MAINTENANCE MANUAL AUDIO AMPLIFIER BOARD 19D904025G1 (MDR) AUDIO AMPLIFIER BOARD 19D904025G2 (MDX)

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DESCRIPTION

Audio Amplifier Boards 19D904025G1 (MDR) and G2 (MDX), provide audio compression (transmit and receive), 10 watt audio output to drive the external speaker, audio muting, and power line filtering for the handset or display board. It also passes serial data between the audio/logic board and the handset (MDR) or display board (MDX). Refer to Figures 1 and 2 for a block diagram of the audio amplifier board for the MDR and MDX radios respectively. The diagrams also show how the audio amplifier board interfaces with other boards in the radio.

CIRCUIT ANALYSIS

The Audio Amplifier Boards include the audio compressors (transmit and receive). 10 watt external speaker audio or 4 watt internal speaker audio, muting controls, external option interfaces, power filter, and power supplies

BASIC AUDIO COMPRESSOR

Audio compression is performed on the received audio from the audio/logic board and on the Tx audio from the handset (MDR), but not on the MIC audio from the microphone in MDX radios. The basic audio compressor consists of analog compandor IC U802, op amp U803, and associated circuitry.

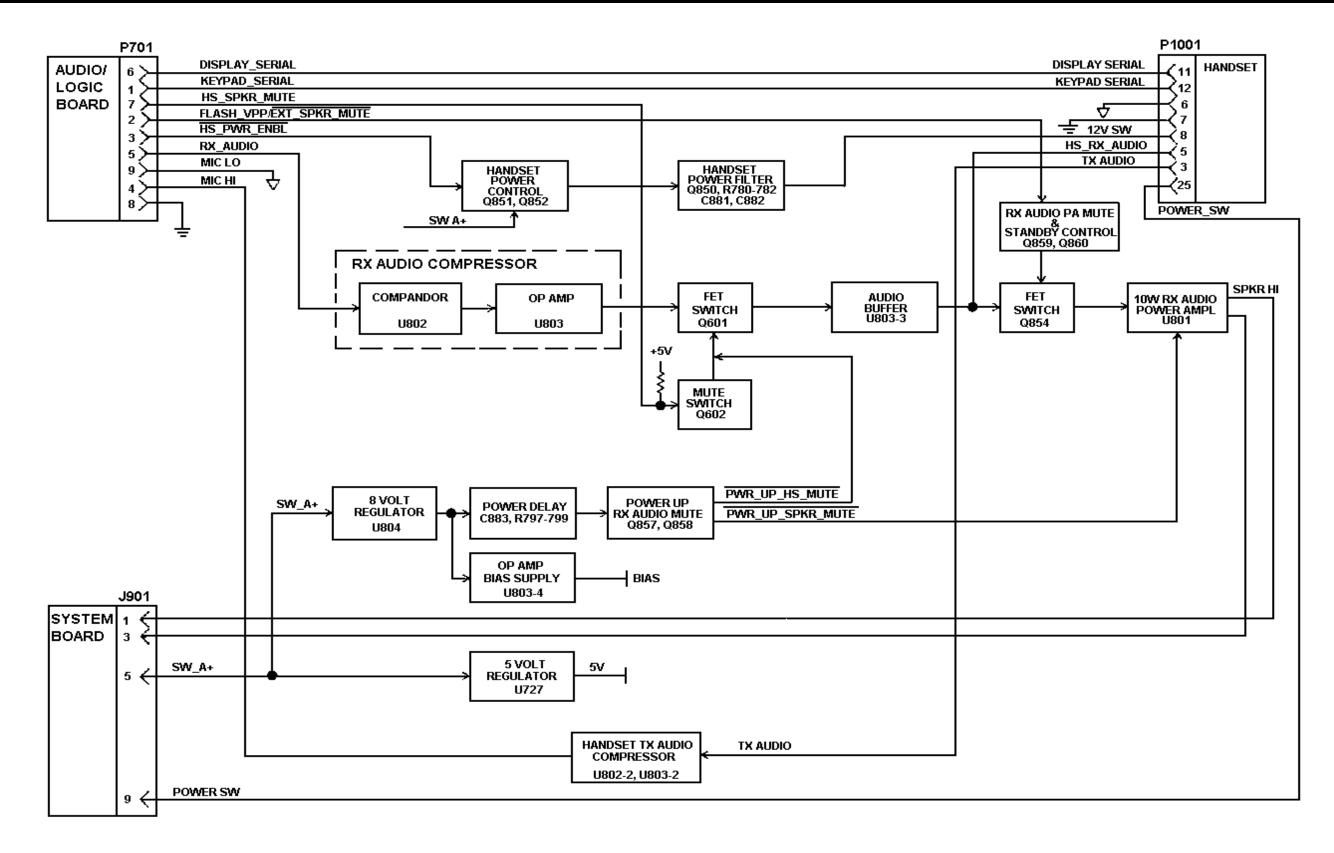
Compandor IC U802, contains a temperature compensated linearized gain cell with a full wave rectifier and a buffer amplifier. A 2.5 volt bias is internally derived from the +8 volt supply. Due to the inherent low distortion, low noise, and linearization of large signals, a wide dynamic range is obtained from the device. The internal buffer amplifier provides independent control of the attack and recovery time of the compandor.

> Ericsson Inc. Private Radio Systems Mountain View Road Lynchburg, Virginia 24502 1-800-528-7711 (Outside USA, 804-528-7711)



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BLOCK DIAGRAM



LBI-38844B

Figure 1 - Audio Amplifier Board, MDR

BLOCK DIAGRAM

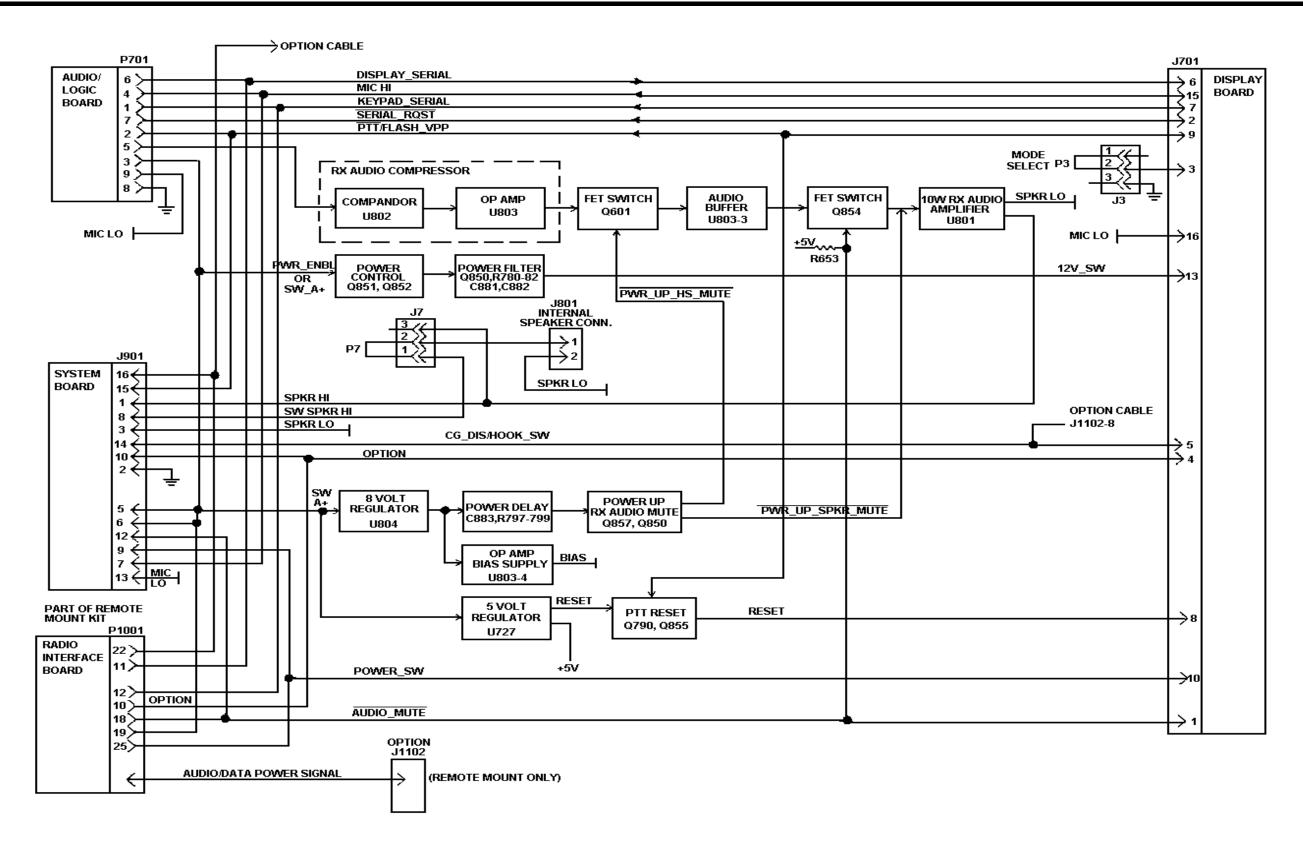


Figure 2 - Audio Amplifier, MDX

TX AUDIO COMPRESSOR

Op amp U803 provides current to voltage conversion for the compandor. The compandor's gain cell provides the variable resistance used to automatically control the gain of the compandor

The configuration of compandor U802 and op amp U803 form a compressor circuit that allows low level signals to pass through while high level signals are compressed. This type of compressor operation is ideal for signals with widely varying amplitudes.

The audio input to the basic compressor circuit is introduced at the op amp and also to the rectifier input of the compandor. The op amp is configured as a standard negative feedback circuit that uses the compandor's variable resistance in the feedback loop.

The value of the compandor's variable resistance is controlled by the average level of the rectified Rx audio input from the audio/logic board. The diode rectifier does not turn on for low level input signals. The gain cell of the compandor is maintained at the maximum resistance level. A resistor provides a scaled sample of the input signal to be rectified and used to control the gain cell. The rectifier input to the compandor is fed from the audio input signal from the audio/logic board in order to obtain the fastest response time for compandor control (faster than the attack time as set by the external capacitor).

The compandor's internal buffer amplifier provides the high impedance isolation and level to drive the gain cell control. The buffer amplifier also controls the attack and decay time constants through a capacitor resistor network. The gain cell provides the variable feedback to control the gain of the op amp.

The compressor attack time is achieved through a single pole RC filter consisting of an internal 10K ohm resistor and an external capacitor.

The compressor decay time is achieved through an internal two pole filter. The audio is processed so that short peaks increase the average loudness while long phrases with high average levels are processed to reduce the annoying rush of gain and noise between words.

The Tx audio compressor is used in MDR radios. The microphone audio is routed through the audio amplifier board in MDX radios; therefore, the Tx audio compression is not used. The transmit compressor level values for the audio amplifier board are listed is Table 1.

The transmit audio frequency response of the audio amplifier board (used in the MDR radios only) is listed in Table 2.

Table 1 - Typical Compressor Audio Levels (At 1000 Hz)

TX AUDIO	MIC HI
P1001-3	P701-4
1000 HZ	MV RMS
MV RMS	TYPICAL
50	27
100	55
200	110
400	215
1000	480
2000	610

Table 2 - Compressor Frequency Responses (At 100 mV rms Input

TX AUDIO P1001-3 100 MV RMS FREQUENCY HZ	MIC HI P701-4 DB
300	- 0.2 ± .5
500	- 0.1 ±.5
1000	0 (REF)
2500	- 0.1 ±.5
3000	- 0.2 ±.5

RX AUDIO COMPRESSOR

Receive audio compression is performed by compandor U802 and op amp U803 and associated components. The Rx audio compressor circuit is similar to the transmitter compressor circuit described above; therefore, a separate description is not included here. The receive compressor level values for the audio amplifier board (MDR and MDX) are listed in Table 3.

