

ALLISCOM

MIMO Antenna

Data Sheet



Model No. AM460

Feature

- Iridium Certified**
- 6 in 1 antenna**
- High performance for GPS/WiFi/Iridium/2G/3G/4G**
- Resistant to harsh outdoor environment**
- Omni-directional for cellular system**
- 2 * Cellular/LTE (2G/3G/4G) (MIMO) antennas**
- 2 * WiFi (802.11 abgn, ac) 2.4/5G (MIMO) antennas**
- 1 * GPS antenna**
- 1 * Iridium antenna**
- Waterproof IP67, Stainless Steel Base**
- RoHS Compliant**

Description The AM460 is an omni-directional, IP67 waterproof antenna for use in transportation and remote monitoring applications. This antenna delivers advanced MIMO antenna technology for GPS/Iridium/2G/3G/4G/WiFi in a compact package. The functions of WiFi include 802.11abgn and emerging 802.11ac. The antenna has its own ground-plane and can radiate on any mounting environment such as metal or plastic without affecting performance. This antenna is particularly suitable for trains, buses and commercial transport applications.

1. Electrical Specifications

1.1 GPS Active Antenna

Patch Antenna				
Frequency	1575.42 ± 3 MHz			
VSWR	1.5 Max.			
Bandwidth	20 MHz Min. at -10 dB			
Axial Ratio/ Polarization	3dB typical/ RHCP			
Peak Gain	4dBic min. at 0° (7cm x 7cm ground plane)			
Gain Coverage	≥ -4dBic at −90°≤ θ≤90°(over 75% volume)			
Amplifier Module				
Amplifier Gain without cable	Noise Figure	Output VSWR	DC Voltage	DC Current
27dB Typical	1.8dB Typical	2.0 Max.	DC 2.7V to 6.0V	12±5.5mA

1.2 Iridium Passive Antenna

Frequency	1616~1626MHz
VSWR	2.0 Max
Bandwidth	15 MHz Min. at -10 dB
Axial Ratio/ Polarization	3dB typical/ RHCP
Peak Gain	4dBic min. at 0° (7cm x 7cm ground plane)
Gain Coverage	$\geq$ -4dBic at $-90^\circ \leq \theta \leq 90^\circ$ (over 75% volume)

1.3 Cellular Passive Antenna

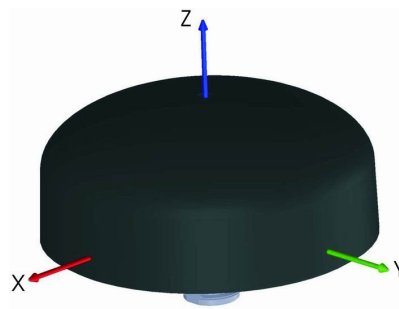
Frequency		LTE 696~800MHz	AMPS/GSM 824~960MHz	DCS/PCS 1710~1990MHz	WCDMA 1920~2170MHz
Average Peak Gain	MIMO I	2.6dBi	-0.1dBi	6.7dBi	6.8dBi
	MIMO II	1.9dBi	-0.8dBi	5.3dBi	5.9dBi
Average Efficiency	MIMO I	64%	39%	78%	80%
	MIMO II	63%	38%	77%	80%
VSWR Max.		3.0:1	3.0:1	3.0:1	2.0:1
Impedance		50 Ω			
Pattern Type/ Polarization		Omni-direction / Linear			
Power Handling		25 watt			

1.4 WiFi Passive Antenna

Frequency		2.4~2.5GHz	5~5.4GHz	5.4~5.9GHz
Average Peak Gain	MIMO I	4.8dBi	6.9dBi	7.7dBi
	MIMO II	5.8dBi	2.1dBi	6.1dBi
Average Efficiency	MIMO I	73%	65%	70%
	MIMO II	69%	25%	47%
VSWR Max.		3.0:1	3.0:1	3.0:1
Impedance		50Ω		
Pattern Type/ Polarization		Omni-direction / Linear		
Power Handling		25 watt		

Note: Specifications subject to change without notice.

