

Antenna Test Report

Product Specifications

Model: 5F48E9

FCC ID: 2AEUPBHASG001

Measurement Setup

Transmission 2-port measurements performed with Network Analyzer

Equipment Details

Manufacturer	Model	Type	Calibration Due
Keysight	E5063A	Network Analyzer	Nov 2023
Keysight	85033E	Calibration kit	Nov 2023
MVG	SG24	Multi-probe Antenna Measurement System	Nov 2023

Software Details

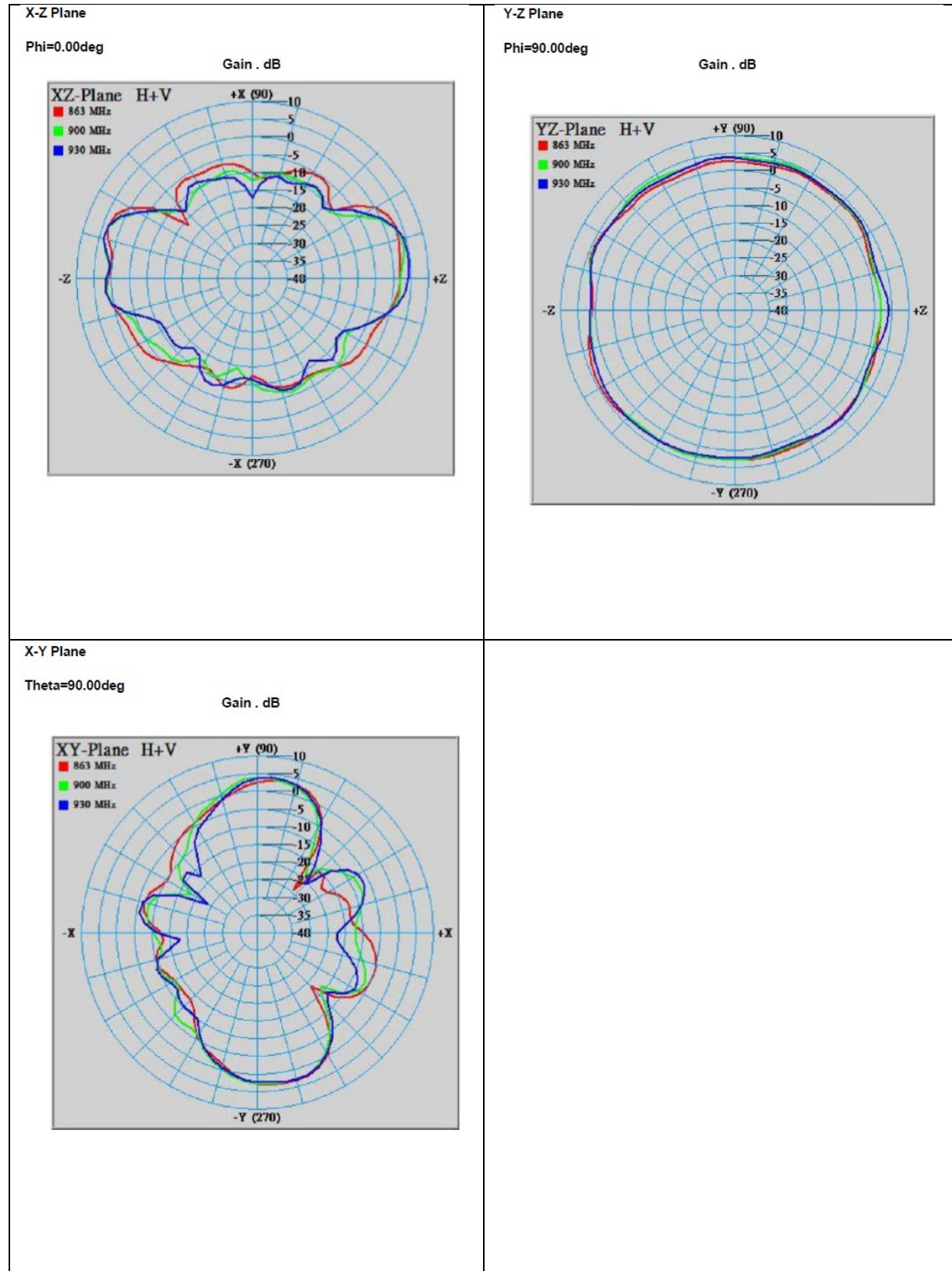
Software	Version
SatEnv	3.0.3.0b23
SatMap	1.3.2.1
SPM	1.11.6
SAM	2.25.8
Hardware Configuration	2.1.1
MVG Products	2020.2.6

