

Regulatory WWAN Antenna Information

Platform	
Platform Owner	
Brand Name	Samsung
Model Name	Winchester II
ODM	
Target Launch Date	(YYYY/ MM/ DD)
Antenna	
Brand Name	WNC
Part Number	<input type="checkbox"/> Tx1 Antenna:81.EJV 15.G07
Module	
With WLAN Module	<input type="checkbox"/> WM3B2200BG
(Check Box)	<input type="checkbox"/> WM3B2915ABG
	<input type="checkbox"/> WM3945ABG
	<input type="checkbox"/> 4965AGN
	<input type="checkbox"/> 4965AG_
	<input type="checkbox"/> 533ANX Family
	<input type="checkbox"/> 512ANX Family
	<input type="checkbox"/> 533AN Family
	<input type="checkbox"/> 512AN Family

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. <u>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</u>	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

NOTE:

(*) if 3rd antenna is Rx only (e.g. receive only for 4965AGN) then peak gain and cable loss not required

Antenna Information

Section 1. Antenna Assembly Specifications

Antenna Assembly Summary:

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
(P/N:81.EJV15.G07) TXI ANTENNA	Wistron Neweb Corporation	PIFA	P/N: 137I441G(241) 50 ohm Coaxial. length: 441 mm diameter: 1.37 mm Connector: IPEX	824-894MHz	824-894MHz	824-894MHz	824-894MHz
				0.05 dBi (peak)	0.57 dBi (peak)	3.0 max	0.52 dBi (peak)
				900-925MHz	900-925MHz	900-925MHz	900-925MHz
				-4.35 dBi (peak)	-3.83 dBi (peak)	3.0 max	0.52 dBi (peak)
				940-1710MHz	940-1710MHz	940-1710MHz	940-1710MHz
				-1.78 dBi (peak)	-1.26 dBi (peak)	3.0 max	0.52 dBi (peak)
				1750~1805MHz	1750~1805MHz	1750~1805MHz	1750~1805MHz
				-0.08 dBi (peak)	0.50 dBi (peak)	4.0 max	0.58 dBi (peak)
				1840~1910MHz	1840~1910MHz	1840~1910MHz	1840~1910MHz
0.42 dBi (peak)	1.00 dBi (peak)	4.0 max	0.58 dBi (peak)				
1920~1950MHz	1920~1950MHz	1920~1950MHz	1920~1950MHz				
0.24 dBi (peak)	0.82 dBi (peak)	3.0 max	0.58 dBi (peak)				
1960~1990MHz	1960~1990MHz	1960~1990MHz	1960~1990MHz				
0.89 dBi (peak)	1.47 dBi (peak)	3.0 max	0.58 dBi (peak)				
2110~2170MHz	2110~2170MHz	2110~2170MHz	2110~2170MHz				
-0.97 dBi (peak)	0.71 dBi (peak)	3.0 max	1.68 dBi (peak)				

Antenna Peak Gain Table:

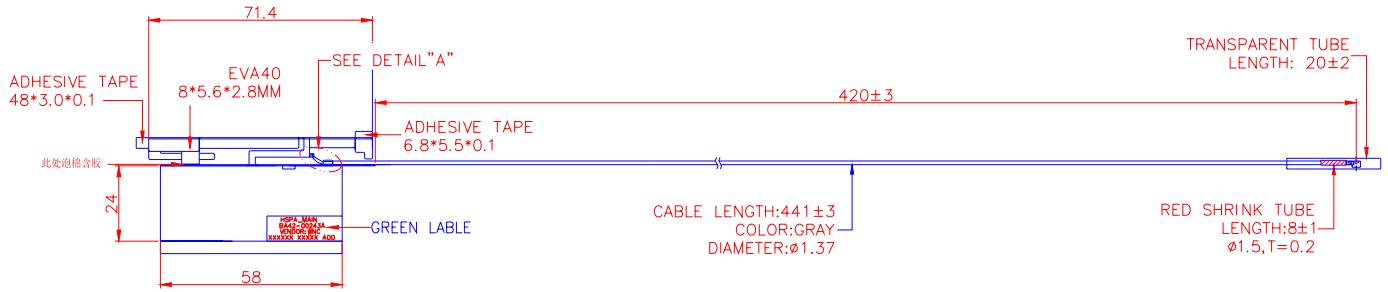
TX1 antenna Gain			
Frequency (MHz)	Max value		
	H-pol (dBi)	V pol (dBi)	Total(dBi) (H-pol+V-pol)
824	-0.07	-5.77	0.39
835	-0.05	-4.91	0.42
849	0.05	-4.04	0.47
869	-0.76	-3.86	-0.22
880	-1.6	-3.87	-0.79
894	-2.61	-3.92	-1.45
915	-4.35	-4.46	-2.66
925	-4.57	-4.9	-3.03
940	-4.09	-5.08	-2.54
960	-3.2	-4.75	-1.88
1710	-1.78	-2.3	-0.3
1750	-1.1	-2.73	0.12
1785	-0.27	-1.75	0.83
1805	-0.08	-1.23	1.04
1840	0.36	-0.91	1.44
1850	0.3	-0.81	1.46
1880	0.42	-0.24	1.48
1920	0.24	-0.03	1.34
1930	0.24	0.04	1.35
1950	0.23	-0.22	1.32
1960	0.23	-0.28	1.42
1980	0.89	-0.55	2.09
2110	-1.02	-1.67	0.69
2140	-1.46	-1.08	0.27
2170	-1.54	-0.97	0.47

- 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:

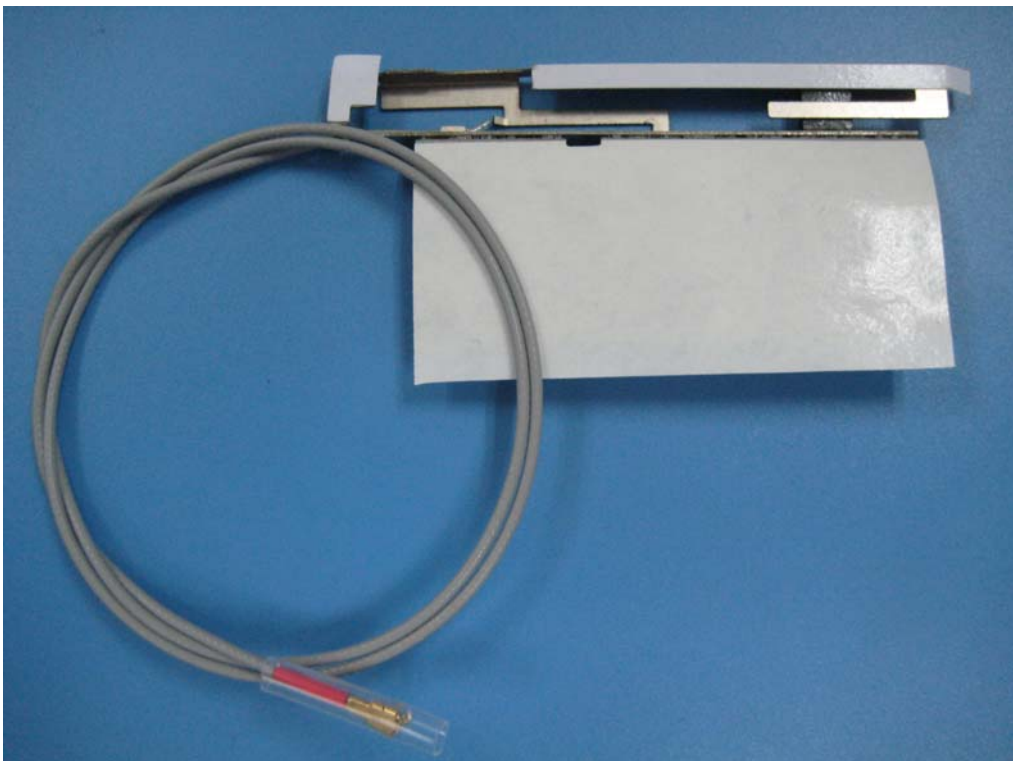


Include front view photo of antenna here.
Antenna Manufacturer: Wistron Neweb Corporation
Antenna Part Number: 81.EJV15.G07 (Tx1)



Include back view photo of antenna here.

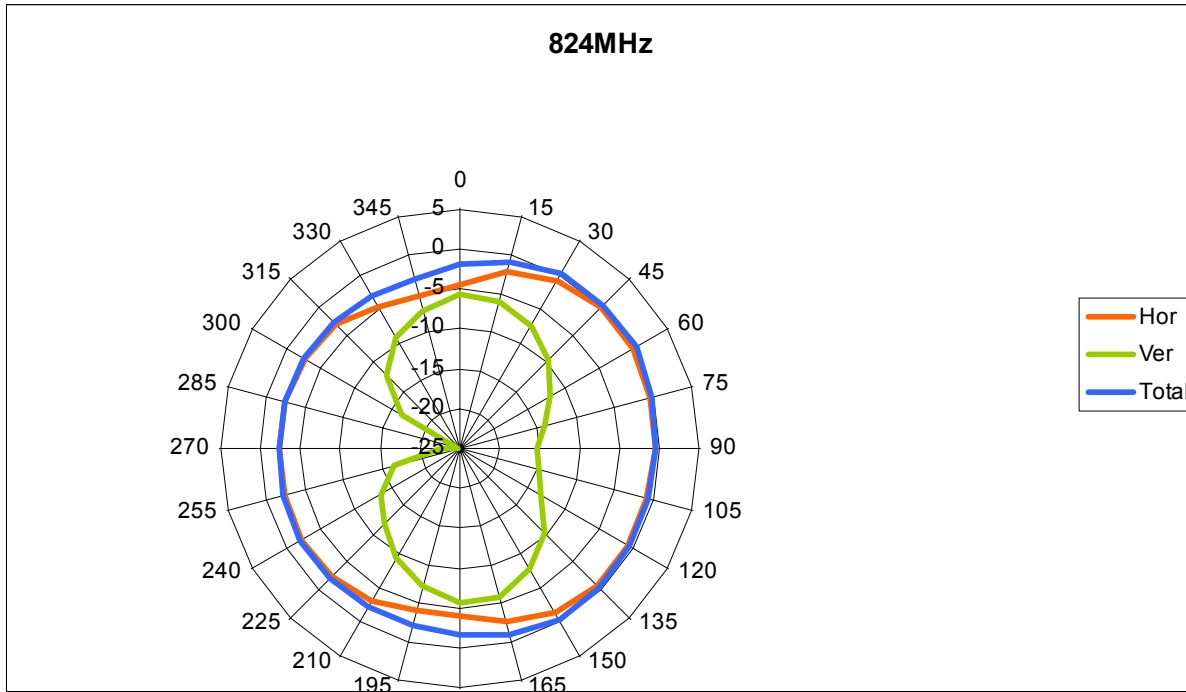
Antenna Manufacturer: Wistron Neweb Corporation
Antenna Part Number: 81.EJV15.G07 (Main)