Table 3 - Typical Compressor Audio Levels (At 1000 Hz)

RD AUDIO P701-5 1000 Hz MV RMS	HS RX AUDIO P1001-5 MV RMS TYPICAL
50	28
100	55
200	110
400	180
1000	220
2000	240
TABLE 3	HS RX AUDIO LEVEL

The receive audio frequency response of the Audio Amplifier Board (used in the MDR and MDX radios) is listed in Table 4.

Table 4 - Compressor Frequency Responses (At 100 mV rms Input) **RX AUDIO** HS RX AUDIO P701-5 P1001-5 FREQUENCY HZ DB 300 - 0.2 ±0.5 500 -0.1 ± 0.5 1000 0 (REF) 2500 - 0.1 ±0 .5 3000 0.2 ± 0.5

INTERNAL AND EXTERNAL SPEAKER AUDIO

Internal and external speaker audio is generated from the receive compressed audio output (HS RX AUDIO). The output of op amp U803.3 is applied to 10 watt audio amplifier U801.

R652 and R651 comprise a voltage divider that is used to set the output power of the audio amplifier U801 to 10 watts (into a standard 4 ohm load) or 4 watts (into a standard 8 ohm load). R803, R804, C803, and C804 prevent high frequency oscillations.

The 10 watt audio output to the external speaker is routed to the system board via the SPKR HI line through J901. The external speaker connects to the system board through the option cable when using the external speaker option.

The four watt audio output is routed to the internal speaker connector (J801). The 1 ohm resistors, R801 and R802, drop the voltage to the 8 ohm speaker in order to achieve the rated four watt output.

The audio amplifier gain response for the four and eight ohm speakers as measured at SPKR HI is shown in Table 5.

The audio amplifier frequency response is given in Table 6.

MUTE CONTROLS

Several types of audio muting are found on the audio amplifier board. They include power up, Rx audio to the Rx compressor, external speaker audio, and 10 watt audio amplifier.

The power up mute occurs through transistors Q857, Q858, and associated circuitry. When A+SW power is initially applied to the board, the +8V line goes from 0 volts to +8 volts. This change of state on the +8V line at power up causes pull up capacitor C883 to inject a high to the base of transistors Q857 and Q858 through resistors R798 and R799, respectively. Turning on Q857 at power up mutes the 10 watt audio amplifier. Power up muting lasts for approximately 15 milliseconds.

Table 5 - Speaker HI Levels

Power Up Mute Control

	(At 1000 Hz)			
RX AUDIO	SPKR HI 4	SPKR HI 8		
P701-5	OHM	OHM		
MV RMS	J901-1, 3	J801-1, 2		
	MV RMS ±20%	MV RMS ±20%		
50	1068	854		
100	2115	1692		
200	4223	3378		
400	6941	5553		
1000	7899	6319		
2000 8082 6466				
Table 6 - Speaker Audio Frequency Response				

RX AUDIO P701-5 100 MV RMS FREQUENCY HZ	SPKR HI 4 OHM J901-1, 3 DB
300 500 1000 2500 3000	$- 0.5 \pm .5$ - 0.2 ± .5 0 (REF) - 0.2 ± .5 - 0.3 ± .5

RX Audio Muting To The RX Compressor/Ext Spkr Audio (MDR)

Muting the audio to the RX compressor is accomplished by HS SPKR MUTE (P701-7). When P701-7 is high, transistor O602 is turned on. The collector of O602 and the gate of FET Q601 are pulled low. A low on the gate of Q601 prevents audio from passing between the drain and source of the FET, muting the audio input to the RX compressor. Since the audio input to the 10 watt audio amplifier is generated from the RX compressor output, the external speaker audio is also muted under control of HS SPKR MUTE.

Audio Muting To 10 Watt Amplifier (MDR)

Muting the audio to the 10 watt audio amplifier is accomplished by EXT_SPKR_MUTE (P710-2). When P701-2 is low, transistor Q859 is turned off. The collector of Q859 rises to turn transistor Q860 on through pull up resistor R623. With Q860 on, the collector is low, turning off FET transistor Q854.

A second source used to mute the 10 watt audio amplifier is through external control EXT PTT (J901-15). When EXT PTT goes low, the line EXT SPKR MUTE is also brought low, muting the audio amplifier.

<u>MDX RADIOS</u> - AUDIO MUTE (J707-1) from the display board is used to mute the 10 watt speaker audio by tying into the gate of FET transistor Q854.

EXTERNAL OPTIONS (MDR)

There are three lines used for external options: external push-to-talk (J901-15), external MIC HI (J901-7), and audio mute (J901-12).

External Push-To-Talk

EXT PTT is used by external devices to activate the push to talk function on the radio. When this line is brought low by the external device, the external speaker audio is muted. This line is then sampled by the microcomputer on the audio/logic board to determine if an external device is activating a PTT function.

When the external speaker audio is enabled (EXT_SPKR_MUTE line high), sampling of the EXT PTT by the logic board detects the low going level and activates the PTT function.

When the external speaker audio is muted (EXT_SPKR_MUTE line low), the microcomputer samples the EXT PTT input on this line as follows. The microcomputer brings the EXT_SPKR_MUTE high for a short period of time. During this short period, the microcomputer reads the state of the line to determine if an external device is holding it low. After the brief sampling period, the microcomputer returns the EXT_SPKR_MUTE line to its original low state. Chatter to the external speaker audio amplifier during this sampling of the external push to talk input is prevented by the RC time constant consisting of R621, R622, and C620. When the sampling period is much shorter than the time constant at the input transistor Q859, this transistor does not turn on. The on time for this sampling is approximately one millisecond with the duty cycle of 12%.

External MIC HI

External MIC HI is used by external devices to inject audio on the transmit path of the radio. EXT_MIC_HI is summed with the handset TX audio prior to being fed to the TX compressor. This summing of audio allows customer devices to generate tones, data (i.e. FSK), or audio, and allows them to be passed through the transmitter of the radio.

Audio Mute

Audio Mute is used by external devices to mute the handset and speaker audio. Audio Mute is activated by customer devices to disable audio during periods of tone of data (i.e. FSK) signalling.

EXTERNAL OPTIONS (MDX)

External PTT, External MIC HI, Audio Mute, SW SPKR HI

These control lines are used by the standard external options supported, such as, T90/T99 encoder/decoder, universal tone cable, etc.

Jumper P7 on J7 selects the switched speaker audio from the system board. This is used with some options that switch speaker audio in and out during the encoding/decoding functions.

HANDSET POWER (MDR) AND DISPLAY BOARD (MDX) BACKLIGHT POWER FILTER

The handset power filter consists of transistor Q850 and associated circuitry. The RC filter consisting of R780, R781, C881, and C882, is a two-pole filter that filters out the ripple on the power supply leads. With the base of transistor Q850 having a steady DC level, the emitter of Q850 is also maintained at a steady DC level that is not affected by the current requirements of the handset.

With an input voltage of 13.8 volts, the power supplied to the handset is approximately 12 volts (J725-5) and current drain approximately 150 milliamps. The typical power supply ripple rejection from this filter is approximately 35 dB.

The handset power supply is turned on by the HS_PWR_ENBL line (P701-3) from the audio/logic board. Optionally, jumper J1/P1 can bypass the enable/disable function from the audio/logic board and supply handset power continuously.

The MDX radio uses this same power source to power the backlight on the display board and to the DTMF microphones.

HANDSET SERIAL DATA (MDR)

The handset communicates with the microcomputer through a 300 baud serial data link (TTL logic levels). Commands are inverted 8 bit ASCII bursts. When the handset display is updated, the microcomputer passes data over the DISPLAY_SERIAL line. When key presses are detected by the handset, the microcomputer receives data over the KEYPAD_SERIAL line. When data is not being transmitted, both lines remain high.

DISPLAY BOARD SERIAL DATA (MDX)

The display board is linked to the microcomputer on the audio/logic board through the serial data lines, DISPLAY_SE-RIAL (J707-6, P701-6), KEYPAD_SERIAL (J707-7, P701-1), and SERIAL_RQST (J707-2, P701-7).

If MTD/MVS protocol is being used, communication is at 9600 baud on DISPLAY_SERIAL and KEYPAD_SERIAL with SERIAL_RQST used to indicate survive requests from the display board to the audio/logic board.

The mode select line (J707-3) is sent to the display board to indicate MTD/MVS protocol at 9600 baud using SE-RIAL_RQST.

When the mode select line is at a TTL high (P3 installed on J3-1 and 2), the MTD/MVS protocol is invoked on the display board micro communications (used for MDX Dual Format, MDX-UHF, MDX-VHF). When the mode select line is at a TTL low (P3 on J3-2 and 3), the TMX-8825 protocol is invoked (used in the MDX GE-MARC radio).

When the handset display (MDR) is updated, the microcomputer passes data over the DISPLAY_SERIAL line. When key presses are detected by the handset, the microcomputer receives data over the KEYPAD_SERIAL line. When data is not being transmitted, both lines remain high.

RADIO ON/OFF CONTROL

The radio is turned on and off through the POWER SW control line from the handset (P1001-25) or the display board (J707-10). This control is derived from an independent button on the handset (no handset key press detection performed) or on the display board (no micro sampling performed).

This button press is a closure to ground and is passed to the system board (J901-9). A D-type flip-flop on the system board is

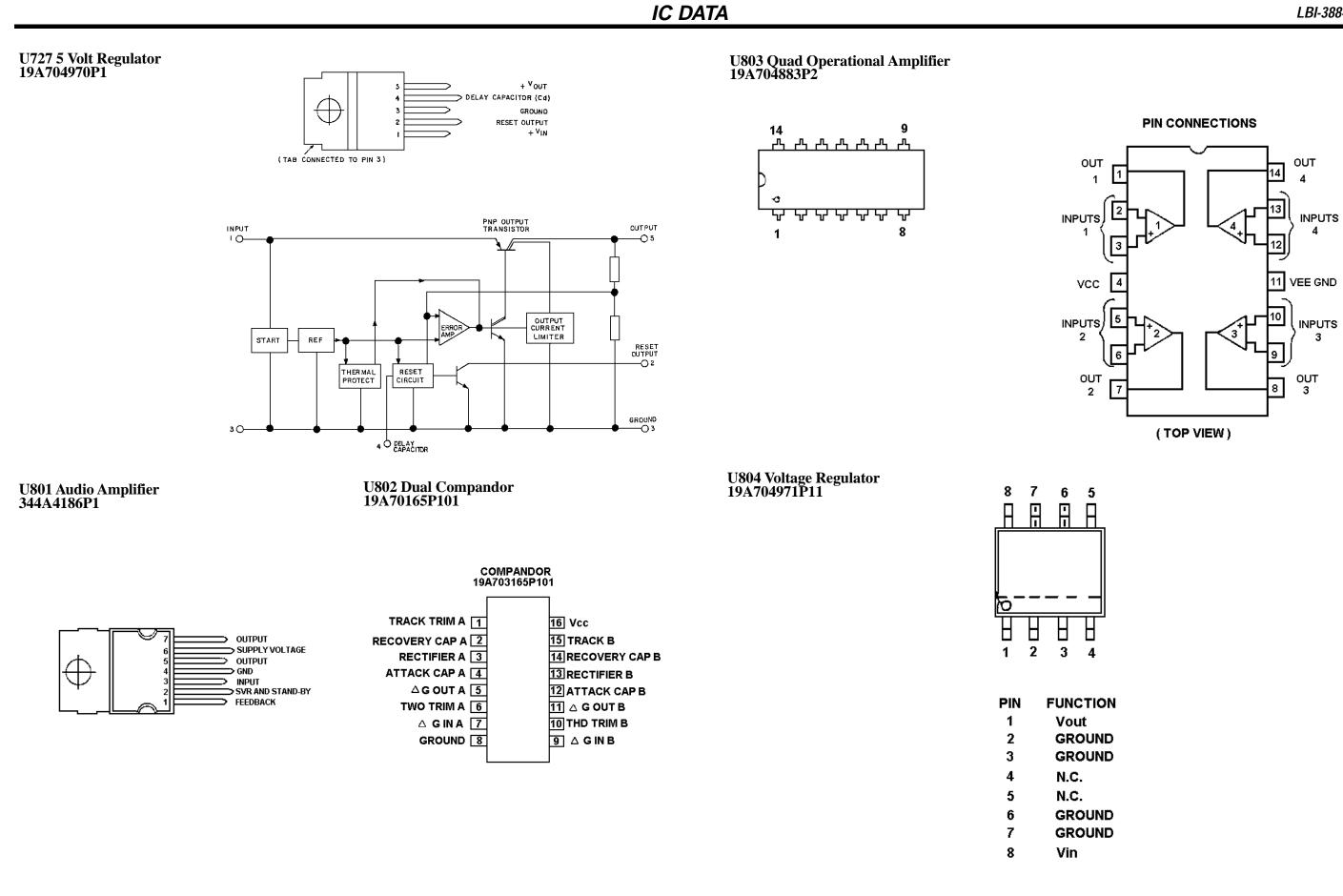
used to control a power transistor that routes continuous battery power, A+, to the switched power line, SW A+.