Antenna Gain Summary

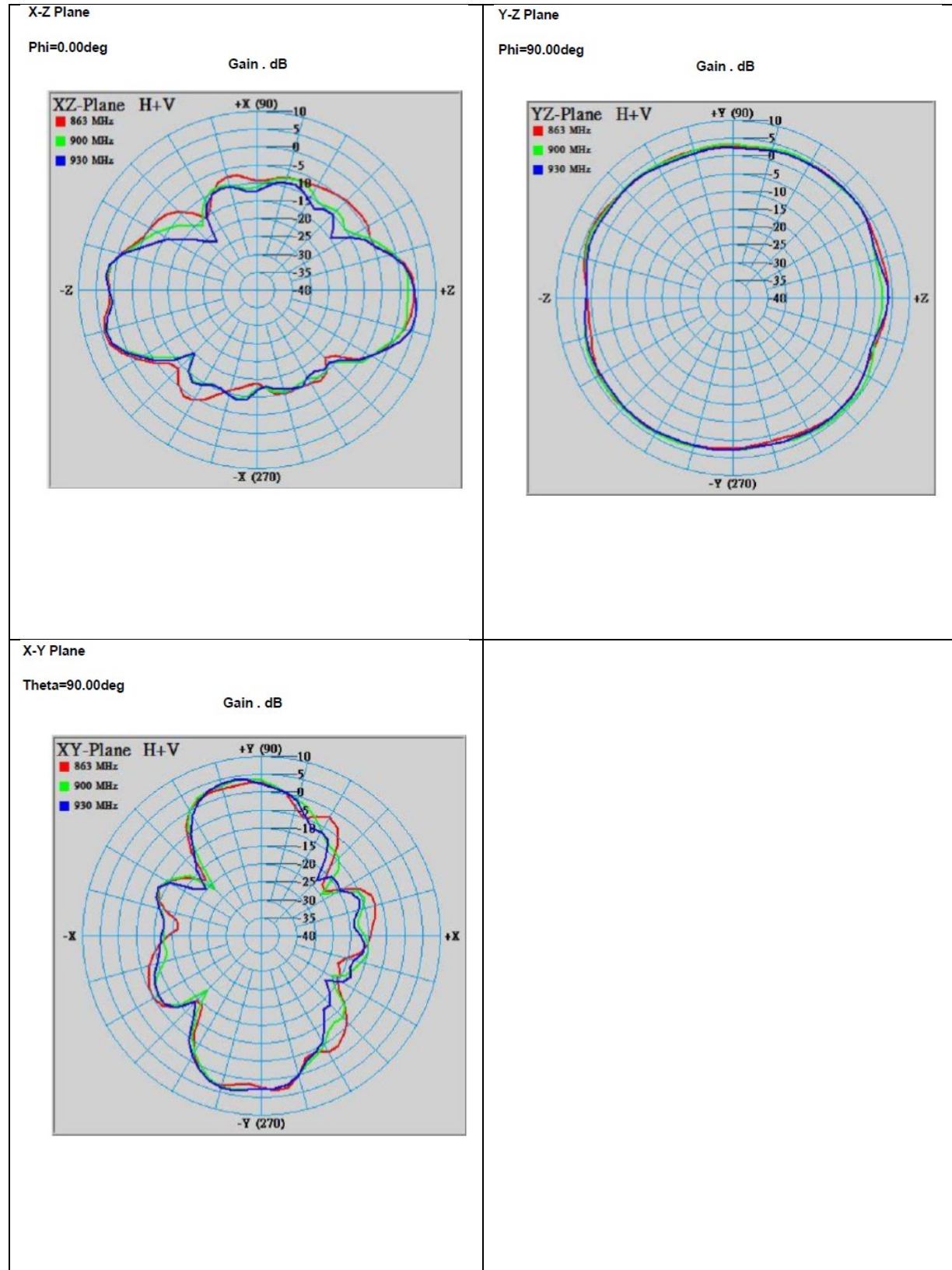
RF Chain	Brand	Model	Ant. Type	Connector	Antenna Gain (dBi)	Frequency	Cable Length (m)
LoRa/FSK	Inpaq	RFDPA563600AFRBX01	Dipole	R-N type(F)	5.5	902-928 MHz	1
LoRa/FSK	Inpaq	RFDPA563600AFRBX01	Dipole	R-N type(F)	5	902-928 MHz	3
LoRa/FSK	Inpaq	RFDPA161500AMUB801	Dipole	R-N type(M)	2.8	902-928 MHz	0
WiFi0	Inpaq	RFPCA520814IMLB301	Dipole	i-pex (MHF)	6.87	2.4-2.4835 GHz	0.145
					7.89	5.15-5.85 GHz	
WiFi1	Inpaq	RFPCA501016IMLB301	Dipole	i-pex (MHF)	7.45	2.4-2.4835 GHz	0.165
					7.34	5.15-5.85 GHz	
BT	Inpaq	RFPCA520815IMAB301	Dipole	i-pex (MHF)	5.22	2.4-2.4835 GHz	0.15
GPS (L1)	Inpaq	RFPCA621512IMTB301	Dipole	i-pex (MHF)	5.89	1575 MHz	0.12
GPS (L5)	Inpaq	RFPCA711620IMTB301	Monopole	i-pex (MHF)	5.96	1176 MHz	0.2