1.5 Antenna Measurement (With Ground Plane)



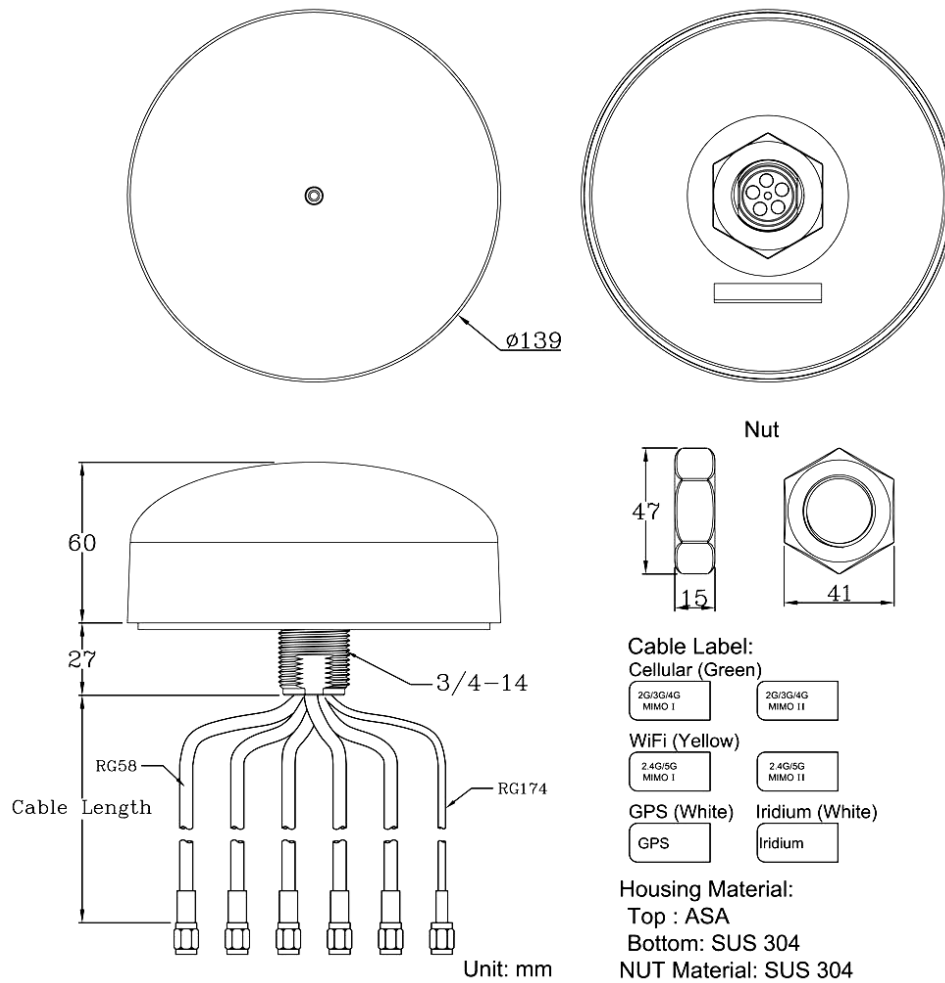
2. Mechanical Specification

2.1 Mechanical

Housing Material	Top: ASA / Bottom: SUS 304			
Size	139mm Dia.x 60mm			
Connector	GPS: Optional	Iridium: Optional	Cellular: Optional	WiFi: Optional
RF Cable	GPS: Optional	Iridium: Optional	Cellular: Optional	WiFi: Optional
Tolerance of RF Cable Length	Longer than 500mm: +(2%xCable Length)/-0			
	Shorter than 500mm: +5mm/-0			
Mounting	Permanent mount			
Housing Color	Black			

Note: Specifications subject to change without notice.

