

Extreme AP4060X Antenna Test Report

May. 5, 2025

Manufacturer: Sercomm Cooperation

Address: 8F, No. 3-1, Yuanqu St., Nangang Dist., Taipei City 115, Taiwan

John Hsieh

Antenna Design Department

Antenna Specification

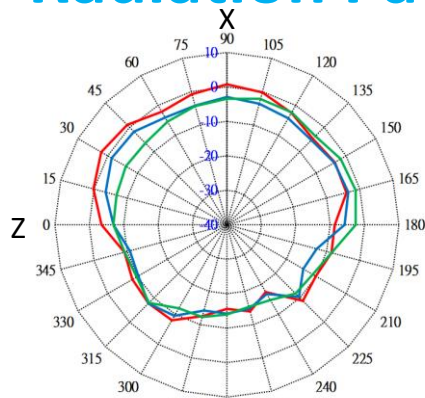
Item	Description		
Operation Band	BLE/IOT (Ant 1 ~ 3)	Sensor (Ant 4)	GPS (Ant 5)
Frequency (MHz)	2400 ~ 2500	2400 ~ 2500 5150 ~ 7125	1176 / 1575
Peak Gain (dBi)	3.8 ~ 4.7	2.43 ~ 5.26	1.18 ~ 2.31
Efficiency (%)	61 ~ 69	60 ~ 75	53 ~ 61
Beamwidth	Omni	Omni	Omni
Isolation (dB)	≥ 20 dB	≥ 20 dB	NA
Return Loss (dB)	≥ 10 dB	≥ 10 dB	≥ 10 dB
Pattern Gain Ripple	≤ 10dB	≤ 10dB	≤ 10dB
Type	PIFA	PIFA	PIFA
Feeding	Cable	Cable	Cable

Antenna Structure & Placement

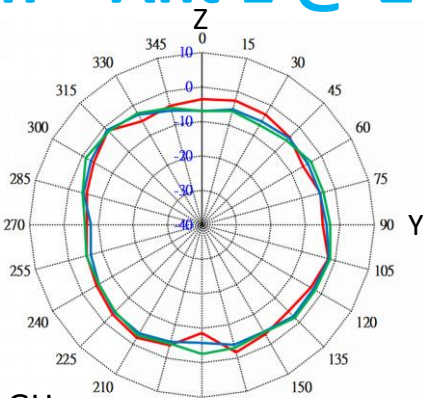
Ant No.	Model Name	Operating Band	Polarization	Type	Material	Feeding	Dimension
Ant 1/2/3	6172008HWA6 6172008HWA7 6172008HWA8	BLE/IOT	V_Pol	PIFA	Metal	Cable	38 x 14 x 8.7 mm ³
Ant 4	6172008HWA5	WiFi 2.4G/5G/6G (Sensor)	V_Pol	PIFA	Metal	Cable	37 x 22 x 9.5 mm ³
Ant 5	6172008HWA9	GPS L1 & L5	V_Pol	PIFA	Metal	Cable	45.5 x 31.5 x 9.9 mm ³

2D Radiation Pattern – Ant 1 @ 2G Band

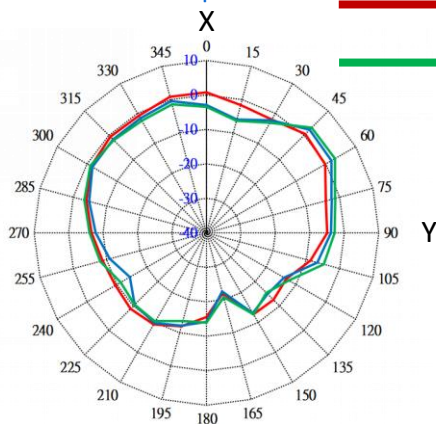
Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 8\text{dB}$



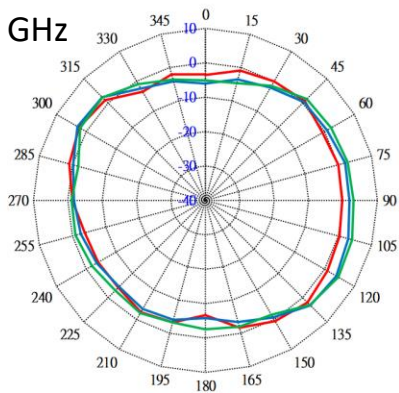
X-Z plane



Y-Z plane (Phi 90 deg)



