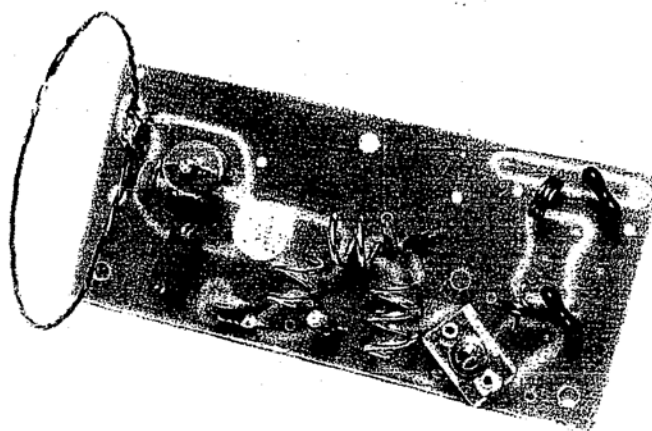


MAGGIORE ELECTRONIC LABORATORY

Hi Pro

OPERATING AND MAINTENANCE MANUAL



Hi Pro PAV-1 POWER AMPLIFIER

1. EQUIPMENT DESCRIPTION -The PAV-1 is an RF power amplifier which produces a minimum output of 25* watts with a nominal input drive of 3 watts. The unit covers the frequency range of 132-174 MHz and was designed primarily as a booster amplifier accessory for the Maggiore Electronic Lab. EV-1 transmitter exciter. Any exciter with a 50 ohm output, capable of meeting the drive and emission requirements, however, may be used.

The PA operates from a nominal 13.8 VDC source. In most cases, a battery is used as the main source of supply with a D.C. supply operating from the A.C. mains to provide for charging of the battery.

The amplifier incorporates a single power transistor, type MRF240, operated in Class C. An input network, with a high efficiency trifilar wound coil, T1 provides a 50 ohm matching load and a means of coupling the exciter output to the amplifier. The input circuit is tuned to resonance by means of capacitor C2. The output circuit is tuned with capacitors C6 and C7. The output of the amplifier is fed to the antenna through a low pass filter consisting of C13, L4, C14, L5 and C15.

TUNE UP PROCEDURE

Equipment - A 50 ohm non-inductive load and wattmeter (5w and 30 watt scales, preferable).

DC Ammeter, 0-2A, connected in series with the + volts lead to measure collector input current.

Procedure - Tune up driver unit first in accordance with its prescribed procedure. Terminate driver output in wattmeter/load. Adjust drive to approximately 3 watts (3.3 watts, maximum). This is accomplished with the EV-1 by tuning the output network, so as to produce the required output with the lowest exciter collector input current. Connect driver output to PA.

Adjust PA input capacitor, C2, for an increase in power amplifier collector current.

Adjust C10 for maximum current. Output power on the wattmeter/load should be indicated at this time.

Adjust C11 for maximum output power indication.

Re-adjust C2 for maximum output.

Alternately re-adjust C10 and C11 for maximum output with minimum input (lowest collector current reading).

*Note These instructions also will apply to the 15 watt amplifier.

