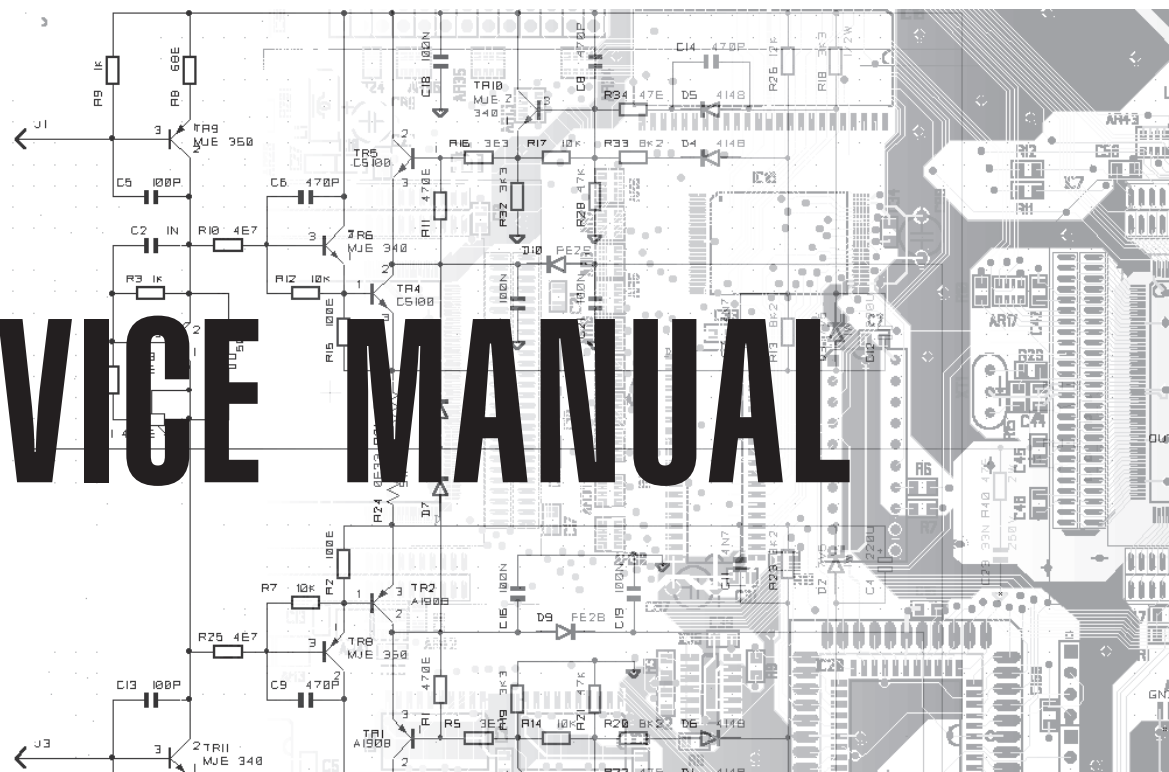




# *K<sup>L</sup> Active*

Second Edition

# SERVICE MANUAL



## Index

- 2 Block Diagram - Inputs, Output & Controls Boards
- 3 600W Power Amplifier Assembly (K6 Active)
- 4 Technical Specifications - Spare Part List

## 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 ( $\mu$ ) micro symbol of capacitance value is substituted by U.

The ( $\Omega$ ) omega symbol of resistance value is substituted by E.

The electrolytic capacitors are 25Vdc rated voltage unless otherwise specified.

All resistors are 1/8W unless otherwise specified.

All switches shown in the "OFF" position. All DC voltages measured to ground with a voltmeter 20KOhm/V.

← Soldering point.

↑ Supply voltage.

⊥ Logic supply ground.

• Male connector.

□ Test point.

⊥ Analog supply ground.

○ Female connector.

◊ Flag joined with one or more flags

⊥ Chassis ground.

⊔ M/F faston connector.

with the same signal name inscribed.

⊕ Earth ground.



### ATTENTION

Observe precautions when handling electrostatic sensitive devices.

