

4G/5G Cellular Transit Antenna

TRNC[G]-7-60

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TRNC[G]-7-60

- Standard four hole fixing transit antenna
- Wideband LTE/Cellular/WIFI element
- Optional Integrated GPS/GNSS antenna

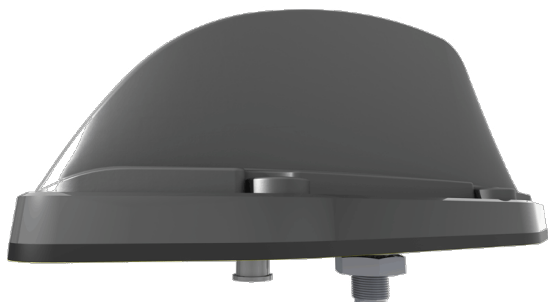
The TRNC[G] antenna series has been designed specifically for use on trains, trams and buses operating on surface or underground systems.

The TRNC[G]-7-60 range covers 698-960/1427-6000MHz for global 5G/4G/LTE operation and the radiating element is DC grounded.

The TRNCG-7-60 variant also incorporates an active GPS/GNSS antenna for GPS/ GLONASS/Galileo/BeiDou systems with a 26dB gain LNA, advanced filtering and a gas discharge surge arrestor.

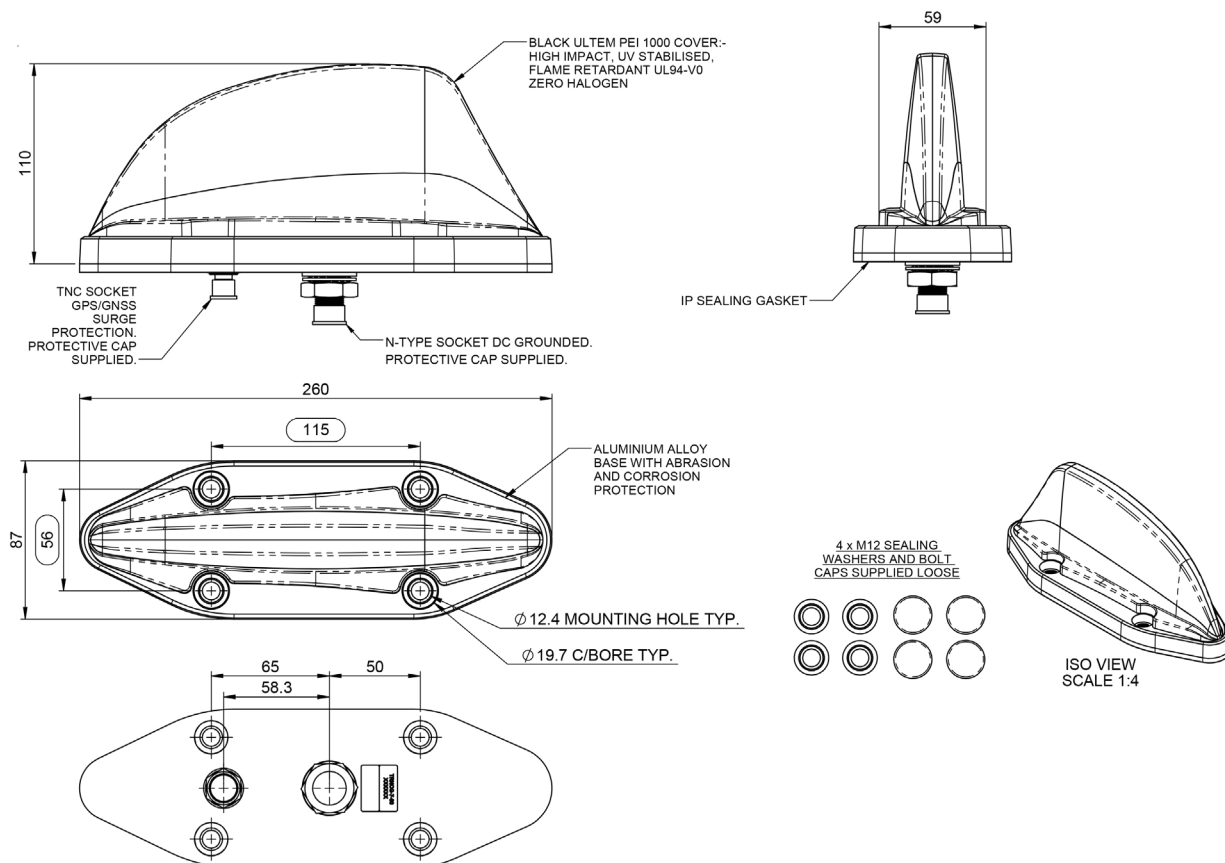
Housed in a high impact, flame retardant Ultem housing, the TRNC[G] series is weatherproof ensuring that the antenna's performance is never compromised.

