UNCLASSIFIED

TECHNICAL MANUAL

for

LINEAR POWER AMPLIFIER MODEL PAL-1K(B2) (AMPLIFIER POWER SUPPLY GROUP, AN/URA-36( ))

THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y. OTTAWA, ONTARIO

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LINEAR POWER AMPLIFIER

MODEL PAL-1K(B2)

AN/URA-36()

Linear Power Amplifier PAL-1K(B 2) is similiar to Linear Power Amplifier PAL-1K(A); the PAL-1K(A) instruction manual will apply with the following exceptions:

a. All reference to PAL-1K(A) should be changed to PAL-1K(B2).

b. All reference to RFD-1A should be changed to RFD-1B.

c. All reference to PS-5 should be changed to PS-5B.

d. Electrical characteristics given in table 1-1 should be changed to comply with table 1 of this addendum.

TABLE 1. ELECTRICAL CHARACTERISTICS PAL-1K(B2)

ITEM	CHARACTERISTICS
FREQUENCY RANGE:	2 to 32 mc continuous, bandswitched. (For operation to 1.75 mc, see OPTIONS/ ACCESSORIES).
MODES OF OPERATION:	CW, MCW, AM, AME, SSB, FSK and FAX. *
POWER OUTPUT:	At least 1000 watts PEP. 1000 watts CW and FSK.
OUTPUT IMPEDANCE:	50 ohms nominal. Pi-L network will match a load with up to a 2:1 VSWR.
INPUT IMPEDANCE:	70 ohms nominal.
TUNING:	All tuning and bandswitching accomplished from front panel (no plug-in components).
SIGNAL/DISTORTION RATIO:	1. At least 40 db below either tone of standardtwo-tone test at 1 kw PEP, at

* With appropriate exciter.

TABLE 1. ELECTRICAL CHARACTERISTICS PAL-1K(B2)(cont)

ITEM	CHARACTERISTICS
	frequencies below 30 mc. 2. At least 35 db below either tone of standard two-tone test at 1 kw PEP 30 to 32 mc.
HARMONIC SUPPRESSION:	Second harmonic at least 40 db down, all others at least 50 db down from full PEP output.
ALDC:	An Automatic Load and Drive Control Circuit is incorporated to generate a DC voltage for external control of an associated exciter. The DC voltage varies from 0 to -14 volts and can be extended back to the exciter to provide improved linearity and to minimize distortion.
METERING:	Front-panel meters provide indications of the operation of all critical circuits.
ENVIRONMENTAL CONDITIONS:	Designed to operate in any ambient temperature between 0^{o} to 50^{o} C, and any value of humidity up to 90%.
COOLING:	High capacity, filtered, forced air cooling.
SAFETY FEATURES:	Full interlock protection. Full overload and fuse protection.
PRIMARY POWER REQUIREMENTS:	115/230 volts, single phase, 50/60 cycle AC, approximately 2500 watts under full power output, 400 watts on standby.

e. Figure 5-4 should be changed to show PA BANDSWITCH and PA LOADING switch modifications as indicated in figures 1 and 2 of this addendum.

f. The parts list (section 7) should be changed in accordance with items 1 thru 4 below:

1. On page 7-2, delete symbol C244.
2. On page 7-4, delete symbols C272 and C274.
3. On page 7-4, add symbols C291 through C296 as given in table 2 of this addendum.

7-18-8-0

4. On page ~~7-8,~~ delete symbols V401 and V402 and add symbols as given in table 2 of this addendum.

TABLE 2. PARTS LIST

SYMBOL	DESCRIPTION	TMC PART NO.
C291	CAPACITOR, PORCELAIN, HIGH VOLTAGE: 2,000 uuf, +5%; 2,000 volts RMS at 500 WVDC; current rating 22 amps RF.	CC113-2-202J
C292	Same as C291.	
C293	CAPACITOR, PORCELAIN, HIGH VOLTAGE: 1,000 uuf, +5%; 2,000 volts RMS at 500 WVDC; current rating 22 amps RF.	CC113-1-102J
C294	Same as C293.	
C295	Same as C291.	
C296	Same as C291.	
CR401	Half Wave Rectifier	DD134-1
CR402	Half Wave Rectifier	DD134-1

g. The PA BANDSWITCH and PA LOADING switch circuitry of figure 8-1 (page 8-1/8-2) should be changed in accordance with figure 3 of this addendum.

h. Replace figure 8-3 with the schematic diagram provided with this addendum.

I on Page 1-4 Table 1-2 ~~Change~~ Delete ~~Delete~~ V401 + V402 and add symbols as given in Table 2 of this addendum.