Section 3. Radiation characteristics of antennae Loaded in Host Platform

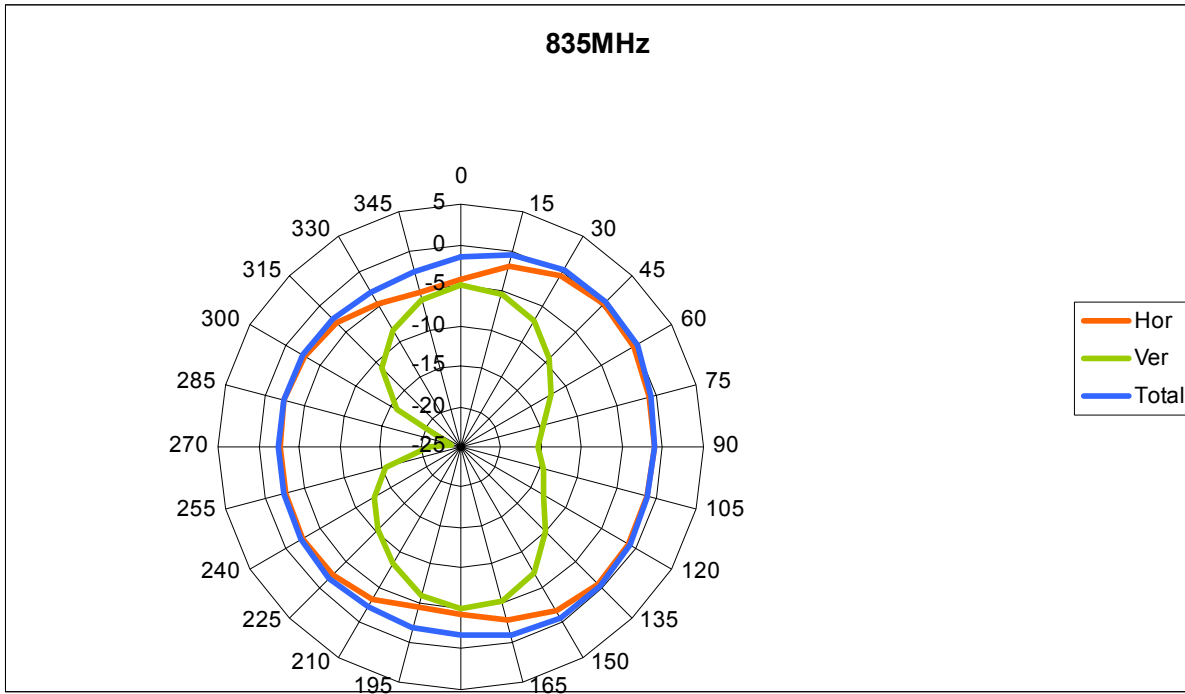
824-894MHz radiation characteristic

Tx1 antenna: 824 MHz



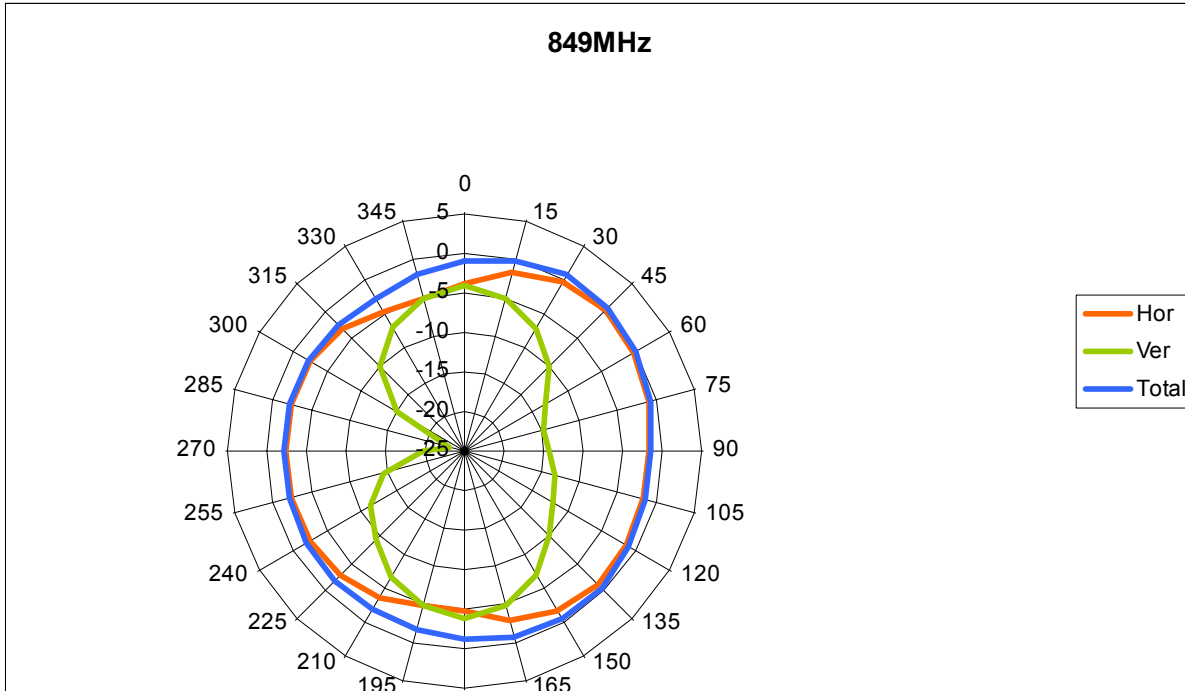
Center Frequency	824 MHz
Horizontal (dBi) peak	-0.07
Vertical (dBi) peak	-5.77

Tx1 antenna: 835 MHz



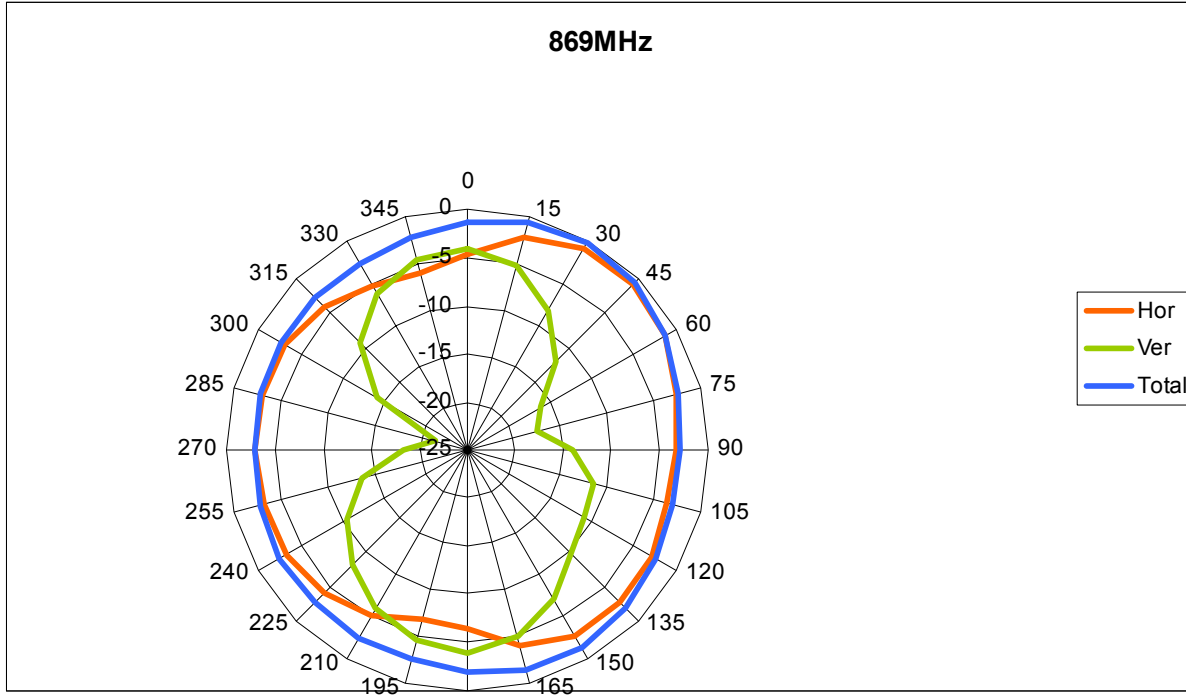
Center Frequency	835 MHz
Horizontal (dBi) peak	-0.05
Vertical (dBi) peak	-4.91

