



Phantom Titan

L001421-01 - Wastewater and Extreme Environment 4G/5G Cellular & NTN Antenna

The Phantom Titan antenna series has been designed with wastewater and ground level caustic, flood and moisture prone environments in mind. These IP68 rated antennas are qualified for exposure to sulfuric acid, hydrogen sulfide, methane and other gases. The rodent resistant cable makes them ideal for ground-level installation.

The antenna offers global cellular 617-7125 MHz coverage even for regions where the lower 600 MHz band is required. They deliver high levels of efficiency and gain in a compact form factor.

A direct-mount, threaded stud with shake-proof washer and locking nut meets with superior quality to provide an extremely rugged antenna designed with harsh environments in mind.

FEATURES

- Global cellular coverage 617-7125 MHz
- Suitable for use on satcom D2D/NTN networks
- High performance in a very compact form factor of 86 x 45 mm (3.4 x 1.8 in.)
- Developed with wastewater systems and extreme environments in mind
- Rugged and Tested: IP68 rated, rodent resistant braided sleeve, shake-proof washer and locking nut, ASTM G155, ASTM G210, UL94-V0, IEC 60068-2-27, IEC60068-2-64 and more
- Connectivity where you need it - Uniform azimuth patterns reduce the chance of signal drop outs
- Made in Malaysia

APPLICATIONS

- Water Monitoring & Management: sewers, wastewater, storm drains, culverts, water tunnels
- Environmental Monitoring: rivers, canals, estuaries flood plane, marsh/swamps
- Industrial Applications: liquid processing, ground level or below ground working areas
- Infrastructure: ground or below ground buildings and parking areas
- Animal Exposure: areas that are prone to damage from wildlife, rodents or other interference
- Utilities: transformer and sub-station ground-level or below ground locations
- Others: mining, ports and maritime, liquid handling, breweries, agriculture, underground roadways, tunnels, rail, robotics

ELECTRICAL SPECIFICATION

Operating Frequency (MHz)	617-960	1427-1675	1695-2700	3300-4200	4400-6000	6000-6500	6500-7125
VSWR - Max	<2.5:1	<1.8:1	<1.8:1	<1.8:1	<1.9:1	<2.2:1	<2.2:1
Peak Gain - Average (dBi)	2.1	2.8	3.4	4.5	5.8	6.0	6.0
Efficiency (%) Avg.	77	85	84	78	83	71	71
Polarization	Vertical						
Azimuth Beamwidth (All Models)	360 °, Omnidirectional						
Nominal Impedance (Ohms)	50						

