



Shenzhen Anwei Wireless Technology Co., Ltd

A leading manufacturer of one-stop communication RF antenna solutions in the industry

Dachengwei HD8603 US version antenna tuning and testing report

RF: MR. LEI

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Report Edition: 2026.04.03 V1



Introduction to project debugging

Pattern	Complete machine		
Antenna Overview	main antenna	frequency band	
		2G	B2/3/5/8
		3G	WCDMA B1/2/5/8
		4G	LTEB1/2/3/4/5/8/12/17/30/34/38/39/40/41/66/71
	other antennas	BT/WIFI	2. 4G/5G/WIFI
		BD	1575. 42MHz
		DIV	B7/38/41
		NFC	13. 56MHz

Antenna model	
4G-MAIN	AW006-HD8603-M-021-A0
4G-DIV	AW006-HD8603-M-022-A0
BT/WIFI/BD	AW006-HD8603-M-023-A0
NFC	AW006-HD8603-020-A0



Active data in free space

	Channel	TRP （dBm）	TIS （dBm）			Channel	TRP （dBm）	TIS （dBm）			Channel	TRP （dBm）	TIS （dBm）
FDD B1	18050	18. 83		FDD B30					WCDMA B1	10562	18. 25		
	18300	19. 07			27710	15. 55	-91. 17			10700	18. 93		
	18550	19. 18	-94. 26							10838	18. 98	-107. 89	
FDD B2	18650	18. 26		FDD B66	132022	18. 3		WCDMA B2	9262	18. 76			
	18900	18. 71			132322	18. 4				9400	18. 74		
	19150	18. 68	-93. 43		132622	18. 2	-93. 6			9538	18. 11	-104. 91	
FDD B3	19250	18. 46		FDD B71	133172	8. 3		WCDMA B5	4132	18. 16			
	19575	18. 25			133297	8. 9				4183	18. 34		
	19900	17. 95	-94. 15		133422	9. 54	-84. 6			4233	18. 37	-105. 31	
FDD B4	20000	18. 2		TDD (B34)	36250	18. 94		WCDMA B8	2712	17. 74			
	20175	17. 56			36275	18. 13				2787	18. 64		
	20350	18. 05	-94. 86		36300	18. 95	-92. 31			2863	18. 26	-105. 17	
FDD B5	20450	17. 98		TDD (B38)	37850	18. 26		GSM 850	128	27. 4			
	20525	18. 05			38000	18. 02				190	27. 25		
	20600	18. 63	-92. 6		38150	18. 62	-92. 74			251	28. 02	-104. 37	
FDD B8	21500	18. 56		TDD (B39)	38350	18. 06		GSM 900	1	27. 29			
	21625	18. 88			38450	18. 87				62	27. 2		
	21750	18. 59	-90. 99		38550	18. 03	-91. 12			124	27. 91	-104. 27	
FDD B12	23060	10. 68		TDD (B40)	38750	18. 08		DCS1800	512	26. 98			
	23095	10. 7			39150	18. 31				698	25. 38		
	23130	10. 43	-91. 12		39550	18. 99	-93. 83			885	25. 5	-106. 85	
FDD B17	23780	11. 4		TDD (B41)	40340	18. 38		PCS 1900	512	24. 98			
	23790	11. 5			40620	18. 01				661	25. 86		
	23800	11. 6	-90. 6		41140	18. 99	-90. 04			810	26. 49	-105. 32	

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Main antenna/diversity passive data

 Main antenna efficiency/gain

频段 (MHz)	增益 (dBi)	效率 (%)
660	-10.27	10.13
680	-9.91	10.45
700	-9.42	11
720	-8.78	13.8
740	-7.09	14.89
760	-7.33	14.95
780	-7.02	15.79
800	-1.02	38.88
820	-1.11	35.45
840	-1.55	29.94
860	-1.16	28.57
880	-1.21	27.28
900	-1.91	26.33
920	-0.87	29.68
940	-0.89	33
960	-0.9	34.04

频段 (MHz)	增益 (dBi)	效率 (%)
1700	1.46	43.11
1720	1.09	42.17
1740	1.87	45.53
1760	2.9	51.85
1780	1.55	51.62
1800	2.2	42.83
1820	2.26	43.97
1840	2.53	42.78
1860	3.03	43.69
1880	2.97	42.9
1900	2.95	41.92
1920	2.92	43.71
1940	2.48	45.08
1960	2.02	46.25
1980	1.97	47.96
2000	1.43	45.07
2020	1.34	45.21
2040	1.55	45.53
2060	1.31	46.57
2080	1.35	47.82
2100	1.36	48.57
2120	1.14	44.8
2140	1.6	49.04
2160	1.43	48.47
2180	1.47	47.71
2200	1.55	51.16
2220	1.15	49.74
2240	0.88	47.92
2260	1.87	51.93

