

# Regulatory WWAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

<b>Platform</b>	
Platform Owner	Hewlett-Packard International Pte. Ltd.
Brand Name	Hewlett-Packard International Pte. Ltd.
Model Name	(PA Cover) Blade & Ripley
ODM	Compal Electronica,INC.
Target Launch Date	(2008/ 06/ 13)
<b>Antenna</b>	
Brand Name	<b>Wistron NeWeb Corp.</b>
Part Number	Main Antenna: <b>DC33000E800</b>
	Aux Antenna: <b>DC33000E800 (Rx only)</b>
<b>Module</b>	
With WWAN Module	MC5720
(Check Box)	MC8775
	MC8765

## 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	Main antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Main and AUX antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Main antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of Main and AUX 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	Required (Photos)	Required (Photos)
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 (WWAN, 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

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)
<b>Main Antenna</b> WNC P/N: (81.EGK15.005) Customer P/N (DC33000E800)	Wistron NeWeb corp.	PIFA	P/N: 60.EGK01.008  50 ohm Coaxial. length: 500 mm diameter: 1.37 mm Connector: IPEX	824-849MHz	824-849MHz	824-849MHz	824-849MHz
				-1.34 dBi (peak)	-0.64 dBi (peak)	3.0 max	0.70 dBi (peak)
				890-915MHz	890-915MHz	890-915MHz	890-915MHz
				-0.80 dBi (peak)	-0.08 dBi (peak)	3.0 max	0.73 dBi (peak)
				1710-1785MHz	1710-1785MHz	1710-1785MHz	1710-1785MHz
2.49 dBi (peak)	3.54 dBi (peak)	2.0 max	1.05 dBi (peak)				
1850-1910MHz	1850-1910MHz	1850-1910MHz	1850-1910MHz				
3.10 dBi (peak)	4.17 dBi (peak)	2.0 max	1.08 dBi (peak)				
1920-1980MHz	1920-1980MHz	1920-1980MHz	1920-1980MHz				
3.06 dBi (peak)	4.14 dBi (peak)	2.0 max	1.08 dBi (peak)				
<b>Aux Antenna</b> WNC P/N: (81.EGK15.005) Customer P/N (DC33000E800)	Wistron NeWeb corp.	PIFA	P/N:60.EGK01.008  50 ohm Coaxial. length: 730 mm diameter: 1.37 mm Connector: IPEX	824-849MHz	824-849MHz	824-849MHz	824-849MHz
				-4.39 dBi (peak)	-3.46 dBi (peak)	3.0 max	0.93 dBi (peak)
				890-915MHz	890-915MHz	890-915MHz	890-915MHz
				-0.53 dBi (peak)	0.44 dBi (peak)	3.0 max	0.97 dBi (peak)
				1710-1785MHz	1710-1785MHz	1710-1785MHz	1710-1785MHz
0.02 dBi (peak)	1.46 dBi (peak)	2.0 max	1.44 dBi (peak)				
1850-1910MHz	1850-1910MHz	1850-1910MHz	1850-1910MHz				
0.78 dBi (peak)	2.25 dBi (peak)	2.0 max	1.48 dBi (peak)				
1920-1980MHz	1920-1980MHz	1920-1980MHz	1920-1980MHz				
1.30 dBi (peak)	2.78 dBi (peak)	2.0 max	1.48 dBi (peak)				

Antenna Peak Gain Table:

Frequency (MHz)	Main antenna		AUX Antenna(Rx only)	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
824.2	-1.92	-2.22	-8.38	-4.39
836.6	-1.35	-1.91	-5.99	-4.93
848.8	-1.34	-2.75	-4.75	-4.69
880.2	-1.14	-2.42	-2.08	-3.99
897.6	-1.21	-2.28	-0.68	-2.90
914.8	-0.80	-2.02	-0.53	-3.47
1710.2	1.64	-3.15	-0.31	-4.69
1747.6	2.38	-1.91	-0.48	-4.07
1784.8	2.49	-1.94	0.02	-2.97
1850.2	2.58	-1.32	0.50	-3.32
1880	3.10	-0.57	0.27	-2.57
1909	3.09	-0.12	0.78	-2.33
1922.6	3.06	-0.08	0.86	-2.43
1950	2.43	-0.90	0.75	-1.27
1997.4	2.48	-0.74	1.30	-2.15

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

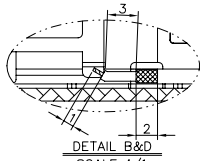
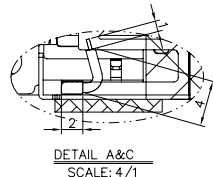
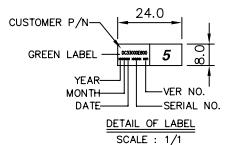
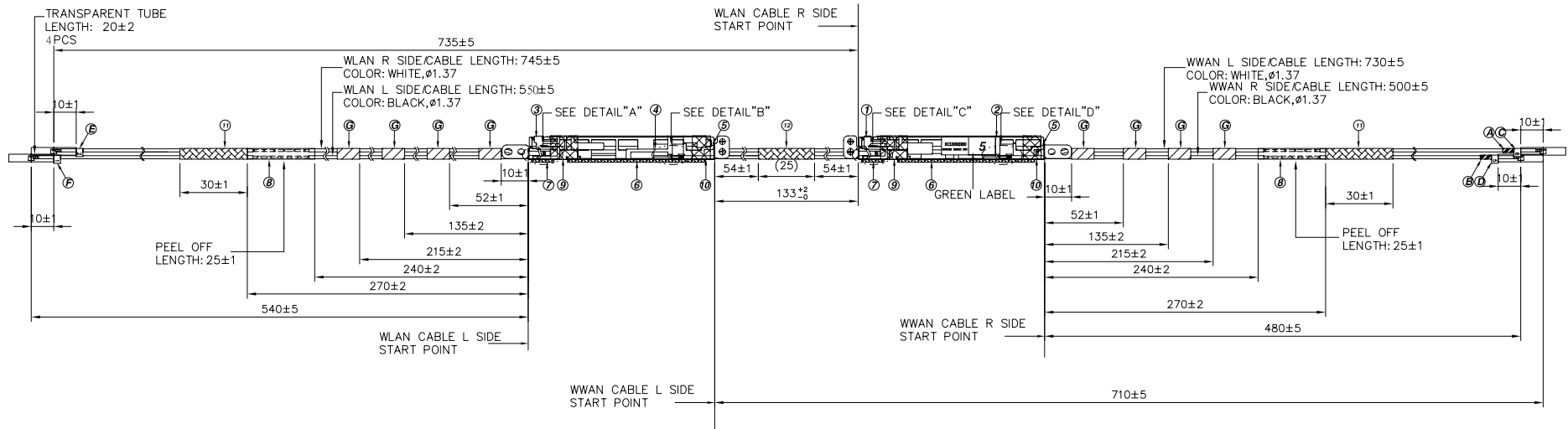
## Section 2. Dimensioned Photos or Drawings of Antennas

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

Main Antenna Dimensioned Drawing:

PART NUMBER BLOCK		PART NUMBER BLOCK	
PART NUMBER	REV	PART NUMBER	REV
81.EGK15.005	J	DC33000E800	X01

WNC PROPRIETARY				
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	J	MODIFY PEEL OFF DIM	02/27/08	QUECK LO



- NOTES :
- Ⓐ RED SHRINK TUBE,LENGTH: 5±1,φ1.5,超薄
  - Ⓑ BLUE SHRINK TUBE,LENGTH: 5±1,φ1.5,超薄
  - Ⓒ GREEN LABEL 12\*4對貼
  - Ⓓ GREEN LABEL 12\*4對貼
  - Ⓔ GREEN LABEL 12\*4對貼
  - Ⓕ GREEN LABEL 12\*4對貼
  - Ⓖ BLACK SHRINK TUBE,LENGTH: 10±1,φ2.5,超薄\*8PCS

12	3T-EGKC1T5-011	TAPE,ACETATE,MIDDLE,EGK-C2	EA	1
11	3T-EGKC1T3-011	TAPE,ACETATE,EGK-C1	EA	2
10	3T-EGKC1T2-011	TAPE,MYLAR_WWAN,EGK-C1	EA	2
9	3T-EGKC1T1-011	TAPE,MYLAR_WLAN,EGK-C1	EA	2
8	3T-EGKC1E2-011	TAPE,FABRIC,PA BEZEL,EGK-C1	EA	2
7	3G-EGKC1B2-011	GASKET,WLAN,B380F,EGK-C1	EA	2
6	3G-EGKC1B1-011	GASKET,WWAN,B380F,EGK-C1	EA	2
5	3H-EGKC1P3-011	HOLDER,PA BEZEL,EGK-C1	EA	2
4	3A-EGKC1C4-001	ANTENNA,WWAN_AUX_LEFT,EGK-C2	EA	1
3	3A-EGKC1C3-001	ANTENNA,WLAN_AUX_LEFT,EGK-C2	EA	1
2	3A-EGKC1C2-001	ANTENNA,WWAN_MAIN_RIGHT,EGK-C2	EA	1
1	3A-EGKC1C1-001	ANTENNA,WLAN_MAIN_RIGHT,EGK-C2	EA	1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM AND TOLERANCES ARE:		DRAWN		CH WU		02/27/08		SIZE		DWG NO.	
INTEGRAL DIMENSIONS ± 0.2		ENGR		IRENE CHIU		02/27/08		A1		81.EGK15.005	
1 PLACE DECIMAL ± 0.1		APVD		HEN AN CHEN		02/27/08		SCALE		1/1	
2 PLACE DECIMALS ± 0.05		MATERIAL: NA		FINISH: NA		THIRD ANGLE PROJECTION		APPLICATION		SHEET 1 OF 2	
DWG TITLE		GLADIATOR PA COVER		WWAN+WLAN COMBO MAIN+_AUX, EGK-C2		REVISIONS		DATE		APPROVED	