The TRNC[G]-7-60 meets stringent industry standards including EN50155, EN45545-2 (HL1-3), EN50124 (40 KA 100 MS) and the installation is ingress protected to IP69K when correctly installed.



Technical Drawing

TRNCG-7-60 Shown



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Product Data

Part No.		
TRNC[G]-7-60		TRNC-7-60
Electrical Data		
Frequency Range (MHz)		698-960/1427-6000 MHz
Polarisation		Vertical
Typical VSWR*		< 2.5:1
Pattern		Omni-directional
Impedance		50Ω
Max Input Power (W)		60
GPS Data		
Frequency Range (MHz)		1559-1612 -
Impedance		50Ω -
LNA Gain		26dB ± 3 -
Polarisation		Righthand Circular -
Operating Voltage		3-5V DC -
Current (Typical)		17mA -
Mechanical Data		
Dimensions (mm)	Height (N/inc pad)	110 (4.33")
	Width	87 (3.42")
	Length	260 (10.23")
Environmental Specification		
Operating Temp (°C)		-40° / +85°C (-40° / +185°F)
Radome Material		Ultem 1000
Radome Flame Retardance Rating		V0 (UL 94)
Base Material		Cast Aluminium
Ingress Protection		IP67 or IP69K depending on installation condition
Approvals Data		
Regulatory Approvals		EN50155:2021 (Dry heat & Cooling, Damp Heat, Salt Mist), EN61373:2010 / EN50155:2021 (Shock & Vibration), EN45545:2020- HL3 (flammability) / EN50124-1:2017 (40 KA 100ms)
Mounting Data		
Fixing		4 × mounting holes to suit M12 bolts
Termination Data		
Termination	Comms	N (female) - DC grounded
	GPS	TNC (female) - surge protected -

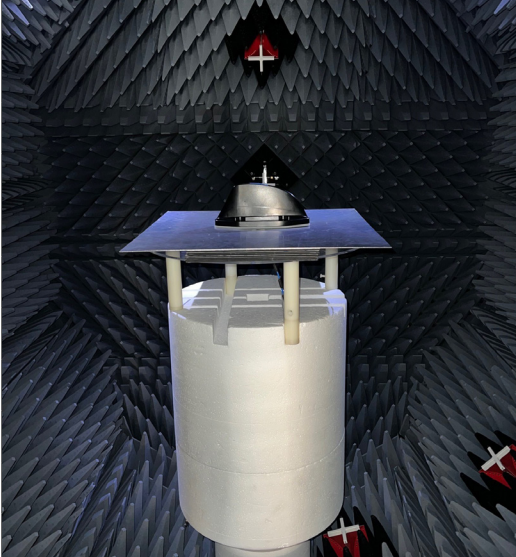
* Across 90% of relevant frequencies when measured on a 600 x 600mm (2' x 2') ground plane with 1m (3') of low loss cable

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Electrical Data
Ground Plane - Cell

Measurement Conditions	4G/5G Antenna				
Measured on a 600 x 600mm (2' x 2') ground plane without cable	Frequency Range (MHz)	LTE Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	617-698	71, 105	Cell	5.0	84
	699-798	12,13, 14 17,28	Cell	5.0	87
	807- 862	5,19,20,26,27	Cell	4.4	75
	880-960	8	Cell	5.9	86
	1427-1518	11, 21, 74,75,76	Cell	7.5	91
	1710-1920	2,3,4,9,25,35,39,66	Cell	5.9	82
	1920-2170	1,23	Cell	7.6	91
	2300-2400	30,40	Cell	8.2	96
	2496-2690	7,38,41	Cell	8.5	98
	3300-4200	22,42,43,48,77,78	Cell	7.8	87
	4400-5000	79	Cell	8.6	89