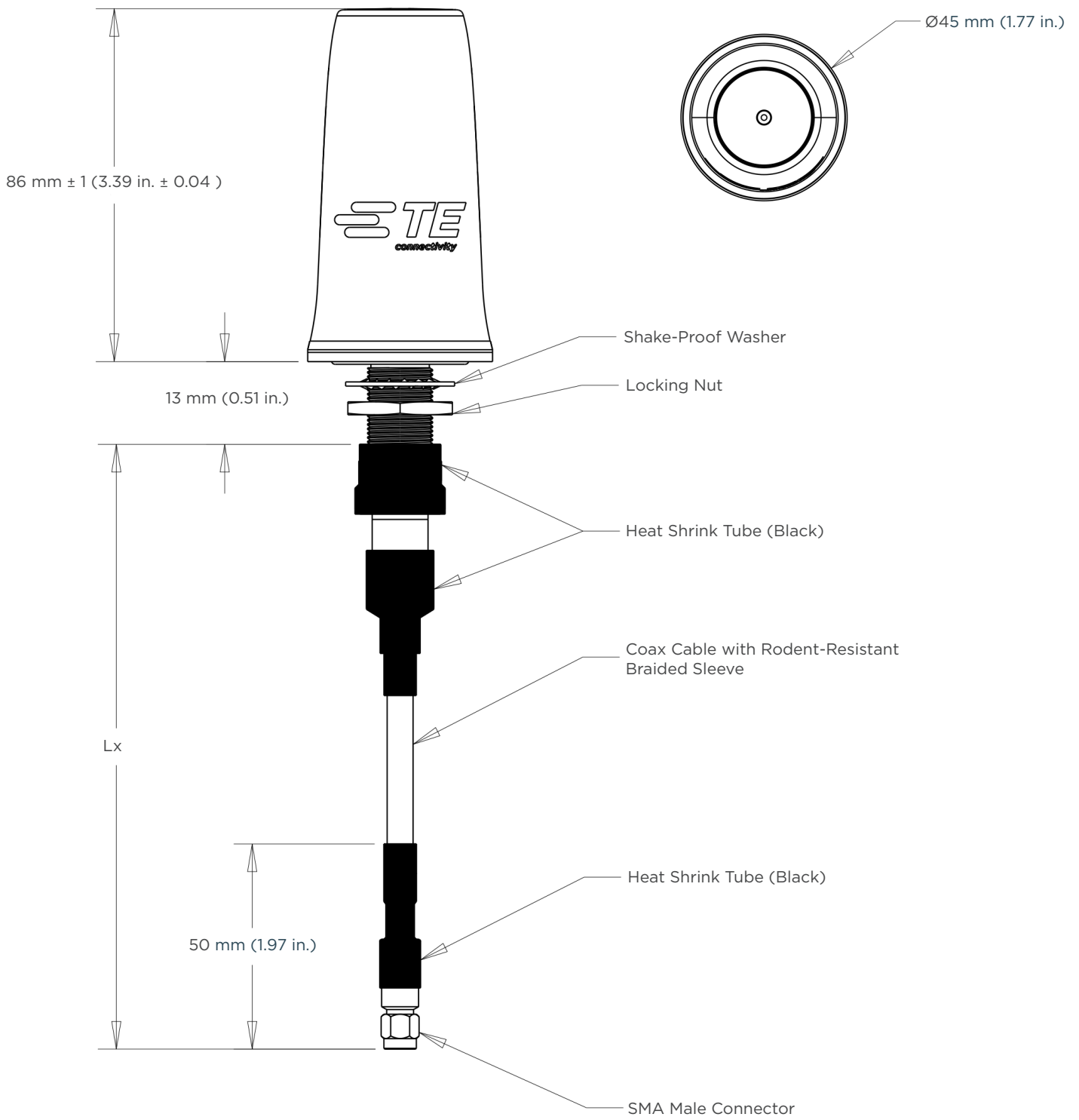
MECHANICAL SPECIFICATION

Dimensions - height x diameter - mm (in.)	86 x 45Ø (3.34 x 1.77)
Weight - kg (lb.)	0.25 (0.55)
Connector	SMA (male)
Cable Type	LMR 195-Type Rodent Resistant Jacketed Cable
Pull Test - Cable	20 lbs - 30 second Durations
Cable Length - mm (in.)	1000 ± 30 (39.37 ± 1.18)
Drop Test - Radome	1 m Drop on Hard Surface (5 Drops Total)
Mechanical Shock Rating	IEC 60068-2-27
Vibration Test Rating	IEC60068-2-64

