

617 – 7125 MHz Cellular, GNSS, Wi-Fi 6E COMBINATION ANTENNA

Part Number: 2108948-X

(see page 11 for details)

FEATURES & BENEFITS

- Cellular world band coverage 617-7125 MHz for 5G, LTE, NB-IoT and Cat-M
- Wi-Fi 6E triple band, Bluetooth, Zigbee, GNSS
- Adhesive backing on the PCB simplifies mounting within the device
- PCB antenna assembly
- Different cable length and connector options available

SPECIFICATIONS (Shown as 2108948-1 : Others can vary with different cable lengths.)

Frequency Range (MHz)	617-960	1427-1700	1700-2700	3300-4000	4000-5000	5000-6000	6000-7125
VSWR	< 2.4:1	< 3.0:1	< 2.7:1	< 2.4:1	< 2.3:1	< 1.9:1	< 2.4:1
Average Efficiency	60 %	71 %	69 %	64 %	68 %	65 %	66%
Peak Gain	0.7 dBi	2.5 dBi	4.7 dBi	3.3 dBi	3.9 dBi	4.2 dBi	5.6 dBi
Average Gain	-2.3 dBi	-1.5 dBi	-1.7 dBi	-2.0 dBi	-1.7 dBi	-1.9 dBi	-1.9 dBi
Power Handling	10 Watt cw						
Feed Point Impedance	50 ohms						
Polarization	Linear						
Size	119.3 mm x 20.0 mm x 0.55 mm						
Weight	< 3.7 g						
Mounting	Adhesive Tape						
Mating Connectors	MHF and MHF4L type, Refer to page 11						
Cable	1.13mm and 1.37mm Dia., Refer to page 11						
Operating Temperature	-40 to +85°C						
Storage Temperature	-40 to +85°C						
Hazardous Materials	A certificate of conformance is available from the product page on TE website.						

Antenna RF Specifications with different cable assemblies

P/N	RF DATA	Frequency Range (MHz)						
		617-960	1427-1700	1700-2700	3300-4000	4000-5000	5000-6000	6000-7125
2108948-1 50 mm MHF 1.37 mm	VSWR	< 2.4:1	< 3.0:1	< 2.7:1	< 2.4:1	< 2.3:1	< 1.9:1	< 2.4:1
	Avg. Efficiency	60 %	71 %	69 %	64 %	68 %	65 %	66%
	Peak Gain (Max)	0.7 dBi	2.5 dBi	4.7 dBi	3.3 dBi	3.9 dBi	4.2 dBi	5.6 dBi
	Average Gain	-2.3 dBi	-1.5 dBi	-1.7 dBi	-2.0 dBi	-1.7 dBi	-1.9 dBi	-1.9 dBi
2108948-2 100 mm MHF 1.37 mm	VSWR	< 3.6:1	< 2.8:1	<2.3:1	< 2.1:1	< 2.0:1	<2.0:1	<2.3:1
	Avg. Efficiency	59 %	69 %	66 %	61 %	65 %	62 %	61 %
	Peak Gain (Max)	0.6 dBi	2.3 dBi	4.6 dBi	3.2 dBi	3.8 dBi	3.9 dBi	5.4 dBi
	Average Gain	-2.4 dBi	-1.6 dBi	-1.8 dBi	-2.2 dBi	-1.9 dBi	-2.1 dBi	-2.1 dBi
2108948-3 150 mm MHF 1.37 mm	VSWR	< 3.9:1	< 2.6:1	<2.4:1	< 2.1:1	< 2.1:1	<1.9:1	<2.2:1
	Avg. Efficiency	56 %	67 %	64 %	58 %	62 %	59 %	58 %
	Peak Gain (Max)	0.5 dBi	2.2 dBi	4.4 dBi	3.0 dBi	3.6 dBi	3.7 dBi	5.2 dBi
	Average Gain	-2.5 dBi	-1.7 dBi	-2.0 dBi	-2.3 dBi	-2.1 dBi	-2.3 dBi	-2.4 dBi
2108948-4 200 mm MHF 1.37 mm	VSWR	< 3.1:1	< 2.6:1	<2.5:1	< 2.0:1	< 2.2:1	<1.9:1	<2.1:1
	Avg. Efficiency	55 %	66 %	62 %	56 %	59 %	56 %	54 %
	Peak Gain (Max)	0.4 dBi	2.1 dBi	4.3 dBi	2.9 dBi	3.4 dBi	3.5 dBi	4.9 dBi
	Average Gain	-2.6 dBi	-1.8 dBi	-2.1 dBi	-2.5 dBi	-2.3 dBi	-2.5 dBi	-2.6 dBi

CABLE LOSS

OD 1.37mm (P/N: 3-2108948)							
Freq. Range (MHz)	617-960	1427-1700	1700-2700	3300-4000	4000-5000	5000-6000	6000-7125
Cable attenuation (dB/m)	< 1.9	<2.3	< 2.8	< 3.5	<4.0	< 4.5	< 5.1