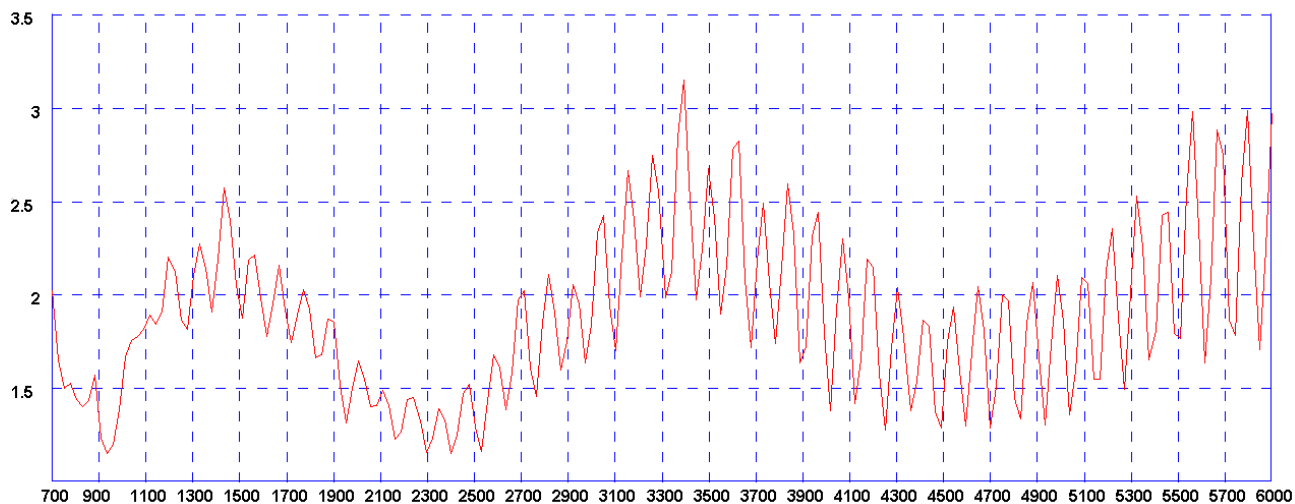
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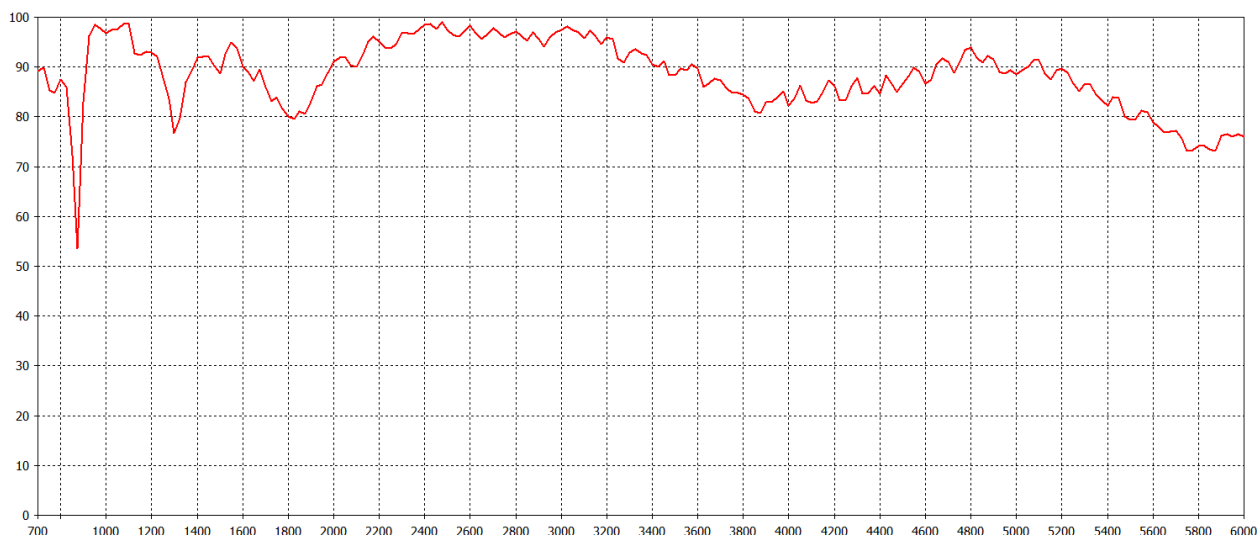
Electrical Data
Ground Plane - Cell

Typical VSWR*



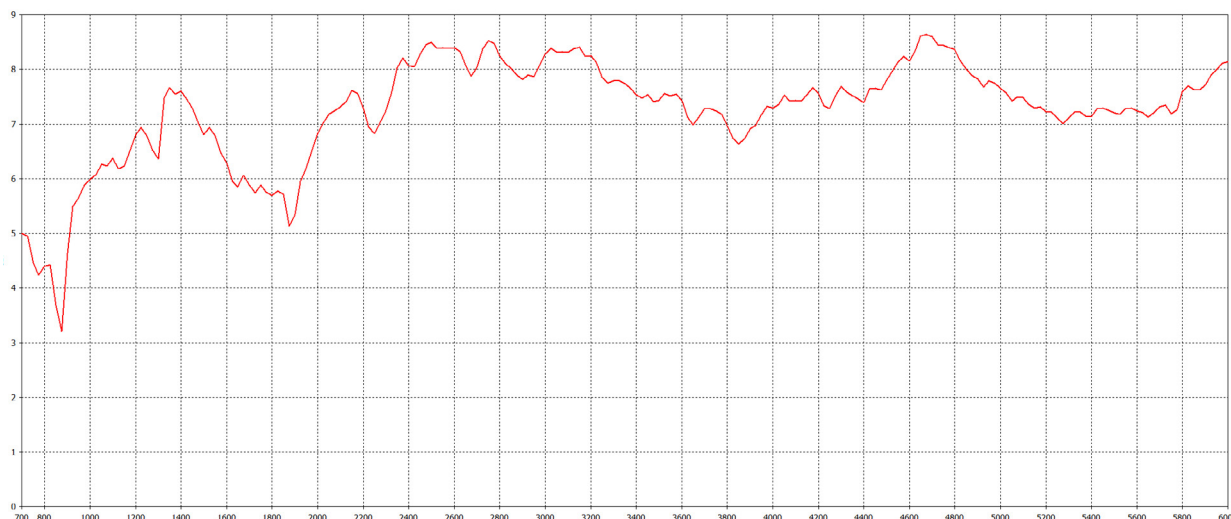
* VSWR Measured on a 600 x 600mm (2' x 2') ground plane with 1m (3') of low loss cable