频段 (MHz)	增益 (dBi)	效率 (%)
2300	2.4	45.22
2320	2.45	46.77
2340	2.3	45.38
2360	3.91	52.12
2380	3.27	47.07
2400	3.41	51.27
2420	3.22	50.8
2440	2.66	46.54
2460	3.24	47.19
2480	2.95	46.57
2500	2.71	47.65
2520	2.29	43.1
2540	2.24	45.65
2560	2.2	38.89
2580	2.04	37.92
2600	1.71	33.66
2620	2.36	40.33
2640	1.61	31.35
2660	1.82	35.01
2680	1.5	32.56
2700	1.59	48.63

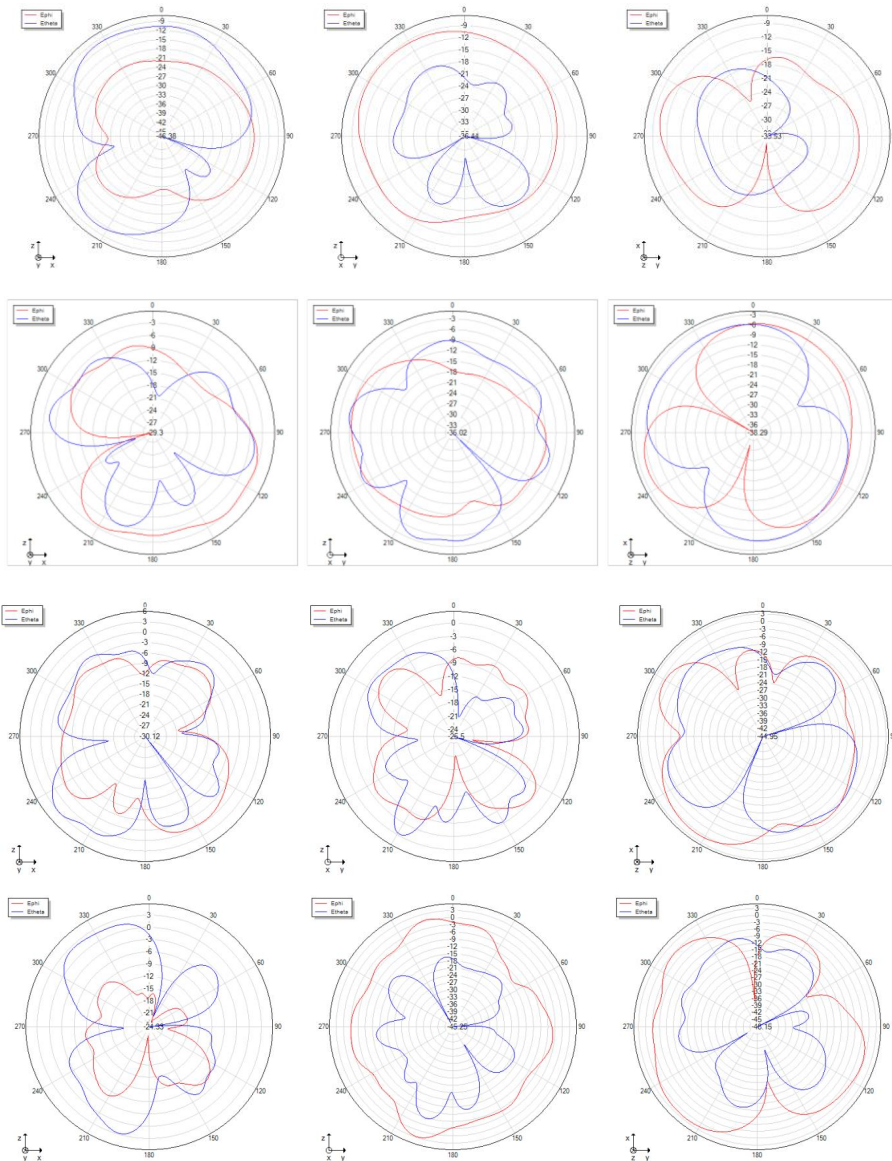
 Diversity antenna efficiency/gain

频段 (MHz)	增益 (dBi)	效率 (%)
2300	0.35	47.88
2320	0.32	51.22
2340	0.47	50.23
2360	1.74	55.34
2380	1.64	51.7
2400	2.08	57.44
2420	1.74	55.81
2440	1.4	52.81
2460	1.95	52.79
2480	1.94	51.48
2500	1.98	53.25
2520	1.79	49.31
2540	1.64	50.91
2560	1.09	44.03
2580	0.69	42.42
2600	0.13	38.24
2620	0.96	47.88
2640	0.16	39.31
2660	0.23	41.83
2680	0.13	39.8
2700	-0.13	37.18

