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INSTRUCTION MANUAL

MODELS 751A, 752A AND 753A BRICKWALL FILTERS

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WAVETEK

WAVETEK SAN DIEGO, INC.

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INSTRUCTION MANUAL

MODELS 751A, 752A AND 753A BRICKWALL FILTERS

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SAFETY

This instrument is wired for earth grounding via the facility power wiring. Do not bypass earth grounding with two wire extension cords, plug adapters, etc.

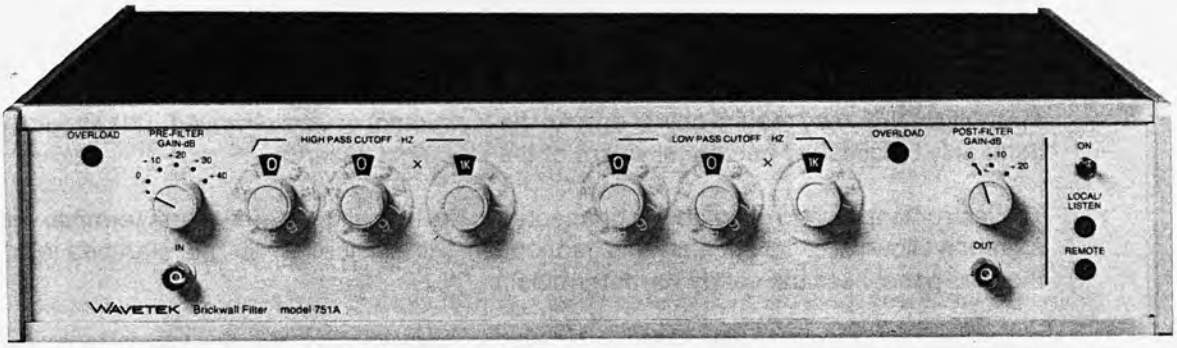
BEFORE PLUGGING IN the instrument, comply with installation instructions.

MAINTENANCE may require power on with the instrument covers removed. This should be done only by qualified personnel aware of the electrical hazards.

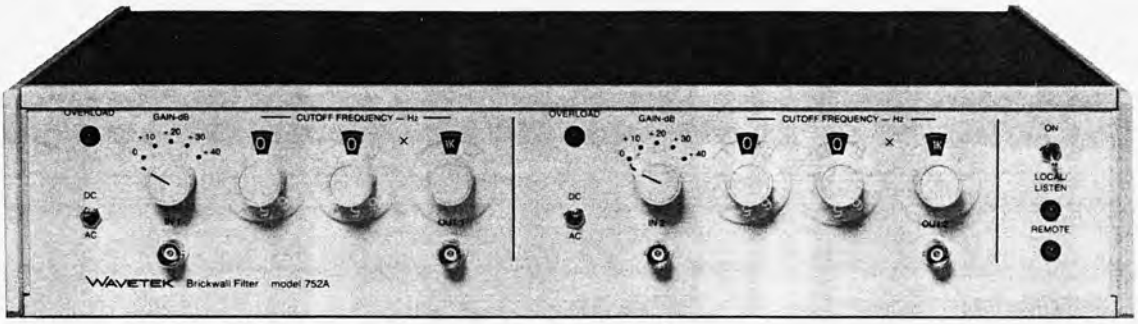
The instrument power receptacle is connected to the instrument safety earth terminal with a green/yellow wire. Do not alter this connection. (Reference: ⏚ or ⚠ stamped inside the rear panel near the safety earth terminal.)

WARNING notes call attention to possible injury or death hazards in subsequent operations.

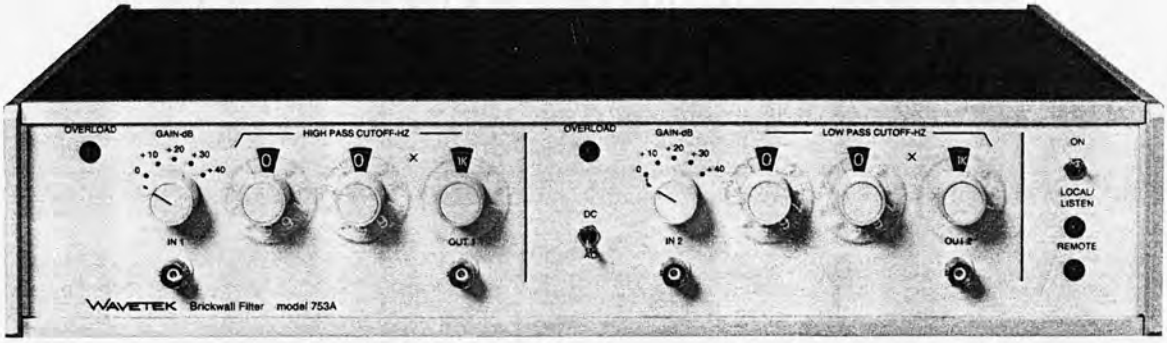
CAUTION notes call attention to possible equipment damage in subsequent operations.



Model 751A. Brickwall Filter



Model 752A. Brickwall Filter



Model 753A. Brickwall Filter

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SECTION 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

The Models 751A, 752A and 753A are programmable Brickwall™ Filters offering near-ideal passband and stopband characteristics.

The instruments employ 7th-order (7 poles and 6 zeroes) Elliptic or Cauer filters with design values of 0.3 dB peak-to-peak passband ripple and 85 dB stopband attenuation. The transition from passband to stopband has a 115 dB/octave rolloff rate. For low pass response, the stopband is at 1.7 × cutoff frequency; high pass response, the stopband is 0.6 × cutoff for frequency.

The cutoff frequency may be programmed from 10 Hz to 99 kHz with 2-digit resolution and 1 Hz to 9 Hz with 1-digit resolution. Pre-filter, and (where available) post-filter gain may be programmed in 10 dB steps, up to the maximum available.

These instruments are extremely valuable in signal-processing applications for band-limiting prior to sampling to prevent aliasing, or for separating a narrow spectrum of interest from noise or other interfering signals. In addition to the extremely sharp filtering, they provide programmable low noise amplification for applications involving low-level signals and overload indicators to ensure operation within their linear dynamic range.

The basic differences of the three models are summarized here.

1.1.1 Model 751A is a single-channel band pass filter which consists of a high-pass section followed by a low-pass section. Low-pass and high-pass cutoff frequencies may be independently programmed. Prefilter gain, up to 40 dB, may be programmed, as well as postfilter gain, up to 20 dB. In addition, there are individual input and output overload indicators.

1.1.2 Model 752A is a dual-channel, low-pass filter. The two channels are amplitude-and phase-matched. They may be used independently, or cascaded for a rolloff rate of 230 dB/octave. Each channel has prefilter gain of up to 40 dB, input overload indicators and selectable ac/dc input coupling.

1.1.3 Model 753A is a dual-channel instrument which consists of independent high-pass and low-pass sections. The two sections may be used independently, cascaded for band pass response, or paralleled for band reject response. Each section has prefilter gain of up to 40 dB and input overload indicators. The low-pass section has selectable ac/dc input coupling.

1.2 OPTIONS

Option 001 allows remote control of the filter using 35 lines of parallel BCD programming. Programming delay is 500 μs plus filter settling time, which is a function of the programmed cutoff frequency.

Option 002 allows remote control of the filter using the IEEE 488-1978 (GPIB) interface. The interface includes the following functions: AH1 (Acceptor Handshake), L1 (Basic Listener with listen only), and DT1 (Device Trigger).

1.3 DEFINITIONS

The important low-pass characteristic of an Elliptic Filter is illustrated in Figure 1-1. The high-pass characteristic is the "mirror image" of the low-pass curve shown.

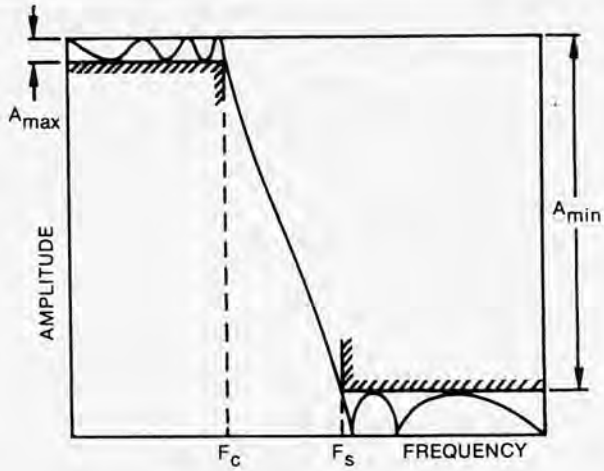

Figure1-1. Elliptic Filter Response

The Cutoff Frequency, F_C, is the frequency at which the response of the filter drops below the specified passband

ripple, A_{max}. The conventional −3 dB frequency criterion has no significance in an elliptic filter.

For the low-pass section, F_s is the lowest frequency for which the specified stop-band attenuation (A_{min}) applies. For the high-pass section, it is the highest frequency.

It should be noted that the low-pass and high-pass cutoff frequency tolerances of these instruments are intentionally "skewed" to slightly beyond their nominal values. That is, the high-pass cutoff frequency is slightly lower and the low-pass cutoff frequency is slightly higher than its nominal value. This ensures no data loss up to the F_c setting in the case of the 752A, or in the case of the 751A or 753A, when the two sections are set to identical cutoffs (minimum bandwidth) the slopes of the resulting response will not overlap and cause a passband amplitude loss.

1.4 SPECIFICATIONS

The following specifications apply to all models, except as noted.

1.4.1 Cutoff Frequency (F_c)

Range
1 Hz to 99 kHz with front panel and GPIB, 1 Hz to 100 kHz with remote control (BCD only).

Control (each channel)
Two 10-position switches, one 4-position multiplier switch; remotely by 12-bit code.

Resolution

Multiplier	Frequency (Hz) Local	Frequency (Hz) Remote	Resolution of Setting (Hz)
× 1	1-99	1-100	1
× 10	100-990	100-1k	10
× 100	1k-9.9k	1k-10k	100
× 1K	10k-99k	10k-100k	1k

Accuracy
−0.3 ± 0.1 dB at F_c.

Stability
± 200 ppm/°C.

1.4.2 Gain (Prefilter)

Control (each channel)
One 5-position switch, or 3-bit code.

Steps
0, +10, +20, +30, +40 dB.

Accuracy
± 0.2 dB.

Gain (Postfilter)
Model 751A only

Control
One 3-position switch, or 3-bit code.

Steps
0, +10, +20 dB.

Accuracy
± 0.2 dB.

1.4.3 Filter Characteristics

Type
7-pole, 6 zero elliptic (Cauer).

Rolloff
115 dB/octave.

Passband Response
Low-pass channel: 0.3 dB p-p; High-pass channel: 0.3 dB p-p (−3 dB at approximately 400 kHz).

Stopband Attenuation

Low-Pass Channel	High-Pass Channel
−0.3 dB (dc to F_c)	−0.3 dB at F_c
−40 dB at 1.34 F_c	−40 dB at 0.75 F_c
−60 dB at 1.53 F_c	−60 dB at 0.65 F_c
−80 dB at 1.7 F_c	−80 dB at 0.6 F_c

Maximum Stopband Attenuation
Low-pass channel: 85 dB (typical); 80 dB (minimum) to 10 MHz. High-pass channel: 85 dB (typical); 80 dB (minimum).

Model 752A only

Amplitude Match*
± 0.1 dB, dc to 0.8 F_c. ± 0.2 dB, 0.8 F_c to F_c.

Phase Match*
± 1/2° (typical). ± 1° (maximum), dc to 0.8 F_c. ± 1° (typical), ± 2° (maximum), 0.8 F_c to F_c.

1.4.4 Input Characteristics

Coupling
Low-pass channel: dc or ac with 0.3 Hz cutoff (nominal). High-pass channel: dc.

Impedance
1 MΩ 50 pF nominal.

Full Scale Signal
± 10V at 0dB gain; ± 100V absolute maximum.

Equivalent Input Noise
−150 dBV/$\sqrt{Hz}$ at + 40 dB gain.

1.4.5 Output Characteristics

Impedance
50Ω nominal.

Full Scale Signal
± 10V into R_L > 5kΩ.

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Noise (1 MHz detector BW)
<80 dB below full-scale referred to output at any prefilter gain. (0 dB postfilter gain, 751A).
<10 μV referred to input at 40 dB prefilter gain.

Harmonic Components
>80 dB below full-scale for 1kHz input frequency.

Spurious Components
>80 dB below full-scale (includes line-related spurious).

Intermodulation Products
>70 dB below full-scale for 90 kHz and 70 kHz input frequencies.

DC Offset
Adjustable to 0 Vdc; < ± 10 mV

Drift
± 50 mV (maximum), + 15°C to + 40°C at 0 dB gain setting.

1.4.6 General

Configuration
Bench-top, convertible to rack-mounting.

Input/Output Connectors
Front and rear panel BNCs.

Accessories Supplied
Instruction Manual, Rack-mounting kit.

Temperature
0°C to + 40°C for operation; − 20°C to + 70°C for storage.

Dimensions
43.2 cm (17 in.) wide; 8.9 cm (3½ in.) high; 33 cm (13 in.) deep.

Weight
8.2 kg (18 lb) net; 10.5 kg (23 lb) shipping.

Power
115/230 Vac ± 10%, 50 to 60 Hz, 25W.

1.4.7 Options

001 Parallel BCD Interface
002 GPIB Interface — (IEEE 488-1978)

*Specifications apply when most significant cutoff digit is used; derate by a factor of 2 when both digits are used.

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SECTION 2
INITIAL PREPARATION

2.1 INSPECTION

After unpacking the instrument, visually inspect all external parts for possible damage to connectors, surface areas, etc. If damage is discovered, file a claim with the carrier who transported the unit. The shipping container and packing material should be saved in case reshipment is required.

2.2 MECHANICAL INSTALLATION

The Models 751A, 752A, and 753A are designed for bench top operation or standard 19-inch RETMA rack mounting. Ambient temperature within the rack must not exceed + 40°C while the instrument is operating. The rear panel switches should be set before installing the filter in the rack.

2.3 ELECTRICAL INSTALLATION

2.3.1 Power Connection

The instrument will operate from either 115 or 230 Vac ± 10%, 50 to 60 Hz. The unit is shipped with the rear panel line voltage selector set for 115 V and a 1A SB fuse (see figure 2-1). To change the setting, insert a small-blade screwdriver in the switch slot and move switch to expose 115 for 115 Vac operation, or 230 for 230 Vac operation. For 230 Vac operation, change to a ½A SB fuse.

WARNING

In keeping with standard safety practice, the case of the instrument is grounded through the power cord. If the instrument must be connected to a two wire receptacle, use a parallel ground adapter and connect the short lead to ground.

Figure 2-1. Voltage Selector and Fuse

2.3.2 Signal Connection

Use RG58U 50Ω coaxial cables equipped with BNC connectors to distribute signals when connecting this instrument to associated equipment.

2.3.3 GPIB Option

2.3.3.1 GPIB Connection

The GPIB I/O rear panel connection is shown in figure 2-2; pin connections and signal names are given in table 2-1. The panel connector is an Amphenol 57-10240 or equivalent and connects to a GPIB bus cable connector (available from Wavetek in 1 and 2 meter lengths).

Table 2-1. GPIB Data In/Out

Pin	Signal	
1	DIO1	True When Low
2	DIO2	True When Low
3	DIO3	True When Low
4	DIO4	True When Low
5	EOI	True When Low
6	DAV	True When Low
7	NRFD	True When High
8	NDAC	True When High
9	IFC	True When Low
10	SRQ	True When Low
11	ATN	True When Low
12	Chassis Ground (⏚)	
13	DIO5	True When Low
14	DIO6	True When Low
15	DIO7	True When Low
16	DIO8	True When Low
17	REN	True When Low
18		Signal Ground (⏚)
19		Signal Ground (⏚)
20		Signal Ground (⏚)
21		Signal Ground (⏚)
22		Signal Ground (⏚)
23		Signal Ground (⏚)
24		Signal Ground (⏚)

2.3.3.2 GPIB Address

For instruments on the General Purpose Interface Bus (GPIB), ensure that the GPIB address is correct. The GPIB address can be changed by the switch on the rear of the instrument (see figure 2-2) by simply setting the multiple section switch according to table 2-2. The switch sections are labeled from 1 through 5 and their open position noted (OPEN = Binary "0" in table 2-2).

Table 2-2. GPIB Address Codes

	ASCII		Switch Position					
Device	Listen	Talk	16	8	4	2	1	Listen (Hexa-decimal)
1	(space)	@	0	0	0	0	0	20
1	!	A	0	0	0	0	1	21
2	"	B	0	0	0	1	0	22
3	#	C	0	0	0	1	1	23
4	$	D	0	0	1	0	0	24
5	%	E	0	0	1	0	1	25
6	&	F	0	0	1	1	0	26
7	'	G	0	0	1	1	1	27
8	(	H	0	1	0	0	0	28
9	)	I	0	1	0	0	1	29
10	*	J	0	1	0	1	0	2A
11	+	K	0	1	0	1	1	2B
12	,	L	0	1	1	0	0	2C
13	—	M	0	1	1	0	1	2D
14	•	N	0	1	1	1	0	2E
15	/	O	0	1	1	1	1	2F
16	0	P	1	0	0	0	0	30
17	1	Q	1	0	0	0	1	31
18	2	R	1	0	0	1	0	32
19	3	S	1	0	0	1	1	33
20	4	T	1	0	1	0	0	34
21	5	U	1	0	1	0	1	35
22	6	V	1	0	1	1	0	36
23	7	W	1	0	1	1	1	37
24	8	X	1	1	0	0	0	38
25	9	Y	1	1	0	0	1	39
26	:	Z	1	1	0	1	0	3A
27	;	[	1	1	0	1	1	3B
28	<	\	1	1	1	0	0	3C
29	=	]	1	1	1	0	1	3D
30	>	↑	1	1	1	1	0	3E

NOTE

Address 31 is not allowed.

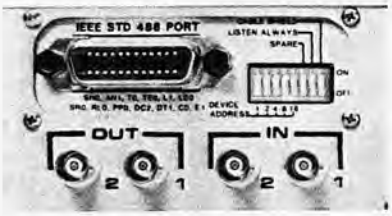

Figure 2-2. GPIB Address Selector Switch

2.3.4 BCD Option

The BCD I/O connector is a 50 pin connector; pin connections and functions are listed in table 2-3.

Table 2-3. BCD Interface Programming Connector All Models(1)

Pin	Function	
1	× 1 Cutoff-Frequency Multiplier	True When Low Channel 1
2	× 10 Cutoff-Frequency Multiplier	
3	× 100 Cutoff-Frequency Multiplier	
4	× 1k Cutoff-Frequency Multiplier	
5	Cutoff-Frequency 1	
6	Cutoff-Frequency 2	
7	Cutoff-Frequency 4	
8	Cutoff-Frequency 8	
9	Cutoff-Frequency 10	
10	Cutoff-Frequency 20	
11	Cutoff-Frequency 40	
12	Cutoff-Frequency 80	
13	Gain 1	
14	Gain 2	
15	Gain 4	
16	Overload	
17-22	Ground	
23	Load Command	
24	Ground	
25-26	Remote Enable	True When Low Channel 2
27	Ground	
28	Load Command	
29-34	Ground	
35	Overload	
36	Gain 4 (Not used in Model 751A).	

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Table 2-3. BCD Interface Programming Connector All Models[1] (Continued)

Pin	Function	
37	Gain 2	True When Low Channel 2
38	Gain 1	
39	Cutoff-Frequency 80	
40	Cutoff-Frequency 40	
41	Cutoff-Frequency 20	
42	Cutoff-Frequency 10	
43	Cutoff-Frequency 8	
44	Cutoff-Frequency 4	
45	Cutoff-Frequency 2	
46	Cutoff-Frequency 1	
47	× 1k Cutoff-Frequency Multiplier	
48	× 100 Cutoff-Frequency Multiplier	
49	× 10 Cutoff-Frequency Multiplier	
50	× 1 Cutoff-Frequency Multiplier	

[1] For Models 751A/753A, Channel 1 = High pass filter section; Channel 2 = Low pass filter section.

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SECTION 3
OPERATION

3.1 INTRODUCTION

This section describes how to operate the Models 751A, 752A, and 753A. Each model's controls and indicators are described. This is followed by typical operating procedures and response characteristics. Finally, the two interface options, BCD and GPIB, are discussed.

3.2 CONTROLS AND INDICATORS

The front panel controls and indicators are shown in the following figures and described in the following tables.

Model	Figure	Table
751A	3-1	3-1
752A	3-2	3-2
753A	3-3	3-3

Rear panel controls for all three models are shown in figure 3-4 and described in table 3-4.

Table 3-1. Model 751A Controls and Indicators

Location in Figure 3-1	Function
1	OVERLOAD LED — When lit, indicates an input signal level of greater than ± 10V (including pre-filter gain).
2	PRE-FILTER GAIN — Sets the gain from 0 to 40 dB in 10 dB steps.
3	Most Significant Digit — Sets the MSD of the cutoff frequency of the high pass filter, positions 0 to 9 with continuous rotation.
4	Least Significant Digit — Sets the LSD of the cutoff frequency of the high pass filter, positions 0 to 9 with continuous rotation.
5	Decimal Multiplier — Sets the cutoff frequency range of high pass filter, positions 1, 10, 100, and 1k.
6	Most Significant Digit — Sets the MSD of the cutoff frequency of the low pass filter; positions 0 to 9 with continuous rotation.
7	Least Significant Digit — Sets the LSD of the low pass filter cutoff frequency, positions 0 to 9 with continuous rotation.
8	Decimal Multiplier — Sets the low pass filter cutoff frequency range, positions 1, 10, 100, and 1k.
9	OVERLOAD LED — When lit, indicates an output signal of greater than ± 10V (including all filter gain).
10	POST-FILTER GAIN — Sets the gain from 0 to 20 dB in 10 dB steps.
11	ON switch — Turns the 751A on.
12	LOCAL/LISTEN — A lit LED indicates active front panel controls (LOCAL) or remote GPIB control (LISTEN). With the BCD interface, the LED does not light in remote.

Table 3-1. Model 751A Controls and Indicators (Continued)

Location in Figure 3-1	Function
13	REMOTE LED — When lit, indicates the 751A is in the remote mode.
14	Output BNC connector.
15	Input BNC connector.

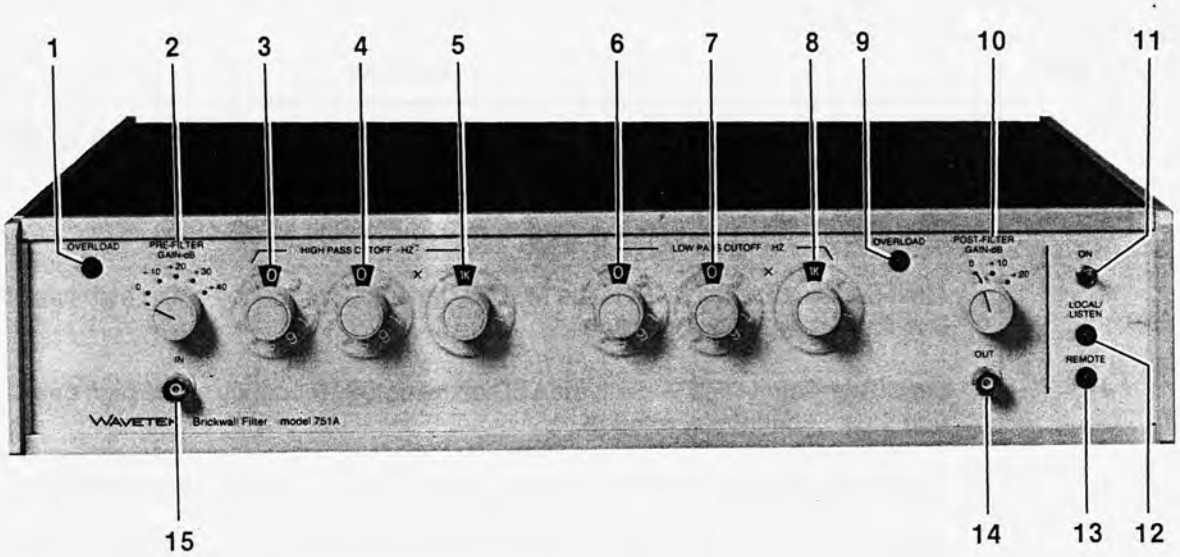

Figure 3-1. Model 751A Controls and Indicators

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Table 3-2. Model 752A Controls and Indicators

Location in Figure 3-2	Function
1	OVERLOAD LED — When lit, indicates an input signal level to channel 1 of greater than ± 10V (including gain).
2	GAIN Channel 1 — Sets the input gain from 0 to 40 dB in 10 dB steps.
3	Most Significant Digit — Sets the MSD of the Channel 1 cutoff frequency, positions 0 to 9 with continuous rotation.
4	Least Significant Digit — Sets the LSD of the Channel 1 cutoff frequency, positions 0 to 9 with continuous rotation.
5	Decimal Multiplier — Sets the Channel 1 cutoff frequency range, positions 1, 10, 100, and 1k.
6	OVERLOAD LED — When lit, indicates an input signal level to channel 2 of greater than ± 10V (including gain).
7	GAIN Channel 2 — Sets the input gain from 0 to 40 dB in 10 dB steps.
8	Most Significant Digit — Sets the MSD of the Channel 2 cutoff frequency, positions 0 to 9 with continuous rotation.
9	Least Significant Digit — Sets the LSD of the Channel 2 cutoff frequency, positions 0 to 9 with continuous rotation.
10	Decimal Multiplier — Sets the Channel 2 cutoff frequency range, positions 1, 10, 100, and 1k.
11	ON Switch — Turns the 752A on.
12	LOCAL/LISTEN — A lit LED indicates active front panel controls (LOCAL) or remote GPIB control (LISTEN). With the BCD interface, the LED does not light in remote.
13	REMOTE LED — When lit, indicates the 752A is in the remote mode.
14	Channel 2 Output BNC connector.
15	Channel 2 Input BNC connector.
16	DC/AC Switch — Selects input coupling for Channel 2.
17	Channel 1 Output BNC connector.
18	Channel 1 Input BNC connector.
19	DC/AC Switch — Selects input coupling for Channel 1.

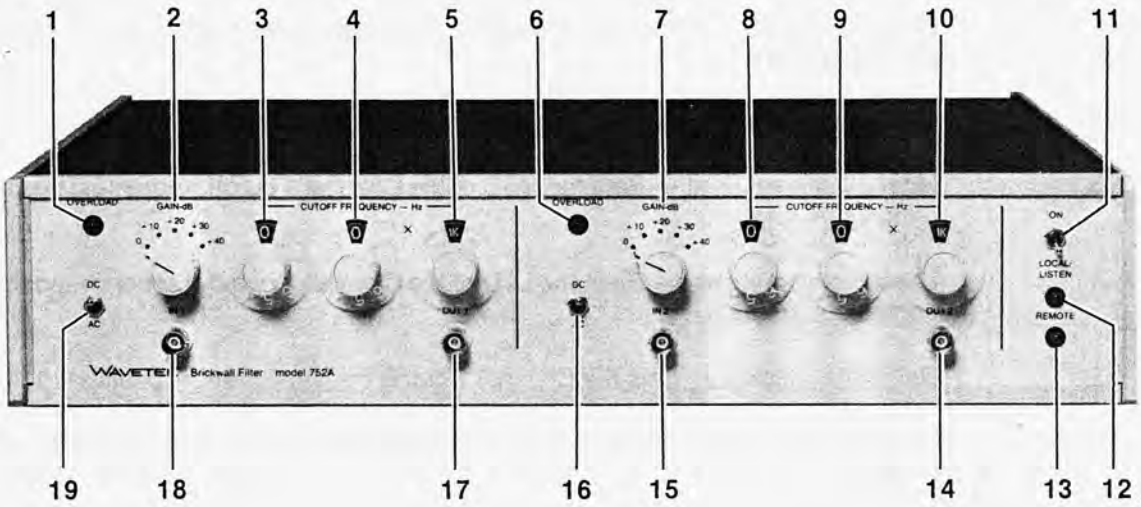

Figure 3-2. Model 752A Controls and Indicators

Table 3-3. Model 753A Controls and Indicators

Location in Figure 3-3	Function
1	OVERLOAD LED — When lit, indicates an input signal level to high pass filter of greater than ± 10V (including gain).
2	High Pass GAIN — Sets the input gain from 0 to 40 dB in 10 dB steps.
3	Most Significant Digit — Sets the MSD of the high pass filter's cutoff frequency, positions 0 to 9 with continuous rotation.
4	Least Significant Digit — Sets the LSD of the high pass filter's cutoff frequency, positions 0 to 9 with continuous rotation.
5	Decimal Multiplier — Sets the high pass filter's cutoff frequency range, positions 1, 10, 100, and 1k.
6	OVERLOAD LED — When lit, indicates an input signal level to low pass filter of greater than ± 10V (including gain).
7	Low Pass GAIN — Sets the input gain from 0 to 40 dB in 10 dB steps.
8	Most Significant Digit — Sets the MSD of the low pass filter's cutoff frequency, positions 0 to 9, continuous rotation.

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Table 3-3. Model 753A Controls and Indicators (Continued)

Location in Figure 3-3	Function
9	Least Significant Digit — Sets the LSD of the low pass filter cutoff frequency, positions 0 to 9 with continuous rotation.
10	Decimal Multiplier — Sets the high pass filter cutoff frequency range, positions 1, 10, 100, and 1k.
11	ON Switch — Turns the 753A on.
12	LOCAL/LISTEN — A lit LED indicates active front panel controls (LOCAL) or remote GPIB control (LISTEN). With the BCD interface, the LED does not light in remote.
13	REMOTE LED — When lit, indicates the 753A is in the remote mode.
14	Low pass channel output BNC.
15	Low pass channel input BNC.
16	DC/AC Switch — Selects input coupling for the low pass channel.
17	High pass channel output BNC.
18	High pass channel input BNC.

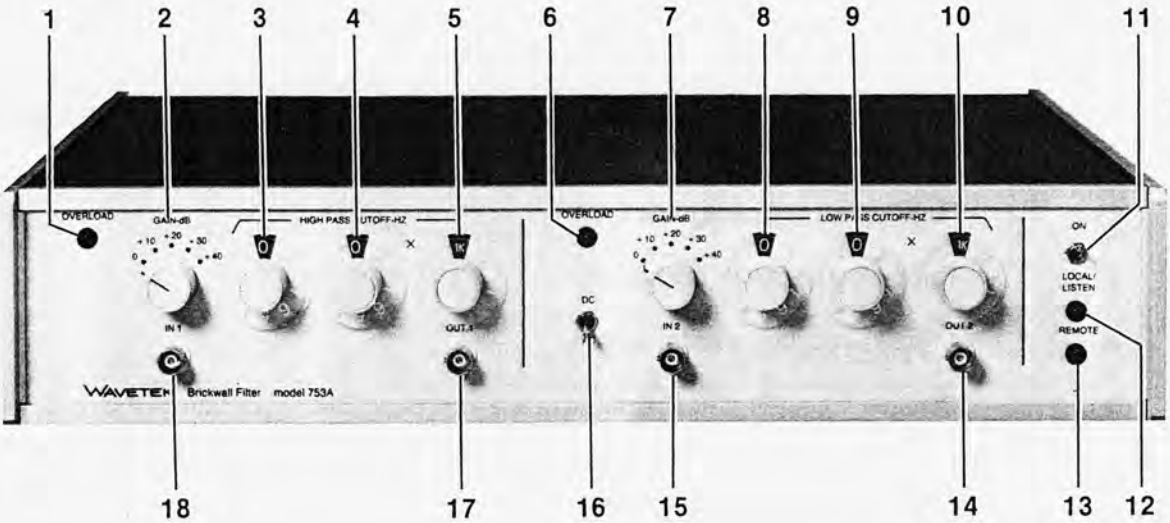

Figure 3-3. Model 753A Controls and Indicators

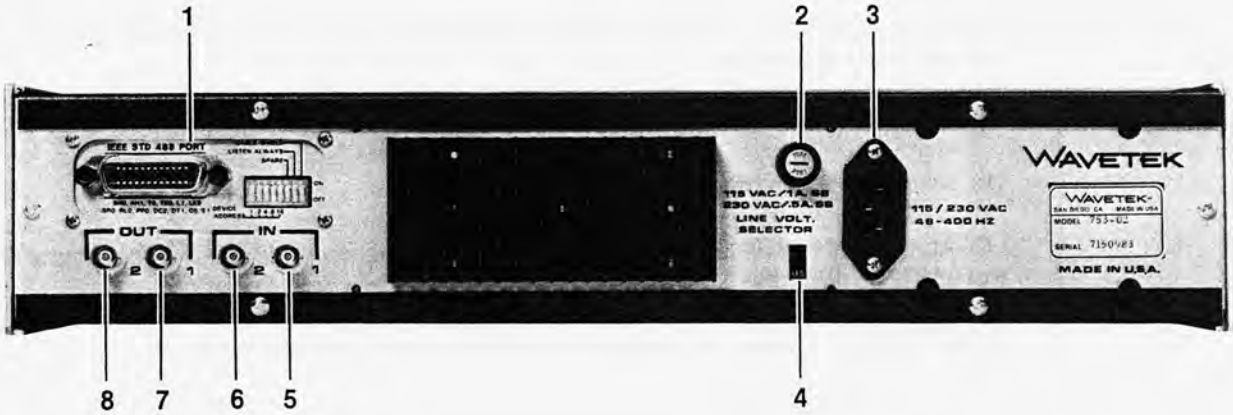

Figure 3-4. Models 751A, 752A, and 753A Rear Panel Controls

Table 3-4. Models 751A, 752A, and 753A Rear Panel Controls

Location in Figure 3-4	Function
1	Optional rear panel programming connector. Option 01: BCD interface 50 pin connector (not shown), see table 3-5 and paragraph 3.4. Option 02: GPIB interface connector, see table 2-1 and paragraph 3.5; GPIB address switch, see table 2-2 and paragraph 2.3.3.2.
2	Fuseholder, see paragraph 2.3.1.
3	Three-wire ac power connector.
4	115/230 Vac line selector switch.
5	Channel 1 input BNC connector parallels front panel BNC. Duplicate of item 6 for input on Model 751A.
6	Channel 2 input BNC connector.
7	Channel 1 Output BNC connector parallels front panel BNC. Duplicate of item 8 for output BNC on Model 751A.
8	Channel 2 Output BNC connector. Parallels front panel BNC.

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3.3 TYPICAL OPERATING PROCEDURES

Always select the minimum decimal multiplier setting. For example, a cutoff frequency of 90 Hz can be set as 09 × 10 or 90 × 1. The proper choice is 90 × 1. In other words, the most significant digit of the cutoff frequency dials should not be set to 0, unless the cutoff frequency is less than 10 Hz. The minimum valid setting of Cutoff Frequency dials is 01. The setting 00 is not valid.

3.3.1 Model 751A

Passband

The passband of the filter extends from the high-pass cutoff frequency setting to the low-pass cutoff frequency setting. These, in turn, are detemined by the two cutoff frequency dials and the corresponding multiplier switches.

The narrowest passband is obtained by setting high-pass and low-pass cutoff frequencies to the same value f_o. In this case, the insertion loss is nominally 0 dB; the 3dB bandwidth extends from approximately 0.95 f_o to approximately 1.05 f_o and it is equal to 0.1 f_o. This corresponds to a Q of 10. In this mode of operation, the instrument operates as a constant – Q (or constant % – Bandwidth) filter.

Pre-Filter Gain

Pre-Filter gain may be selected to be 0, 10, 20, 30 or 40 dB. To maximize the useful dynamic range, the maximum gain should be used without causing the corresponding overload LED to light. Overload "On" indicates that an input signal has exceeded the maximum safe desirable amplitude. If the signal exceeds this range and its frequency is within the passband of the filter, a ± 10 Volt A/D converter connected to the output of the 751A will overflow; however, no distortion occurs in the instrument until the signal exceeds full-scale by 10%.

The maximum desirable full-scale signal is ± 10V (7.1 Vrms) for 0 dB gain. When pre-filter gain is employed, the maximum input signal decreases in direct proportion to the increase in gain. For example, with 20 dB gain, the maximum desirable input amplitude is ± 1.0 V (0.71 Vrms).

Post-Filter Gain

Post-Filter gain may be selected to be 0, 10 or 20 dB. This control should be set such that it does not cause the corresponding overload LED to light. Overload "On" indicates that the output signal has exceeded the maximum safe desirable amplitude and a ± 10 Volt A/D converter connected to the output of the 751A will overflow; however, no distortion occurs in the instrument until the signal exceeds full-scale by 10%.

When Post-filter gain other than 0 dB is used, the dynamic range of the instrument is reduced by the amount of gain employed.

The primary use of Post-filter gain is when the instrument is being used with small (narrow) passbands; gain may be used to increase the amplitude of a small signal which was buried in broadband noise; or, it may be be used to amplify noise, when the objective is to generate band-limited noise from a broadband noise source.

Response Characteristics

The following figures show examples of Model 751A typical response characteristics.

