

Pantech

APPROVAL No.		ISSUE	
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APPROVAL SPECIFICATION

TITLE : Built-in Antenna
DWG No. : KRS-PP800US-MA
PART No. : KRS-PP800US-MA
MODEL : PX-800

- CONDITION : 1. Cellular/US-PCS
2. _____
3. _____
4. _____

We would like to approval the suited product.

Pantech Approval	Prepared by	Reviewed by	Check by	Approved by
Supplier Approval	Prepared by	Reviewed by	Check by	Approved by

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ANTENNA SPECIFICATION



KARAM Solution

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1. Technical Items

1.1 Electrical Spec.

Electrical Spec.				
Frequency Range (MHz)	Cellular		US-PCS	
	Tx1	Rx1	Tx2	Rx2
	824 – 849MHz	869 - 894MHz	1850 - 1910MHz	1930 - 1990MHz
V.S.W.R (Max)	3.0	3.5	3.0	3.0
GAIN (E2, Peak Min)	-4.0 dBi	-4.5 dBi	-2.0 dBi	-4.0 dBi
Impedance (Nominal)	50 ohms			
Polarization	VERTICAL			
Radiation Pattern	OMNI-DIRECTIONAL			
Maximum Power	2 Watts			

1.2 Mechanical Spec.

Mechanical Spec.	
Connector	CONTACT PIN TYPE
Overall length	See drawing
Operation Temperature	-30 °C ~ +80 °C
Weight	0.88 g

1.3 Packing Spec.

Packing Spec.		
PRODUCT	QUALITY	MATERIAL
TRAY	20 / 2,000 EA	P.S(0.8t)
PAD	2 / 2,000 EA	DW 2 type (A corrugated paper)
CARTON BOX	1 / 2,000 EA	DW 2 type (AB corrugated paper)

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2. Test Equipment

The test equipments for antenna are as follows

◆ Network Analyzer (HP8753ET) to measure the V.S.W.R and impedance of antenna

◆ Spectrum Analyzer to measure the receiving signal intensity

◆ Standard Horn antenna that is adjustable in the Cellular band

◆ Standard Horn antenna that is adjustable in the US-PCS band

◆ Anechoic Chamber installed the cables, connectors and equipments for measurement

◆ Dogmatic Caliper to measure the dimensions

◆ Torque Driver to measure the torque force of the helix

◆ Push/Pull gauge to measure the pulling force

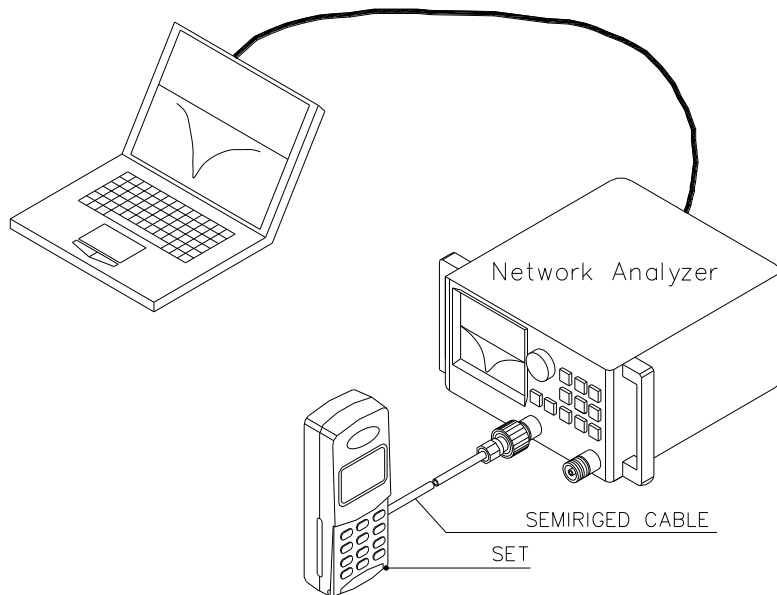
◆ Climatic Chamber for environmental test

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3. Electrical Demands

3.1 V.S.W.R

The V.S.W.R characteristics must satisfy the electrical demands. With CARD Type Rx diversity Antenna mounted on a Notebook condition, the V.S.W.R of antenna must be less than 3.5:1(824 ~ 894MHz) at Cellular, 3.0:1(1850 ~ 1990MHz) at US-PCS band on the free space.



