



Antenna Debugging Report

Customer: Duoke

Project: DK103

Structure: Xiaoxiang-13316888409

RF: Long Yaobin -15874137313

Date: 2025-4-29



Antenna Debugging Report

Report type:

Version number: V5.0

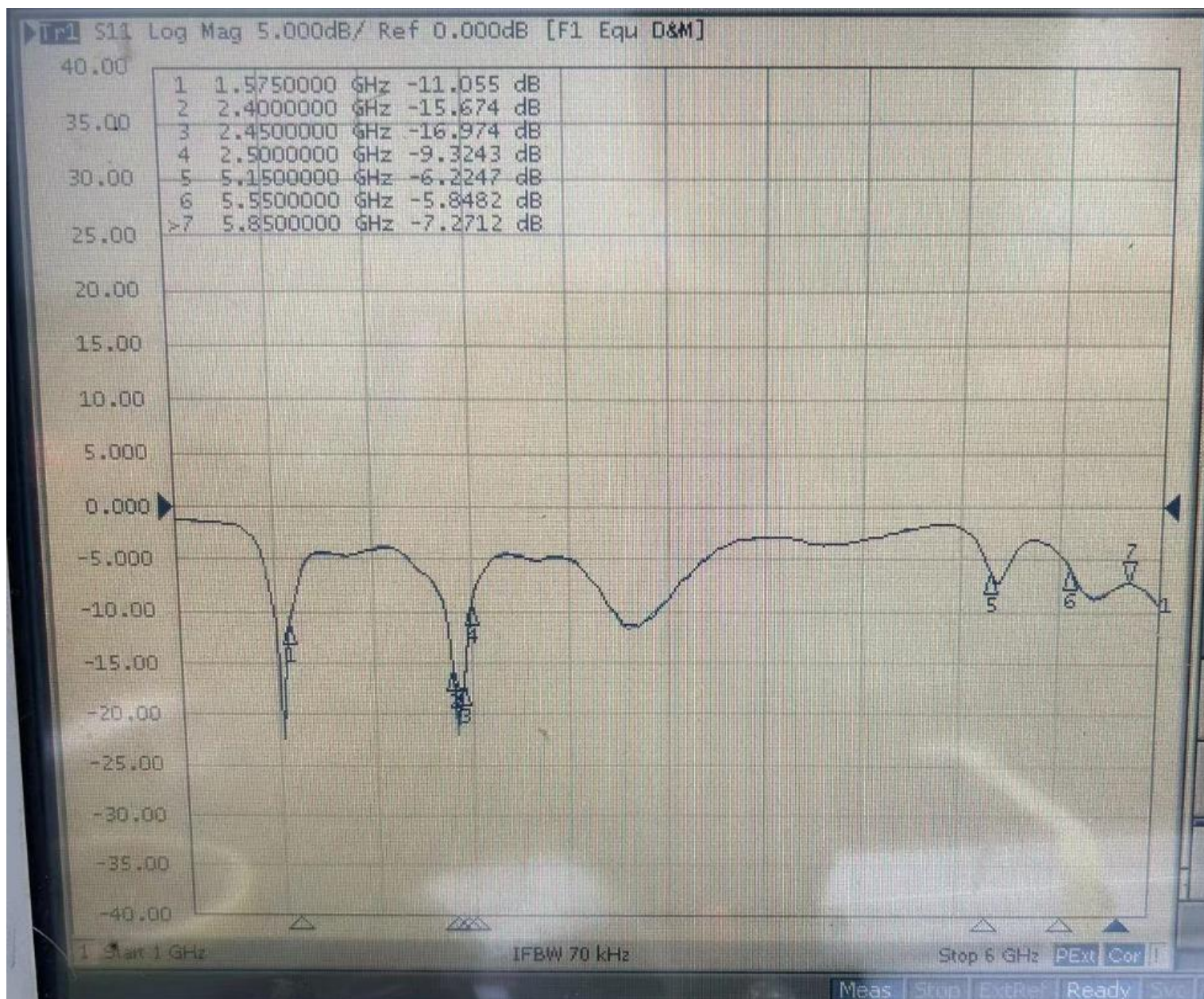
Machine status: PVT trial production machine

Antenna frequency band:

