

SPECIFICATION FOR APPROVAL

CUSTOMER	荣业佳
CUS. CODE	
CUS. MODEL	
HJ-Tech CODE	3N0401BK-0112
PRO. NAME	RF ANTENNA COMPONENT
SPECIFICATION DESCRIPTION	BUILT IN ANTENNA, OD1. 13 BLACK, P1 PORT FPC, P2 PORT MHF-1-PLUG, L=35mm
DATE	2026/3/18

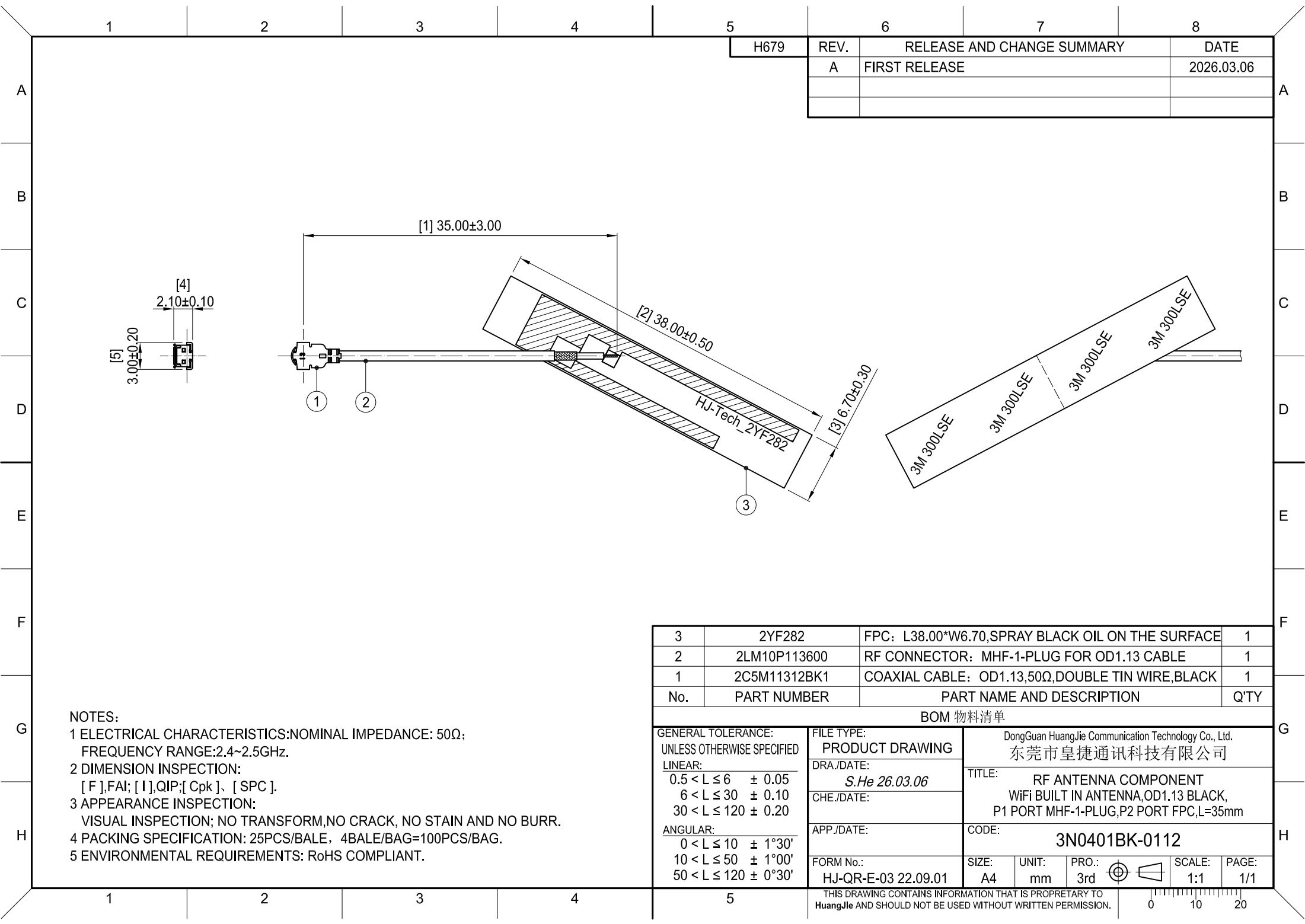
SUPPLIER		
PREPARED	CHECKER	APPROVER
S. He	XIU HE	LFY