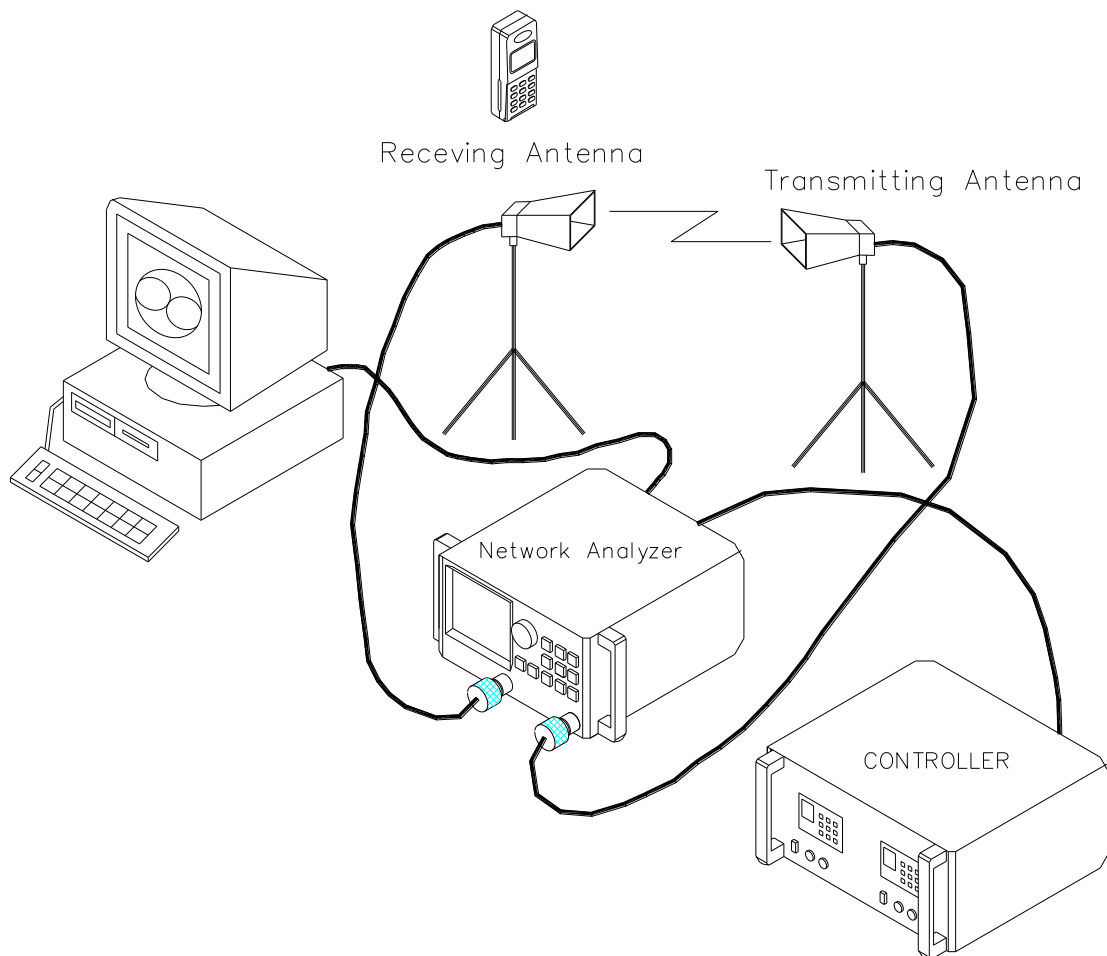
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3.2 Radiation Pattern

The radiation pattern must have the omni-directional characteristic in Cellular/ PCS Band and H-PLANE.

3.3 Gain

The gain is expressed as dBi that standardizes the half-wave length dipole antenna. With CARD Type Rx diversity Antenna mounted on a Notebook condition (E2-Plane), the minimum Gain of antenna must be bigger than -4.5dBi , in Cellular, -4.0dBi , in US-PCS band.



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4. Mechanical Demands

4.1 Dimensions

See the drawing.



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5. Environmental Demands

5.1 Operation Temperature Test

- Test A: Place the antennas for testing in chamber. The chamber condition should be as follows:

1hours at -20°C

- Final measurements: The antenna shall be visually inspected and electrically and also mechanically checked as required by products standard.

- Test B: Place the antennas for testing in chamber. The chamber condition should be as follows:

1hours at 70°C

- Final measurements: The antenna shall be visually inspected and electrically and also mechanically checked as required by products standard.

5.2 Humidity Test

- Test: Place the antennas for testing in chamber. The chamber condition should be as follows:

24hours at +55°C, Relative humidity is 95%.