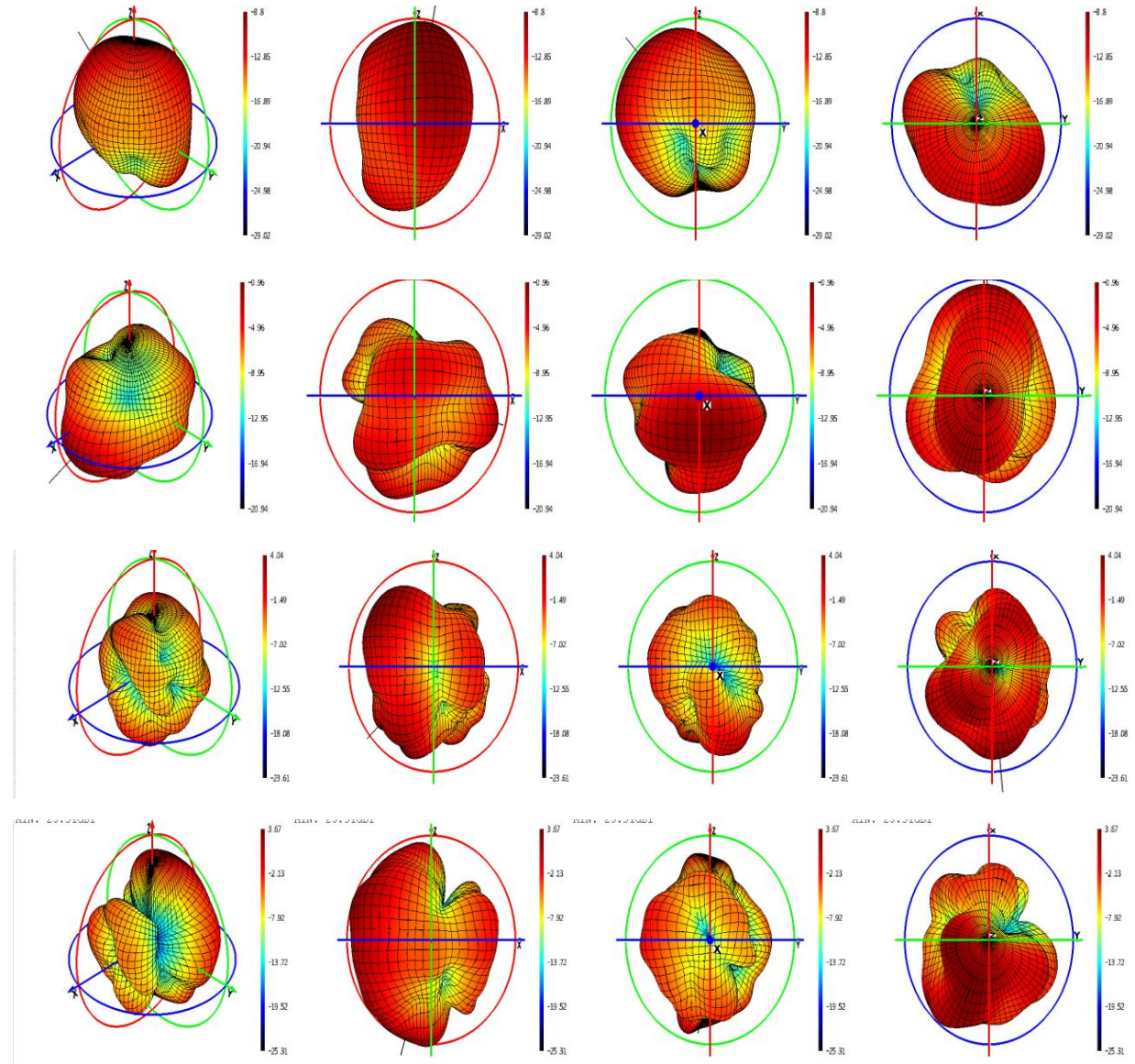


Main antenna/diversity direction/Apple diagram

660-2700MHz



660-2700MHz