ENVIRONMENTAL SPECIFICATION

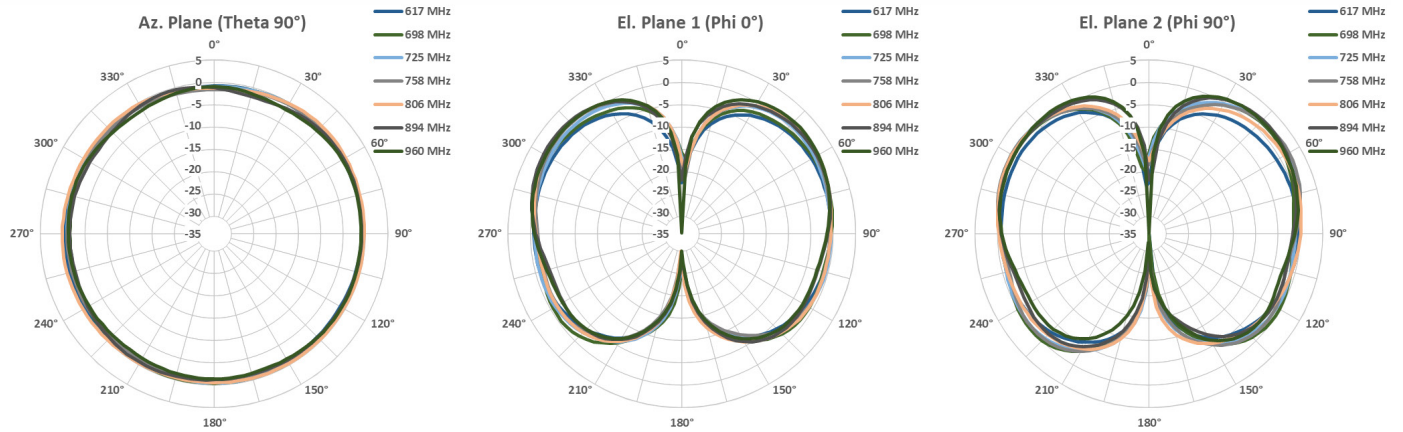
Operating Temperature - °C (°F)	-30 to +70 (-22 to +158)
Storage Temperature - °C (°F)	-40 to +85 (-40 to +185)
Ingress Protection (IP Rating)	IP68 - 5m water depth tested for 30 days
Waste Water Environment Compatibility	ASTM G210 Tested to Survive Exposure: Acid/Salt solution immersion. (Sodium Chloride (NaCL) and Sulfuric Acid (H2SO4) Hydrogen Sulfide (H2S); Carbon Dioxide (CO2); Methane (CH4)
UV Resistance	UV-stable radome tested to ASTM G155
Flammability Rating	UL94-V0 UL746C-F2
Temperature Cycling	IEC 68-2-14
Humidity Rating	MIL-STD 810G/Method 507.5/ Procedure II (Aggravated Cycle): 5±1 °C/min
Antenna Dielectric Properties	1000 V Dielectric Withstand 5000 MOhm Insulation Resistance
Material Substance Compliance	RoHS REACH HF CE UKCA

