Digital Receiver Technology, Inc.

Approved for Public Release

DF240B

DESCRIPTION

Direction Finding Antenna System

The DF240B is a tactical, man-portable Direction Finding (DF) antenna system with high sensitivity. The DF240B is used with DRT receivers to locate the source emitters for signals in the 100 MHz to 3000 MHz frequency range. Commutated DF is the standard method for most signals of interest, but this system can also perform Instantaneous DF (IDF) on short-duration signals.

The DF antenna connects to the DRT receiver using coaxial RF and control cabling. Two auxiliary RF connectors on the antenna allow it to be joined and used in concert with an optional DF520 – Low Frequency Extender (LFE). The DF520 LFE option extends the low frequency range down to 20 MHz and improves performance in the 100 to 600 MHz range. The DF240B system includes an external top-mounted ultra-wideband omni antenna, a separate LFE Intercept Antenna with the DF520 option, an integrated electronic compass, and an integrated GPS antenna. The system is powered through the DRT receiver. It can be mounted in a variety of ways. The DF240B is weather-resistant for continuous outdoor operation and is water resistant to 1 meter for a period of 30 minutes.

Features

- Tactical, man-portable
- Broad frequency range: VHF, UHF
- Extendible down to 20 MHz with LFE option
- Mapping and geolocation
- Capable of tracking multiple targets
- DRT receiver compatibility
- DF on short-duration signals (IDF)
- Auxiliary port for use with optional DF520 Low Frequency Extender (LFE)
- Externally mounted omni antenna
- Additional omni LFE intercept antenna with optional LFE
- Manpack, tripod, and vehicle mount standard. Can be adapted for airborne or shipboard use.

DF240B Specifications	
Frequencies	Optimized for 100 – 3000 MHz (down to 20 MHz with DF520)
DF Modes	Standard commutated DF DF on short-duration signals (IDF)
External Omni Antenna	Includes a TNC connector mounted on the top of the radome for an omni intercept antenna. With LFE option, the LFE intercept antenna snaps to the LFE frame and connects via cable to the DF240B.
Polarization	Vertical
Mounting Options	Fixed site, vehicle mount (pole mount) standard. Can be adapted for airborne or shipboard mount. Do not mount directly to metal tripod/mast.
Power Consumption	12 W typical. 14 W max. Higher than 12 W usage only applies when using cables longer than 25 ft. (7.62m) Note: DRT1301C does not support DF antenna power consumption greater than 12 W. When using cables longer than 25 ft. with DRT1301C, RF sensitivity may be reduced.
DF Accuracy (RMS Error)	Typical Performance: ≤ 2° 600 - 3000 MHz ≤ 4° 100 - 600 MHz ≤ 2° 20 - 600 MHz (LFE option)
Sensitivity	Contact DRT for detailed information on typical sensitivity with DRT Receiver.
LOB Rate	10-32 LOBs per second (depending on format and DRT system type); typically 10 for SGPR
Navigation	Compass & GPS
Operating Temperature	-4° F to +140° F (–20° C to +60° C)
Array Size	**Without DF520 option**: 10.30 in. (26.16 cm) W x 10.68 in. (27.13 cm) D x 7.32 in. (18.59 cm) H (without intercept antenna; installing the high band intercept antenna adds 2.2 in. (5.59 cm) to array height; installing the low band intercept antenna adds 12.5 in. (31.75 cm) to array height) **DF520 option**: Deployed: 29 in. (73.7 cm) D x 47.5 in. (120.7 cm) H (includes tripod); Stowed: 7 in. (17.8 cm) D x 30 in. (76.2 cm) H
Weight	**Without DF520 option:** 7 lbs. 15.3 oz. (3.61 kg) **DF520 option**: LFE weighs 9.45 lbs. (4.29 kg) including integrated tripod NOTE: all weights exclude cabling to DRT receiver
Compatible with	DRT1183C, DRT12xxC, DRT1301C
Water Resistance	Immersible up to 1 meter for 30 minutes
Auxiliary Ports	Can be used with DF520 (LFE)
Colors	Black, Desert Tan, various Camo patterns

Software Control

Alaska, DRT's standard control software, provides integrated direction finding control and reporting. Using state-of-the-art algorithms, the DF software module (running on the DRT receiver) controls the antenna array and computes line-of-bearing (LOB) results continuously or on demand.

DRTview Geolocation Mapping Software

The DF antenna includes *DRTview*, DRT's geolocation mapping software tool. *DRTview* takes geolocation data such as LOBs provided by one or more DRT receiver systems (live or from logs) and displays the data on a map or image. Using a single type of data or a combination of these data types, *DRTview* calculates and displays real-time updated geolocation estimates (fixes), their respective uncertainty ellipses, and filtered data. See the *DRTview* data sheet for more information.

Standard Cables and Adapters

DF240B-V1 (For use with DRT1301C+)

- Cable Assy – DF Interface Cable, DSUB/MS, 50 ohm, 25 ft. (7.62 m)
- Cable Assy – DRT1301C+ RF Adapter

DF240B-V2 (For use with DRT11xx or DRT12xx)

- Cable Assy – DF Interface Cable, DSUB/MS, 50 ohm, 25 ft. (7.62 m)
- Cable Assy – DRT11xx/DRT12xx DF Power/Control Adapter
- Cable Assy – DRT11xx/DRT12xx RF Adapter

Optional Cables and Adapters (Specify V1 or V2 System)

- Cable Assy – DF Interface Cable, DSUB/MS, 50 ohm, 50 ft. (15.24 m)
- Cable Assy – DF Interface Cable, DSUB/MS, 50 ohm, 75 ft. (22.86 m)

Low Frequency Operation with Optional DF520 (LFE)

The DF520 extends the low frequency range to 20 MHz and improves performance in the 100 to 600 MHz range. The DF240B is placed in the middle of the DF520 array and the DF520 antenna elements connect to the auxiliary port on the rear of the DF240B.

12409 Milestone Center Drive, Germantown, MD 20876-7114
Phone: 855-401-4185 ~ Fax: 301-916-5787 ~ www.drti.com ~ international@drti.com

Rev. 1.8-INT, September 2013