
Test Report for Antenna Specifications for 5CFYA9

Product details:

FCC-ID: 2AEUP-5CFYA9

Product Model Number: 5CFYA9

Date (Report): 2026-3-2

- Test Date: 2026-2-8

Test Lab name and address: weifang-Goertek

OTA Laboratory, Northeast Corner, 1st Floor, Building 10, Phase II, Goer Electronic Park,
No. 268 Dongfang Road, High-tech Zone, Weifang City, Shandong Province

Entity / Grantee Name:

OTA Engineer: fengjun.ye

Antenna Specification:

Operating Frequency Range:

LoRa: 860MHz – 930MHz

BLE: 2000 MHz – 3000 MHz

WiFi 802.11g: 2000 MHz – 3000 MHz

WiFi 802.11a: 5000 MHz – 6000 MHz

Band of Interest: 900-928MHz; 2400 MHz – 2483 MHz; 5150 MHz - 5850MHz

Antenna Type:

LoRa – PIFA on a Flex

BLE – IFA stamped metal

WiFi 0 and WiFi 1 – Dipole on a Flex

Peak Antenna Gain:

Antenna	Antenna type	Frequency (MHz)	Peak gain (dBi)
BLE	IFA – stamped metal	2400 - 2483	1.7
LoRa	PIFA – Flex	902 - 928	1
WiFi 0	Dipole - Flex	2400 - 2483	2.8
		5150 – 5250	3.2
		5250 – 5350	3.2
		5470 – 5725	4.7
		5725 - 5850	4.5
WiFi 1	Dipole - Flex	2400 - 2483	3.2
		5150 – 5250	2.8
		5250 – 5350	2.8
		5470 – 5725	4.4
		5725 - 5850	4.2

Antenna Gain Measurement:**Measurement Test Method:**

Center antenna within the housing in the chamber. With the pigtail on -y axis (Φ 270°) passive antenna performance was measured by VNA and OTA chamber system. The measurement was done in the configuration representative on how it would be with intended end user.

Commercial test software :

EMQuest™ EMQ-1.10

Test Procedure: (Passive Antenna Measurement):

1. Mount the Device Under Test (DUT) on the supporting pole at the center of the anechoic chamber.
2. Connect the DUT antenna port to the measurement system using a coaxial cable at the transmitter side of the chamber.
3. Close the chamber door to eliminate external signal interference during measurement.
4. Launch the antenna measurement system, configure the required test parameters (e.g., frequency points or rotation angles), and import the frequency list for testing.

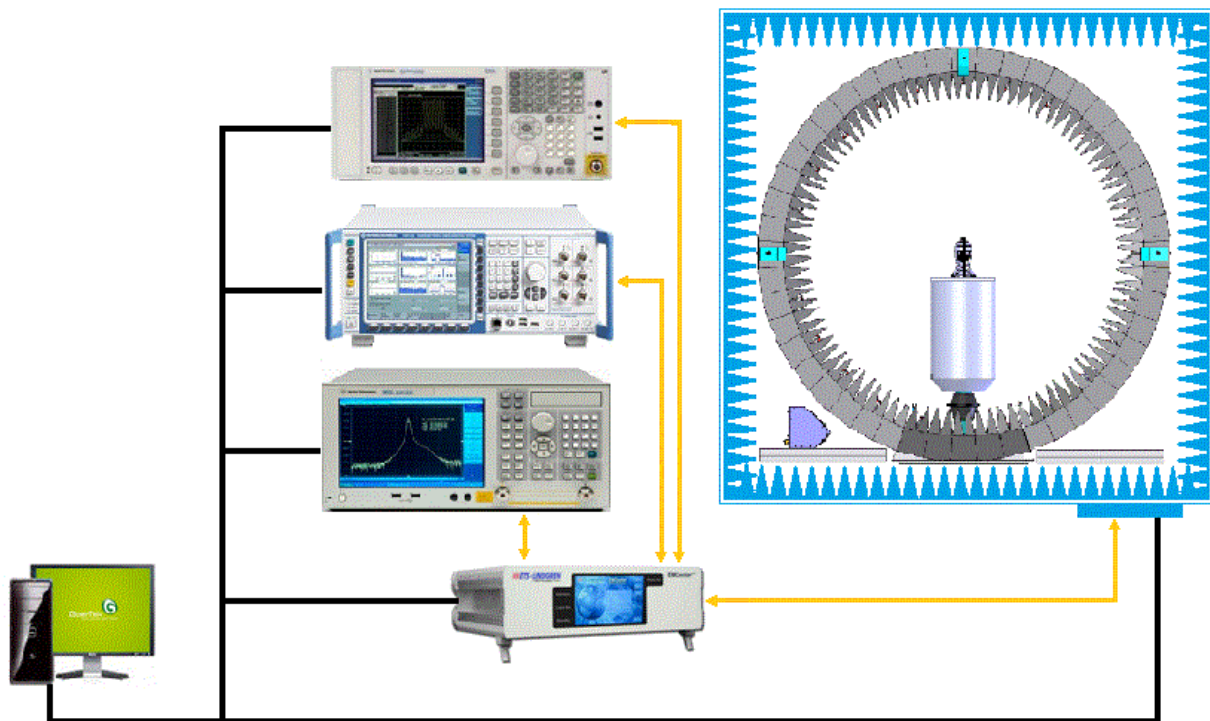
After completing the measurement, process the recorded data and perform far-field data conversion as required

Test Equipment Used:

Description	Manufacturer	Model	Serial Number	Cal from	Cal Due
Test Chamber	ets-lindgren	AMS8923	CT0000789-1162	June 2025	-
ENA Network Analyzer	Keysight	E5071C	MY46733377	March 2025	1 year

