

MBAP-RF1-PANFO-5M2001213

5GHz 18-20dBi Dual Polarization MIMO Panel Antenna Assembled above the case (without Wireless Motherboard)



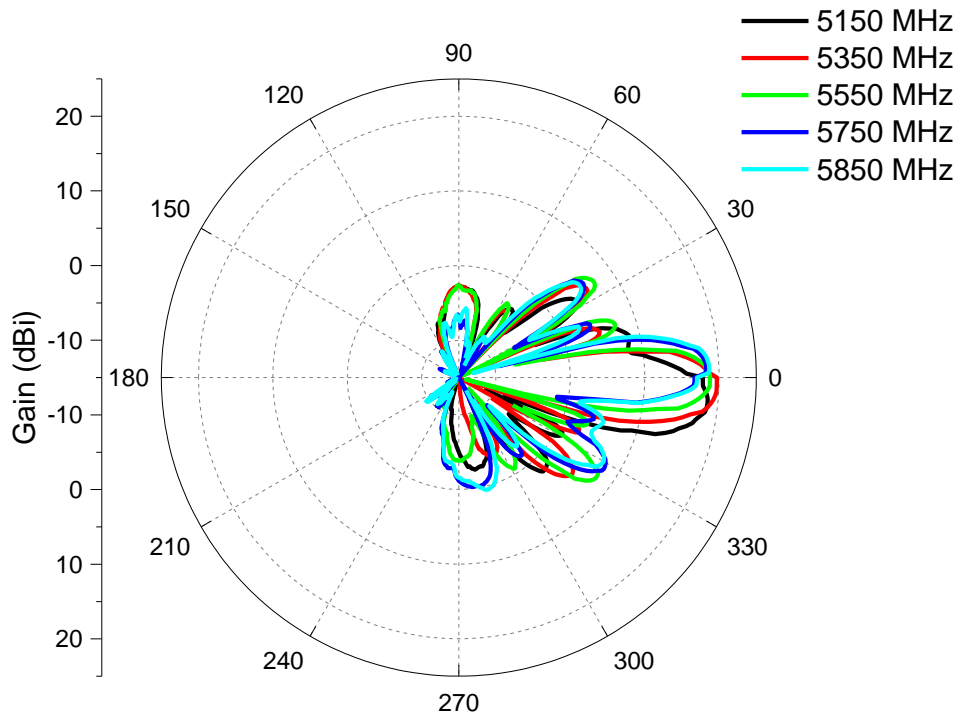
Electrical Specification	
Frequency	4900 - 6100MHz
Standard Frequency	18 - 20dBi +/-0.5dBi
Antenna Gain	<ul style="list-style-type: none"> ■ 5150 – 5250MHz: 18.5 -19.5dBi ■ 5250 – 5550MHz: 19.0 -20.5dBi ■ 5550 – 5850MHz: 18.0 -18.5dBi
Special Frequency	<ul style="list-style-type: none"> ■ 4900 – 4950MHz: 13.0-16.0dBi ■ 5000 – 5100MHz: 16.5-18.5dBi
Antenna Gain	<ul style="list-style-type: none"> ■ 5900 – 5950MHz: 18.0-18.5dBi ■ 6000 – 6100MHz: 15.5-17.5dBi
VSWR	2.0 : 1 (Max.)
Polarizations	90° Dual Polarization Vert. / Hor.
Isolation	20 dB Typical
HPBW H-Plane	12°
HPBW V-Plane	13°
Front Back Ratio	30dB
Power handing	5W (cw)
Input Impedance	50 Ohm
Built in Conn / Length / Cable Loss	MMCX Plug x 2 / 20cm / 1.2dB Max

Mechanical Specification & Environment Characteristics	
Dimension	266 x 266 x 110 mm
Assembly PCBA Space	180 x 140 x Up-50mm / Down-25mm
Weight	1000g + 1500g = 2500g
Radome Color	White
Radome Material	PC, UV resistant, UL746C
Under Cover Shell ##	Aluminum Die-casting
Temperature	-40°C to 80 °C
Humidity	95% @ 55 °C
Survival Wind Speed / Scale	250Km/hr & 17Beaufort scale
Waterproof	IP67
Universal Stainless Mounting Kit* P/N:IOP-UHMK-VESA75-1 L x W x H :118 x 125 x 77mm Weight : 0.9Kg	<ul style="list-style-type: none"> ■ Wall Mount / Car Mount ■ Pole Mount (1" ~ 2.5") ■ Lamp Post (Belt Type) ■ Electric Pole (Belt Type)
* Support International VESA Standard Installation Size : 75 X 75 mm * Support General ODU Installation Size : 60 X 60 mm ~ 75 X 75mm * Support Triangle Fixing Point Fixed Way * Support Screw-tightening Method * Support + -40° Antenna Angle Adjustment Function ## Supports EL-N & MBAP-XACX wireless products and other customized products	

