

Vieworks 2012-01 Antenna

PCB Dual-Band Antenna (Wi-Fi 2.4/5GHz)

PRODUCT APPROVAL SHEET

Version : 2.0

Model	Vieworks 2012-01 Dual Band PCB Antenna
Part Number	AEi-2450/5500DP-C1.13[Vieworks]
Description	Dual-Band(2.4/5GHz) /PCB /I-Pex
Sales	Rodem Microsystem
D	

Suppliers			Customer
Writer	Review	Approval	Approved by
			



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Revised History

Version	Purpose	Date	Editor
V 1.0	Initial Doc	2012/05/11	Bae Jae-Kyun
V 2.0	Gain & Measurement	2012/10/04	Bae Jae-Kyun

1. SPECIFICATION

1.1. Model : AEi-2450/5500DP-C1.13[Vieworks]

1.2. Application

This specifications are specified for the Wi-Fi dual band PCB antenna.

1.3. ANTENNA conditions of use

Portable Stationary Mobile Outdoor Indoor etc. ()

1.4. ANTENNA shape

Refer to the attached drawings.

1.5. Electrical characteristics and performance

Working conditions or their equivalent state must be satisfied the following.

ELECTRICAL SPECIFICATIONS	
MODEL	AEi-2450/5500DP-C1.13[Vieworks]
(MHz)	2.4~2.5GHz / 5.2~5.8GHz
V.S.W.R	LESS THAN 1 : 5.0
GAIN(dBi) - 2.4GHz	2.5dBi [Composite Gain : 4.3 dBi]
GAIN(dBi) - 5.2GHz(5150~5350)	1.99dBi [Composite Gain : 4.7 dBi]
GAIN(dBi) - 5.6GHz(5470~5725)	2.19dBi [Composite Gain : 5.0 dBi]
Max Input Power	5 [W]
Input Impedance	50 [Ω]
POLARIZATION	Isotropic

1.6. Mechanical specifications and properties

MECHANICAL SPECIFICATIONS		
	SPEC	REMARK
TYPE	FR-4	
RADIATION TYPE	Dipole PCB	
CONNECTOR TYPE	U.FL	GOLD-PLATING
CABLE	1.13 Φ , 300mm	BLACK-Color
MATERIAL	FR-4, 0.8T	
DIMENSION	44 x 10 x 0.8mm	
OPERATING TEMPERATURE($^{\circ}$ C)	-30 $^{\circ}$ ~ +70 $^{\circ}$	

1.7. Other performance and properties

1.7.1 Anti-shock

With combining the antenna, applying the peak to peak amplitude 1mm vibration, swept frequency to 5~55Hz at 1 minute intervals, in vertical and horizontal, left and right, forward and backward directions for 2 hours, it is measured. It should be no problems in each part. It is satisfied with the characteristics and performance of the clause 5.

1.7.2 Temperature Properties

The antenna is measured after being left for 96 hours at -30 °C and 70 °C respectively. It should be no problem such as separation, modification in each part. It is satisfied with the characteristics and performance of the clause 5.

1.7.3 Humidity Properties

The antenna is measured after being left for 96 hours at ambient temperature 40 °C and relative humidity 90~95%. It should be no problem in appearance, on the structure in each part. It is satisfied with the characteristics and performance of the clause 5.

1.8. Measurement and Inspection

It should be appropriate for specifications and requirements in this approval sheet, and also suitable for quality management regulations of our company. However, clause 7 may be omitted by agreement of the buyer.

1.9. Packaging

The product has to do assembly packaging not to do movement of the boxes after doing individual packaging.