Test Setup:

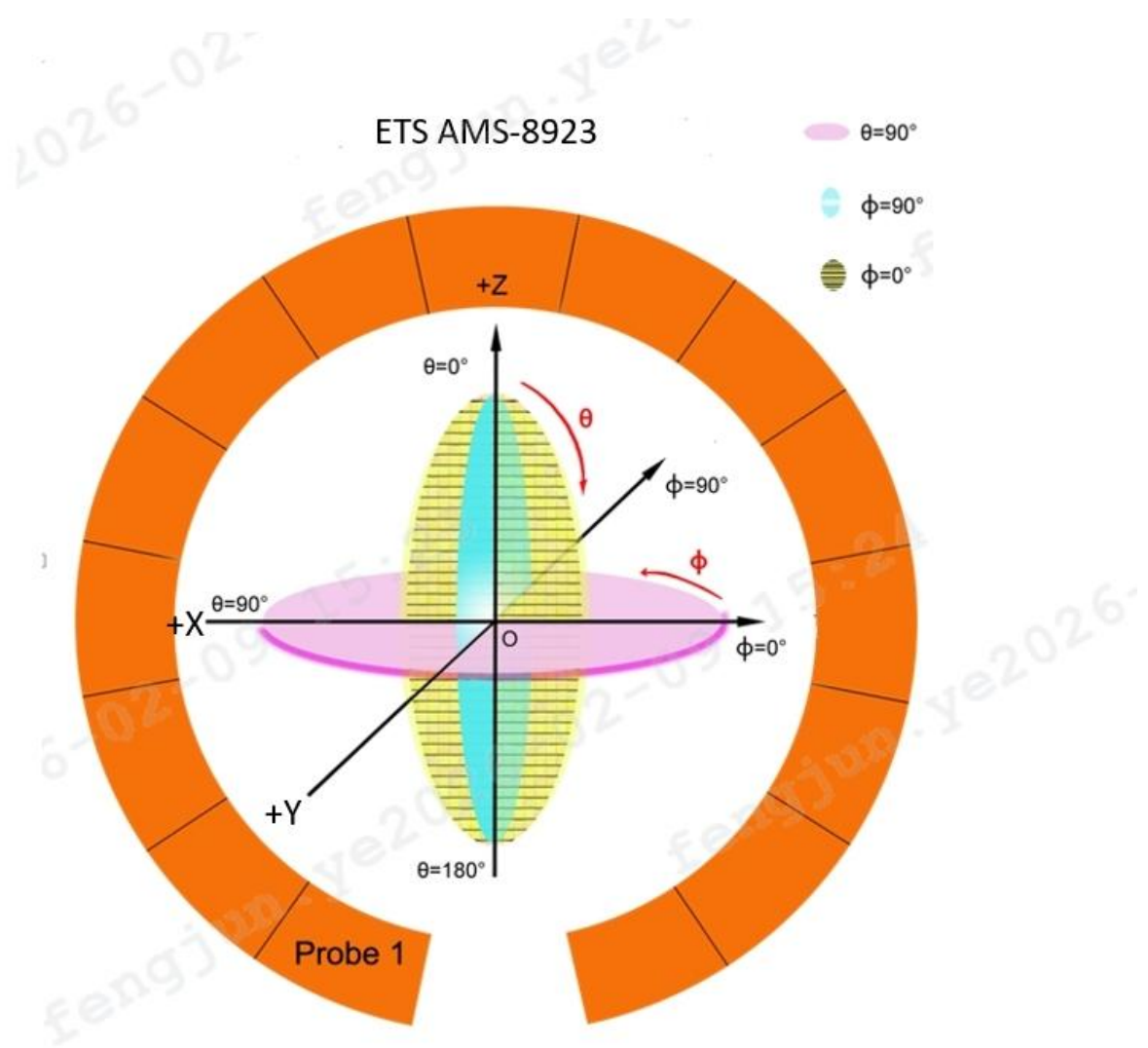
1. Below is a block diagram of the antenna measurement setup.