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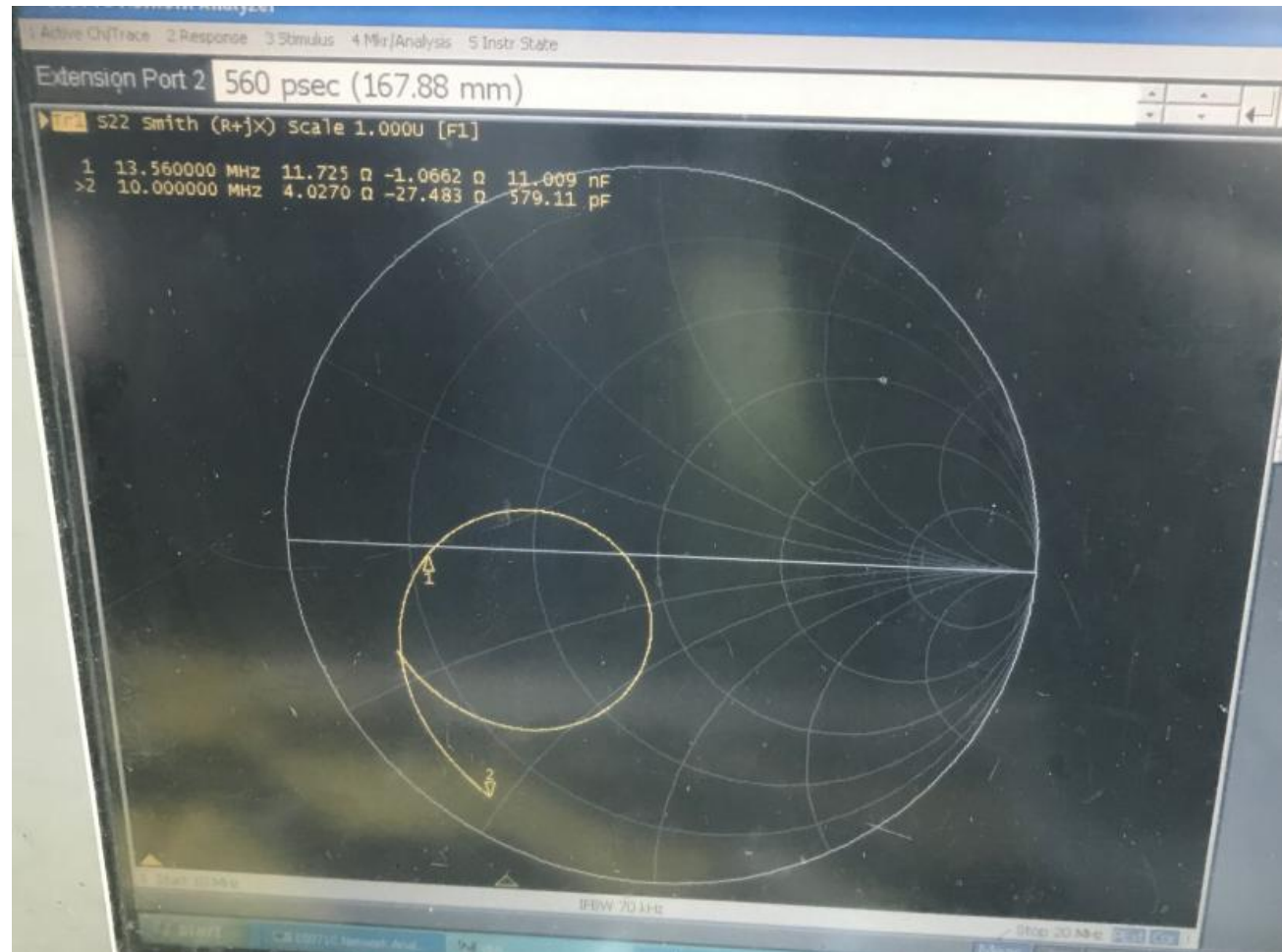
WIFI test data

