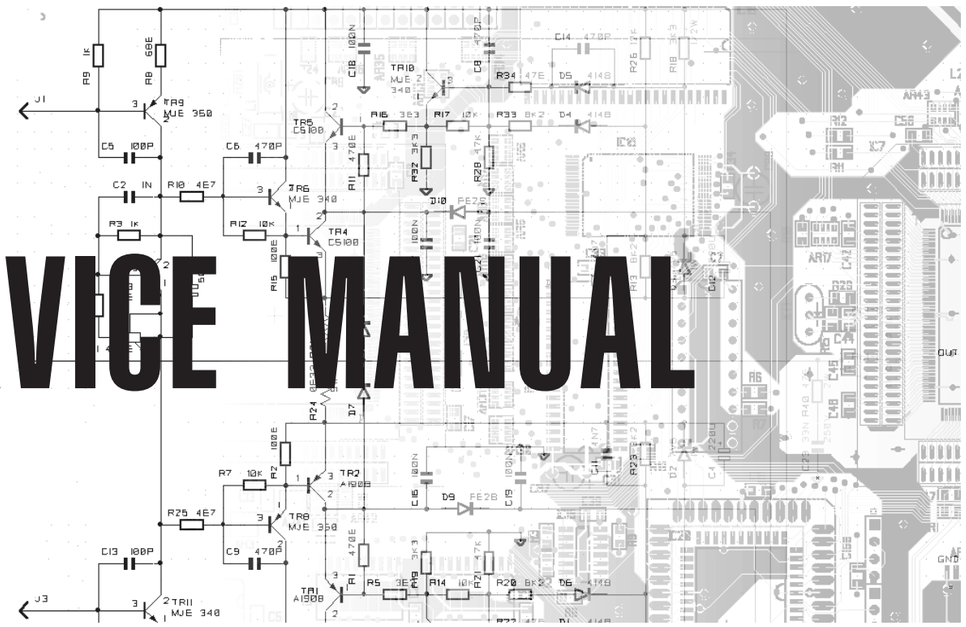
Sound Pressure

SUB
ACTIVE



SERVICE MANUAL

GENERALMUSIC®

CODE: 270219

Index

Warnings

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.
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 1/8Ω 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.
- ↑ Supply voltage.
- Test point.
- Flag joined with one or more flags with the same signal name inscribed.
- Logic supply ground.
- Analog supply ground.
- Chassis ground.
- Earth ground.

ATTENTION

Observe precautions when handling electrostatic sensitive devices.

Address

GENERALMUSIC S.p.A. Sales Division: 47842 S.Giovanni in Marignano (RN) ITALY - Via delle Rose, 12 - tel. 0541/959511 - fax 0541/957404
GENERALMUSIC on the NET: http://www.generalmusic.com

TECHNICAL SPECIFICATIONS			
POWER AMPLIFIER (1KHz, THD 1%)	W (continuous)	350	values measured with anti-clipping not inserted
DISTORTION	(THD+N)	Less than 0,1%	
INPUT IMPEDANCE	Kohms	30(balanced) 15(unbalanced)	
INPUT SENSITIVITY	dB	0 (0.775Vms)	
POWER SUPPLY		230Vac ±15% 50/60Hz (EU) 115Vac ±15% 50/60Hz (US)	
SENSITIVITY (SPL 1W/1m)	dB	91	
MAX SPL	dB	120	
FREQUENCY RESPONSE	Hz(-10dB)	50-400	
CROSSOVER FREQUENCY	Hz	Variable from 80 to 320 at 12dB/ott.	
COMPONENTS		12" Woofer	
CONSTRUCTION		Enclosure in polypropilene with mineral fibres and anti-scratch painting. Metal grid. 4 fixing points for SC accessories (SP LIVE and SP MEDIA)	
CONTROLS		Volume control Earth lift. XOVER frequency control	
CONNECTIONS		INPUT: 2Jack + 2female XLR OUTPUT: 2Jack + 2maleXLR	
DIMENSIONS	mm (LxAxP) in.(WxHxD)	530x386x443 20,8x15x17,4	
WEIGHT	Kg • lbs.	21,5 · 50,9	

BIAS ADJUSTMENT

Instruments, materials and tools:

- Audio Generator
- Dual Trace Oscilloscope
- Digital Voltmeter (or Multimeter)
- 4E 300W Resistor
- Temperature Meter

Setup:

- Remove the Power Amplfier Board from the chassis keeping in connections with transformer and diode bridge;
- turn VR1 clockwise up to end-stroke;
- connect the audio generator to the input and set it to output 1KHz sinusoidal signal;
- put the volume potentiometer at its maximum level;
- connect the 4E 300W resistor to the amplifier output instead of the speaker;
- connect the oscilloscope probe on the load (setting 20V/div., 1ms/div);
- insert the temperature sensor through the interstice between the heat-sink and R59 (PTC);
- insert the voltmeter terminals across R60.