PARTS LIST

Maggiore Electronic Laboratory

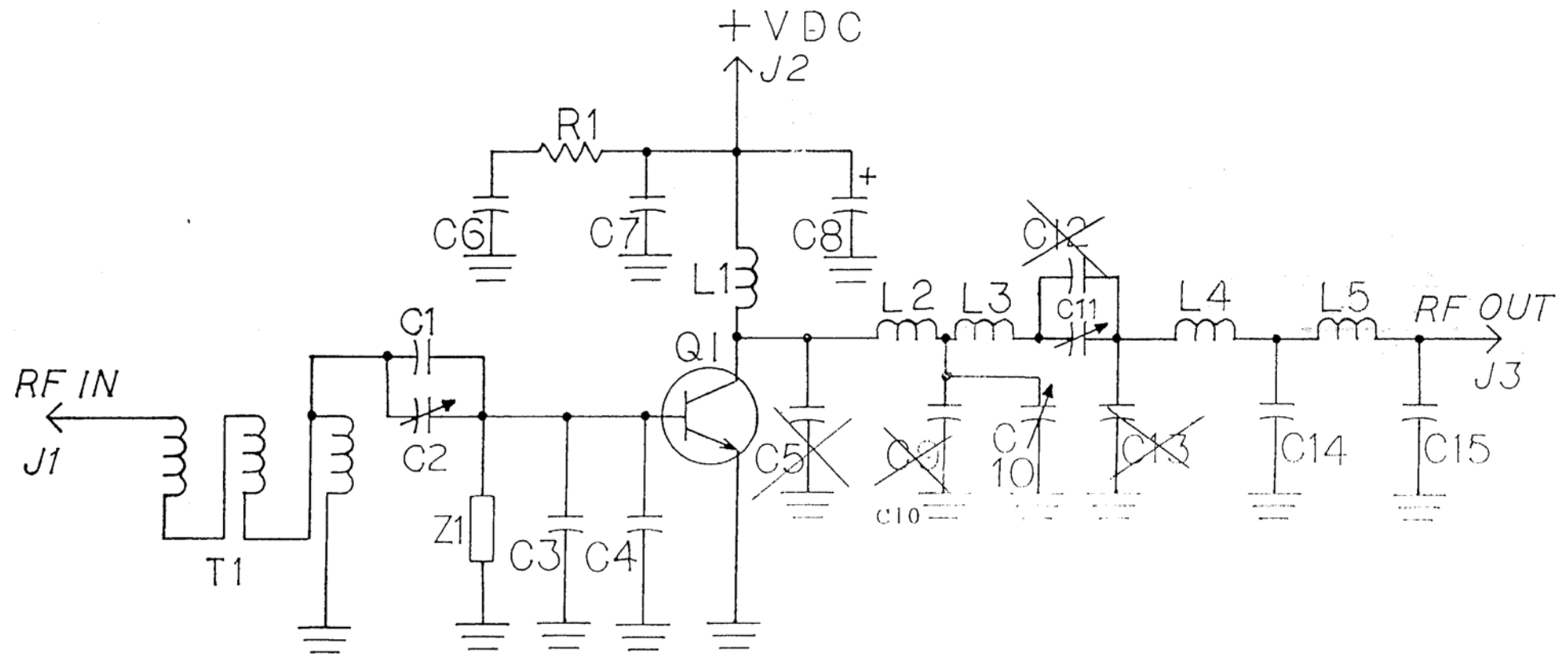
CONTRACT 1

LIST TITLE:

Hi Pro PAV-1 Power Amplifier

AUTHENTICATION:

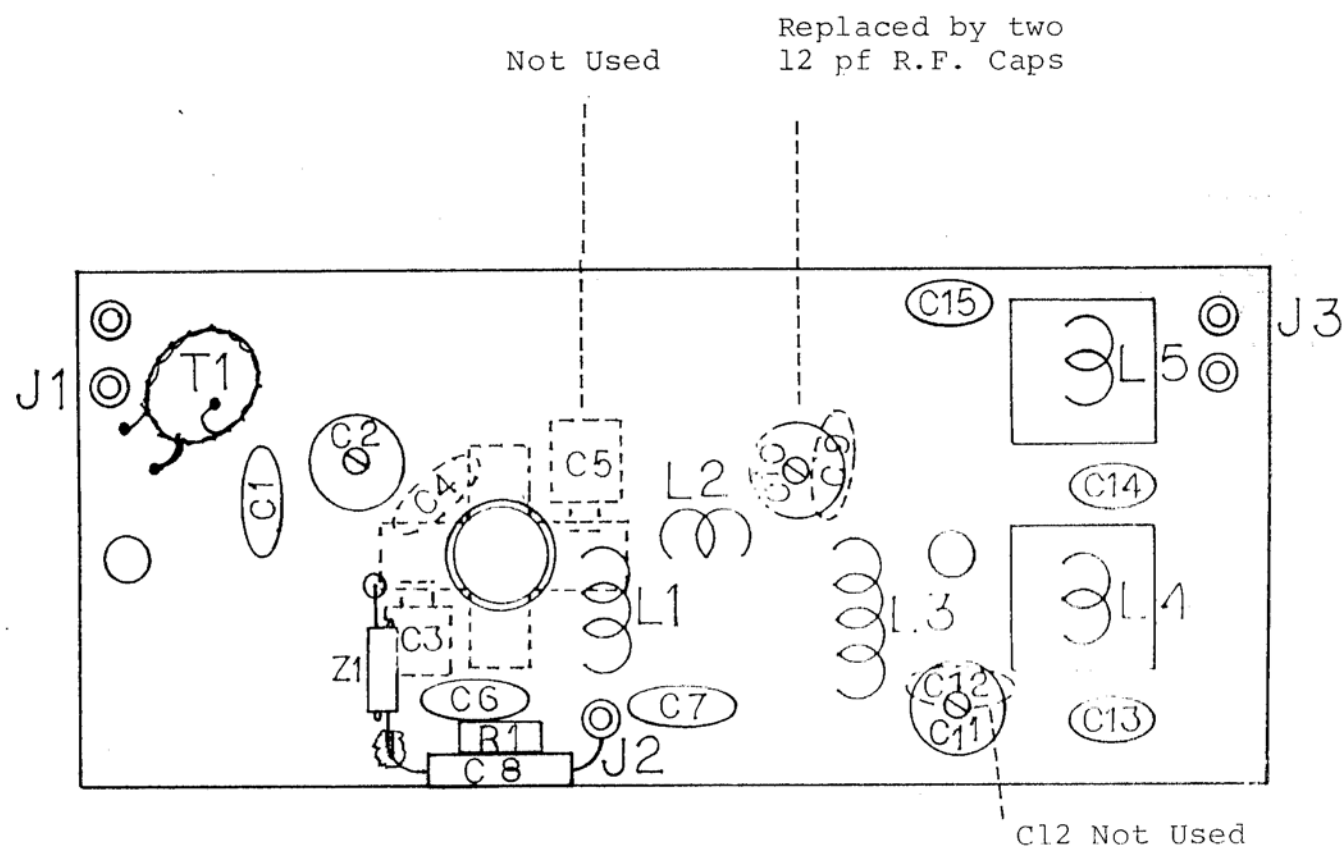
DRAWING OR DOCUMENT NUMBER	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
C1		22 PF CERAMIC DISC
C2		10-40 PF TRIMMER
C3		150 PF DISC
C4		150 PF CERAMIC DISC
C6		.02 MF CERAMIC DISC
C7		.001 CERAMIC DISC
C8		10 UF ELECTROLYTIC
C10		2-12 PF R.F. CAPS
C11		2-13 PF TRIMMER
C14		22 PF S.M.
C15		22 PF S.M.
L1		P.A. COIL
L2		P.A. COIL
L3		P.A. COIL
L4		FILTER COIL
L5		FILTER COIL
Q1		MRF 238 TRANSISTOR
T1		9:1 TRANSFORMER
Z1		FERRITE CHOKE
R1		10 Ohm $\frac{1}{4}$ Watt



HI PRO V.H.F. AMPLIFIER

SIZE	CODE IDENT NO.	DRAWING NO.
	PAV-1	2D0583
SCALE	<i>f.m.</i>	SHEET 3

Maggiore Electronic Laboratory



HI PRO V.H.F. AMPLIFIER

SIZE	CODE IDENT NO.	DRAWING NO.
	PAV-1	2E0583
SCALE		SHEET 4
	F.M.	