Antenna Measurement Data

Lora #1 (Outdoor)- Model RFDPA563600AFRBX01



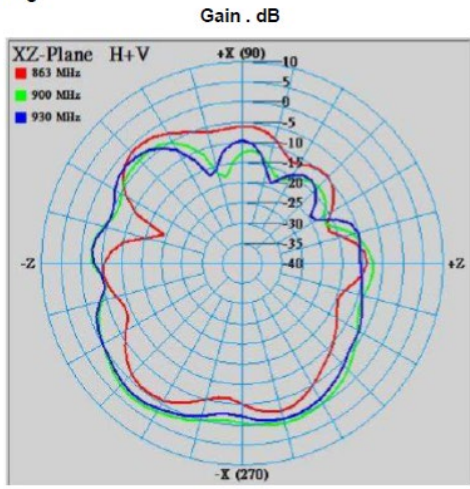
Lora #2 (Outdoor)- Model RFDPA563600AFRBX01



Lora #1 (Indoor)- Model RFDPA161500AMUB801

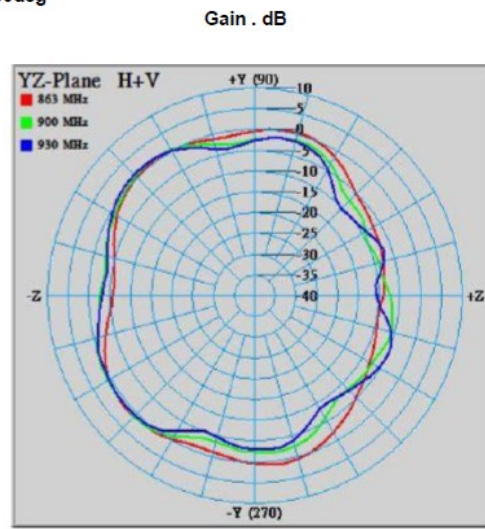
X-Z Plane

Phi=0.00deg



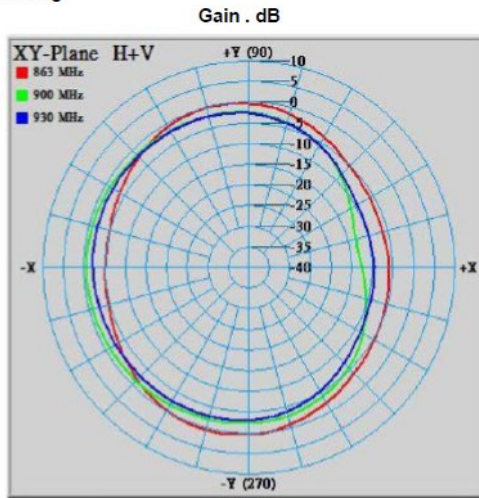
Y-Z Plane

Phi=90.00deg



X-Y Plane

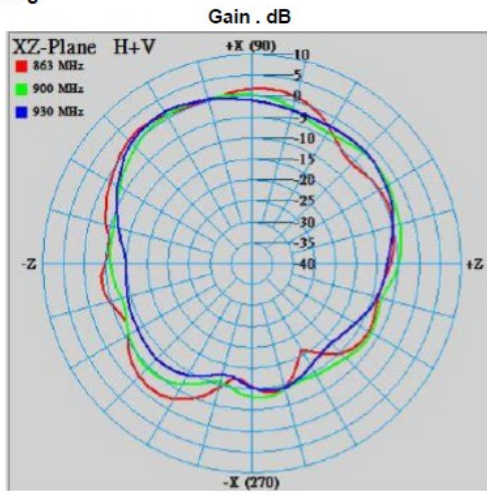
Theta=90.00deg