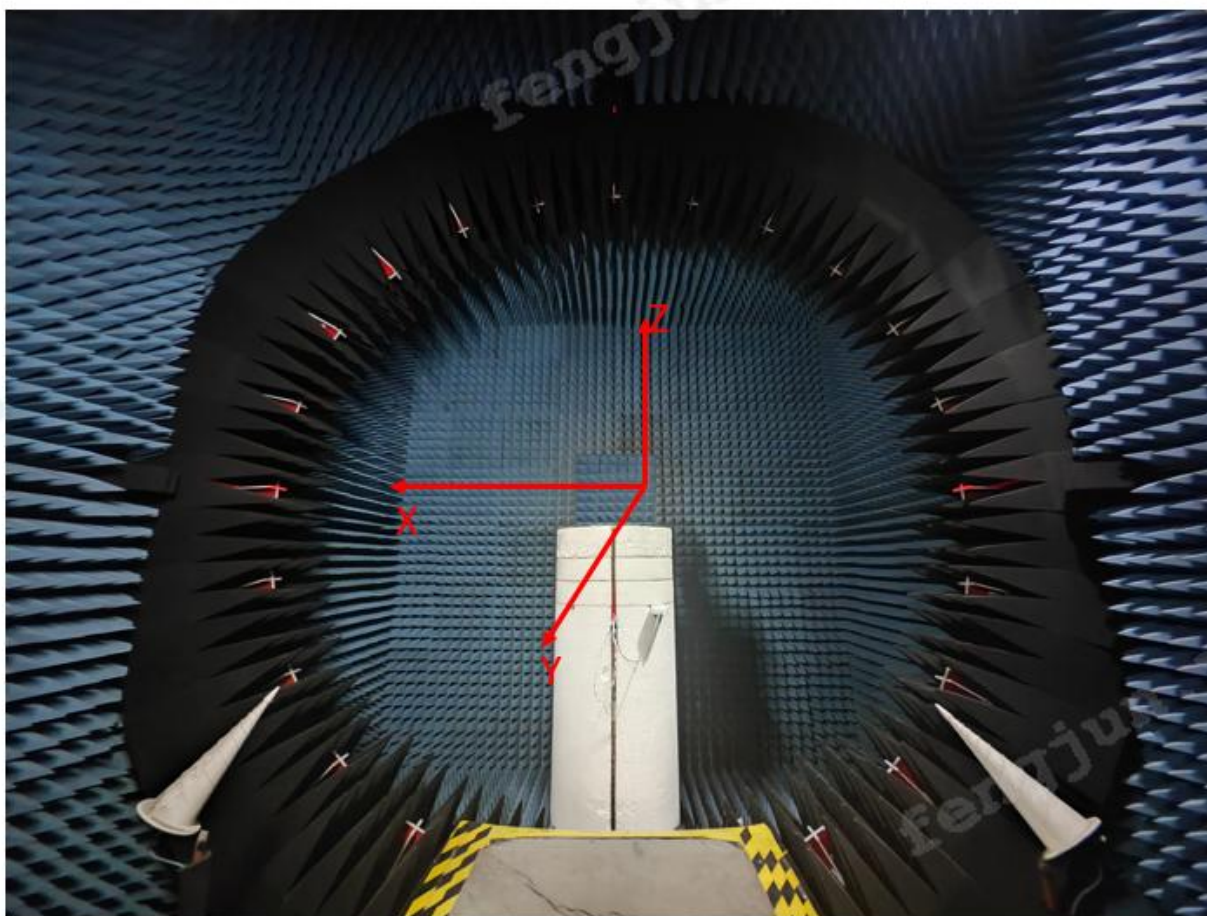


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2. Actual setup picture of the DUT mounted on the turn table inside the anechoic chamber:



3. Turn table angle definition:

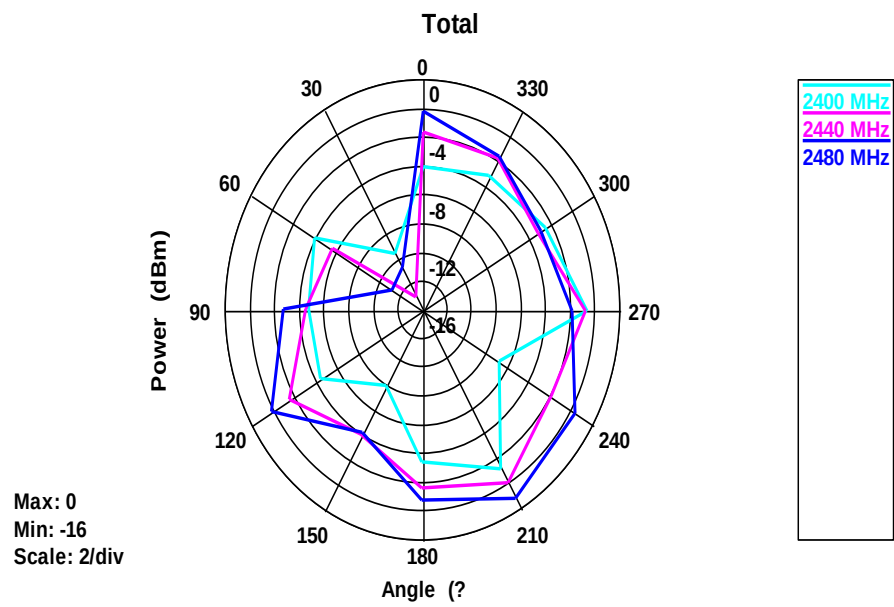




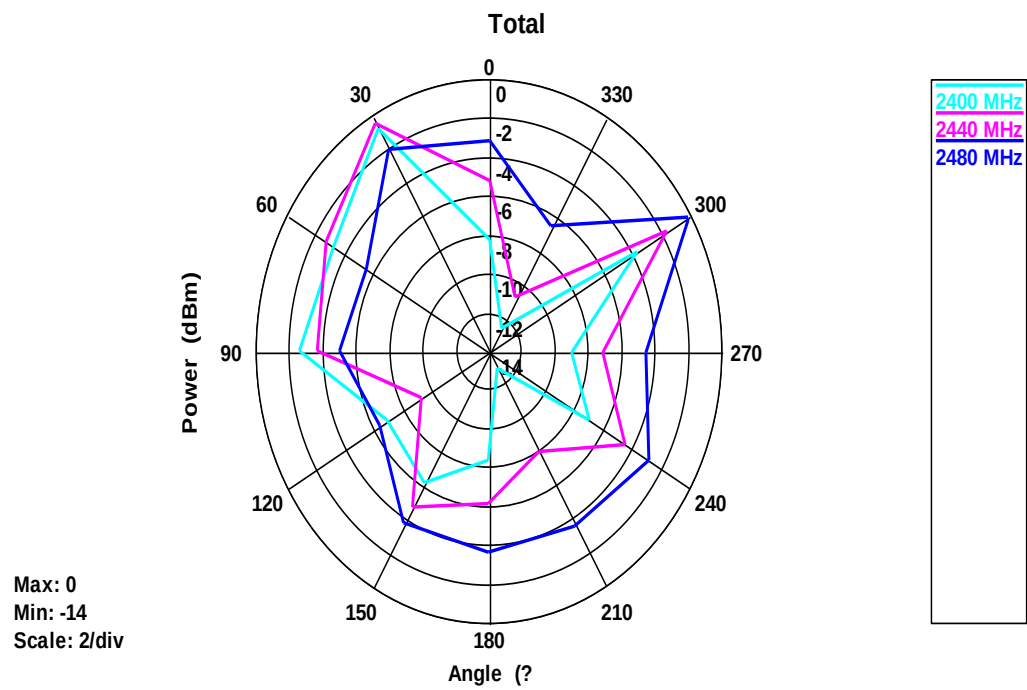
2D Radiation Pattern:

BLE

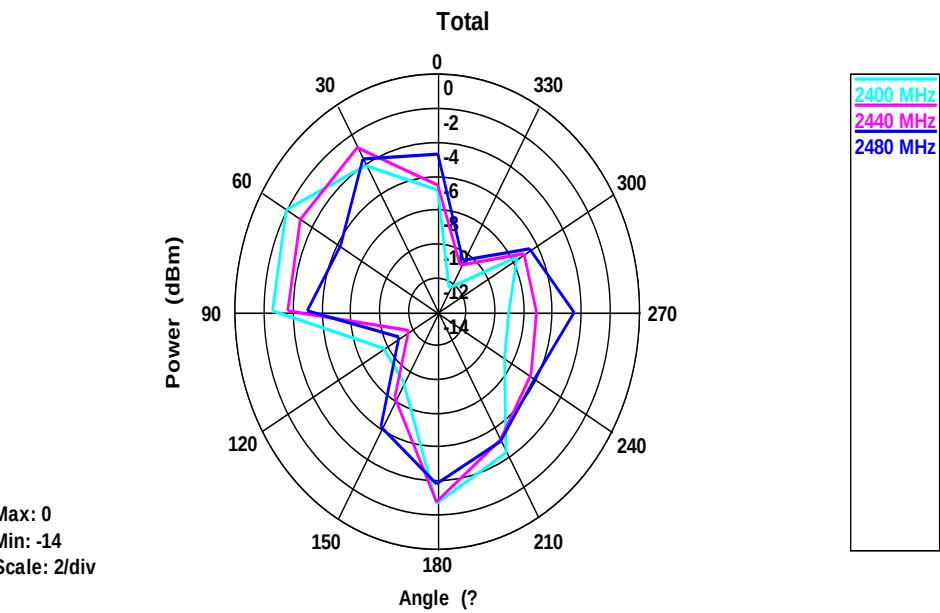
PHI=0°



PHI=90°



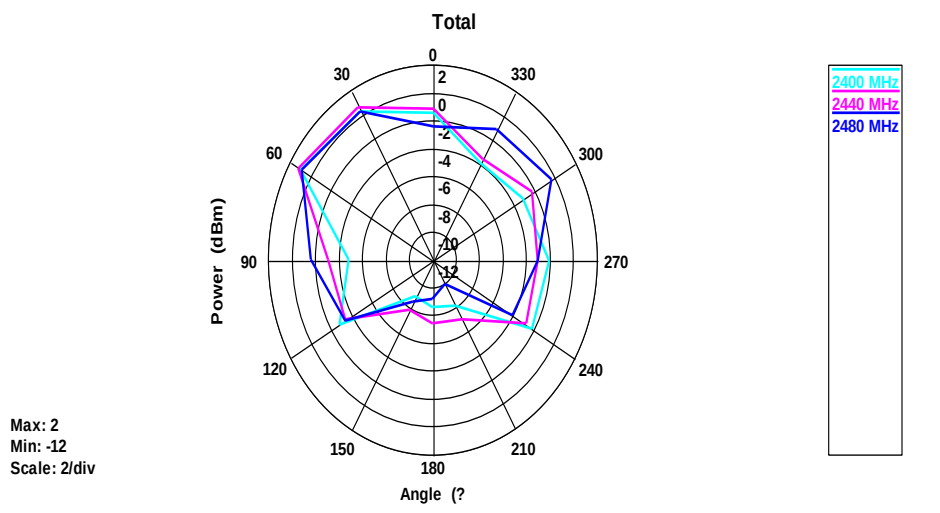
Theta=90°



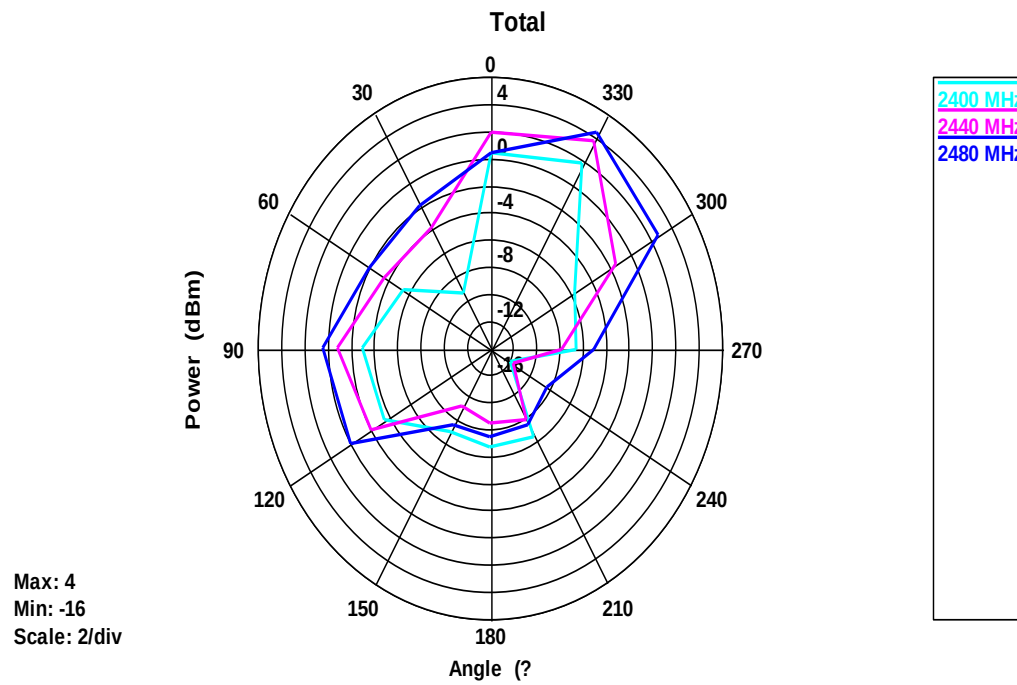
Wi-Fi 0

2.4GHz

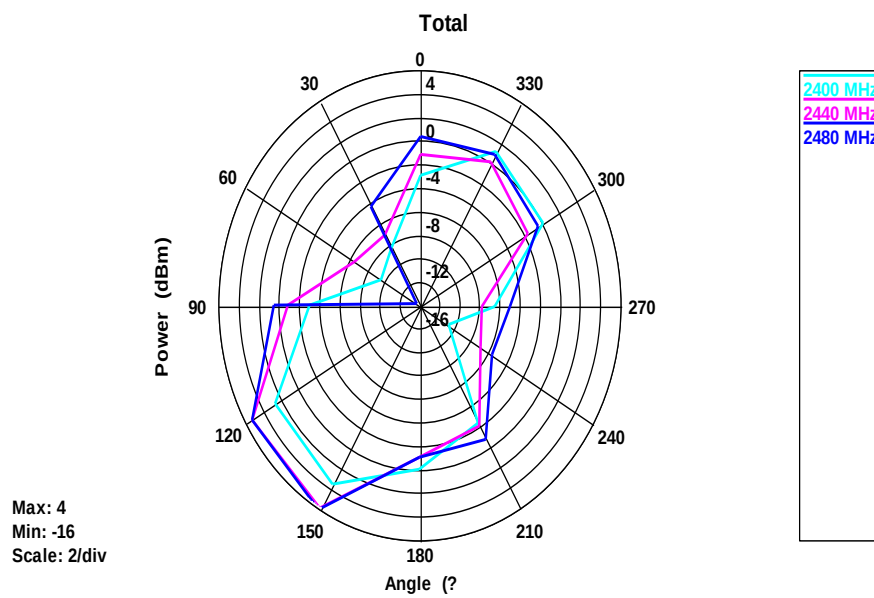
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PHI=90°

