



DESCRIPTION

Direction Finding Antenna System

The DF520 is DRT's tactical, man-portable, circular array antenna system used with DRT receiver and transceiver systems for Direction Finding (DF). The DF520 provides frequency coverage from 20 MHz to 600 MHz with high sensitivity and excellent DF accuracy. It is rugged, light-weight, and has an integrated tripod. The DF520 has a collapsible mechanism that allows ease of deployment, storage and transport. The DF520 may be operated in a standalone mode or to augment another DF antenna system.

Features

- Tactical, Rugged
- Man-portable, Light-Weight with Integrated Tripod
- Collapsible for Ease of Storage and Transport
- Sensitive and Accurate for Low Frequencies Down to 20 MHz
- DRT Receiver Compatibility
- Externally Mounted Omni Intercept Antenna
- Integrated Tripod Mount; Other Mounting Adapters can be provided
- Mapping and Geolocation
- Supplied with or without Beamformer (Beamformer required for standalone use)

Standalone Mode

In the standalone mode, the DF520 is well-suited for 20 – 600 MHz manpack missions requiring accurate DF and high sensitivity that are typically achieved in larger, heavier DF antennas that are not man-portable. A BF2 or BF3 module is installed in the middle of the array, as depicted in the above illustration. When used with a DRT receiver, the standalone system can detect, collect, and geolocate radio frequencies of interest in the DF520 antenna system's bandwidth, including conventional radio signals (for example, push-to-talk radios).

Augmenting a DF Antenna

The DF520 may be used as an option to augment DRT's DF antennas. When used with another DF antenna, the DF520 does not need its own beamformer. Instead, the other DF antenna is placed inside the DF520 array and that antenna's beamformer is used. When used with a DRT receiver, the complete system can detect, collect, and geolocate radio frequencies of interest in the bandwidth covered by both the DF520 and the other DF antenna. Contact DRT for more information on augmenting DF antennas.

DF520 Specifications	
Frequencies	20 MHz – 600 MHz
IDF (DF on Short-Duration Signals)	With a BF2, a DF240B or a DF281B, the DF520 can also perform Instantaneous DF (IDF) on short-duration signals. Contact DRT for more information on the DF281B / DF520 combination.
External Omni Antenna	Antenna element snaps to the frame and is connected via cable to the Beamformer. DFxxxC antenna systems do not use an optional intercept antenna.
Polarization	Vertical
Mounting Options	Supplied with integrated tripod. Optional Vehicle Mount (mast mount) Other mounting adapters can be provided.
Power Consumption	Standalone BF2: 12 W max Standalone BF3: 3 W max
Cable Equalization Amplifiers	BF2: Optimized for 25 ft., 50 ft., and 75 ft. DRT DF Interface Cables BF3: Optimized for 6 ft., 12 ft., and 25 ft. DRT DF Interface Cables
DF Accuracy (RMS Error)	Typical Performance: < 5°, 20 MHz to 150 MHz < 2°, 150 MHz to 600 MHz
DF Antenna Sensitivity	Contact DRT for detailed information on typical sensitivity with DRT Receiver and different beamformers.
LOB Rate	SGPR: typically 10 LOBs per second for 1000-system and 14 LOBs per second for 4000-system
Navigation	BF2 / DF2xxB: Compass & GPS BF3 / DF2xxC: Compass
Operating Temperature	BF2 / DF2xxB: -4° F to +140° F (-20° C to +60° C) BF3 / DF2xxC: -4° F to +140° F (-20° C to +60° C)
Array Size	Erected: 47.5 in. (120.7 cm) H x 29 in. (73.7 cm) D (includes tripod) Stowed: 30 in. (76.2 cm) H x 7 in. (17.8 cm) D
Weight	DF520 without Beamformer Antenna: under 9.45 lbs. (4.29 kg) including integrated tripod and Intercept antenna (without Beamformer & cabling to DRT receiver) DF520 with BF2 - <15.40 lbs. (6.99 kg) Standalone BF2 w/o DF520 - 5.95 lbs (2.70 kg) DF520 with BF3 – < 14.48 lbs. (6.57 kg) Standalone BF3 w/o DF520 - 5.03 lbs (2.28 kg)
Water Resistance	Immersible up to 1 meter for 30 minutes

DF520 Modes

Mode	DF520	BF or DF Antenna	Compatible DRT Receivers
Standalone - As a standalone DF antenna, the DF520 may be used in a standalone mode with either a BF2 or a BF3	DF520B	Beamformer 2 (BF2)	DRT1000C systems
	DF520C	Beamformer 3 (BF3)	DRT4411B-R, DRT4413B-R
Augment DF Antenna	DF520 with BF2 DF Antenna	DF240B, DF281B	DRT1000C systems
	DF520 with BF3 DF Antenna	DF240C	DRT4411B-R, DRT4413B-R

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.

Configurations

DF520 for BF2 / DF2xxB and BF3 / DF2xxC Beamformers and Antennas (AUG B&C)

This configuration contains the cable necessary to connect the DF520's intercept antenna to either a Beamformer 2 / DF2xxB antenna or a Beamformer 3 / DF240C antenna, if needed.

This configuration contains no cables for connection to a DRT receiver.

DF520 for BF2 / DF2xxB Beamformers and Antennas (AUG DFB)

This configuration contains the cable necessary to connect the DF520's intercept antenna to a Beamformer 2 / DF2xxB antenna.

This configuration contains no cables for connection to a DRT receiver.

DF520 for BF3 / DF2xxC Beamformers and Antennas (AUG DFC)

This configuration contains the cable necessary to connect the DF520's intercept antenna to a Beamformer 3 / DF240C antenna, if needed.

This configuration contains no cables for connection to a DRT receiver.

DRT Receiver Cabling

Cabling required to connect the Beamformer / DF antenna to the DRT receiver is ordered separately. Contact DRT for more information on cables for your application

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