Lora #2 (Indoor)- Model RFDPA161500AMUB801

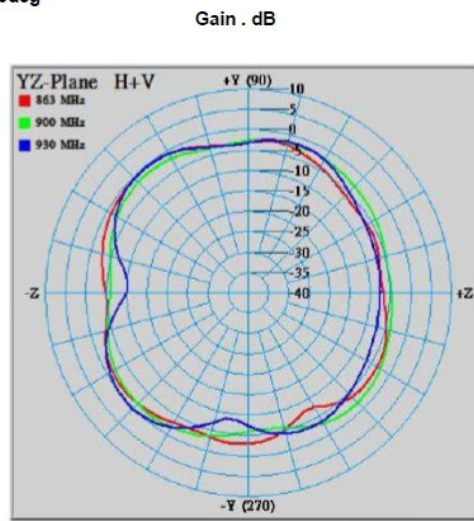
X-Z Plane

Phi=0.00deg



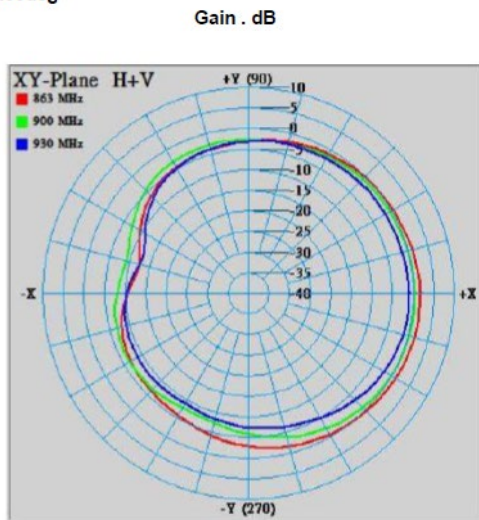
Y-Z Plane

Phi=90.00deg



X-Y Plane

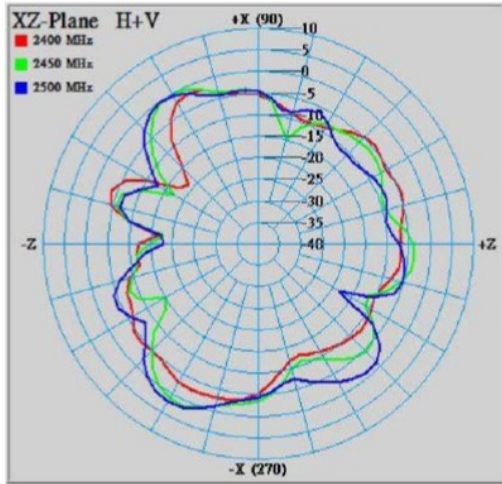
Theta=90.00deg



WiFi0- Model RFPCA520814IMLB301

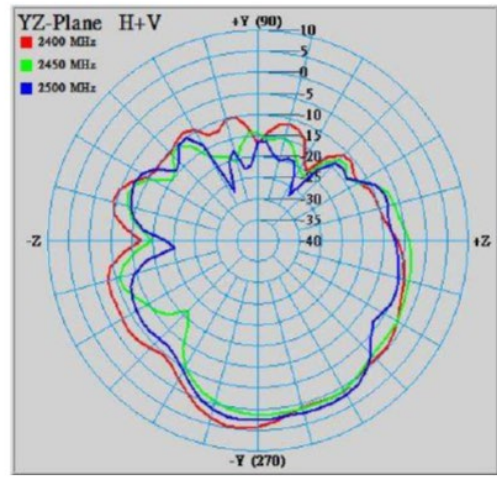
2.4~2.5 GHz
X-Z Plane
Phi=0.00deg

Gain . dB



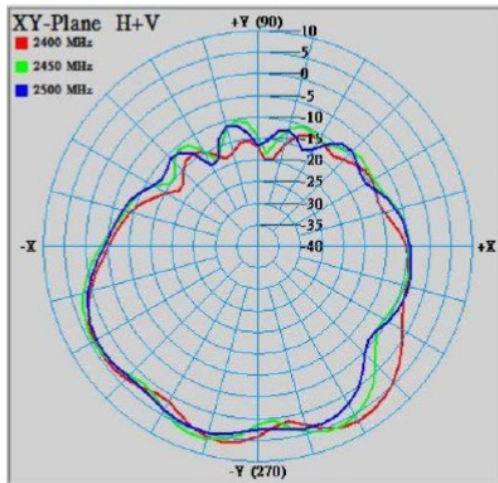