1.10. Assurance

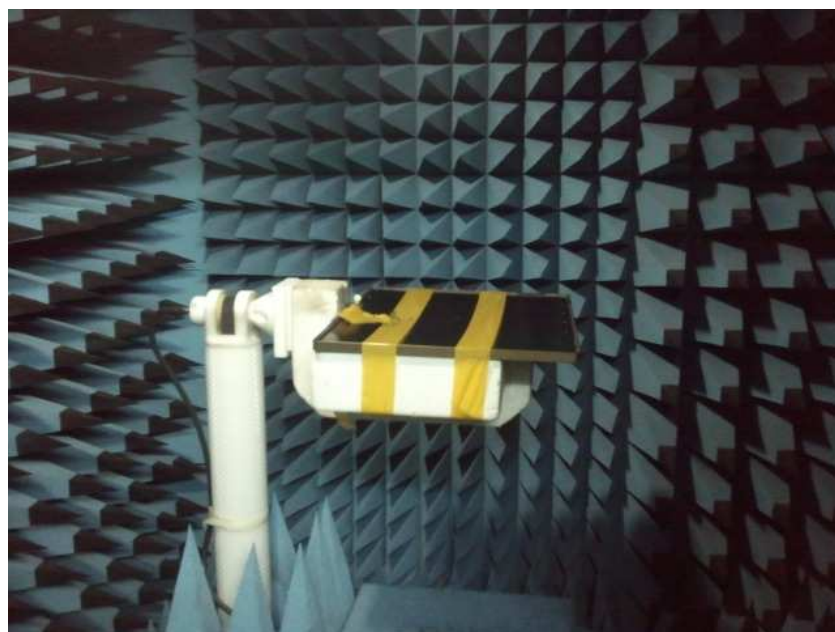
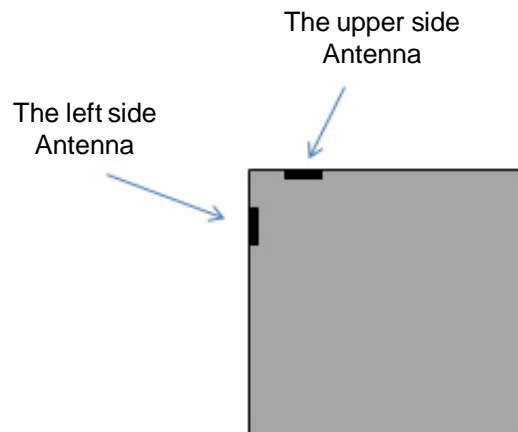
If any part of the product proves to be defective, is determined to be defective design or manufacturing, within one year of the date of purchase, it is under an obligation to repair or replace free of charge, immediately.

2. Measurement

2.1. Measurement

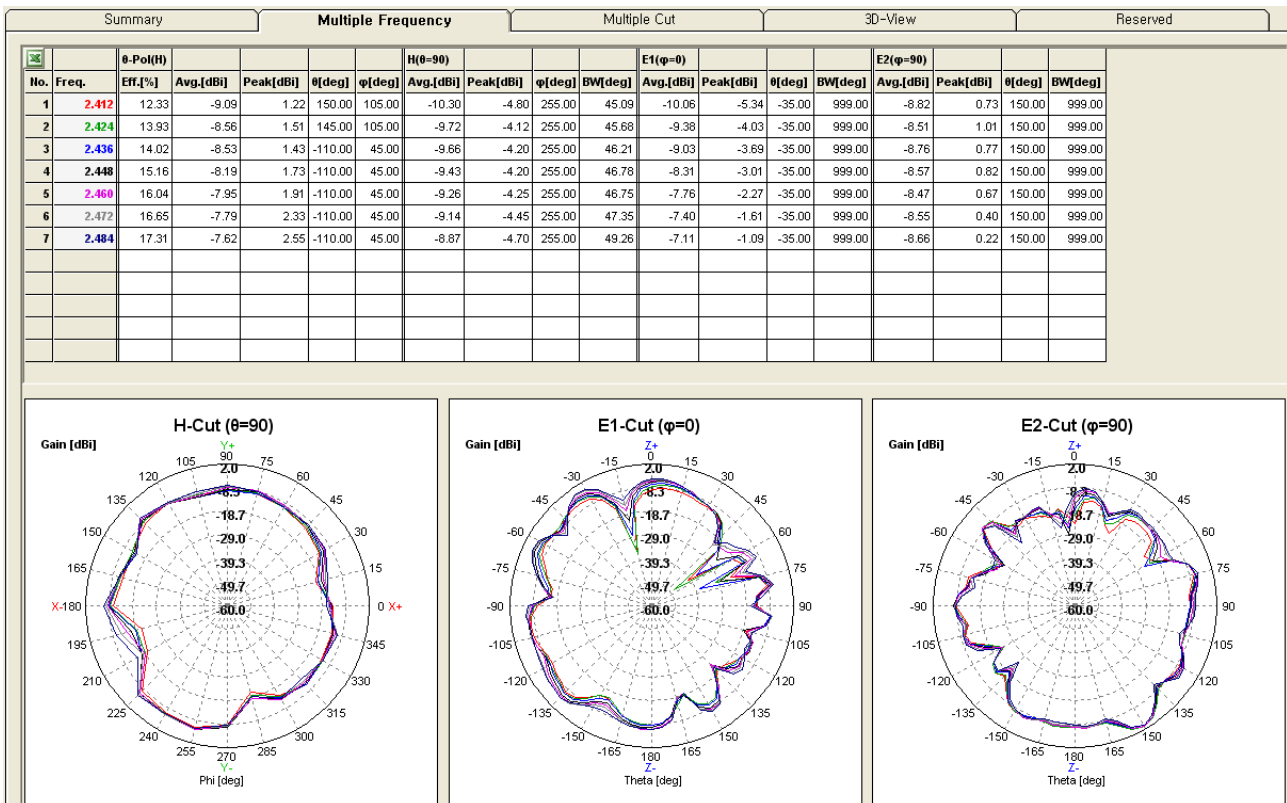
Antenna installation for measuring antenna gain, radiation pattern.