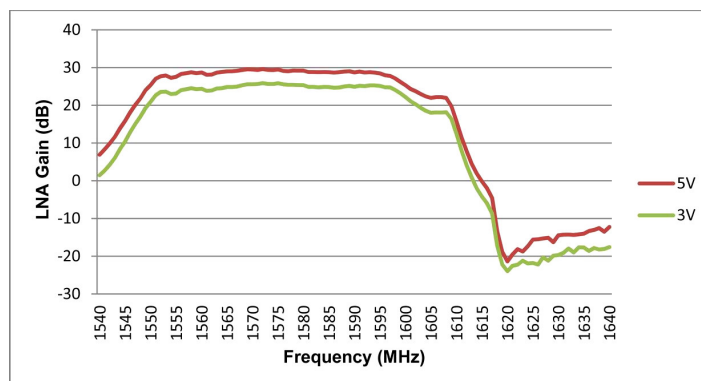
2.2 Dimension



3. Appendix: Gain Patterns

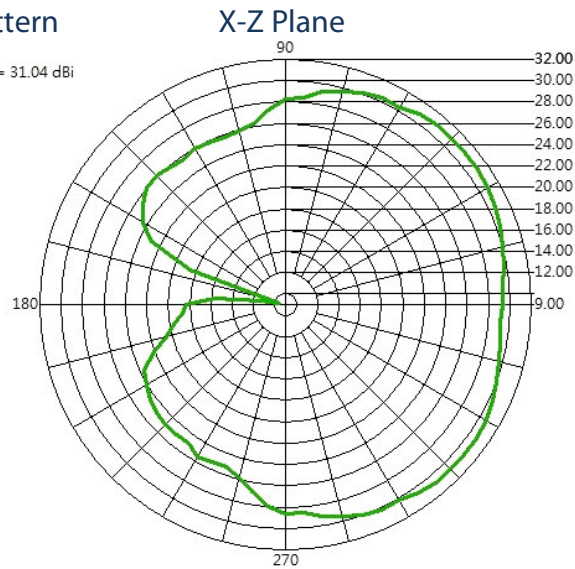
GPS Active Antenna

● LNA Gain



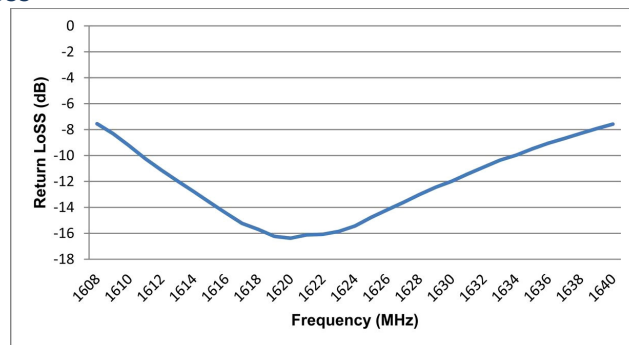
● Radiation Pattern

■ 1575 MHz Peak gain = 31.04 dBi

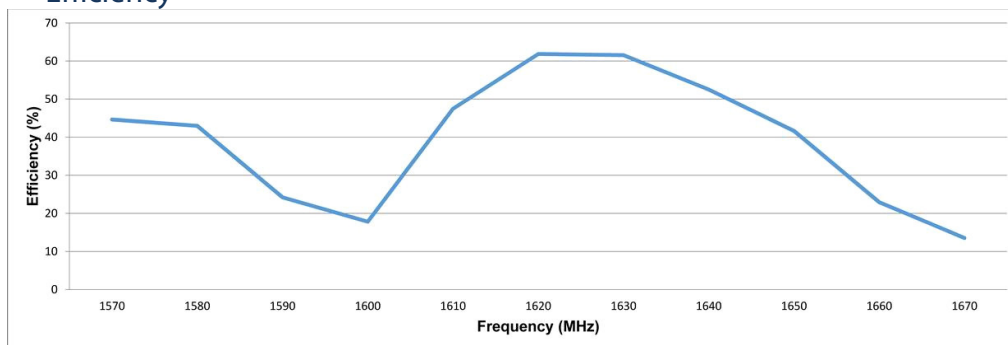


Iridium Passive Antenna

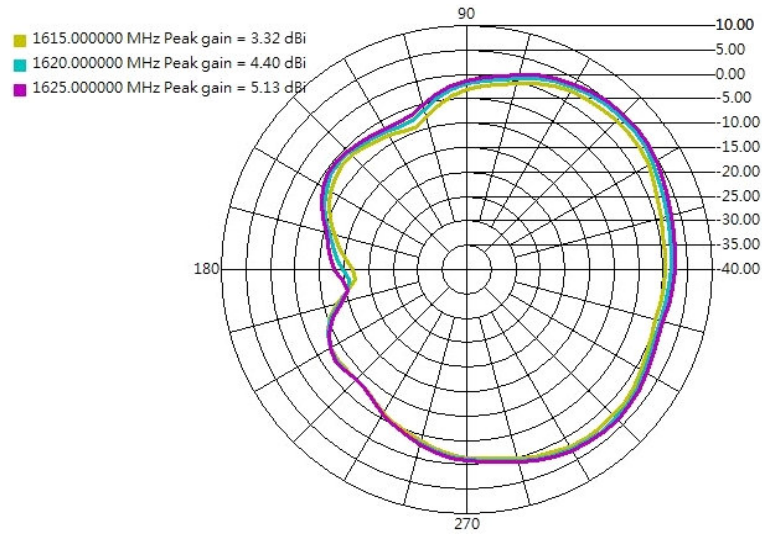