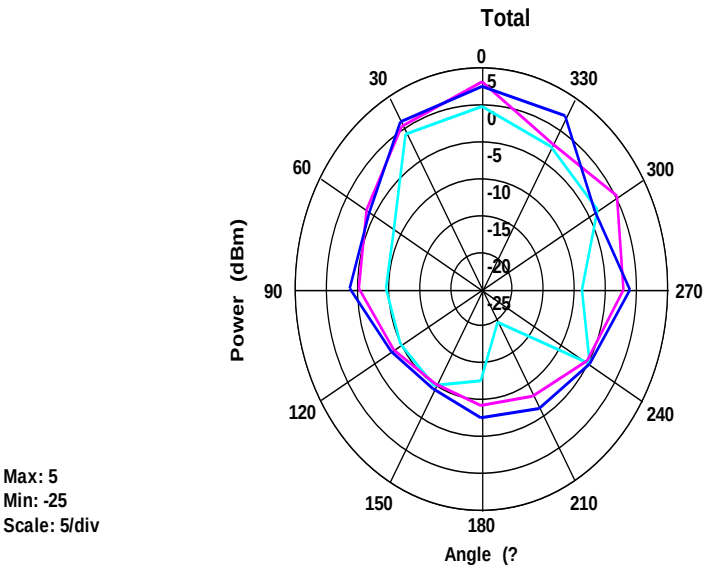


Theta=90°

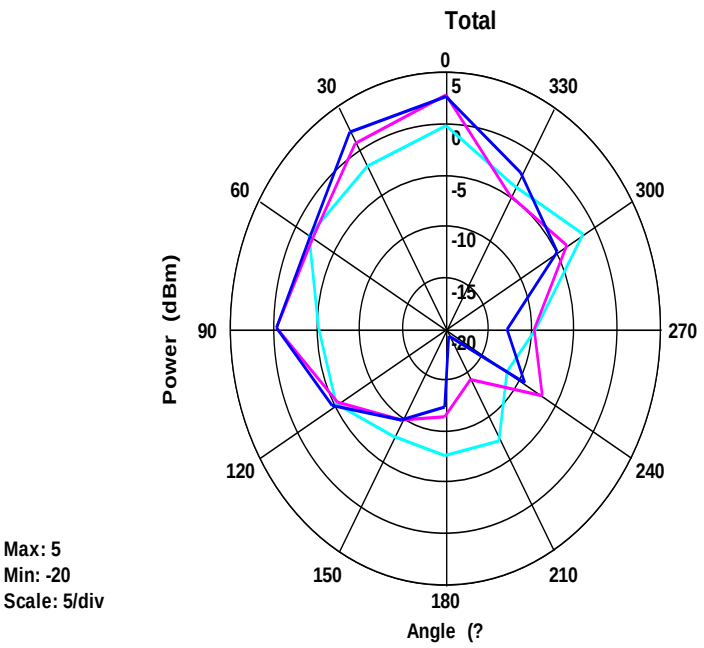


5GHz

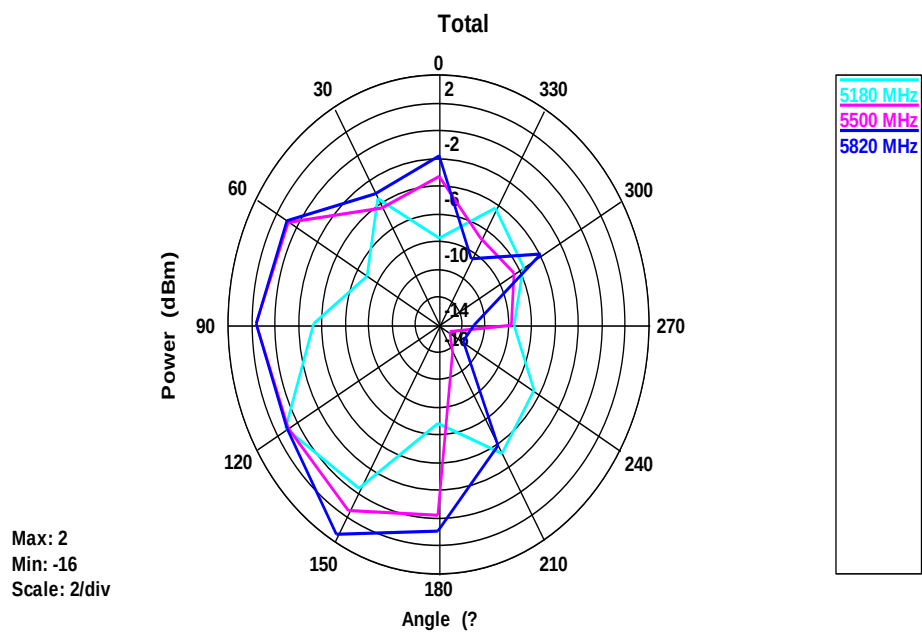
PHI=0°



PHI=90°



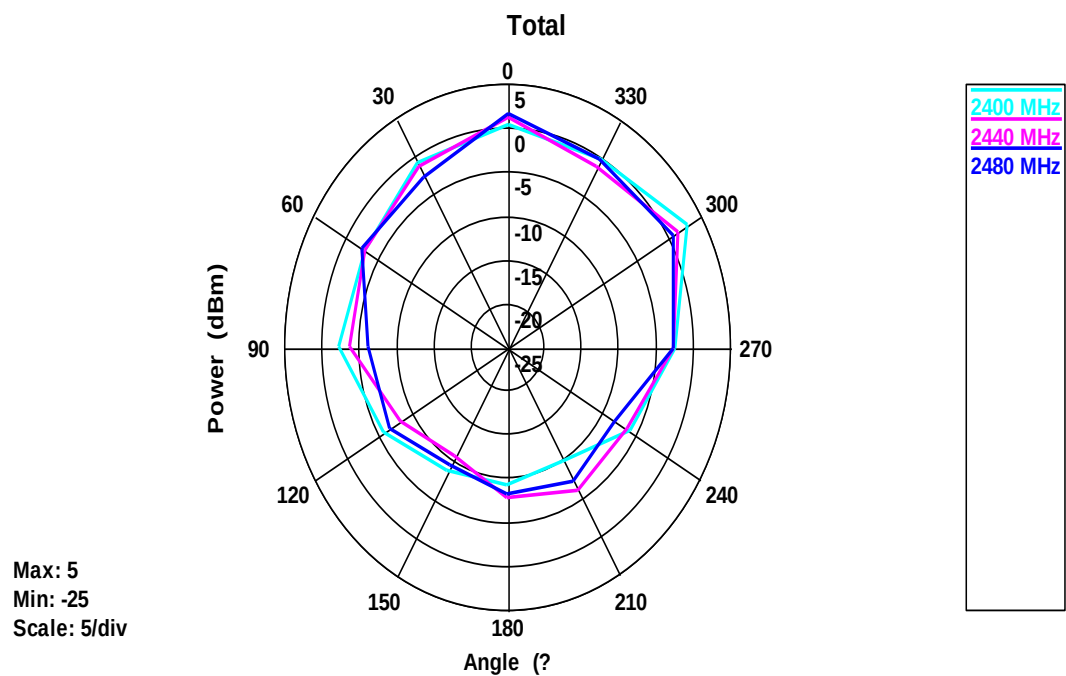
