

LF Engineering Co.

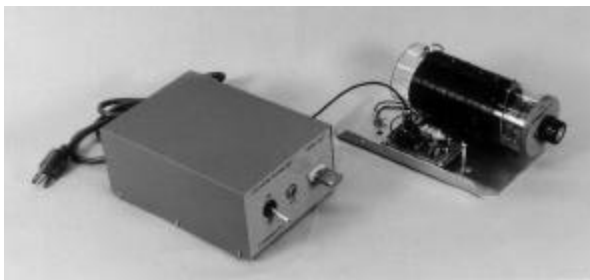
Model TM-2 1750 Meter One Watt CW Transmitter

Status: Discontinued

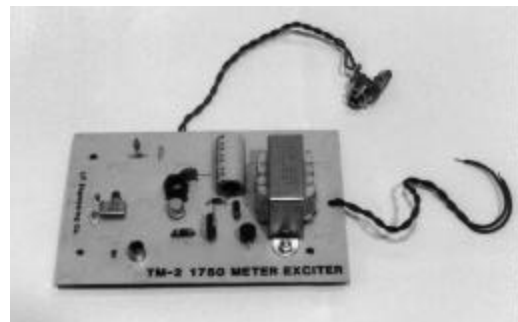
Part Description	Source
Litz Wire, 10/40 Nylon wrapped	Kerrigan Lewis Mfg Co.
PVC Coil Form, 2"x 8" (sch 40, 2" I.D.)	Plumbing Supply Store
Electronic Components	Mouser Electronics, Digi-Key Electronics

Notes on making the litz wrapped antenna tuning coil:

1. Wrap the litz wire evenly around the length of the coil form, do not overlap windings. This process takes time, take your time and do it right.
2. Use contact cement to hold the windings in place. Just brush a light coating over each inch of finished work to hold it in place during the winding process. When complete, lightly coat entire length of the coil with a light coat of contact cement.
3. During winding process, create an electrical tap every inch by twisting a pinch of litz wire from the coil. Later, scrape the taps clean of insulation and tin with solder. These will be used for tuning with the output jumper wire.



Exciter and PA/Tuning Coil



Exciter pc board

TM-2 1750 METER CW TRANSMITTER

by LF Engineering Co.

The TM-2 transmitter is for use in the 160 - 190 kHz (1750 meter) experimenters band. The TM-2 uses a selectable divide by 32 or 16 circuit and a broadly resonant driver. Crystals between 2560 to 3040 kHz and 5120 to 6080 kHz will cover the entire band. Keying is accomplished by gate keying of the first divider network which insures clean clickless cw. The power amplifier can run up to 2 watts maximum input. A single coaxial cable supplies both the PA voltage and the RF drive. The power amplifier is a push-pull complementary high voltage transistor configuration with a low pass filter at the output feeding the antenna loading coil.

To conform with FCC regulations, the TM-2 is in a partial kit form. The driver section is fully assembled as is the P.A. section. You must connect a power cord and fuse for transmitter operation.

1. Connect a 120 VAC cord and plug to one of the black wires on the primary of the power transformer.
2. Connect a 1/8 amp fuse to the other black lead and a switch in series with the fuse rated for at least 1 amp at 110 VAC.
3. Connect the second 120 VAC cord lead to the switch and a ground wire to the chassis grounding lug.
4. Connect your antenna to the antenna end or hot side of the antenna loading coil.
5. Connect the coaxial cable provided to the PA board and the other end to the RF output of the main driver unit. CAUTION: Be sure the cable has no shorts, check with an ohm meter if possible. A short could damage the power supply.
6. Plug the TM-2 into a 120 VAC 60 Hz outlet. Turn the unit on and plug in a key or keyer. Monitor the signal on your receiver.
7. The supplied crystal will permit you to operate on 187.5 kHz. 1750 meter frequencies can be determined by the formulae:

$$\text{Xtal Freq.} = \text{Desired LF Freq.} \times 32 \text{ or } 16 \text{ (N16,N32)}$$