Tx1 antenna: 849MHz



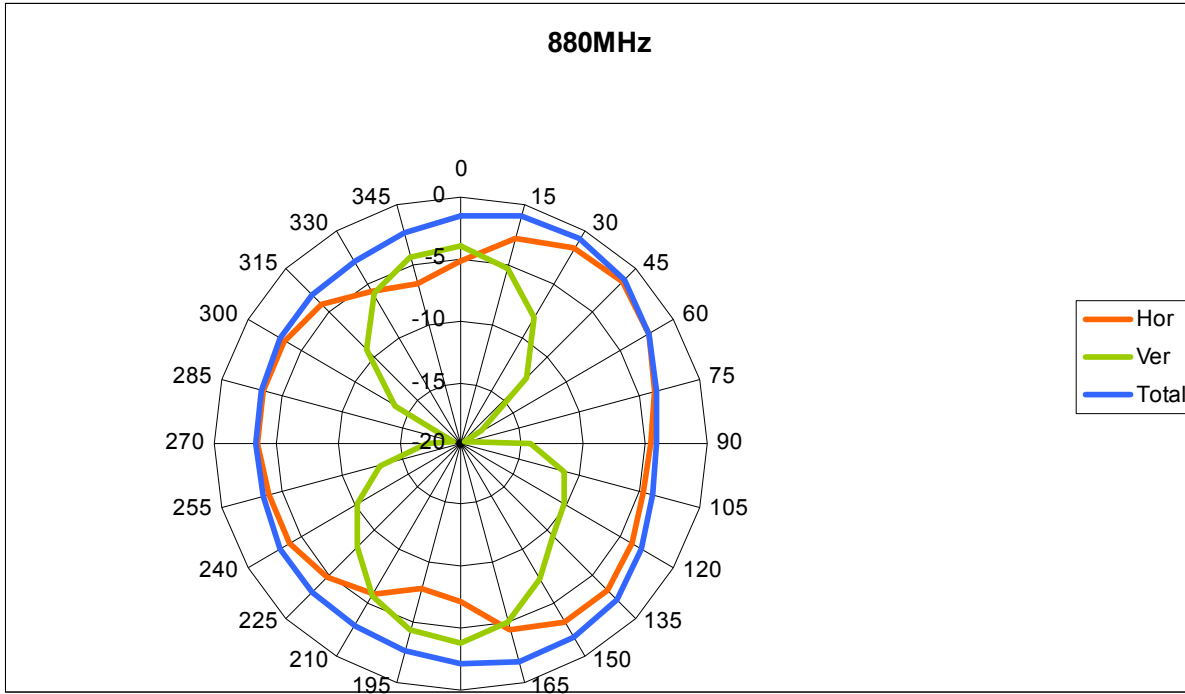
Center Frequency	849 MHz
Horizontal (dBi) peak	0.05
Vertical (dBi) peak	-04.04

Tx1 antenna: 869MHz



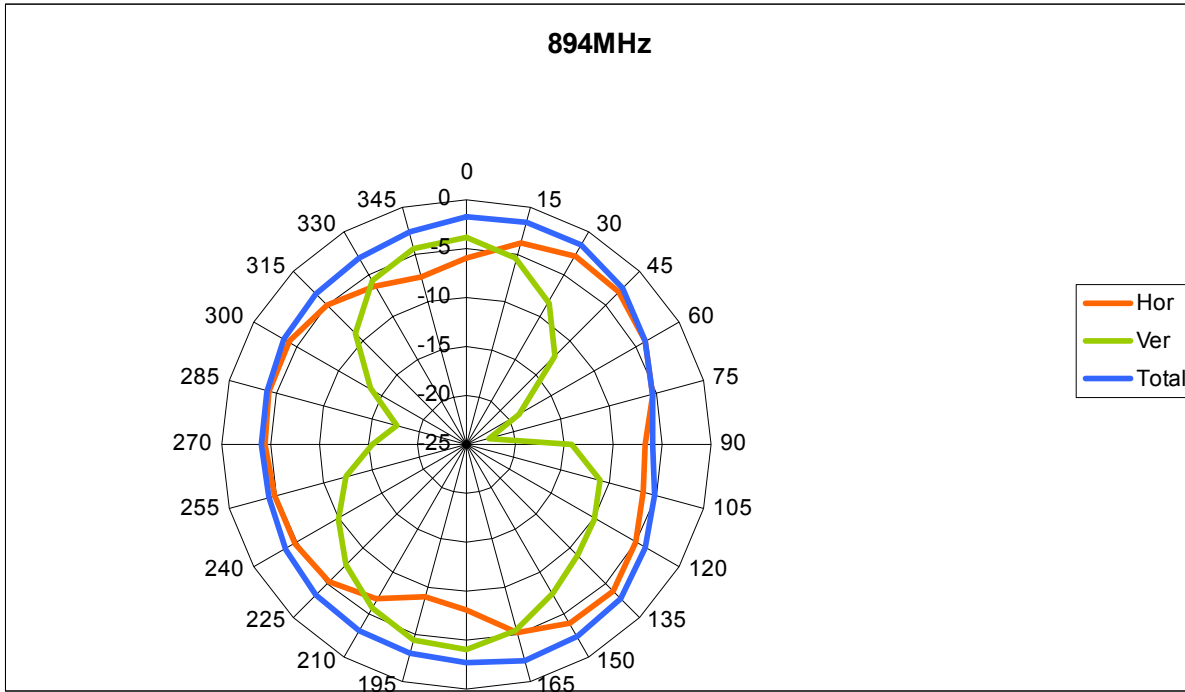
Center Frequency	869 MHz
Horizontal (dBi) peak	-0.76
Vertical (dBi) peak	-3.86