Antenna RF Specifications with different cable assemblies

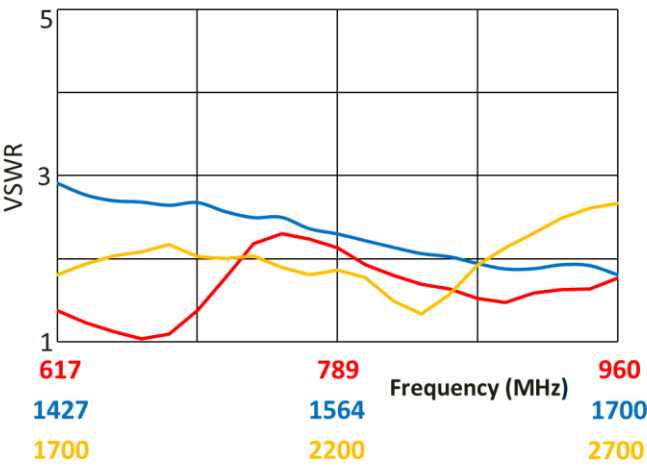
P/N Cable Length/ Connector/ Cable OD	RF DATA	Frequency Range (MHz)						
		617-960	1427-1700	1700-2700	3300-4000	4000-5000	5000-6000	6000-7125
2108948-5 50 mm MHF4L 1.13 mm	VSWR	< 2.7:1	< 2.7:1	< 3.0:1	< 2.5:1	< 2.4:1	< 1.6:1	< 2.3:1
	Avg. Efficiency	59 %	70 %	67 %	63 %	67 %	65 %	64%
	Peak Gain (Max)	0.7 dBi	2.4 dBi	4.7 dBi	3.3 dBi	3.9 dBi	4.1 dBi	5.6 dBi
	Average Gain	-2.3 dBi	-1.5 dBi	-1.7 dBi	-2.0 dBi	-1.8 dBi	-1.9 dBi	-1.9 dBi
2108948-6 100 mm MHF4L 1.13 mm	VSWR	< 3.5:1	< 2.8:1	<2.5:1	< 2.6:1	< 2.3:1	<2.0:1	< 2.3:1
	Avg. Efficiency	57 %	68 %	64 %	59 %	63 %	61 %	60 %
	Peak Gain (Max)	0.6 dBi	2.3 dBi	4.5 dBi	3.1 dBi	3.7 dBi	3.8 dBi	5.3 dBi
	Average Gain	-2.4 dBi	-1.7 dBi	-1.9 dBi	-2.3 dBi	-2.0 dBi	-2.2 dBi	-2.2 dBi
2108948-7 150 mm MHF4L 1.13 mm	VSWR	< 3.9:1	< 2.6:1	<2.4:1	< 2.5:1	< 2.2:1	<1.9:1	< 2.3:1
	Avg. Efficiency	56 %	66 %	62 %	56 %	60 %	57 %	56 %
	Peak Gain (Max)	0.5 dBi	2.1 dBi	4.3 dBi	2.9 dBi	3.4 dBi	3.6 dBi	5.0 dBi
	Average Gain	-2.5 dBi	-1.8 dBi	-2.1 dBi	-2.5 dBi	-2.3 dBi	-2.5 dBi	-2.6 dBi
2108948-8 200 mm MHF4L 1.13 mm	VSWR	< 3.5:1	< 2.5:1	<2.8:1	< 2.1:1	< 2.3:1	<1.9:1	< 2.3:1
	Avg. Efficiency	54 %	64 %	59 %	54 %	56 %	53 %	52 %
	Peak Gain (Max)	0.3 dBi	2.0 dBi	4.1 dBi	2.7 dBi	3.2 dBi	3.3 dBi	4.7 dBi
	Average Gain	-2.6 dBi	-2.0 dBi	-2.3 dBi	-2.7 dBi	-2.5 dBi	-2.7 dBi	-2.9 dBi

CABLE LOSS

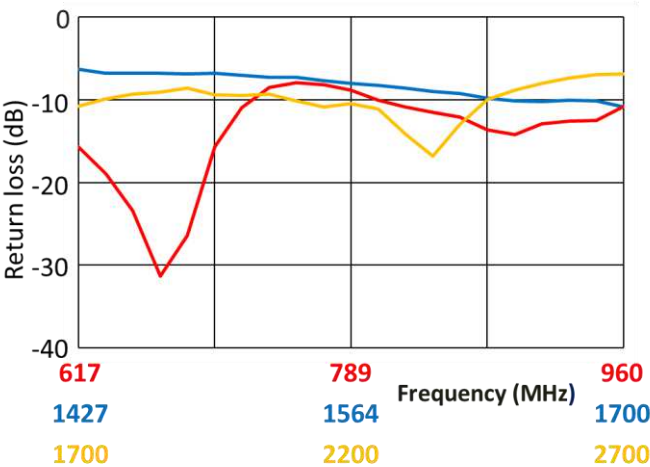
OD 1.13mm (P/N: 4-2108948)							
Freq. Range (MHz)	617-960	1427-1700	1700-2700	3300-4000	4000-5000	5000-6000	6000-7125
Cable attenuation (dB/m)	< 2.2	<2.9	< 3.7	< 4.5	<5.0	< 5.5	< 6.2

RF DATA (Shown as 2108948-1 : Others can vary with different cable lengths.)

