

RDF PRODUCTS

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Product Data Sheet; Model DFR-8500B Wideband HF/VHF/UHF
Radio Direction Finding Receiver & Watson-Watt DF Bearing Processor/Display

FEATURES

- Ultra-Wide Coverage From 0.1-2,000 MHz
- Real-Time TFT Polar Bearing Display
- Precision 3½-Digit Numeric Bearing Display
- AM/FM/CW/SSB Demodulation Capability
- Simultaneous DF & Listen-Through
- Fast Pulse Response Capability
- 6/15/30/200 kHz Selectable IF Bandwidths
- Real-Time Remote Operation w/Software

DESCRIPTION

The RDF Products Model DFR-8500B is a compact, self-contained wideband HF/VHF/UHF DF receiver and bearing processor/display combo designed for both mobile and fixed-site DF applications. Frequency coverage is from 100 kHz to 2,000 MHz, limited only by the accompanying DF antenna.

Comprising the DFP-1000B DF Processor/ Display and ICOM R8500 Wideband Communications Receiver, the DFR-8500B teams up the world's finest single-channel DF processor with a professional-quality wideband communications receiver. The resulting combo package provides a complete full-featured high-performance DF receiver in a footprint small enough for even mobile operation.

Operationally, the R8500 serves as a wideband tuneable down-converter for the DFP-1000B processor. Physically, the DFP-1000B mounts atop the R8500, secured by Velcro or Nylon mounting straps.

The DFR-8500B employs a 360° degree real-time polar TFT bearing display that is unsurpassed in dynamic DF environments where either the signal source or the DF station is in motion. This highly intuitive display format is essential for discriminating valid bearings from noise,



reflections, and interference. For fixed-site or other applications where higher bearing accuracy and resolution is required, the numeric bearing display allows bearing resolution down to 0.5°. Using the supplied Windows software controller package "DefCon2b", the DFR-8500B can be remotely operated by computer as a "virtual DF receiver" as illustrated on the following page.

The DFR-8500B features excellent listen-through capability. With most signal formats, undistorted signal audio output is obtainable simultaneously with DF operation. Demodulators are included for AM, FM, CW, and SSB with built-in speaker or external headset audio output, along with four selectable IF bandwidths for optimum reception.

Seven selectable bearing integration times are available for optimum DF performance for a wide variety of signal formats. With pulse response capability down to 35 milliseconds, the DFR-8500B can respond to very short duration signals (including A.I.D. beacons). Other features include bearing display Track & Hold, Range Tone, and GPS receiver/digital compass interfaces.

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SPECIFICATIONS (subject to change without notice)

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DF Technique:	Single-channel Watson-Watt	Bearing Integration:	35/50/80/160/200/275/400 ms
Frequency Coverage:	0.1-2,000 MHz (subject to frequency limitations of attached DF antenna)	Track & Hold:	3 sec nominal holding time
DF Sensitivity:	Established by DF antenna	RS-232 Interface (to host computer)	19200-N-8-1; data string includes embedded data from receiver, GPS, & compass
RF Input Impedance:	50 ohms nominal	Power Requirements:	11-16 VDC @ 3.2 amperes (negative ground)
IF Bandwidths:	6/15/30/200 kHz	Over- And Reverse-Voltage Protection:	18 volt shunt power Zener diode blows fuse
Audio Output Power:	1.5 watts into 8 ohms	Operating Temp.:	0 to +50 degrees C
Audio Frequency Response:	250-3300 Hz nom. @ -3 dB (measured at headset jack)	Storage Temp.:	-40 to +70 degrees C
Bearing Displays:	Real-time 360° polar TFT and 3½-digit numeric displays	Humidity:	0-95% (no condensation)
Bearing Accuracy:	0.5° RMS (using 160 milli-second bearing integration)	Dimensions:	9.2"x8.5"x12.0" (HxWxD)
Bearing Resolution:	0.5°/0.1°	Weight:	16.5 lbs

APPLICATIONS INFORMATION

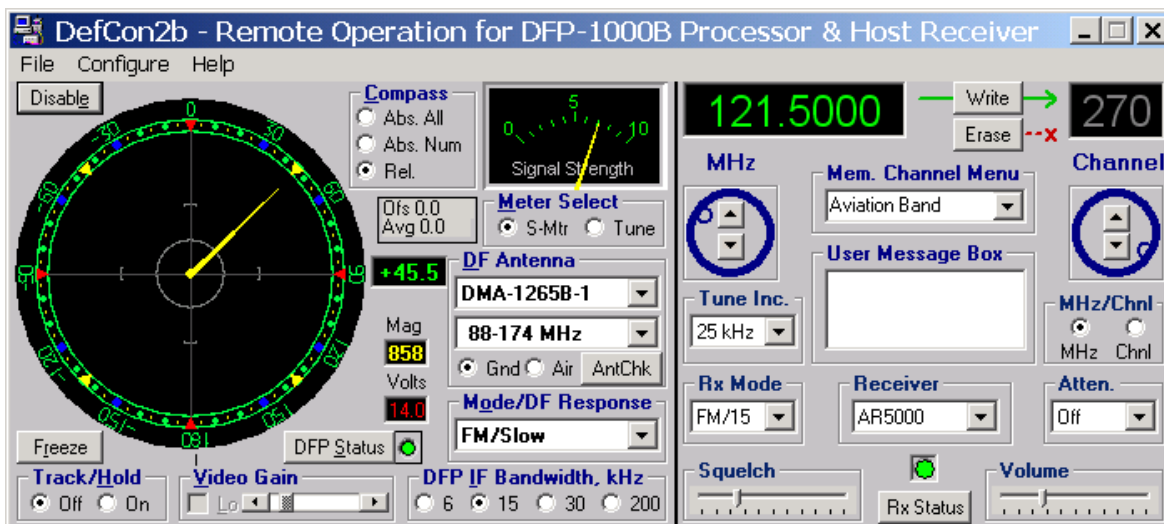
The RDF Products Model DFR-8500B has been specifically designed for three primary DF applications. First, it is intended to be used in applications where a compact, self-contained, easy-to-operate DF receiver capable of accepting a wide variety of signal formats is required. (In this regard, it is particularly well suited for mobile DF missions.) Second, it is intended for applications where wide frequency coverage is required. Finally, it is intended for applications where the ability to respond to short-duration signals is important (pulsed beacon tracking, for example).

In general, the DFR-8500B is recommended for all HF/VHF/UHF mobile and fixed-site DF applications that require a compact, self-contained, easy-to-operate high-

performance unit employing premium components. It is particularly effective for mobile DF applications due to its compactness and ease-of-installation, and is one of the very few units capable of DF operation in motion on a wide variety of signal formats.

The DFR-8500B is directly compatible with all RDF Products DF antenna models (both mobile and fixed-site). It is also compatible with the HuntMaster digital mapping software (supplied as an extra-cost option).

The R8500 receiver can be dismantled from the DFP-1000B for convenience of storage and transit. See the DFP-1000B product data sheet for important additional information.



DefCon2b "Virtual DF Receiver" Controller Main Screen