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Keysight Technologies
N6850A Broadband Omnidirectional Antenna

Data Sheet



KEYSIGHT TECHNOLOGIES

Industries and Applications

- Spectrum monitoring and signal location, outdoor and indoor
- Interference Detection and location
- Fixed-site, vehicle-mounted, or handheld operation
- For use with N6841A RF Sensor, N99XX handheld spectrum analyzers, spectrum analyzers, or any receiver

Product Description

For your spectrum monitoring or interference detection applications, having an antenna that covers the entire frequency range of interest would be most convenient. Assembling discone antennas is time-consuming and usually has to be done on-site as they are hard to transport without damaging the elements and may require multiple antennas to cover the full frequency range of the receiver. Other antennas may not have uniform gain patterns that are required by received signal strength geolocation algorithms.

The Keysight Technologies, Inc. N6850A Broadband Omni Antenna is a passive, omnidirectional antenna designed for receivers that operate up to 6 GHz. With this antenna, you can minimize mounting complexity by mounting only one very compact antenna. Its low profile design makes it ideal for inconspicuous spectrum monitoring applications. Its uniform gain pattern makes it ideal for time difference of arrival or for received signal strength geolocation techniques.



Figure 1. The antenna and the bracket

Main Features and Benefits

Product Features	Your Benefits
Wide frequency range	Covers 20 MHz to 6 GHz, meaning you only need only 1 antenna with your RF sensor or other receiver
Uniform gain pattern	Suitable for indoor or outdoor geolocation
Mounting adapter	Suitable for post or rail mounting, or handheld use. Easily adapted for vehicle mounting.
Compact design, low wind loading	Suitable for signal monitoring from tower or vehicle. Easy to transport, easy to mount.

Specifications and Characteristics

All specs and plots are Typical unless otherwise stated.

Product Features	Your Benefits
Frequency range	20 MHz to 6 GHz
Type	Omnidirectional, Passive
Size	16.5 inch high x 6.14 inch wide
Connector	Type N
Polarization	Vertical
Impedance	50 ohms
VSWR	< 2.5 for 450 MHz to 6 GHz
Operating Temperature	-50 to +70°C
Ingress	IP67
Wind Survivability	100 miles/hr (160 km/hr)
ROHS	Compliant
Antenna weight	Approx. 1.15 kg
Mounting bracket weight	Approx 1.54 kg
Shipping weight	Approx 6.1 kg

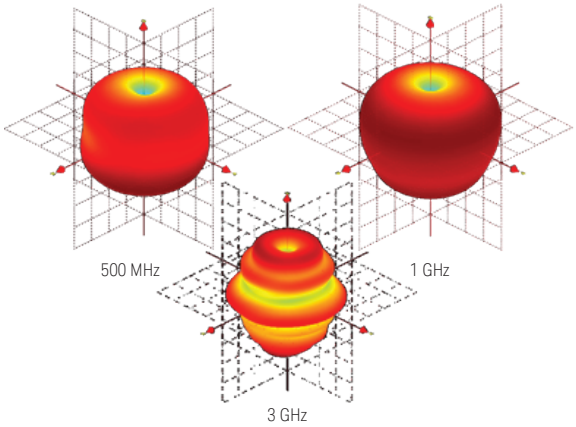


Figure 2. 3D gain plot of a representative unit at ambient temp

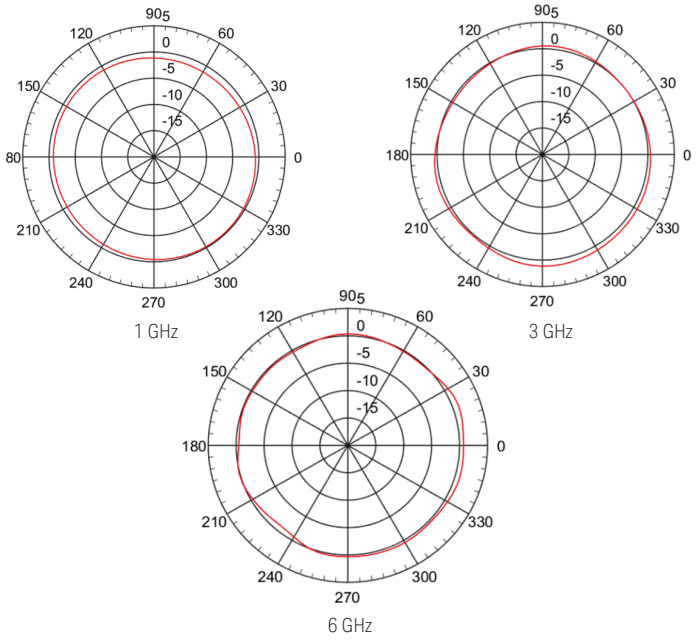


Figure 3. Radial gain pattern at the horizon of a representative unit at ambient temperature

