



## DESCRIPTION

### Direction Finding Antenna System

The DF281B is a tactical, man-portable Direction Finding (DF) antenna system with high sensitivity. The DF281B 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 DF281B system includes an external top-mounted ultra-wideband omni antenna, 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 DF281B 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
- Mapping and geolocation
- Capable of tracking multiple targets
- DRT receiver compatibility
- DF on short-duration signals (IDF)
- Externally mounted omni antenna
- Manpack, tripod, and vehicle mount standard. Can be adapted for airborne or shipboard use
- Extendible down to 20 MHz with optional DF520 Low Frequency Extender (LFE). Contact DRT for the DF281B-LFE option.

<b>DF281B Specifications</b>	
<b>Frequencies</b>	Optimized for 600 – 3000 MHz (down to 20 MHz with DF520)
<b>DF Modes</b>	Standard commutated DF DF on short-duration signals (IDF)
<b>External Omni Antenna</b>	Includes a TNC connector mounted on the top of the radome for an omni intercept antenna.
<b>Polarization</b>	Vertical
<b>Mounting Options</b>	Fixed site (tripod), vehicle mount. Can be adapted for airborne or shipboard mount. Do not mount directly to metal tripod/mast.
<b>Power Consumption</b>	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.
<b>DF Accuracy (RMS Error)</b>	Typical Performance: $\leq 8^\circ$ 400 - 600 MHz $\leq 3^\circ$ 600 - 3000 MHz
<b>Sensitivity</b>	Contact DRT for detailed information on typical sensitivity with DRT Receiver.
<b>LOB Rate</b>	10-32 LOBs per second (depending on format and DRT system type); typically 10 for SGPR
<b>Navigation</b>	Compass & GPS
<b>Operating Temperature</b>	-4° F to +140° F (-20° C to +60° C)
<b>Array Size</b>	7.98 in. (20.27 cm) W x 9.16 in. (23.27 cm) L x 6.33 in. (16.08 cm) H (without intercept antenna; installing intercept antenna adds 2.2 in. (5.59 cm) to array height)
<b>Weight</b>	5 lbs. (2.27 kg)
<b>Compatible with</b>	DRT1183C, DRT12xxC, DRT1301C
<b>Water Resistance</b>	Immersible up to 1 meter for 30 minutes
<b>Auxiliary Ports</b>	Can be used with DF520 (LFE). Contact DRT for information.
<b>Colors</b>	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

### **DF281B-V1 (For use with DRT1301C+)**

- Cable Assy – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 25 ft.
- Cable Assy - DRT1301C+ RF Adapter

### **DF281B-V2 (For use with DRT11xx or DRT12xx)**

- Cable Assy – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 25 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 – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 10 ft.
- Cable Assy – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 15 ft.
- Cable Assy – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 50 ft.
- Cable Assy – Antenna Array to DRT Receiver, DSUB/MS, 50 ohm, 75 ft.

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