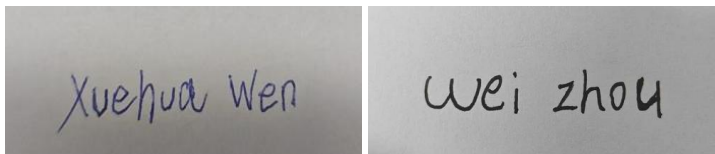

Antenna Reports

Issue date: 2025/08/21

Documented by:



Antenna Summary Table

Check items	Information
Provided by lab	Tinno internal lab (GTS)
Manufacturer/ Brand name	Shenzhen Hamywe Micro Technology Co., Ltd. hanghai Deman Electronics Technology Co.,Ltd.
Manufacturer address	4th Floor, Building D, Aimet Electric Appliance Company, No. 4 Huangfengling Industrial Avenue, Shiyao Street, Bao'an District, Shenzhen City, Guangdong Province, China No.58, Shenzhou Road, Xinzhuang Industrial Park, Minhang District, Shanghai
Model name (Part number)	X3322-N280A-MIAN-V0.4 YYWW X3322-N280A-DIV-V0.2 YYWW X3322-N280A-GWB-V0.3 YYWW
Test environment	Tinno XI'An RD team Lab with GTS2800 chamber
Test equipment software	GTS MaxSign-Libra
List of calibrated test equipment	GTS2800 with calibrated date: 2024/10/26, Due date:2025/10/25
Antenna detail info.	Show WLAN/BT/ WWAN ANT0:LMB antenna(699~960MHz,1.7~2.7GHz) , Monopole type antenna. ANT1:LMB antenna(699~960MHz,1.7~2.7GHz) , PIFA type antenna. ANT2: GPS 1575MHz+WiFi2.4G+5G antenna (2.4~2.5GHz, 5.15~5.8GHz), Monopole type antenna. NFC Antenna: NFC antenna with dimension 66.1 mm *37mm
Antenna gain test data	Included antenna frequency, gain pattern

Note: Antenna gain was measured in the anechoic chamber, 3D scan was exercised, and the highest numbers are reported in this document.

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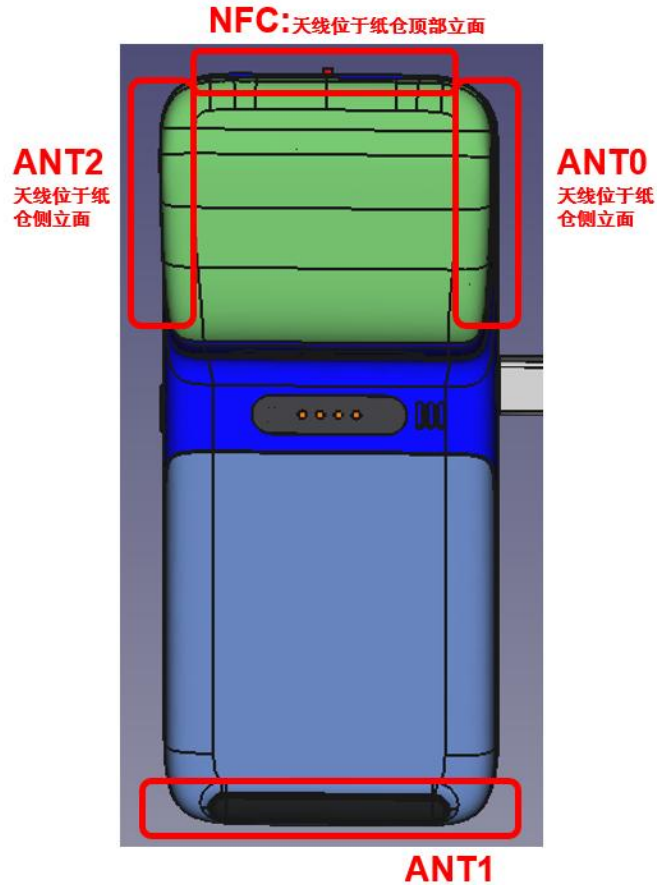
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1. Antenna Placement



		US	EU	
ANT	band	band detail	band detail	function
ANT0	LB	G850/G900	G850/G900	TX&RX0
		WB5/WB8	WB5/WB8	
		LTE B5/B8/B12/B17/B19/B26/B28	LTE B5/B8/B19/B20/B26	
	MB	G1800/G1900	G1800/G1900	
		WB1/B2/B4	WB1	
		LTEB1/2/3/4/25/66	LTEB1/3	
	HB	LTEB7/B38/B41	LTEB7/B38/B40/B41	
ANT1	LB	G850/G900	G850/G900	RX1
		WB5/WB8	WB5/WB8	
		LTE B5/B8/B12/B17/B19/B26/B28	LTE B5/B8/B19/B20/B26	
	MB	G1800/G1900	G1800/G1900	
		WB1/B2/B4	WB1	
		LTEB1/2/3/4/25/66	LTEB1/3	
	HB	LTEB7/B38/B41	LTEB7/B38/B40/B41	
ANT2	WIFI/GPS L1/BT	2.4G+5GWIFI TRX/GPS L1/BT	2.4G+5GWIFI TRX/GPS L1/BT	TRX
NFC	NFC	13.56MHz	13.56MHz	

