

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	1/8

Product Name : **Patch Antenna for 2.4GHz Wireless LAN**

MODEL : HIF-2400 (Code : 15B-11-004)

Delivery Line : Standard

Management department : 3 development teams



[Revision history]

NO		my	dragon	note
2	2002.07.12	Form modified		
1	2001 07 12	Radiation pattern Beam Width modified		
0	2000.03.15	Draft		
Distributor		Production Management, Sales, Purchasing, QC part		
Approval	write	check	examine	approval
	김정영			나병국
Approval date	2002-07-12			2002-07-12

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	2/8

1. Application

This specification specifies patch antenna for wireless LAN used in 2.4~2.5GHz band.

2. Conditions for using Antenna

γ Mobile γ Fixed γ Mobile γ Outdoor γ Indoor γ Others

3. Antenna shape

4 Page drawing reference

4. Electrical Characteristics and

Performance Satisfy the following under actual conditions of use or appropriate conditions corresponding thereto.

item	Characteristics/Performance	note
Antenna Type	Patch	
Frequency range	2.4-2.5 GHz	Center Frequency = 2.45 GHz
Bandwidth	100 MHz	
Impedance	50γ	Nominal
VSWR	less than 1.5	
Gain	9.13	
Polarization	Vertical	
Radiation Pattern	Directional	
Half Power Beamwidth	Azimuth: 70° Elevation: 55°	
Front to Back Ratio	15 dB	
Power Input	50W	Maximum

5. Mechanical specifications and characteristics

item	Specifications/Characteristics	note
Dimensions (W×H×D)	90 × 127 × 68 mm	
Weight	160 g (only ANT.)	240g (with individual box and install kit)
Connector	SMA Female R/A	
Mount Type	Wall Mount	
Articulation Angle	-60° to +60°	
Op. Temperature	-30~+60γ	

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	3/8

6. Other Performance and Characteristics

6.1 Anti-Seismic

Resistance When the antenna is in the finished product state, vibration that changes by dividing the total amplitude of 1mm and the frequency of 5~55Hz for 1 minute is applied for 2 hours in the up-down, left-right, and front-back directions, and then measured. There should be no abnormality such as deviation, and the characteristics and performance of paragraph 4 shall be satisfied.

6.2 Temperature resistance

After leaving the antenna at -30℃ and 60℃ for 96 hours, respectively, measure it so that there is no abnormality such as deviation or deformation of each part, and the characteristics and performance of paragraph 4 are satisfied.

6.3 Moisture resistance

After leaving the antenna at an ambient temperature of 40℃ and a relative humidity of 90~95% for 96 hours, it is measured under normal temperature and humidity conditions, and there is no abnormality in the appearance and structure of each part, and the characteristics and performance of paragraph 4 are satisfied.

7. Measurement and Inspection

Follow the requirements set forth in this specification and the approval authority, and conform to our quality control regulations. However, the items in paragraph 6 can be omitted by consultation with the owner.

8. Packaging

Product packaging is individually packaged and then collectively packaged in an appropriate box so that there is no flow.

9. Warranty

This product is obliged to repair or replace it immediately free of charge if a defect that is judged to be a defect in design or manufacturing occurs within one year after delivery.

