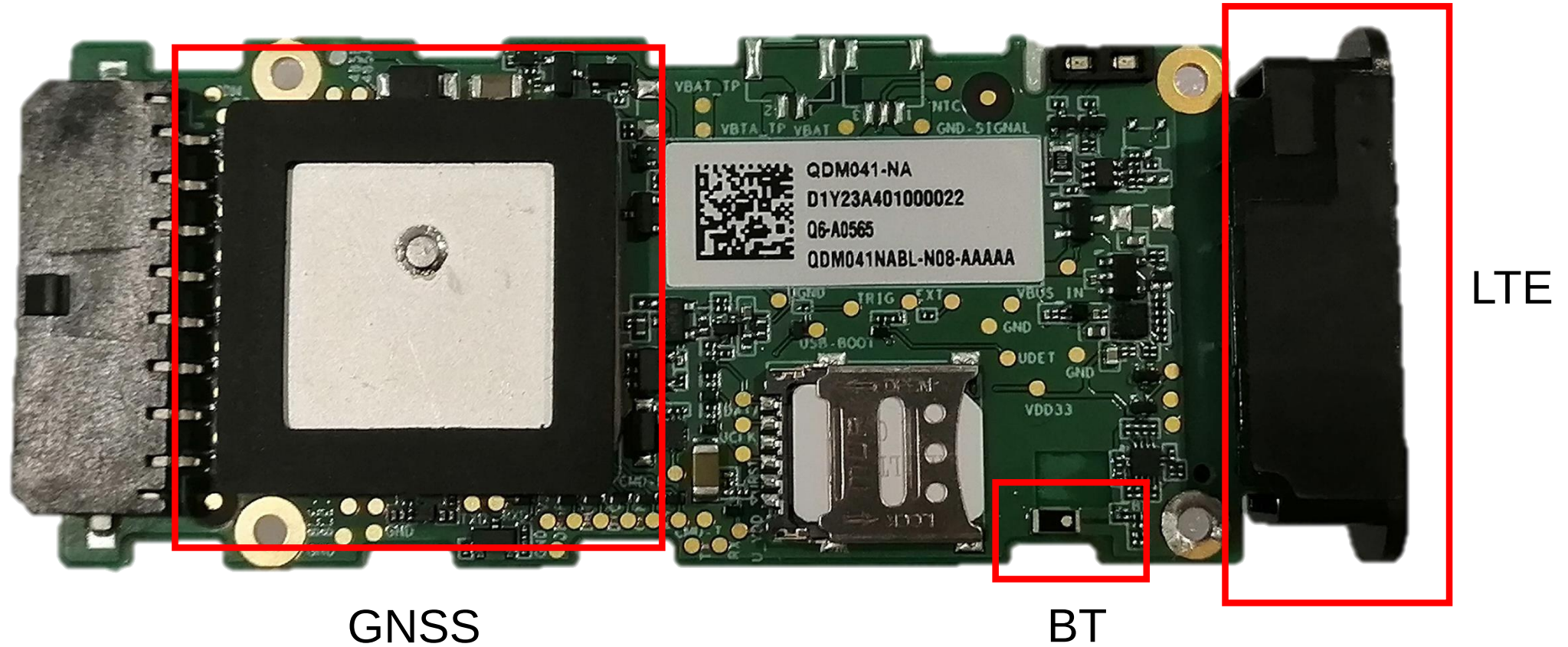


Project Overview

- Customer Name: Procon
 - Project Name: QDM041-NA
 - Device Dimensions: 91*39.5*12mm
 - Mainboard Dimensions: 85mm*35mm
 - Antenna Number: 3
 - Antenna Network Type & Frequency Band:
 - LTE*1: 700-960MHz&1710-2170MHz
 - BT*1: 2400-2500MHz
 - GNSS*1: 1559-1609MHz
 - Module No.: BG95-M1
 - Requirement:
 - Pass Verizon & T-Mobile Certification
- Bluetooth Antenna Gain: 3.8dBi
Band 13: 3.05dBi; Band 25: 4.67dBi; Band 26: 3.03dBi;
Band 66: 2.77dBi

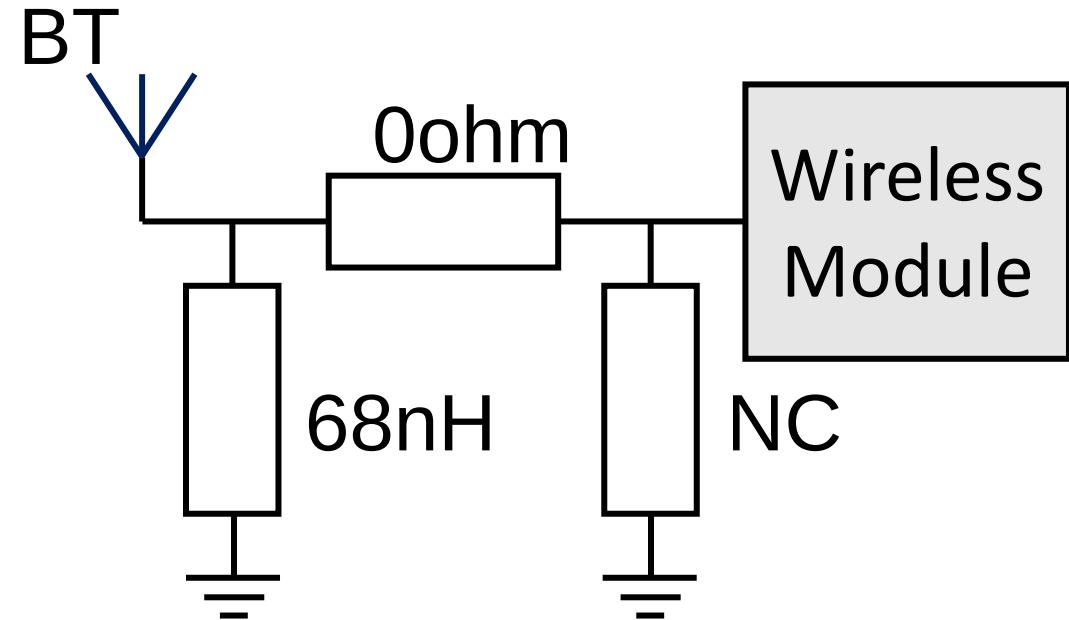
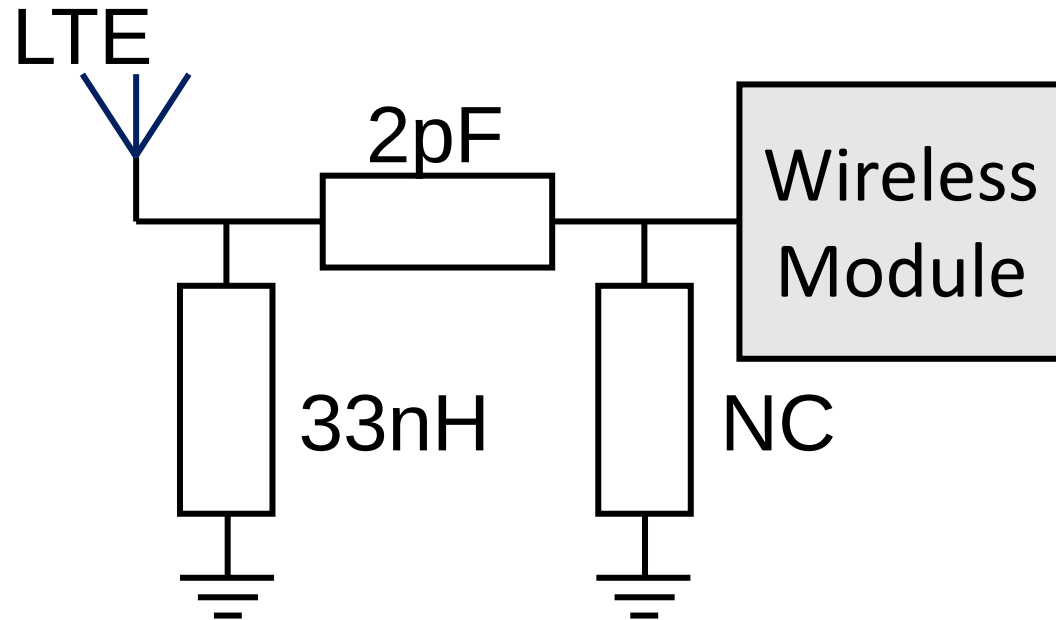