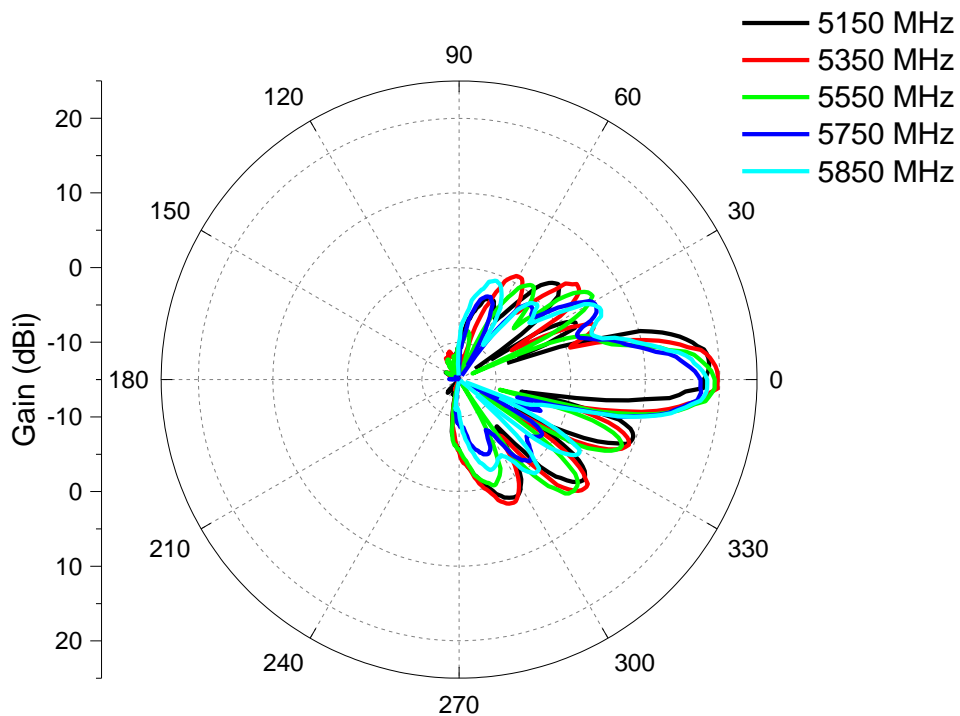
Radiation Pattern

H-Polar

H-Plane -01

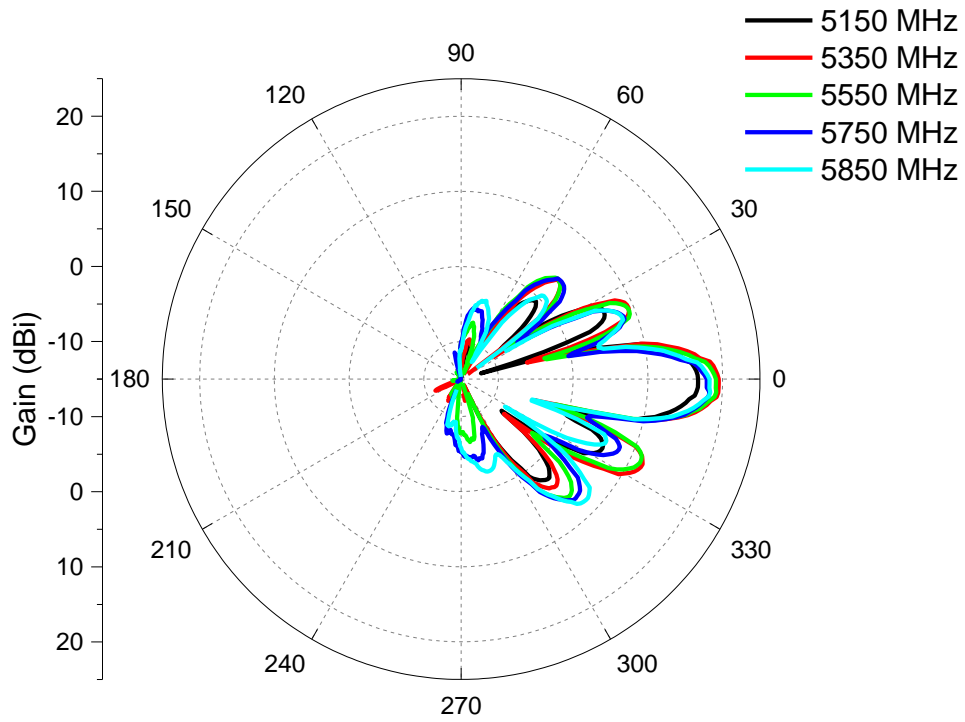


H-Plane -02

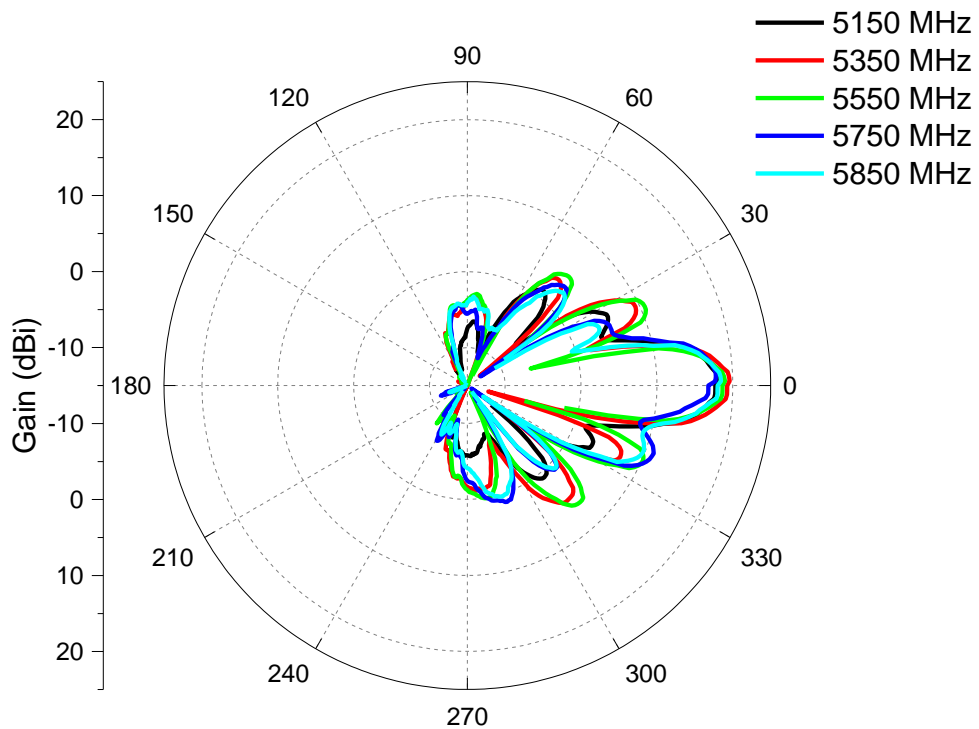


V-Polar

V-Plane -01



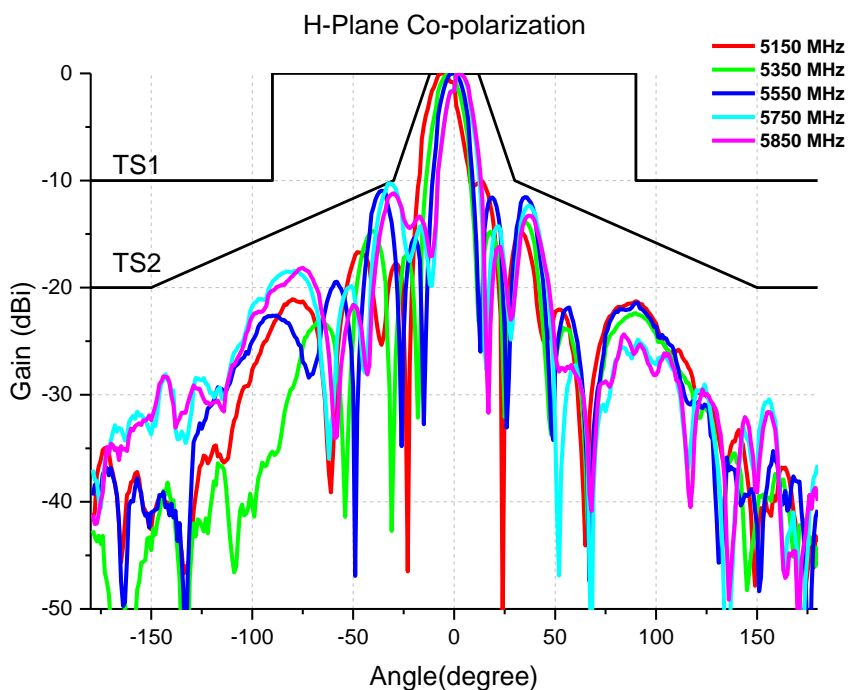
V-Plane -02



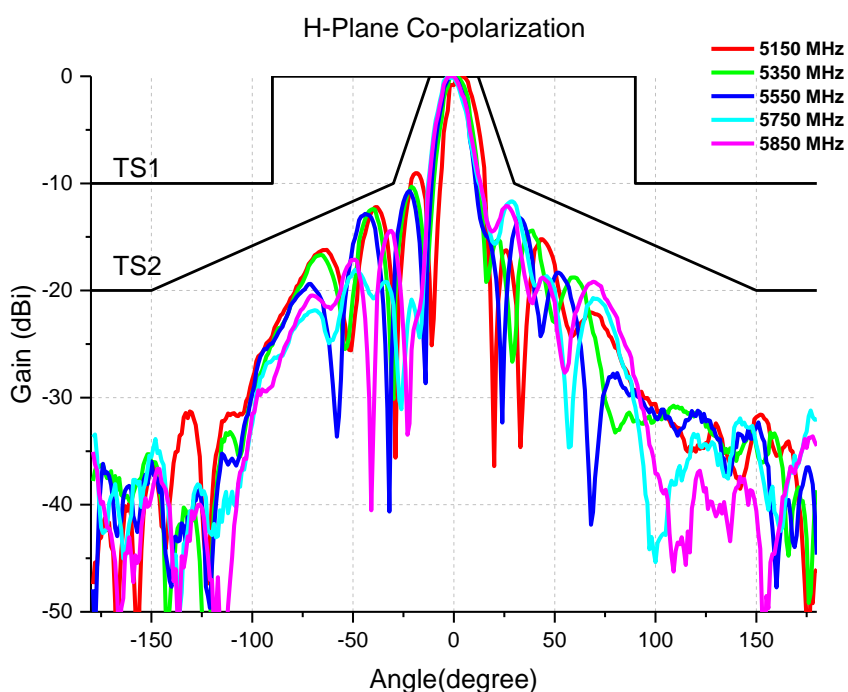
ETSI Standard

H-Polar

H-Plane - 01

