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Maker Code	KT-WIFI-KM2606
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Model	Type	Rev.	KEITECH	IR
Outdoor Thread	Int F-PCB Antenna		LGIT	A

For specification certification Sheet

Customer : LGIT

Company : KEITECH

Product Name : Int F-PCB Antenna

Model : Outdoor Thread

Customer P/N : 2ANE00021A

Maker Code : KT-WIFI-KM2606

Department	Investigation	Verification	Approval
Circuit			
Machine			
Safety			



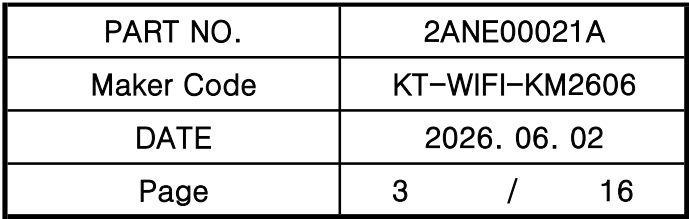
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1. Revision History of Product Specification

1.1 History List of Approval Sheet

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2. Circuit Specification

2.1 Test Setting

2.1.1 Test Environment (Condition/Method)

① VSWR

Step 1. Connect ANT port with cable included adaptor to port1 of Network analyzer.

Step 2. Point out markers on network analyzer display at target frequencies.

Step 3. Inspect VSWR

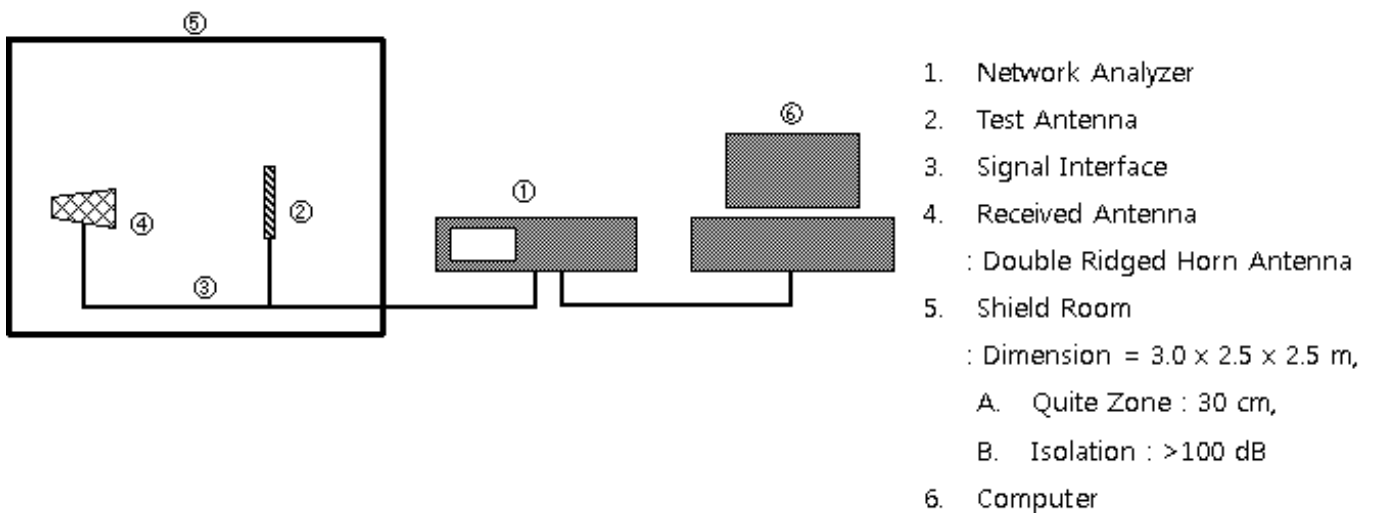
② Radiation Pattern and Gain

Step 1. Calibrate chamber system for gain measurement using horn antenna.

At the same time set up software program for chamber system control.

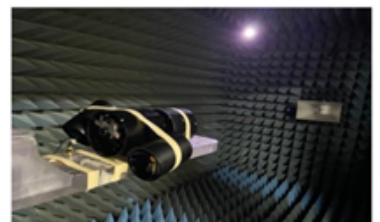
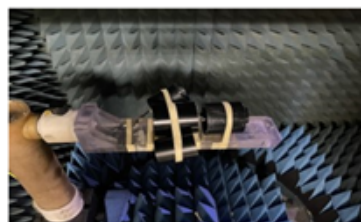
Step 2. Change over from a horn antenna to measuring antenna on target positioner

Step 3. Start a software program for chamber system control & measuring.