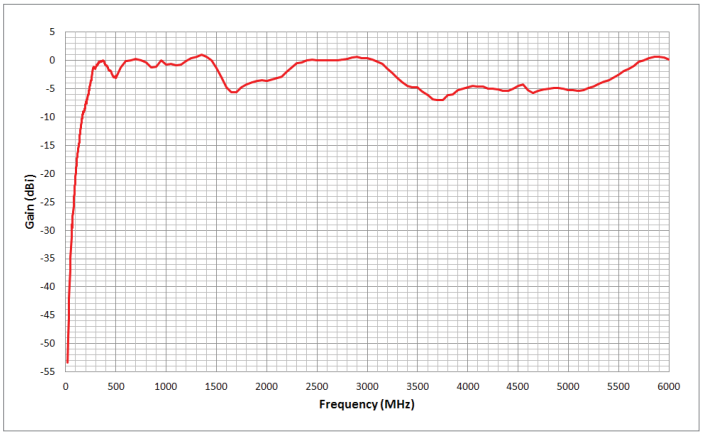


Figure 4. Average gain at the horizon at ambient temperature

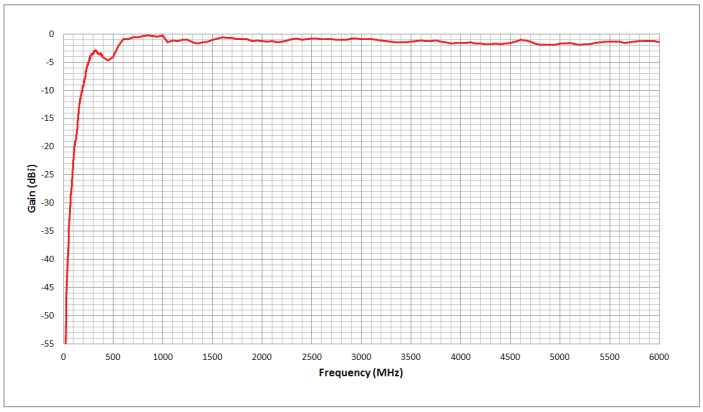


Figure 5. Average gain over all space at ambient temperature

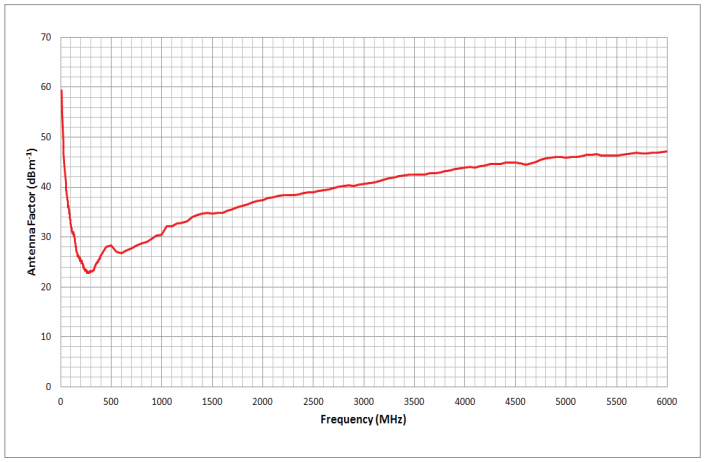
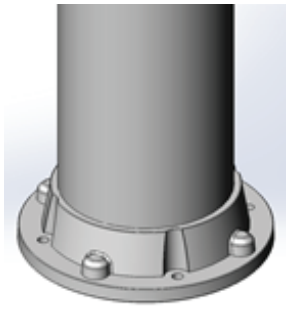


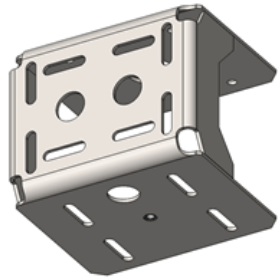
Figure 6. Average antenna factor over all space at ambient temperature

Mounting

There are 4 threaded inserts and 4 through-holes for mounting the antenna. You may use the enclosed mounting bracket or devise your own mount.

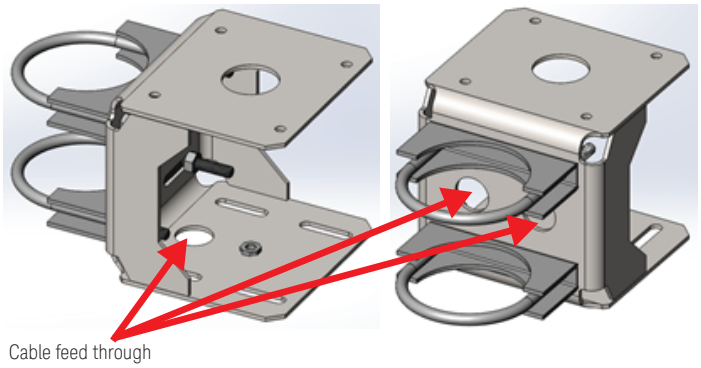


The 4 threaded inserts will accept 1/4”-20 x 0.5” (inch) length machine screws with ¼” washer. The through-holes will accept 1/4”-20 x 1” (inch) bolt and nut. When used with our mounting bracket, you may mount with either the 4 through-holes or the 4 threaded inserts.