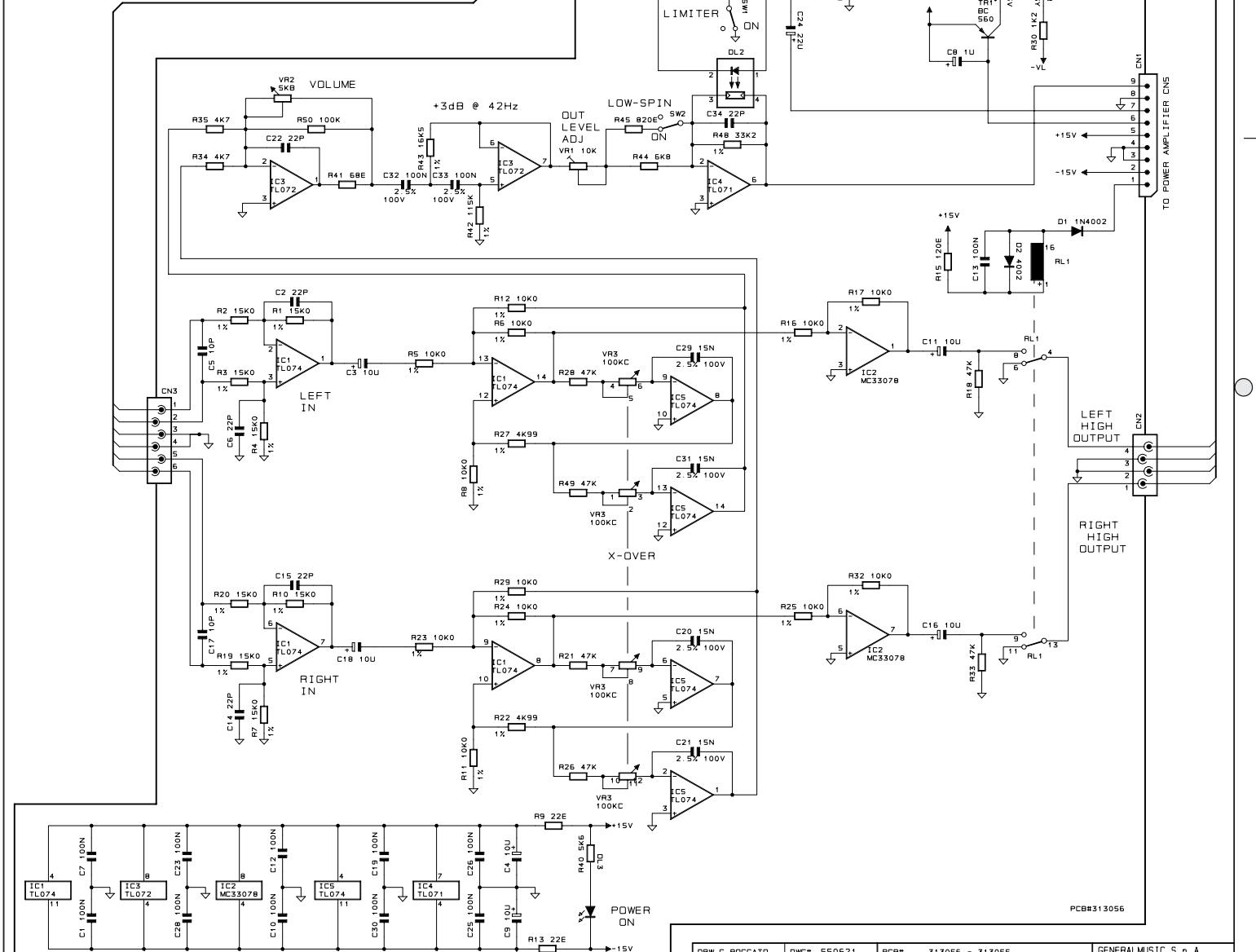
