

SHK[G]-7-27[-T24-58]

Multifunction MiMo Antenna

PANORAMA ANTENNAS

26/02/2019 v.2

Available Colours:

- Black
- White



SHK[G]-7-27[-T24-58]

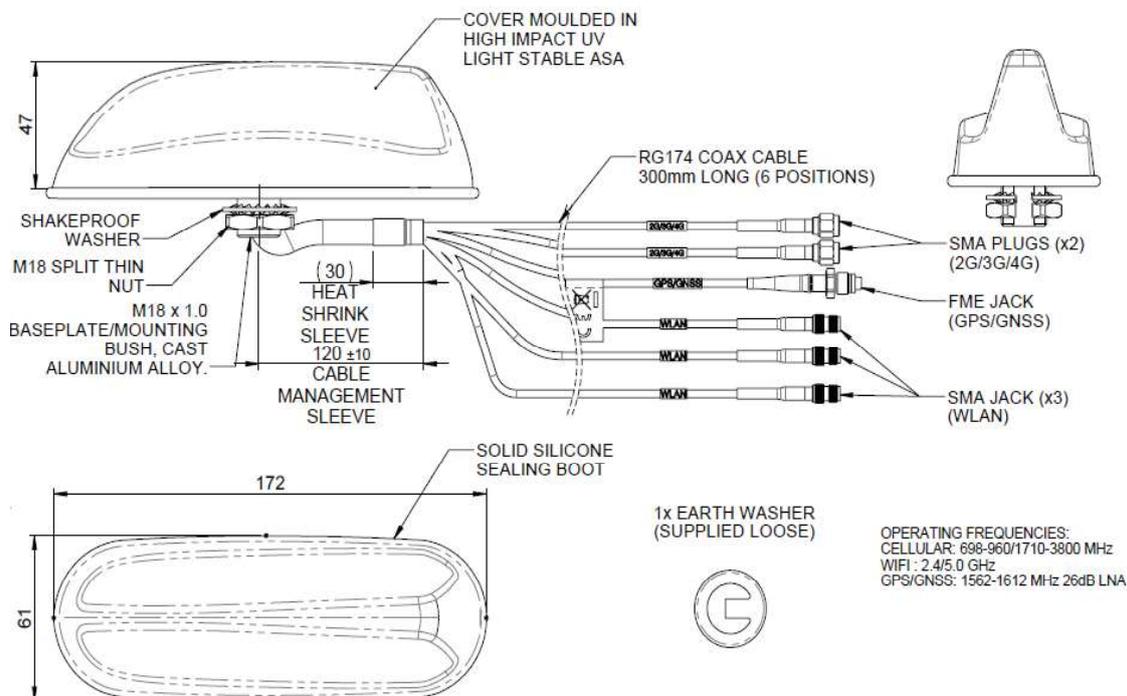
- OEM shark fin styling
- GPS/GNSS, MiMo 4G/3G/2G
- Optional 2x2 or 3x3 MiMo 2.4/4.9-6GHz

The SHK[G]-7-27 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 order to maximise functionality versions of the SHK[G] are available that add either 2x2 MiMo or 3x3 MiMo antenna functionality for 2.4/5.8GHz WiFi.

The 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 SHK[G] reduces vehicle damage, installation time & cost and visual impact whilst protecting a vehicle's resale value.

