



Product Performance and Specification Approval Certificate

Maya Antenna R&D Department

Material Name: M80T

Sample color: black

Sample types: FPC

Customer Model: _____

y Mold Sample  her

Supplier: Shenzhen Maya Communication Equipment Co., Ltd. Version: RA

Fiction	structure	quality	approve	Sample delivery date
				2023.09.01

Client: Yidao Information

department	confirm	date	state	Signature and seal
electronic				
structure				
quality				
project				

1. Confidentiality Requirements: Shenzhen Maya Communication Equipment Co., Ltd. owns the proprietary technology for this product. Without the prior authorization of Shenzhen Maya Communication Equipment Co., Ltd., the product may not be used for any business activities.

The limited company has given written consent that it may not disclose this information to any company or individual.

2. Special Note: Before signing this document, all parties must carefully read the "Special Terms" and the contents of the table of contents. Both parties' representatives must sign.

This is deemed as acceptance of the contents of this document without objection, and both parties agree to abide by it.

Special Terms and Conditions of Shenzhen Maya Communication



Equipment Co., Ltd.

1. Regarding the confirmation of performance and structure

★ Please verify the product's appearance and performance before signing the confirmation form. ★ Please provide us with the final mass production trial production machine or have it returned to us for verification before mass production. ★ As this product is a highly sensitive item, please retain the test machine for future traceability. ★ This product complies with RoHS certification. ★ As this product is a customized item with highly specific applications, if you change materials or use it for non-designated projects, please return the changed materials or non-designated project machine to us for RF performance verification. Otherwise, it may lead to serious issues such as discrepancies between the usage and design specifications. Please have our sealed and debugged prototypes functionally confirmed to ensure they function completely correctly and prevent antenna performance errors caused by malfunctions.

2. Regarding product storage issues

★Because this product has printed ink on the surface, adhesive backing, and electroplated parts, please ensure that it is stored or transported in an environment free from strong acids, sulfur, and oxygen during storage or transportation, maintaining a temperature between 23°C-27°C, relative humidity below 60%, and without strong acids. ★Because the adhesive backing of this product has stringent environmental requirements, customers must assemble the product within its optimal lifespan after receiving it to ensure its reliability.

3. Regarding product usage agreements

★Due to the special structure of this product, please ensure that it is in full contact with the object to be pasted when using this product. The object to be pasted must be free of residual chemicals (release agents, etc.) or you should try to avoid using raw materials containing release agents. To ensure the product's performance, please clean the surface of the object to be pasted before using this product to ensure that there are no chemical residues on the surface of the object to be pasted.

4. Quality Statement Regarding This Product

★Due to the aforementioned factors, the optimal usage period for this product is recommended to be within 12 months. Exceeding this period will affect the product's effectiveness. Our company provides lifetime consultation and paid replacement services for this product. ★This product is a custom-made component. Upon receiving the product, please inspect its appearance, quantity, performance, etc., within 7 days according to the standards agreed upon in this "Product Performance and Specifications Approval Form". If you fail to do so within the specified period, the product quality will be deemed to meet the standards agreed upon by both parties. ★Verification method: Compare with the sealed sample in the approval document.



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1. Customer's antenna debugging and design requirements (frequency band)