Tx1 antenna: 880MHz



Center Frequency	880 MHz
Horizontal (dBi) peak	-1.6
Vertical (dBi) peak	-3.87

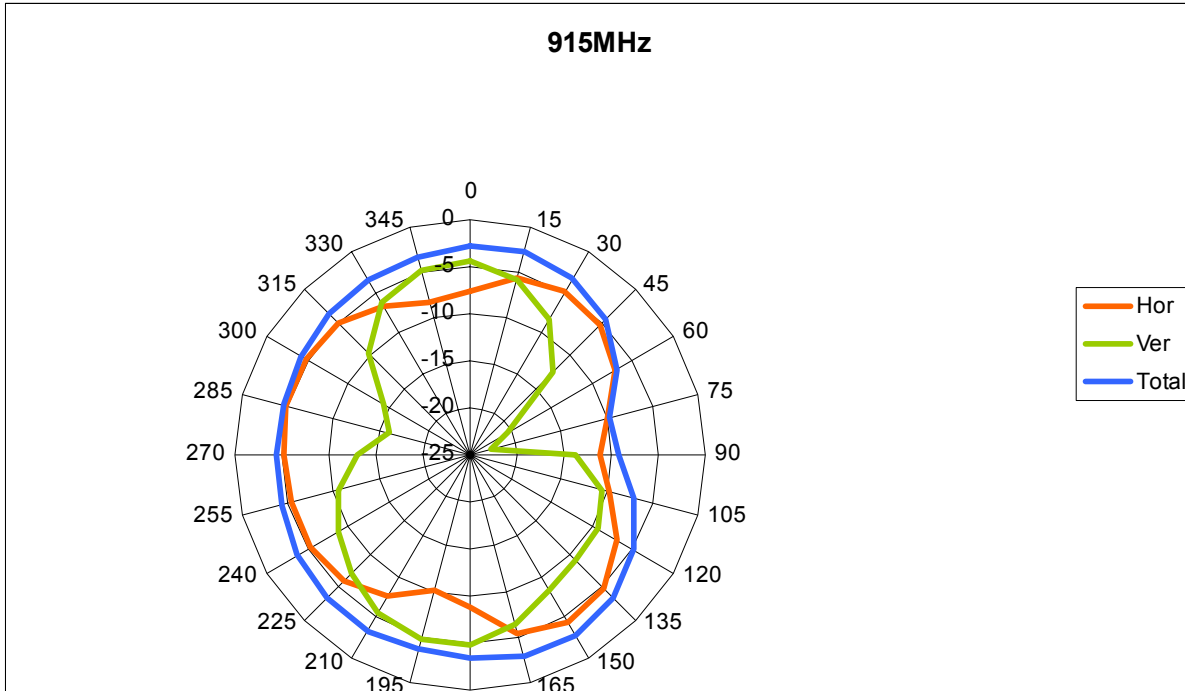
Tx1 antenna: 894MHz



Center Frequency	894 MHz
Horizontal (dBi) peak	-2.61
Vertical (dBi) peak	-3.92

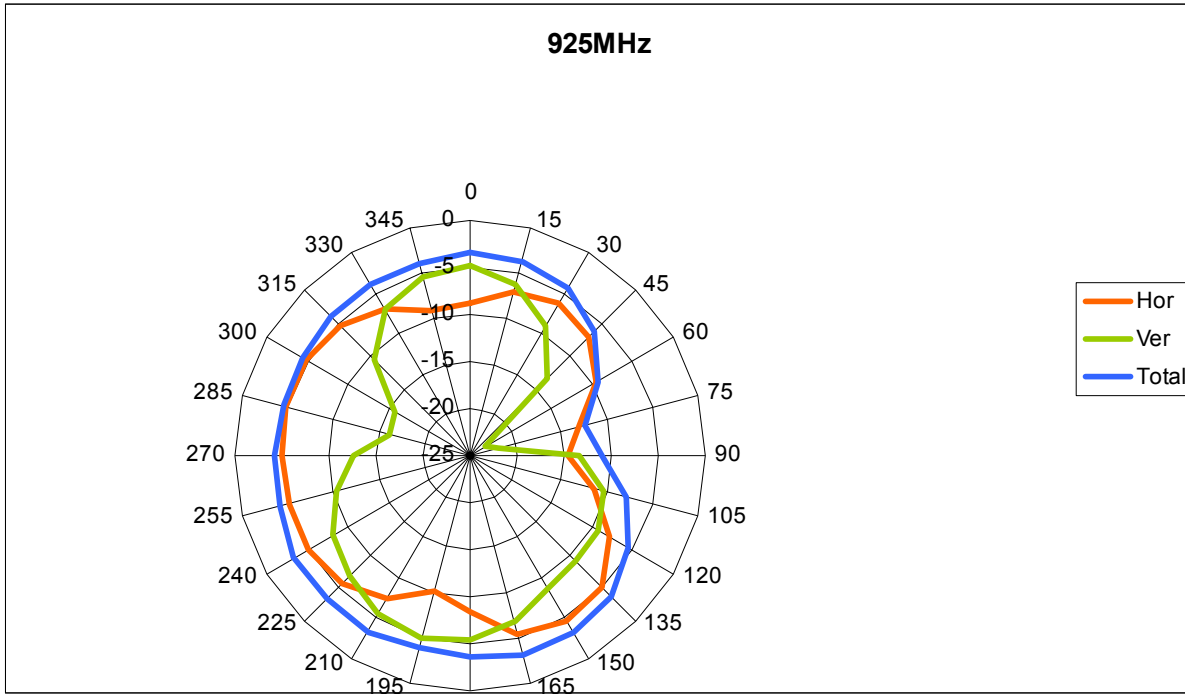
915-925 MHz radiation characteristic

Tx1 antenna: 915MHz



Center Frequency	915 MHz
Horizontal (dBi) peak	-4.35
Vertical (dBi) peak	-4.46

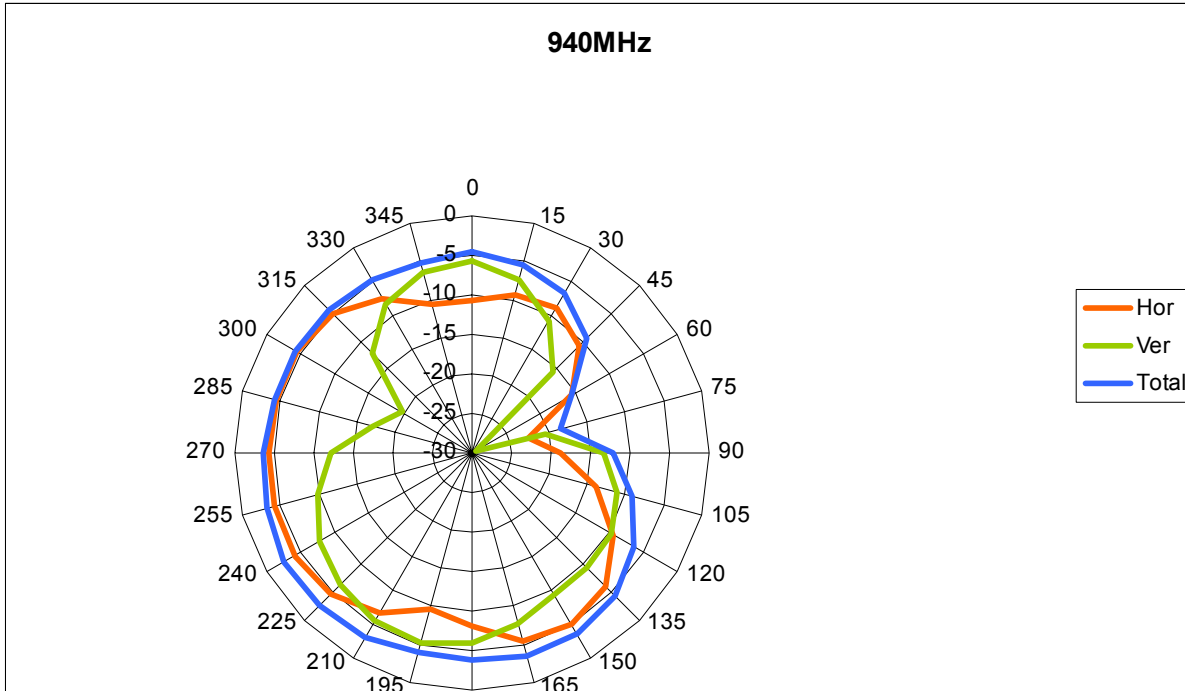
Tx1 antenna: 925MHz



Center Frequency	925 MHz
Horizontal (dBi) peak	-4.57
Vertical (dBi) peak	-4.9

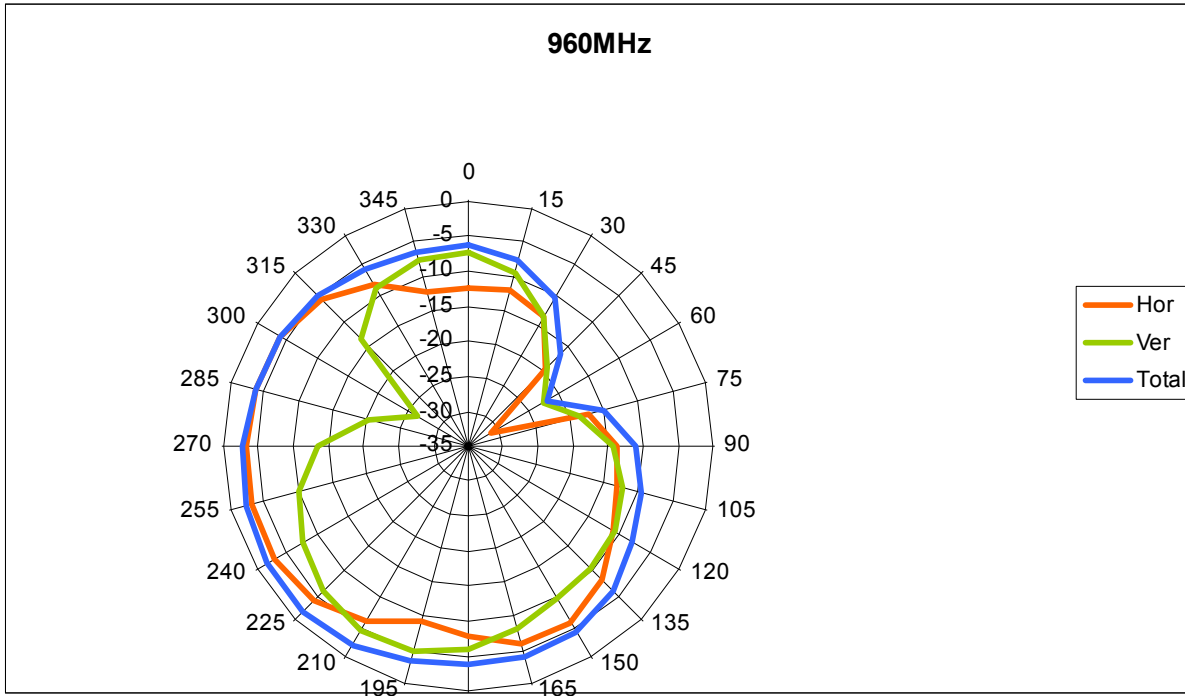
940-1710 MHz radiation characteristic

Tx1 antenna: 940MHz



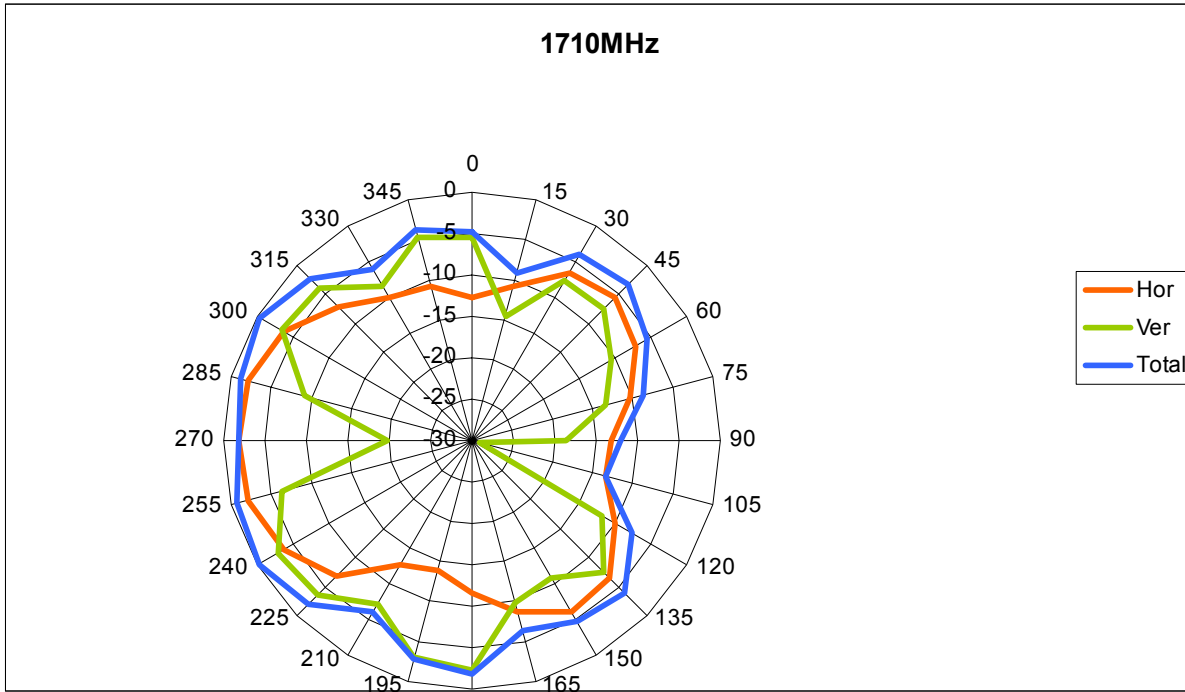
Center Frequency	940 MHz
Horizontal (dBi) peak	-4.09
Vertical (dBi) peak	-5.08

