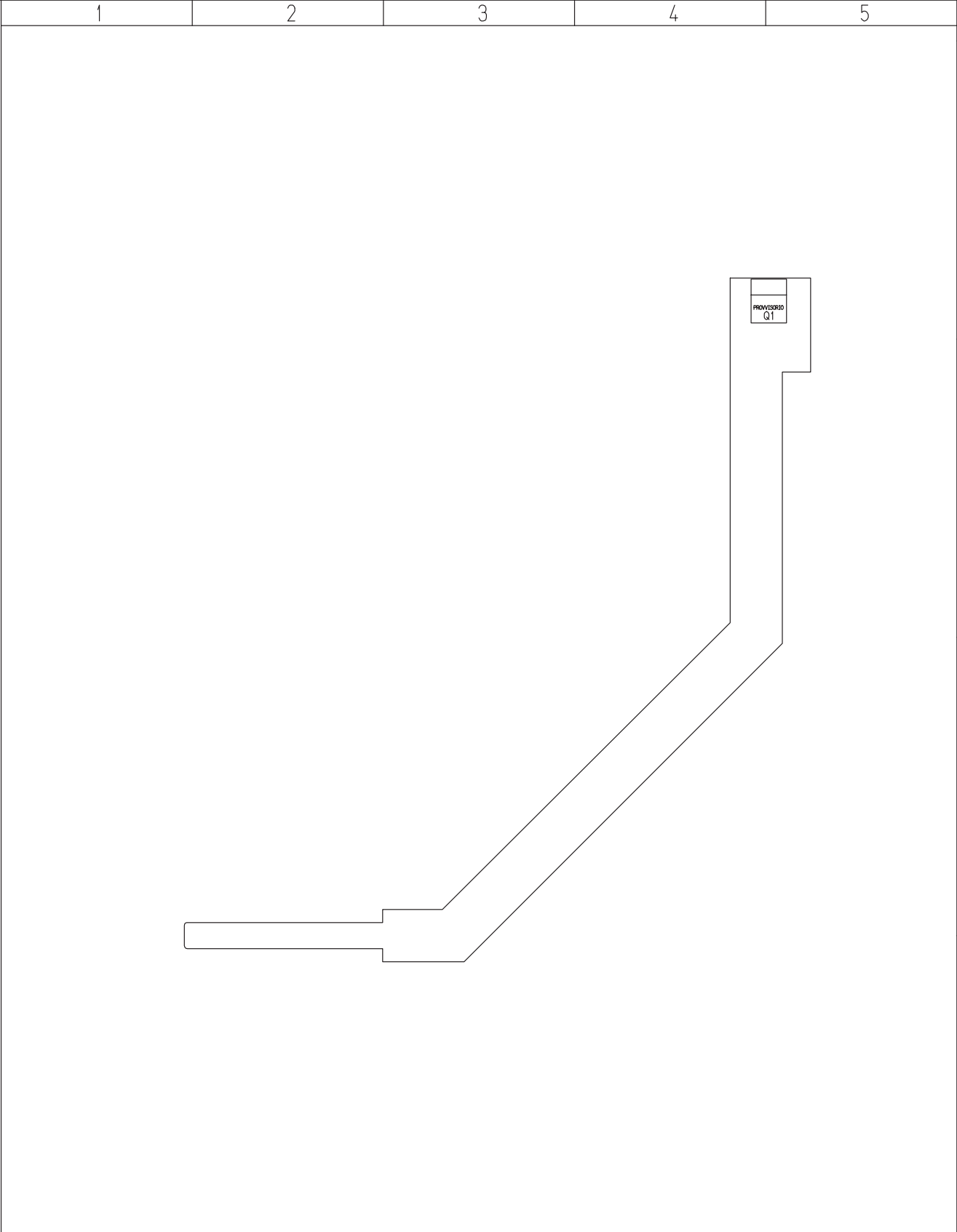


MODIFY																	
DATE																	
PATH	cae7/home/users/serdi								DESCRIPTION SILKSCREEN MASK CS661C								
FILE NAME	cs661c-p																
FILE GERBER	cs661c-p.skp																
				ANNOTATION												FORM	
PROJECT BY				COMPONENTS SIDE 1 = LAYER 1												A3	
DRAWN BY	Serdi M.		150199		PROJECT		SHEET N.		OF SHEETS		DRAWING CODE						
VERIFIED BY	Serdi M.		150199		0080		1		2		# CS661C.SM						



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FORBIDDEN



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

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.

