

# GPSD

## Multifunction MiMo Antenna

PANORAMA ANTENNAS

23/06/2016 v.1

### GPSD

OEM shark fin styling

GPS/GNSS, MiMo 4G/3G/2G & Optional MiMo 2.4/4.9-6GHz

Support for VHF or UHF external antenna

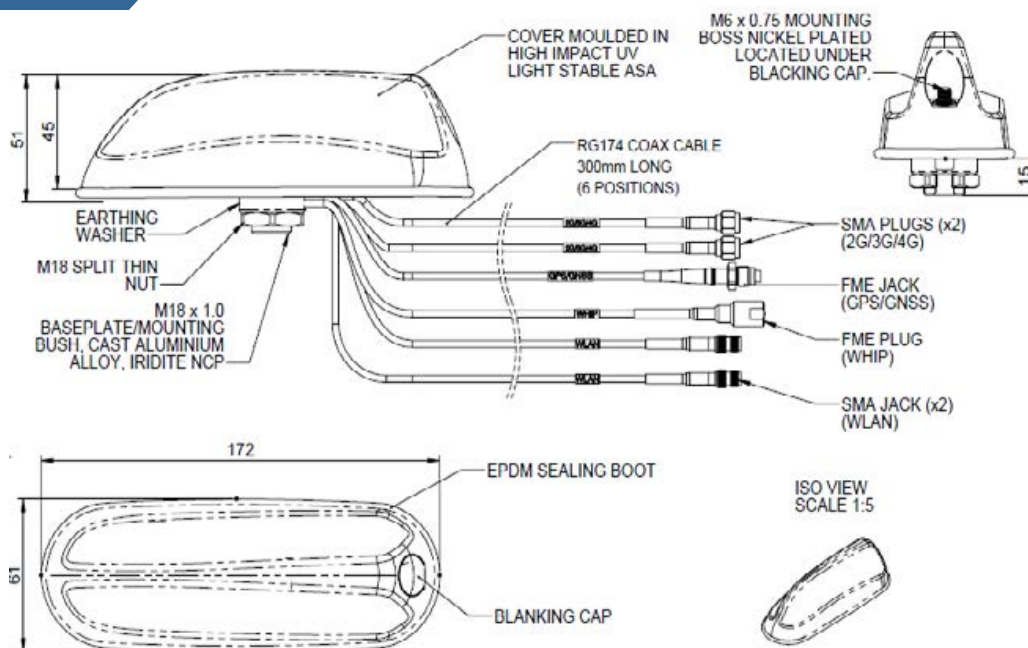


The GPSD has a compact OEM style shark fin housing that contains 2x2 MiMo antenna function for 4G/3G/2G and an active antenna for GPS/GLONASS/Galileo/Beidou with 26dB gain LNA. In addition, there is an integral stud mount for an external antenna whip that can support a range of VHF, UHF or 700/800MHz antennas. A blanking cover is supplied for when an external whip is not required. A further version of GPSD is available that adds 2x2 MiMo antenna function for 2.4/5.8GHz WiFi.

The GPSD shark fin style design provides multiple antenna functions while remaining discreet and is suitable for public safety (overt/covert), industrial and transport applications where a cost effective, efficient and robust antenna is essential. Requiring only a single hole mounting, the GPSD reduces vehicle damage, installation time & cost and visual impact whilst protecting a vehicle's resale value.

### Technical Drawing

GPSD-7-27-24-58 shown



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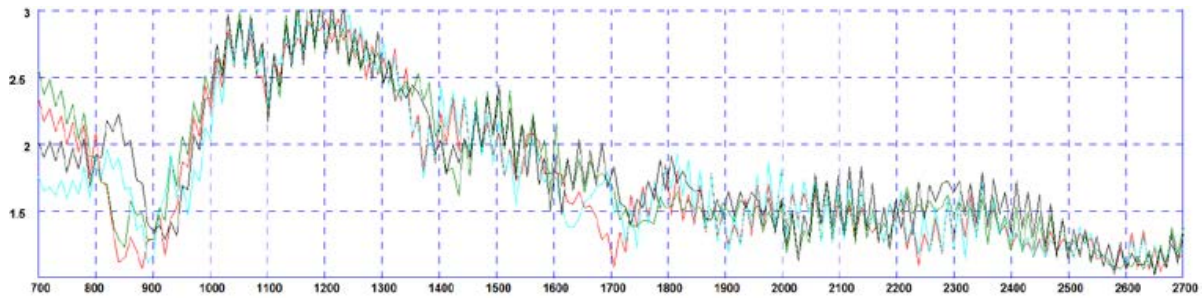
**Product Data**

