

KunShan Innowave Communication Technology CO.,Ltd.

【Material acknowledgement】

CUSTOMER NAME:ShenZhen Azroad Technology Incorporated CO LTD

PRODUCT NAME: KD89 (F003D8913980004)

CUSTOMER: L530100082839

Customer material name: MD15

PRODUCT: Antenna: MD15-5G antenna 2 Size: 100*10*0.6mm Black
line exposed line length 165mm Innowave

Factory signature:

APPROVED BY	AUDITOR BY	CHECKED BY
Huang Chao	Lin Quan Jun	Huang Lei

Customer acknowledges signature:

Acknowledge the result: ☐ OK ☐ NG

APPROVED BY	APPROVED BY	APPROVED BY

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Telephone: 13823308576

Fax: 051257258326

Contact person: zengqiuzhi

Mailbox: zengqiuzhi@innnowave.cn

Website:<https://www.innowave.cn/>

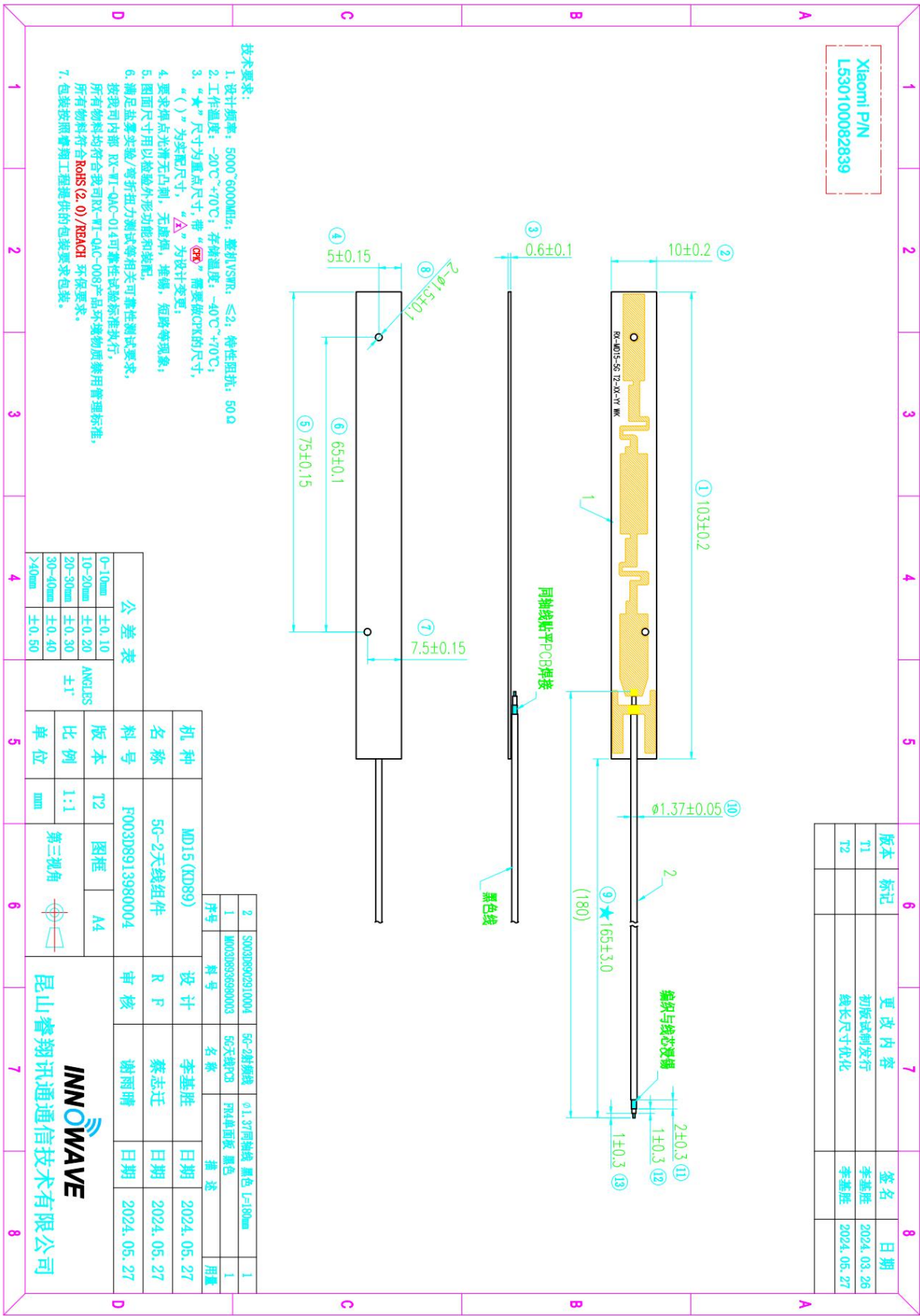
(1) Antenna description

Product main technical parameters

Main technical specificationf

Main technical specifications		Main technical specifications	
Frequency Range (MHz)	5150-5850	Frequency Range (MHz)	5150-5850
Impedance (Ω)	50	Impedance (Ω)	50
Peak Gain(dBi)	5.0	Peak Gain(dBi)	5.0
VSWR	≦2.0	VSWR	≦2.0
Polarization	vertical polarization	Polarization	vertical polarization
Radiation	Omni-directional	Radiation	Omni-directional
Connector Type	Cable	Connector Type	Cable
Physical Properties		Physical Properties	
Antenna Base	FR-4	Antenna Base	FR-4
Operating Temp	-20℃~+70℃	Operating Temp	-20℃~+70℃
Storage Temp	-40℃~+70℃	Storage Temp	-40℃~+70℃