POWER DISTRIBUTION

Switched power, SW A+, from the system board, (A5), feeds the audio amplifier board through J901-5,6. SW A+ supplies 13.8 volts (nominal) to the 10 watt audio amplifier, U801, 8 volt regulator, U804, the 5 volt regulator, U727, and the handset/display board power filter, Q850.

The 8 volt regulator, U804, supplies the power to the op amp, U803, the compandor, U802, the power up mute circuitry, Q857, Q858, and associated circuits.

The 5 volt regulator supplies the power up reset and 5 volt power to the display board. The 5 volt supply is also used as a pull-up for various circuits on the audio amplifier board.



AUDIO AMPLIFIER BOARD 19D904025G1 (MDR) 19D904025G2 (MDX)

		9D904025G1 (MDK)			
	1	9D904025G2 (MDX)	C911	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
			C912	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.
SYMBOL	Part No.	DESCRIPTION	C914 thru	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.
		CAPACITORS	C916		
C301	19A702052P45	Ceramic: 0.22 μF ±10%. 16 VDCW.	C922	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C302	19A705205P19	Tantalum: $2.2 \mu\text{F} \pm 20\%$, 10VDCW; sim to Sprague 293D.	thru C924		
thru	10/11/00/2001 10		C925	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.
C305			C926	19A702061P61	Ceramic: 470 pl ±5%, 50 VDCW.
C306	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	thru	10/11020011 01	
C307	19A704879P1	Electrolytic: 100 µF, 6.3 VDCW.	C931		
C308	19A705205P206	Tantalum: 10 μF, ±20% 16 VDCW.	C933	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C309	19A705205P12	Tantalum: .33 μF, 16 VDCW; sim to Sprague 293D.	C935 and	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C310	19A704879P2	Electrolytic: 47 µF ±20%, 16 VDCW.	C936		
C601	19A702052P45	Ceramic: 0.22 µF ±10%. 16 VDCW.	C1002	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C602 thru	19A705205P19	Tantalum: 2.2 uF \pm 20%, 10VDCW; sim to Sprague 293D.	thru C1004		
C605			C1006	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.
C606	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	C1009	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C607	19A705205P206	Tantalum: 10 mF, ±20% 16 VDCW.	C1011	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C608	19A704879P1	Electrolytic: 100 µF, 6.3 VDCW.	C1013	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C609	19A705205P12	Tantalum: .33 µF, 16 VDCW; sim to Sprague 293D.	thru	10,1102001101	
C610	19A702052P134	Ceramic: 0.1µF ±5%, 25 VDCW.	C1015		
C611	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.	C1017 thru	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.
C612	19A705205P206	Tantalum: 10 μF, ±20% 16 VDCW.	C1024		
C620	19A705205P2	Tantalum: 1 µF, 16 VDCW; sim to Sprague 293D.	C1025	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.
C651	19A702052P134	Ceramic: 0.1µF ±5%, 25 VDCW.			
and					DIODES
C652 C653	104705205021	Testalum 22.15 1200/ 20\/DC\M/ sim to Sprague 202D	D652	19A700053P2	Silicon: 2 Diodes in Series; sim to BAV99.
and	19A705205P21	Tantalum: 22 μF ±20%, 20VDCW; sim to Sprague 293D.			
C654					JACKS
C701 thru	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.	J1	19A703248P11	Post: Gold Plated, 10 mm length.
C707			J3	19A703248P11	Post: Gold Plated, 10 mm length.
C720	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.	J7	19A703248P11	Post: Gold Plated, 10 mm length.
C723	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	J707	19A703248P11	Post: Gold Plated, 10 mm length.
C724	19A702052P134	Ceramic: 0.1 µF ±5%, 25 VDCW.	J801	19A704852P132	Printed wire board, two-part; sim to Molex 22-12-2024.
C730	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	J901	19A703248P11	Post: Gold Plated, 10 mm length.
C790	19A702052P45	Ceramic: 0.22 µF ±10%. 16 VDCW.	J1102	19A703248P11	Post: Gold Plated, 10 mm length.
C791	19A705205P19	Tantalum: 2.2 µF ±20%, 10VDCW; sim t o Sprague			
and C702		293D.			PLUGS
C792 C793	19A702052P134		P1	19A702104P2	Connector: Shorting Jumper, Gold Plated. (Housing Color: White).
C794	19A705205P21	Ceramic: 0.1μ F ±5%, 25 VDCW. Tantalum: 22 μ F ±20%, 20VDCW; sim to Sprague 293D.	P3	19A702104P2	Connector: Shorting Jumper, Gold Plated.
C803	19A702052P45	Ceramic: $0.22 \mu\text{F} \pm 10\%$. 16 VDCW.	10	10/11 02 10 11 2	(Housing Color: White).
and	1341020321 43	Ceramic. 0.22μ $\pm 10\%$. 10 VDCW.	P7	19A702104P2	Connector: Shorting Jumper, Gold Plated.
C804					(Housing Color: White).
C810	19A702052P134	Ceramic: 0.1µF ±5%, 25 VDCW.	P701	19B209727P31	Connector, shielded: 9 contacts sim to 74951-1.
C880	19A703314P15	Electrolytic: 100 μ F ±20%, 25 VDCW.	P1001	19B209727P58	Connector, 25 position with 25 press fit contacts; sim to 745628-2. (Used in G1).
C881 and	19A705205P15	Tantalum: 33 µF, 16 VDCW; sim to Sprague 293D.			
C882			0004	2444 4400 04	TRANSISTORS
C883	19A705205P19	Tantalum: 2.2 μF, 10 VDCW; sim to Sprague 293D.	Q601	344A4183P1	N-Channel FET: sim to MMBF5484LT1.
C884	19A705205P21	Tantalum: 22 μF ±20%, 20VDCW; sim to Sprague 293D.	Q602 Q790	19A700076P2 19A700076P2	Silicon, NPN: sim to MMBT3904, low profile. Silicon, NPN: sim to MMBT3904, low profile.
C901	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.	Q790 Q850	19A702503P2	Silicon, NPN: sim to 2N4401.
C902	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	Q850 Q851	19A702505P2 19A700059P2	Silicon, NPN: sim to MMBT3906, low profile.
C903	19A702061P61	Ceramic: 100 pF ±5%, 50 VDCW.	Q851 Q852	19A700059P2 19A700076P2	Silicon, NPN: sim to MMBT3904, low profile.
and C904			Q852 Q854	344A4183P1	N-Channel FET: sim to MMBF5484LT1
C904 C907	19A702061P61		Q855	19A700076P2	Silicon, NPN: sim to MMBT3904, low profile.
thru		Ceramic: 100 pF ±5%, 50 VDCW.	Q857	19A700076P2	Silicon, NPN: sim to MMBT3904, low profile.
C909			thru		
C910	19A702061P77	Ceramic: 470 pF ±5%, 50 VDCW.	Q860		
L					

SYMBOL

PART NO.