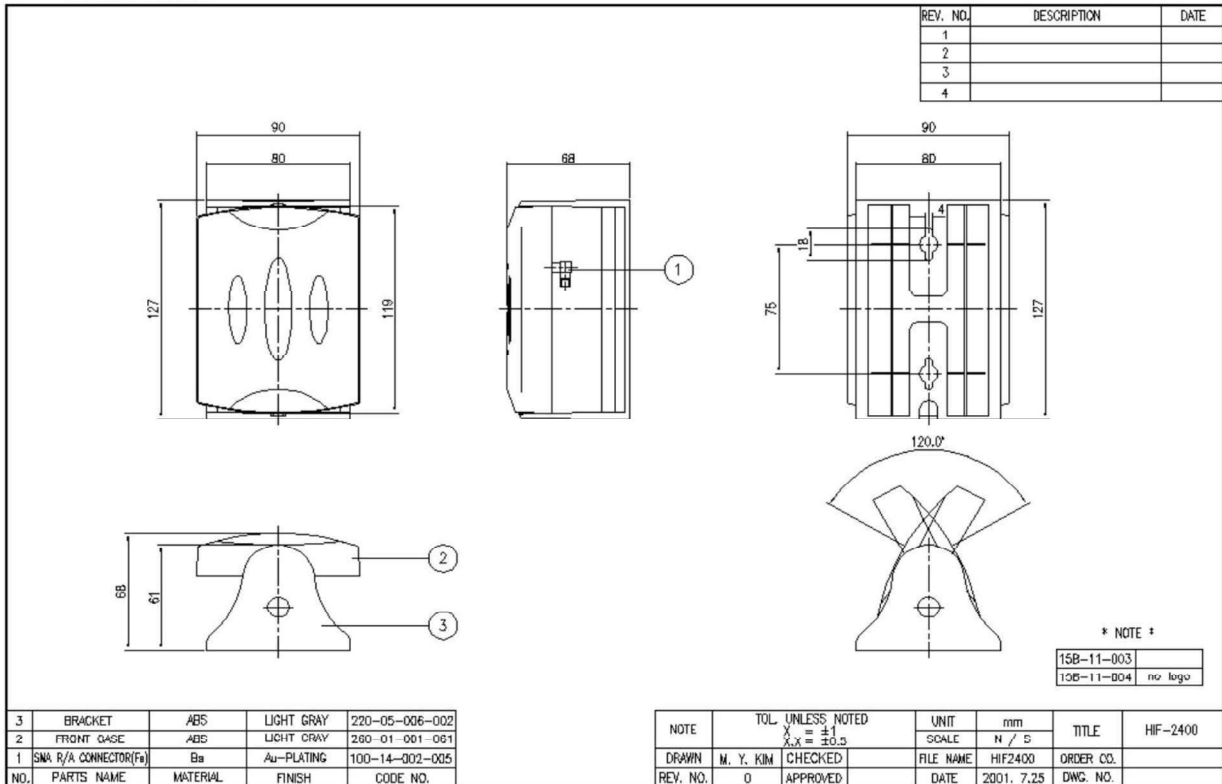
10. Attached Documents

- 1) Antenna standard drawing
- 2) Antenna characteristic data

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	4/8