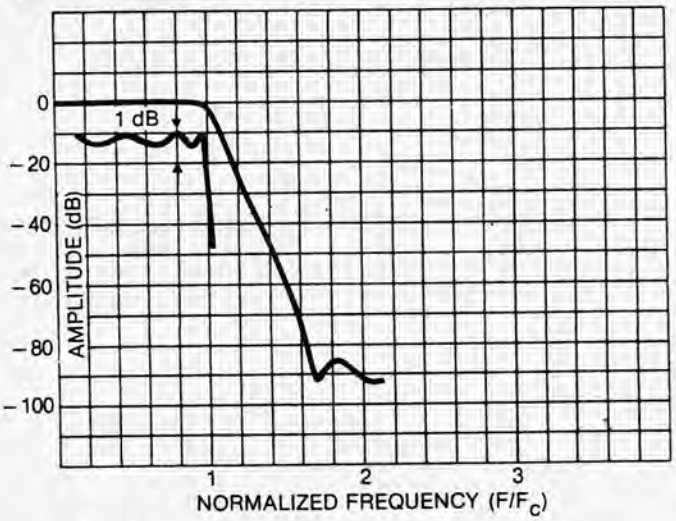

Figure 3-5. Model 751A Low-Pass Frequency Response

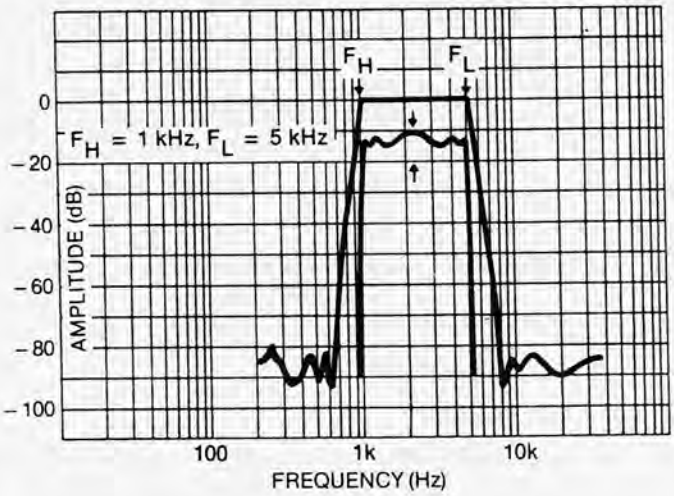

Figure 3-6. Model 751A Typical Bandpass Response

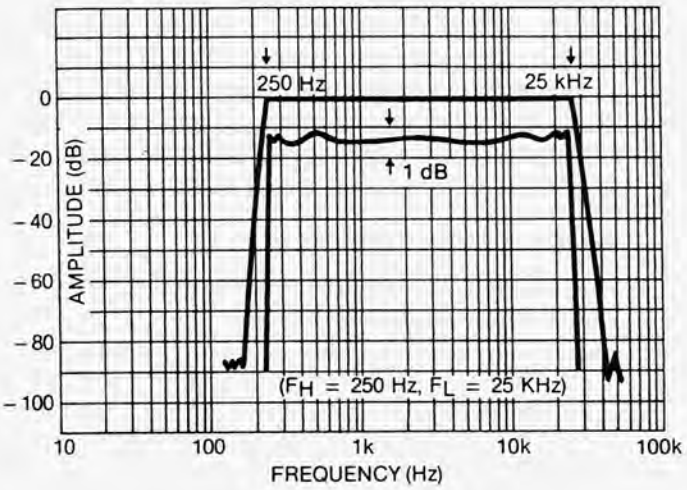

Figure 3-7. Model 751A Typical Bandpass Response

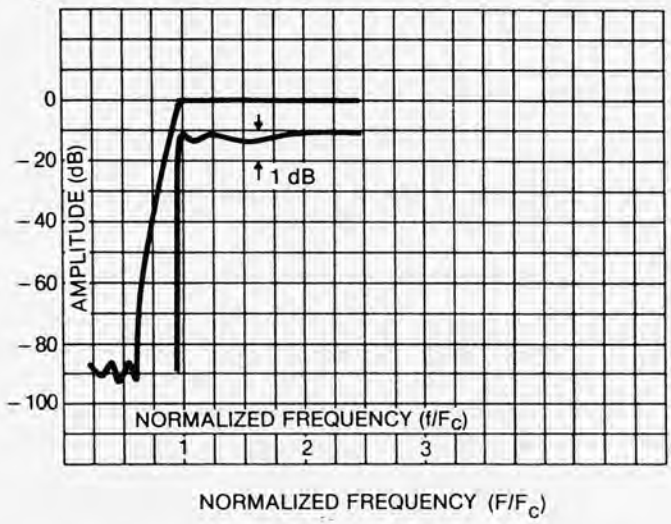

Figure 3-8. Model 751A High-Pass Frequency Response

3.3.2 Model 752A

Low-Pass Filter

The two channels of the instrument may be used independently to process two different input signals.

If the input coupling switch is set to DC, the passband of the filter extends from dc to the cutoff frequency which is defined by the cutoff frequency dials and the multiplier.

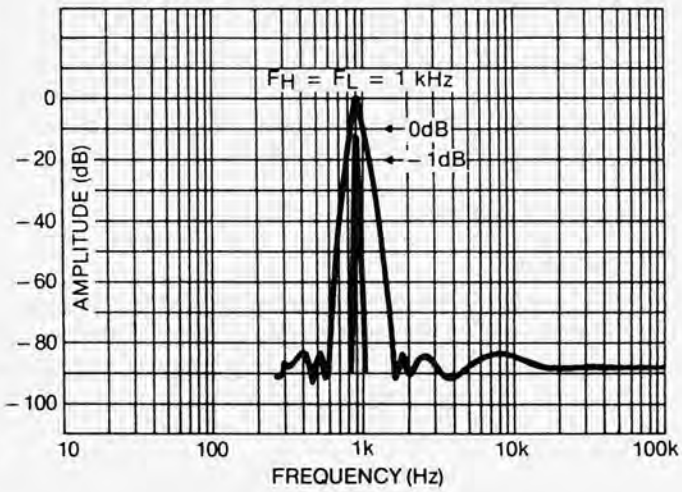

Figure 3-9. Model 751A Minimal Bandpass Response

Switching the coupling to AC causes a 6 dB/oct. rolloff below 0.3 Hz. This position should be used when large dc offsets are present in the input signal and response to dc is not required.

The passband gain of each channel may be selected to be 0, 10, 20, 30 or 40 dB using the Gain switch. To maximize the useful dynamic range, the maximum gain should be used without causing the overload LED to light. Overload "On" indicates that the input signal has exceeded the maximum safe desirable amplitude. If the signal exceeds this range, a ± 10 Volt A/D converter connected to the output of the 752A will overflow; however, no distortion occurs in the instrument until the signal exceeds full-scale by 10%.

The maximum desirable full-scale signal is ± 10V (7.1 Vrms) for 0dB gain. When gain is employed, the maximum input signal decreases in direct proportion to the increase in gain. For example, with 20 dB gain, the maximum desirable input amplitude is ± 1.0V (0.71 Vrms).

Low-Pass Filter with Doubled Rolloff

The two channels of the instrument may be cascaded by connecting the output of channel 1 to the input of channel 2. The cutoff frequency of both channels is set to the same value. Gain controls of both channels may be used. However, to maximize the usable dynamic range, the gain setting of channel 1 should be used before applying gain in channel 2. For example, if 50 dB gain is needed, set channel 1 to 40 dB and Channel 2 to 10 dB.

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Response Characteristics

The following figures show examples of typical Model 752A response characteristics.

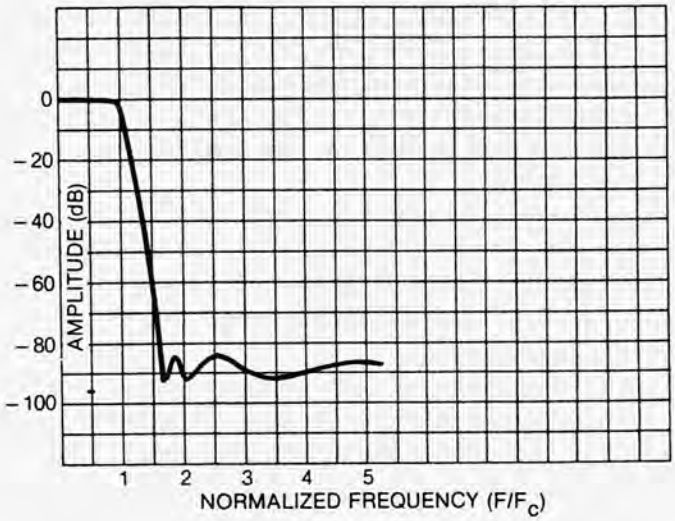

Figure 3-10. Model 752A Frequency Response

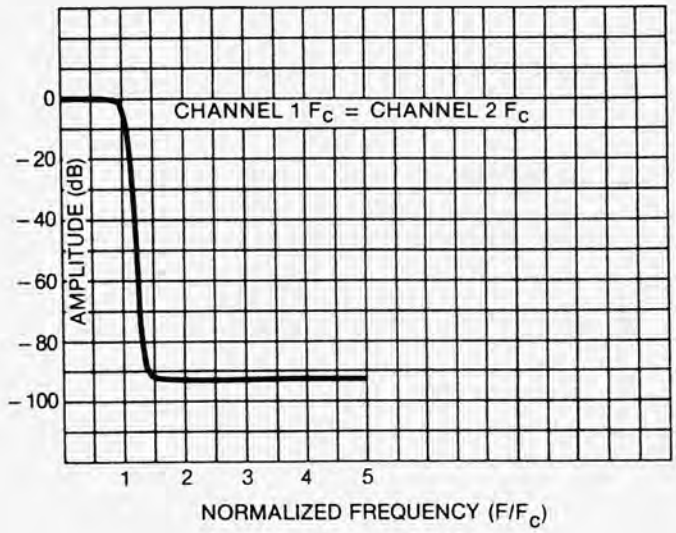

Figure 3-11. Model 752A Cascaded Channel Frequency Response

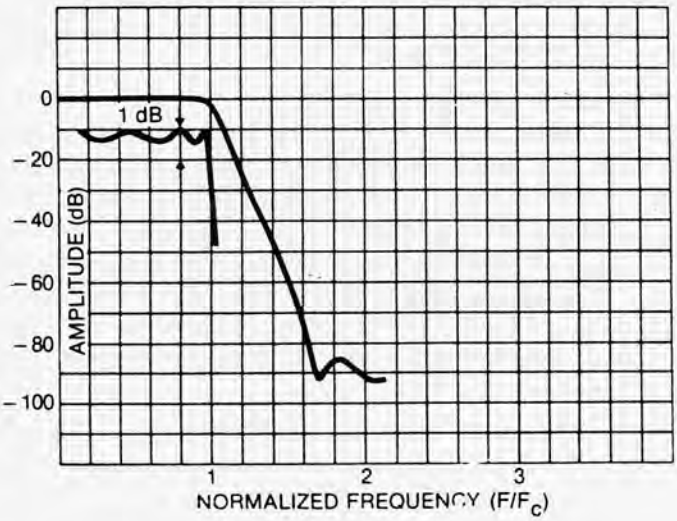

Figure 3-12. Model 752A Low-Pass Freuency Response

3.3.3 Model 753A

High-Pass Filter

The passband of the filter extends from the cutoff frequency setting to the upper 3 dB point of its active elements, which is around 400 kHz. The cutoff frequency is defined by the two cutoff frequency dials and the multiplier.

The passband gain may be selected to be 0, 10, 20, 30 or 40 dB using the gain switch. To maximize the useful dynamic range, the maximum gain should be used without causing the overload LED to light. Overload "On" indicates that the input signal has exceeded the maximum safe desirable amplitude. If the signal exceeds this range, a ± 10 Volt A/D converter connected to the output of the 753A will overflow; however, no distortion occurs in the instrument until the signal exceeds full-scale by 10%.

The maximum desirable full-scale signal is ± 10V (7.1 Vrms) for 0 dB gain. When gain is employed, the maximum input signal decreases in direct proportion to the increase in gain. For example, with 20 dB gain, the maximum desirable input amplitude is ± 1.0 V (0.71 Vrms).

Low-Pass Filter

If the input coupling switch is set to DC, the passband of the filter extends from dc to the cutoff frequency which is defined by the cutoff frequency dials and the multiplier.

Switching the coupling to AC causes a 6 dB/oct. rolloff below 0.3 Hz. This position should be used when large dc offsets are present in the input signal and response to dc is not required.

The passband gain may be selected to be 0, 10, 20, 30 or 40 dB using the gain switch. To maximize the useful dynamic range, the maximum gain should be used without causing the overload LED to light. Overload "On" indicates that the input signal has exceeded the maximum safe desirable amplitude. If the signal exceeds this range, a ±10 Volt A/D converter connected to the output of the 753A will overflow; however, no distortion occurs in the instrument until the signal exceeds full-scale by 10%.

The maximum desirable full-scale signal is ±10V (7.1 Vrms) for 0 dB gain. When gain is employed, the maximum input signal decreases in proportion to the increase in gain. For example, with 20 dB gain, the maximum desirable input amplitude is ±1.0V (0.71 Vrms).

Bandpass Filter

The two channels of the Model 752A may be cascaded by connecting the output of channel 1 to the input of channel 2 as shown in figure 3-13.

The passband of the filter extends from the high-pass cutoff frequency setting to the low-pass cutoff frequency setting. These are determined by the two cutoff frequency dials and the corresponding multiplier switches.

The narrowest passband is obtained by setting high-pass and low-pass cutoff frequencies to the same value, f_o. In this case, the insertion loss is nominally 0dB; the −3 dB bandwidth extends from approximately 0.95 f_o to approximately 1.05 f_o and is equal to 0.1 f_o. This corresponds to a Q or 10. In this mode the instrument operates as a constant −Q (or constant % − Bandwidth) Filter.

Gain may be selected in either, or both high-pass and low-pass sections. To maximize the useful dynamic range, the maximum gain should be used without causing the corresponding overload LED to light.

Band-Reject Filter

The two channels of the instrument may be connected in parallel by applying the input signal to both channels and summing the output signals, as shown in figure 3-14.

The rejection band of the filter extends from the low-pass cutoff frequency setting to the high-pass cutoff frequency setting. These are determined by the cutoff frequency dials and multiplier switches.

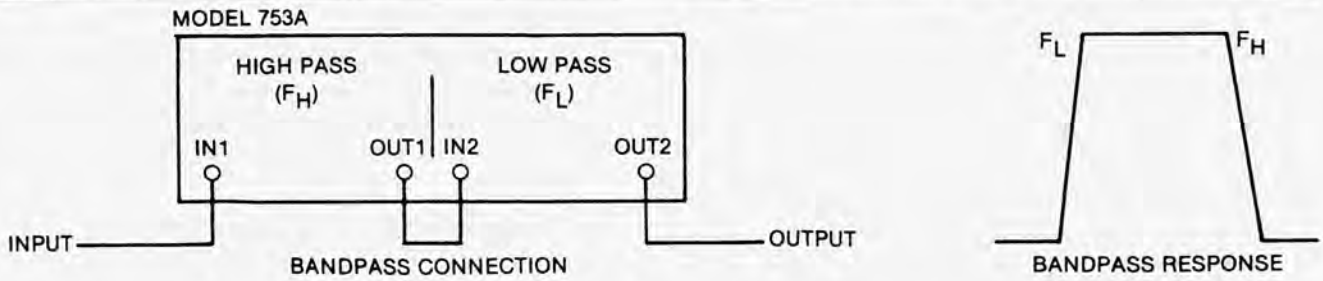

Figure 3-13. Band-Pass

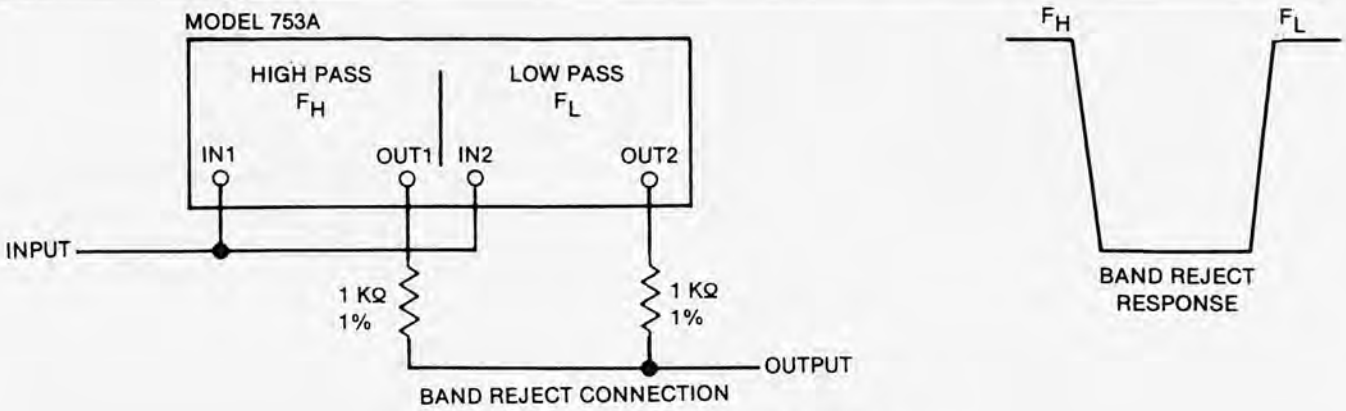

Figure 3-14. Band Reject

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Because of the summation network at the output, this connection has an inherent 6dB insertion loss. If gain is necessary, both channel gains must be increased and set to the same value, when equal response outside the rejection band is desired. Unequal responses may be obtained by using different gains. For example, the low-pass side of the rejection band may be made higher in amplitude by setting the low-pass gain higher.

In either case, gain in the respective passbands will be 6dB less than the selected gain settings.

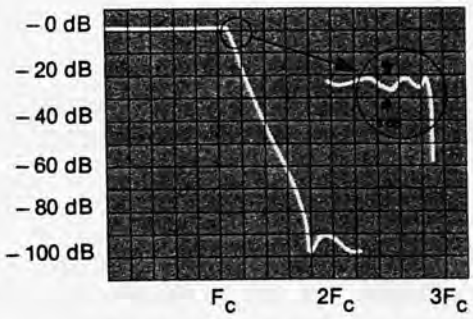

Figure 3-15. Low-Pass Response

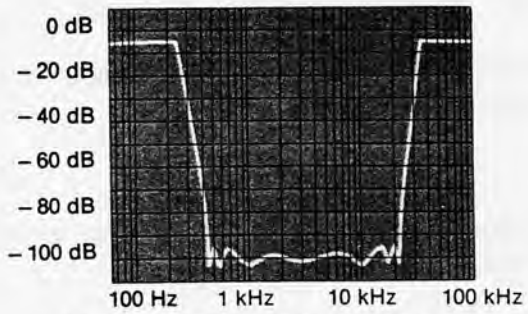

Figure 3-16. Band-Reject Response

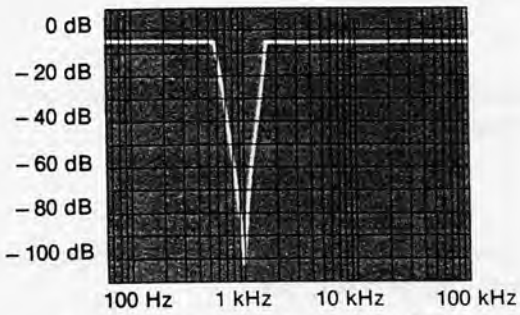

Figure 3-17. Minimum Band-Reject (Notch) Response

A Notch response is a particular case of Band-Reject response. To obtain the minimum-width notch, set the low-pass cutoff at 59% and the high-pass cutoff at 167% of the desired notch frequency.

Response Characteristics

The following figures show examples of typical Model 753A response characteristics.

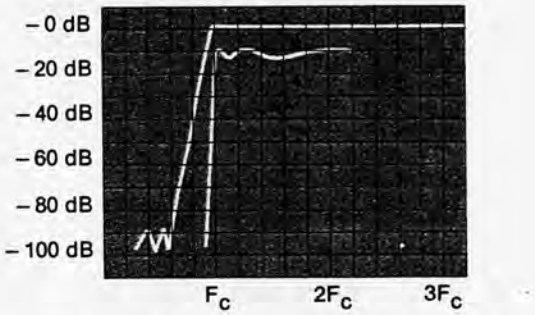

Figure 3-18. High-Pass Response

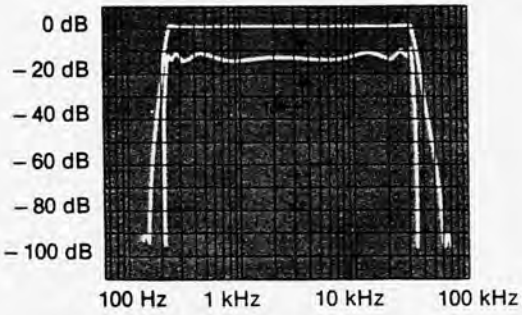

Figure 3-19. Pass-Band Response

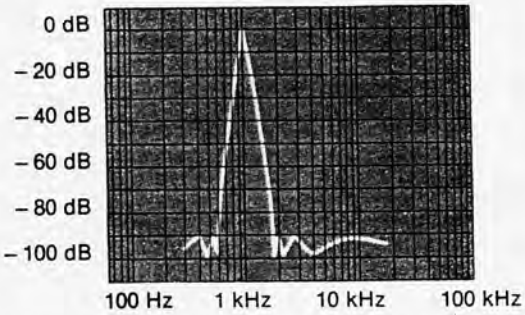

Figure 3-17. Minimum Pass-Band Response

3.4 REMOTE PROGRAMMING: BCD INTERFACE (OPTION 01)

A 50-pin connector is provided on the rear panel. Table 3-5 lists the pin connections and describes each signal. Remote programming inputs are low active ("1" State). A "1" is 0 V to 0.8 V, and a "0" is +2 V to +5 V.

Table 3-5. BCD Interface Programming Connector[a]

Pin	Function	Description
1	×1 Cutoff Frequency Multiplier	Low active. Selects the cutoff frequency multiplier for Channel 1.
2	×10 Cutoff Frequency Multiplier	
3	×100 Cutoff Frequency Multiplier	
4	×1k Cutoff Frequency Multiplier	
5	Cutoff Frequency 1 Bit	Low active. Selects the units digits for the cutoff frequency for Channel 1 in 8, 4, 2, 1 binary code.
6	Cutoff Frequency 2 Bit	
7	Cutoff Frequency 4 Bit	
8	Cutoff Frequency 8 Bit	
9	Cutoff Frequency 10 Bit	Low active. Selects the tens digit for the cutoff frequency for Channel 1 in 8, 4, 2, 1 binary code.
10	Cutoff Frequency 20 Bit	
11	Cutoff Frequency 40 Bit	
12	Cutoff Frequency 80 Bit	
13	Gain 1 Bit	Low active. Selects the gain for Channel 1 in 4, 2, 1 binary code. Programmed as follows: 0 dB-000, 10 dB-001, 20 dB-010, 30 dB-011, 40 dB-100.
14	Gain 2 Bit	
15	Gain 4 Bit	
16	Overload	Low active. Indicates amplitude of input signal exceeds the maximum value in Channel 1.
17-22	Ground	
23	Load Command	Low active. Loads cutoff frequency and gain into the digital registers of Channel 1.
24	Ground	
25-26	Remote Enable	Low active. Disables front panel control of both channels and enables remote control.
27	Ground	
28	Load Command	Low active. Loads cutoff frequency and gain into the digital registers of Channel 2.
29-34	Ground	
35	Overload	Low active. Indicates amplitude of input signal exceeds the maximum value in Channel 2.
36	Gain 4 Bit[b]	Low active. Selects the gain setting for Channel 2 in 4, 2, 1 binary code. Programmed as follows: 0 dB-000, 10 dB-001, 20 dB-010, 30 dB-011, 40 dB-100.
37	Gain 2 Bit	
38	Gain 1 Bit	

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Table 3-5. BCD Interface Programming Connector[a] (Continued)

Pin	Function	Description
39 40 41 42	Cutoff Frequency 80 Bit Cutoff Frequency 40 Bit Cutoff Frequency 20 Bit Cutoff Frequency 10 Bit	Low active. Selects the tens digit for the cutoff frequency for Channel 2 in 8, 4, 2, 1 binary code.
43 44 45 46	Cutoff Frequency 8 Bit Cutoff Frequency 4 Bit Cutoff Frequency 2 Bit Cutoff Frequency 1 Bit	Low active. Selects cutoff frequency multiplier for Channel 2.
47 48 49 50	×1k Cutoff Frequency Multiplier ×100 Cutoff Frequency Multiplier ×10 Cutoff Frequency Multiplier ×1 Cutoff Frequency Multiplier	Low active. Selects cutoff frequency multiplier for Channel 2.

[a] Applies to all Models except the 751A/753A, where "Channel 1" relates to the high pass controls; "Channel 2" relates to the low-pass controls.

[b] Not used in the 751A; Post-Filter Gain is limited to 20 dB.

3.5 REMOTE PROGRAMMING: GPIB INTERFACE (OPTION 02)

3.5.1 Introduction

The reader is assumed to be familiar with the IEEE 488-1978 standard. If not, a detailed description of the bus system and its parameters, IEEE STD 488-1978 is available from:

IEEE Standards
347 East 47th Street
New York, New York 10017

3.5.2 Device Address Code and Mode Select Switches

A row of eight miniature rocker switches on the rear panel sets the device address code and other operating modes.

3.5.2.1 Device Address Code Selection — Switches #1 through #5

The five left-most switches allow the selection of the device address in the system. The range of addresses is from 0 — 30 (decimal) corresponding to the ASCII characters "SPACE" through ">" see table 2-1.

The switches have binary weights of "1", "2", "4", "8" and "16". When the top edge of the rocker is pressed, the binary weight of that switch contributes to the address. When the bottom edge of the rocker is pressed, that weight is off. For example, to set a listen address of 11 (decimal), the rocker switch pattern would be (left-to-right) on-on-off-on-off, or up-up-down-up-down.

3.5.2.2 Listen Always (Listen Only) Mode — Switch #6

The Listen Always (or Listen only) mode allows the instrument to only function as a listener. This eliminates the need for addressing the unit as a listener in simpler systems. When the Listen Always rocker switch is in the up (top depressed) position the Listen Always (Listen only) mode is selected. When this rocker switch is down (bottom depressed), the unit must be explicitly made a listener to receive data.

3.5.2.3 Shield Ground — Switch #8

When this switch is in the up position the shield of the IEEE Bus cable is electrically connected to the circuit ground of the instrument. When the switch is in the down position, the shield is not connected.

Use of this switch may be necessary in achieving optimum noise performance in a multi-instrument system.

3.5.3 Initialization

After power has been applied to all devices in the system, the Controller should:

1. Send REM (Remote Enable) active (low).
2. Send IFC (Interface Clear) active (low).

3. Send IFC (Interface Clear) inactive (high)

This will initialize all bus devices and set them to an idle state. Exercising the IFC line as above is also useful in reinitializing the system whenever it may be necessary. The instrument will assume the UNLISTEN state after this sequence.

3.5.4 Listen State

In order to receive data, the instrument must be in the LISTEN state, indicated by the LOCAL/LISTEN LED on the front panel. When in the LISTEN state, the unit handshakes and inspects all data sent over the bus. When not in the LISTEN state, the unit does not participate in the handshake and ignores data. Two methods are available for effecting the LISTEN state:

1. Sending the LISTEN command.
2. Setting the LISTEN ALWAYS switch on.

LISTEN Command

The LISTEN command is a universal bus command sent by the contoller containing the address of the device to be affected. After sending this command, the green LISTEN LED on the front panel of the instrument should be lit.

LISTEN ALWAYS

If the rear panel LISTEN ALWAYS switch #6 is set to ON, then the first prefix character handshake cycle on the bus will place the instrument in the LISTEN mode, lighting the green LISTEN LED.

UNLISTEN STATE

If the LISTEN ALWAYS switch is OFF, the instrument will leave the LISTEN state if the universal command UNLISTEN or, IFC is issued or, power is removed. If the LISTEN ALWAYS switch is ON, the instrument will leave the listen state only if power is removed or IFC is issued.

3.5.5 Sending Data

All control and input data are sent in ASCII character format, which is prevalent in GPIB systems. When in the LISTEN mode, the instrument will handshake all characters sent over the bus, but only the characters in table 3-6 are meaningful to filters operation.

If any characters other than these are sent, the instrument will ignore them.

Channel Select Commands

To select the filter channel to be loaded, the character **C** must be sent followed by either:

A for Channel 1 (or H — Models 751A/753A).
B for Channel 2 (or L — Models 751A/753A).
D for both Channels

For example, to select Channel 1 send:

CA

In order to make the string more intelligible to the user, extra characters may be inserted:

CH:A
CHNL = A

Table 3-6. ASCII Codes

ASCII Character	Function
A	Code for Channel 1; high pass (751A)
B	Code for Channel 2; low.pass (751A)
D	Code for both Channels
G	Gain Digit Prefix
0,1,2,3,4,5,6,7,8, 9	Data Value
F	Cutoff Frequency Digit Prefix
M	Cutoff Frequency Multiplier Prefix
C	Channel Select Prefix
CR	Carriage Return for Loading
GET	Group Execute Trigger for Loading

Frequency Digit Commands

The frequency digit is loaded by sending **F** followed by up to two digits between 0 and 99. For example, to send a frequency digit of 6, send:

F6

By inserting extra characters, the string can be more readable:

FREQ = 6
FREQ DIGIT: 6

Notice that both of these last examples contain the same key characters, F6. The other characters are simply ignored.

If more than two digits are sent, only the last two will be retained.

It is advisable never to send a frequency digit of 0 since this may cause a large dc offset to appear at the filter outputs.

Frequency Multiplier Commands

The frequency multiplier is treated like an exponent of 10. To enter the multiplier, send **M** followed by one digit from 0 to 3 which represents the power of ten of the multiplier. For example, M3 corresponds to a multiplier setting of × 1k.

Any digit greater than 3 will be ignored and not loaded and if more than one digit is entered, only the last one will be retained if it is 3 or less.

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By adding characters, alternate strings may be issued:
MULT = 3
MULT RNGE: 3

Gain Commands

The gain is loaded by sending **G** followed by 1 digit between 0 and 4 specifying the gain in multiples of 10 dB. For example, to set a maximum gain of 40 dB send:
G4

By inserting extra characters, the string can be more readable:
GAIN = 4
GAIN: 4

The type of filter gain used (i.e., Channel 1, Channel 2, Pre-filter or post-filter) is determined by the last channel select command that was sent over the system.

Notice that all these examples contain the same key characters "G4". The other characters are ignored. The maximum post-filter gain of the 751A's channel 2 is 20 dB (G2).

Terminator Commands

To terminate a digital value following a prefix character, send another prefix character (such as C, F, M, etc.), or CR or GET commands.

For example:
F28M.

The CR (Carriage Return) or GET (Group Execute Trigger) commands at the end of a command-value string loads the string into the instrument.

The GET command is a universal command the controller sends to initiate a simultaneously activity by more than one bus device. The interface interprets the GET command exactly as a CR character, causing loading of the data to the instrument.

Combining Commands

Channel number and gain commands may be entered in one ASCII string followed by a CR or GET which transfers all data simultaneously to the unit. The order of command is unimportant. If one or more of the commands is omitted, the last value entered will be retained (as long as power is maintained). If more than one occurrence of a command is present in a string, only the last one will be retained.

For example, to program Channel 2 with 60 kHz cutoff-frequency and 10 dB gain send:
CBF60M3G1 (CR)

Alternatives for the same parameters are:
F60M3G1CB (CR)
M3CBG1F60 (CR)

In addition, if the channel select, multiplier digit, and gain do not change from the previous entry but the frequency digit changes to 40, then it is only necessary to send:
F40 (CR)

Extra characters may be included for easier programming:
"CHNL = A, FREQ = 60, MULT = 3, GAIN = 1 (CR)"

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SECTION 4
CIRCUIT DESCRIPTION

4.1 INTRODUCTION

This section gives a functional description of the Models 751A, 752A, and 753A Brickwall filters. Following this is a detailed explanation of the seventh-order elliptic filter.

4.2 MODEL 751A

For the following description, refer to figure 4-1. The input signal is applied to a low-noise input amplifier with programmable gain (Prefilter gain) of 0dB to 40 dB in 10 dB steps. An overload detector at the output of this amplifier indicates when input signal levels exceed $\pm 10\ V_{pk}$ or $7V_{rms}$. This signal is applied to an active RC seventh order high pass elliptic filter (see paragraph 4.5) whose cutoff frequency is programmed by changing the resistors in 8, 4, 2, 1 BCD steps and changing in the capacitors in decade steps.

The output of the high pass section is connected to an active RC seventh-order low pass elliptic filter. The high pass cutoff frequency is programmed the same as the low pass filter.

The high pass filters output is applied to an output amplifier with programmable gain (postfilter gain) of 0dB, 10 dB, or 20 dB. An overload detector at the output indicates when the output signal level exceeds $\pm 10\ V_{pk}$ or $7V_{rms}$, which is the rated input for most A/D converters.

All filter parameters can be controlled by the front panel controls or optional GPIB and BCD interfaces.

A regulated and shielded power supply provides all the filters power requirements.

4.3 MODEL 752A

For the following description, refer to figure 4-2. The

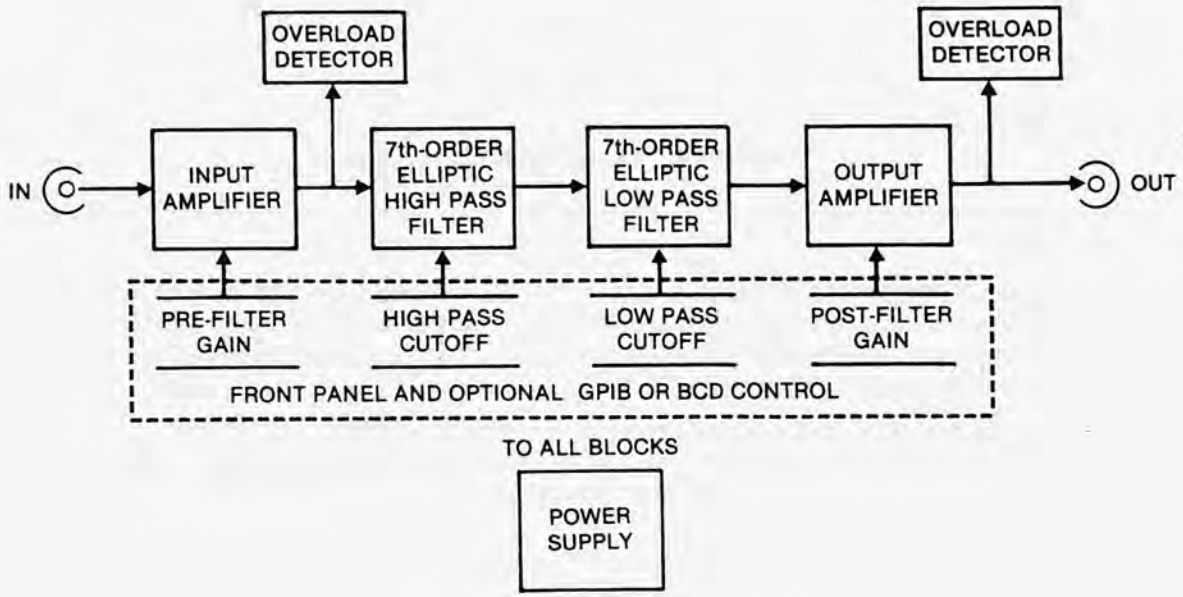

Figure 4-1. Model 751A Block Diagram

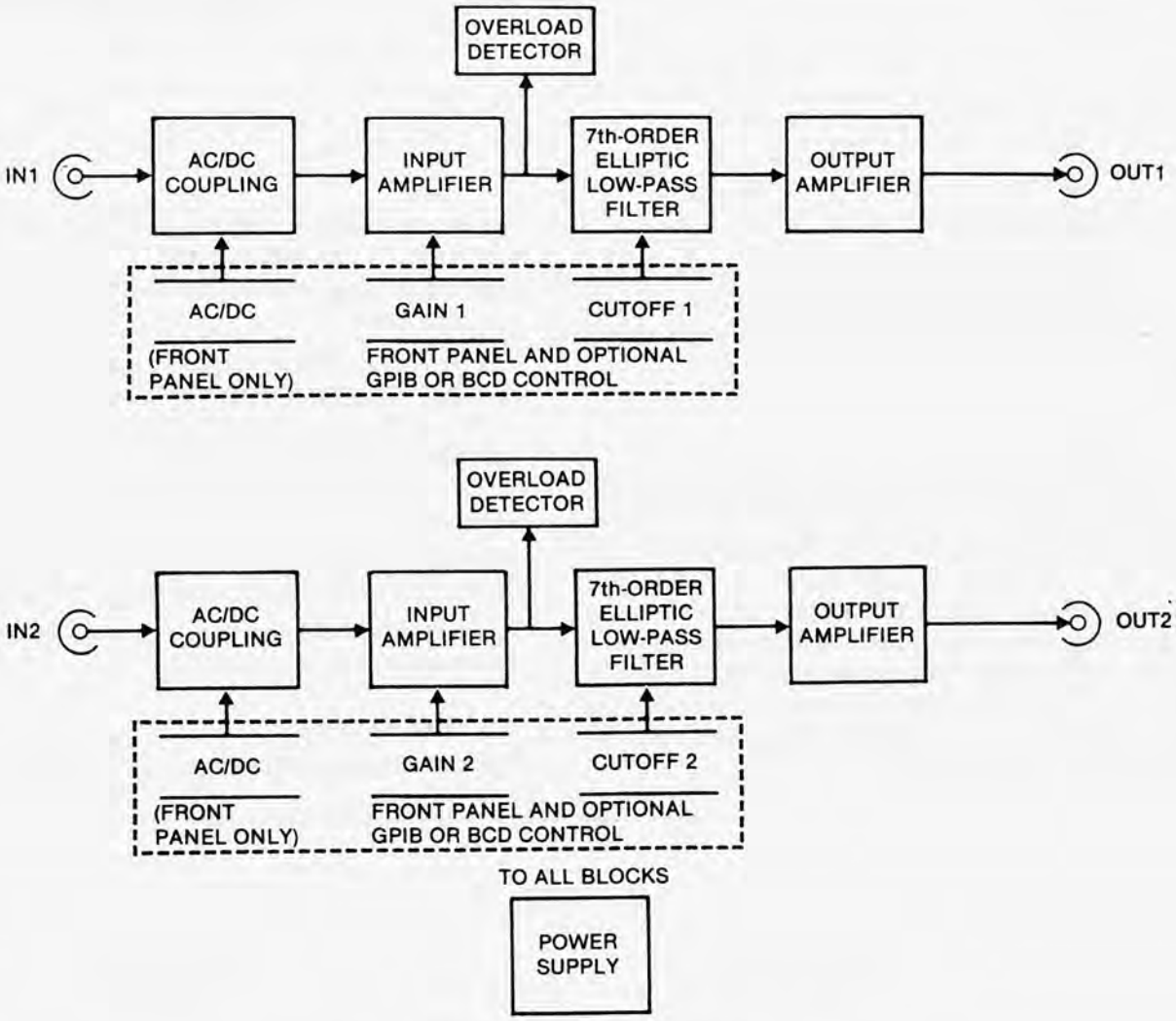

Figure 4-2. Model 752A Block Diagram

Model 752A consists of two identical, separate low pass filters which are amplitude and phase matched throughout the filter pass band. Since both channels are identical, only one channel will be described.

The input signal is applied through the AC/DC coupling switch (front panel control only) to the input of a low noise input amplifier with programmable gain of 0dB to 40 dB in 10 dB steps. An overload detector at the output of this amplifier indicates when input signal levels exceed ± 10 V_{pk} or $7V_{rms}$. This signal is applied to an active RC seventh order low pass elliptic filter (see paragraph 4.5) whose cutoff frequency is programmed by changing the resistors in 8, 4, 2, 1 BCD steps and changing in the capacitors in decade steps.

The low pass filter output is applied to the fixed gain output amplifier. This serves to isolate the filter section from the load connected to the output and defines the full scale output at ± 10 V_{pk} or $7V_{rms}$, which is the rated input of most A/D converters.

All filter parameters can be controlled by front panel controls or optional GPIB and BCD interfaces.

A regulated and shielded power supply provides all the filters power requirements.

4.4 MODEL 753A

For the following description, refer to figure 4-3. The Model 753A consists of a separate high pass filter (Channel 1) and low pass filter (Channel 2).