Technical Drawing

SHKG-7-27-T24-58 shown



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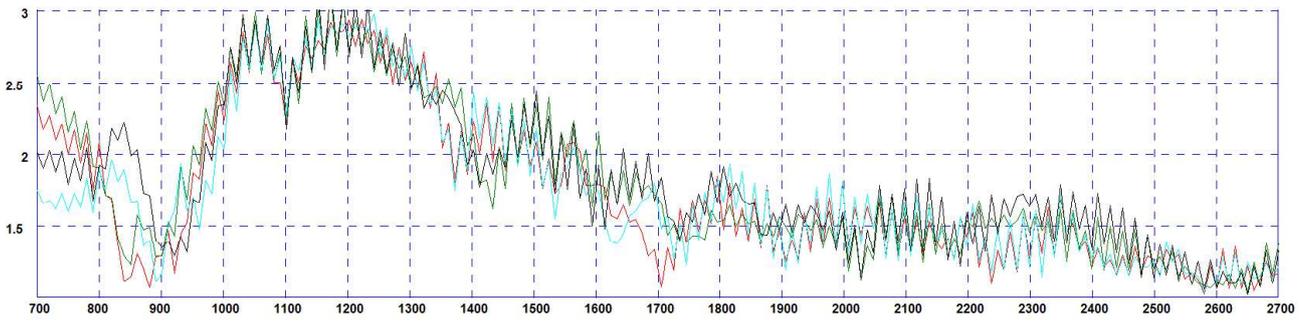
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Part No.				
Black Version	SHKG-7-27-T24-58	SHKG-7-27-24-58	SHKG-7-27	SHK-7-27
White Version	SHKGW-7-27-T24-58	SHKGW-7-27-24-58	SHKGW-7-27	SHKW-7-27
Electrical Data				
Frequency Range (MHz)	Element 1	1562-1612		-
	Elements 2 & 3	698-960, 1710-2170, 2500-3800		
	Elements 4 & 5	2300-2500 & 4900-6000	-	-
	Element 6	2300-2500 & 4900-6000	-	-
Operational Bands	Element 1	GPS/GNSS/Galileo/Beidou		-
	Elements 2 & 3	4G/3G/2G		
	Elements 4 & 5	2.4GHz WLAN / 5.8GHz WiFi	-	-
	Element 6	2.4GHz WLAN / 5.8GHz WiFi	-	-
Peak gain: Isotropic*	Elements 2 & 3	2dBi (698-960MHz) 5dBi (1710-3800MHz)		-
	Elements 4, 5 (&6)	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 (element 6 is horizontal)			
Pattern	Omni-directional			
Impedance	50Ω			
Max Input Power (W)	25			
GPS/GNSS Data				
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		-	
Mechanical Data				
Dimensions (mm)	Total Height	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			
Approx Weight (g)	260			
Ingress Protection	IP 66			
Mounting Info				
Fixing	Panel Mount			
Hole Size (mm)	19 (3/4")			
Cable Data				
Cable Type - All Feeds	RG174 (UN ECE 118.01 Compliant)			
Dimensions (mm)	Diameter	2.8 (0.11")		
	Length	300 mm (12")		
Termination	GPS/GNSS	FME socket		-
	2 x 4G/3G/2G	2 x SMA plug		
	2x2 or 3x3 WiFi	2 x (or 3x) SMA socket		

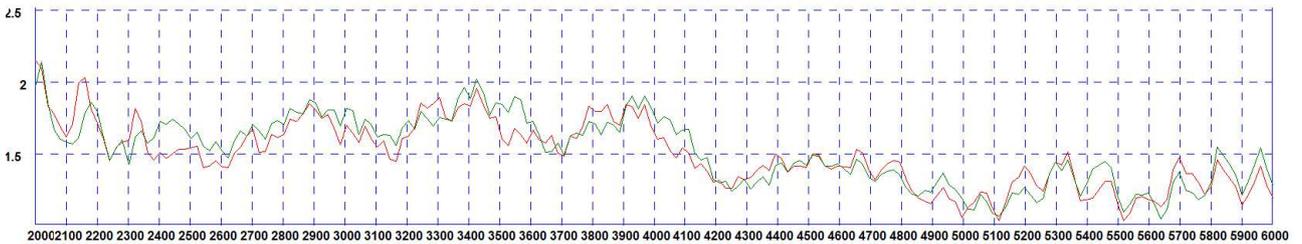
VSWR

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 = 600x 600mm (2'x2') ground plane