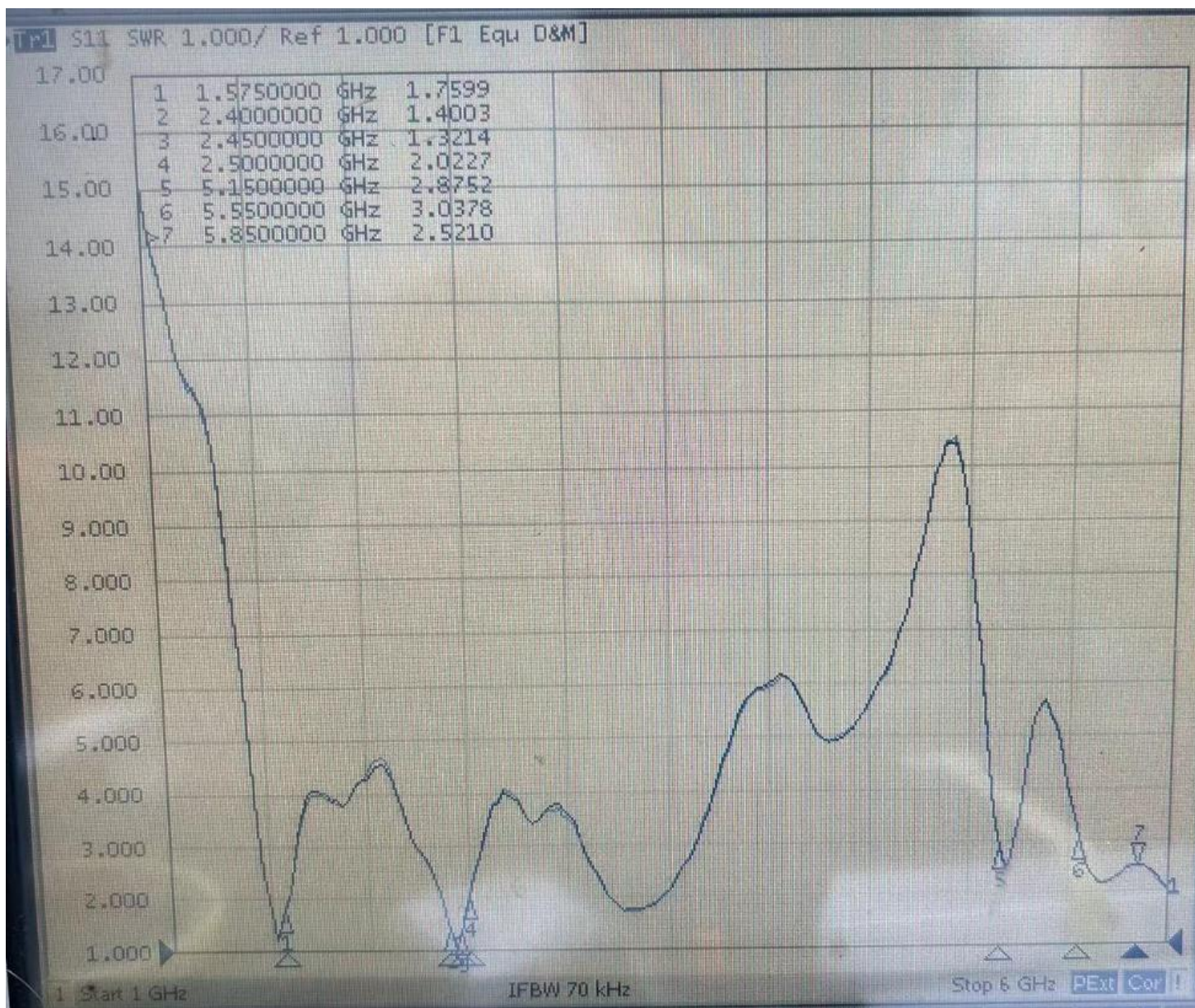
802.11a/b/g/n/ac

GPS+GLONASS+Galileo

Debugging conclusion and precautions:



GPS/Wifi/BT antenna SWR



Frequency (MHZ)	Average Gain(dBi)	Peak Gain(dBi)
WIFI 2.4G/BT	-4.3	0.5
WIFI 5.8G	-5.5	-0.8
GPS	-3.8	0.9