Antenna Placement



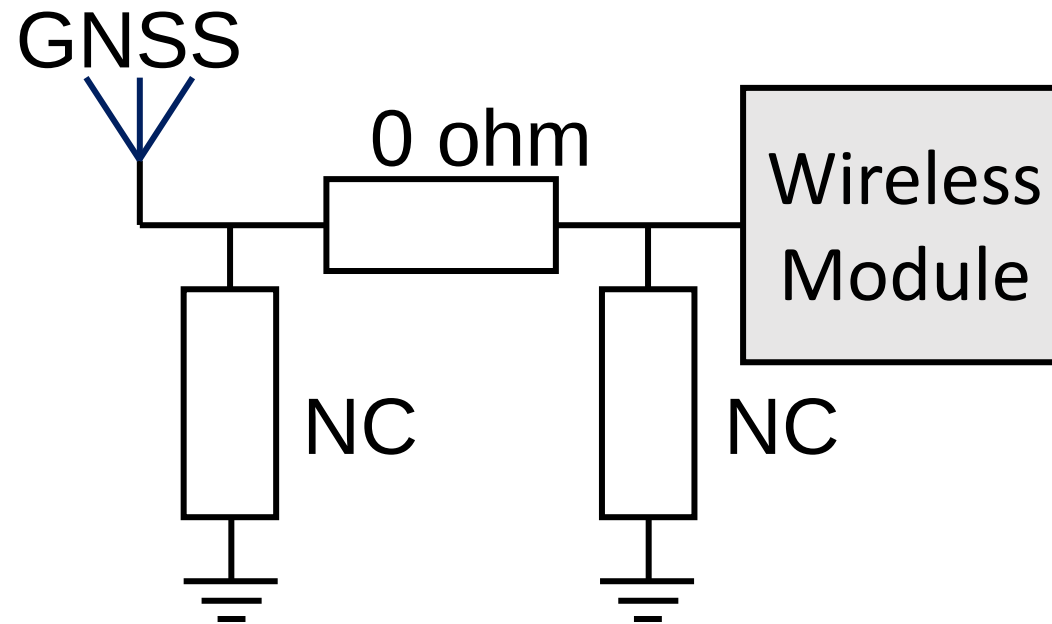
Antenna Matching

- Matching Circuit



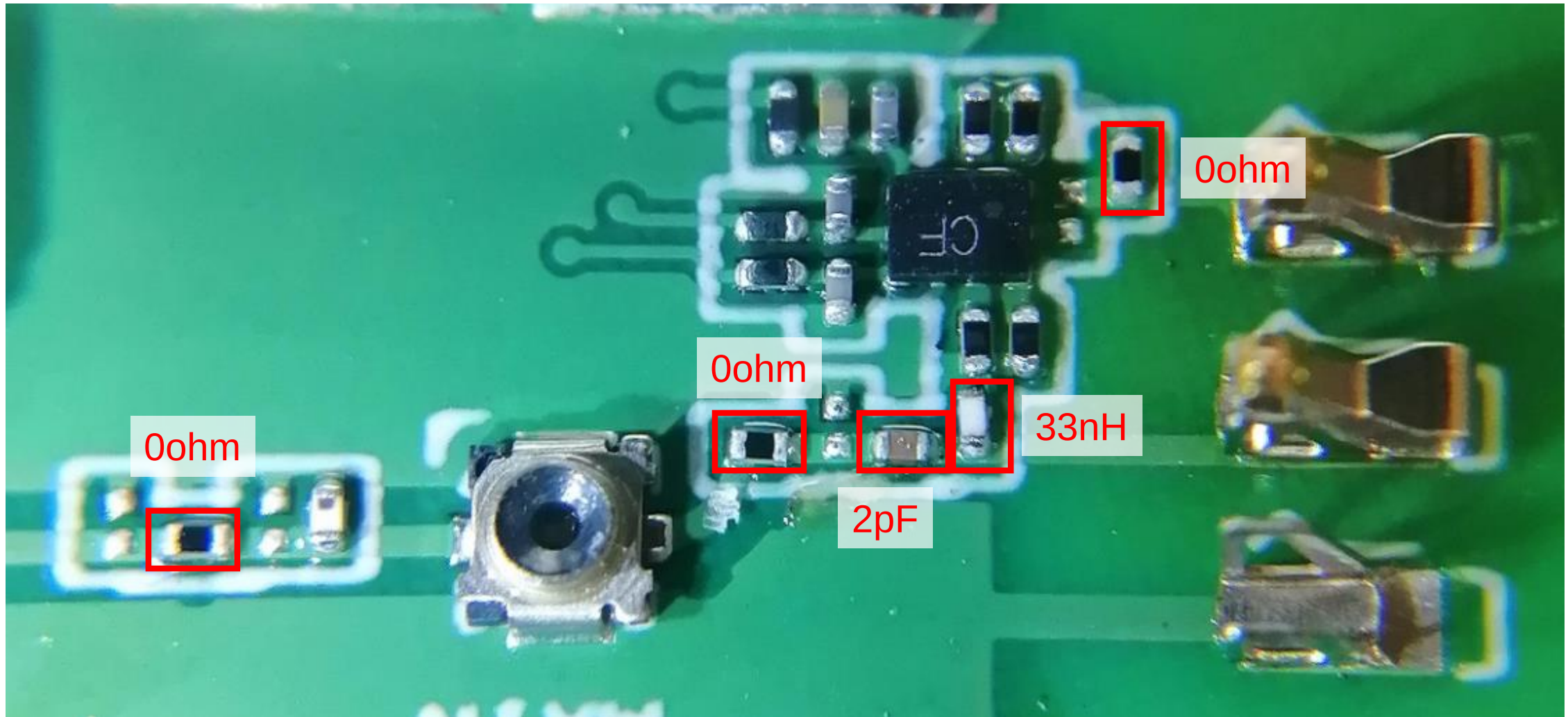
Antenna Matching

- Matching Circuit



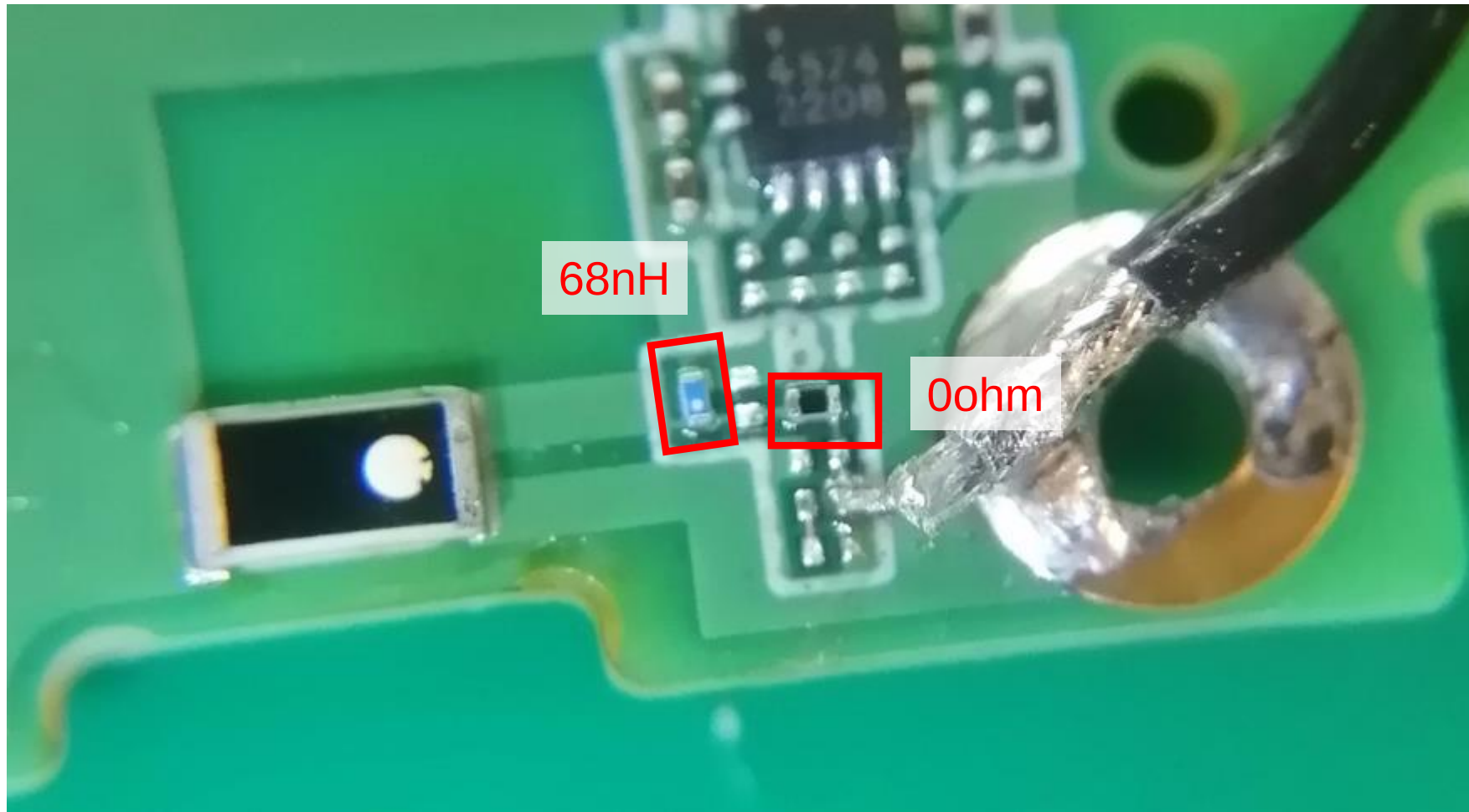
Antenna Matching

- Matching Circuit



