Product Overview

Small broadband digital-mode loop with low-noise that receives from 1.8 MHz through 1 GHz and offer tuner-free digital transmit support from 10 MHz through 54 MHz.

Key Specifications

Specification	Details
TX/RX	Tuner-free from 10-54 MHz
RX Characteristics	Low noise characteristics for digital mode from 1.8 MHz through 1 GHz.
Digital input	* 5W minimum required; 25W maximum continuous
Shipping weight	5 lb
Shipping size	36 x 5 x 24 in

* Including but not limited to the MIL-STD-188 M110a digital communications mode that is rated at 25 watts continuous with bursts of 100 watts digital for up to 1 minute using the MIL-STD Data Modem Terminal (MS-DMT) and Automated Message Terminal (AMT) software applications.

Best For

- Digital/SCADA and broadband receive
- Portable/backpack operation
- Ground-wave and skywave digital communications
- Quantum communications
- Spread-spectrum equipment

What’s Included

- MiniLoop system and included deployment hardware (page states two physical arrangements)

Setup and Operation

Deploy in either of the two supported physical arrangements; the page states deployment option B provides greatest efficiency.

Deployment Specifications

The Mini-Loop is deployable in two ways using the included hardware, where Deployment Option B provides the most efficiency.

Performance and Technical Data

Analysis

The following results were nearly identical, whether taken indoors, outside, or in a backpack.

Analysis from 0-1GHz

Analysis from 0-54MHz

WSPR TX Test baselines at 250 mw

For TX we purposely tested the loop while deployed between two metal buildings & at 250 mw.

NOTE – TX efficiencies increase as power increases, which can lower the usable frequency.

WSPR 30M TX Test

Coverage = 236 km to 1506 km

WSPR Loop 30M TX

WSPR 20M TX Test

Coverage = 675 km to 2427 km

WSPR Loop 20M TX

WSPR 40M RX Test

For all RX tests we purposely tested the loop while deployed indoors and between floors of a multi-story building.

Max Range = 1337 km

WSPR Loop 40M RX

WSPR 30M RX Test

Max Range = 1797 km

WSPR Loop 30M RX

WSPR 20M RX Test

Max Range = 1838 km

WSPR Loop 20M RX

Usage Scenarios

Where secrecy is paramount, communication through unseen methods plays a crucial role. Some of the usage scenarios of clandestine antennas include:

1. SCADA

- Context: Protecting infrastructure is key to providing continuity, integrity, and availability.
- Scenario:

- Solution:
    - Clandestine Deployment: A small out-of-site antenna is significant to hiding communications capabilities are less likely to be thwarted.

2. Clandestine Communications in Cyber-Denied Environments:

- Context: In an era where internet-based communications are vulnerable to surveillance and attacks, intelligence operatives seek alternative methods.
- Scenario: Imagine a situation where an operative needs to communicate without exposing themselves to internet-based surveillance.
- Solution:
    - Physical Separation: Platforms physically separated from the internet can be used. These platforms are not susceptible to internet-based surveillance or attacks.
    - Radio Technology: Combine modern computer-based software with radio technology.
- Importance: Counterintelligence and law enforcement must adapt to these evolving communication methods.
- Countermeasures: Detect radio-based clandestine communications and secure evidence.

3. Operational Scenarios where concealment and minimizing visibility are critical:

- Inside a Parked Car:
    - Example: Monitoring a nearby building while parked outside.
        - Setup: Transmitter, receiver, and antennas positioned out of sight from windows.
    - Between Floors in an Office Building:
        - Example: Operating from the third floor to the first floor.
            - Setup: Transmitter, receiver, and antennas positioned out of sight carried out of site under clothing.
        - Out in the Open:
            - Example: Providing regional communications support while deployed in the field.
                - Setup: Transmitter, receiver, and antennas positioned out of sight inside a backpack.

Remember, clandestine antennas are designed to operate stealthily and covertly, avoiding detection by adversaries. Their success lies in striking a balance between effective communication and maintaining secrecy with a right sized antenna.

All these solutions are enabled by the Broadband Alpha Mini-Loop.

Support Resources

- User Manuals: Alpha Antenna User Manuals hub.
- Videos: Related videos.
- Guidance / FAQs: Available HERE.
- Customer Reviews: Scroll to bottom of this page.

We Listen

We are dedicated to improving all of our systems. Specifications and descriptions are subject to change without notice.

5.0

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1. JK

Protected_User_78cf3840
Reviewer
May 28, 2024

Digital Mini-Loop

Broadband tuning across all the digital frequencies necessary for NVIS and Groundwave communcations are delivered in this small loop antenna.