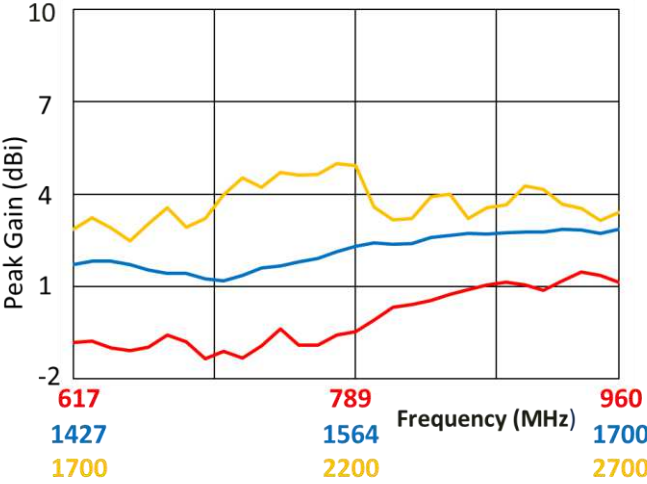
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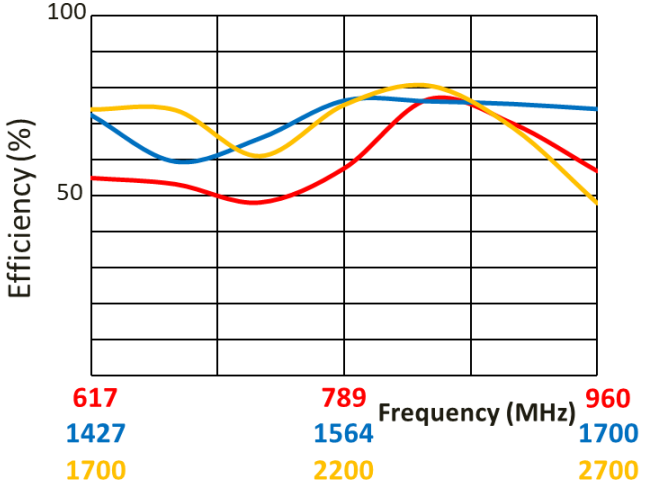
Return Loss



Peak Gain



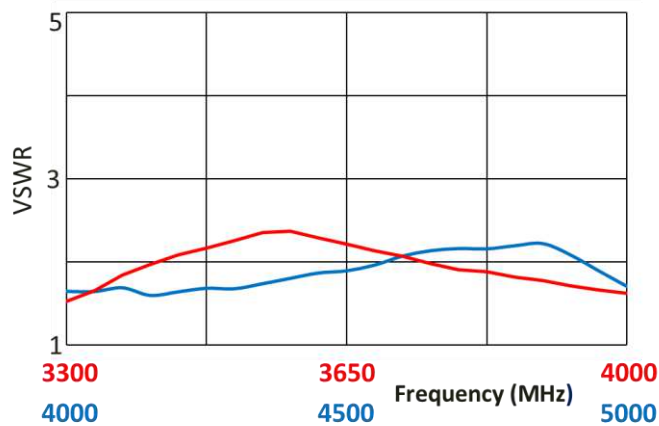
Efficiency



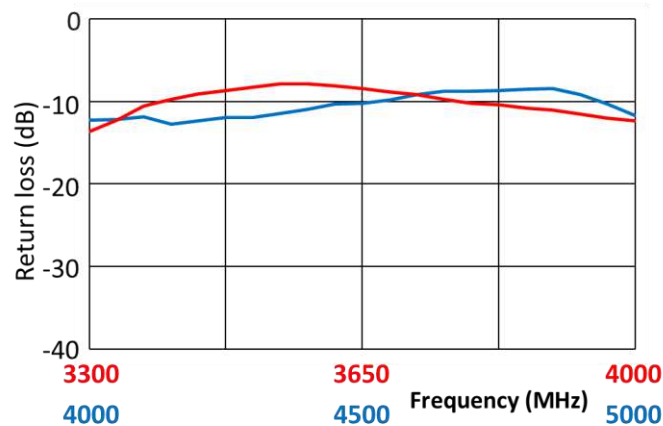
Data measured in free space and on 165 x 100 x 2 mm PC plastic

RF DATA (Shown as 2108948-1 : Others can vary with different cable lengths.)