Tx1 antenna: 960MHz



Center Frequency	960 MHz
Horizontal (dBi) peak	-3.2
Vertical (dBi) peak	-4.75

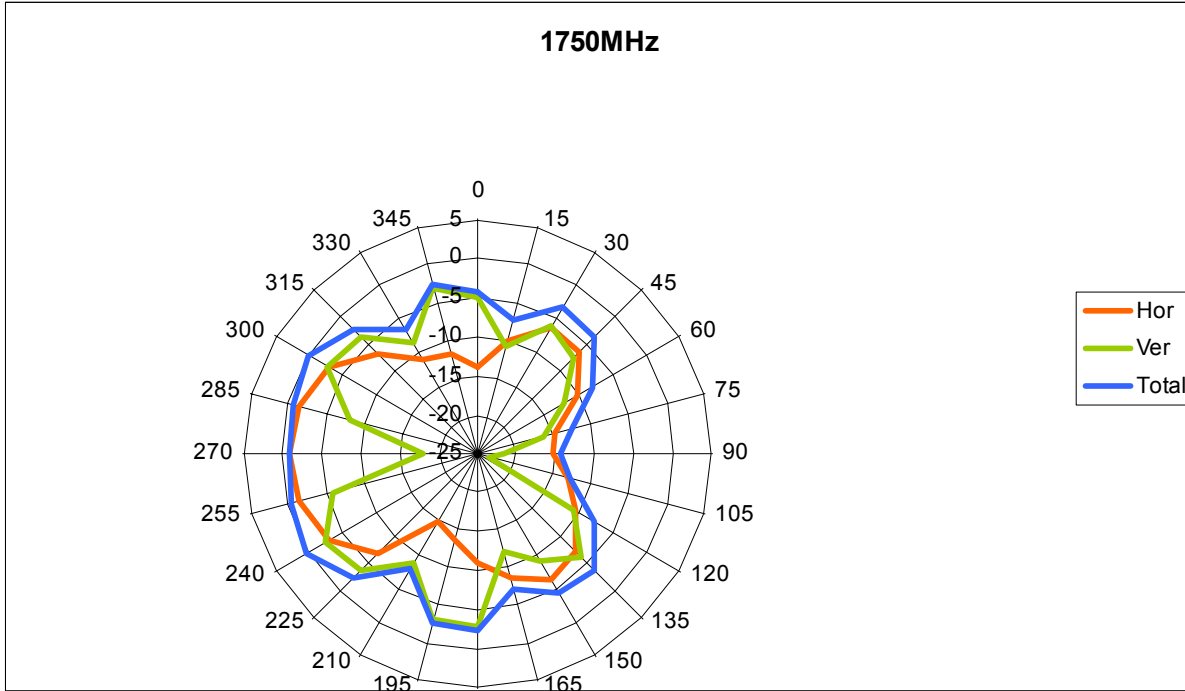
Tx1 antenna: 1710MHz



Center Frequency	1710 MHz
Horizontal (dBi) peak	-1.78
Vertical (dBi) peak	-2.3

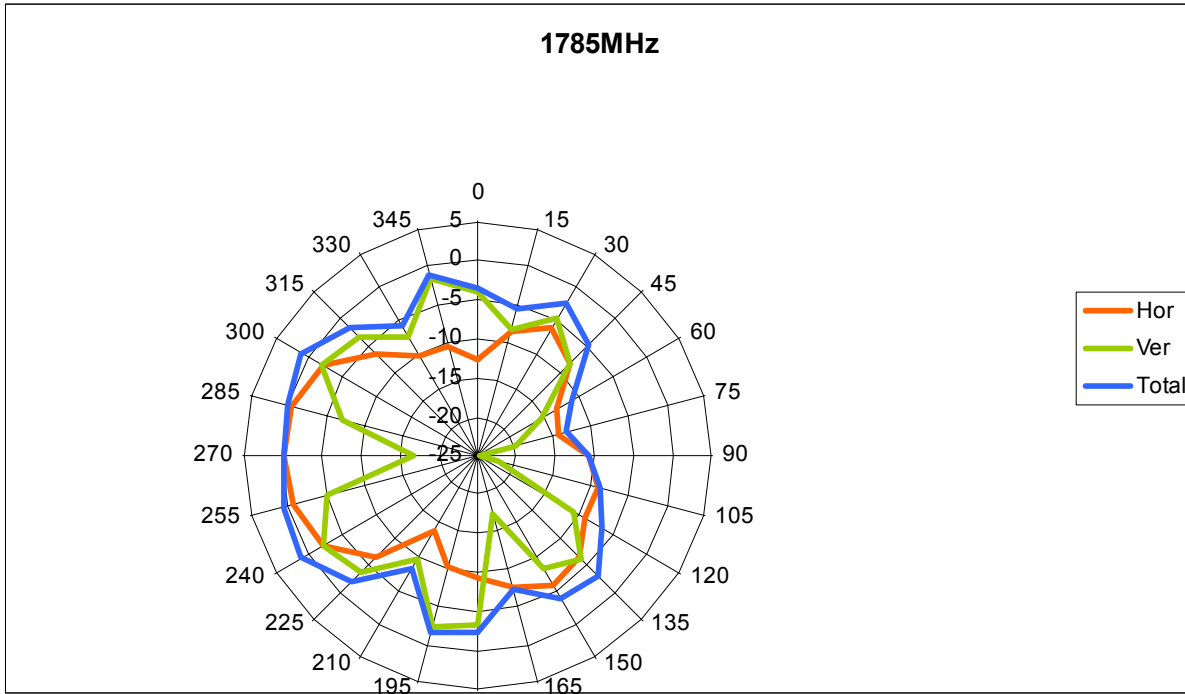
1750-1805MHz radiation characteristic

Tx1 antenna: 1750 MHz



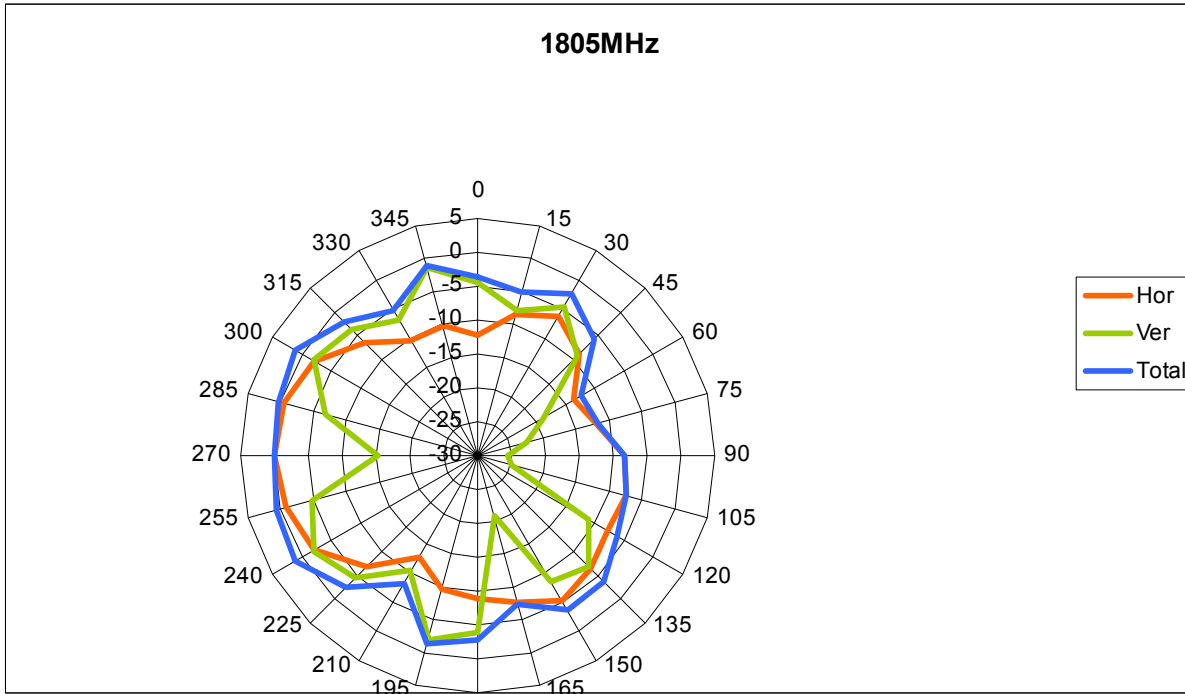
Center Frequency	1750 MHz
Horizontal (dBi) peak	-1.1
Vertical (dBi) peak	-2.73