[Attachment 1] Antenna specifications drawing

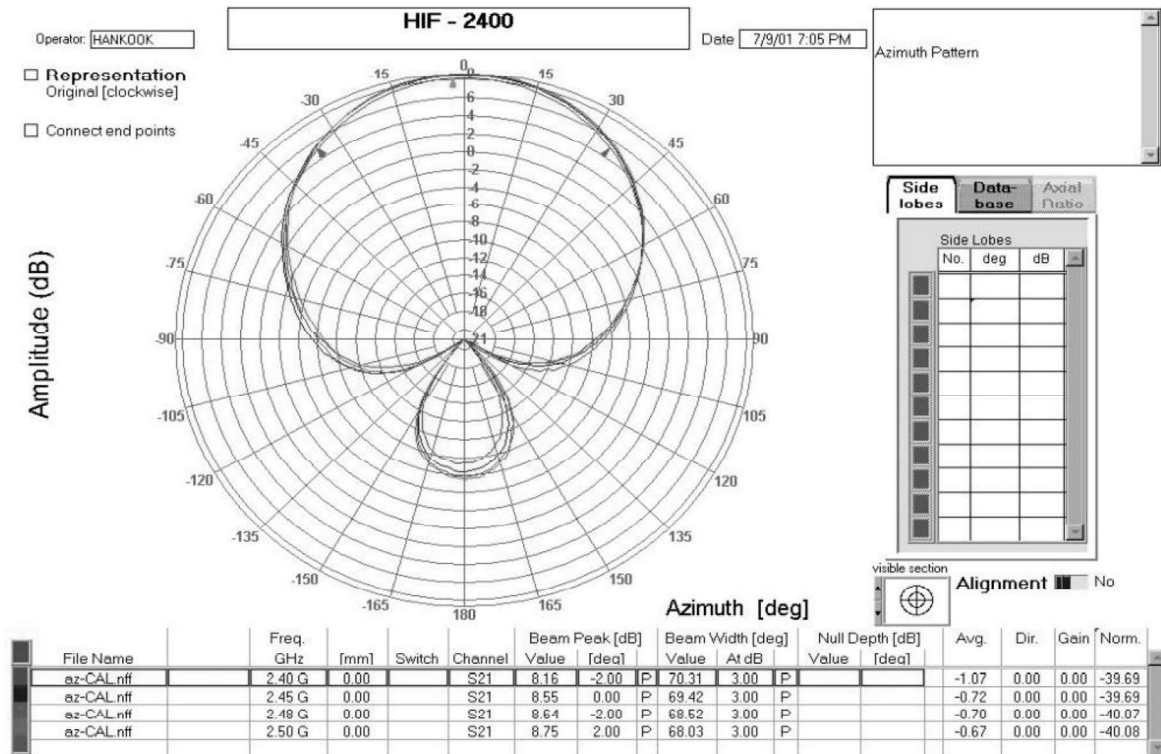
Satena®



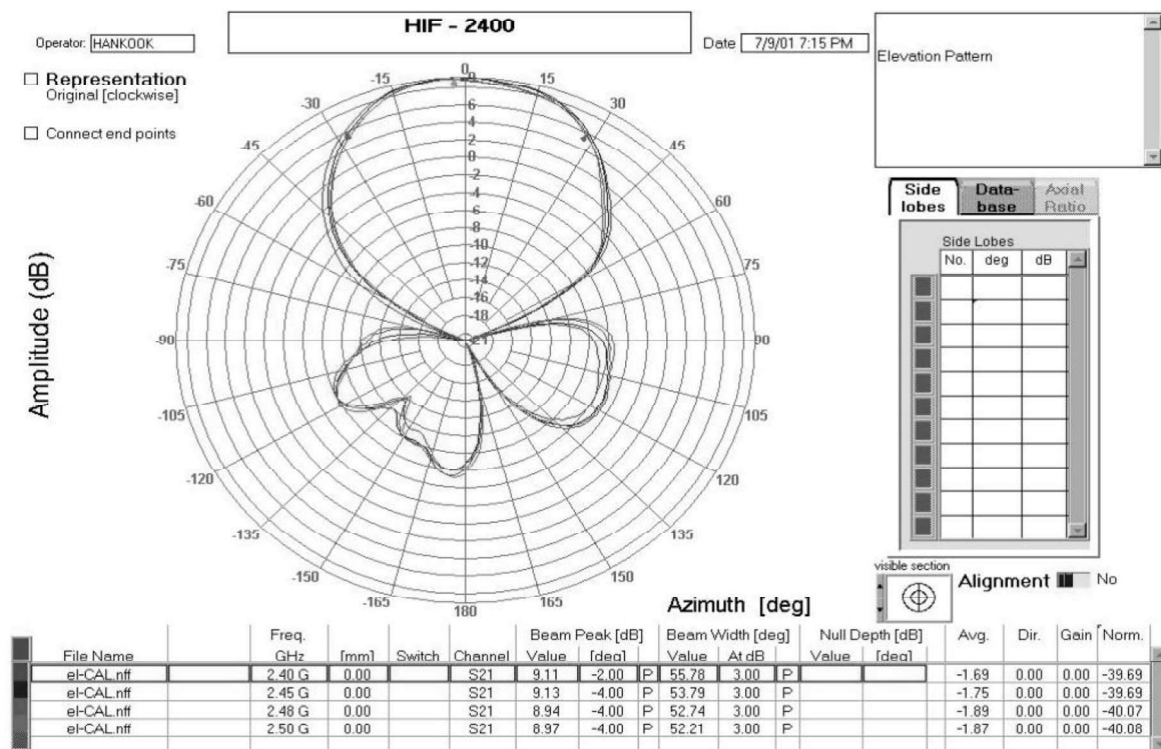
© Hankook Antenna Co., Ltd.