● Return Loss



● Efficiency

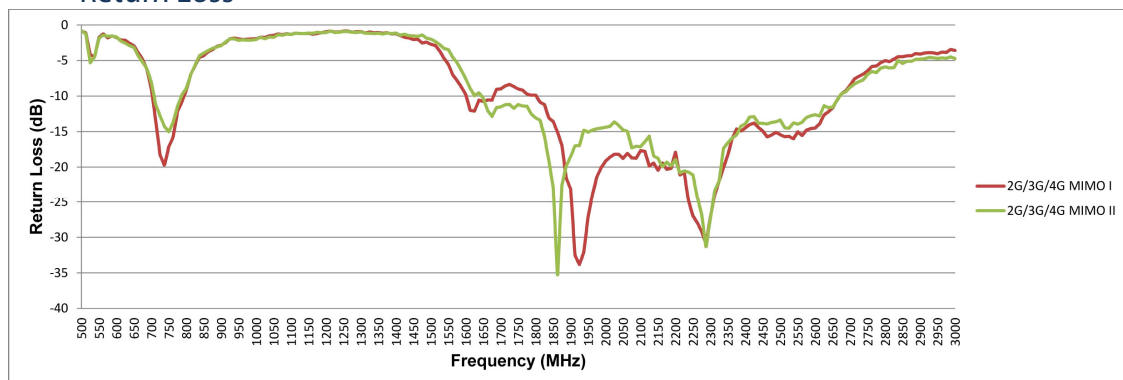


● Radiation Pattern

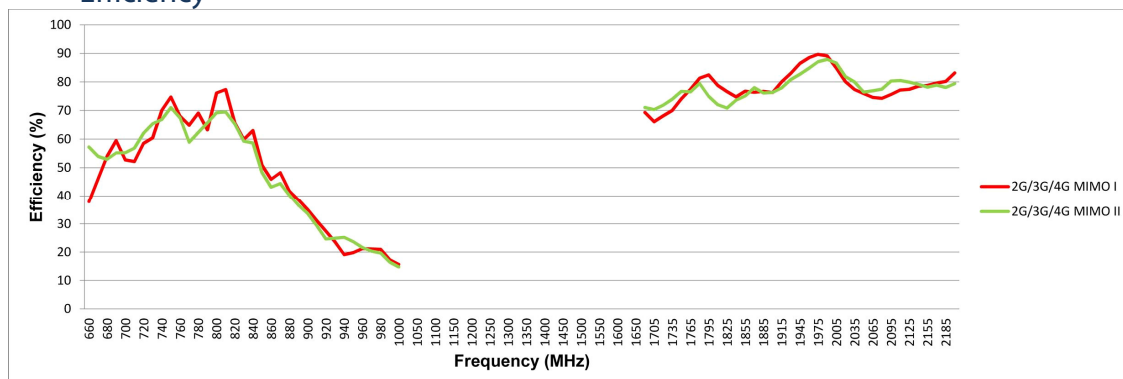


Cellular Passive Antenna

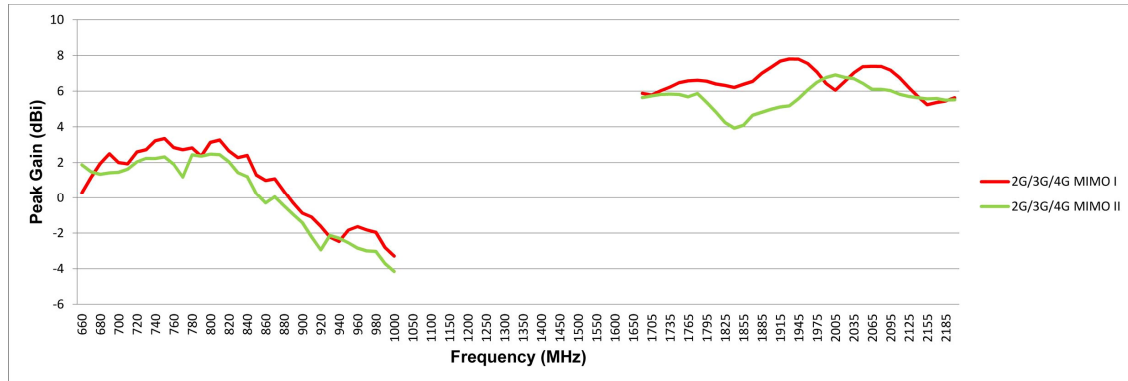
● Return Loss



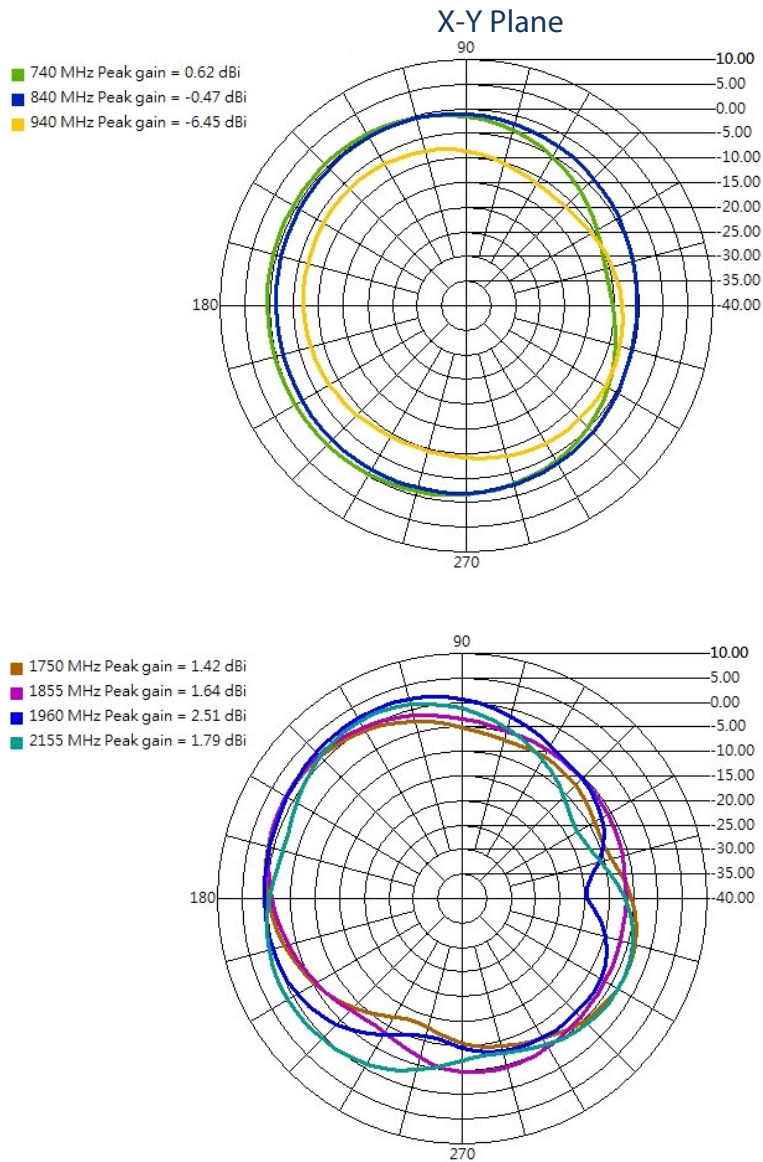
● Efficiency



● Peak Gain

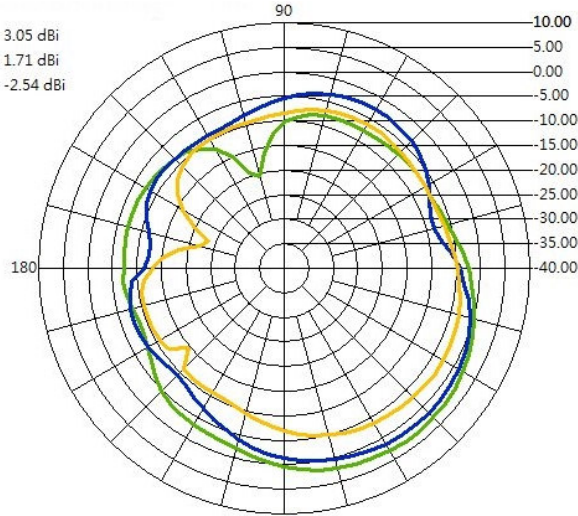