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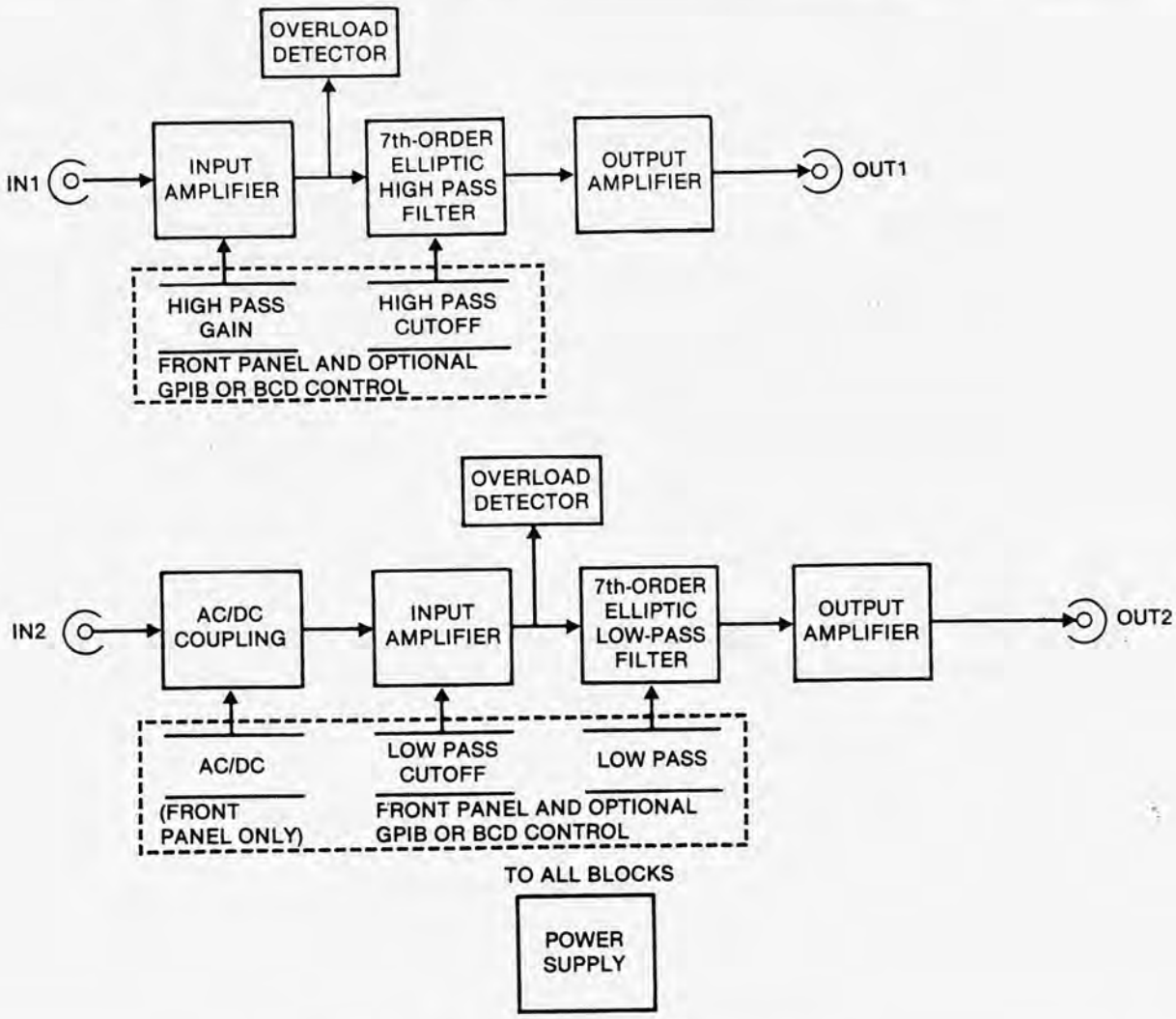

Figure 4-3. Model 753A Block Diagram

High Pass Filter

The input signal is applied to a low-noise input amplifier with programmable gain (Prefilter gain) of 0dB to 40 dB in 10 dB steps. An overload detector at the output of this amplifier indicates when input signal levels exceed ± 10 V_{pk} or $7V_{rms}$. This signal is applied to an active RC seventh order high pass elliptic filter (see paragraph 4.5) whose cutoff frequency is programmed by changing the resistors in 8, 4, 2, 1 BCD steps and changing in the capacitors in decade steps.

The high pass filters output is applied to the fixed gain output amplifier. This serves to isolate the filter section from the load connected to the output and defines the full scale output at ± 10 V_{pk} or $7V_{rms}$, which is the rated input of most A/D converters.

Low Pass Filter

The input signal is applied through the AC/DC coupling switch (front panel control only) to the input of a low noise input amplifier with programmable gain of 0dB to 40 dB in 10 dB steps. An overload detector at the output of this amplifier indicates when input signal levels exceed ± 10 V_{pk} or $7V_{rms}$. This signal is applied to an active RC seventh order low pass elliptic filter (see paragraph 4.5) whose cutoff frequency is programmed by changing the resistors in 8, 4, 2, 1 BCD steps and changing in the capacitors in decade steps.

The low pass filter output is applied to the fixed gain output amplifier. This serves to isolate the filter section from the load connected to the output and defines the full

scale output at $\pm 10\ V_{pk}$ or $7V_{rms}$, which is the rated input of most A/D converters.

All filter parameters can be controlled by front panel controls or optional GPIB and BCD interfaces.

A regulated and shielded power supply provides all the filters power requirements.

4.5 ELLIPTIC FILTERS

This section provides general information relative to the filter sections used in the Models 751A, 752A, and 753A.

The seventh-order elliptic filter, as shown in figure 4-4, consists of a first order stage followed by three second-order stages. Also, figure 4-4 shows the zero/pole location for each stage, high pass and low pass filter amplitude responses, and transfer functions.

Figure 4-5 shows a simplified diagram for the first-order stage. This stage is a simple RC network followed by an unity gain noninverting operational amplifier. The R and C values determine the cutoff frequency. Notice the input and grounding connections for low pass and high pass filters.

Figure 4-6 shows a simplified diagram of the second order stage. This stage is a so-called state variable filter. The R and C values determine the cutoff frequency. R_Q sets the Q of the filter. R_L and R_H locates the zeros of the transfer function. The transfer function is represented by the general equation:

$$H_{(S)} = \frac{a_0 + a_1S + a_2S^2}{b_0 + b_1S + b_2S^2}$$

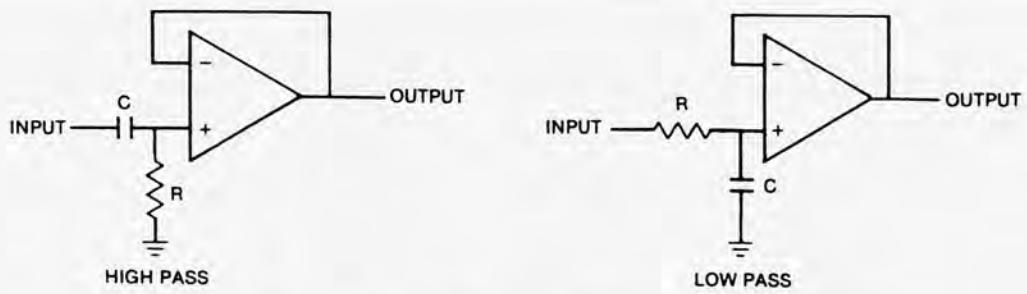

Figure 4-5. First-Order Stage

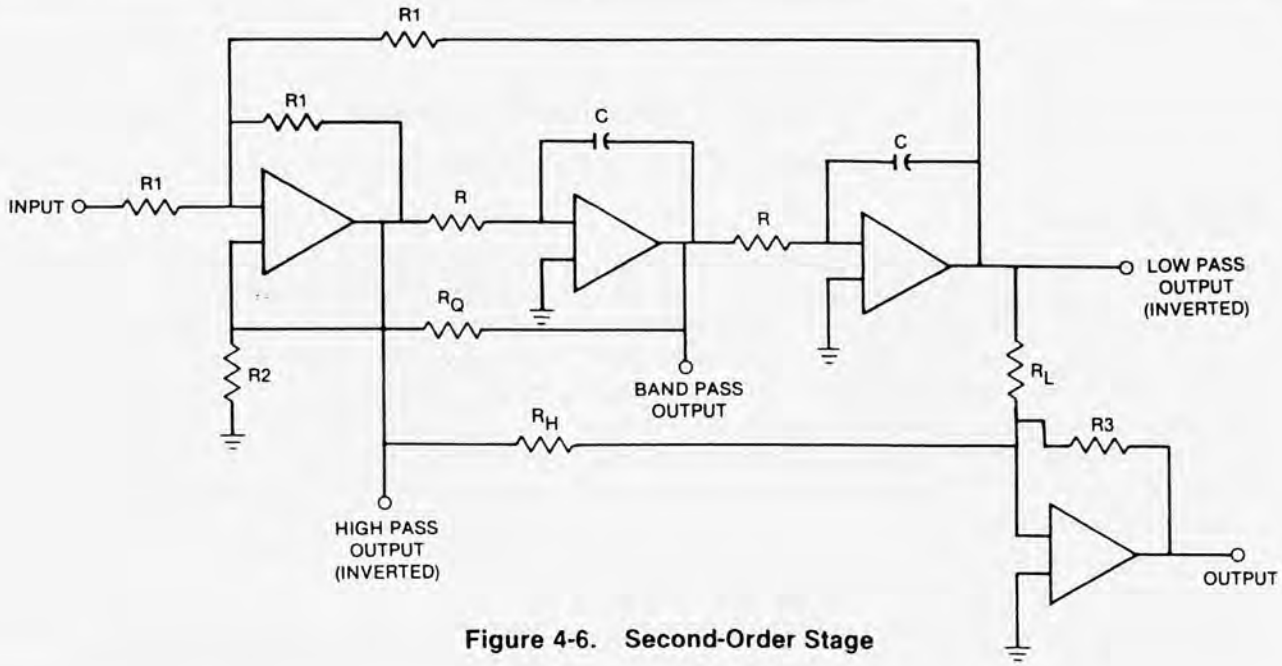

Figure 4-6. Second-Order Stage

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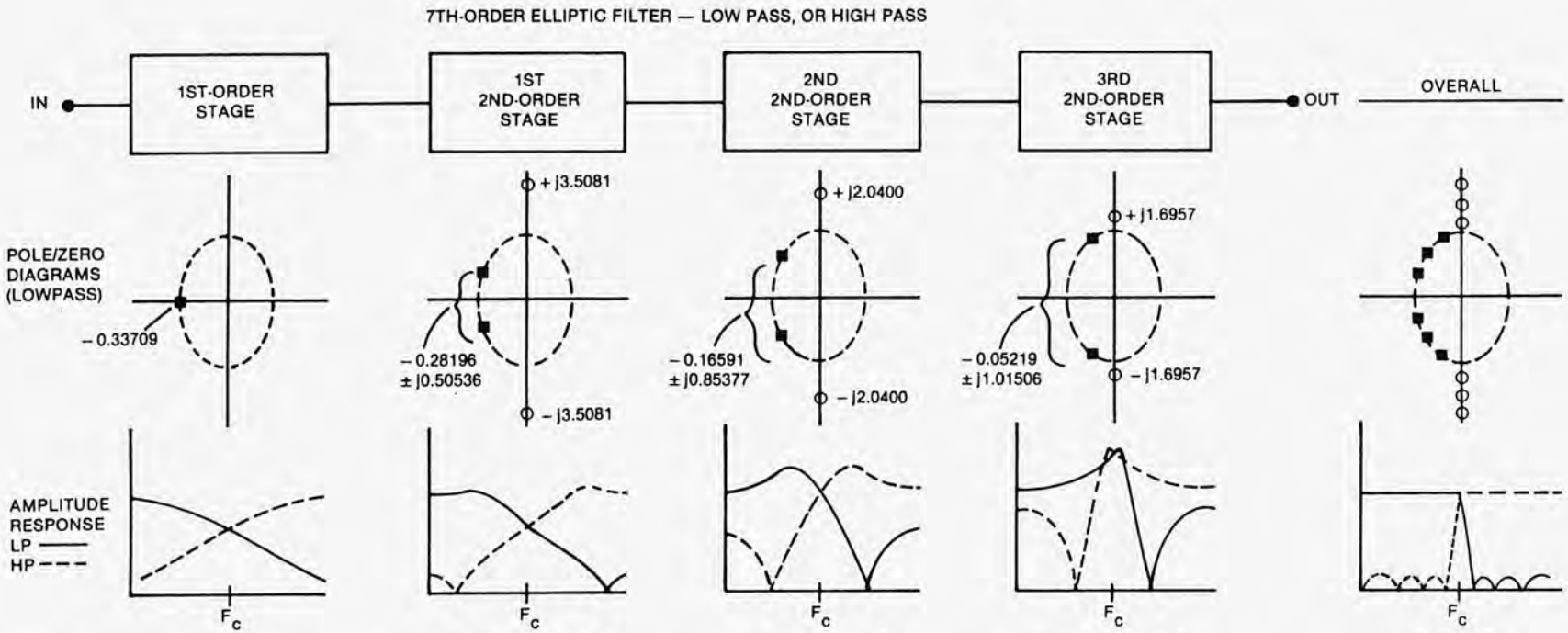

$$H_{LP}(S) = \frac{.3405}{.3405 + S} \times \frac{.3416 + .0272S^2}{.3416 + .5675S + S^2} \times \frac{.7716 + .1818S^2}{.7716 + .3353S + S^2} \times \frac{1.0539 + .3593\,S^2}{1.0539 + .1054S + S^2}$$

LOW PASS TRANSFER FUNCTION

$$H_{HP}(S) = \frac{S}{2.922 + S} \times \frac{.0788 + S^2}{2.897 + 1.6524S + S^2} \times \frac{.2334 + S^2}{1.2837 + .4324S + S^2} \times \frac{.3374 + S^2}{.9390 + .0995S + S^2}$$

HIGH PASS TRANSFER FUNCTION

BAND-PASS: $H_{BP}(S) = H_{LP}(S) \times H_{HP}(S)$ TRANSFER FUNCTION

BAND-REJECT: $H_{BR}(S) = \frac{1}{2}\left[H_{LP}(S) + H_{HP}(S)\right]$

Figure 4-4. Seventh Order Elliptic Filter Parameters

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SECTION 5
CALIBRATION

5.1 FACTORY REPAIR

Wavetek maintains a factory repair department for those customers not possessing the necessary personnel or test equipment to maintain the instrument. If an instrument is returned to the factory for calibration or repair, a detailed description of the specific problem should be attached to minimize turnaround time.

5.2 CALIBRATION

Only limited calibration can be performed in the field, because these instruments are calibrated at the factory by comparing their response against the response of a "Factory Standard" instrument. The "Factory Standard", in turn, has been adjusted and is continuously maintained to provide a response which is essentially identical to the theoretical (or mathematical) response of these filters. As a result, it is recommended that any adjustments which alter the filter response be made only at the factory. The only adjustments that may be performed in the field are those pertaining to Gain Steps and DC Offsets.

Table 5-1 lists the required test equipment required to perform the tests and calibration procedures. Tables 5-2, 5-3, and 5-4 contain the dc offset and gain test for each model; perform these tests to identify calibration problems. Table 5-5 gives procedures for board access. Tables 5-6, 5-7, and 5-8 lists the actual calibration procedures for each model.

NOTE

The completion of these calibration procedures returns the instrument to correct calibration. All limits and tolerances given in these procedures are calibration guides and should not be interpreted as instrument specifications. Instrument specifications are given in section 1 of this manual.

Table 5-1. Required Test Equipment

Instrument	Suggested Model	Comments
Oscilloscope	Tektronix 475	Waveform viewing
Digital Voltmeter	Data Precision 2480	DC offset
RMS Voltmeter	Fluke 8921, 8922	Signal level
Signal Source	Wavetek 5100 Frequency Synthesizer	Gain accuracy
10 dB/Step Attenuator	Kay	Gain accuracy
50Ω BNC Termination	—	—

Table 5-2. 751A Gain and Offset Tests

Step	Test	Tester & Setup	Control	Desired Measurement	Measurement Record
1	0dB Gain	Connect the Model 751A as shown in figure 5-1. Model 5100: Freq 10.00 kHz, Output level 1.00 Vrms. Attenuator: 0dB	High Pass Cutoff: 01 × 1Hz Low Pass Cutoff: 99 × 1kHz Pre-Filter Gain: 0dB Post Filter Gain: 0dB	0 ± 0.2 dB	_____

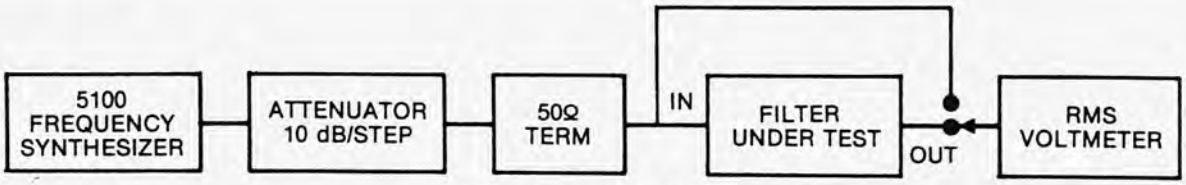

Figure 5-1. Gain Setup

Table 5-2. 751A Gain and Offset Tests (Continued)

Step	Test	Tester & Setup	Control	Desired Measurement	Measurement Record
2	10 dB Pre-filter Gain	Attenuator: 10 dB	Pre-filter: +10 dB Post-filter: 0dB		_____
3	20 dB Pre-filter Gain	Attenuator: 20 dB	Pre-filter: +20 dB Post-filter: 0dB		_____
4	30 dB Pre-filter Gain	Attenuator: 30 dB	Pre-filter: +30 dB Post-filter: 0dB		_____
5	40 dB Pre-filter Gain	Attenuator: 40 dB	Pre-filter: +40 dB Post-filter: 0dB		_____
6	10 dB Post-filter Gain	Attenuator: 10 dB	Pre-filter: 0dB Post-filter: +10 dB		_____
7	20 dB Post-filter Gain	Attenuator: 20 dB	Pre-filter: 0dB Post-filter: +20 dB		_____
8	0dB dc Offset	Connect Model 751A as shown in Figure 5-2	High Pass Cutoff: 01 × 1Hz. Low Pass Cutoff: 50 × 1kHz. Pre-filter Gain: 0dB Post-filter Gain: 0dB	Adjustable to 0Vdc	
9	+10 dB dc Offset		Pre-filter: +10 dB Post-filter: 0dB		_____
10	+20 dB dc Offset		Pre-filter: +20 dB Post-filter: 0dB		_____
11	+30 dB dc Offset		Pre-filter: +30 dB Post-filter: 0dB		_____
12	+40 dB dc Offset		Pre-filter: +40 dB Post-filter: 0dB		_____
13	+50 dB dc Offset		Pre-filter: +40 dB Post-filter: +10 dB		_____
14	+60 dB dc Offset		Pre-filter: +40 dB Post-filter: +20 dB		_____

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Figure 5-2. Offset Setup

Table 5-3. 752A Gain and Offset Tests

When making the tests on the 752A, set the controls for both channels. Make the tests for Channel 1, then switch the cables to Channel 2 and make those tests.

Step	Test	Tester & Setup	Control	Desired Measurement	Measurement Record
1	0dB Gain	Connect the Model 752A as shown in figure 5-1. Attenuator: 0dB Model 5100: Freq 10.00 kHz Output level 1.00 Vrms	Cutoff: 99 × 1kHz Gain: 0dB	0 ± 0.2 dB	Ch 1 _____ Ch 2 _____
2	10 dB Gain	Attenuator: 10 dB	Gain: + 10 dB		Ch 1 _____ Ch 2 _____
3	20 dB Gain	Attenuator: 20 dB	Gain: + 20 dB		Ch1 _____ Ch 2 _____
4	30 dB Gain	Attenuator: 30 dB	Gain: + 30 dB		Ch 1 _____ Ch 2 _____
5	40 dB Gain	Attenuator: 40 dB	Gain: + 40 dB		Ch 1 _____ Ch 2 _____
6	0dB dc Offset	Connect the Model 752A as shown in figure 5-2.	Cutoff: 50 × 1kHz Coupling: DC Gain: 0dB	Adjustable to 0Vdc	Ch 1 _____ Ch 2 _____
7	+ 10 dB dc Offset		Gain: + 10 dB		Ch 1 _____ Ch 2 _____
8	+ 20 dB dc Offset		Gain: + 20 dB		Ch 1 _____ Ch 2 _____
9	+ 30 dB dc Offset		Gain: + 30 dB		Ch 1 _____ Ch 2 _____
10	+ 40 dB dc Offset		Gain: + 40 dB		Ch 1 _____ Ch 2 _____

Table 5-4. 753A Gain and Offset Tests

When making the tests on the 753A, set the controls for both channels. Make the tests for Channel 1, then switch the cables to Channel 2 and make those tests.

Step	Test	Tester & Setup	Control	Desired Measurement	Measurement Record
1	0dB Gain	Connect the Model 753A as shown in figure 5-1. Attenuator: 0dB Model 5100: Freq 10.00 kHz Output level 1.00 Vrms	High Pass Cutoff: 01 × 1Hz Low Pass Cutoff: 99 × 1kHz Gain: 0dB	0 ± 0.2 dB	Ch 1 _____ Ch 2 _____
2	10 dB Gain	Attenuator: 10 dB	Gain: +10 dB		Ch 1 _____ Ch 2 _____
3	20 dB Gain	Attenuator: 20 dB	Gain: +20 dB		Ch1 _____ Ch 2 _____
4	30 dB Gain	Attenuator: 30 dB	Gain: +30 dB		Ch 1 _____ Ch 2 _____
5	40 dB Gain	Attenuator: 40 dB	Gain: +40 dB		Ch 1 _____ Ch 2 _____
6	0dB dc Offset	Connect the Model 753A as shown in figure 5-2.	High Pass Cutoff: 01 × 1Hz. Low Pass Cutoff: 50 × 1kHz. Coupling: DC. Gain: 0dB	Adjustable to 0Vdc	Ch 1 _____ Ch 2 _____
7	10 dB dc Offset		Gain: 10 dB		Ch 1 _____ Ch 2 _____
8	20 dB dc Offset		Gain: 20 dB		Ch 1 _____ Ch 2 _____
9	30 dB dc Offset		Gain: 30 dB		Ch 1 _____ Ch 2 _____
10	40 dB dc Offset		Gain: 40 dB		Ch 1 _____ Ch 2 _____

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Table 5-5. Board Access

Step	Procedure	Associated Figure
1	Unplug power cord.	
2	Remove two screws at rear of top cover; slide the top cover off.	
3	Grasp the card cage, pull it up and forward towards the front panel. Card cage will sit at top of unit.	5-3.
4	Disconnect connectors at front of desired board.	5-4.
5	Release rear retainer.	5-5.
6	Slide desired board towards rear of instrument.	5-6.
7	Place nonconductive material (such as cardboard) on top of card cage. Place the board on top and reconnect the connectors.	5-7.

	Top Board	Middle Board	Bottom Board
751A	GPIB/BCD Interface	High Pass	Low Pass
752A		Ch 1	Ch 2
753A		High Pass	Low Pass

To reassemble the unit, reverse the order of the steps in this table.

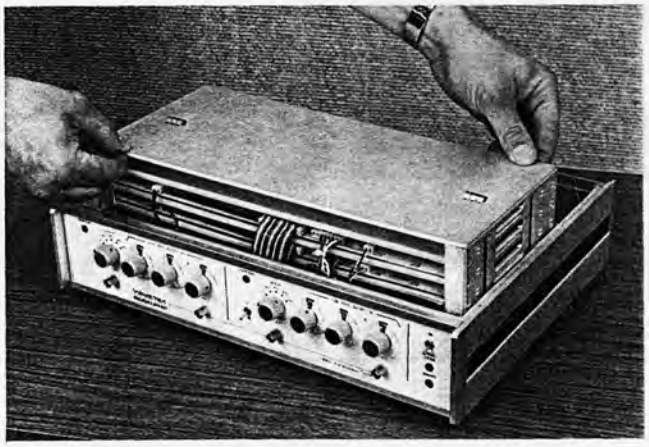

Figure 5-3. Moving Card Cage Out of Instrument

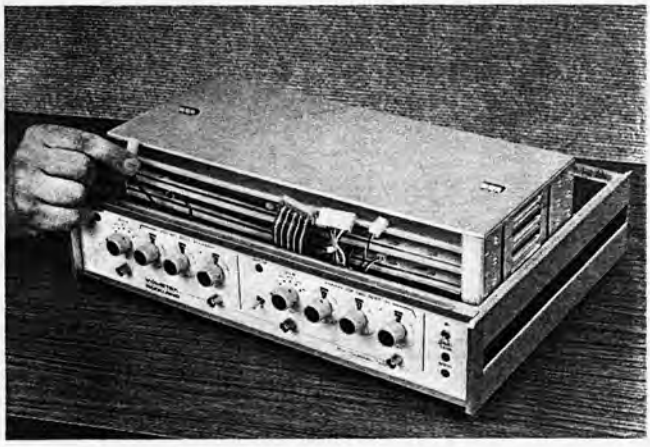

Figure 5-4. Disconnecting Board Connectors

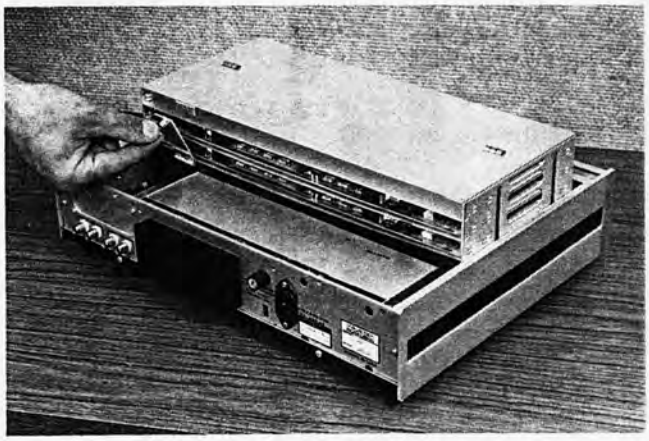

Figure 5-5. Releasing Rear Retainer

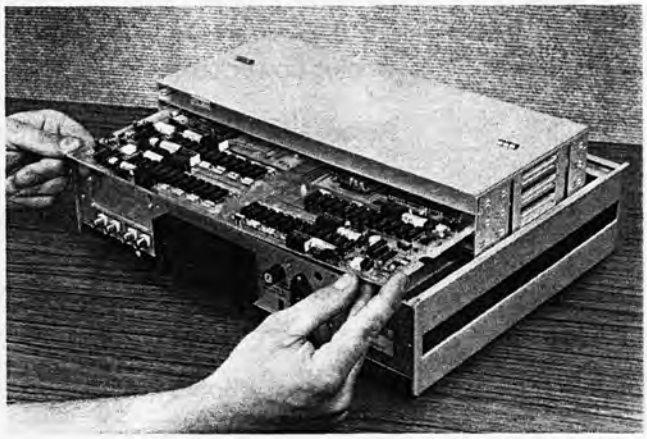

Figure 5-6. Sliding Out Board

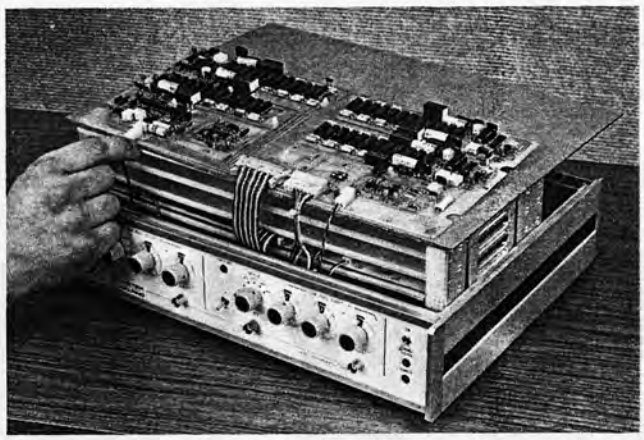

Figure 5-7. Reconnecting and Gaining Access to Board

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Table 5-6. 751A Calibration Procedure

Step	Test	Setup	Controls	Test Point	Tester	Adjust	Result	Comments
1a	Gain	Connect 751A as shown in figure 5-1. Attenuator: 0dB Model 5100: Freq 100 Hz Output level 1 Vrms	High Pass Cutoff: 01 × 1kHz Pre-filter Gain: 0dB	J14	RMS Voltmeter	R107	10.0 dB below	Access High Pass Filter board. Turn on, allow 10 min. warmup.
1b		Model 5100: Freq 10.0 kHz				C52		Replace high pass filter when finished.
2a	dc Offset	Connect 751A as shown in figure 5-2.	Pre-filter Gain: +40 dB	TP1	DVM	R106	0 ± 10 mVdc	Access low pass filter board. Turn power on, allow 10 min. warm-up. Replace low pass filter when finished.
2b			Low Pass Cutoff: 50 × 1kHz Post-filter Gain: +20 dB	OUT		R138		

Table 5-7. 752A Calibration Procedures

Before beginning, determine which channel requires calibration.

Step	Test	Setup	Controls	Test Point	Tester	Adjust	Result	Comments
1a	Gain	Connect Model 752A as shown in figure 5-1. Attenuator: 0dB Model 5100: Freq 100 Hz Output level 1.00 Vrms	Cutoff: 99 × 1kHz Gain: 0dB	J14	RMS Voltmeter	R107	1.00 Vrms	Remove channel to be calibrated. Turn power on. Allow 10 warmup.
1b		Model 5100: Freq 10.0 kHz				C52		
2a	dc Offset	Connect Model 752A as shown in figure 5-2.	Cutoff: 50 × 1kHz Gain: +40 dB Coupling: DC	TP1	DVM	R106	0 ± 10mV dc	
2b				OUT		R138		Replace channel when finished

Table 5-8. 753A Calibration Procedures

Step	Test	Setup	Controls	Test Point	Tester	Adjust	Result	Comments
1a	High Pass Gain	Connect 753A as shown in figure 5-1 using IN1 and OUT 1. Attenuator: 0dB Model 5100: Freq 100 Hz Output level 1.00 Vrms	High Pass Cutoff: 01 × 1Hz Gain: 0 dB	J14	RMS Voltmeter	R107	1.00 Vrms	Remove the High Pass filter board. Turn power on. Allow 10 min. warmup.
1b		Model 5100: Freq 10.0 kHz				C52		Replace high pass filter when finished.
2a	Low Pass Gain	Connect 753A as shown in figure 5-1 using IN 2 and OUT 2. Attenuator: 0dB Model 5100: Freq 100 Hz Output level 1.00 Vrms	Low Pass Cutoff: 99 × 1kHz Gain: 0dB	J14		R107		Remove the low pass filter board. Turn power on. Allow 10 min. warmup.
2b		Model 5100: Freq 10.0 kHz				C52		Replace low pass filter board when finished.
3a	High Pass dc Offset	Connect 753A as shown in figure 5-2 using IN 1 and OUT 1.	High Pass Cutoff: 50 × 10 Hz Gain: + 40 dB	TP1	DVM	R106	0 ± 10mV	Remover the High Pass filter board. Turn power on. Allow a 10 min. warmup.
3b				OUT 1		R138		Replace high pass filter when finished.
4a	Low Pass dc Offset	Connect 753A as shown in figure 5-2 using IN 2 and OUT 2.	Low Pass Cutoff: 50 × 1kHz Gain: + 40 dB Coupling: DC	TP1		R106		Remove low pass filter. Turn power on. Allow a 10 min. warmup.
4b				OUT 2		R138		Replace low pass filter when finished.

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SECTION 6
TROUBLESHOOTING

6.1 FACTORY REPAIR

Wavetek maintains a factory repair department for those customers not possessing the necessary personnel or test equipment to maintain the instrument. If an instrument is returned to the factory for calibration or repair, a detailed description of the specific problem should be attached to minimize turnaround time.

Customer Service
Wavetek San Diego, Inc.
9045 Balboa Avenue
San Diego, CA 92123
Telephone: (619) 279-2200

6.2 TROUBLESHOOTING

6.2.1 Filter Troubleshooting

If your filter fails to operate when the power switch is ON, perform the following checks.

1. Verify the filter has ac power.
2. Verify the 115/230 Volt switch is in the proper position.
3. Check the fuse and if defective, replace it.
4. With the power switch ON, check continuity of the unplugged line cord with an ohmmeter.

6.2.2 Optional GPIB Interface Troubleshooting

In the event that the bus system is not performing correctly, any functional tests may be made to help locate the cause. In general, an effort should be made to reduce both the hardware and software complexity of the system to the simplest configuration which still exhibits the problem.

Since the filter was exhaustively tested prior to shipment, the probability is low that problems encountered when first setting up the system are due to hardware failures. It is more likely that some set-up parameter, device address, or software convention is causing the problem. Hardware failures are typically indicated only if the system has been successfully operating for some time and then fails with no system changes having been made.

6.2.2.1 Checklist of Set-up Problems

Before attempting diagnostic tests, the following list of common set-up errors should be checked:

1. Make sure power is applied to all units connected to the bus system. Although not true of this instrument, some units, when power is off, will load the bus and cause transmission failures.
2. Check tightness of the bus cable connectors. A connector which is not secured by the captive screws may become partially disengaged from its mating socket causing intermittent or open connections.
3. Review the address code structure of the system making sure that no two devices unintentionally share the same address code. Make sure the controller is correctly identifying each device by its respective address.
4. Make sure the cable between the filter and GPIB controller is correctly installed and locked into place at both ends.

6.2.2.2 Diagnostic Tests

Problems can generally be classified as either related to the bus system operation or to the filter operation. The controller is usually provided with some fault-indicating messages which can be useful in diagnosing bus problems.

1. Bus Testing
   The most basic bus activity is the handshake function which is required for all universal commands and data transfers. The controller will generally indicate if there is a problem in completing the handshake. If a problem exists, the offending device can be determined by connecting devices to the bus one at a time.

Next level of activity is establishing the various devices as active listeners or talkers. Your instrument indicates its status by the green LISTEN lamp. Each bus device should respond appropriately to these universal commands and not interfere with each other. A unit-by-unit check of these operations will verify correct performance of these functions.

2. Instrument Testing
   If bus activity appears normal but data is not being loaded correctly into your instrument, make sure a "CR" or "GET" command is being issued by the controller. In addition, the REMOTE lamp on the front panel of your instrument must be lit during remote transfers. If not, check that the REMOTE ENABLE line on the bus is sent active by the controller.

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SECTION 7
PARTS AND SCHEMATICS

7.1 DRAWINGS

The following assembly drawings (with parts lists) and schematics are in the arrangement shown below.

7.2 ADDENDA

Under Wavetek's product improvement program, the latest electronic designs and circuits are incorporated into each Wavetek instrument as quickly as development and testing permit. Because of the time needed to compose and print instruction manuals, it is not always possible to include the most recent changes in the initial printing. Whenever this occurs, addendum pages are prepared to summarize the changes made and are inserted immediately inside the rear cover. If no such pages exist, the manual is correct as printed.

7.3 ORDERING PARTS

When ordering spare parts, please specify part number, next higher assembly, and serial number of the instrument.

NOTE

The number etched into a PC board is the bare board part number. The assembly (board and components on the board) part number is stamped on the board. The assembly drawing number is not necessarily the assembly number. However, the assembly number and the parts list number are always the same.

