DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO., LTD.

SPECFICATION FOR APPROVAL

CUSTOMER	
CUS. CODE	
CUS. MODEL	
HJ-Tech CODE	3K3401BK00-002
PRO. NAME	RF ANTENNA COMPONENT
SPECIFICATION DESCRIPTION	WIFI Antenna Black, 1. 13 Black Cable+MHF-1, Exposed Cable Length L=60mm
DATE	2026/8/24

SUPPLIER		
PREPARER	CHECKER	APPROVER
S.He	XIU HE	LFY

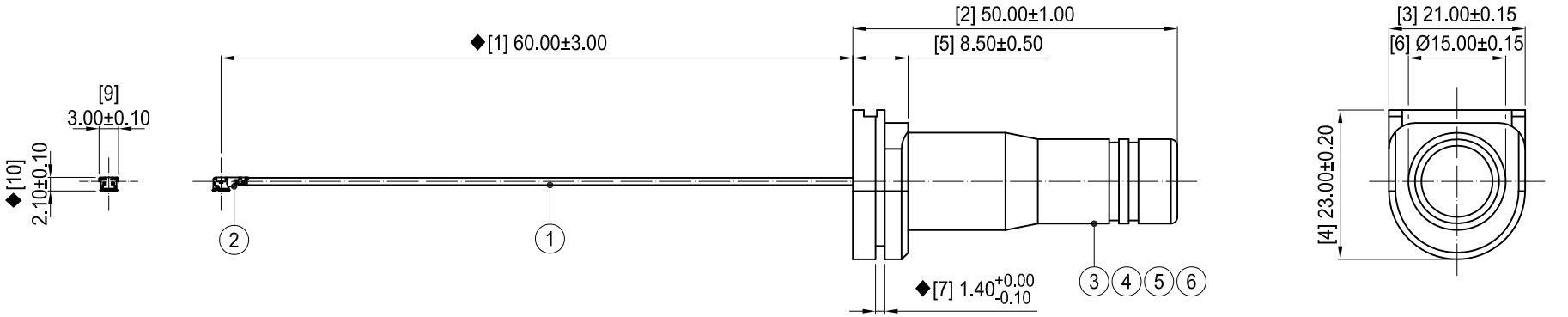
CUSTOMER		
TRANSCTOR	CHECKER	APPROVER

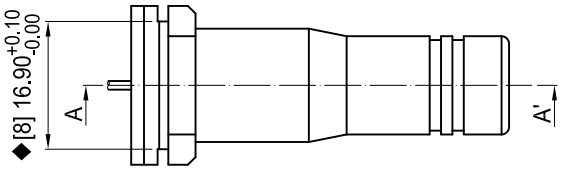
DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO.,LTD.
Address: Daqiandi Industrial Zone, Quantang, Liaobu Town, Dongguan City, Guangdong Province, China
Tel:86-769-83328111 Fax:86-769-83327688
email:info@iphone-line.com
website:www.iphone-line.com

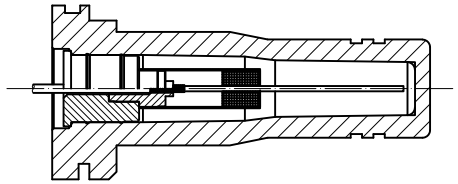
CONTENTS

S/N	SYNOPSIS	PAGE
1	COVER	1
2	CONTENTS	2
3	PRODUCT DRAWING	3
4	PRODUCT SPECIFICATION	4~5
5	PACKAGE DRAWING	6
6	ANTENNA ELECTRICAL CHARACTERISTIC TEST REPORT	7~10

H377	REV.	RELEASE AND CHANGE SUMMARY	DATE
	A	Initial release	2023.03.28
	B	Rod sleeve material changed from ASA to PPS; braid at soldered copper tube end shall be tinned.	2023.04.21
	C	ARod sleeve material changed from PPS to PPE(PPO)+PS; terminal orientation requirement added.	2023.04.24
	D	Terminal revised to version without IPX marking.	2023.06.02