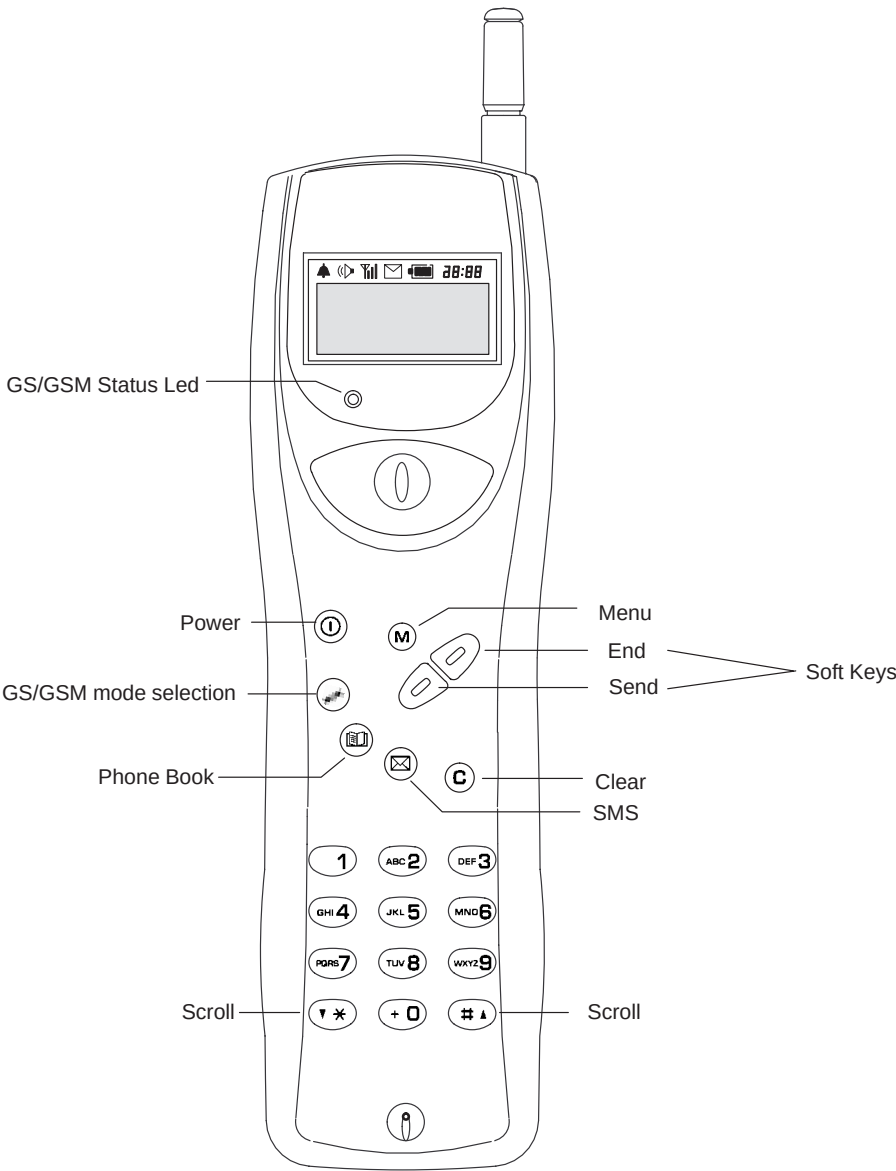


Figure 1

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).