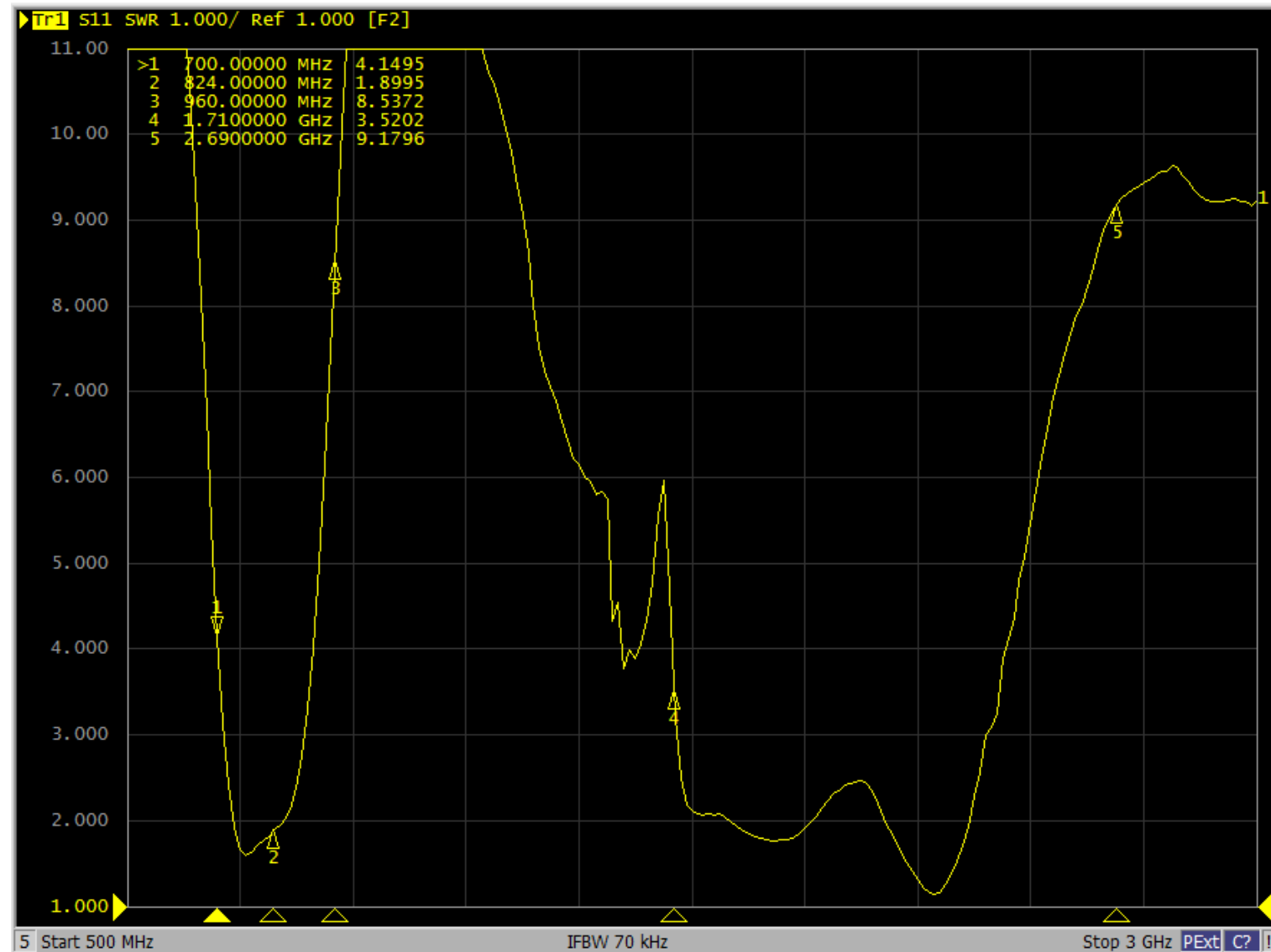
Antenna Matching

- Matching Circuit



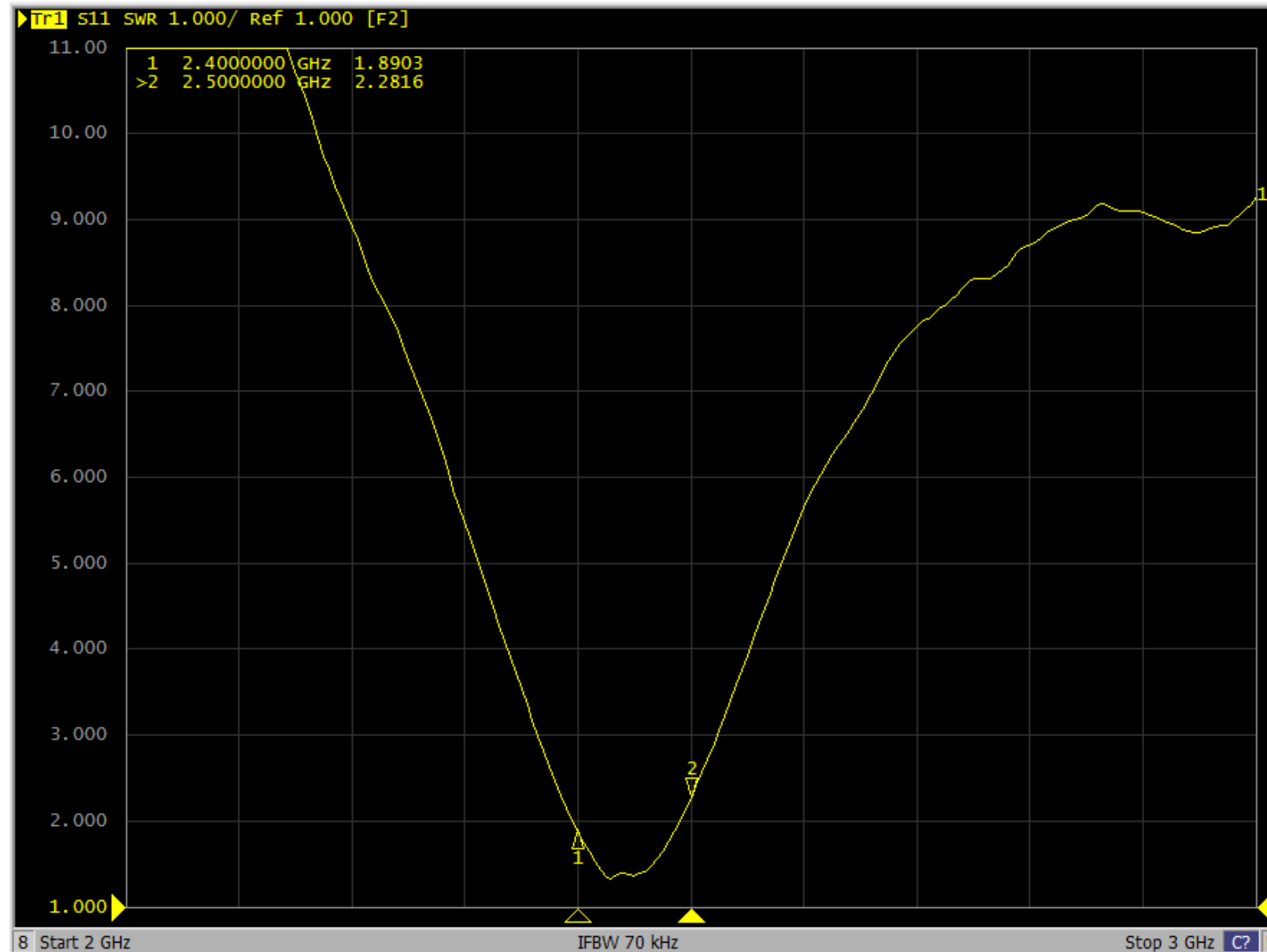
Passive Test

- VSWR_LTE



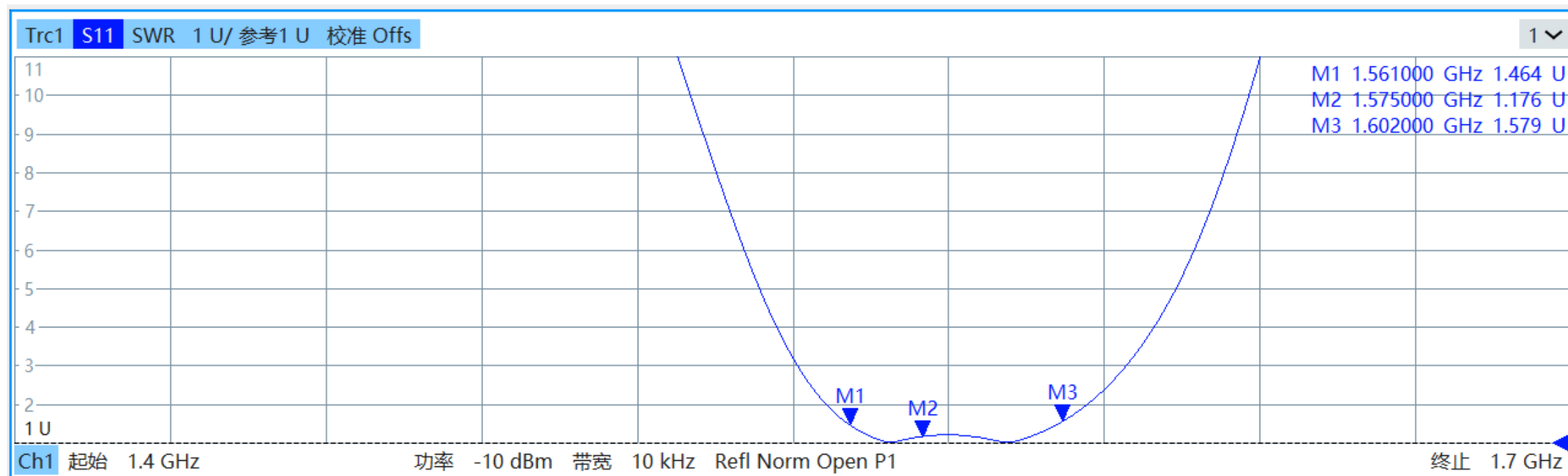
Passive Test

- VSWR_BT

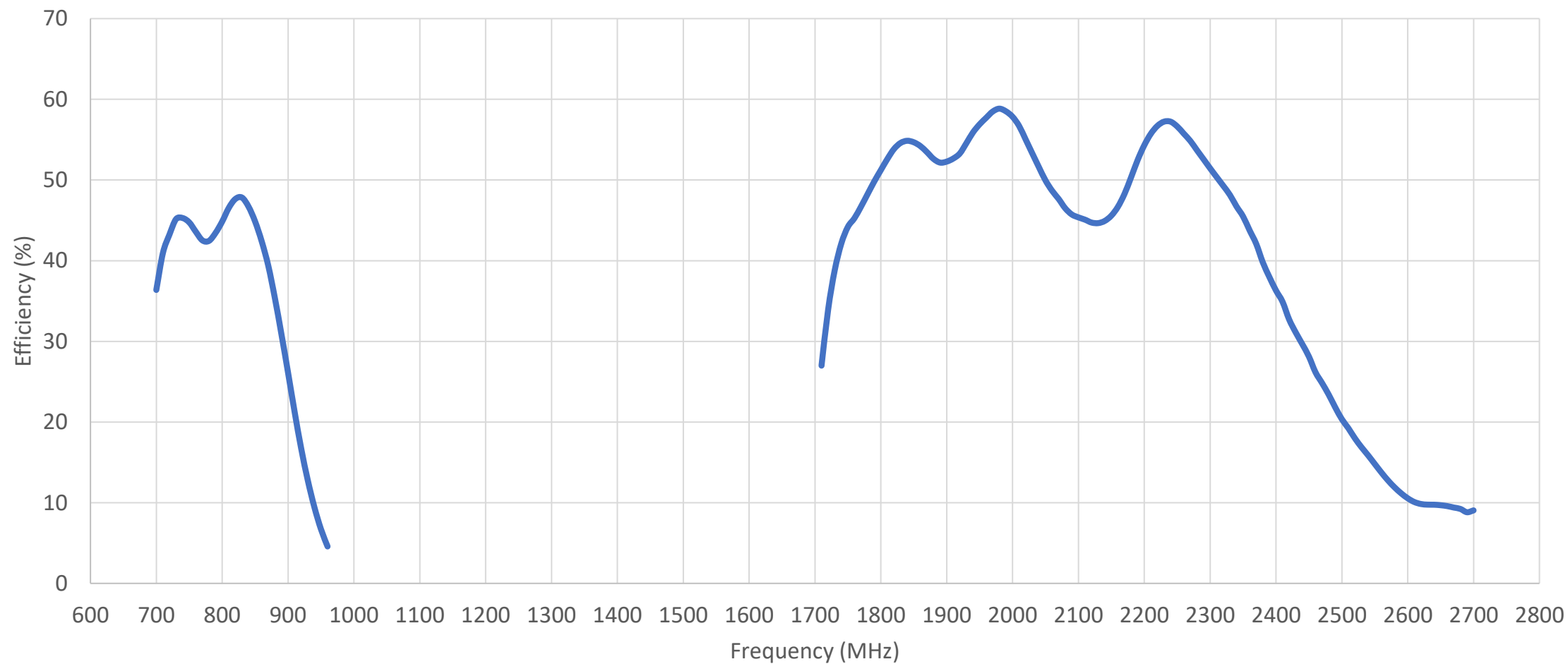