CUSTOMER		
TRANSECTOR	CHECKER	APPROVER

Address: Quantang Daxiandi Industrial Zone, Liaobu
Town, Dongguan City, Guangdong Province

CONTENTS

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



H679

REV.	RELEASE AND CHANGE SUMMARY	DATE
A	FIRST RELEASE	2026.03.06

- NOTES:
- 1 ELECTRICAL CHARACTERISTICS:NOMINAL IMPEDANCE: 50Ω;
FREQUENCY RANGE:2.4~2.5GHz.
- 2 DIMENSION INSPECTION:
[F],FAI; [I],QIP;[Cpk], [SPC].
- 3 APPEARANCE INSPECTION:
VISUAL INSPECTION; NO TRANSFORM,NO CRACK, NO STAIN AND NO BURR.
- 4 PACKING SPECIFICATION: 25PCS/BALE, 4BALE/BAG=100PCS/BAG.
- 5 ENVIRONMENTAL REQUIREMENTS: RoHS COMPLIANT.

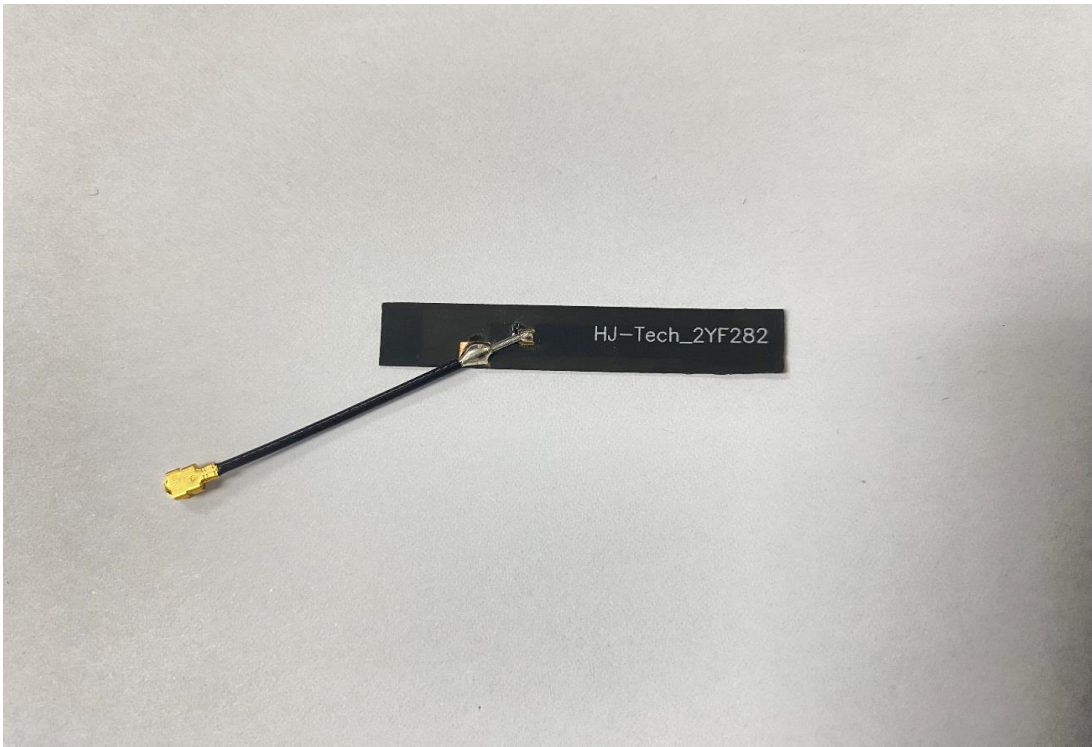
3	2YF282	FPC: L38.00*W6.70,SPRAY BLACK OIL ON THE SURFACE	1
2	2LM10P113600	RF CONNECTOR: MHF-1-PLUG FOR OD1.13 CABLE	1
1	2C5M11312BK1	COAXIAL CABLE: OD1.13,50Ω,DOUBLE TIN WIRE,BLACK	1
No.	PART NUMBER	PART NAME AND DESCRIPTION	Q'TY
BOM 物料清单			
GENERAL TOLERANCE: UNLESS OTHERWISE SPECIFIED LINEAR: 0.5 < 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'		FILE TYPE: PRODUCT DRAWING	DongGuan HuangJie Communication Technology Co., Ltd. 东莞市皇捷通讯科技有限公司
		DRA./DATE: S.He 26.03.06	
		CHE./DATE:	
		APP./DATE:	TITLE: RF ANTENNA COMPONENT WiFi BUILT IN ANTENNA,OD1.13 BLACK, P1 PORT MHF-1-PLUG,P2 PORT FPC,L=35mm
		FORM No.: HJ-QR-E-03 22.09.01	CODE: 3N0401BK-0112
		SIZE: A4	UNIT: mm
		PRO.: 3rd	SCALE: 1:1
			PAGE: 1/1