WIFI active test data

BAND	2.4GWIFI			5.8WIFI		
CHANNEL	1	6	11	36	64	165
TRP (dBm)	12.3	12.6	12.7	10.3	10.8	11.3
TIS (dBm)	-78.6	-78.9	-80.6	-69.8	-72.4	-70.6

WIFI passive test data

频段(MHz)	增益(dBi)	效率(%)
2400	1.17	43.89
2450	1.46	32.93
2500	1.24	27.49
5100	1.27	28.24
5300	1.08	31.07
5800	1.09	40.46

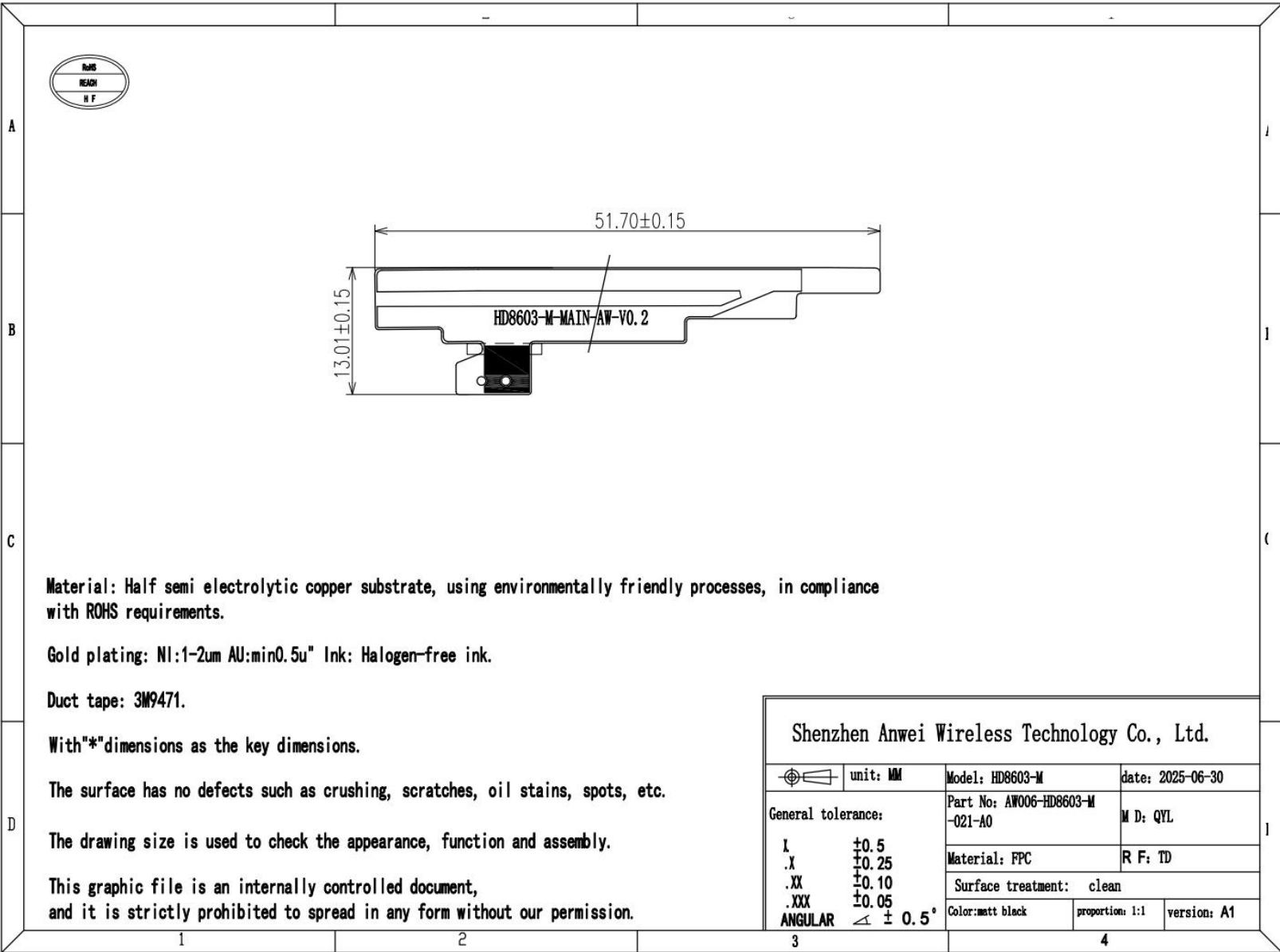


Frequency	13.56MHz
Impedance	50 Ω
Gain	-9.5dBi



