

This is a small Digital Broadband MiniLoop Antenna that is deployable in two physical arrangements to affect efficiency, which provides 0-2500km coverage on 10MHz through 54MHz, which has:

- Receive with low noise characteristics from 1.8MHz through 1GHz and higher frequencies.
- Transmit support without a tuner for Digital Modes from 10MHz through 54MHz.

SPECIFICATIONS

OPERATIONAL SPECIFICATIONS

Specifications of this broadband digital mode Mini-Loop:

- Coverage: 10-30MHz TX/RX plus 1.8MHz-1GHz RX
- Receive: Low noise characteristics for digital mode from 1.8MHz through 1GHz.
- Transmit: Support without a tuner for digital mode from 10MHz through 54MHz.
 - 5W minimum digital input signal required with a maximum input power rating of 25W for Digital Modes. 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.

USAGE SPECIFICATIONS

- Deployable with quantum communications and/or spread-spectrum computing and RF equipment.
- Missions that require digital Ground-wave and/or Skywave HF communications.
- Useful when an isolated solution is required.

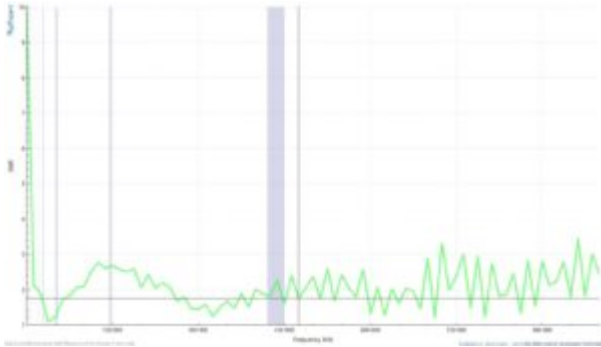
DEPLOYMENT SPECIFICATIONS

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

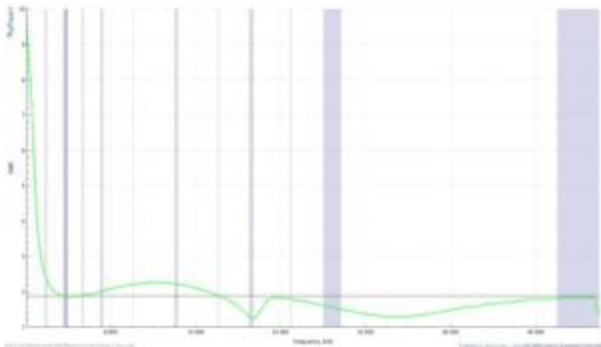
ANALYSIS

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 250mw

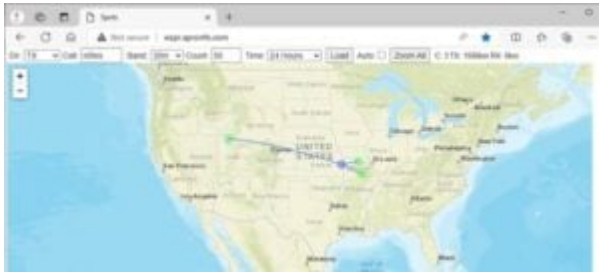
For TX we purposely tested the loop while deployed between two metal buildings & at 250mw.

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

WSPR 30M TX Test

Coverage = 236km to 1506km

Digital Mode HF-1GHz Antenna



WSPR Loop 30M TX

WSPR 20M TX Test

Coverage = 675km to 2427km

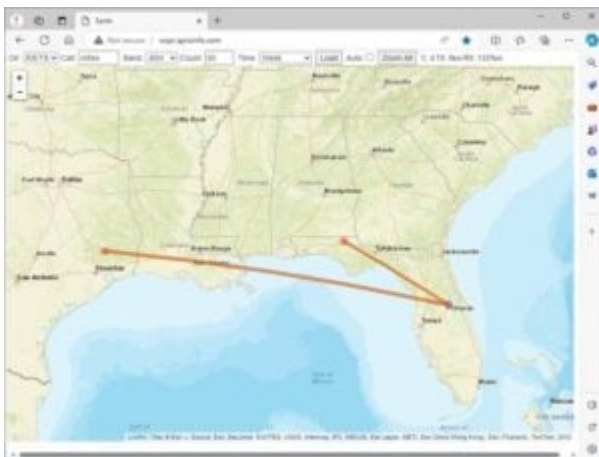


WSPR Loop 20M TX

WSPR 40M RX Test

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

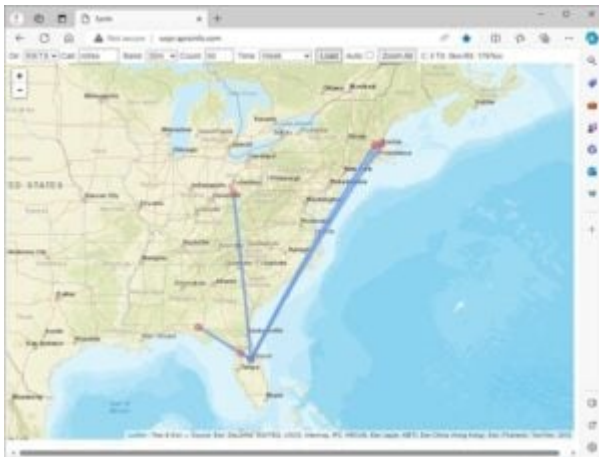
Max Range = 1337km



WSPR Loop 40M RX

WSPR 30M RX Test

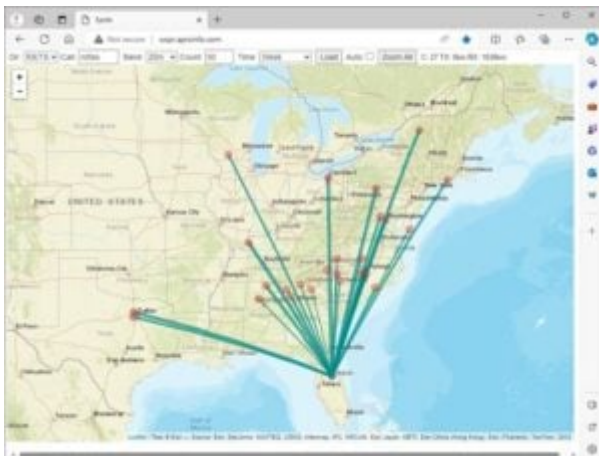
Max Range = 1797km



WSPR Loop 30M RX

WSPR 20M RX Test

Max Range = 1838km



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.

Use our [Make an Offer Program](#) and Click this button if you can't afford full price.

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5.0

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4★

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JK

Protected_User_ded48176
Reviewer

Digital Mode HF-1GHz Antenna

May 28, 2024



[Digital Mode HF-1GHz Antenna](#)

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