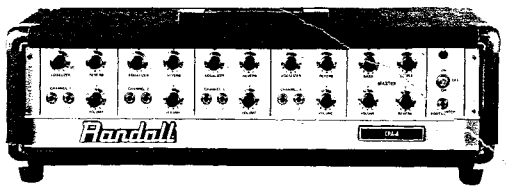
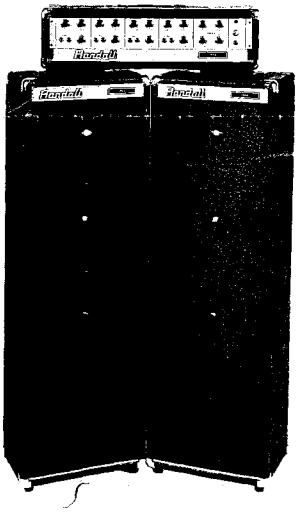


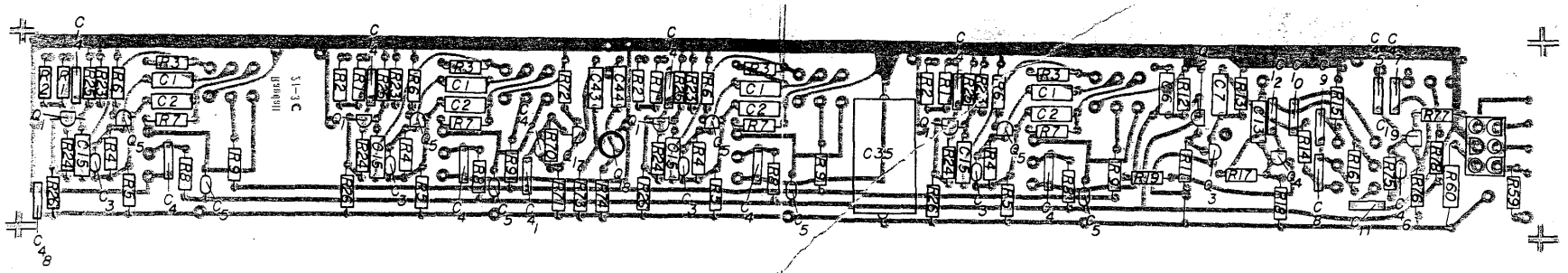
SPECIFICATIONS CPA-4

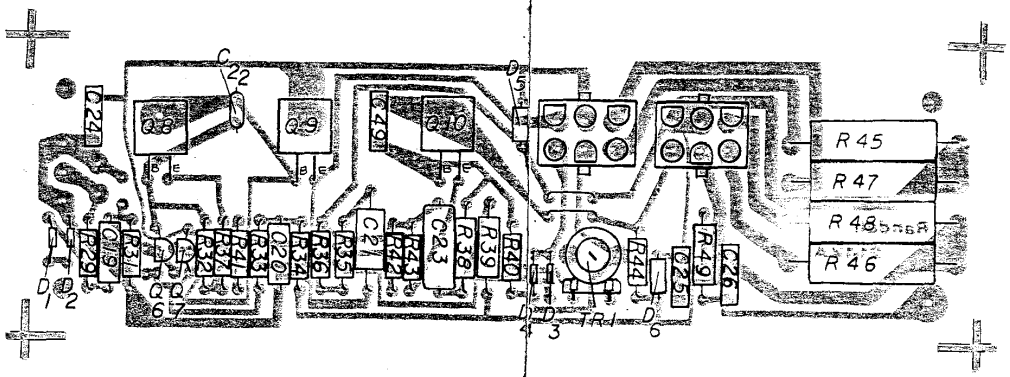
CIRCUITRY	Advanced Solid State virtually immune to short circuit, open circuit and overload operation.
POWER OUTPUT	2 ohm load, 180 watts RMS 4 ohm load, 121 watts RMS 8 ohm load, 80 watts RMS
SIGNAL TO NOISE RATIO	-60 dB below rated output
MINIMUM INPUT VOLTAGE FOR RATED OUTPUT	12mV with boost off, 3mV with boost on
MAXIMUM INPUT VOLTAGE	15 volts plus (infinite headroom)
NUMBER OF CHANNELS	4
INPUTS PER CHANNEL	2
GAIN DIFFERENCE BETWEEN HIGH AND LOW INPUTS	6 dB
CONTROLS EACH CHANNEL	Volume, Bass treble equalizer, reverb
MASTER CONTROLS	Volume (with 10 dB boost) Bass, Treble, Reverb
MONITOR OUTPUT VOLTAGE	.5 volts RMS
AC LINE VOLTAGE FOR RATED OUTPUT	125 VAC
SIZE	Console: 8" high, 25-3/4" wide, 9" deep Column: 49" high, 15-1/2" wide, 10" deep