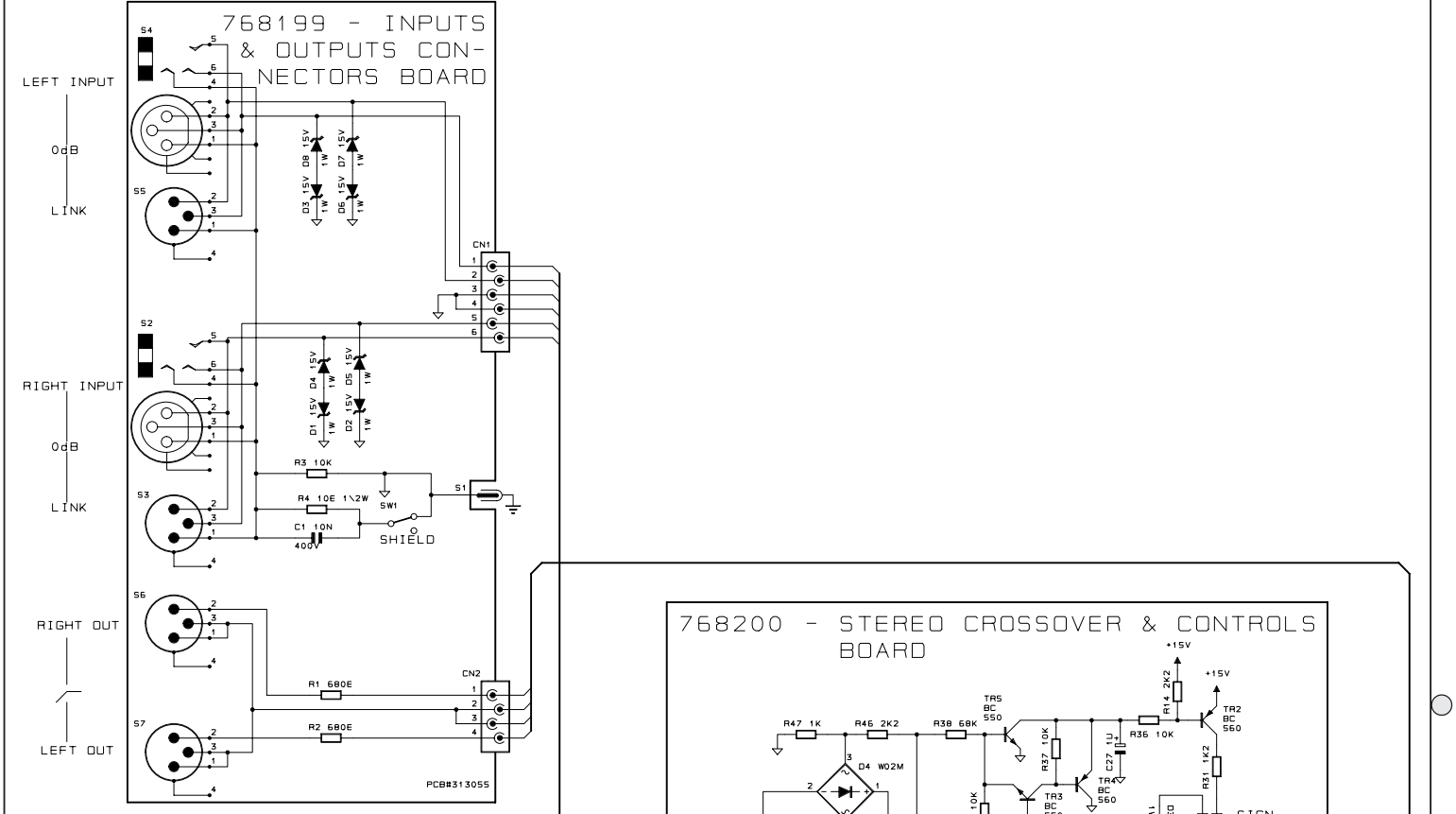
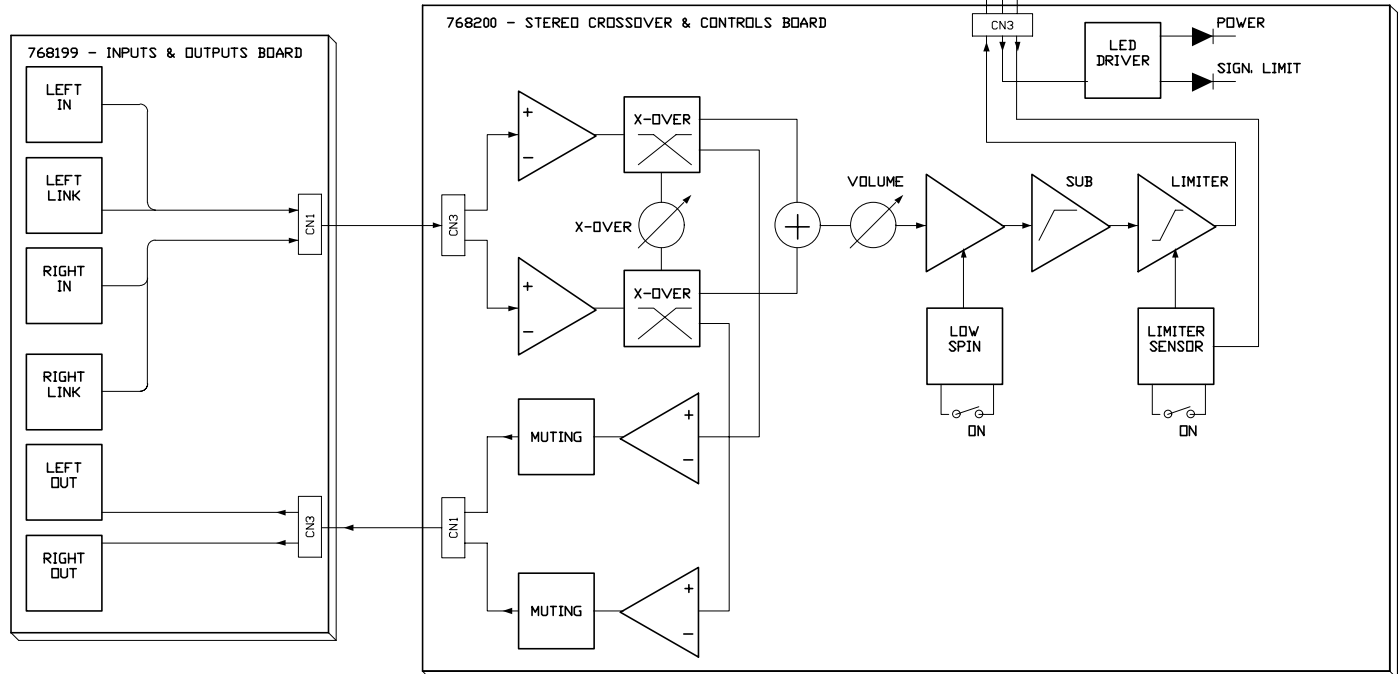