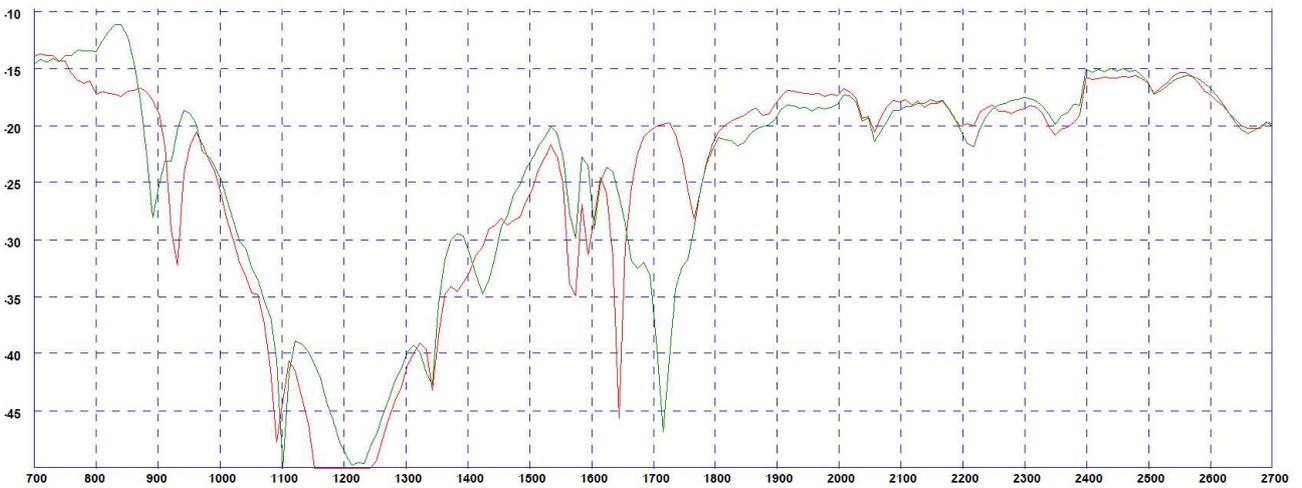
Typical VSWR - WiFi Elements 4&5*



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

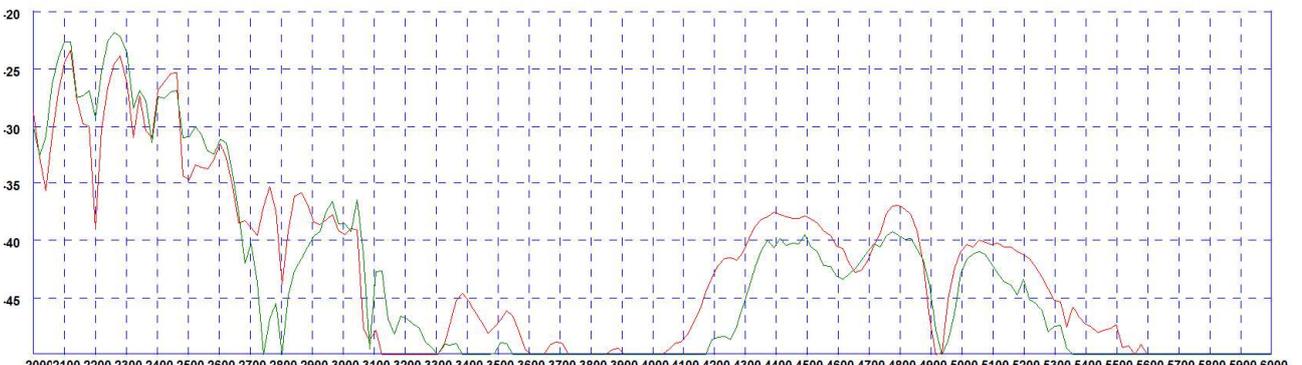
Isolation

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

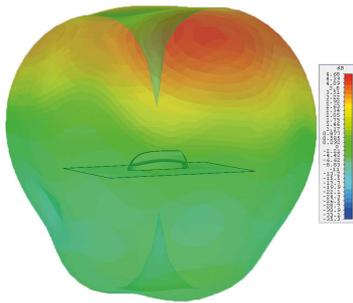
Typical Isolation - WiFi Elements 4&5*



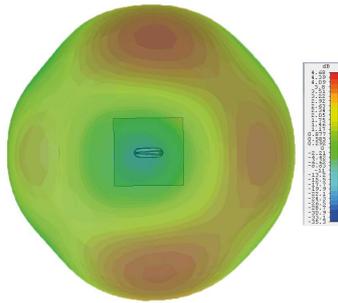
*Isolation measured with no whip and 5m (16') of CS29 cable Red Plot = 600x600mm (2' X2') ground plane Green Plot = no ground plane

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

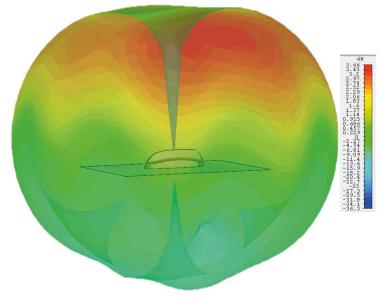
3D Gain Plot Side (700MHz)



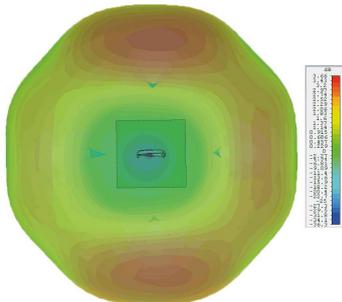
3D Gain Plot Top (700MHz)