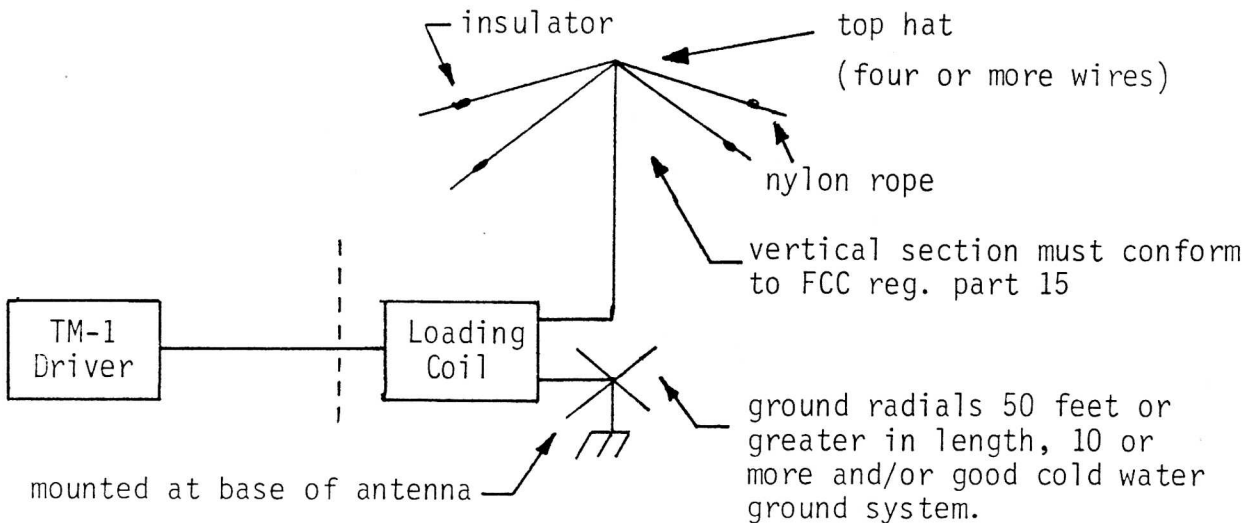
$$\text{Trans. Freq.} = \text{Xtal Freq.}$$

$$\text{-----}$$
$$32 \text{ or } 16 \text{ (N16,N32)}$$

LF Engineering Co. Inc.
17 Jeffry Road
East Haven, CT 06513
(203) 467-3590

TUNING YOUR ANTENNA

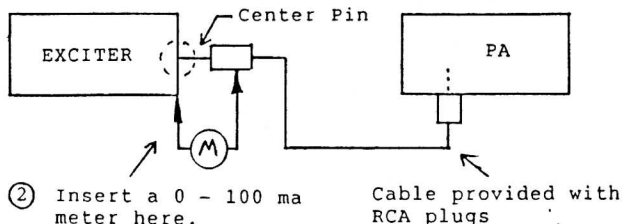
It is recommended to use a top hat on your vertical antenna for best efficiency. A good ground system is also required. The illustration below describes the method used:

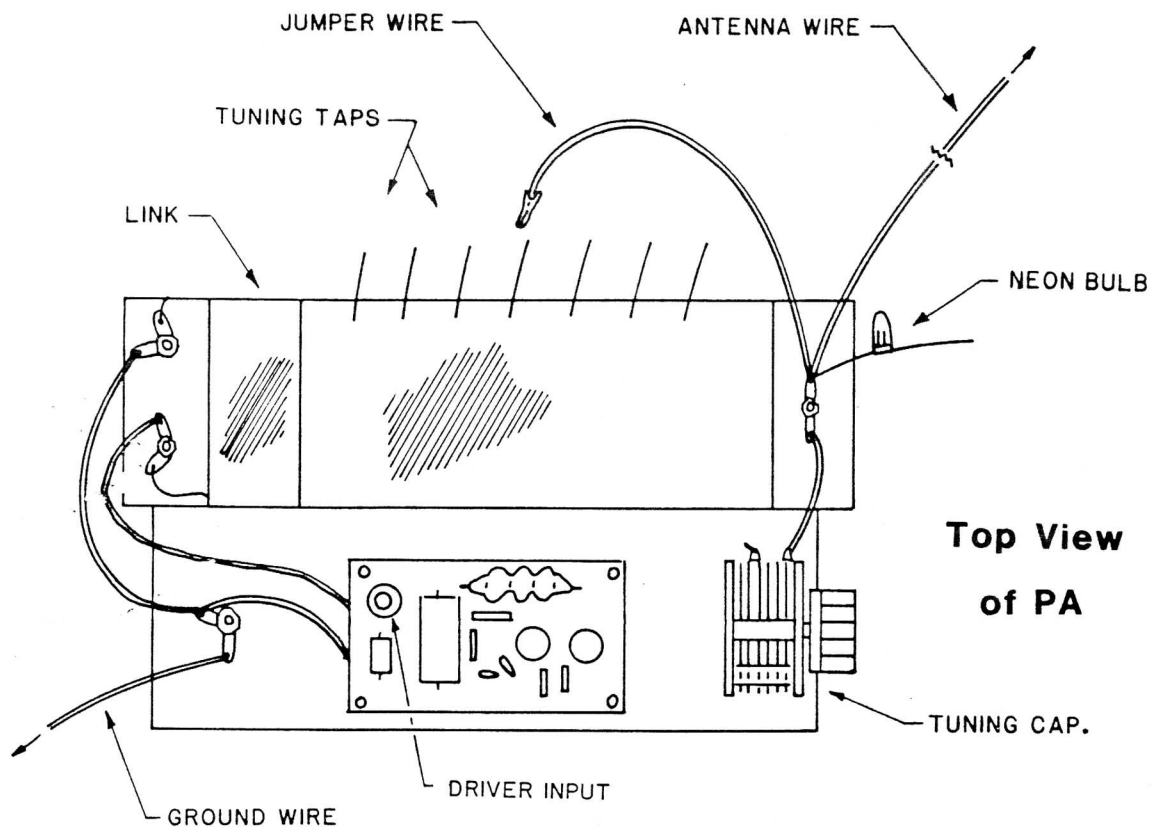


Note: The limited length of your antenna can be extended if you conform to part 15.202 $\frac{2400}{F(\text{kHz})} = 13 \mu\text{V/ meter at 1000 ft.}$

