Simple Magnetic Loop Antenna for a Jorney

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Credit Line: Forum at www.cqham.ru

The Magnetic Loop Antenna is designed especially for working from journey. The Antenna is ready for operation from disassembled to assembled condition in several minutes. Antenna contains cheap or not hard to find stuff. I spend less $ 50.0 for kit for the antenna. However, I have managed to buy the vacuum variable capacitor (old surplus stuff) for good price. **Figure 1** shows design of the Magnetic Loop Antenna.

Figure 1 Magnetic Loop Antenna

Loop of the antenna made of from a RG-213 Coaxial Cable in 3- meter length. So the loop has diameter near 1- meter. At both sides of the coaxial cable there are installed male PL-259 connectors. The loop is formed by wooden spreaders (in diameter 14- mm) with plastic holders on the ends. **Figure 2** shows Central Spreader. **Figure 3** shows End Spreader. Coupling Loop has diameter 200- mm.

Figure 2 Central Spreader

The loop made from copper strip in 10- mm wide. One end of the Coupling Loop directly connected to the central core of feeding coaxial cable (50- Ohm) another end of the Coupling Loop is connected to the shield of feeding coaxial cable. Several ferrite snap RF chokes (what were in my junk- box) are installed on feeding coaxial cable near the Coupling LOOP. **Figure 4** shows the Coupling Loop.

The vacuum variable capacitor was old military Russian one, type KP, 5- KV, 5- 250- pF. The capacitor is placed in the box that literally holds the Magnetic Loop Antenna. **Figure 5** shows the box. **Figure 6** shows the box inside. Two female SO- 239 connectors are installed at both sides of the plastic box.

Figure 3 End Spreader

Figure 5 Plastic Box for Variable Capacitor

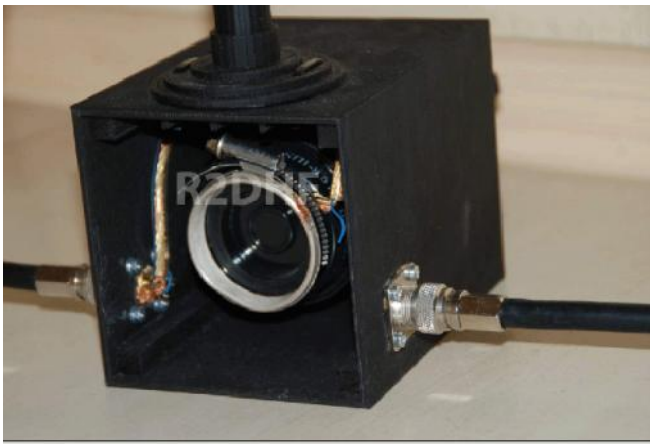

Figure 6 Plastic Box for Variable Capacitor, Inside View

Figure 4 Coupling Loop

All plastic parts of the antenna made with 3D- Printer. You may find file with the parts at:
http://www.antentop.org/020/R2DHF_020.htm

Antenna parts fastened with help plastic ties and Velcro tape (you could see it on the figures).

Magnetic Loop Antenna was tested with Yaesu FT-817. It was discovered (in receiving mode) that the Antenna may be tuned from 10 to 80- meter Band. Antenna was tested in transmission mode at the 10 and 20- meter Band. It worked quite satisfactory.

Best Regards, 73!
de R2DHF