Theta=90



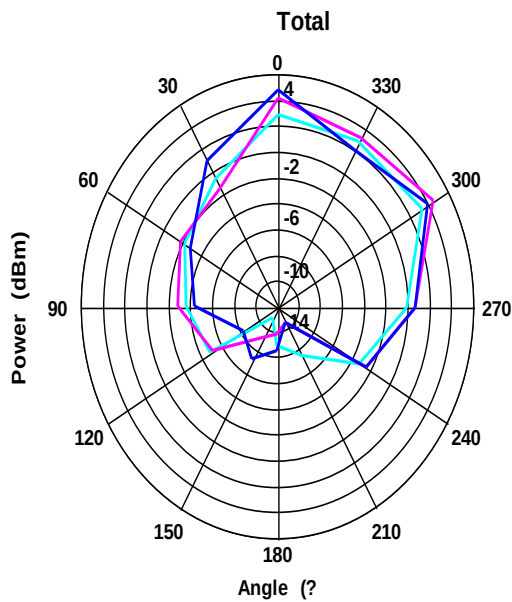
Wi-Fi 1

2.4GHz

PHI=0°



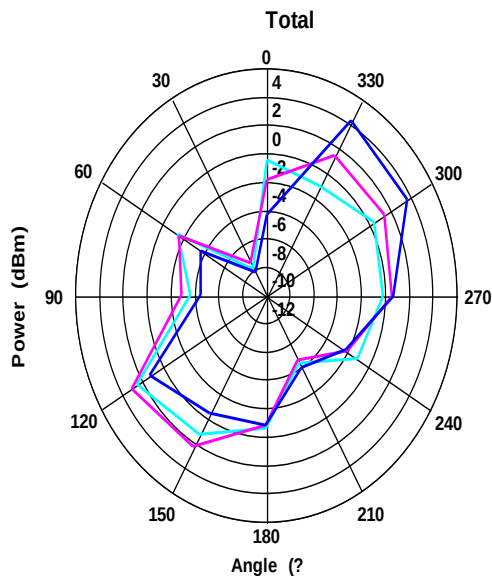
PHI=90°



Max: 4
Min: -14
Scale: 2/div



Theta=90°



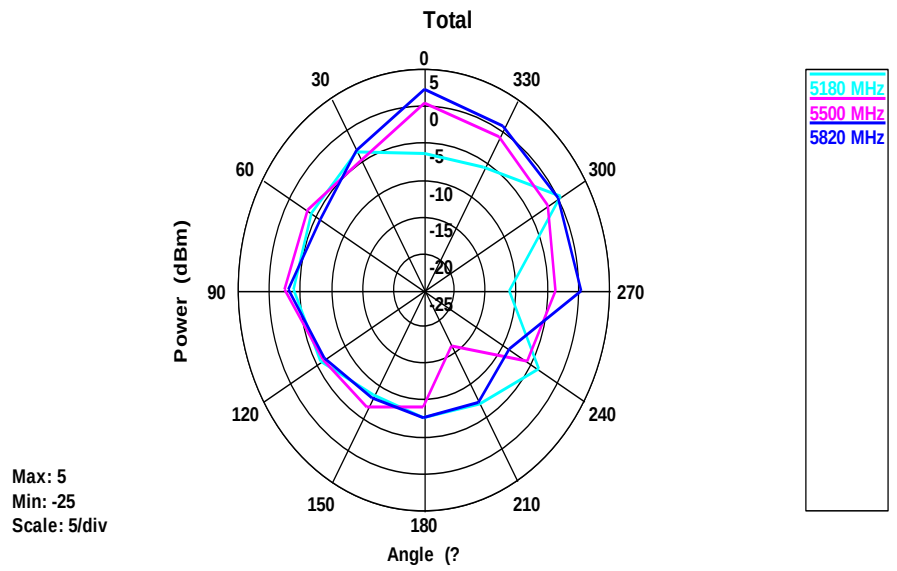