DO NOT MAIL

CPA-4 PA System Owner's Manual







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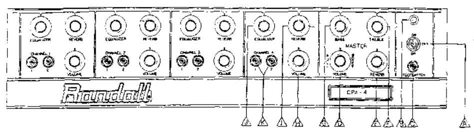
SCHEMATICS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



← FRONT

FRONT PANEL

A Power and Polarity Switch
This three position switch provides a means of turning the amplifier on and also reversing the line polarity. Select the on position which best grounds the amplifier at each different set up.

B Pilot Light
The pilot light is activated when the amplifier is turned on, and indicates that the amplifier is drawing current from the power source.

C Footswitch Jack
This jack is provided as a connection for a reverb footswitch. The reverb function of the amplifier can be turned on and off by means of the footswitch; however, the reverb can be used without a footswitch. If a footswitch is desired to turn the reverb on and off, simply preset the reverb to the required level, then plug the footswitch plug all the way in and use the footswitch as an on/off switch for the reverb.

D Master Volume Control
The Master Volume Control controls the overall volume level of all four channels simultaneously. This control allows the volume of all four channels to be increased or decreased without affecting the mix of each individual channel. An initial Master Volume Control setting of between 3 and 4 provides a good starting point. The Master Volume Control also incorporates a pull switch which, when pulled out provides a boost in the overall gain of the system of 10dB. This is a very valuable feature when high volume levels are required.

E Master Reverb Control
The Master Reverb Control controls the overall reverb level of all four channels simultaneously. This control allows the reverb level of all four channels to be increased or decreased without affecting the reverb mix of each individual channel. One important factor to remember is that regardless of the Master Reverb Control setting, at least one or more Channel Reverb Control must be on for any channel to have reverb. An initial Master Reverb Control setting of between 3 and 5 provides a good starting point.

F Master Treble Control
The Master Treble Control equalizes the overall high frequency response of all four channels simultaneously. This allows the high frequency response of all four channels to be increased or decreased as required without affecting the mix of each individual channel. A setting of 5 on the Master Treble Control is flat and affords a good starting point. Rotating the control toward 10 will increase the overall high frequency response and rotating the control toward 0 will decrease the overall high frequency response.

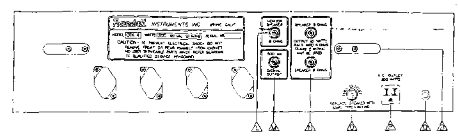
G Master Bass Control
The Master Bass Control equalizes the overall low frequency response of all four channels simultaneously. This allows the low frequency response of all four channels to be increased or decreased as required without affecting the mix of each individual channel. A setting of 5 on the Master Bass Control is flat and affords a good starting point. Rotating the control toward 10 will increase the overall low frequency response and rotating the control toward 0 will decrease the overall low frequency response.

Note: The Master Treble Control and Master Bass Control also function as effective anti-feedback controls. Decreasing the Master Treble control will help eliminate high frequency feedback. Decreasing the Master Bass Control will help eliminate low frequency feedback.