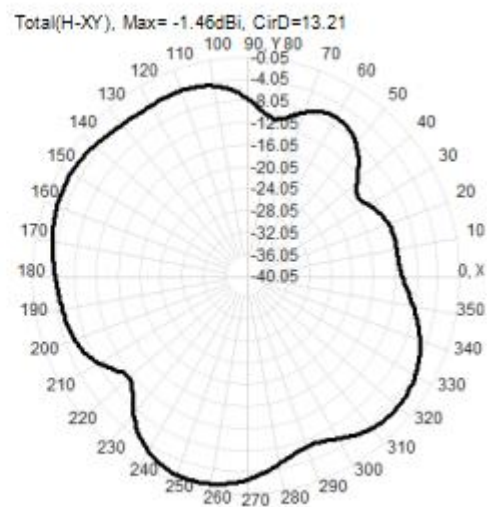
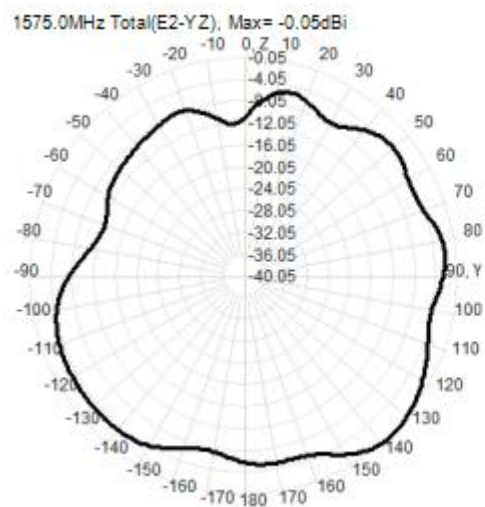
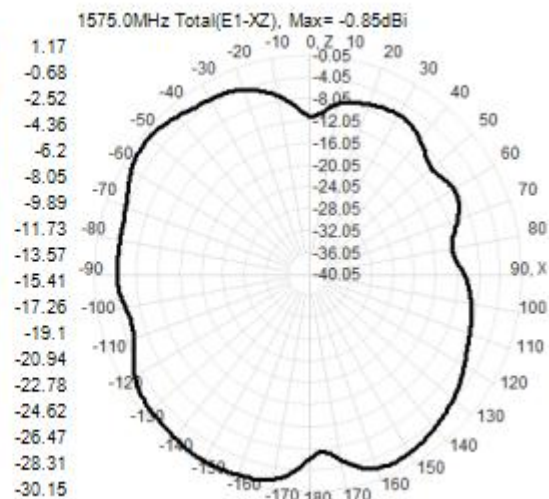
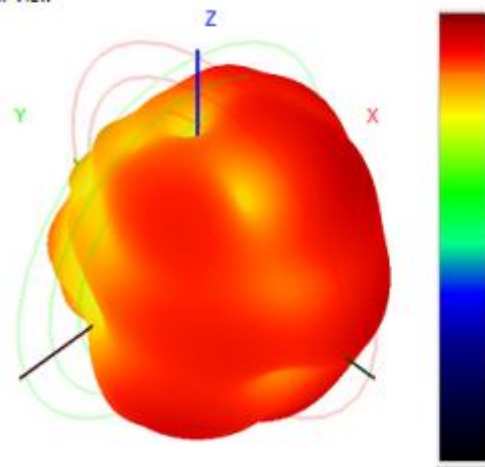
Antenna test data

3D Free Space									
2.4G	Band	Channel	TRP	TIS	5.8G	Band	Channel	TRP	TIS
	b (11M)	1	14.4			a (54M)	36	12.6	
		6	13.3				149	16.1	
		13	13.7	-81.8			165	15.2	-71.3
	g (54M)	1	11.9			n (MCS7)	36	11.7	
		6	11.2				149	15.9	
		13	11.4	-70.2			165	15.1	-67.2
	n (MCS7)	1	12.6			ac (MCS8)	36	11.9	
		6	11.6				149	16.1	
		13	11.4	-65.6			165	15.2	-65.6

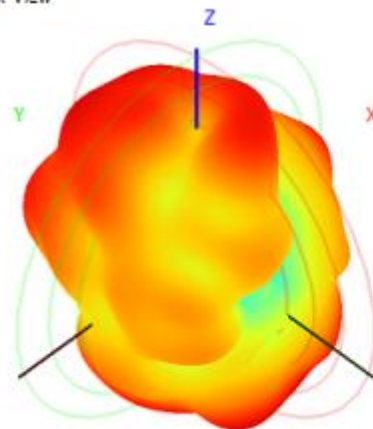
GPS antenna measurement, location:
Intersection of Ping'an Avenue
Weather: Sunny