**Main Antenna Photo:**

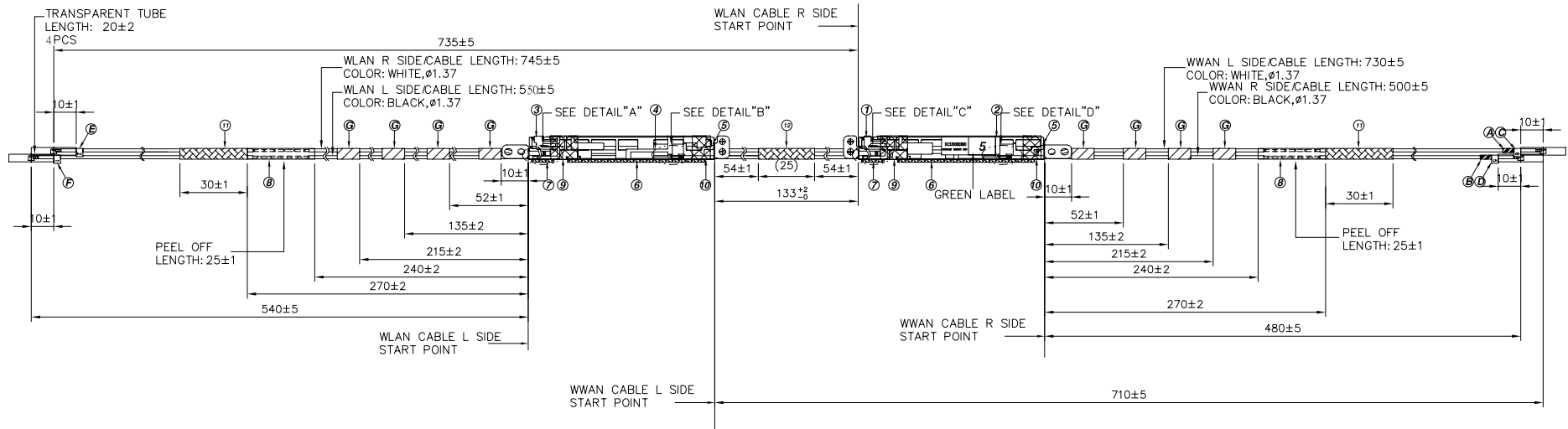


**Include a dimensioned photo and dimensioned drawing of Rx antenna here.**

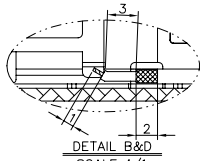
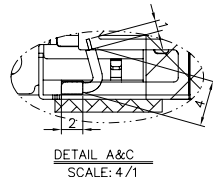
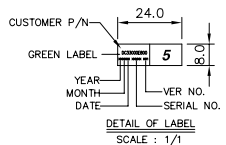
**AUX Antenna Dimensioned Drawing:**

PART NUMBER BLOCK		PART NUMBER BLOCK	
PART NUMBER	REV	PART NUMBER	REV
81.EGK15.005	J	DC33000E800	X01

WNC PROPRIETARY				
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	J	MODIFY PEEL OFF DIM	02/27/08	QUECK LO



- NOTES :
- Ⓐ RED SHRINK TUBE, LENGTH: 5±1, Ø1.5, 超薄
  - Ⓑ BLUE SHRINK TUBE, LENGTH: 5±1, Ø1.5, 超薄
  - Ⓒ GREEN LABEL 12\*4 對貼
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  - Ⓕ GREEN LABEL 12\*4 對貼
  - Ⓖ BLACK SHRINK TUBE, LENGTH: 10±1, Ø2.5, 超薄\*8PCS



12	3T-EGKC1T5-011	TAPE, ACETATE, MIDDLE, EGK-C2	EA	1
11	3T-EGKC1T3-011	TAPE, ACETATE, EGK-C1	EA	2
10	3T-EGKC1T2-011	TAPE, MYLAR, WWAN, EGK-C1	EA	2
9	3T-EGKC1T1-011	TAPE, MYLAR, WLAN, EGK-C1	EA	2
8	3T-EGKC1E2-011	TAPE, FABRIC, PA BEZEL, EGK-C1	EA	2
7	3G-EGKC1B2-011	GASKET, WLAN, B380F, EGK-C1	EA	2
6	3G-EGKC1B1-011	GASKET, WWAN, B380F, EGK-C1	EA	2
5	3H-EGKC1P3-011	HOLDER, PA BEZEL, EGK-C1	EA	2
4	3A-EGKC1C4-001	ANTENNA, WWAN_AUX_LEFT, EGK-C2	EA	1
3	3A-EGKC1C3-001	ANTENNA, WLAN_AUX_LEFT, EGK-C2	EA	1
2	3A-EGKC1C2-001	ANTENNA, WWAN_MAIN_RIGHT, EGK-C2	EA	1
1	3A-EGKC1C1-001	ANTENNA, WLAN_MAIN_RIGHT, EGK-C2	EA	1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM AND TOLERANCES ARE:		DRAWN		CH WU	02/27/08	SIZE	DWG NO.	REV
INTEGRAL DIMENSIONS	± 0.2	1 PLACE DECIMAL	± 0.1	ENGR	IRENE CHIU	02/27/08	A1	J
2 PLACE DECIMALS	± 0.05	ANGULAR DIMENSIONS	± 1°	APVD	HEN AN CHEN	02/27/08	SCALE	1/1
MATERIAL: NA		HOLES UNDER Ø5.00	± 0.05				SHEET	1 OF 2
FINISH: NA								
THIRD ANGLE PROJECTION								
APPLICATION								



