Product and Test Method Specification

TITLE: OEM2322: M/A-COM Tri-Band Survivor 764-869 MHz / 1575 MHz GPS GROUND PLANE DEPENDENT ANTENNA

1. **Reference Part Number:**

M/A-COM P/N	SUPPLIER	SUPPLIER P/N	DESCRIPTION
TBD	ANTENEX	OEM2322	Tri-band Survivor™ 764-869 MHz Omni-directional Antenna, low profile mount, radiates uniformly, 5/8λ over 1/4λ, 3 dBd gain, TNC male connector /w Teflon cable, length of 13 ft, ground plane dependent antenna (radio) and 1575.42 MHz active patch GPS (receive only) antenna, 28dB LNA gain, and SMA male connector /w RG174 length of 13ft. (see datasheet on page 3)

2. **Supplier Information:**

Antenex, Inc.
2000-205 Bloomingdale Road
Glendale Hts., Illinois 60139
Telephone: (630) 351-9007 x206
FAX: (630) 351-9009
WEBSITE: www.antenex.com
Contact Person: Bill Young (bill@antenex.com)

3. **Electrical and Mechanical Characteristics:**

764-869 MHz Omni-directional Antenna, low profile mount, radiates uniformly, 5/8λ over 1/4λ, 3 dBd gain, TNC male connector /w Teflon cable, length of 13 ft, ground plane dependent antenna (radio) and 1575.42 MHz active patch GPS (receive only) antenna, 28dB LNA gain, and SMA male connector /w RG174 length of 13ft. (see datasheet on page 3)

Electrical and Mechanical Characteristics (continued):

Patented Phantom Technology Antenna 746-869 MHz: (Radio, TX & RX)
For a typical transceiver or radio, the Tri-band Survivor™ antenna operates at frequency range 764-869 MHz. OEM2322 is provided with a standard Teflon low loss coaxial cable length of 13ft using TNC male connector.

The radiation pattern on page 4 is typical for the OEM2322 and represents far field measurements taken in an outdoor environment on a mast raised approximately 60 inches above the ground at least 10λ from the illuminating antenna. The readings were measured against a known standard by a network analyzer. OEM2322 has an omni-directional radiation pattern antenna with 360° Azimuthal angle coverage. It is recommended for long-range radio transmission.

The VSWR plot, on page 5, is typical for the OEM2322 and was taken by network analyzer 60 inches above the floor in a free space environment.

The Return Loss plot, on page 6, is typical for the OEM2322 and was taken by network analyzer 60 inches above the floor in a free space environment.

Active Patch Antenna 1575 MHz: (GPS, RX only)
The GPS active patch antenna operates at frequency 1575.42 ± 1 MHz. For normal usage, the GPS antenna requires +3.3 to +5VDC. The GPS antenna has a gain of 3dBi (right hand circularly polarized) and its power amplifiers have an overall relative gain of (28 ± 3) dB through a RG174 coax cable length of 13ft using SMB Plug connector. The GPS patch antenna's Electro-static discharge (ESD) is rated at ±15KV.

EMI/EMC/RFI Characteristics:
Mutual coupling between the high power rating Survivor™ antenna (100W radio) at frequency range 764-869 MHz and 1575 MHz the active GPS patch antenna is greatly minimized through independent groundings and cablings.

PRODUCT SPECIFICATIONS:

SURVIVOR™ ANTENNA (TX & RX)

MOUNTING

DESIGN TO:	4'x4' metallic surface Mobile Applications

ELECTRICAL

FREQUENCY RANGE:	764 – 869 MHz
VSWR:	< 1.5:1
NOMINAL GAIN:	3 dBd 3 dBd (elevation = 0˚) 6 dBd (elevation = 45˚) -8 dBd (elevation = 90˚)
MAXIMUM POWER:	100W
NOMINAL IMPEDANCE:	50Ω
POLARIZATION:	Vertical
PATTERN:	Omni-Directional
AZIMUTHAL ANGLE COVERAGE:	360°
LIGHTNING PROTECTION:	DC ground
CABLE:	Teflon @13 feet, exit at bottom
TERMINATION:	TNC Male connector

MECHANICAL

SIZE:	Diameter = 3" Height = 16"
WEIGHT:	< 1.5 lbs
MATERIAL:	Delrin
COLOR:	Black

ACTIVE GPS (RX ONLY)

GPS ANTENNA (RX Only)