MECHANICAL DRAWING

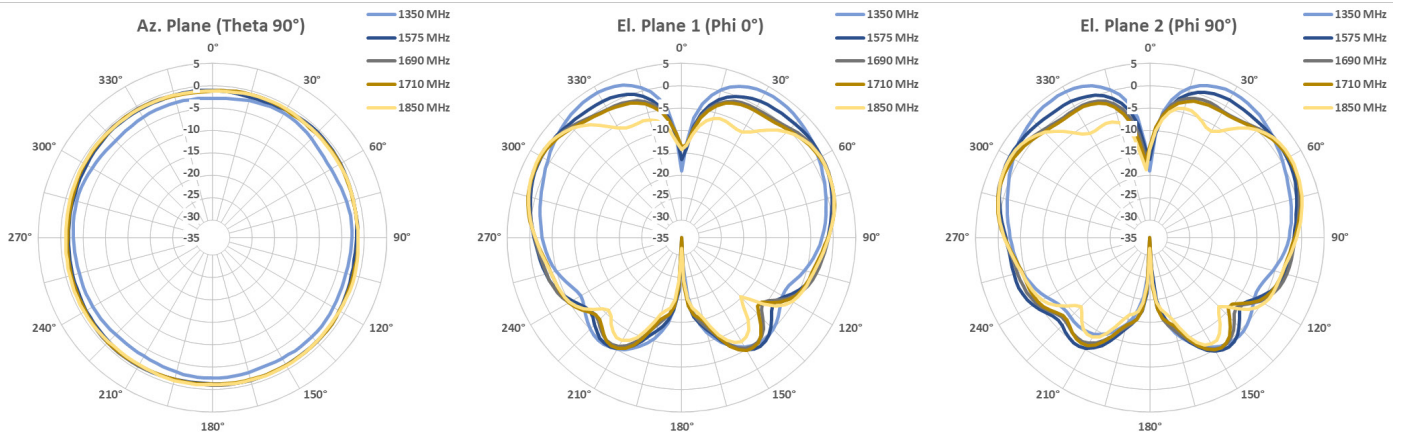


RADIATION PATTERNS

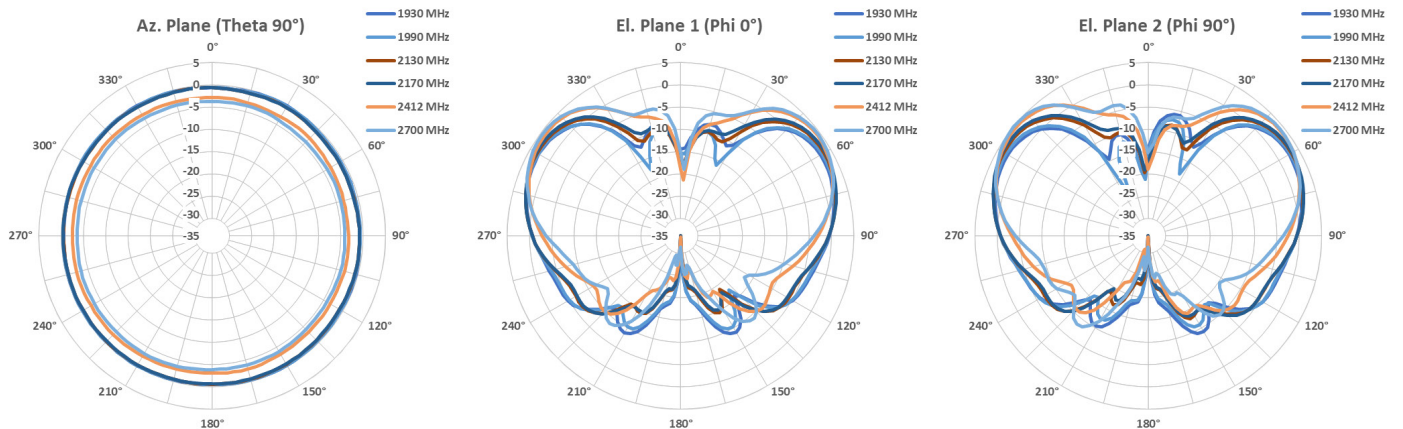
Radiation Patterns 617 - 960 MHz



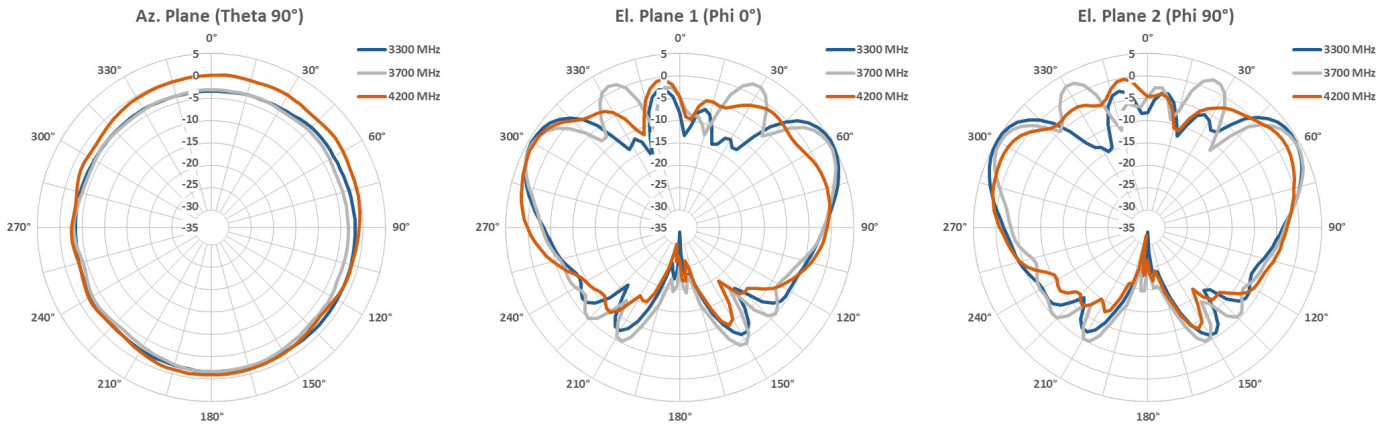