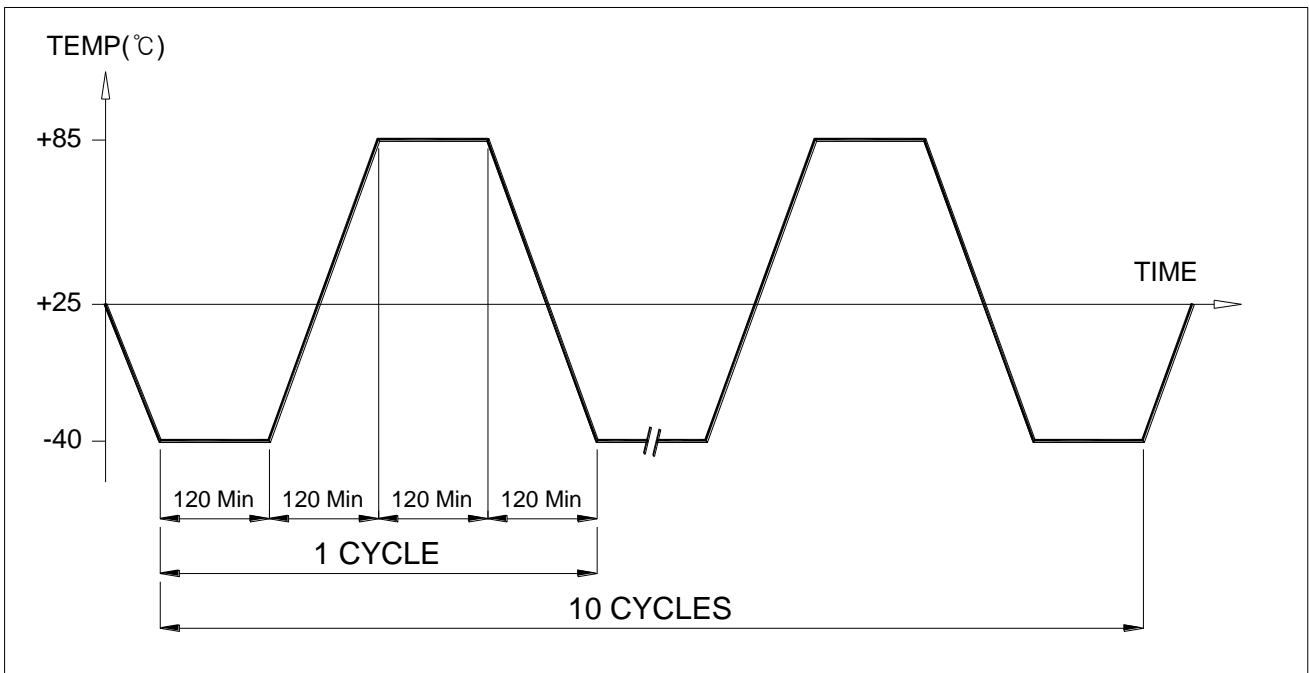
- Final measurements: The antenna shall be visually inspected and electrically and also mechanically checked as required by products standard
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5.3 Temperature Cycling Test

The antenna shall withstand 10 repeated cycles of 120 minutes at -40°C and 120 minutes at +85°C with a maximum transition time between temperature extremes of 120 minutes.

After the test, no visual deterioration shall occur. After the test, the antenna shall satisfy the electrical demands.

