TM 15.2 ACTIVE

BI-AMPLIFIED DIGITALLY PROCESSED
LOUDSPEAKER SYSTEM

SERVICE MANUAL

Schematic Diagrams

CODE : 277322

Index & Warnings

GENERALMUSIC S.p.a. Sales Division:47842 S.Giovanni in Marignano (RN) ITALY - Via delle Rose, 12 - tel. 0541/957404 - fax0541/957404 - http://www.generalmusic.com

Notice

Service must be carried out by qualified personnel only. Any tampering carried out by unqualified personnel during the guarantee period will forfeit the right to guarantee.
For a correct operation of the instrument, after having switched off, be careful to wait at least 3 seconds before switching on again.
To improve the device's specifications, the schematic diagrams may be subject to change without prior notice.

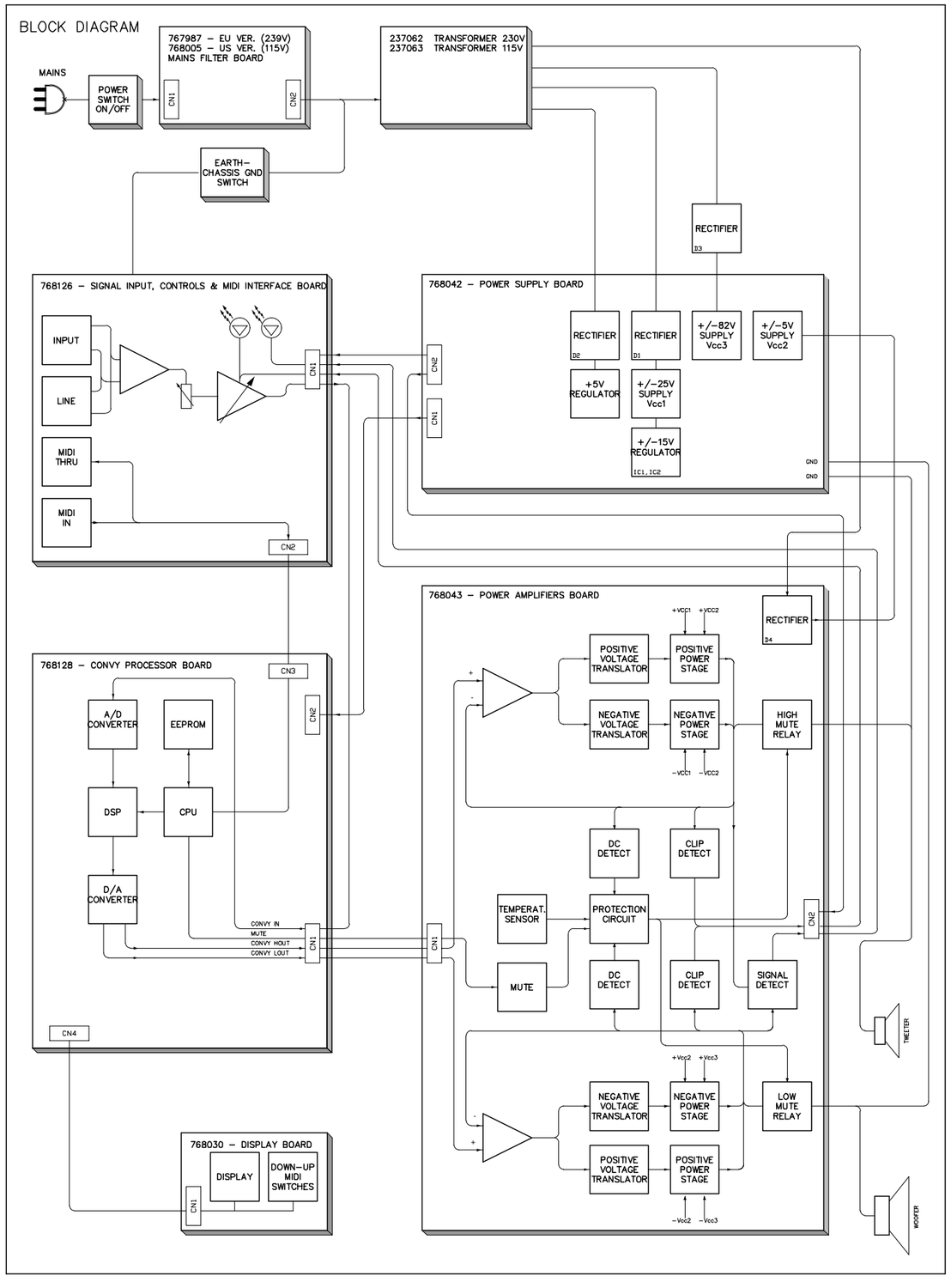
Schematic Notes

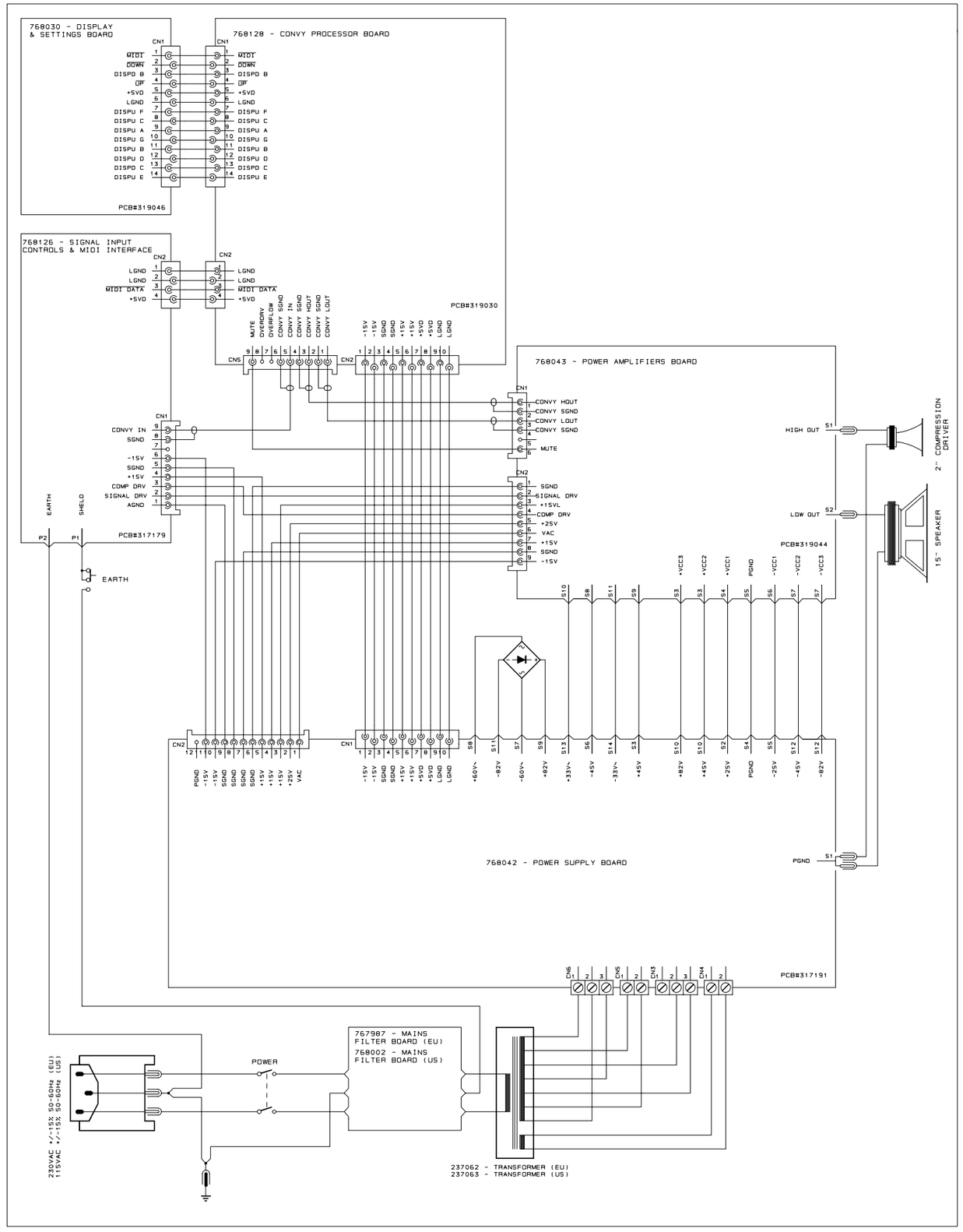