Main antenna drawing

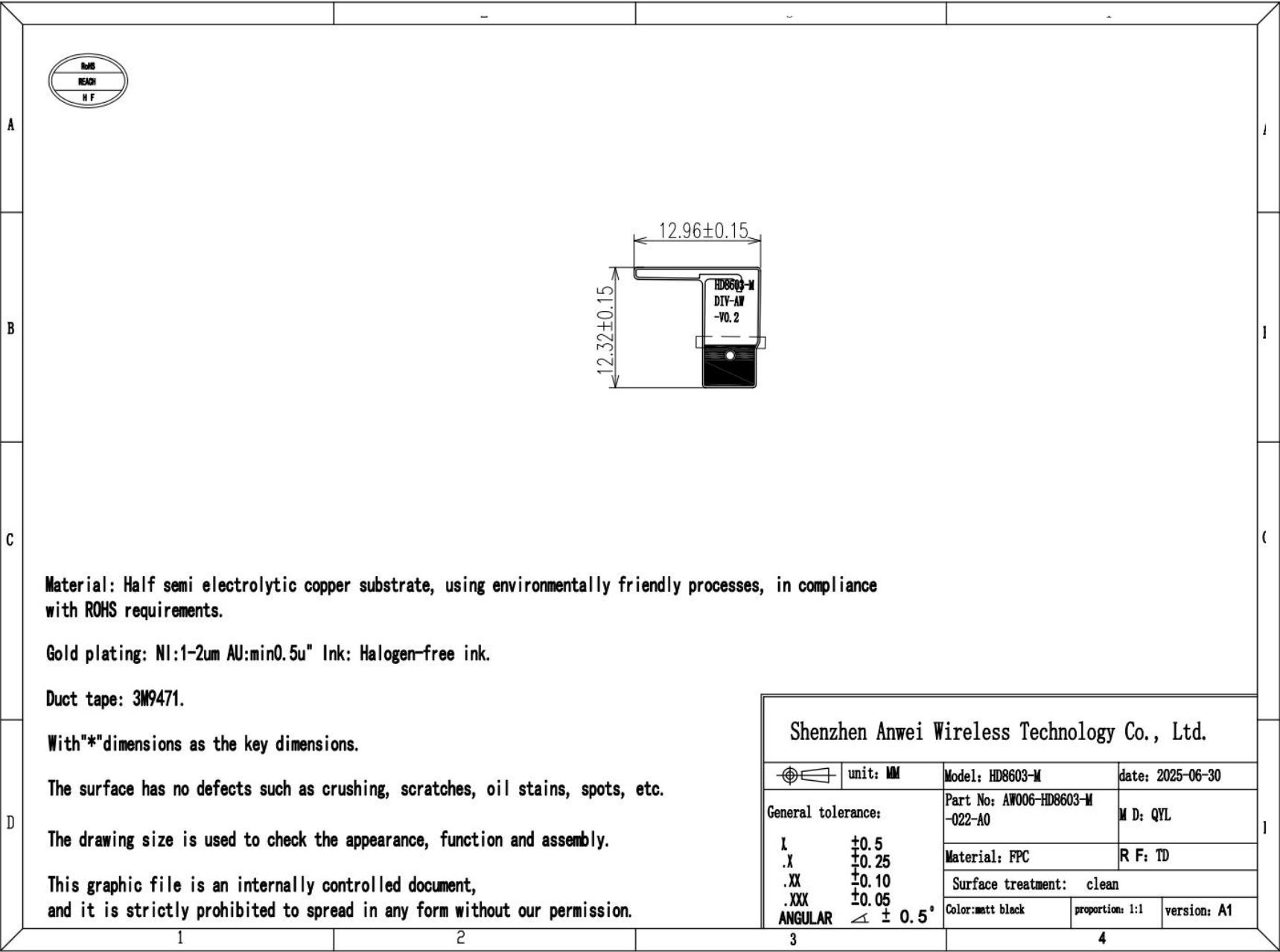
 Unit: MM





Diversity antenna drawing

 Unit: MM



RoHS

REACH

HF

A

B

C

D

26.06±0.15

13.33±0.15

HD8603-M-GWB-AW-V0.2

Material: Half semi electrolytic copper substrate, using environmentally friendly processes, in compliance with ROHS requirements.

Gold plating: NI:1-2um AU:min0.5u" Ink: Halogen-free ink.

Duct tape: 3M9471.