Max: 4
Min: -12
Scale: 2/div



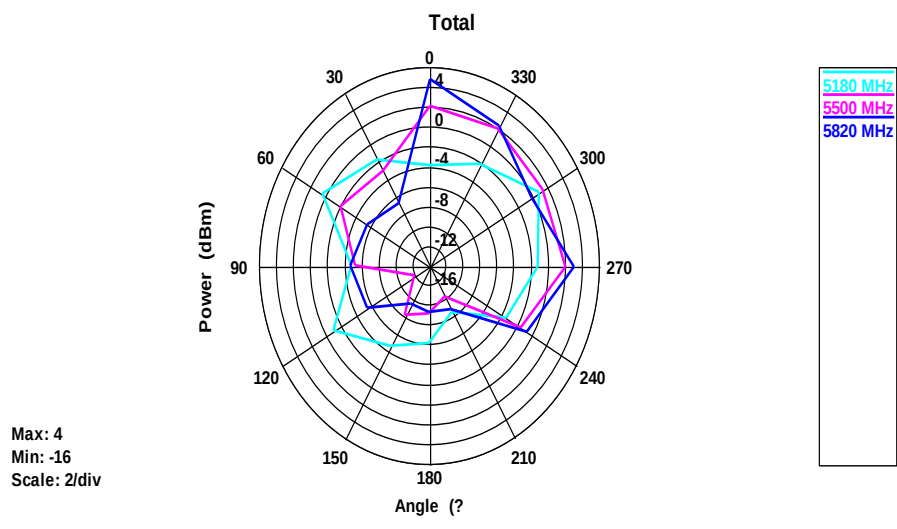
Wi-Fi 1

5GHz

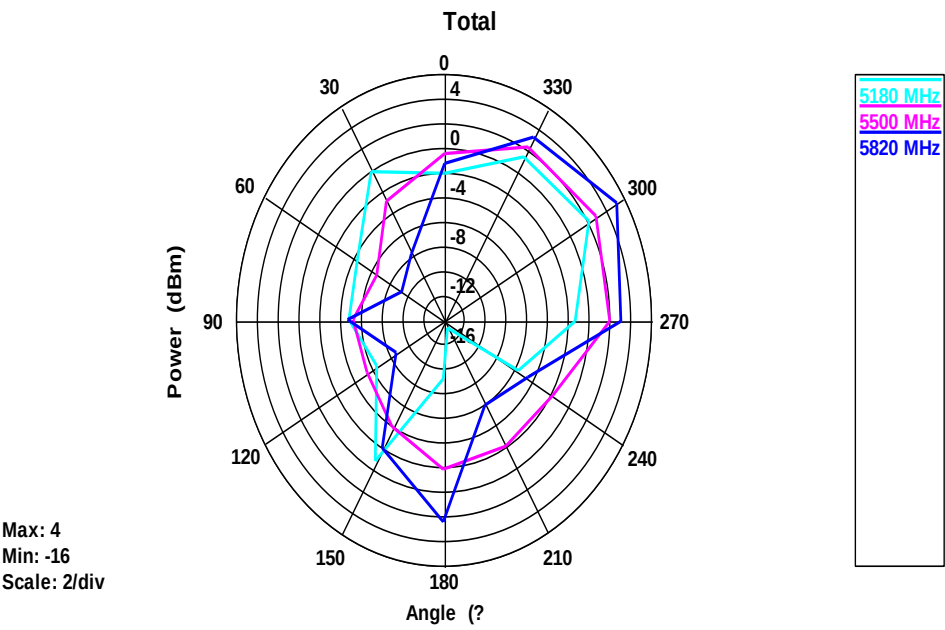
PHI=0°



PHI=90°

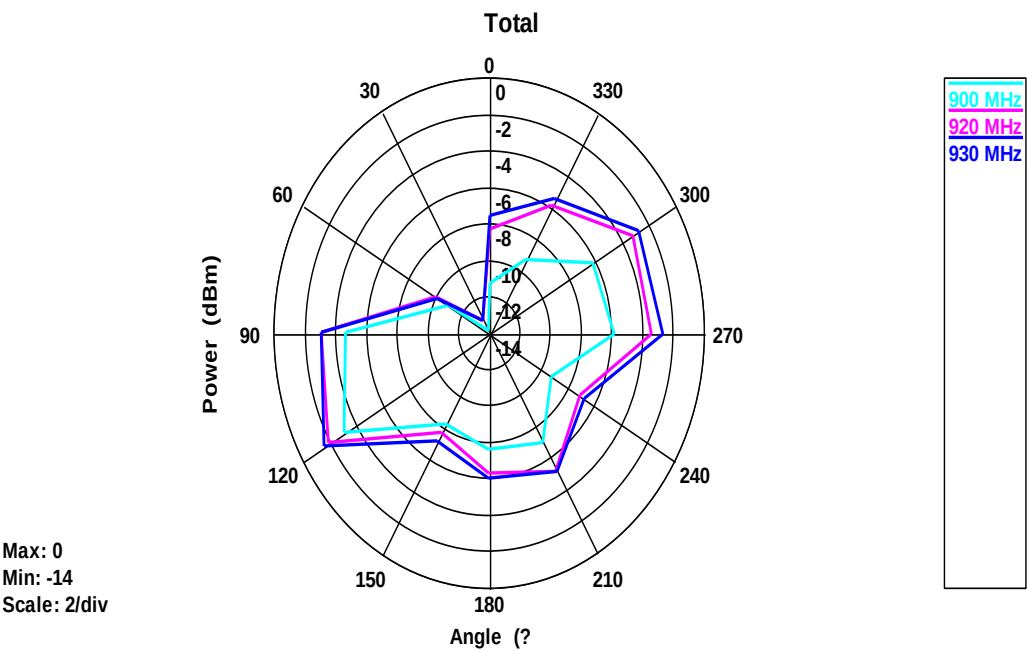


