Digital Receiver Technology, Inc.

Approved for Public Release

DF280B

DF280B

Beamformer

DESCRIPTION

Direction Finding Antenna System

The DF280B is a tactical Direction Finding (DF) antenna system with high sensitivity. The DF280B is used with DRT receivers to locate the source emitters for signals in the 600 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. The Beamformer (BF2) has an integrated electronic compass, an external GPS antenna connection, and an ultra-wideband omni antenna. The system is powered through the DRT receiver. It can be mounted in a variety of ways. The DF280B is weather-resistant for continuous outdoor operation and is water resistant to 1 meter for a period of 30 minutes.

The DF280B model provides the beamformer and array as separate components. This allows the DF280B antenna array to be as small as possible.

Features

- Tactical and portable
- Broad frequency range
- Mapping and geolocation
- Capable of tracking multiple targets
- DRT receiver compatibility
- DF on short-duration signals (IDF)
- Externally mounted omni antenna
- Ideal for tripod and vehicle mount or direct placement on the ground. Can be adapted for airborne or shipboard use.

DF280B Specifications	
Frequencies	Optimized for 600 – 3000 MHz
DF Modes	Standard commutated DF DF on short-duration signals (IDF)
External Omni Antenna	Includes a TNC connector mounted on beamformer for an omni intercept antenna.
Polarization	Vertical
Mounting Options	Fixed site, vehicle mount (pole mount) standard. Can be adapted for airborne or shipboard mount.
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: ≤ 12° 400 - 600 MHz ≤ 3° 600 - 3000 MHz
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 *Note: When using magnetic compass for heading, arrow on antenna array must align with arrow on beamformer.
Operating Temperature	-4° F to +140° F (-20° C to +60° C)
Array Size	Size: 7.25 in. (18.4 cm) Dia. x 5 in. (12.7 cm) H
Array Weight	Weight: 2.48 lbs. (1.11 kg)
Beamformer Size	Size: 11.04 in. (28.04 cm) Dia. x 1.9 in. (4.83 cm) H
Beamformer Weight	Weight: 5.95 lbs. (2.70 kg)
Compatible with	DRT1183C, DRT12xxC, DRT1301C
Water Resistance	Immersible up to 1 meter for 30 minutes
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.

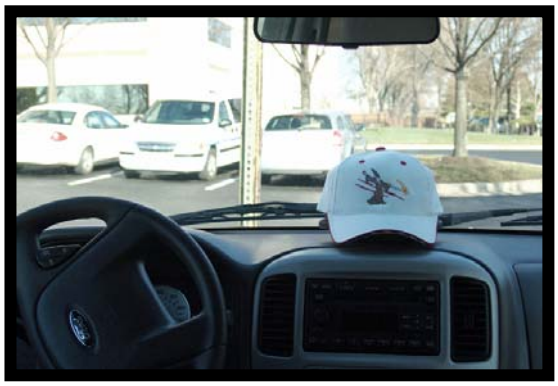
DRTview Geolocation Mapping Software

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.

DF280B Components

The DF280B comprises:

- Antenna array with radome
- External beamformer module
- Cabling for connection to a DRT receiver.



DF280B small enough to be covered by hat on dashboard

Standard Cables and Adapters

DF280B-V1 (For use with DRT1301C+)

- Cable Assy - Antenna Array to BF2, DSUB/DSUB, 50 ohm, 10 ft.
- Cable Assy - Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 10 ft.
- Cable Assy - DRT1301C+ RF Adapter

DF280B-V2 (For use with DRT11xx or DRT12xx)

- Cable Assy – Antenna Array to BF2, DSUB/DSUB, 50 ohm, 10 ft.
- Cable Assy – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 10 ft.
- 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 – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 3 ft.
- Cable Assy – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 6 ft.
- Cable Assy – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 15 ft.
- Cable Assy – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 25 ft.
- Cable Assy – Beamformer to DRT Receiver, DSUB/MS, 50 ohm, 50 ft.
- Cable Assy – Antenna Array to Beamformer, DSUB/MS, 50 ohm, 3 ft
- Cable Assy – Antenna Array to Beamformer, DSUB/MS, 50 ohm, 6 ft.

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