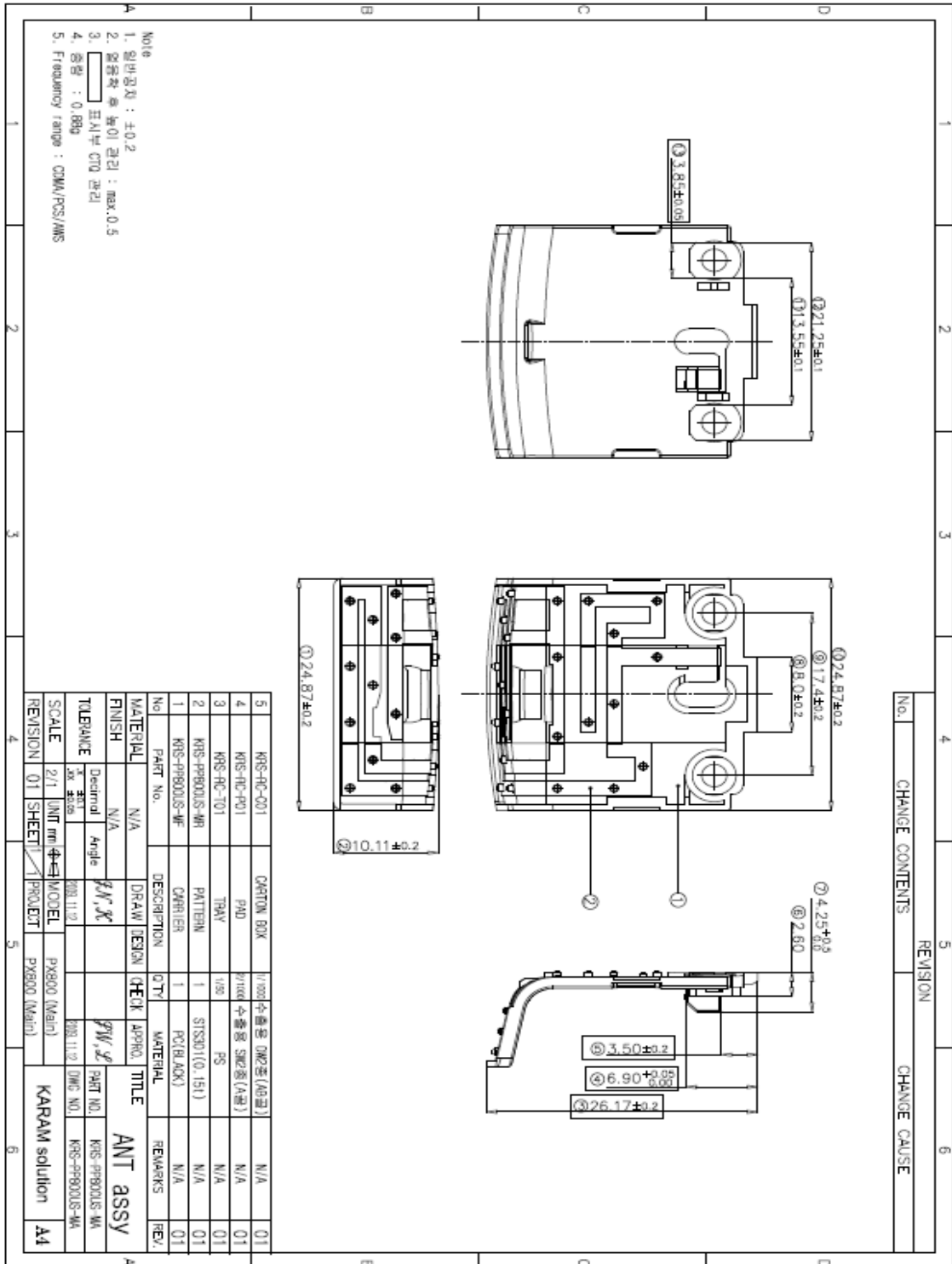


5.4 Salt spray Test

In salt fog chamber, expose test antennas to a 35°C, 5% salt fog atmosphere for 48 hours. After the test, the antenna shall be continued. The antenna shall satisfy the electrical demands.