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO
HuangJie AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.



P/N : 3N0401BK-0112

DESCRIPTION : BUILT IN ANTENNA,OD1.13 BLACK,P1 PORT FPC,P2 PORT MHF-1-PLUG,L=35mm



ELECTRICAL PERFORMANCE

1	NOMINAL IMPEDANCE :	50Ω
2	FREQUENCY RANGE :	2.4~2.5GHz;
3	VSWR :	2.0 MAX.(WHOLE MACHINE TESTING)
4	GAIN :	2.13dBi
5	POLARIZATION MODE :	VERTICAL
6	RADIATION DIRECTION :	OMNIDIRECTIONAL

MECHANICAL PROPERTIES

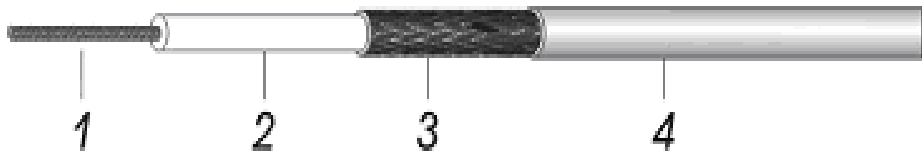
1	ANTENNA SIZE :	L38.00*6.70mm
2	ANTENNA HOUSING :	BLACK
2	ANTENNA CONNECTOR :	MHF-1-PLUG

ENVIRONMENTAL SPECIFICATION

1	OPERATION TEMPERATURE :	-40C° 至 +60C°
2	CORROSION :	SALT WATER DENSITY:(5±1)%,TEMPERATUR:(35±3)°C,48HRS.
3	STORAGE ENVIRONMENT:	TEMPERATURE: -40C° ~ +85C°; HUMIDITY: 20% ~ 75%
4	MEMORY CYCLE :	AT LEAST 6 MONTHS IF CONDITIONS ARE MET.
5	ENVIRONMENTAL :	RoHS COMPLIANT.