FREQUENCY RANGE:	1,575.42 ± 1 MHz
POLARIZATION:	RIGHT HAND CIRCULARLY POLARIZED (RHCP)
GAIN:	3dBi min (elevation = 90°) -5dBi min (elevation = 20°)
AXIAL RATIO:	4.0 dB max (elevation = 90°) 6.0 dB max (elevation = 10°)

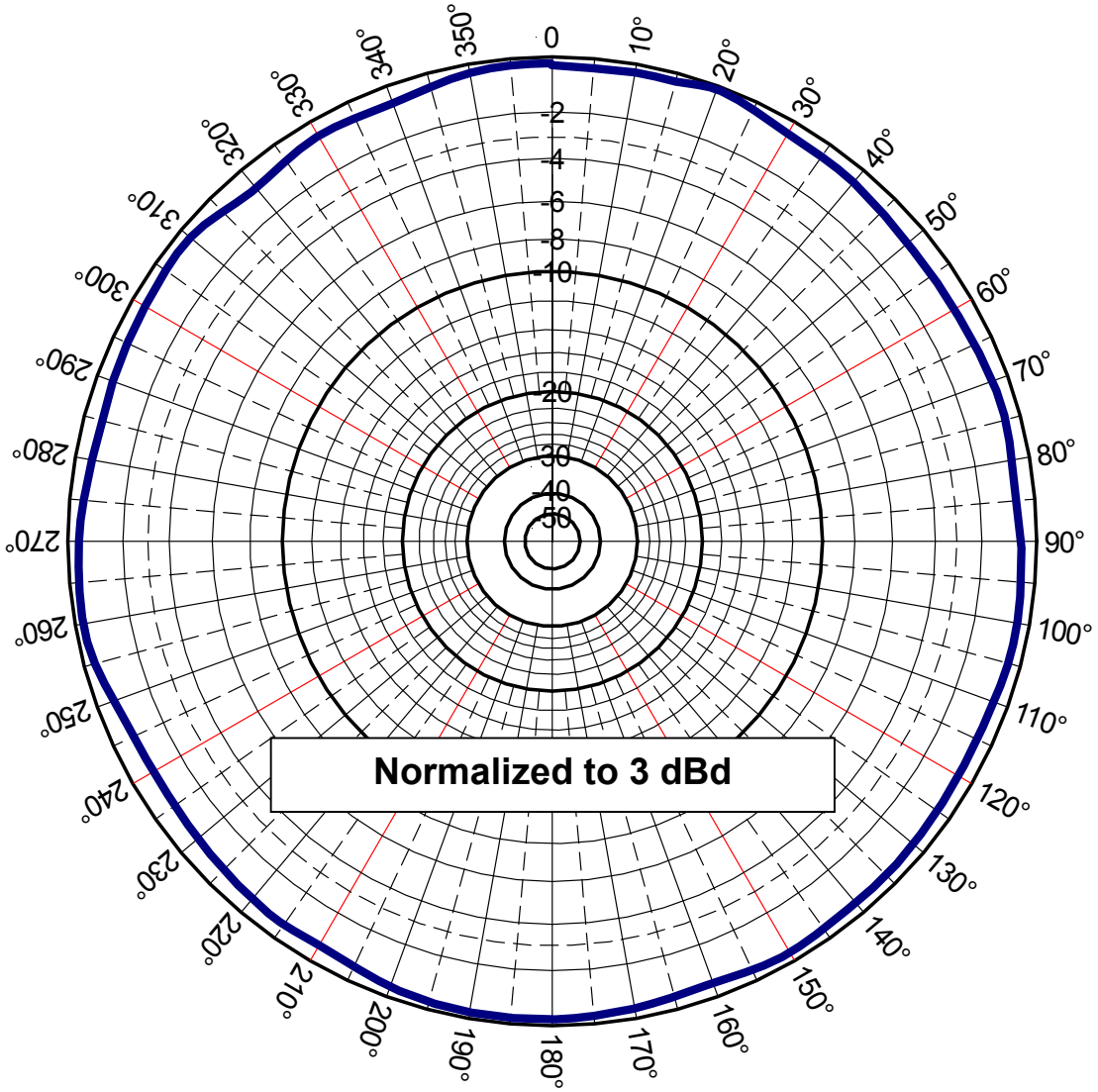
BUILT-IN LNA

VSWR:	<1.5:1
BANDWIDTH:	2 MHz
NOMINAL GAIN:	(28 ± 3) dB
OUTPUT IMPEDANCE:	50 Ω
NOISE FIGURE:	1.5dB @25°C
POWER SUPPLY:	3 to 5 Vdc
CURRENT CONSUMPTION:	15mA max
POWER HANDLING:	1W max
ESD:	±15KV
CABLE:	RG174 @13 feet, exit at bottom
TERMINATION:	SMA male connector
TEMPERATURE:	-67˚F to +185˚F (-55˚C to +85˚)