Passive Test

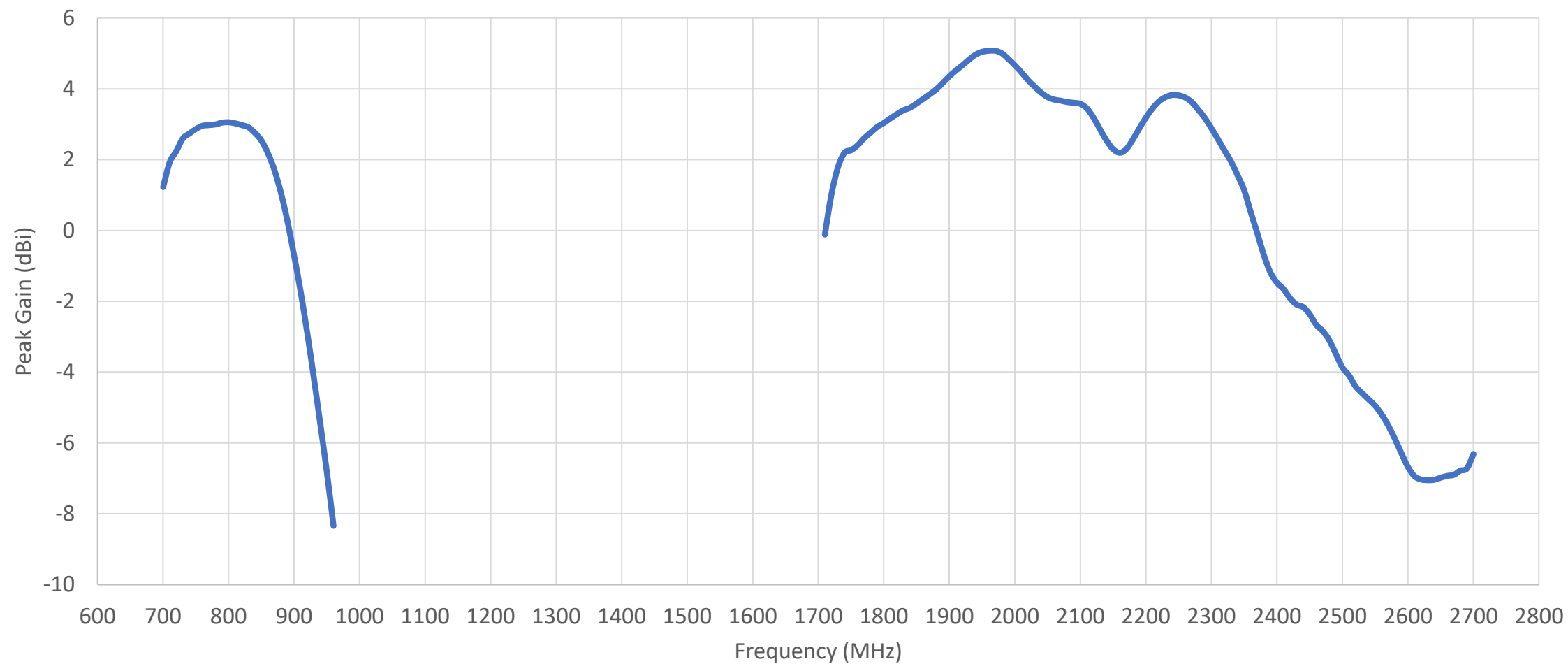
- VSWR_GNSS



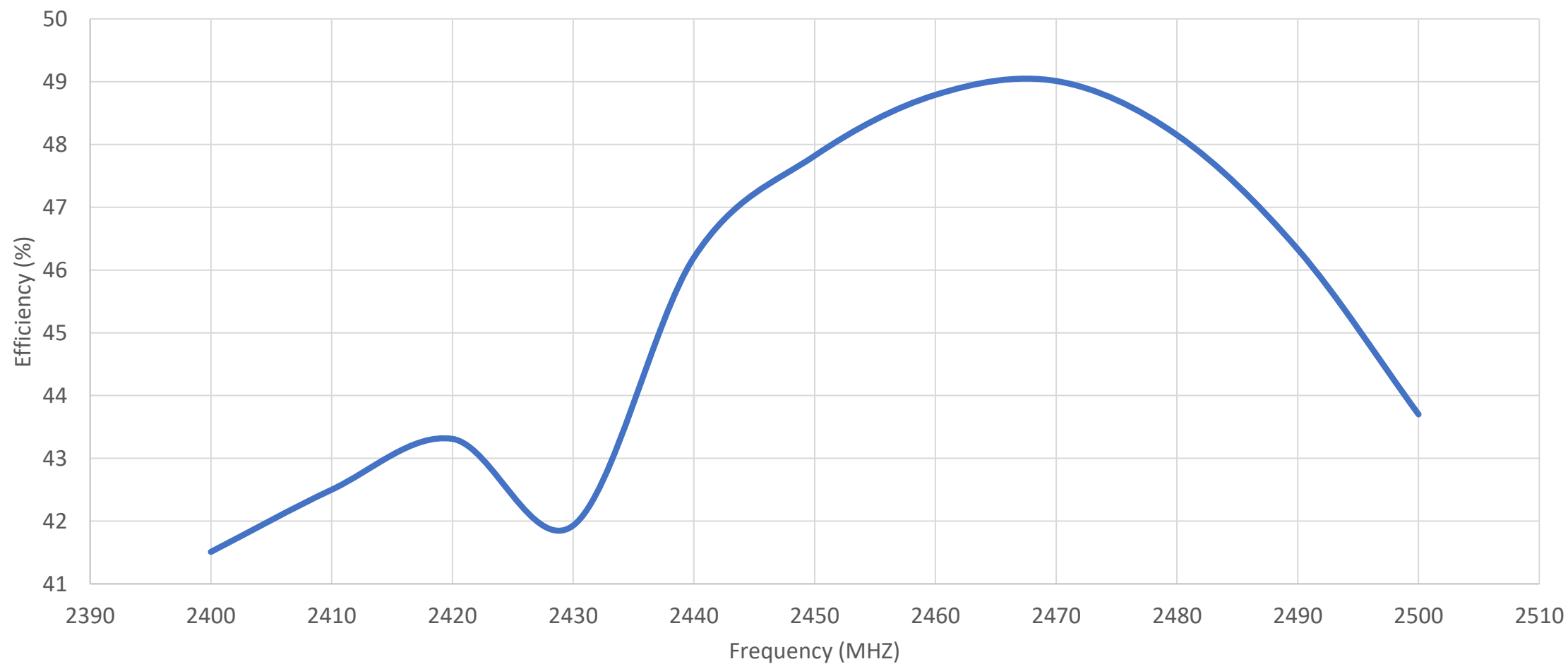
- Efficiency_LTE



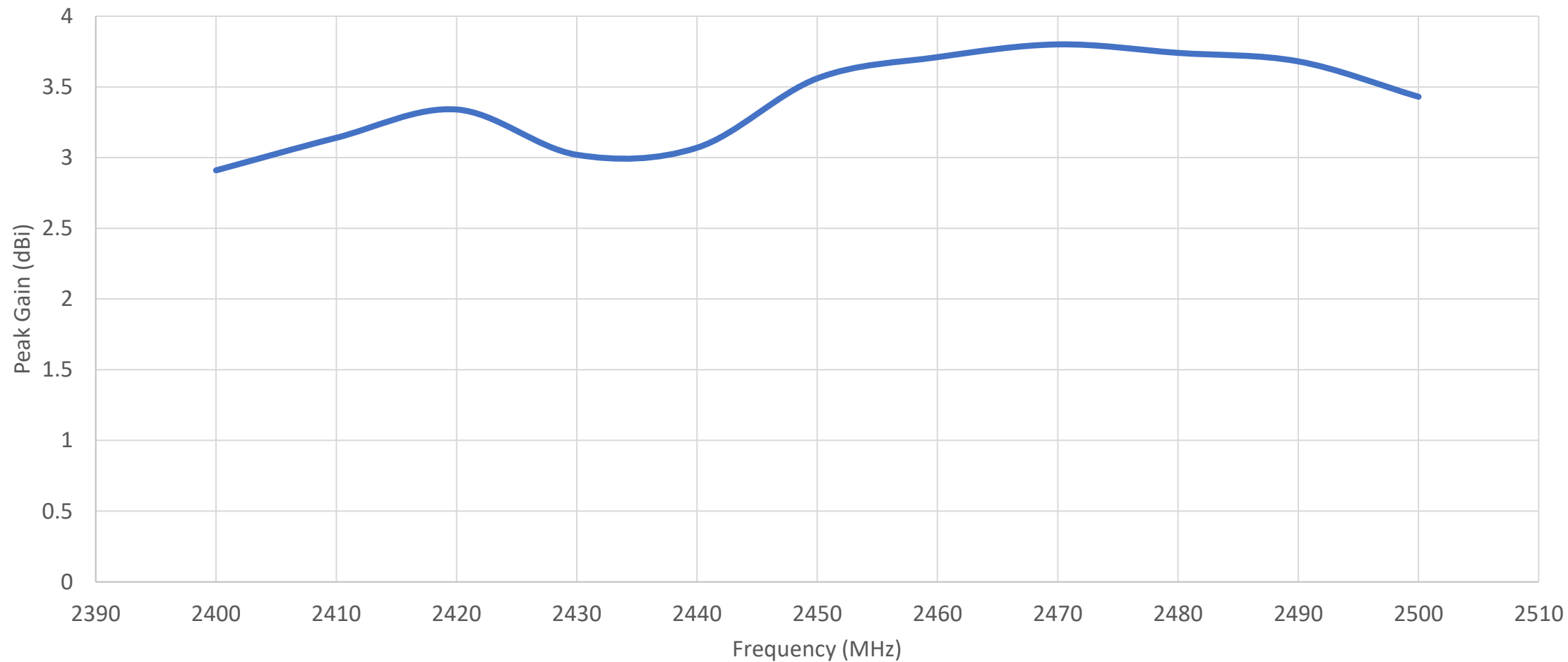
- Peak Gain_LTE



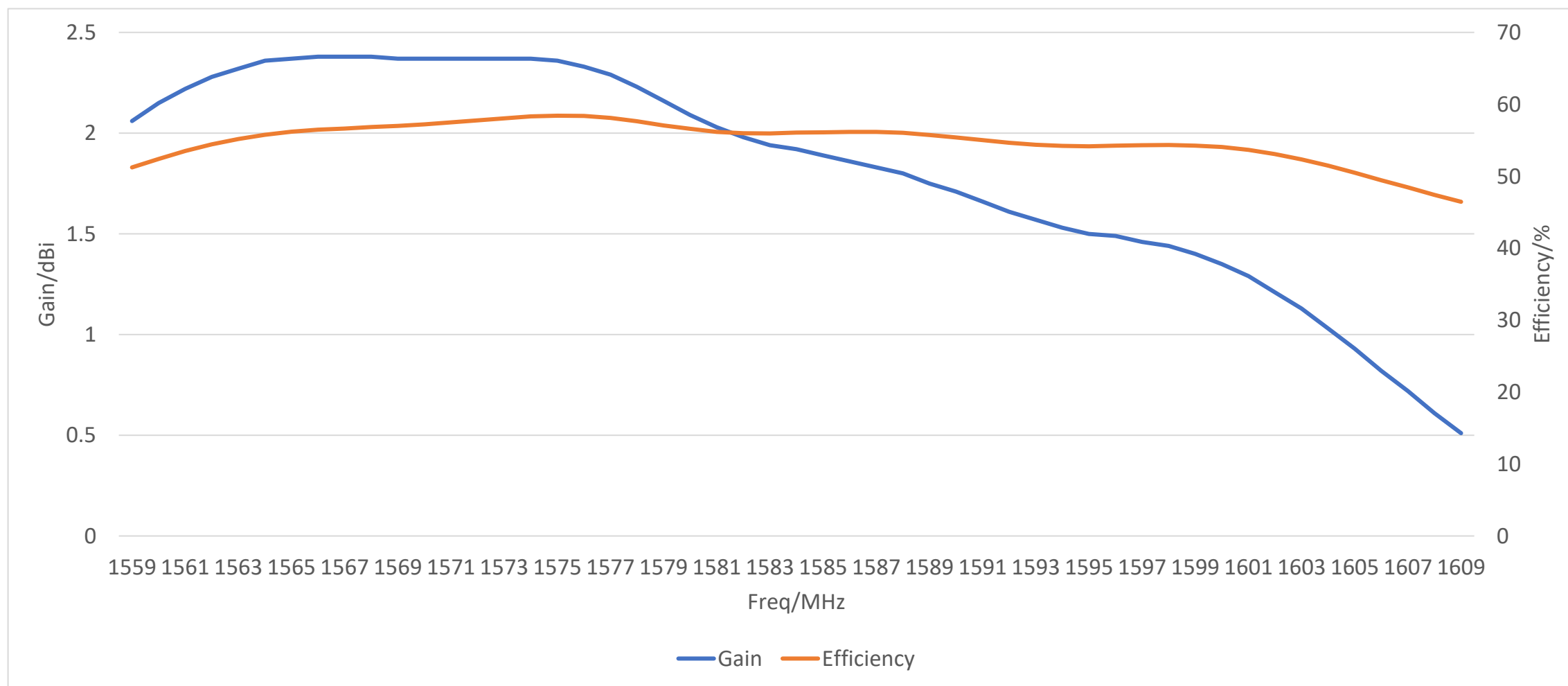