DWG TITLE: GLADIATOR PA COVER WWAN+WLAN COMBO MAIN+ AUX, EGK-C2

81.EGK15.005

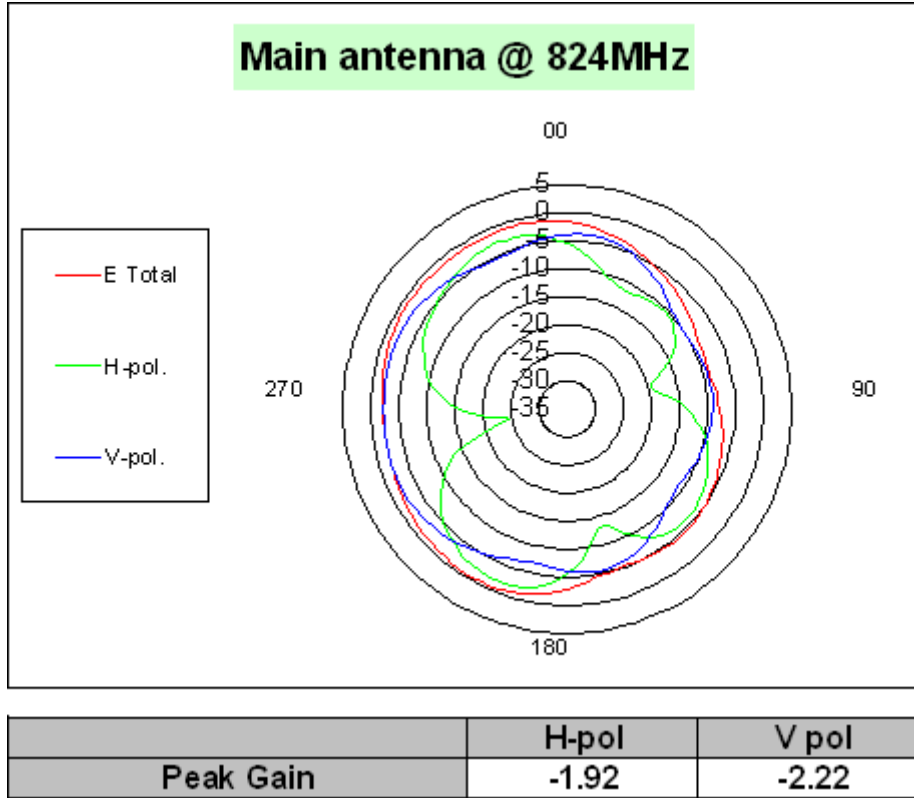
**AUX Antenna Photo:**



## Section 3. Radiation characteristics of antennae Loaded in Host Platform

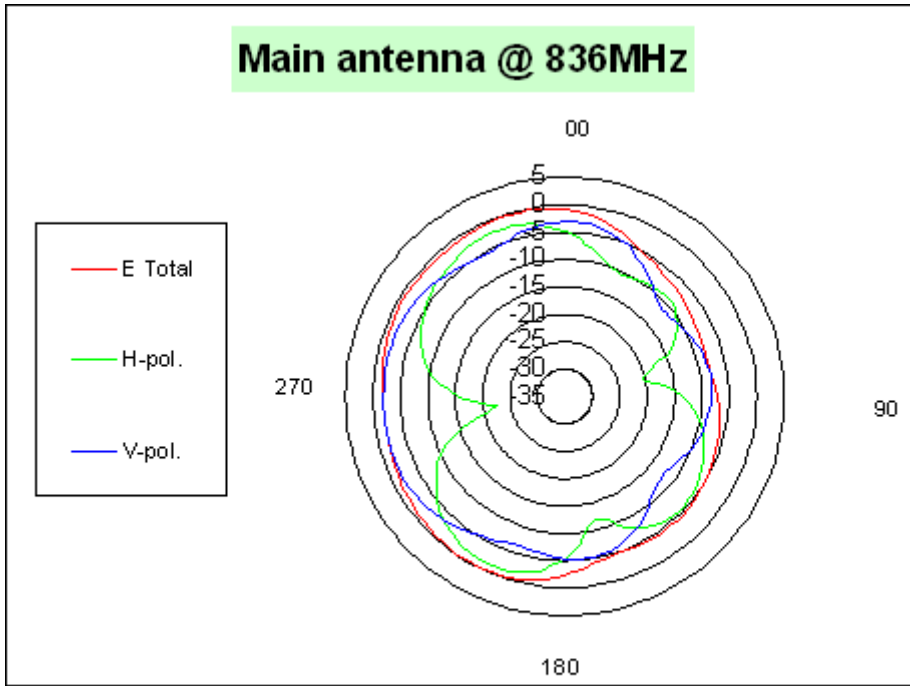
### 850MHz radiation characteristic

Main antenna: 824.2 MHz



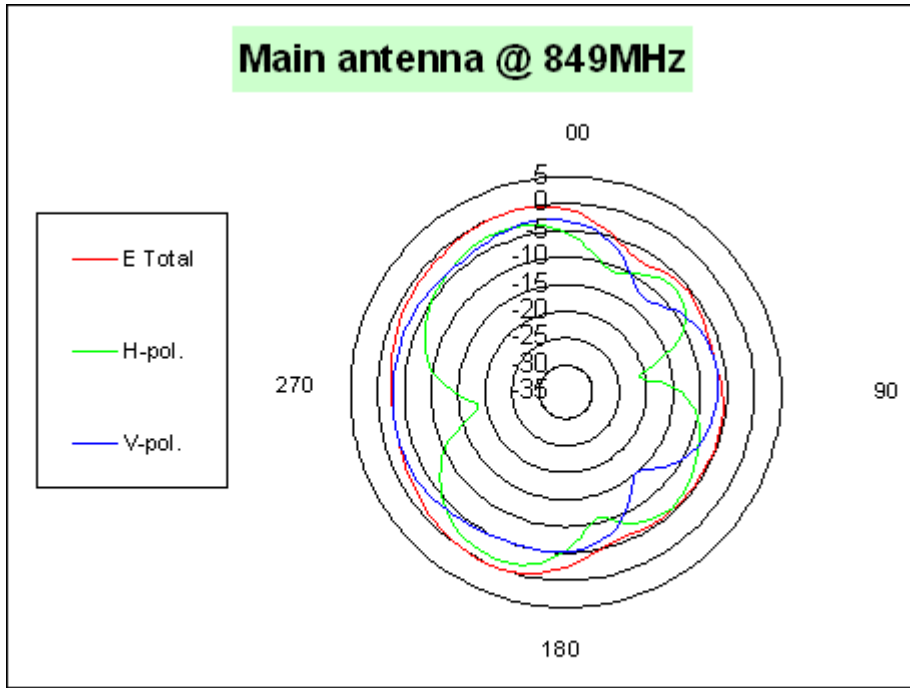


**Main antenna: 836.6 MHz**



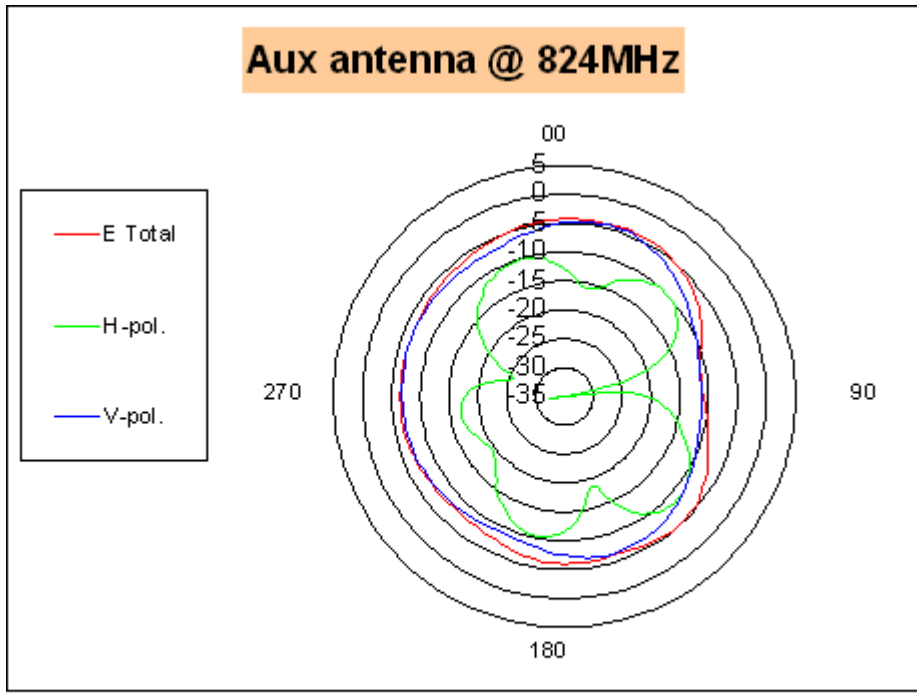
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.35</b>	<b>-1.91</b>

Main antenna: 848.8 MHz



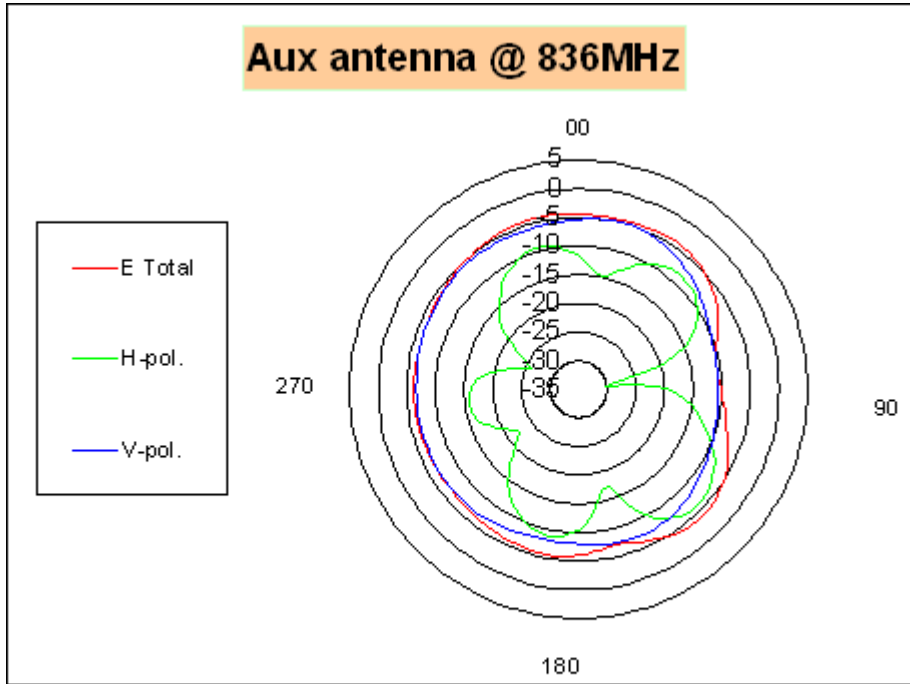
	H-pol	V pol
Peak Gain	-1.34	-2.75

**AUX antenna: 824.2 MHz**



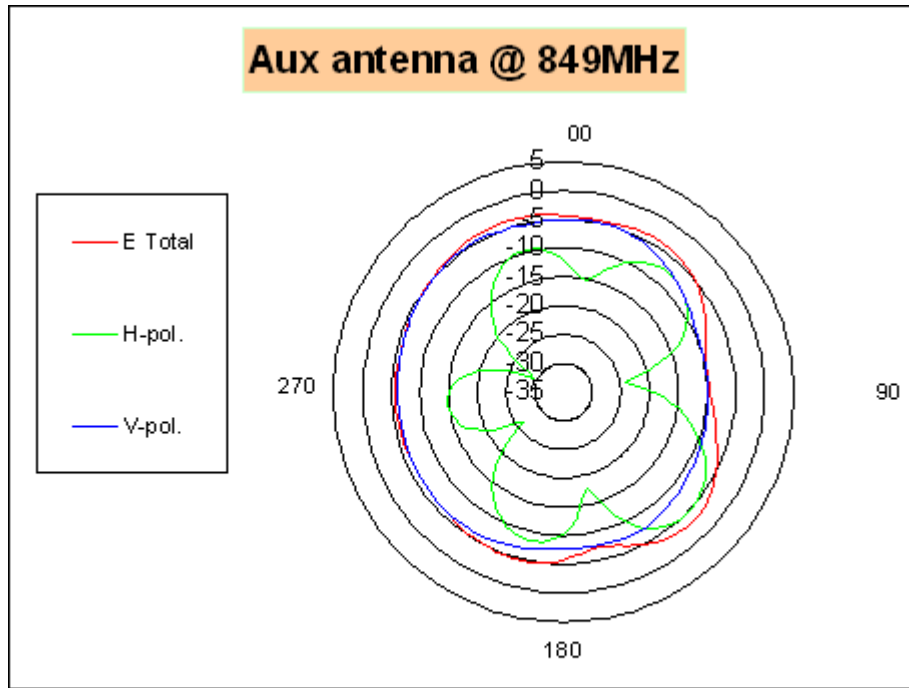
	H-pol	V pol
<b>Peak Gain</b>	<b>-8.38</b>	<b>-4.39</b>

**AUX antenna: 836.6 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>-5.99</b>	<b>-4.93</b>

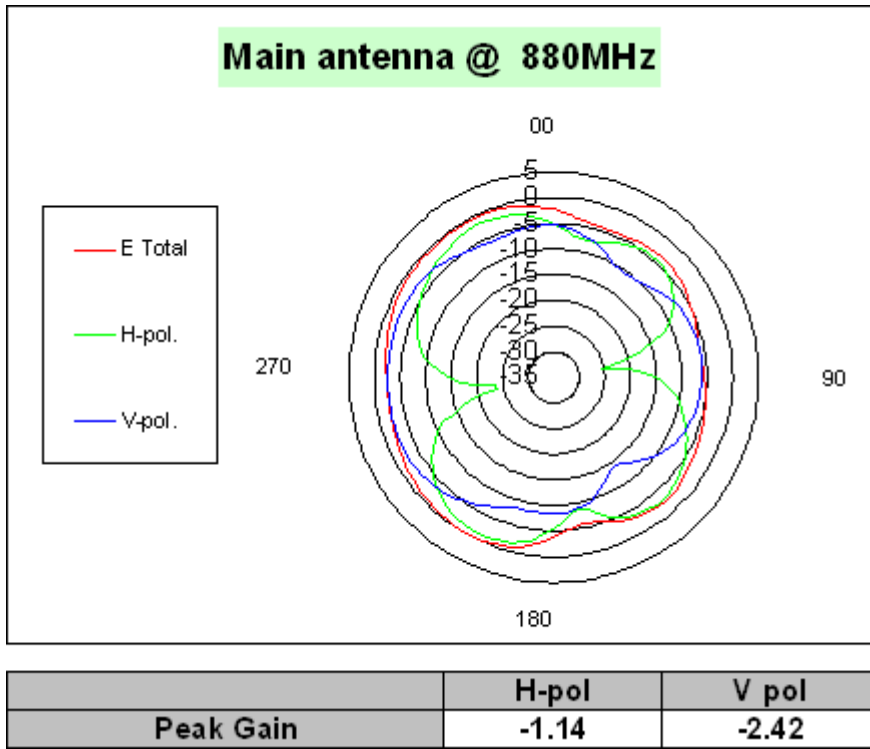
**AUX antenna: 848.8 MHz**



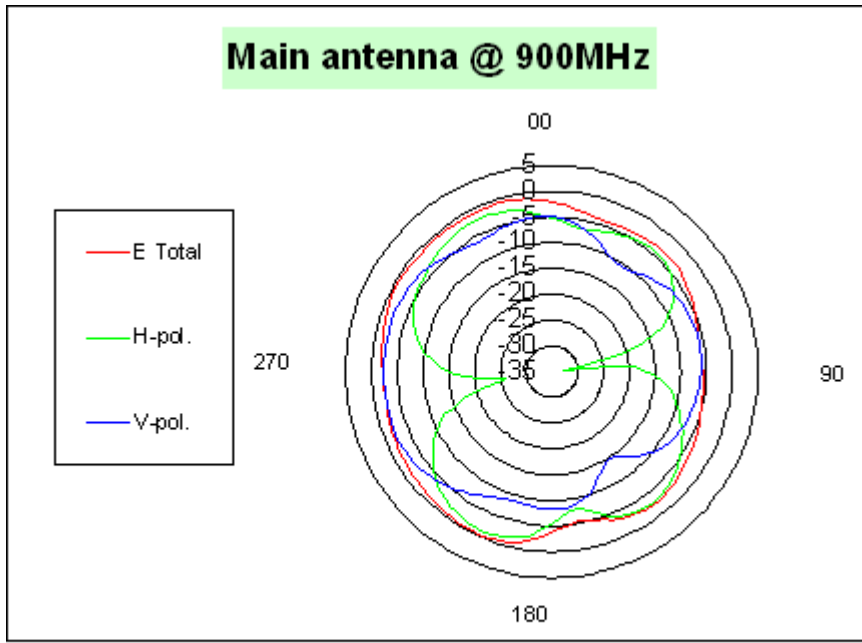
	H-pol	V pol
<b>Peak Gain</b>	<b>-4.75</b>	<b>-4.69</b>