Y-Z Plane
Phi=90.00deg

Gain . dB



X-Y Plane
Theta=90.00deg

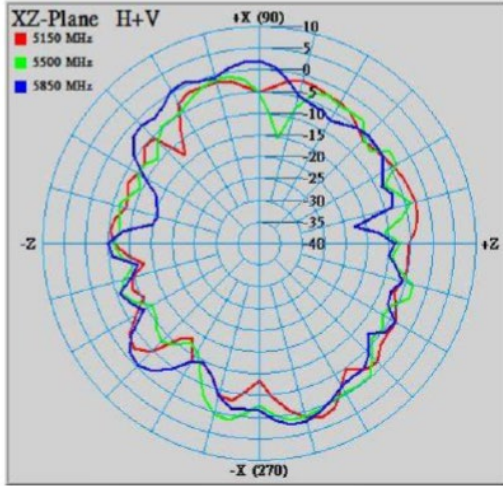
Gain . dB



WiFi0- Model RFPCA520814IMLB301

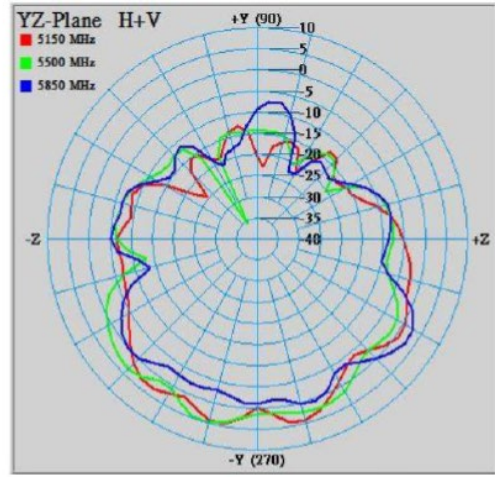
5.15-5.85 GHz
X-Z Plane
Phi=0.00deg

Gain . dB



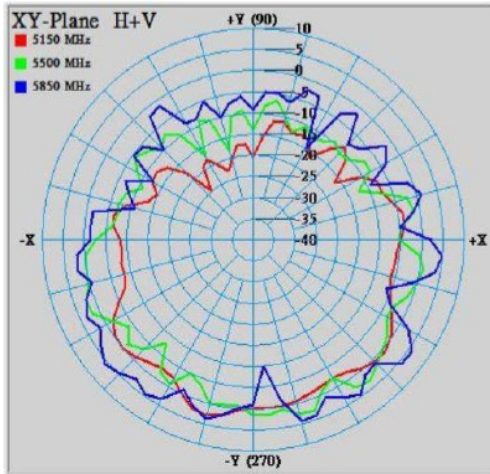
Y-Z Plane
Phi=90.00deg

Gain . dB



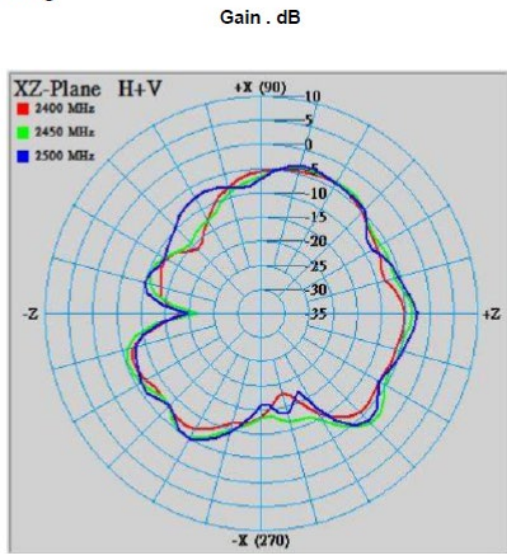
X-Y Plane
Theta=90.00deg

Gain . dB