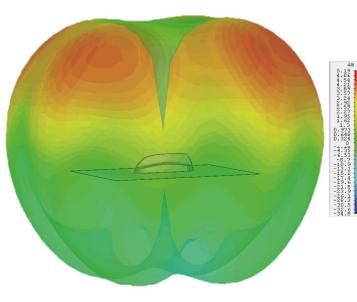
3D Gain Plot Side (800MHz)



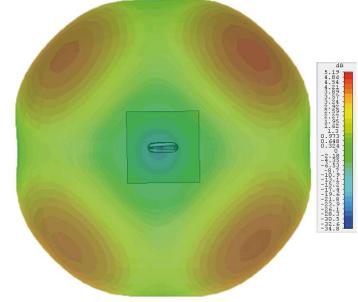
3D Gain Plot Top (800MHz)



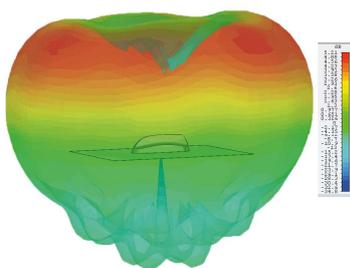
3D Gain Plot Side (900MHz)



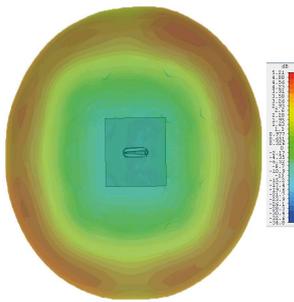
3D Gain Plot Top (900MHz)



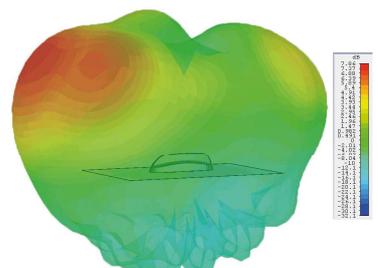
3D Gain Plot Side (1800MHz)



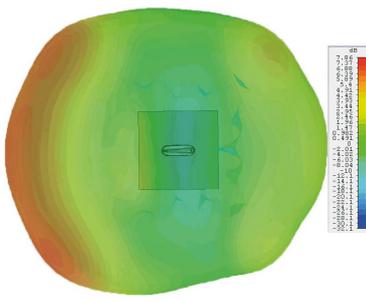
3D Gain Plot Top (1800MHz)



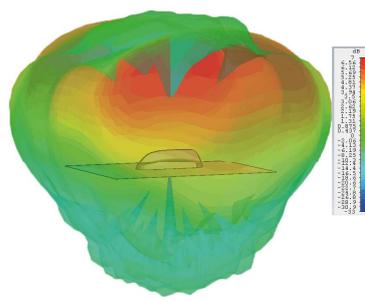
3D Gain Plot Side (2100MHz)



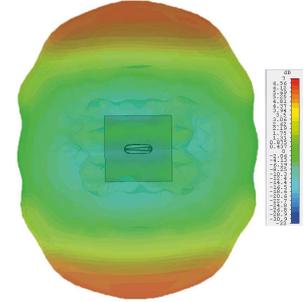
3D Gain Plot Top (2100MHz)



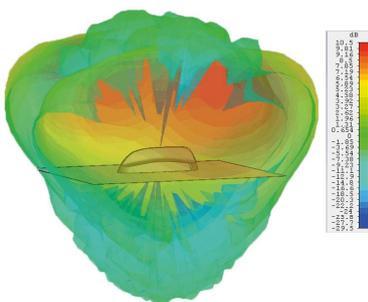
3D Gain Plot Side (2600MHz)



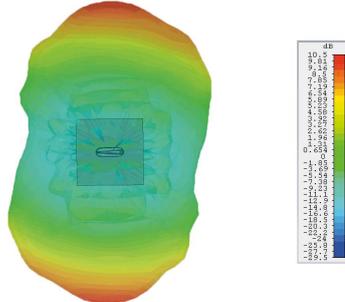
3D Gain Plot Top (2600MHz)



3D Gain Plot Side (3600MHz)



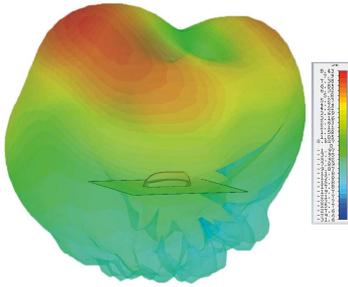
3D Gain Plot Top (3600MHz)



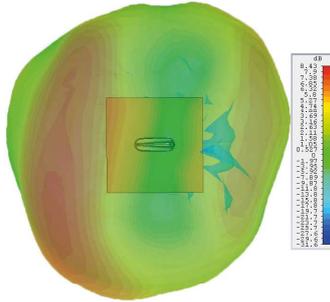
*3D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2' X2') ground plane with both elements fed together.