MODEL	DRAWING	DRAWING NUMBER
752A (751, 753)	751A, 752A and 753A Top Drawing	00-000-0750
751A	751A Parts List	000.0700
752A	752A Parts List	000.0750
753A	753A Parts List	000.0753
752A	Mainframe Assembly	02-002-0750
753A		02-002-0753
751A	Subassembly Parts List	002.0700
752A		002.0750
753A		002.0753
751A	Front Panel Assembly	02-001-0700
752A		02-001-0750
753A		02-001-0753
751A	Front Panel Parts List	001.0700
752A		001.0750
753A		001.0753
751A, 752A, 753A	Power Supply Schematic	03-004-0765
751A, 752A, 753A	Power Supply Assembly	02-004-0765
751A, 752A, 753A	Power Supply Parts List	004.0765
751A, 752A, 753A	Rear Panel Assembly	02-002-0785
751A, 752A, 753A	Rear Panel Parts List	002.0785

MODEL	DRAWING	DRAWING NUMBER
751A	Mainboard HPF Schematic	03-004-0760
751A	Mainboard HPF Assembly	02-004-0760
751A	Mainboard HPF Parts List	004.0760
751A	Mainboard LPF Schematic	03-004-0755
751A	Mainboard LPF Assembly	02-004-0755
751A	Mainboard LPF Parts List	004.0755
752A	Mainboard LPF Schematic	03-004-0750
752A	Mainboard LPF Assembly	02-004-0750
752A	Mainboard LPF Parts List	004.0750
753A	Mainboard HPF Schematic	03-004-0753
753A	Mainboard HPF Assembly	02-004-0753
753A	Mainboard HPF Parts List	004.0753
751A, 752A, 753A	BCD Interface Schematic	03-004-0780
751A, 752A, 753A	BCD Interface PCB Assembly	02-004-0780
751A, 752A, 753A	BCD Interface Parts List	004.0780
751A, 752A, 753A	IEEE Option 002 Parts List	000.0785
751A, 752A, 753A	IEEE Interface Schematic	03-004-0785
751A, 752A, 753A	IEEE Interface PCB Assembly	02-004-0785
751A, 752A, 753A	IEEE Interface Parts List	004.0785
751A, 752A, 753A	IEEE Paddle Board Assembly and Parts List	009.9785

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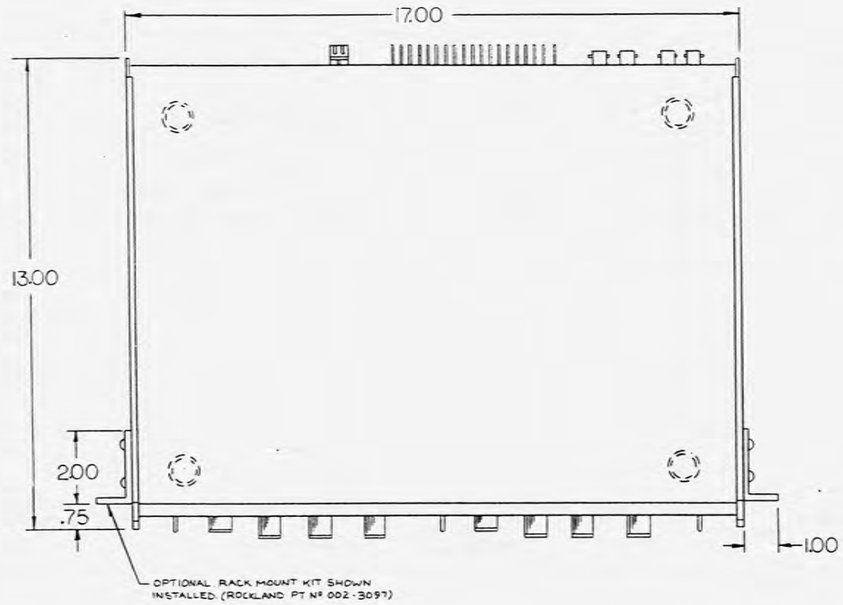
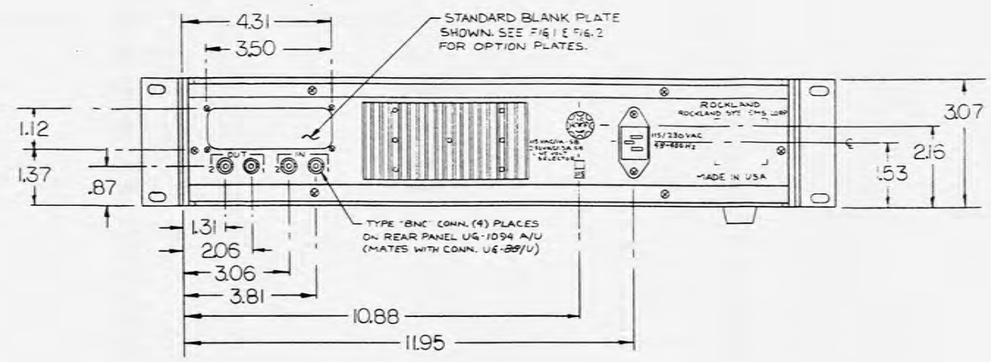
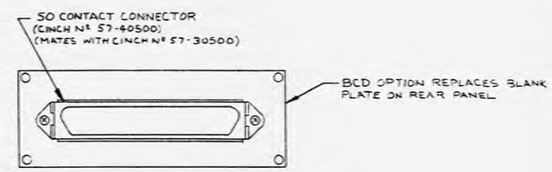
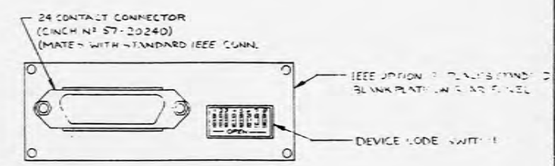
LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
A	RELEASE			



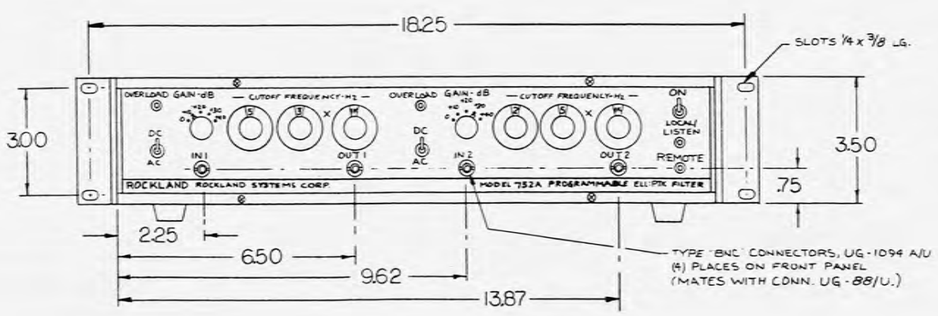


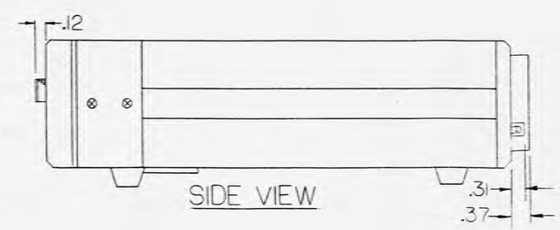


BCD OPTION
FIG.1



IEEE OPTION
FIG.2





SIDE VIEW

DRAWN BY: M. McMINN	DATE 4/16/79	ROCKLAND Rockland Systems Corporation
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ENG. APPVL:	4/24/79	Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		TITLE OUTLINE 752A ROCKWAVE™ PROGRAMMABLE ELLIPTIC FILTER
		SIZE D · DRAWING NO. 00 000 0759 · REV A · SCALE 1/2 · SHEET 1 OF

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	MAIN SUBASSY: 751 ANAL FILTER			002.0700	1
NONE	BOTTOM COVER ASSY: BLACK			002.3092	1
NONE	OPT-04, RACK MOUNT KIT-FILTER			002.3097	1
NONE	COVER: TOP, BLACK	MPV-40464-14	BUKEY	303.0101	1
NONE	PWR CORD: 3 COND IEC, USA	17250	BELDN	378.4007	1
NONE	INST MANUAL: 751/752/753 1STED			800.0077	1

WAVETEK PARTS LIST — TITLE: 751 ANALOG FILTER — ASSEMBLY NO. 000.0700 — REV C — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	MAIN SUBASSY: 753			002.0753	1
NONE	BOTTOM COVER ASSY: BLACK			002.3092	1
NONE	OPT-04, RACK MOUNT KIT-FILTER			002.3097	1
NONE	COVER: TOP, BLACK	MPV-40464-14	BUKEY	303.0101	1
NONE	PWR CORD: 3 COND IEC, USA	17250	BELDN	378.4007	1
NONE	INST MANUAL: 753			800.0073	1

WAVETEK PARTS LIST — TITLE: 753 ANALOG FILTER — ASSEMBLY NO. 000.0753 — REV C — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	MAIN SUBASSY: 752 ANAL FILTER			002.0750	1
NONE	BOTTOM COVER ASSY: BLACK			002.3092	1
NONE	OPT-04, RACK MOUNT KIT-FILTER			002.3097	1
NONE	COVER: TOP, BLACK	MPV-40464-14	BUKEY	303.0101	1
NONE	PWR CORD: 3 COND IEC, USA	17250	BELDN	378.4007	1
NONE	INST MANUAL: 752 1ST ED			800.0071	1

WAVETEK PARTS LIST — TITLE: 752 ANALOG FILTER — ASSEMBLY NO. 000.0750 — REV C — PAGE 1

WAVETEK SAN DIEGO • CALIFORNIA

TITLE	MODEL NO.	DWG NO.	REV
751A, 752A & 753A	751	000.0700	C
	752	000.0750	
	753	000.0753	
	CODE IDENT 23338	SHEET 1 OF	

NOTE: UNLESS OTHERWISE SPECIFIED

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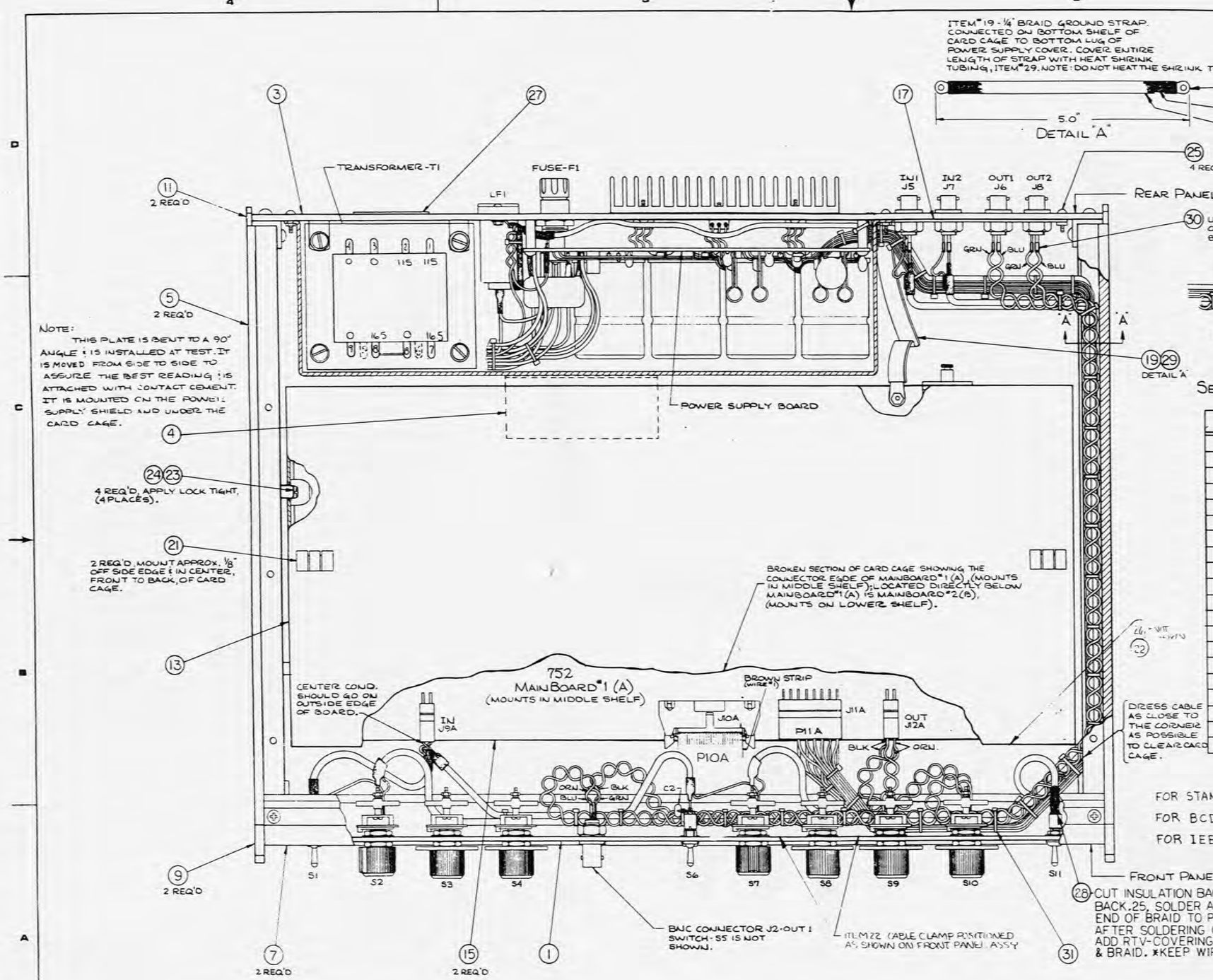
C	1111	SAM 4-17-8		
D	1441	JP 3-8-83		



WIRING CHART

FROM FRONT PANEL	TO REAR PANEL	WIRE COLOR/TYPE	LENGTH (REF.)
J1-IN 1	J5-IN 1	COAX-RG174	30"
J2-OUT 1	J6-OUT 1	GRN. & BLU. TWISTED PAIR	30"
J3-IN 2	J7-IN 2	COAX-RG174	30"
J4-OUT 2	J8-OUT 2	GRN. & BLU. TWISTED PAIR	30"
S11-LUG 2	F1-OUTER LUG	BLK. } SHIELDED CABLE	} 30"
S11 LUG 3	T1-LUG 1	WHT. } SHIELDED CABLE	} 30"
	MAINBOARD #1 (A)		
J1-2 & S1-2	J9A-IN	COAX RG174, MOLEX CONN.	11"
J2-OUT 1	J12A-OUT	BLK & ORN. TWISTED PAIR	11"
P10A (S1 SIDE)	J10A	26 CONDUCTOR CABLE	20"
P11A (POWER SUPPLY)	J11A	8 POSITION MOLEX (6 USED)	35"
	MAINBOARD #2 (B)		
J3-2 & S6-2	J9B-IN	COAX RG174, MOLEX CONN.	11"
J4-OUT 2	J12B-OUT	BLK & ORN. TWISTED PAIR	11"
P10B (S11 SIDE)	J10B	26 CONDUCTOR CABLE	20"
P11B (POWER SUPPLY)	J11B	8 POSITION MOLEX (6 USED)	35"

FOR STANDARD 752, SEE "B" SIZE CABLING DWG NO. 04-002-0750, SHEET 1.
FOR BCD OPTION, SEE "B" SIZE CABLING DWG NO. 04-002-0750, SHEET 2.
FOR IEEE OPTION, SEE "B" SIZE CABLING DWG NO. 04-002-0750, SHEET 3.

SHEET #2 IS AN "A" SIZE L/M.

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.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

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TITLE: 752A MAINFRAME ASSEMBLY

SIZE D | DRAWING NO. 02-002-0750 | REV D
SCALE FULL, 1:1 | SHEET 1 OF 2

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LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
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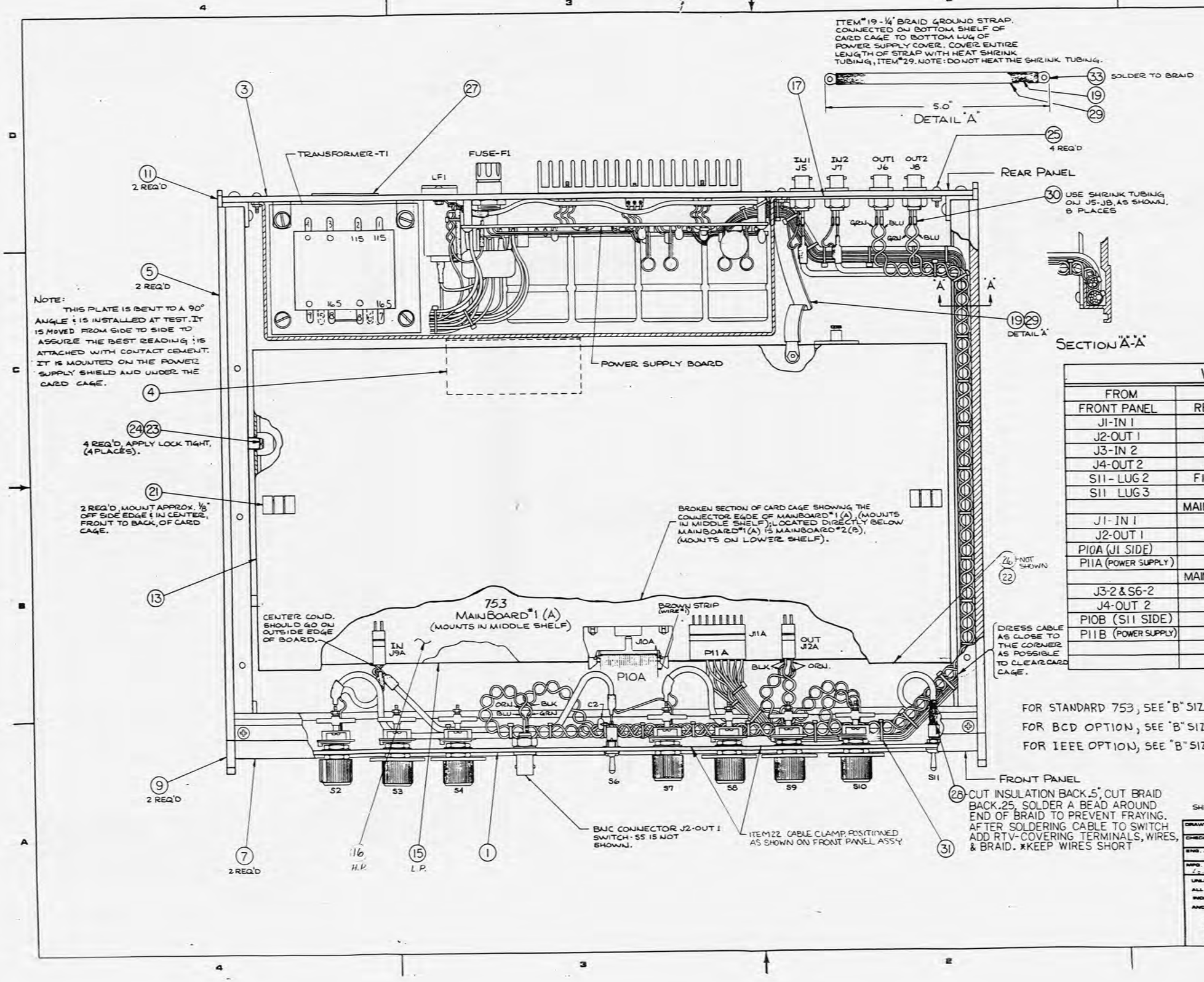
B	[illegible]	JB 2-1-83	RAL L.A. Tuck	6-3-83



WIRING CHART

FROM FRONT PANEL	TO REAR PANEL	WIRE COLOR/TYPE	LENGTH (REF.)
J1-IN 1	J5-IN 1	COAX-RG174	30"
J2-OUT 1	J6-OUT 1	GRN. & BLU. TWISTED PAIR	30"
J3-IN 2	J7-IN 2	COAX-RG174	30"
J4-OUT 2	J8-OUT 2	GRN. & BLU. TWISTED PAIR	30"
S11-LUG 2	F1-OUTER LUG	BLK. } SHIELDED CABLE	} 30"
S11 LUG 3	T1-LUG 1	WHT. } SHIELDED CABLE	} 30"
	MAINBOARD #1 (A)	H.P.	
J1-IN 1	J9A-IN	COAX RG174, MOLEX CONN.	11"
J2-OUT 1	J12A-OUT	BLK. & ORN. TWISTED PAIR	11"
P10A (J1 SIDE)	J10A	26 CONDUCTOR CABLE	20"
P11A (POWER SUPPLY)	J11A	8 POSITION MOLEX (6 USED)	35"
	MAINBOARD #2 (B)	L.P.	
J3-2 & S6-2	J9B-IN	COAX RG174, MOLEX CONN.	11"
J4-OUT 2	J12B-OUT	BLK. & ORN. TWISTED PAIR	11"
P10B (S11 SIDE)	J10B	26 CONDUCTOR CABLE	20"
P11B (POWER SUPPLY)	J11B	8 POSITION MOLEX (6 USED)	35"

FOR STANDARD 753, SEE "B" SIZE CABLING DWG NO. 04-002-0753, SHEET 1.
FOR BCD OPTION, SEE "B" SIZE CABLING DWG NO. 04-002-0753, SHEET 2.
FOR IEEE OPTION, SEE "B" SIZE CABLING DWG NO. 04-002-0753, SHEET 3.

SHEET #2 IS AN "A" SIZE L/M.

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ENG. APPVL: RAL	3/2/79	
MFG. APPVL: L.A. Tuck	3/2/79	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005, .XX ± .01, X/X ± 1/64, ∠° ± 1°		TITLE 753A MAINFRAME ASSEMBLY
		SIZE D — DRAWING NO. 02-002-0753 — REV B — SCALE FULL — SHEET 1 OF 2

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	PANEL ASSEMBLY FRONT 751			001.0700	1
NONE	PANEL ASSY: REAR, 751/752			002.0785	1
NONE	MAINBOARD ASSY 751-LP			004.0755	1
NONE	MAINBOARD ASSY 751-HP			004.0760	1
NONE	SUPER KIT	2500-0751-01	WVTK	2500-0751-01	1
NONE	SIDE FRAME	MP40375	BUKEY	303.0500	2
NONE	CARD CAGE 751/752			303.0510	1
NONE	TRIM: FRONT SHORT	MP40282-1	BUKEY	303.0901	2
NONE	TRIM: REAR	MP40281-1	BUKEY	303.0902	2
NONE	CONN PLATE BLANKING: (751/752)			303.0910	1
NONE	SPRING: FORMED "IM" MOD 3/4"			304.0859	2
NONE	TRIM: FRONT TOP SUPR/SNUB 512	MP40318-4	BUKEY	307.0914	2
NONE	LUG: SOLDER ANGLED #6	1416-6	SMITH	359.0006	1
NONE	CLAMP: CABLE FLAT	FCC163	RICH	362.1606	2

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 751 ANAL FILTER — ASSEMBLY NO. 002.0700 — REV D — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	GROMMET STRIP: SOLID, .050	GS2ACP	ELECT	366.1803	3.6
NONE	SHIELD: MU-METAL 3X3X.020			376.1503	1
NONE	SPCR: NY 1/4D X 1/4L X.140ID	13SP041	MICRO	376.2110	4
NONE	TIE: CABLE NY NAT 3/4 MAX DIA	SST-1-M	PANDT	377.4001	15
NONE	BRAID: TINNED COPPER 1/4" DIA			378.3250	.5
NONE	SHRINK TBG PLYFIN BLACK 1/8"			378.5520	.5
NONE	SHRINK TBG PLYFIN BLACK 1/4"			378.5540	.45
NONE	M SCR: ST CD PH 4-40 X 3/8 PH			381.4062	4
NONE	M SCR: ST CD PHP 6-32 X 1/2 BH			381.6081	6
NONE	ADHESIVE: PASTE, CLEAR (RTV)			500.2001	.1

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 751 ANAL FILTER — ASSEMBLY NO. 002.0700 — REV D — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	PANEL ASSEMBLY FRONT 752			001.0750	1
NONE	PANEL ASSY: REAR, 751/752			002.0785	1
NONE	MAINBOARD ASSY 752 (L-P/FB)			004.0750	2
NONE	LABEL, SERIAL NUMBER/FILTERS & SYNTHESIZERS	FSS-8660	WVTK	1400-01-8660	1
NONE	SIDE FRAME	MP40375	BUKEY	303.0500	2
NONE	CARD CAGE 751/752			303.0510	1
NONE	TRIM: FRONT SHORT	MP40282-1	BUKEY	303.0901	2
NONE	TRIM: REAR	MP40281-1	BUKEY	303.0902	2
NONE	CONN PLATE BLANKING: (751/752)			303.0910	1
NONE	SPRING: FORMED "IM" MOD 3/4"			304.0859	2
NONE	TRIM: FRONT TOP SUPR/SNUB 512	MP40318-4	BUKEY	307.0914	2
NONE	LUG: SOLDER ANGLED #6	1416-6	SMITH	359.0006	2
NONE	CLAMP: CABLE FLAT	FCC163	RICH	362.1606	2

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 752 ANAL FILTER — ASSEMBLY NO. 002.0750 — REV D — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	GROMMET STRIP: SOLID, .050	GS2ACP	ELECT	366.1803	3.3
NONE	SHIELD: MU-METAL 3X3X.020			376.1503	1
NONE	SPCR: NY 1/4D X 1/4L X.140ID	13SP041	MICRO	376.2110	4
NONE	TIE: CABLE NY NAT 3/4 MAX DIA	SST-1-M	PANDT	377.4001	15
NONE	BRAID: TINNED COPPER 1/4" DIA			378.3250	.5
NONE	SHRINK TBG PLYFIN BLACK 1/8"			378.5520	.5
NONE	SHRINK TBG PLYFIN BLACK 1/4"			378.5540	.4
NONE	M SCR: ST CD PH 4-40 X 3/8 PH			381.4062	4
NONE	M SCR: ST CD PHP 6-32 X 1/2 BH			381.6081	4
NONE	ADHESIVE: PASTE, CLEAR (RTV)			500.2001	.1

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 752 ANAL FILTER — ASSEMBLY NO. 002.0750 — REV D — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	PANEL ASSEMBLY FRONT 753			001.0753	1
NONE	PANEL ASSY: REAR, 751/752			002.0785	1
NONE	MAINBOARD ASSY 752 (L-P/FB)			004.0750	1
NONE	MAINBOARD ASSY 753 (H-P/FB)			004.0753	1
NONE	LABEL, SERIAL NUMBER/FILTERS & SYNTHESIZERS	FSS-8660	WVTK	1400-01-8660	1
NONE	SIDE FRAME	MP40375	BUKEY	303.0500	2
NONE	CARD CAGE 751/752			303.0510	1
NONE	TRIM: FRONT SHORT	MP40282-1	BUKEY	303.0901	2
NONE	TRIM: REAR	MP40281-1	BUKEY	303.0902	2
NONE	CONN PLATE BLANKING: (751/752)			303.0910	1
NONE	SPRING: FORMED "IM" MOD 3/4"			304.0859	2
NONE	TRIM: FRONT TOP SUPR/SNUB 512	MP40318-4	BUKEY	307.0914	2

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 753 — ASSEMBLY NO. 002.0753 — REV B — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	LUG: SOLDER ANGLED #6	1416-6	SMITH	359.0006	2
NONE	CLAMP: CABLE FLAT	FCC163	RICH	362.1606	2
NONE	GROMMET STRIP: SOLID, .050	GS2ACP	ELECT	366.1803	42
NONE	SHIELD: MU-METAL 3X3X.020			376.1503	1
NONE	SPCR: NY 1/4D X 1/4L X.140ID	13SP041	MICRO	376.2110	4
NONE	TIE: CABLE NY NAT 3/4 MAX DIA	SST-1-M	PANDT	377.4001	15
NONE	BRAID: TINNED COPPER 1/4" DIA			378.3250	5
NONE	SHRINK TBG PLYFIN BLACK 1/8"			378.5520	5
NONE	SHRINK TBG PLYFIN BLACK 1/4"			378.5540	4.5000
NONE	M SCR: ST CD PH 4-40 X 3/8 PH			381.4062	4
NONE	M SCR: ST CD PHP 6-32 X 1/2 BH			381.6081	4
NONE	ADHESIVE: PASTE, CLEAR (RTV)			500.2001	0

WAVETEK PARTS LIST — TITLE: MAIN SUBASSY: 753 — ASSEMBLY NO. 002.0753 — REV B — PAGE 2

WAVETEK SAN DIEGO • CALIFORNIA

TITLE	MODEL NO.	DWG NO.	REV
PARTS LIST MAIN SUBASSEMBLY	751	002.0700	D
	752	002.0750	D
	753	002.0753	B
	CODE IDENT 23338	SHEET 1 OF 1	

NOTE: UNLESS OTHERWISE SPECIFIED

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A	RELEASE			
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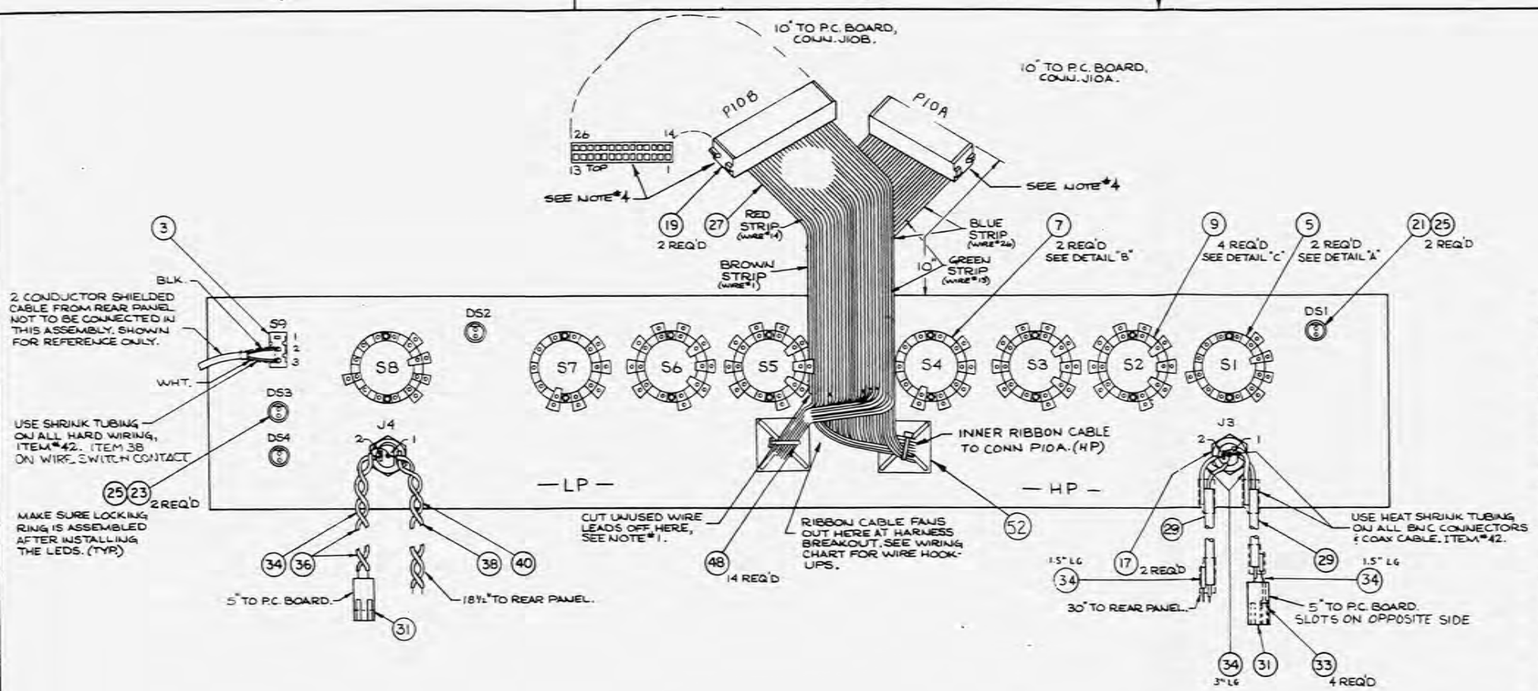
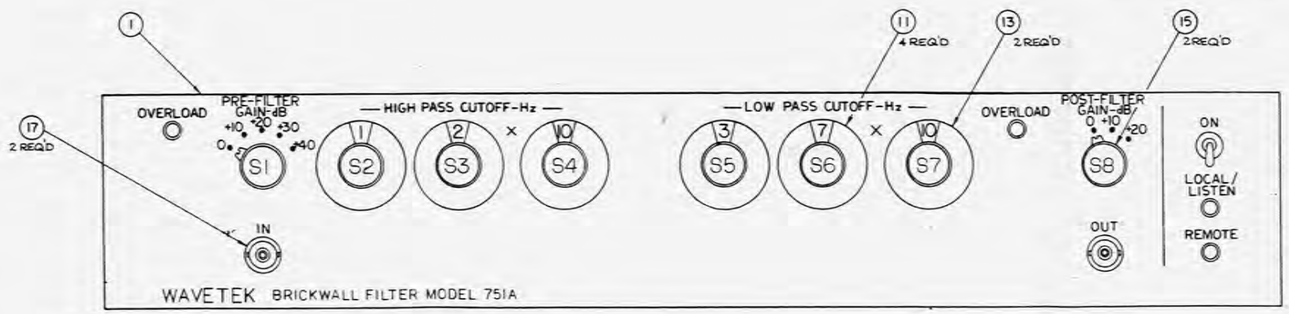
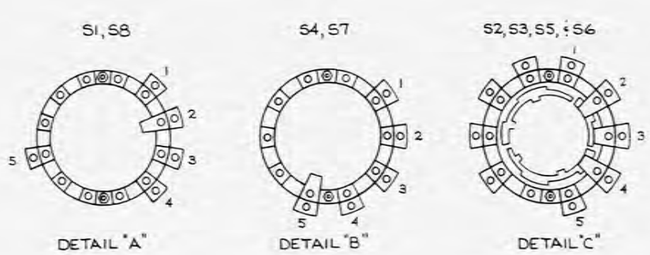
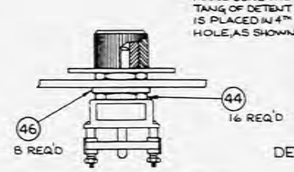
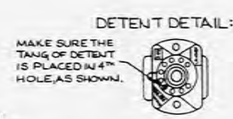
C	1082	JB 12-10-79	LAT	12/17/79
D	1107	JA 1-17-80	LAT	4/23/80
E	1386	M. MCMINN	JV	5/4/82
F	1894	M. MCMINN		9/3/84
G	2023	9/27/11		9/27/11

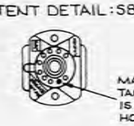


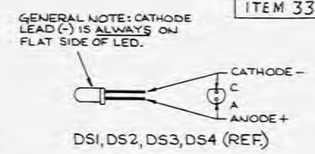












WIRING CHART

FROM	TO	COLOR	LG.	ITEM
S2-4	S1-2	ORN.	4"	36
S3-4	S2-4	ORN.	3"	36
S4-5	S3-4	ORN.	4"	36
P10A-11	S1-5	BRN.	20"	27
P10A-10	S1-1	WHT.	↓	↓
P10A-9	S1-3	VIO.		
P10A-22	S2-1	GRY.		
P10A-21	S2-5	BLU.		
P10A-20	S2-2	YEL.		
P10A-19	S2-3	RED		
P10A-18	S3-1	BLK.		
P10A-17	S3-5	GRY.		
P10A-16	S3-2	BLU.		
P10A-15	S3-3	YEL.		
P10A-26	S4-1	BLU.		
P10A-25	S4-2	YEL.		
P10A-24	S4-3	RED		
P10A-23	S4-4	BLK.		
P10A-5+6	S4-5	WHT+BRN		
P10A-13	DS1-C	GRN.		
P10A-12	DS1-A	ORN.		
P10A-2	SEE NOTE #1	ORN.		
P10A-1		BRN.		
P10A-3		GRN.		
P10A-4		VIO.		
P10A-7		ORN.		
P10A-8		GRN.	↑	↑
P10A-14		RED	20"	27
J3-1	SEE NOTE #2	COAX RG174	5"	29
J3-2		BLK.	3"	34
J3-1		COAX RG174	30"	29
J3-2		BLK.	3"	34
ITEM 29	REAR PNL	BLK.	1.5"	34
ITEM 33	ITEM 29	BLK.	1.5"	34

SHOULD BE DONE FIRST

FROM	TO	COLOR	LG.	ITEM
S6-4	S5-4	ORN.	4"	36
S7-5	S6-4	ORN.	4"	36
S8-2	S7-5	ORN.	5"	36
DS3-A	DS4-A	RED	1½"	50
P10B-22	S5-1	GRY.	20"	27
P10B-21	S5-5	BLU.	↓	↓
P10B-20	S5-2	YEL.		
P10B-19	S5-3	RED		
P10B-18	S6-1	BLK.		
P10B-17	S6-5	GRY.		
P10B-16	S6-2	BLU.		
P10B-15	S6-3	YEL.		
P10B-26	S7-1	BLU.		
P10B-25	S7-2	YEL.		
P10B-24	S7-3	RED		
P10B-23	S7-4	BLK.		
P10B-5+6	S8-2	WHT+BRN		
P10B-7	S8-3	ORN.		
P10B-8	S8-1	GRN.		
P10B-12	DS2-A	ORN.		
P10B-13	DS2-C	GRN.		
P10B-14	DS3-A	RED		
P10B-3	DS3-C	GRN.		
P10B-2	DS4-C	ORN.		
P10B-1	SEE NOTE #1	BRN.		
P10B-4		VIO.		
P10B-9		VIO.		
P10B-10		WHT.	↑	↑
P10B-11		BRN.	20"	27
J4-1	SEE NOTE #2	ORN.	5"	36
J4-2		BLK.	5"	34
J4-1		BLU.	18"	40
J4-2		GRN.	18"	38

SHOULD BE DONE FIRST

NOTES:
1- THESE WIRE LEADS ARE TO BE LEFT UNTERMINATED AND CUT OFF AS CLOSE AS POSSIBLE TO THE HARNESS BREAKOUT OF THE RIBBON CABLE.
2- WIRING TO BE COMPLETED IN NEXT ASSEMBLY LEVEL, (MAIN FRAME ASSEMBLY).
3- FINAL WIRE LENGTHS WILL BE DETERMINED IN PILOT RUN.
4- MARK CONNECTOR DESIGNATION (P10A OR P10B) ON TOP SIDE OF CONNECTOR.
SHEETS 2 & 3 ARE "A" SIZE L/M.

DRAWN BY: JB.	DATE 11-05-79	ROCKLAND Rockland Systems Corporation
CHECKED BY:		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG. APPVL. LAT	5/7/79	
MFG. APPVL.		TITLE 751A FRONT PANEL ASSEMBLY
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		SIZE D DRAWING NO. 02-001-0700 REV G SCALE 1:1 SHEET 1 OF 3

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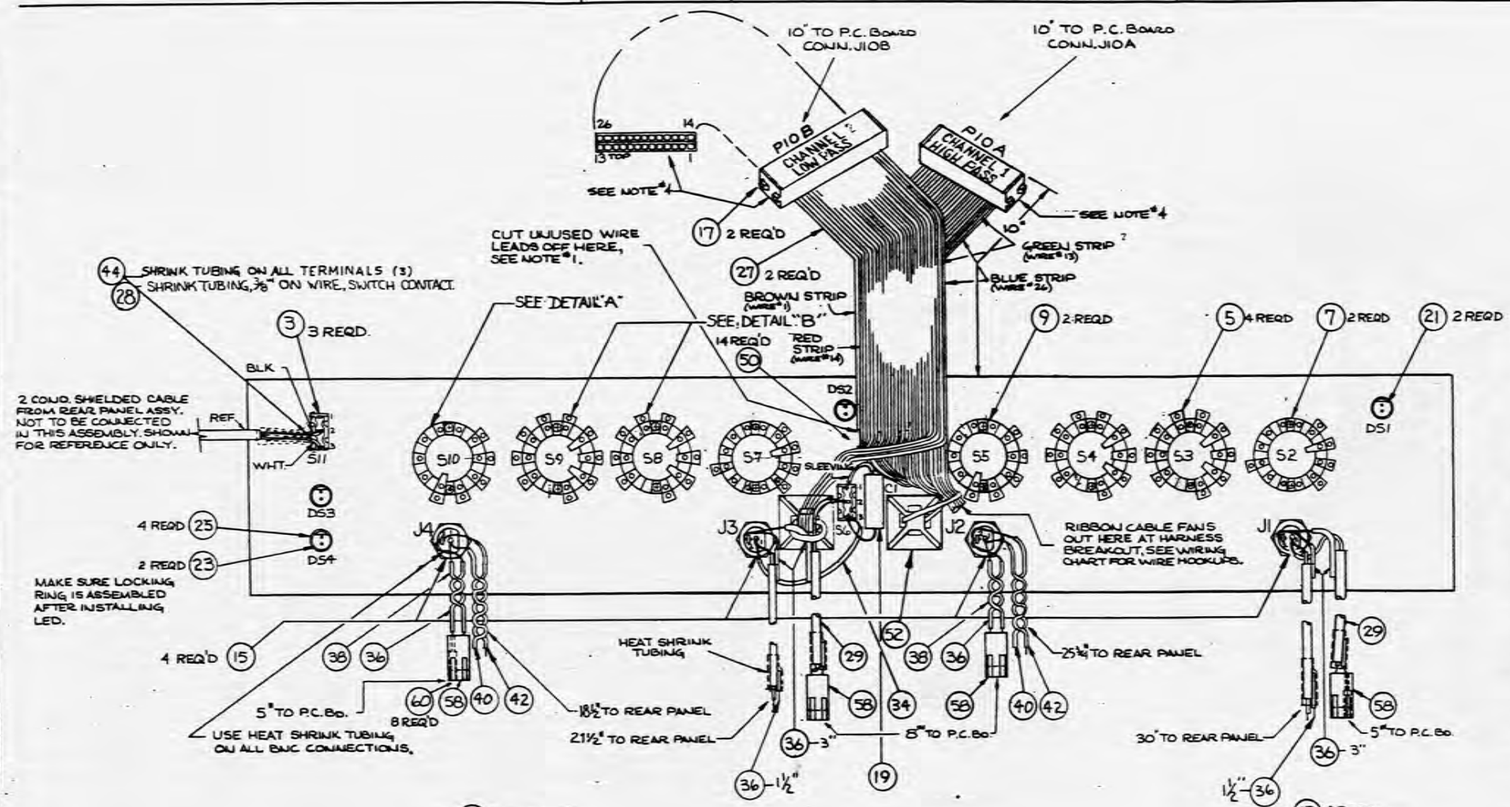
LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE



WIRING CHART

FROM	TO	COLOR	LENGTH	ITEM NO.	FROM	TO	COLOR	LENGTH	ITEM NO.
					S7-2	S8-4	ORN.	4"	38
S5-5	S4-4	ORN.	4"	38	S6-4	S9-4	ORN.	3"	38
S4-4	S3-4	ORN.	3"	38	S9-4	S10-5	ORN.	4"	38
S3-4	S2-2	ORN.	4"	38	DS4-A	DS3-A	RED.	15"	54
P10A-11	S2-5	BRN.	20"	27	P10B-11	S7-5	BRN.	20"	27
P10A-10	S2-1	WHT.	↑	↑	P10B-10	S7-1	WHT.	↑	↑
P10A-9	S2-3	VIO.			P10B-9	S7-3	VIO.		
P10A-22	S3-1	GRY.			P10B-22	S8-1	GRY.		
P10A-21	S3-5	BLU.			P10B-21	S8-5	BLU.		
P10A-20	S3-2	YEL.			P10B-20	S8-2	YEL.		
P10A-19	S3-3	RED			P10B-19	S8-3	RED		
P10A-18	S4-1	BLK.			P10B-18	S9-1	BLK.		
P10A-17	S4-5	GRY.			P10B-17	S9-5	GRY.		
P10A-16	S4-2	BLU.			P10B-16	S9-2	BLU.		
P10A-15	S4-3	YEL.			P10B-15	S9-3	YEL.		
P10A-26	S5-1	BLU.			P10B-26	S10-1	BLU.		
P10A-25	S5-2	YEL.			P10B-25	S10-2	YEL.		
P10A-24	S5-3	RED			P10B-24	S10-3	RED		
P10A-23	S5-4	BLK.			P10B-23	S10-4	BLK.		
P10A-5+6	S5-5	WHT-BRN			P10B-5+6	S10-5	WHT-BRN		
P10A-12	DS1-A	ORN.			P10B-12	DS2-A	ORN.		
P10A-13	DS1-C	GRN.			P10B-13	DS2-C	GRN.		
P10A-2	SEE NOTE #1	ORN.			P10B-14	DS4-A	RED		
P10A-1		BRN.			P10B-3	DS3-C	GRN.		
P10A-3		GRN.			P10B-2	DS4-C	ORN.		
P10A-4		VIO.			P10B-1	SEE NOTE #1	BRN.		
P10A-7		ORN.			P10B-4		VIO.		
P10A-8		GRN.	↓	↓	P10B-7		ORN.	↓	↓
P10A-14		RED	20"	27	P10B-8		GRN.	20"	27
REAR PANEL COAX GND		BLK	1.5	36					
		BLK	1.5	36					
	C1				S6-1	C2			
	C1				S6-3	C2			
	J1-1				S6-3	J3-1	WHT	3"	34
J1-1	SEE NOTE #2	RG174	5"	29	S6-2	SEE NOTE #2	RG174	8"	29
J1-1		RG174	30"	29	J3-1		RG174	30"	29
J1-2		BLK	3"	36	J3-2		BLK	3"	36
J1-2		BLK	3"	36	J3-2		BLK	3"	36
J2-1		ORN	8"	38	J4-1		ORN	5"	38
J2-1		BLU	25⅜"	42	J4-1		BLU	18½"	42
J2-2		BLK	8"	36	J4-2		BLK	5"	36
J2-2		GRN	25⅜"	40	J4-2		GRN	18½"	40

NOTES:
1- THESE WIRE LEADS ARE TO BE LEFT UNTERMINATED AND CUT OFF AS CLOSE AS POSSIBLE TO THE HARNESS BREAKOUT OF THE RIBBON CABLE.
2-WIRING TO BE COMPLETED IN NEXT ASSEMBLY LEVEL, (MAIN FRAME ASSEMBLY).
3-FINAL WIRE LENGTHS WILL BE DETERMINED IN PILOT RUN.
4- MARK CONNECTOR DESIGNATION (P10A OR P10B) ON TOP SIDE OF CONNECTOR.
SHEETS 2 & 3 ARE A SIZE L/M.

