

Regulatory WLAN Antenna Information

Platform information							
Brand	ODM	Platform model name (RMN)	Platform type (ex: Notebook PC, convertible PC, AIO...etc)			*SAR minimum separation (mm)	
HP Inc.	Inventec	Magneta (HSN-I52C)	Notebook PC			12.8 mm	
Antenna information							
Vendor		Type	Antenna Part number (Main/TX2)			Antenna Part number (Aux/ TX1)	
WNC		PIFA	6036B0315001 (81EABL15.G59)			6036B0314901 (81EABL15.G58)	
Peak gain w/ cable loss (dBi)							
2.4GHz 2400-2500MHz	5.2&5.3GHz 5150-5350MHz	5.5GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	6.9GHz 6875-7125MHz
2.94	0.79	1.83	1.93	1.26	0.05	0.04	-0.82
Module information							
Model	Form factor and suffixes (NGW/ HMW AND AN/ NB/ BN....)						
AX211.D2WG	Intel Garfield Peak 2 AX211 Wi-Fi 6e +BT 5.2 M.2 1216 160MHz CNVi WW WLAN						
Notes (marked with *)							
* SAR minimum separation (mm)							
- Regular NB: Minimum antenna-to-body (from antenna bottom to the bottom of the device)							
- Tablet / Convertible PC: Minimum antenna-to-edge (5 sides of the device)							
- Mini-tablet: Minimum antenna-to-edge (6 sides of the device)							
* 3D Peak Antenna gain should be equal or greater than -2 dBi							
- If a host integrator plans to use a lower gain antenna of the same type, additional CBP(FCC)/EDT(EU) testing need to be performed while the module is installed in the host.							

Antenna Sample / Antenna Data

Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 & Tx3 antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs <u>and</u> Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. (S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.	Required	Required	Desired	<u>Required (Photos)</u>	<u>Required (Photos)</u>
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

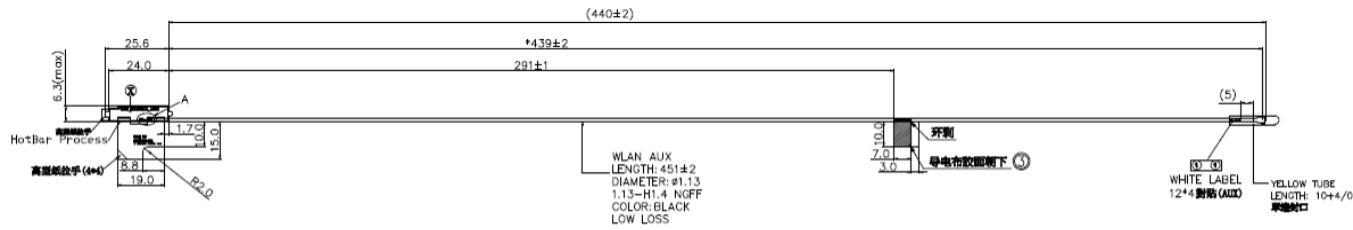
1A Antenna Part Number	1B Manu- facturer	1C Antenna Type	1D Cable Assembly Part Number and Information	Freq Range MHz	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G Max VSWR	1H Cable Loss (dB)
(P/N: 81EABL15.G59) Main Antenna (TX2)	WNC	PIFA	Cable P/N: SY113L/50-065,SHENYU 50 ohm Coaxial length: 152mm diameter: 1.13mm Connector: I-PEX P/N: 20565-001R-13	2400-2500	2.94	3.36	3.0	0.42
				5150-5250	0.79	1.42	3.0	0.63
				5250-5350	0.79	1.42	3.0	0.63
				5470-5725	1.83	2.48	3.0	0.65
				5725-5850	1.93	2.59	3.0	0.66
				5925-6425	1.26	1.94	3.0	0.68
				6425-6525	0.05	0.75	3.0	0.7
				6525-6875	0.04	0.76	3.0	0.72
				6875-7125	-0.82	-0.08	3.0	0.74
(P/N: 81EABL15.G58) Aux Antenna (TX1)	WNC	PIFA	Cable P/N: SY113L/50-065,SHENYU 50 ohm Coaxial length: 440mm diameter: 1.13mm Connector: I-PEX P/N: 20565-001R-13	2400-2500	1.99	3.21	3.0	1.22
				5150-5250	-0.55	1.27	3.0	1.82
				5250-5350	-0.55	1.27	3.0	1.82
				5470-5725	-0.21	1.66	3.0	1.87
				5725-5850	-0.21	1.69	3.0	1.9
				5925-6425	0.08	2.05	3.0	1.97
				6425-6525	-0.66	1.38	3.0	2.04
				6525-6875	-0.28	1.80	3.0	2.08
				6875-7125	-0.92	1.23	3.0	2.15

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

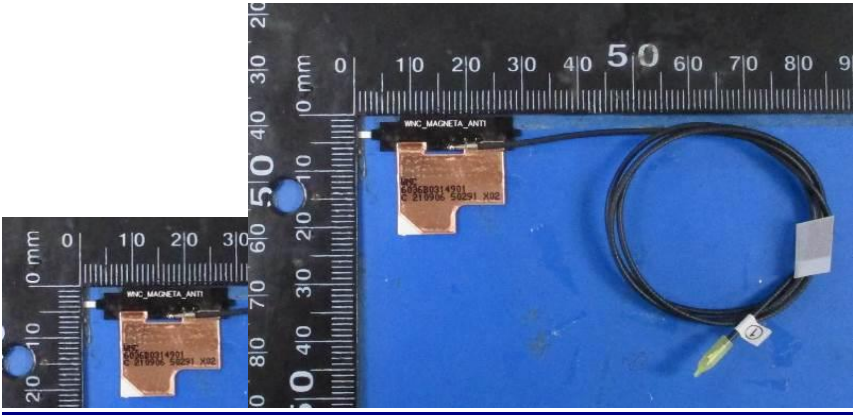
Section 2. Dimensioned Photos or Drawings of Antennas

Include a dimensioned photo and dimensioned drawing of Tx1 antenna here.

Tx1 Antenna Dimensioned Drawing:



Tx1 Antenna Photo:



Technical drawing of a cable assembly with dimensions and labels:

- Overall length: (152 ± 2)
- Distance from left end to center of connector: $*151 \pm 2$
- Distance from center of connector to right end: 24.0
- Distance from left end to center of connector: (5.0)
- Distance from center of connector to right end: 33 ± 1
- Distance from center of connector to right end: 7.0
- Distance from center of connector to right end: 3.0
- Distance from center of connector to right end: 10.0
- Distance from center of connector to right end: 15.0
- Distance from center of connector to right end: 10.0
- Distance from center of connector to right end: 8.8
- Distance from center of connector to right end: 19.0
- Distance from center of connector to right end: $6.3(\text{max})$
- Labels:
 - ③ 导电布胶面朝下
 - 环剥
 - YELLOW TUBE LENGTH: $10 \pm 4/0$ 單連封口
 - BLACK LABEL 12*4 對貼 (MAIN)
 - WLAN MAIN LENGTH: 161.5 ± 2
 - DIAMETER: $\phi 1.13$
 - 1.13-H1.4 NGFF
 - COLOR: BLACK
 - LOW LOSS
 - 高型紙拉手
 - HotBar Process
 - 高型紙拉手 (4*4)
 - CUSTOMER P/N
 - WNC PV 603630315001

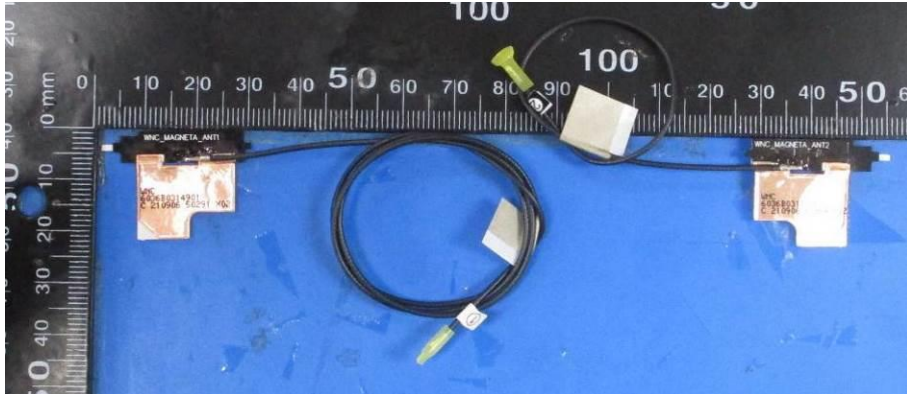
Figure 1 consists of two photographs, (a) and (b), showing the experimental setup. Photograph (a) is a top view showing a small antenna (labeled 'WVC_MAGNETA_ANT2') connected to a magnet. The antenna is a small, rectangular, copper-colored component with a black wire. The magnet is a small, white, rectangular block. A ruler is visible in the background, showing measurements in millimeters. Photograph (b) is a side view of the same setup, showing the antenna and magnet from a different angle. The ruler is also visible in the background.

Regulatory WLAN Antenna Information

Include front view photo of all 2 antennas here.

Antenna Manufacturer: WNC

Antenna Part Number: 81EABL15.G59 (Tx1), 81EABL15.G58 (Tx2 or Rx2)



Note: antenna photo should include L type ruler

Include back view photo of all 2 antennas here.