All components marked by this symbol have special safety characteristics, when replacing any of these components use only manufacturer's specified parts.
The (µ) micro symbol of capacitance value is substituted by U. The (Ω) omega symbol of resistance value is substituted by E.
The electrolytic capacitors are 25Vdc rated voltage unless otherwise specified. All resistors are 1/4W unless otherwise specified.
All switches shown in the "OFF" position. All DC voltages measured to ground with a voltmeter 20KOhm/V.

- Soldering point.
- Male connector.
- Female connector.
- M/F faston connector.
- Test point.
- Supply voltage.
- Logic supply ground.
- Analog supply ground.
- Signal ground.
- Chassis ground.
- Flag joined with one or more flags with the same signal name inscribed.

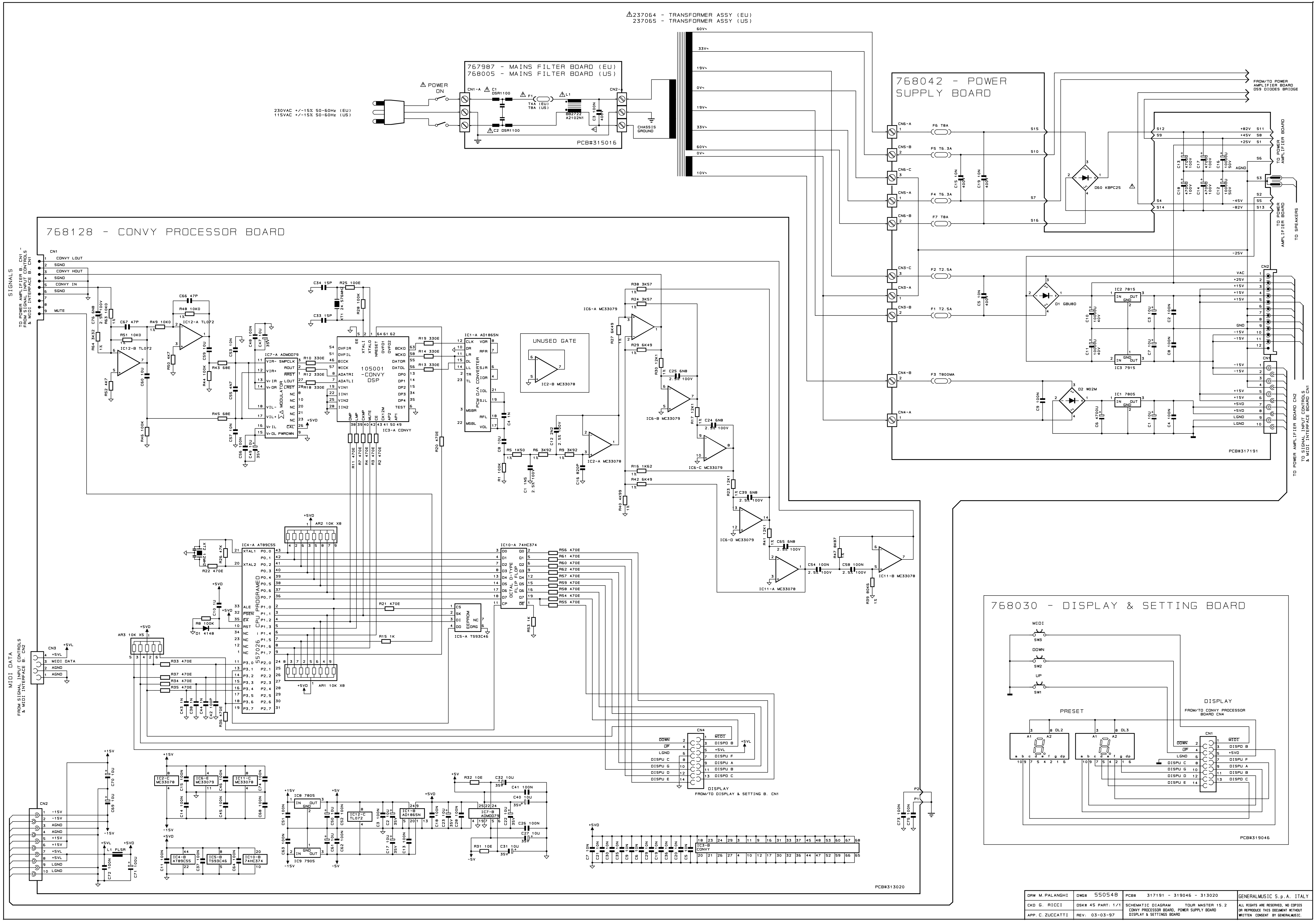
ATTENTION
Observe precautions when handling
electrostatic sensitive devices