DESCRIPTION

PARTS LIST

R611 1980/1251P100 Metal film: 10 ohms ±5%, 1/10 w. R613 1980/1251P103 Metal film: 10 K ohms ±5%, 1/10 w. R614 1980/1251P473 Metal film: 10 K ohms ±5%, 1/10 w. R615 1980/1251P473 Metal film: 47K ohms ±5%, 1/10 w. R616 1980/1251P473 Metal film: 47K ohms ±5%, 1/10 w. R621 1980/1251P473 Metal film: 22K ohms ±5%, 1/10 w. R622 1980/1251P473 Metal film: 6.8K ohms ±5%, 1/10 w. R623 1980/1251P473 Metal film: 6.8K ohms ±5%, 1/10 w. R624 1988/01251P473 Metal film: 47K ohms ±5%, 1/10 w. R625 1988/01251P473 Metal film: 47K ohms ±5%, 1/10 w. Changes in the equipment to improve performance to simplify circuits are identified by the model number of the unit. The revision stamped on the all previous revisions. Refer to the Parts List or the descriptions of parts affected by the R654 R652 1988/01251P473 Metal film: 47K ohms ±5%, 1/10 w. Changes for desk top applications and fix display board whine in audio path. Deleted R708 (1980/037P4) and R903 (1980/0251P1). R780 1988/01251P473 Metal film: 100K ohms ±5%, 1/10 w. R781 1988/01251P473 Metal film: 100K ohms ±5%, 1/10 w. R782	SYMBOL	PART NO.	DESCRIPTION	SYMBOL	PART NO.	DESCRIPTION
R301 1980/1251P104 Metal film: 100 K ohms 25%, 110 w. R303 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R304 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R305 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R306 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R306 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R301 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R303 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R304 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R305 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R304 1980/1251P102 Metal film: 100 K ohms 25%, 110 w. R305 1988/01251P10 Metal film: 100 K ohms 25%, 110 w. R304 1988/01251P10 Metal film: 100 K ohms 25%, 110 w. R305 1988/01251P10 Metal film: 100 K ohms 25%, 110 w. R311 1988/01251P10 Metal film: 100 K ohms 25%, 110 w. R311 1988/01251P10 Metal film: 100 K ohms 25%, 110 w. R311 1988/01251P10 <td></td> <td></td> <td>DESISTORS</td> <td>R797</td> <td>19B801251P104</td> <td>Metal film: 100K ohms +5% 1/10 w</td>			DESISTORS	R797	19B801251P104	Metal film: 100K ohms +5% 1/10 w
R302 194702331P308 Meal film: 49.5K ohms ±1%, 200 VDCW, 18 w. R304 194702331P308 Meal film: 15 ohms ±1%, 200 VDCW, 18 w. R304 196801251P2K2 Meal film: 15 ohms ±5%, 110 w. R301 198801251P147 Meal film: 10 ohms ±5%, 110 w. R301 198801251P147 Meal film: 10 ohms ±5%, 110 w. R301 198801251P144 Meal film: 10 ohms ±5%, 110 w. R302 198801251P144 Meal film: 10 ohms ±5%, 110 w. R301 198801251P144 Meal film: 10 ohms ±5%, 110 w. R302 198801251P144 Meal film: 10 ohms ±5%, 110 w. R303 198801251P144 Meal film: 10 ohms ±5%, 110 w. R304 198801251P144 Meal film: 10 ohms ±5%, 110 w. R304 198801251P144 Meal film: 10 ohms ±5%, 110 w. R304 198801251P144 Meal film: 10 ohms ±5%, 110 w. R305 198801251P144 Meal film: 10 ohms ±5%, 110 w. R304 198801251P14 Meal film: 10 ohms ±5%, 110 w. R304 198801251P14 Meal film: 10 ohms ±5%, 110 w. R305 198801251P147 Meal film: 47K ohms ±5%, 110 w.	R301	19B801251P104		thru	thru	
R303 19470332198 Meal film: 71.5K ohms 21%, 200 VDCW, 18 w. R304 19470332198 Meal film: 71.5K ohms 21%, 200 VDCW, 18 w. R305 19580125121912 Meal film: 10K ohms 1%, 200 VDCW, 18 w. R306 19580125121912 Meal film: 20K ohms 5%, 110 w. R307 19580125121912 Meal film: 10K ohms 5%, 110 w. R308 195801251912 Meal film: 10K ohms 5%, 110 w. R301 195801251912 Meal film: 10K ohms 5%, 110 w. R303 195801251912 Meal film: 10K ohms 5%, 110 w. R304 195801251912 Meal film: 10K ohms 5%, 110 w. R305 195801251912 Meal film: 10K ohms 5%, 110 w. R304 195801251912 Meal film: 10K ohms 5%, 110 w. R305 195801251912 Meal film: 10K ohms 5%, 110 w. R304 195801251912 Meal film: 10K ohms 5%, 110 w. R305 195801251912 Meal film: 10K ohms 5%, 110 w. R301 195801251912 Meal film: 10K ohms 5%, 110 w. R301 195801251912 Meal film: 10K ohms 5%, 110 w. R311 1958012519172 Meal film: 47K ohms 5%, 110 w					244444720400	Madel Flore Alcher 1597 Alco
R394 194702331P40 Metal film: 100k ohms ±1%, 200 VDCW, 18 w. R802 198801251P12K Metal film: 2.2 ohms ±5%, 110 w. R306 198801251P12K Metal film: 1.4 chms ±5%, 110 w. R810 198801251P12K Metal film: 2.2 ohms ±5%, 110 w. R308 198801251P10K Metal film: 1.6 chms ±5%, 110 w. R811 198801251P10K Metal film: 100 chms ±5%, 110 w. R603 194702351P37K Metal film: 100 chms ±5%, 110 w. R811 198801251P10 Metal film: 100 chms ±5%, 110 w. R604 194702351P37K Metal film: 100 chms ±5%, 110 w. R803 198801251P1 Jumper. (Used in G1). R604 194702351P37K Metal film: 100 chms ±5%, 110 w. R804 198801251P1 Jumper. (Used in G1). R604 194702351P37K Metal film: 100 chms ±5%, 110 w. R805 198801251P1 Jumper. (Used in G2). R604 198801251P10K Metal film: 100 chms ±5%, 110 w. R801 198801251P1 Jumper. (Used in G2). R613 198801251P10K Metal film: 100 chms ±5%, 110 w. R811 198801251P1 Jumper. (Used in G2). R614 198801251P17X Me					344A4173P1R0	Metal film: 1 onm \pm 5%, 1 w.
R305 198801251P72 Metal film: 12 x0x chms ±5%, 1/10 w. Intel film: 22 x0x chms ±5%, 1/10 w. R307 198801251P72 Metal film: 12 x0x chms ±5%, 1/10 w. R004 Intel film: 10 chms ±5%, 1/10 w. R307 198801251P72 Metal film: 10 chms ±5%, 1/10 w. R01 198801251P104 Metal film: 10 chms ±5%, 1/10 w. R004 198801251P72 Metal film: 10 chms ±5%, 1/10 w. R01 198801251P104 Metal film: 10 chms ±5%, 1/10 w. R004 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R004 198801251P1 Jumper. (Jused in G2). R005 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R005 198801251P1 Jumper. (Jused in G2). R006 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R001 198801251P1 Jumper. (Jused in G2). R011 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R011 198801251P1 Jumper. (Jused in G2). R011 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R011 198001251P10 Metal film: 10 chms ±5%, 1/10 w. R011 198801251P10 Metal film: 10 chms ±5%, 1/10 w. R011 198001						
R306 198801251P274 Metal film: 270K ohms 15%, 1/10 w. R04 R307 198801251P104 Metal film: 270K ohms 15%, 1/10 w. R01 198801251P104 Metal film: 10K ohms 15%, 1/10 w. R001 198801251P104 Metal film: 10K ohms 15%, 1/10 w. R04 198801251P1 Metal film: 10K ohms 15%, 1/10 w. R004 198801251P104 Metal film: 10K ohms 15%, 1/10 w. R04 198801251P1 Metal film: 10K ohms 15%, 1/10 w. R004 198801251P104 Metal film: 10K ohms 15%, 1/10 w. R004 198801251P1 Jumper. (Used in G1). R005 198801251P47 Metal film: 10K ohms 15%, 1/10 w. R005 198801251P1 Jumper. (Used in G2). R006 198801251P47 Metal film: 10K ohms 15%, 1/10 w. R005 198801251P1 Jumper. (Used in G2). R11 198801251P47 Metal film: 10K ohms 15%, 1/10 w. R01 198801251P1 Jumper. (Used in G2). R11 198801251P47 Metal film: 47K ohms 15%, 1/10 w. R01 198801251P1 Jumper. (Used in G2). R611 198801251P47 Metal film: 47K ohms 15%, 1/10 w. R01 19801251P1					19B801251P2R2	Metal film: 2.2 ohms ±5%, 1/10 w.
R307 198801251P472 Metal film: 10 chms ±5%, 1/10 w. R308 198801251P100 Metal film: 10 chms ±5%, 1/10 w. R601 198801251P100 Metal film: 10 chms ±5%, 1/10 w. R602 19A702831P398 Metal film: 10 chms ±5%, 1/10 w. R603 198001251P102 Metal film: 10 chms ±5%, 1/10 w. R604 194702831P438 Metal film: 10 chms ±5%, 1/10 w. R605 198801251P102 Metal film: 10 chms ±5%, 1/10 w. R606 198801251P12 Metal film: 10 chms ±5%, 1/10 w. R606 198801251P12 Metal film: 10 chms ±5%, 1/10 w. R607 198801251P12 Metal film: 10 chms ±5%, 1/10 w. R616 198801251P173 Metal film: 10 chms ±5%, 1/10 w. R616 198801251P173 Metal film: 10 chms ±5%, 1/10 w. R617 198801251P173 Metal film: 20 whth ±5%, 1/10 w. R616 198801251P173 Metal film: 47K chms ±5%, 1/10 w. R616 198801251P473 Metal film: 47K chms ±5%, 1/10 w. R617 198801251P473 Metal film: 47K chms ±5%, 1/10 w. R617 198801251P473 Metal film: 47K ch						
R308 198801251P100 Metal film: 100 chms ±5%, 1/10 w. R601 198801251P104 Metal film: 100 chms ±5%, 1/10 w. R602 19770231783 Metal film: 23,7K chms ±1%, 200 VDCW, 1/8 w. R603 19770231794 Metal film: 23,7K chms ±1%, 200 VDCW, 1/8 w. R604 19770231794 Metal film: 100 chms ±5%, 1/10 w. R605 198801251P102 Metal film: 100 chms ±5%, 1/10 w. R606 198801251P124 Metal film: 100 chms ±5%, 1/10 w. R607 198801251P103 Metal film: 100 chms ±5%, 1/10 w. R607 198801251P104 Metal film: 100 chms ±5%, 1/10 w. R614 198801251P103 Metal film: 10 chms ±5%, 1/10 w. R615 198801251P104 Metal film: 47K chms ±5%, 1/10 w. R622 198801251P143 Metal film: 47K chms ±5%, 1/10 w. R623 198801251P143 Metal film: 47K chms ±5%, 1/10 w. R624 198801251P473 Metal film: 47K chms ±5%, 1/10 w. R624 198801251P473 Metal film: 47K chms ±5%, 1/10 w. R624 198801251P473 Metal film: 47K chms ±5%, 1/10 w. Changes in the equipment to inprove performance to simplify				R810	19B801251P103	Metal film: 10K ohms ±5%, 1/10 w.
R601 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. R602 19870231P268 Metal film: 25%, 1/10 w. R603 19870231P268 Metal film: 25%, 1/10 w. R604 19870231P268 Metal film: 25%, 1/10 w. R605 198801251P1 Metal film: 25%, 1/10 w. R606 198801251P1 Jumper. (Used in G2). Metal film: 10 km = 5%, 1/10 w. R906 198801251P1 Metal film: 10 km = 5%, 1/10 w. R907 198801251P1 Jumper. (Used in G1). R606 198801251P10 Metal film: 10 km = 5%, 1/10 w. R910 R910 R611 198801251P10 Metal film: 10 km = 5%, 1/10 w. Urar 198801251P1 Jumper. (Used in G2). R614 198801251P10 Metal film: 10 km = 5%, 1/10 w. R910 R910 R910 R615 198801251P14 Metal film: 47K km = 5%, 1/10 w. Urar 19870487P11 Linear: 5 Vet Regulators is no t0A7240A R621 198801251P73 Metal film: 47K km = 5%, 1/10 w. Urar 198704887P2 Uigita: Cuad Op Amji is no t0A7240A R621 198801251P747	R308	19B801251P100		R811	19B801251P184	Metal film: 180K ohms ±5%, 1/10 w.
R602 19A702331P368 Metal film: 49.9K ohms ±1%, 200 VDCW, 1/8 w. R603 19A702331P437 Metal film: 23.7K ohms ±1%, 200 VDCW, 1/8 w. R604 19801251P1 Jumper, (Jaed In G2), Jumper, (Jaed In G2), Jumper, (Jaed In G1), Jumper, (Jaed In G1), Jumper, (Jaed In G2), Jumper, (Jaed In G2), Jumper, (Jaed In G2), Jumper, (Jaed In G1), Jumper, (Jaed In G2), Jumper, Jum				R880	344A4173P110	Metal film: 110 ohms ±5%, 1 w.
R603 194702331P337 Metal film: 23.7K ohms ±1%, 200 VDCW, 1/8 w. R604 194702331P415 Metal film: 160K ohms ±1%, 200 VDCW, 1/8 w. R605 198801251P12 Jumper. (Used in G1). R606 198801251P274 Metal film: 20K ohms ±5%, 1/10 w. R607 198801251P12 Metal film: 100K ohms ±5%, 1/10 w. R608 198801251P10 Metal film: 100K ohms ±5%, 1/10 w. R611 198801251P10 Metal film: 100K ohms ±5%, 1/10 w. R614 198801251P10 Metal film: 100K ohms ±5%, 1/10 w. R615 198801251P10 Metal film: 47K ohms ±5%, 1/10 w. R617 198801251P13 Metal film: 47K ohms ±5%, 1/10 w. R617 198801251P13 Metal film: 47K ohms ±5%, 1/10 w. R614 198801251P13 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P477 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P477 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P477 <t< td=""><td></td><td></td><td></td><td>R904</td><td>19B801251P1</td><td>Jumper. (Used in G2).</td></t<>				R904	19B801251P1	Jumper. (Used in G2).