Tx1 antenna: 1785 MHz



Center Frequency	1785 MHz
Horizontal (dBi) peak	-0.27
Vertical (dBi) peak	-1.75

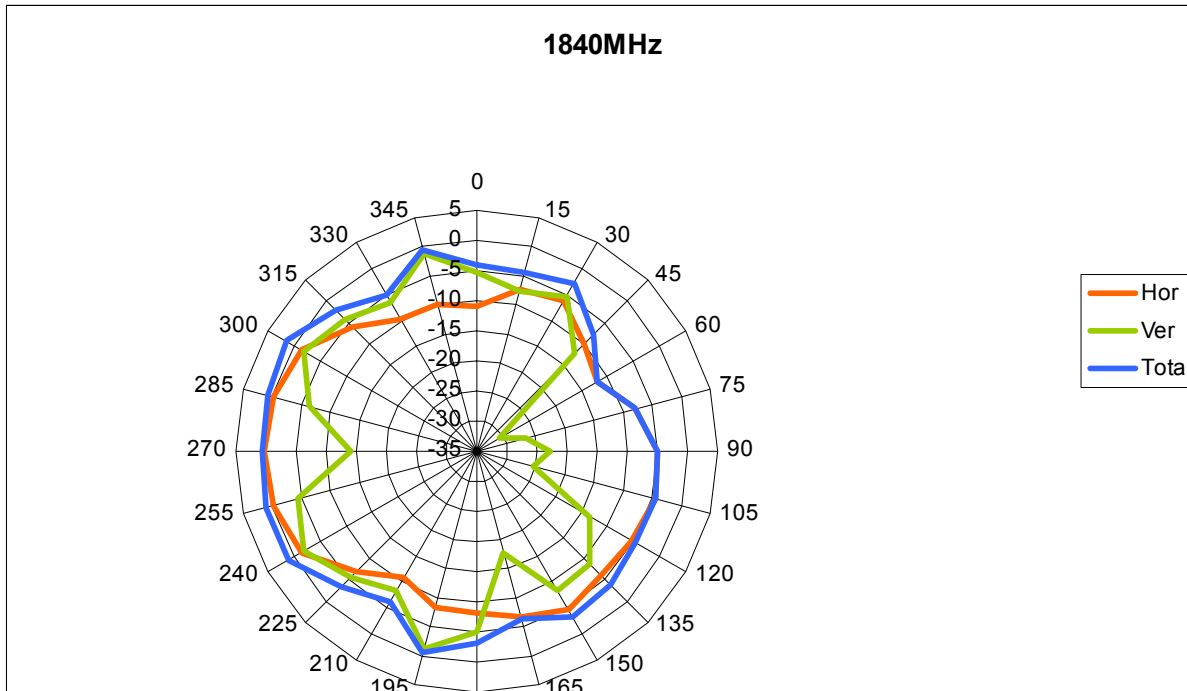
Tx1 antenna: 1805MHz



Center Frequency	1805 MHz
Horizontal (dBi) peak	-0.08
Vertical (dBi) peak	-1.23

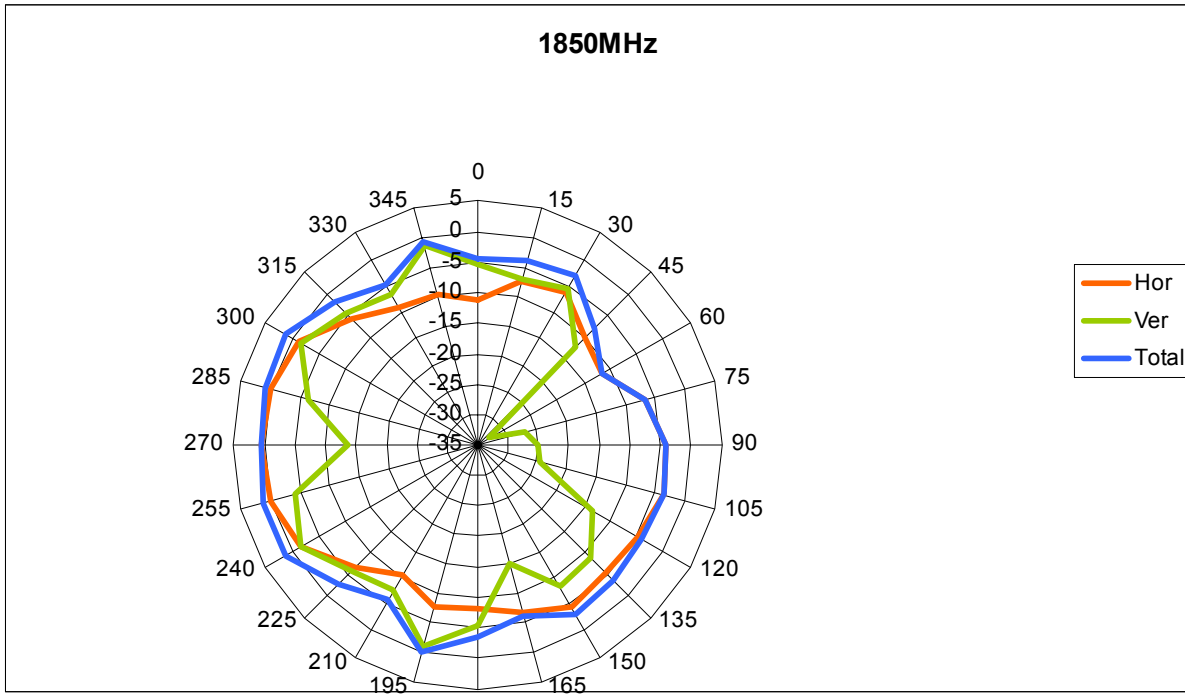
1840-1880MHz radiation characteristic

Tx1 antenna: 1840MHz



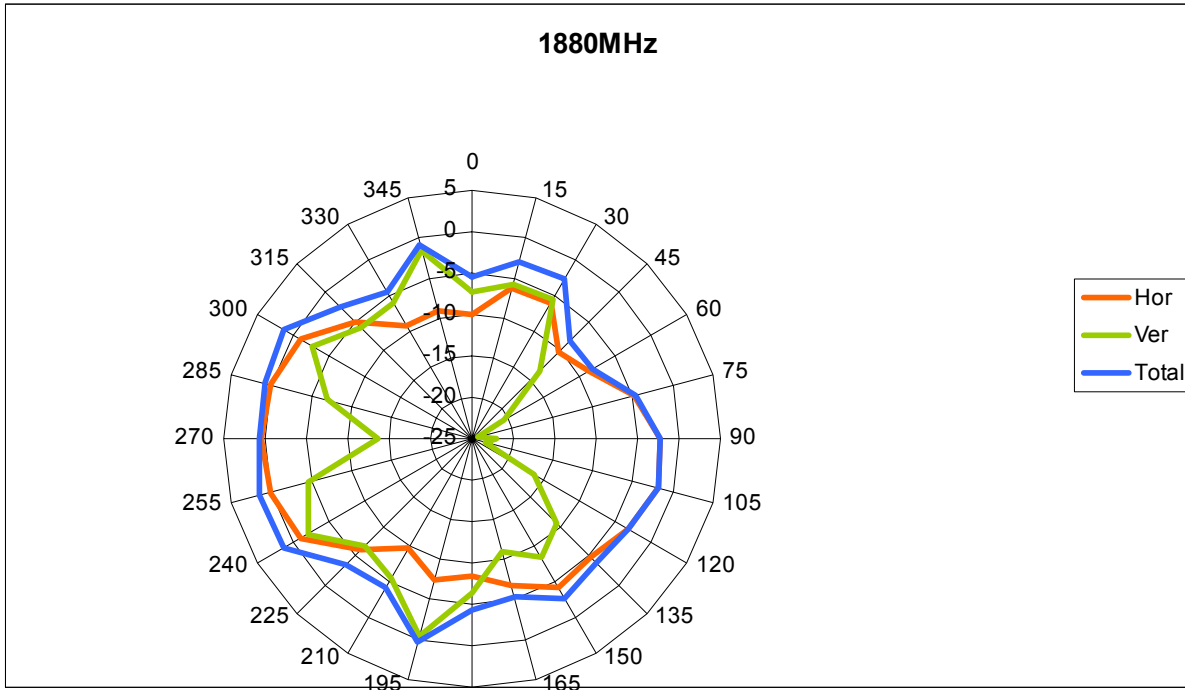
Center Frequency	1840MHz
Horizontal (dBi) peak	0.36
Vertical (dBi) peak	-0.91