BLOCK DIAGRAM





DRW M.PALANGHI	DWG# 550547	PRINTED CIRCUIT CODE :	GENERALMUSIC S.p.A. ITALY
CKD I.BATTELLI	DISK:46PART: 1/1	SCHEMATIC DIAGRAM TM15.2 ACTIVE	
APP. C.ZUCCATTI	REV: 28-04-97	BLOCK & WIRING CONNECTIONS	



⚠237064 - TRANSFORMER ASSY (EU)
237065 - TRANSFORMER ASSY (US)
767987 - MAINS FILTER BOARD (EU)
768005 - MAINS FILTER BOARD (US)
⚠ POWER ON
230VAC +/-15% 50-60Hz (EU)
115VAC +/-15% 50-60Hz (US)
CHASSIS GROUND
PCB#315016
768042 - POWER SUPPLY BOARD
FROM/TO POWER AMPLIFIER BOARD D59 DIODES BRIDGE
TO POWER AMPLIFIER BOARD
TO SPEAKERS
TO POWER AMPLIFIER BOARD CN2
TO SIGNAL INPUT CONTROLS & MIDI INTERFACE BOARD CN1
PCB#317191
768128 - CONVY PROCESSOR BOARD
SIGNALS
TO POWER AMPLIFIER B. CN1 - FROM SIGNAL INPUT CONTROLS & MIDI INTERFACE B. CN1
UNUSED GATE
105001 -CONVY DSP
PCM D/A CONVERTER
MIDI DATA
FROM SIGNAL INPUT CONTROLS & MIDI INTERFACE B. CN2
CPU PROGRAMMED 557026
OCTAL D-TYPE FLIP FLOP
DISPLAY FROM/TO DISPLAY & SETTING B. CN1
PCB#313020
768030 - DISPLAY & SETTING BOARD
MIDI
DOWN
UP
PRESET
DISPLAY
FROM/TO CONVY PROCESSOR BOARD CN4
PCB#319046
DRW M.PALANGHI
DWG# 550548
PCB# 317191 - 319046 - 313020
GENERALMUSIC S.p.A. ITALY
CKD G. RICCI
DSK# 45 PART: 1/1
SCHEMATIC DIAGRAM TOUR MASTER 15.2
CONVY PROCESSOR BOARD, POWER SUPPLY BOARD
DISPLAY & SETTINGS BOARD
APP. C.ZUCCATTI
REV: 03-03-97
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768043 - POWER AMPLIFIERS BOARD

FROM/TO POWER SUPPLY BOARD

S11 VAC1
S12
+VCC1
VAC1
S10
S13 -VCC1
⚠ DS9 GBU8D

SIGNALS FROM CONVY PROCESSOR BOARD CN1

CN1
1 CONVY HOUT
2 CONVY GND
3 CONVY LOUT
4 CONVY GND
5
6 MUTE

ERR. AMP.
D25 7V5 1W
D29 7V5 1W
C39 470P
R49 15K
R45 1K0
IC1-C TL074
R146 3K32 1%
C72 6N8 2.5% 100V
R32 10K0 1%
R31 5K49 1%
R35 5K49 1%
R30 10K0 1%
R145 3K32 1%
C73 6N8 2.5% 100V
IC1-D TL074
R34 1K00 1%
R36 3K92 1%
C29 100N
C36 10P
R37 100K 1%
D23 4148
D24 4148
D18 4002
R27 82K
D22 4148
IC1-A TL074
R49 10K
R33 10K
D20 4148
IC1-B TL074
D19 4148
R28 150K
C22 4U7
-15V