●Antenna Gain Test Equipment
Measurement system
Changwoo System
Calibration date: October 21, 2024

Network Analyzer
Agilent 5071B
Calibration date: May 13, 2024





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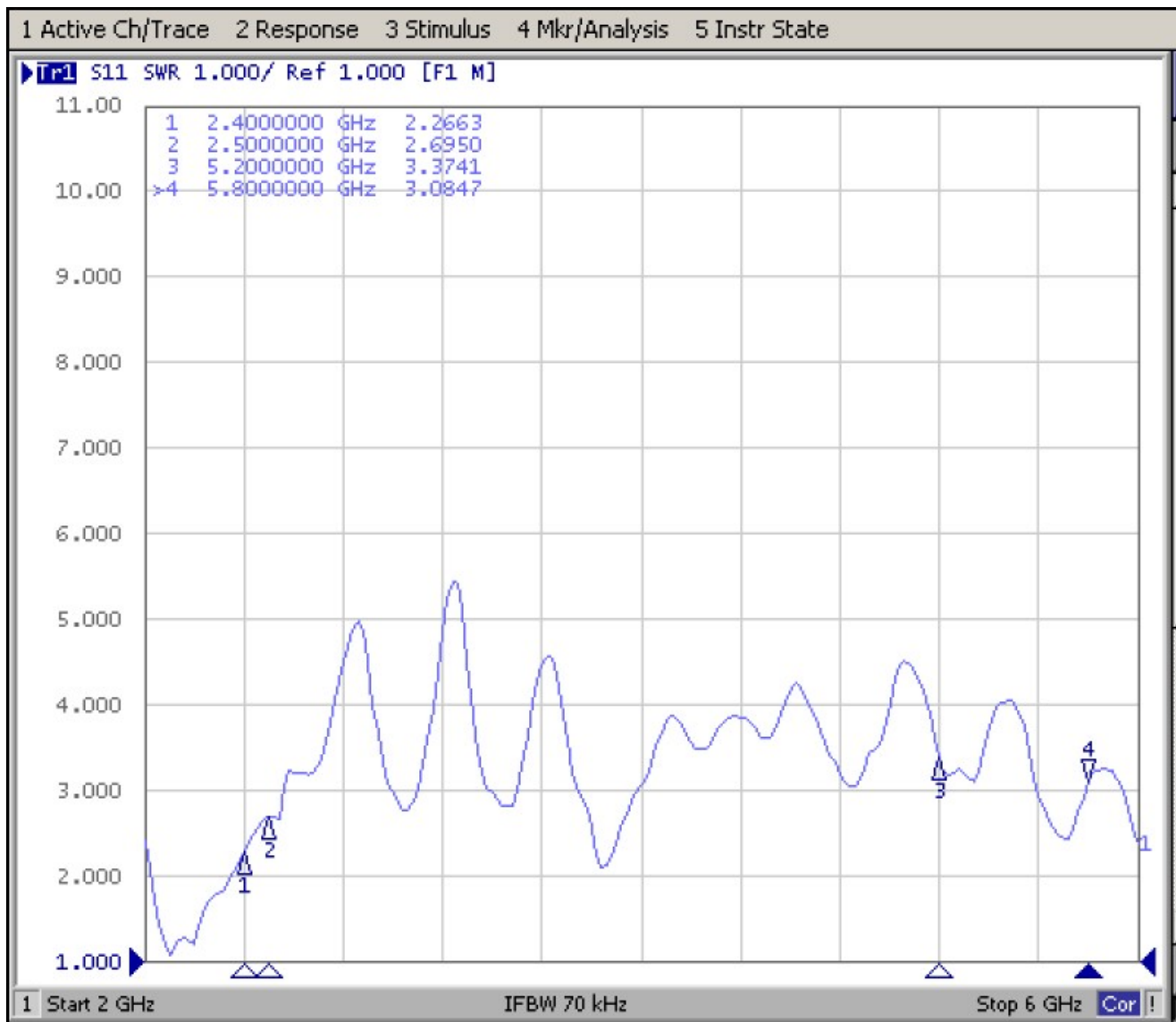
2.2 Electrical Specification

Outdoor Thread				
Frequency	2400MHz	2500MHz		
VSWR	≤ 3.0	≤ 3.0		
Peak Gain (dBi)	1.0	1.0		
Directivity	Omni-directional			
Polarization	Linear			