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6. Antenna Drawing

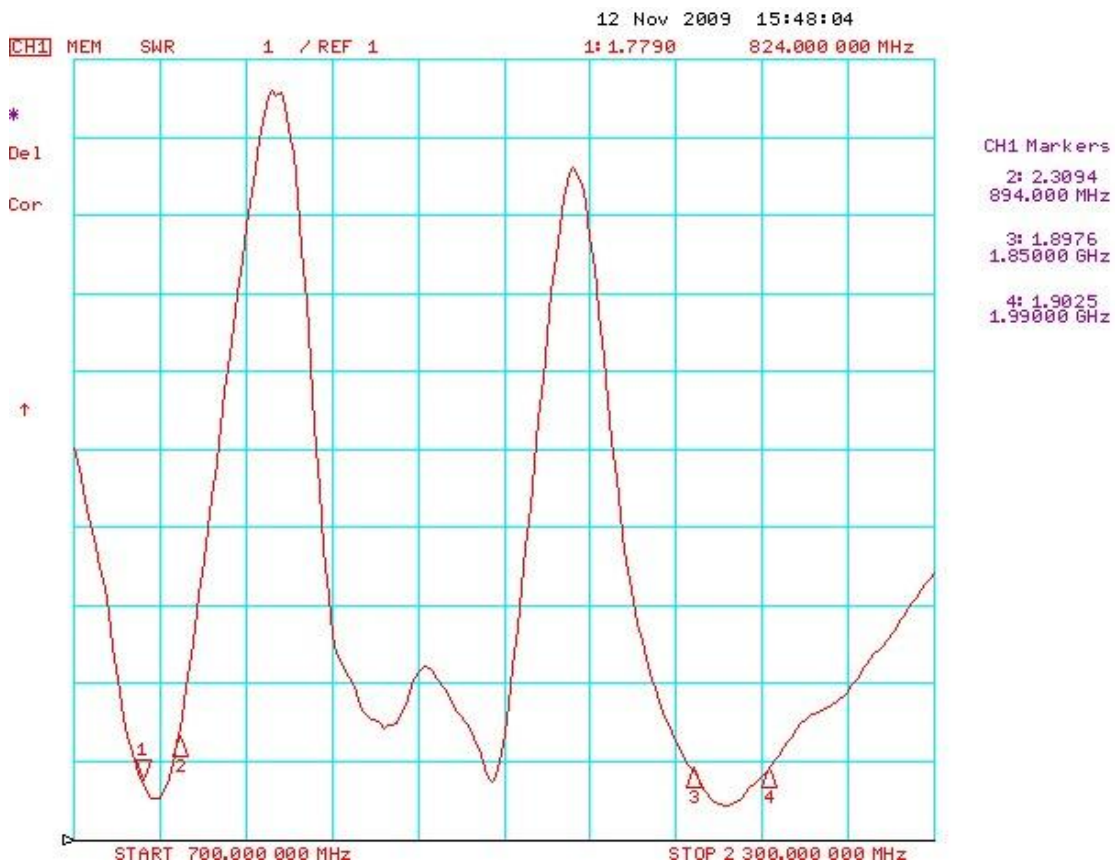


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7. Electrical data

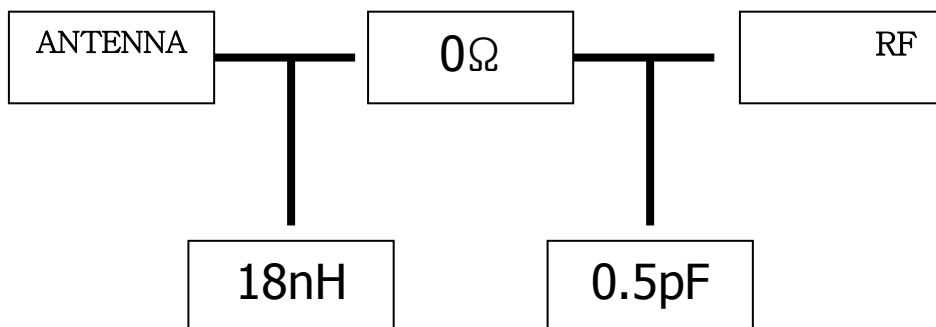
→ V. S.W.R

7.1 CARD Type Rx diversity Antenna mounted on a Notebook V.S.W.R



[CARD Type Rx diversity Antenna mounted on a Notebook State]