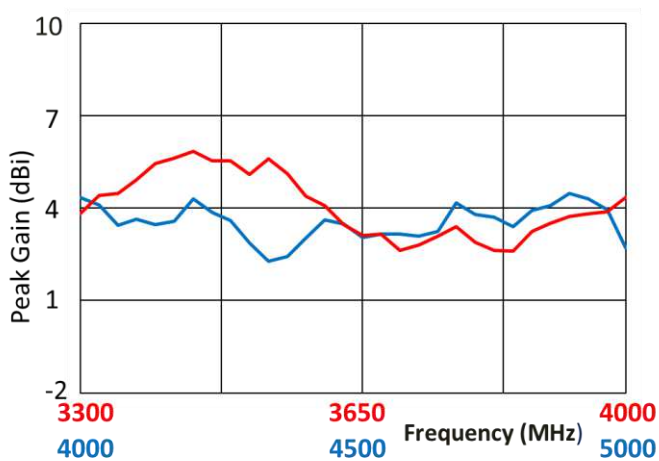
VSWR



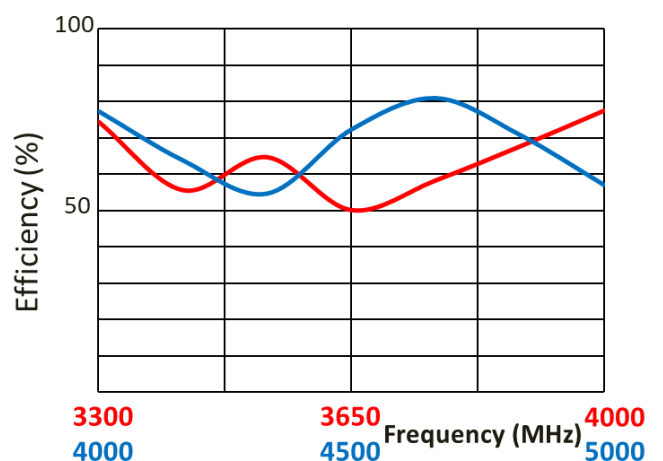
Return Loss



Peak Gain



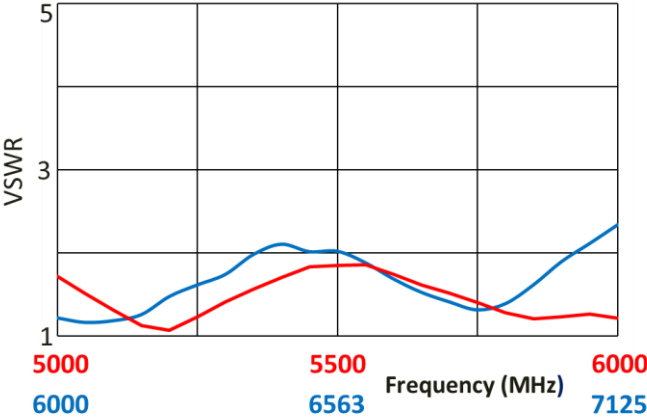
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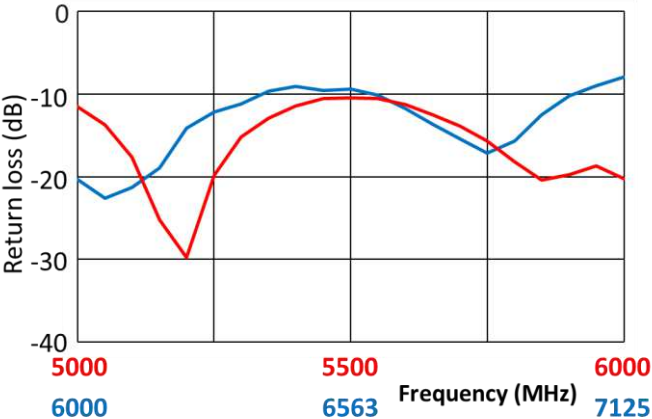
Data measured in free space and on 165 x 100 x 2 mm PC plastic

RF DATA (Shown as 2108948-1 : Others can vary with different cable lengths.)

