RDF PRODUCTS

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Product Data Sheet; Model DTI-100B *DF Bearing Synthesizer*

FEATURES

- **Highly Accurate DF Bearing Calibration Standard**
- **Allows Indoor System Tests Without DF Antenna**
- **Verifies DF Receiver/Processor Bearing Accuracy**
- **Verifies DF Receiver/Processor DF Sensitivity**
- **Gain Control for Simplified Equipment Interface**
- **Full 16-Azimuth Selection**
- **High- and Low-Level Signal Outputs**
- **Remote Azimuth Selection Via RS-232**
- **Modulated 5 MHz Harmonic Comb Generator**
- **Compact, Easy to Operate**

DESCRIPTION

The RDF Products Model DTI-100B DF Bearing Synthesizer is a precision test instrument designed to facilitate calibration, testing, troubleshooting, and performance verification of RDF Products DF receivers and bearing processors. Functionally, the DTI-100B allows the operator to precisely synthesize a selected bearing (azimuth) that can be displayed on the DF receiver or bearing processor under test. In either case, meaningful system testing and evaluation (particularly with regard to bearing accuracy and sensitivity) can be conducted *without* the DF antenna. This in turn eliminates the requirement for time consuming and expensive outdoor field tests in most cases and permits rapid and convenient DF receiver and bearing processor testing and evaluation in a controlled indoor environment.

The DTI-100B is well suited for use as a DF bearing calibration standard. Its accuracy is guaranteed by careful selection and matching of its critical precision components. The DTI-100B functions equally well for DF systems employing either quadrature phase or dual frequency DF antenna X-Y axis encoding tone formats.

Significant improvements have been incorporated into the DTI-100B as compared to the DTI-100A that it replaces. First, the DTI-100B features full 16-azimuth selection as opposed to the 12-azimuth selection available in the DTI-100A. Second, a modulated 5 MHz comb generator with useful harmonic output up to 1000 MHz has been added that functions as a built-in RF signal generator for many tests. This latter feature is particularly useful in field situations where an RF signal generator may not be available. Finally, an RS-232 interface has been included so that azimuths can be selected via a host computer.

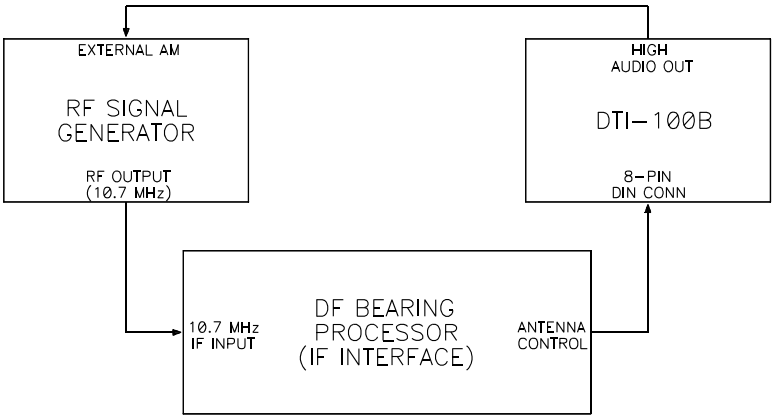
The DTI-100B is compact, self-contained, simple to operate, and suitable for both laboratory and field use. DC power is provided by the host DF receiver or bearing processor to which the unit is connected.

Rev A03/06-07/dti100b_pds_01

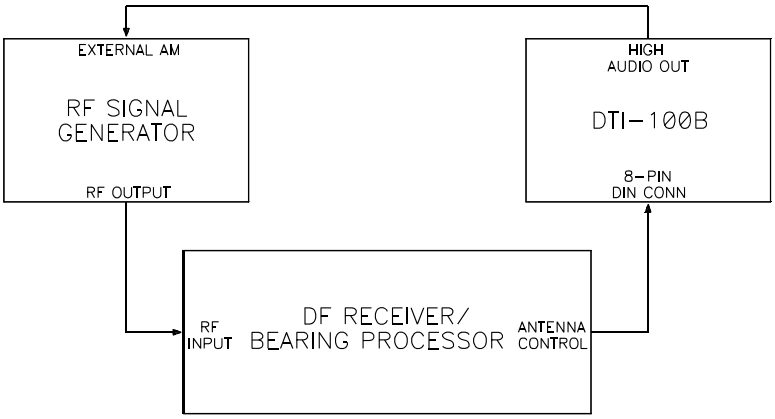
SPECIFICATIONS (subject to change without notice)

Primary Azimuths:	0E, 90E, 180E, 270E
Secondary Azimuths:	45E, 135E, 225E, 315E
Tertiary Azimuths:	22.5E, 67.5E, 112.5E, 157.5E, 202.5E, 247.5E, 292.5E, 337.5E
Azimuthal Accuracy:	Primary - <0.1E Secondary - <0.2E Tertiary - <0.5E Overall RMS - <0.3E
Required X & Y Tone Input Voltages:	1.0 VPP (sinusoidal)
Output Signal Voltages:	Variable from 0-1.4 VRMS (high-level output port), or 0–0.045 VRMS (low- level output port), depending upon gain control setting (approximate open-circuit voltages). RMS output voltage constant to within 0.35 dB as function of selected azimuth.
Output Impedance:	600 ohms unbalanced (for both high- and low-level outputs)
Output Load Requirements:	Load presented to output signal should be 600 ohms or greater with no DC bias.
Power Requirements:	11-16 VDC @ 35 mA (negative ground)
Dimensions (HxWxD):	3.1"x3.7"x6.1" (w/o cables)
Weight:	1.1 lbs (w/o cables)
Operating Temp.:	0 to +50 degrees C
Storage Temp.:	-40 to +70 degrees C
Humidity:	0-95% (no condensation)

TYPICAL TEST SETUPS



Test Setup, DF Bearing Processor (IF Interface) with DTI-100B and RF Signal Generator



Test Setup, Integrated DF Receiver/Bearing Processor with DTI-100B and RF Signal Generator