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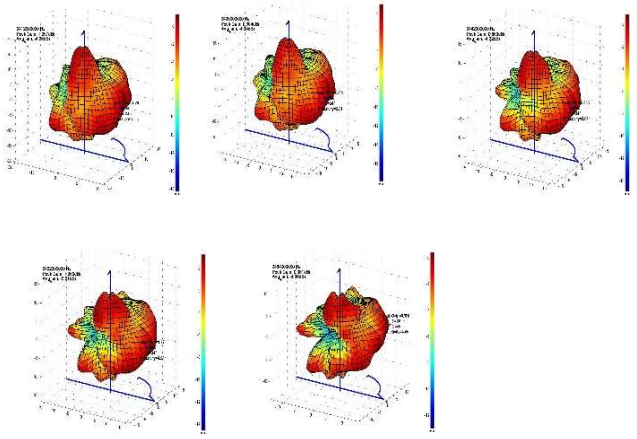
2.2.1 Electrical Spec. of Piece (With VSWR)



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2.2.2 Passive Gain & 3D Pattern

2GHz_3D Pattern	5GHz_3D Pattern
	

Passive Gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2,400,000,000 Hz	18.1 %	-9.6 dBi	-7.1 dBi	-7.2 dBi	-0.2 dBi	0.8 dBi	1.0 dBi
2,420,000,000 Hz	17.9 %	-9.7 dBi	-7.3 dBi	-7.3 dBi	-0.5 dBi	0.7 dBi	0.8 dBi
2,442,000,000 Hz	17.8 %	-9.9 dBi	-7.5 dBi	-7.5 dBi	-0.7 dBi	0.6 dBi	0.7 dBi
2,462,000,000 Hz	17.5 %	-10.1 dBi	-7.8 dBi	-7.7 dBi	-0.8 dBi	0.5 dBi	0.5 dBi
2,500,000,000 Hz	17.4 %	-10.4 dBi	-7.9 dBi	-7.8 dBi	-0.9 dBi	0.4 dBi	0.4 dBi