C26 47U 100V
R41 100E
R38 1K2
TR18 2N 5550
R40 82E
TR14 MJE 2350
C10 220P 500V
R55 4K7
R50 10K
-15V
D26 4148
R51 68K
C25 100P 500V
R39 12K
TR15 MJE 340
R10 1K0
TR7 MJE 340
TR6 MJE 340
TR1 MJE 350
R6 330E
TR11 TIP 36C
D15 4002
C16 470P
R18 4K7
R7 1K0
C9 220P
D4 4002
R8 1K0
D3 4002
D2 10V 1W
D12 FE6B
C15 220P 500V
TR5 MJE 340
R23 4E7
D8 4002
R17 470E
R5 68E
R2 0R22 5W 11mV
D9 4002
D10 4002
R3 0R22 5W 11mV
C20 1N
R25 1K
TR12 MJE 802
C21 10U
C10 2N7
R10 5K6
R9 2K7
R26 330E
VR1 470E
C11 2N7
R11 5K6
R12 2K7
R16 68E
TR3 TIP 35C
TR10 MJE 350
R22 470E
C18 220P 500V
R24 4E7
D6 4002
D7 10V 1W
D16 FE6B
R29 470E
C28 100N
R20 4K7
R14 1K0
C12 220P 500V
TR9 MJE 350
TR8 MJE 350
D5 4002
R13 1K
C17 470P
TR4 MJE 340
D21 4002
TR13 TIP 35C
R12 330E
D14 4002
C19 100N 100V
C5 100N 100V
C13 47U 100V
C7 47U 100V
+15V
R52 68K
R57 10K
TR19 2N 5401
D27 4148
C27 100P 500V
TR16 MJE 340
R42 1K2
R56 4K7
R42 1K2
R44 82E
R53 100E
C33 220P 500V
C31 47U 100V

+45V
C8 47U 100V
C14 100N 100V
D13 4002
+25V
C6 47U 100V
C4 100N 100V
D12 FE6B
-25V
D14 4002
C19 100N 100V
C5 100N 100V
C13 47U 100V
C7 47U 100V
-45V
D16 FE6B

AL1-B
AL1-C
S1
HIGH OUT
TWEETER
C2 6U8 100V
C1 33N 250V
R1 47E 2W
R4 10K
HIGH DC DETECT
TR24 BC 550
R58 22K
R63 4K7
C38 10U
TR22 BC 550
R59 10K
TR23 BC 560
CLIP DETECT
D39 4002
R67 10K
TR20 2N 5401
R64 4K7
D17 10V 1W
R62 1K
R54 10K
R65 10K
C35 100N
SIGNAL DETECT
TR31 BC 550
C45 10U 50V
R100 47K
R102 47K
D40 4148
PROTECTION CIRCUIT
D34 7V5 1W
R83 100K
D36 7V5 1W
R93 10K
D30 4148
R86 10K
C49 1000U 6V3
TR28 BC 550
R87 10K
+15V
R90 10K
R85 330E
CLIP DETECT
D37 4002
R94 10K
TR30 2N 5401
D38 13V 1W
R72 1K
R84 10K
C44 100U 25V
C46 22U 50V
LOW DC DETECT
R80 47K
TR26 BC 550
R91 10K
TR25 BC 550
TR27 BC 560
R78 4K7
C42 1000U 6V3
R92 47K
TR33 MJE 802
R89 100K
TR32 BC 550
R97 10K
AL2-B
AL2-C
LOW OUT
S4
WOOFER
C3 100N
D1 4002
RL1-A
RL2-A

+25V +15VL
CN2
LGND 1
SIGNAL DRV 2
+15VL 3
COMP DRV 4
+25V 5
VAC 6
+15V 7
SGND 8
-15V 9
POWER SUPPLY FROM POWER SUPPLY BOARD CN2
+15V
IC1-B TL072
IC1-C TL074
C23 100N
C41 100N
C34 10U 25V
C24 100N
C40 100N
C32 10U 25V
-15V

TEMP. SENSOR
R107 70 ±7C
R82 10K
+15VL
TR29 BC 550

ERR. AMP.
D33 7V5 1W
D32 7V5 1W
R77 1K
IC2-B TL072
R147 3K32 1%
C74 6N8 2.5% 100V
R69 10K0 1%
R47 3K01 1%
R46 3K01 1%
R70 10K0 1%
R148 3K32 1%
C75 6N8 2.5% 100V
IC2-A TL072
C43 2U2 50V
R74 4K7
C47 68P
R75 100K
D31 4148
D35 4148

R106 4K7
TR36 2N 5550
R104 100E
R97 820E
R110 68E
TR39 MJE 350
D42 4148
R76 12K
-15V
R79 68K
C57 220P 500V
C54 1N
R95 1K5
TR37 MJE 802
C53 10U
R96 330E
VR2 470E
C50 47U 100V
R88 470E
C51 100N
C58 220P 500V
+15V
R89 12K
D41 4148
TR34 2N 5401
R103 820E
R112 68E
R89 4K7
C56 47U 100V
R111 100E

C52 220P 500V
TR35 MJE 340
R105 12K
R113 1K
TR46 MJE 340
TR45 MJE 350
R124 4K7 1%
R123 1K0
C65 220P
C59 470P
D43 4002
R125 1K0
D49 4002
D50 10V 1W
D55 FE6B
+82V
+45V
C70 100N 100V
C68 47U 100V
D53 4002
R109 4E7
C60 220P 500V
TR42 MJE 15030
TR49 MJL 21194
TR51 MJL 21194
TR53 MJL 21194
R118 470E
R122 6E8
R136 0R22 5W
R135 0R22 5W
R139 0R22 5W 6mV
D44 4002
D45 4002
R117 5K6
R126 2K7
D48 4002
D47 4002
R132 6E8
R133 0R22 5W
R134 0R22 5W
R140 0R22 5W 6mV
R130 470E
TR50 MJL 21193
TR52 MJL 21193
TR54 MJL 21193
R115 4E7
C63 220P 500V
DS2 4002
DS1 10V 1W
DS6 FE6B
-45V
D54 4002
R114 12K
TR38 MJE 350
C55 220P 500V
D46 4002
R128 1K0
R129 4K7 1%
R127 1K0
C66 220P
C64 470P
TR48 MJE 350
TR47 MJE 350
TR56 MJE 15030
TR44 MJE 340
DS8 4002
TR58 TIP 35C
TR60 TIP 35C
R121 1K
R116 1K
R138 330E
R143 0R22 5W
R144 0R22 5W
C71 100N 100V
C69 47U 100V
-82V