H Channel Volume Control
The Channel Volume Control controls the volume level of the individual channel independent of the other channels. After setting the Master Volume Control between 3 and 4 as discussed in D, the recommended initial Channel Control setting is between 2 and 4. The individual channel volume level can then be increased or decreased on each channel by use of the Channel Volume Control. The recommended settings given in the manual are only starting points as volume requirements will differ with each application.

I Channel Reverb Control
The Channel Reverb Control controls the reverb level of the individual channel independent of the other channels. The recommended initial setting of the Channel Reverb Control is between 5 and 7, depending on personal preference.

BACK →



BACK PANEL

J Equalizer Control
The Equalizer Control on the RPA-2 Sound System equalizes the tonal response of the individual channel. The Equalizer Control acts as a Bass boost on a setting of 0 and a Treble boost on a setting of 10. The desired Bass/Treble mix can be found at some setting between 0 and 10.. The recommended initial setting for the Equalizer Control is 3. Adjust from that point to suit personal preference.

K Input Jacks
Two Input Jacks are provided on each channel as a means of connecting the signal source to the CPA-4 Sound System. For most applications the signal source will be a microphone. Since the CPA-4 is a high impedance system, only high impedance microphones should be used. Input Jack #1 on each channel will be used with most microphones. The gain characteristic of this input is 6dB higher than input #2. Input Jack #2 provides connection for microphones whose input signal is so high as to cause an overload (front end distortion) when plugged into input #1. It is possible to use both input jacks at the same time by plugging a microphone into each one. When both [illegible] are used at the same time, the gain characterist[illegible] are equalized and both microphone signals wil[illegible] total of eight inputs are provided so a total of [illegible] phones can be used.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

L Monitor Speaker Jack
The Monitor Speaker Jack provides power to an external monitor speaker. No other amplification is required. The recommended impedance of the external monitor speaker to be used with this jack is 8 to 16 ohms.

M Signal Output
The Signal Output Jack is provided as a means of supplying a low impedance signal source to another amplifier or tape recorder. The Signal Output Jack provides a signal source of up to 500 mV.

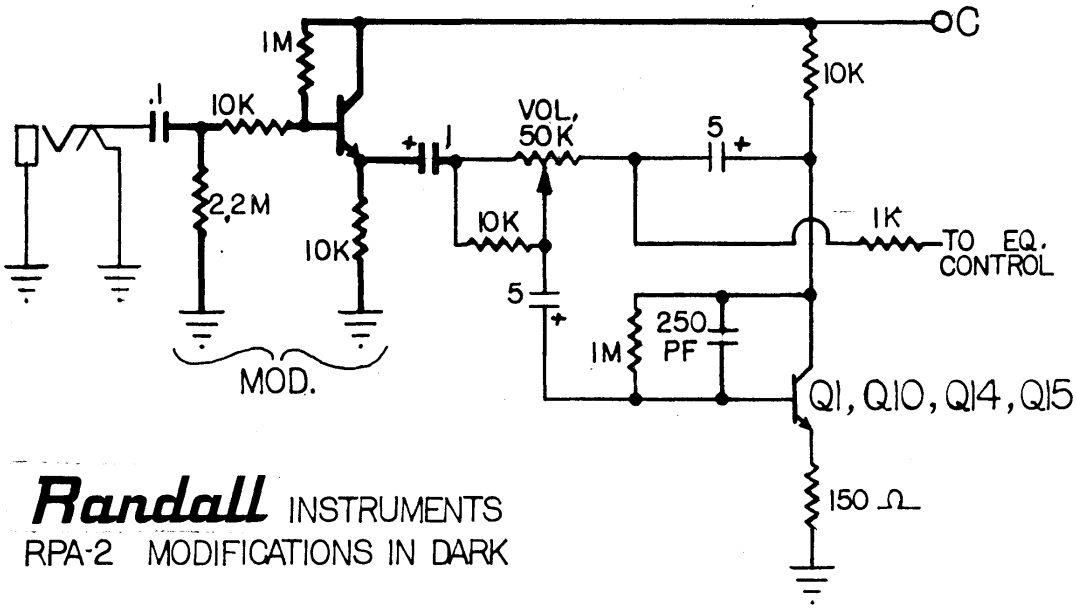
N Speaker Jacks
The Speaker Jacks are used to connect external speaker cabinets of not less than 8 ohms each.