Radiation Patterns 1350 - 1850 MHz



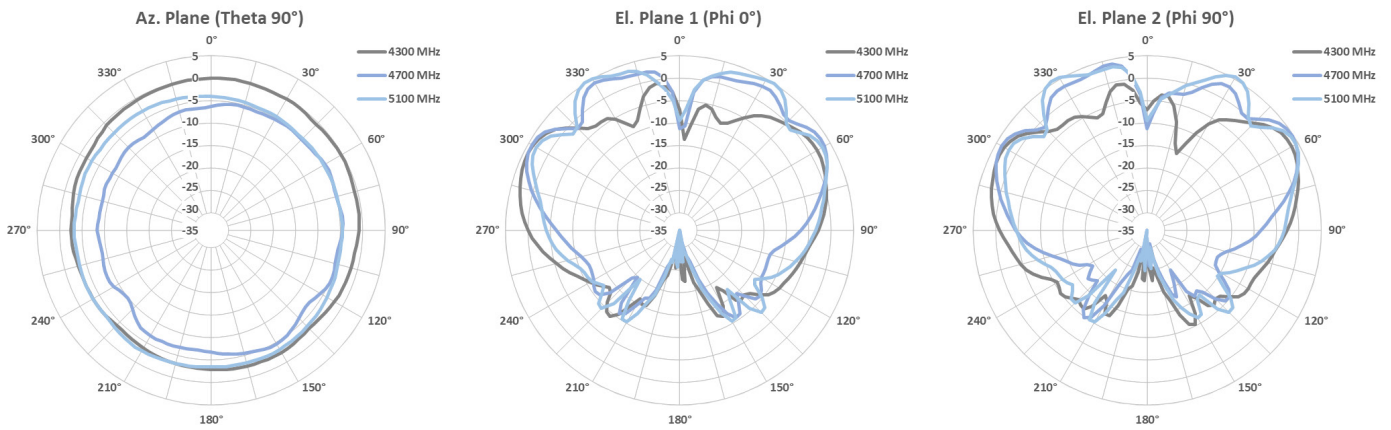
Radiation Patterns 1930 - 2700 MHz



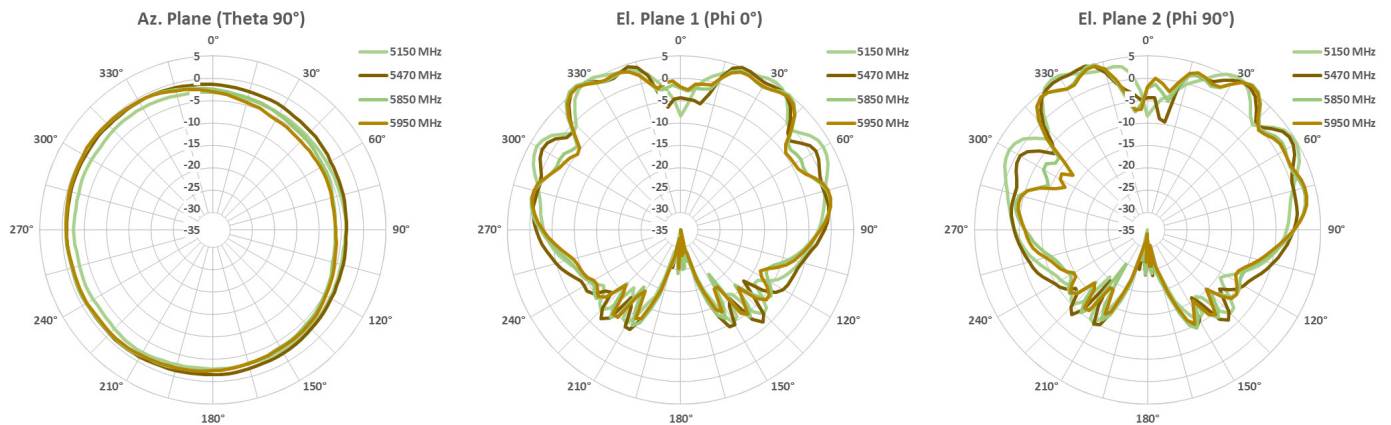
Radiation Pattern at 3300 - 4200 MHz



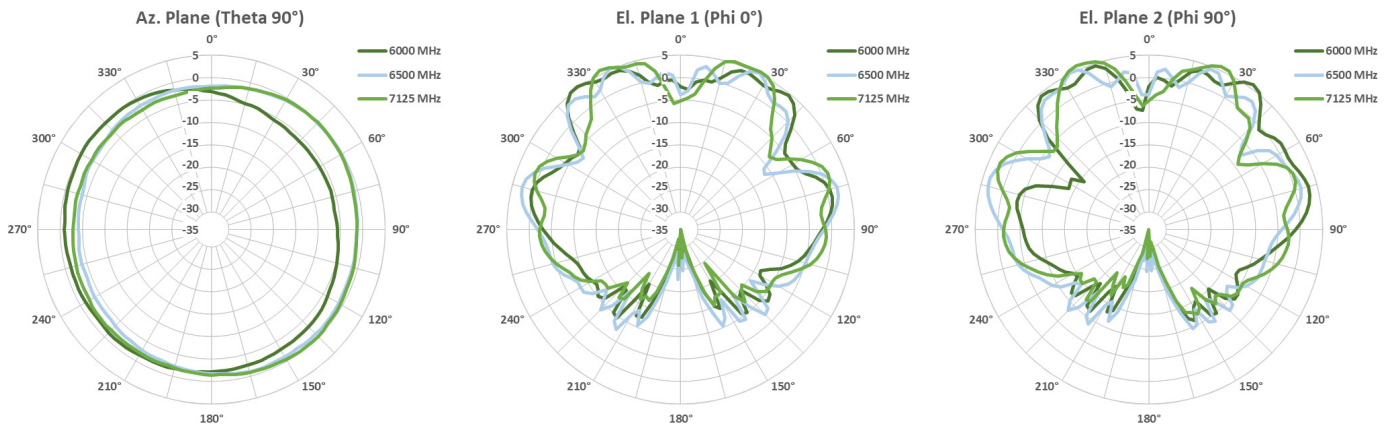