With"*"dimensions as the key dimensions.

The surface has no defects such as crushing, scratches, oil stains, spots, etc.

The drawing size is used to check the appearance, function and assembly.

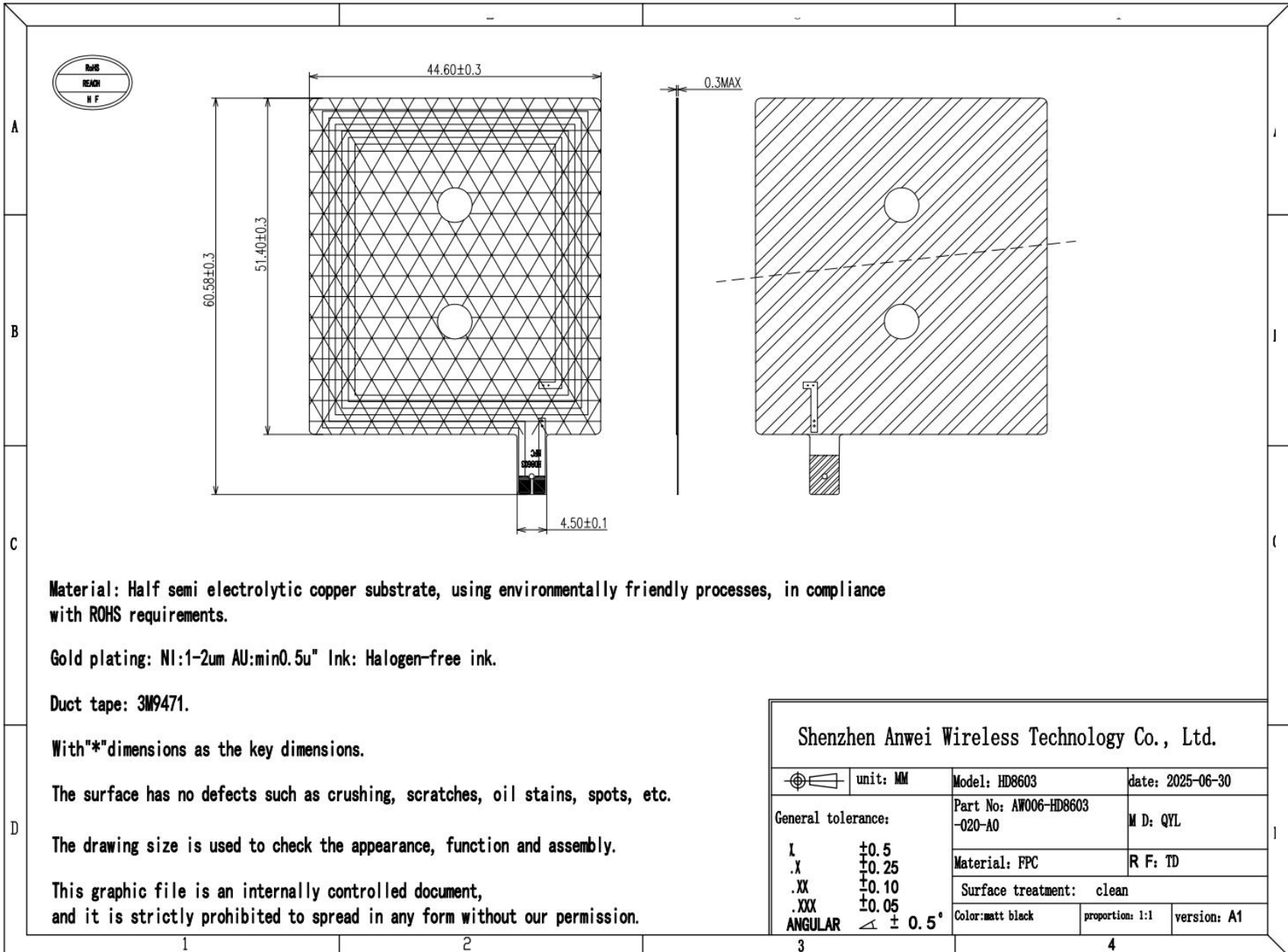
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	unit: MM	Model: HD8603-M	date: 2025-06-30
General tolerance:		Part No: AWO06-HD8603-M-023-A0	M D: QYL
		Material: FPC	R F: TD
		Surface treatment: clean	
I	±0.5	Color:matt black	proportion: 1:1
.X	±0.25		version: A1
.XX	±0.10		
.XXX	±0.05		
ANGULAR	∠ ± 0.5°		