### 900MHz radiation characteristic

#### Main antenna: 880.2 MHz

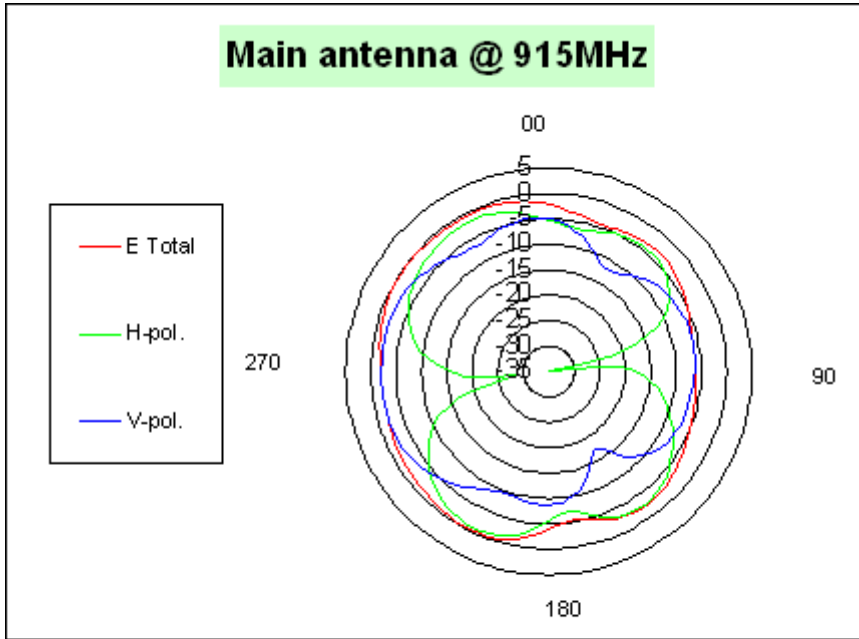


Main antenna: 897.6 MHz



	H-pol	V pol
Peak Gain	-1.21	-2.28

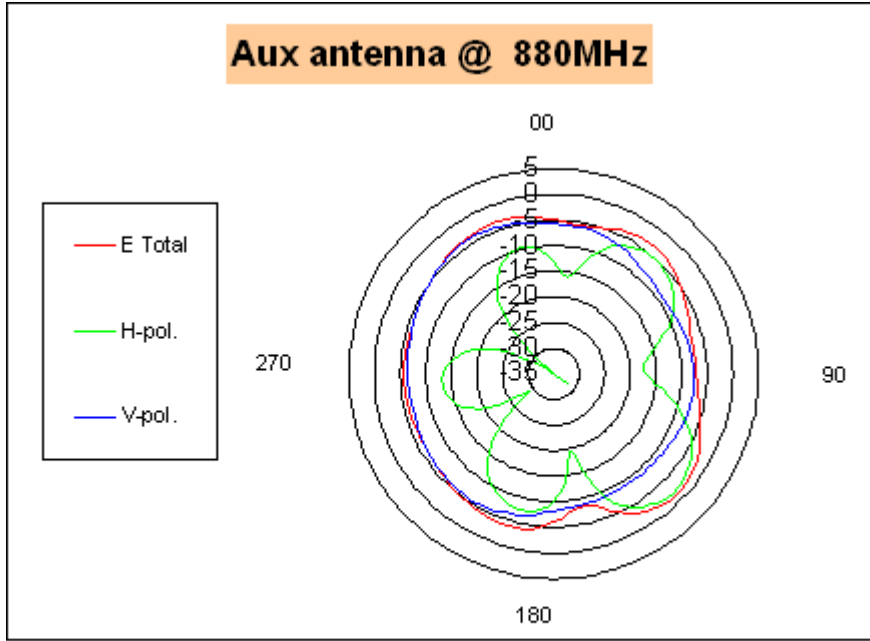
Main antenna: 914.8 MHz



	H-pol	V pol
Peak Gain	-0.80	-2.02

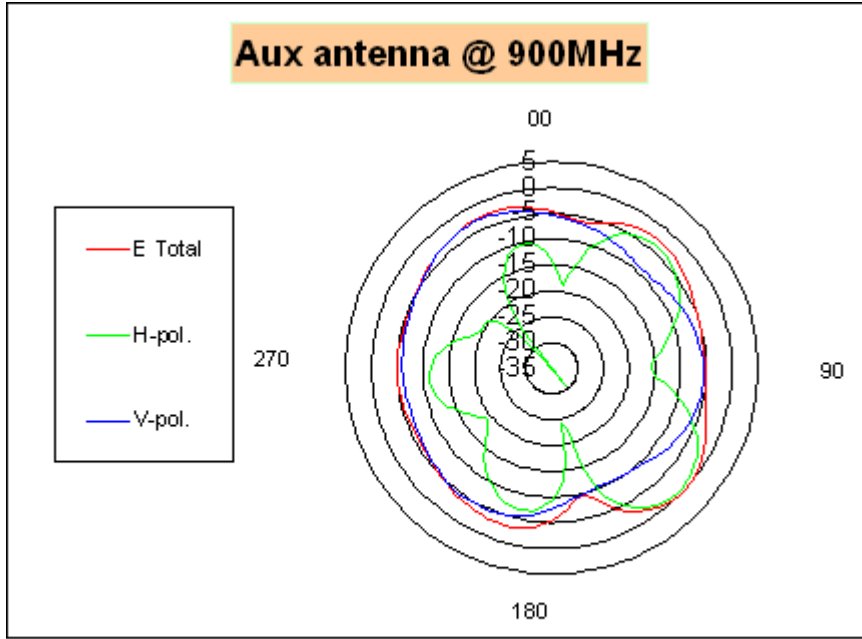


### AUX antenna: 880.2 MHz



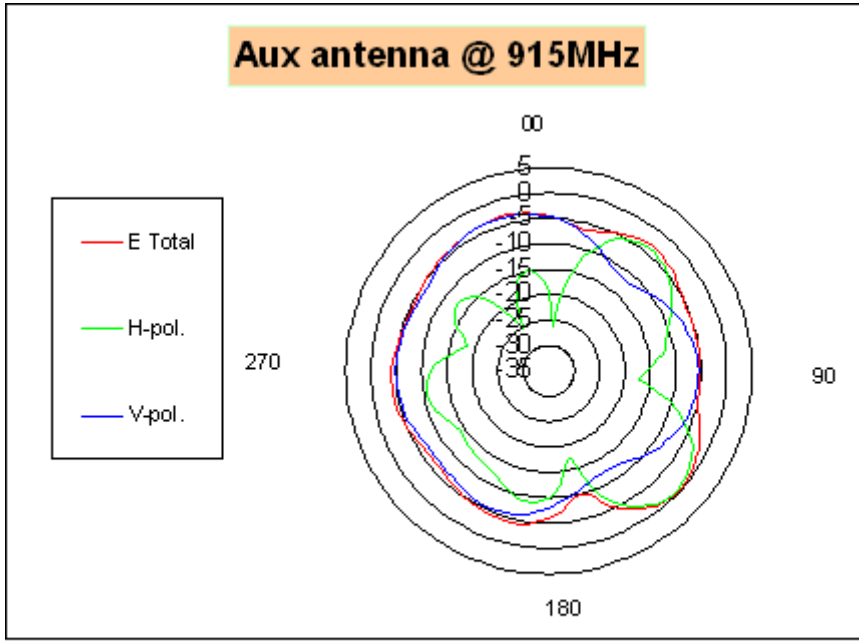
	H-pol	V pol
Peak Gain	-2.08	-3.99

**AUX antenna: 897.6 MHz**



	H-pol	V pol
Peak Gain	-0.68	-2.90

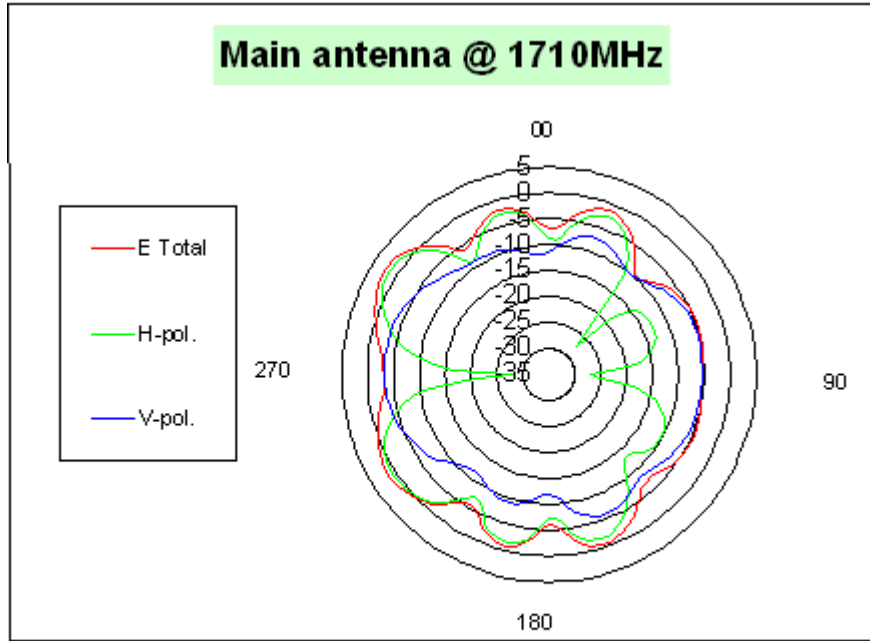
**AUX antenna: 914.8 MHz**



	H-pol	V pol
Peak Gain	-0.53	-3.47

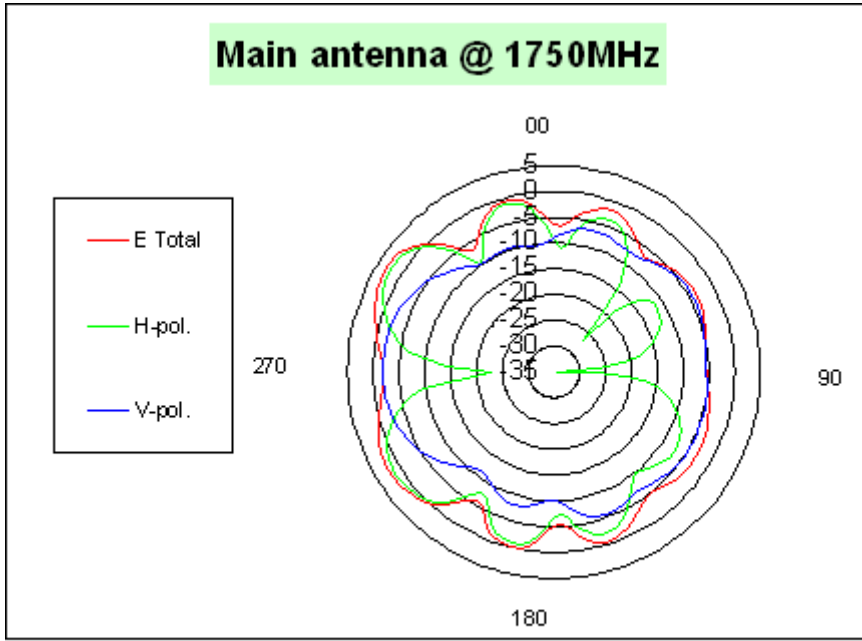
