

LOOP ANTENNA

by I3VHF

The Awesome Antenna

CIRCLE... the perfect geometric shape.

It is the most natural shape as it has no end and no beginning.

Furthermore, it embodies the concept of union and perfection.

Ciro Mazzone

Radiocomunicazioni

The LOOP ANTENNA was designed for radio operators who have limited space for their antenna, yet still want a quality antenna that meets their needs.

The antenna has smaller dimensions, but high efficiency in order to compete with the classic dipole. The antenna bandwidth covers more than one band within the amateur radio frequency allocations, as well as enough bandwidth to support commercial, military and civil use.

The antenna was designed and produced by an entrepreneur, who dedicated his professional life to experimentation and testing in order to produce such a superior product.

Radiated power:

The brain of **LOOP ANTENNA** is the ATU2.0 (Automatic Tuner Unit). It takes care of every single movement any time that you need to tune your **LOOP ANTENNA**.

Thanks to its technology, ATU2.0 is able to set the antenna to the best S.W.R. by opening or closing the capacitor for a correct inductance and capacity ratio.

In this way, the antenna is well tuned and the power of your signal is ready to go all around the world.

The ATU2.0 has an RS232 interface on-board and can be connected and managed by the radio in AUTO or SEMIAUTO mode.

The ATU2.0 supports:

- > CI-V ICOM protocol (with CT-17 opt.)
- > YAESU CAT system (also FT100 - FT817 - FT857 - FT897 with CT-62 opt.)
- > Kenwood
- > Elecraft (with KXSER cable opt.)
- > ELAD FDM-DUO



$$E(\theta) = \sin^2 \theta$$

$$\Pi = \int \int \int |E_\theta|^2 \cdot r^2 \sin \theta d\theta d\phi ds$$

$$\Pi = \frac{1}{12\pi} \eta \beta^4 (IA)^2$$

LOOP BABY datasheet:

Radiation pattern:



ELECTRICAL SPECIFICATIONS

- > continuous coverage from 6.6 to 29.8 MHz
- > S.W.R. 1.3:1 (typical)
- > front to back ratio: 6dB
- > front to side ratio: 25dB
- > 50 Ohm input impedance with gamma match short circuited (electrostatic discharge protection)
- > $L = 3\mu\text{H}$ $Q = 1.100 @ 7\text{MHz}$ $C = 400\text{ pF} @ 17\text{KV r.m.s.}$
- > power 450W up to 21MHz
1KW from 22 to 29.8 MHz
- > bandwidth 4KHz @ 7MHz
6KHz @ 14MHz
12KHz @ 21MHz
20KHz @ 28MHz
- > Gain compared to $\lambda/2$ dipole. (1 point "S" = 6 dB) :
 $R_r \sim 4\text{ dB} @ 7\text{MHz}$
 $R_r \sim 0.3\text{ dB} @ 28\text{MHz}$

MECHANICAL SPECIFICATIONS

- > diameter: 1.0m 39.8in
- > alluminum alloy 60/60 TIG solder
- > weight 16Kg 26.5lbs
- > windload 0.25m^2 2.69ft^2
- > max wind speed 161Km/h 100mph

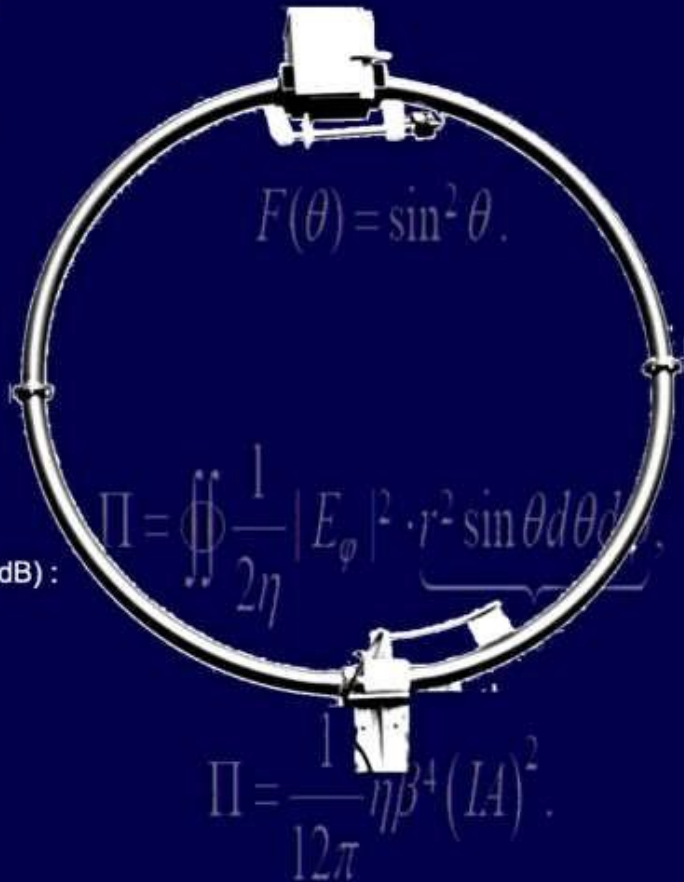
LOOP MIDI datasheet:

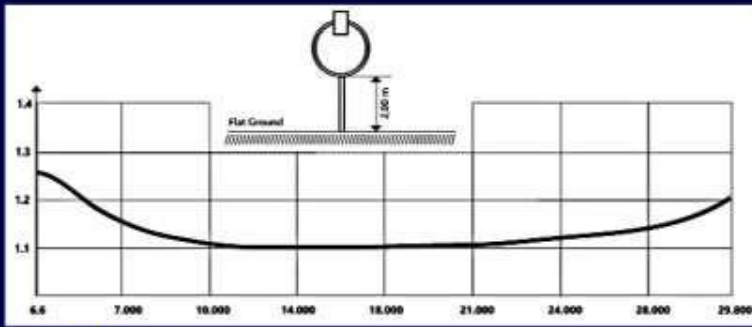
ELECTRICAL SPECIFICATIONS

- > continuous coverage from 3.5 to 14.5 MHz
- > S.W.R. 1.2:1 (typical)
- > front to back ratio: 6dB
- > front to side ratio: 25dB
- > 50 Ohm input impedance with gamma match short circuited (electrostatic discharge protection)
- > $L = 4.5\mu\text{H}$ $Q = 1.500 @ 3.5\text{MHz}$
 $C = 560\text{ pF} @ 14\text{KV r.m.s.}$
- > power 300W up to 7MHz
800W from 8 to 14MHz
- > bandwidth 4KHz @ 3.5MHz
6KHz @ 7MHz
10KHz @ 14MHz
- > Gain compared to $\lambda/2$ dipole (1 point "S" = 6 dB) :
- 4 db @ 3.5 MHz
- 0.3 db @ 14.0 MHz

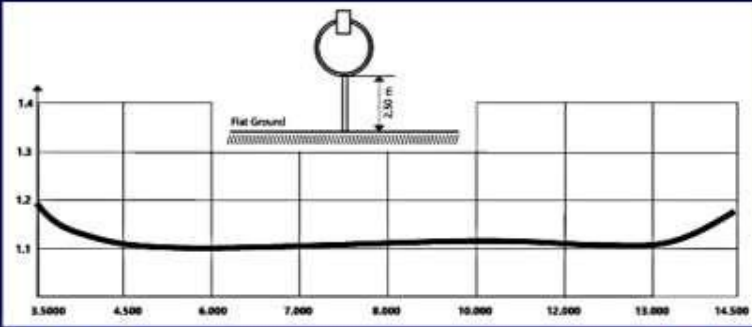
MECHANICAL SPECIFICATIONS

- > diameter: 2.0m 78.7in
- > alluminum alloy 60/60 TIG solder
- > weight 20Kg 44.1lbs
- > windload 0.50m^2 5.38ft^2
- > max wind speed 161Km/h 100mph





LOOP BABY



LOOP MIDI

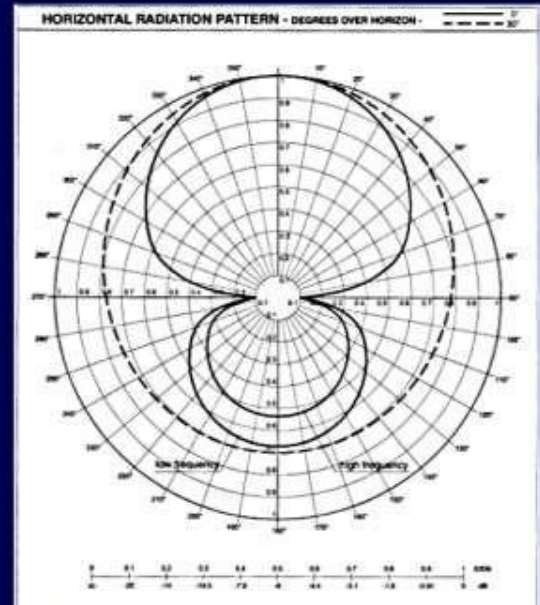
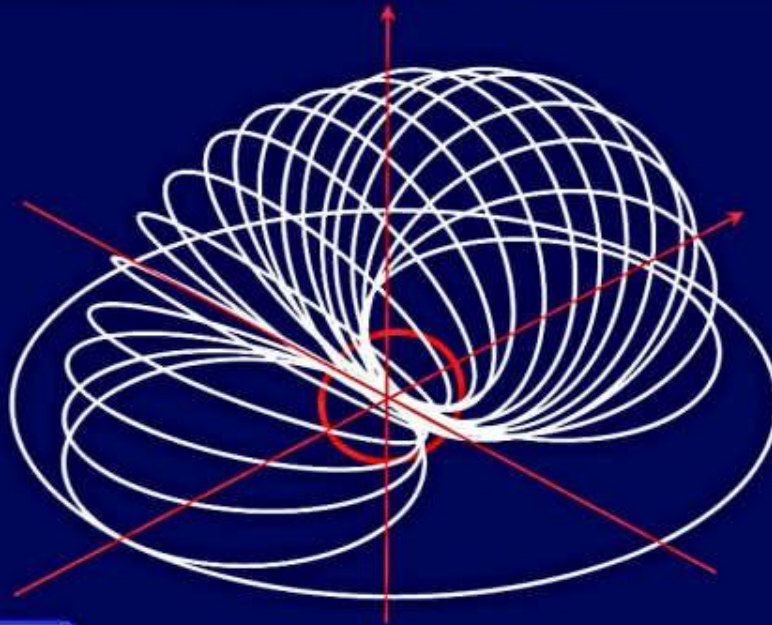


Fig. 50

FREQUENCY RANGE		100 W
GAIN (dBi) REFERRED TO THE HALF-WAVE DIPOLE		
E.R.P. WITH 100 W APPLIED TO THE ANTENNA CONNECTOR		
MAGNETIC LOOP ANTENNA - 1/2 WAVE VERTICALITY		MODE
		DATE 10-10-98
		CTRL



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