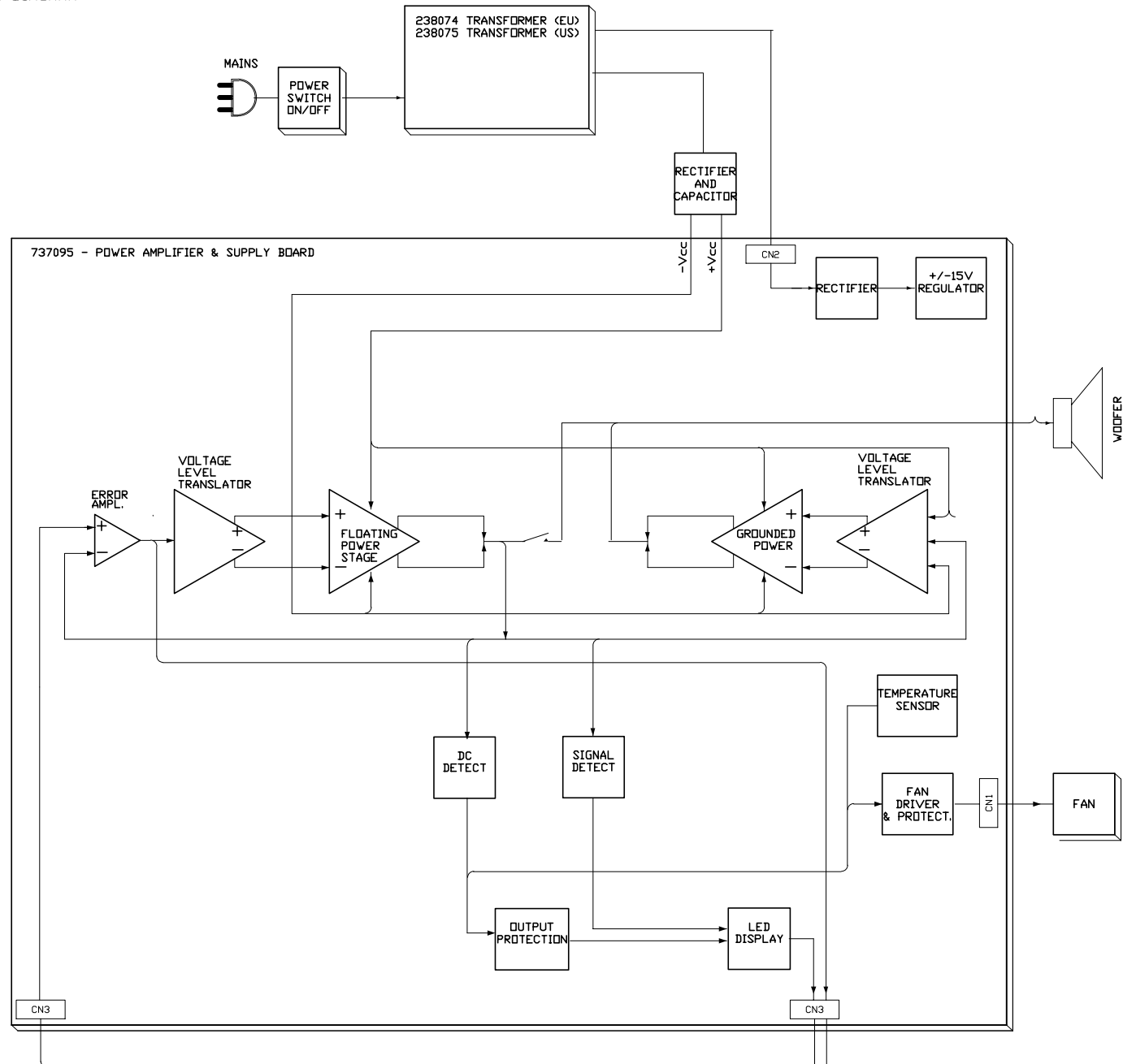
## Address