GPS ATTENUATION RESPONSE:

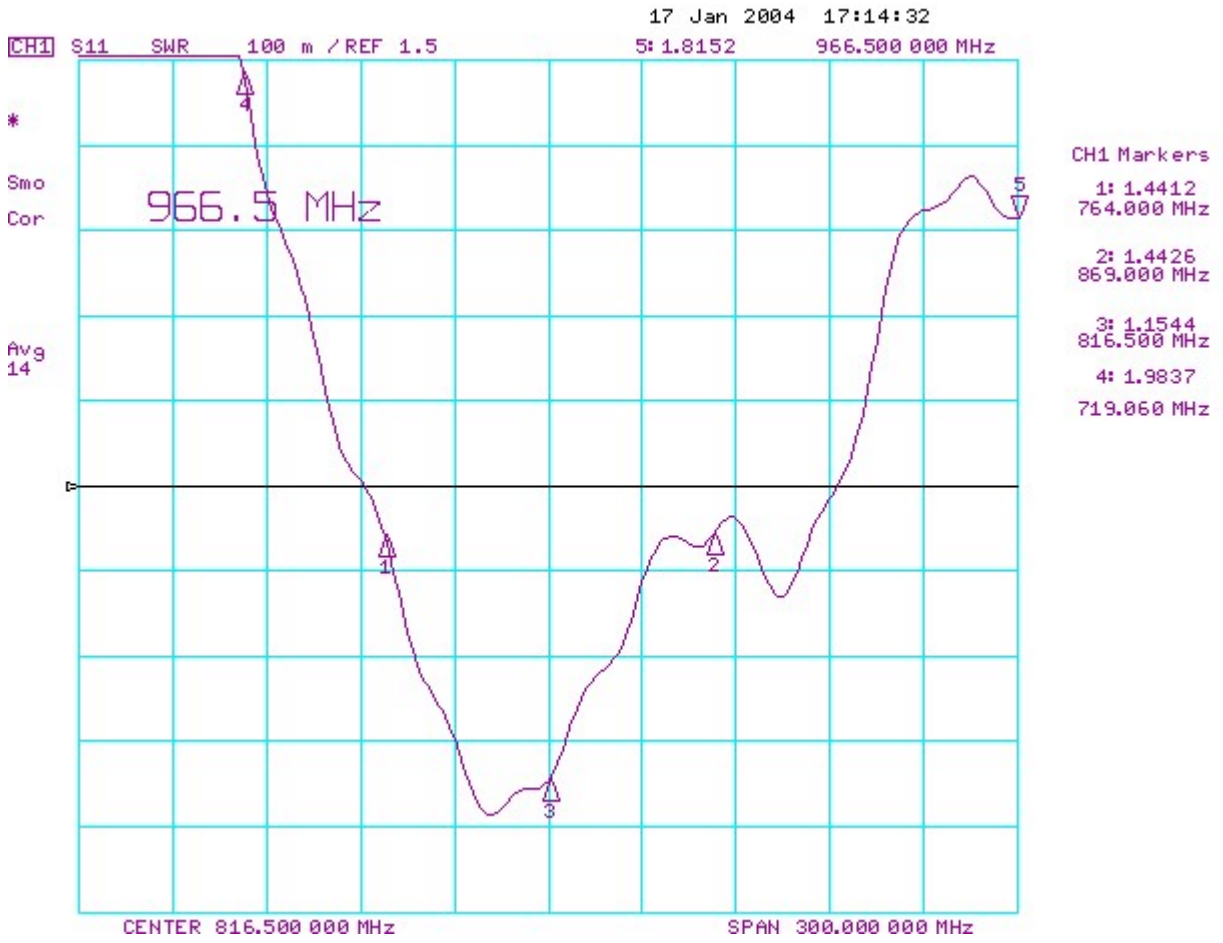
FREQUENCY:	**ATTENUATION:**
600 MHz ~ 1000 MHz	-40dBc min
1475 MHz	-30dBc min
1525 MHz	-20dBc min
1625 MHz	-15dBc min
1675 MHz	-25dBc min