- Efficiency_BT



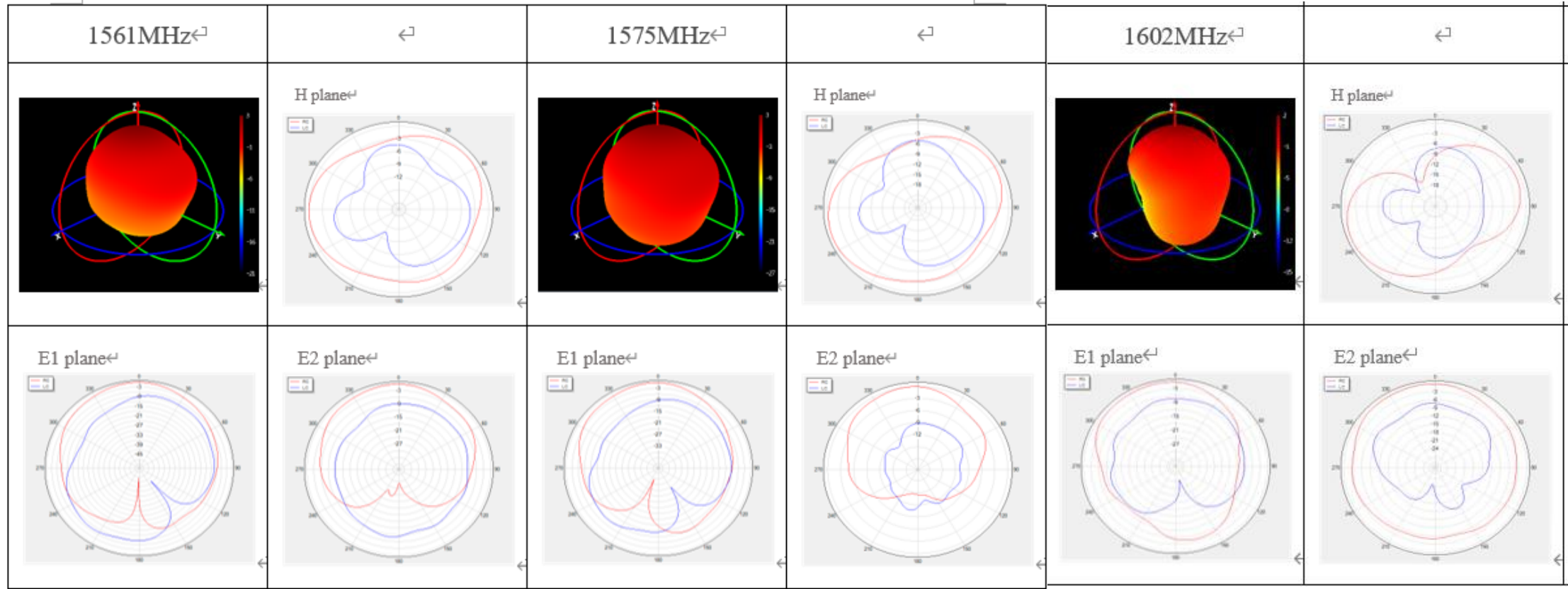
- Peak Gain_BT

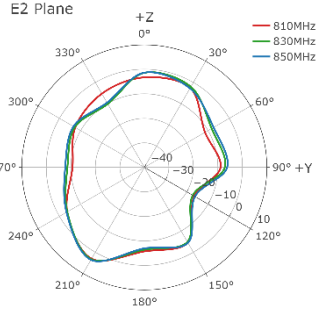


- Efficiency+peak gain_GNSS



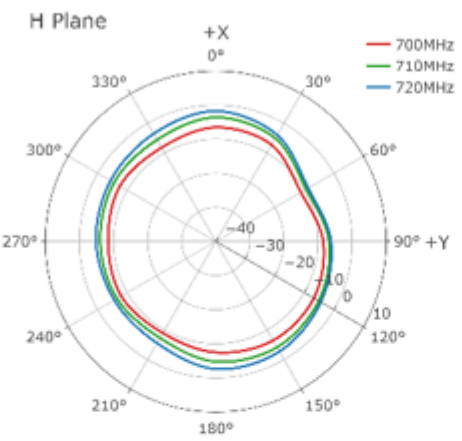
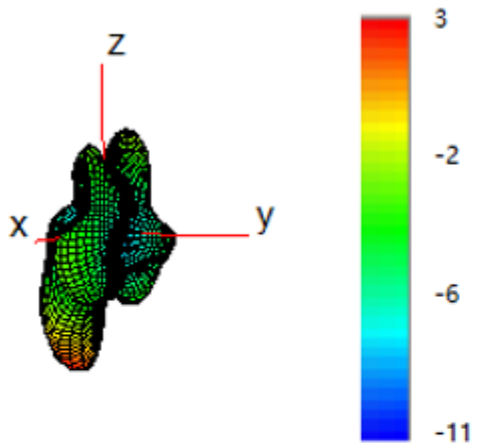
GNSS Radiation Pattern Plots