O Circuit Breaker
Th[illegible]ker is actually a mechanical fuse and protects the amplifier from extreme overload conditions. [illegible] ing in on the [illegible] Circuit Breaker button [illegible] need not [illegible] reset unless caused to trip by an extreme overload. If the Circuit [illegible] and cannot be reset, it indicates trouble that should be investigated by a qualified technician.

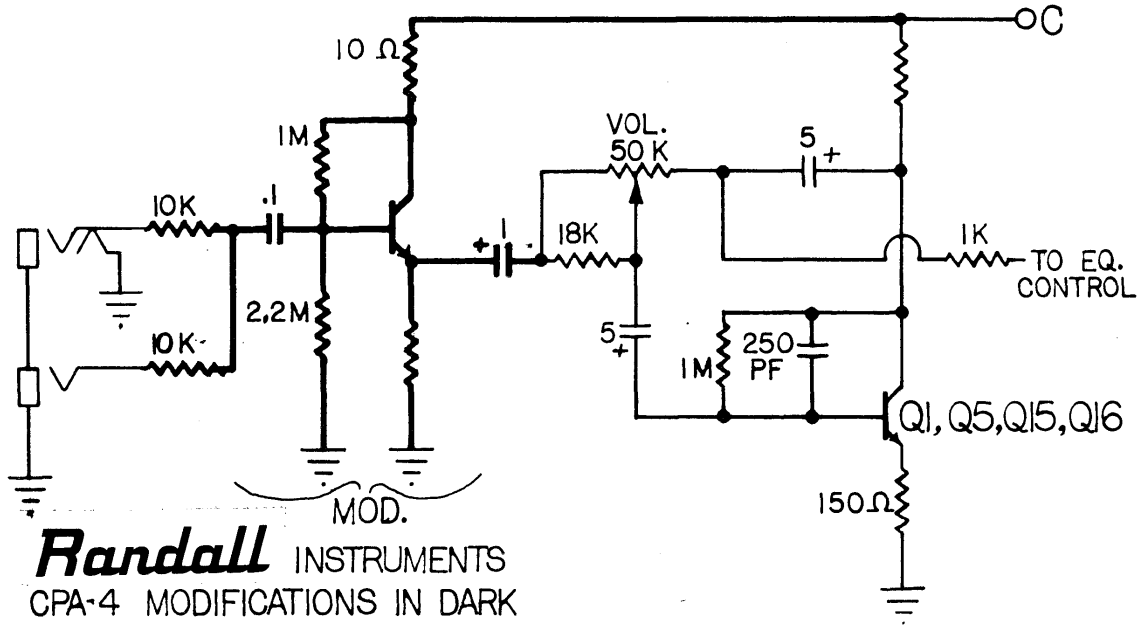
P AC Convenience Outlet
Can be used as an external power source to supply any piece of equipment requiring 115-125 VAC and 50/60 HZ, 200 watts. This outlet is not switched from the on/off switch.

Q AC Line Cord
To be connected to any external power source capable of supplying 115-125 VAC at 50/60 HZ, 200 watts.