- Calibration frequency band : 2.4 ~ 6.0[GHz]
- Radiation pattern angle step : 05°



3. SPEC Data

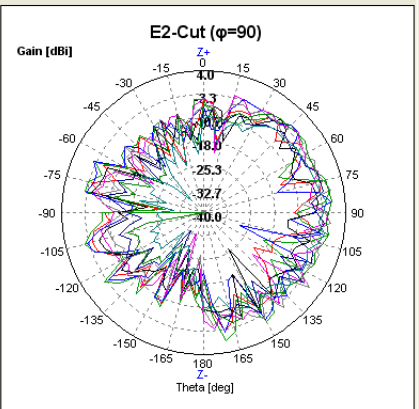
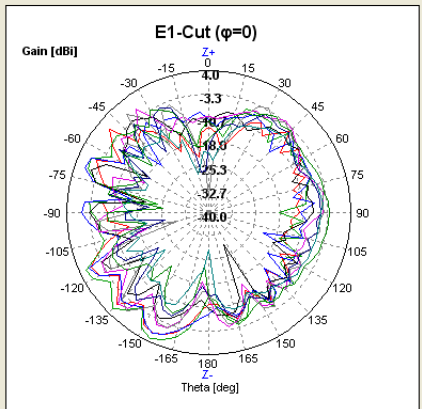
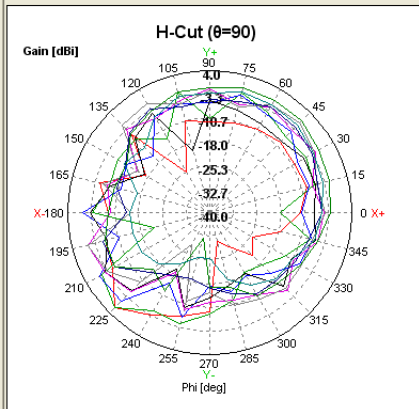
3.1. Radiation Pattern / The left side - 2.4GHz