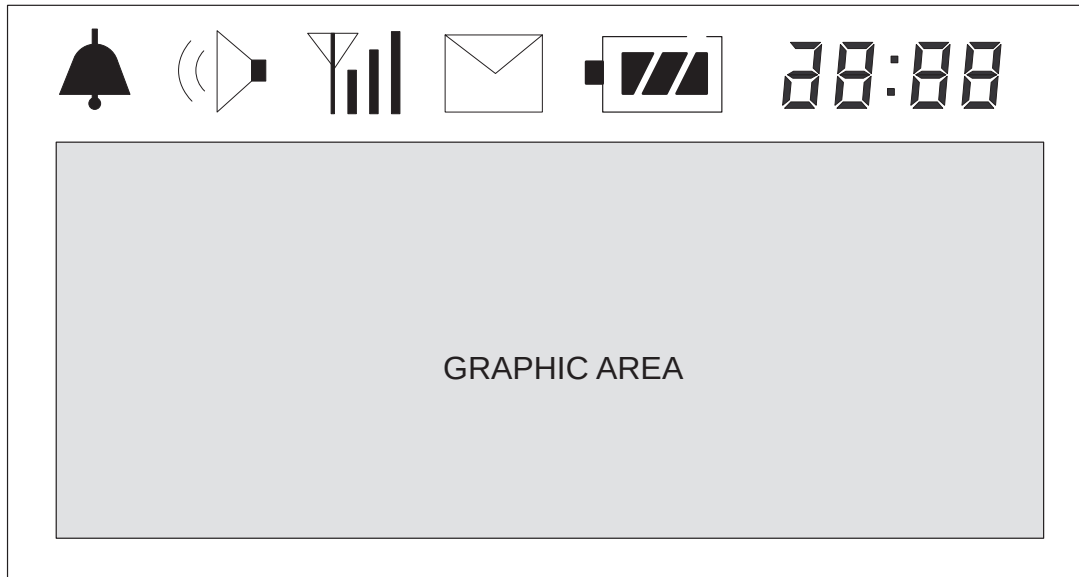


Figure 2

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 **1** (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

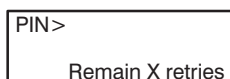
** GS/GSM DMUT **

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 #.

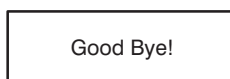
Warning: If you cannot remember your PUK code or you enter a wrong one for 10 times, you have no other possibility but that of contacting the network operator who issued your SIM card.

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:

Enter name

-  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:

Name	mem
Number	

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.

