

OM0ET UltraLight Magnetic Loop Antenna v. 4.0 (MLA)



Welcome to my website about this small and compact
UltraLight MLA antenna ver. 4 made for lower HF bands.

This 4th version of the QRP UltraLight MLA antenna has the same foldable construction designed for easy carry in a common laptop bag same as the 3rd version. This antenna was designed primarily for 40 / 20 and 17m bands. Diameter of the main loop grooved to 1m and height of 30cm more than ver.3. Also I have used a wider PVC tubing of foldable boom. All this changes caused higher efficiency on all bands, especially on 40M band which was missing in 3th version of UltraLight MLA. By using this same variable capacitor I was not able to reach the 10M band. This band is unfortunately missing in the 4th version. I decided to do that because of longlasting poor propagations on higher bands due to deep Solar minimum in the present years.

The tuning box is made of the solid plastic. For SWR measuring I have used the QRP transceiver XIEGU X5105. The SWR on all bands is better than. 1:1.5

This v. 4 MLA is working from 7MHz to 27,5MHz continuously and CB band is covered too. Total weight is only +/- 960 grams. No switch is needed. It's a QRP version for 5 to 10W max. Please do not exceed the power limit of 10W! It may cause a fire on the capacitor plates or damage PA in your transceiver.

Dimensions:

Large loop diameter: approx. 1m (wire lenght is 3141 mm / 10,304ft)

Small loop diameter: approx. 34cm (wire lenght is 1068 mm / 42,047inch)

Capacitor: air type with ELTRA 2x 243pF with small gearbox reduction - used in split stator mode

Large loop is made of Nordix MWC 10/50 microwave coaxial cable (can be used RG213U but it's not hold the shape of ring as Nordix)

Small loop is made of 3,5mm copper wire PVC isolated

The boom is made of 3 pieces 467mm long and 25mm in diameter PVC pipe

Total weight: +/- 960g

How to use this antenna:

Important information:

Never transmit in to the antenna before you don't listen the background noise peak while tuning, it may damage your transmitter!

1. Set the frequency on your transceiver and tune antenna knob to resonant frequency until you will listen the noise peak.
2. After you listen the noise peak start measure the SWR and carefully tune antenna for the best value (SWR 1:1.1).
3. Now you can transmitting.

Some close metallic objects may disturb SWR, if so you have to place antenna more away from this object.

If you move from this frequency away you will need tune again (point 1-3).

The elevation will improve efficiency of your magnetic loop antenna.

This antenna no need counterpoise.

I wish you have fun with QRP and this antenna!