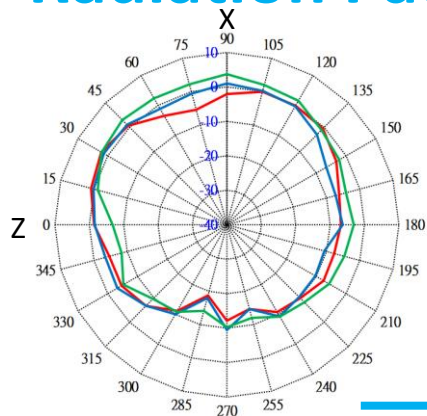
X-Y plane



Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 2 @ 2G Band

Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 7\text{dB}$

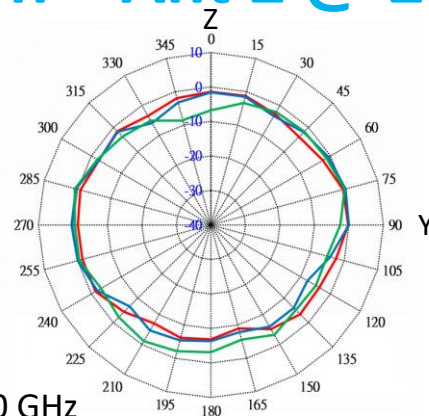


X-Z plane

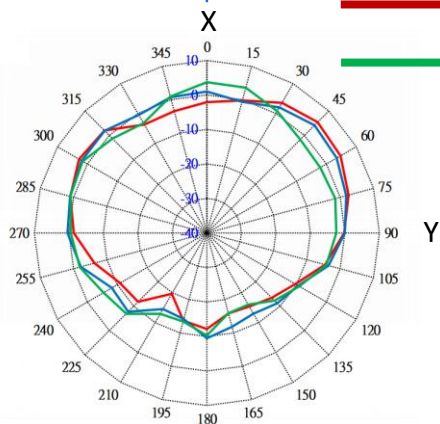
— 2.40 GHz

— 2.45 GHz

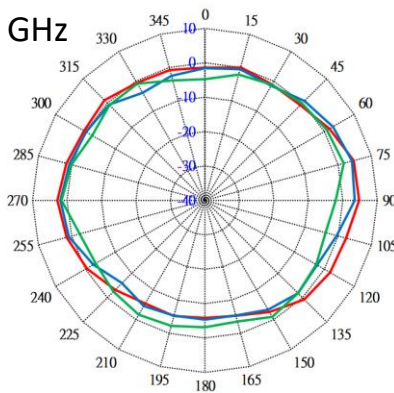
— 2.50 GHz



Y-Z plane (Phi 90 deg)



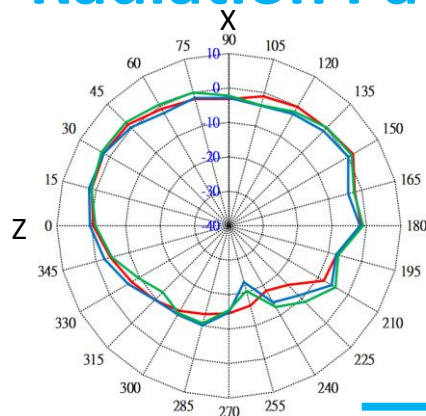
X-Y plane



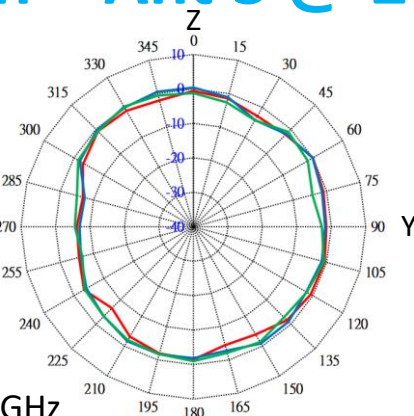
Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 3 @ 2G Band