Typical Efficiency*



*Efficiency Measured on a 600 x 600mm (2' x 2') ground plane with 1m (3') of low loss cable

Typical Swept Peak Gain*



*Peak Gain Measured on a 600 x 600mm (2' x 2') ground plane with 1m (3') of low loss cable

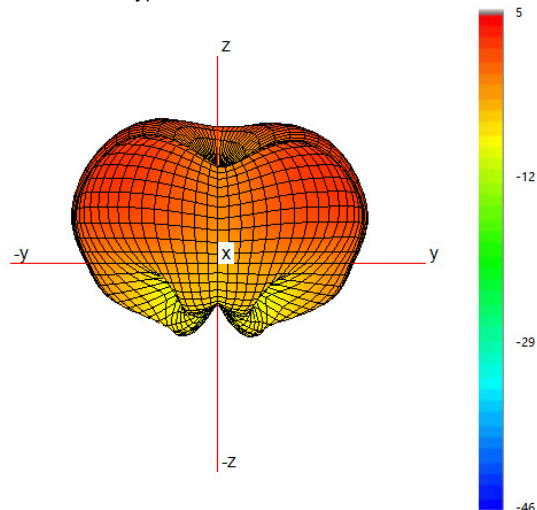
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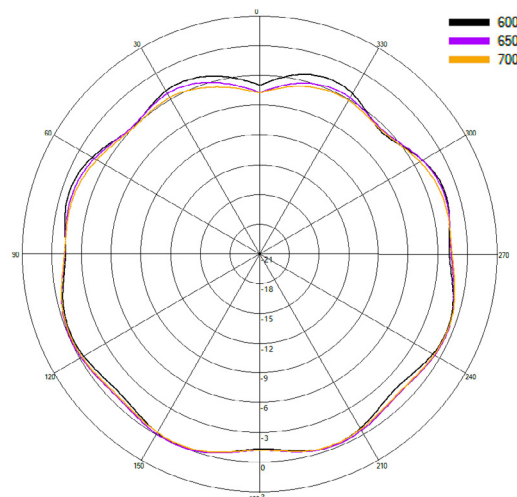
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Patterns Cell
Ground Plane

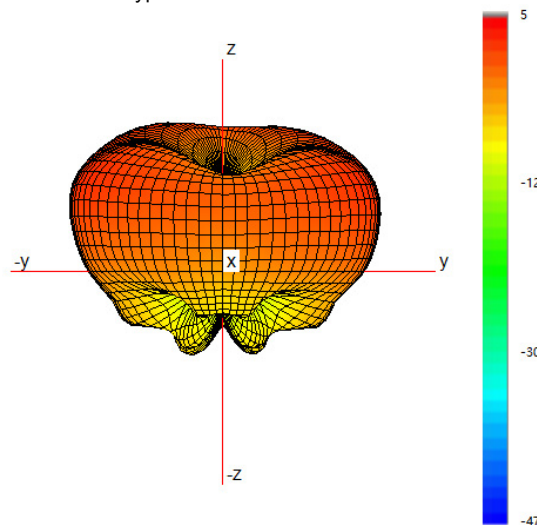
Typical 3D Pattern- Cell - 650 MHz



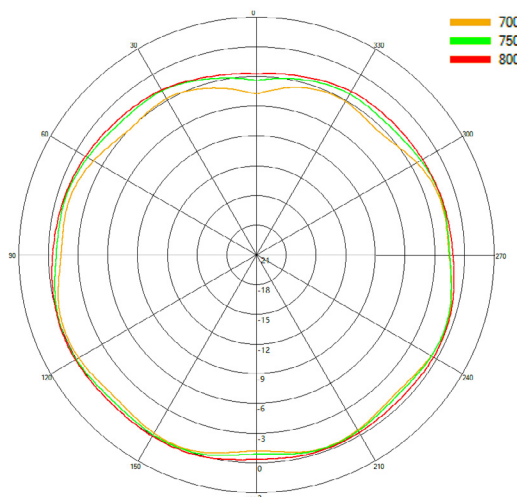
Typical H Plane- Cell - Patterns- 600-700MHz