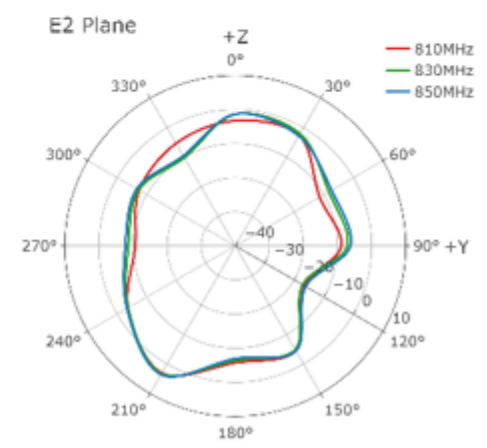
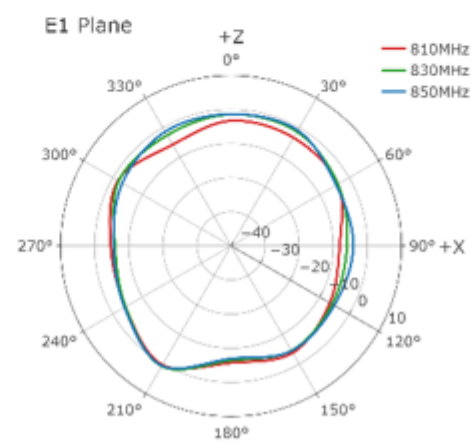
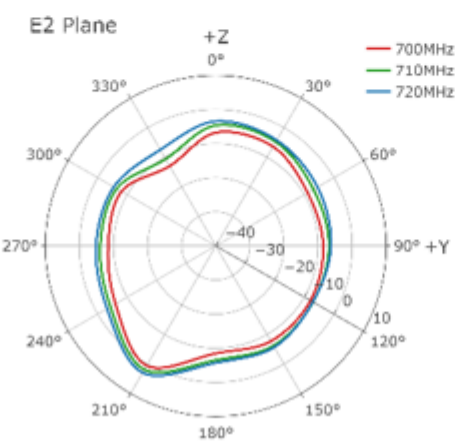
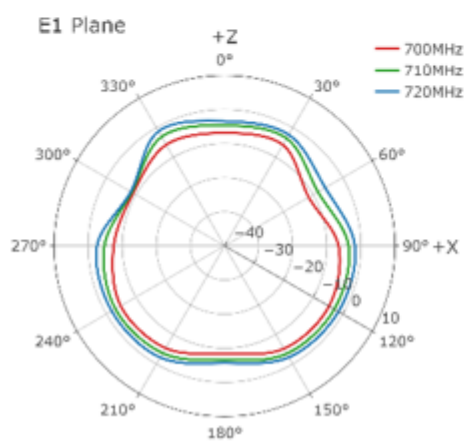
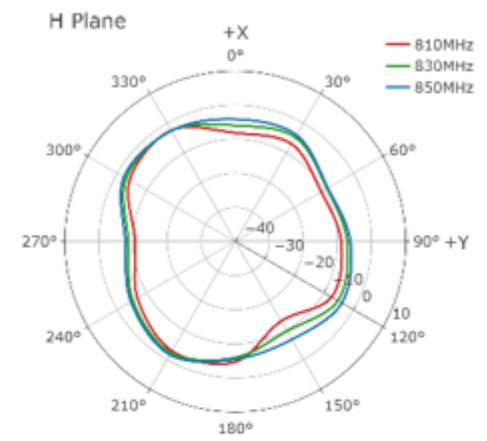
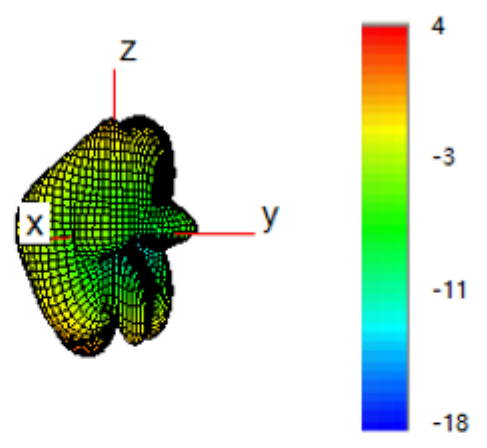