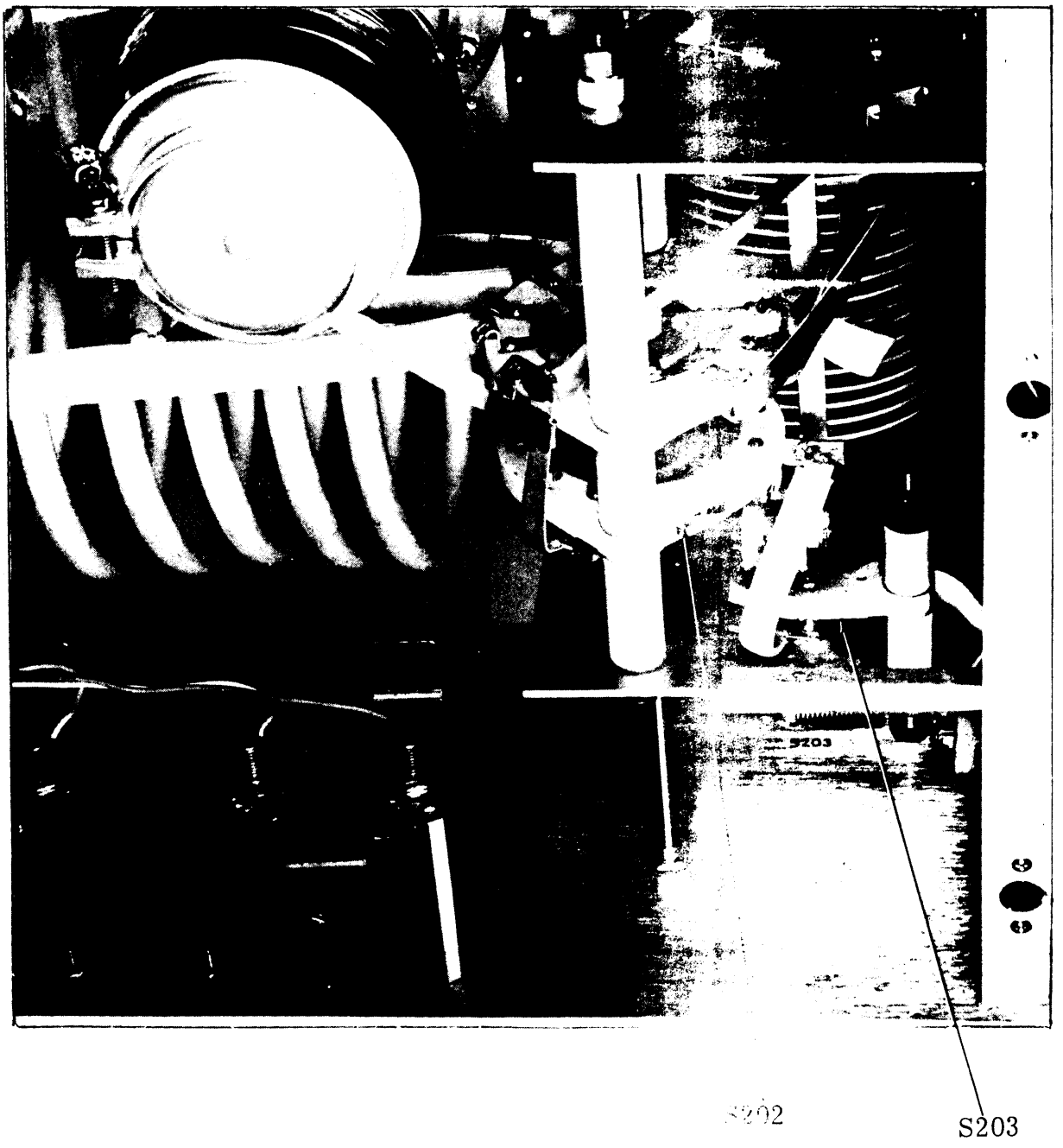