**1800MHz radiation characteristic**

**Main antenna: 1710.2 MHz**



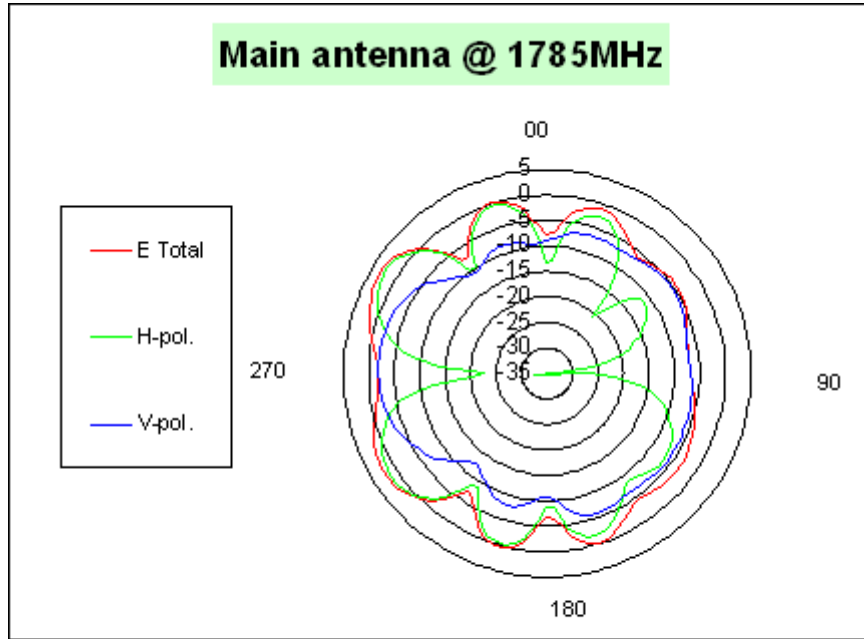
	H-pol	V pol
Peak Gain	1.64	-3.15

**Main antenna: 1747.6 MHz**



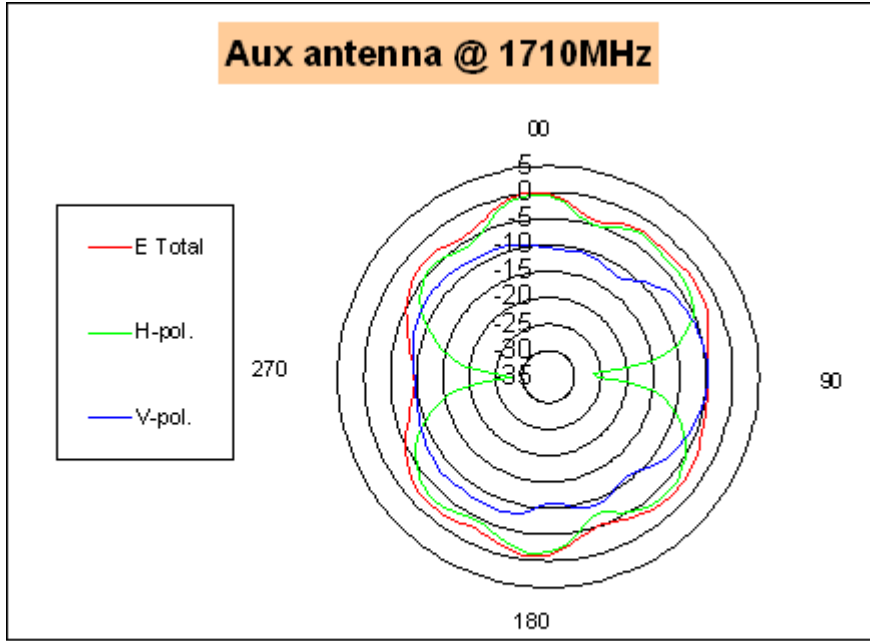
	H-pol	V pol
<b>Peak Gain</b>	<b>2.38</b>	<b>-1.91</b>

Main antenna: 1784.8 MHz



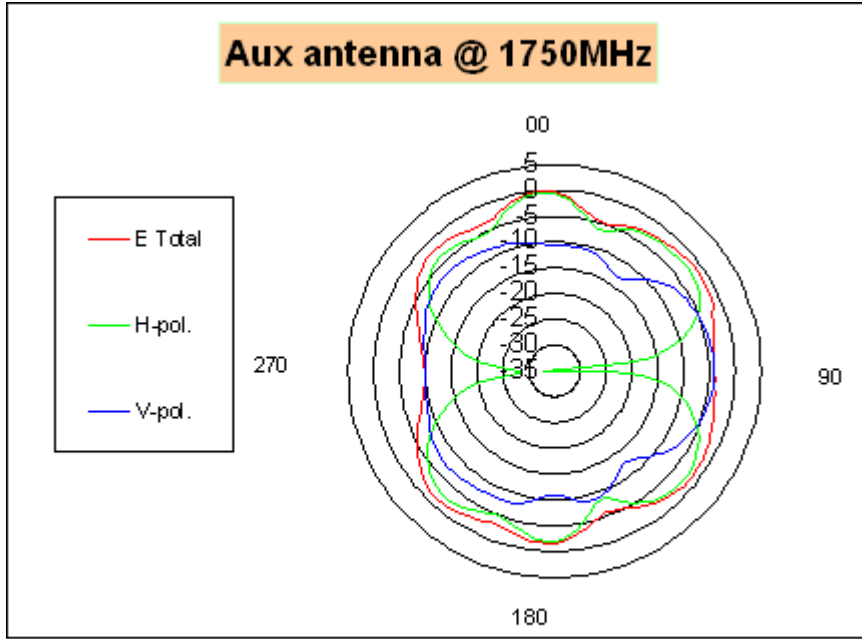
	H-pol	V pol
Peak Gain	2.49	-1.94

**AUX antenna: 1710.2 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>-0.31</b>	<b>-4.69</b>

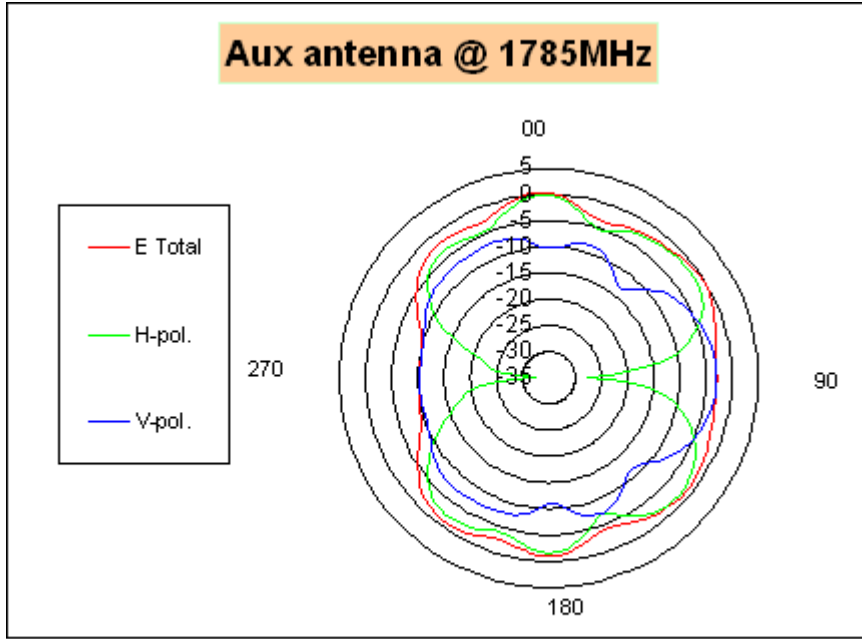
### AUX antenna: 1747.6 MHz



	H-pol	V pol
Peak Gain	-0.48	-4.07



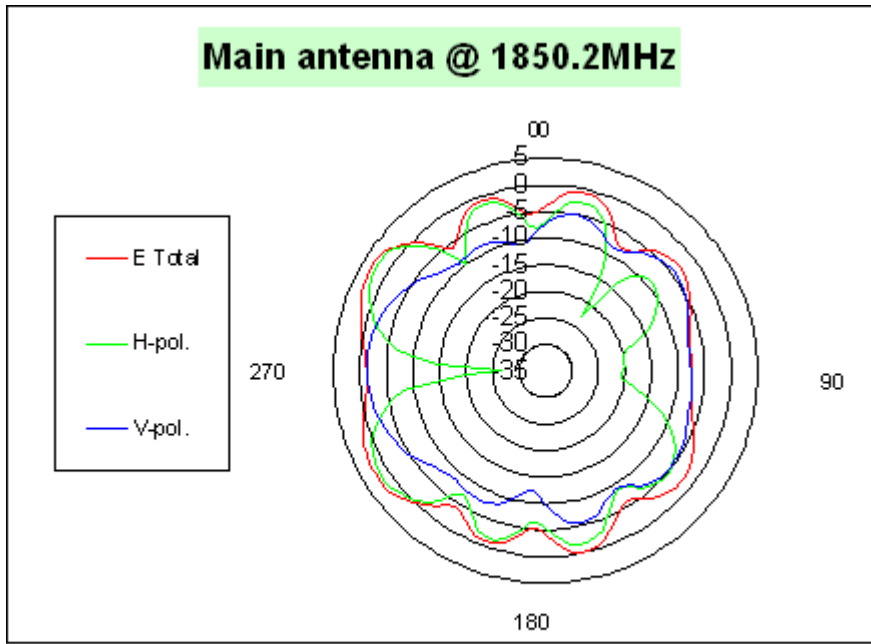
AUX antenna: 1784.8 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>0.02</b>	<b>-2.97</b>

