GSM-R / LTE
MiMo Transit Antenna Range

PANORAMA ANTENNAS

TRNM[G]-7-60-NJ

TRNM[G]-7-60-NJ

- Standard four hole rail fixing
- 2x2 MiMo Cell / LTE / WiFi 2.4/5.0
- Optional Integrated GPS / GNSS / Beidou antenna
- Suitable for GSM-R rail applications

The TRNM(G) MiMo antenna series is designed specifically for use on trains, trams and buses underground or over ground. Incorporating two elements operating wideband across all frequencies from 698MHz to 6000MHz the TRNM(G) range is versatile and future proof.

The TRNM(G) series covers GSMR, 700MHz LTE, 800MHz TETRA and trunking bands along with all Cellular and GSM frequencies, 2.4 & 5.8GHz WLAN, 2.6 GHz LTE and WIMAX all in one housing.

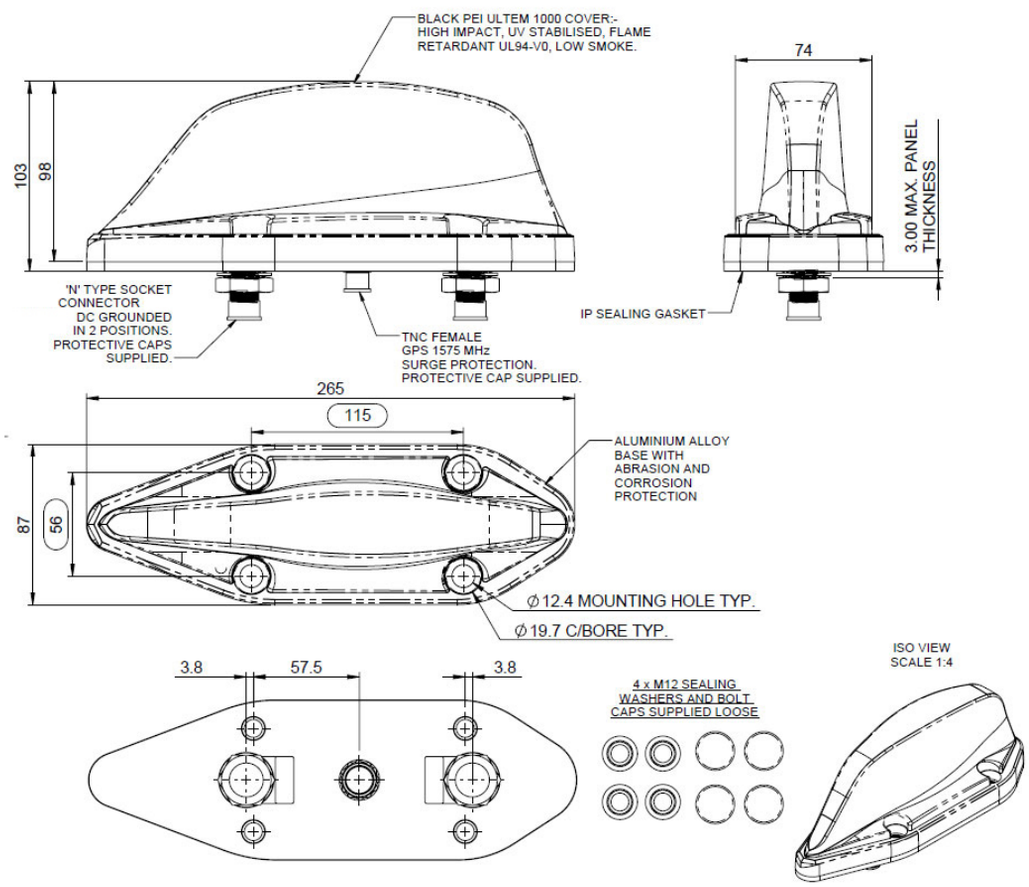
The TRNM(G) has two DC grounded radiating elements, in versions with a GPS module it is protected by a gas discharge surge arrestor.