(1) Sample sky chart

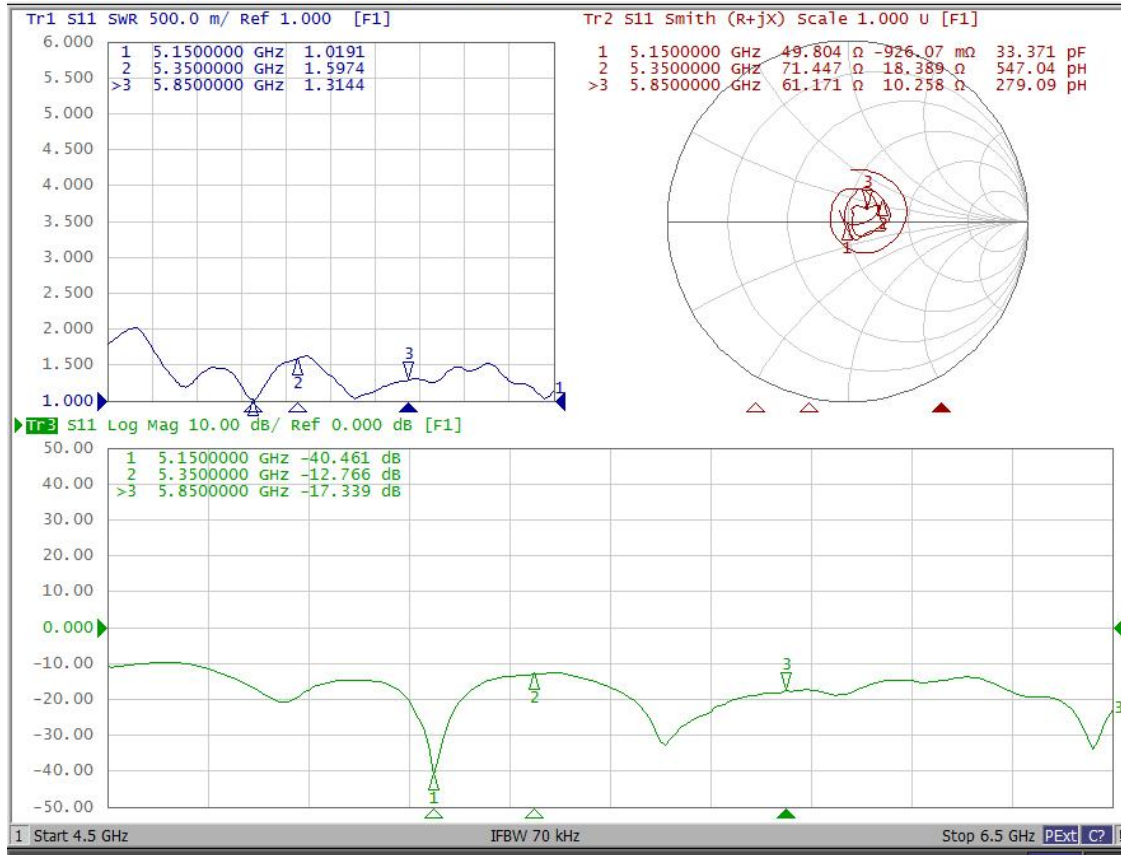


(2) Test report

2.1: Network analysis test report

E5063A Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



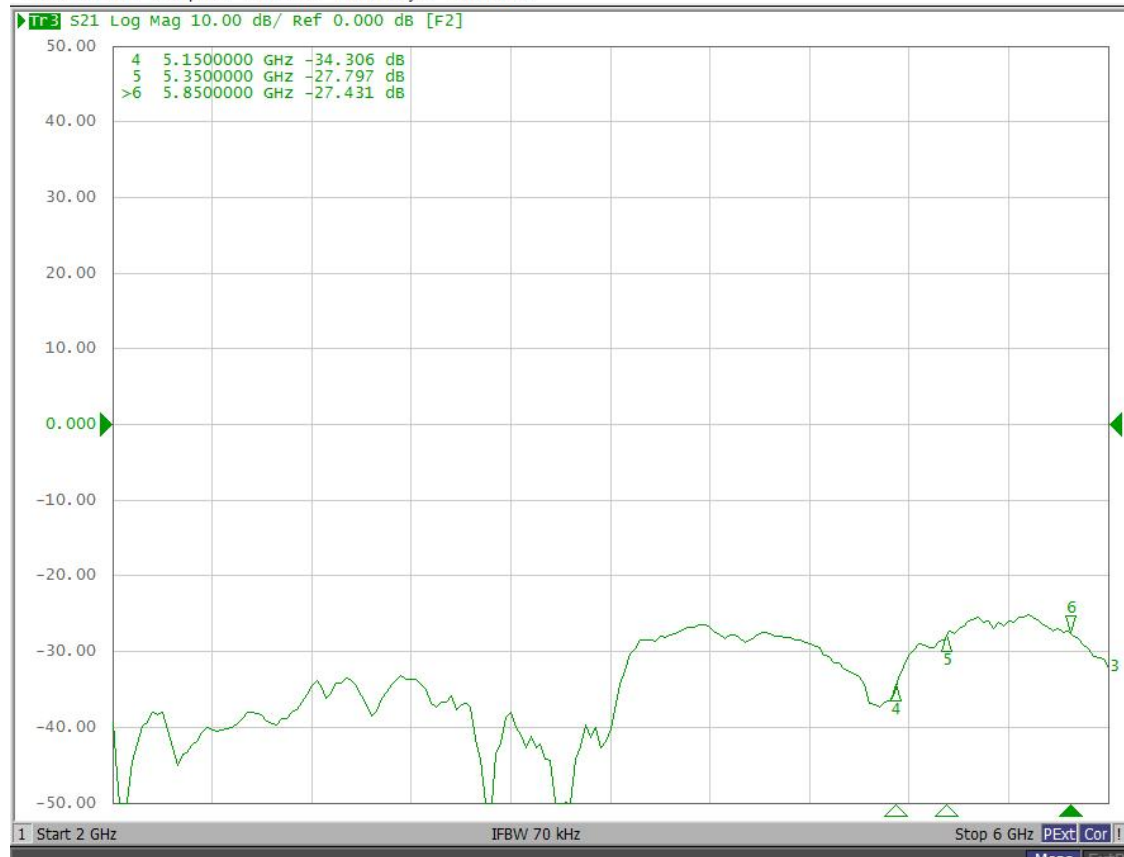
2.2: Antenna gain, efficiency meter:

Freq (MHz)	Effi (%)	Gain (dBi)
5150	62.3	5.6
5200	65.2	5.5
5250	63.3	5.1
5300	63.9	5.1
5350	69.1	5.6
5400	67.0	5.8
5450	64.7	5.5
5500	70.4	5.5
5550	71.1	5.5
5600	67.7	5.6
5650	69.3	5.8
5700	69.7	5.6
5750	68.9	5.6
5800	68.1	5.5
5850	69.3	5.6

2.3: Isolation:

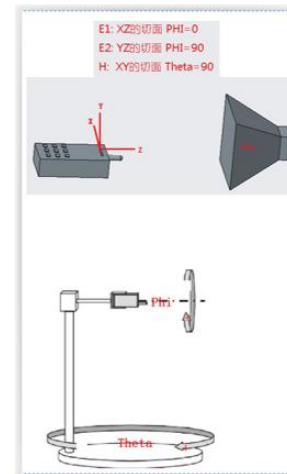
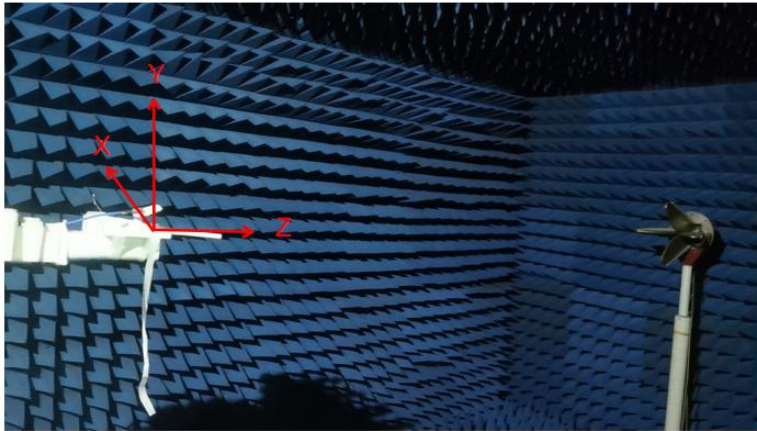
E5063A Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



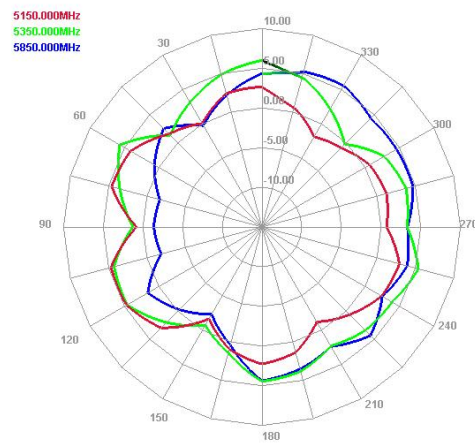
(3) Directional diagram

3.1: Test environment diagram:

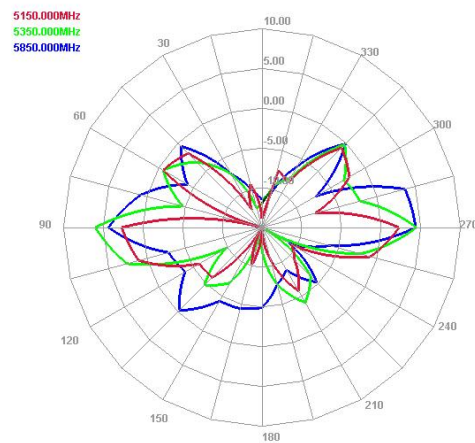


2.4G 方向图:

Horizontal

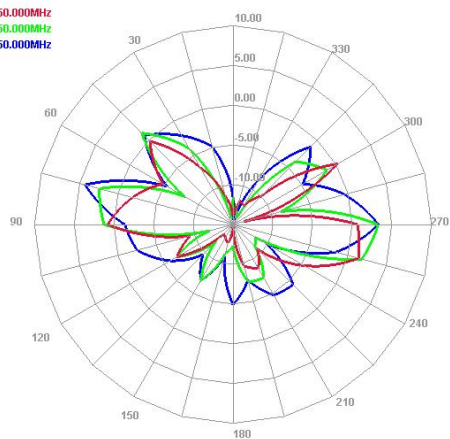


E1 Face



E2 Face

5150.000MHz
5350.000MHz
5850.000MHz



DimensionsReport

Vendor(供应商)		Material Name (材 质名称)		线材+PCB		Part NO(料号)		F003D8913910004		Tool Number(模号)		Cav. Number(穴数)		Unit(单位)		Comments(设计者签字)								
Kunshan Innowave Communication Technology Co.,Ltd.(昆山睿翔讯通 通信技术有限公司)		Material Code (材 质牌号)		/		Part Name (零件名称)		KD89-5.8G-2天线组 件				/		Rev(版本)				T2		☐ INCHES ☒ MILLIMETERS				
Date(日期)		2024/5/28				MEASURED DIMENSION(实测尺寸)					% TOLERANCE USED(公差使用百分比)		DISPOSITION					ACCEPTABLE VARIANCE						
DIM. #	DIMENSION	DRAWING ZONE	+ TOL.	- TOL.	NOTE	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5	UPPER	LOWER	0%-25%	25%-50%	50%-75%	75%-100%	100%+	Re-Measure	Accept	Fix Tool	Accept With Variance	DIMENSION	+ TOL.	- TOL.
1	103.00	103.20	0.20	0.20	102.80	103.01	103.03	103.01	103.03	103.02	15%	0%	X								√			
2	10.00	10.20	0.20	0.20	9.80	10.01	10.02	10.01	10.01	10.02	10%	0%	X								√			
3	0.60	0.70	0.10	0.10	0.50	0.61	0.61	0.60	0.60	0.61	10%	0%	X								√			
4	5.00	5.15	0.15	0.15	4.85	5.01	5.02	5.02	5.01	5.01	13%	0%	X								√			
5	75.00	75.15	0.15	0.15	74.85	75.02	75.01	75.00	75.04	75.02	27%	0%		X							√			
6	65.00	65.10	0.10	0.10	64.90	65.02	65.02	65.01	65.01	65.02	20%	0%	X								√			
7	7.50	7.65	0.15	0.15	7.35	7.51	7.52	7.51	7.52	7.51	13%	0%	X								√			
8	1.50	1.60	0.10	0.10	1.40	1.51	1.52	1.50	1.49	1.50	20%	6%	X								√			
9	165.00	168.00	3.00	3.00	162.00	165.02	165.01	165.00	165.04	165.02	1%	0%	X								√			
10	1.37	1.42	0.05	0.05	1.32	1.37	1.36	1.37	1.37	1.37	0%	20%	X								√			
11	2.00	2.30	0.30	0.30	1.70	2.02	2.02	2.01	2.01	2.04	13%	0%	X								√			
12	1.00	1.30	0.30	0.30	0.70	1.01	0.99	0.99	1.00	1.01	3%	3%	X								√			
13	1.00	1.30	0.30	0.30	0.70	1.00	0.99	1.02	1.02	1.01	7%	3%	X								√			

5 Reliability test report

KunShan Innowave Communication Technology CO.,Ltd.					
KD89Reliability test report					
Experimental report number: 20240326022					
The name of a product or commodity: 5G-2					
Color: Black					
DATE: 2024.3.26					
CHECKED BY: Zhang Zaoqin		AUDITOR BY: Yan Wulin		APPROVED BY: Luo Hai Jun	
Serial number	Test item	QTY	Experimental result	Remark	
1	Salt spray test	3PCS	OK		
2	High temperature storage test	3PCS	OK		
3	Low temperature storage test	3PCS	OK		
4	Temperature shock test	3PCS	OK		
5	Constant temperature and humidity	3PCS	OK		
6	Adhesion test	3PCS	OK		
Preservation Department:		Quality Department		Form number:	RX-FR-QAC-068 AD

6、 Bill of materials

 KunShan Innowave Communication Technology CO.,Ltd. BOM									
Client:		Type:		Model:		Version:		Date:	
/				MD15		T3			
Project		K089		Edition:		T3			
BOM									
1		T2		F003D0913900004		The K089 has a built-in 5G-2 antenna assembly		The black cable length of the MD15 5G-2 antenna is 105mm	
2		T2		MD0338936800003		K089 built-in 5G antenna PCB		103*10*0.6mm	
2		T2		S003368902910004		The K089 has a built-in 5G-2 RF cable		Φ1.37*180mm	
3		T2		T010116		1.37 Common coaxial line		/	
3				B15A0003		Lead-free environmental protection high temperature tin bar		Lead-free environmental protection high temperature tin strip weight 18G	
2				B15A0002		Lead-free green tin wire 0.8mm diameter		Φ0.8mm	
2				B000E2Z00061000		Zip-lock bag 006 260*380mm		Transparent, anti-static, self-sealing single layer thickness 0.07mm	
2				B01A0026		Carton 350*350*250mm		Carton 350*350*250mm	
								Halogen-free carton 350*350*250mm	