3. SPEC Data

3.2 Radiation Pattern / The left side - 5GHz

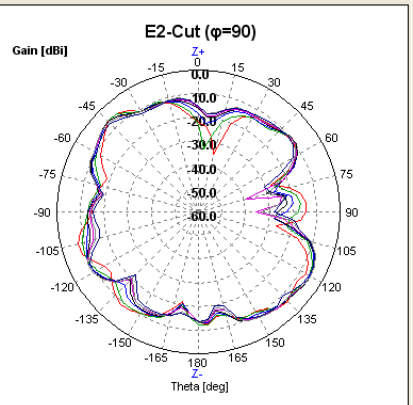
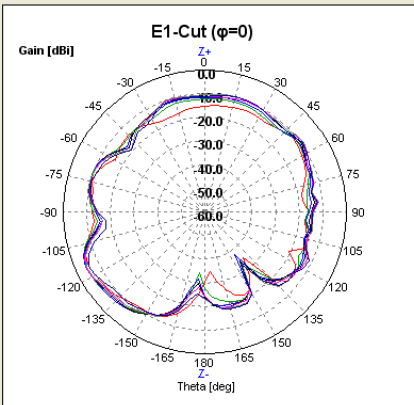
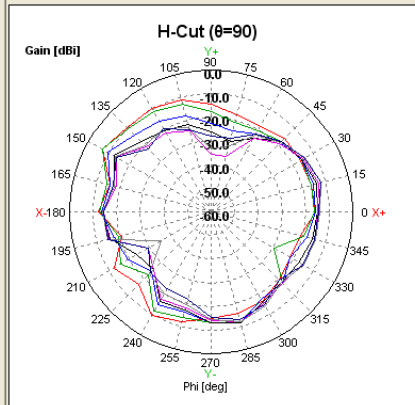
Summary		Multiple Frequency						Multiple Cut				3D-View				Reserved							
No.	Freq.	θ-Pol(H)	Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]	H(θ=90)	Avg.[dBi]	Peak[dBi]	φ[deg]	BW[deg]	E1(φ=0)	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]	E2(φ=90)	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]	
8	5.100	18.38	-7.36	1.78	-115.00	60.00	-7.44	1.65	225.00	15.55	-6.23	1.09	-155.00	17.24	-8.19	-1.96	75.00	999.00					
9	5.200	28.53	-5.45	1.99	-125.00	15.00	-5.34	1.69	225.00	21.88	-4.43	1.62	-155.00	16.33	-5.94	0.31	170.00	999.00					
10	5.300	24.79	-6.06	1.77	-125.00	15.00	-6.02	-0.48	210.00	22.12	-5.47	1.12	-155.00	16.62	-6.59	-0.43	85.00	999.00					
11	5.400	16.75	-7.76	0.59	150.00	150.00	-7.41	-2.73	210.00	25.33	-7.66	-1.22	-70.00	9.04	-8.95	-2.45	40.00	999.00					
12	5.500	24.95	-6.03	1.28	150.00	150.00	-5.26	-1.01	195.00	27.30	-6.24	-0.29	-135.00	9.16	-6.44	-1.54	50.00	999.00					
13	5.600	24.19	-6.16	1.83	50.00	150.00	-4.75	-0.83	195.00	18.89	-6.45	-0.17	-40.00	999.00	-6.33	0.13	80.00	999.00					
14	5.700	15.46	-8.11	-1.14	85.00	60.00	-6.55	-2.07	60.00	75.58	-8.53	-4.06	-40.00	999.00	-8.42	-2.45	80.00	999.00					
15	5.800	24.95	-6.03	0.37	85.00	60.00	-4.23	0.25	60.00	999.00	-6.95	-2.69	90.00	999.00	-6.41	0.01	85.00	999.00					
16	5.900	14.05	-8.52	-1.38	90.00	75.00	-6.47	-1.38	75.00	105.14	-10.00	-4.36	85.00	999.00	-8.99	-1.89	85.00	999.00					



3. SPEC Data

3.3. Radiation Pattern / The upper side – 2.4GHz

Summary		Multiple Frequency					Multiple Cut				3D-View				Reserved								
No.	Freq.	ϕ -Pol(V)	Eff.[%]	Avg.[dBi]	Peak[dBi]	θ [deg]	ϕ [deg]	H($\theta=90$)	Avg.[dBi]	Peak[dBi]	ϕ [deg]	BW[deg]	E1($\phi=0$)	Avg.[dBi]	Peak[dBi]	θ [deg]	BW[deg]	E2($\phi=90$)	Avg.[dBi]	Peak[dBi]	θ [deg]	BW[deg]	
1	2.412		10.18	-9.92	-0.98	-120.00	30.00	-13.23	-6.66	150.00	19.08	-12.90	-5.85	-115.00	31.52	-11.49	-5.69	-40.00	999.00				
2	2.424		11.00	-9.58	-0.62	-120.00	30.00	-13.98	-6.86	150.00	18.62	-11.59	-4.36	-115.00	34.07	-11.12	-5.69	-45.00	999.00				
3	2.436		11.30	-9.47	-0.82	-120.00	30.00	-15.72	-9.68	150.00	17.26	-11.51	-4.36	-115.00	34.31	-11.15	-5.53	120.00	999.00				
4	2.448		12.31	-9.10	-0.45	125.00	120.00	-16.38	-11.45	285.00	29.07	-11.34	-4.27	-115.00	32.01	-10.92	-5.12	120.00	999.00				
5	2.460		12.17	-9.15	-0.67	-115.00	30.00	-16.52	-11.74	285.00	30.25	-11.36	-4.42	-115.00	24.57	-11.08	-5.18	120.00	999.00				
6	2.472		12.46	-9.05	-0.51	135.00	135.00	-16.16	-11.90	15.00	999.00	-11.24	-4.64	-115.00	20.93	-11.01	-5.10	120.00	999.00				
7	2.484		10.43	-9.82	-1.21	135.00	135.00	-16.58	-11.87	15.00	999.00	-11.98	-5.89	-115.00	19.79	-11.71	-5.87	120.00	999.00				