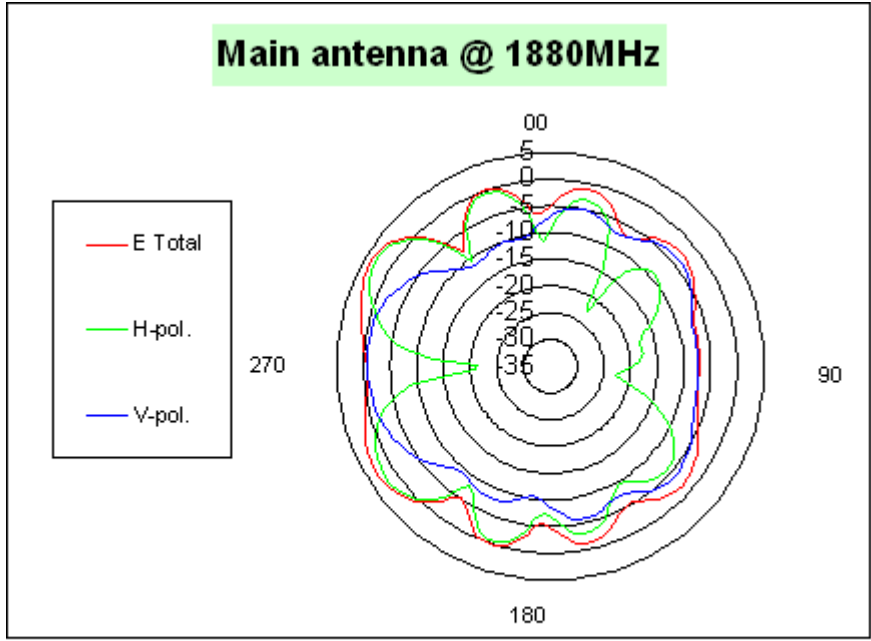
**1850 MHz radiation characteristic**

**Main antenna: 1850.2 MHz**



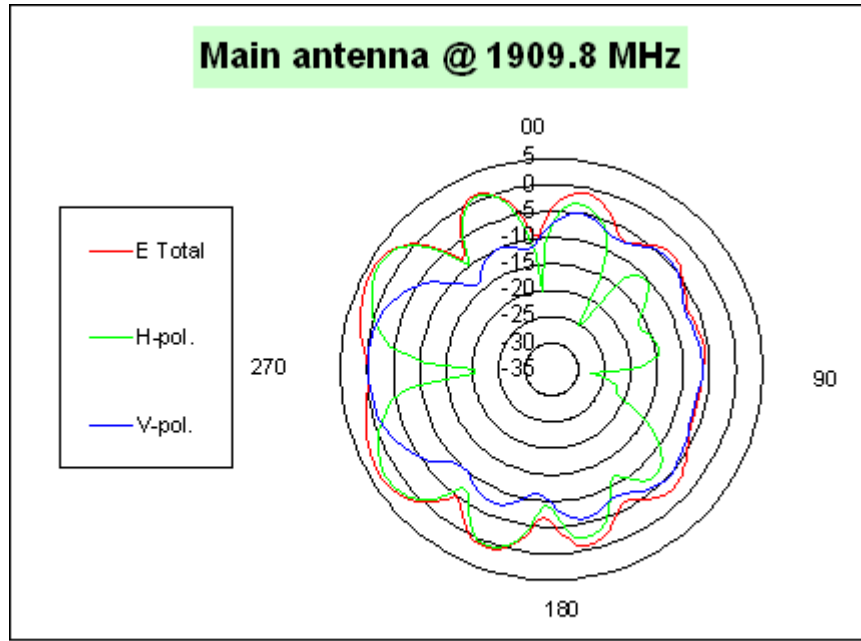
	H-pol	V pol
Peak Gain	2.58	-1.32

Main antenna: 1880 MHz



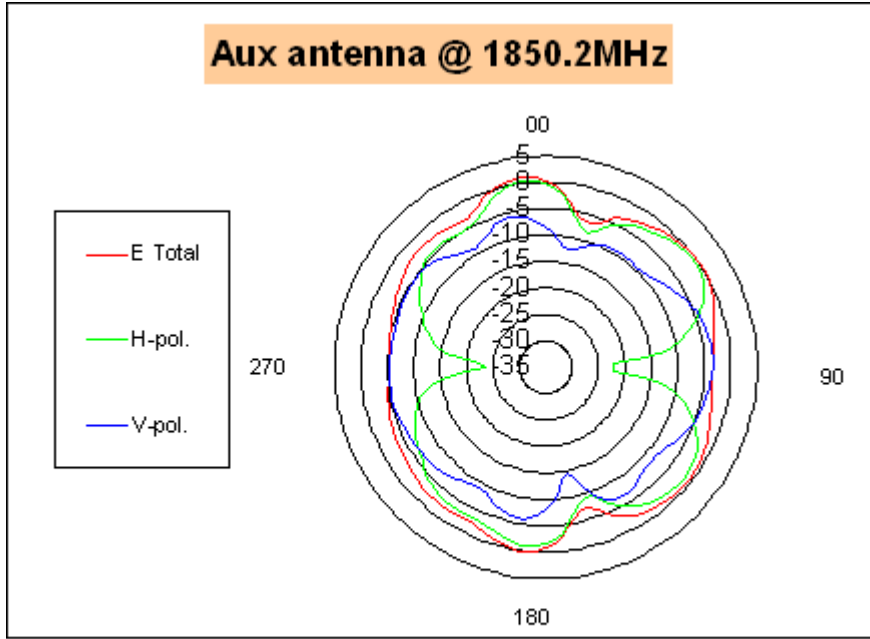
	H-pol	V pol
Peak Gain	3.10	-0.57

Main antenna: 1909.8 MHz



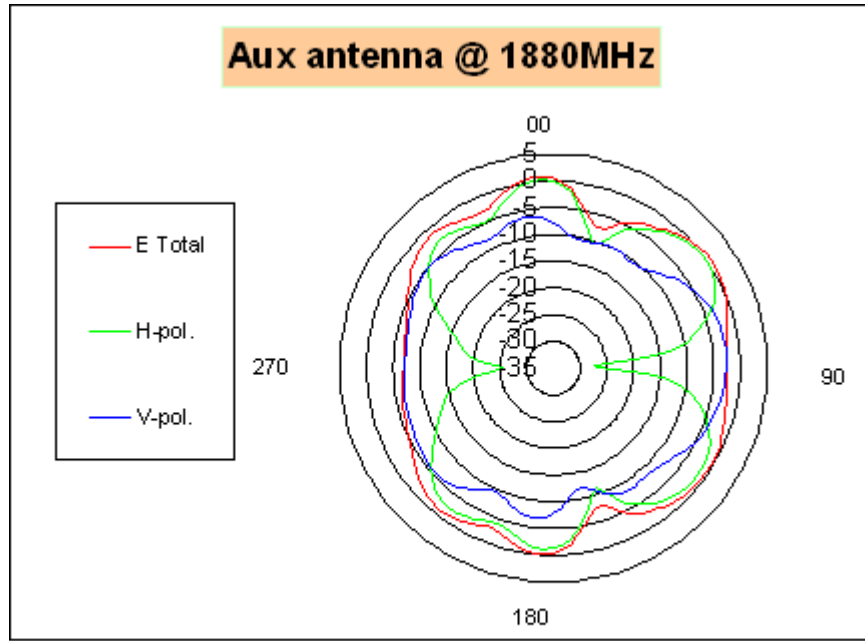
	H-pol	V pol
Peak Gain	3.09	-0.12

### AUX antenna: 1850.2 MHz



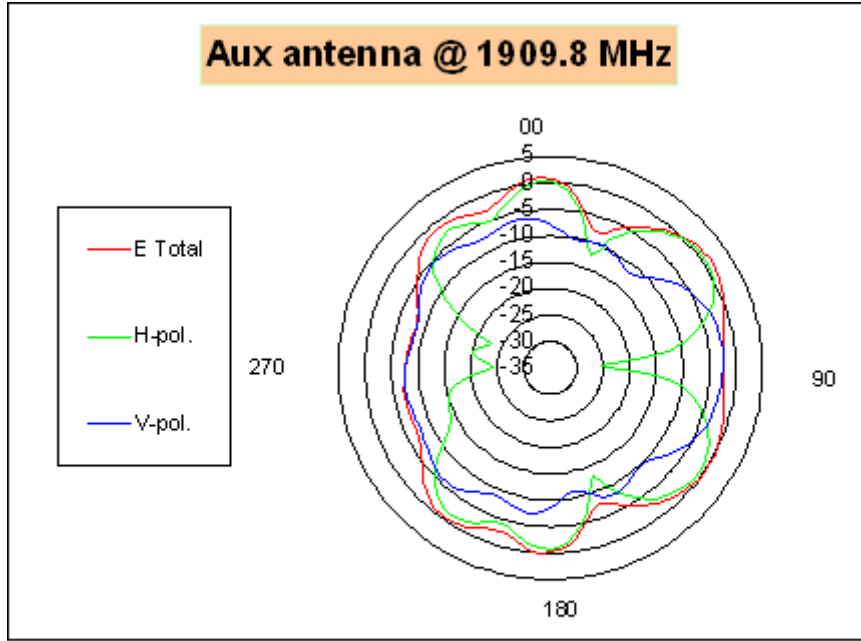
	H-pol	V pol
Peak Gain	0.50	-3.32

### AUX antenna: 1880 MHz



	H-pol	V pol
Peak Gain	0.27	-2.57

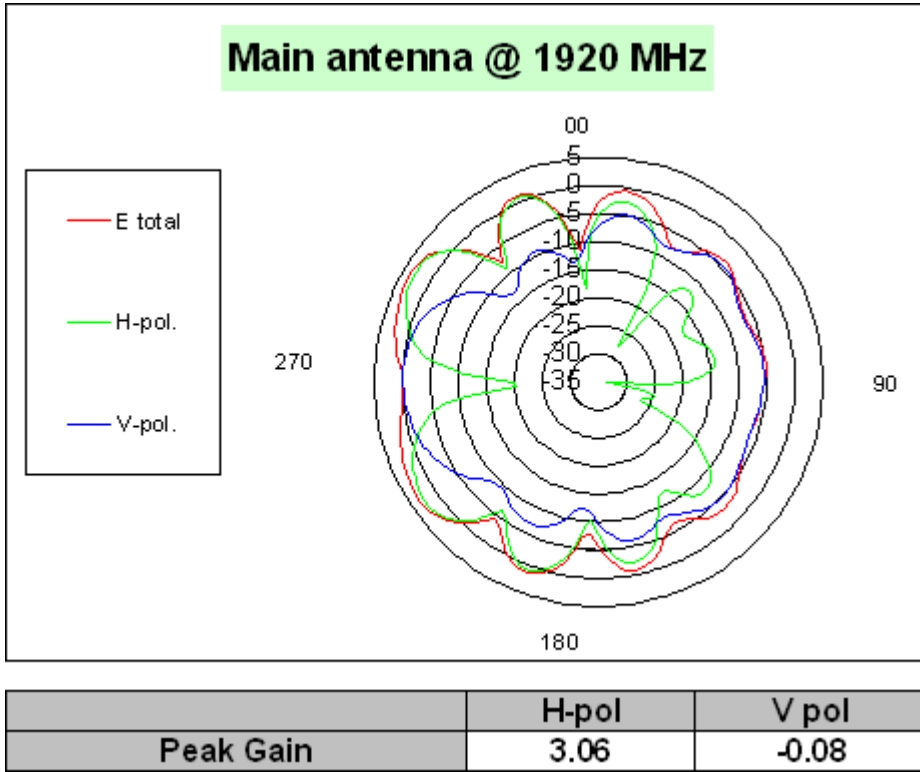
### AUX antenna: 1909.8 MHz



	H-pol	V pol
Peak Gain	0.78	-2.33

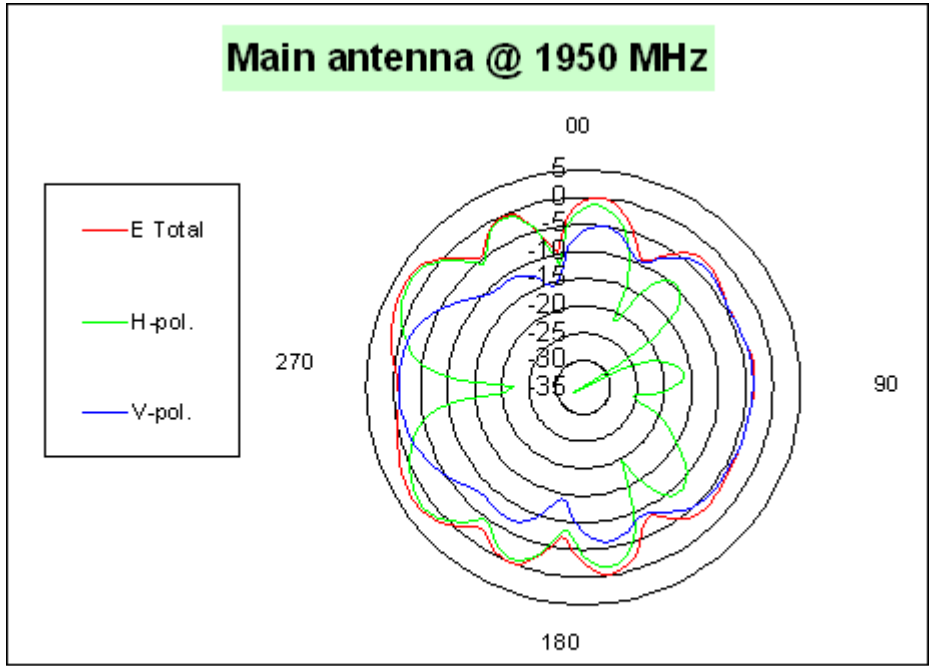
**2100 MHz radiation characteristic**

**Main antenna: 1922.6 MHz**



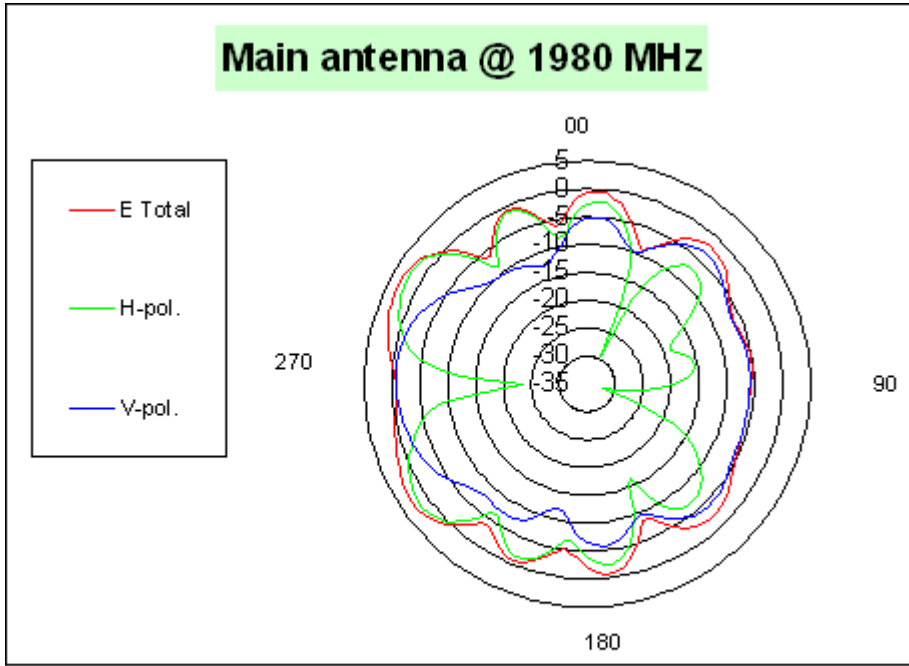


**Main antenna: 1950 MHz**



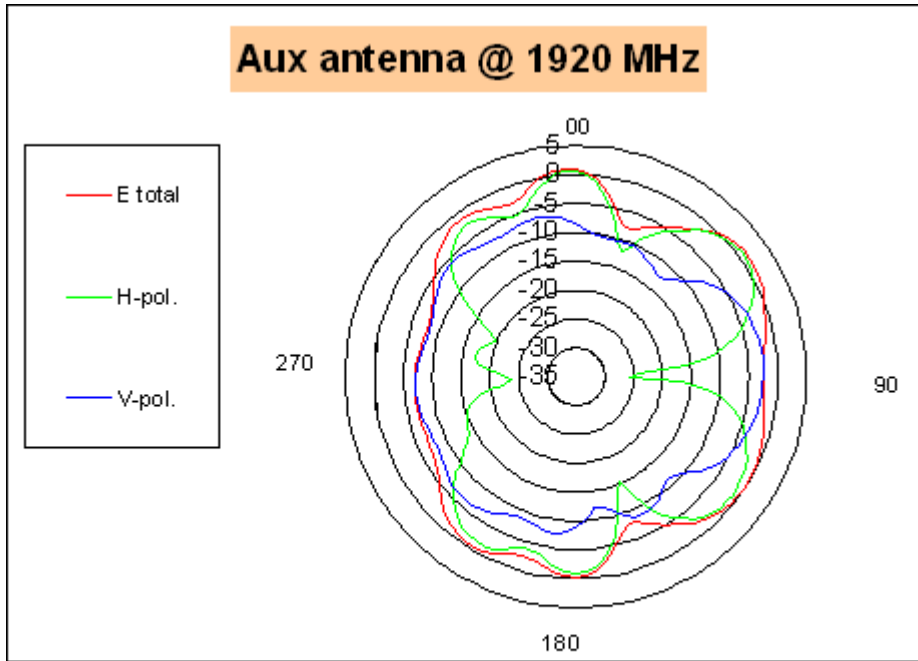
	H-pol	V pol