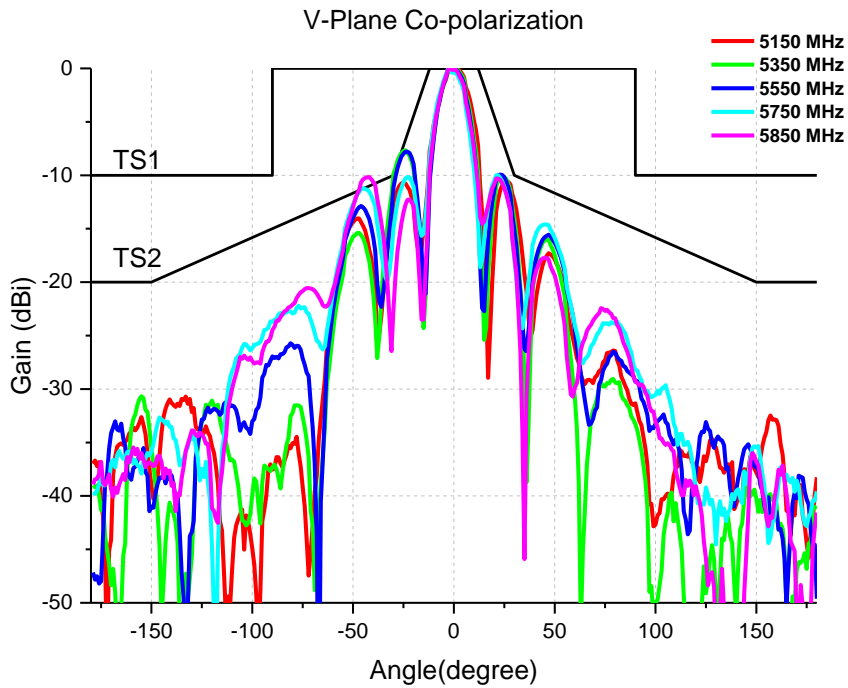


H-Plane - 02

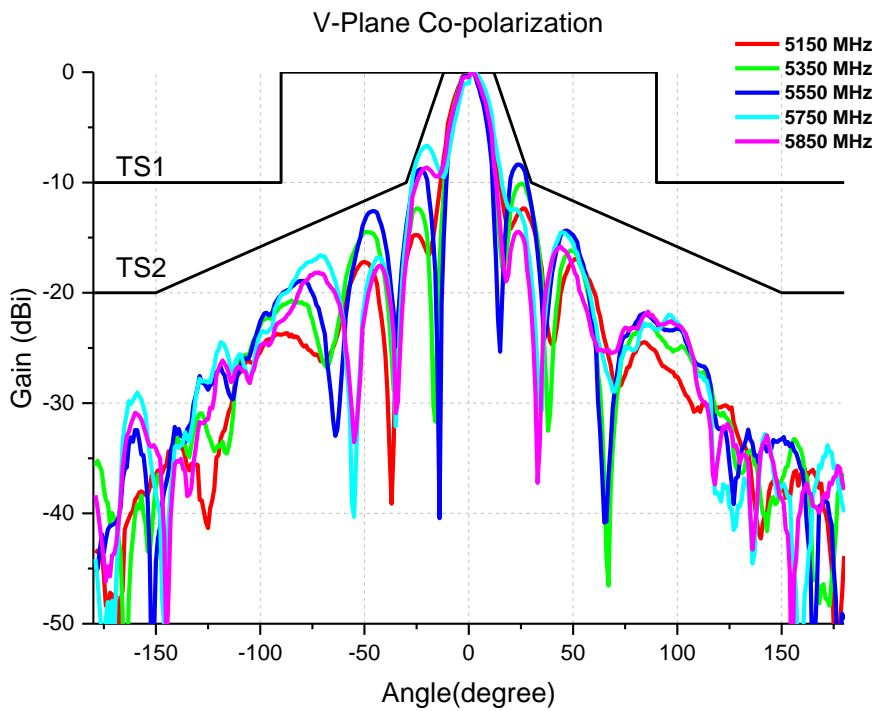


V-Polar

V-Plane -01



V-Plane -02



『All in One』 Machine Point-to-Point wireless transmission distance of this antenna is recommended:



■ IOP-EL-N Series--802.11an: Transmission distance 30m~5000m (5Km)

TX Antenna Gain
dBi

RF Cable Loss
<= 1 dB

RF Output Power
dBm

Air Space Loss = - 92.4dBm -20*LOG(Frequency)-20*LOG(Distance)

Point to Point Receive Sensitivity (RSSI) Suggest

1. for Wireless Backbone System: **802.11ag** -60dBm< RSSI< -40dBm/ **802.11an** -50dBm< RSSI < -35dBm/ **802.11ac** -40dBm< RSSI< -25dBm

2. for Wireless Surveillance System : **802.11ag** -65dBm< RSSI< -40dBm/ **802.11an** -55dBm< RSSI < -35dBm/ **802.11ac** -45dBm< RSSI< -25dBm

3. for Wireless Surf Internet Coverage System : -60dBm < RSSI < -35dBm

Note: Receive Sensitivity (RSSI) don't under > -20dBm, it will have effect of Hearing Loss

RX Antenna Gain
dBi

RF Cable Loss
<= 1 dB

RF Receive Sensitivity
dBm

無線鏈路訊號值(dBm)計算 (Wireless PtP Signal Sensitivity Calculation)