ANTENNA RADIATION PATTERN



Azimuthal Pattern

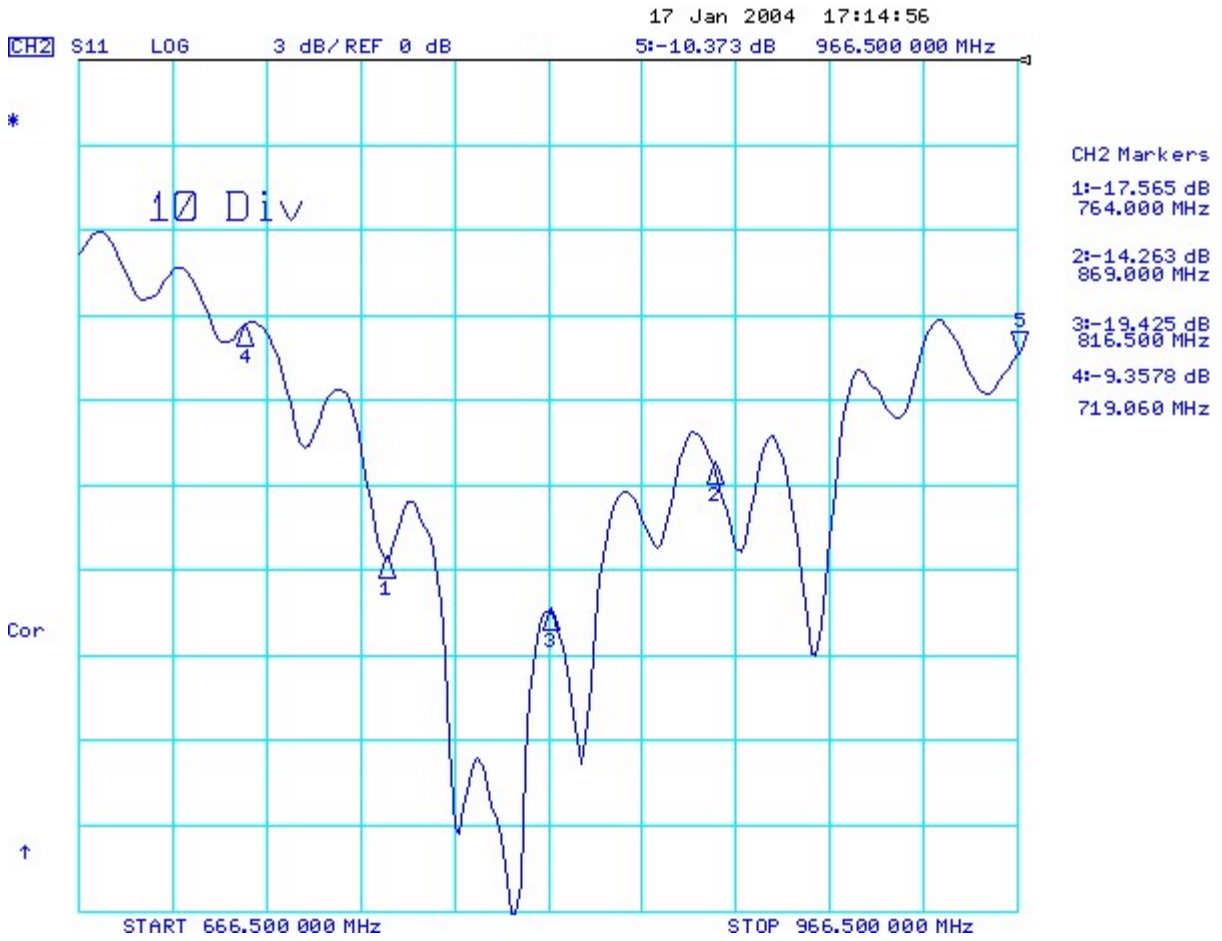
VSWR of OEM2322



OEM2322 Typical VSWR sweeps – Primary Specification (BW = 105 MHz @VSWR <1.5:1)

Marker 1: 1.4412 to 1 @ 764.000 MHz
Marker 2: 1.4426 to 1 @ 869.000 MHz
Marker 3: 1.1544 to 1 @ 816.500 MHz
01/17/2004

Return Loss of OEM2322



OEM2322 Typical Return Loss sweeps – Primary Specification (BW = 105 MHz)

Marker 1: -17.565 dB @ 764.000 MHz
Marker 2: -14.263 dB @ 869.000 MHz
Marker 3: -19.425 dB @ 816.500 MHz
01/17/2004