3. SPEC Data

3.4. Radiation Pattern / The upper side – 5GHz

Summary		Multiple Frequency					Multiple Cut				3D-View				Reserved								
No.	Freq.	θ-Pol(H)	Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]	H(θ=90)	Avg.[dBi]	Peak[dBi]	φ[deg]	BW[deg]	E1(φ=0)	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]	E2(φ=90)	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]	
8	5.100		16.75	-7.76	1.62	-100.00	45.00	-6.44	-0.20	225.00	29.81		-8.29	-0.61	-165.00	19.66		-7.99	-1.10	-30.00	999.00		
9	5.200		16.63	-7.79	1.37	-130.00	45.00	-7.64	-2.68	255.00	19.06		-7.50	-1.34	-160.00	24.89		-7.75	-1.86	35.00	999.00		
10	5.300		14.74	-8.31	0.42	-60.00	30.00	-8.46	-4.08	210.00	64.80		-8.30	-1.78	-160.00	21.98		-8.23	-2.18	35.00	999.00		
11	5.400		17.03	-7.69	1.64	-120.00	45.00	-8.05	-3.17	180.00	38.78		-7.29	-1.14	-165.00	23.34		-8.48	-2.47	-10.00	999.00		
12	5.500		20.32	-6.92	2.18	-120.00	45.00	-8.51	-4.02	180.00	12.58		-7.27	-0.50	-165.00	17.29		-7.57	-1.30	-75.00	7.88		
13	5.600		16.99	-7.70	2.19	150.00	150.00	-10.05	-2.91	240.00	7.56		-7.96	-0.74	-140.00	10.17		-7.98	-0.66	-75.00	6.82		
14	5.700		18.64	-7.30	2.10	-115.00	30.00	-9.09	-3.88	270.00	55.50		-8.53	-2.27	150.00	999.00		-6.71	0.15	-55.00	999.00		
15	5.800		10.44	-9.81	-0.91	-75.00	90.00	-11.95	-5.60	270.00	25.69		-12.90	-5.03	-125.00	11.11		-7.14	-0.91	-75.00	10.19		
16	5.900		7.99	-10.98	-0.72	-5.00	90.00	-14.27	-7.46	270.00	25.32		-17.70	-10.49	-140.00	8.73		-7.13	-0.72	-5.00	999.00		

H-Cut (θ=90)
Gain [dBi] vs Phi [deg].

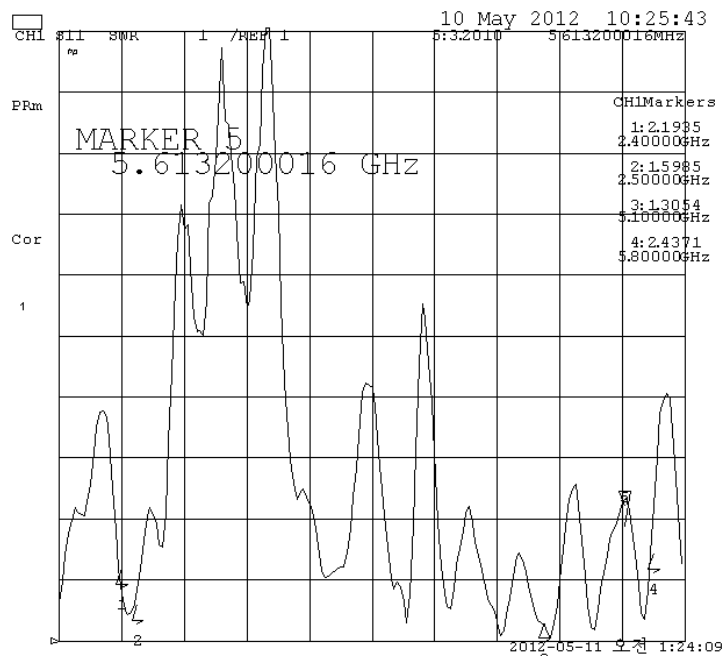
E1-Cut (φ=0)
Gain [dBi] vs Theta [deg].