2.TX Antenna Peak Gain

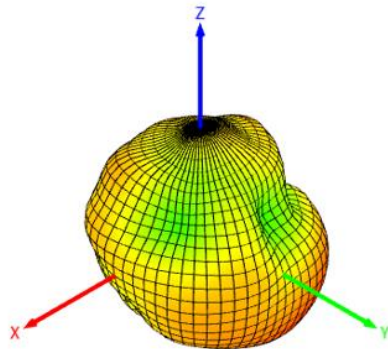
Test / Position	Free Space	
bands	Frequency	TX Antenna Peak Gain
		Ant 0
GSM 850	824-849MHz	1.99
GSM 900	880- 915MHz	1.3
DCS 1800	1710-1785MHz	0.74
PCS 1900	1850-1910MHz	0.8
WCDMA Band 1	1920-1980MHz	1.82
WCDMA Band 2	1850-1910MHz	0.8
WCDMA Band 4	1710-1755MHz	0.74
WCDMA Band 5	824-849MHz	1.99
WCDMA Band 8	880- 915MHz	1.3
LTE Band 1	1920-1980MHz	1.82
LTE Band 2	1850-1910MHz	0.8
LTE Band 3	1710-1785MHz	0.74
LTE Band 4	1710-1755MHz	0.74
LTE Band 5	824-849MHz	1.99
LTE Band 7	2500-2570MHz	2.7
LTE Band 8	880- 915MHz	1.3
LTE Band 12	699- 716MHz	0.14
LTE Band 17	704- 716MHz	0.14
LTE Band 19	830- 845MHz	1.99
LTE Band 20	832-862MHz	1.99
LTE Band 25	1850-1915MHz	0.8
LTE Band 26	814-849MHz	1.99
LTE Band 28	703-748MHz	0.14
LTE Band 38	2570-2620MHz	2.7
LTE Band 40	2300-2400MHz	0.91
LTE Band 41	2496-2690MHz	2.7
LTE Band 66	1710-1780MHz	0.74

Test / Position	Free Space	
bands	Frequency	TX Antenna Peak Gain
		ANT6
WiFi 2.4G	2400-2500MHz	0.46
WiFi 5G	5150~5250MHz	-0.31
WiFi 5G	5250~5350MHz	-0.14
WiFi 5G	5470~5725MHz	-0.12
WiFi 5G	5725~5850MHz	-0.63

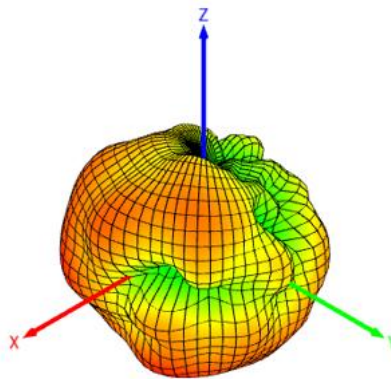
3. Gain Plots

ANT2

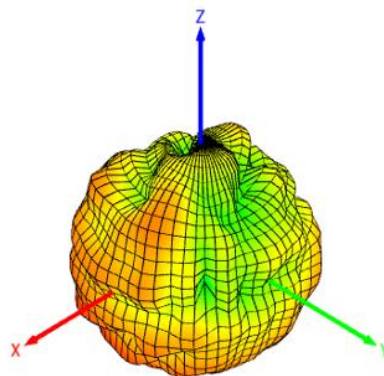
WIFI 2.4G (2450 MHz)



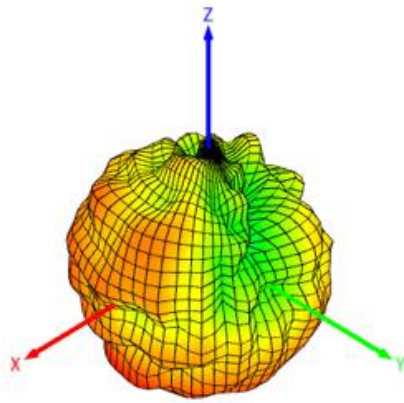
WIFI 5G (5200 MHz)



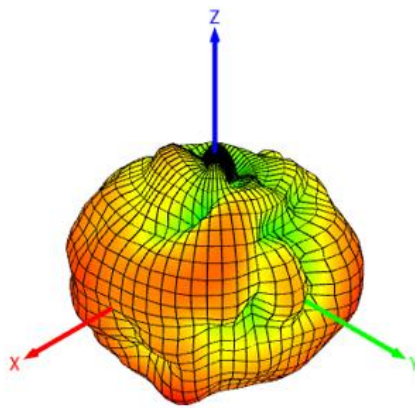
WIFI 5G (5350 MHz)