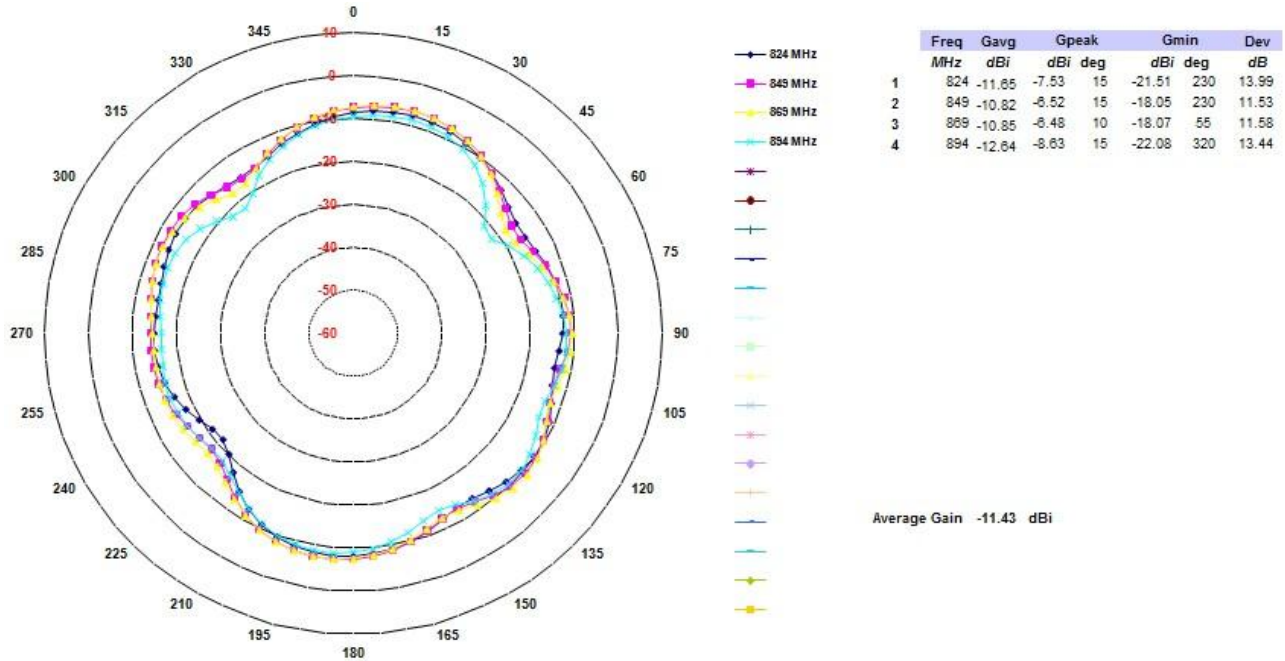
→ Matching Network



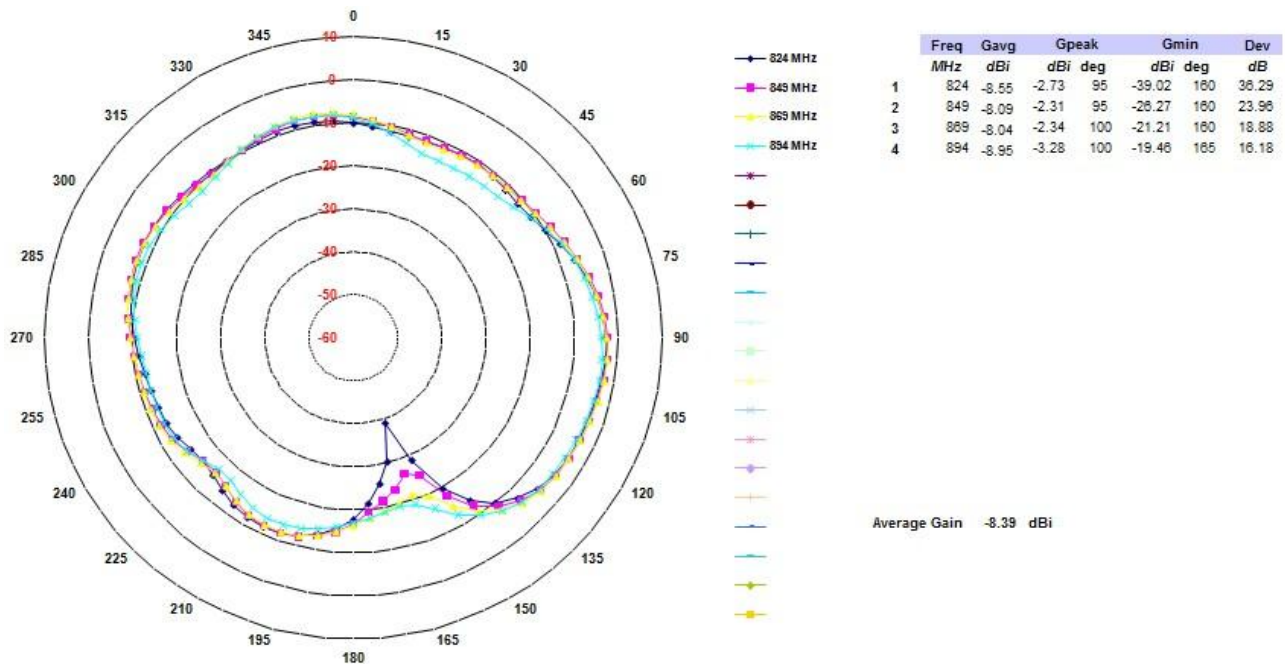
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→ Radiation Gain