DURABILITY SPECIFICATION

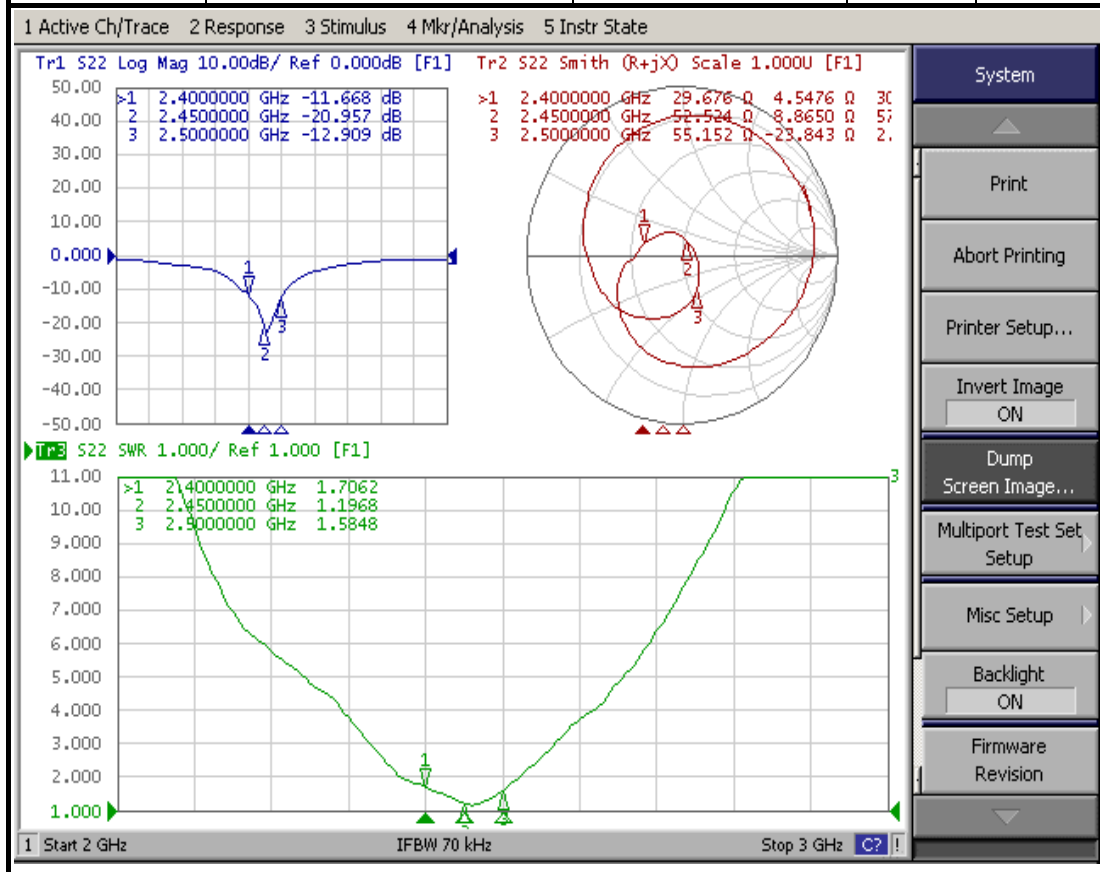
1	DURABILITY :	MHF PLGU: 30 CYCLES
2	SERVICE LIFE :	UNDER THE ABOVE ELECTRICAL, MECHANICAL, AND ENVIRONMENTAL PERFORMANCE CONDITIONS, THE SERVICE LIFE IS 10 YEARS

Type	RF-1.13/50	P/N	2C5M11312BK1 (Black)	
Structure drawing				
Structure characteristics				
Structure	Item		Standard value	
①Inner conductor	Material		Tinned copper wire	
	Makeup:total / O.D. of every wire(mm)		7/0.08	
	(Intertwist)NOM.O.D.(mm)		0.24±0.02	
②Insulation	Material		FEP	
	Color		Natural	
	NOM.O.D.(mm)		0.7±0.03	
③Outer conductor	Material		Tinned copper wire	
	Makeup:total / O.D. of every wire(mm)		16/4/0.05	
	NOM.O.D.(mm)		0.92±0.05	
	覆盖率(%) Coverage ratio(%)		90±5	
④Jacket	材料 Material		FEP	
	Color		Black	
	NOM.O.D.(mm)		1.13±0.05	
Electrical characteristics				
Item	Standard value	Item	Frequency	Standard value Unit:dB/m
Capacitance(pF/m)	98	Attenuation	1GHz	≤2. 32
Velocity(%)	70		2GHz	≤3. 27
Impedance(Ω)	50±3		3GHz	≤4. 01
Standing wave ratio	≤1.4@0~6GHz		4GHz	≤4. 64
Max.operating voltage(V)	1000		5GHz	≤5. 17
Max.operating frequency(GHz)	6		6GHz	≤5. 70
Dependability				
Item		Unit	Standard value	
Min.bending radius static		mm	4	
Min.bending radius repeated		mm	—	
Operating temperature		℃	-55~+150	