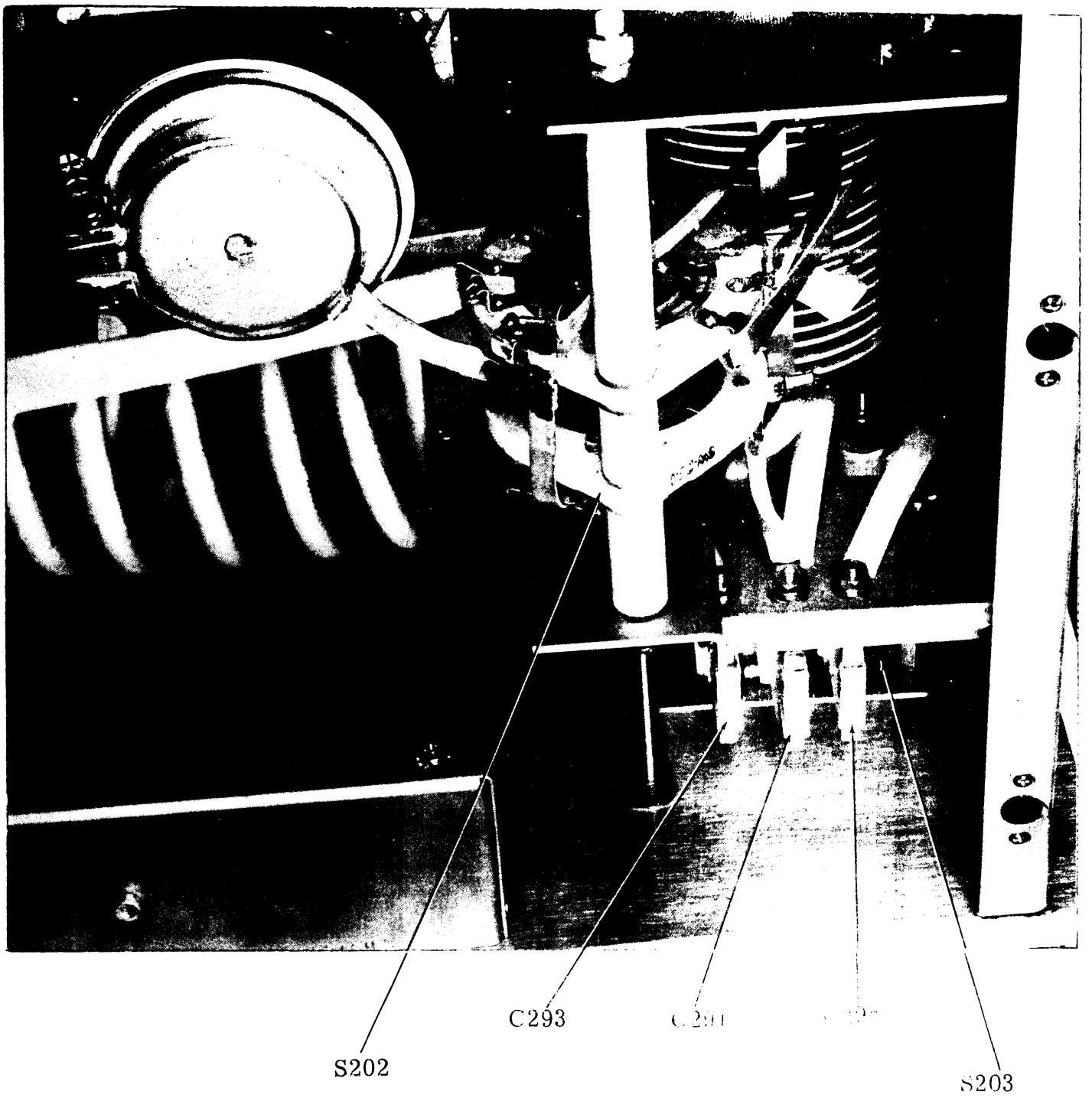