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3. Mechanical Specification

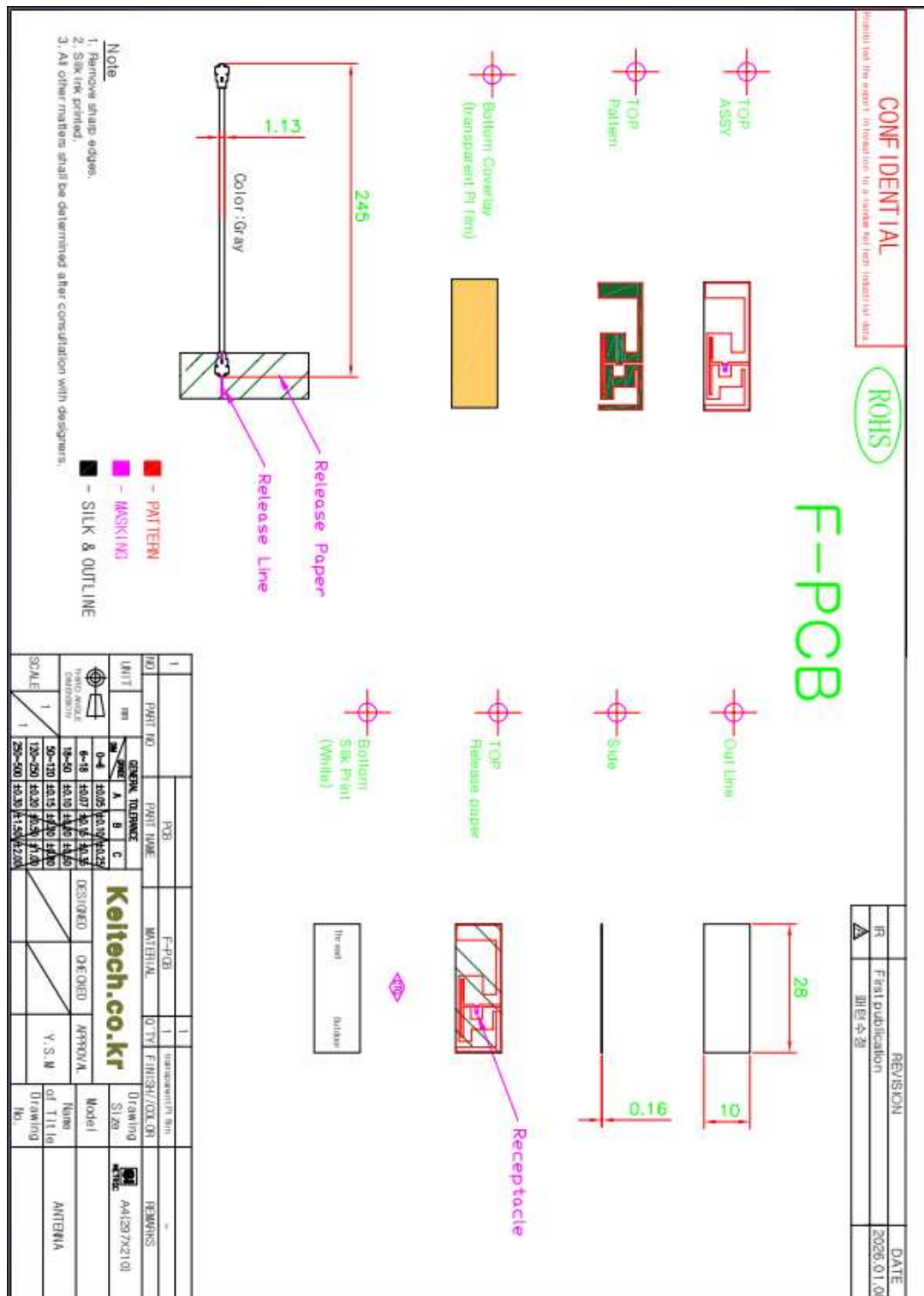
3.1 Material Certificate

Model		Outdoor Thread				
Ant Type		Int F-PCB Antenna				
No	Part Name	Part No.	Raw Material (Plating Spec.)	Raw Material Company	Manufacture Company	Processing Company Representative
1	F-PCB	—	F-PCB, 0.16T / PI Film	INTERNATION AL LAMINATE MATERIAL	Gaoke Ant Co.,Ltd	Chen Biyun +86-13570069921
2	Cable	—	FEP/Copper Φ1.13*245mm/Gray	Yuanda		

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3.2 Assy Drawing



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4. Quality Specification

4.1 Required Test (With Report)

Reliability Test Report		작 성	검 토	승 인
				
Objective	Approval	PERSON IN CHARGE	Park Byoung Wook	
TEST DATE	2026.03.14~2026.03.23.	DATE	2026.03.23	
ITEM	Thread Antenna	MODEL	Outdoor Thread	
Request	R & D	Quantity	20ea	
Information	PCB, CABLE	CUSTOMMER	LGIT	
RESULT		PASS		

Test Item			Test Conditions / Judgment Standards	RESULT
1	Estimation of Documents		- It is checked missing and error of commissioned paper that drawing, approval sheet, design samples etc. - Our requirements and test specifications are satisfied.	OK
2	Characteristics	Appearance	- It is checked abnormalities of color, printing specifications compared to design sample. - It is checked abnormalities of appearance defect visually. - It should not have ratch, strain, burr, discoloration, eccentricity, stain etc.	OK
		Dimensions	- It should be satisfied management standards of drawing, approval sheet. - It is measured major point as a vernier caliper, microscope. * Basic measurement points: length, width, thickness, etc. (Important point)	OK
		Electrical Characteristics	- It should be satisfied management standards of drawing, approval sheet. - Shall be tested as follows 1. It is recommended to be tested equipment setting and test environment in the space completely shielded from external radiation. 2. Network Analyzer and LCR meter are calibrated before test. 3. It is measured inductance using test jig.	OK



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Test Item	Test Conditions / Judgment Standards	RESULT
3 Thermal Shock	1. Test conditions - Test temperature/Time: -40℃/45min, 85℃/45min - Test Cycle: 27 Cycle 2. Standards of Judgment - It should not be change of inductance and have problem at using, be damaged of appearance..	OK
4 High humidity Storage	1. Test conditions - Test temperature/Humidity: 60℃/95% - Test time: room temperature 1Hr after storage 48Hr 2. Standards of Judgment - It should not be change of inductance and have problem at using, be damaged of appearance.	OK
5 High Temperature Storage	1. Test conditions - Test temperature: 85℃ - Test time: room temperature 1Hr after storage 48Hr 2. Standards of Judgment - It should not be change of inductance and have problem at using, be damaged of appearance.	OK
6 Low Temperature Storage	1. Test conditions - Test temperature: -40℃ - Test time: room temperature 1Hr after storage 48Hr 2. Standards of Judgment - It should not be change of inductance and have problem at using, be damaged of appearance. .	OK