Antenna Manufacturer: WNC

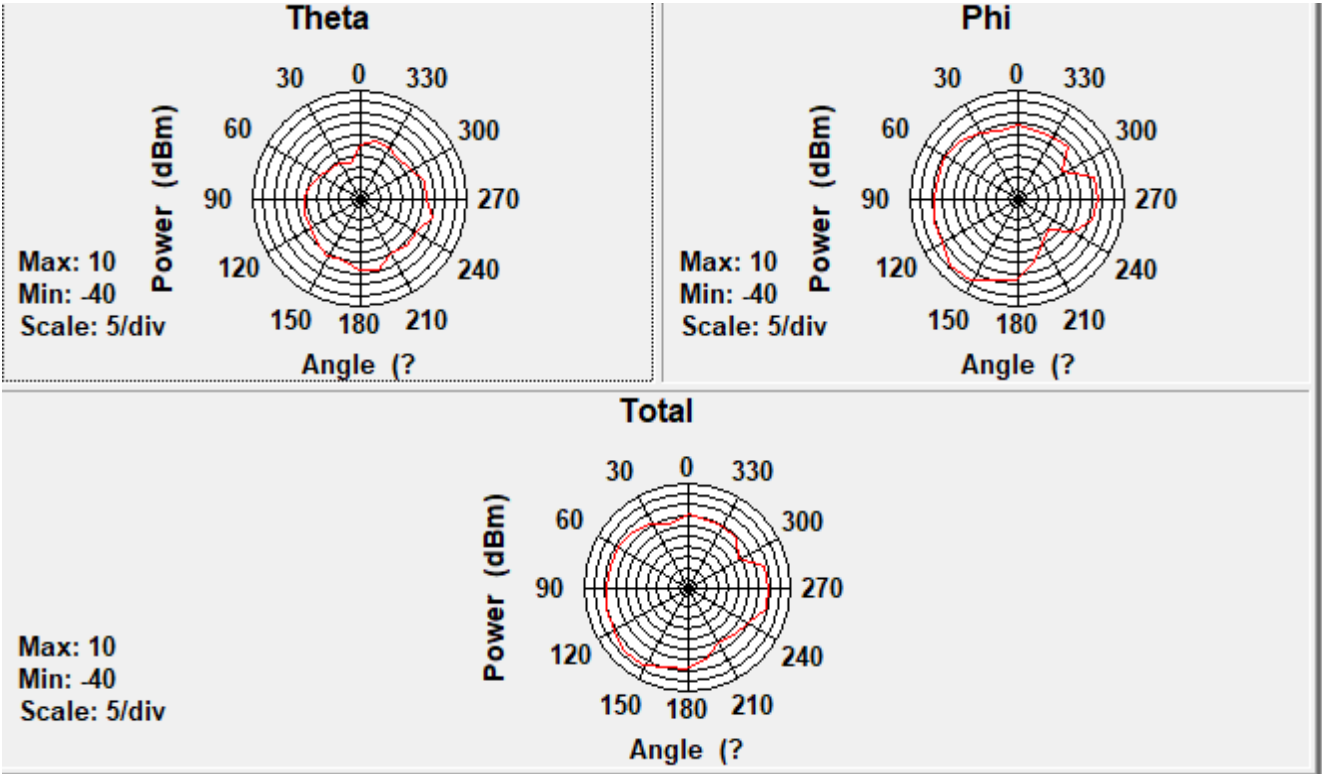
Antenna Part Number: 81EABL15.G59 (Tx1), 81EABL15.G58 (Tx2)



Section 3. Radiation characteristics of antennae Loaded in Host Platform

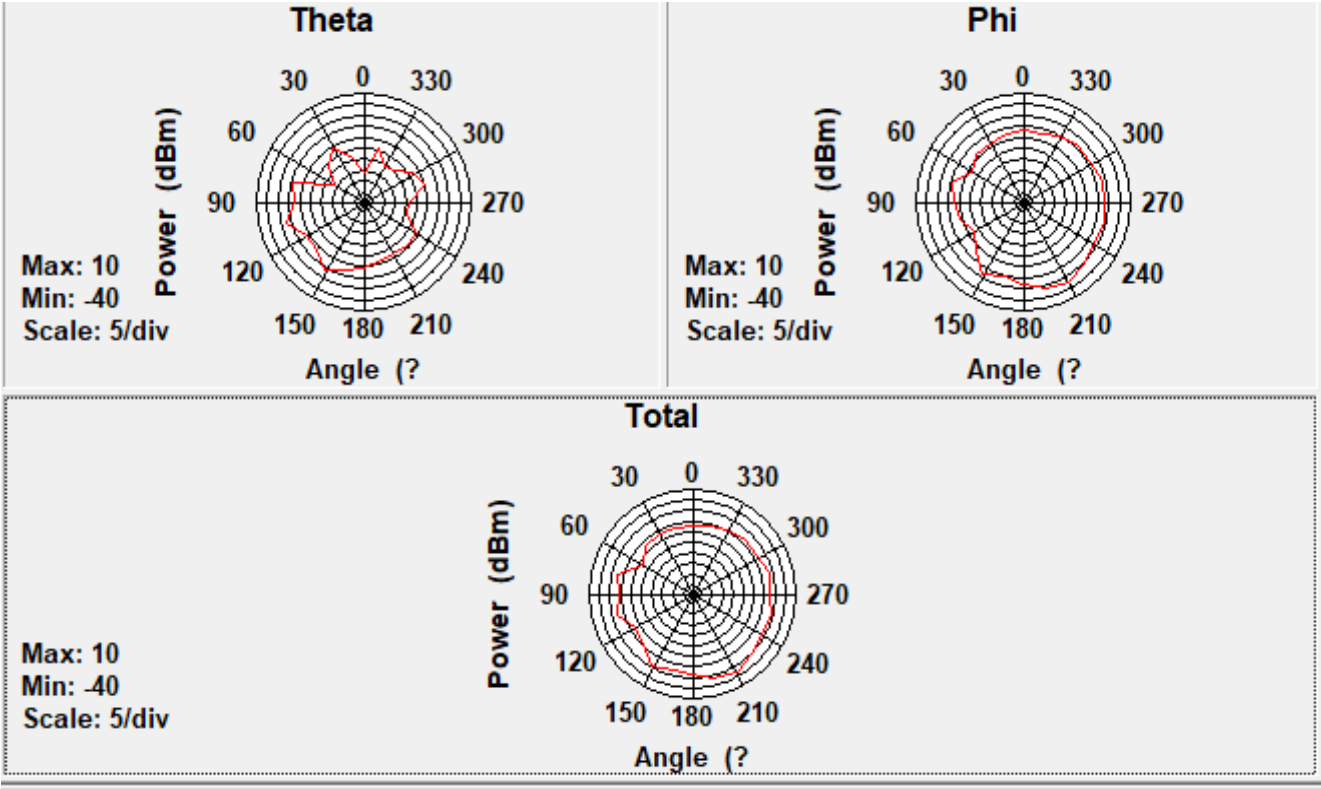
2400-2500MHz radiation characteristic (1E Peak Gain W/ Cable loss (dBi))

Main antenna:

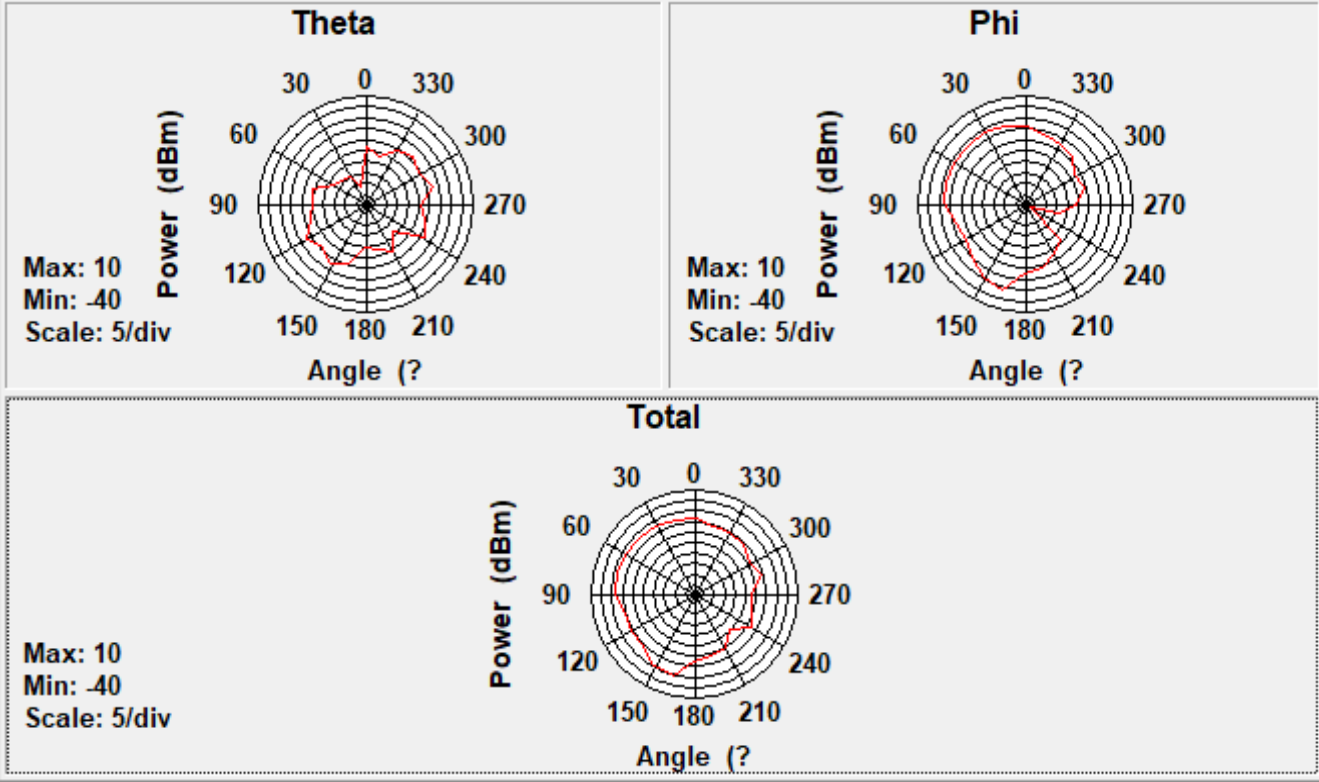


Center Frequency	2400-2500 MHz
Horizontal+ Vertical (dBi) peak	2.94

Aux antenna:

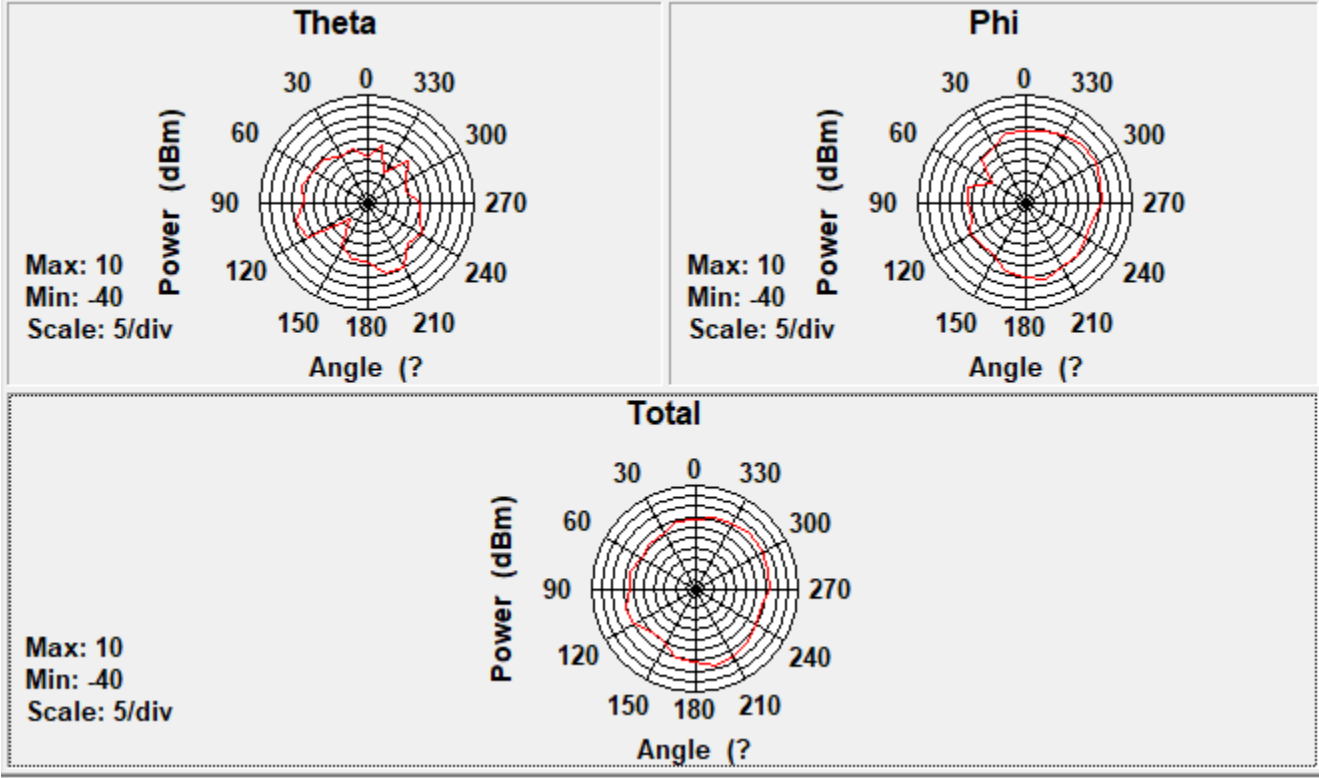


Center Frequency	2400-2500 MHz
Horizontal+ Vertical (dBi) peak	1.99



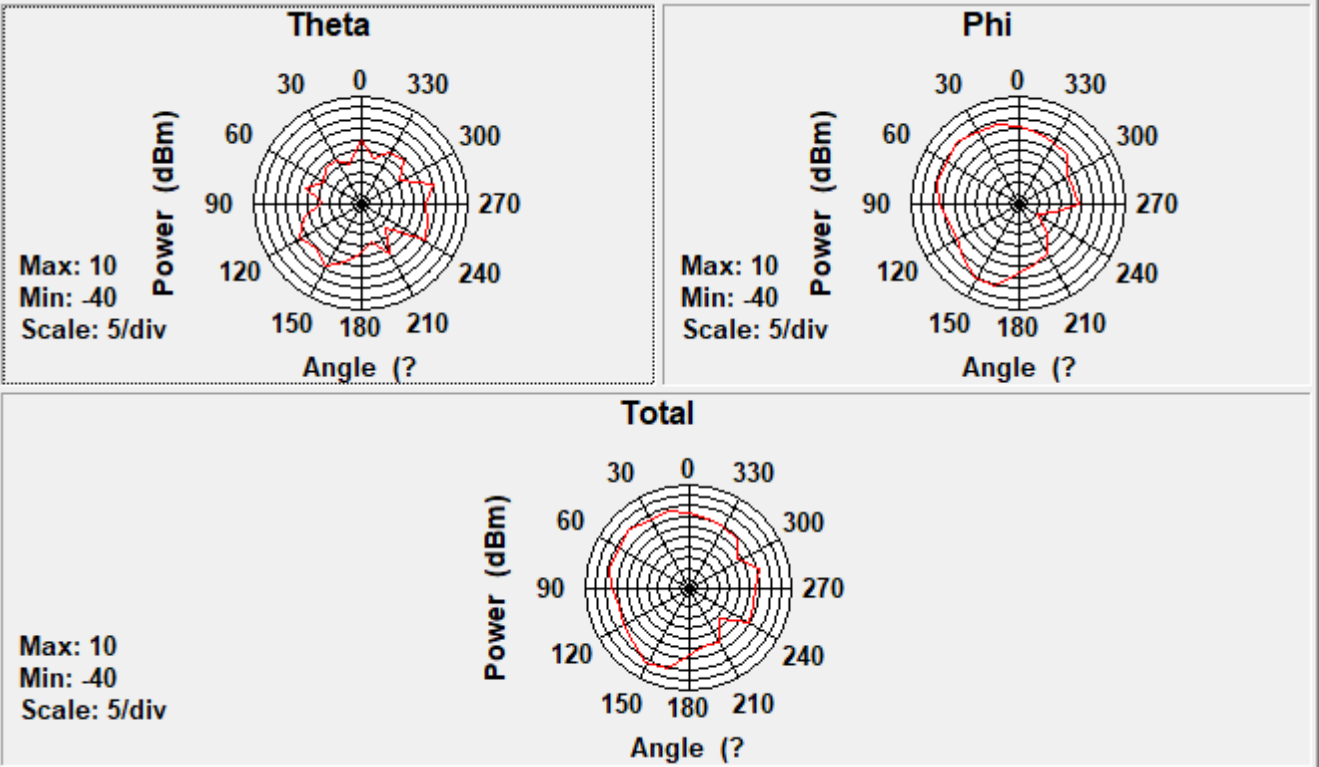
Horizontal+ Vertical (dBi) peak	0.21
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Aux antenna:



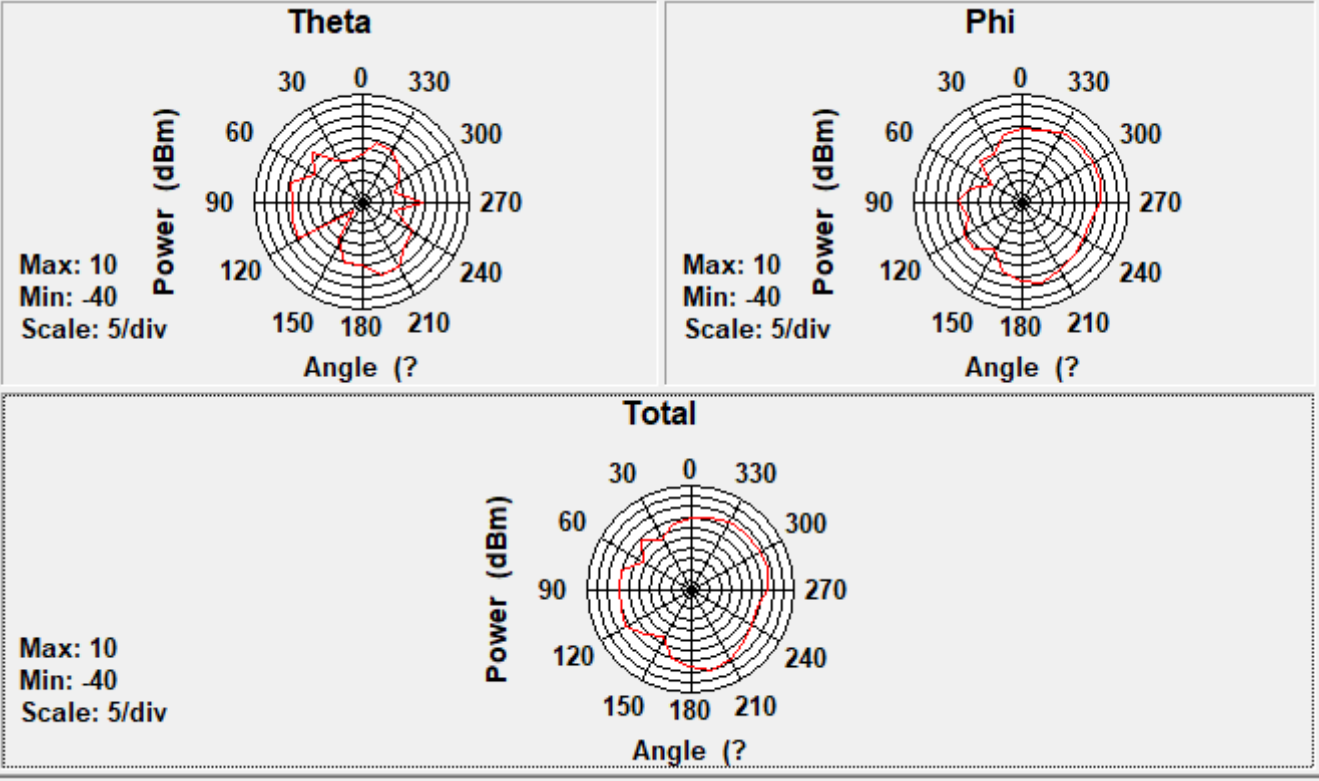
Horizontal+ Vertical (dBi) peak	-1.34
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Main antenna:



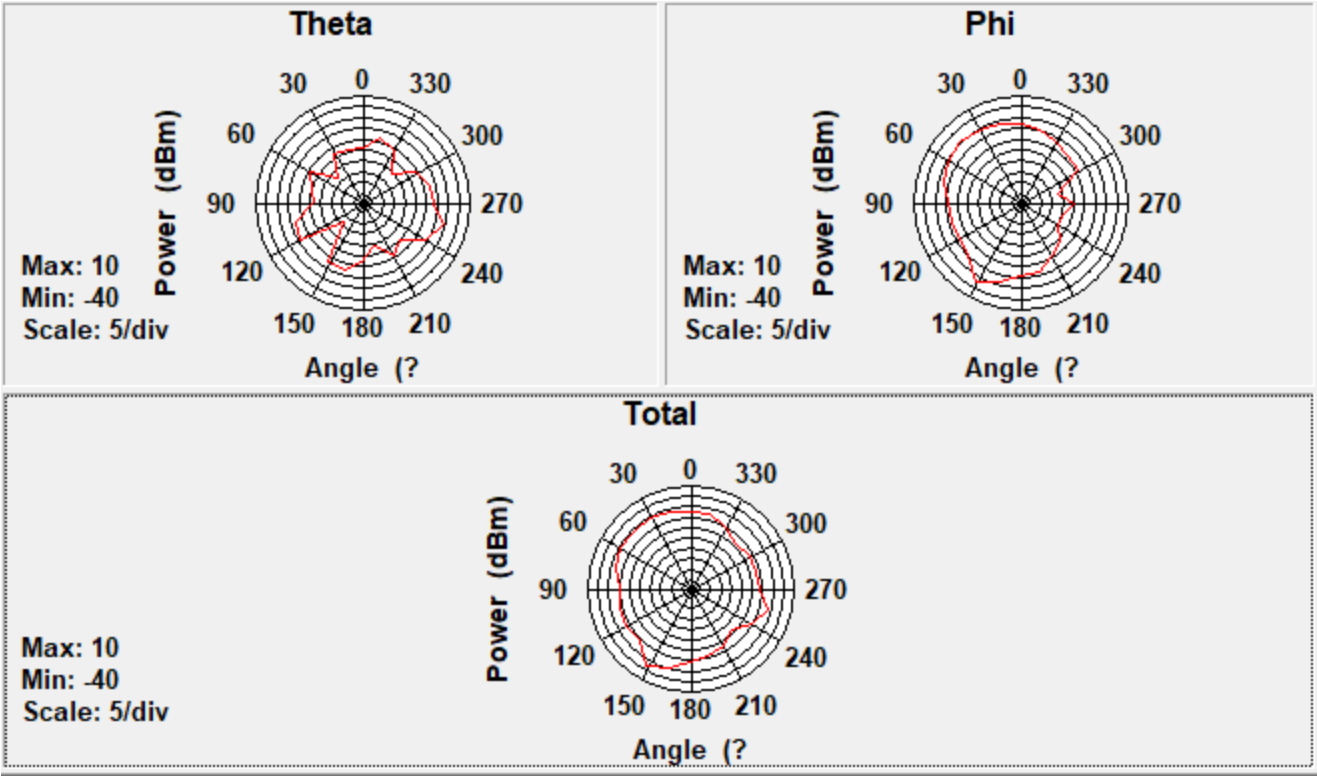
Horizontal+ Vertical (dBi) peak	0.79
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Aux antenna:



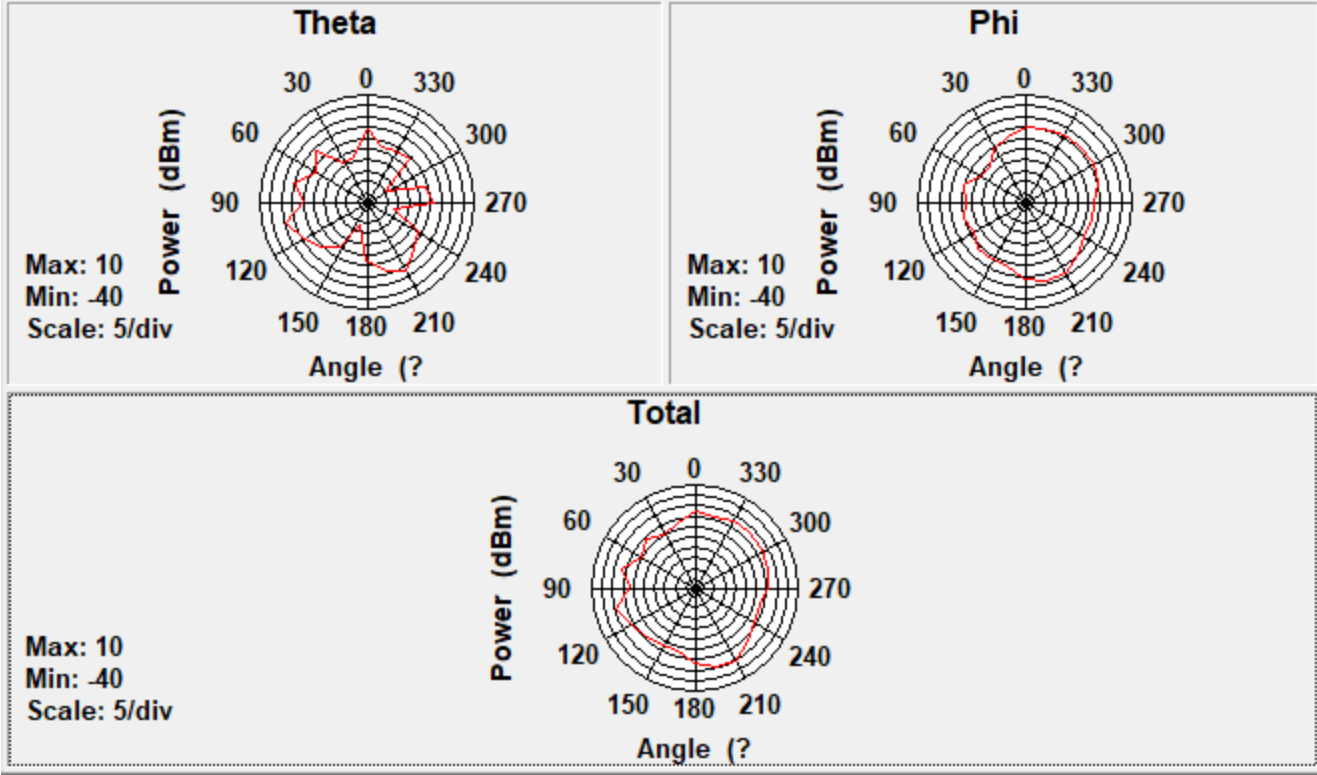
Horizontal+ Vertical (dBi) peak	-0.55
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Main antenna:



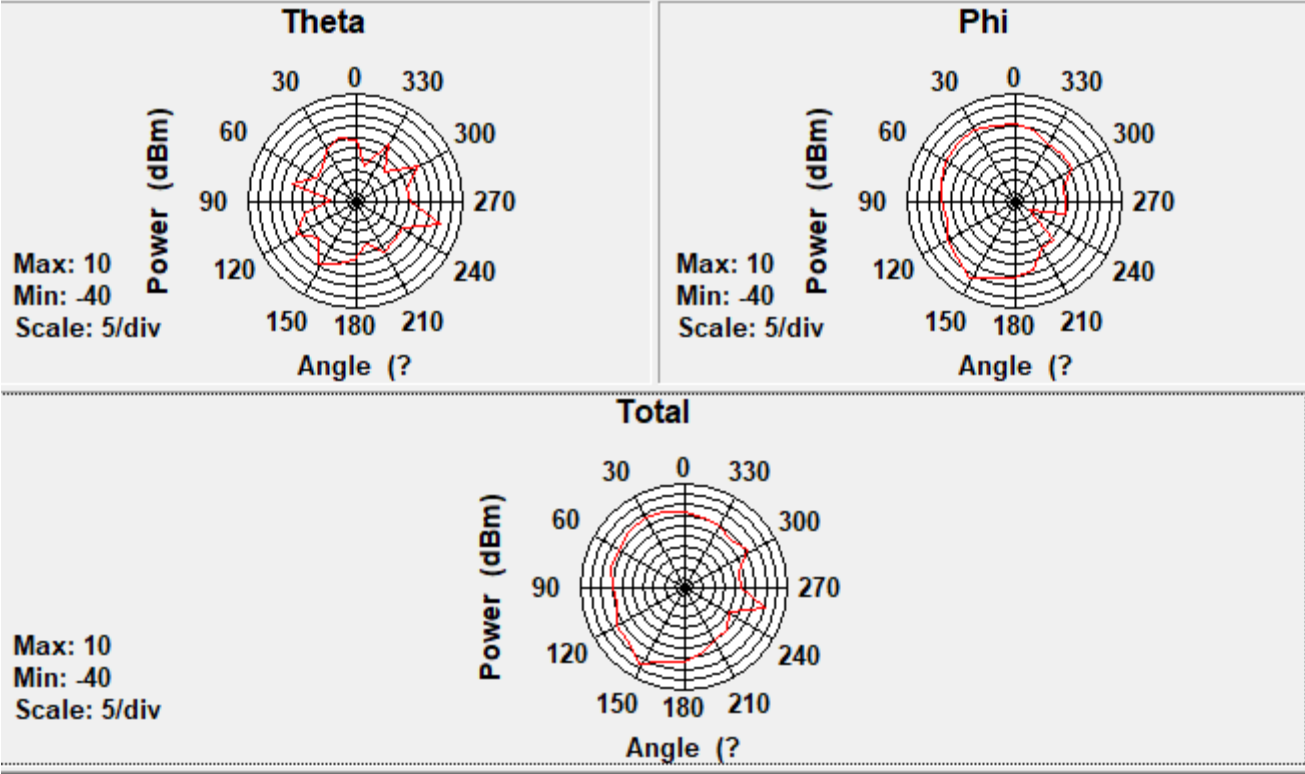
Horizontal+ Vertical (dBi) peak	1.83
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Aux antenna:



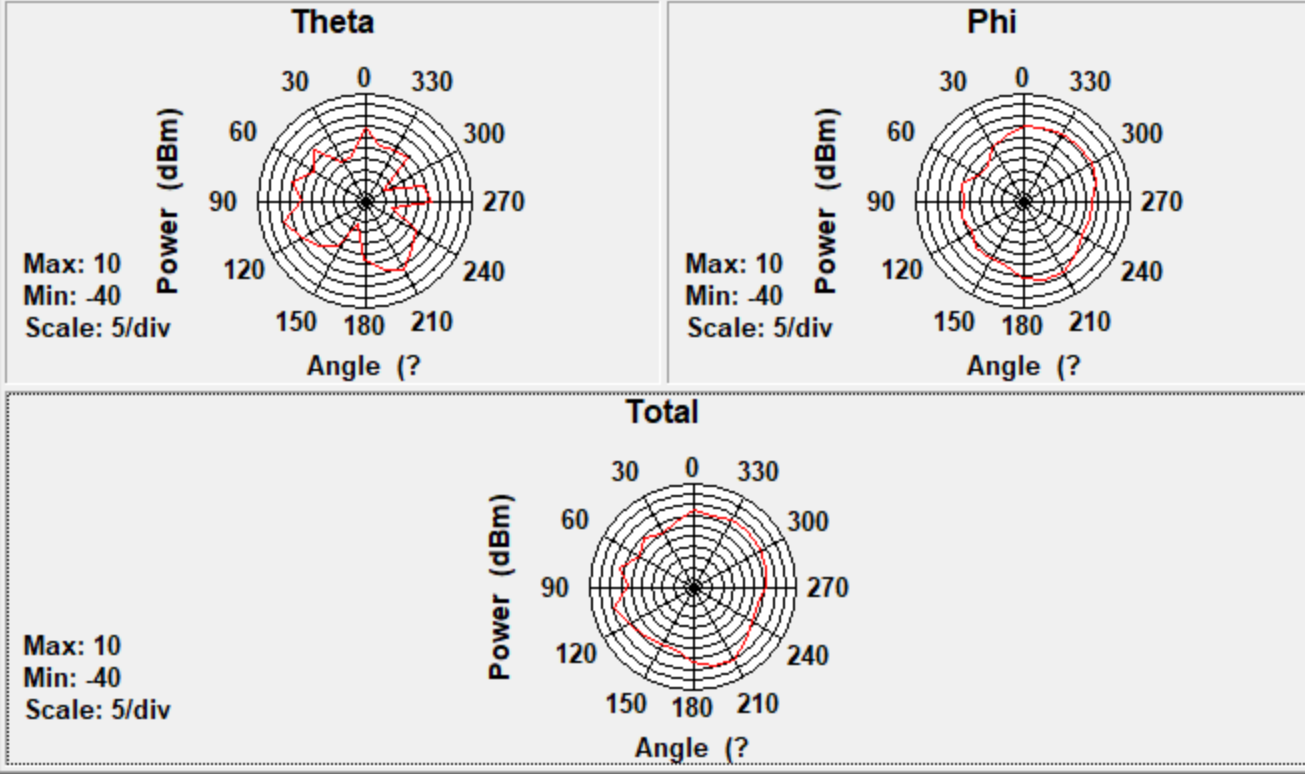
Horizontal+ Vertical (dBi) peak	-0.21
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Main antenna:



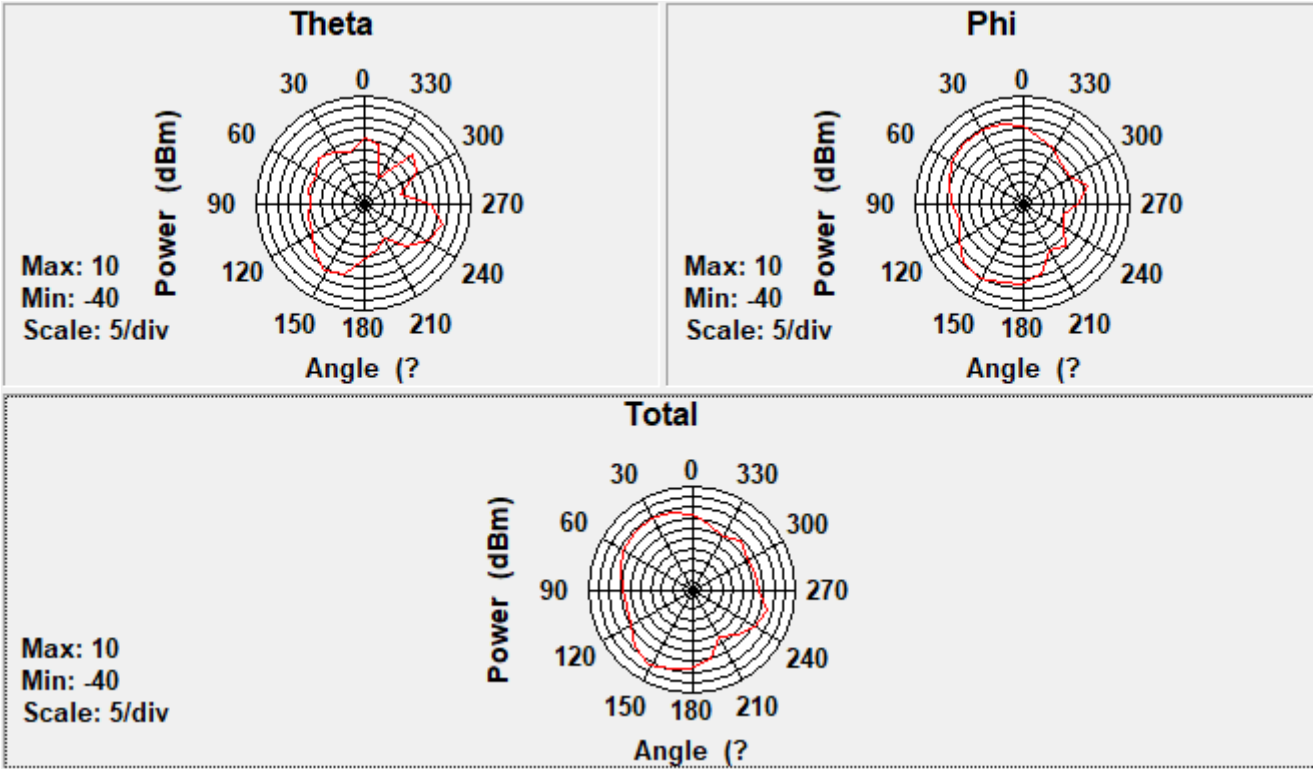
Horizontal+ Vertical (dBi) peak	1.93
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Aux antenna:



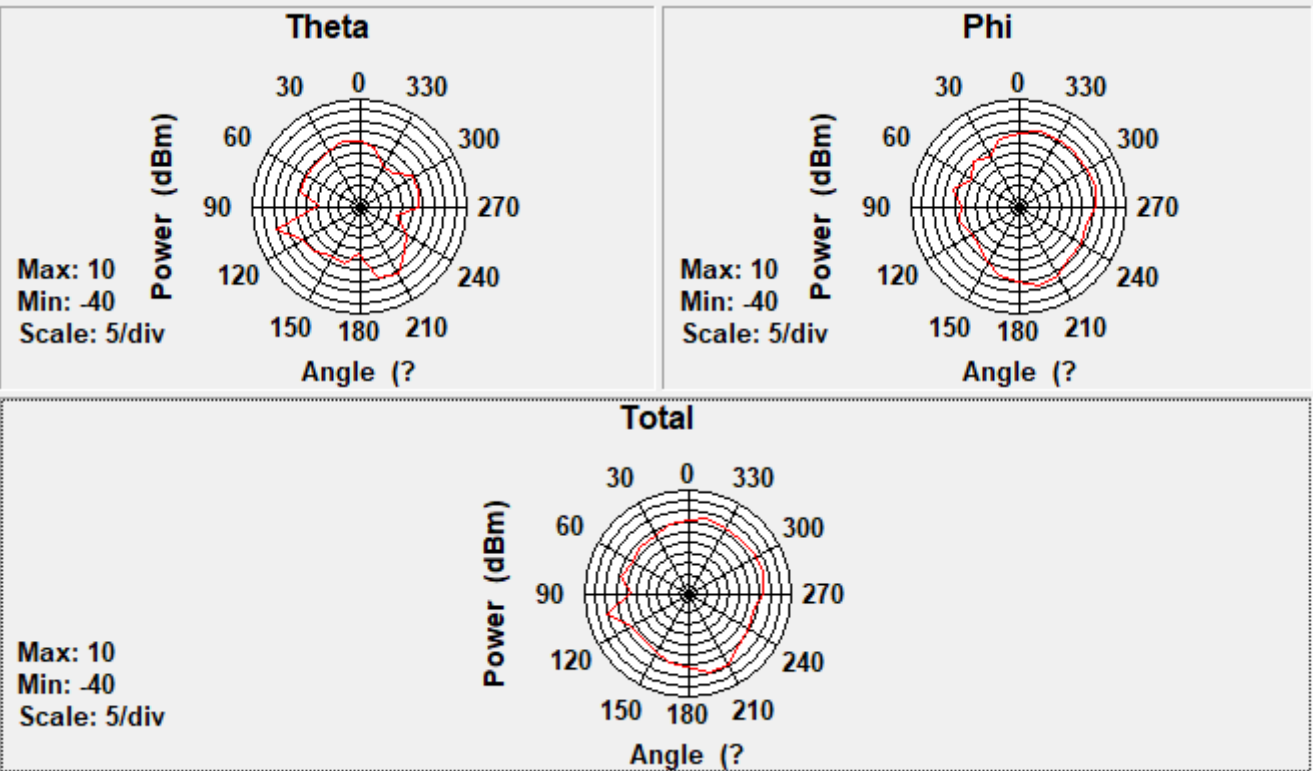
Horizontal+ Vertical (dBi) peak	-0.21
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Main antenna:



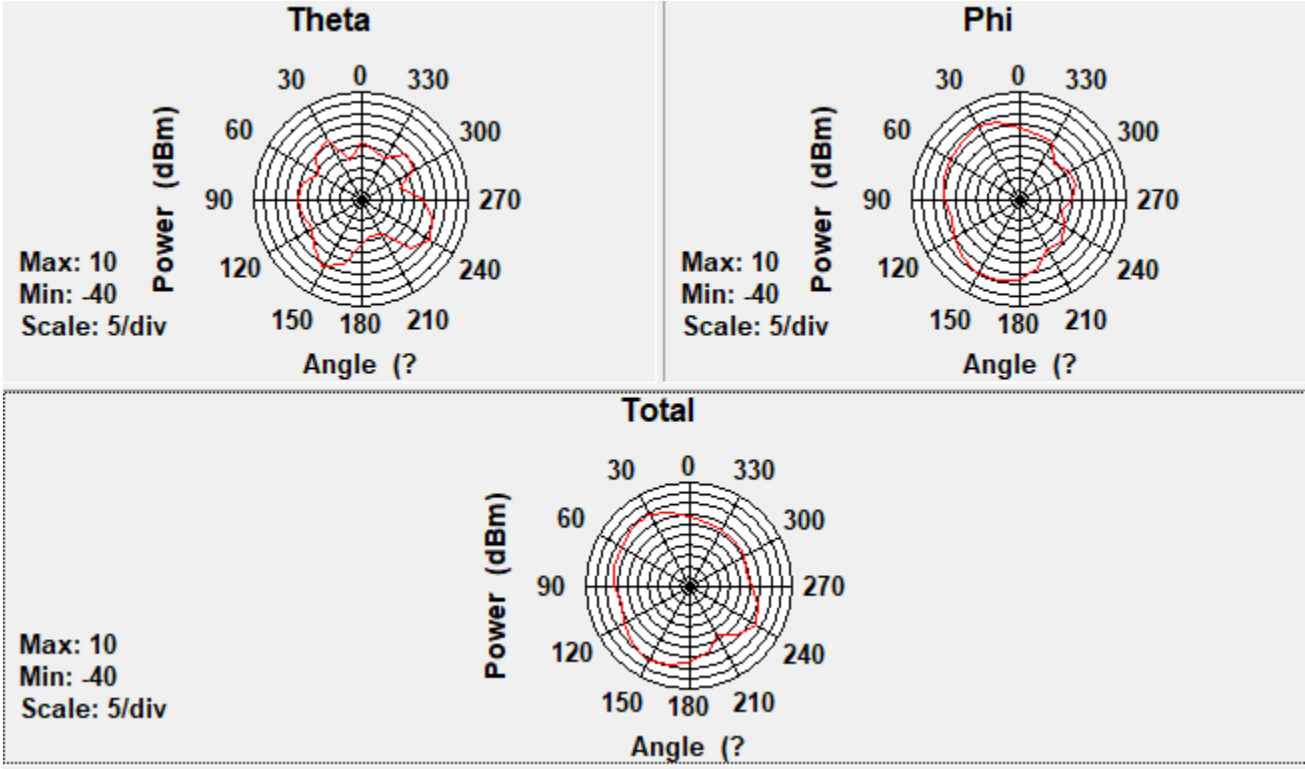
Horizontal+ Vertical (dBi) peak	1.26
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Aux antenna:



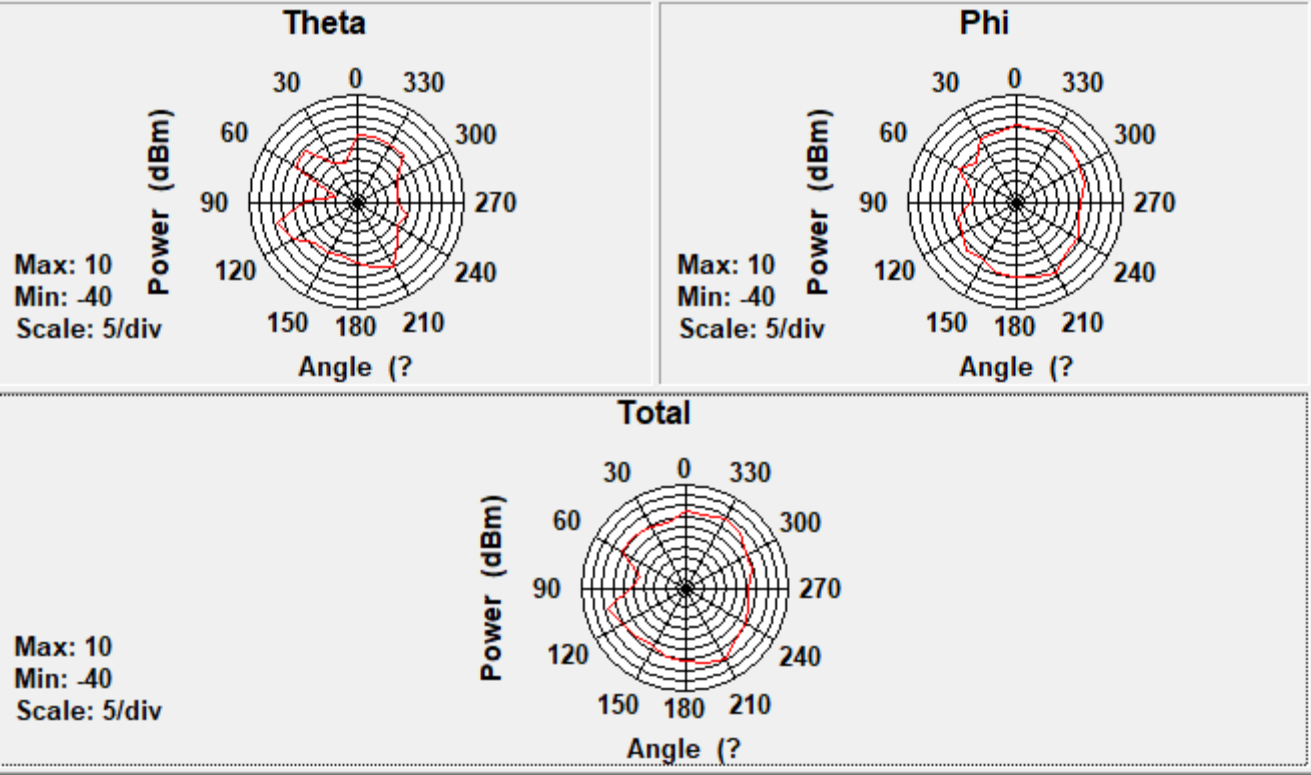
Horizontal+ Vertical (dBi) peak	0.08
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Main antenna:



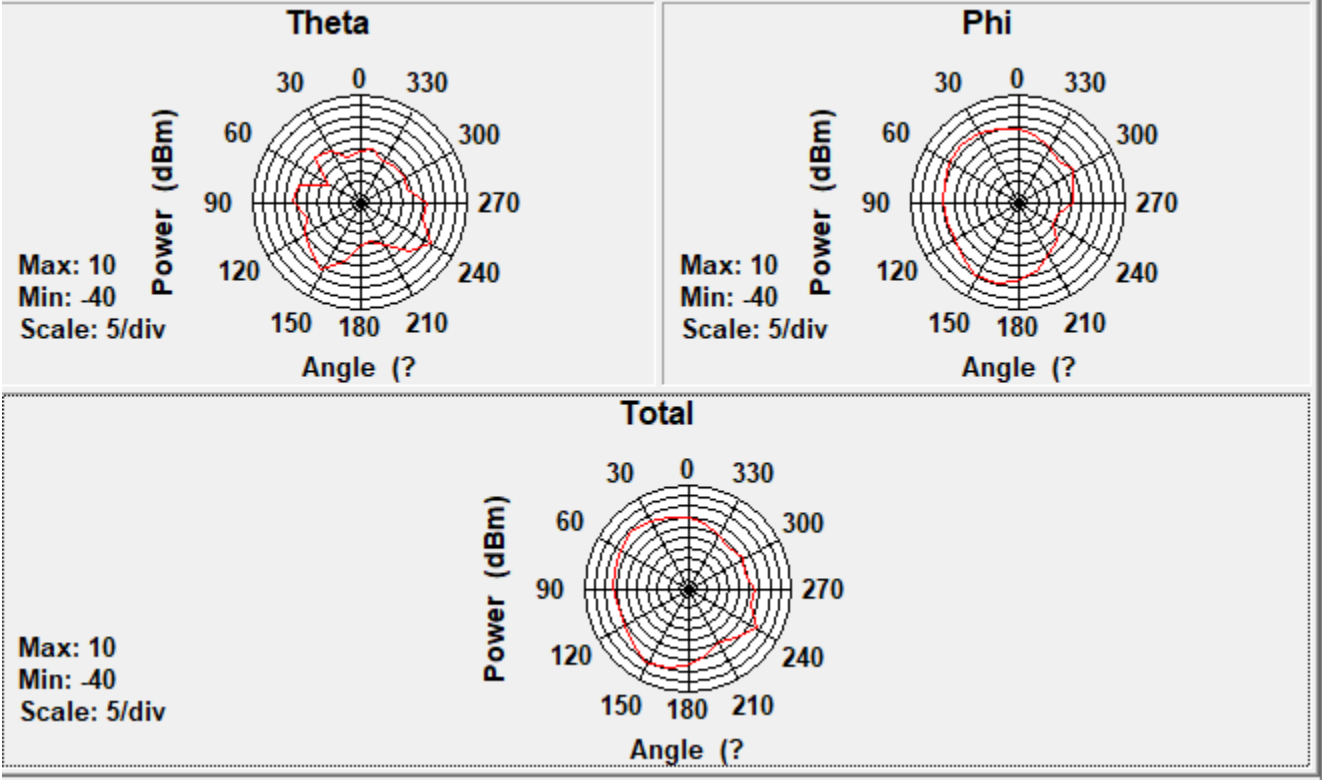
Horizontal+ Vertical (dBi) peak	0.05
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Aux antenna:



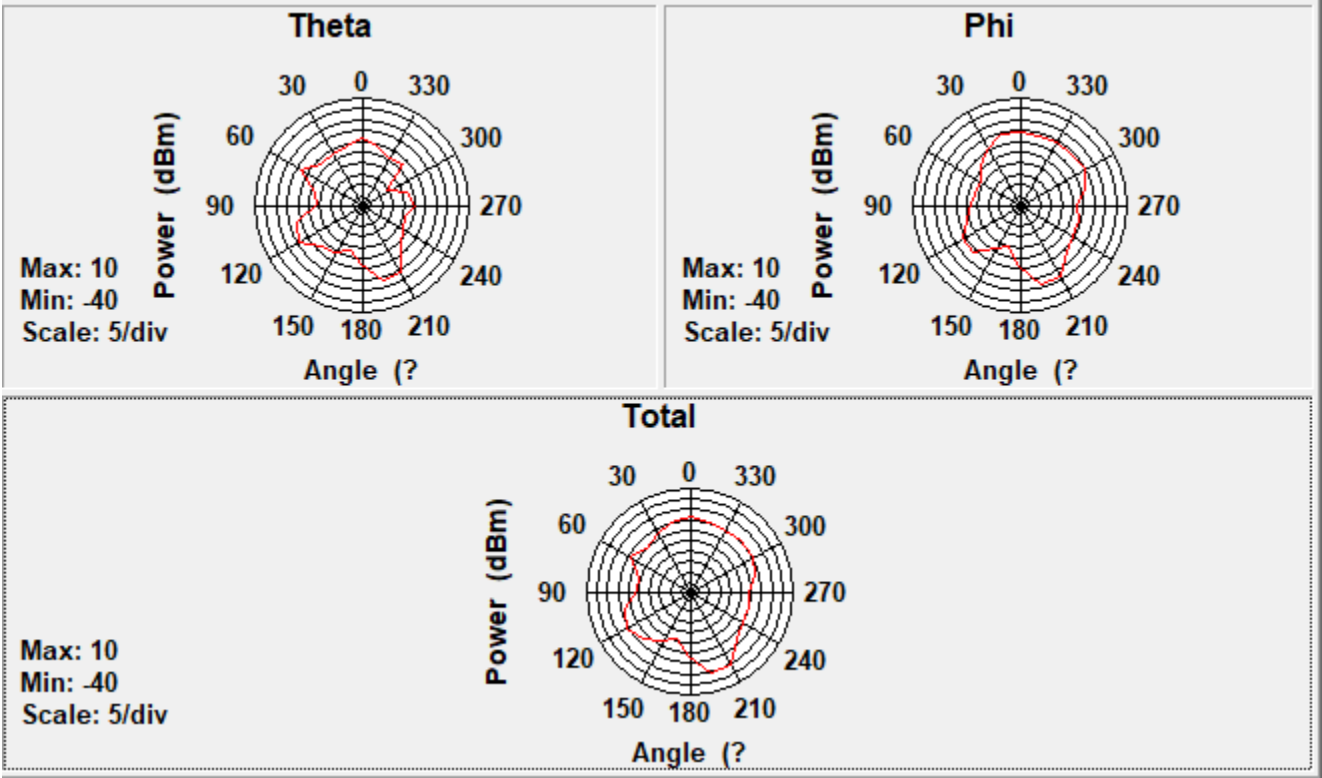
Horizontal+ Vertical (dBi) peak	-0.66
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Main antenna:



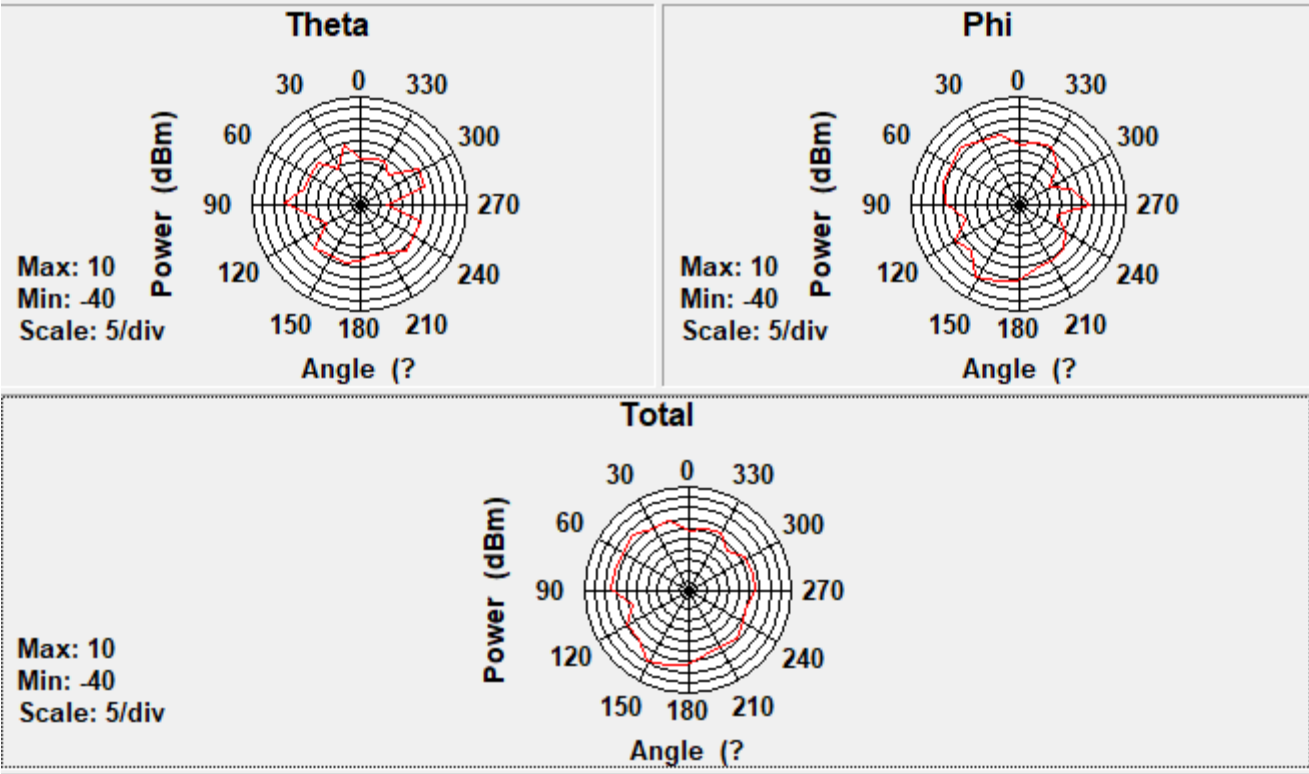
Horizontal+ Vertical (dBi) peak	0.04
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Aux antenna:



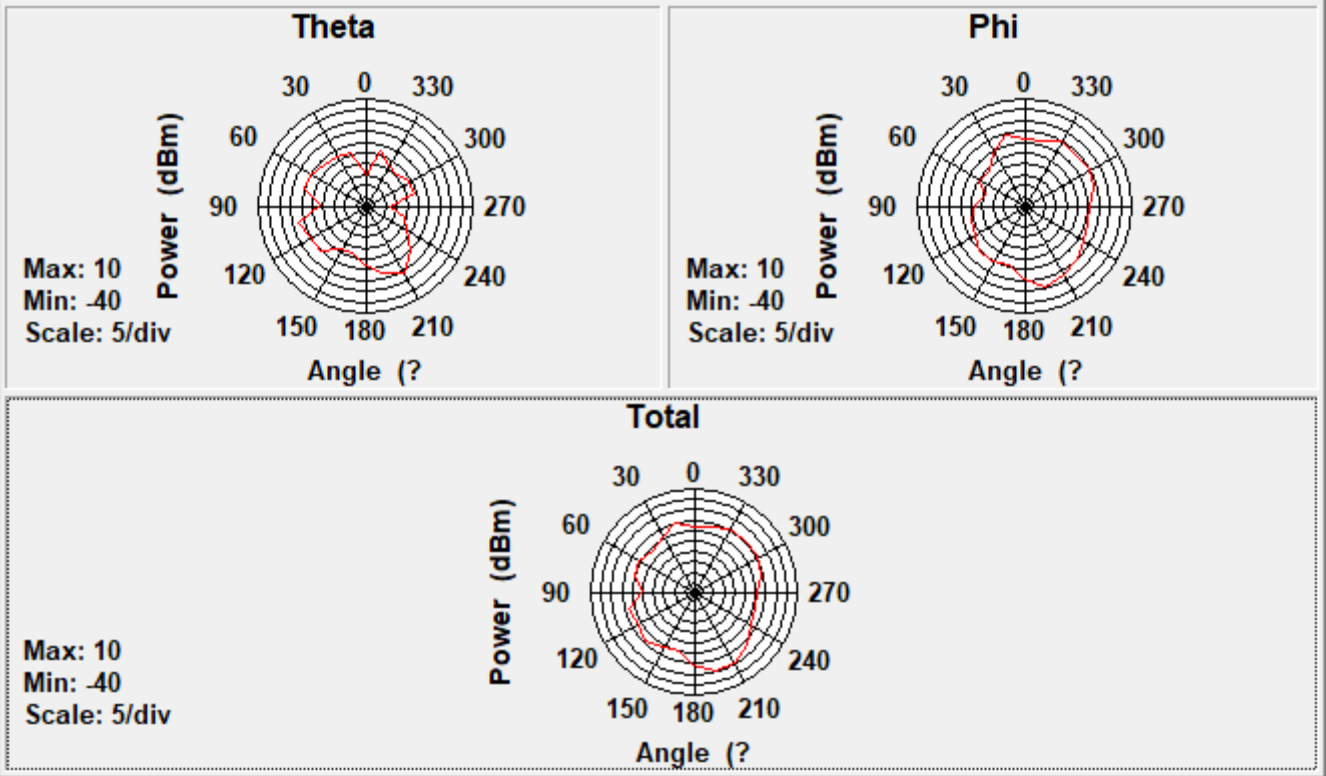
Horizontal+ Vertical (dBi) peak	-0.28
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Main antenna:



Horizontal+ Vertical (dBi) peak	-0.82
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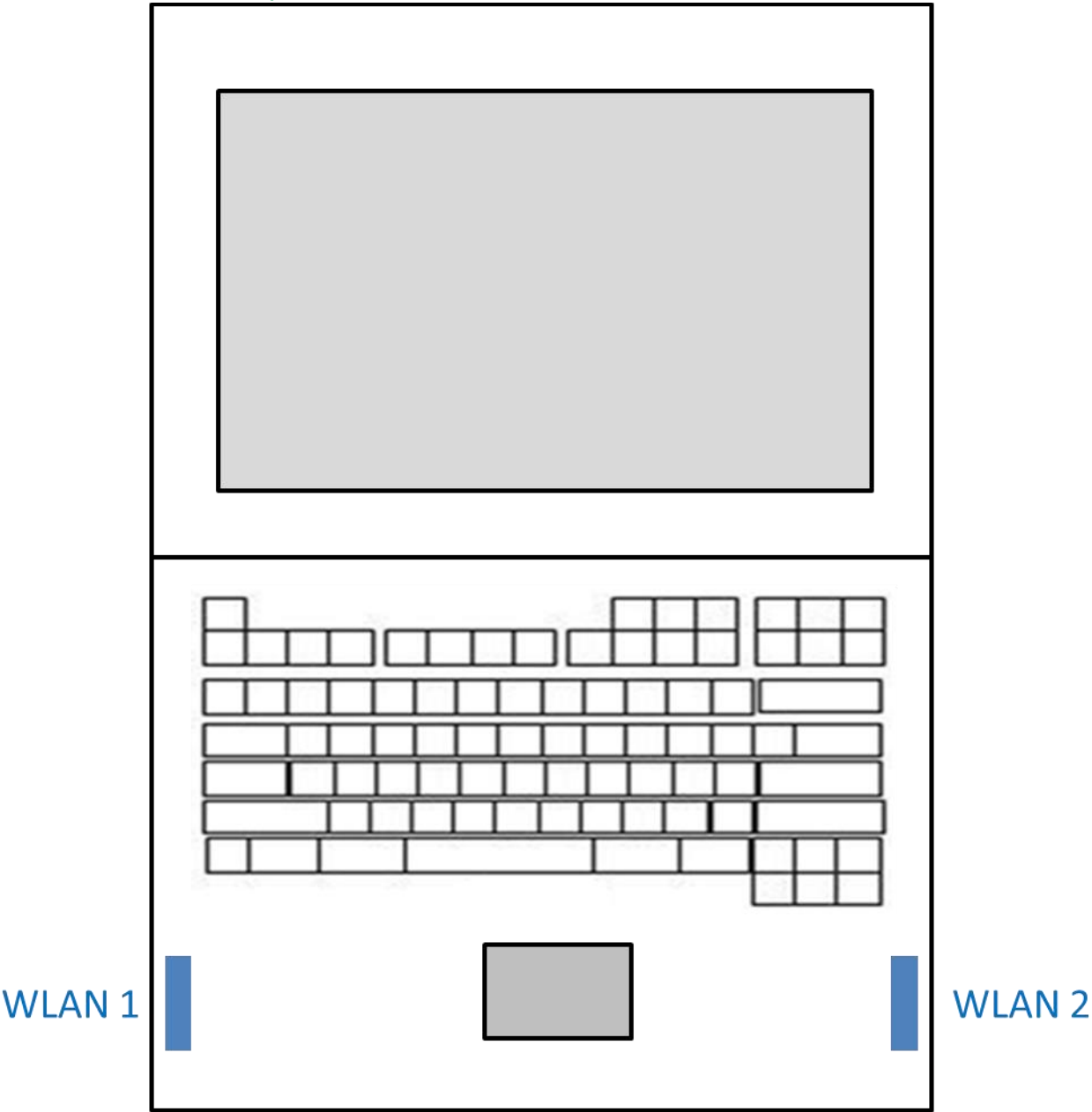
Aux antenna:

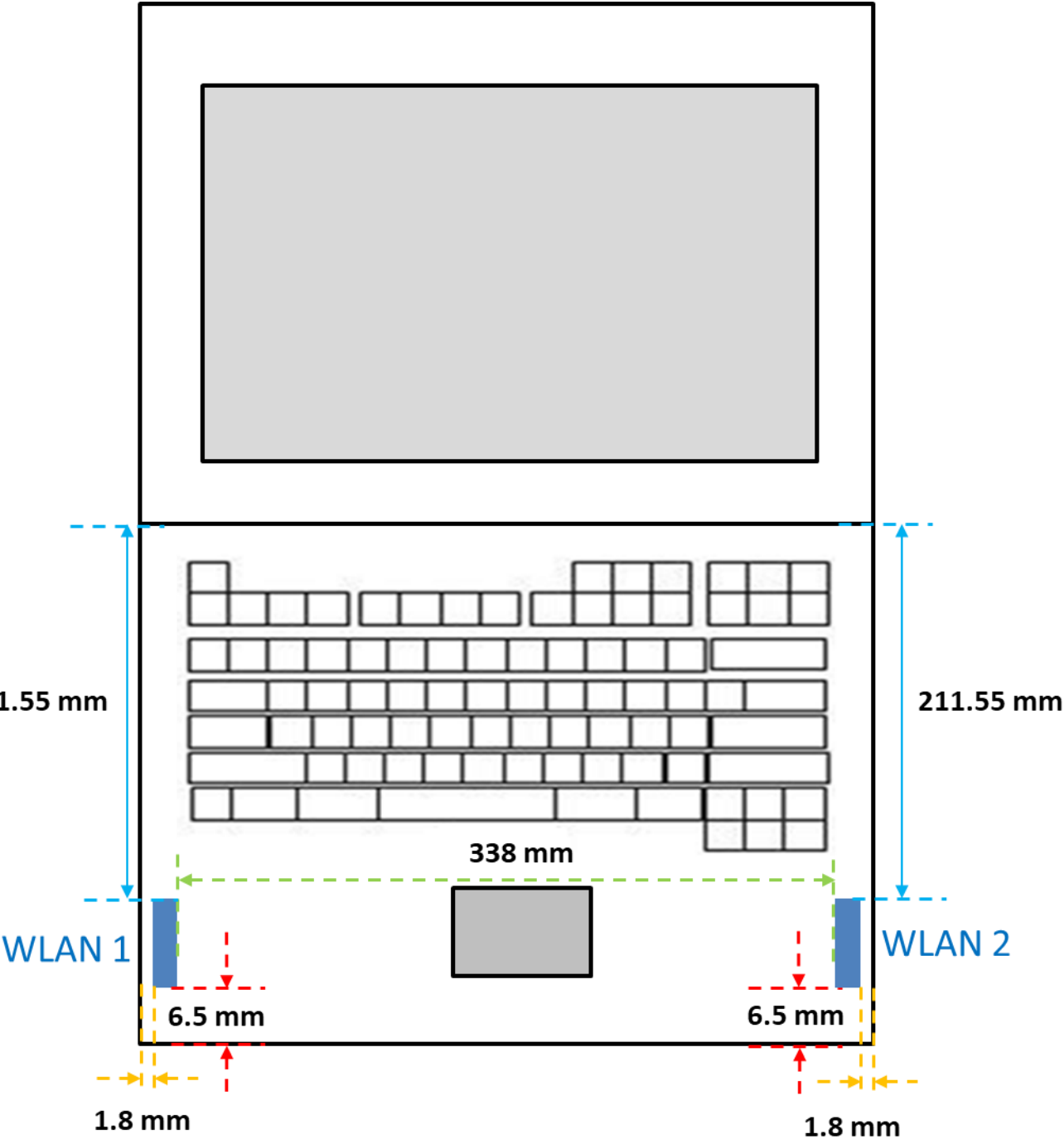


Horizontal+ Vertical (dBi) peak	-0.92
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Section 4. Antenna Host Platform Location Information

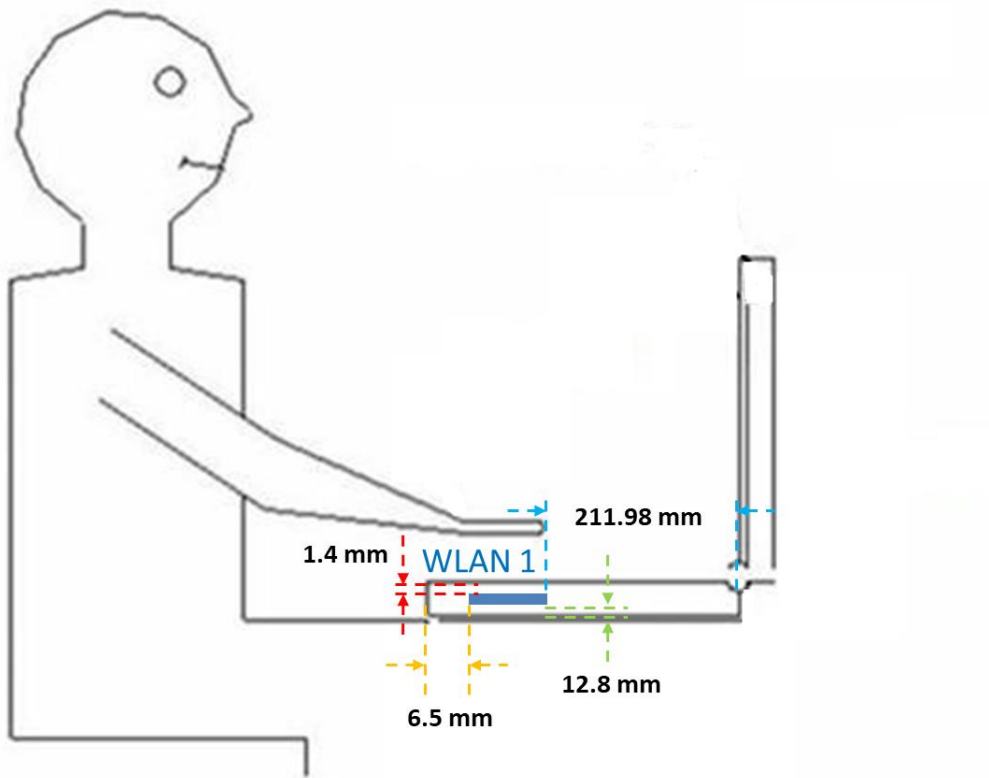
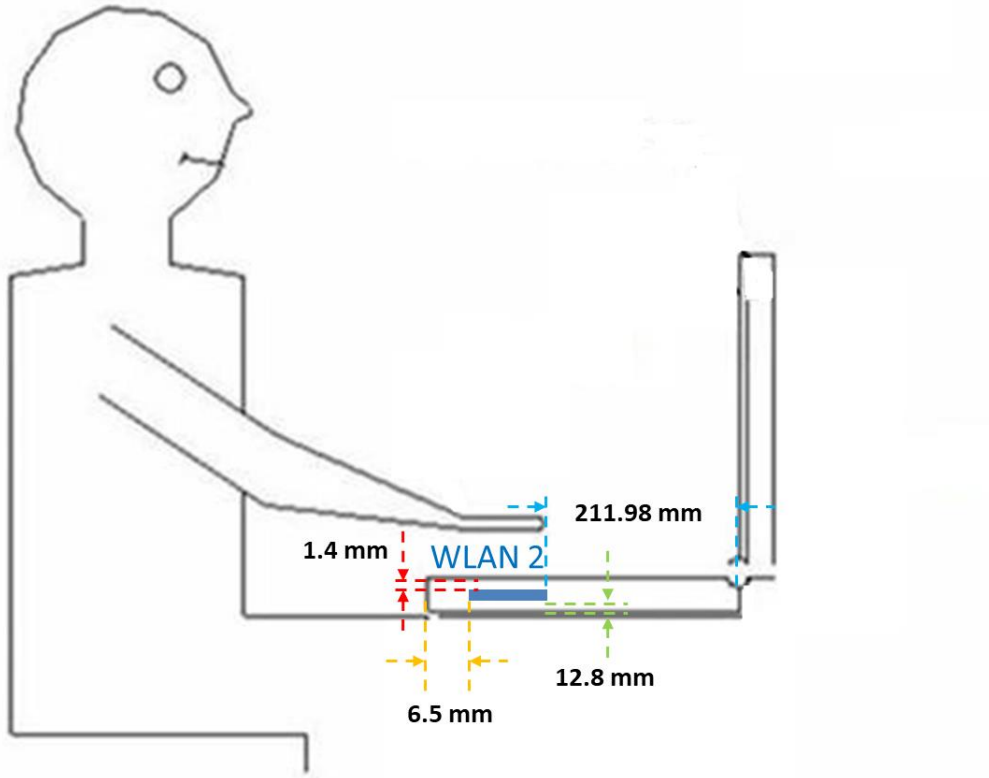
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna). Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.





Section 5. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.



Section 6. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between all WLAN transmit antennas and other co-located radiator transmit antenna such as Bluetooth, WWAN,..

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)