R604 194702331P41a Metal film: 150K ohms ±1%, 200 VDCW, 1/8 w. R006 198801251P102 Jumper. (Jused in G1). R606 198801251P274 Metal film: 270K ohms ±5%, 1/10 w. R007 198801251P12 Jumper. (Jused in G1). R607 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. R310 198801251P10 Jumper. (Jused in G2). R611 198801251P100 Metal film: 100K ohms ±5%, 1/10 w. R311 R311 Linear: 5 Volt Regulator with Reset Output, sim to L387 R614 198801251P473 Metal film: 100K ohms ±5%, 1/10 w. U303 194704870P1 Linear: 5 Volt Regulator with Reset Output, sim to L387 R617 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. U303 19470483P2 U303 19470483P2 U303 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R623 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R624 194704370P1 Linear: 5 Volt Regulator with Reset Output, sim to K6300251P10. R633 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R624 198801251P473 Metal film: 47		19A702931P337		R905	19B801251P1	Jumper. (Used in G1).
R605 198801251P102 Metal film: 10K chms ±5%, 1/10 w. R607 198801251P27 Jumper. (Used in G1). R606 198801251P274 Metal film: 27K chms ±5%, 1/10 w. Metal film: 27K chms ±5%, 1/10 w. Jumper. (Used in G2). R607 198801251P104 Metal film: 10K chms ±5%, 1/10 w. Jumper. (Used in G2). Jumper. (Used in G2). R611 198801251P104 Metal film: 10K chms ±5%, 1/10 w. Jumper. (Used in G2). Jumper. (Used in G2). R613 198801251P473 Metal film: 10K chms ±5%, 1/10 w. Jumper. (Used in G2). Jumper. (Used in G2). R614 198801251P473 Metal film: 47K chms ±5%, 1/10 w. Jumper. (Used in G2). Linear: 6 Volt Regulator with Reset Output; sin to US7240A R621 198801251P473 Metal film: 47K chms ±5%, 1/10 w. Metal film: 47K chms ±5%, 1/10 w. R623 198801251P473 Metal film: 47K chms ±5%, 1/10 w. Re24 film: 47K chms ±5%, 1/10 w. R635 198801251P473 Metal film: 47K chms ±5%, 1/10 w. Re24 film: 47K chms ±5%, 1/10 w. R635 198801251P472 Metal film: 47K chms ±5%, 1/10 w. Re24 film: 47K chms ±5%, 1/10 w. R635 198801251P477 Metal fil			, ,	R906	19B801251P1	Jumper.
R666 198801251P274 (Hetal film: 4.7K ohms ±5%, 1/10 w. Metal film: 4.7K ohms ±5%, 1/10 w. R607 198801251P104 Metal film: 4.7K ohms ±5%, 1/10 w. R611 198801251P104 Metal film: 4.7K ohms ±5%, 1/10 w. R611 198801251P103 Metal film: 4.7K ohms ±5%, 1/10 w. R611 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R611 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R623 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R624 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R631 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R65					19B801251P1	Jumper. (Used in G1).
R607 198801251P472 Metal film: 4.7K ohms ±5%, 1/10 w. R608 198801251P104 Metal film: 10 ok ohms ±5%, 1/10 w. R611 198801251P100 Metal film: 10 ok ohms ±5%, 1/10 w. R613 198801251P103 Metal film: 10 ok ohms ±5%, 1/10 w. R614 198801251P473 Metal film: 0K ohms ±5%, 1/10 w. R615 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. U727 19A704970P1 Linear: 5 Volk Regulator with Reset Output; sim to INE722. Linear: 5 Volk Regulator with Reset Output; sim to INE722. U801 344A4186P1 Audio Amplifier, 20 watt bridge; sim to INC78L08ACD. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Beat film: 54% ohms ±5%, 1/10 w. PCDUCTION CHANGES R624 198801251P472 Metal film: 47K ohms ±5%, 1/10 w. PCDUCTION CHANGES R635 198801251P472 Metal film: 47K ohms ±5%, 1/10 w. R651 198801251P472 Metal film: 47K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R758 198801251P474 Metal film: 47K ohms ±5%, 1/10 w.						
R608 thru R610 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. and R911 and R911 R611 198801251P104 Metal film: 10 ohms ±5%, 1/10 w. U727 19A704970P1 Linear: 5 Volt Regulator with Reset Output; sim to Last. R614 198801251P103 Metal film: 47K ohms ±5%, 1/10 w. U727 19A704970P1 Linear: 5 Volt Regulator with Reset Output; sim to Last. R614 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. U801 344A4186P1 Compandor:Dual Programmable; sim to NE572. UB01 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. U801 19A704832P2 Linear: 8-Volt Regulator; sim to MC78L08ACD. R622 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. PRODUCTION CHANGES R623 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Changes in the equipment to improve performance to simplify circuits are identified by Letter', which is stamped after the wold number of the unit. The revision stamped and all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the description of parts affected by the all previous revisions. Refer to the Parts List for the description of parts affected by the all previous revisions. Refer to the Parts List for the description of part malum. Added C780 (198000507P1) and R903 (198001251P1).			,	R910	19B801251P1	Jumper. (Used in G2).
Invu R610 Metal film: 10 ohms ±5%, 1/10 w. UT27 19A704970P1 Linear: 5 Volt Regulator with Reset Output; sin to Linear: 5 Volt Regulator, sin to NC73030. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Metal film: 47K ohms ±5%, 1/10 w. R651 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P41) and R903 (198801251P1). R780 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Ref to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions, A forms ±5%, 1/10 w. R781 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Ref descriptions and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). Added C724 to 19A705205P21). Added C724 to 19A705205P21). Added C724 to 19A705205P21). Added C724 to 19A70520	R608	19B801251P104	·			
R611 198801251P100 Metal film: 10 ohms ±5%, 1/10 w. R613 198801251P103 Metal film: 10 k ohms ±5%, 1/10 w. R614 198801251P173 Metal film: 47K ohms ±5%, 1/10 w. R615 198801251P173 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P273 Metal film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Metal film: 22K ohms ±5%, 1/10 w. R621 198801251P23 Metal film: 6.6K ohms ±5%, 1/10 w. R623 198801251P473 Metal film: 6.6K ohms ±5%, 1/10 w. R624 198801251P473 Metal film: 6.6K ohms ±5%, 1/10 w. R625 198801251P473 Metal film: 6.6K ohms ±5%, 1/10 w. R626 198801251P473 Metal film: 6.7K ohms ±5%, 1/10 w. R652 198800527P127 Metal film: 47K ohms ±5%, 1/10 w. R780 198800527P104 Metal film: 22K ohms ±5%, 1/10 w. R781 198800507P222 Metal film: 100K ohms ±5%, 1/10 w. Metal film: 22K ohms ±5%, 1/10 w. R782 198800527P104 Metal film: 100K ohms ±5%, 1/10 w. Metal film: 22K ohms ±5%, 1/10 w. R782 198801251P473 Metal film: 100K				Rail		
R613 19801251P103 Metal film: 10K ohms ±5%, 1/10 w. Lisa7. Lisa7. Audio Amplifier, 20 watt bridge; sim to TDA7240A R614 19801251P473 Metal film: 47K ohms ±5%, 1/10 w. U801 344A4186P1 Audio Amplifier, 20 watt bridge; sim to TDA7240A R617 198001251P473 Metal film: 47K ohms ±5%, 1/10 w. U802 19A703465P101 U802 19A703465P101 Compandor: Dual Programmable; sim to NE722. R622 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Metal film: 47K ohms ±5%, 1/10 w. PRODUCTION CHANGES R623 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. PRODUCTION CHANGES R651 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Changes in the equipment to improve performance to simplify circuits are identified by Letter', which is stamped after the model number of the unit. The revision stamped on the all previous revisions. Refer to the Parts List for the descent List for the		1000010510100				INTEGRATED CIRCUITS
Notes Notes <th< td=""><td></td><td></td><td>,</td><td>U727</td><td>19A704970P1</td><td>Linear: 5 Volt Regulator with Reset Output; sim to SGS</td></th<>			,	U727	19A704970P1	Linear: 5 Volt Regulator with Reset Output; sim to SGS
Notes Notes <th< td=""><td></td><td></td><td></td><td>U801</td><td>344A4186P1</td><td></td></th<>				U801	344A4186P1	
Instantini in tork billing 15%, 1/10 w. Water film: Water film: 100k billing 15%, 1/10 w. R617 Big 801251P473 Mater film: 47K ohms ±5%, 1/10 w. R621 198801251P473 Mater film: 22K ohms ±5%, 1/10 w. R623 198801251P473 Mater film: 47K ohms ±5%, 1/10 w. R624 Mater film: 47K ohms ±5%, 1/10 w. PRODUCTION CHANGES R651 198801251P473 Mater film: 47K ohms ±5%, 1/10 w. PRODUCTION CHANGES R652 198801251P472 Mater film: 47K ohms ±5%, 1/10 w. Rescurptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List			,			
R617 Metal film: 47K ohms ±5%, 1/10 w. R620 19B801251P473 Metal film: 56K ohms ±5%, 1/10 w. R621 19B801251P563 Metal film: 22K ohms ±5%, 1/10 w. R623 19B801251P473 Metal film: 6.8K ohms ±5%, 1/10 w. R624 19B801251P473 Metal film: 6.8K ohms ±5%, 1/10 w. R651 19B801251P472 Metal film: 6.8K ohms ±5%, 1/10 w. Changes in the equipment to improve performance to simplify circuits are identified by Letter', which is stamped after the model number of the unit. The revision stamped on the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the descriptions of parts affected by the all previous revisions. Refer to the Parts List of the description of parts affected by the all previous revisions. Refer to the Parts List of the description of parts affected by the all previous revisions. Refer to the Parts List of the description of parts affected by the all previous revisions. Refer to the Parts List of the description of parts affected by the all previous revisions. Refer to the Parts List of the description of parts affected by the all previous revisions. Refer to the Parts		19B601231F104	Metal him: TOOK Onms ±5%, 1/10 w.			
R621 198801251P563 Metal film: 56K ohms ±5%, 1/10 w. R622 198801251P223 Metal film: 22K ohms ±5%, 1/10 w. R623 and R624 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R651 198801251P682 Metal film: 4.7K ohms ±5%, 1/10 w. R652 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R653 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. R780 and R781 198800607P470 and R781 Metal film: 2.2K ohms ±5%, 1/10 w. Metal film: 4.7K ohms ±5%, 1/10 w. R782 198800251P104 Metal film: 100K ohms ±5%, 1/10 w. Metal film: 100K ohms ±5%, 1/10 w. R784 and R785 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G1 R787 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Carmic, 470 pF 50V (19A702061P61). R786 198801251P104 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 198801251P104 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 198801251P104 Metal film: 47K ohms ±5%, 1/10 w. Charge for desk top applications and fix display board				U804	19A704971P11	
R622 198801251P223 Metal film: 22K ohms ±5%, 1/10 w. PRODUCTION CHANGES R623 and R624 198801251P473 Metal film: 22K ohms ±5%, 1/10 w. Changes in the equipment to improve performance to simplify circuits are identified by Letter", which is stamped after the model number of the unit. The revision stamped on the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the R651 R651 198801251P472 Metal film: 4.7K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G1 R653 198801251P473 Metal film: 4.7K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). R780 198800607P470 Metal film: 2.2K ohms ±5%, 1/8 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). R781 198801251P104 Metal film: 2.2K ohms ±5%, 1/10 w. Added C304, Ceramic, 100 PF, 50V (19A702061P61). R783 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 198801251P473						-