Theta=90°

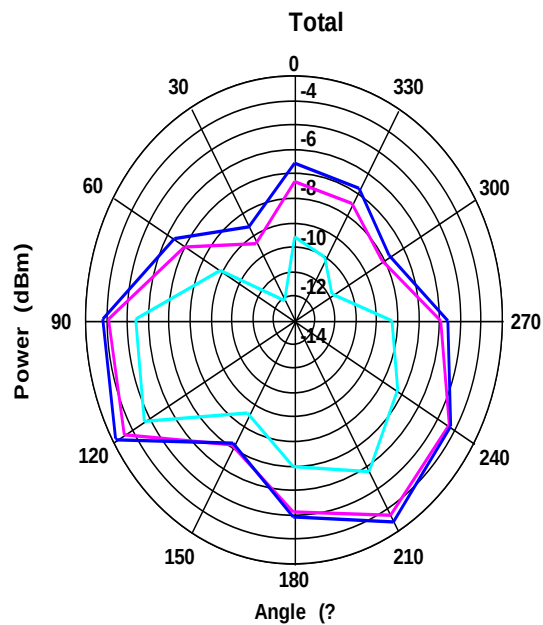


LoRa

PHI=0°



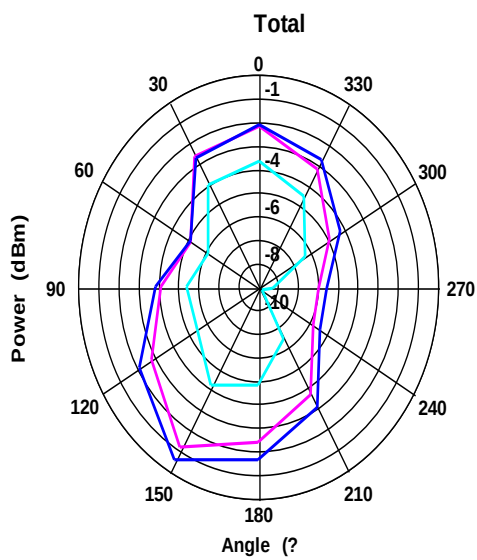
PHI=90°



Max: -4
Min: -14
Scale: 1/div



Theta=90°



Max: -1
Min: -10
Scale: 1/div

