Direction Finding Antenna set for HF

Features

- Crossed loop based mobile antenna set to find the direction of ground and low elevation sky waves
- Frequency range: 9KHz to 30MHz
- Polarization: vertical
- Full 360 degree direction coverage
- Automatic North direction calibration using electronic compass
- Built-in GPS receiver for positioning of and time synchronization
- “Quick move, deploy and move again” tripod based DF antenna
- Fully computer controllable
- DF method: Wattson-Watt

Product description

The SDA-30CL antenna set consists of two loops, one omni directional antenna and antenna head. The antenna head is housing the signal processor unit, GPS antenna and electrical compass. The two loops are installed at right angles.

The set contains all elements which are necessary for reception of the radio frequency signal and applying the modulation content of the incoming signal to operate the direction finding functions of the SDF-3000 DF receiver.

The SDF-3000 receiver is able to control all of the functionality of the antenna set based on SDA-30CL antenna’s signal processor with its own control program by the menu commands of the operator or remote control software.

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Antenna head

The equipment uses an integrated antenna head for reception of incident waves. The antenna head integrates the antennas, the antenna signal processing including the low-noise preamplifiers and the navigation module with GPS and compass. This integrated construction allows using it in some different mission. It can be operated on a static site, mobile or a man portable operation is supported too.

The antenna has to be assembled from two main parts: one loop with the head and the omnidirectional antenna and the other is single loop. This loop is to be installed in rigth angle with the other loop.

On the bottom of the head there are the RF output connector (TNC), the GPS antenna input connector (SMA) and the control cable's eight pole connector.

Antenna Head

Antenna loops with the head

Automatic positioning

The equipment has a built-in electronic compass in the antenna subsystem. This means that automatic calibration of the bearing measurement can be done without any human interaction. The displayed bearing can be relative (to the antenna head) for homing operations or absolute (to the magnetic north) for geolocation measurements.

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Specification summary

Antenna	
Type	Active loop
Compression point (1dB)	+25dBm
Intercept points	2nd order 55dBm typ.
	3rd order 40dBm typ.
Output impedance	50 ohm
Output connector	Type BNC
Antenna head	
Number of input	3 (NS, EW and Omnidirectional)
Input impedance	50 ohm nominal
Frequency range	9KHz-30 MHz
Antenna input connectors	Type BNC
RF output connector	Type TNC
Output impedance	50 ohm nominal
RF cable	10m (up to 30m optional)
Control cable	10m (up to 30m optional)
Fixing	Removable bracket and clamp for 30-40mm diameter mast
Navigation	
Location	Tbd.
Antenna North calibration	Tbd.
Powering	
External power requirements	9-12V DC / 0.5A max.
Power feed	Trough the control cable
Mechanical	
Size (installed antenna)	W1000 x L1000 x H1000mm
Size (for transportation)	W1000 x L1000 x H150mm
Weight	1.5 kg
Color	Tbd.
Location and positioning	
Location	Tbd.
Antenna North calibration	Tbd.
Environmental	
Operating temperature	-10 - +40 deg C

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