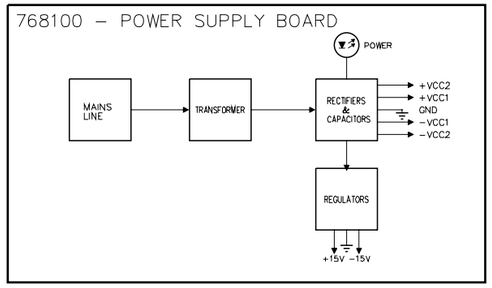
Adjustement Procedure

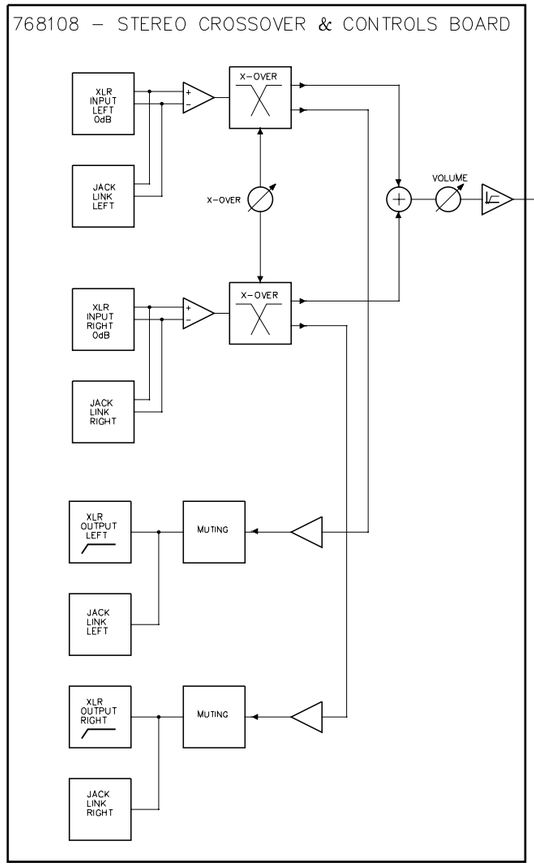
1) Turn on the amplifier.
2) Set the input signal to obtain 0dB (0.775Vms).
3) When the temperature has reaches about 50°C set the signal input to minimum (0 or -).
4) Adjust the trimmerVR1 to read a voltage of 10mV ±0.05mV on the multimeter.
5) Check that the voltage across the R61 resistor has the same value.

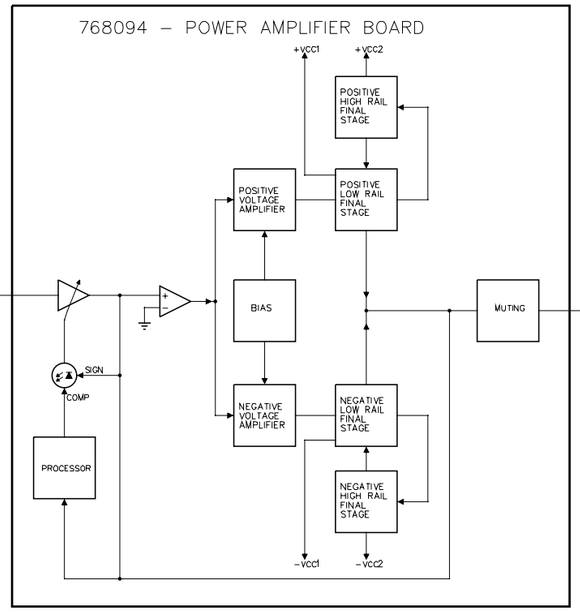
Veryfing:

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 VR1 position until distortion disappears.
3) The voltage value across the R60 and R61 resistors must not exceed 15mV.
4) Re-connect the speaker instead of the 4E 300W resistor.