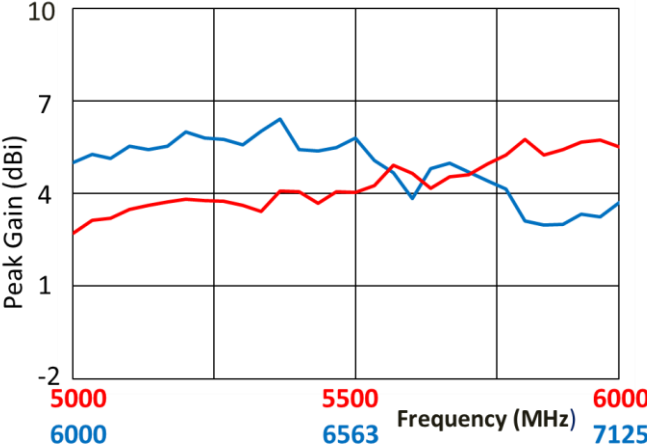
VSWR



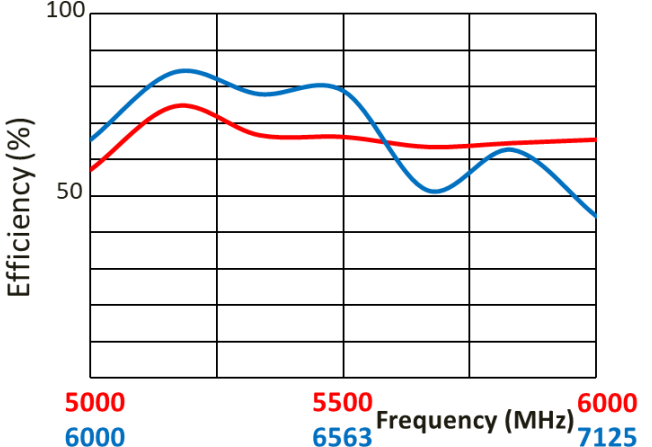
Return Loss



Peak Gain



Efficiency

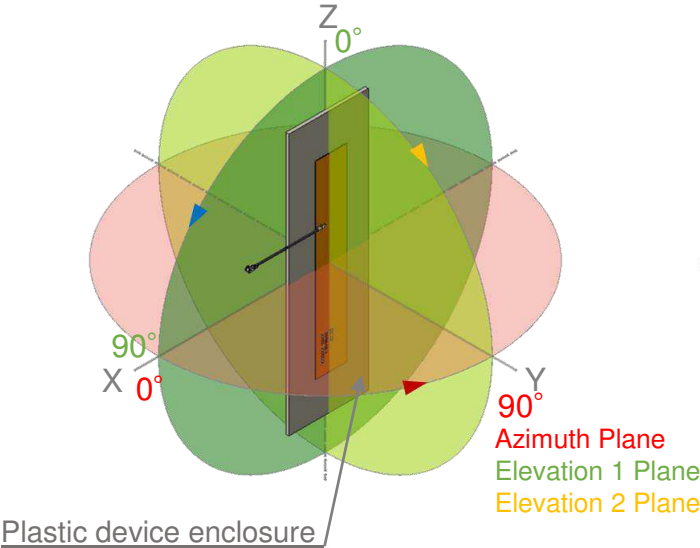


Data measured in free space and on 165 x 100 x 2 mm PC plastic

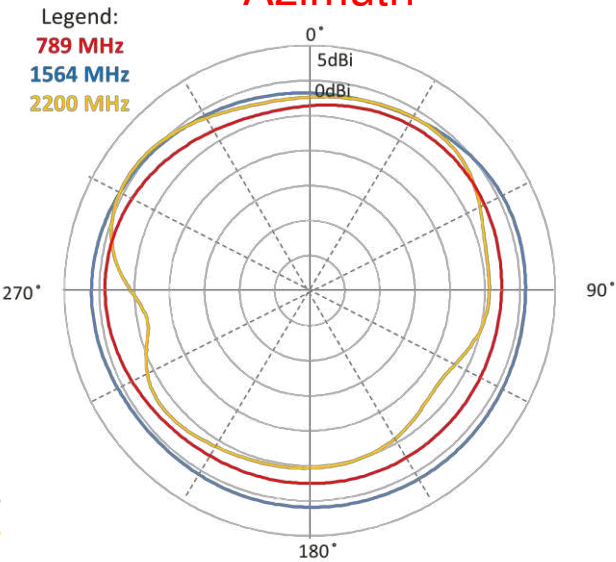
RADIATION PATTERN

(Shown as 2108948-1 : Others can vary with different cable lengths.)