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>



▲ CODE: 270223 ▼

BLOCK DIAGRAM



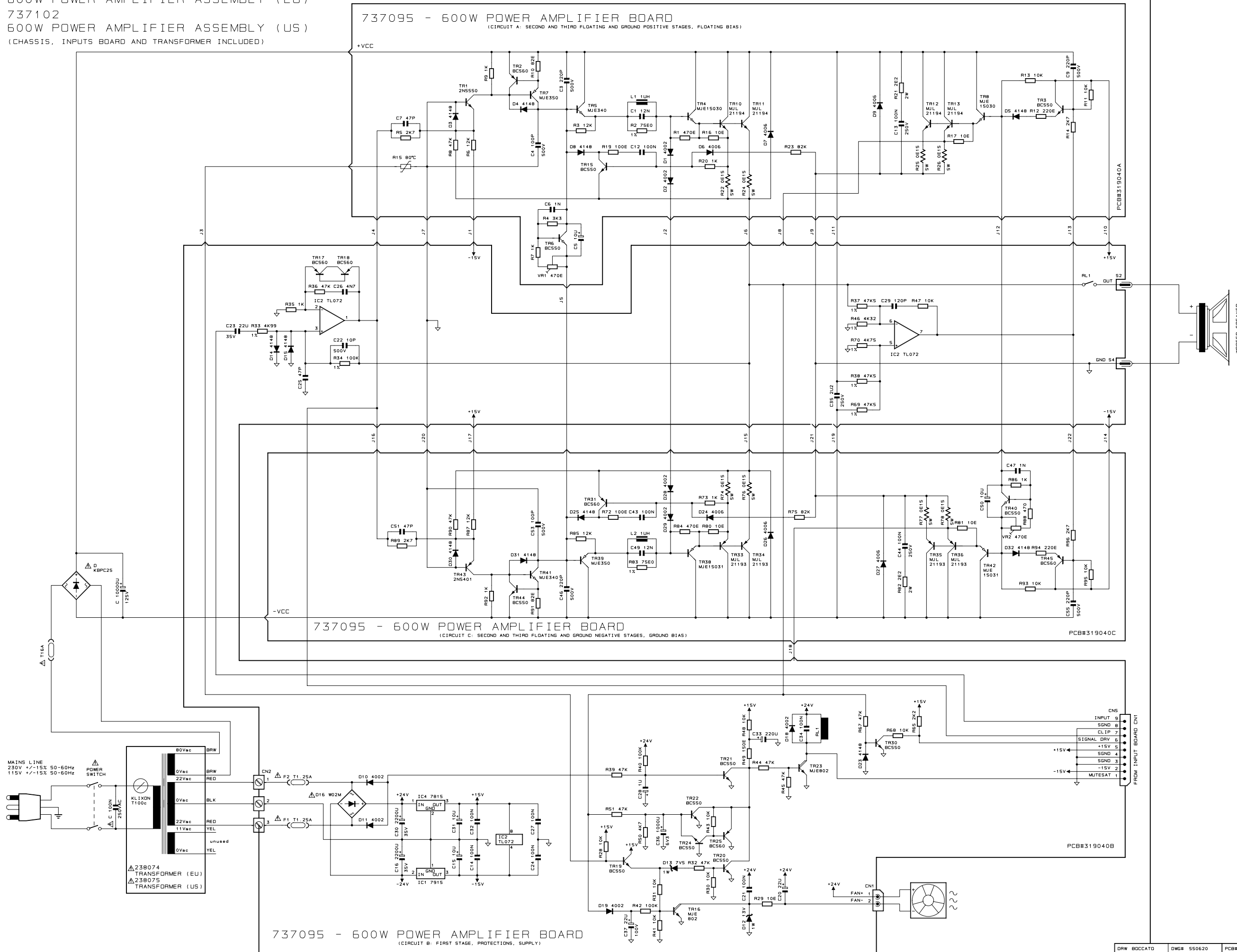
DRW G. BOCCATO	DWG# 550621	PCB# 313056 - 313055	GENERALMUSIC S.p.A.
CKD G. RICCI	DATE 15/07/00	DESCRIPTION K LOW ACTIVE	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP R. MAGALOTTI	REV#	INPUTS & CROSSOVER	