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	5/8

[Attachment 2] Antenna characteristic data



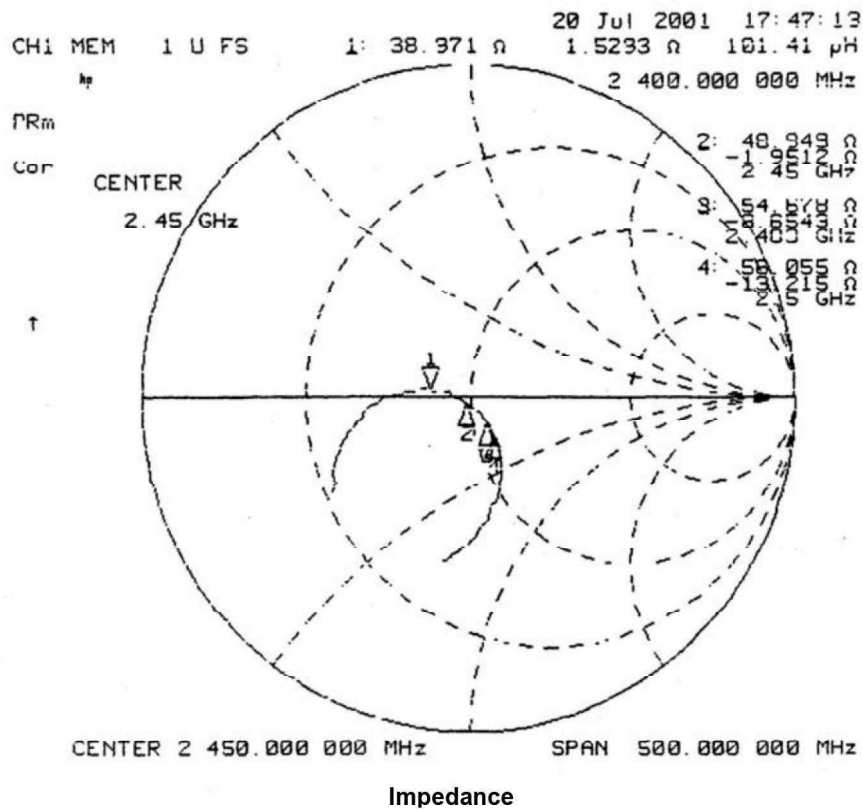
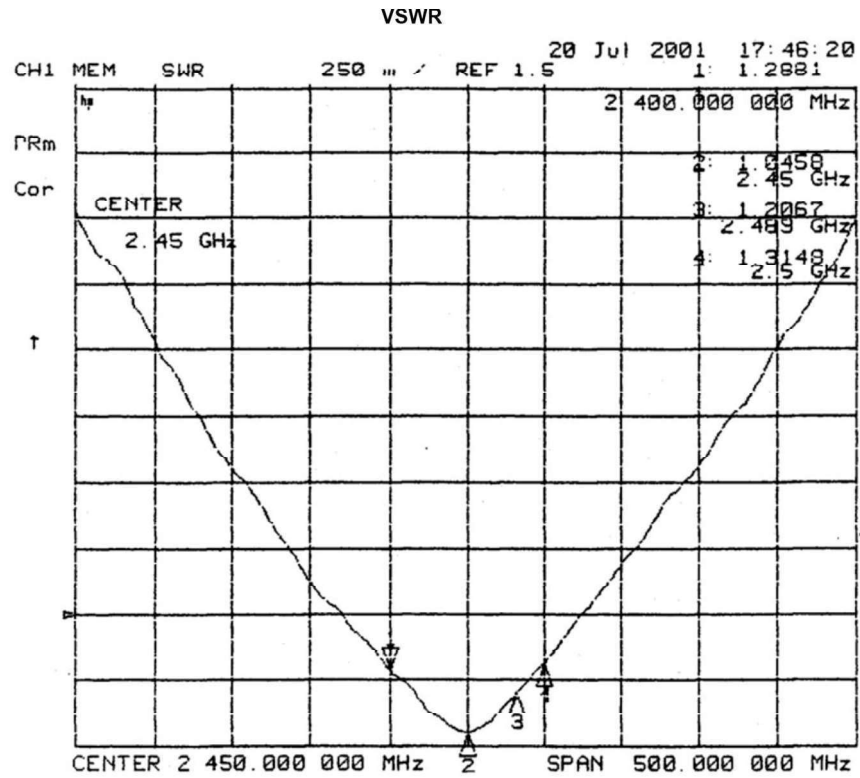
Azimuth