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CHECKED BY:		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG. APPVL.		
MFG. APPVL.		
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005 .XX ± .01 M/M ± 1/64 ∠° ± 1°		TITLE 753 A FRONT PANEL ASSEMBLY
		SIZE D — DRAWING NO. 02 001-0753 — REV — SCALE 1:1 — SHEET 1 OF 2

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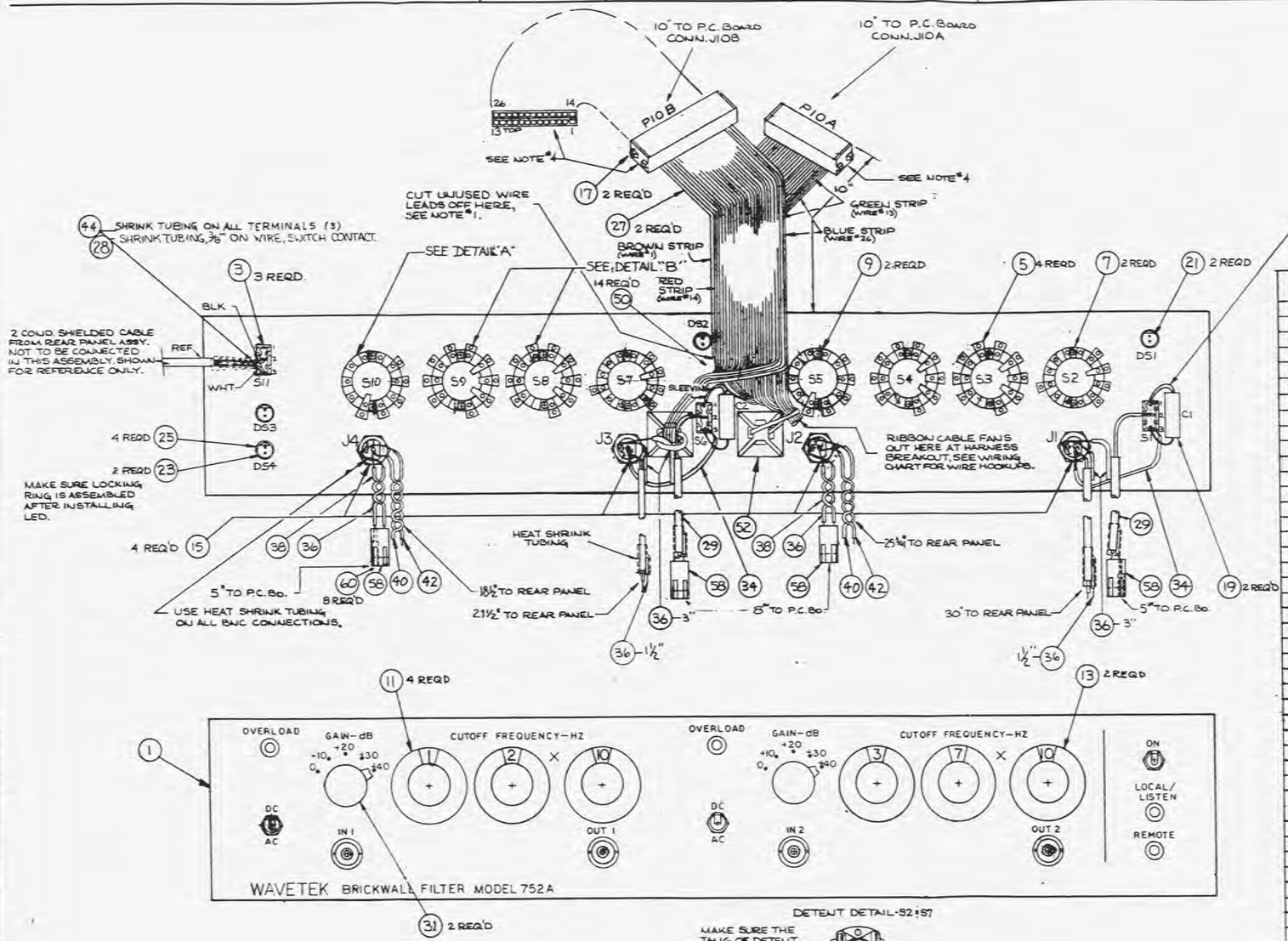
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE		GAS	LAT	1-16-7
B	1040	M. MCMINN		LAT	8/9/79
C	1072	T.H. 8-8-79		LAT	8/9/79
D	1082	JB 12-10-79		LAT	12/13/79
E	1105	SAM 4-7-80		LAT	7/13/80
F	1108	SAM 4-14-80		LAT	7/13/80
G	1386	M. MCMINN		JV	5/9/82
H	1894	M. MCMINN		JW	9/21/87
J	2124	NP 4/29/86			



WIRING CHART

FROM	TO	COLOR	LENGTH	ITEM NO.	FROM	TO	COLOR	LENGTH	ITEM NO.
					S7-2	S8-4	ORN.	4"	38
S5-5	S4-4	ORN.	4"	38	S8-4	S9-4	ORN.	3"	38
S4-4	S3-4	ORN.	3"	38	S9-4	S10-5	ORN.	4"	38
S3-4	S2-2	ORN.	4"	38	DS4-A	DS3-A	RED.	15"	54
P10A-11	S2-5	BRN.	20"	27	P10B-11	S7-5	BRN.	20"	27
P10A-10	S2-1	WHT.	↓	↓	P10B-10	S7-1	WHT.	↓	↓
P10A-9	S2-3	VIO.			P10B-9	S7-3	VIO.		
P10A-22	S3-1	GRY.			P10B-22	S8-1	GRY.		
P10A-21	S3-5	BLU.			P10B-21	S8-5	BLU.		
P10A-20	S3-2	YEL.			P10B-20	S8-2	YEL.		
P10A-19	S3-3	RED.			P10B-19	S8-3	RED.		
P10A-18	S4-1	BLK.			P10B-18	S9-1	BLK.		
P10A-17	S4-5	GRY.			P10B-17	S9-5	GRY.		
P10A-16	S4-2	BLU.			P10B-16	S9-2	BLU.		
P10A-15	S4-3	YEL.			P10B-15	S9-3	YEL.		
P10A-26	S5-1	BLU.			P10B-26	S10-1	BLU.		
P10A-25	S5-2	YEL.			P10B-25	S10-2	YEL.		
P10A-24	S5-3	RED.			P10B-24	S10-3	RED.		
P10A-23	S5-4	BLK.			P10B-23	S10-4	BLK.		
P10A-5+6	S5-5	WHT-BRN.			P10B-5+6	S10-5	WHT-BRN.		
P10A-12	DS1-A	ORN.			P10B-12	DS2-A	ORN.		
P10A-13	DS1-C	GRN.			P10B-13	DS2-C	GRN.		
P10A-2		ORN.			P10B-14	DS4-A	RED.		
P10A-1		BRN.			P10B-3	DS3-C	GRN.		
P10A-3		GRN.			P10B-2	DS4-C	ORN.		
P10A-4	SEE NOTE #1	VIO.			P10B-1	SEE NOTE #1	BRN.		
P10A-7		ORN.			P10B-4		VIO.		
P10A-8		GRN.	↓	↓	P10B-7		ORN.	↓	↓
P10A-14		RED.	20"	27	P10B-8		GRN.	20"	27
REAR PANEL COAX GND		BLK	1.5	36					
		BLK	1.5	36					
S1-1	C1				S6-1	C2			
S1-3	C1				S6-3	C2			
S1-3	J1-1	WHT	3"	34	S6-3	J3-1	WHT	3"	34
S1-2		RG174	5"	29	S6-2		RG174	8"	29
J1-1		RG174	30"	29	J3-1		RG174	30"	29
J1-2		BLK	3"	36	J3-2		BLK	3"	36
J1-2		BLK	3"	36	J3-2		BLK	3"	36
J2-1	SEE NOTE #2	ORN	8"	38	J4-1	SEE NOTE #2	ORN	5"	38
J2-1		BLU	25⅜"	42	J4-1		BLU	18½"	42
J2-2		BLK	8"	36	J4-2		BLK	5"	36
J2-2		GRN	25⅜"	40	J4-2		GRN	18½"	40

NOTES:
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4-MARK CONNECTOR DESIGNATION (P10A OR P10B) ON TOP SIDE OF CONNECTOR.
SHEETS 2 & 3 ARE A SIZE L/M.

DRAWN BY: M. McMINN	DATE 6/18/78	ROCKLAND Rockland Systems Corporation
CHECKED BY:		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG. APPVL. RAS	1/11/79	
MFG. APPVL. Louis R. Tavia	1-16-79	TITLE 752A FRONT PANEL ASSEMBLY
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		SIZE D — DRAWING NO. 02 001-0750 — SCALE 1:1 — SHEET 1 OF 3

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
DS1 DS2	LED: RED, 2MCD@10, 40DVA	MV5054-1	MONSO	171.1600	2
DS3 DS4	LED: GRN, 3MCD@20 90DVA	5082-4955	HP	171.1602	2
NONE	SUPER KIT	2500-0751-02		2500-0751-02	1
NONE	FRONT PANEL: 751			300.0701	1
S9	S: TOG SPDT ON-ON RB	7101-SYZG	C&K	340.1201	1
S4 S7	S: ROT 1P 4 POS 36 DEG (751 MULT)	511611323-0	OAK	343.1040	2
S2 S3 S5 S6	S: RPT 10P BCD 36 DEG (5600)	512371321-A	OAK	345.1101	4
S1 S8	S: ROT 1P 11 POS BCD (751GAIN)	513481320-A	OAK	345.1112	2
J3 J4	CONN: COAX BLKHD RECPT ISOL	31-010	AMPH	351.0006	2
NONE	CLAMP: CABLE TIE	6001-12A	AUGAT	362.1607	2
NONE	CLIP: LED MTG BLK (MV)			362.2010	4
NONE	KNOB: BAR LT/GRY ANALOG GAIN			370.0771	2
NONE	KNOB: DIAL 0-9			370.0774	4

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 751 — ASSEMBLY NO. 001.0700 — REV G — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
	LT-GRY/WHT-MK				
NONE	KNOB: MULT 1-1K LT-GRY/WHT-MK			370.0777	2
NONE	WIRE: #24 AWG STR RED			378.1724	.15
NONE	NUT: HX ST CD 3/8-32 X 1/2AF			387.0160	16
NONE	WASHER: INT LK STL CAD 3/8			388.1370	8

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 751 — ASSEMBLY NO. 001.0700 — REV G — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
C1 C2	FX PLSTR .47UF 5% 100V	A11B474J	BISHO	105.4470	2
DS1 DS2	LED: RED, 2MCD@10, 40DVA	MV5054-1	MONSO	171.1600	2
DS3 DS4	LED: GRN, 3MCD@20 90DVA	5082-4955	HP	171.1602	2
NONE	SUPER KIT	2500-0752-02		2500-0752-01	1
NONE	FRONT PANEL: 752			300.0751	1
S1 S11 S6	S: TOG SPDT ON-ON RB	7101-SYZG	C&K	340.1201	3
S10 S5	S: ROT 1P 4 POS 36 DEG (751 MULT)	511611323-0	OAK	343.1040	2
S3 S4 S8 S9	S: RPT 10P BCD 36 DEG (5600)	512371321-A	OAK	345.1101	4
S2 S7	S: ROT 1P 11 POS BCD (751GAIN)	513481320-A	OAK	345.1112	2
J1 J2 J3 J4	CONN: COAX BLKHD RECPT ISOL	31-010	AMPH	351.0006	4
NONE	CLAMP: CABLE TIE	6001-12A	AUGAT	362.1607	2
NONE	CLIP: LED MTG BLK (MV)			362.2010	4
NONE	KNOB: BAR LT/GRY			370.0771	2

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 752 — ASSEMBLY NO. 001.0750 — REV J — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
	ANALOG GAIN				
NONE	KNOB: DIAL 0-9 LT-GRY/WHT-MK			370.0774	4
NONE	KNOB: MULT 1-1K LT-GRY/WHT-MK			370.0777	2
NONE	WIRE: #22 AWG STR WHITE			378.1694	.6
NONE	WIRE: #24 AWG STR RED			378.1724	.15
NONE	NUT: HX ST CD 3/8-32 X 1/2AF			387.0160	16
NONE	WASHER: INT LK STL CAD 3/8			388.1370	8

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 752 — ASSEMBLY NO. 001.0750 — REV J — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
C1	FX PLSTR .47UF 5% 100V	A11B474J	BISHO	105.4470	1
DS1 DS2	LED: RED, 2MCD@10, 40DVA	MV5054-1	MONSO	171.1600	2
DS3 DS4	LED: GRN, 3MCD@20 90DVA	5082-4955	HP	171.1602	2
NONE	SUPER KIT	2500-0752-02		2500-0752-01	1
NONE	FRONT PANEL: 753			300.0753	1
S11 S6	S: TOG SPDT ON-ON RB	7101-SYZG	C&K	340.1201	2
S10 S5	S: ROT 1P 4 POS 36 DEG (751 MULT)	511611323-0	OAK	343.1040	2
S3 S4 S8 S9	S: RPT 10P BCD 36 DEG (5600)	512371321-A	OAK	345.1101	4
S2 S7	S: ROT 1P 11 POS BCD (751GAIN)	513481320-A	OAK	345.1112	2
J1 J2 J3 J4	CONN: COAX BLKHD RECPT ISOL	31-010	AMPH	351.0006	4
NONE	CLAMP: CABLE TIE	6001-12A	AUGAT	362.1607	2
NONE	CLIP: LED MTG BLK (MV)			362.2010	4
NONE	KNOB: BAR LT/GRY			370.0771	2

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 753 — ASSEMBLY NO. 001.0753 — REV D — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
	ANALOG GAIN				
NONE	KNOB: DIAL 0-9 LT-GRY/WHT-MK			370.0774	4
NONE	KNOB: MULT 1-1K LT-GRY/WHT-MK			370.0777	2
NONE	WIRE: #22 AWG STR WHITE			378.1694	.25
NONE	WIRE: #24 AWG STR RED			378.1724	.15
NONE	NUT: HX ST CD 3/8-32 X 1/2AF			387.0160	16
NONE	WASHER: INT LK STL CAD 3/8			388.1370	8

WAVETEK PARTS LIST — TITLE: PANEL ASSEMBLY FRONT 753 — ASSEMBLY NO. 001.0753 — REV D — PAGE 2

NOTE: UNLESS OTHERWISE SPECIFIED

WAVETEK SAN DIEGO • CALIFORNIA

TITLE	MODEL NO.	DWG NO.	REV
PARTS LIST FRONT PANEL ASSEMBLY	751	001.0700	G
	75^	001.0750	J
	753	001.0753	D
	CODE IDENT 23338	SHEET 1 OF 1	

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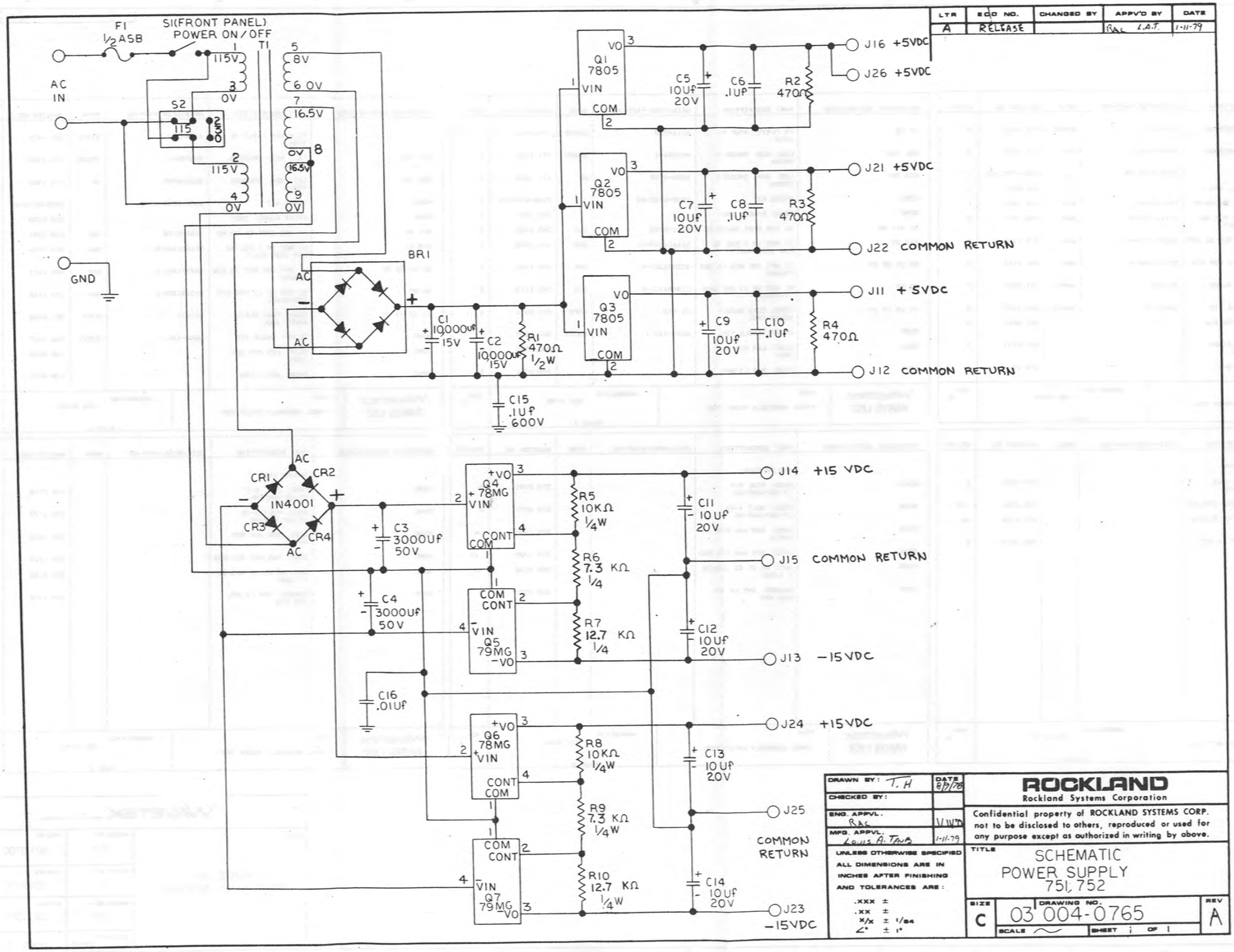

LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
A	RELEASE		RAC L.A.T.	1-11-79

DRAWN BY: T.H DATE 8/3/78
CHECKED BY:
ENG. APPVL. RAC
MFG. APPVL. LOUIS A. TAUB 1-11-79

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE:
.XXX ±
.XX ±
X/X ± 1/64
∠° ± 1°

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TITLE
SCHEMATIC
POWER SUPPLY
751, 752

SIZE C | DRAWING NO. 03 004-0765 | REV A
SCALE ~ | SHEET 1 OF 1

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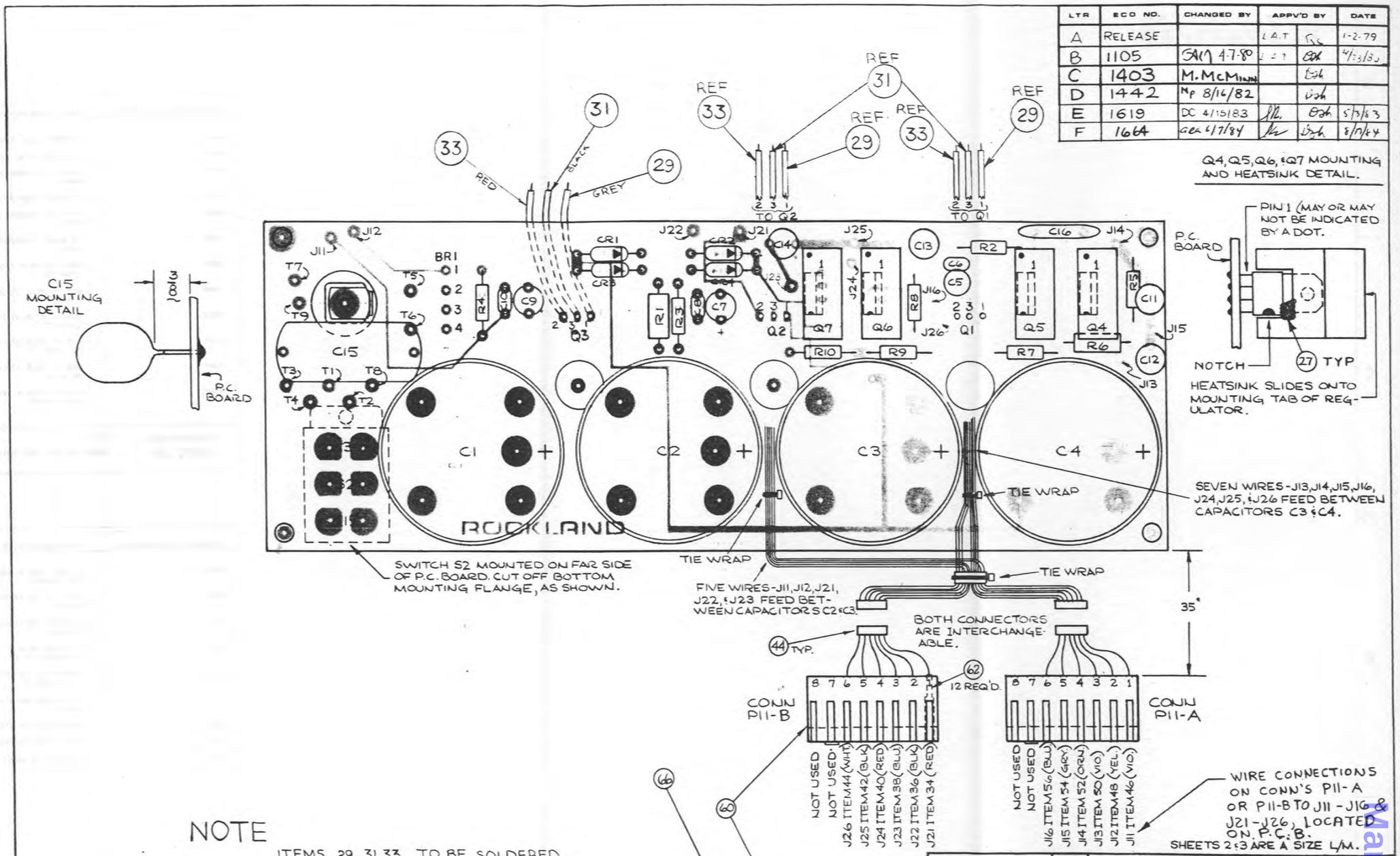
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE		L.A.T		1-2-79
B	1105	SAM 4-7-80			4/15/80
C	1403	M. McMinn			
D	1442	MP 8/16/82			
E	1619	DC 4/15/83			5/3/83
F	1664	GEA 4/7/84			8/7/84



NOTE

ITEMS 29, 31, 33 TO BE SOLDERED TO Q1, Q2 & Q3 ON BOTTOM (SOLDER SIDE) OF BOARD, AS INDICATED.

DRAWN BY: JB	DATE 12-5-78	ROCKLAND Rockland Systems Corporation
CHECKED BY:		
ENG APPVL: RC	1/12/79	Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
MFG APPVL: L.A. TAUB	1-2-79	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE:
.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

TITLE: POWER SUPPLY ASSEMBLY 751, 752, 753

SIZE: C | DRAWING NO: 02-004-0765 | REV: F

SCALE 2:1 | SHEET 1 OF 3

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REV	ECN	BY	DATE	APP

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	FX CER .01UF GMV 1KV	DD-103	CRL	100.3100	1
NONE	FX MOND 0.1UF 50V Z5U	SR215E104ZAT	AVX	100.4102	1
NONE	FX PLSTR .10UF 10% 600V	DMT6P1	C-D	105.4100	1
NONE	FX TANT 10UF 20% 20V	T368B106M025A$	KEMET	109.6100	1
NONE	FX ELECT 3000UF 50V (PC)	3487AE332M050KM	MEPCO	109.8300	1
NONE	FX ELECT 10000UF 15V (PC)	3487BD103M016KM	MEPCO	109.9100	1
NONE	RES, FX MFLM 7.30K 1% 1/8W T0	CR125	CTLRE	111.7300	1
NONE	RES,FX MFLM 10.0K 1% 1/10W T2	RN55C1002F	UMCEM	112.1001	1
NONE	RES,FX MFLM 12.7K 1% 1/10W T2	RN55C1272F	UMCEM	112.1271	1
NONE	RES,FX CFLM 470 OHM 5% 1/4W			116.1471	1
NONE	RES,FX COMP 470 OHM 5% 1/2W			116.1472	1
NONE	Q: P.V. REG 4 TERM ADJ, 500MA	UA78MGU1C	SCHEL	120.0001	1

WAVETEK PARTS LIST — TITLE: POWER SUPPLY ASSY 751/752 — ASSEMBLY NO. 004.0765 — REV F

PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	Q: N.V. REG 4 TERM ADJ, 500MA	UA79MGU1C	SCHEL	120.0002	1
NONE	ASSY, PC BD PREPPED 751-0765	751-2449	WVTK	1208-00-2449	1
NONE	SIL RECT 50PIV 1A (1N4001)			130.0110	1
NONE	S: SLIDE DPDT (115/230, PC MT)	11A-1388	SWCFT	342.2203	1
NONE	HEAT SINK: TO-202 CLIP (6047PB	6047PB	THERM	367.0410	4
NONE	WIRE: #22 AWG STR BLACK			378.1604	.9
NONE	WIRE: #22 AWG STR RED			378.1624	.9
NONE	WIRE: #22 AWG STR GRY			378.1684	.9
NONE	ADHESIVE: PASTE, CLEAR (RTV)			500.2001	1

WAVETEK PARTS LIST — TITLE: POWER SUPPLY ASSY 751/752 — ASSEMBLY NO. 004.0765 — REV F

PAGE 2

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO • CALIFORNIA
MATERIAL	PROJ ENGR		TITLE PARTS LIST POWER SUPPLY ASSY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 .XX ±.030 ANGLES ±1		
	DO NOT SCALE DWG		MODEL NO 751/752/753 — DWG NO 004.0765 — REV F
	SCALE		CODE IDENT 23338 — SHEET 1 OF 1

NOTE: UNLESS OTHERWISE SPECIFIED

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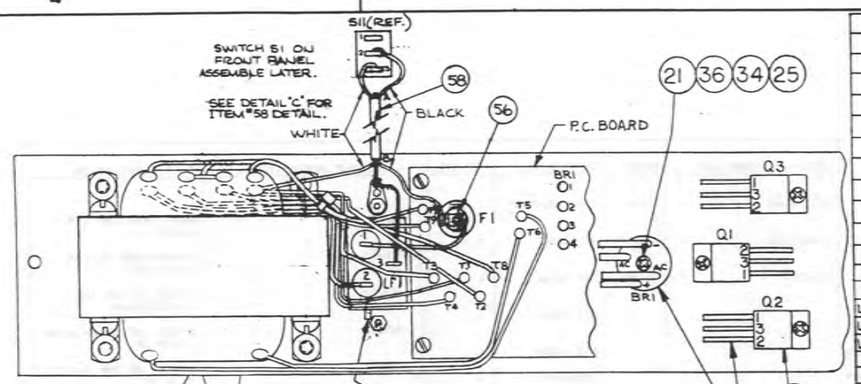
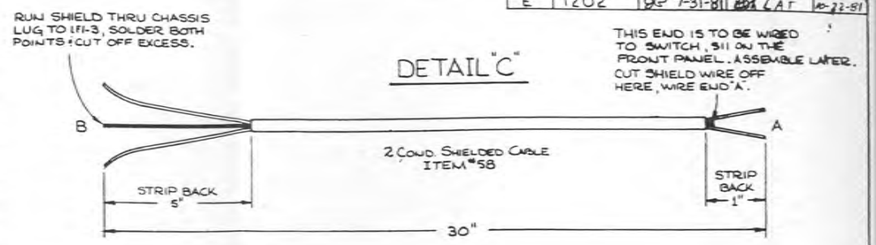
ZONE	LTR	ECO NO.	CHANGED BY	APPR'D BY	DATE
	F	1403	M. McMINN		12/9/82
	G	1619	4/15/83		5/5/83
	H	2130	5/9/86		5/9/86

LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
A	RELEASE		R.C. LAT	1-3-79
B	1073	T.N. 8-7-79	LAT	
C	1105	5411 4-7-80	LAT	4/15/80
D	1109	5411 4-21-80	LAT	4/21/80
E	1202	7-31-81	LAT	10-22-81

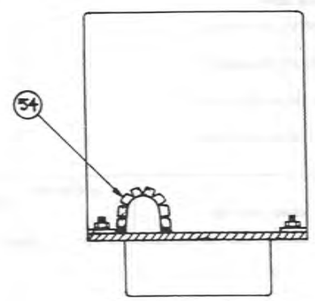


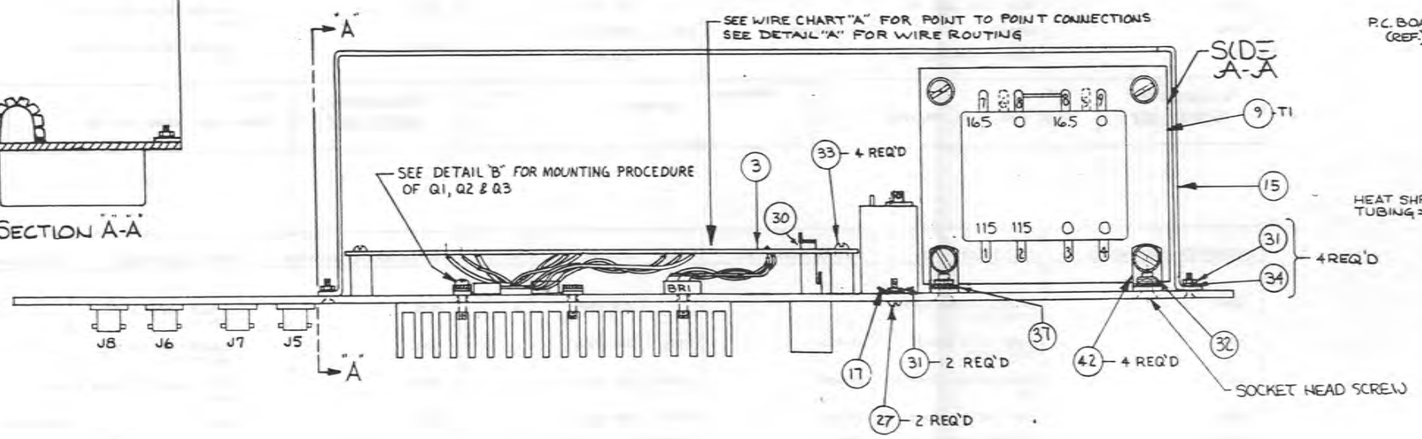
WIRING CHART "A"			
FROM P.C. BOARD	TO TRANSFORMER	LENGTH	ITEM
T1	LUG 1	8½"	44
T2	LUG 2	8½"	46
T3	LUG 3	8¾"	44
T4	LUG 4	8½"	46
T5	LUG 5	11"	48
T6	LUG 6	12"	48
T7	LUG 7	8"	50
T8	LUG 8	9"	52
T9	LUG 9	10"	50
LF1-LUG 1	F1 CENTER LUG	6½"	44
LF1-LUG 2	TRANS. LUG 4	7½"	46
LF1-LUG 3	CHASSIS LUG	END "B" - 5" SHIELD (CUT EXCESS)	58
F1 OUTER LUG	S11-LUG 2 (FRONT PANEL) (BLK)	30"	58
TRANS LUG 1	S11-LUG 3 (" ") (WHT)	30"	58

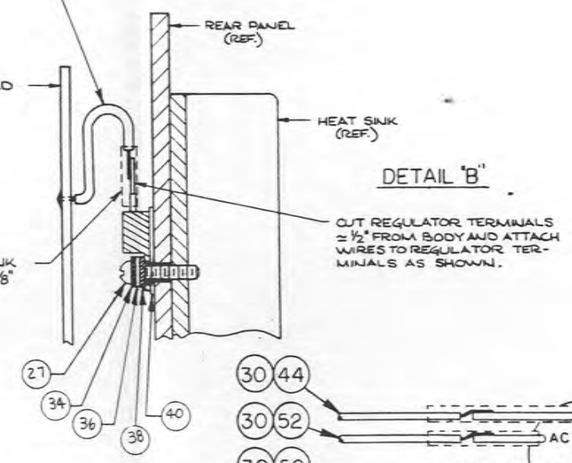
SEE DETAIL "C" FOR DETAIL OF 2 COND. SHIELDED CABLE, ITEM #58.

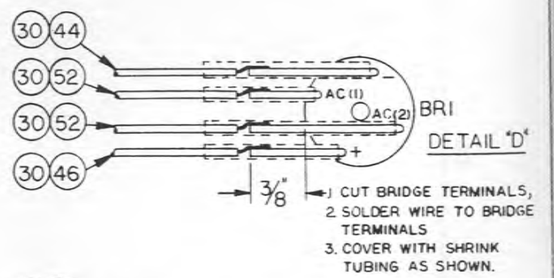


SEE WIRE CHART "C"

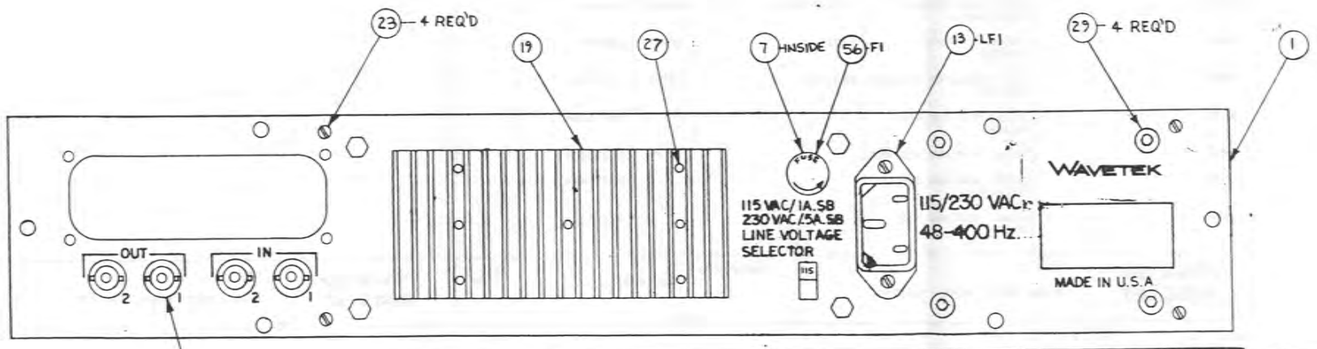


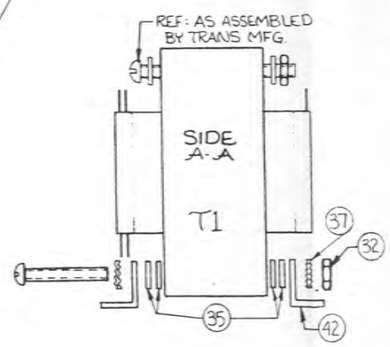






NOTE:
1-USE SHRINK TUBING ON ALL EXPOSED LUGS EXCEPT ITEM #17 AND LF1-3. (SHIELD WIRE OF "B" END OF ITEM #58)





WIRE CHART "B"			
FROM REAR PANEL	TO P.C. BD	LENGTH	ITEM
BRI-NEG.	BRI-1	2"	44
BRI-AC (1)	BRI-2	2"	52
BRI-AC (2)	BRI-3	2"	52
BRI-POS.	BRI-4	2"	46

WIRE CHART "C"		
FROM REAR PANEL	TO P.C. BD	COLOR
Q1-1	Q1-1	GRAY
Q1-2	Q1-2	RED
Q1-3	Q1-3	BLACK
Q2-1	Q2-1	GRAY
Q2-2	Q2-2	RED

WIRE CHART "C"		
FROM REAR PANEL	TO P.C. BD	COLOR
Q2-3	Q2-3	BLACK
Q3-1	Q3-1	GRAY
Q3-2	Q3-2	RED
Q3-3	Q3-3	BLACK

SHEETS 2 & 3 ARE "A" SIZE L/M.