Antenna Electrical Characteristic Test Report

File Number:HJ-QR-Q-22 Rev:A0

Part Number:	3N0401BK-0112	Item	Spec	Judge
Part Name:	BUILT IN ANTENNA,OD1.13 BLACK, P1 PORT FPC,P2 PORT MHF-1- PLUG,L=35mm	Characteristic impedance	50Ω	pass
Test Equipment	Network analyzer/ microwave darkroom			
Q uantity	5pcs			
Test Date	2026/3/16			



Checker: XIU HE

Tester:

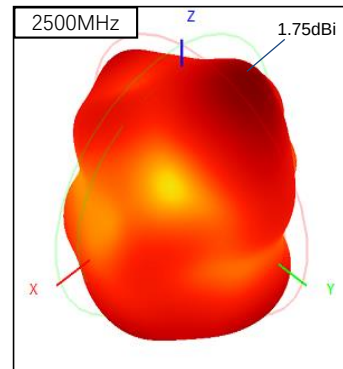
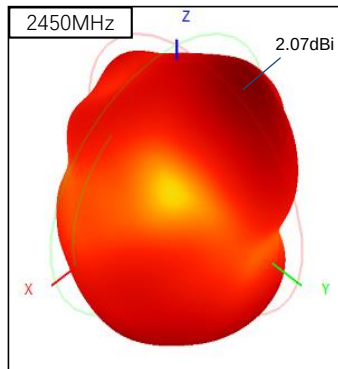
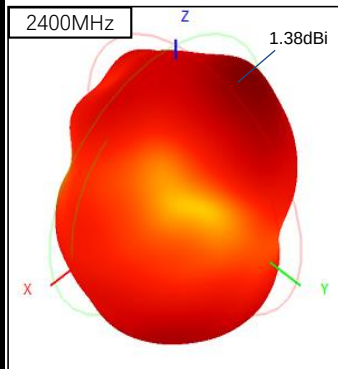
S.He

Antenna Electrical Characteristic Test Report

File Number:HJ-QR-Q-22 Rev:A0

Part Number:	3N0401BK-0112	Item	Spec	Judge
Part Name:	BUILT IN ANTENNA,OD1.13 BLACK, P1 PORT FPC,P2 PORT MHF-1- PLUG,L=35mm	Characteristic impedance	50Ω	pass
Test Equipment	Network analyzer/ microwave darkroom			
Q uantity	5pcs			
Test Date	2026/3/16			

Frequency ID	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)	-4.12	-3.65	-3.48	-3.31	-3.16	-3.17	-3.20	-3.35	-3.52	-3.74	-3.99
Gain (dBi)	1.38	1.77	1.87	1.98	2.03	2.07	2.13	2.12	2.13	1.96	1.75
Efficiency (%)	38.74	43.17	44.83	46.66	48.36	48.25	47.82	46.21	44.50	42.22	39.93
Directivity (dB)	5.50	5.42	5.35	5.29	5.18	5.24	5.34	5.47	5.65	5.70	5.73
Peak Gain Position (Theta)	25.00	25.00	25.00	25.00	25.00	25.00	25.00	24.00	24.00	24.00	24.00
Peak Gain Position (Phi)	114.00	113.00	112.00	111.00	110.00	108.00	107.00	107.00	106.00	104.00	103.00
Efficiency ThetaPol (%)	17.41	19.43	20.28	21.31	22.31	22.48	22.45	21.86	21.27	20.40	19.53
Efficiency PhiPol (%)	21.33	23.74	24.55	25.35	26.05	25.77	25.38	24.34	23.22	21.82	20.40
Upper Hem. Efficiency (%)	19.93	21.87	22.68	23.73	24.52	24.81	24.60	23.67	22.99	21.68	20.48
Lower Hem. Efficiency (%)	18.82	21.30	22.14	22.92	23.83	23.44	23.23	22.53	21.51	20.55	19.45



Checker: XIU HE

Tester:

S.He