NFC Antenna Drawing

 Unit: MM

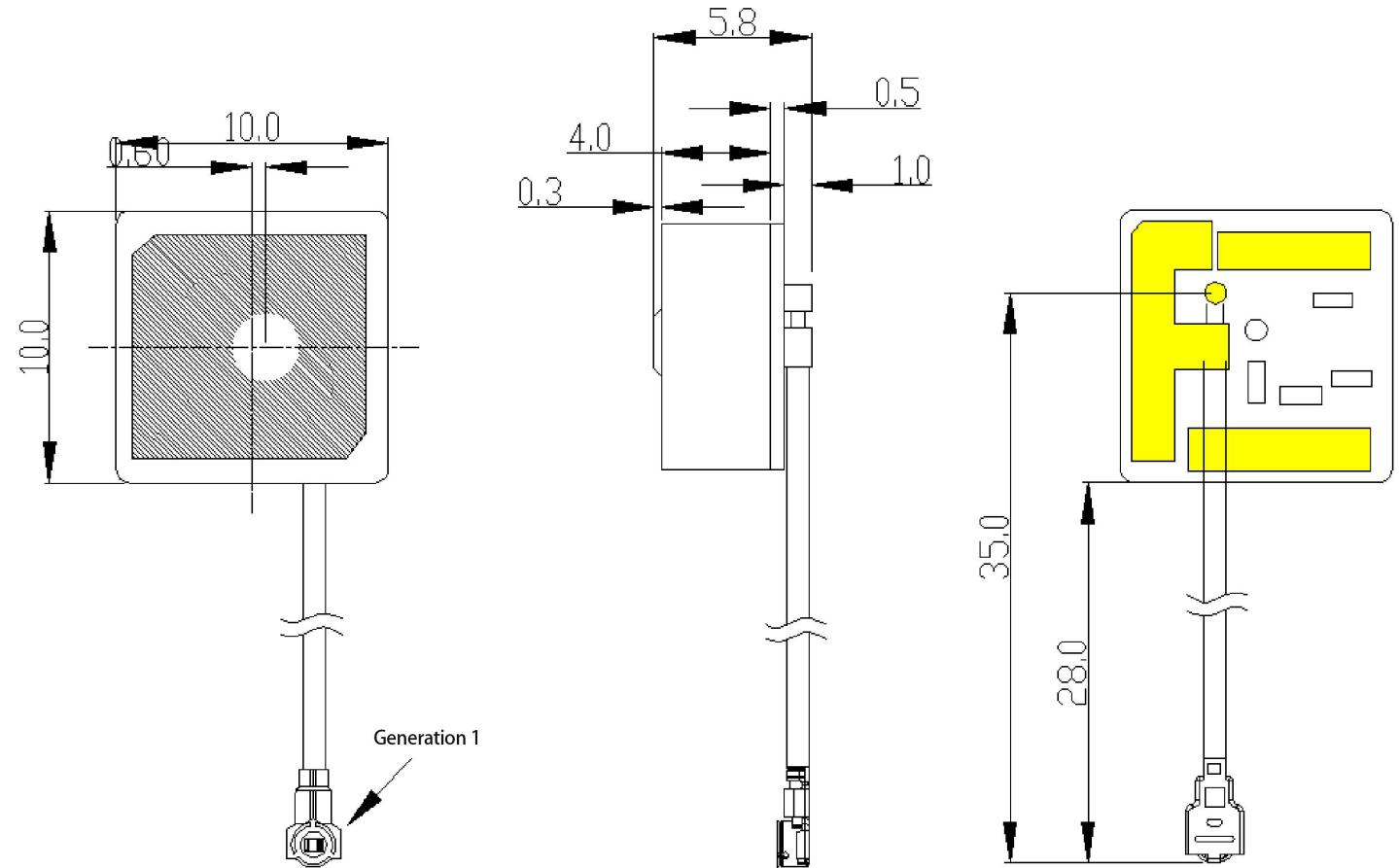




BD/GPS ceramic antenna blueprint

 Unit: MM

frequency range	1561MHZ $\pm$ 5MHz
Resistance	50 Ω
Polarization mode	Right-hand circular polarization
Horizontal coverage angle	360°
Standing wave	≤ 1.5
Max gain	0.5dBi
10dB bandwidth	± 5 MHz





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The End

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