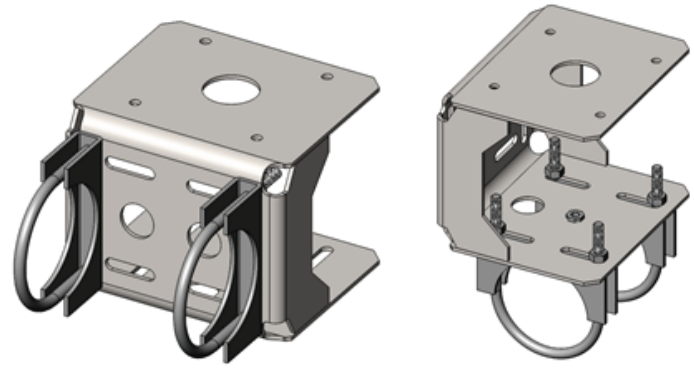


The mounting bracket can be vertical pole or horizontal rail mounted with 2 U-bolts (not included). All slots accommodate U-bolts for 1” to 3” diameter pipe.

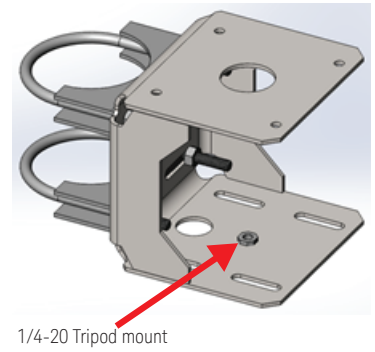
Mount designed for 5/16” diameter U-bolts.



U-bolts for vertical pole mounting (U-bolts not included)

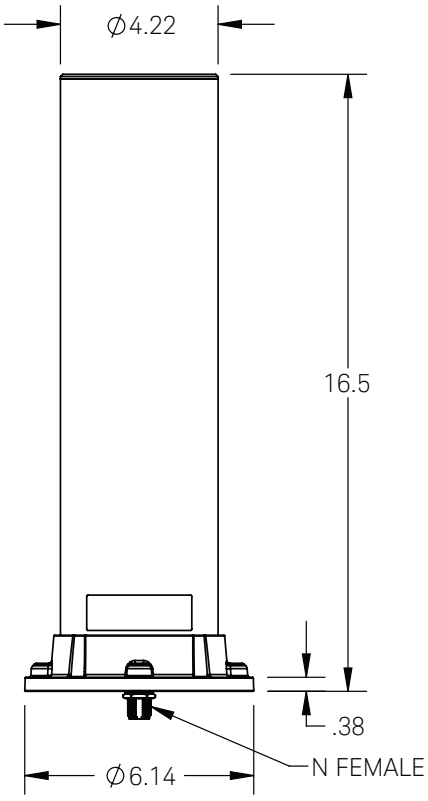


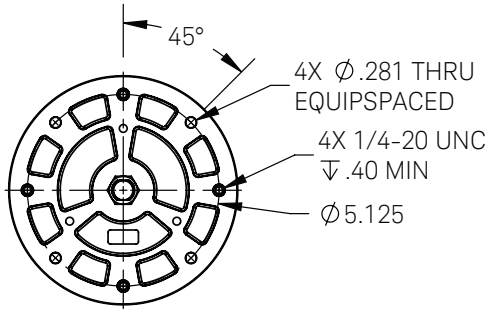
U-bolts for horizontal rail mounting (U-bolts not included)

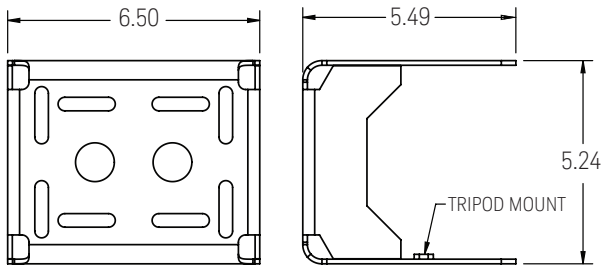


Vehicle mounting can be done by purchasing a magnetic mount with a 1/4-20 tripod screw.

Dimensions







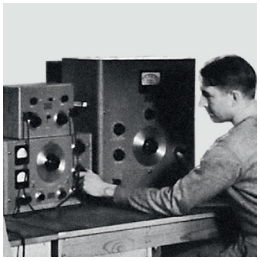
Ordering Information

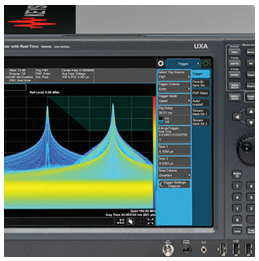
Model	Description
N6850A	Broadband omni antenna (6 GHz) Includes post/rail mounting adapter N-type antenna cable (5 ft) Mounting instructions

(Note: vehicle mount not included)

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