Elevation

NO.	A302071202	product specification sheet ANTENNA SPECIFICATION	REVISION	Rev.02
DATE	2002 07 12		PAGE	6/8

[Attachment 2] Antenna characteristic data



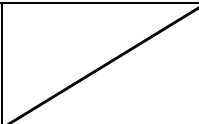
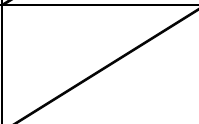
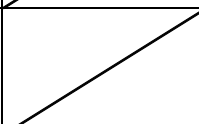
Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

APPROVAL SHEET

Customer Name : FITOGETHER

Company Name : Hutec

Product Name : HPW24B

Department	Complete	Review	Approval
RF			
MT	정광신		
QA			

Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

► Contents ◀

1. Revision History of Product Specification

1.1 History List of Approval Sheet	3
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2. RF Specification

2.1 Test Condition	4
2.1.1 Test Environment (Condition/Method)	
2.2 Electrical Specification	5
2.2.1 V.S.W.R	5
2.2.2 3D Gain & Radiation Pattern	6

3. Mechanical Specification

3.1 Mechanical Requirement	7
3.1.1 Part List	7
3.1.2 Ass'y Drawing	8

Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

1. Revision History of Product Specification

1.1 History List of Approval Sheet

[illegible]

Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

2. RF Specification

2.1 Test Condition

2.1.1 Test Environment (Condition/Method)

① Voltage Standing Wave Ratio(VSWR)

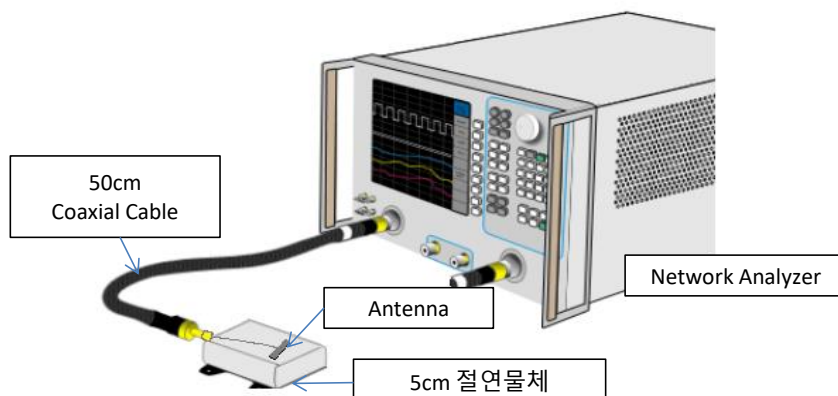
Step 1. Set the frequency range after connect 50cm cable to Network analyzer.

Step 2. Connect Calibration Kit to Network analyzer and calibrate.

Step 3. Fix the cable and keep separation distance over 30cm for reducing effect by Network analyzer.

Step 4. Fix insulator over 5cm on the bottom of measuring antenna.

Step 5. Measure VSWR with setting marker of desired frequency.