R120 4E7 5WCK7 33N 250V

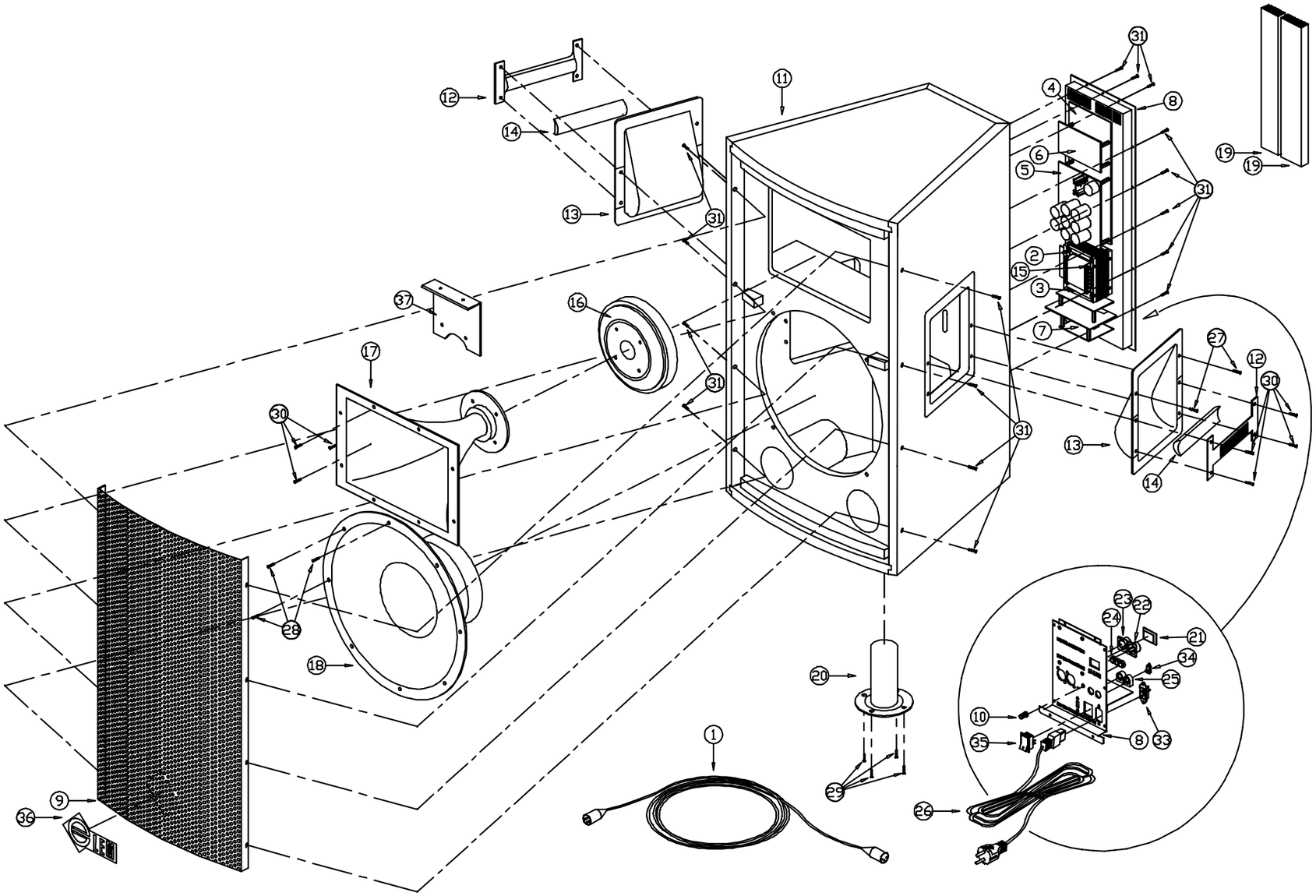
FROM POWER SUPPLY BOARD
-VCC3
-VCC2
AGND
-VCC1
+VCC1
+VCC2
+VCC3
PCB#319044

EARTH LIFT
CHASSIS GROUND
S1
F1
F2

768126 - SIGNAL INPUT CONTROLS & MIDI INTERFACE BOARD

INPUT 0dB
IN
LINK
S2
S3
IC1-C TL072
C7 10U 50V
C5 100N
C6 0U1
+15V
TR8 BC 560
R18 2K2
R19 10K
SIGN COMP
R23 1K2
R24 1K
R17 47K
TR2 BC 560
DL1
R15 470E
TR1 BC 550
R12 1M0
R5 47K
R4 100E
VR1 1K
C10 22P
R9 15K0
R8 15K0
R7 100E
C12 2U2 50V
VR3 5K0
C14 2U2 50V
R10 33K
IC1-B TL072
VOLUME
IC1-A TL072
COMPRESSOR ADJ
R3 10K
C1 1N5
C11 22P
C2 1N5
R2 15K0
R1 15K0
C4 22P
C16 10N
R14 100E
R6 100E
D1 7V5
D2 7V5
AGND 1
SIGNAL DRV 2
COMP DRV 3
+15V 4
SGND 5
-15V 6
SGND 7
SGND 8
CONVY IN 9
CN1
FROM POWER SUPPLY BOARD CN2
CONVY TO BOARD CN1
MIDI
L4 FLSR
R22 220E
CN4
THRU
L3 FLSR
R21 220E
L5 FLSR
IC2-C 74HC04
CN3
IN
L1 FLSR
L2 FLSR
R20 220E
IC2-F 74HC04
IC2-E 74HC04
IC2-D 74HC04
IC2-G 74HC04
+5VD
MIDI DATA 3
LGND 2
LGND 1
CN2
TO CONVY PROCESSOR BOARD CN3
C9 10U 25V
C8 100N
C15 100N
IC3 6N138
R11 4K7
D3 4148
NC NC
R16 4K7
IC2-A 74HC04
IC2-B 74HC04
PCB#313019

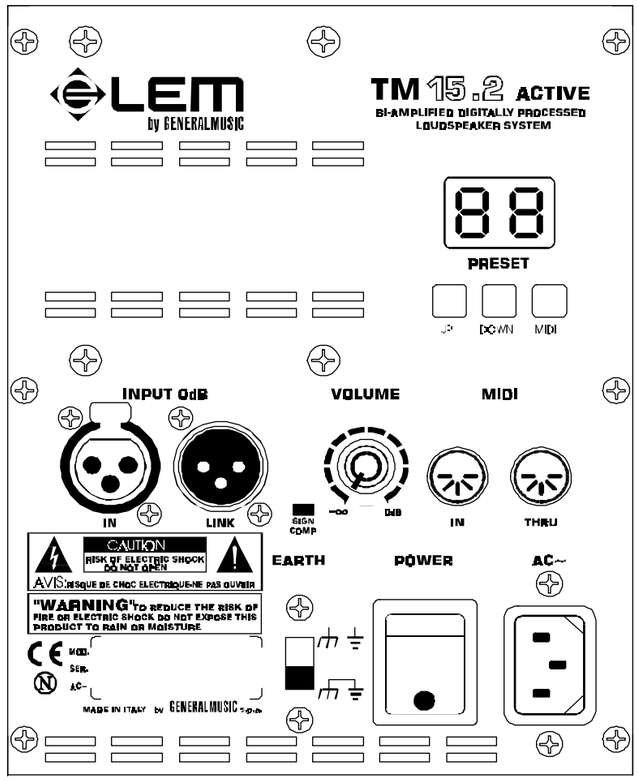
DRW M.PALANGHI	DWG# 550549	PCB# 319044 - 313019	GENERALMUSIC S.p.A. ITALY
CKD I.BATTELLI	DSK# 46 PART: 1/1	SCHEMATIC DIAGRAM TM 15.2 ACTIVE POWER AMPLIFIERS & SUPPLY BOARD MAIN FILTER - INPUTS BOARD	