Peak Gain	2.43	-0.90

**Main antenna: 1977.4 MHz**



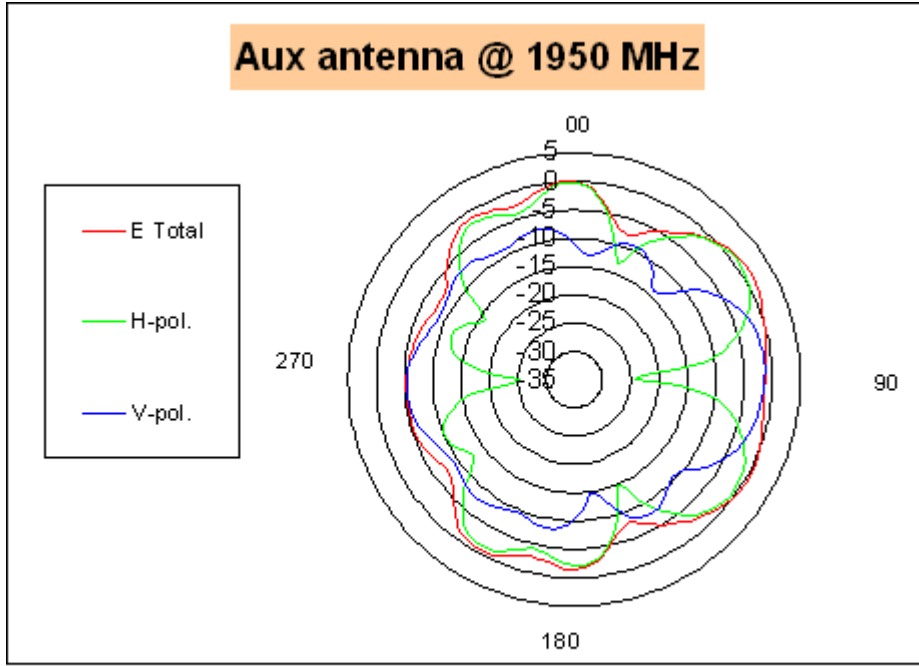
	H-pol	V pol
Peak Gain	2.48	-0.74

### AUX antenna: 1922.6 MHz



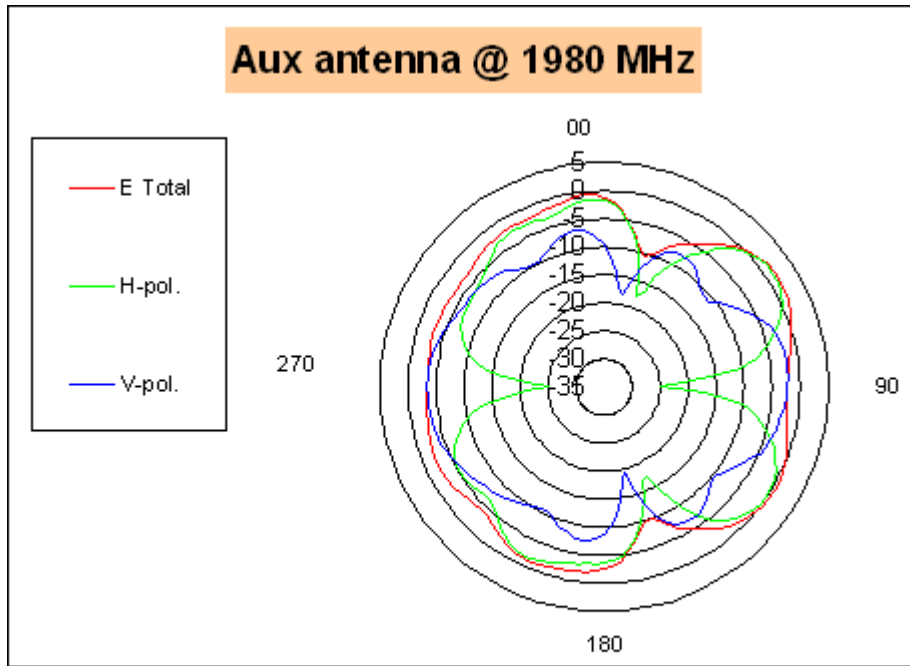
	H-pol	V pol
Peak Gain	0.86	-2.43

**AUX antenna: 1950 MHz**



	H-pol	V pol
Peak Gain	0.75	-1.27

**AUX antenna: 1977.4 MHz**



	H-pol	V pol
Peak Gain	1.30	-2.15

## Section 4. Host Platform Information

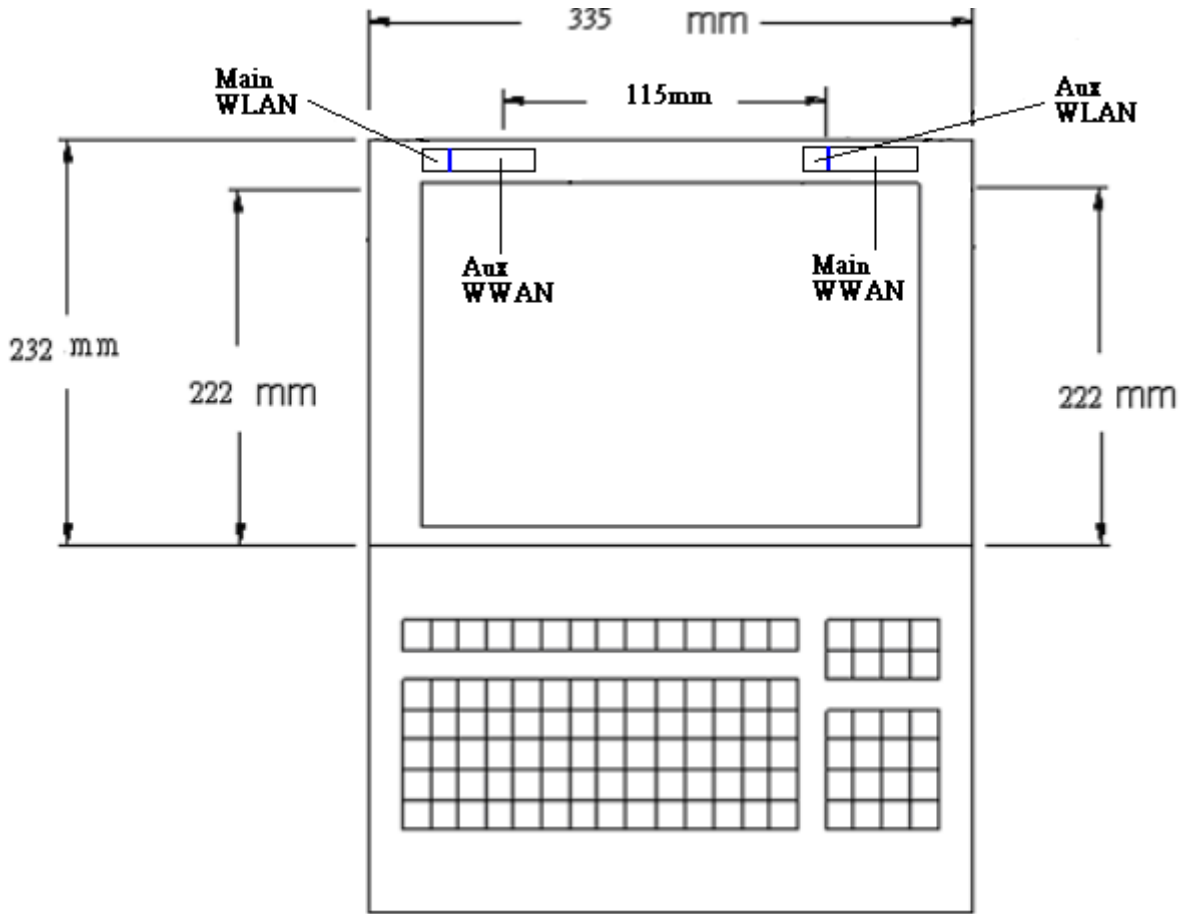
OEM / ODM Host platform: (XXXXXXX) platform correlated to antenna data

### Rating Label Photo:

<b>Customer (HPQ)</b>	<b>ODM (COMPAL)</b>		<b>Antenna Vendor</b>	
<b>Model name</b>	<b>Model name</b>	<b>Part Number</b>	<b>Manufacturer</b>	<b>Part Number</b>
<b>Gladiator</b>	<b>Gladiator</b>	<b>Main Antenna(R): DC33000E800</b>	<b>WNC</b>	<b>Main Antenna: (81.EGK15.005)</b>
		<b>Aux Antenna(L): DC33000E800</b>		<b>Aux Antenna: (81.EGK15.005)</b>

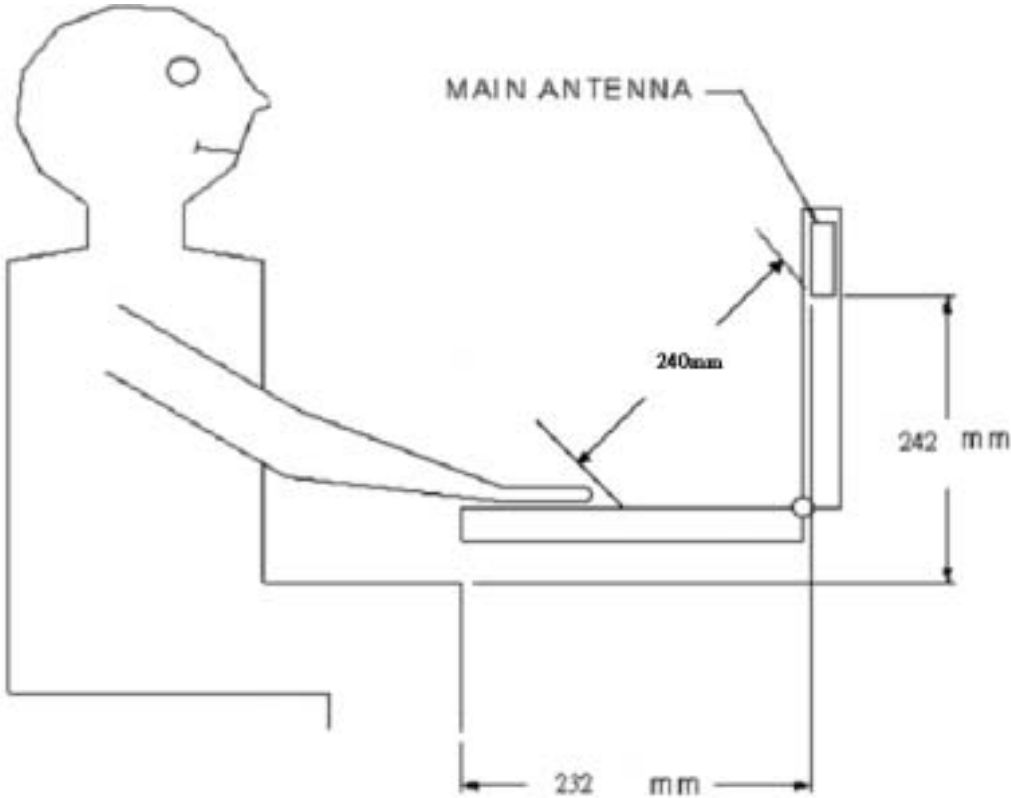