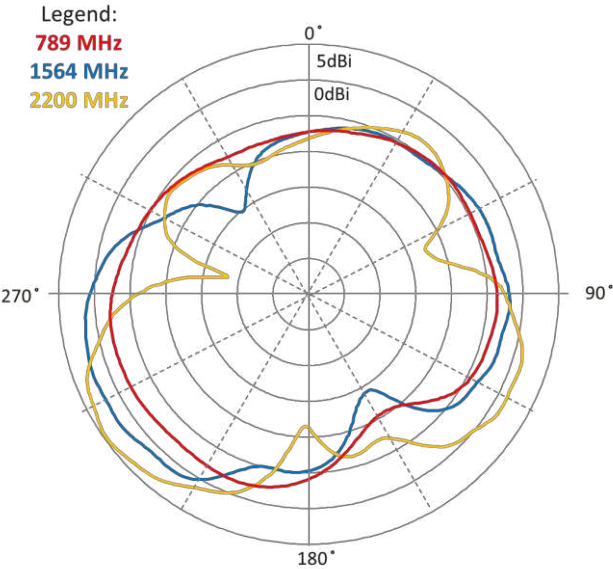
Test setup



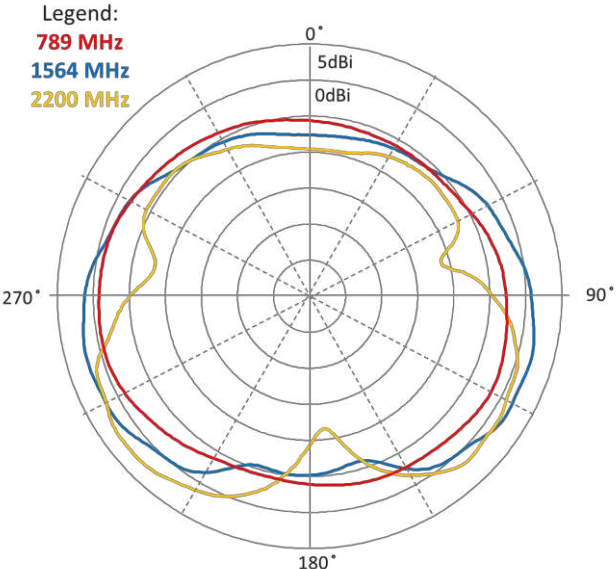
Azimuth



Elevation 1



Elevation 2

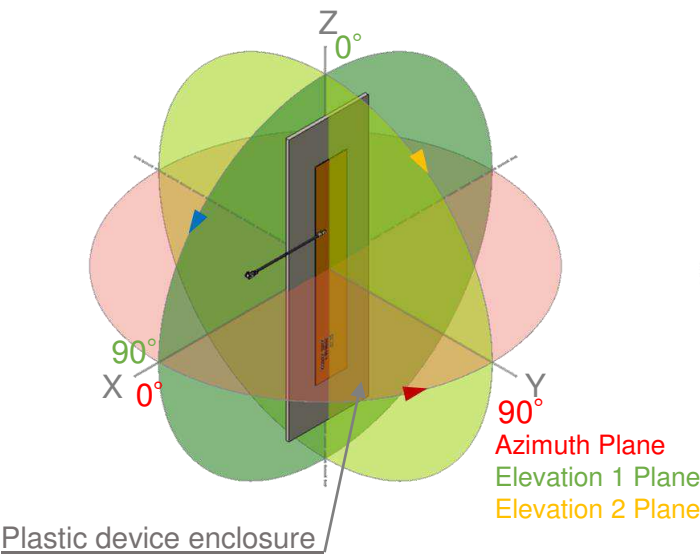


Data measured in free space and on 165 x 100 x 2 mm PC plastic

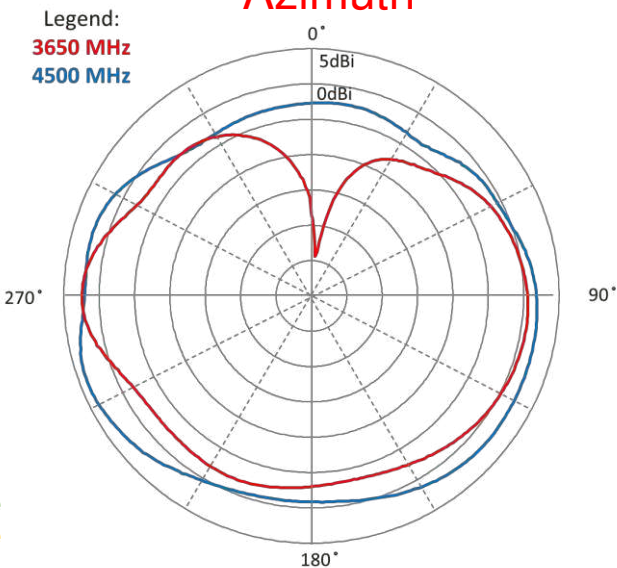
RADIATION PATTERN

(Shown as 2108948-1 : Others can vary with different cable lengths.)

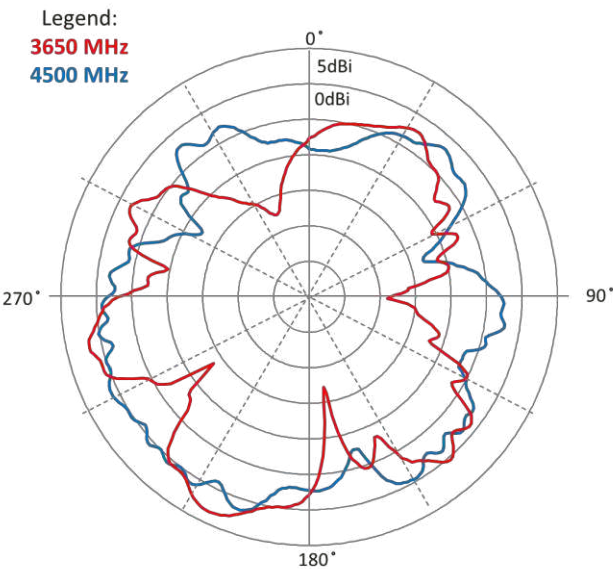
Test setup



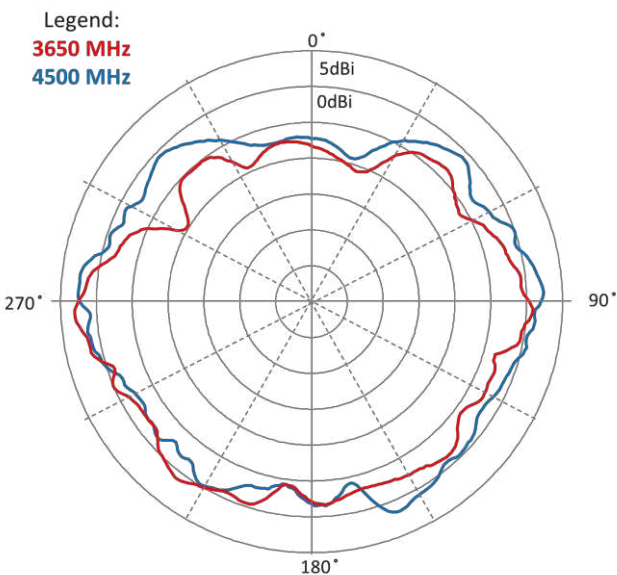
Azimuth



Elevation 1



Elevation 2

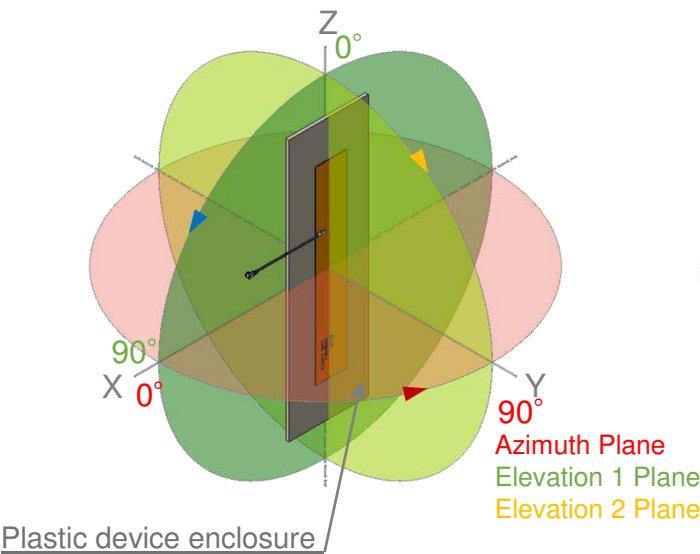


Data measured in free space and on 165 x 100 x 2 mm PC plastic

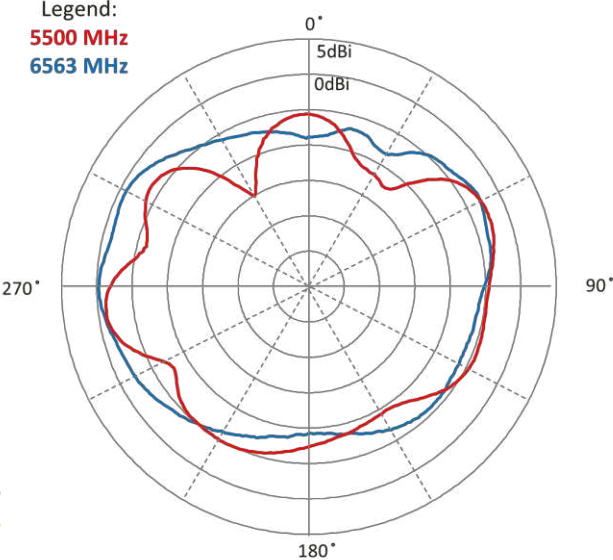
RADIATION PATTERN

(Shown as 2108948-1 : Others can vary with different cable lengths.)