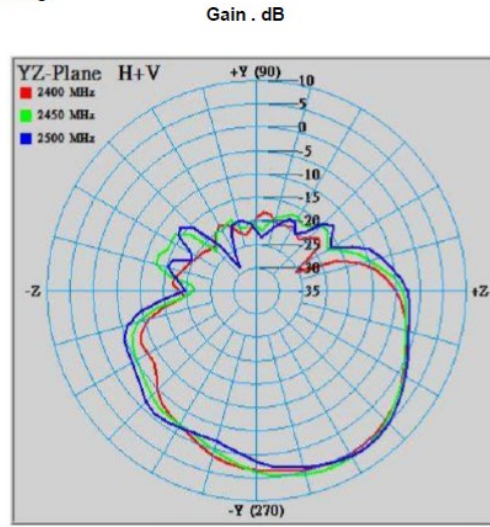


WiFi1- Model RFPCA501016IMLB301

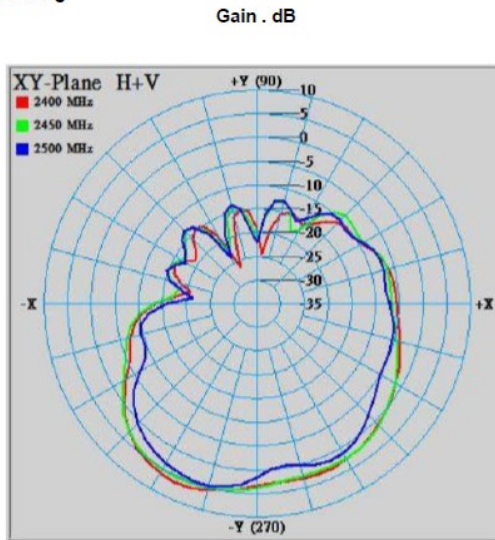
2.4~2.5 GHz
X-Z Plane
Phi=0.00deg



Y-Z Plane
Phi=90.00deg



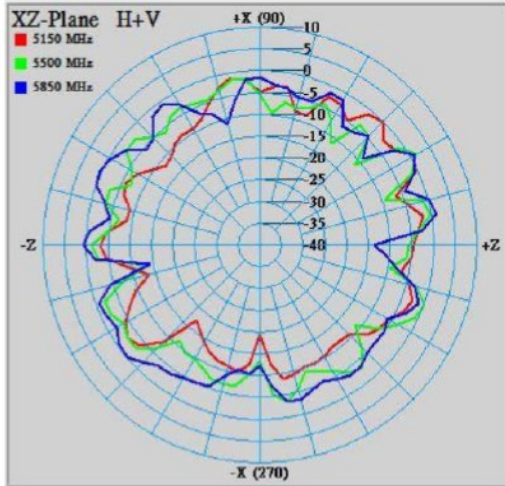
X-Y Plane
Theta=90.00deg



WiFi1- Model RFPCA501016IMLB301

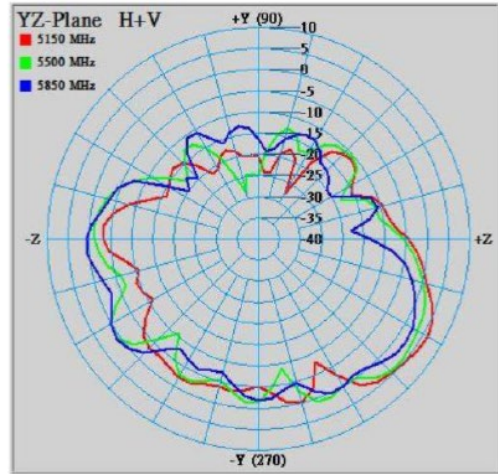
5.15-5.85 GHz
X-Z Plane
Phi=0.00deg

Gain . dB



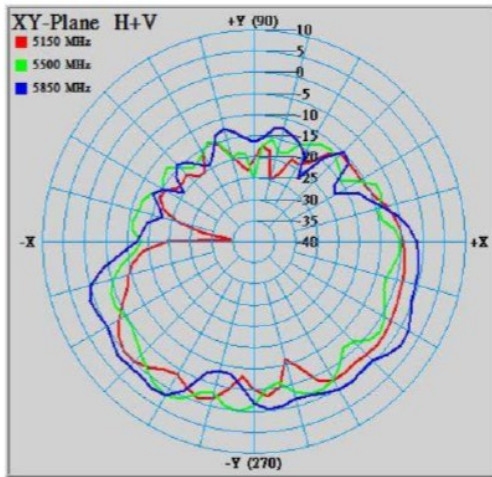
Y-Z Plane
