Developmental Specification

WATKINS-JOHNSON

May 1996

HF Direction Finding Array
WJ-9896

The WJ-9896 HF Direction Finding Array provides accurate DF performance on HF ground-wave and sky-wave signals in the 2 to 30 MHz range. The HF DF array is used with the WJ-8996-1 Receiver/DF Processor. It consists of:

- Four antenna elements
- A calibration switch
- Coaxial RF cables

The antennas use collapsible monopoles for easy deployment in all terrains. A single BNC coaxial cable connects each of the antenna elements to the switch box. When deployed, the antennas form a 14 foot (4.26 meter) square array (a larger baseline may be used for lower frequencies). For best performance, WJ recommends deploying the antenna system in a clear area at least 250 feet (75 meters) from other obstructions, including shelters or buildings.

The mechanical design of the WJ-9896 allows for very compact storage when disassembled. An operator can stow the disassembled antenna in a 2 x 1 x 1 foot (0.6 x 0.3 x 0.3 meters) pack.

Features

- ❏ *2 to 30 MHz DF coverage*
- ❏ *Light weight*
- ❏ *Manportable*

Element Length	Array Dimension	Weight
9 ft (2.74 meters)	14 x 14 ft (4.26 x 4.26 meters)	<10 lbs (4.52 kg)

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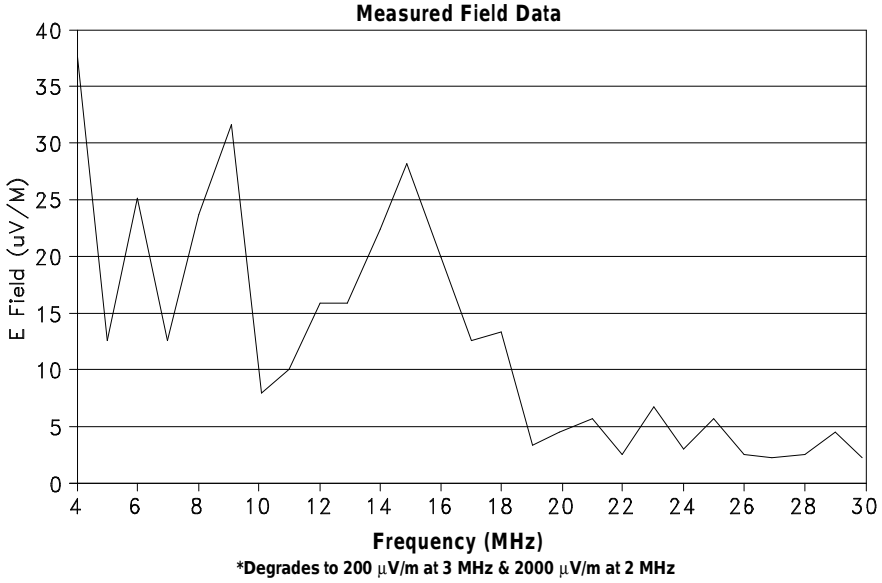
Specifications

DF Frequency Coverage	**2 to 30 MHz**
Azimuth Coverage	**360°**
Polarization	**Vertical**
Output Impedance	**50 ohms, unbalanced**
Output VSWR	**2:1, max**
Connectors	
RF	**BNC**
Cables	
RF	**50 ft (15.24 meters)**
Environmental	
Temperature Range	
Operating	**-20 to +60°C**
Storage	**-40 to +70°C**
Humidity	**95% non-condensing**
Shock	**Contact factory**



This figure shows the DF Sensitivity versus frequency for the WJ-8996 DF Processor when used with the WJ-9896 HF antenna array. DF Sensitivity is the minimum electric field strength that produces a ±3° deviation in the line-of-bearing.