BLOCK DIAGRAM







DRW M.PALANGHI	DWG# 550609	PCB#	GENERALMUSIC S.p.A. ITALY
CKD G.RICCI	DSK# PART:	SCHEMATIC DIAGRAM SP SUB	ALL RIGHTS ARE RESERVED, NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP. C.ZUCCATTI	REV: 19-03-98	BLOCK DIAGRAM	

768181 - STEREO CROSSOVER & CONTROLS

768094 - 350W POWER AMPLIFIER BOARD

768100 - POWER SUPPLY BOARD

LEFT INPUT

RIGHT INPUT

VOLUME

SIGN COMP

BIAS ADJ

X-OVER

LEFT HIGH OUTPUT

RIGHT HIGH OUTPUT

EARTH LIFT

POWER ON/OFF

KLIXON

230Vac +/-15% 50/60Hz(EU)
115Vac +/-15% 50/60Hz(US)

POWER ON

237068 - TRANSFORMER 230VAC 350W (EU)
237069 - TRANSFORMER 115VAC 350W (US)

4OHM 350W 12" WOOFER SPEAKER.

NOTE: The power stage is inverting.

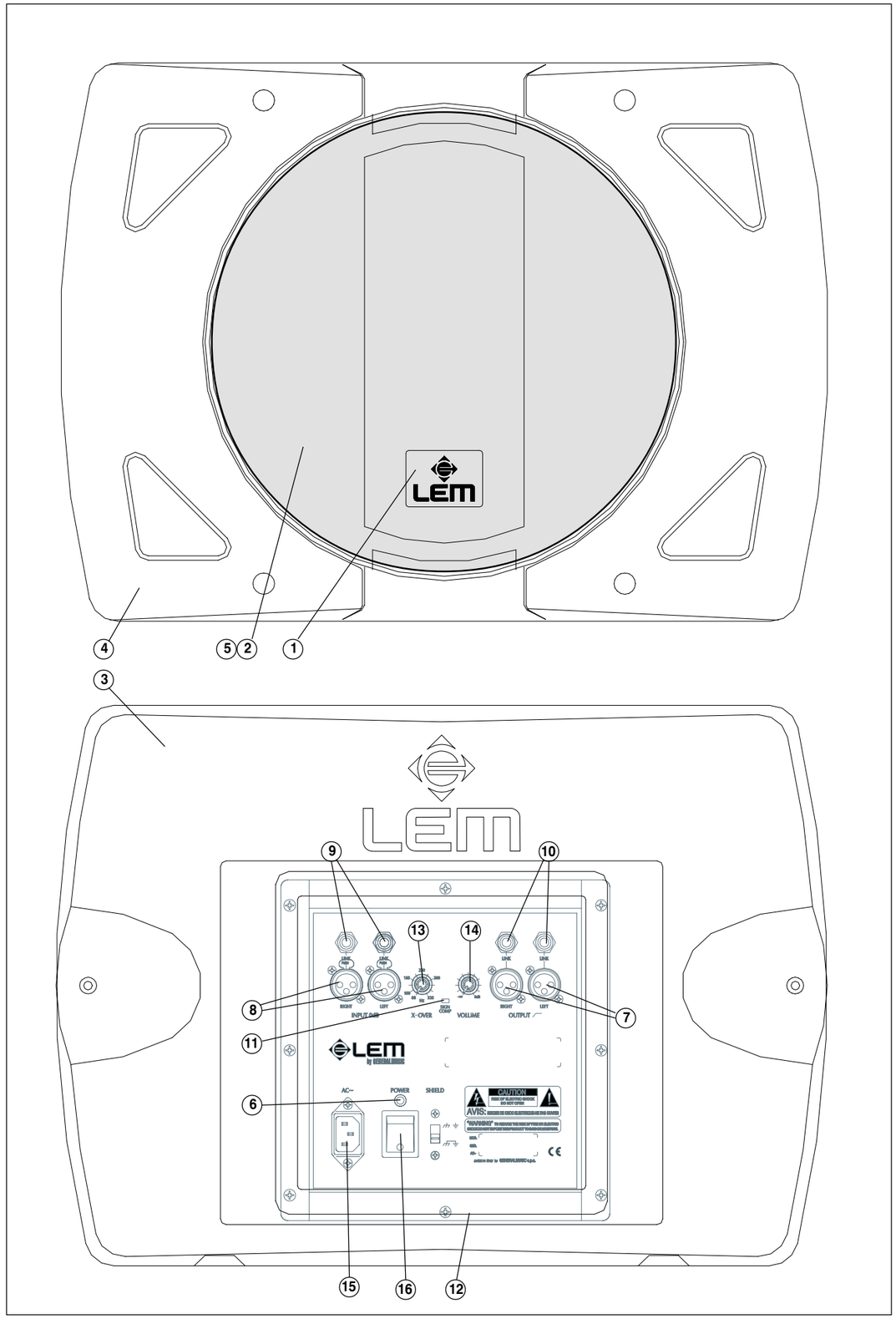
PCB#313002

PCB#313042

PCB#317197

PCB#319064

DRW I.BATTELLI	DWG# 550608	PCB# 313002 - 319064/1 - 317197 - 313042	GENERALMUSIC S.p.A. ITALY
CKD I.BATTELLI	DSK# PART: 1/1	SCHEMATIC DIAGRAM SP SUB ACTIVE	ALL RIGHTS ARE RESERVED, NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP. C.ZUCCATTI	REV: 13-03-98	8 OHM LOUDSPEAKER SYSTEM	