Tx1 antenna: 1850MHz



Center Frequency	1850MHz
Horizontal (dBi) peak	0.3
Vertical (dBi) peak	-0.81

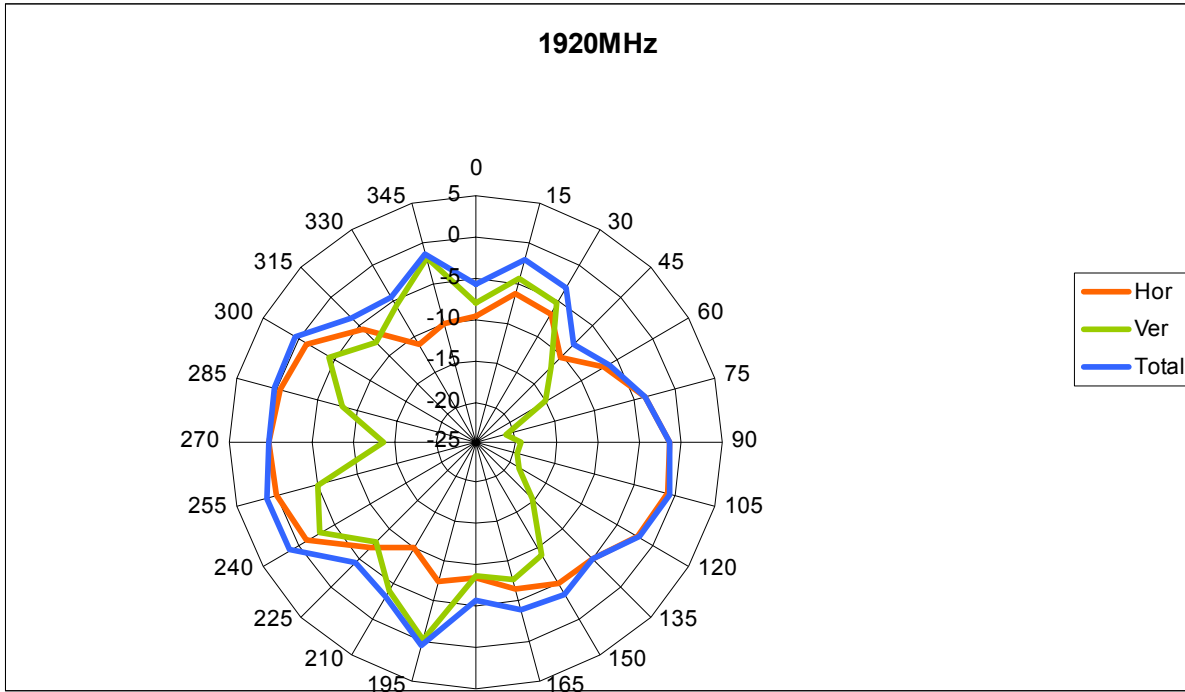
Tx1 antenna: 1880MHz



Center Frequency	1880 MHz
Horizontal (dBi) peak	0.42
Vertical (dBi) peak	-0.24

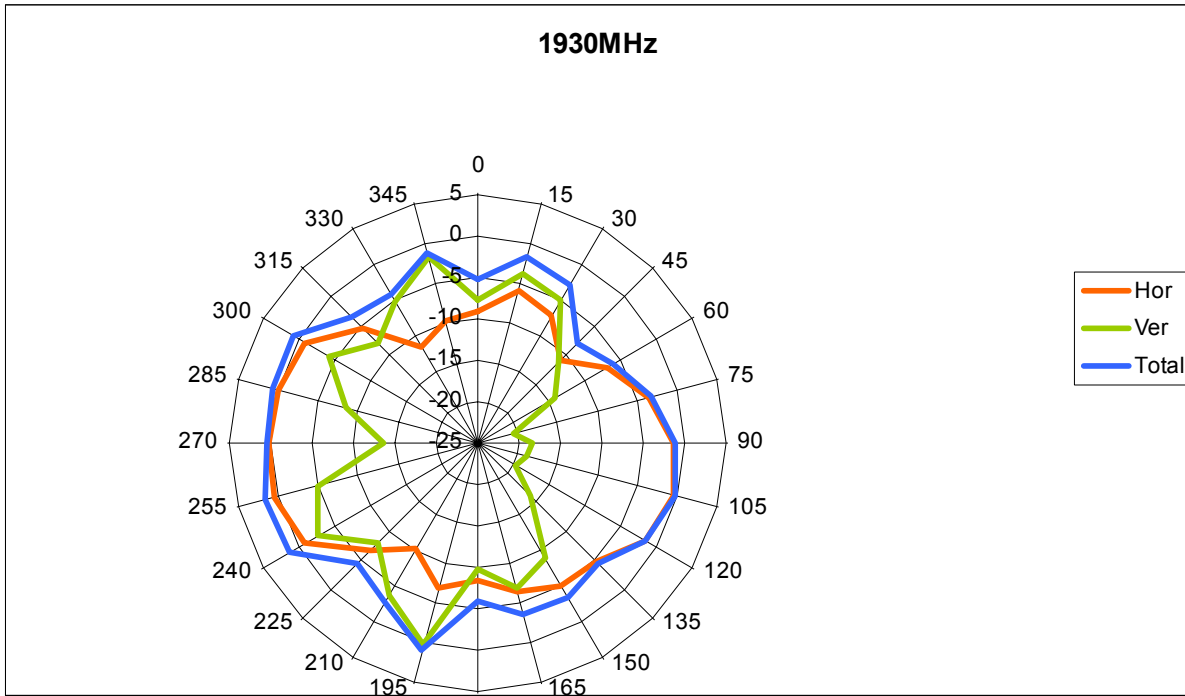
1920-1950MHz radiation characteristic

Tx1 antenna: 1920 MHz



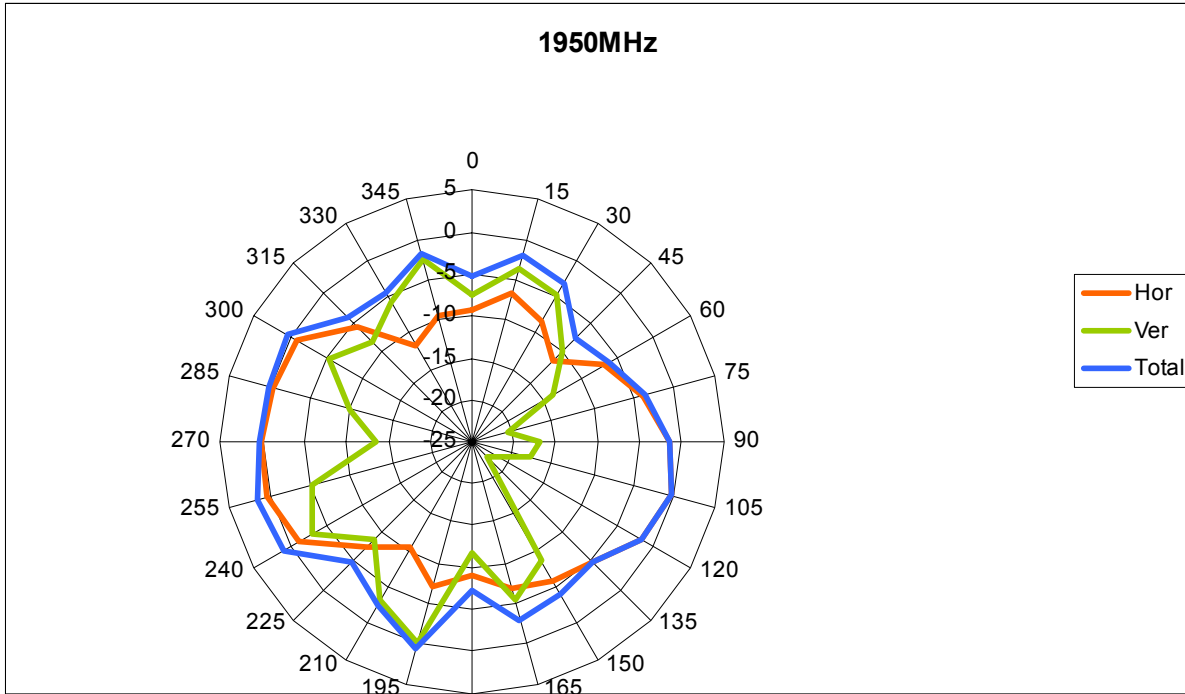
Center Frequency	1920 MHz
Horizontal (dBi) peak	0.24
Vertical (dBi) peak	-0.03