R622 and R623 and R624198801251P473 R651Metal film: 22K 0fmls 15%, 1/10 w.Changes in the equipment to improve performance to simplify circuits are identified by Letter", which is stamped after the model number of the unit. The revision stamped on the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the Metal film: 4.7K ohms ±5%, 1/10 w.R651 R652 198801251P472 R653 198801251P473 and R780 and R781Metal film: 4.7K ohms ±5%, 1/10 w.Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P422 Metal film: 2.2K ohms ±5%, 1/8 w.Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P470 Added C724, Ceramic, 100 pF, 50V (19A702061P61).R781 R782 and R784 and R785 R785 R786 198801251P104Metal film: 100K ohms ±5%, 1/10 w.REV. A - Audio Amplifier Board 19D904025G2 Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P12) Added C835 and C936, Ceramic, 100 pF, 50V (19A702061P61).R786 R786 R786 R786 198801251P104Metal film: 100K ohms ±5%, 1/10 w.REV. A - Audio Amplifier Board 19D904025G2 Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). Changed C794 to 19A70205P21, 22 µF, 20V, 19A702061P61).R787 R786 and R786 R786 198801251P473Metal film: 47K ohms ±5%, 1/10 w.Metal film: 47K ohms ±5%, 1/10 w.Metal film: 47K ohms ±5%, 1/10 w.R787 R786 R786 R786 R786 R786 198801251P473Metal film: 47K ohms ±5%, 1/10 w.Metal film: 47K ohms ±5%, 1/10 w.Metal film:			,		DD	
and R624Charge for desk top applications and fix display back whine in audio path. Deleter, which is stamped after the model number of the unit. The revision stamped and on the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the all previous revisions. Refer to the Parts List for the descriptions of parts affected by the 			,		FR	ODUCTION CHANGES
R651 198801251P682 Metal film: 6.8K ohms ±5%, 1/10 w. R652 198801251P472 Metal film: 4.7K ohms ±5%, 1/10 w. R653 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R780 and R781 198800607P470 and R781 Metal film: 2.7K ohms ±5%, 1/8 w. Metal film: 47 ohms ±5%, 1/8 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). Changed C794 to 19A705205P21, 22 µF, 20V, Tantalum. Added C904, Ceramic, 100 pF, 50V (19A702061P61). Added C84, Tantalum, 22µF, 20V (19A702061P61). R782 198801251P104 Metal film: 2.2K ohms ±5%, 1/10 w. Metal film: 47K ohms ±5%, 1/10 w. R784 and R785 198801251P473 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 198801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Rest A function and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). R790 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 100 pF, 50V (19A702061P61). Added C794 to 19A705205P21, 22 µ	and	19B801251P473	Metal film: 47K ohms ±5%, 1/10 w.	Letter", which	is stamped after the m	nodel number of the unit. The revision stamped on the unit includes
R652 198801251P472 Metal film: 4.7K ohms ±5%, 1/10 w. R653 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. R780 198800607P470 Metal film: 47 ohms ±5%, 1/10 w. And Metal film: 2.2K ohms ±5%, 1/8 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P222 Metal film: 2.2K ohms ±5%, 1/8 w. Change for desk top applications and fix display board whine in audio path. R781 198801251P104 Metal film: 2.2K ohms ±5%, 1/10 w. Metal film: 100K ohms ±5%, 1/10 w. R784 198801251P104 Metal film: 47K ohms ±5%, 1/10 w. Added C884, Tantalum, 22µF, 20V (19A702061P61). R785 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 Change for desk top applications and fix display board whine in audio path. Deleted R708 (198800607P1) and R903 (198801251P1). R786 198801251P473 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. R786 198801251P473 Metal film: 47K ohms ±5%, 1/10 w. Change dC794 to 19A702051P71). Added C935 coramic, 100 pF, 50V (19A702061P61). R77	R651	19B801251P682	Metal film: 6.8K ohms ±5%, 1/10 w.			
R780 and R781 19B800607P470 and R781 Metal film: 47 ohms ±5%, 1/8 w. Deleted R708 (19B800607P1) and R903 (19B801251P1). Changed C794 to 19A702505P21, 22 µF, 20V Tantalum. Added C904, Ceramic, 100 pF, 50V (19A702061P77). Added C794, Ceramic, 470 pF, 50V (19A702061P77). Added C935 and C936, Ceramic, 100pF, 50V (19A702061P61). R781 19B800607P222 Metal film: 2.2K ohms ±5%, 1/8 w. Added C344, Ceramic, 100 pF, 50V (19A702061P77). Added C935 and C936, Ceramic, 100pF, 50V (19A702061P61). R783 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R784 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R785 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. Deleted R708 (19B800607P1) and R903 (19B801251P1). R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 100 PF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 470 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C936, Ceramic, 100 PF, 50V (19A702061P61).	R652	19B801251P472	Metal film: 4.7K ohms ±5%, 1/10 w.	REV. A - <u>Audi</u>	o Amplifier Board 1	9D904025G1
R780 19580060/P470 Metal film: 47 ohms ±5%, 1/8 w. Changed C794 to 19A705205P21, 22 µF, 20V, Tantalum. R781 R781 Added C304, Ceramic, 100 pF, 50V (19A702061P61). Added C204, Ceramic, 100 pF, 50V (19A702061P61). R782 19B800607P222 Metal film: 2.2K ohms ±5%, 1/8 w. Added C304, Ceramic, 100 pF, 50V (19A702061P61). R783 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. Added C335 and C336, Ceramic, 100pF, 50V (19A702061P61). R784 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. R786 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C394, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C304, Ceramic, 470 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C336, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C304, Ceramic, 470 pF, 50V (19A702061P61).	R653	19B801251P473	Metal film: 47K ohms ±5%, 1/10 w.			
and R781 Added C904, Ceramic, 100 pF, 50V (19A702061P61). Added C724, Ceramic, 470 pF, 50V (19A702061P77). Added C234, Ceramic, 270 pF, 50V (19A702061P77). Added C884, Tantalum, 22µF, 20V (19A702061P61). R783 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. Added C935 and C935, and C936, ceramic, 100 pF, 50V (19A702061P61). R784 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R785 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 19B801251P104 Metal film: 47K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. R787 19B801251P104 Metal film: 47K ohms ±5%, 1/10 w. Change dor desk top applications (108B010507P1) and R903 (19B801251P1). R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C335, Geramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C344, Tantalum, 22µF, 20V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%,	R780	19B800607P470	Metal film: 47 ohms ±5%, 1/8 w.			
R78219B800607P222Metal film: 2.2K ohms ±5%, 1/8 w.Added C84, Tantalum, 22µF, 20V (19A7022061P7).R78319B801251P104Metal film: 100K ohms ±5%, 1/10 w.Added C84, Tantalum, 22µF, 20V (19A7022061P61).R78419B801251P473Metal film: 100K ohms ±5%, 1/10 w.REV. A - Audio Amplifier Board 19D904025G2R78519B801251P104Metal film: 100K ohms ±5%, 1/10 w.REV. A - Audio Amplifier Board 19D904025G2R78619B801251P104Metal film: 100K ohms ±5%, 1/10 w.Change for desk top applications and fix display board whine in audio path.R78619B801251P473Metal film: 47K ohms ±5%, 1/10 w.Change d C724, Ceramic, 100 pF, 50V (19A7022061P61).R78719B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C724, Ceramic, 100 pF, 50V (19A7022061P61).R79019B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C724, Ceramic, 100 pF, 50V (19A7022061P61).R79119B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C724, Ceramic, 100 pF, 50V (19A7022061P61).R79119B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C724, Ceramic, 100 pF, 50V (19A7022061P61).R79119B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C724, Ceramic, 100 pF, 50V (19A7022061P61).R79119B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C935 and C936, Ceramic, 100 pF, 50V (19A7022061P61).R79119B801251P473Metal film: 47K ohms ±5%, 1/10 w.Added C935 and C936, Ceramic, 100 pF, 50V (19A7022061P61).R791R791Added C935Added C936Ceramic, 100 pF, 50V (19A7022061P61).R791 <td></td> <td></td> <td></td> <td>Adde</td> <td>ed C904, Ceramic, 10</td> <td>00 pF, 50V (19A702061P61).</td>				Adde	ed C904, Ceramic, 10	00 pF, 50V (19A702061P61).
R783 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. Added C935 and C936, Ceramic, 100pF, 50V (19A702061P61). R784 and R785 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R786 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. R787 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. Change for desk top applications and fix display board whine in audio path. R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C934, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C74, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C74, Ceramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C74, Ceramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C935 and C936, Ceramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C935 and C936, Ceramic, 100 pF, 50V (19A702061P61). R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C936, Ceramic, 100		19B800607P222	Motal film: 2.2K abms +5% 1/8 w			
R784 and R785 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. REV. A - Audio Amplifier Board 19D904025G2 R785 Change for desk top applications and fix display board whine in audio path. R786 19B801251P104 Metal film: 100K ohms ±5%, 1/10 w. R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. R790 and R791 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. R791 Netal film: 47K ohms ±5%, 1/10 w. R791 Metal film: 47K ohms ±5%, 1/10 w. R791 Netal film: 47K ohms ±5%, 1/10 w. Added C394, Ceramic, 100 pF, 50V (19A702061P61). Added C394, Caranic, 100 pF, 50V (19A702061P77). Added C393, Ceramic, 100 pF, 50V (19A7022061P61). Added C391 and R910 and R911 Metal Film chip, 0 ohms (19801251P1).						
and R785 Index mining intercement of the second			,	REV A - Audi	o Amplifier Board 1	9090402562
R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Changed C794 to 19A705205P21, 22 µF, 20V, Tantalum. R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C904, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 470 pF, 50V (19A702061P67). and R791 Added C884, Tantalum, 22µF, 20V (19A702051P21). R791 Added C884, Tantalum, 22µF, 20V (19A702051P61). Added R910 and R911 Metal Film chip, 0 ohms (19B801251P1).	and	1000012011 410	wedar min. 477C 0mm5 ±376, 1/10 w.	Chai	nge for desk top appl	ications and fix display board whine in audio path.
R787 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C904, Ceramic, 100 pF, 50V (19A702061P61). R790 19B801251P473 Metal film: 47K ohms ±5%, 1/10 w. Added C724, Ceramic, 470 pF, 50V (19A702061P61). and R791 Metal film: 47K ohms ±5%, 1/10 w. Added C395, and C395, Ceramic, 100 pF, 50V (19A702061P61). R791 Added C394, Ceramic, 100 pF, 50V (19A702061P61). Added C884, Tantalum, 22μF, 20V (19A702051P61). R791 Added C935, and C395, Ceramic, 100 pF, 50V (19A702051P61). Added C894, D0 and R911 Metal Film chip, 0 ohms (19B801251P1).	R786	19B801251P104	Metal film: 100K ohms ±5%, 1/10 w.			
And Added C884, Tantalum, 22µF, 20V (19A705205P21). R791 Added C935 and C936, Ceramic, 100pF, 50V (19A702061P61). Added R910 and R911 Metal Film chip, 0 ohms (19B801251P1). Added R910 and R911 Metal Film chip, 0 ohms (19B801251P1).			Metal film: 47K ohms ±5%, 1/10 w.	Adde	ed C904, Ceramic, 10	00 pF, 50V (19A702061P61).
Added R910 and R911 Metal Film chip, 0 ohms (19B801251P1).	and	19B801251P473	Metal film: 47K ohms ±5%, 1/10 w.	Added C724, Ceramic, 470 pF, 50V (19A702061P77). Added C884, Tantalum, 22µF, 20V (19A705205P21).		
and Delete Rad2 (1960/1231F1).	R795 and	19B801251P473	Metal film: 47K ohms ±5%, 1/10 w.			
R796 REV. B - <u>Audio Amplifier Board 19D904025G1, G2</u>	R796			REV. B - <u>Audi</u>	o Amplifier Board 1	<u>9D904025G1, G2</u>