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4.1.2 Thermal Shock

TEST RESULT	2026.03.14~2026.03.23.		PERSON IN CHARGE		Park Byoung Wook	
TEST ITEM	Environment Test		TEST Condition		-40℃/45min ~ +85℃/45min (27 Cycle)	
	Thermal Shock					
SPEC	BEFORE(VSWR)				RESULT	
Frequency	2400MHz	2500MHz				
SPEC	Max 3.0	Max 3.0				
1	2.88	2.90			PASS	
2	2.90	2.85			PASS	
3	2.81	2.86			PASS	
4	2.90	2.81			PASS	
5	2.81	2.89			PASS	
MAX	2.90	2.90				
MIN	2.81	2.81				
AVG.	2.86	2.86				
SPEC	AFTER(VSWR)				RESULT	
Frequency	2400MHz	2500MHz				
SPEC	Max 3.0	Max 3.0				
1	2.87	2.90			PASS	
2	2.89	2.81			PASS	
3	2.83	2.88			PASS	
4	2.80	2.87			PASS	
5	2.89	2.86			PASS	
MAX	2.89	2.90				
MIN	2.80	2.81				
AVG.	2.86	2.86				

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4.1.3 High humidity Storage

TEST DATE	2026.03.14~2026.03.23.		PERSON IN CHARGE	Park Byoung Wook	
TEST ITEM	Environment Test		TEST Condition	60℃/ 95%/ 48Hrs	
	High Humidity				
SPEC	BEFORE(VSWR)				RESULT
Frequency	2400MHz	2500MHz			
SPEC	Max 3.0	Max 3.0			
1	2.88	2.80			PASS
2	2.89	2.80			PASS
3	2.85	2.90			PASS
4	2.85	2.83			PASS
5	2.89	2.82			PASS
MAX	2.89	2.90			
MIN	2.85	2.80			
AVG.	2.87	2.83			
SPEC	AFTER(VSWR)				RESULT
Frequency	2400MHz	2500MHz			
SPEC	Max 3.0	Max 3.0			
1	2.88	2.80			PASS
2	2.89	2.84			PASS
3	2.88	2.88			PASS
4	2.81	2.83			PASS
5	2.84	2.84			PASS
MAX	2.89	2.88			
MIN	2.81	2.80			
AVG.	2.86	2.84			

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4.1.4 High Temperature Storage

TEST DATE	2026.03.14~2026.03.23.		PERSON IN CHARGE		Park Byoung Wook	
TEST ITEM	Environment Test		TEST Condition		85℃/ 48Hrs	
	High Temperature					
SPEC	BEFORE(VSWR)				RESULT	
Frequency	2400MHz	2500MHz				
SPEC	Max 3.0	Max 3.0				
1	2.80	2.80			PASS	
2	2.83	2.84			PASS	
3	2.86	2.87			PASS	
4	2.82	2.85			PASS	
5	2.87	2.82			PASS	
MAX	2.87	2.87				
MIN	2.80	2.80				
AVG.	2.84	2.84				
SPEC	AFTER(VSWR)				RESULT	
Frequency	2400MHz	2500MHz				
SPEC	Max 3.0	Max 3.0				
1	2.89	2.82			PASS	
2	2.82	2.88			PASS	
3	2.85	2.86			PASS	
4	2.85	2.82			PASS	
5	2.83	2.80			PASS	
MAX	2.89	2.88				
MIN	2.82	2.80				
AVG.	2.85	2.84				

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4.1.5 Low Temperature Storage

TEST DATE	2026.03.14~2026.03.23.		PERSON IN CHARGE	Park Byoung Wook	
TEST ITEM	Environment Test		TEST Condition	-40℃ / 48Hrs	
	Low Temperature				
SPEC	BEFORE(VSWR)				RESULT
Frequency	2400MHz	2500MHz			
SPEC	Max 3.0	Max 3.0			
1	2.88	2.80			PASS
2	2.83	2.84			PASS
3	2.80	2.89			PASS
4	2.88	2.90			PASS
5	2.85	2.83			PASS
MAX	2.88	2.90			
MIN	2.80	2.80			
AVG.	2.85	2.85			
SPEC	AFTER(VSWR)				RESULT
Frequency	2400MHz	2500MHz			
SPEC	Max 3.0	Max 3.0			
1	2.84	2.90			PASS
2	2.81	2.80			PASS
3	2.82	2.85			PASS
4	2.87	2.90			PASS
5	2.89	2.89			PASS
MAX	2.89	2.90			
MIN	2.81	2.80			
AVG.	2.85	2.87			