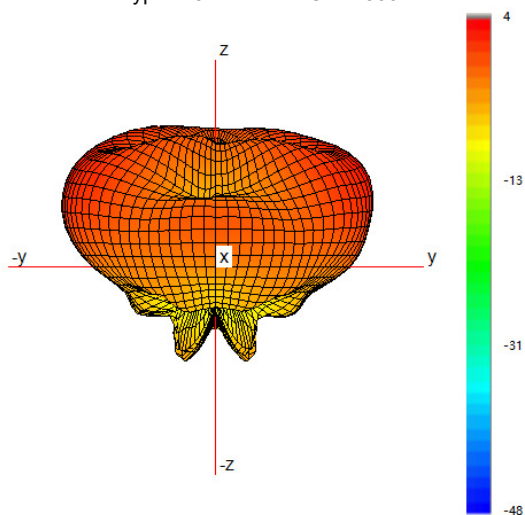
Typical 3D Pattern- Cell - 750 MHz



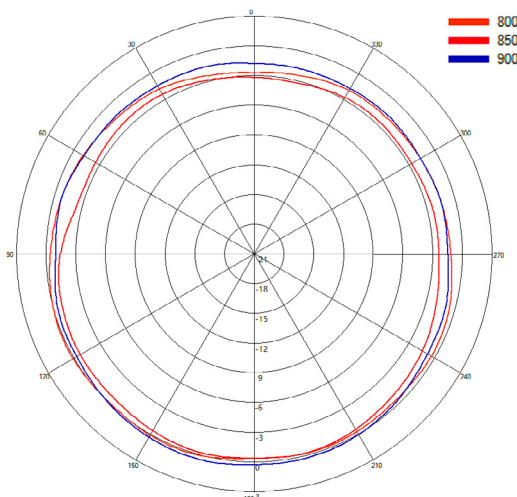
Typical H Plane- Cell - Patterns- 700-800MHz



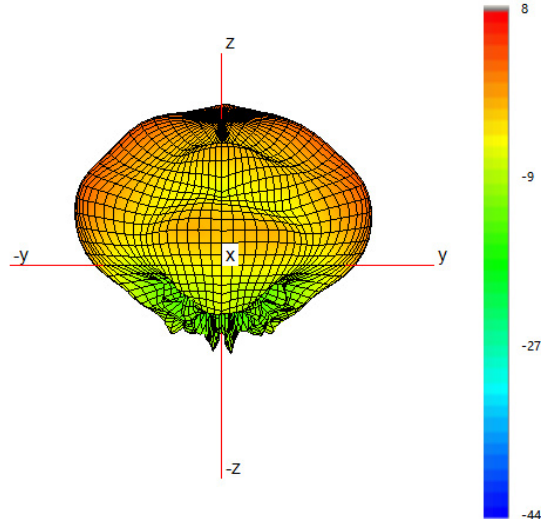
Typical 3D Pattern- Cell - 850 MHz



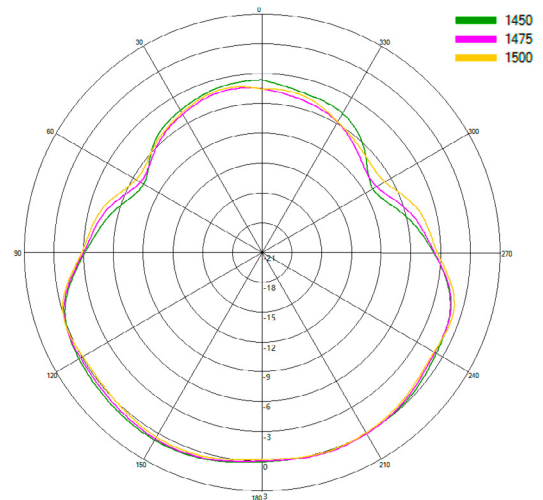
Typical H Plane- Cell - Patterns- 800-900MHz



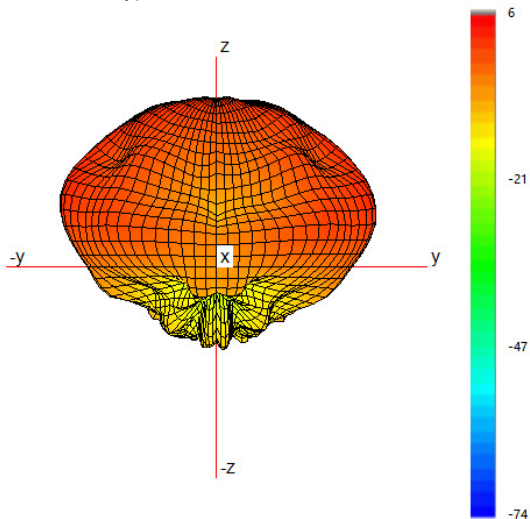
Typical 3D Pattern- Cell - 1475 MHz



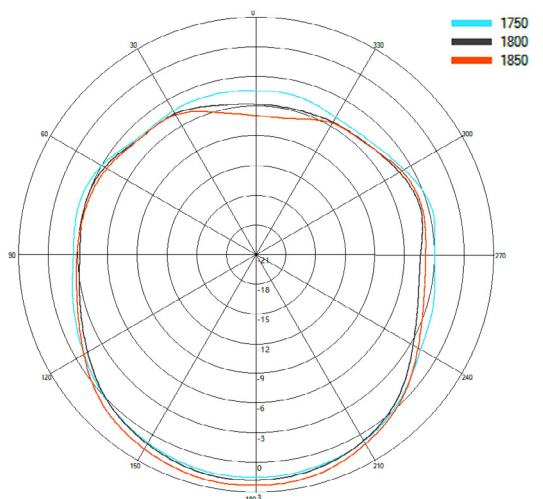
Typical H Plane- Cell - Patterns- 1450-1500 MHz