Typical 3D Radiation Patterns - Wifi Elements 4&5

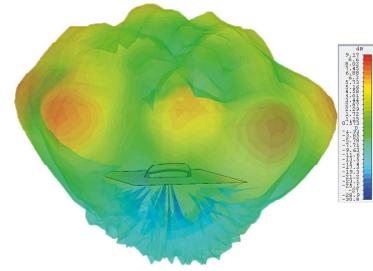
3D Gain Plot Side (2.4GHz)



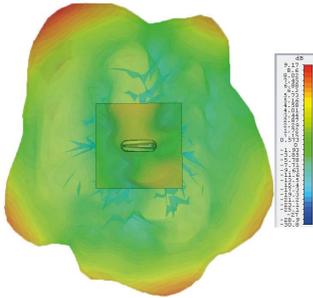
3D Gain Plot Top (2.4GHz)



3D Gain Plot Side (5.4GHz)

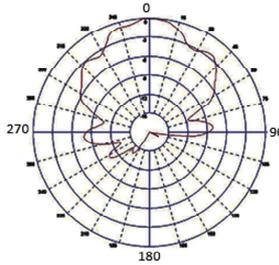


3D Gain Plot Top (5.4GHz)



Typical Radiation Patterns - GPS/GNSS Element 1

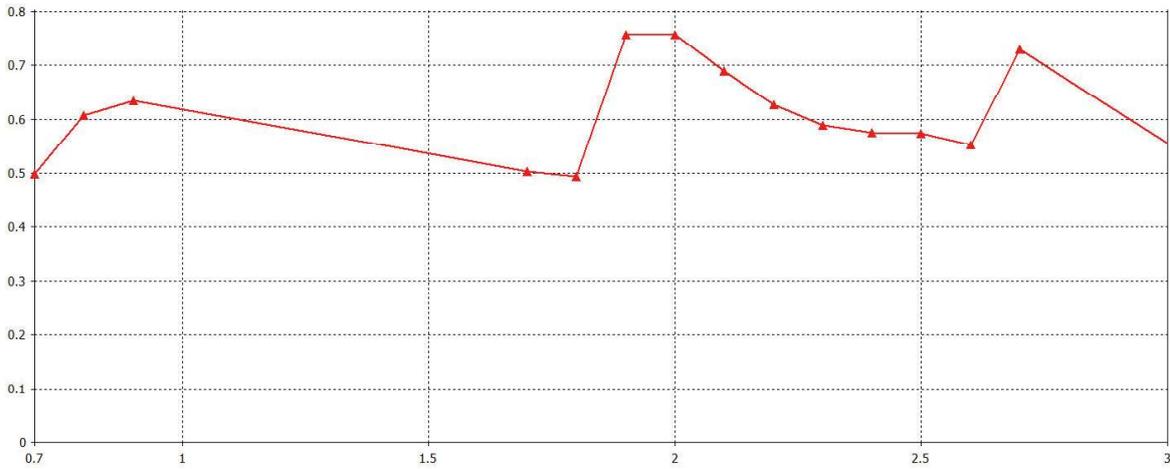
Element 3: Typical E Plane Pattern



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

Typical Total Efficiency

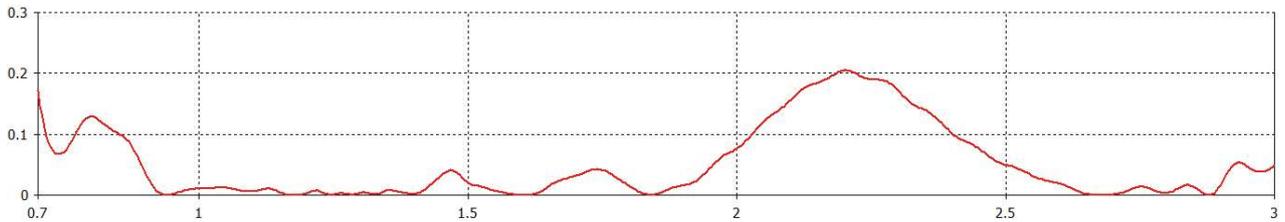
Typical Total Efficiency - Cellular Elements 2&3*



* 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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