● Radiation Pattern 2G/3G/4G MIMO I

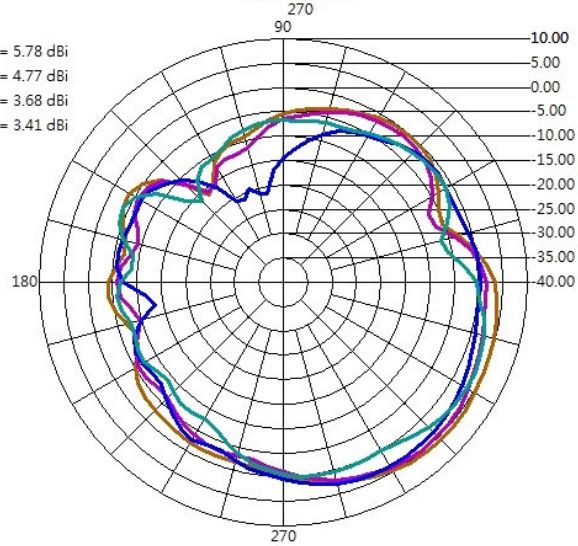


X-Z Plane

- 740 MHz Peak gain = 3.05 dBi
- 840 MHz Peak gain = 1.71 dBi
- 940 MHz Peak gain = -2.54 dBi



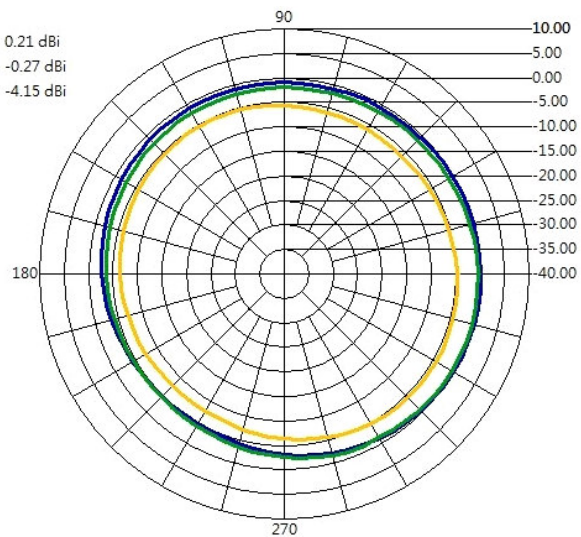
- 1750 MHz Peak gain = 5.78 dBi
- 1855 MHz Peak gain = 4.77 dBi
- 1960 MHz Peak gain = 3.68 dBi
- 2155 MHz Peak gain = 3.41 dBi