APP. C.ZUCCATTI	REV. 28-04-97		



Spare Parts

1	887074	XLR MALE-FEMALE SIGNAL CABLE (mt. 1.5)
2	768030	DISPLAY & SETTING BOARD
3	768126	SIGNAL INPUTS CONTROLS & MIDI INTERFACE BOARD
4	768043	POWER AMPLIFIER BOARD
5	768042	POWER SUPPLY BOARD
6	768128	CONVY PROCESSOR BOARD
7	767987	MAINS FILTER BOARD (EU)
7	768002	MAINS FILTER BOARD (US)
8	667613	CONTROLS PANEL
9	667610	METAL GRID
10	659027	CYL. KNOB WHITE CAP
11	717054	WOODEN CABINET
12	347287	PLASTIC HANDLE
13	347286	HANDLE SET
14	347187	RUBBER HANDLE
15	237064	TRANSFORMER (EU)
15	237065	TRANSFORMER (US)
16	229030	2" COMPRESSION DRIVER TWEETER
17	347283	COMPRESSION DRIVER HORN
18	227038	15" SPEAKER
19	177476	AMPLIFIER HEAT SINK
20	177325	STAND ADAPTOR
21	150591	DISPLAY RED GLASS
22	141202	XLR MALE SOCKET
23	141184	XLR FEMALE SOCKET
24	140526	GRAY BUTTON
25	140212	DIN SOCKET
26	130297	MAINS CORD (EU)
26	130283	MAINS CORD (US)
27	120319	WL 4x15 MAINS CORD SCREW
28	120125	M5x35 MAINS CORD SCREW
29	120111	M6x25 MAINS CORD SCREW
30	120108	M5x30 MAINS CORD SCREW
31	120099	M4x25 MAINS CORD SCREW
32	120098	M4x20 MAINS CORD SCREW
33	110614	MAINS INLET (EU)(US)
34	110297	2 POLES 2 POS. SLIDE SWITCH
35	110291	MAIN SWITCH (EU)(US)
36	180637	ADHESIVE "GENERALMUSIC-LEM" BRAND
37	177474	DRIVER HOLDER