Technical Requirements
1. Assembly Requirement: The tail of the rear plug shall be soldered to the braid of the coaxial cable; terminal orientation shall be +45° as shown in drawing.
2. Electrical Characteristics: 100% tested by Vector Network Analyzer.
Characteristic Impedance: 50Ω; Operating Frequency: 2.4GHz~2.5GHz; VSWR: ≤2.0; Gain: Peak 2dBi.
3. Cable Retention Force: The pull-out force between cable and connector shall be minimum 1.30kgf.
Test Method: Lift the 1.30kg weight vertically off the table along the cable central axis at a speed of approximately 253 mm/min to pass the test.
4. Mating & Unmating Force: MHF PLUG. Minimum initial force: 5N; minimum force after 30 mating cycles: 3N.
5. Mechanical Durability: Mating and unmating between MHF PLUG and MHF RECEPTACLE for 30 cycles,
6. Dimension Inspection: [] = FAI First Article Inspection item; = QIP Key Inspection item; * = CPK Process Control item.
7. Visual Inspection: 100% visual check. No scratches, damage or contamination on product surface; plating shall be bright and uniform without oxidation.
8. Packaging Specification: 10pcs per bundle.
9. Environmental Requirement: The product and all materials used in the manufacturing process shall comply with EU RoHS Directive.

No.	PART NUMBER	PART NAME AND DESCRIPTION	Q'TY
7	2MH011	Foam: Ø5.50*T5.00, EVA, Black	1
6	2SBKG4600	Rod Sleeve: 23.00*L50.00, PPE(PPO)+PS, XYRON 540Z, UV resistant, UL94 V-0, Black	△C 1
5	2YG204	Copper Tube: Ø5.20×L16.00, Raw Brass	1
4	2YG200-2	Rear Plug: Ø4.87*L8.50, Raw Brass	1
3	2YG200-1	Base Plug: Ø10.00*L10.00, Raw Brass	1
2	2LM10P113600	RF Connector: MHF-1-PLUG FOR OD1.13 CABLE, without IPX marking	△D 1
1	2C5M11312BK1	Micro Coaxial Cable: OD1.13, 50Ω, Double tinned wire, Black	1

BOM

GENERAL TOLERANCE:
UNLESS OTHERWISE SPECIFIED
LINEAR:
0.5 < L ≤ 6 ±0.05
6 < L ≤ 30 ±0.10
30 < L ≤ 120 ±0.20
ANGULAR:
0 < L ≤ 10 ±1°30'
10 < L ≤ 50 ±1°00'
50 < L ≤ 120 ±0°30'

ISS. /DATE: Product Drawing
APP./DATE: S.He 23.03.28
CHE./DATE:
DRA./DATE:
FILE FORM: HJ-QE-E-03 22.11.01

Dongguan HUANGJIE Communication Technology Co., Ltd.
东莞市皇捷通讯科技有限公司

TITLE: Cable outlet type antenna, copper tube structure, 1.13 black micro-coaxial cable + MHF PLUG (without IPX marking), exposed cable length L=60mm (2.4G, 2dBi)

CODE: 3K3401BK00-002

SIZE:	UNIT:	PRO.:	SCALE:	PAGE:
A4	mm	3RD	1:1	1/1

0 10 20

WiFi Wire-fed Antenna

1 SCOPE

1.1 CONTENTS

This Product Specification covers the mechanical, electrical and environmental performances specification for WiFi Wire-fed Antenna.

1.2 QUALIFICATION

When tests are performed the specification shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2 APPLICABLE DOCUMENTS AND FORMS

The associated product documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of the specification and the reference documents, this specification shall take precedence.

3 TEST AND ACCEPTANCE REQUIREMENTS

3.1 GENERAL

3.1.1 Dimensional Characteristics

Part construction shall conform to the dimensions, shape, and detail attributes specified on the latest revision of the applicable part drawing(s).

3.1.2 Material Characteristics

All material used in each test sample shall conform to the material specifications shown on the latest revision of the applicable part drawing(s).

3.2 RATING

Frequency Range	Nominal Impedance	VSWR	Peak Gain	Operating Temperature
2.4~2.5G	50Ω	2.0MAX.	3dBi	-40℃ ~ +85℃

3.3 TEST CONDITION

Unless otherwise specified, all tests and measurements shall be performed under the following conditions.

Temperature	Atmospheric Pressure	Relative Humidity
+15℃ ~ +35℃	866hPa ~ 1066hPa	45% ~ 75%

3.4 Electrical Performance

No.	Items	Test Condition	Specifications
		GENERAL	
1	Contact Resistance	Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in figure 1 by the four terminal method. Open circuit voltage: 20mV MAX Circuit current: 10mA MAX	Inner contact: Initial: 20mΩ MAX After: 25mΩ MAX Ground contact: Initial: 20mΩ MAX After: 25mΩ MAX
2	Insulation Resistance	Mate the plug and receptacle connector Together,and then, apply DC 200 V Voltage between the inner contact and the ground contact in accordance with EIA 364-21F	Initial: 500 MΩ MIN After: 100 MΩ MIN
3	Dielectric Withstanding Voltage	Mate the plug and receptacle connector together, and then apply AC 200 V between the inner contact and the ground contact in accordance with EIA 364-20F	No flashover, No sparkover, No excess leakage, No breakdown
4	V.S.W.R	Measure V.S.W.R with a network analyzer from 0 to 6GHz(Install in plastic housing and test)	2.0MAX.
		MECHANICAL	
5	Un-mating Force	Solder the receptacle to the test board and mate the plug into it. Test the withdrawal force with an insertion-extraction force tester at a rate of 25 ± 3 mm/min	1.Initial:4N MIN 2.After 30 Cycle:2N MIN

