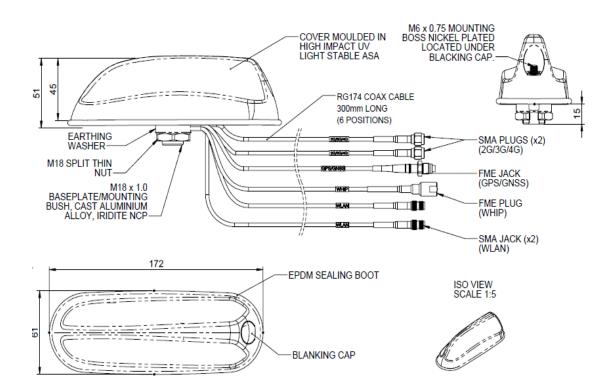


EMERGENCY SERVICE ANTENNA

MULTIFUNCTION MIMO ANTENNA

The Emergency Service antenna has a compact OEM style shark fin housing that contains 2x2 MiMo antenna function for 4G/3G/2G and an active antenna for GPS/Galileo with 26 dB 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 Emergency Service antenna is available that adds 2x2 MiMo antenna function for 2.4/5.8GHz WiFi.

The antenna's 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 Emergency Service antenna reduces vehicle damage, installation time & cost and visual impact whilst protecting a vehicle's resale value.



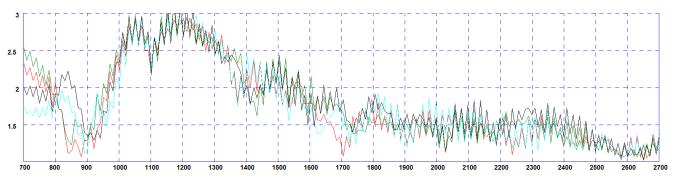


Technical Information

Technical Information		Part Numbers		
		1-2823602-2	1-2823602-1	
Electrical Data				
Frequency Range (MHz)	Element 1	2562-1612		
	Element 2 & 3	698-960, 1710-2	698-960, 1710-2170, 2500-3800	
	Elements 4 & 5	-	2300-2500 & 4900-6000	
	Whip	Dependent on	Dependent on selected whip	
Operational Bands	Element 1	GPS/GNSS	GPS/GNSS/Galileo	
	Elements 2 & 3	4G/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		Internal elements 25W/main whip 60W		
GPS/GNSS Data				
Frequency Range (MHz)		1562-1612MHz		
VSWR		<2:1 <u>+</u> 4MHz		
LNA Gain		26dB		
Polarisation		Right Han	Right Hand Circular	
Operating Voltage		3-5VDC (Fe	3-5VDC (Fed via Coax)	
Current		Typical <20mA		
Mechanical Data				
Dimensions (mm)	Height (excluding whip)	50 (2.2")		
	Length	17 (6.77")		
	Width	60 (2.4")		
Operating Temp (°C)		-40 to +80 (-4	-40 to +80 (-40°F to 176°F)	
Material		ASA, EPDM, Aluminium Alloy		
Colour		Black		
Typical Weight (g)		240	260	
Cable Data				
Cable Type - All Feeds		RG174 (UN ECE	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	

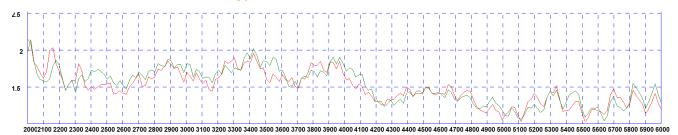


Typical VSWR - 2G/3G/4G Elements 2&3*



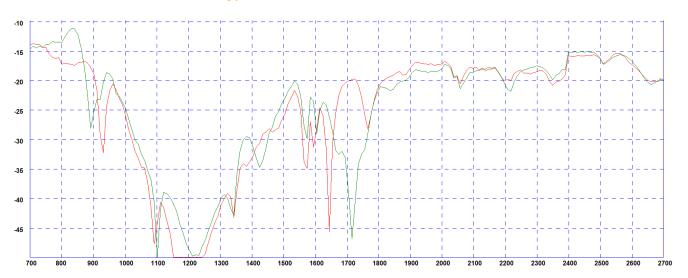
*VSWR measured with no whip and 5m (16') of CS29 cable Black & Blue = no ground plane Green and Red = 600x 600mm (2'x2') ground plane