To eliminate high frequency oscillation and noise in handset audio. C724 was 470pF, 50V, Ceramic (19A702061P77).

To prevent damage to R614 when mounting in casting. R614, R615 and C730 relocated on board.

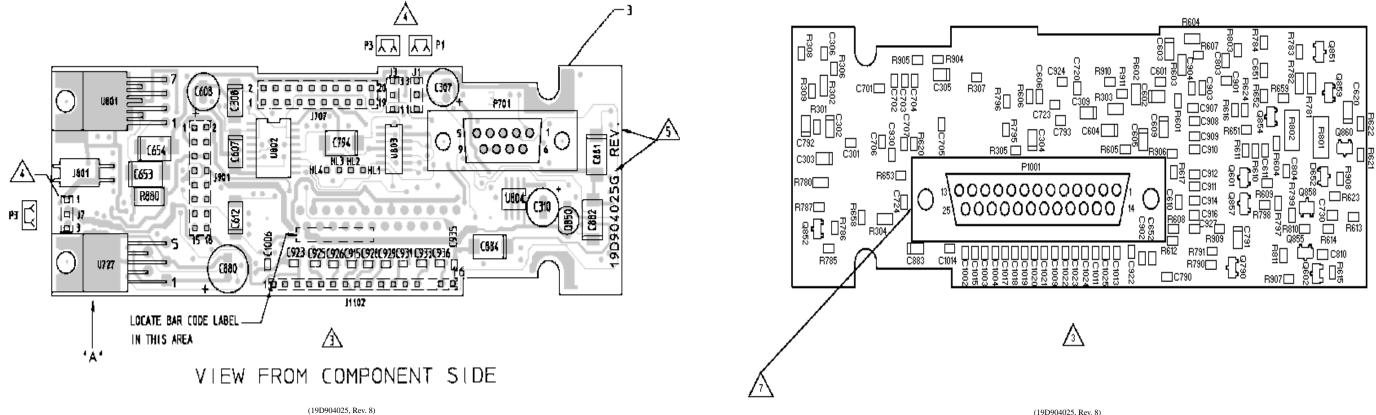
*COMPONENTS ADDED , DELETED OR CHANGED BY PRODUCTION CHANGES

To improve handset sensitivity. Changed R303 to 19A702931P383, Metal Film, 71.5k ohms. Changed R304 to 19A702931P401, Metal Film, 100k ohms.

REV. C - Audio Amplifier Board 19D904025G1, G2

REV. D - Audio Amplifier Board 19D904025G1, G2

OUTLINE DIAGRAM



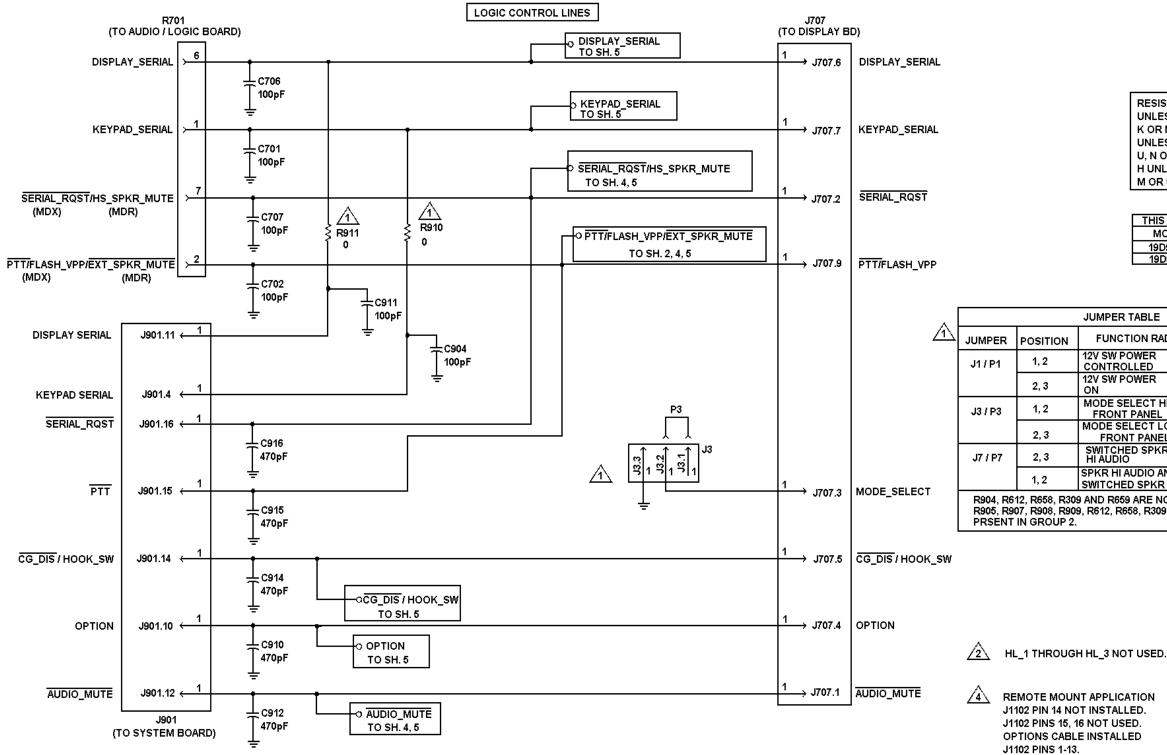
(19D904025, Rev. 8)

LEAD IDENTIFICATION LEAD IDENTIFICATION FOR Q602, Q790, Q851-Q853, Q855, & Q860 LEAD IDENTIFICATION **FOR Q850** FOR D651 & D652 (B) 2 🗖 2 □3 (C) Пз (E) 1 🗖 1 IN - LINE TOP VIEW TOP VIEW TOP VIEW NOTE: CASE SHAPE IS DETERMINING PRESS IN PERPENDICULAR TO BOARD WITHIN 2 DEGREES AND IN ALIGNMENT WITH EACH OTHER WITHIN 3 DEGREES IF APPLICABLE FACTOR FOR LEAD IDENTIFICATION LEAD IDENTIFICATION FOR Q601 & Q854 (D) 2 🗖 🛛 3 (G) (S) 1 🗖 MOUNTING FOR J1, J3, J7, J707, J901, & J1102 TOP VIEW

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AUDIO AMPLIFIER BOARD 19D904025G1, 2

SCHEMATIC DIAGRAM



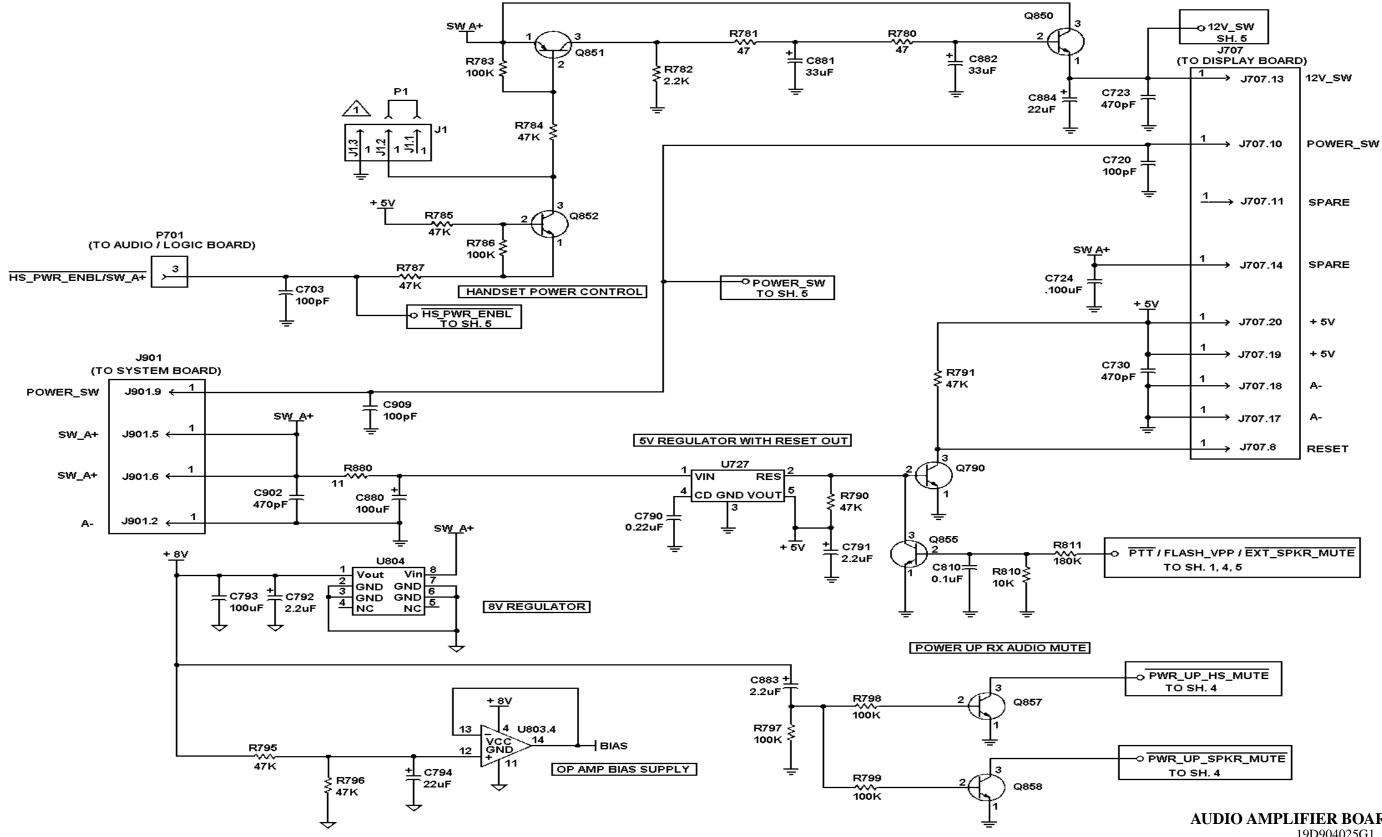
19D904025G1, G2 (19D904024, Sh. 1, Rev. 7)

RESISTOR VALUES ARE IN OHMS UNLESS FOLLOWED BY A MULTIPLIER K OR M. CAPACITOR VALUES IN F UNLESS FOLLOWED BY A MULTIPLIER U, N OR P. INDUCTANCE VALUES IN H UNLESS FOLLOWED BY A MULTIPLIER MORU.