Figure 1. RFD-1A

655.3-2



655.3-1

Figure 2. RFD-1B

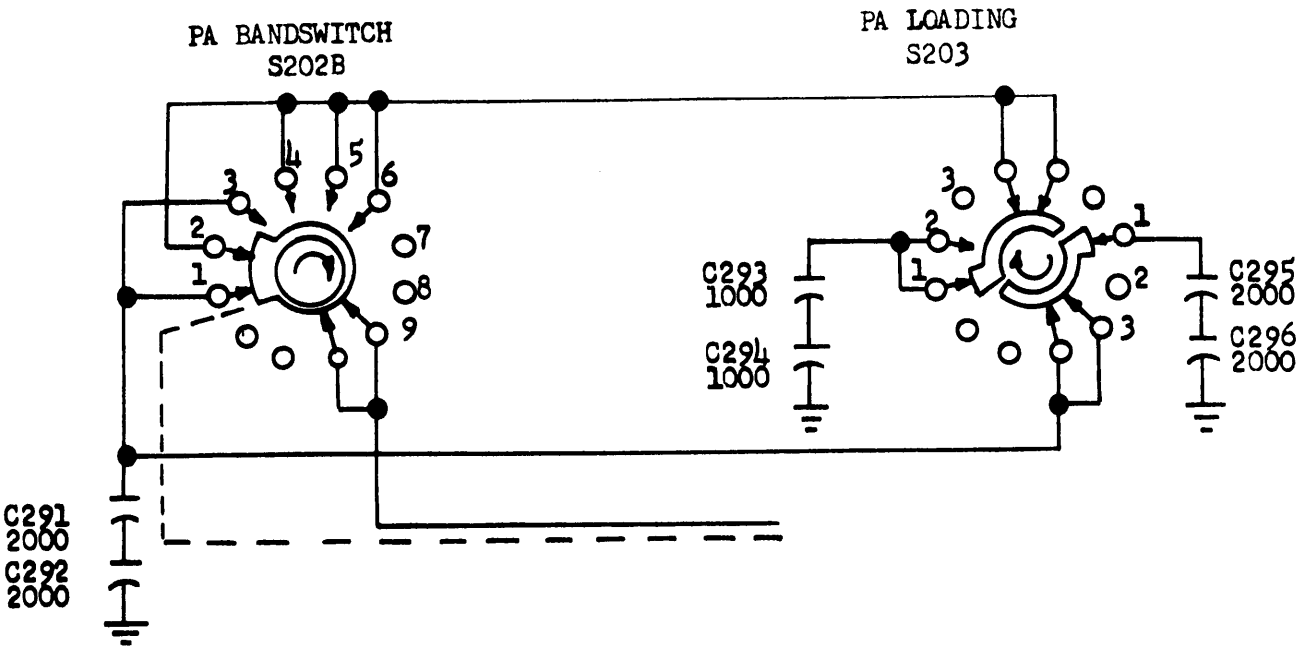

PA BANDSWITCH
S202B
PA LOADING
S203
C291
2000
C292
2000
C293
1000
C294
1000
C295
2000
C296
2000

Figure 3.

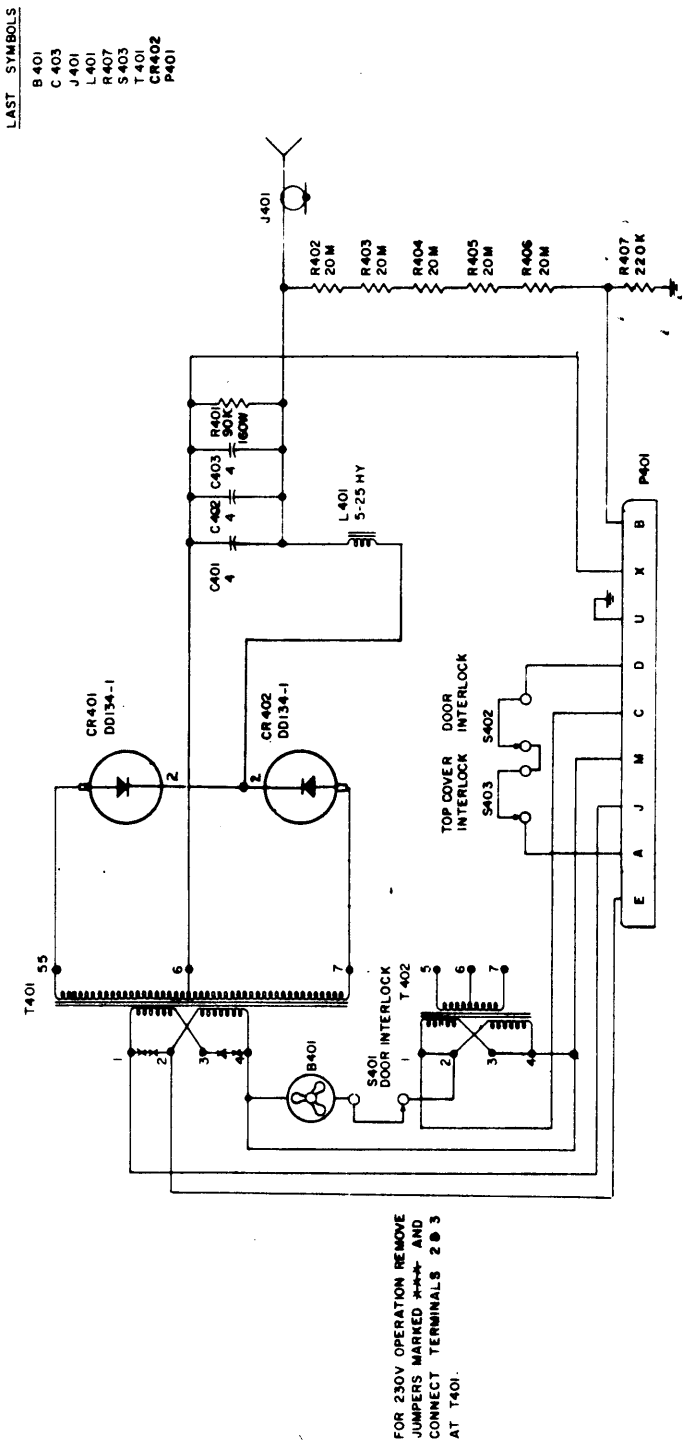


Figure 8-3. Schematic Diagram, Kit-261 (PS-5B)