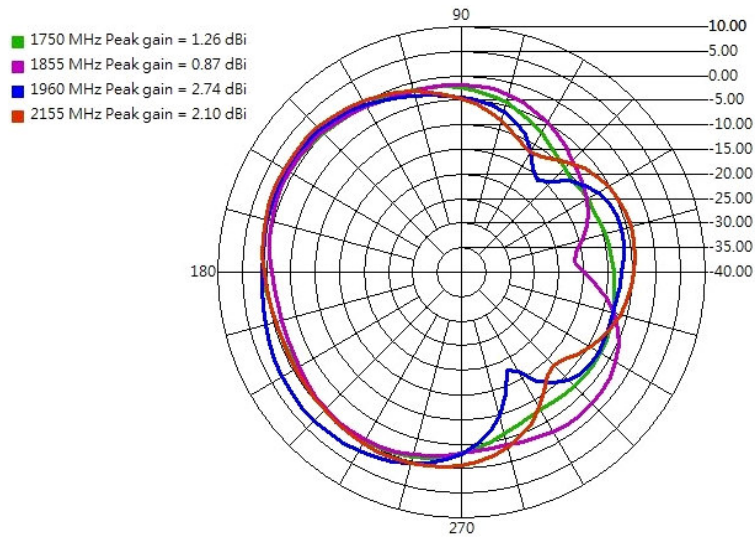


2G/3G/4G MIMO II

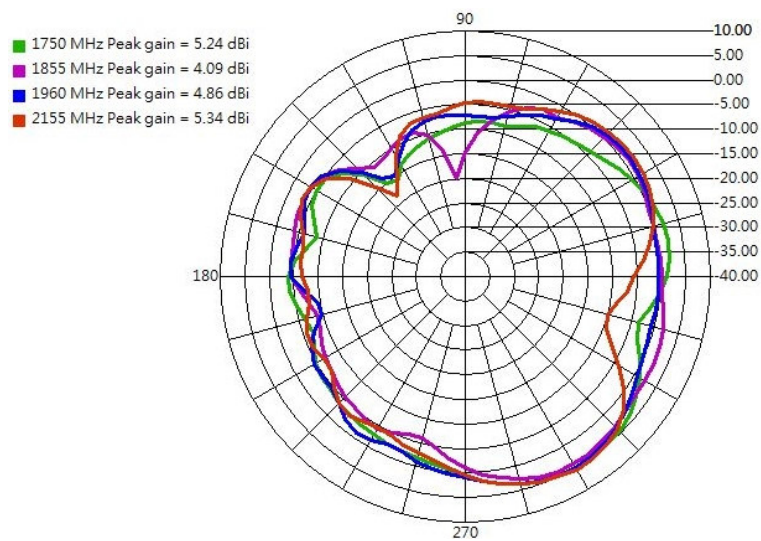
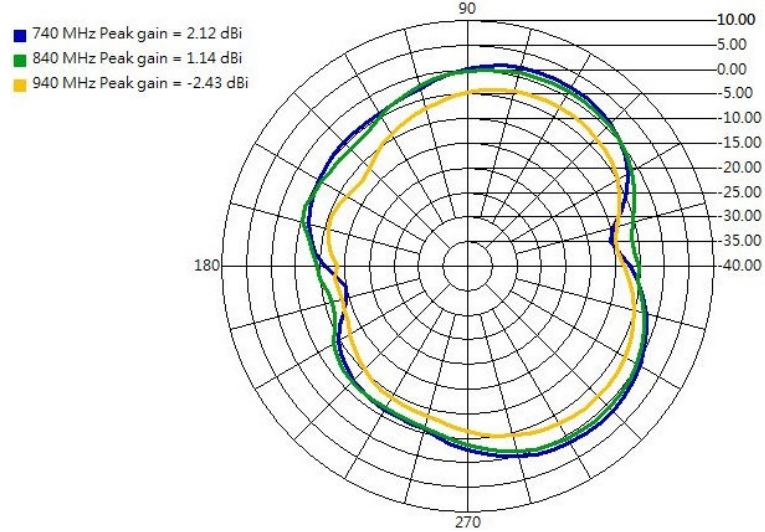
X-Y Plane

- 740 MHz Peak gain = 0.21 dBi
- 840 MHz Peak gain = -0.27 dBi
- 940 MHz Peak gain = -4.15 dBi