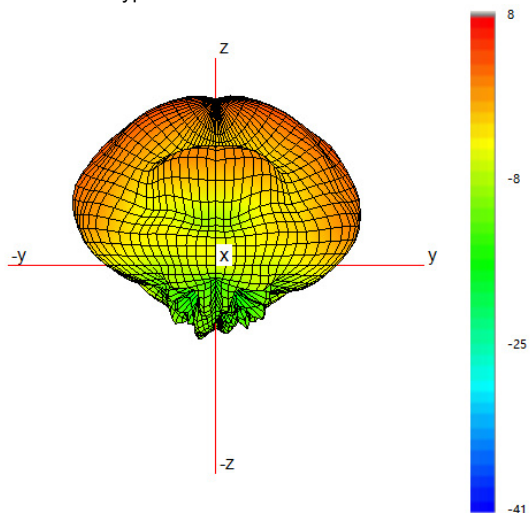
Typical 3D Pattern- Cell - 1800 MHz



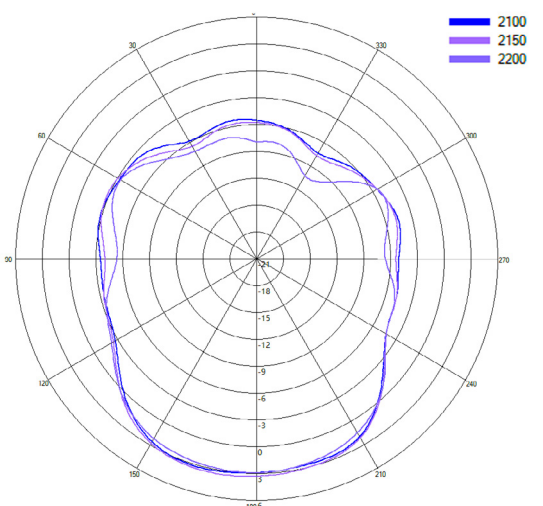
Typical H Plane- Cell - Patterns- 1750-1850 MHz