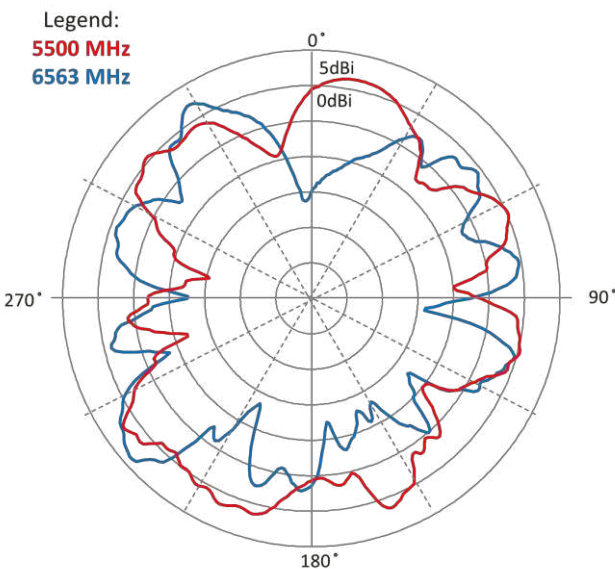
Test setup



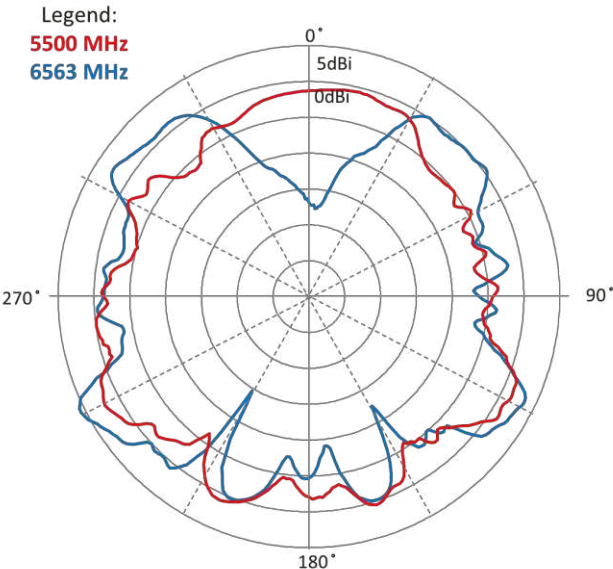
Azimuth



Elevation 1

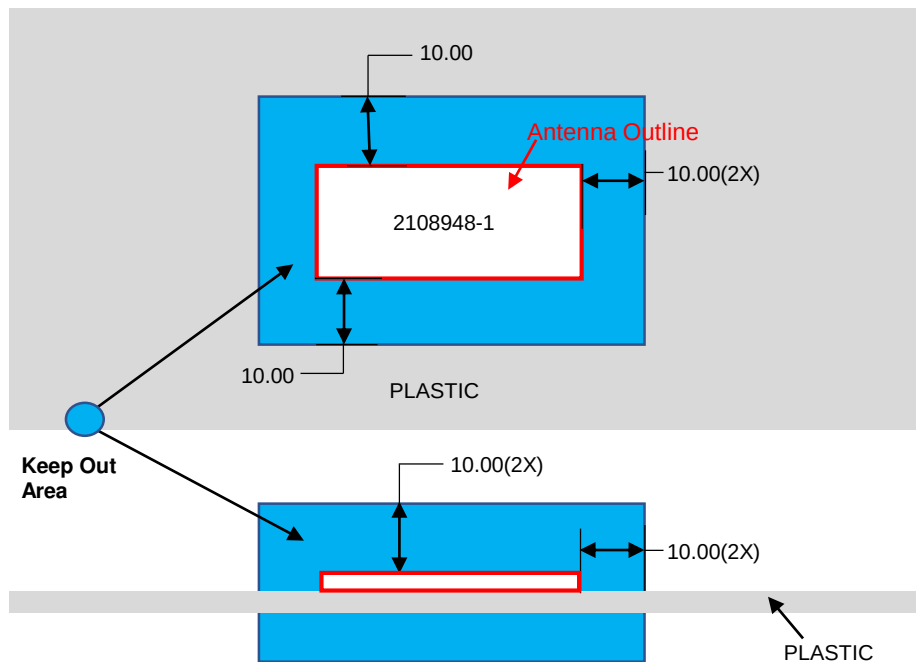


Elevation 2



Data measured in free space and on 165 x 100 x 2 mm PC plastic

KEEP OUT AREA

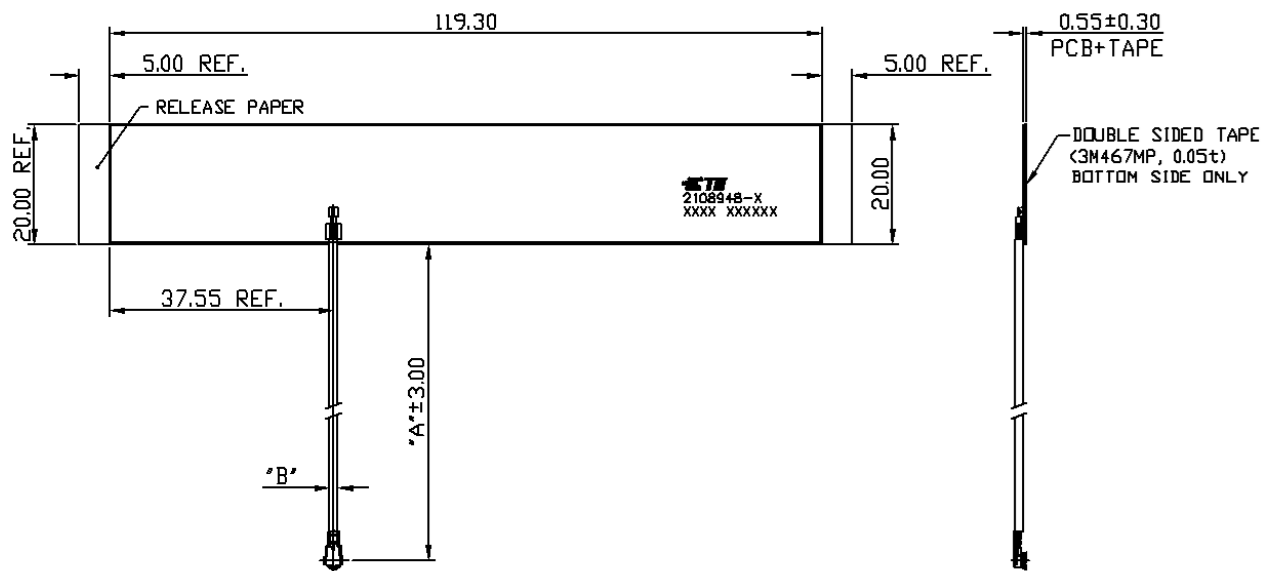


NOTES:1. Antenna designed to be mounted on plastic cover.
2. Area in blue above indicates Keep Out Area.
3. For more information please call TE.

Dimensions: mm
Diagram is not to scale

DIMENSIONS

(Refer to Page9 for dimension “A” and “B”)

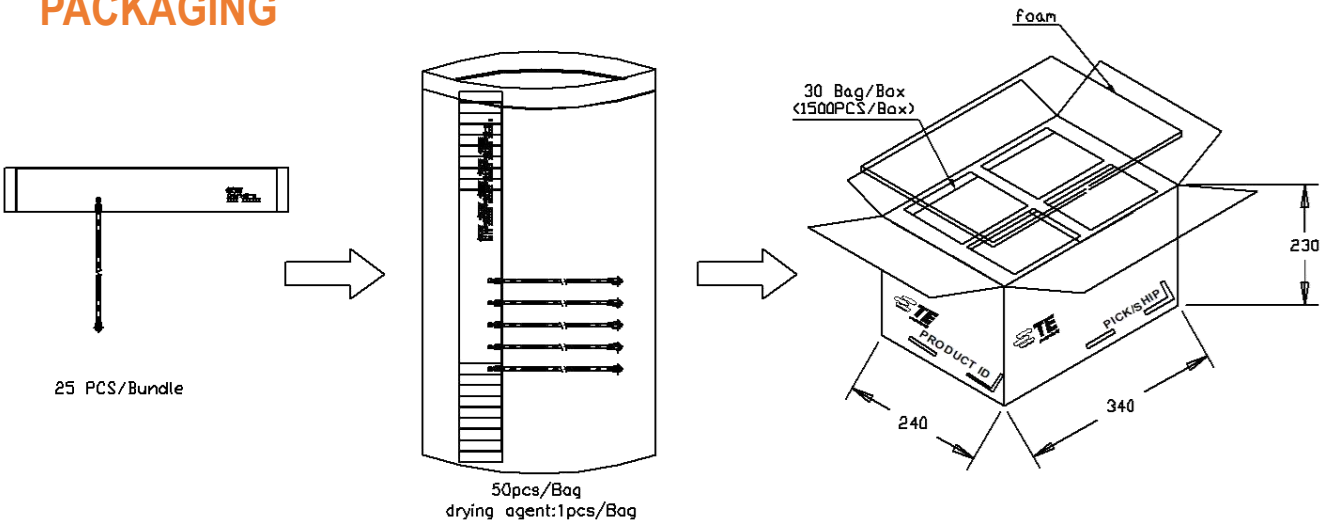


Dimensions: mm
Diagram is not to scale

MATING COMPONENTS TO PART NUMBERS AND DIMENSIONS

2108948-1	50.0	1.968	1.37	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
2108948-2	100.0	3.937	1.37	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
2108948-3	150.0	5.905	1.37	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
2108948-4	200.0	7.784	1.37	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
2108948-5	50.0	1.968	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
2108948-6	100.0	3.937	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
2108948-7	150.0	5.905	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
2108948-8	200.0	7.784	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
PART	MM	INCH	CABLE O.D("B"), MM	CONNECTOR TYPE	PART NUMBER	IMAGE
NUMBER	CABLE LENGTH(A)			(ON CABLE)	MATING COMPONENTS	

PACKAGING





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