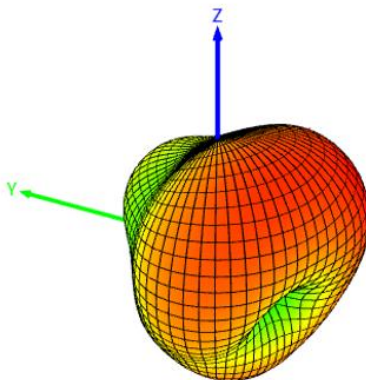
WIFI 5G (5500 MHz)



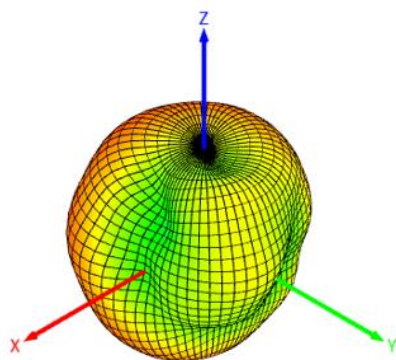
WIFI 5G (5800 MHz)



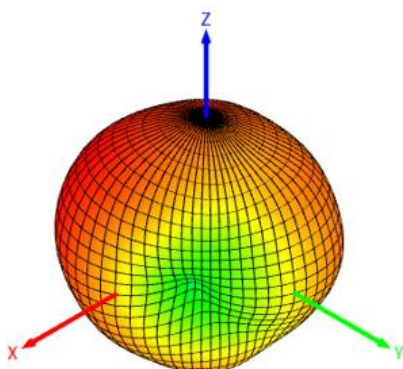
ANT0



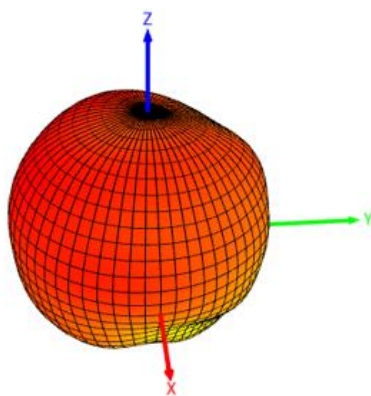
850/W5/B5/B19/B20/B26



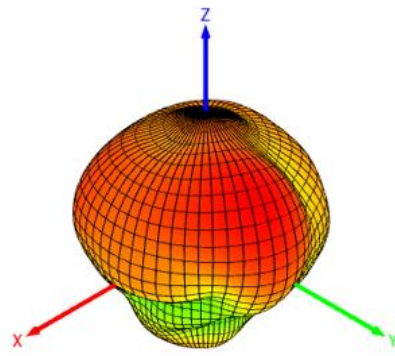
900/W8/B8



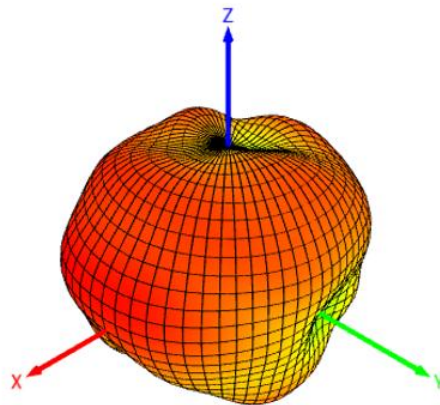
B12/B17/B28



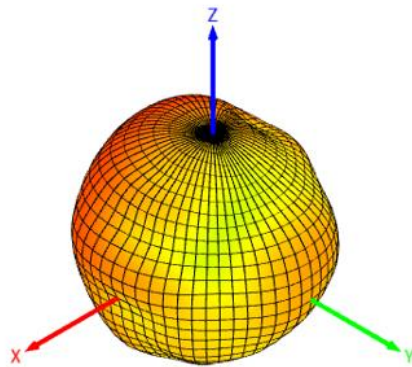
B3/B4/B66/G1800/W4



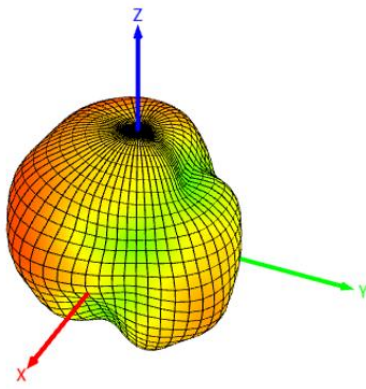
B2/B25/G1900 /W2



W1/B1



B40



B7/B38/B41

4. Test setup