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

The TRNM[G] antenna meets stringent industry standards including EN50155, EN45545-2 (HL 1-3), EN50124-1 (25 KA / 100 MS) and is ingress protected to IP69k when properly installed.

Technical Drawing

TRNMG-7-60-NJ Shown



Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

PANORAMA ANTENNAS

26/10/2018 V3

GSM-R / LTE
MiMo Transit Antenna Range

PANORAMA ANTENNAS

TRNM[G]-7-60-NJ

Product Data

Part No.		TRNM-7-60-NJ	TRNMG-7-60-NJ
Electrical Data			
Frequency Range (MHz)		2x 698-960 / 1700-6000 MHz	
Peak Gain: Isotropic**	698-960	6dBi	
	1710-2700	6dBi	
	4.9-6GHz	10dBi	
Polarisation		Vertical	
Typical VSWR*		< 2.5:1	
Correlation Co-Efficient		<0.1	
Typical Isolation***		<15dB	
Pattern		Omni-directional	
Impedance		50Ω	
Max Input Power (W)		60	
GPS Data			
Frequency Range (MHz)		-	1560-1612
Impedance		-	50Ω
LNA Gain		-	26dB ± 3
Polarisation		-	Rigth Hand Circular
Operating Voltage		-	3-5V DC
Current (Typical)		-	15mA
GPS Antenna EMC Compliance		-	EN 301 489-1 V1.81 & EN 301 489-3 V1.6.1 | EN 50121-3-2:2015
Mechanical Data			
Dimensions (mm)	Height (N/inc pad)	98 (3.86")	
	Width	87 (3.42")	
	Length	265 (10.4")	
Environmental Specification			
Operating Temp (°C)		-40° / +80°C (-40° / +176°F)	
Radome Material		Ultem 1000	
Radome Flame Retardance Rating		V0 (UL 94)	
Base Material		Cast Aluminium (corrosion protected & powder coated)	
Ingress Protection		IP67 (Report No. 98883) or IP69K when installed in accordance with SW3 - 988 (Report No. 103439)	
Approvals Data			
Regulatory Approvals		EN50155:2007 (Dry heat & Cooling), EN61373:2010 / EN50155:2007 (Shock & Vibration), EN45545 - HL3 (flammability), EN50124-1 (Rated Insulation UNm 17.25/27.5 KV | Short Circuit Current 25 Ka 100ms)	
Mounting Data			
Fixing		4 × mounting holes to suit M12 bolts	
Termination Data			
Termination	Comms	2x N (female) - DC grounded	
	GPS	-	TNC (female) - surge protected