Part No.		GPSD-7-27	GPSD-7-27-24-58
<b>Electrical Data</b>			
Frequency Range (MHz)	Element 1	1562-1612	
	Elements 2 & 3	698-960, 1710-2170, 2500-3800	
	Elements 4 & 5	-	2300-2500 & 4900-6000
	Whip	Dependent on selected whip	
Operational Bands	Element 1	GPS/GNSS/Galileo/Beidou	
	Elements 2 & 3	4G/3G/2G	
	Elements 4 & 5	-	2.4GHz WLAN / Public Safety 4.9GHz / 5.8GHz WiFi
	Whip	Dependent on selected whip	
Peak gain: Isotropic*	Elements 2 & 3	2dBi (698-960MHz)   5dBi (1710-3800MHz)	
	Elements 3 & 4	-	4dBi (2.4GHz), 6dBi (5.8GHz)
Isolation (with 5m (16') CS29)	Cellular	>12dB	
	WiFi	> 20dB	
Typical Efficiency* w/o Cable Loss	Elements 2 & 3	> 50%	
Correlation Co-efficient	Elements 2 & 3	<0.2	
Polarisation		Vertical	
Pattern		Omni-directional	
Impedance		50Ω	
Max Input Power (W)		Internal elements 25W / main whip 60W	
<b>GPS/GNSS Data</b>			
Frequency Range (MHz)		1562-1612	
VSWR		<2:1 ± 4MHz	
Gain: LNA		26dB	
Polarisation		Right Hand Circular	
Operating Voltage		3-5V DC (fed via coax)	
Current		Typical <20mA	
<b>Mechanical Data</b>			
Dimensions (mm)	Total Height (excluding whip)	50 (2.2")	
	Length	170 (6.77")	
	Width	60 (2.4")	
Operating Temp (°C)		-40° / +80°C (-40° / 176°F)	
Material		ASA, EPDM, Aluminium Alloy	
Colour		Black	
Weight (g)		240	260
<b>Cable Data</b>			
Cable Type - All Feeds		RG174 (UN ECE 118.01 Compliant)	
Dimensions (mm)	Diameter	2.8 (0.11")	
	Length	300 mm (12")	
Termination	Whip	FME plug	
	GPS/GNSS	FME socket	
	2 x 4G/3G/2G	2 x SMA plug	
	2 x WiFi	-	2 x SMA socket

Electrical Data

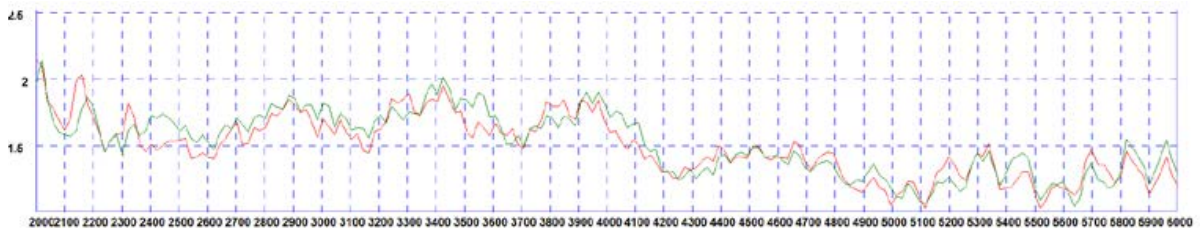
**VSWR**

Typical VSWR - 2G/3G/4G Elements 2&3\*



\*VSWR measured with no whip and 5m (16') of CS29 cable Black & Blue = no ground plane Green and Red = 600x600mm (2'x2') ground plane