frequency	frequency band
WIFI	2.4/5.8GHz

2. Product Antenna Diagram



WIFI antenna diagram



3. Electrical performance

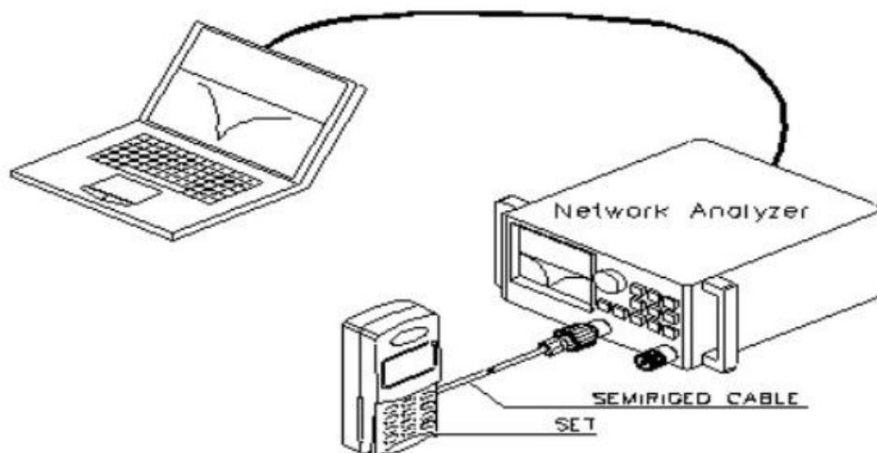
3.1 Test Methodology and Data

Device Name	use
Vector Network Analyzer	S11/Impedance/ Passive Test
Agilent 8960 SP6010 R&S CMU200	Includes GSM, GPRS, EDGE, CDMA2000, 1xEV-DO, Testing of mobile communication devices using TD-SCDMA, WCDMA, and HSDPA
R&S CMW500 MT8820C	Includes TD-SCDMA, WCDMA, Testing of mobile communication devices using HSDPA, LTE, WIFI, and GPS
SP9500E	Includes 5G, SA, NSA
Agilent E4438C	Testing active GPS
MVG Chamber	Passive Test / OTA active Test / Efficiency/Gain

3.2 Passive Test Report

Test equipment: Network analyzer

Test method: Use a 50-ohm cable to extend from the instrument's test port, calibrate it using a calibration kit, and then connect it to the SMA connector of the handheld device. Record the return loss or VSWR data corresponding to the relevant frequency points.



测试示意图



3.3 Active Test Report (TRP/TIS) Test Tools: Comprehensive Tester,

Network

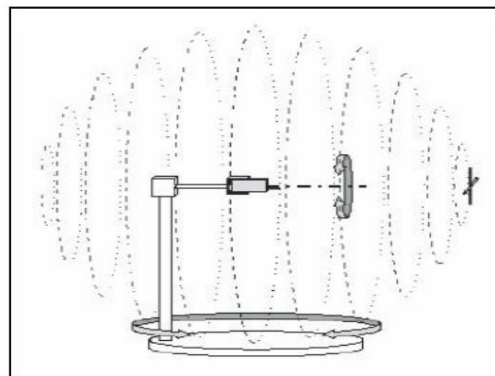
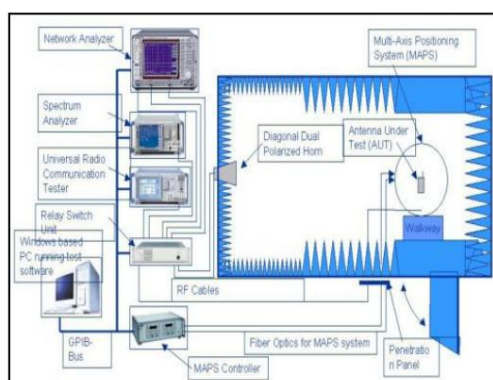
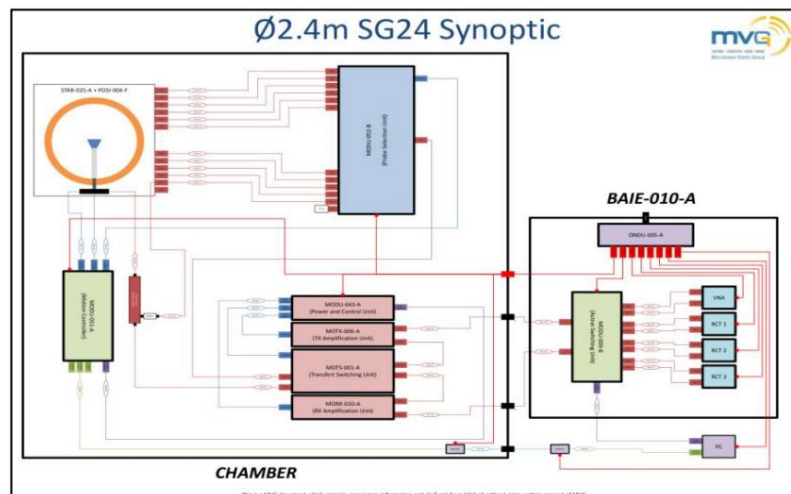
Analyzer, All-wave Far-field ETS, French MVG SG24LT (Salmio) Near-field Tester