737101  
600W POWER AMPLIFIER ASSEMBLY (EU)  
737102  
600W POWER AMPLIFIER ASSEMBLY (US)  
(CHASSIS, INPUTS BOARD AND TRANSFORMER INCLUDED)

737095 - 600W POWER AMPLIFIER BOARD  
(CIRCUIT A: SECOND AND THIRD FLOATING AND GROUND POSITIVE STAGES, FLOATING BIAS)

737095 - 600W POWER AMPLIFIER BOARD  
(CIRCUIT C: SECOND AND THIRD FLOATING AND GROUND NEGATIVE STAGES, GROUND BIAS)

737095 - 600W POWER AMPLIFIER BOARD  
(CIRCUIT B: FIRST STAGE, PROTECTIONS, SUPPLY)



DRW BOCCATO	DWG# 550620	PCB# 319040	GENERALMUSIC S.p.A.
CKD RICCI	DATE 1/1	DESCRIPTION KL ACTIVE	ALL RIGHTS ARE RESERVED. NO COPIES
APP MAGALOTTI	REV# 16/04/00	600W POWER AMPLIFIER ASSY	OR REPRODUCE THIS DOCUMENT WITHOUT
			WRITTEN CONSENT BY GENERALMUSIC

# Tecnichal Specifications

		K L A
<b>POWER (EIA RS-426A)</b>	Watts EIA	550
<b>HANDLING</b>	Watts IHF	600
<b>DISTORTION</b>	(THD+N)	<0,02%
<b>INPUT IMPEDANCE</b>	Kohms	30 balanced 15 unbalanced
<b>INPUT SENSITIVITY</b>	dB	0 (0,775 V) with LOW spin OFF -6 (0,387 V) with LOW spin ON
<b>POWER SUPPLY</b>		230Vac +/-15% 50-60Hz - 115Vac +/-15% 50-60Hz
<b>SENSITIVITY (SPL 1W/1m)</b>	dB	98
<b>MAX SPL continous</b>	dB	118
<b>MAX SPL peak</b>	dB	121
<b>FREQUENCY RESPONSE</b>	Hz (-10dB)	40÷320
<b>COMPONENTS</b>		15" Woofer
<b>CONSTRUCTIONS</b>		Cabinet: birch plywood. Finish: Black scratch-resistant paint Metal Grille Polyurethane front panel
<b>CONTROLS</b>		Volume Control. SHIELD Limiter ON/OFF.
<b>CONNECTIONS</b>		Combo - 1 XLR-M POWERCON power connector
<b>DIMENSION</b>	mm (LxAxP)	542x656x537
<b>WEIGHT</b>	kg	41,6

## BIAS ADJUSTEMENT

### Instruments, materials and tools:

- Audio Generator
- Dual Trace Oscilloscope with 10x prober.
- Digital Voltmeter (or Multimeter)
- 8W 1000W Resistor
- Temperature Meter

### Setup:

- Connect the Audio Generator to the input and set it to output 1KHz sinusoidal signal.
- Connect the Dual Trace Oscilloscope to the input (set CH1 trace at 0.5V/div. 200usec./div) and to the output (set CH2 trace at 20V/div. 200usec/div) of the amplifier. **WARNING: The oscilloscope must be earth insulated.**
- Insert the temperature sensor through the interstize between the heatsink and R15 (PTC).
- Unconnect amplifier's output from the cross-over and connect the 8W 1000W resistor instead of it.
- Insert the voltmeter terminals across R22.