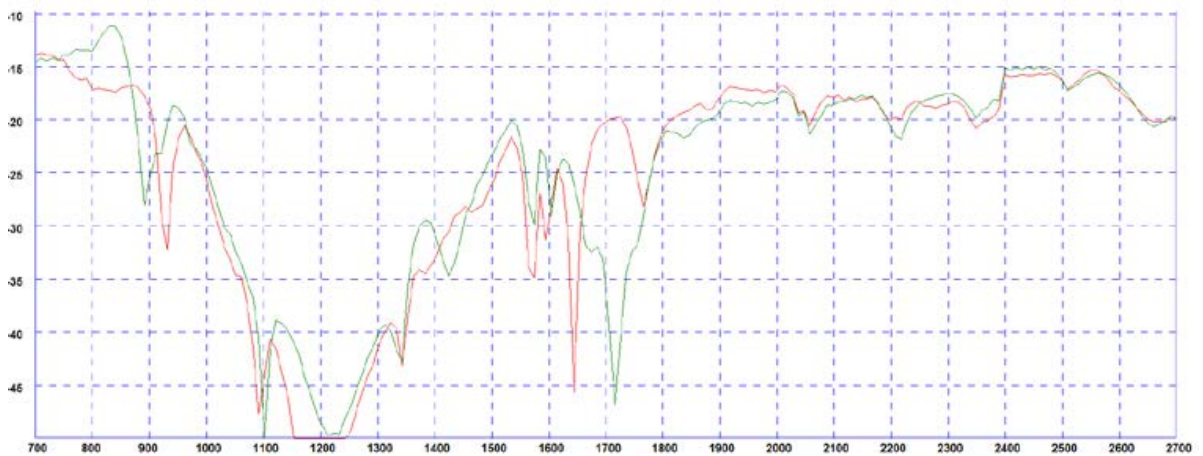
Typical VSWR - WiFi Elements 4&5\*



\*VSWR measured with no whip and 5m (16') of CS32 cable

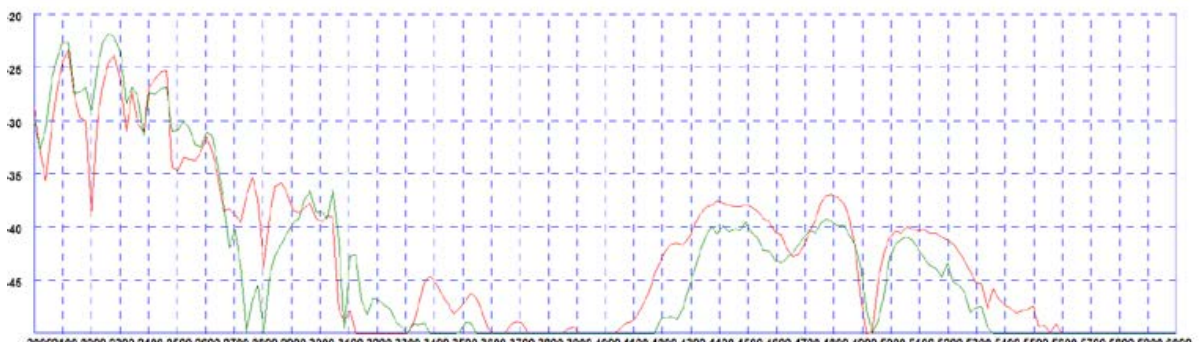
**Isolation**

Typical Isolation - Cellular Elements 2&3\*



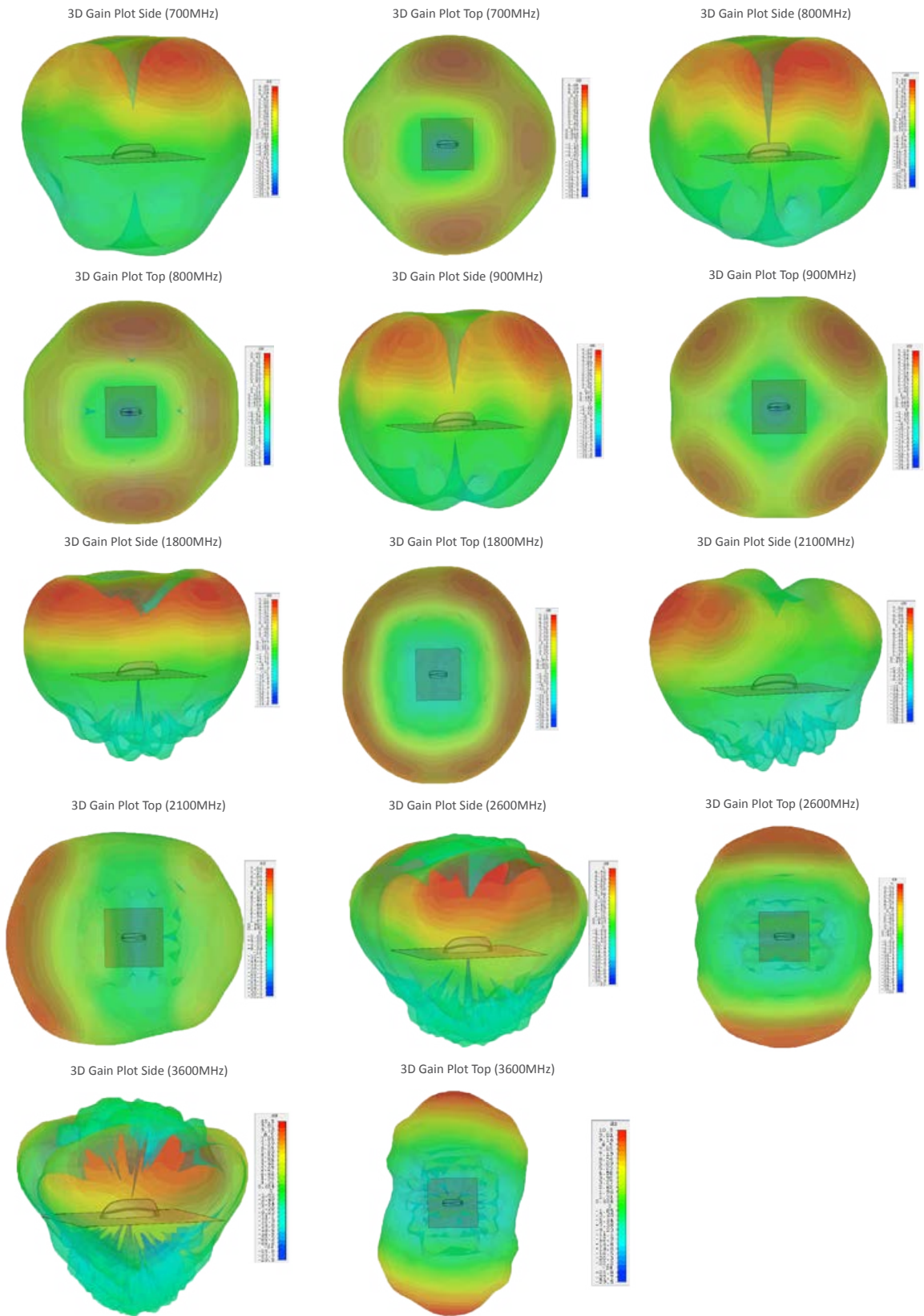
\*Isolation measured with no whip and 5m (16') of CS29 cable Green Plot = 600x600mm (2' X2') ground plane Red Plot = no ground plane