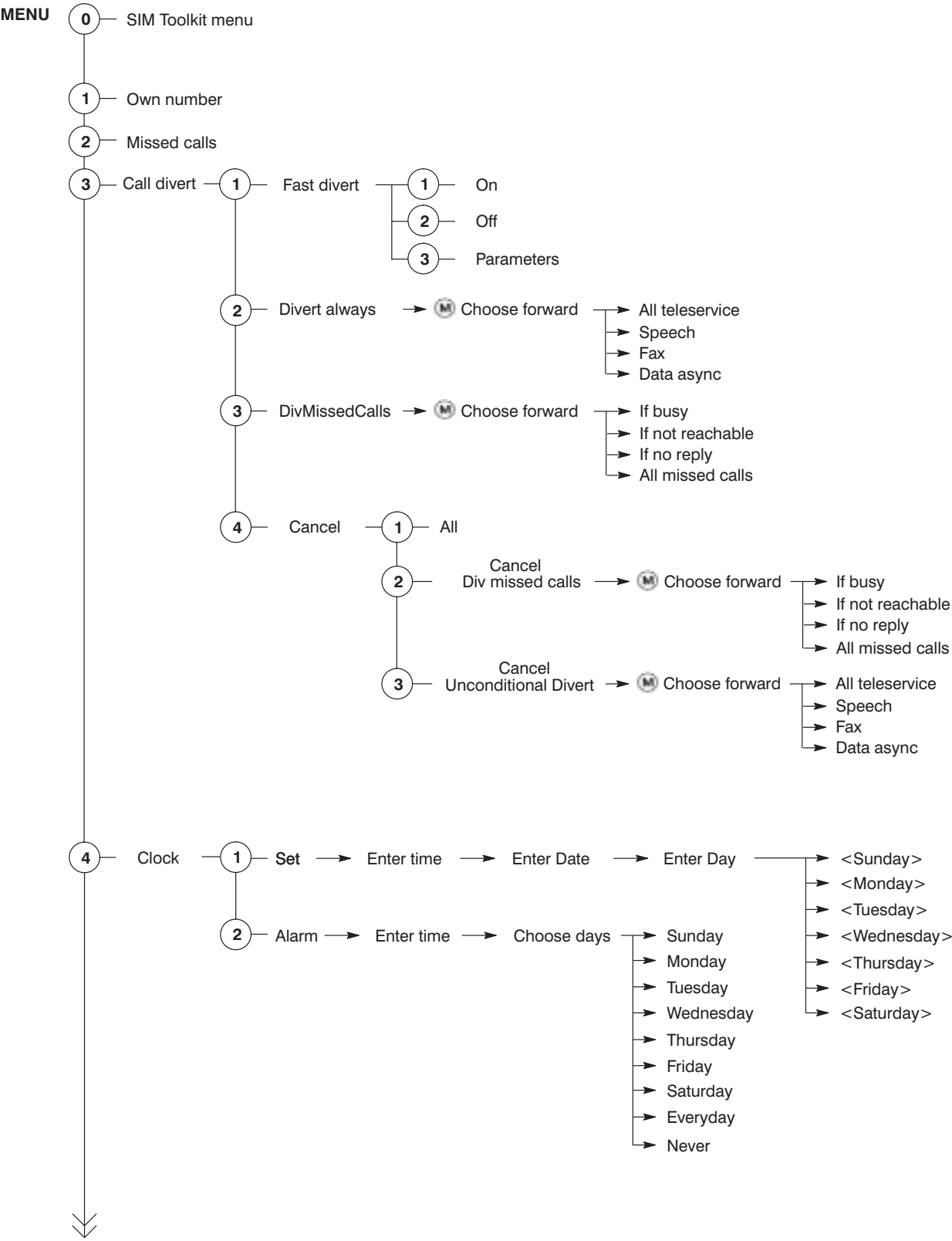
9.1.6 Function menu

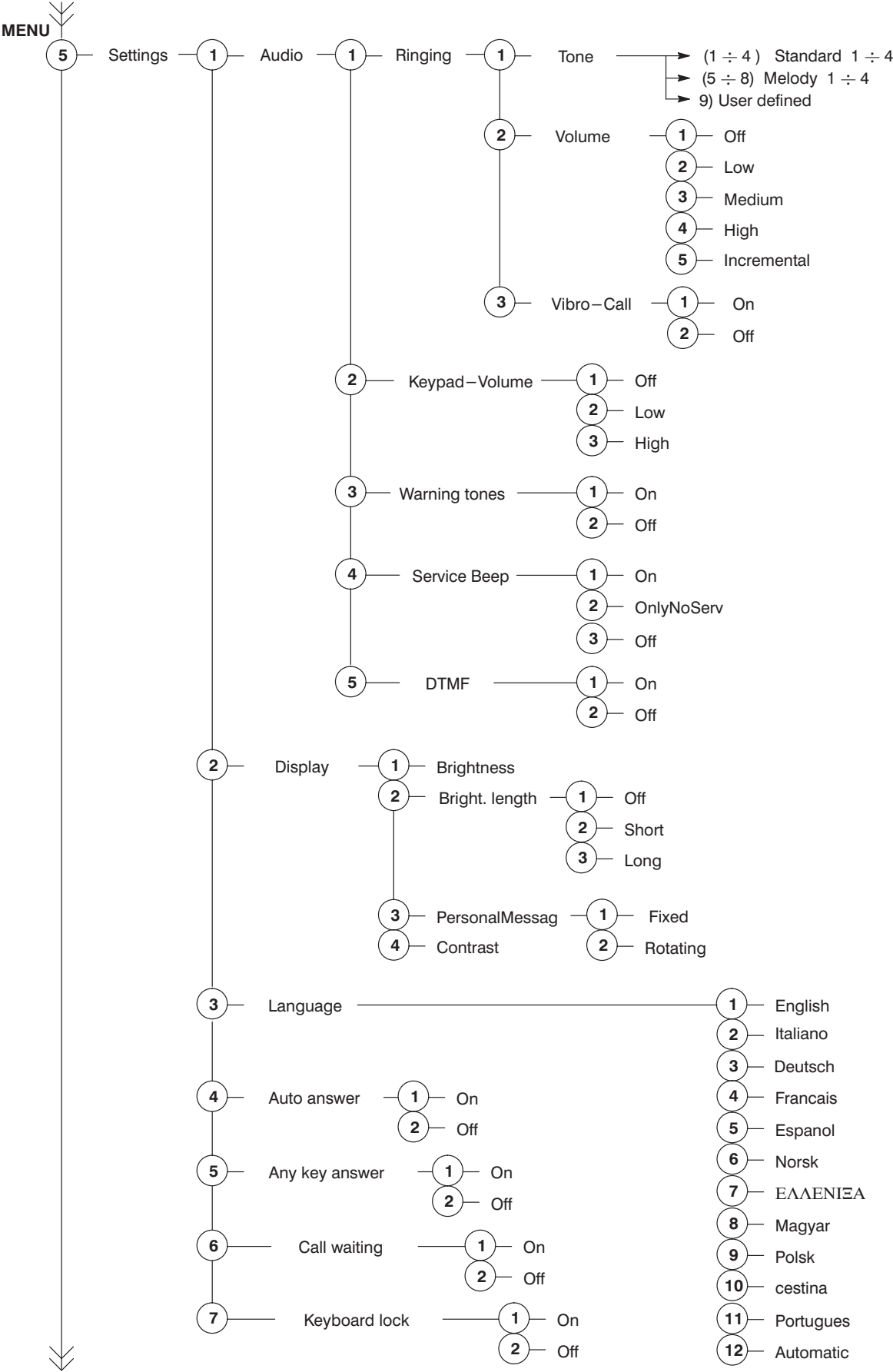
- Press "M" key followed by the number key corresponding with the desired menu number or,
- Press "M" key to going to the menu.
- Press ∇ * and # $\blacktriangle$ or press the "M" key to browse the menus.
- Confirm the access on the desired menu by pressing  (SEND) key.
- To exit from menu without save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