DRAWN BY: JB DATE 12-6-78
CHECKED BY:
ENG. APPVL. R.A.L. 1-3-79
MFG. APPVL. L.A. Terry 1-3-79

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE:
.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

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TITLE: REAR PANEL ASSY 751, 752, 753

SIZE D | DRAWING NO. 02 002-0785 | REV H
SCALE | SHEET 1 OF 3

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REV	ECN	BY	DATE	APP

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	ASSY, PRE WAVE LOAD 751-0765	751-2448	WVTK	1208-00-2448	1
NONE	S: SLIDE DPDT (115/230, PC MT)	11A-138B	SWCFT	342.2203	1
NONE	HEAT SINK: TO-202 CLIP (6047PB	6047PB	THERM	367.0410	1
NONE	WIRE: #22 AWG STR BLACK			378.1604	1
NONE	WIRE: #22 AWG STR RED			378.1624	1
NONE	WIRE: #22 AWG STR GRY			378.1684	1
NONE	ADHESIVE: PASTE, CLEAR (RTV)			500.2001	1
NONE	Q: P.V. REG 5V 1A TO-220	LM7805CT	NSC	120.0052	1
NONE	SIL FWB 100PIV 10A			130.1540	1
NONE	FILTER: POWER LINE 3A	3EF1	CORCM	165.3001	1
NONE	FUSE: 3AG 1A SB 250V	313001	LITFU	165.4002	1
NONE	XFMR: PWR DUAL PRI			177.3005	1
NONE	WASHER	B51547F015	MOT	2800-11-0015	1
NONE	PANEL: REAR 751/752			303.0630	1

WAVETEK PARTS LIST — TITLE: PANEL ASSY: REAR, 751/752 — ASSEMBLY NO. 002.0785 — REV H — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	SHIELD: POWER SUPPLY (751/752)			303.0909	1
NONE	CONN: COAX BLKHD RECPT ISOL	31-010	AMPH	351.0006	1
NONE	FUSE HOLDER: MINI 3 AG	345602	LITFU	351.9951	1
NONE	LUG: SOLDER ANGLEI #6	1416-6	SMITH	359.0006	1
NONE	GROMMET STRIP: BLACK	2692	SMITH	366.1800	1
NONE	HEAT SINK: POWER (751/752)	05-367-0411	AAVID	367.0411	1
NONE	INSULATOR: MICA TO-220	4672	KEYST	368.5004	1
NONE	TIE: CABLE NY NAT 3/4 MAX DIA	SST-1-M	PANDT	377.4001	1
NONE	WIRE: #18 AWG STR BLACK			378.1404	1
NONE	WIRE: #18 AWG STR RED			378.1424	1
NONE	WIRE: #18 AWG STR YELLOW			378.1444	1
NONE	WIRE: #18 AWG STR BLUE			378.1464	1

WAVETEK PARTS LIST — TITLE: PANEL ASSY: REAR, 751/752 — ASSEMBLY NO. 002.0785 — REV H — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	WIRE: #18 AWG STR WHITE			378.1494	1
NONE	SHRINK TBG PLYFIN BLACK 3/4"			378.5620	1
NONE	M SCR: ST CD PHP 4-40X3/4 PH			381.4122	1
NONE	M SCR: ST CD PH 6-32 X 3/8 PH			381.6062	1
NONE	M SCR: SS PHP 4-40 X 7/16 PH			385.4072	1
NONE	M SCR: SS PHP 4-40X7/16 100FH			385.4074	1
NONE	SKT CSCR: BLK 8-32X3/8 82FH			386.8061	1
NONE	NUT: HX ST CD 4-40 X 1/4AF			387.4080	1
NONE	NUT: HX ST CD 8-32 X 1/4AF			387.8080	1
NONE	WASHER: FLAT STL CAD #4			388.0040	1
NONE	WASHER: FLAT STL CAD #8			388.0080	1

WAVETEK PARTS LIST — TITLE: PANEL ASSY: REAR, 751/752 — ASSEMBLY NO. 002.0785 — REV H — PAGE 3

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	WASHER: EXT LK STL CAD #4			388.1041	1
NONE	WASHER: EXT LK STL CAD #8			388.1081	1
NONE	BKT: ANG ST CD .628 X .628	618	KEYST	389.3004	1
NONE	SUPER KIT	2500-0751-03		2500-0751-03	1

WAVETEK PARTS LIST — TITLE: PANEL ASSY: REAR, 751/752 — ASSEMBLY NO. 002.0785 — REV H — PAGE 4

NOTE: UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE
MATERIAL	PROJ ENGR	
	RELEASE APPROV	
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 ANGLES ±1 .XX ±.030	
	DO NOT SCALE DWG	
	SCALE	

WAVETEK SAN DIEGO • CALIFORNIA

TITLE: PARTS LIST REAR PANEL ASSEMBLY

MODEL NO: 751/752/753 — DWG NO: 002.0785 — REV

CODE IDENT: 23338 — SHEET — OF

BISHOP GRAPHICS-ACCUPRESS REORDER NO. A3786

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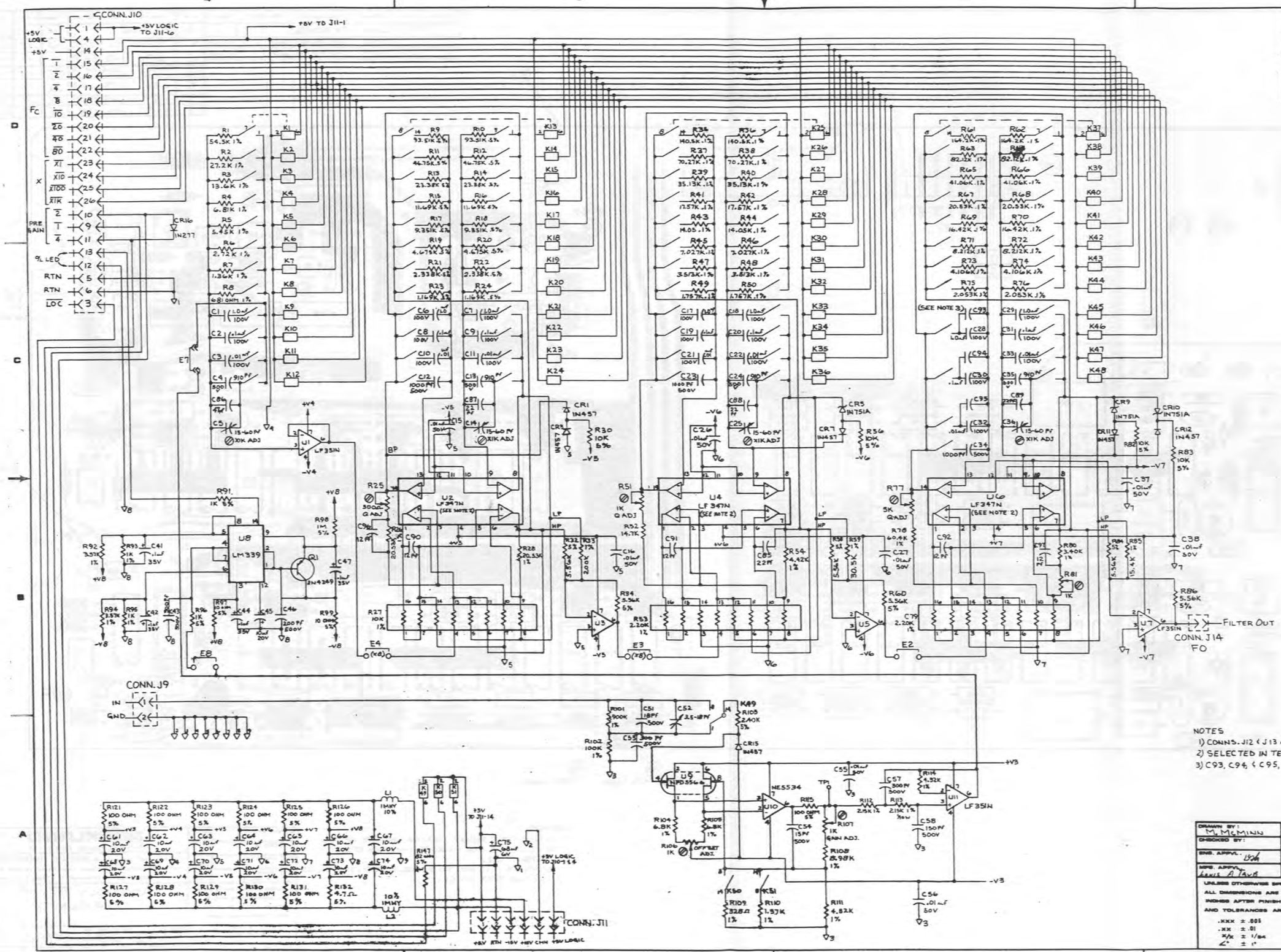
LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
A	RELEASE			
B	1062	M.McMINN	LAT	12-29-78
C	1082	JB 12-20-79	LAT	12-20-79
D	1197	SD 7/31/81	LAT	10/8/81
E	1289	McMINN	LAT	2/24/82
F	7783	SD 11-14-86		11-21-86
G	7805	SD 11-14-86		11-21-86



NOTES
1) CONNS. J12 & J13 ARE NOT USED ON THIS OPTION.
2) SELECTED IN TEST.
3) C93, C94, & C95, ARE SELECTED IN TEST.

DRAWN BY: M. McMINN	DATE 6-14-79	ROCKLAND Rockland Systems Corporation
CHECKED BY:		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG. APPVL. LSA	7/14/79	
MFG. APPVL. Louis A Tavo	7-15-79	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE: .XXX ± .005, .XX ± .01, X/X ± 1/64, ∠° ± 1°

TITLE: 751A HP MAINBOARD SCHEMATIC DIAGRAM

SIZE D | DRAWING NO. 03 004 0760 | REV G | SCALE NONE | SHEET 1 OF

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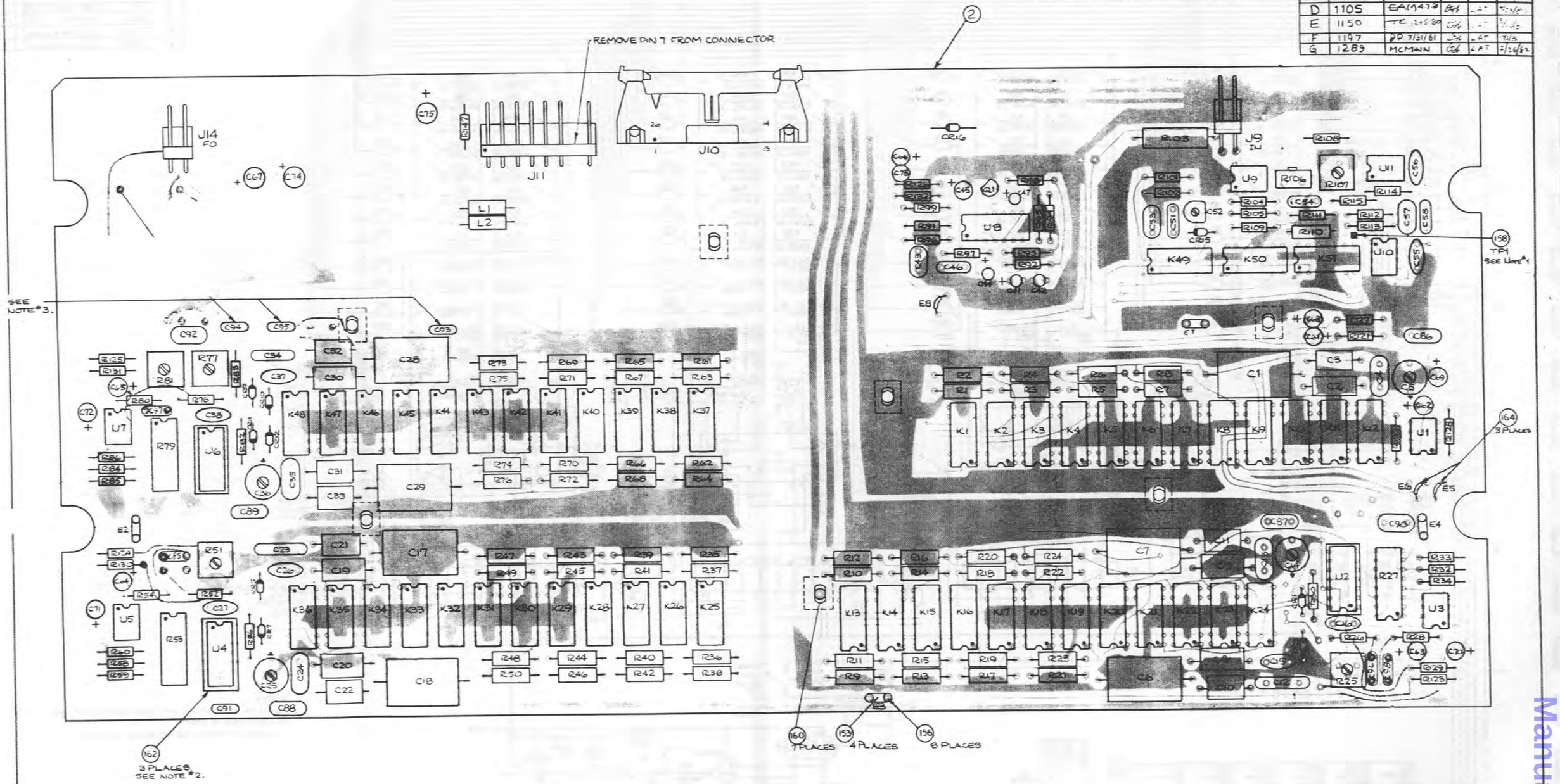
ZONE	LTR	ECO NO	CHANGED BY	APPR'D BY		DATE
	H	2141	MP 5/30/86			
	J	7783	SD 11-14-86	mcl		11-21-86
	K	7805	SD 11-14-86	mcl		11-21-86

LTR	ECO NO	CHANGED BY	APPV'D BY	DATE
A	RELEASE			5/7/79
B	1069	T.R. 7/27/79		8/6/79
C	1074	JB 12-4-79		12/3/79
D	1105	EA(1)4-7-80		7/3/80
E	1150	TC 12-5-80		3/1/81
F	1197	DD 7/31/81		9/4/81
G	1289	MCMANN		2/26/82



NOTES:
1- CUT TEST POINT TO MAX. HEIGHT OF 3/8".
2- U2, U4, & U6 ARE MOUNTED IN SOCKETS, ITEM #162.
3- C93, C94, & C95 ARE TO BE SELECTED & INSTALLED IN THE TEST STAGE.

DRAWN BY JB	DATE 4-30-79	ROCKLAND Rockland Systems Corporation
CHECKED BY		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG APPVL.	5/1/79	
MFG APPVL.	5/1/79	TITLE ASSEMBLY 751A HP FILTER BOARD
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		SIZE D — DRAWING NO 02-004-0760 — SCALE 2:1 — SHEET 1 OF 4

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NA NONE	ELECT SCHEMATIC: HP FILTER (751)	03.004.0760	WVTK	03.004.0760	2
U2 U4 U6	U: QD LIN BIFET OP-AMP (LF347)	LF347N	NSC	120.2047	3
NONE	FX MOND .01UF +80 -20% 50V	SR215E103ZAT	AVX	100.3105	1
NONE	CAP MICA FX VA DIP 12PF 5% 200 PPM/C 500V	CM05CD120J03	CDE	101.0120	1
NONE	CAP MICA FX VAL DIP 15PF 5% 200 PPM/C 500V	CM05CD150J03	CDE	101.0150	1
NONE	CAP MICA FX VAL DIP 18PF 5% 200 PPM/C 500V	CM05CD180J03	CDE	101.0180	1
NONE	CAP MICA FX VAL DIP 22PF 5% -20+100PPM/C 500V	CM05ED220J03	CDE	101.0220	1
NONE	CAP MICA FX VAL DIP 30PF 5% -20+100PPM/C 500V	CM05ED300J03	CDE	101.0300	1
NONE	CAP MICA FX VAL DIP 47PF 5% -20+100PPM/C 500V	CM05ED470J03	CDE	101.0470	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	CAP FX VAL,DP MICA 150PF 5% 0 TO +70PPM/C 500V	CM05FD151J03	CDE	101.1150	1
NONE	CAP FX VAL,DP MICA 200PF 5% 0 TO +70PPM/C 500V	CM05FD201J03	CDE	101.1200	1
NONE	CAP FX VAL,DP MICA 300PF 5% 0 TO +70PPM/C 500V	CM05FD301J03	CDE	101.1300	1
NONE	CAP MICA FX VAL DIP 910PF 1% 0 TO+70PPM/C 100V	CD15FA911F03	CDE	101.1910	1
NONE	CAP MICA FX VAL DIP 100PF 1% 0 TO+70PPM/C500V	CM06FD102F03	CDE	101.2101	1
NONE	FX PLYSTY .01UF -.5+0%	PSBPC0103E	AMRAD	104.3106	1
NONE	FX PLYSTY 0.1UF -.5+0% 50V	PSW0104E	AMRAD	104.4106	1
NONE	FX PLYSTY 0.1UF 50V SET	PSW0104F-MS	AMRAD	104.4107	1
NONE	FX PLYCRB 1.0UF -.5+0% 100V	MPABPC0105E	AMRAD	104.5103	1
NONE	VAR CER 3.5-18PF 250V	9373	JACO	108.0180	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	VAR CER 15-60PF	538-011-F	MILGY	108.0600	1
NONE	FX TANT .10UF 20% 35V	T368A104M035AS	KEMET	109.4100	1
NONE	FX TANT 10UF 20% 20V	T368B106M025AS	KEMET	109.6100	1
NONE	FX TANT 68UF 20% 6V	T368B686M006AS	KEMET	109.6680	1
NONE	RES.FX MFLM 328 OHM .5% 1/10W T2	RN55C3280D	ENOX	110.3281	1
NONE	RES. FX MFLM 681 OHM 1% 1/8W T0	RN55C6810F	UMCEM	110.6810	1
NONE	RES.FX MFLM 1.00K 1% 1/10W T2	RN55C1001F	UMCEM	111.1001	1
NONE	RES.FX MFLM 1.169K .5% 1/8W T0	CR125 100PPM	CTLRE	111.1168	1
NONE	RES.FX MFLM 1.36K 1% 1/8W T0	NA	NA	111.1360	1
NONE	RES.FX MFLM 1.37K 1% 1/8W T0	RN55C1371F	UMCEM	111.1370	1
NONE	RES.FX MFLM 1.757K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.1758	1
NONE	RES.FX MFLM 2.053K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.2059	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 3

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 2.15K 1% 1/10W T2	RN55C2151F	UMCEM	111.2151	1
NONE	RES.FX MFLM 2.338K .5% 1/8W T0	HA55 100PPM	HYMEQ	111.2338	1
NONE	RES.FX MFLM 2.40K 5% 2W 200PPM	FP42 2.4K 5% 2W 200PPM	CORNG	111.2403	1
NONE	RES.FX MFLM 2.72K 1% 1/8W T0	CR125 100PPM	CTLRE	111.2720	1
NONE	RES.FX MFLM 3.40K 1% 1/10W T2	RN55C3401F	UMCEM	111.3401	1
NONE	RES.FX MFLM 3.513K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.3518	1
NONE	RES.FX MFLM 3.57K 1% 1/10W T2	RN55C3571F	UMCEM	111.3571	1
NONE	RES.FX MFLM 4.106K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.4109	1
NONE	RES.FX MFLM 4.32K 1% 1/10W T2	RN55C4321F	UMCEM	111.4321	1
NONE	RES.FX MFLM 4.42K 1% 1/10W T2	RN55C4421F	UMCEM	111.4421	1
NONE	RES.FX MFLM 4.675K .5% 1/8W T0	HA55 100PPM	HYMEQ	111.4678	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 4

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 5.45K 1% 1/8W T0	CR125	CTLRE	111.5450	1
NONE	RES. FX MFLM 5.56K .5% 1/10W T2	RN55C5561D	ENOX	111.5561	1
NONE	RES. FX MFLM 6.81K 1% 1/10W T2	RN55C6811F	UMCEM	111.6811	1
NONE	RES. FX MFLM 7.027K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.7028	1
NONE	RES. FX MFLM 8.212K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.8219	1
NONE	RES. FX MFLM 8.98K .5% 1/10W T2	RN55C8981D	KAGAN	111.8981	1
NONE	RES. FX MFLM 9.351K .5% 1/8W T0	CR125 100PPM	CTLRE	111.9358	1
NONE	RES.FX MFLM 11.69K .5% 1/8W T0	CR125 100PPM	CTLRE	112.1168	1
NONE	RES.FX MFLM 13.6K 1% 1/8W T0	CR125 100PPM	CTLRE	112.1360	1
NONE	RES.FX MFLM 14.05K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1408	1
NONE	RES.FX MFLM 14.7K 1% 1/10W T2	RN55C1472F	UMCEM	112.1471	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 5

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 15.4K 1% 1/10W T2	CR125 50PPM	CTLRE	112.1541	1
NONE	RES.FX MFLM 16.42K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1649	1
NONE	RES.FX MFLM 17.57K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1758	1
NONE	RES.FX MFLM 20.53K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.2058	1
NONE	RES.FX MFLM 23.38K .5% 1/8W T0	CR125 100PPM	CTLRE	112.2338	1
NONE	RES.FX MFLM 27.2K 1% 1/8W T0	CR125 100PPM	CTLRE	112.2720	1
NONE	RES MF FIX. VALUE 0.5% 50PPM RN55 SIZE	RN55C3052D	MIL	112.3051	1
NONE	RES.FX MFLM 35.13K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.3518	1
NONE	RES. FX MFLM 41.06K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.4108	1
NONE	RES. FX MFLM 46.75K .5% 1/8W T0	CR125 100PPM	CTLRE	112.4678	1
NONE	RES. FX MFLM 54.9K 1% 1/8W T0	CR125 100PPM	CTLRE	112.5450	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 6

NOTE UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES
MATERIAL
FINISH WAVETEK PROCESS
DRAWN — DATE — PROJ ENGR — RELEASE APPROV
TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 .XX ±.030 ANGLES ±1
DO NOT SCALE DWG
SCALE

WAVETEK SAN DIEGO, CALIFORNIA

TITLE: PARTS LIST MAINBOARD ASSY

MODEL NO. 751 — DWG NO. 004.0760 — REV K
CODE IDENT 23338 — SHEET 1 OF 1

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 60.4 1% 1/10W T2	RN55C6042F	UMCEM	112.6041	1
NONE	RES. FX MFLM 70.27K .1% 1/8W T0	HA55 100PPM	HYMEG	112.7028	1
NONE	RES. FX MFLM 82.12K .1% 1/8W T0	HA55 100PPM	HYMEG	112.8218	1
NONE	RES. FX MFLM 93.51K .5% 1/8W T0	CR125 100PPM	CTLRE	112.9358	1
NONE	RES.FX MFLM 100K 1% 1/10W T2	RN55C1003F	UMCEM	113.1001	1
NONE	RES.FX MFLM 140.5K .1% 1/8W T0	HA55 100PPM	HYMEG	113.1408	1
NONE	RES.FX MFLM 164.2K .1% 1/8W T0	HA55 100PPM	HYMEG	113.1648	1
NONE	RES.FX MFLM 200K 1% 1/10W T2	RN55C2003F	UMCEM	113.2001	1
NONE	RES. FX MFLM 900K 1% 1/10W T2			113.9009	1
NONE	RES.FX CFLM 10 OHM 5% 1/4W			116.0101	1
NONE	RES.FX CFLM 82 OHM 5% 1/4W			116.0821	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 7

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	U: QUAD ANAL VOLT COMP (LM339)	LM339N	MOT	120.3339	1
NONE	ASSY. PC BD PREPPED 751-0760	751-2447	WVTK	1208-00-2447	1
NONE	CDS U: RES NET 2.2K OHM 1% XB	4116R-001-2.2K	BOURN	128.2223	1
NONE	CDS U: RES NET 10K OHM 1% XB	698-3-R10K-F	BECK	128.3103	1
NONE	SL ZR 5.1V 5% 400MW (1N751A)			131.9510	1
NONE	GER 120PIV 100MA (1N277)			132.0277	1
NONE	SL LW LK 70PIV 200MW (1N457)			132.0457	1
NONE	Q: SIL PNP (2N4249)			136.4249	1
NONE	Q: DL MATCH FET (NPD-5566)	NPD-5566	NSC	138.5566	1
NONE	L: FXD 1 MHY +/-10% SHLD	1641-105	DELVN	150.2100	1
NONE	RELAY: REED DIP 1A W/DIODE 5V	1503-8-1	WABSH	175.1505	1
NONE	RELAY: REED DIP 1C	815-244-11	WABSH	175.1506	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 9

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX CFLM 100 OHM 5% 1/4W			116.1101	1
NONE	RES FX CFLM 1.0K OHM 5% 1/4W			116.2101	1
NONE	RES.FX CFLM 10K OHM 5% 1/4W			116.3101	1
NONE	RES.FX CFLM 1.0M OHM 5% 1/4W			116.5101	1
NONE	RES.FX CFLM 4.7 OHM 5% 1/4W			116.9471	1
NONE	RES. VAR CMT 500 OHM 3/8SQ FM	72PR500	BECK	118.1503	1
NONE	RES. VAR CMT 1.0K 3/8SQ EM	72XR1K	BECK	118.2101	1
NONE	RES. VAR CMT 1.0K 3/8SQ FM	72PR1K	BECK	118.2102	1
NONE	RES. VAR CMT 5.0K 3/8SQ FM	72PR5K	BECK	118.2502	1
NONE	U: LIN BIFET OP-AMP DIL LF351	LF351N	NSC	120.1017	1
NONE	U: LIN OP-AMP DIL (NE5534A)	SA5534AN	SIG	120.1018	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 8

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
	W/DIODE 5V				
NONE	RELAY: REED DIP 2A W/DIODE 5V	1503-7-1	WABSH	175.1507	1
NONE	CONN. PLUG: HDR 26P DIL RT ANG ST LK	3429-1002&3505-2	3M	352.2601	1
NONE	SOCKET: IC 14PIN DIP ST			353.1403	1
NONE	CONN: 8PIN R/A HDR F/L 9751081	09-75-1081	MOLEX	354.0020	1
NONE	CONN: 2PIN R/A HDR F/L 9751021	09-75-1021	MOLEX	354.0022	1
E2 E3 E4 E7	CONN. PLUG: SHORTING (LOW PROF)	4612872-01-03-10	CTC	352.0202	4
NONE	SOCKET: JMPR (USE W/352.0202)	4503327-01-0300	CTC	353.0104	8
TP1	CONN: TERM PIN .025 WW (NAIL)	W98-025-560-GH-GOLD	A/S	354.0003	1
NONE	SPACER: NYL SNAP-BTN (MB1-156)	MB-1-156	P&MC	376.2109	7
NONE	WIRE: BUSS TINNED #22GA			378.0601	3
NONE	SLVNG: PLASTIC FBRGLS #22AWG			378.5221	[illegible]

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-HP — ASSEMBLY NO. 004.0760 — REV K — PAGE 10

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO, CALIFORNIA
MATERIAL	PROJ ENGR		TITLE: PARTS LIST MAIN BOARD ASSEMBLY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 .XX ±.030 ANGLES ±1		
	DO NOT SCALE DWG		MODEL NO. 751 — DWG NO. 004.0760 — REV K
	SCALE		CODE IDENT 23338 — SHEET 2 OF 2

NOTE: UNLESS OTHERWISE SPECIFIED

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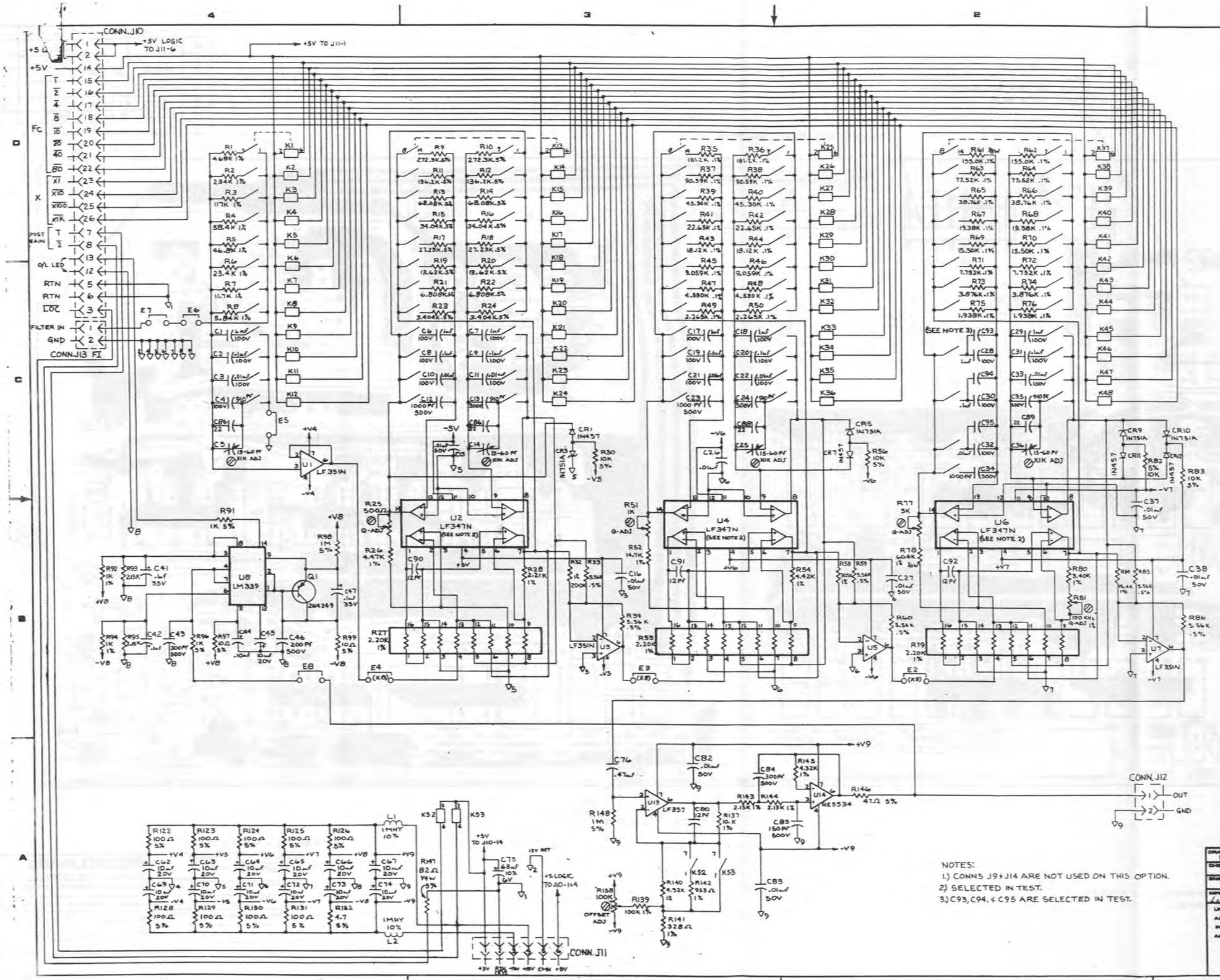
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE				
B	1062	M. McMINN	DGK	LAT	7-16-79
C	1071	T.H. 8-7-79	DGK	LAT	8/9/79
D	1700	M.McMINN	PM		3/19/85



NOTES:

1.) CONNS J9 + J14 ARE NOT USED ON THIS OPTION.
2) SELECTED IN TEST.
3.) C93, C94, & C95 ARE SELECTED IN TEST.

DRAWN BY: M. McMINN — DATE 5-31-79
CHECKED BY:
ENG. APPVL. DGK 7/16/79
MFG. APPVL. Louis R. Tavis 7/16/79

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE:
.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

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Rockland Systems Corporation

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TITLE
751A LP MAIN BOARD ASSEMBLY
SCHEMATIC DIAGRAM

SIZE D — DRAWING NO. 03 004 0755 — REV D
SCALE NONE — SHEET 1 OF 1

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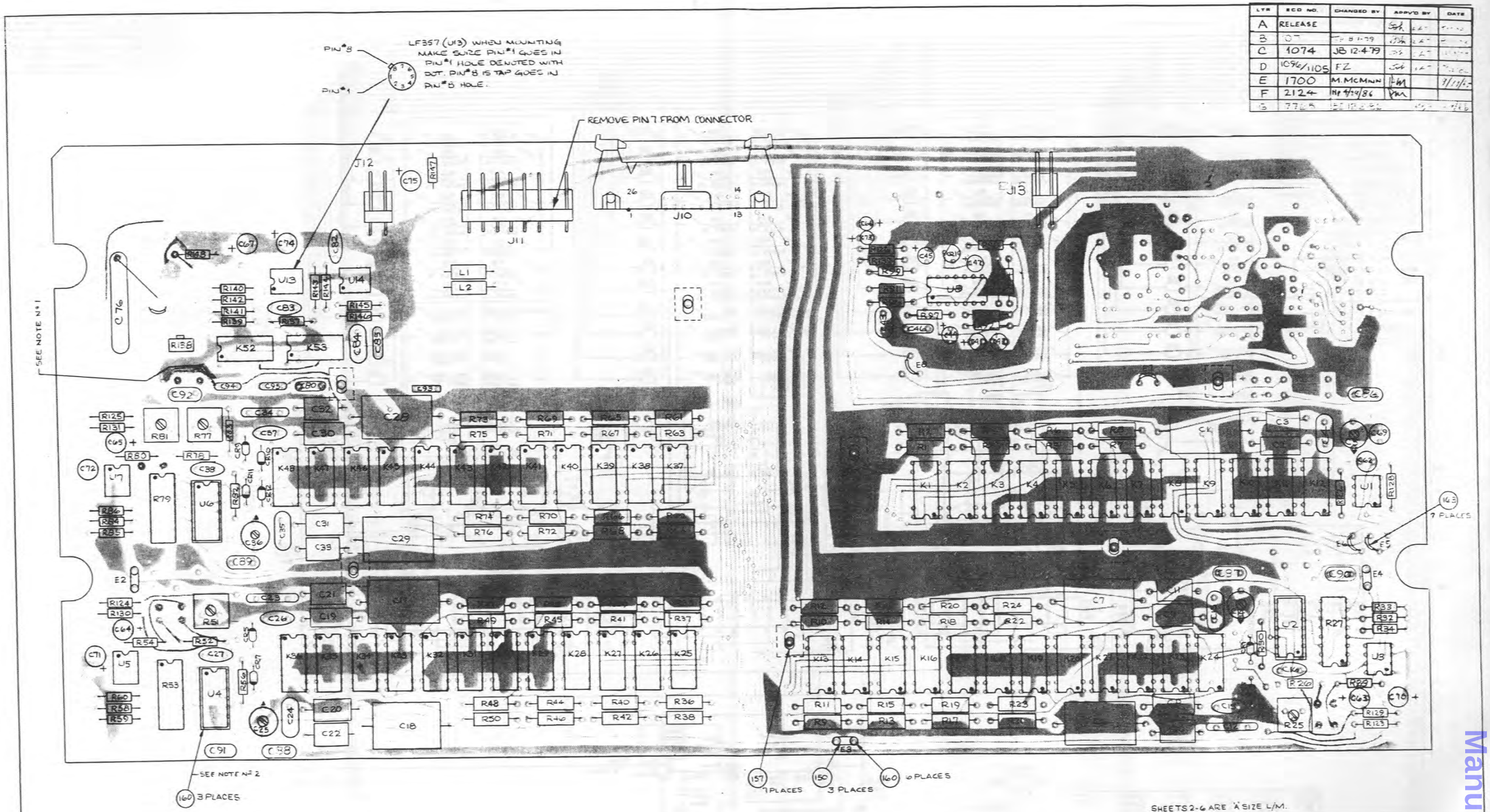
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE				
B	07	TP 8-1-79			
C	1074	JB 12-4-79			
D	1096/1105	FZ			
E	1700	M. McMINN			8/11/[illegible]
F	2124	HP 4/29/86			
G	7765				



SHEETS 2-6 ARE 'A' SIZE L/M.

NOTES:
1. C93, C94 & C95 ARE SELECTED AND INSTALLED IN TEST.
2. U2, U4, & U6 ARE MOUNTED IN SOCKETS.