** Simulated on a 600 x 600mm (2' x 2') ground plane without cable.

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

Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

PANORAMA ANTENNAS

26/10/2018 V3

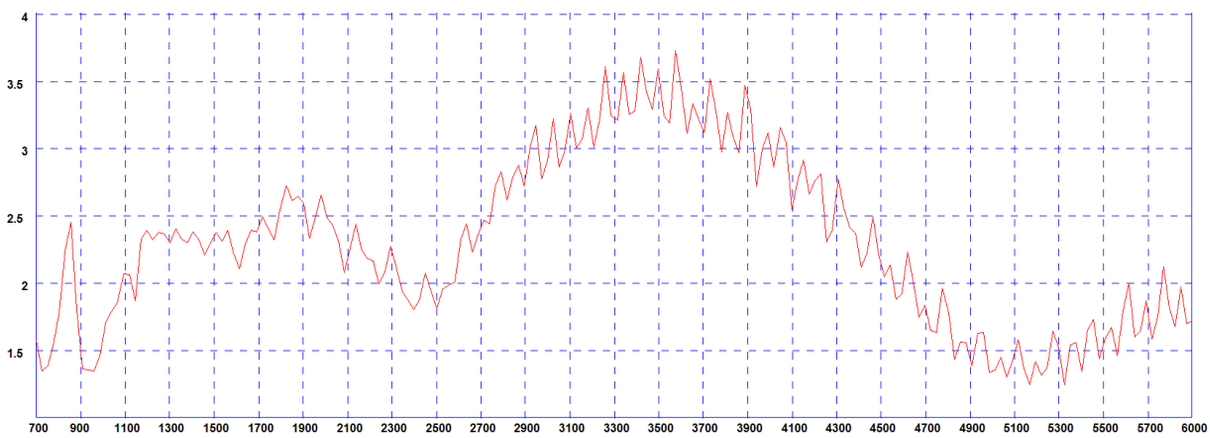
GSM-R / LTE
MiMo Transit Antenna Range

PANORAMA ANTENNAS

TRNM[G]-7-60-NJ

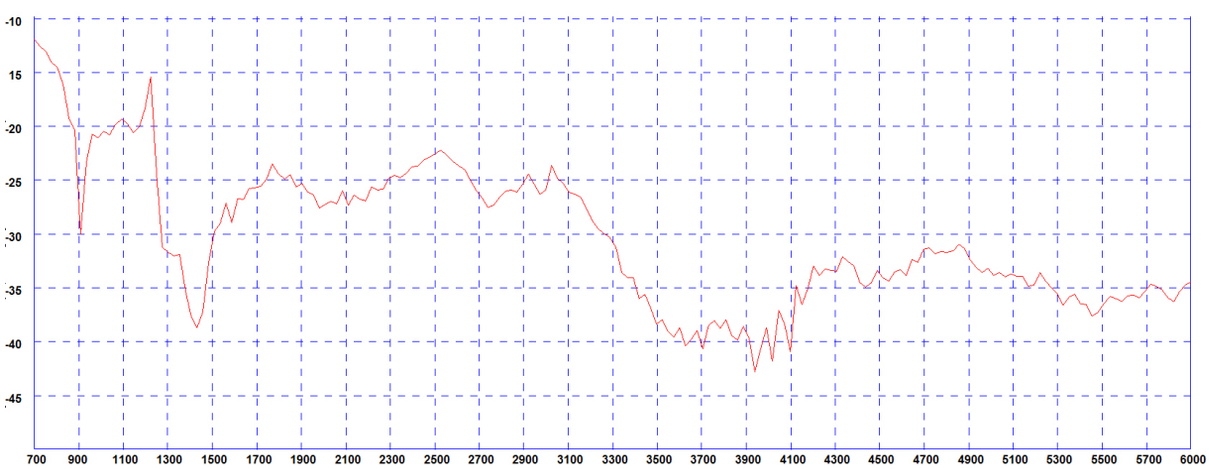
Electrical Data

Typical VSWR*



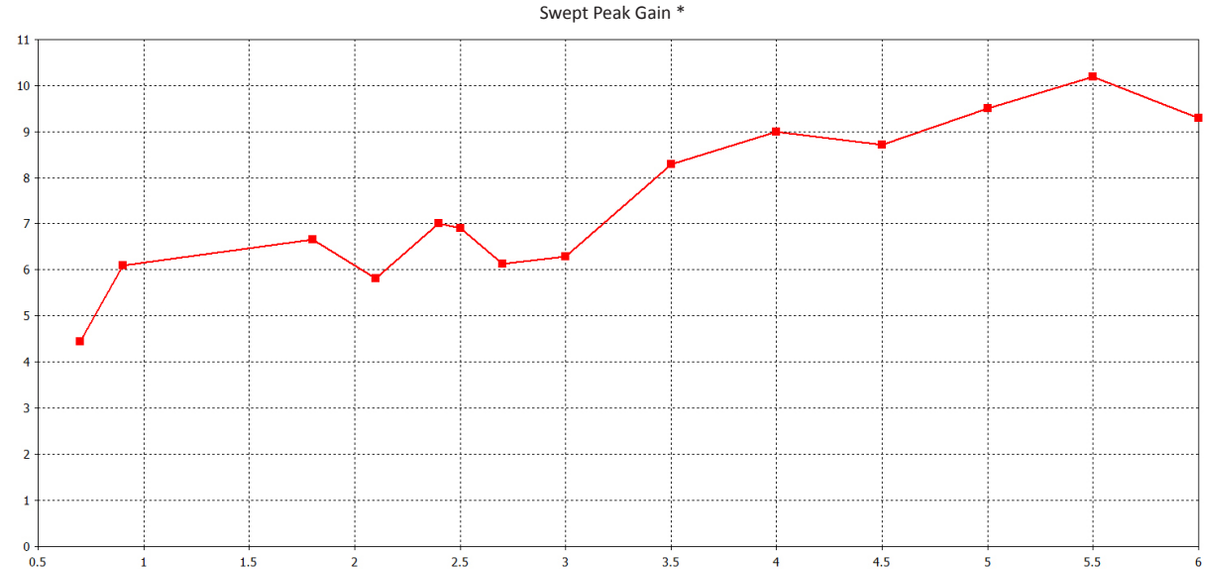
* Measured on a 600 x 600mm (2' x 2') ground plane with 1m (3')of low loss cable