Part List

Legend			
EU	= Specify Europe Version (230Vac)		
US	= Specify US Version (115Vac)		
Code	Description		
Ref.	Code		Description
			Accessories
	887069		15mt Jack-Jack Signal Cable
	277326		Owner's Manual
	210217		Black Sealer (specify mt)
1	180663		"Lem" Adhesive Orange Plate
1	180662		"Lem" Adhesive Blue Plate
	130297		Mains Cord (EU)
	130283		Mains Cord (US)
			Optional Accessories
	951126		SC80 Flange for Telescopic stand and TOTEM system
	951127		SC81 Male Flange
	951128		SC82 Female Flange
	951131		SC85 TOTEM System Support
	950978		SC31 Telescopic Stand
	950444		SC61 Microphone Stand Adaptor
	950445		SC62 Wall Mounting Support
	950446		SC63 Table Fixing Clamp
	951125		SC64 T-Stand
			Cabinet Assembly
2	667663		Speakers Net
3	657258		Rear Shell
4	657256		Front Panel
5	227052		4ohm 350W 12" Woofer Speaker
	210242		Filler for Speaker Box (Specify m²)
	210217		Black Sealer (specify mt)
			Amplifier Assembly
	737090		Amplifier Assembly (EU)
	737091		Amplifier Assembly (US)
	778134	*	Cables Assemblies
6	080716	**	Led 5mm 60deg Diffused Green
	768181	*	**Inputs & Crossover Board (PCB#313042)**
7	141187	**	Hor Female XLR Socket (NC3FAH Neutrik)
8	141186	**	Hor Male XLR Socket (NC3MAH Neutrik)
9	140929	**	9 Contacts Vert Male Connector
10	140908	**	6 Contacts Vert Male Small Connector
	120857	**	Vertical Male Faston 6.3mm
	110305	**	Relay 12V / 2 Switch 1A 250V
	100084	**	TL074 Quad J-Fet Operational Amplifier
11	080734	**	Led 2.5x5mm Rect Diff Red-Grn
	080293	**	15V 1W 5% Zener Diode
	080103	**	1N4148 100mA 75V Signal Diode
	075820	**	4x100K Alog Potentiometer Alps RK1631410
	074570	**	5K 31steps Linear Potentiometer
	042730	**	115K 1/4W 1% Metalized Film Resistor
	042625	**	15K0 1/4W 1% Metalized Film Resistor
	042605	**	10K0 1/4w 1% Metalized Film Resistor
	042585	**	6K81 1/4w 1% Metalized Film Resistor
	042565	**	4K99 1/4w 1% Metalized Film Resistor
	022024	**	100n 2.5% 100V MKP Polypropylene Capacitor
	022014	**	15n 2.5% 100V MKP Polypropylene Capacitor
	768109	*	**Jack Sockets Board (PCB#313002)**
	778111	**	6 Contacts Female Cable
	140217	**	Jack Stereo Slim Horizontal Socket
	727562	*	Power Amplifier Assembly
	768100	**	**Power Supply Board (PCB#317197)**
	140917	***	2 Contacts Vert Male Connector
	140081	***	H 2c P=10 Terminal Block
	140069	***	H 3c P=10mm Terminal Block
	110119	***	Fuse Clip 10A max (EU) (US)
	100060	***	7815 +15V 1A Voltage Regulator
	100049	***	7915 -15V 1A Voltage Regulator
	080606	***	GBU8D 8A Rectifier Diodes Bridge
	080342	***	30V 1W 5% Zener Diode
	080293	***	15V 1W 5% Zener Diode