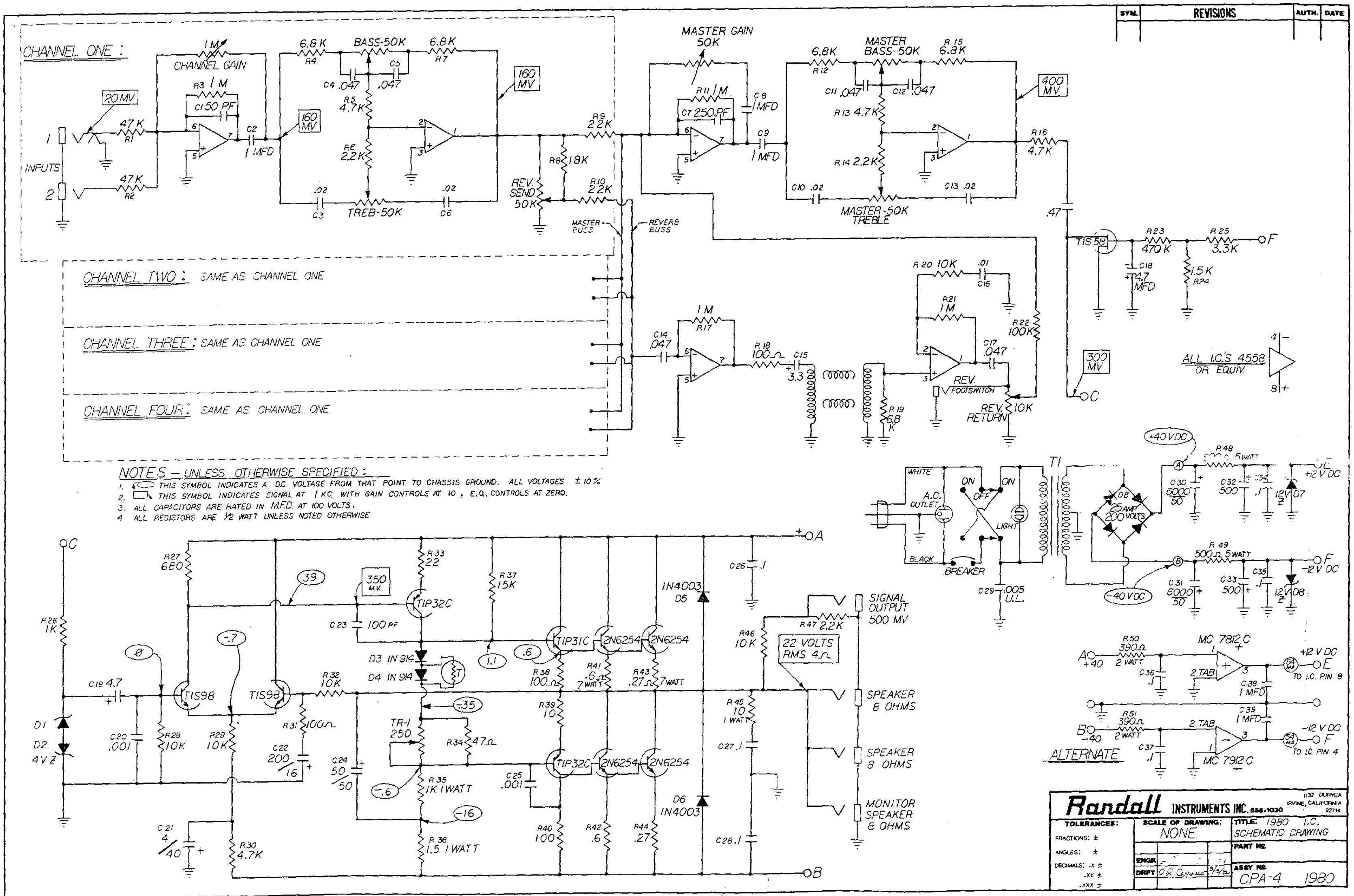
R Cord Wrap
The Cord Wrap is provided to allow storage of the AC Line Cord when the CPA-4 Sound System is not in use.