Radiation Pattern Plots

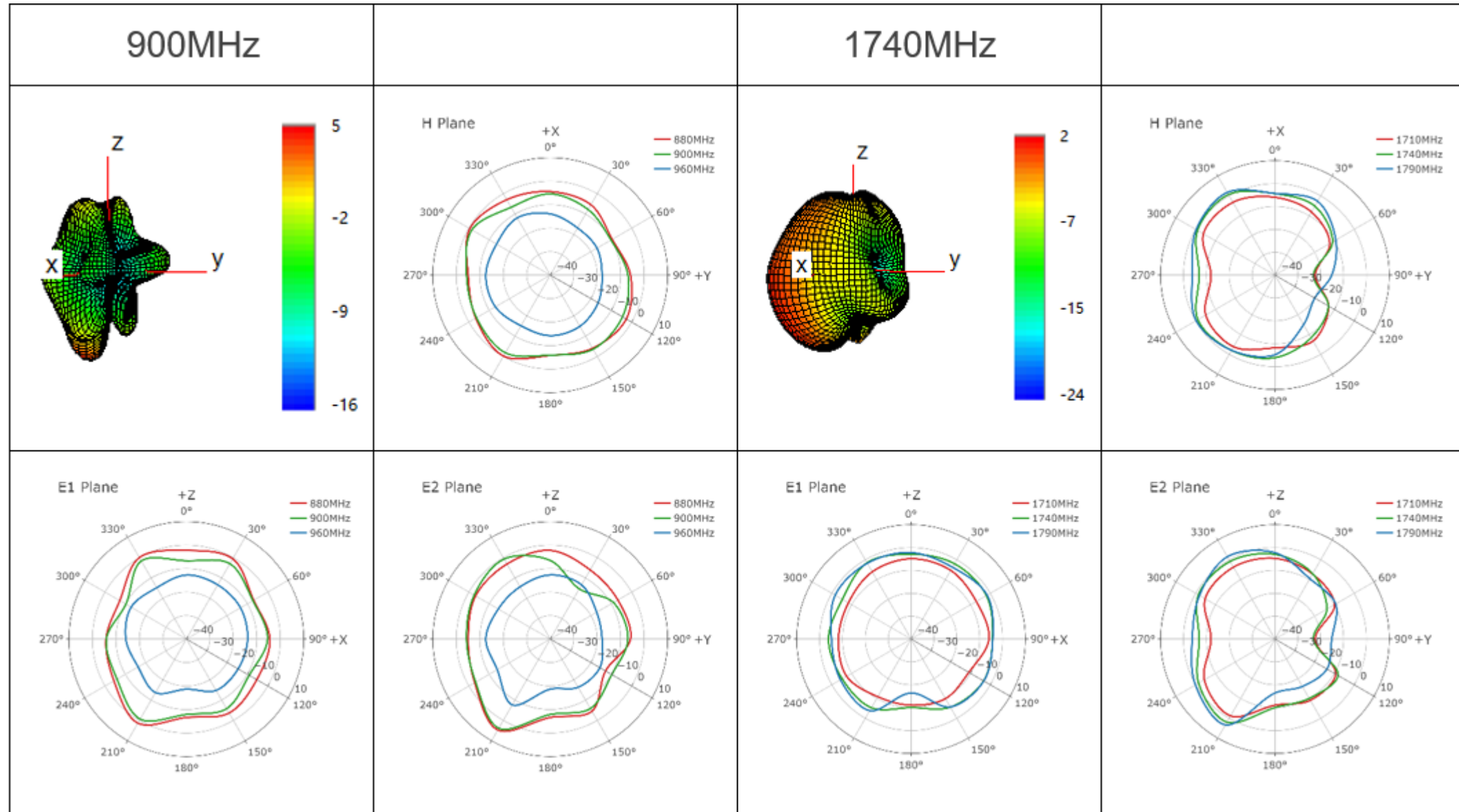
710MHz



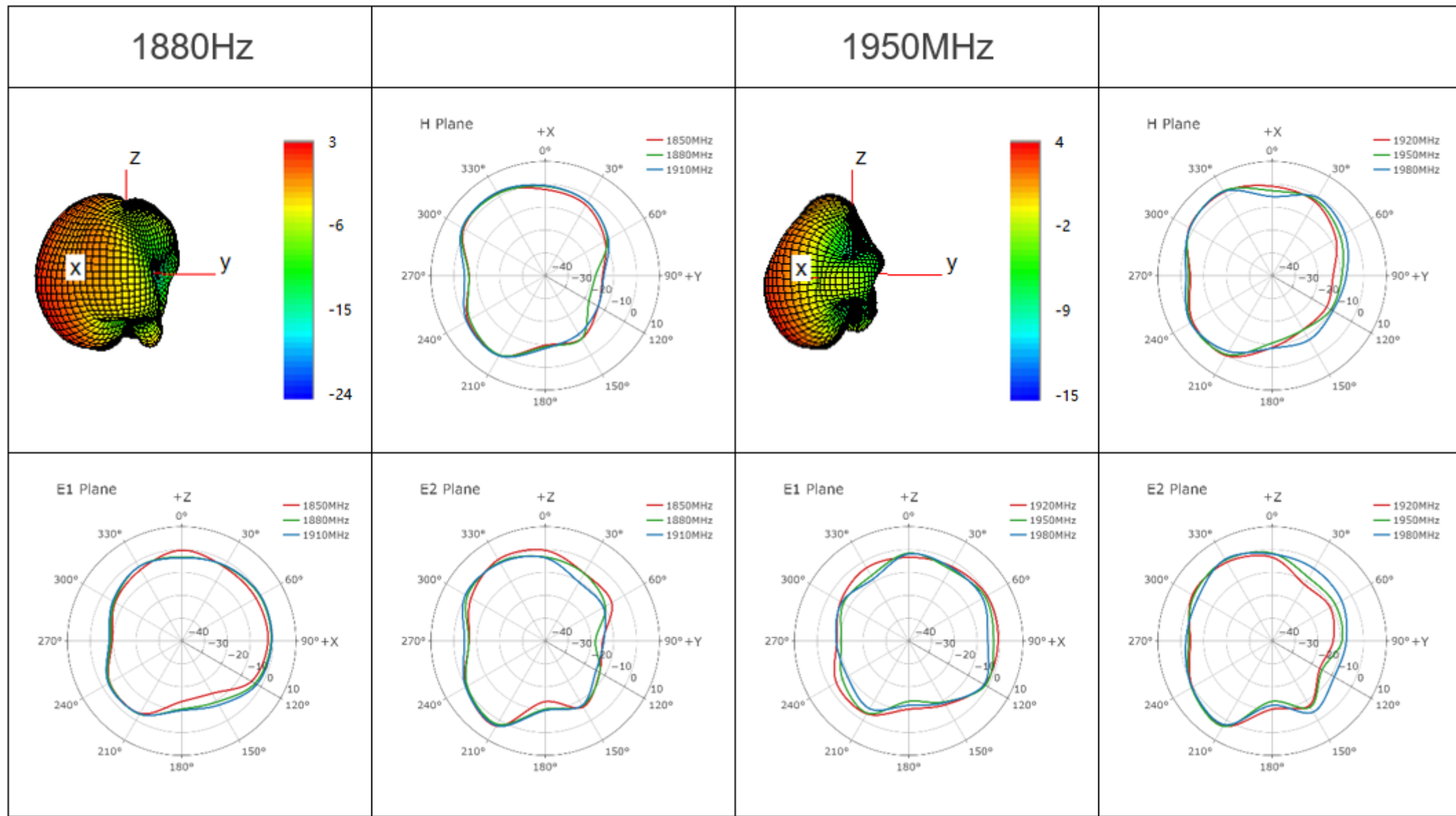
830MHz



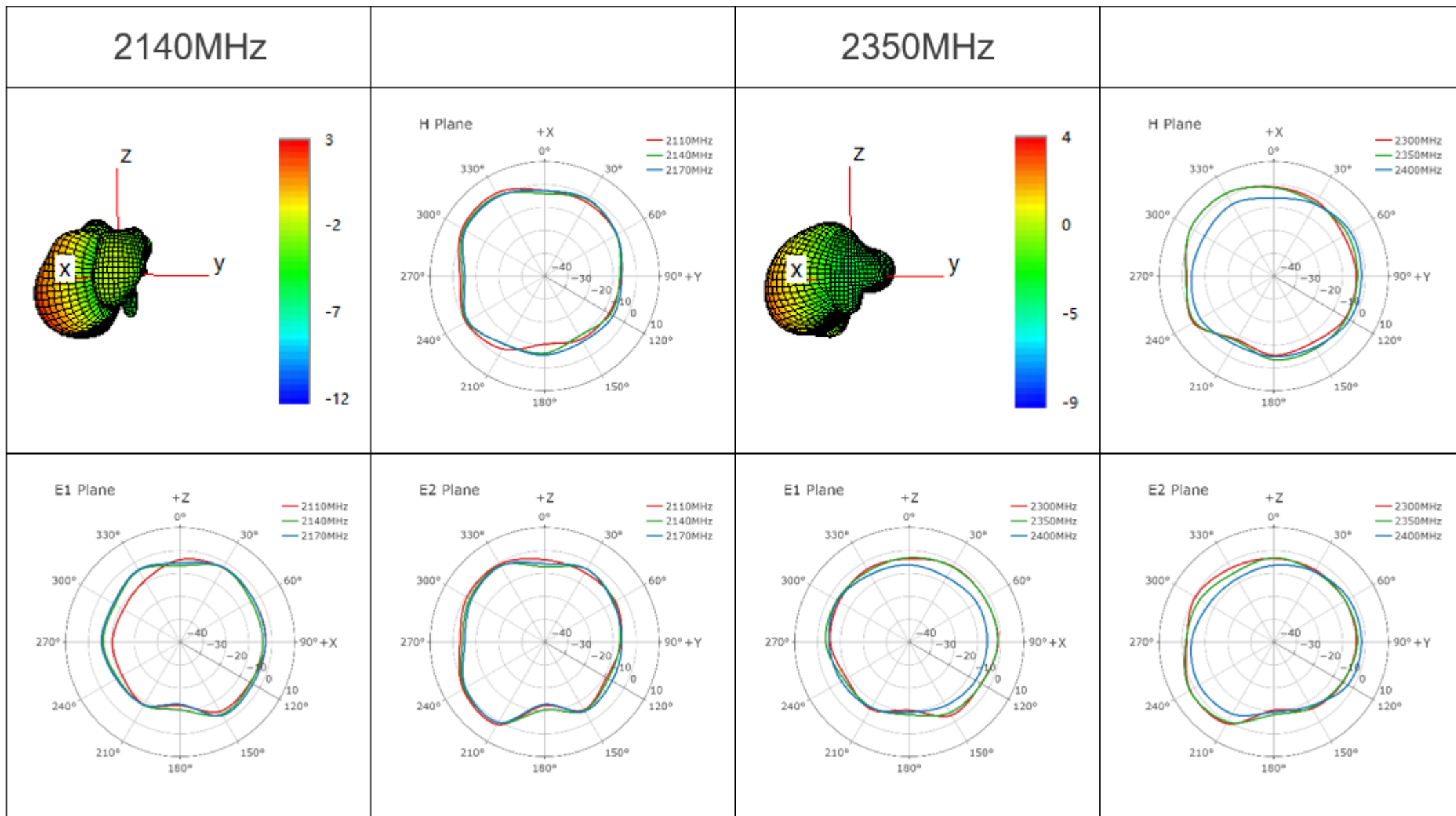
LTE Radiation Pattern Plots



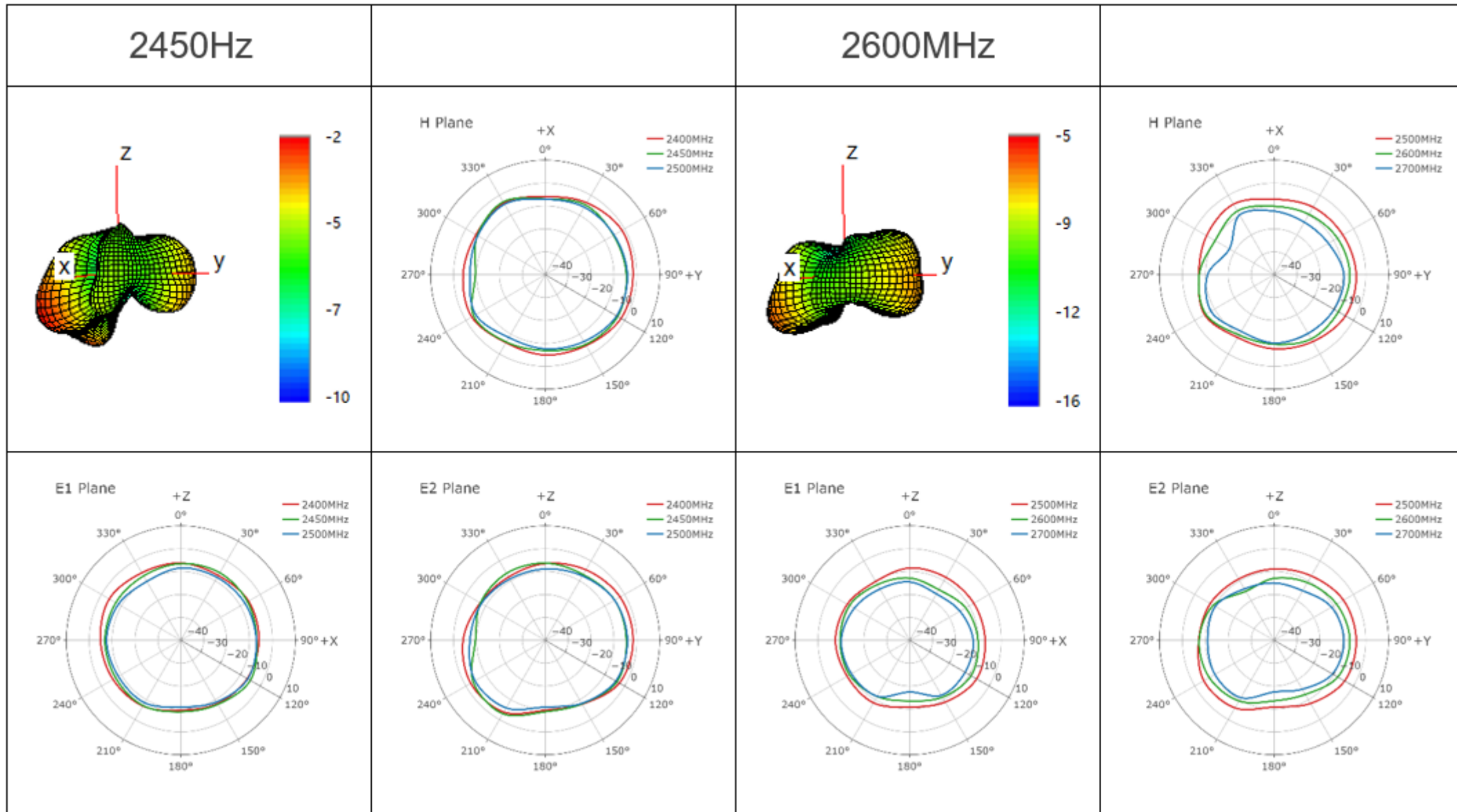
LTE Radiation Pattern Plots



LTE Radiation Pattern Plots

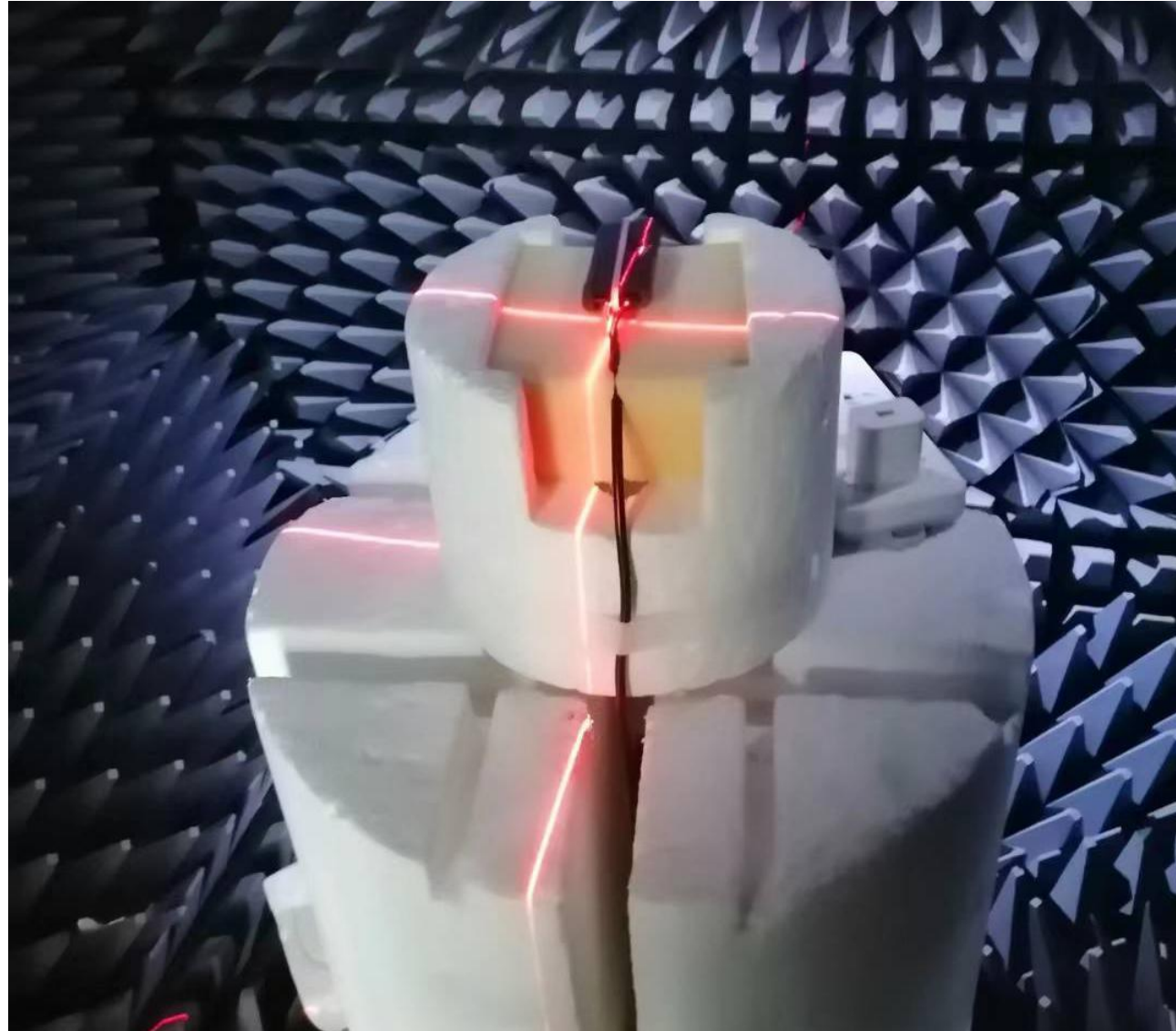


LTE Radiation Pattern Plots



Active Test

- Test picture



- OTA data

Band	Channel	TRP	Channel	TIS	Requirement	
Cat-M Band 4	20000	17.34			16	
	20175	18.63			16	
	20350	18.33	2350	-103.87	16	-100
Cat-M Band 13	23230	17.64	5230	-104.32	15	-97

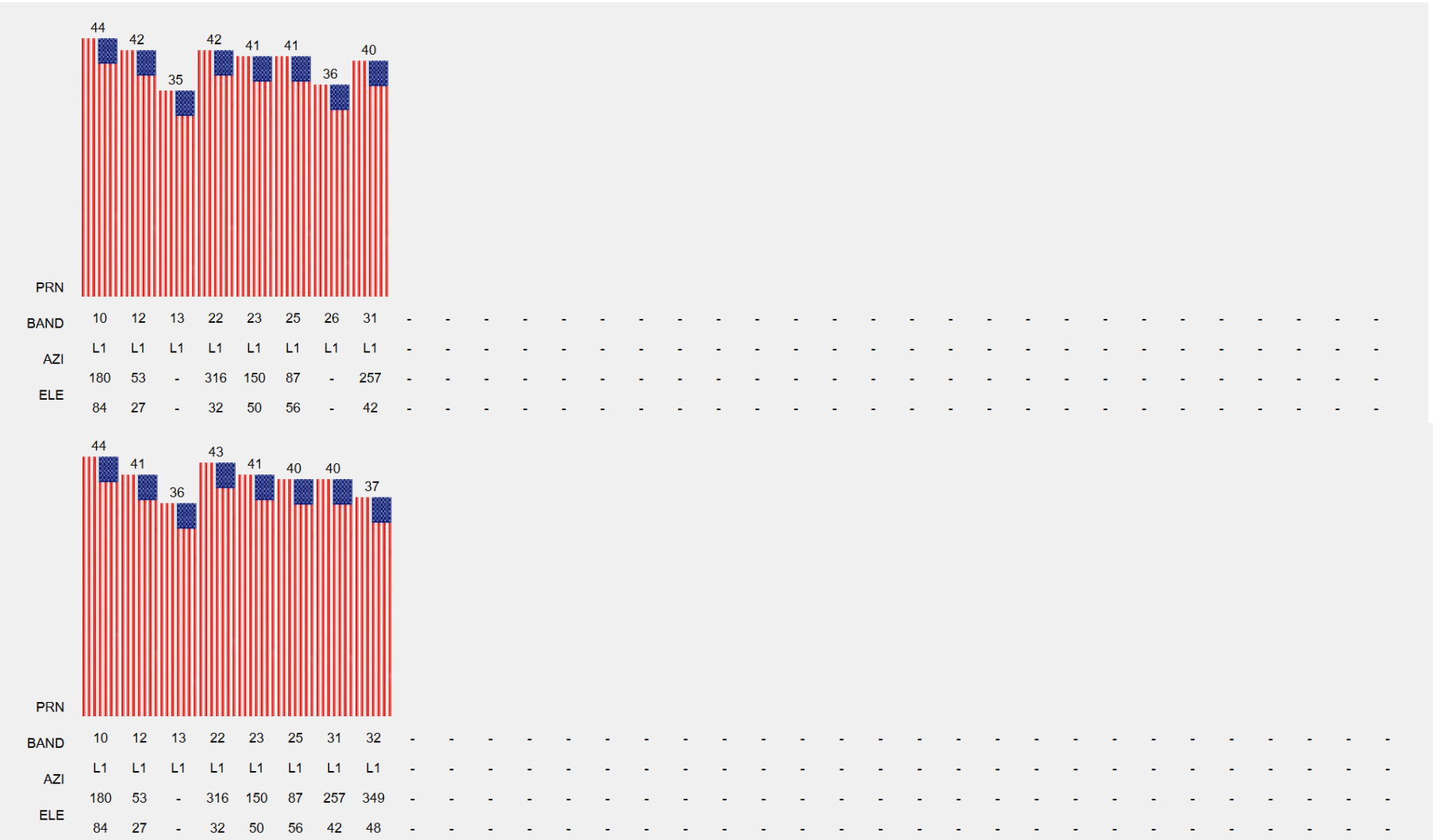
Active Test

- OTA data

Band	Channel	TRP	TIS
FDD_B1	18050	18.9	
FDD_B1	18300	18.53	
FDD_B1	18550	18.22	-97.18
FDD_B2	18650	19.98	
FDD_B2	18900	19.57	
FDD_B2	19150	19.5	-105.61
FDD_B3	19250	18.91	
FDD_B3	19575	18.83	
FDD_B3	19900	18.97	-98.74
FDD_B5	20450	18.28	
FDD_B5	20525	17.6	