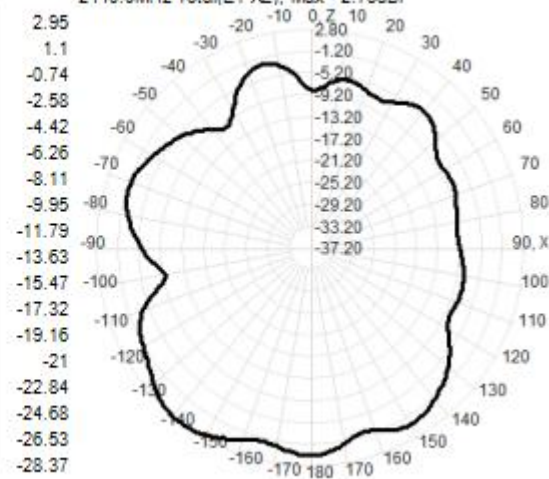
Back View



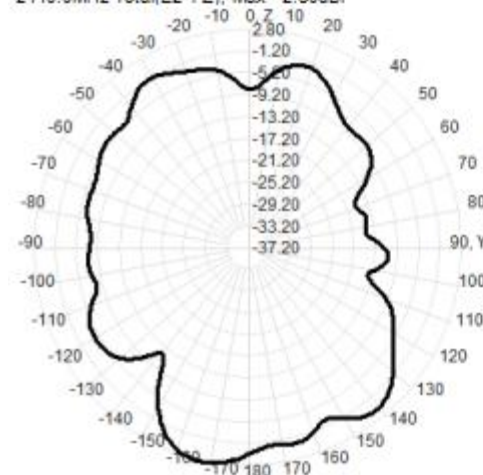
Back View



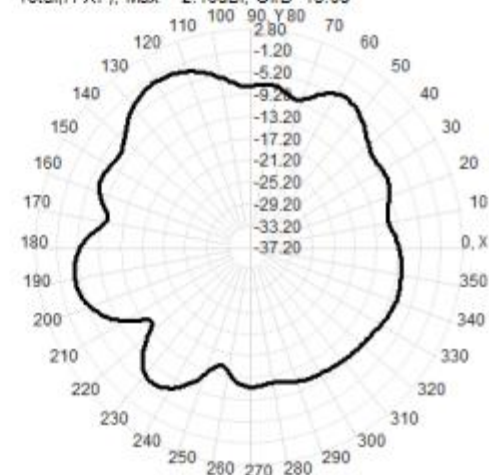
2440.0MHz Total(E1-XZ), Max= 2.73dBi



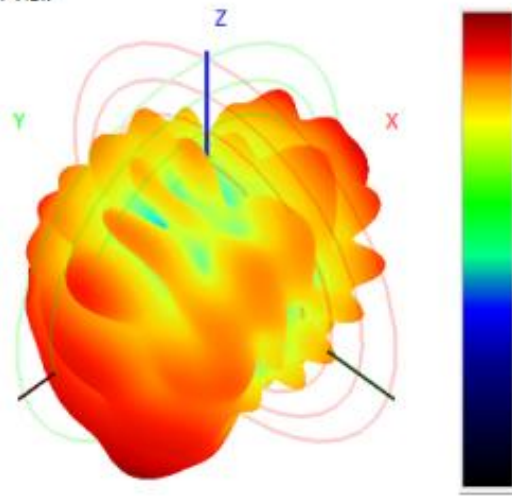
2440.0MHz Total(E2-YZ), Max= 2.80dBi