3D microwave anechoic chamber, high-precision positioning system and its controller, and computer with automatic test program. Test environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $60\% \pm 15\%$. Test method: Using EST or Satimo 24LT system software TRP test method and calculation. During TRP testing, the DUT (Device Under Test) is at its maximum transmit power. Three channels (high, medium, and low) are selected for testing. The position of the DUT is controlled by the positioning system. The effective radiated power (EIRP) at each point in three-dimensional space is measured in 15-degree increments. The average value on the sphere is calculated by integration. The calculation formula is as follows:

$$TRP \cong \frac{\pi}{2NM} \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} [EiRP_{\theta}(\theta_i, \phi_j) + EiRP(\theta_i, \phi_j)] \sin(\theta_i)$$

During TIS testing, the DUT was at maximum transmit power. Three channels (high, medium, and low) were selected for testing. By controlling the DUT's position in 30-degree increments, the receiver sensitivity at various points in three-dimensional space was measured. The average value on the sphere was calculated through integration, using the following formula:

$$TIS \cong \frac{2NM}{\pi \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} \left[\frac{1}{EIS_{\theta}(\theta_i, \phi_j)} + \frac{1}{EIS_{\phi}(\theta_i, \phi_j)} \right] \sin(\theta_i)}$$





3.4 Active OTA TRP/TIS Data

BAND	WIFI-B			WIFI-G		
CHANNEL	Low	Medium	High	Low	Medium	High
TRP	12.7	12.9	12.8	11.4	11.6	11.3
亮屏TIS			-82.7			-70.3
BAND	WIFI-N			WIFI-A		
CHANNEL	Low	Medium	High	Low	Medium	High
TRP	10.8	11.2	10.9	7.9	8.2	8.4
亮屏TIS			-66.4			-71.8
BAND	WIFI-AC					
CHANNEL	Low	Medium	High			
TRP	10.4	10.5	10.4			
亮屏TIS			-66.5			

3.5 Passive Test Data

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
2400000000	55.25%	-2.57647	2400000000	4.079152	5200000000	55.80%	-2.53388	5200000000	6.456877
2410000000	53.85%	-2.68796	2410000000	4.083756	5230000000	52.36%	-2.81015	5230000000	6.364419
2420000000	52.44%	-2.80314	2420000000	4.158305	5260000000	52.06%	-2.83456	5260000000	6.580369
2430000000	53.43%	-2.72251	2430000000	3.802173	5290000000	49.82%	-3.02567	5290000000	6.296965
2440000000	52.64%	-2.78677	2440000000	3.462779	5320000000	46.31%	-3.34361	5320000000	5.476544
2450000000	51.83%	-2.85406	2450000000	3.588725	5350000000	41.04%	-3.86821	5350000000	5.164452
2460000000	52.00%	-2.83992	2460000000	3.875187	5380000000	40.84%	-3.88886	5380000000	5.477484
2470000000	51.77%	-2.85956	2470000000	3.995673	5410000000	43.19%	-3.64609	5410000000	5.580508
2480000000	49.93%	-3.01672	2480000000	3.65394	5440000000	45.70%	-3.4011	5440000000	5.350838
2490000000	48.67%	-3.1275	2490000000	3.406447	5470000000	41.57%	-3.81202	5470000000	4.974681
2500000000	49.46%	-3.05725	2500000000	3.716518	5500000000	42.21%	-3.74572	5500000000	5.02903
					5530000000	43.40%	-3.62471	5530000000	5.630523
					5560000000	43.89%	-3.57592	5560000000	5.617943
					5590000000	38.72%	-4.12106	5590000000	4.922279
					5620000000	38.09%	-4.19183	5620000000	5.274626
					5650000000	36.72%	-4.35109	5650000000	5.496565
					5680000000	36.37%	-4.39217	5680000000	5.795709
					5710000000	34.90%	-4.57181	5710000000	5.628128
					5740000000	36.15%	-4.41887	5740000000	5.568222
					5770000000	40.88%	-3.8849	5770000000	5.716376
					5800000000	43.69%	-3.59661	5800000000	5.800922