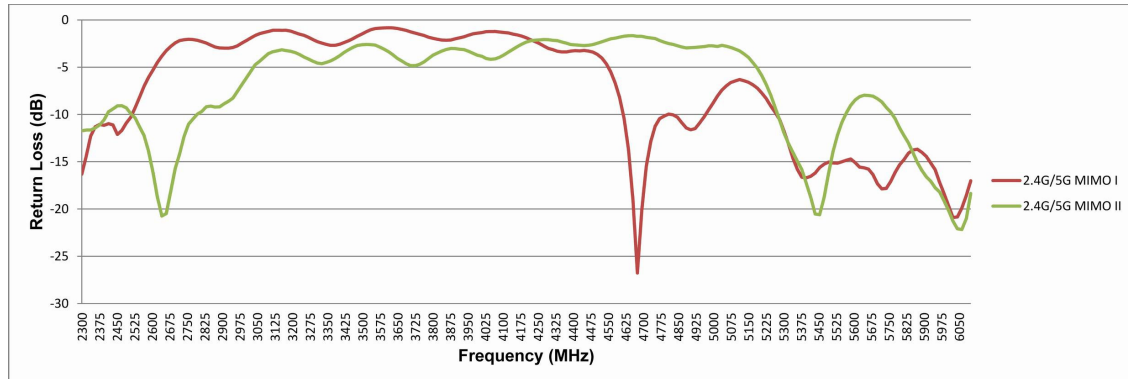


X-Z Plane

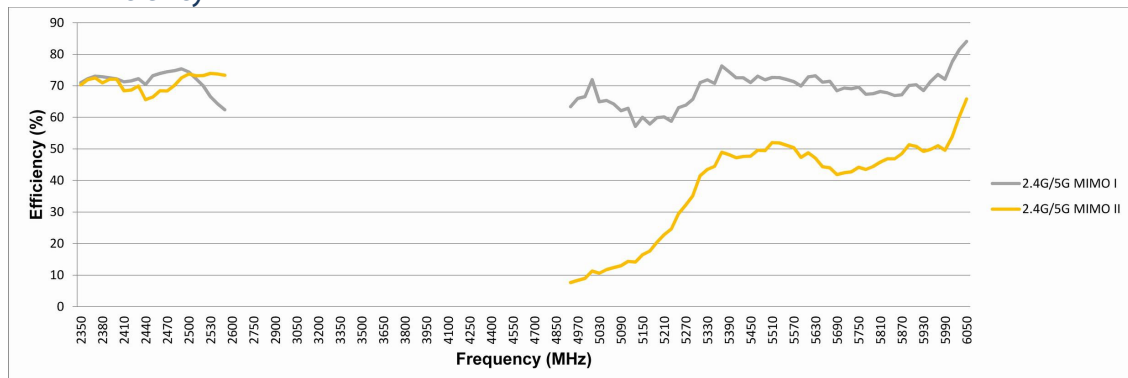


WiFi Passive Antenna

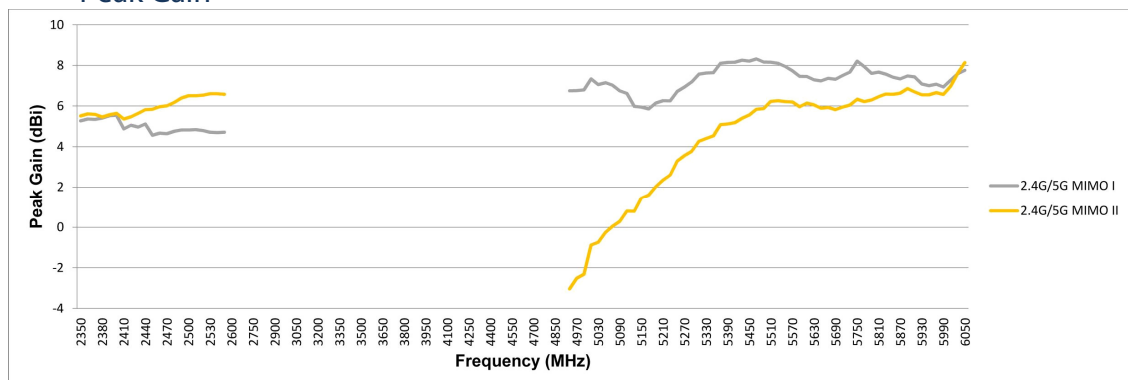
● Return Loss



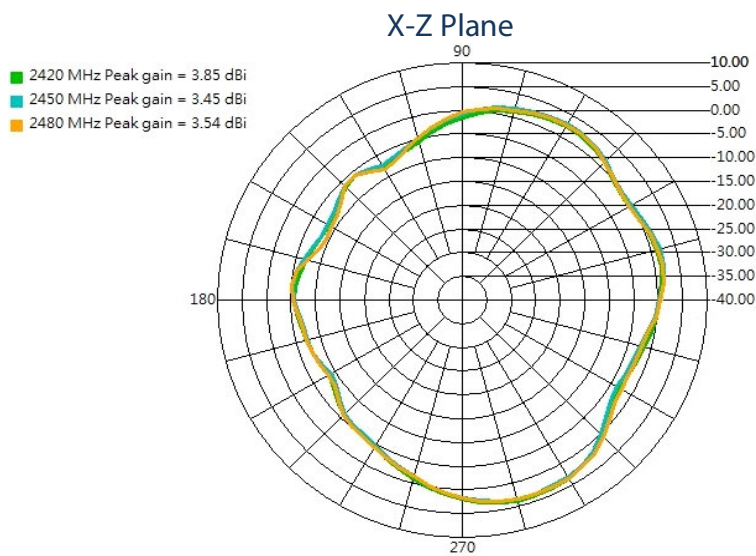
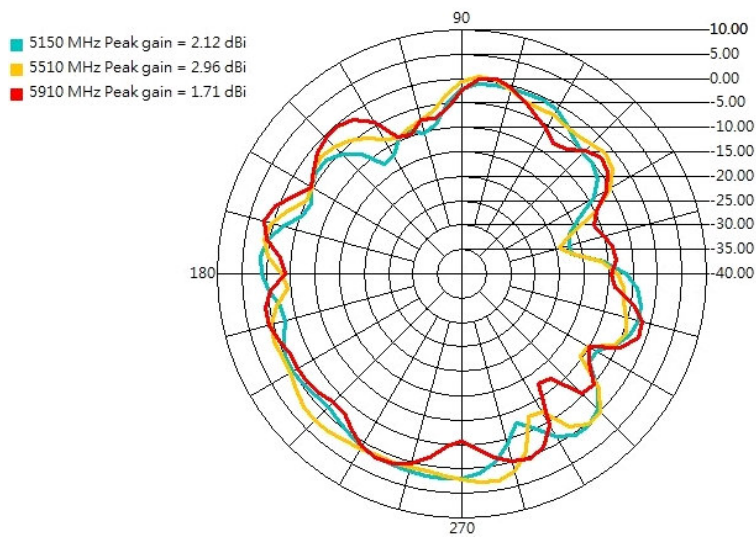
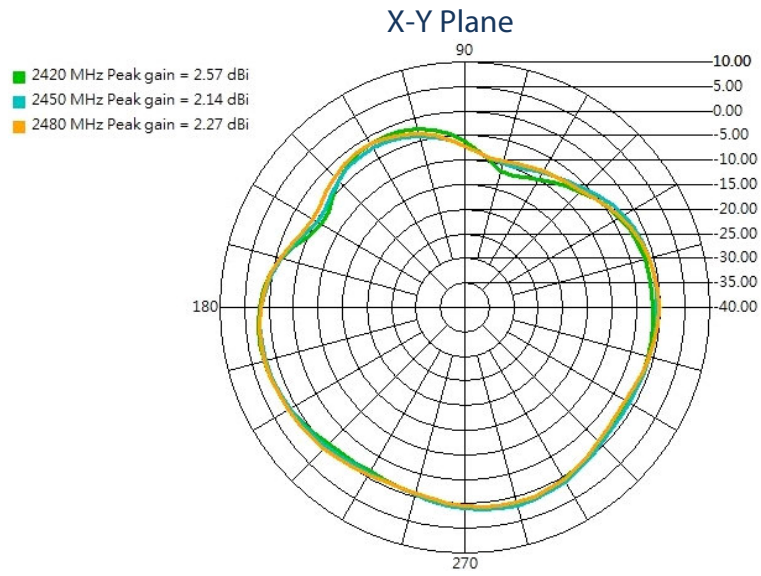
● Efficiency