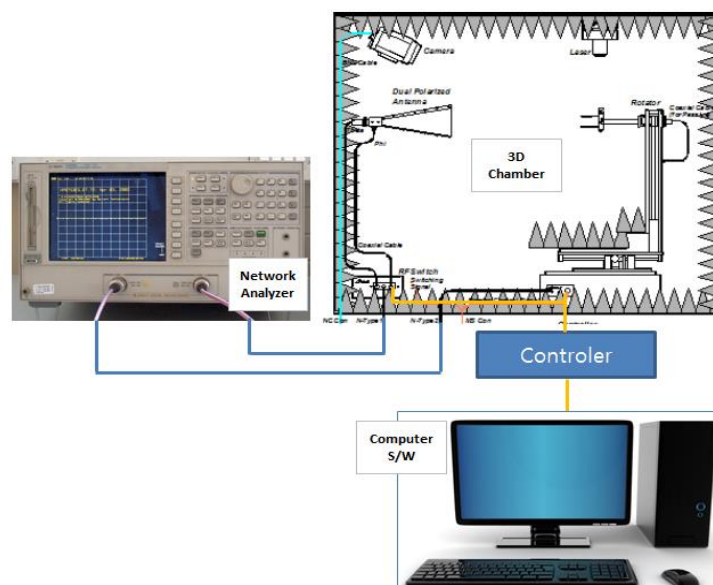


② Radiation Pattern & Gain

Step 1. Calibrate the Chamber system using Horn antenna, and set up the software to control the Chamber system at the same time.

Step 2. Keep the measuring antenna to holder.

Step 3. Measure Gain & efficiency.