E2-Cut (φ=90)
Gain [dBi] vs Theta [deg].

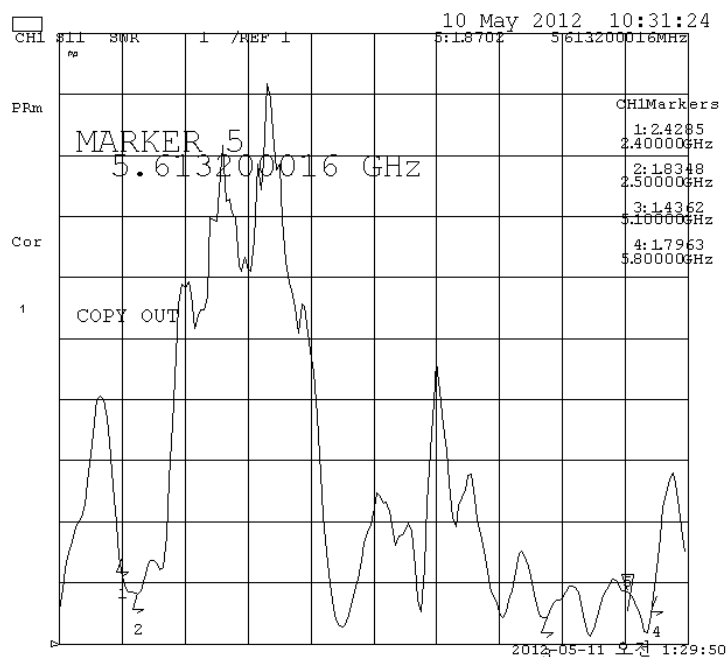
4. INPUT Impedance

4.1. Input Impedance Matching (VSWR)

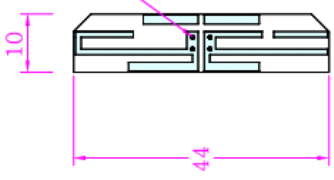
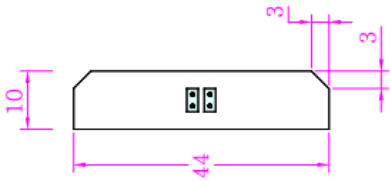
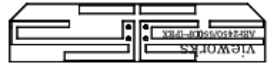
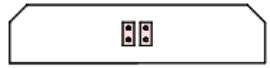
<4.1 Left Antenna - VSWR>



<4.2 Upper Antenna - VSWR>



5. Antenna Dimension

ANTENNA ENGINE		TOL Unless Noted	DIMENSION	mm	No	DATE	REVISION	CHECKER		
		X. = ±0.5	SCALE	1/1	△	20				
		X.X = ±0.1	MATERIAL		△	20				
		X.XX = ±0.05	FINISH							
<p><앞면></p>  <p><뒷면></p> 		<p><앞면></p>  <p><뒷면></p> 		PSR은 흰색						
<p>주 기</p> <p>1. □ 표시는 동박 Area 임.</p> <p>□ 표시는 PSR처리 안되는 부분 (PSR 색깔:흰색)</p> <p>2. FR-4 0.8T 양면기판(0.8T+0.09,-0)</p>		<p>TITLE</p> <p>Drawn</p> <p>J.K.BAE</p>		<p>뷰웍스 안테나</p> <p>Checked</p> <p>H.J.SHIN</p>		<p>MODEL</p> <p>Approval</p> <p>2012.06.25.</p>		<p>File Name</p> <p>PART NAME</p> <p>FINISH</p>		

6. Antenna Image