DRAWN BY M. McMINN	DATE 8-26-79	ROCKLAND Rockland Systems Corporation
CHECKED BY		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG APPVL.		
MFG APPVL.		
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		TITLE ASSEMBLY 7514LP FILTER BOARD
		SIZE D — DRAWING NO 02-004-0755
		SCALE 2:1 — SHEET 1 OF 4

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
U2 U4 U6	U: QD LIN BIFET OP-AMP (LF347)	LF347N	NSC	120.2047	3
NONE	FX MOND .01UF +80 -20% 50V	SR215E103ZAT	AVX	100.3105	1
NONE	CAP MICA FX VA DIP 12PF 5% 200 PPM/C 500V	CM05CD120J03	CDE	101.0120	1
NONE	CAP MICA FX VAL DIP 22PF 5% -20+100PPM/C 500V	CM05ED220J03	CDE	101.0220	1
NONE	CAP FX VAL.DP MICA 150PF 5% 0 TO +70PPM/C 500V	CM05FD151J03	CDE	101.1150	1
NONE	CAP FX VAL.DP MICA 200PF 5% 0 TO +70PPM/C 500V	CM05FD201J03	CDE	101.1200	1
NONE	CAP FX VAL.DP MICA 300PF 5% 0 TO +70PPM/C 500V	CM05FD301J03	CDE	101.1300	1
NONE	CAP MICA FX VAL DIP 910PF 1% 0 TO+70PPM/C 100V	CD15FA911F03	CDE	101.1910	1
NONE	CAP MICA FX VAL DIP 100PF 1% 0 TO+70PPM/C500V	CM06FD102F03	CDE	101.2101	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	FX PLYSTY .01UF -.5+0%	PSBPC0103E	AMRAD	104.3106	1
NONE	FX PLYSTY 0.1UF -.5+0% 50V	PSW0104E	AMRAD	104.4106	1
NONE	FX PLYSTY 0.1UF 50V SET	PSW0104F-MS	AMRAD	104.4107	1
NONE	FX PLYCRB 1.0UF -.5+0% 100V	MPABPC0105E	AMRAD	104.5103	1
NONE	FX PLSTR .47UF 5% 100V	A11B474J	BISHO	105.4470	1
NONE	VAR CER 15-60PF	538-011-F	MILGY	108.0600	1
NONE	FX TANT .10UF 20% 35V	T368A104M035AS	KEMET	109.4100	1
NONE	FX TANT 10UF 20% 20V	T368B106M025AS	KEMET	109.6100	1
NONE	FX TANT 68UF 20% 6V	T368B686M006AS	KEMET	109.6680	1
NONE	RES.FX MFLM 328 OHM .5% 1/10W T2	RN55C3280D	ENOX	110.3281	1
NONE	RES. FX MFLM 953 OHM 1% 1/10W T2	RN55C9530F	UMCEM	110.9531	1
NONE	RES.FX MFLM 1.00K 1% 1/10W T2	RN55C1001F	UMCEM	111.1001	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 1.938K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.1939	1
NONE	RES.FX MFLM 2.15K 1% 1/10W T2	RN55C2151F	UMCEM	111.2151	1
NONE	RES.FX MFLM 2.21K 1% 1/10W T2	RN55C2211F	UMCEM	111.2211	1
NONE	RES.FX MFLM 2.265K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.2269	1
NONE	RES.FX MFLM 3.40K 1% 1/10W T2	RN55C3401F	UMCEM	111.3401	1
NONE	RES.FX MFLM 3.404K .5% 1/8W T0	CR125 100PPM	CTLRE	111.3408	1
NONE	RES.FX MFLM 3.876K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.3879	1
NONE	RES.FX MFLM 4.32K 1% 1/10W T2	RN55C4321F	UMCEM	111.4321	1
NONE	RES.FX MFLM 4.42K 1% 1/10W T2	RN55C4421F	UMCEM	111.4421	1
NONE	RES.FX MFLM 4.530K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.4539	1
NONE	RES. FX MFLM 5.56K .5% 1/10W T2	RN55C5561D	ENOX	111.5561	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 3

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 5.84K 1% 1/8W T0	CR125	CTLRE	111.5840	1
NONE	RES. FX MFLM 6.808K .5% 1/8W T0	CR125	CTLRE	111.6808	1
NONE	RES. FX MFLM 7.752K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.7759	1
NONE	RES. FX MFLM 9.059K .1% 1/8W T0	HA55 100PPM	HYMEQ	111.9059	1
NONE	RES.FX MFLM 10.0K 1% 1/10W T2	RN55C1002F	UMCEM	112.1001	1
NONE	RES.FX MFLM 11.7K 1% 1/8W T0	CR125 100PPM	CTLRE	112.1170	1
NONE	RES.FX MFLM 13.62K .5% 1/8W T0	CR125 100PPM	CTLRE	112.1368	1
NONE	RES.FX MFLM 14.7K 1% 1/10W T2	RN55C1472F	UMCEM	112.1471	1
NONE	RES.FX MFLM 15.4K 1% 1/10W T2	CR125 50PPM	CTLRE	112.1541	1
NONE	RES.FX MFLM 15.50K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1559	1
NONE	RES.FX MFLM 18.12K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1819	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 4

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 19.38K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.1939	1
NONE	RES.FX MFLM 22.65K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.2269	1
NONE	RES.FX MFLM 23.4K 1% 1/8W T0	RN55C2342F	ENOX	112.2340	1
NONE	RES.FX MFLM 27.23K .5% 1/8W T0	CR125 100PPM	CTLRE	112.2728	1
NONE	RES MF FIX. VALUE 0.5% 50PPM RN55 SIZE	RN55C3052D	MIL	112.3051	1
NONE	RES.FX MFLM 34.04K .5% 1/8W T0	CR125 100PPM	CTLRE	112.3408	1
NONE	RES.FX MFLM 38.76K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.3879	1
NONE	RES. FX MFLM 45.30K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.4539	1
NONE	RES. FX MFLM 46.8K 1% 1/8W T0	CR125 100PPM	CTLRE	112.4680	1
NONE	RES. FX MFLM 58.4K 1% 1/8W T0	CR125 100PPM	CTLRE	112.5840	1
NONE	RES. FX MFLM 60.4 1% 1/10W T2	RN55C6042F	UMCEM	112.6041	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 5

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 68.08K .5% 1/8W T0	CR125 100PPM	CTLRE	112.6808	1
NONE	RES. FX MFLM 77.52K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.7759	1
NONE	RES. FX MFLM 90.59K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.9059	1
NONE	RES.FX MFLM 100K 1% 1/10W T2	RN55C1003F	UMCEM	113.1001	1
NONE	RES.FX MFLM 117K 1% 1/8W T0	CR125 100PPM	CTLRE	113.1170	1
NONE	RES.FX MFLM 136.2K .5% 1/8W T0	CR125 100PPM	CTLRE	113.1368	1
NONE	RES.FX MFLM 155.0K .1% 1/8W T0	HA55 100PPM	HYMEQ	113.1559	1
NONE	RES.FX MFLM 181.2K .1% 1/8W T0	HA55 100PPM	HYMEQ	113.1819	1
NONE	RES.FX MFLM 200K 1% 1/10W T2	RN55C2003F	UMCEM	113.2001	1
NONE	RES.FX MFLM 234K 1% 1/8W T0	CR125 100PPM	CTLRE	113.2340	1
NONE	RES.FX MFLM 272.3K .5% 1/8W T0	HA55 100PPM	HYMEQ	113.2728	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 6

NOTE: UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES
MATERIAL
FINISH WAVETEK PROCESS
DRAWN | DATE | PROJ ENGR | RELEASE APPROV
TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 ANGLES ±1 .XX ±.030
DO NOT SCALE DWG
SCALE

WAVETEK SAN DIEGO, CALIFORNIA

TITLE: PARTS LIST MAINBOARD ASSY

MODEL NO.	DWG NO.	REV
751	004.0755	G

CODE IDENT 23338 — SHEET 1 OF 2

BISHOP GRAPHICS/ACCUPRESS REORDER NO. 43708

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES, FX MFLM 468K 1% 1/8W TO	CR125 100PPM	CTLRE	113.4680	1
NONE	RES,FX CFLM 10 OHM 5% 1/4W			116.0101	1
NONE	RES,FX CFLM 47 OHM 5% 1/4W			116.0471	1
NONE	RES,FX CFLM 82 OHM 5% 1/4W			116.0821	1
NONE	RES,FX CFLM 100 OHM 5% 1/4W			116.1101	1
NONE	RES FX CFLM 1.0K OHM 5% 1/4W			116.2101	1
NONE	RES,FX CFLM 10K OHM 5% 1/4W			116.3101	1
NONE	RES,FX CFLM 1.0M OHM 5% 1/4W			116.5101	1
NONE	RES,FX CFLM 4.7 OHM 5% 1/4W			116.9471	1
NONE	RES, VAR CMT 500 OHM 3/8SQ FM	72PR500	BECK	118.1503	1
NONE	RES, VAR CMT 1.0K 3/8SQ FM	72PR1K	BECK	118.2102	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 7

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RELAY: REED DIP 1A W/DIODE 5V	1503-8-1	WABSH	175.1505	1
NONE	RELAY: REED DIP 2A W/DIODE 5V	1503-7-1	WABSH	175.1507	1
NONE	CONN, PLUG: HDR 26P DIL RT ANG ST LK	3429-1002&3505-2	3M	352.2601	1
NONE	SOCKET: IC 14PIN DIP ST			353.1403	1
NONE	CONN: 8PIN R/A HDR F/L 9751081	09-75-1081	MOLEX	354.0020	1
NONE	CONN: 2PIN R/A HDR F/L 9751021	09-75-1021	MOLEX	354.0022	1
E2 E3 E4	CONN, PLUG: SHORTING (LOW PROF)	4612872-01-03-10	CTC	352.0202	3
NONE	SOCKET: JMPR (USE W/352.0202)	4503327-01-0300	CTC	353.0104	6
NONE	SPACER: NYL SNAP-BTN (MB1-156)	MB-1-156	P&MC	376.2109	7
NONE	WIRE: BUSS TINNED #22GA			378.0601	.4
NONE	SLVNG: PLASTIC FBRGLS #22AWG			378.5221	.2

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 9

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES, VAR CMT 5.0K 3/8SQ FM	72PR5K	BECK	118.2502	1
NONE	RES, VAR CMT 100K 3/8SW FMHY 18T	68PR100K	BECK	118.4104	1
NONE	U: LIN BIFET OP-AMP DIL LF351	LF351N	NSC	120.1017	1
NONE	U: LIN OP-AMP DIL (NE5534A)	SA5534AN	SIG	120.1018	1
NONE	U: LIN OP AMP (LF357H)	LF357H	NSC	120.1019	1
NONE	U: QUAD ANAL VOLT COMP (LM339)	LM339N	MOT	120.3339	1
NONE	ASSY, PC BD PREPPED 751-0755	751-2445	WVTK	1208-00-2445	1
NONE	CO5 U: RES NET 2.2K OHM 1% XB	4116R-001-2.2K	BOURN	128.2223	1
NONE	SL ZR 5.1V 5% 400MW (1N751A)			131.9510	1
NONE	SL LW LK 70PIV 200MW (1N457)			132.0457	1
NONE	Q: SIL PNP (2N4249)			136.4249	1
NONE	L: FXD 1 MHY +/-10% SHLD	1641-105	DELVN	150.2100	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 751-LP — ASSEMBLY NO. 004.0755 — REV G — PAGE 8

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO, CALIFORNIA
MATERIAL	PROJ ENGR		TITLE: PARTS LIST MAIN BOARD ASSEMBLY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED XXX ±.010 XX ±.030 ANGLES ±1		
	DO NOT SCALE DWG		MODEL NO 751 — DWG NO 004.0755 — REV G
	SCALE		CODE IDENT 23338 — SHEET 2 OF 2

NOTE: UNLESS OTHERWISE SPECIFIED

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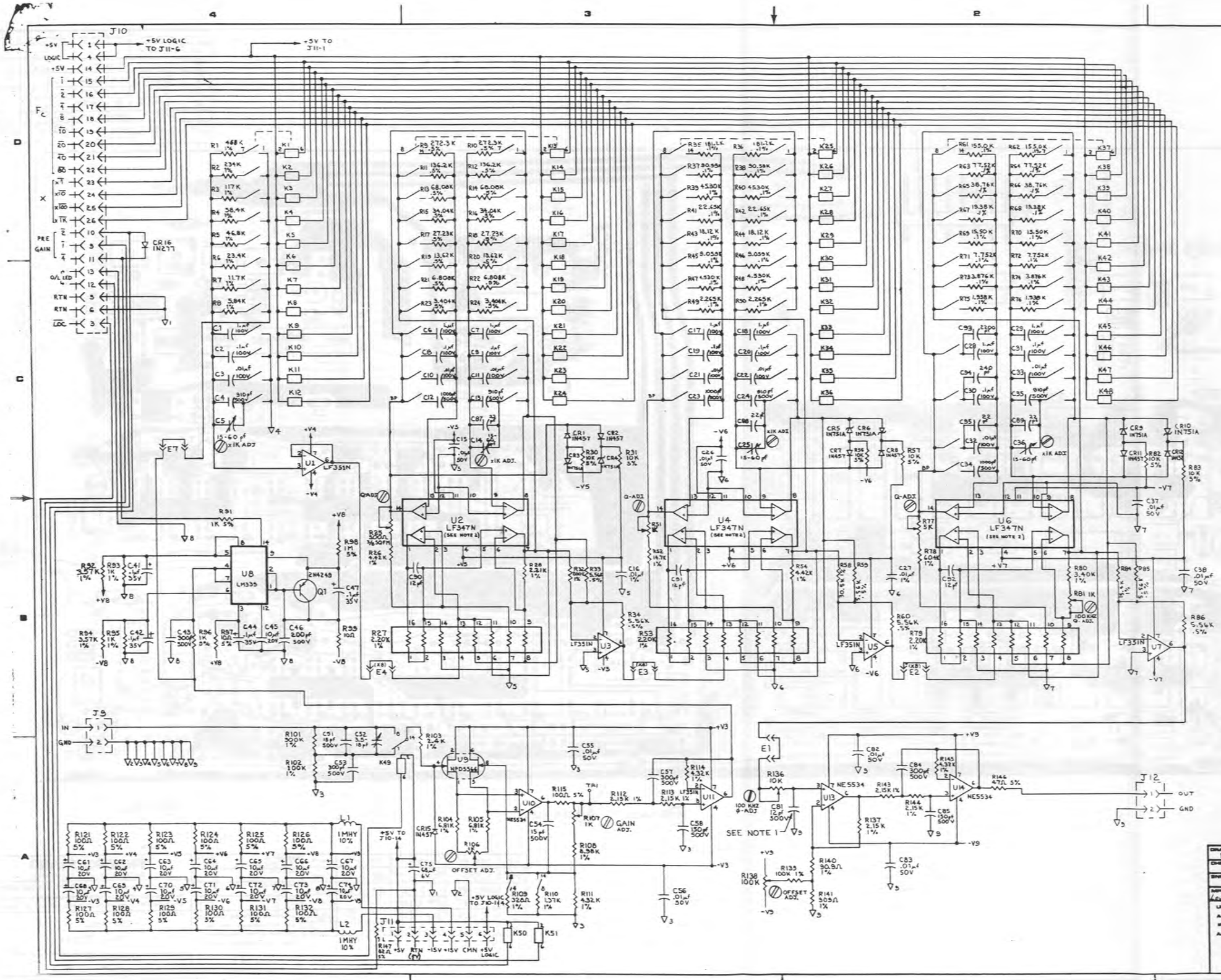
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE				
B	1002	M. McMINN			
C	1062	B. THANOS	LDA	L.A.T	7-16-79
D	1072	T.H. 8-8-79	BOK	L.A.T	8-9-79
E	1189A	SR			10/4/81
F	1690	8/8/95			8/30/95



NOTES:
1. C81 IS A 12pf CAP (NOMINAL) INSTALLED IN PRODUCTION. TEST WILL SELECT NEW CAP VALUE IF REQUIRED.
2. LF347N SELECTED IN TEST.
3. C93, C94, & C95 SELECTED IN TEST.
4. CONNS J13 & J14 ARE NOT USED ON THIS OPTION.

		DATE
DRAWN BY: M. McMINN		
CHECKED BY:		
ENG. APPVL.		7/16/79
MFG. APPVL. Louis A. Tavis		7/16/79

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE:
.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

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TITLE
752 MAIN BOARD ASSEMBLY
SCHEMATIC DIAGRAM

SIZE	DRAWING NO.	REV
D	03 004 0750	F

SCALE NONE SHEET 1 OF 1

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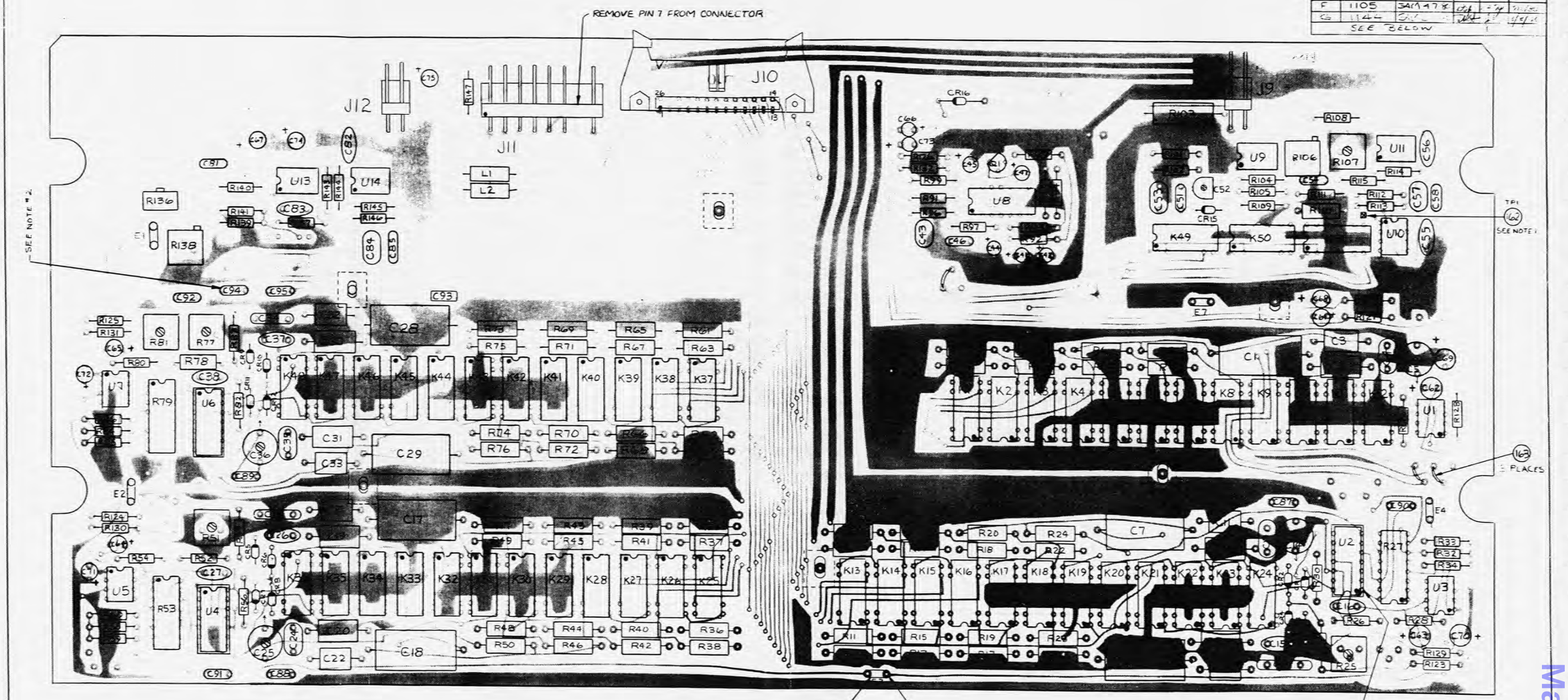
LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE				
B	1002	M. McMinn			
C	1040	M. McMinn			
D	072	[illegible] 8-8-79			
E	1074	JB 12-4-79			
F	1105	SAM 4-7-8			
G	1144	[illegible]			
SEE BELOW					



NOTE.
1. CUT TEST POINT PIN TO A MAX HEIGHT OF 3/8"
2. C93, C94 & C95 ARE TO BE SELECTED AND INSTALLED IN TEST STAGE.

LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
H	1150	TC 12-15-80			1/22/81
J	1189-1189A	TC 3-5-81			6-9-81
K	1690	[illegible] 8/20/81			8/20/81
L	2124	SN 5/13/86			5/13/86
M	7765	SD 12-2-86	KBG		12/8/86

DRAWN BY M. McMINN — DATE 3-6-79
CHECKED BY
ENG APPVL. RA — 3-7-79
MFG APPVL. L A TA-8 — 3-7-79

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE
.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

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TITLE: ASSEMBLY 752A FILTER BOARD

SIZE: D — DRAWING NO: 02-004-0750 — REV: V
SCALE 2:1 — SHEET 1 OF 2

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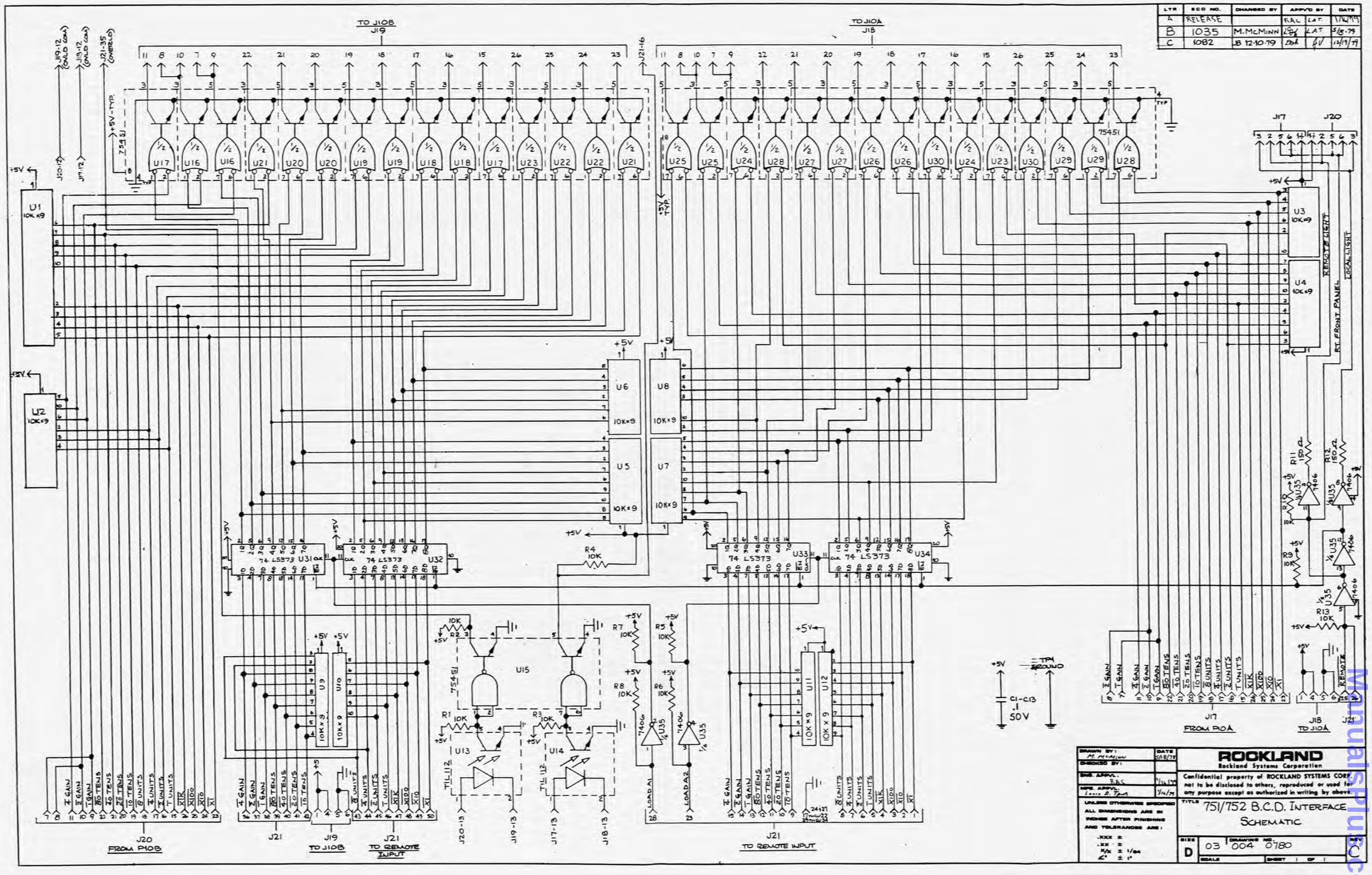

LTR	ECO NO.	CHANGED BY	APPV'D BY		DATE
A	RELEASE		RAC	LAT	1/16/79
B	1035	M. McMINN		LAT	5/8/79
C	1082	JB 12-10-79			12/19/79

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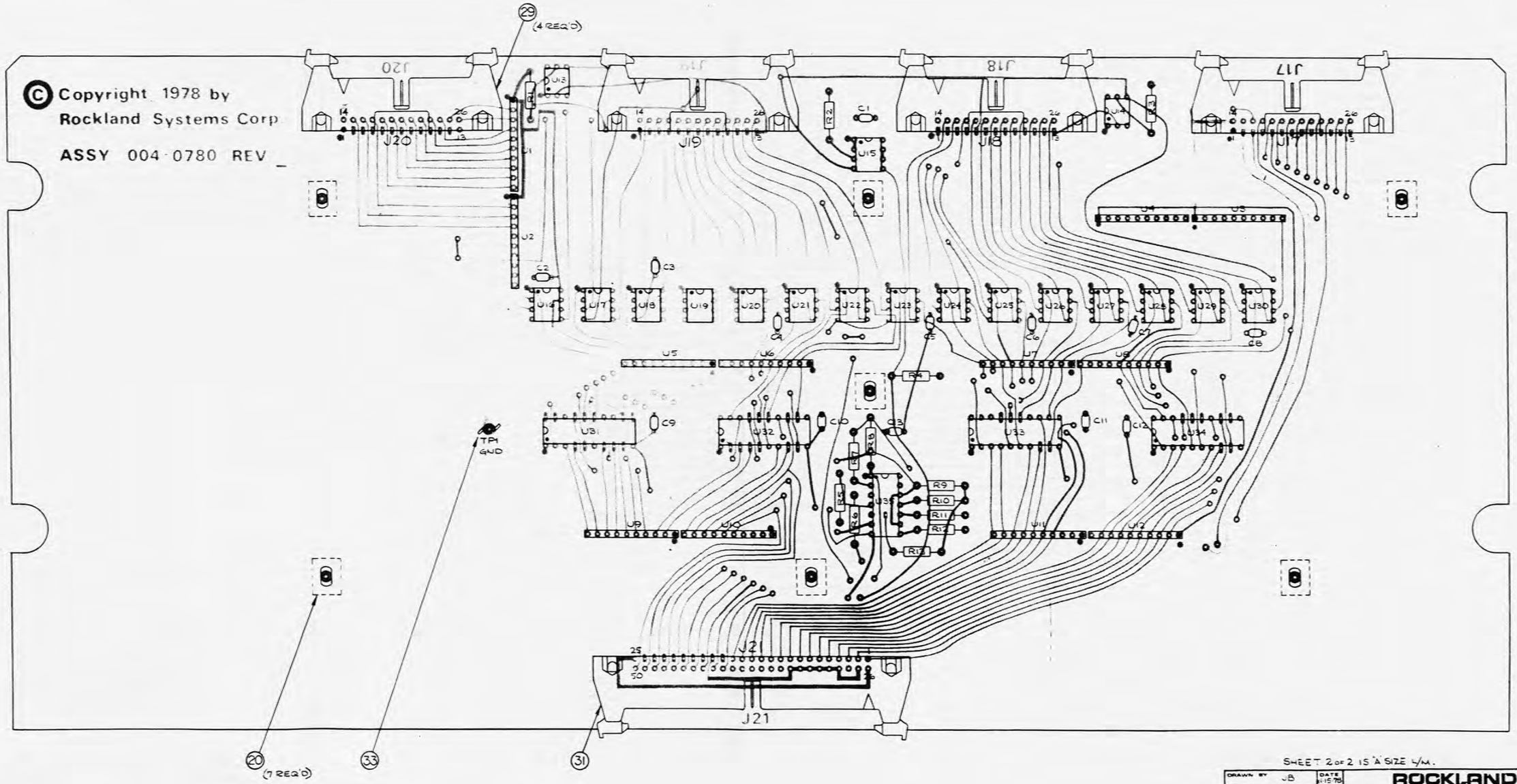
LTR	ECO NO	CHANGED BY	APPV'D BY	DATE
A	RELEASE			
B	1082	JB 12 11 79		



SHEET 2 OF 2 IS 'A' SIZE 4/M.

DRAWN BY JB	DATE 11-15-78	ROCKLAND Rockland Systems Corporation
CHECKED BY		Confidential property of ROCKLAND SYSTEMS CORP. not to be disclosed to others, reproduced or used for any purpose except as authorized in writing by above.
ENG APPVL		
MFG APPVL		
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AFTER FINISHING AND TOLERANCES ARE .XXX ± .005 .XX ± .01 X/X ± 1/64 ∠° ± 1°		TITLE 751/752 BCD INTERFACE PCB ASSY.
		SIZE D — DRAWING NO 02-004-0780 — REV B — SCALE 2:1 — SHEET 1 OF 2

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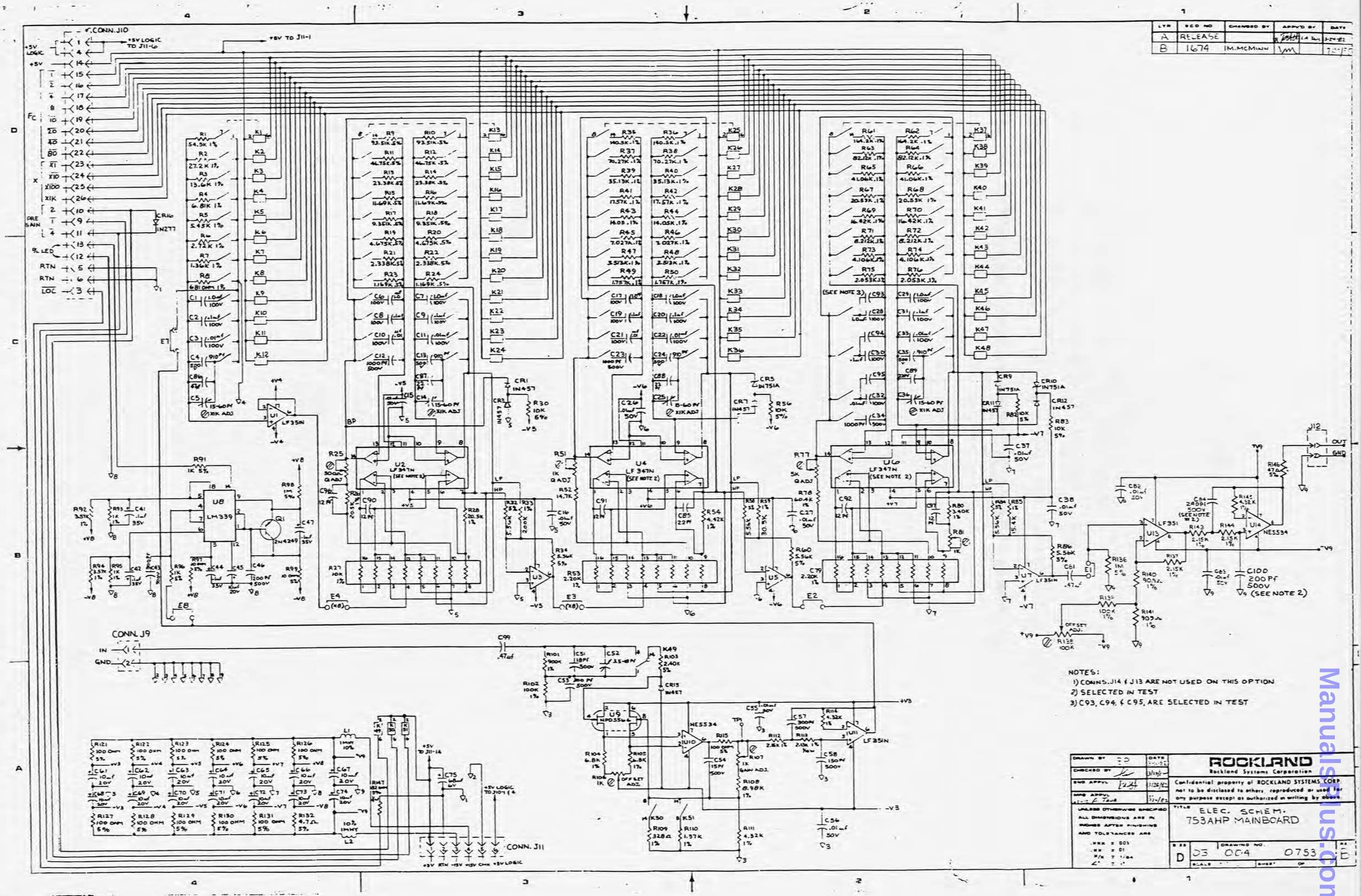
LTR	ECO NO	CHANGED BY	APPV'D BY	DATE
A	RELEASE			3-24-82
B	1674	IM.MCMINN		7-[illegible]-82



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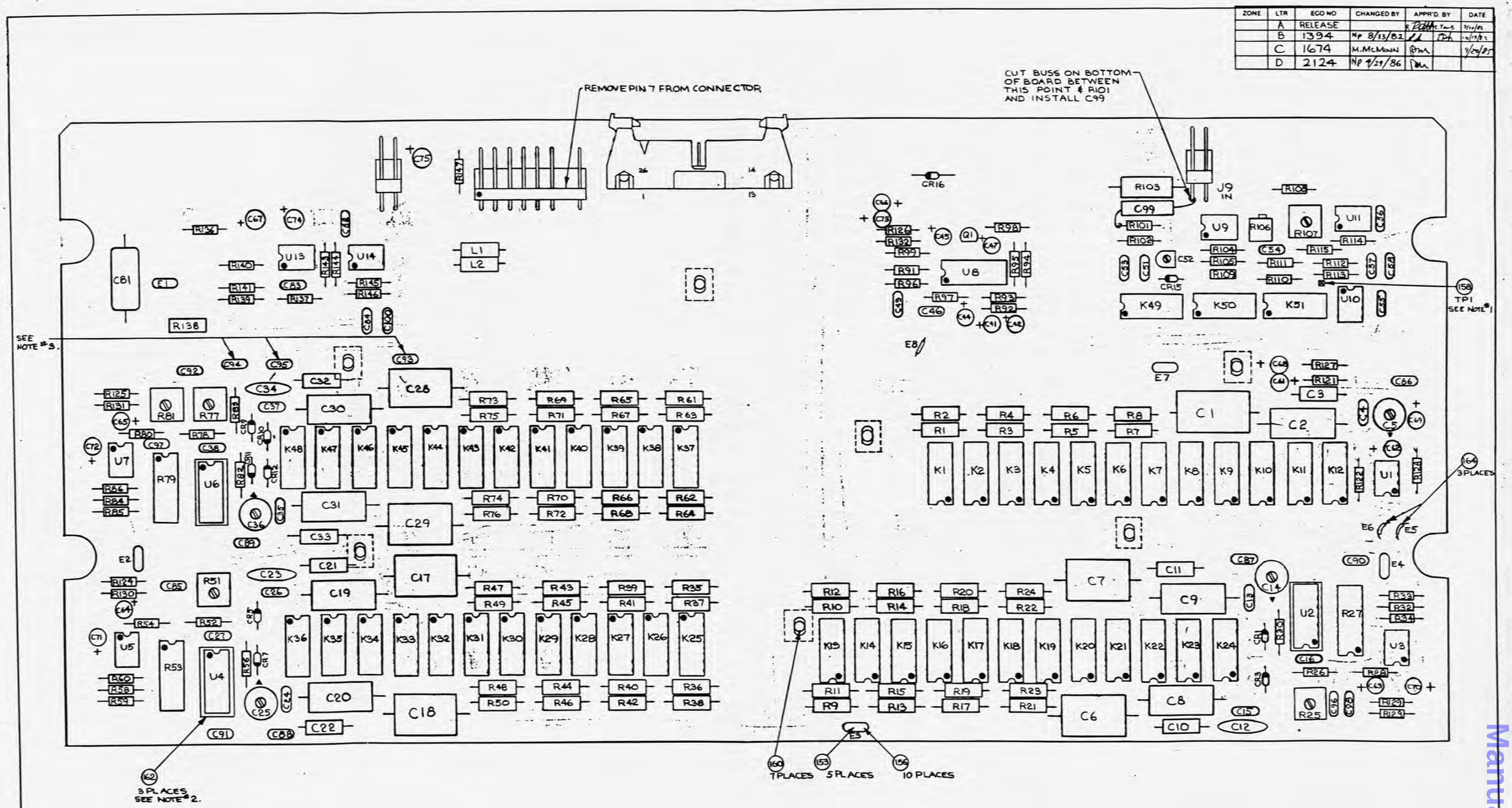
ZONE	LTR	ECO NO	CHANGED BY	APPR'D. BY		DATE
	A	RELEASE		R. Pollitt	A. Tang	3/29/82
	B	1394	NP 8/13/82	[illegible]	[illegible]	10/19/82
	C	1674	M. McMinn	[illegible]		3/20/85
	D	2124	NP 4/29/86	[illegible]		



NOTES:
1-CUT TEST POINT TO MAX. HEIGHT OF 3/8".
2-U2, U4, & U6 ARE MOUNTED IN SOCKETS, ITEM # 162.
3-C93, C94, & C95 ARE TO BE SELECTED & INSTALLED IN THE TEST STAGE

DR. J.P.	DATE 3-15-82	WAVETEK ROCKLAND — Wavetek Rockland, Inc.
CHKD. [illegible]	3/29/82	ASSEMBLY 753A HP FILTER BOARD
ENG. [illegible]	3/26/82	
MFG. Eng. A. Tang	3/29/82	
ISSUED		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND TOLERANCES ARE: .XX ±.005, .XXX ±.005, .XX ±.01, ∠ ±1°

MAT: —
FIN: —

SIZE	MODEL NO	DRAWING NO	REV
D	753A	02-004-0753	D
SCALE 2:1	CODE IDENT 23338	SHEET 1 OF 4	

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
C99	FX PLSTR .47UF 5% 100V	A11B474J	BISHO	105.4470	1
U2 U4 U6	U: GD LIN BIFET OP-AMP (LF347)	LF347N	NSC	120.2047	3
NONE	FX MOND .01UF +80 -20% 50V	SR215E103ZAT	AVX	100.3105	1
NONE	CAP MICA FX VA DIP 12PF 5% 200 PPM/C 500V	CM05CD120J03	CDE	101.0120	1
NONE	CAP MICA FX VAL DIP 15PF 5% 200 PPM/C 500V	CM05CD150J03	CDE	101.0150	1
NONE	CAP MICA FX VAL DIP 18PF 5% 200 PPM/C 500V	CM05CD180J03	CDE	101.0180	1
NONE	CAP MICA FX VAL DIP 22PF 5% -20+100PPM/C 500V	CM05ED220J03	CDE	101.0220	1
NONE	CAP MICA FX VAL DIP 30PF 5% -20+100PPM/C 500V	CM05ED300J03	CDE	101.0300	1
NONE	CAP MICA FX VAL DIP 47PF 5% -20+100PPM/C 500V	CM05ED470J03	CDE	101.0470	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	CAP FX VAL.DP MICA 150PF 5% 0 TO +70PPM/C 500V	CM05FD151J03	CDE	101.1150	1
NONE	CAP FX VAL.DP MICA 200PF 5% 0 TO +70PPM/C 500V	CM05FD201J03	CDE	101.1200	1
NONE	CAP FX VAL.DP MICA 240PF 5% 0 TO +70PPM/C 500V	CM05FD241J03	CDE	101.1240	1
NONE	CAP FX VAL.DP MICA 300PF 5% 0 TO +70PPM/C 500V	CM05FD301J03	CDE	101.1300	1
NONE	CAP MICA FX VAL DIP 910PF 1% 0 TO+70PPM/C 100V	CD15FA911F03	CDE	101.1910	1
NONE	CAP MICA FX VAL DIP 100PF 1% 0 TO+70PPM/C500V	CM06FD102F03	CDE	101.2101	1
NONE	FX PLYSTY .01UF -.5+0%	PSBPC0103E	AMRAD	104.3106	1
NONE	FX PLYSTY 0.1UF -.5+0% 50V	PSW0104E	AMRAD	104.4106	1
NONE	FX PLYSTY 0.1UF 50V SET	PSW0104F-MS	AMRAD	104.4107	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	FX PLYCRB 1.0UF -.5+0% 100V	MPABPC0105E	AMRAD	104.5103	1
NONE	FX PLSTR .47UF 5% 100V	A11B474J	BISHO	105.4470	1
NONE	VAR CER 3.5-18PF 250V	9373	JACO	108.0180	1
NONE	VAR CER 15-60PF	538-011-F	MILGY	108.0600	1
NONE	FX TANT .10UF 20% 35V	T368A104M035A*	KEMET	109.4100	1
NONE	FX TANT 10UF 20% 20V	T368B106M025A*	KEMET	109.6100	1
NONE	FX TANT 68UF 20% 6V	T368B686M006AS	KEMET	109.6680	1
NONE	RES.FX MFLM 328 OHM .5% 1/10W T2	RN55C3280D	ENOX	110.3281	1
NONE	RES. FX MFLM 681 OHM 1% 1/8W TO	RN55C6810F	UMCEM	110.6810	1
NONE	RES. FX MFLM 9009 OHM 1% 1/10W T2	RN55C9090F	JMAR	110.9091	1
NONE	RES.FX MFLM 1.00K 1% 1/10W T2	RN55C1001F	UMCEM	111.1001	1
NONE	RES.FX MFLM 1.169K .5% 1/8W TO	CR125 100PPM	CTLRE	111.1168	1
NONE	RES.FX MFLM 1.36K 1% 1/8W TO	NA	NA	111.1360	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 3

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 1.37K 1% 1/8W TO	RN55C1371F	UMCEM	111.1370	1
NONE	RES.FX MFLM 1.757K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.1758	1
NONE	RES.FX MFLM 2.053K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.2059	1
NONE	RES.FX MFLM 2.15K 1% 1/10W T2	RN55C2151F	UMCEM	111.2151	1
NONE	RES.FX MFLM 2.338K .5% 1/8W TO	HA55 100PPM	HYMEQ	111.2338	1
NONE	RES.FX MFLM 2.40K 5% 2W 200PPM	FP42 2.4K 5% 2W 200PPM	CORNQ	111.2403	1
NONE	RES.FX MFLM 2.72K 1% 1/8W TO	CR125 100PPM	CTLRE	111.2720	1
NONE	RES.FX MFLM 3.40K 1% 1/10W T2	RN55C3401F	UMCEM	111.3401	1
NONE	RES.FX MFLM 3.513K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.3518	1
NONE	RES.FX MFLM 3.57K 1% 1/10W T2	RN55C3571F	UMCEM	111.3571	1
NONE	RES.FX MFLM 4.106K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.4109	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 4