Radiation Pattern at 4300 - 5100 MHz



Radiation Pattern at 5150 - 5950 MHz

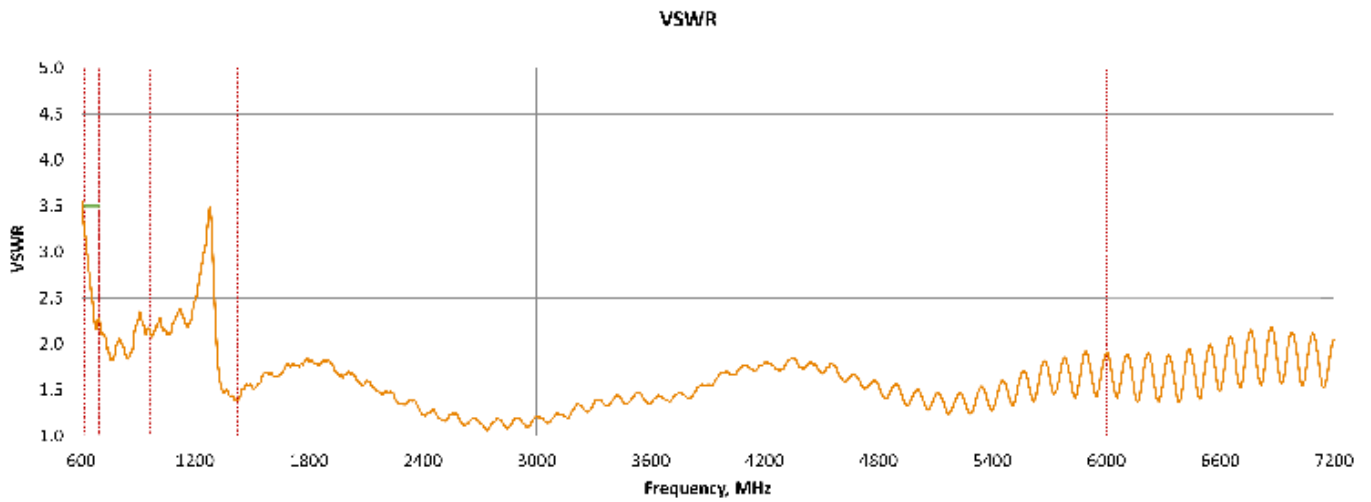


Radiation Pattern at 6000 - 7125 MHz

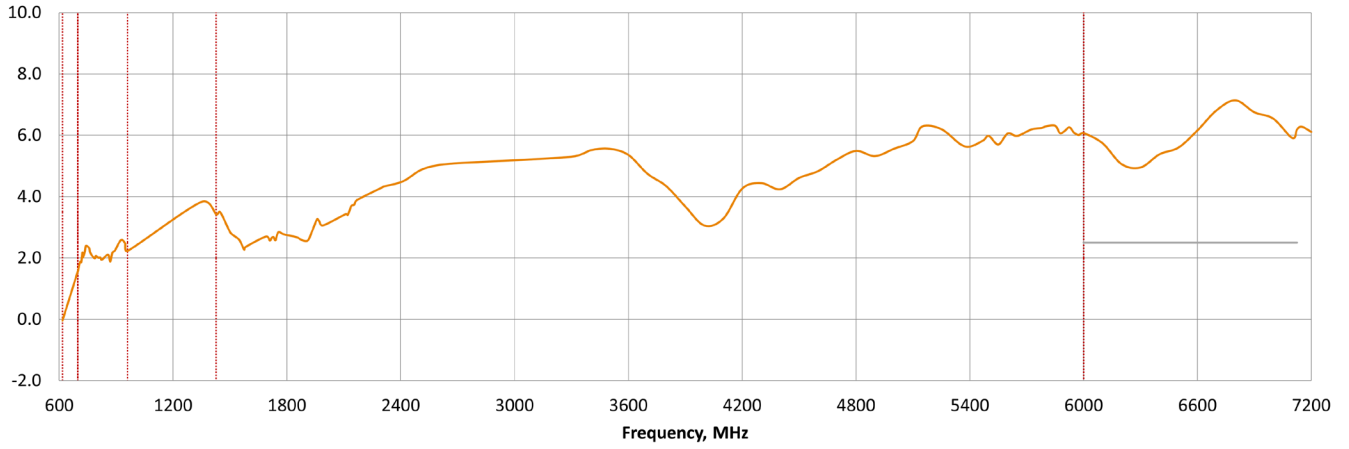


RF PERFORMANCE