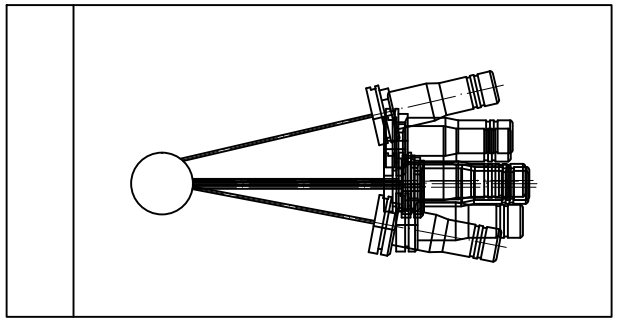
6	Durability	Solder the receptacle onto the test board, interlock the male and female connectors using a mating tester for 30 cycles, and then test the parameters.	Appearance: No AbnormalityContact Resistance: Shall meet 3.4.1/2/3/4
7	Cable retention	1 It is considered qualified if a 1.30 kg weight is lifted vertically from the table along the central axis of the cable at a speed of approximately 25 ± 3 mm/min.	No detachment or looseness at the crimp joint between the wire and the connector. Shall meet 3.4.1/2/3/4
ENVIRONMENTAL			
8	Humidity	Apply the following environment to themating connector in accordance with EIA364-31 Method III Test Condition B Temperature:25~65℃ Humidity : 90~95% R.H Duration: 96 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
9	High Tempera-ture Test	Apply the following environment to themating connector Temperature : 90±2℃ Duration : 96 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
10	Thermal Shock	Perform the following test conditions on mated connectors in accordance with Test Method III, Condition B of EIA-364-32: Temperature: -55°C to 85°C Transfer time: 5 min max. Number of cycles: 5	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
11	Salt Spray	EIA 364-26 Test Condition A Apply the following environment to the mating connector Temperature : 35±2℃ Relative Humidity : 90~98%R.H Salt water density: 5±1% Duration : 24 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1

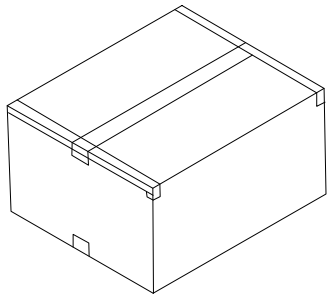
3.5 CHANGE LOG

Revision	Release and Change Summary	Date	Tabulator	Checker	Approver
A		2026.08.11	S.He	XIU HE	LFY

REVISION	DESCRIPTION	DATE	DRAFTER
A0	FIRST RELEASE	22.06.20	S.He







Packaging Specification:

1.10pcs/tie: Bundle the terminals using EPE foan and rubber bands.

2.1 tie/bag:Place 1 tie into a PE bag and seal it.

3. Labeling: A material label must be affixed to the top of each PE bag.

4. Partition board: 2 pcs/carton, Place one partition board at the bottom of the carton beforeloading, and place the other one before sealing the carton.

5. 500 pes/carton: Select the appropriate carton size based on the dimensions and quantity of the materials.

6. Sealing method: Use the “1 tape” sealing method (identical on both the top and bottom).

7. Void fill: If the carton is not completely filled with materials, use appropriate fillernaterials to fill the empty space.

8. Labels: llaterial labels and month labels shall be applied in accordance with the customer’sspecification requirements.