THIS SCHEMATIC DIAGRAM APPLIES TO		
MODEL NO.	REV LETTER	
19D904025G1	D	
19D904025G2	D	

TABLE			
ION RADIO	APPLICATION		
OWER LLED	MDX-DM, MDR-DM, MDX CONV, MDR GE-MARC		
OWER	MDX GE-MARC		
LECT HIGH PANEL	MDX-DM, MDR-DM, MDX CONV, MDR GE-MARC		
LECT LOW T PANEL	MDX GE-MARC		
D SPKR	MDX-DM, MDR-DM, MDX CONV, MDX GE-MARC, MDR GE-MARC		
UDIO AND MDX LT-DM AND REMOTE D SPKR HI MOUNT APPLC.			
ARE NOT PRESENT IN GROUP 1 58, R309 AND R659 ARE NOT			

SCHEMATIC DIAGRAM



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 -0	PTT/FLASH_		SPKR_N	UTE
	TO SH. 1	1, 4, 5		

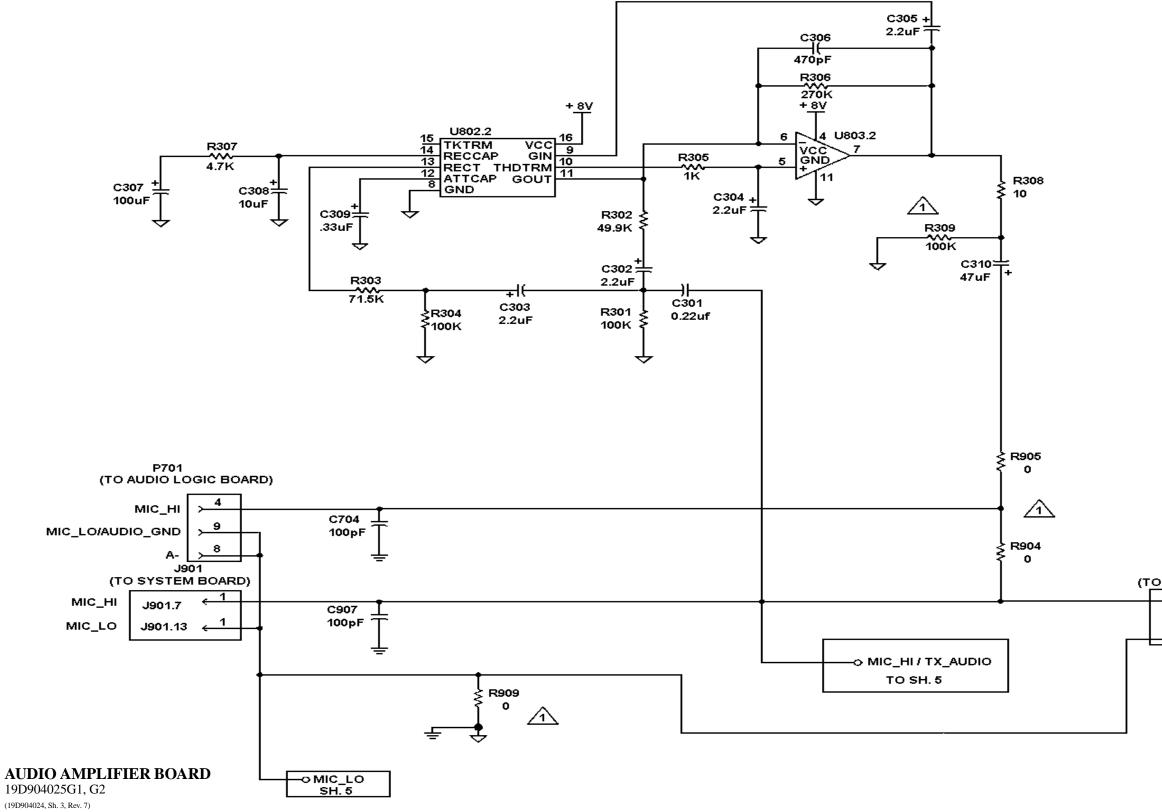
ட	PWR UP HS MUTE
ΓŸ	
	TO SH. 4

AUDIO AMPLIFIER BOARD

19D904025G1, G2

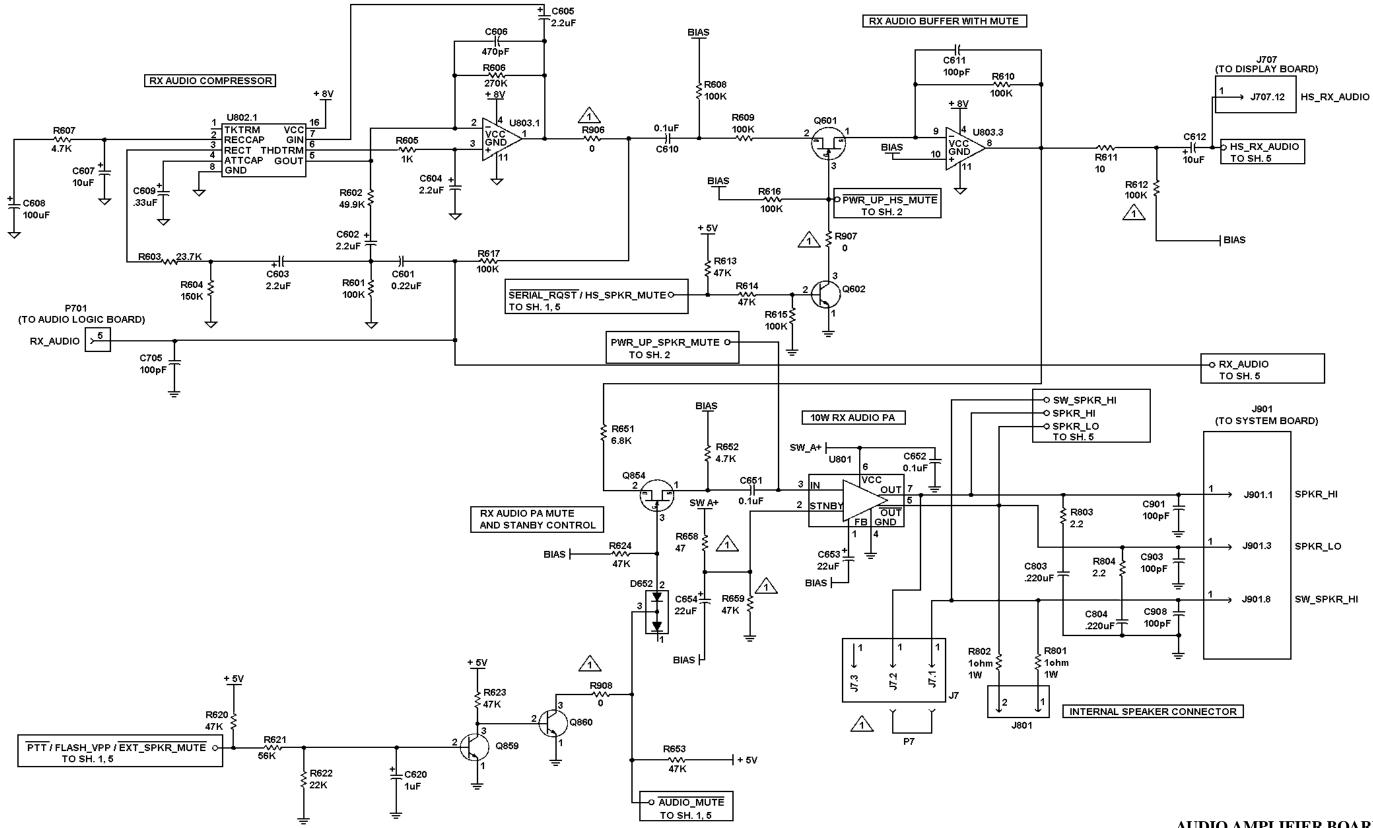
(19D904024, Sh. 2, Rev. 7)

HANDSET TX AUDIO COMPRESSOR



J707 D DISPLAY BOARD)	
1 → J707.15	MIC_HI / TX_AUDIO
<u> 1 </u> → J707.16	MIC_LO / AUDIO_GND

SCHEMATIC DIAGRAM

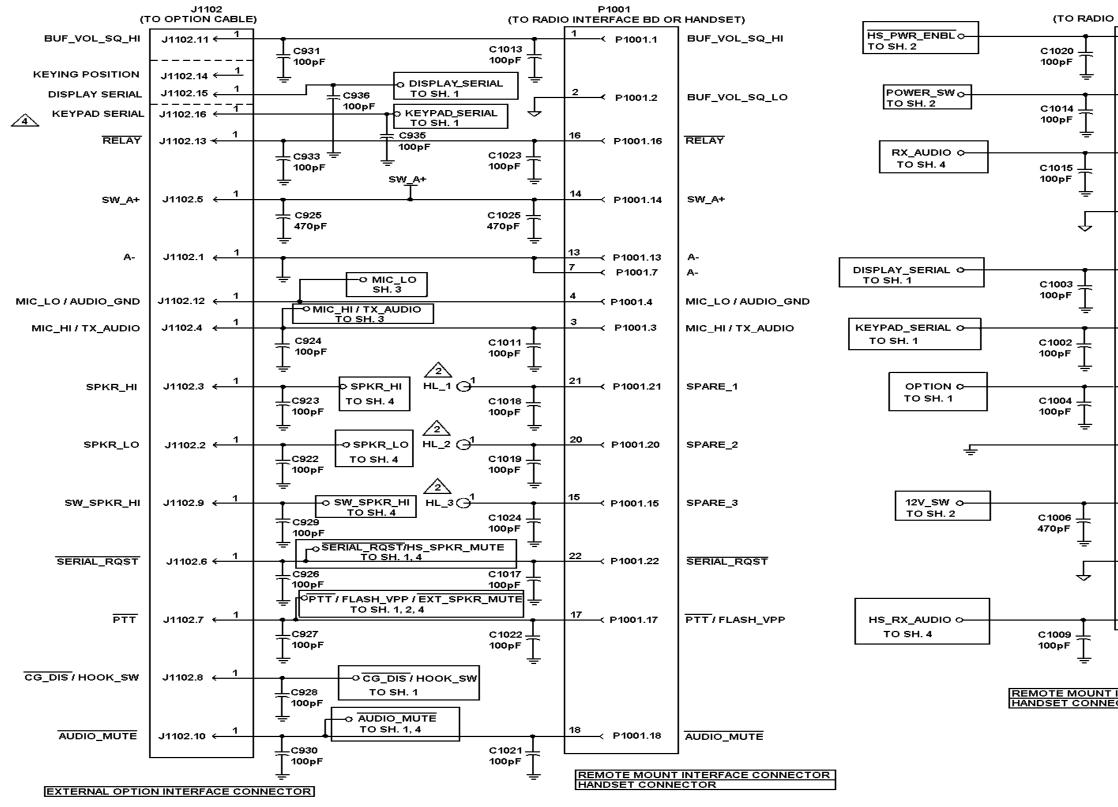


AUDIO AMPLIFIER BOARD

19D904025G1, G2

(19D904024, Sh. 4, Rev. 7)

SCHEMATIC DIAGRAM



AUDIO AMPLIFIER BOARD

19D904025G1, G2

(19D904024, Sh. 5, Rev. 7)

P1001 INTERFACE BD OR HANDSET)	
<u>19</u> ← P1001.19	HS_PWR_ENBL/ SW_A+
25 < P1001.25	POWER_SW
24 < P1001.24	BUF_RX_AUDIO_HI
23 ← P1001.23	BUF_RX_AUDIO_LO
11 ──── P1001.11	DISPLAY_SERIAL
12 P1001.12	KEYPAD_SERIAL
<u>10</u> ← P1001.10	OPTION
	OF HON
9 P1001.9	SHIELD
P1001.9	SHIELD
8 . 54004.0	
P1001.8	12V_SW
6	
P1001.6	AUDIO_GND
5	
5 ← P1001.5	HS_RX_AUDIO

REMOTE MOUNT INTERFACE CONNECTOR HANDSET CONNECTOR

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