Typical VSWR - WiFi Elements 4&5*



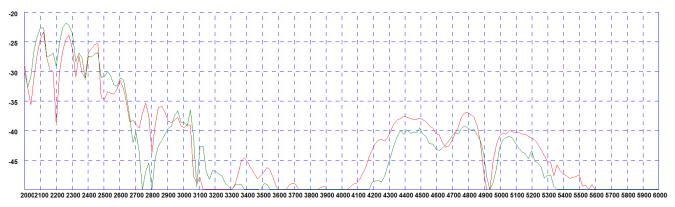
*VSWR measured with no whip and 5m (16') of CS32 cable

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

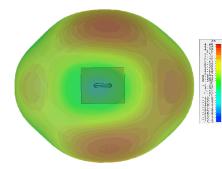


3D Radiation Patterns - Cell/LTE Elements 2&3

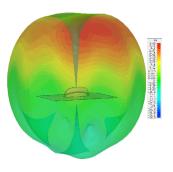
3D Gain Plot Top (700MHz)

3D Gain Plot Side (700MHz)

3D Gain Plot Top (800MHz)

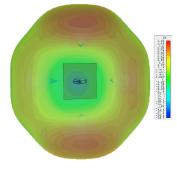


3D Gain Plot Side (900MHz)

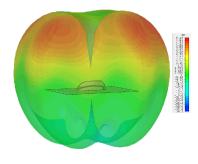


3D Gain Plot Side (800MHz)

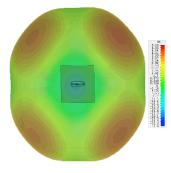
3D Gain Plot Top (900MHz)



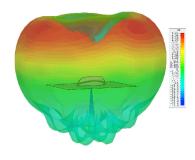
3D Gain Plot Side (1800MHz)



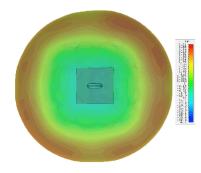
3D Gain Plot Top (1800MHz)



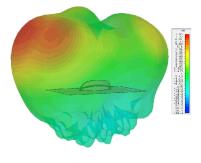
3D Gain Plot Side (2100MHz)



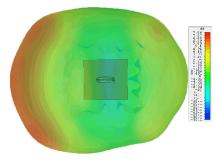
3D Gain Plot Top (2100MHz)



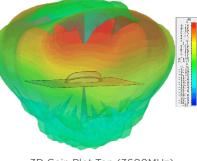
3D Gain Plot Side (2600MHz)



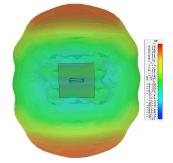
3D Gain Plot Top (2600MHz)

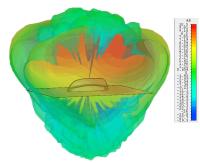


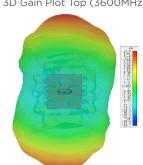
3D Gain Plot Side (3600MHz)



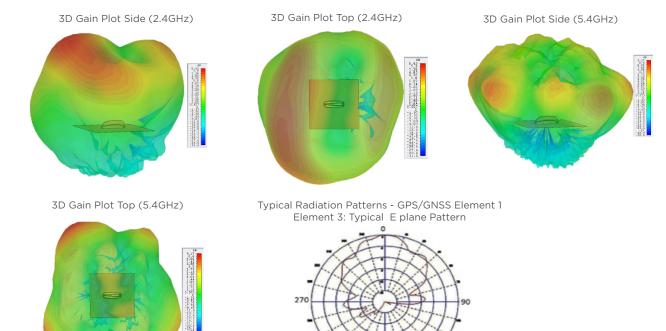
3D Gain Plot Top (3600MHz)







3D Radiation Patterns - WiFi Elements 4&5

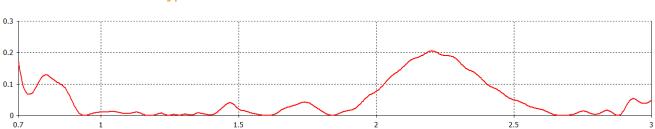


*3D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2' X2') ground plane with both elements fed together.



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 - Cellular Elements 2&3*

^{* 3}D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2'x2') ground plane with both elements fed together.



2.5

 $[\]hbox{*Correlation co-efficient simulated in free space with no whip, no additional cable and no ground plane}$