## Section 5. Antenna Host Platform Location Information

Include a **dimensioned photo or dimensioned drawing** of Main and AUX antenna placements. (Not applicable for receive-only antenna)



## Section 6. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, lap/ thigh, and ankle)

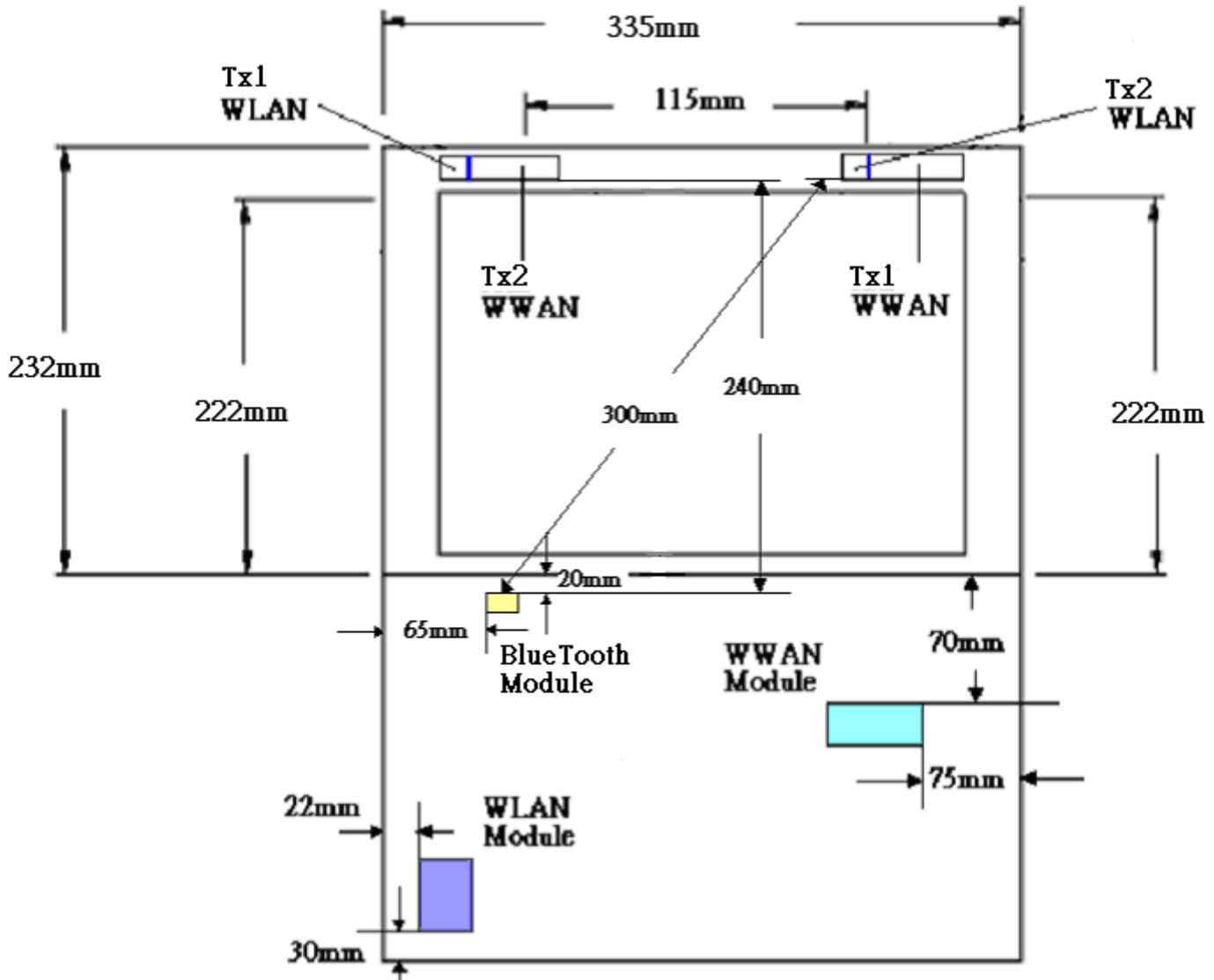




## Section 7. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between **all WWAN 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)



## Section 8. Local representative contact information

Local representative contact information is required for regulatory support for target countries below.

	Local company name	Contact name	Phone number	FAX Number	e-Mail Address	Notes
Argentina						
Brazil						
Indonesia						
Israel						
Malaysia						
Mexico						
Singapore						Telecommunication Equipment Dealer License Required
South Africa						
USA, Canada						