Inputs Controls Panel



TOUR MASTER 15,2 ACTIVE - Technical Specification

SPEAKER SPECIFICATIONS			
COMPONENTS	High		2" driver with controlled directivity horn
	Low		15" low frequency speaker
HIGH section POWER HANDLING		W continuous	75
(EIA RS-426A)		W peak	240
LOW section POWER HANDLING		W continuous	800
(EIA RS-426A)		W peak	2400
IMPEDANCE (nominal)	High	ohm	8
	Low		4
CONSTRUCTION			Cabinet: birch playwood Finish: Black scratch-resistant paint Protection grille: metal grille
WEIGHT		kg - lbs.	48,5 - 106,8
DIMENSIONS		mm - in.	470x790x465 (LxAxP) - 185x311x183(WxHxD)
PROCESSOR SPECIFICATIONS			
INPUT	Sensitivity	dB	0 (0.775Vrms)
	Impedance	Kohm	30 (balanced) - 15 (unbalanced)
A/D converter		bit	18
D/A converter		bit	18
Dynamic range		dB	105
Sampling rate		KHz	48
CROSSOVER	Frequency	Hz	1350
	Slope	dB/oct.	24
HIGH section POWER AMPLIFIER		W continuous	150
LOW section POWER AMPLIFIER		W continuous	650
AMPLIFIERS DISTORTION		THD +Noise	<0,02%
CONTROLS			VOLUME control UP & DOWN selector buttons MIDI button Earth Lift
DISPLAY			2-digit display SIGN/COMP LED
CONNECTORS			1 XLR-F +1 XLR-M (input + link) MIDI in & MIDI THRU
POWER SUPPLY			230V ±15% 50/60Hz - 115V ±15% 50/60Hz
SYSTEM SPECIFICATIONS			
FREQUENCY RESPONSE		Hz	50 ÷ 20000 (-10dB)
SENSITIVITY	SPL 1W/1m	dB	98
	MAX SPL continuous		127
DISPERSION ANGLE	horizontal	°	60 (±10)
	vertical		40 (±7)
DIRECTIVITY Factor (Q)			12
DIRECTIVITY Index Di		dB	11 (+2.8 , -4)

Note:the system specifications have been calculated using PRESET n.1 FLAT

BIAS ADJUSTMENT

Instruments, materials and tools:

- Audio Generator
- Dual Trace Oscilloscope
- Digital Voltmeter (or Multimeter)
- 4Ω 500W and 8Ω 100W Resistors
- Temperature Meter

Setup:

- Connect the Audio Generator to the input and set its output at 2KHz sinusoidal signal.
- Insert the temperature sensor through the interstize between the heatsink and R93 (PTC).
- Connect the 4Ω 500W resistor to the amplifier output instead of the woofer speaker and 8Ω 100W instead of tweeter speaker.
- Connect the oscilloscope probes (setting 20V/div.,1ms/div.) on the loads.
- Insert the voltmeter terminals on R107.

ADJUSTMENT PROCEDURE

1) Turn on the amplifier, pressing "UP" "DOWN" and "MIDI" simultaneously, check that the display shows "C".
2) Set the input signal to 0dB (0.775Vrms).
3) When the temperature has reaches about 45°C (109°F) set the signal input to minimum (0 or -∞).
4) Adjust the trimmer R111 to read a voltage of 6mV ±0.1 on the multimeter.
5) Check that the voltage across the R108 resistor has the same value.
6) At the same temperature condition, adjust the VR1 trimmer to read 2.2mV ±0.1 at R24 resistor.
7) Check that the voltage on the R25 resitor has the same value.

Veryfing:

1) Increase the input level to obtain an output voltage about of 0.5Vpp.
2) Check with the oscilloscope that the output signal is without a cross-talk distortion and eventually slightly adjust the R111 or VR1 position until distortion disappears.
   (Note: the voltage value across the R107 or R108 resistor must not exceed 10mV and the R24 or R25 resistor must not exceed 4mV).

LIMITER ADJUSTEMENT

1) Increase the input level to 10dB, adjust the trimmer VR1 until clipping distortion disappears.
2) Verify tha the led change colour from green to red.
3) Re-connect the speakers instead of the 4Ω and 8Ω resistors.

SPARE PARTS LIST

ACCESSORIES		
887074		XLR Female-Male Signal Cable (1.5mt)
277310		Owner's Manual
ASSEMBLY		
667613		Controls Panel
659027		Cyl. Knob White Cap
237064		Transformer (230V)
237065		Transformer (115V)
150591		Display Red Glass
110614		Mains Socket
110291		Power Switch
110037		T6.3A Fuse 6.3x32mm (US)
110035		T2.5A Fuse 6.3x32mm (US)
110034		T800mA Fuse 6.3x32mm (US)
110022		T8A Fuse 6.3x32mm (US)
110029		T4A Fuse 5x20mm (EU)
110023		T8A Fuse 5x20mm (EU)
110018		T6.3A Fuse 5x20mm (EU)
110015		T800mA Fuse 5x20mm (EU)
110014		T2.5A Fuse 5x20mm (EU)
667506		Left Side Bar
717054		Wooden Cabinet
667610		Metal Grid
347287		Plastic Handle
347286		Plastic Set
347283		2" Comprission Driver Horn
347187		Plastic Grip
229030		2" Compression Driver Tweeter
227038		15" Speaker
177474		Driver Holder
177325		Stand Adapter
130297		Mains Cord (EU Version)
130283		Mains Cord (US Version)

CONVY Processor Board

758128		**CONVY Processor Board (PCB#313020)**
230569	*	FL5R200PNT EMI Coil For Signal
141059	*	Con V M 9 C Mini Mate Burndy
141015	*	Con V F 14c P=1.27 Mmatch Amp
141013	*	Con V F 10c P=1.27 Mmatch Amp
141010	*	4 Contacts Vert Female Connector
100943	*	MC33079 Quad Ln Op Amp
100919	*	MC33078 Dual LN J-Fet Operational Amplifier
100737	*	ADMOD79 2ch Ad Delta Modulator
100643	*	AD1865N Dual 18bit Dac
100642	*	TS93C46 1Kbit Eeprom Memory
100612	*	74HC374 Octal D-Type Flip-Flop
100061	*	TL072 Dual J-Fet Operational Amplifier
100059	*	7805 +5V 1A Voltage Regulator
100058	*	7905 -5V 1A Voltage Regulator
080103	*	1N4148 100mA 75V Signal Diode
050494	*	Resistor Array 10K X5 1/8w 5%
050492	*	10Kx8 1/8w 5% Resistor Array
010722	*	24.576MHz Quartz Resonator
010720	*	12MHz Ceramic Resonator With Capacitors
557026	*	AT89C55-12JC Programmed CPU
105001	*	CONVY Dsp Convolver