7.2 GAIN (with Matching Circuit)

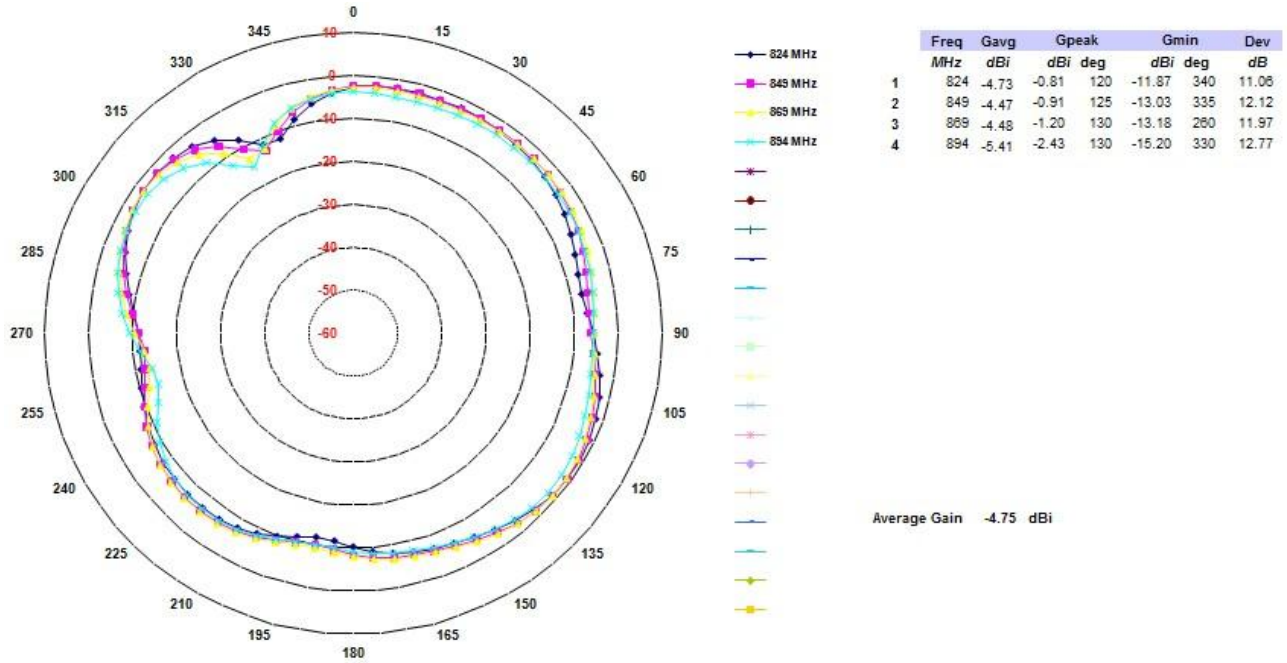


[Cellular Band : E1-plane]



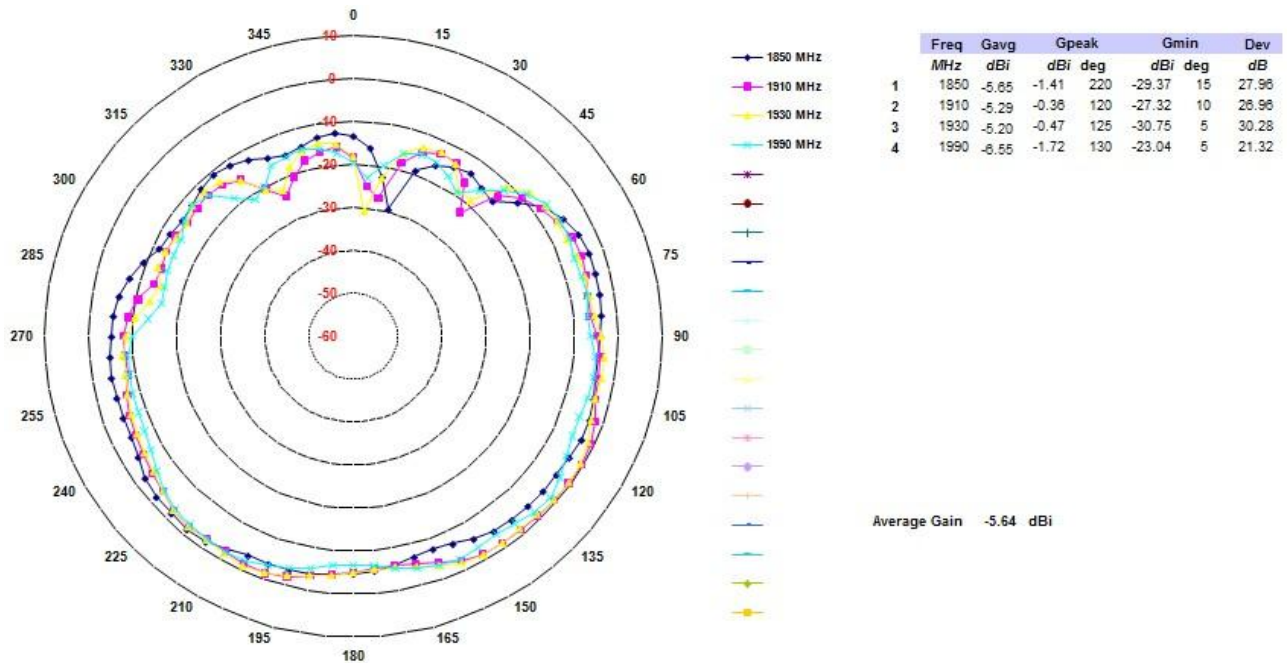
[Cellular Band : E2-plane]