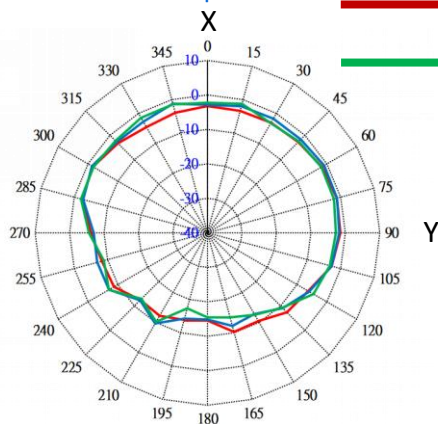
Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 8\text{dB}$



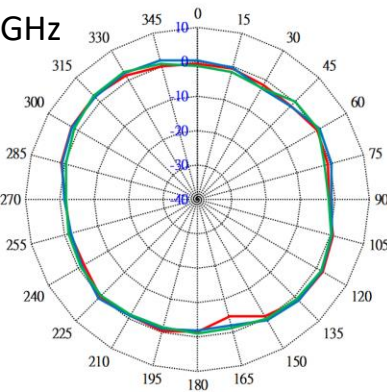
X-Z plane



Y-Z plane (Phi 90 deg)



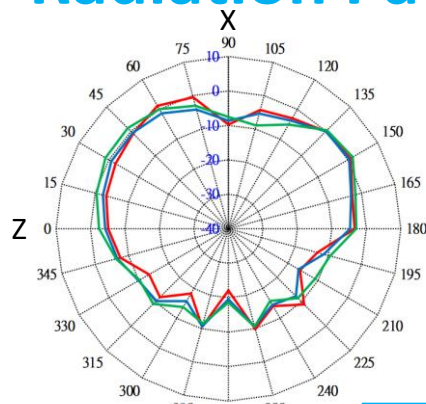
X-Y plane



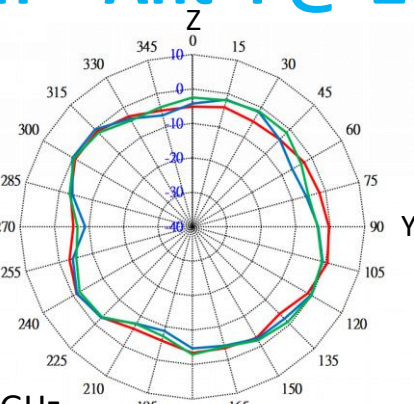
Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 4 @ 2G Band

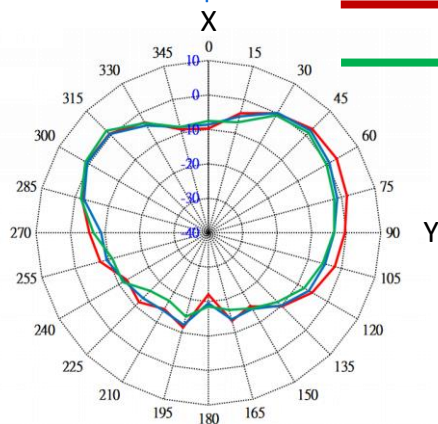
Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 8\text{dB}$



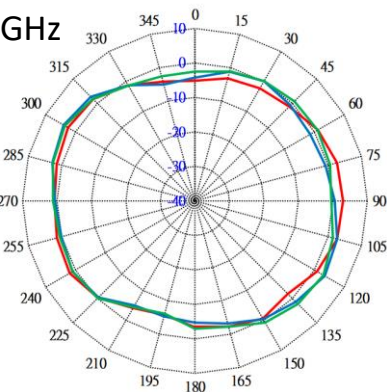
X-Z plane



Y-Z plane (Phi 90 deg)



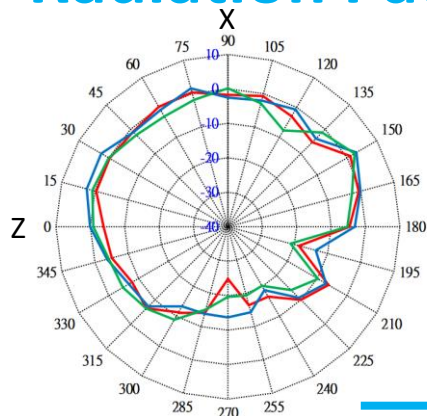
X-Y plane



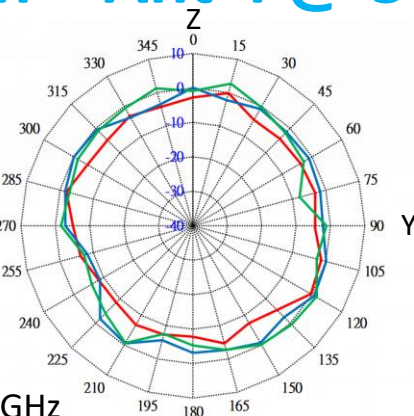
Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 4 @ 5G Band