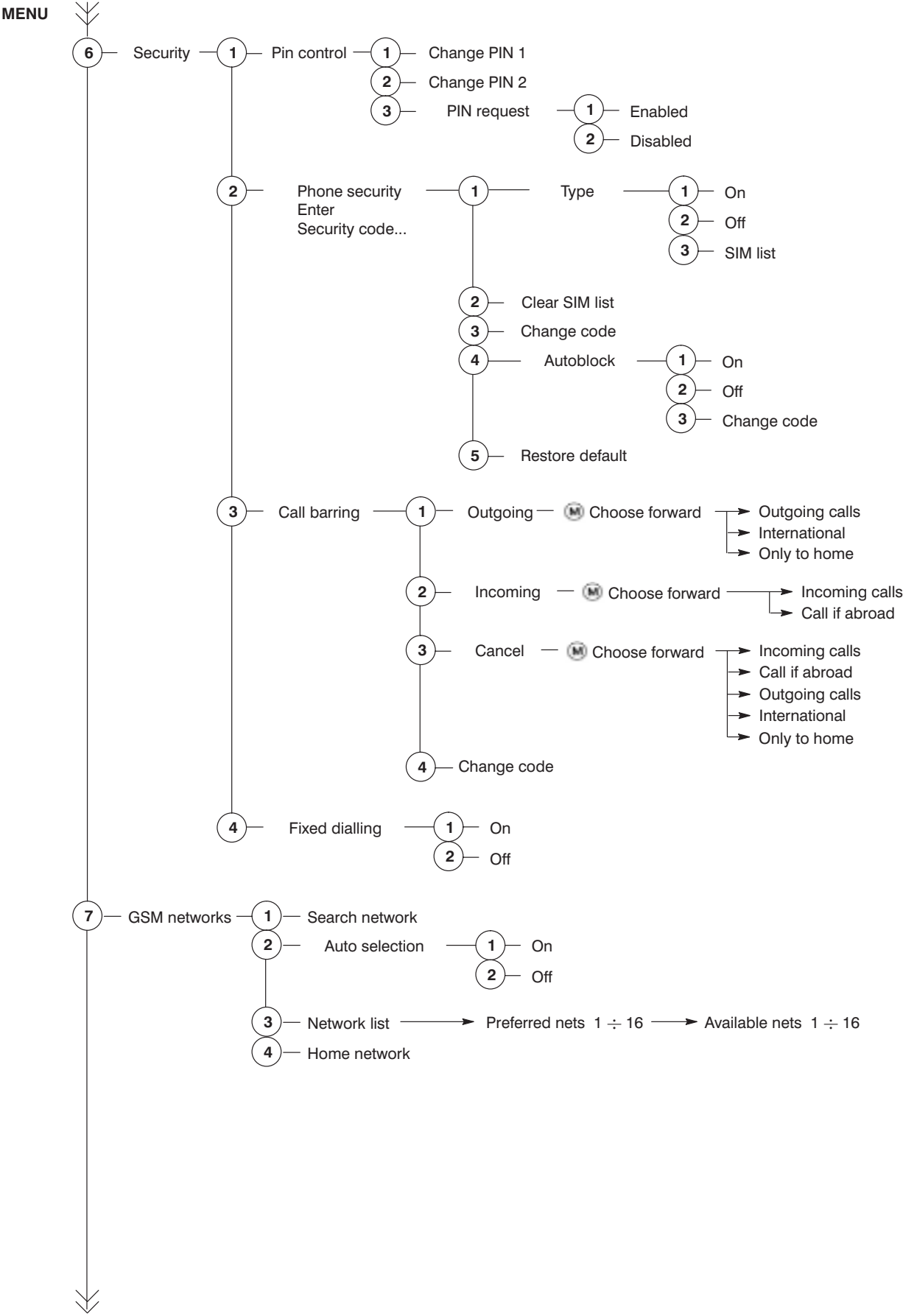
If a "Proactive" SIM is inserted into a DMUT, a menu item 0 will be displayed. By selecting this item, access will be given to the SIM Toolkit services supplied by the network operator.