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 4.32K 1% 1/10W T2	RN55C4321F	UMCEM	111.4321	1
NONE	RES.FX MFLM 4.42K 1% 1/10W T2	RN55C4421F	UMCEM	111.4421	1
NONE	RES.FX MFLM 4.675K .5% 1/8W TO	HA55 100PPM	HYMEQ	111.4678	1
NONE	RES. FX MFLM 5.45K 1% 1/8W TO	CR125	CTLRE	111.5450	1
NONE	RES. FX MFLM 5.56K .5% 1/10W T2	RN55C5561D	ENOX	111.5561	1
NONE	RES. FX MFLM 6.81K 1% 1/10W T2	RN55C6811F	UMCEM	111.6811	1
NONE	RES. FX MFLM 7.027K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.7028	1
NONE	RES. FX MFLM 8.212K .1% 1/8W TO	HA55 100PPM	HYMEQ	111.8219	1
NONE	RES. FX MFLM 8.98K .5% 1/10W T2	RN55C8981D	KAGAN	111.8981	1
NONE	RES. FX MFLM 9.351K .5% 1/8W TO	CR125 100PPM	CTLRE	111.9358	1
NONE	RES.FX MFLM 11.69K .5% 1/8W TO	CR125 100PPM	CTLRE	112.1168	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 5

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES.FX MFLM 13.6K 1% 1/8W TO	CR125 100PPM	CTLRE	112.1360	1
NONE	RES.FX MFLM 14.05K .1% 1/8W TO	HA55 100PPM	HYMEQ	112.1408	1
NONE	RES.FX MFLM 14.7K 1% 1/10W T2	RN55C1472F	UMCEM	112.1471	1
NONE	RES.FX MFLM 15.4K 1% 1/10W T2	CR125 50PPM	CTLRE	112.1541	1
NONE	RES.FX MFLM 16.42K .1% 1/8W TO	HA55 100PPM	HYMEQ	112.1649	1
NONE	RES.FX MFLM 17.57K .1% 1/8W TO	HA55 100PPM	HYMEQ	112.1758	1
NONE	RES.FX MFLM 20.5K 1% 1/8W TO	RN55C2052F	UMCEM	112.2050	1
NONE	RES.FX MFLM 20.53K .1% 1/8W TO	HA55 100PPM	HYMEQ	112.2058	1
NONE	RES.FX MFLM 23.38K .5% 1/8W TO	CR125 100PPM	CTLRE	112.2338	1
NONE	RES.FX MFLM 27.2K 1% 1/8W TO	CR125 100PPM	CTLRE	112.2720	1
NONE	RES MF FIX. VALUE 0.5% 50PPM RN55 SIZE	RN55C3052D	MIL	112.3051	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D — PAGE 6

NOTE: UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO • CALIFORNIA
MATERIAL	PROJ ENGR		TITLE: PARTS LIST MAINBOARD ASSY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 .XX ±.030 ANGLES ±1		
	DO NOT SCALE DWG		MODEL NO: 753 — DWG NO: 004.0753 — REV: D
	SCALE		CAGE IDENT: 23338 — SHEET 1 OF 2

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REV	ECN	BY	DATE	APP

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REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 35.13K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.3518	1
NONE	RES. FX MFLM 41.06K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.4108	1
NONE	RES. FX MFLM 46.75K .5% 1/8W T0	CR125 100PPM	CTLRE	112.4678	1
NONE	RES. FX MFLM 54.5K 1% 1/8W T0	CR125 100PPM	CTLRE	112.5450	1
NONE	RES. FX MFLM 60.4 1% 1/10W T2	RN55C6042F	UMCEM	112.6041	1
NONE	RES. FX MFLM 70.27K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.7028	1
NONE	RES. FX MFLM 82.12K .1% 1/8W T0	HA55 100PPM	HYMEQ	112.8218	1
NONE	RES. FX MFLM 93.51K .5% 1/8W T0	CR125 100PPM	CTLRE	112.9358	1
NONE	RES.FX MFLM 100K 1% 1/10W T2	RN55C1003F	UMCEM	113.1001	1
NONE	RES.FX MFLM 140.5K .1% 1/8W T0	HA55 100PPM	HYMEQ	113.1408	1
NONE	RES.FX MFLM 164.2K .1% 1/8W T0	HA55 100PPM	HYMEQ	113.1648	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. FX MFLM 200K 1% 1/10W T2	RN55C2003F	UMCEM	113.2001	1
NONE	RES. FX MFLM 900K 1% 1/10W T2			113.9009	1
NONE	RES.FX CFLM 10 OHM 5% 1/4W			116.0101	1
NONE	RES.FX CFLM 47 OHM 5% 1/4W			116.0471	1
NONE	RES.FX CFLM 82 OHM 5% 1/4W			116.0821	1
NONE	RES.FX CFLM 100 OHM 5% 1/4W			116.1101	1
NONE	RES FX CFLM 1.0K OHM 5% 1/4W			116.2101	1
NONE	RES.FX CFLM 10K OHM 5% 1/4W			116.3101	1
NONE	RES.FX CFLM 1.0M OHM 5% 1/4W			116.5101	1
NONE	RES.FX CFLM 4.7 OHM 5% 1/4W			116.9471	1
NONE	RES. VAR CMT 500 OHM 3/8SQ FM	72PR500	BECK	118.1503	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	RES. VAR CMT 1.0K 3/8SQ EM	72XR1K	BECK	118.2101	1
NONE	RES. VAR CMT 1.0K 3/8SQ FM	72PR1K	BECK	118.2102	1
NONE	RES. VAR CMT 5.0K 3/8SQ FM	72PR5K	BECK	118.2502	1
NONE	RES. VAR CMT 100K 3/8SW FMHY 18T	68PR100K	BECK	118.4104	1
NONE	RES. FX MFLM 90.9 OHM 1% 1/10W T2	RN55C90R9F	KAGAN	119.9091	1
NONE	U: LIN BIFET OP-AMP DIL LF351	LF351N	NSC	120.1017	1
NONE	U: LIN OP-AMP DIL (NE5534A)	SA5534AN	SIG	120.1018	1
NONE	U: QUAD ANAL VOLT COMP (LM339)	LM339N	MOT	120.3339	1
NONE	ASSY, PC BD PREPPED 753-0753	753-2469	WVTK	1208-00-2469	1
NONE	CO5 U: RES NET 2.2K OHM 1% X8	4116R-001-2.2K	BOURN	128.2223	1
NONE	CO5 U: RES NET 10K OHM 1% X8	698-3-R10K-F	BECK	128.3103	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	SL ZR 5.1V 5% 400MW (1N751A)			131.9510	1
NONE	QER 120PIV 100MA (1N277)			132.0277	1
NONE	SL LW LK 70PIV 200MW (1N457)			132.0457	1
NONE	Q: SIL PNP (2N4249)			136.4249	1
NONE	Q: DL MATCH FET (NPD-5566)	NPD-5566	NSC	138.5566	1
NONE	L: FXD 1 MHY +/-10% SHLD	1641-105	DELVN	150.2100	1
NONE	RELAY: REED DIP 1A W/DIODE 5V	1503-8-1	WABSH	175.1505	1
NONE	RELAY: REED DIP 1C W/DIODE 5V	815-244-11	WABSH	175.1506	1
NONE	RELAY: REED DIP 2A W/DIODE 5V	1503-7-1	WABSH	175.1507	1
NONE	CONN, PLUG: HDR 26P DIL RT ANG ST LK	3429-1002&3505-2	3M	352.2601	1
NONE	SOCKET: IC 14PIN DIP ST			353.1403	1

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	CONN: 8PIN R/A HDR F/L 9751081	09-75-1081	MOLEX	354.0020	1
NONE	CONN: 2PIN R/A HDR F/L 9751021	09-75-1021	MOLEX	354.0022	1
E1 E2 E3 E4 E7	CONN, PLUG: SHORTING (LOW PROF)	4612872-01-03-10	CTC	352.0202	5
NONE	SOCKET: JMPR (USE W/352.0202)	4503327-01-0300	CTC	353.0104	10
TP1	CONN: TERM PIN .025 WW (NAIL)	W98-025-560-GH-GOLD	A/S	354.0003	1
NONE	SPACER: NYL SNAP-BTN (MB1-156)	MB-1-156	P&MC	376.2109	7
NONE	WIRE: BUSS TINNED #22GA			378.0601	.3
NONE	SLVNG: PLASTIC FBRGLS #22AWG			378.5221	.2

WAVETEK PARTS LIST — TITLE: MAINBOARD ASSY 753 (H-P/FB) — ASSEMBLY NO. 004.0753 — REV D

NOTE: UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO CALIFORNIA
MATERIAL	PROJ ENGR		TITLE: PARTS LIST MAIN BOARD ASSEMBLY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED XXX ±.010 XX ±.030 ANGLES ±°		
	DO NOT SCALE DWG		MODEL NO 753 — DWG NO 004.0753 — REV D
	SCALE		CODE IDENT 23338 — SHEET 2 OF 2

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REV	ECN	BY	DATE	APP

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	FX MOND 0.1UF 50V Z5U	SR215E104ZAT	AVX	100.4102	1
NONE	RES.FX CFLM 150 OHM 5% 1/4W			116.1151	1
NONE	RES.FX CFLM 10K OHM 5% 1/4W			116.3101	1
NONE	U: DUAL PRPHL DRIVER (75451)	SN75451BN/P3	TI	120.4451	1
NONE	U: OPTO-ISOLATOR (TIL-112)	TIL-112	TI	120.9112	1
NONE	ASSY, PC BD PREPPED 751-752-01-0780	751-752-01-2715	WVTK	1208-00-2715	1
NONE	U: HEX INVERT DRIVER O/C			122.7406	1
NONE	U: 8 BT LATCH 3-ST (74LS373)	74LS373NP3	SIG	125.0147	1
NONE	U: PULL UP NET 10K 2% X9 SIP	110A103	AB	128.3104	1
NONE	CONN, PLUG: HDR 26P DIL RT ANG ST LK	3429-1002&3505-2	3M	352.2601	1
NONE	CONN, PLUG: HDR 50P DIL RT ANG ST LK	3433-1202	3M	352.5002	1
NONE	CONN: TERM. TEST POINT	61134-1	AMP	354.0027	1

WAVETEK PARTS LIST

TITLE: BCD INTERFACE ASSY 751/752

ASSEMBLY NO. 004.0780

REV B

PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	SPACER: NYL SNAP-BTN (MB1-156)	MB-1-156	P&MC	376.2109	7

WAVETEK PARTS LIST

TITLE: BCD INTERFACE ASSY 751/752

ASSEMBLY NO. 004.0780

REV B

PAGE 2

REMOVE ALL BURRS AND BREAK SHARP EDGES

MATERIAL

FINISH WAVETEK PROCESS

DRAWN | DATE

PROJ ENGR

RELEASE APPROV

TOLERANCE UNLESS OTHERWISE SPECIFIED XXX ±.010 ANGLES ±1 XX ±.030

DO NOT SCALE DWG

SCALE

WAVETEK SAN DIEGO, CALIFORNIA

TITLE: PARTS LIST BCD INTERFACE ASSY

MODEL NO. 751/752/753 | DWG NO. 004.0780 | REV B

CODE IDENT 23338 | SHEET 1 OF 1

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REV	ECN	BY	DATE	APP

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	IEEE INTERFACE ASSY 751/752			004.0785	1
NONE	CABLE ASSY: INT/FILT 751 (3")			009.9782	1
NONE	CABLE ASSY: IEEE INTERFACE 751			009.9783	1
NONE	CABLE ASSY: IEEE INTERFACE 751			009.9785	1

WAVETEK PARTS LIST	TITLE IEEE INTERFACE OPT. 02 751-2-3	ASSEMBLY NO. 000.0785 PAGE 1	REV A

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO • CALIFORNIA
MATERIAL	PROJ ENGR		TITLE PARTS LIST IEEE INTERFACE OPTION 002
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED .XXX ±.010 ANGLES ±1 .XX ±.030		
	DO NOT SCALE DWG	MODEL NO 751/752/753	DWG NO 000.0785 REV A
	SCALE	CODE IDENT 23338	SHEET 1 OF 1

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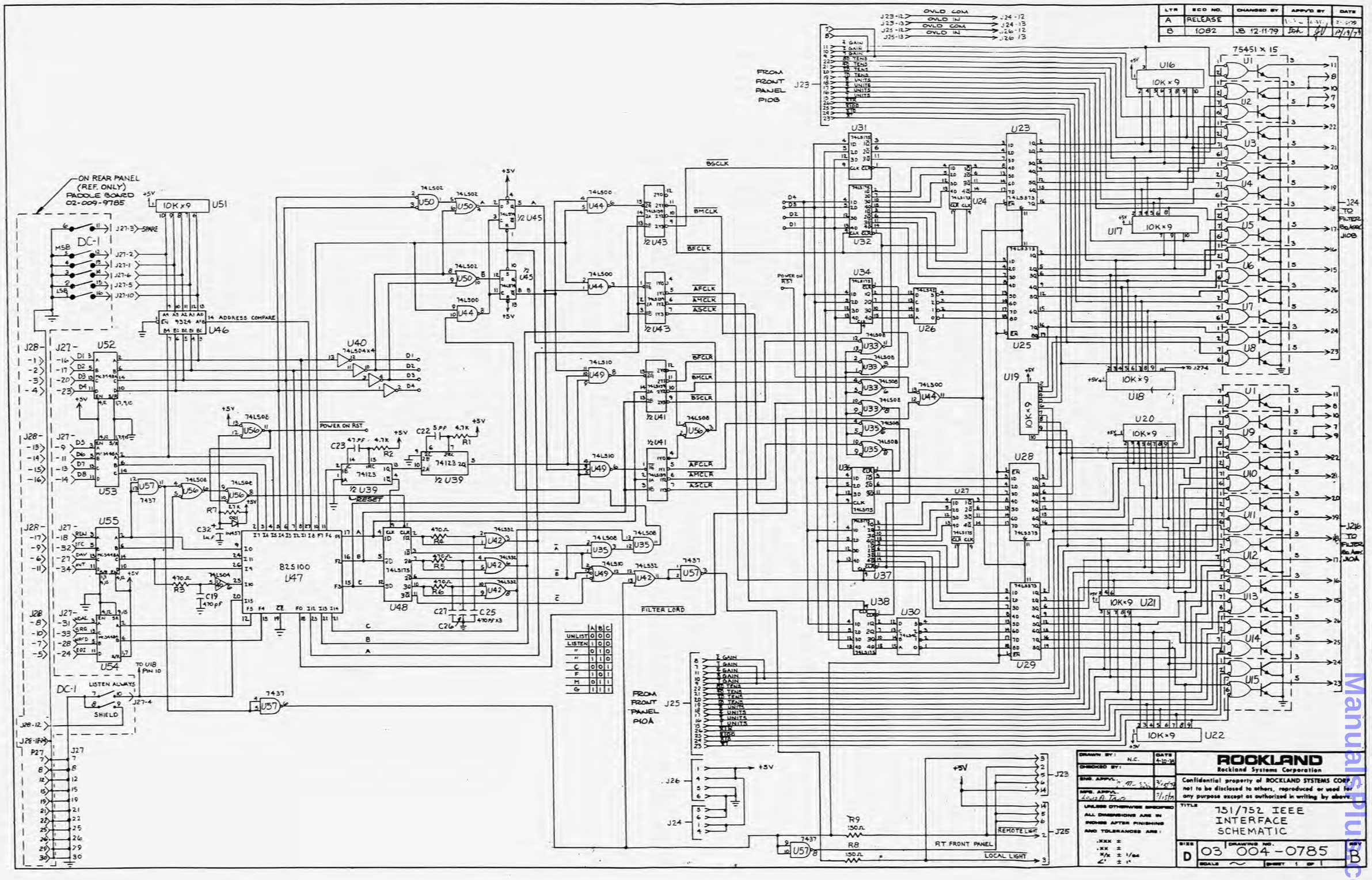

LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
A	RELEASE			
B	1082	JB 12-11-79		12/13/79

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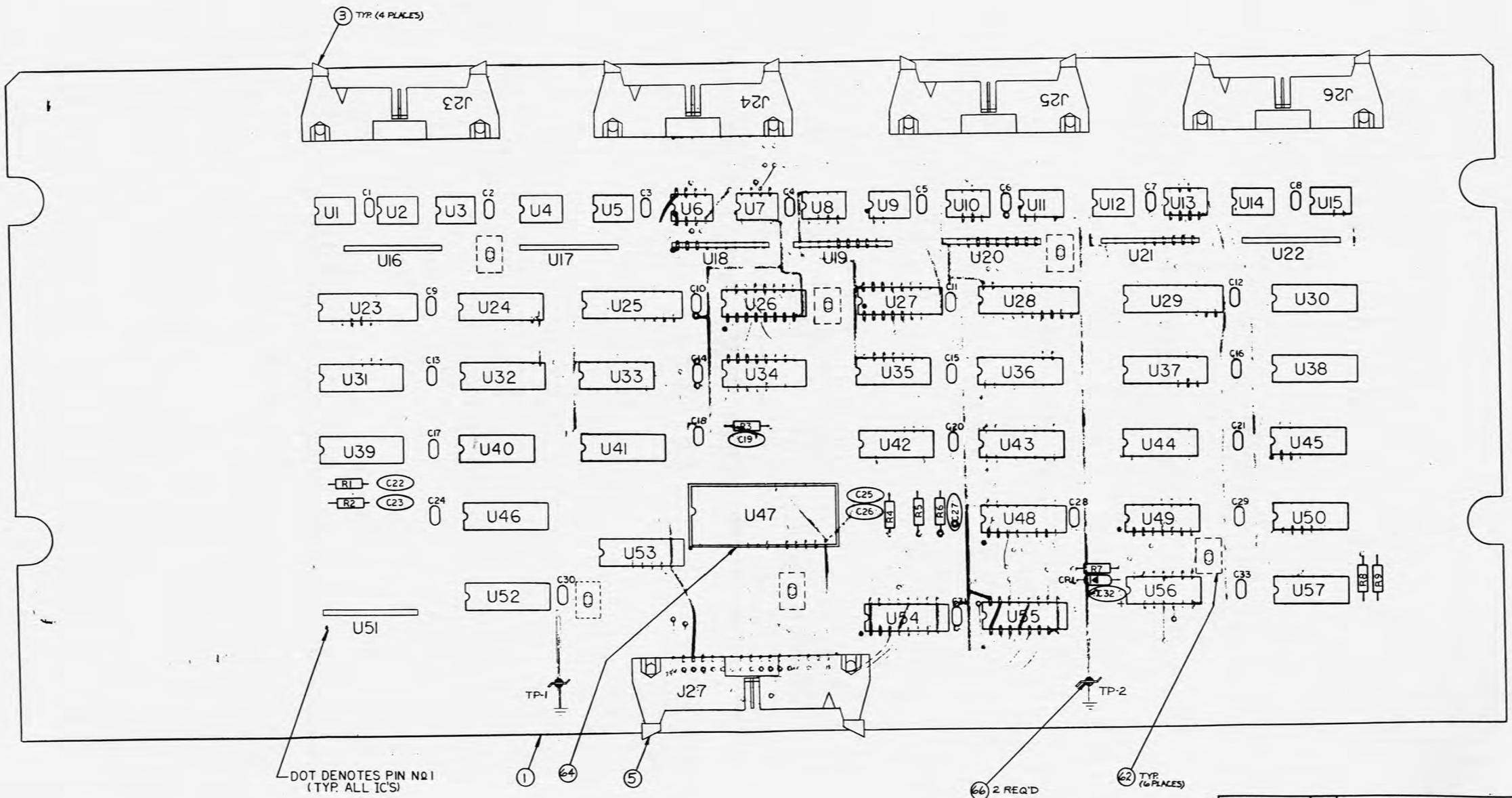
A	RELEASE		RAC	LAT.	3/15/79
B	1026	M.McMINN	RAC	LAT	3/30/79



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MFG APPVL: Louis A. Tate	3/15/79	

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.XXX ± .005
.XX ± .01
X/X ± 1/64
∠° ± 1°

TITLE ASSEMBLY 751/752 IEEE INTERFACE

SIZE	DRAWING NO	REV
D	02 004 0785	B
SCALE 2/1	SHEET 1 OF 3	

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REV	ECN	BY	DATE	APP

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
U47	FPLA: PGMD 751/752			022.0004	1
NONE	FX MOND 0.1UF 50V Z5U	SR215E104ZAT	AVX	100.4102	1
NONE	CAP MICA FX VAL DIP 5PF+-0.5PF 200 PPM 500V	CM05CD050D0	CDE	101.0050	1
NONE	CAP MICA FX VAL DIP 47PF 5% -20+100PPM/C 500V	CM05ED470J03	CDE	101.0470	1
NONE	CAP FX VAL,DIP MICA 470PF 5% 0 TO+70PPM/C 500V	CD15FD471J03	CDE	101.1470	1
NONE	FX TANT 1.0UF 20% 35V	T368A105M035AC2513	KEMET	109.5100	1
NONE	RES,FX CFLM 150 OHM 5% 1/4W			116.1151	1
NONE	RES,FX CFLM 470 OHM 5% 1/4W			116.1471	1
NONE	RES,FX CFLM 4.7K OHM 5% 1/4W			116.2471	1
NONE	RES,FX CFLM 27K OHM 5% 1/4W			116.3271	1
NONE	U: IEEE BUS DRIVER (MC3448AL)	MC3448AL	MOT	120.4448	1

WAVETEK PARTS LIST — TITLE: IEEE INTERFACE ASSY 751/752 — ASSEMBLY NO. 004.0785 — REV B — PAGE 1

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	U: DUAL PRPHL DRIVER (75451)	SN75451BN/P3	TI	120.4451	1
NONE	ASSY, PC BD PREPPED 751-2-02-0785	751-2-02-2717	WVTK	1208-00-2717	1
NONE	U: DL MNSTBL MVBRTR (74123)	SN74123N/P3	TI	122.0107	1
NONE	U: 5 BIT COMPARATOR	N9324N/S2B	SIG	122.9324	1
NONE	U: QUAD D FLIP-FLOP (74LS175)	N74LS175N/S2B	SIG	125.0110	1
NONE	U: DL 2TO4 LN DECOD 74LS139	74LS139N/AT	NSC	125.0116	1
NONE	U: 8 BT LATCH 3-ST (74LS373)	74LS373NP3	SIG	125.0147	1
NONE	U: QUAD 2 IN NAND GATE	74LS00N/S2B	TI	125.7400	1
NONE	U: QUAD 2IN NOR GATE	74LS02N/S	TI	125.7402	1
NONE	U: HEX INVERTER	74LS04N/S2B	SIG	125.7404	1
NONE	U: QUAD 2 IN AND GATE			125.7408	1
NONE	U: TRIPLE 3 IN NAND GATE	74LS10N/S2B	SIG	125.7410	1
NONE	U: QUAD 2 IN OR GATE	74LS32N/S2B	SIG	125.7432	1

WAVETEK PARTS LIST — TITLE: IEEE INTERFACE ASSY 751/752 — ASSEMBLY NO. 004.0785 — REV B — PAGE 2

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	U: QUAD 2 IN NAND BUFFER	74LS37N/P3	TI	125.7437	1
NONE	U: BCD TO DECIMAL DECODER	74LS42PC	SIG	125.7442	1
NONE	U: DUAL TYPE D FLIP FLOP	74LS74N/P3	SIG	125.7474	1
NONE	U: PULL UP NET 10K 2% 19 SIP	110A103	AB	128.3104	1
NONE	SL LW LK 70PIV 200MW (1N457)			132.0457	1
NONE	CONN, PLUG: HDR 26P DIL RT ANG ST LK	3429-1002&3505-2	3M	352.2601	1
NONE	CONN, PLUG: HDR 34P DIL RT ANG ST LK	3431-1202	3M	352.3400	1
NONE	SOCKET: IC 28PIN DIP ST			353.2800	1
NONE	CONN: TERM. TEST POINT	61134-1	AMP	354.0027	1
NONE	SPACER: NYL SNAP-BTN (MB1-156)	MB-1-156	P&MC	376.2109	6

WAVETEK PARTS LIST — TITLE: IEEE INTERFACE ASSY 751/752 — ASSEMBLY NO. 004.0785 — REV B — PAGE 3

NOTE UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND BREAK SHARP EDGES	DRAWN	DATE	WAVETEK SAN DIEGO • CALIFORNIA
MATERIAL	PROJ ENGR		TITLE: PARTS LIST IEEE INTERFACE ASSY
	RELEASE APPROV		
FINISH WAVETEK PROCESS	TOLERANCE UNLESS OTHERWISE SPECIFIED XXX ±.010 XX ±.030 ANGLES ±1		
	DO NOT SCALE DWG	MODEL NO 751/752/753	DWG NO 004.0785 — REV B
	SCALE	IDENT 23338	SHEET 1 OF 1

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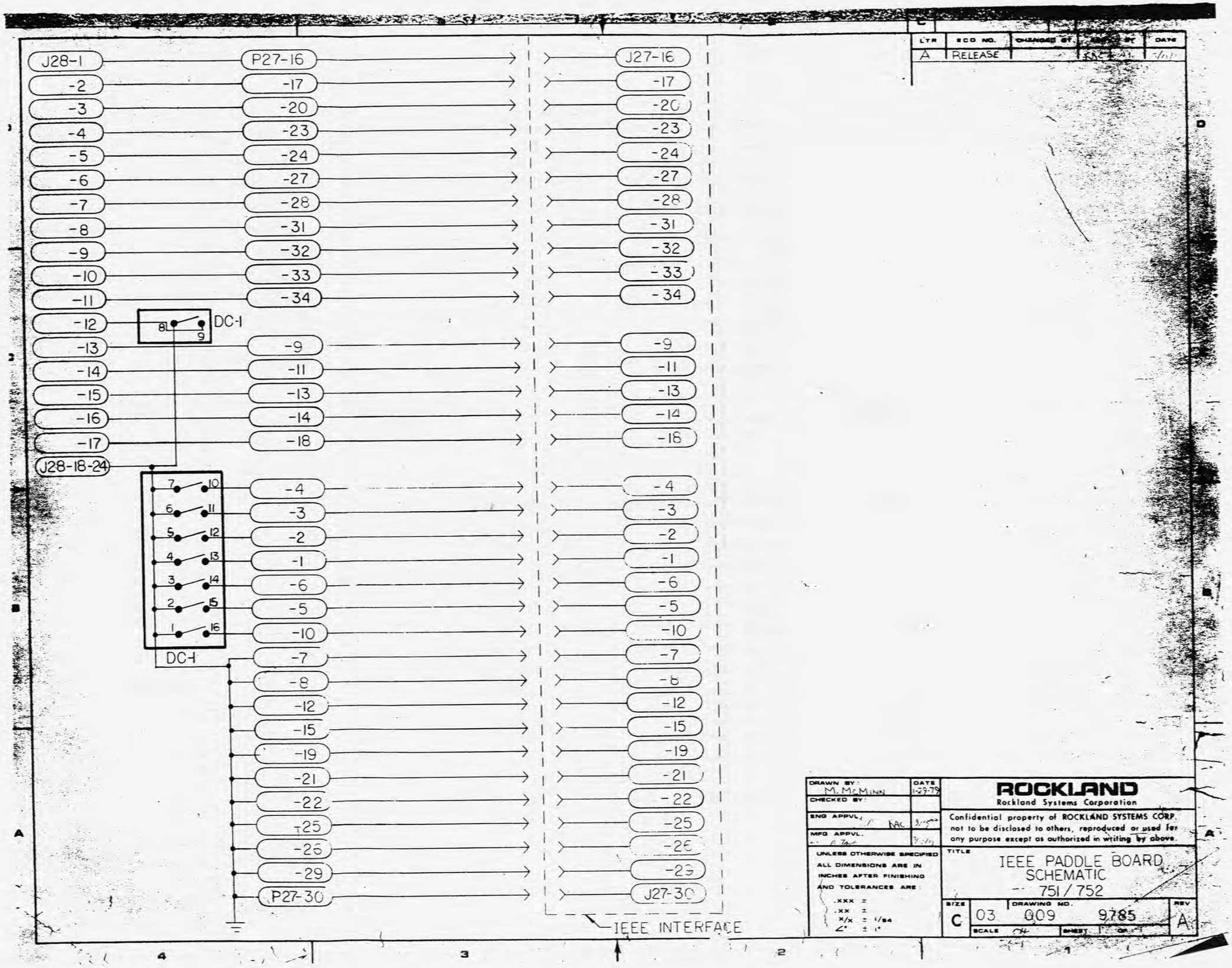

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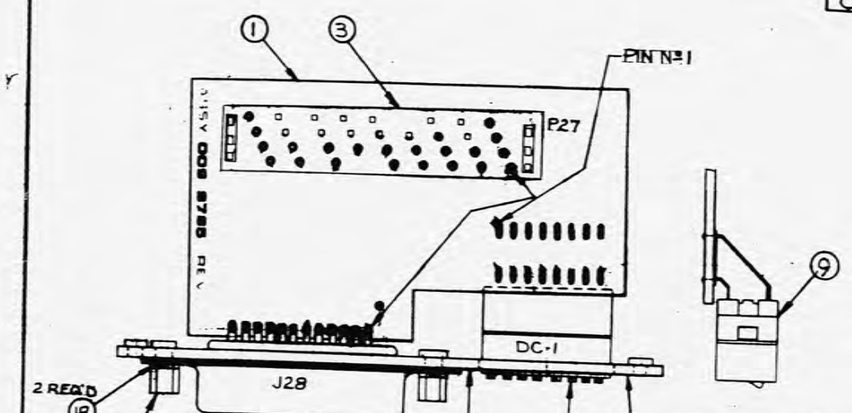
A	RELEASE		LAT	
B	1082		LAT	
C	1106		LAT	



NOTE: PRIOR TO ASSY OF 12B, SECURE LABEL. THE OUTSIDE OF BLACK RECTANGLES MUST BE CUT OUT BEFORE APPLYING TO PANEL. (NO BLACK FROM THE BORDER SHOULD BE SHOWING.)

SHT. Nº 2 IS 'B' SIZE, SHT Nº 3 IS 'A' SIZE 4/M

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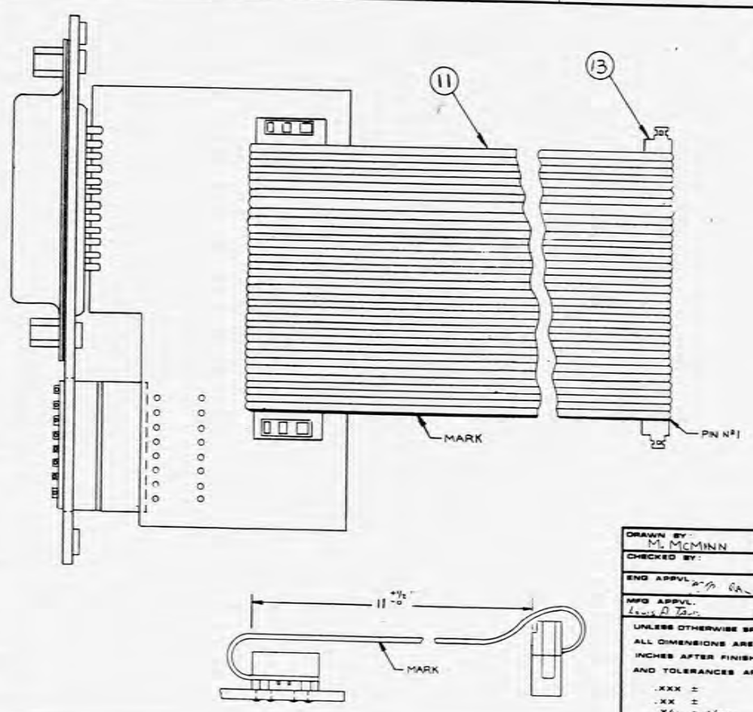
TITLE: ASSEMBLY IEEE PADDLE BOARD 751/752
SIZE B DRAWING NO. 02 009 9785 REV C
SCALE 2/1 SHEET 1 OF 3

LTR	ECO NO.	CHANGED BY	APPV'D BY	DATE
	SEE SHT. Nº 1			



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CHECKED BY:
ENG APPVL.
MFG APPVL.
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TITLE: ASSEMBLY IEEE PADDLE BOARD 751/752
SIZE B DRAWING NO. 02 009 9785 REV C
SCALE 2/1 SHEET 2 OF 3

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
NONE	PC: PADDLE BD IEEE (751/752)			320.0775	1
DC1	S: DIP 8 POLE 2 POS	76SB08	GRAHL	342.8100	1
J28	CONN: RIB SKT CHASSIS 24 CNT	57-2024002	AMPH	351.2403	1
NONE	SOCKET: IC 16PIN DIP HOR	16-823-90	ARIES	353.1605	1
NONE	SOCKET: 34PIN DIL LOCK CLSEND	3414-7034	3M	353.3402	1
NONE	CONN: BD/CABLE 34CONT .050	3402-0000	3M	354.3400	1
NONE	CONN MTG PLATE: IEEE 752, FIN			371.1015	1
	CABLE: 34CND RIB 28GA STR .050	3365/34	3M	378.4018	13
NONE	WASHER: SPLT LK STNLS #8			388.1082	2
NONE	GUIDE PIN ASSY FEM METRIC	552633-3	AMP	389.7004	2

WAVETEK PARTS LIST — TITLE: CABLE ASSY: IEEE INTERFACE 751 — ASSEMBLY NO. 009.9785 — REV — PAGE 1

REMOVE ALL BURRS AND BREAK SHARP EDGES
MATERIAL
FINISH WAVETEK PROCESS
DRAWN DATE
PROJ ENGR
RELEASE APPROV
TOLERANCE UNLESS OTHERWISE SPECIFIED XXX ±.010 XX ±.030 ANGLES ±1
DO NOT SCALE DWG
SCALE

WAVETEK SAN DIEGO • CALIFORNIA
TITLE: IEEE PADDLE BOARD ASSEMBLY
MODEL NO 751/752/753 DWG NO 009.9785 REV
CODE IDENT 23338 SHEET 1 OF 1

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ERRATA
FOR
INSTRUCTION MANUAL
MODELS 751A, 752A and 753A
BRICKWALL FILTERS
DATED 3/87

Make the following changes to the manual:

Page 1-2, Paragraph 1.4.1, Accuracy:
Change "0.3 ± 0.1 dB at F_c" to "Low Pass: -0, +2.5%
High Pass: +0, -2.5%".

Page 1-2, Paragraph 1.4.2, Accuracy:
Change "± 0.2 dB" to "± 0.25 dB" (two locations).

Page 1-2, Paragraph 1.4.3, Passband Response:
Change "Low-pass channel: 0.3 dB p-p; High-pass channel: 0.3 dB p-p (-3 dB at approximately 400 kHz)." to "Low-pass channel: 0.8 dB p-p maximum; High-pass channel (753A): 0.8 dB p-p maximum for $F_c \leq 40$ kHz; High-pass channel (751A, 752A): 0.8 dB p-p maximum for $F_c \leq 40$ kHz, 1.4 dB p-p maximum for $F_c > 40$ kHz".
Amplifier cutoff: -3 dB at approximately 400 kHz.

Page 1-2, Paragraph 1.4.3, Stopband Attenuation:
Change "Low-Pass Channel" and "High-Pass Channel" columns as shown:

Low-Pass Channel	High-Pass Channel
0.8 dB (dc to F_c)	0.8 dB at F_c
40 dB ±4 dB at 1.34 F_c	40 dB ±4 dB at 0.75 F_c
60 dB ±4 dB at 1.53 F_c	60 dB ±4 dB at 0.65 F_c
>76 dB at 1.7 F_c	>76 dB at 0.6 F_c

Page 1-2, Paragraph 1.4.3, Maximum Stopband Attenuation:
Change "Low-pass channel: 85 dB (typical); 80 dB (minimum) to 10 MHz. High-pass channel: 85 dB (typical); 80 dB (minimum)." to "Low-pass channel: 90 dB (typical); 80 dB (minimum) for $F > 2F_c$. High-pass channel: 90 dB (typical); 80 dB (minimum) for $F < .5F_c$.".

Page 1-2, Paragraph 1.4.3, Amplitude Match:
Change "±0.1 dB, dc to 0.8 F_c. ±0.2 dB, 0.8 F_c to F_c." to "±0.25 dB, dc to 0.8 F_c. ±0.4 dB, 0.8 F_c to F_c.".

Page 1-2, Paragraph 1.4.3, Phase Match:
Change "± 1/2° (typical). ±1° (maximum), dc to 0.8 F_c. ± 1° (typical), ± 2° (maximum), 0.8 F_c to F_c." to "±3° (maximum), dc to 0.8 F_c. ± 4° (maximum), 0.8 F_c to F_c.".

Page 1-2, Paragraph 1.4.4, Coupling:
Change "Low-pass channel: dc or ac with 0.3 Hz cutoff (nominal). High-pass channel: dc." to "Low-pass channel: dc or ac with 0.3 Hz cutoff (nominal). High-pass channel: dc input, ac throughput.".

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Page 1-3, Paragraph 1.4.5, Noise (1 MHz detector BW):
Change "< 80 dB below full-scale ..." to "better than 80 dB below full-scale ...".

Page 1-3, Paragraph 1.4.5, DC Offset:
Change "Adjustable to 0 Vdc; < ± 10mV" to "< ± 50mV, adjustable to 0Vdc.".

Page 1-3, Paragraph 1.4.7:
Delete "Specifications apply when most ... digits are used.".

Page 5-1, Table 5-2, Step 1:
Change "Desired Measurement" from "0 ± 0.2 dB" to "0 ± 0.25 dB".

Page 5-3, Table 5-3, Step 1:
Change "Desired Measurement" from "0 ± 0.2 dB" to "0 ± 0.25 dB".

Page 5-4, Table 5-4, Step 1:
Change "Desired Measurement" from "0 ± 0.2 dB" to "0 ± 0.25 dB".

Drawing 03-004-0753:
Change C84 from 240 pf to 300 pf.
Change C100 from 200 pf to 150 pf.

Parts List 004.0753 Sheet 1 of 2:
For row with "WAVETEK NO. 101.1150", change QTY/PT from "1" to "2".
Delete entire entry for "WAVETEK NO." shown as "101.1200".
Delete entire entry for "WAVETEK NO." shown as "101.1240".
For row with "WAVETEK NO. 101.1300", change QTY/PT from "1" to "2".

Parts List 004.0760 Sheet 2 of 2:
For row with "J28", change "57-2024002" to "57-20240-2".
For row with "WAVETEK NO. 175.1506", change ORIG-MFGR-PART-NO from "815-244-11" to "815-244-114".

Parts List 004.0750 Sheet 2 of 2:
For row with "WAVETEK NO. 175.1506", change ORIG-MFGR-PART-NO from "815-244-11" to "815-244-114".

Parts List 004.0753 Sheet 2 of 2:
For row with "WAVETEK NO. 175.1506", change ORIG-MFGR-PART-NO from "815-244-11" to "815-244-114".

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