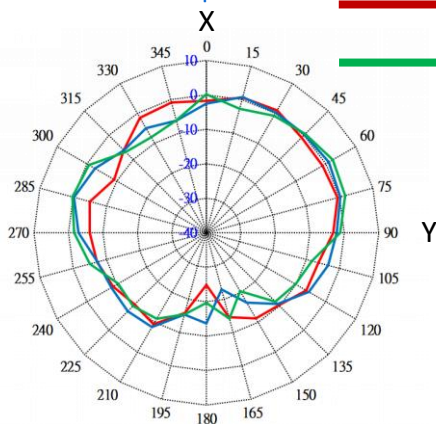
Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 8\text{dB}$



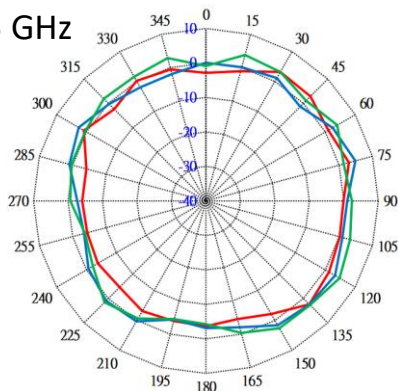
X-Z plane



Y-Z plane (Phi 90 deg)



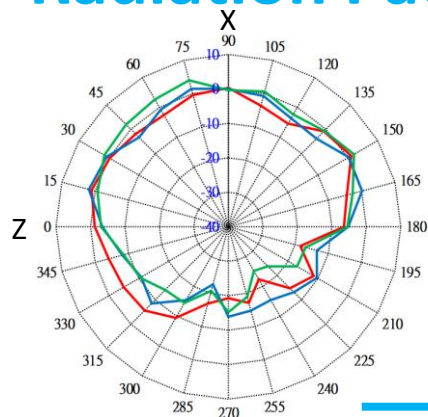
X-Y plane



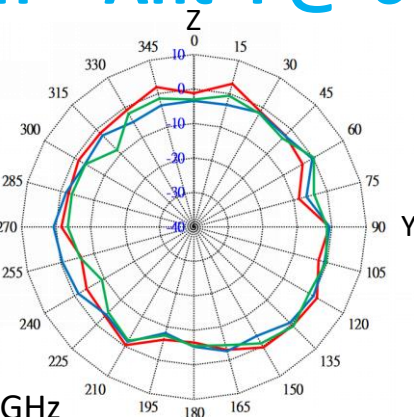
Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 4 @ 6G Band

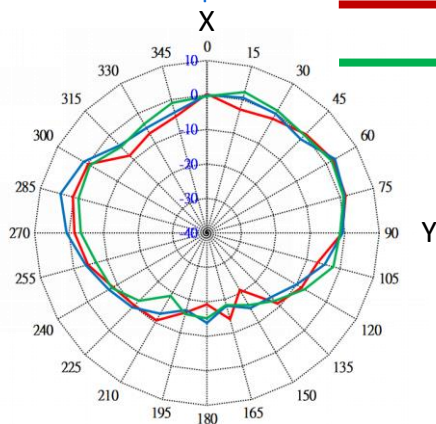
Spec : Pattern Gain Ripple $\leq 10\text{dB}$
Calculated Ripple $\leq 9\text{dB}$



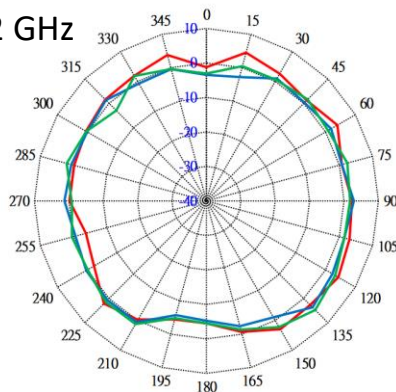
X-Z plane



Y-Z plane (Phi 90 deg)