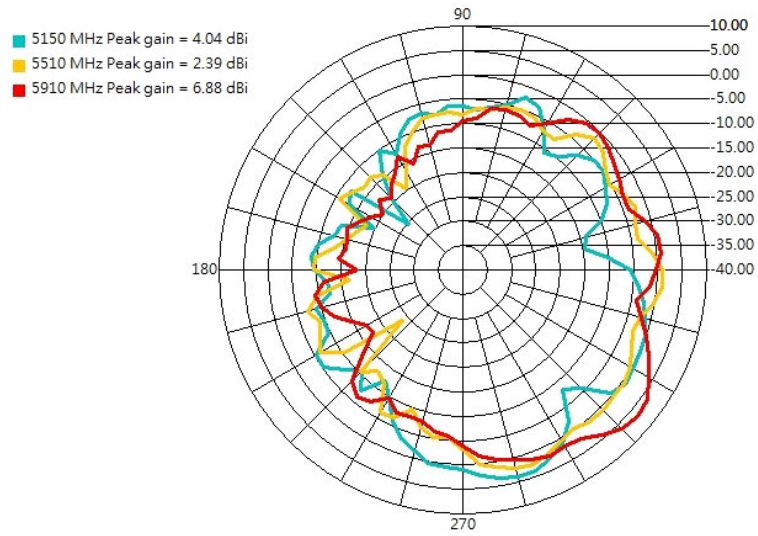


● Peak Gain

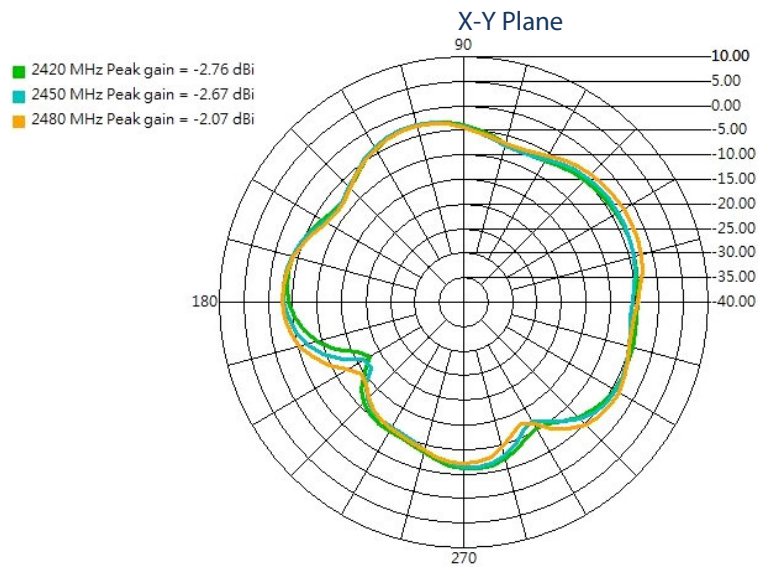


● Radiation Pattern
2.4G/5G MIMO I

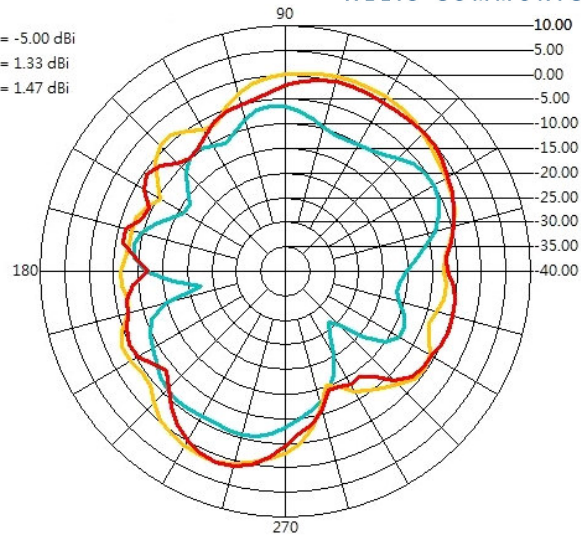




2.4G/5G MIMO II

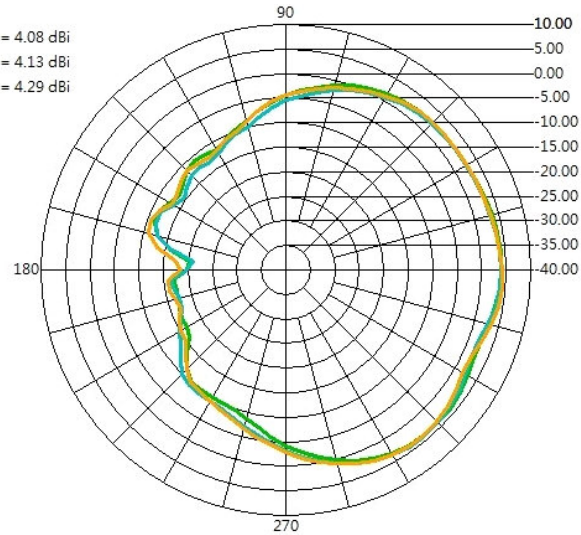


5150 MHz Peak gain = -5.00 dBi
5510 MHz Peak gain = 1.33 dBi
5910 MHz Peak gain = 1.47 dBi



X-Z Plane

2420 MHz Peak gain = 4.08 dBi
2450 MHz Peak gain = 4.13 dBi
2480 MHz Peak gain = 4.29 dBi



5150 MHz Peak gain = -0.34 dBi
5510 MHz Peak gain = 4.46 dBi
5910 MHz Peak gain = 6.06 dBi