Typical 3D Pattern- Cell - 2150 MHz

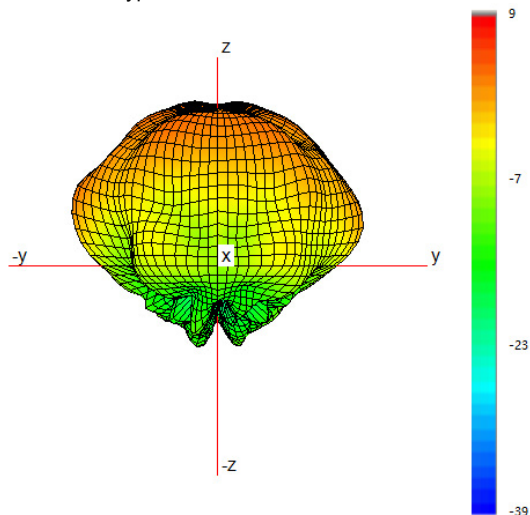


Typical H Plane- Cell - Patterns- 2100-2200 MHz

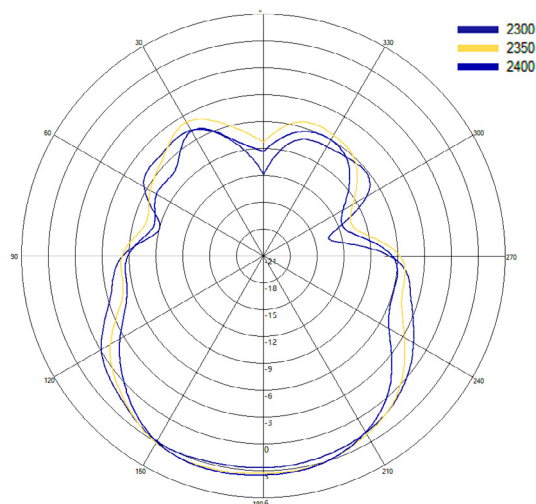


Patterns Cell
Ground Plane

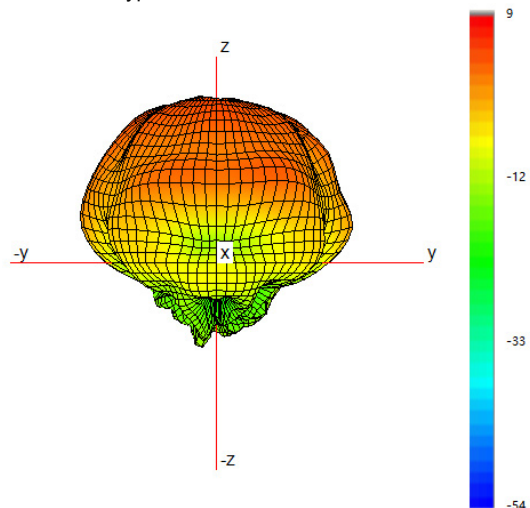
Typical 3D Pattern- Cell - 2350 MHz



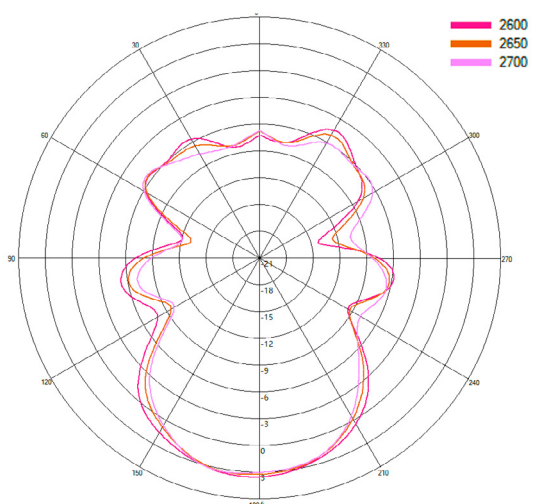
Typical H Plane- Cell - Patterns- 2300-2400 MHz



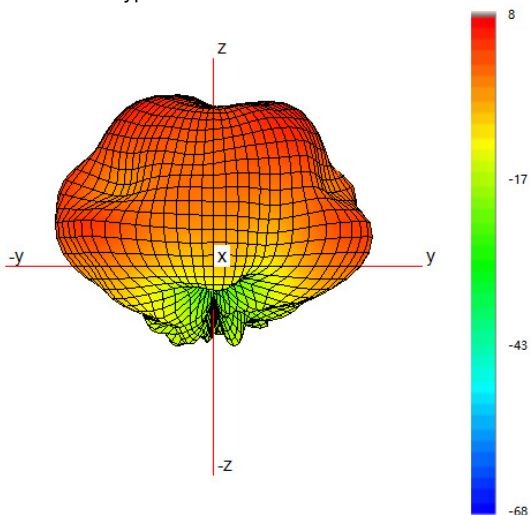
Typical 3D Pattern- Cell - 2650 MHz



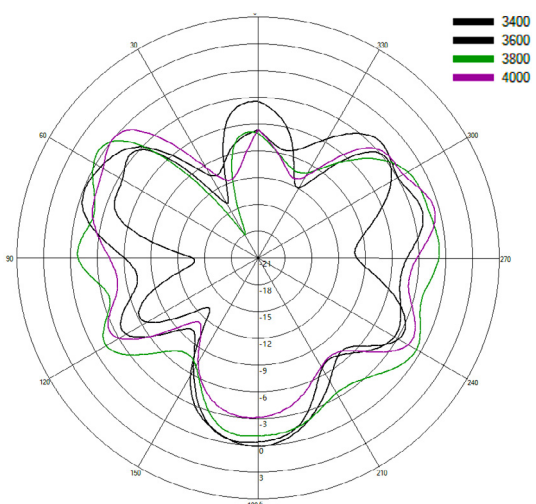
Typical H Plane- Cell - Patterns- 2600-2700 MHz

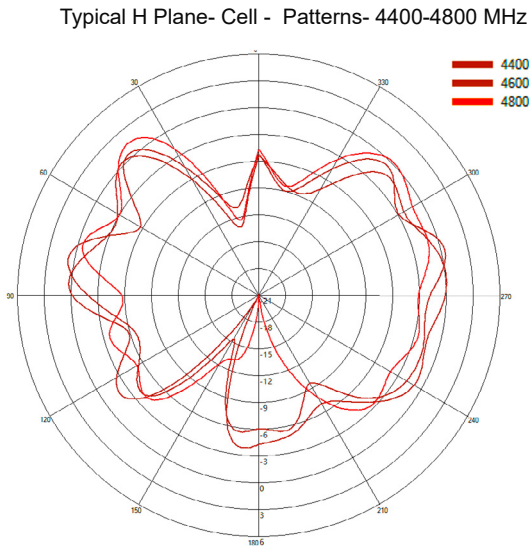
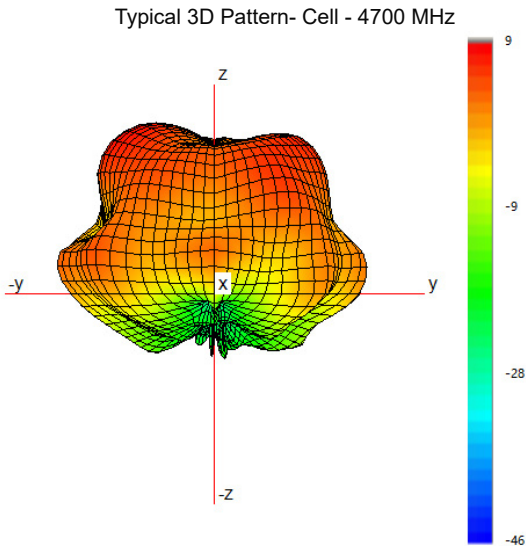