### ADJUSTMENT PROCEDURE

- 1) Turn on the amplifier.
- 2) Set the input signal to obtain approximately 120Vpp on the output.
- 3) When the temperature has reaches about 50°C (122°F) set the input level to minimum
- 4) Adjust the trimmer VR1 to read a voltage of 3±0.05mV on the multimeter.
- 5) Check that the voltage across the R74 resistor has the same value.
- 6) At the same temperature condition, adjust the VR2 trimmer to read 4±0.05mV across R26 resistor.
- 7) Check that the voltage on the R78 resistor has the same value.

### Verifying:

- 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. (Note: the voltage value across the R22 and across R74 resistor must not exceed 5mV)
- 3) Re-connect the cooling fan and the crossover instead of the 8W 1000W resistor.

## Spare Parts List

Legend	
(US) =	Specify USA version
(EU) =	Specify Europe version
Code	Description
Optional Accessories	
950978	SC31 Telescopic Alluminium Support
951136	Mains Link Cable for KL-K6 Active
141208	* Mains Power Grey Plug (NTPW3FCB Neutrik)
141205	* Mains Power Blue Plug (NTPW3FCA Neutrik)
Accessories	
277329	Owner's Manual
887090	Mains Cable (2.5m) (US)
887089	Mains Cable (2.5m) (EU)
141205	* Mains Power Blue Plug (NTPW3FCA Neutrik)
130434	* Mains Cable (US)
130285	* Mains Cable (EU)
190137	5mm Hexagonal Rod Spanner
120142	6x35 Screw with Hex . Head
Cabinet Assembly	
841179	Speakers Cables Assembly
717066	Cabinet Chassis
667682	Metal Grid
347378	Front Panel
227062	15" Speaker
210242	Filler for Speaker Box (Specify mt)
190181	Rubber Foot with M8 Screw
177676	Metal Grid Fixing
177325	Bespeco Flange
600W Power Amplifier Assembly	
<b>737101</b>	<b>600W Power Amplifier Assembly (EU)</b>
<b>737102</b>	<b>600W Power Amplifier Assembly (US)</b>
778143	* Amplifier Cables Assembly
667691	* Power Amplifier Bottom Chassis
667690	* Power Amplifier Left Chassis
667573	* Power Amplifier Top Chassis
667571	* Power Amplifier Right Chassis
667689	* Power Amplifier Control Panel
667575	* Fan Grid
659027	* White Potentiometer Knob
659026	* Orange Potentiometer Knob
238074	* Transformer 230Vac 690W (EU) (K6)
238075	* Transformer 115Vac 690W (US) (K6)
210259	* Fan Foam Filter
210215	* Adhesive Rubber Foam 10x1.9mm (Specify mt)
141207	* Mains Power Grey Socket (NTPW3MPB Neutrik)
141204	* Mains Power Blue Socket (NTPW3MPA Neutrik)
110291	* Power Switch
110120	* Fuse Clip (US)
110119	* Fuse Clip (EU)
110038	* T16A Fuse 6.3x32mm (US)
110026	* T1.25A Fuse 6.3x32mm (US)
110013	* T1.25A Fuse 5x20mm (EU)
080607	* KBPC25 25A 200V Rectifier Diode Bridge
030890	* 10000u 125V -10+50% V Electrolytic Capacitor VT
020491	* 100nF 10% 250Vac Polyester Capacitor
<b>768199</b>	<b>Inputs &amp; Outputs Connectors Board (PCB#313055)</b>
141189	** Combo Connector
141186	** Hor Male XLR Socket (NC3MAH Neutrik)
141011	** 6 Contacts Vert Female Connector
141010	** 4 Contacts Vert Female Connector
110267	** 1sw 2pos Horizontal Slider Switch
080293	** 15V 1W 5% Zener Diode
<b>768200</b>	<b>Stereo Cross-over &amp; Controls Board (PCB#313056)</b>
141011	** 6 Contacts Vert Female Connector
141010	** 4 Contacts Vert Female Connector
140929	** 9 Contacts Vert Male Connector
110305	** Relay 12V / 2 Switch 1A 250V
110267	** 1sw 2pos Horizontal Slider Switch
100919	** MC33078 Dual LN Operational Amplifier
100084	** TL074 Quad J-Fet Operational Amplifier
100061	** TL072 Dual J-Fet Operational Amplifier
100019	** TL071 LN J-Fet Operational Amplifier
090194	** BC560 TO92 LN Pnp Transistor