Typical Isolation - WiFi Elements 4&5\*



\*Isolation measured with no whip and 5m (16') of CS29 cable Red Plot = 600x600mm (2' X2') ground plane Green Plot = no ground plane

3D Radiation Patterns - Cell / LTE Elements 2&3

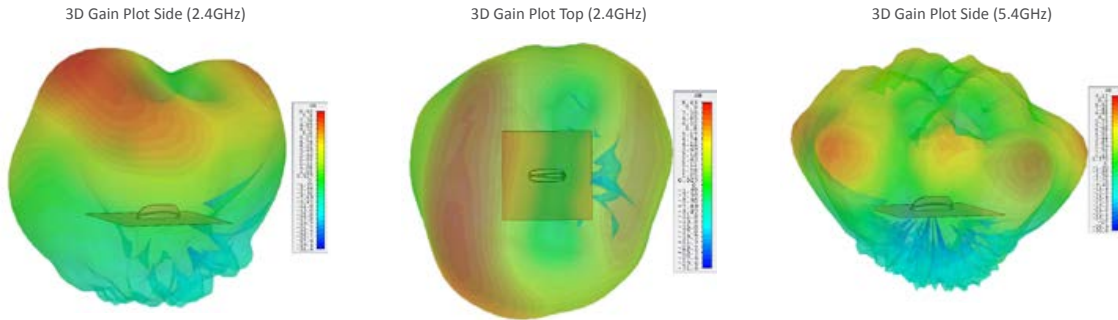


\*3D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2' X2') ground plane with both elements fed together.