COMPLIANCE WITH THE REQUIREMENT: ■RoHS; □ HF; □ SONY SS-00259; □ OTHERS
*NO USING ESTRICTED AND BANNED SUBSTANCE

H377

GENERAL TOLERANCE:	
LINEAR:	
X	±0.50
X.X	±0.20
X.XX	±0.10
X.XXX	±0.05
ANGLE:	
X°	±4.00°
X.X°	±3.00°
X.XX°	±2.00°
X.XXX°	±1.00°

HJ-Tech 东莞市皇捷通讯科技有限公司

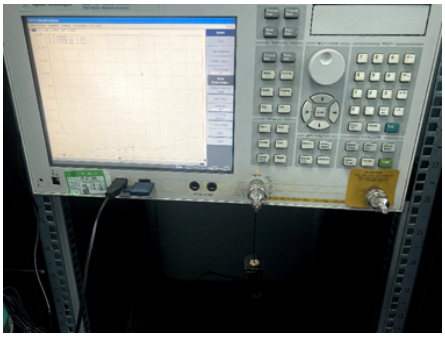
FILE NAME: Packaging diagram	TITLE: Outgoing antenna,copper tube structure, 1.13 Black +MHF PLUG , L=60mm (2.4G 2dBI)
ENG/DATE: S.He/22.06.20	
CHE/DATE:	P/N: 3K3401BK00-002
APP/DATE:	UNIT: mm / SCALE: 1:1 / REVISION: A0 / SHEET: 1/1

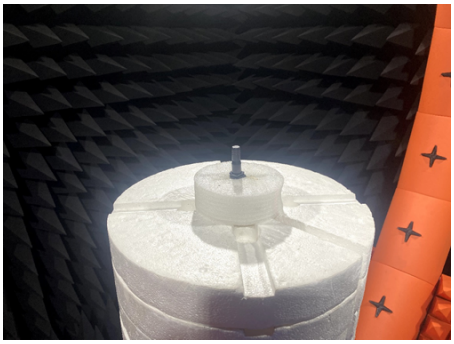
皇捷通讯
COMMUNDAECORNCE

Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3K3401BK00-002	Item	Spec	Judge
Part Name:	WIFI Antenna Black, 1. 13 Black Cable+MHF-1,Exposed Cable Length L=60mm	VSWR	2. 0MAX.	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/24			





1 RETURN LOSS



Checker: XIU HE **Tester: S.He**

皇捷通讯
COMMUNDAECORNCE

Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3K3401BK00-002	Item	Spec	Judge
Part Name:	WIFI Antenna Black, 1. 13 Black Cable+MHF-1,Exposed Cable Length L=60mm	VSWR	2. 0MAX.	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/24			

2 VSWR



Checker: XIU HE **Tester: S.He**

DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO., LTD.

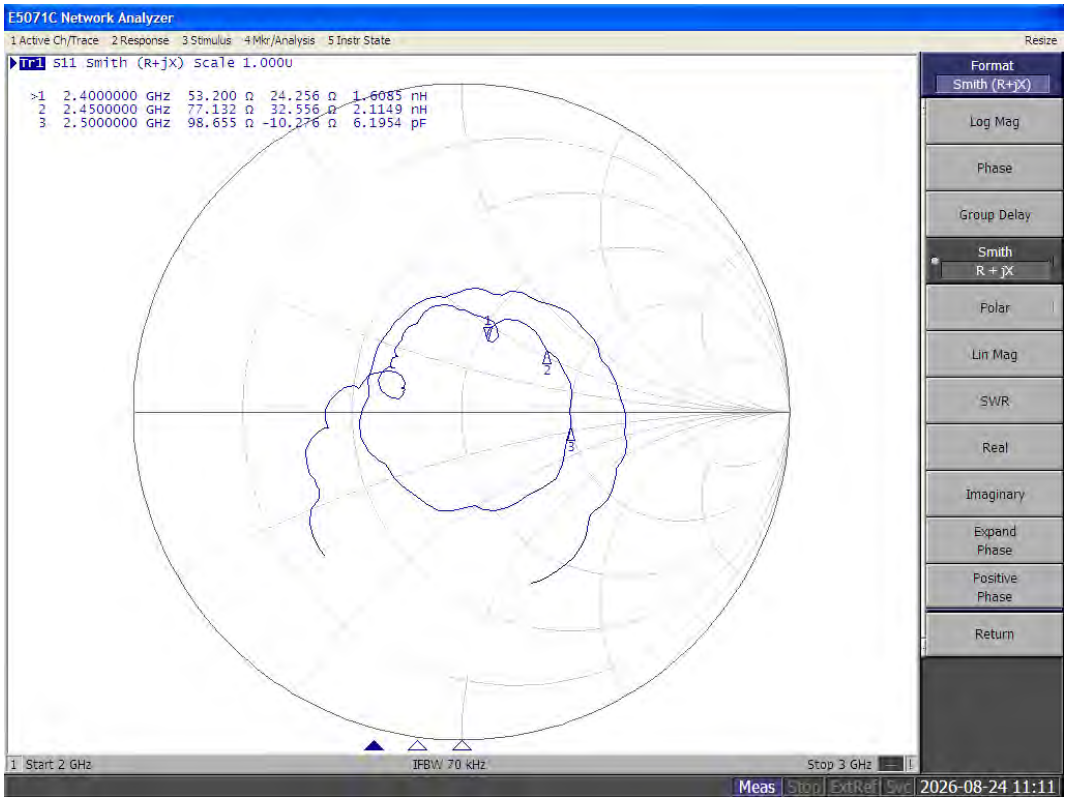
皇捷通讯
COMMUNDAECORNCE

Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3K3401BK00-002	Item	Spec	Judge
Part Name:	WIFI Antenna Black, 1. 13 Black Cable+MHF-1,Exposed Cable Length L=60mm	VSWR	2. 0MAX.	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/24			