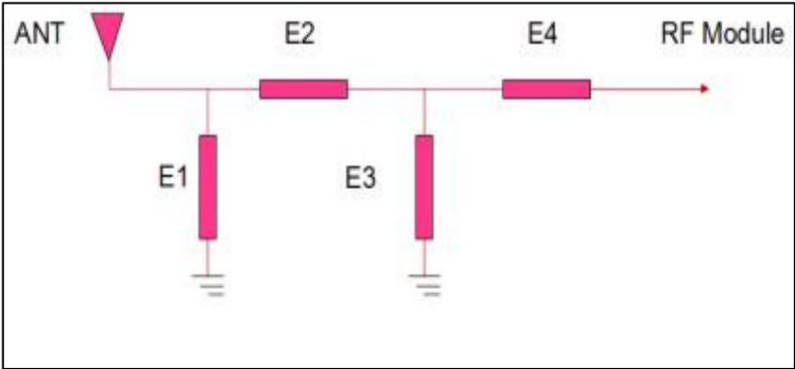


4. WiFi Test Report

距离路由器10米距离



5. Matching Circuit Description



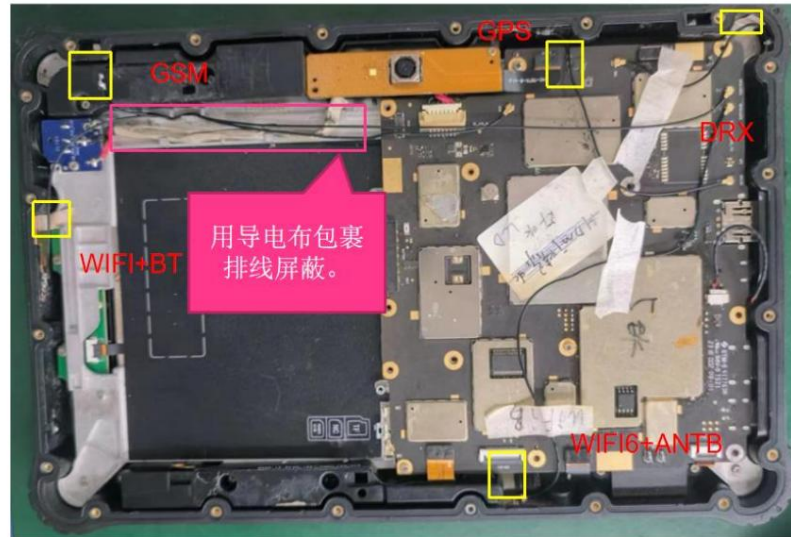
BAND	Main antenna	triple	diversity antenna
Element	Value	Value	Value
E1(0402)			
E2(0402)			
E3(0402)			
E4(0402)			

Note: Our company did not debug the antenna matching circuit.