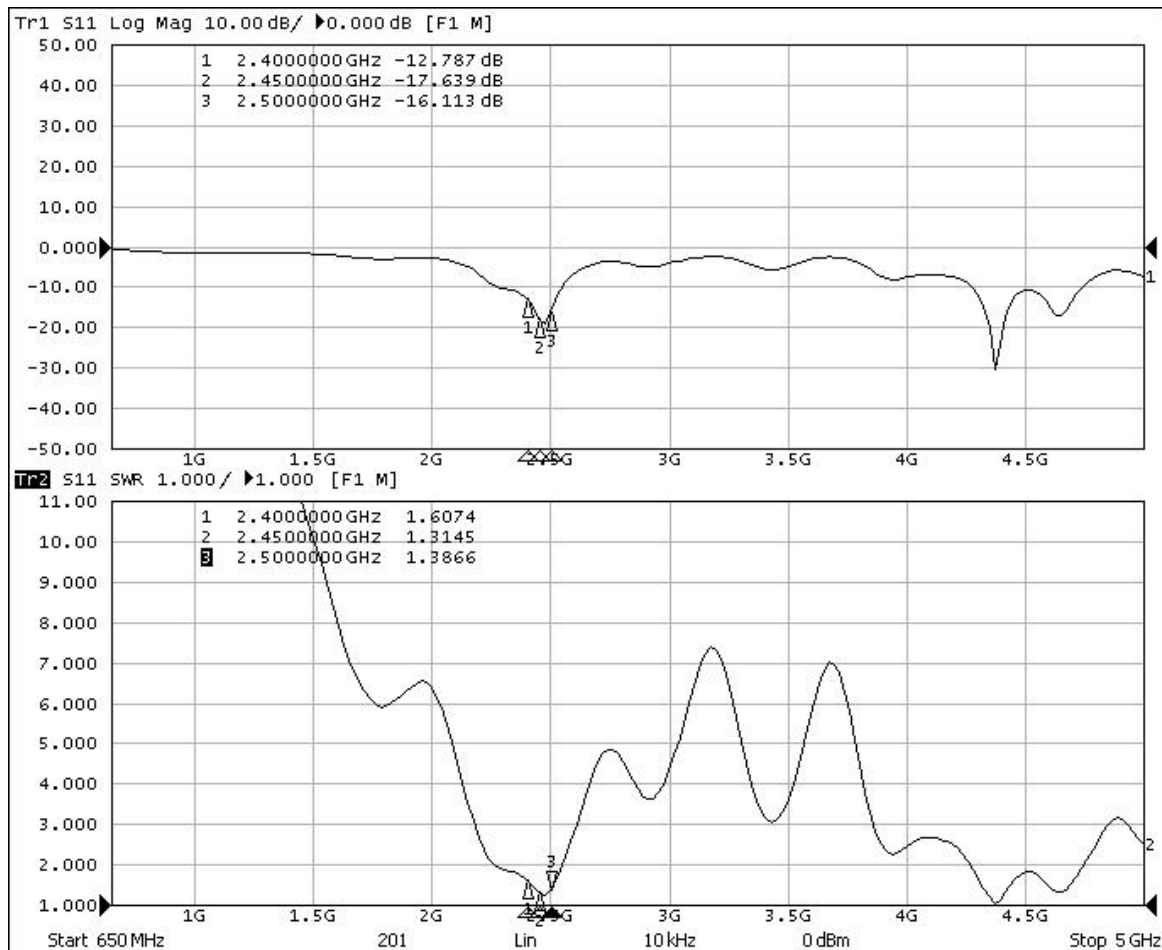


Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

2.2 Electrical Specification

Frequency [MHz]	WiFi 2.4GHz
	2400MHz ~ 2500MHz
Peak Gain	+3.7dBi
VSWR	2.5 : 1 Below
Directivity	Omni-directional
Polarization	Linear
Feed Impedance	50 Ohms
Power Handling	2Watt

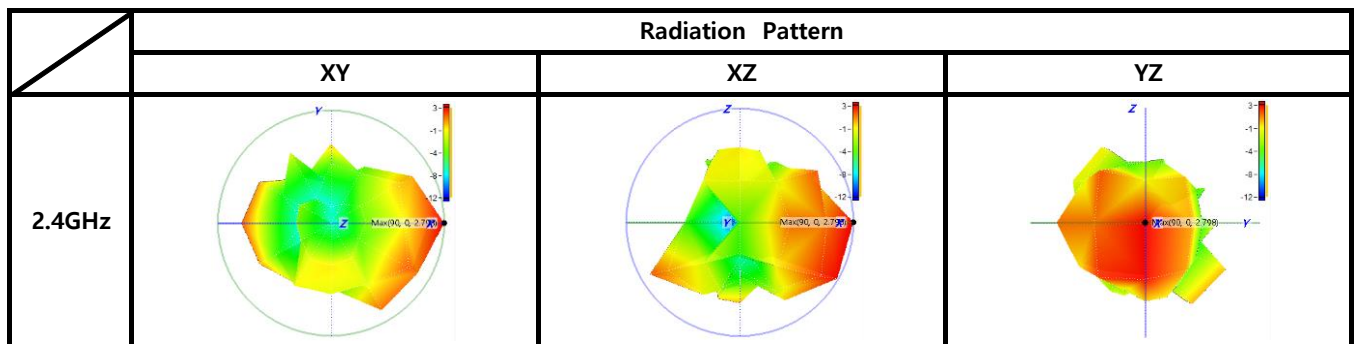
2.2.1 V.S.W.R



Product Name	Type	Rev.	Hutec	IR
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2.2.2 3D Gain & Radiation Pattern

Frequency	Peak Value		Minimum Value		Avg. Gain	Efficiency
[MHz]	Value[dBi]	Degree	Value[dBi]	Degree	[dBi]	[%]
2400	2.798	90 / 0	-11.687	60 / 180	-1.509	70.644
2425	3.586	120 / 0	-12.744	90 / 240	-1.225	75.425
2450	3.722	120 / 0	-14.245	90 / 240	-1.365	73.037
2475	3.509	120 / 330	-14.265	90 / 240	-1.392	72.57
2500	3.077	120 / 330	-14.61	0 / 0	-1.661	68.212



Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

3.1.1 Part List

[illegible]

Product Name	Type	Rev.	Hutec	IR
HPW24B	PCB + CABLE ASS'Y		FITOGETHER	IR

3.1.2 Ass'y Drawing