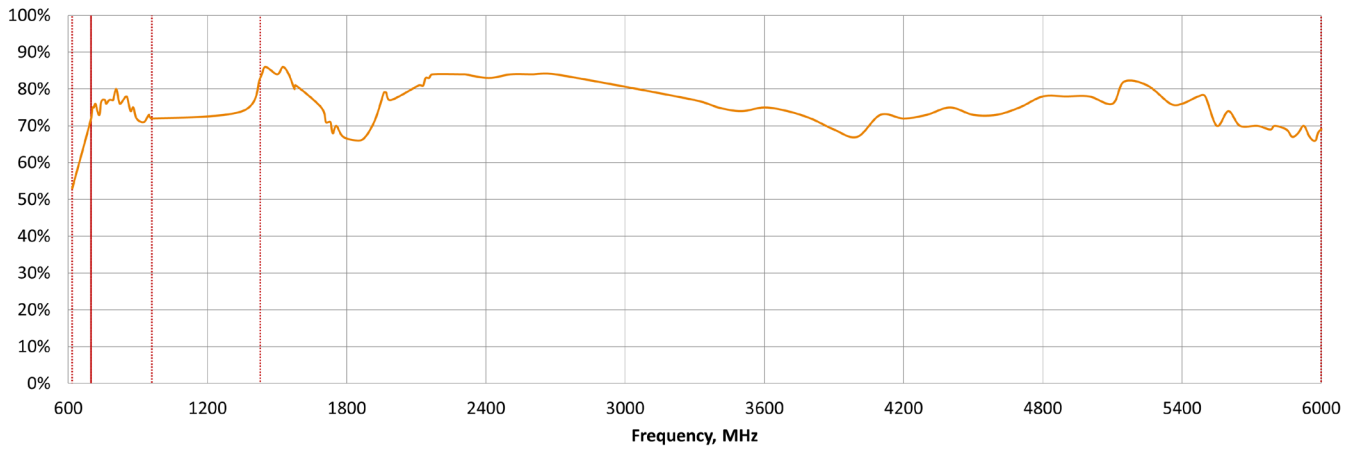
VSWR



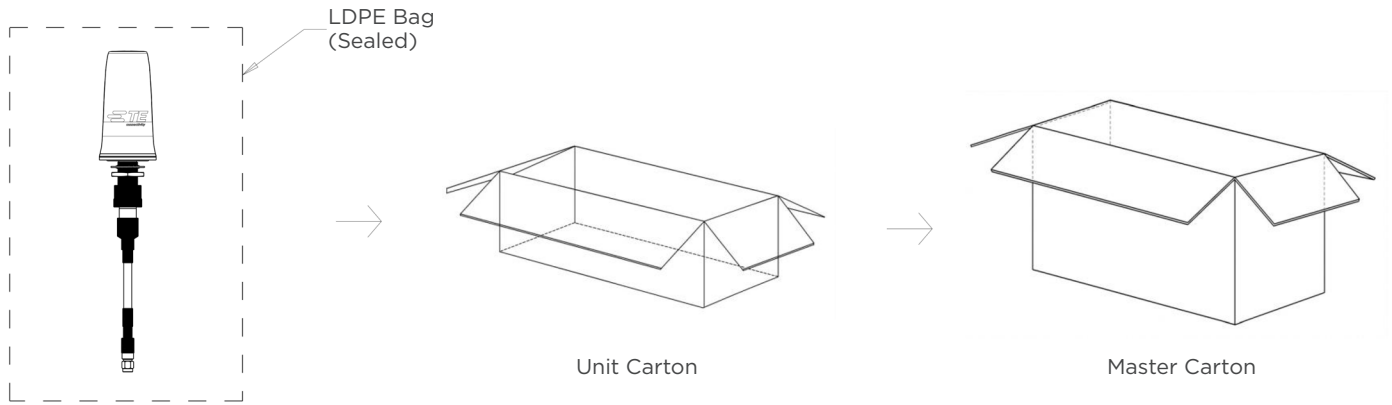
Peak Gain (dBi)



Efficiency (%)



PACKAGING



PACKAGED DIMENSIONS	Unit Carton	Master Carton
Number of Antennas	1	10
Length cm (in.)	214 (8.43)	385 (15.16)
Width cm (in.)	92 (3.62)	193 (7.60)
Height cm (in.)	68 (2.68)	233 (9.17)
Est. Shipping Weight kg (lbs.)	0.31 (0.68)	3.34 (7.36)

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