Typical 3D Pattern- Cell - 3600 MHz



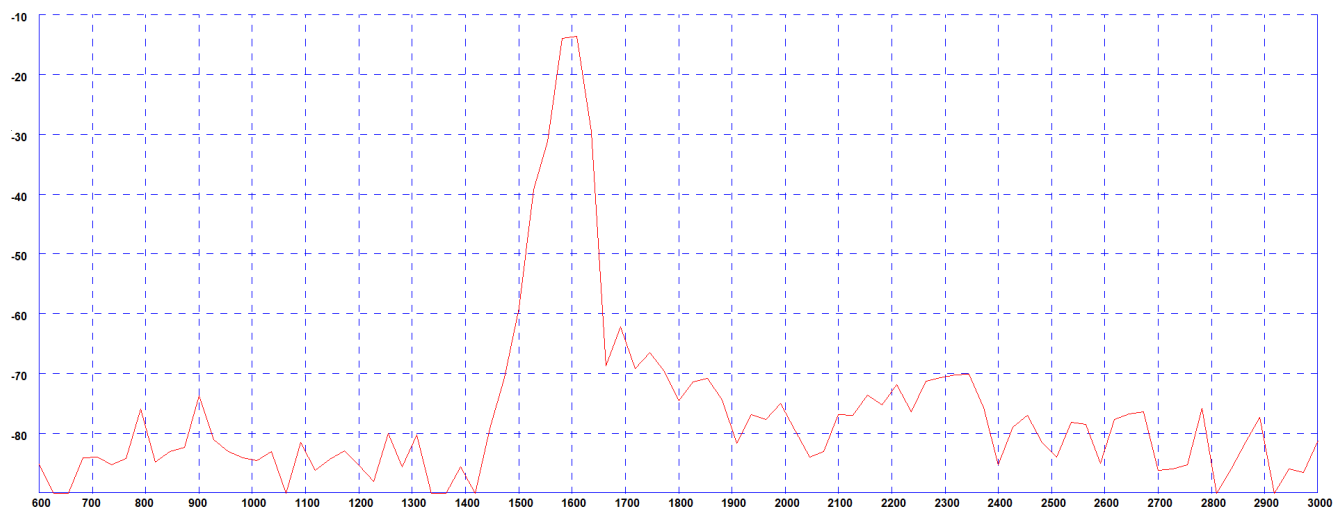
Typical H Plane- Cell - Patterns- 3400-4000 MHz



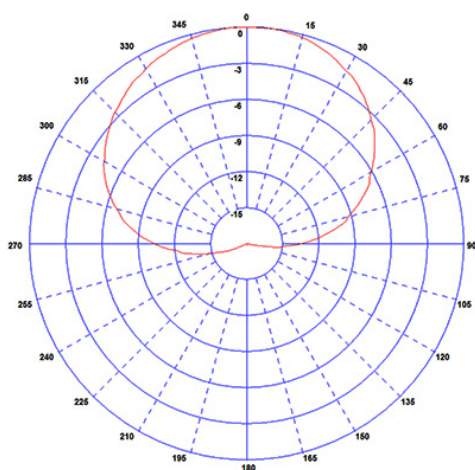


Electrical Data- L1 GPS/GNSS

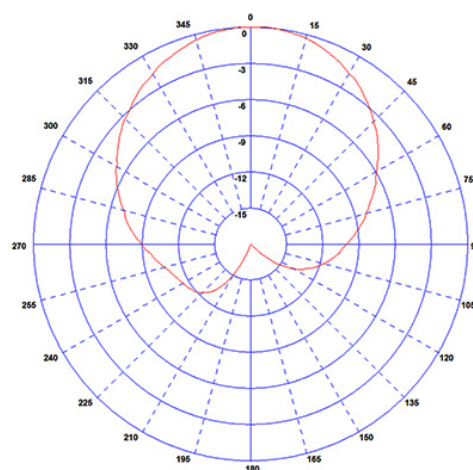
Swept Peak Gain GPS/GNSS



Typical E Plane Pattern - GPS/GNSS 1575 MHz



Typical E Plane Pattern - GPS/GNSS 1602 MHz



GPS/GNSS Measurements taken on 190x190mm (7.4" x 7.4") ground plane excluding cable loss