	080156	***	1N4002 1A 100V Rectifier Diode
	060403	***	180E 3W 10% Resistor
	030884	***	10000U 80V 20% Snap-In Electrolytic Capacitor
	030555	***	4700u 50V 20% Snap-In Electrolytic Capacitor
	768094	**	**Power Amplifier Board (PCB#319064)**
	140929	***	9 Contacts Vert Male Connector
	140927	***	24 Contacts Vert Male Strip
	110316	***	Relay 24V / 1 Switch no 16A 250V
	100904	***	LM393 Dual Comparator
	100061	***	TL072 Dual J-Fet Operational Amplifier
	090917	***	MJE350 TO126 Pnp Transistor
	090916	***	MJE340 TO126 Npn Transistor
	090201	***	2N5401 TO92 Pnp Transistor
	090200	***	2N5550 TO92 Npn Transistor
	090194	***	BC560 TO92 LN Pnp Transistor
	090183	***	BC550 TO92 LN Npn Transistor
	090153	***	BC327 TO92 Pnp Transistor
	080901	***	VTL5C4 Analog Optoisolator
	080245	***	7V5 1W 5% Zener Diode
	080171	***	FE6B 6A 100V Fast Recovery Diode
	080156	***	1N4002 1A 100V Rectifier Diode
	080103	***	1N4148 100mA 75V Signal Diode
	070105	***	470E 20% Vertical Linear Trimmer
	060591	***	8K2 2W 10% Resistor
	060051	***	0E22 5W 5% Wire Resistor
	042695	***	56K2 1/4w 1% Metalized Film Resistor
	042687	***	49K9 1/4w 1% Metalized Film Resistor
	042605	***	10K0 1/4w 1% Metalized Film Resistor
	030715	***	1000u 6v3 20% Vert Electrolytic Capacitor
	030247	***	10u 25V 20% Vert Electrolytic Bipolar Capacitor
	340783	**	TO264 Mica Washer
	340154	**	TO3/TO218 Mica Washer
	340079	**	TO220 Mica Washer
	340078	**	TO220 Insulated Bush
	177619	**	Heatsink
	090924	**	MJL21194 TO264 Npn Transistor
	090923	**	MJL21193 TO264 Pnp Transistor
	090920	**	MJE802 TO126 Npn Darl Transistor
	090919	**	MJE15031 TO220 Pnp Transistor
	090918	**	MJE15030 TO220 Npn Transistor
	090863	**	TIP36C TO218 Pnp Transistor
	090862	**	TIP35C TO218 Npn Transistor
	080821	**	Ptc 90 PTH59F04BE222TS
			Miscellaneus
12	667673	*	Amplifier Chassis with Panel
13	659027	*	White Pot Knob
14	659026	*	Orange Pot Knob
	330130	*	Led Bush
	237068	*	Transformer 230Vac 350VA
	237069	*	Transformer 115Vac 350VA
	210215	*	Adhesive Rubber Foam 10x1.9mm (Specify mt)
	190133	*	Lateroid Insulator For Screw Block
15	110614	*	Mains Socket
16	110291	*	Power Switch
	110029	*	T4A Fuse 5x20mm (EU)
	110036	*	T4A Fuse 6.3x32mm (US)
	110018	*	T6.3A Fuse 5x20mm (EU)
	110037	*	T6.3A Fuse 6.3x32mm (US)
	080607	*	KBPC25 25A 200V Rectifier Diode Bridge
	020491	*	100nF 10% 250Vac Polyester Capacitor

Note:

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 asterisk = 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 name,
3) Module code,
4) Reference name,
5) Quantity number.