Randall INSTRUMENTS
RPA-2 MODIFICATIONS IN DARK



Randall INSTRUMENTS
CPA-4 MODIFICATIONS IN DARK


CHANNEL ONE :
INPUTS
20MV
47K R1
47K R2
1M CHANNEL GAIN
R3 1M
C1 50 PF
C2 1 MFD
160 MV
6.8K R4
BASS-50K
6.8K R7
C4 .047
C5 .047
R5 4.7K
R6 2.2K
TREB-50K
C3 .02
C6 .02
R9 22K
R8 18K
R10 22K
REV. SEND 50K
MASTER BUSS
REVERB BUSS
CHANNEL TWO : SAME AS CHANNEL ONE
CHANNEL THREE : SAME AS CHANNEL ONE
CHANNEL FOUR : SAME AS CHANNEL ONE
MASTER GAIN 50K
R11 1M
C7 250 PF
C8 1 MFD
C9 1 MFD
6.8K R12
MASTER BASS-50K
R15 6.8K
C11 .047
C12 .047
R13 4.7K
R14 2.2K
C10 .02
C13 .02
MASTER-50K TREBLE
400 MV
R16 4.7K
.47
TIS 58
R23 470K
R25 3.3K
C18 4.7 MFD
1.5K R24
300 MV
ALL I.C.'S 4558 OR EQUIV
1M R17
C14 .047
R18 100Ω
C15 3.3
R20 10K
.01 C16
R21 1M
R22 100K
C17 .047
REV. FOOTSWITCH
R19 6.8K
REV. RETURN 10K
NOTES - UNLESS OTHERWISE SPECIFIED :
1. THIS SYMBOL INDICATES A D.C. VOLTAGE FROM THAT POINT TO CHASSIS GROUND. ALL VOLTAGES ± 10%
2. THIS SYMBOL INDICATES SIGNAL AT 1 KC. WITH GAIN CONTROLS AT 10, E.Q. CONTROLS AT ZERO.
3. ALL CAPACITORS ARE RATED IN MFD. AT 100 VOLTS.
4. ALL RESISTORS ARE 1/2 WATT UNLESS NOTED OTHERWISE
T1
WHITE
A.C. OUTLET
ON
OFF
LIGHT
BLACK
BREAKER
C29 .005 U.L.
D8 25 AMP 200 VOLTS
+40VDC
-40VDC
R48 5 WATT
C30 6000 50
C32 500
C34 .1
12V D7
+12V DC
R49 500Ω 5 WATT
C31 6000 50
C33 500
C35 .1
12V D8
-12V DC
R50 390Ω 2 WATT
+40
C36 .1
2 TAB
MC 7812 C
C38 1 MFD
+12 V DC
TO I.C. PIN 8
R51 390Ω 2 WATT
-40
C37 .1
MC 7912 C
C39 1 MFD
-12 V DC
TO I.C. PIN 4
ALTERNATE
R26 1K
D1
D2 4V Z
C19 4.7
C20 .001
R28 10K
TIS98
R27 680
39
Ø
-.7
R29 10K
C21 4/40
R30 4.7K
R31 100Ω
C22 200/16
R32 10K
C24 50/50
R33 22
TIP32C
350 MV
C23 100 PF
D3 IN 914
D4 IN 914
-.35
TR-1 250
R34 47Ω
R35 1K 1WATT
-.6
-16
R36 1.5 1 WATT
R37 15K
1.1
.6
TIP31C
2N6254
R38 100Ω
R39 10
R41 .6Ω 7 WATT
R43 .27Ω 7 WATT
TIP32C
C25 .001
R40 100
R42 .6
R44 .27
1N4003 D5
D6 1N4003
C26 .1
R46 10K
R47 2.2K
22 VOLTS RMS 4Ω
R45 10 1 WATT
C27 .1
C28 .1
SIGNAL OUTPUT 500 MV
SPEAKER 8 OHMS
SPEAKER 8 OHMS
MONITOR SPEAKER 8 OHMS
SYM.
REVISIONS
AUTH.
DATE
Randall INSTRUMENTS INC. 556-1030
1132 DURYEA IRVINE, CALIFORNIA 92714
TOLERANCES:
FRACTIONS: ±
ANGLES: ±
DECIMALS: .X ± .XX ± .XXX ±
SCALE OF DRAWING: NONE
TITLE: 1980 I.C. SCHEMATIC DRAWING
PART NO.
ENGR
DRFT
ASSY NO. CPA-4 1980