Phi=90.00deg

Gain . dB



X-Y Plane
Theta=90.00deg

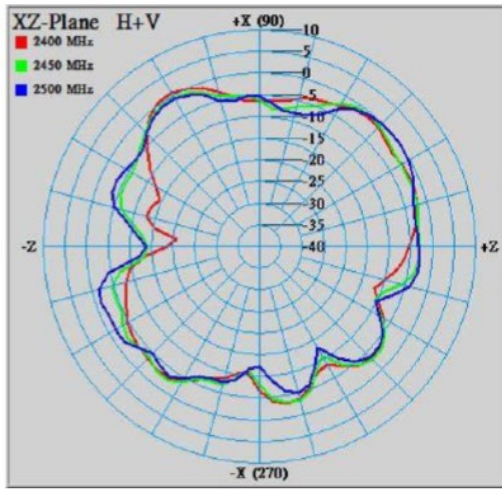
Gain . dB



BT- Model RFPCA520815IMAB301

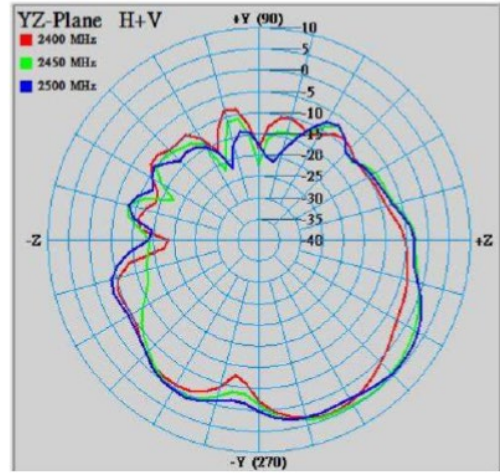
X-Z Plane
Phi=0.00deg

Gain . dB



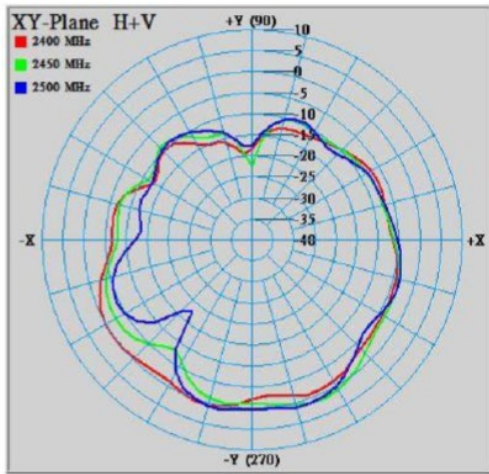
Y-Z Plane
Phi=90.00deg

Gain . dB



X-Y Plane
Theta=90.00deg

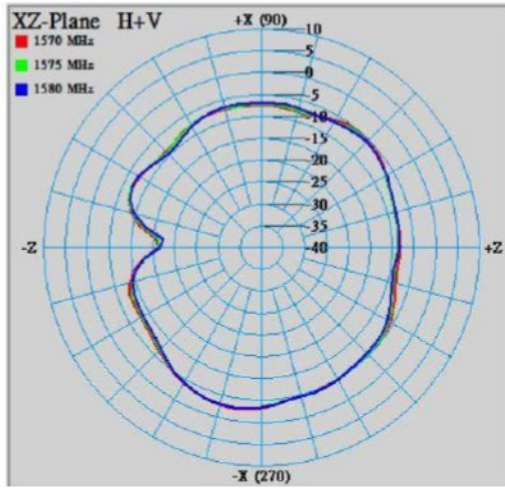
Gain . dB



GPS L1- Model RFPCA621512IMTB301