FDD_B5	20600	17.55	-96.03
FDD_B8	21500	16.66	
FDD_B8	21625	15.51	
FDD_B8	21750	14.05	-85.95
FDD_B12	23060	16.35	
FDD_B12	23095	16.56	
FDD_B12	23130	16.78	-104.64
FDD_B18	23900	18.24	
FDD_B18	23925	18.08	
FDD_B18	23950	18.15	-97.73

Band	Channel	TRP	TIS
FDD_B19	24050	17.48	
FDD_B19	24075	17.53	
FDD_B19	24100	17.62	-96.92
FDD_B20	24200	17.67	
FDD_B20	24300	17.35	
FDD_B20	24400	17.37	-96.97
FDD_B25	26090	18.95	
FDD_B25	26365	19.02	
FDD_B25	26640	19	-97.68
FDD_B26	26740	17.97	
FDD_B26	26865	17.69	
FDD_B26	26990	17.38	-95.56
FDD_B27	27090	17.66	
FDD_B27	27125	18.2	
FDD_B27	27160	17.68	-97.54
FDD_B28	27260	14	
FDD_B28	27435	15.1	
FDD_B28	27610	16.55	-97
FDD_B66	132022	18.7	
FDD_B66	132322	18.5	
FDD_B66	132622	18.78	-103.55

GNSS outdoor test (open sky)



Direction 1

Direction 2

Antenna Bom



Num.	Parts Name	Part Description	Quantity	Pic	Note
1	LTE antenna	FPC+frame	1		X4
2	BT antenna	Chip	1		
3	GNSS antenna	Ceram	1		