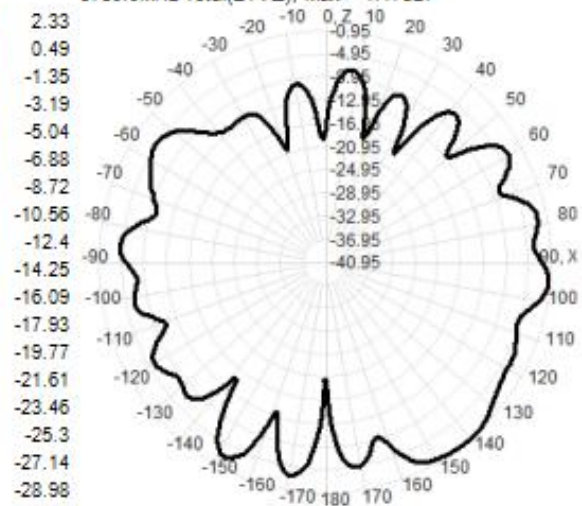
Total(H-XY), Max= -2.19dBi, CirD=13.05



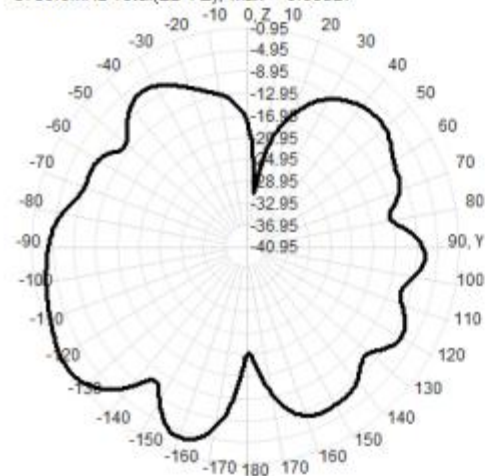
Back View



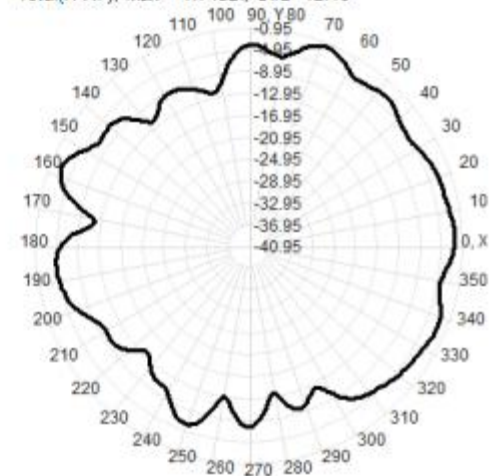
5780.0MHz Total(E1-XZ), Max= -1.17dBi



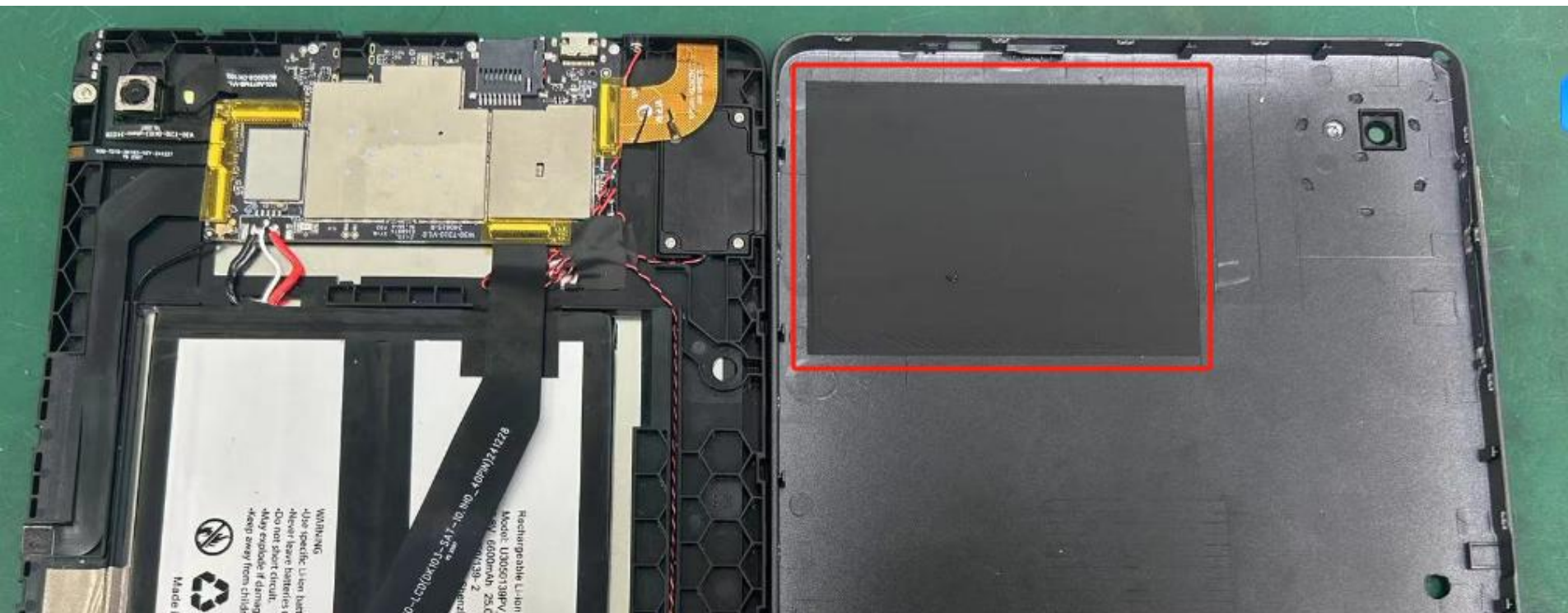