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

The following diagrams show the function menu structure.



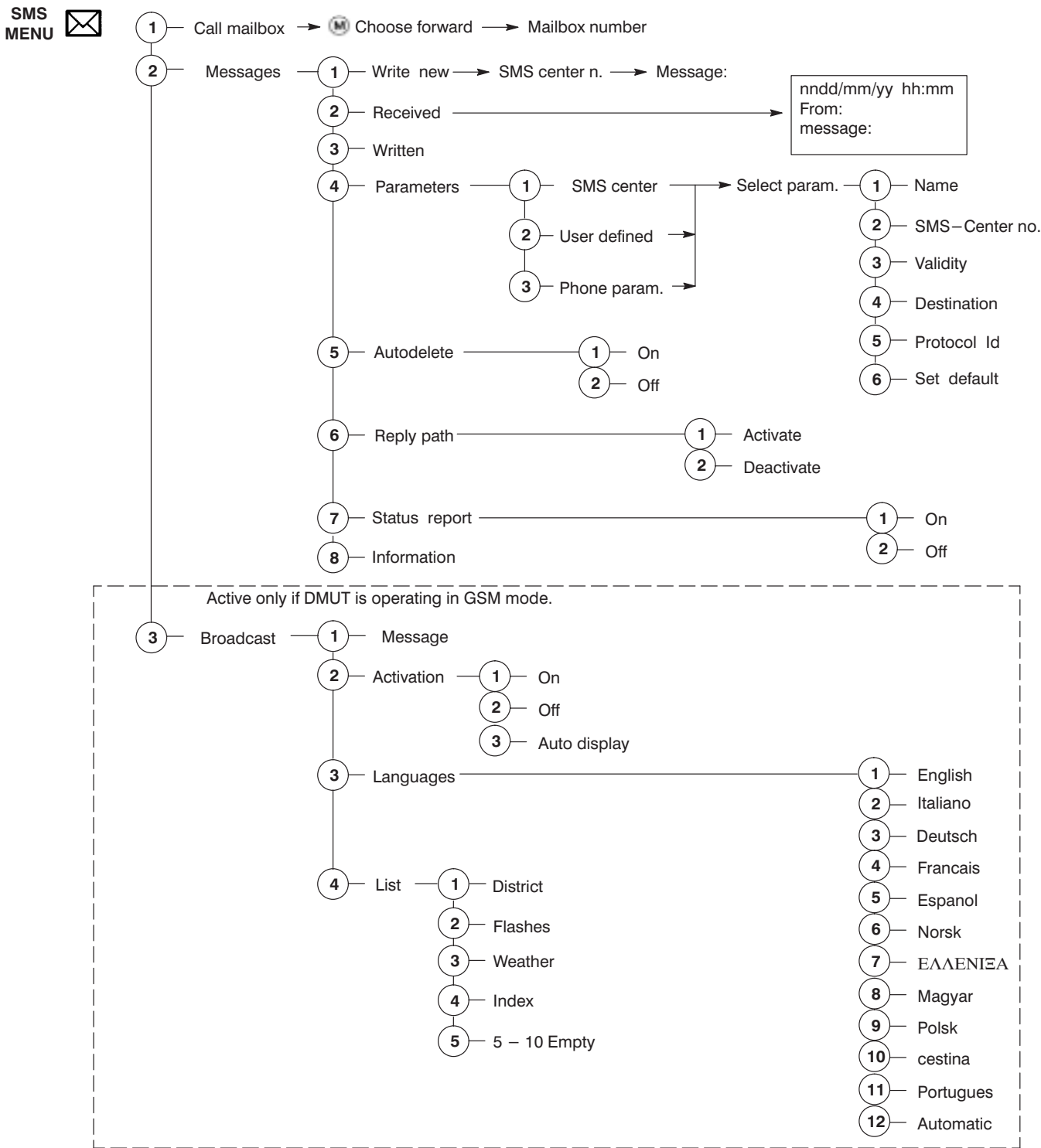






9.1.6.1 SMS menu

Pressing the  is available the SMS (Short Message Service) menu.
This menu allows to send and receive short text messages (SMS), to receive mes-
sages 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.