Tx1 antenna: 1930 MHz



Center Frequency	1930 MHz
Horizontal (dBi) peak	0.24
Vertical (dBi) peak	0.04

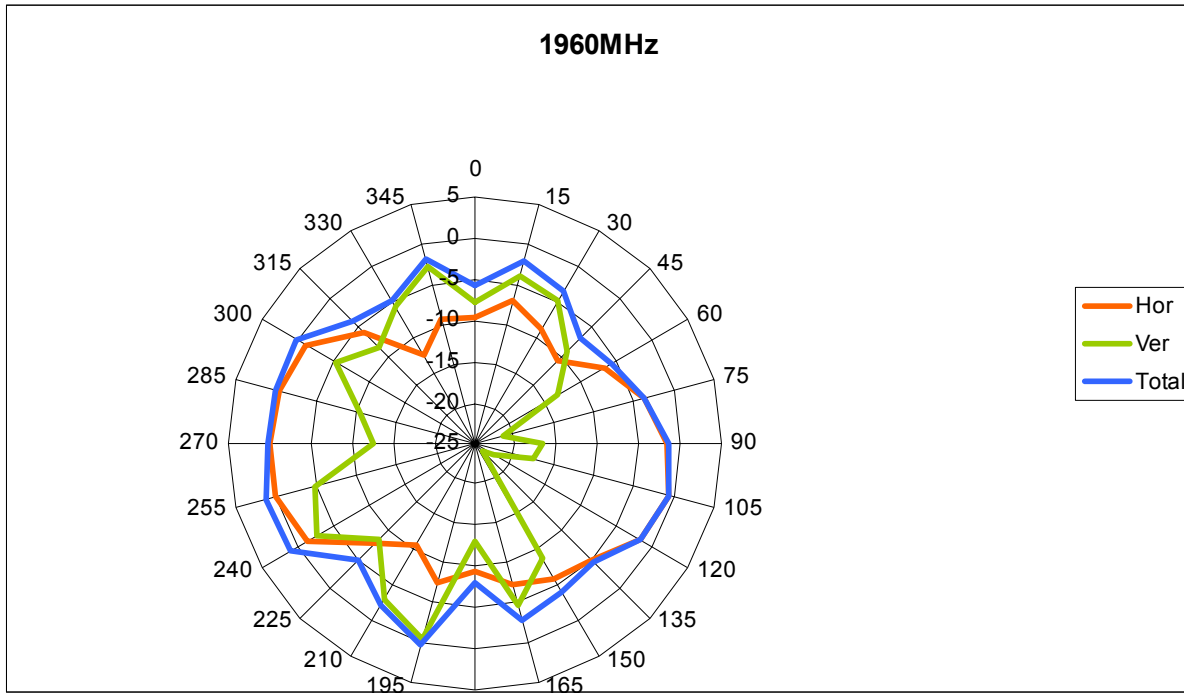
Tx1 antenna: 1950 MHz



Center Frequency	1950 MHz
Horizontal (dBi) peak	0.23
Vertical (dBi) peak	-0.22

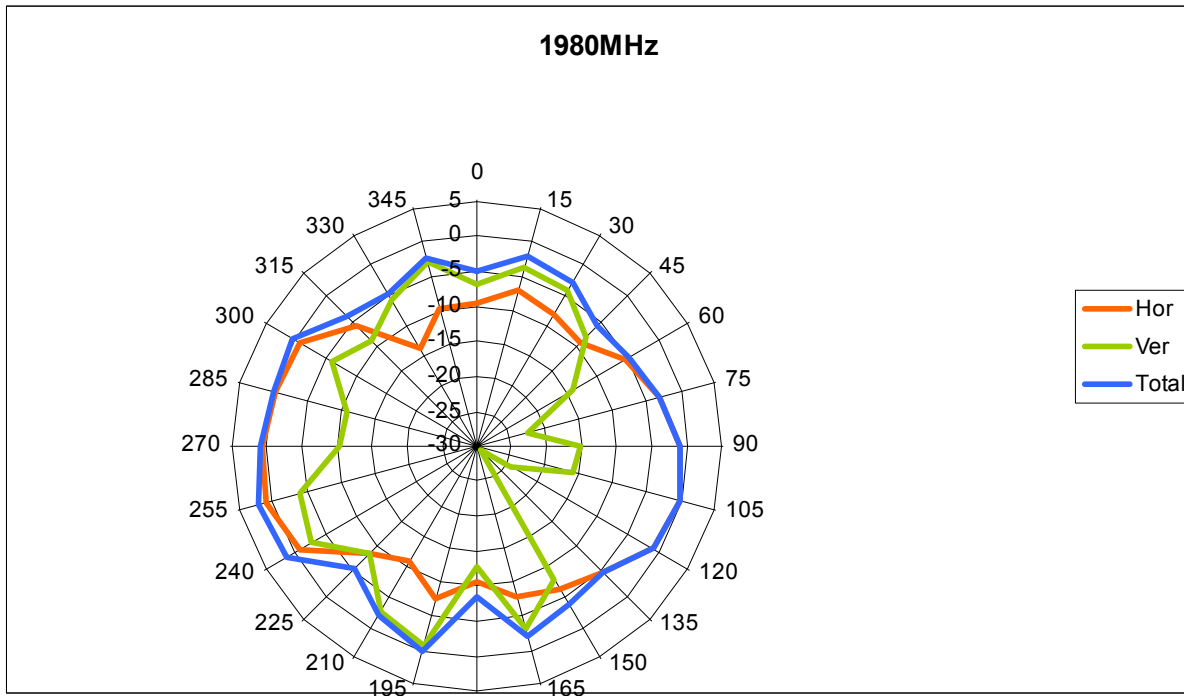
1960-1980MHz radiation characteristic

Tx1 antenna: 1960 MHz



Center Frequency	1960 MHz
Horizontal (dBi) peak	0.23
Vertical (dBi) peak	-0.28

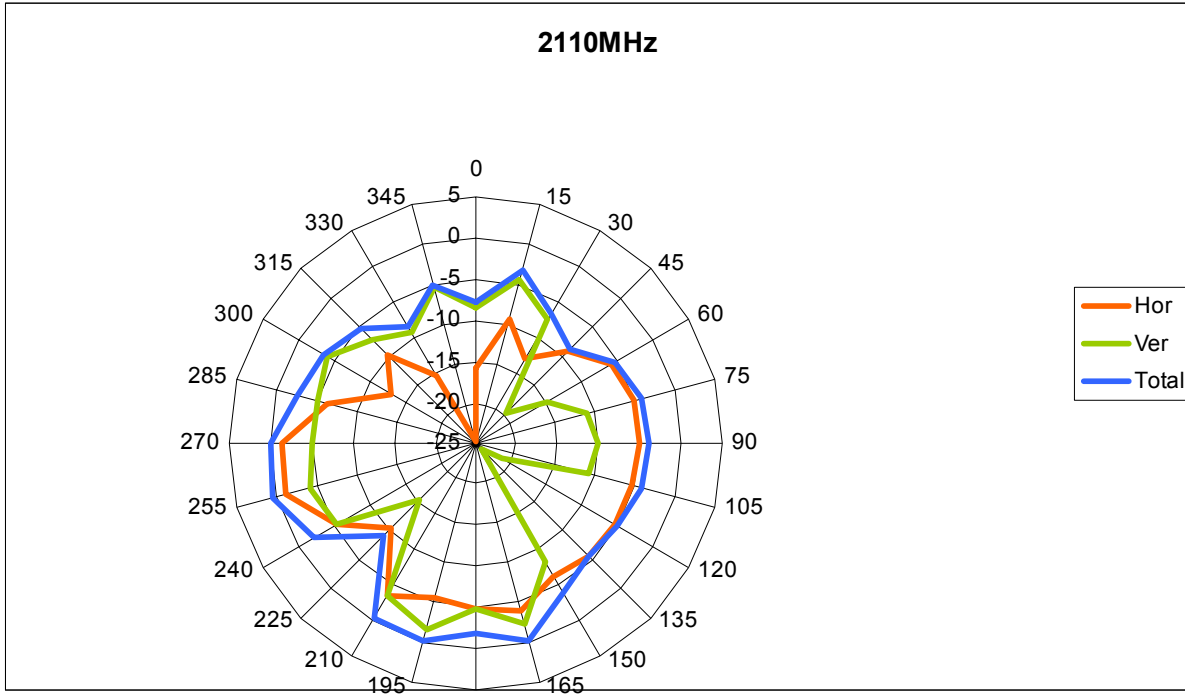
Tx1 antenna: 1980 MHz



Center Frequency	1980 MHz
Horizontal (dBi) peak	0.89
Vertical (dBi) peak	-0.55

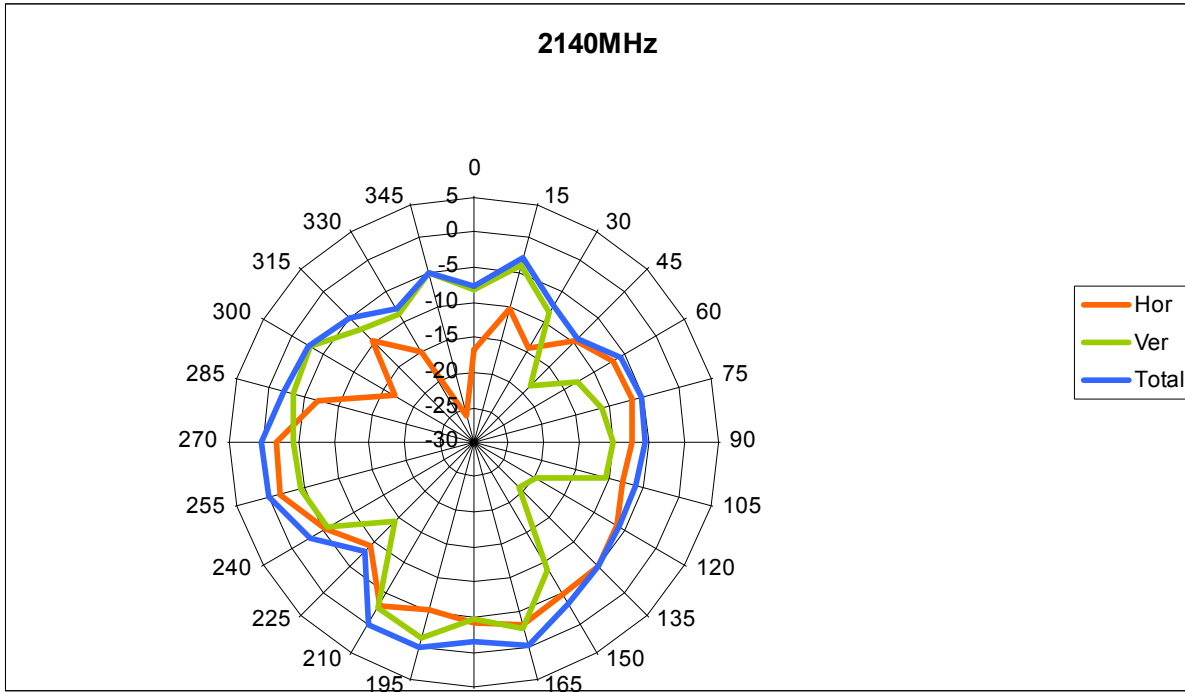
2110-2170MHz radiation characteristic

Tx1 antenna: 2110 MHz



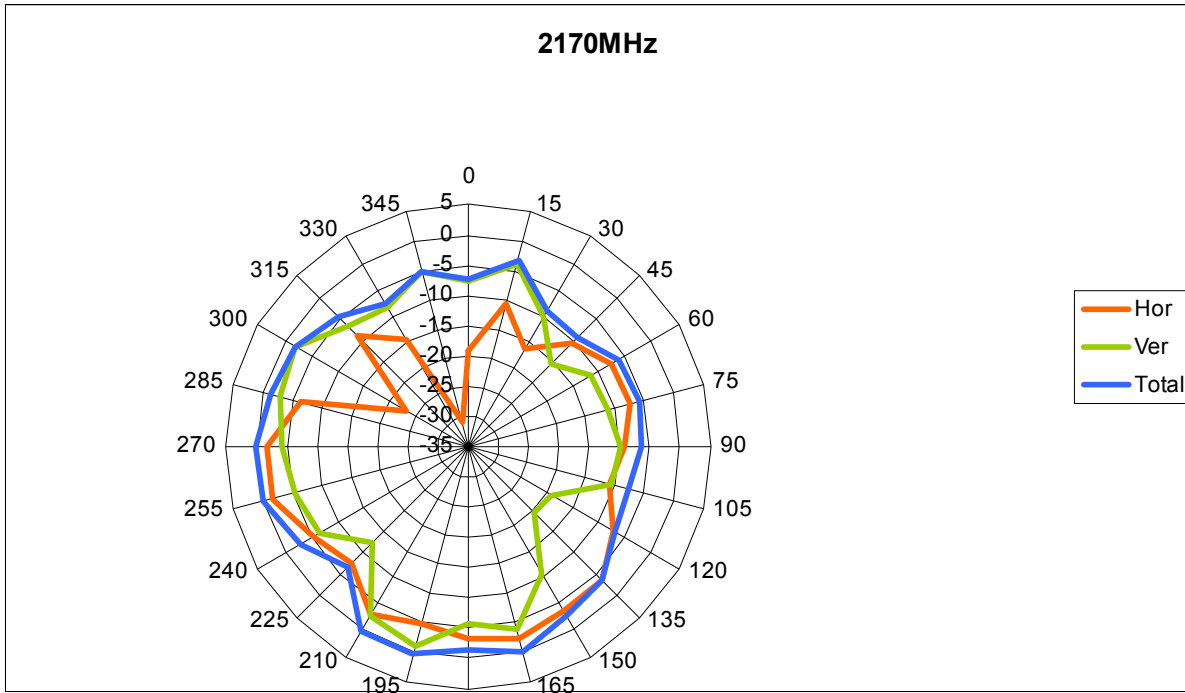
Center Frequency	2110 MHz
Horizontal (dBi) peak	-1.02
Vertical (dBi) peak	-1.67

Tx1 antenna: 2140 MHz



Center Frequency	2140 MHz
Horizontal (dBi) peak	-1.46
Vertical (dBi) peak	-1.08

Tx1 antenna: 2170 MHz



Center Frequency	2170 MHz
Horizontal (dBi) peak	-1.54
Vertical (dBi) peak	-0.97