5780.0MHz Total(E2-YZ), Max= -0.95dBi



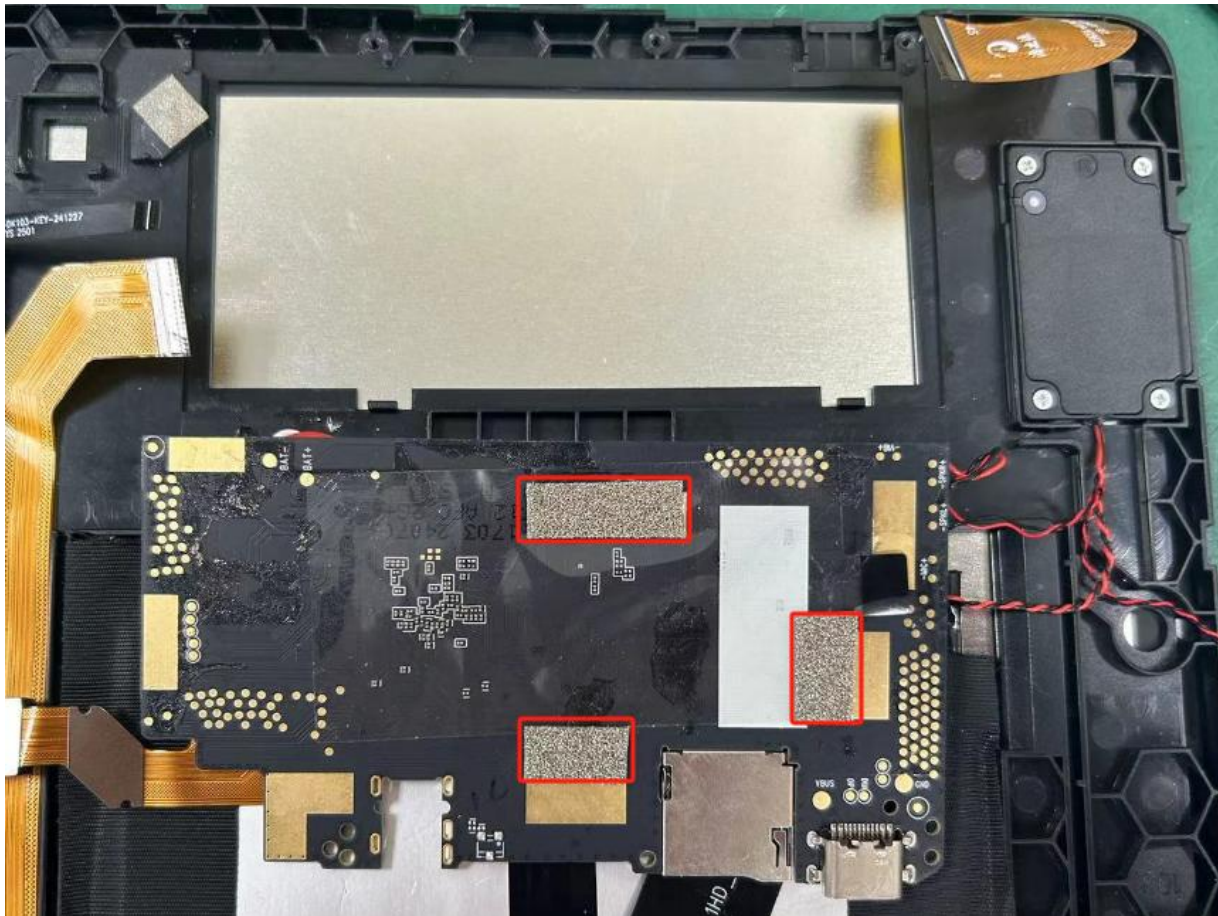
Total(H-XY), Max= -1.74dBi, CirD=12.19



As shown in the red box in the figure: The newly added graphite sheet in the red box cannot extend above the motherboard RF chip.



