**Handheld Direction Finding Antenna**

**20 MHz – 8.5 GHz (optional 9 kHz)**

**Product Code:** DF-A0047

**SPECIFICATIONS:**

<table>
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<th>Product code:</th>
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<td>DF-A0047</td>
<td>20 – 8500 MHz</td>
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<tr>
<td>DF-A0047-01</td>
<td>9 kHz – 20 MHz (extension module)</td>
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<tr>
<td>DF-A0047-02</td>
<td>Carrycase only</td>
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<td>DF-A0047-10</td>
<td>DF-A0047 in colour red</td>
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**Electrical:**

- **Antenna type:** Combined loop / LPDA
- **Frequency range:**
  - Band A: 9 kHz – 20 MHz (DF-A0047-01)
  - Band B: 20 – 500 MHz
  - Band C: 500 – 8500 MHz
- **Nominal input impedance:** 50 Ω
- **VSWR:** < 3.5:1 typical
- **Polarisation:** Adjustable, vertical or horizontal
- **Antenna gain:** Variable with frequency (< 600 MHz) 6 dBi (> 600 MHz)
- **Amplifier:** Low noise 8 – 18 dB, switched in/out
- **Power supply:** 5 V @ 200 mA maximum, via USB
- **Control connection:** USB
- **User inputs:** Band selection by means of a rotary switch
  Active/passive selection by means of a push button
- **Angle detection:** Digital compass, integrated with antenna

**Mechanical:**

- **Form factor:** Handheld
- **Dimensions (l x w x d):** 543 mm x 320 mm x 60 mm
- **Mass, excluding carry case:** 1.8 kg
- **Supplied parts:** Antenna, RF cable, USB cable.
- **Optional parts:** Carrycase and Band A extension

**Environmental:** designed to meet the following specifications

- **Operating temperature range:** -30 °C to +55 °C
- **Storage temperature:** -30 °C to +71 °C
- **Ingress protection:** IP56
- **MTBF:** > 50,000 h

**ELECTRICAL FEATURES:**

- Digital compass gives precise bearing to source
- Very wideband performance in a practical size
- Horizontal and vertical polarisation
- Passive antenna if amplifier is switched off
- Excellent radiation patterns

**MECHANICAL FEATURES:**

- Small, light and easily operated by a single person
- Robust construction

**PRODUCT DESCRIPTION:**

The DF-A0047 is a handheld wideband antenna for direction finding and transmitter hunting in the 20 to 8500 MHz band.

It combines several antennas in a neat housing, and some integrated electronics to make it more effective when used in conjunction with signal analysers.

A single RF output is provided, with internal switching selecting the appropriate antenna, and choosing to connect or bypass the pre-amplifier.

The amplifier is a low-noise wideband amplifier that enhances system sensitivity in active mode. In passive mode, the amplifier is bypassed so that the antenna can be used in the presence of strong signals.

The DF-A0047-01 is an extension module for 9 kHz to 20 MHz which is available as an option. It is a loop antenna with a diameter of 300 mm.

The DF-A0047-02 is a neat and robust carrycase for the DF-A0047.
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Gain:

[Graphs showing gain vs frequency for Bands A, B, and C with and without amplification]
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Radiation patterns (dB – normalised)
H-plane:
Band B:

Band C:
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**E-plane:**

**Band A:**

![Diagram of Band A E-plane]

**Band B:**

![Diagram of Band B E-plane]

**Band C:**

![Diagram of Band C E-plane]