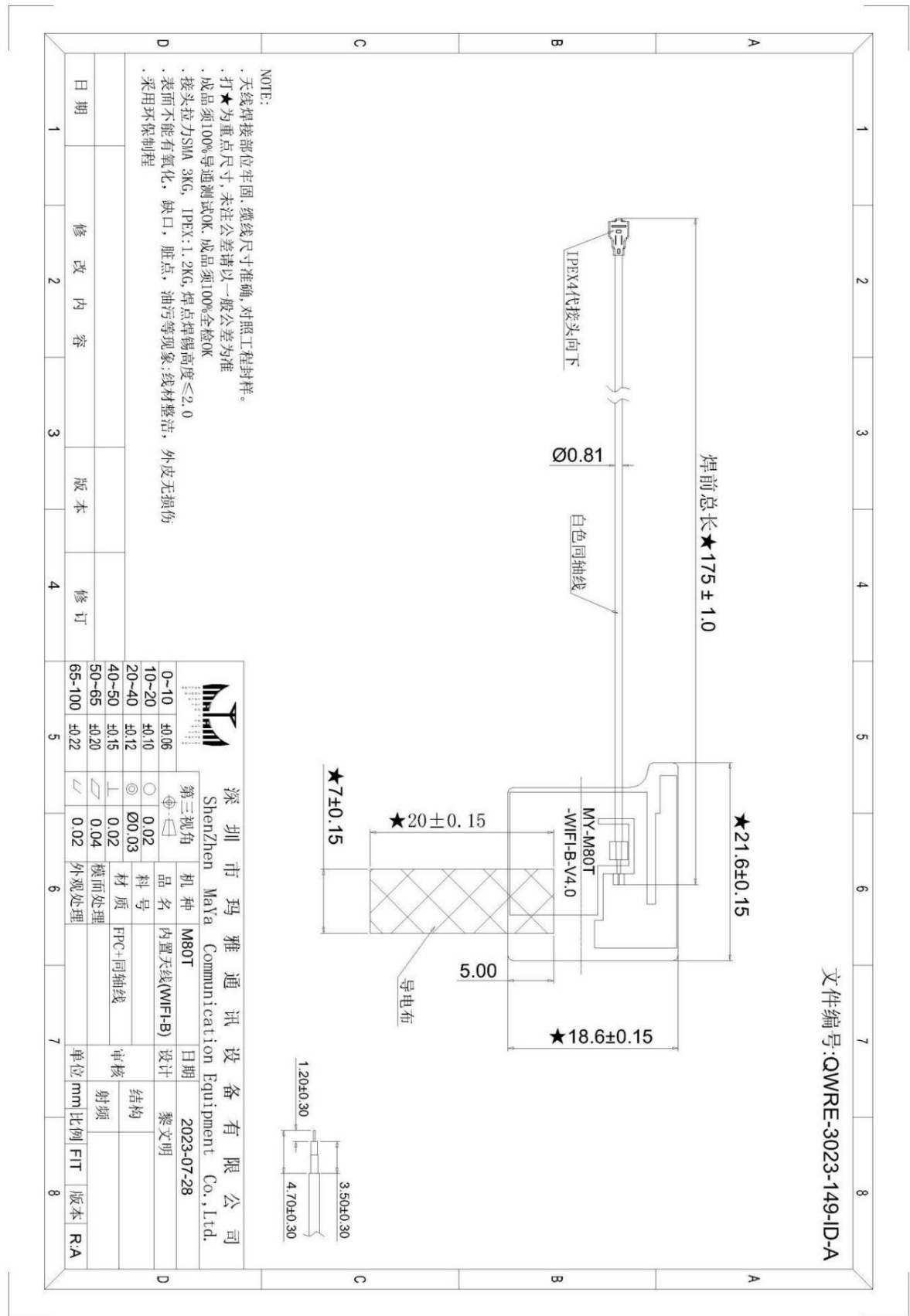
6. Environmental treatment

如图，天线位置
gps天线与分集
天线换位置。





7. Structural drawings





8. Dimensional Inspection Report

Product Inspection Report

Product Inspection Report									
Material	FPC antenna			Illustration:					
Project Name	M80T								
Sample quantity	5PCS								
and date; I.	2023.08.07								
Appearance inspection check:									
Visual inspection items	Random inspection	test result							
1. Surface impurities and dirt	5PCS	OK							
2. Excess		OK							
adhesive 3.		OK							
Waste		OK							
material 4. Tear 5.		OK							
Gold surface oxidation 6. Ink		OK							
(black) II. Reliability Testing (Random Sampling) Take 5 pieces):									
Test Project	standard			1	2	3	4	5	test result
1. Adhesion test 2. Salt	The ink must not peel off, there should be no				Wu	Wu	Wu	No OK	
spray test results 3. Abrasion	gold coating, no corrosion, and no exposed				Wu	Wu	Wu	No OK	
resistance test 4.	substrate.								OK
Silkscreen printing	MY-M80T-WIFI-B-V4.0								OK
content III. Dimensional measurement (randomly selected 5 pieces):									
Part	benchmark value (mm)	tolerance +(mm)	tolerance -(mm)	1	2	3	4	5	Detection result
1	21.6	0.15	0.15	21.65	21.60	21.62	21.57	21.61	OK
2	18.6	0.15	0.15	18.65	18.60	18.62	18.57	18.61	OK
3	20	0.15	0.15	20.05	20.01	20.03	19.97	20.00	OK
4	7	0.15	0.15	7.05	7.01	7.03	6.97	7	OK
5	175	1	1	175.5	175	175.1	174.6	175.2	OK
6									
7									