090183	** BC550 TO92 LN Npn Transistor
080901	** VTL5C4 Analog Optoisolator
080743	** 3mm Wide Diffused Green Led
080734	** Led 2.5x5mm Rect Diffused Red-Grn
080293	** 15V 1W 5% Zener Diode
080168	** W02M 1.5A Rectifier Diodes Bridge
080156	** 1N4002 1A 100V Rectifier Diode
080103	** 1N4148 100mA 75V Signal Diode
075820	** 4x100K 16mm Hor Rotary Alog Potentiometer
074570	** 5K 31steps Linear Potentiometer
070186	** 10K 20% Vertical Linear Trimmer
042730	** 115K 1/4W 1% Metalized Film Resistor
042665	** 33K2 1/4W 1% Metalized Film Resistor
042628	** 16K5 1/4W 1% Metalized Film Resistor
042625	** 15K0 1/4W 1% Metalized Film Resistor
042605	** 10K0 1/4W 1% Metalized Film Resistor
042565	** 4K99 1/4W 1% Metalized Film Resistor
<b>737095</b>	<b>* 600W Power Amplifier Board (PCB#319040)</b>
090924	** MJL21194 TO264 Npn Transistor
090923	** MJL21193 TO264 Pnp Transistor
230530	** 1uH 10% 630ma Rf Coil
140917	** 2 Contacts Vert Male Connector
110316	** Relay 24V / 1 Switch no 16A 250V
100061	** TL072 Dual J-Fet Operational Amplifier
100060	** 7815 +15V 1A Voltage Regulator
100049	** 7915 -15V 1A Voltage Regulator
090920	** MJE802 TO126 Npn Darl Transistor
090201	** 2N5401 TO92 Pnp Transistor
090200	** 2N5550 TO92 Npn Transistor
090194	** BC560 TO92 LN Pnp Transistor
090183	** BC550 TO92 LN Npn Transistor
080282	** 13V 1W 5% Zener Diode
080245	** 7V5 1W 5% Zener Diode
080168	** W02M 1.5A Rectifier Diodes Bridge
080158	** 1N4006 1A 800V Rectifier Diode
080156	** 1N4002 1A 100V Rectifier Diode
080103	** 1N4148 100mA 75V Signal Diode
070106	** 470E 20% Horizontal Linear Trimmer
042725	** 100K 1/4W 1% Metalized Film Resistor
042685	** 47K5 1/4W 1% Metalized Film Resistor
042565	** 4K99 1/4W 1% Metalized Film Resistor
042564	** 4K75 1/4W 1% Metalized Film Resistor
042557	** 4K32 1/4W 1% Metalized Film Resistor
042345	** 75E0 1/4W 1% Metalized Film Resistor
030715	** 1000u 6v3 20% Vert Electrolytic Capacitor
030526	** 2200u 35v 20% Snap-In Electrolytic Capacitor
140929	** 9 Contacts Vert Male Connector
140068	** 3 Contacts Terminal Block
110120	** Fuse Clip (US)
110119	** Fuse Clip (EU)
090919	** MJE15031 TO220 Pnp Transistor
090918	** MJE15030 TO220 Npn Transistor
090917	** MJE350 TO126 Pnp Transistor
090916	** MJE340 TO126 Npn Transistor
090183	** BC550 TO92 LN Npn Transistor
080820	** Ptc 80 PTH59F04BF222TS
727567	** Fan Assembly
110363	*** 24Vdc (80x32cm) Fan
210215	** Adhesive Rubber Foam 10x1.9mm (Specify mt)
177603	** Amplifier Board Support
Wiring Connections	
841180	* 9 Wires 12.5cm Length Crimp Terminal Cable
840803	* 6 Wires 12.5cm Length Flat Cable
840768	* 4 Wires 10cm Length Flat Cable

## 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.