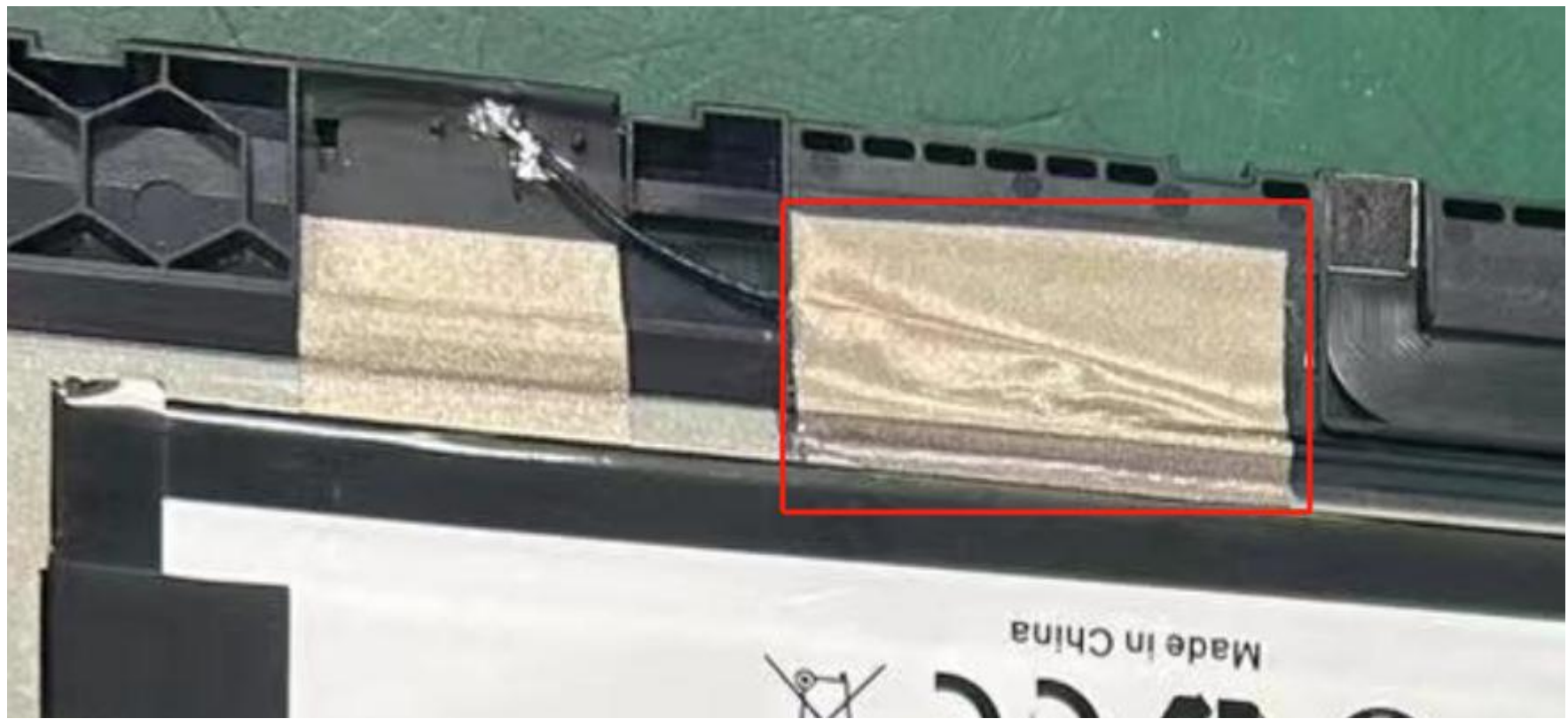
As shown in the red box in the figure: Increase the height of the back of the motherboard enough for the conductive sponge to be grounded to the screen metal. (Note: The exposed copper area on the back of the motherboard overlaps with the plastic bracket, and the conductive sponge should avoid the overlapping area.)



As shown in the red box in the figure, a large strip of conductive cloth is attached to the exposed copper area of the antenna and extended to the grounding of the screen metal area.



As shown in the red box in the figure, a large conductive cloth is added next to the antenna to cover the coaxial line and extend to the grounding point of the screen metal.



As shown in the red box in the figure, the screen cable, IC, etc. are covered with large conductive cloth for shielding, and the conductive cloth is extended and pasted back to the back.