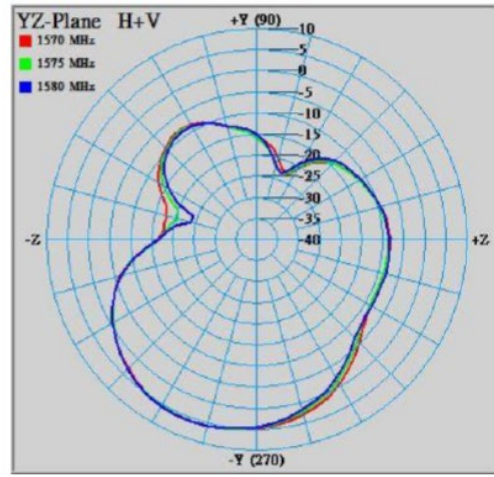
X-Z Plane
Phi=0.00deg

Gain . dB



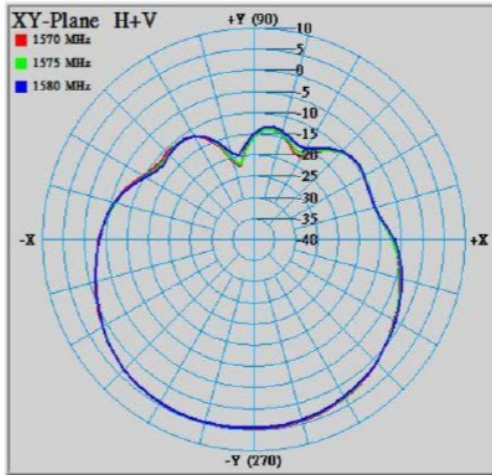
Y-Z Plane
Phi=90.00deg

Gain . dB



X-Y Plane
Theta=90.00deg

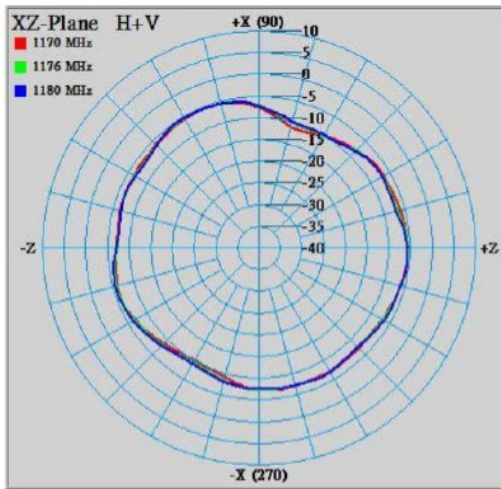
Gain . dB



GPS L5- Model RFPCA711620IMTB301

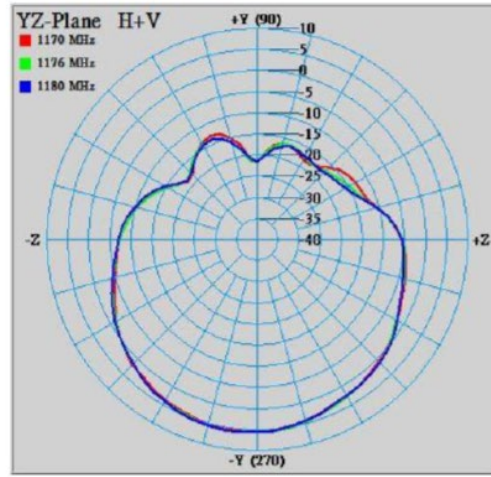
X-Z Plane
Phi=0.00deg

Gain . dB



Y-Z Plane
Phi=90.00deg

Gain . dB



X-Y Plane
Theta=90.00deg

Gain . dB