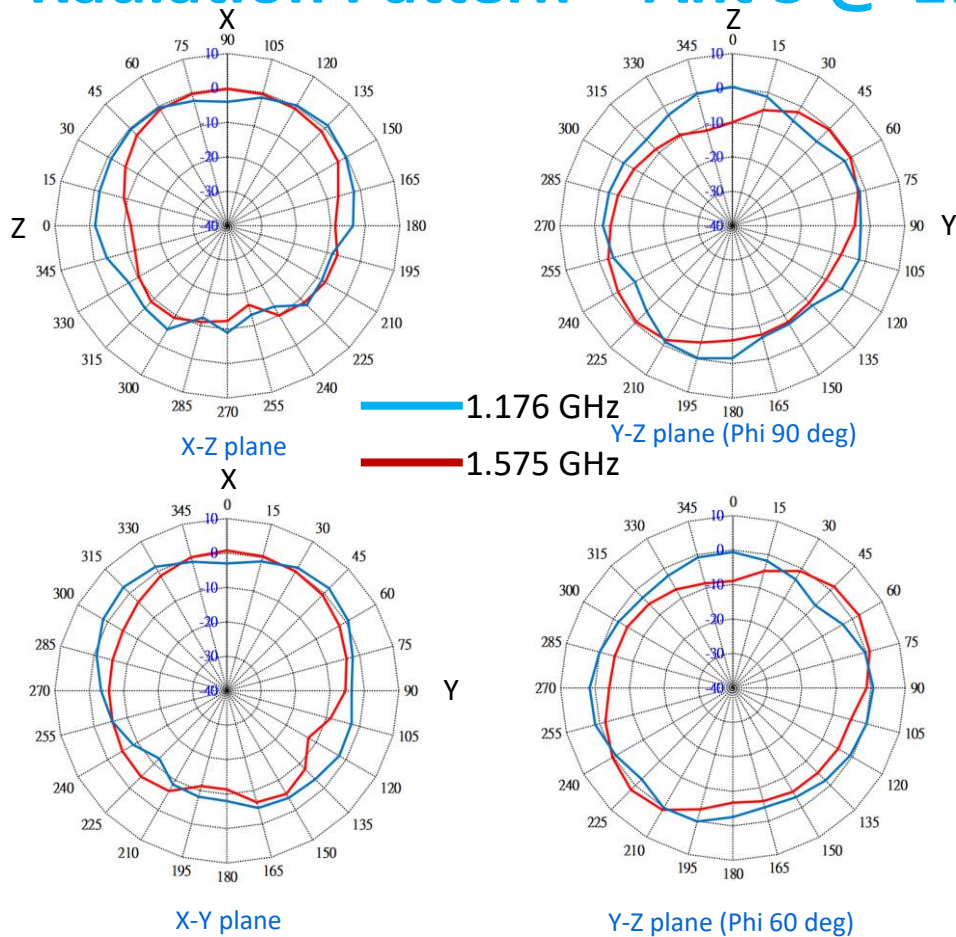


X-Y plane



Y-Z plane (Phi 60 deg)

2D Radiation Pattern – Ant 5 @ 1176MHz & 1575MHz



Frequency	Peak Gain	Efficiency
1176 MHz	1.18 dBi	53%
1575 MHz	2.31 dBi	61%

Peak Gain

Ant #	Band	Peak Gain
Ant1	BLE 2.4G	3.13 dBi
Ant2	BLE 2.4G	4 dBi
Ant3	BLE 2.4G	3.75 dBi
Ant4	Wi-Fi 2.4G	3.7 dBi
	Wi-Fi 5G UNII-1	2.89 dBi
	Wi-Fi 5G UNII-2A	3.35 dBi
	Wi-Fi 5G UNII-2C	4.93 dBi
	Wi-Fi 5G UNII-3	3.56 dBi
	Wi-Fi 6G UNII-5	4.96 dBi
	Wi-Fi 6G UNII-6	3.88 dBi
	Wi-Fi 6G UNII-7	3.55 dBi
	Wi-Fi 6G UNII-8	4.32 dBi

SERCOM
WWW.SERCOMM.COM