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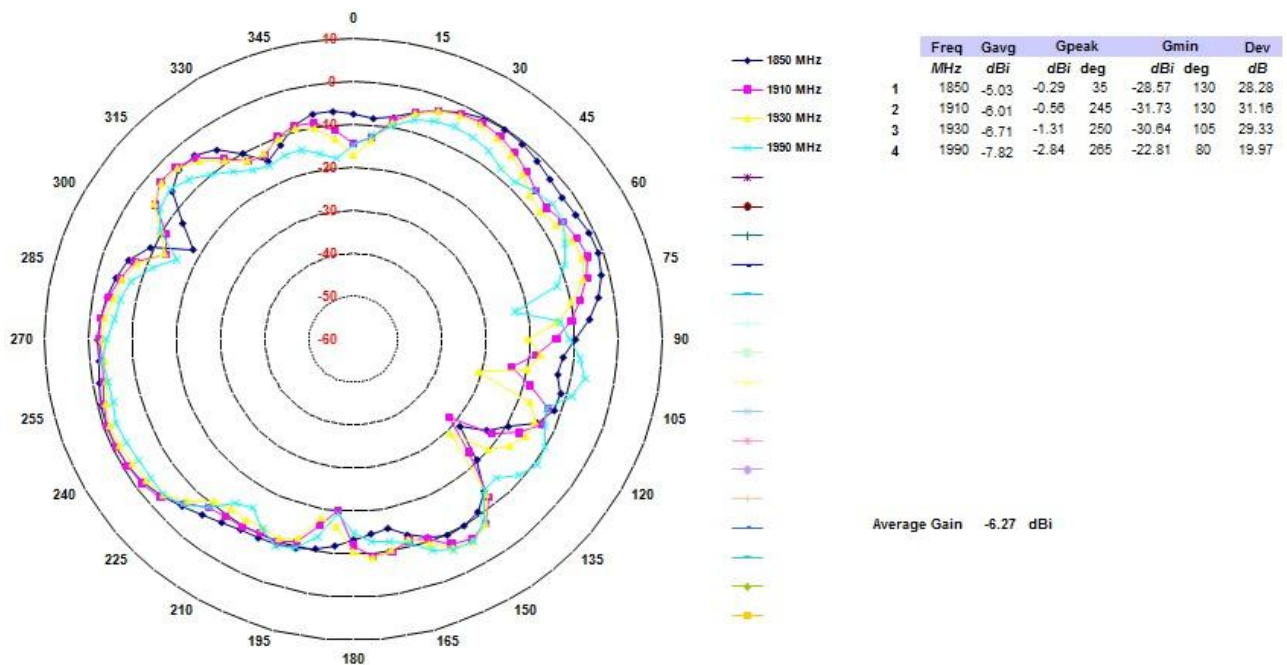


[Cellular Band : H-plane]

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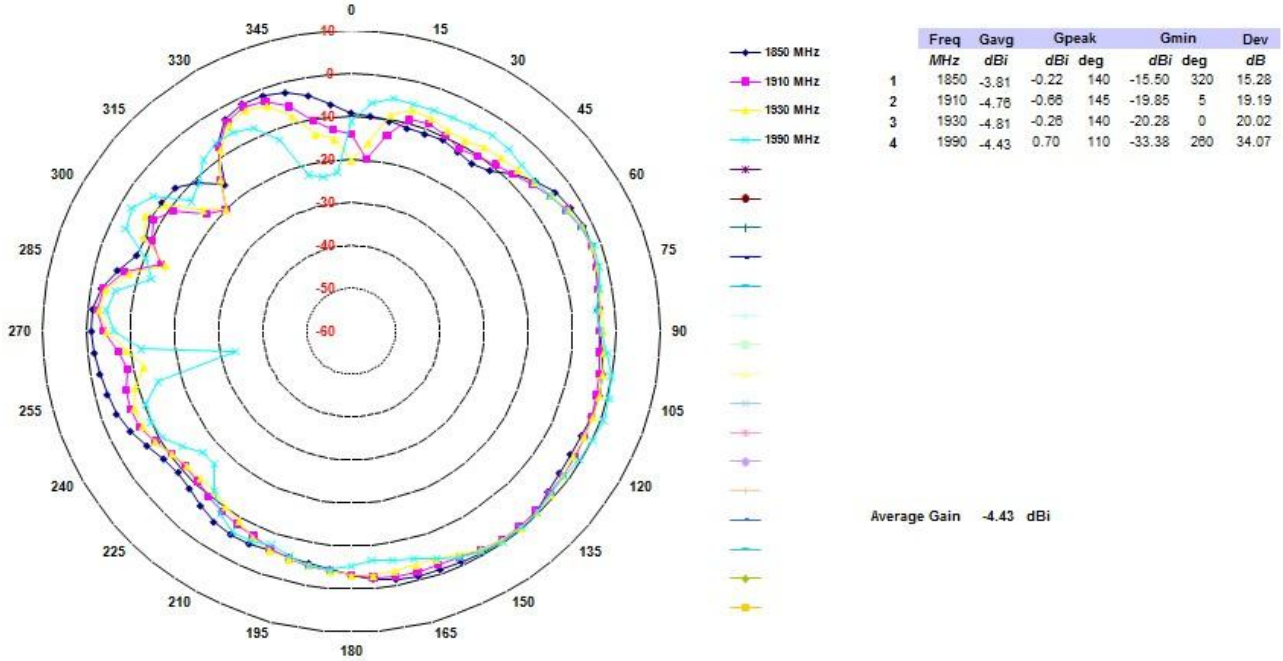


[US-PCS Band : E1-plane]



[US-PCS Band : E2-plane]

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[US-PCS Band : H-plane]