傳輸鏈路訊號計算 (Signal Selectivity Calculation)	RF Output Power dBm (Maxmium)	RF Cable Loss dB (1m=0.6dB)	TX Antenna Gain dBi	Space Loss = 92.4	Frequence Loss GHz	Distance Loss Km	Rain Loss = 2 dB	Tree Loss 1m=5dB	RX Antenna Gain dBi	RF Cable Loss Db (1m=0.6dB)
參數定義 (Parameter Definition)	無線最大輸出功率	RF線損耗	天線增益	空間衰減	頻率衰減	距離衰減	雨衰	樹衰	天線增益	RF線損耗
請填入數據 (Please fill in your data)	21	1.2	19	92.4	5.45	5	0	0	19	1.2
計算結果 (Calculation Results)	-64.5									

Note 1: Defined in wireless transmission adopts "HT40MHz" channel width to reach full-speed bandwidth traffic transmission calculation standard.

Note 2: The signal value is controlled below -64.5dBm, the transmission rate can reach 300Mbps, and the bandwidth throughput can reach 150Mbps.

■ IOP-MBAP-XACX Series--802.11ac: Transmission distance 30m~2500m (2.5Km)

TX Antenna Gain
dBi

RF Cable Loss
<= 1 dB

RF Output Power
dBm

Air Space Loss = - 92.4dBm -20*LOG(Frequency)-20*LOG(Distance)

Point to Point Receive Sensitivity (RSSI) Suggest

1. for Wireless Backbone System: **802.11ag** -60dBm< RSSI< -40dBm/ **802.11an** -50dBm< RSSI < -35dBm/ **802.11ac** -40dBm< RSSI< -25dBm

2. for Wireless Surveillance System : **802.11ag** -65dBm< RSSI< -40dBm/ **802.11an** -55dBm< RSSI < -35dBm/ **802.11ac** -45dBm< RSSI< -25dBm

3. for Wireless Surf Internet Coverage System : -60dBm < RSSI < -35dBm

Note: Receive Sensitivity (RSSI) don't under > -20dBm, it will have effect of Hearing Loss

RX Antenna Gain
dBi

RF Cable Loss
<= 1 dB

RF Receive Sensitivity
dBm

無線鏈路訊號值(dBm)計算 (Wireless PtP Signal Sensitivity Calculation)

傳輸鏈路訊號計算 (Signal Selectivity Calculation)	RF Output Power dBm (Maxmium)	RF Cable Loss dB (1m=0.6dB)	TX Antenna Gain dBi	Space Loss = 92.4	Frequence Loss GHz	Distance Loss Km	Rain Loss = 2 dB	Tree Loss 1m=5dB	RX Antenna Gain dBi	RF Cable Loss Db (1m=0.6dB)
參數定義 (Parameter Definition)	無線最大輸出功率	RF線損耗	天線增益	空間衰減	頻率衰減	距離衰減	雨衰	樹衰	天線增益	RF線損耗
請填入數據 (Please fill in your data)	23	1	20	92.4	5.4	2.5	0	0	20	1
計算結果 (Calculation Results)	-54.0									

Note 1: Defined in wireless transmission adopts "HT80MHz" channel width to reach full-speed bandwidth traffic transmission calculation standard. RSSI = -54dBm can support 867Mbps Data Rate & 450-550Mbps Throughput.

■ 802.11ac Wireless RSSI and Data Rate Table (R11e-5HacD Wireless Network Card Usage Reference)

MIMO	HT80MHz	Data Rate	RSSI/dBm	HT80MHz	Data Rate	RSSI/dBm
2X2	MCS 9	780 ~ 867Mbps	-50 ~ -56	MCS 4	351 ~ 390Mbps	-68 ~ -72
2X2	MCS 8	702 ~ 780Mbps	-56 ~ -59	MCS 3	234 ~ 260Mbps	-72 ~ -75
2X2	MCS 7	585 ~ 650Mbps	-59 ~ -62	MCS 2	175.5 ~ 195Mbps	-75 ~ -80
2X2	MCS 6	526.5 ~ 585Mbps	-63 ~ -65	MCS 1	117 ~ 130Mbps	-80 ~ -85
2X2	MCS 5	468 ~ 520Mbps	-65 ~ -68	MCS 0	58.5 ~ 65Mbps	-85 ~ -88