Typical Isolation *



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

Swept Peak Gain *



* Simulated in CST Microwave Studio on a 600 x 600mm (2' x 2') ground plane with 1m (3')of low loss cable

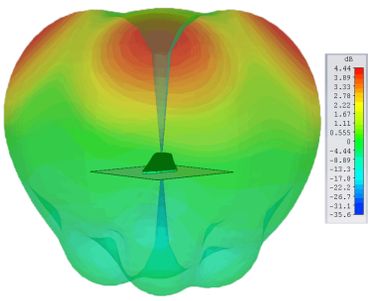
Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

PANORAMA ANTENNAS

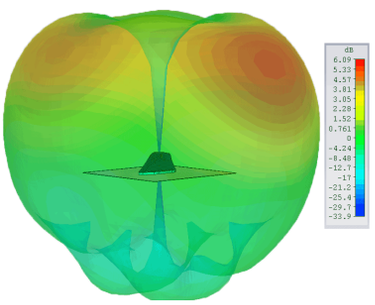
26/10/2018 V3

Patterns

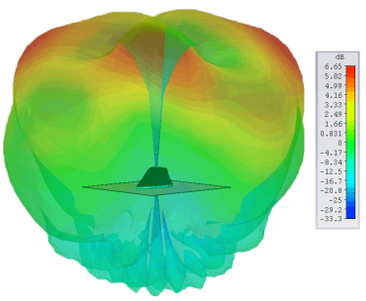
Typical 3D Pattern - 700MHz



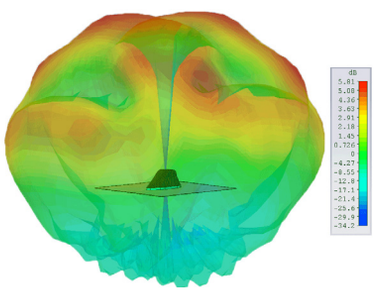
Typical 3D Pattern - 900MHz



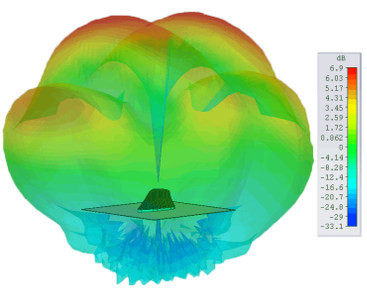
Typical 3D Pattern - 1800MHz



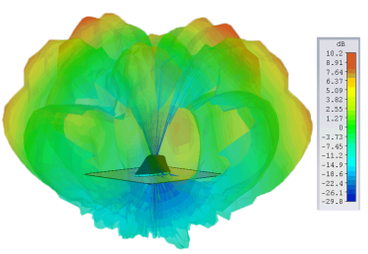
Typical 3D Pattern 2100MHz



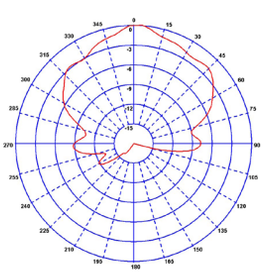
Typical 3D Pattern 2500MHz



Typical 3D Pattern 5500MHz



Typical E-Plane Pattern - (GPS) 1575MHz



3D patterns simulated with both elements fed on a 600 x 600 (2' x 2') ground plane without cable

Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com