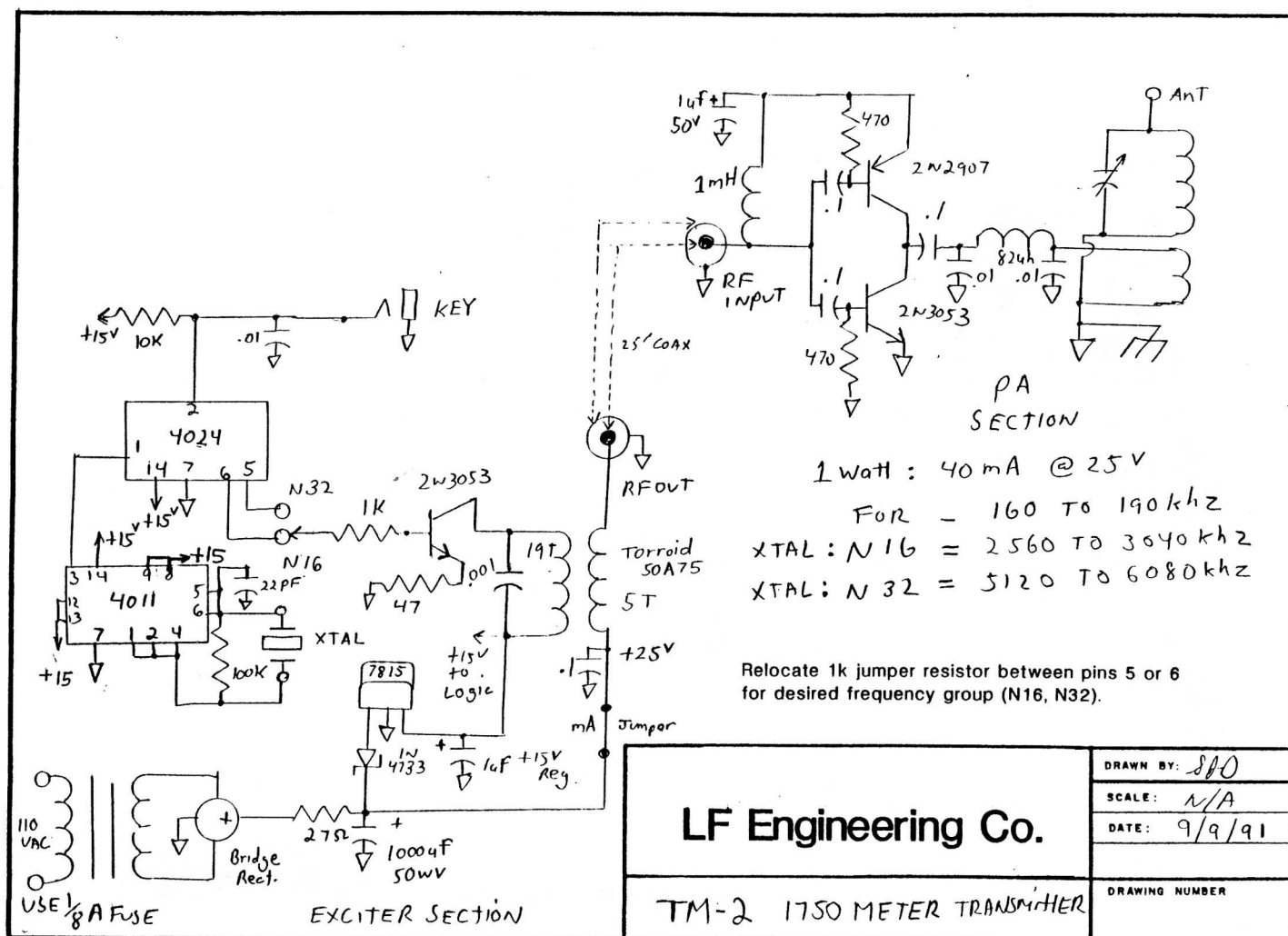
1. It is recommended that a remote key or switch to your driver be used when tuning up your antenna.
2. Use the jumper wire provided to short the proper coil tap when tuning your antenna. Connect the jumper wire to any of the taps provided on the antenna coil for maximum output. Use a field strength meter or a NE-2 neon bulb connected to the hot end of the antenna coil as shown. Tune for maximum meter indication and/or bulb brilliance, selecting the proper taps while keeping your tuning capacitor (least meshed) at a minimum capacitance as possible but with peaked maximum output. This will insure best efficiency. **CAUTION:** keep driver key or switch off when selecting coil taps.
3. When the proper tap is found, solder it in place.
4. Tune for maximum output with a field strength meter or with the neon bulb provided. The current can be measured on the ground side of the cable. 50 ma. at 20 volts is typical for a one watt (factory set) input.

① Pull out connector to open ground side, leave center pin connected.





Top View
of PA



TM-2 1750 METER CW TRANSMITTER

SPECIFICATIONS

DC input 1 watt (factory set)
2nd and 3rd harmonic level ≈ 40 dB down
Power input 6 watts, 120 vac, 60 Hz
Crystal Frequency for operation ... 187.5 kHz
Fuse..... 1/8 amp 3AG

LF Engineering Co. does not claim responsibility for product misuse.

WARRANTY

LF Engineering Co. warrants that, at the time of shipment the products manufactured by LF Engineering Co. are free from defects in material and workmanship. LF Engineering Co. obligation under this warranty is limited to replacement or repair of such products within 1 year from date of shipment.

Copyright 1992 by LF Engineering Co. Inc.
All rights reserved.

Printed in U.S.A.

LF Engineering Co. Inc.
17 Jeffry Road
East Haven, CT 06513
(203) 467-3590