Power Supply Board

768042	*	**Power Supply Board (PCB#317191)**
141060	**	Con V M 12c Mini Mate Burndy
141013	**	Con V F 10c P=1.27 Mmatch Amp
140081	**	H 2c P=10 Terminal Block
140069	**	H 3c P=10mm Terminal Block
100060	**	7815 +15V 1A Voltage Regulator
100059	**	7805 +5V 1A Voltage Regulator
100049	**	7915 -15v 1a Voltage Regulator
080606	**	GBU8D 8A Rectifier Diodes Bridge
080168	**	W02M 1.5A Rectifier Diodes Bridge
030882	**	10000uF 50V Snap-In Electrolytic Capacitor
030881	**	10000uF 50V Snap-In Electrolytic Capacitor
030866	**	4700uF 100V Snap-In Electrolytic Capacitor
030858	**	4700uF 25V 20% Vert Electrolytic Capacitor
030560	**	4700uF 80V 20% Snap-In Electrolytic Capacitor

Signal Input Controls & MIDI Interface Board

768126		**Signal Input, Controls & MIDI Interface Board (PCB#313019)**
757942	*	Photores Coupler
141202	*	Hor. Male XLR Socket (M21bc Nuova Asme)
141184	*	Hor. Male XLR Socket (NC3FPRH Neutrik)
141064	*	9 Contacts Hor. Male Connector
141010	*	4 Contacts Vert Female Connector
140212	*	Horizontal Female 5 Poles Din Socket
100602	*	74HC04 Hex Inverter
100061	*	TL072 Dual J-Fet Operational Amplifier
100035	*	6N138 Optocoupler
090194	*	BC560 TO92 LN Pnp Transistor
090183	*	BC550 To92 Ln Npn Transistor
080734	*	Led 2.5x5mm Rect Diff Red-Grn LED
080245	*	7V5 1W 5% Zener Diode
080103	*	1N4148 100mA 75V Signal Diode
074570	*	5K lin. 31 clicks Potentiometer
070125	*	1K 20% Vertical Linear Trimmer
140526	*	Gray Button

Display & Setting Board

768030	*	**Display & Setting Board (PCB#319046)**
141015	**	Con V F 14c P=1.27 Mmatch Amp
140526	**	Microswitch 100V 100ma 0.8mm
080717	**	HDN1105 7 Segments Display

Mains Filter Board

767987	*	**Mains Filter Board (Pcb#315016) (EU)**
768002	*	**Mains Filter Board (Pcb#315016) (US)**
230565	**	2.5mH 250V 3A AC Line Filter
140010	**	3 Contacts P=10 Vert Terminal Block
110113	**	Fuse Clip 5x20mm 6A max (EU)
110114	**	Fuse Clip 6.3x32mm 10A Max (US)
020493	**	100n 250Vac MKP EMI Capacitor "Siemens"
010719	**	2n2 250Vac 7A 20% AC Line "Y" Filter "Murata"

Power Amplifier Assembly

727524		Power Amplifier Assenbly
768043	*	**Power Amplifier Board (PCB#319044)**
141059	**	9 Contacts Vert. Male Connector
141058	**	6 Contacts Vert. Male Connector
110316	**	Relay 24V / 1 Switch no 16A 250V
110307	**	Relay 24V / 2 Switch 5A 250V
100084	**	TL074 Quad J-Fet Operational Amplifier
100061	**	TL072 Dual J-Fet Operational Amplifier
090920	**	Mje803 TO126 Npn Darl Transistor
090917	**	MJE350 TO126 Pnp Transistor
090916	**	MJE340 TO126 Npn Transistor
090201	**	2N5401 TO92 Pnp Transistor
090200	**	2N5550 TO92 Npn Transistor
090924	**	MJL21194 NPN Transistor
090923	**	MJL21193 PNP Transistor
090920	**	MJE802P PNP Transistor
090919	**	MJE15031 PNP Transistor
090918	**	MJE15030 NPN Transistor
090917	**	MJE350 PNP Transistor
090916	**	MJE340 NPN Transistor
090863	**	TIP36C PNP Transistor
090862	**	TIP35C NPN Transistor
080282	**	13V 1W 5% Zener Diode
080261	**	10V1W 5% Zener Diode
080245	**	7V5 1W 5% Zener Diode
080241	**	5V6 1W 5% Zener Diode
080171	**	FE6B 6A 100V Fast Recovery Diode
080156	**	1N4002 1A 100V Rectifier Diode
080103	**	1N4148 100mA 75V Signal Diode
070106	**	470E 20% Horizontal Linear Trimmer
070082	**	220E 20% Horizontal Linear Trimmer
080819	*	PTC 70 Pth59f04bg222ts
080607	*	KBPC25 25A 200V Bridge Rectifier Diode
080606	*	GBU8D 8A Rectifier Diodes Bridge

Notes:

Each spare part is single quantity unless otherwise specified

Asterisk prefix explanation:

Omitted	= First level spare part.
One asterisk	= Second level, part of previous listed first level part.
Two asterisks	= Third level, part of previous listed second level part.
Three asterisk	=.....

Any request for not above mentioned part must encompass specific description including:

1) Model name,
2) Section,
3) Module code,
4) Reference name,
5) Quantity number.