

Instructions for use of MK9A Transmitter

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I. Introduction:

The MK9A transmitter is a portable, low power, single-frequency, pulsed transmitter designed for rugged service in a variety of environmental conditions. The transmitter and a 3.6V lithium battery are housed in a hermetic canister, with a mounting tab for convenient mounting. The 18" long permanently attached antenna is made of flexible, Teflon® [PTFE] coated wire. The MK9A emits a train of unmodulated RF pulses, with pulse width, pulse period, and frequency factory configurable. For operation under MURS rules, the transmitter may be factory programmed to any of the following frequencies (151.820, 151.880, 151.940, 154.570, and 154.600MHz).

II. Operation:

Antenna –

The MK9A antenna is constructed of PTFE coated multi-strand stainless steel cable and is designed for easy deployment in a variety of configurations. Note that best radiated power will be obtained when the antenna is deployed in open air, away from conductive objects. The antenna can be coiled, placed near conductive objects, or otherwise compacted without damage to the unit. However, the effective range of the transmitter may be reduced as a result.

On-Off Function –

The only user-controlled feature of the MK9A is the on-off function. Placing a magnet over the arrow marker on the package (see fig 1a) causes the transmitter to shut down. Removing the magnet initiates the transmitter. Note that the transmitter indicates a clean restart by sending a series of 5 pulses in rapid succession when the magnet is removed.

Programming and Initialization –

The following parameters of the MK9A are factory configurable:

- Frequency (select from any of the 5 MURS frequencies)
- RF Pulse Width (15-250msec) 20msec standard
- Pulse Period (400-2000msec) 800msec standard

Maintenance-

Since the MK9A is sealed in a hermetic package, it is not user serviceable. Contact the factory for reprogramming or battery replacement.

Notice for portable use: This device should only be used at a distance of 20cm or more to comply with FCC's R.F. Hazard Exposure requirements.

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III. MK9A TRANSMITTER SPECIFICATIONS:

Available Frequencies	151.820, 151.880, 151.940, 154.570, 154.600MHz
Frequency Tolerance	±2ppm over operating temperature range
Temperature Range	Operating: -30 to +50°C Storage: -40 to +60°C
Modulation Type	1k0N0N (Unmodulated RF pulses)
Pulse Width	20msec standard (15-250msec upon request)
Pulse Period	800msec standard (400-2000msec upon request)
Power Output	20mW maximum peak at 3.6V supply into 100Ω load
Harmonic Suppression	better than 40dB
Spurious Emissions	<-40dBc
Power Supply	Internal 3.6V Lithium Cell (factory replaceable)
Battery Lifetime	More than 3 years continuous operation* *Standard Pulse Width and Pulse Rate. Lifetime will vary with pulse width and pulse rate settings
Dimensions	Housing: 3.0 x 2.0 x 1.5" (76 x 51 x 38mm) Mounting Tab: 4.55 x 1.6 x 0.03" (116 x 41 x .08mm) Mounting Holes: 4ea / 0.20"dia, 4.05 x 1.00" pattern
Antenna:	18"L x 0.087"dia (450mm L x 2mm dia) (multi-strand stainless steel whip, PTFE insulation)

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Figure 1: External Views

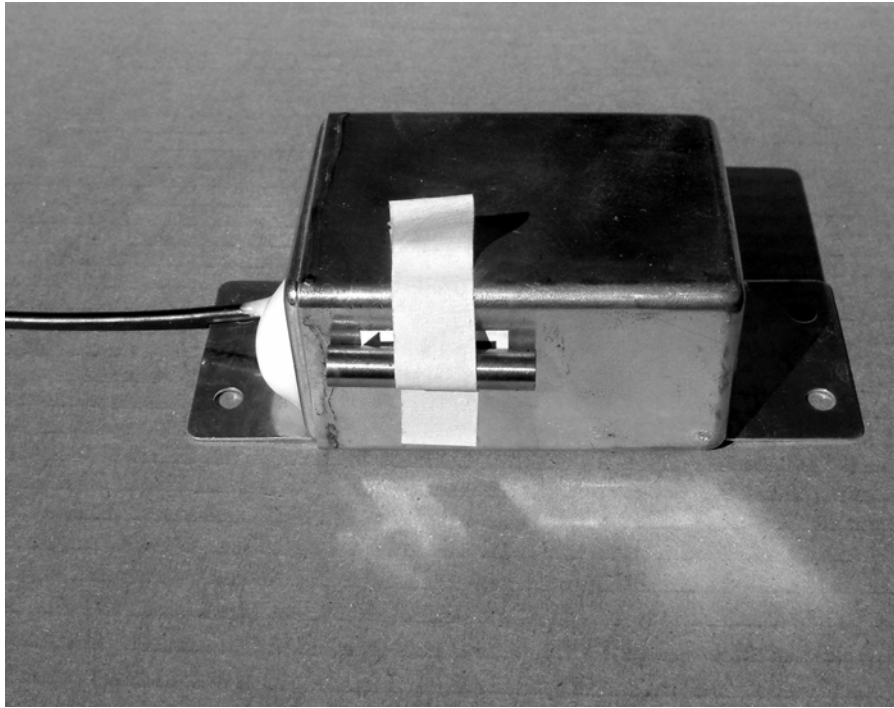


fig 1a) Magnet Arrow Marker Location – Magnet shown in place (transmitter ‘off’)



fig 1b) FCC and Manufacturer ID labeling