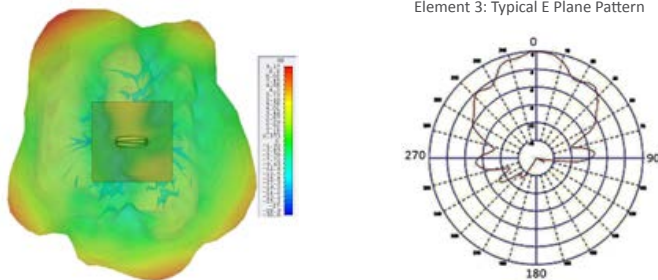
**Radiation Patterns**

**Typical 3D Radiation Patterns - Wifi Elements 4&5**



**Typical Radiation Patterns - GPS/GNSS Element 1**

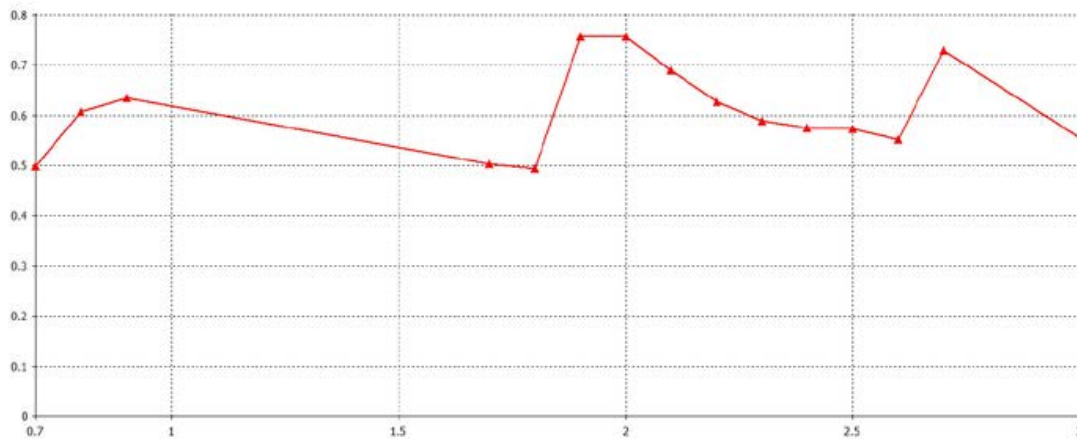
Element 3: Typical E Plane Pattern



\*3D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2' X2') ground plane with both elements fed together.

**Typical Total Efficiency**

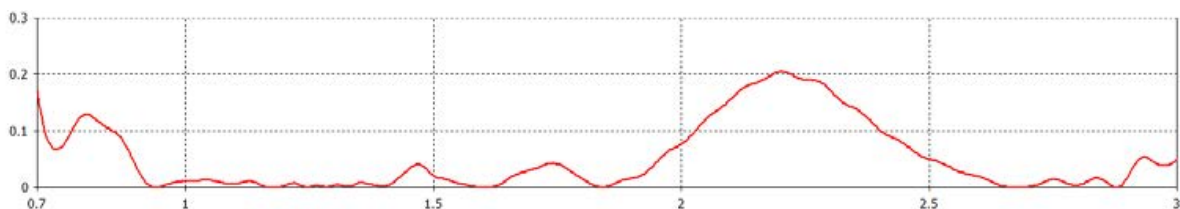
Typical Total Efficiency - Cellular Elements 2&3\*



\* Efficient simulated in free space with no whip and no ground plane and no cable.

**Typical Correlation Co-efficient**

Typical Correlation Co-efficient- Cellular Elements 2&3\*



\*Correlation co-efficient simulated in free space with no whip, no additional cable and no ground plane

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