3 SMITH(R+JX)



Checker: XIU HE **Tester: S.He**

皇捷通讯
COMMUNDAECORNCE

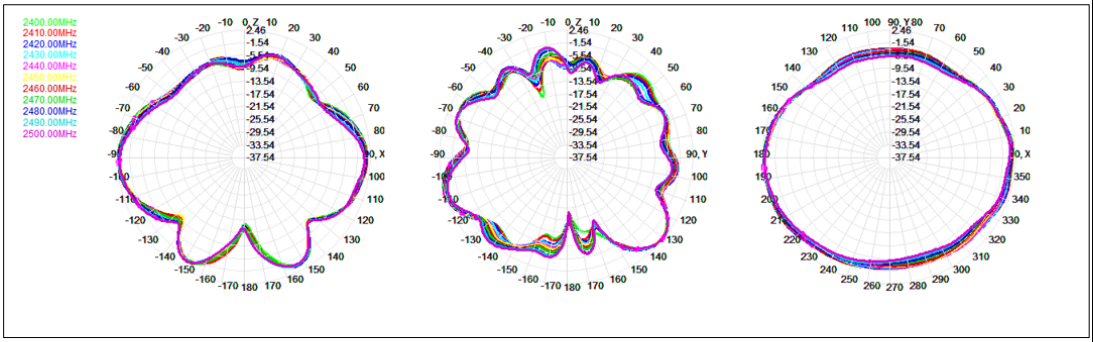
Antenna Electrical Characteristic Test Report

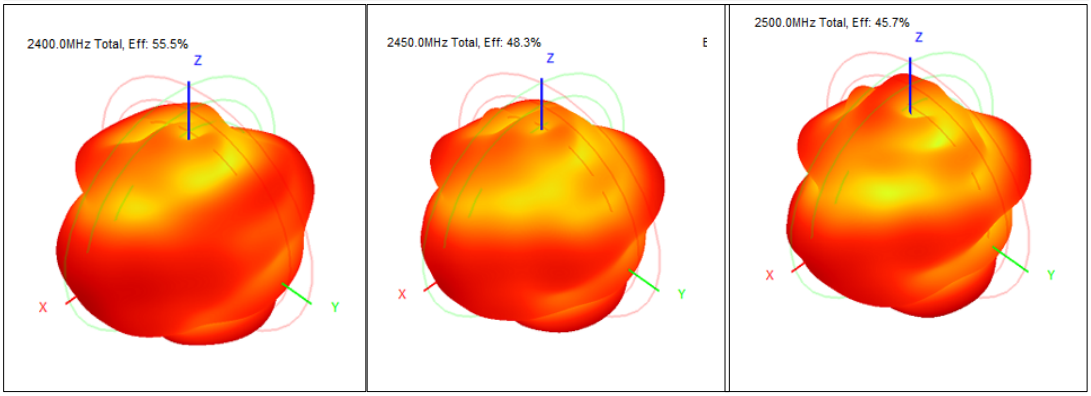
DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3K3401BK00-002	Item	Spec	Judge
Part Name:	WIFI Antenna Black, 1. 13 Black Cable+MHF-1,Exposed Cable Length L=60mm	Gain	2. 0dBi	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/24			

4 2D/3D RADIATION PATTERN

Serial number	1	2	3	4	5	6	7	8	9	10	11
Frequency(MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.55	-2.74	-2.83	-2.87	-3.14	-3.16	-3.02	-3.22	-3.05	-3.28	-3.40
Gain (dBi)	3.09	3.09	3.16	3.11	3.19	3.09	3.11	3.03	3.00	2.93	2.88
Efficiency (%)	55.53	53.18	52.17	51.68	48.53	48.31	49.94	47.67	49.60	46.94	45.74
Directionality(dB)	5.64	5.83	5.99	5.98	6.33	6.25	6.13	6.25	6.05	6.22	6.27





Checker: XIU HE **Tester: S.He**