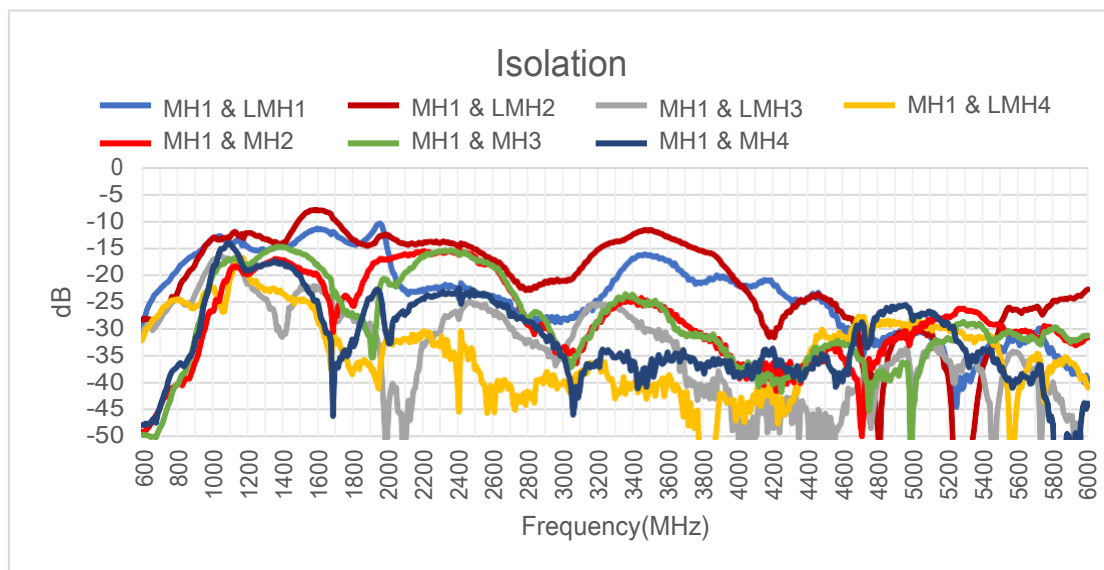
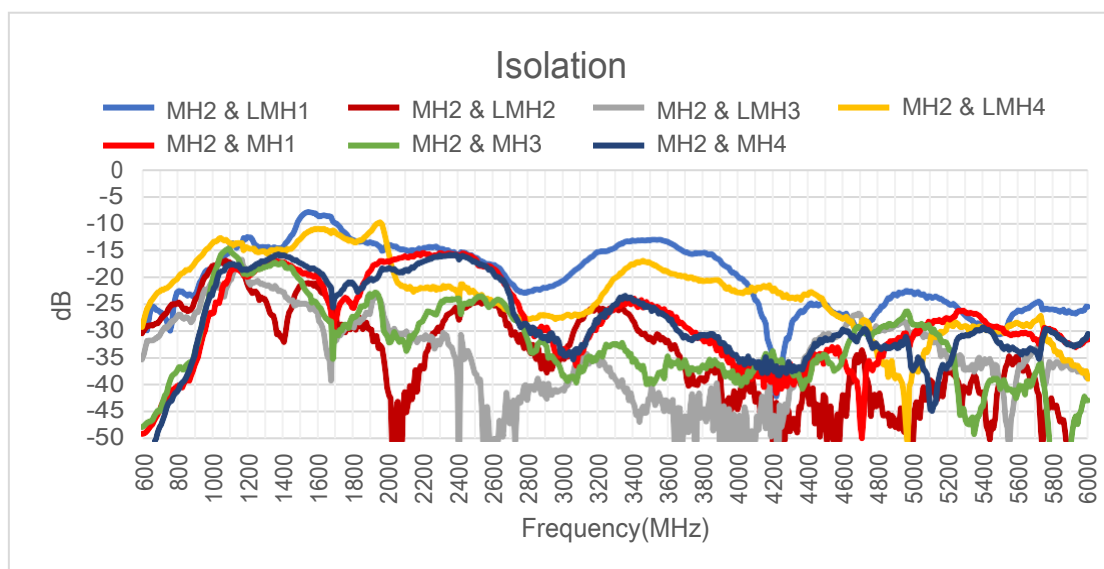


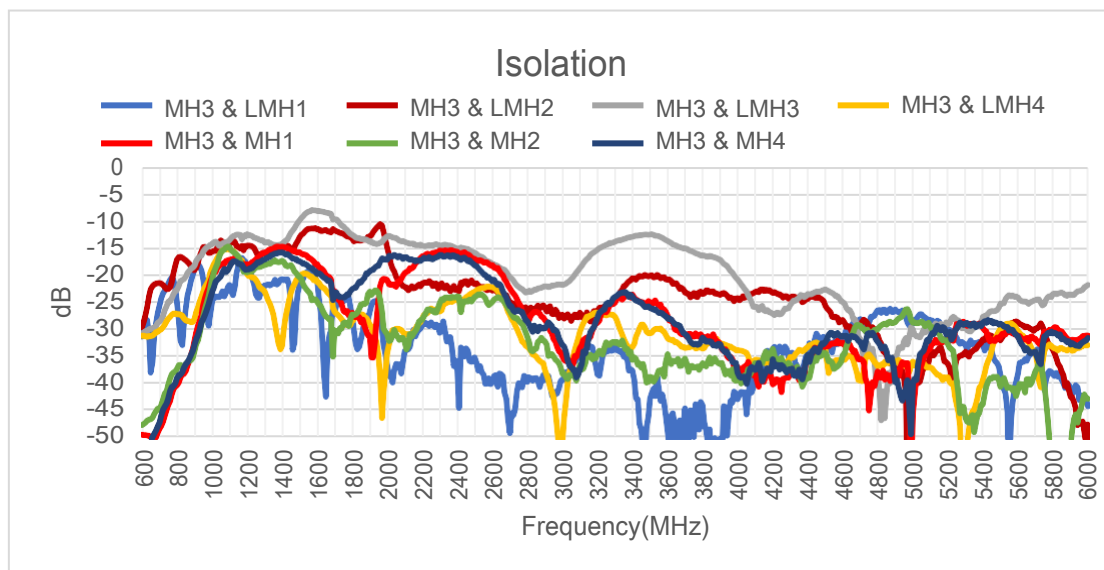
3.1.3.2.5. MH1



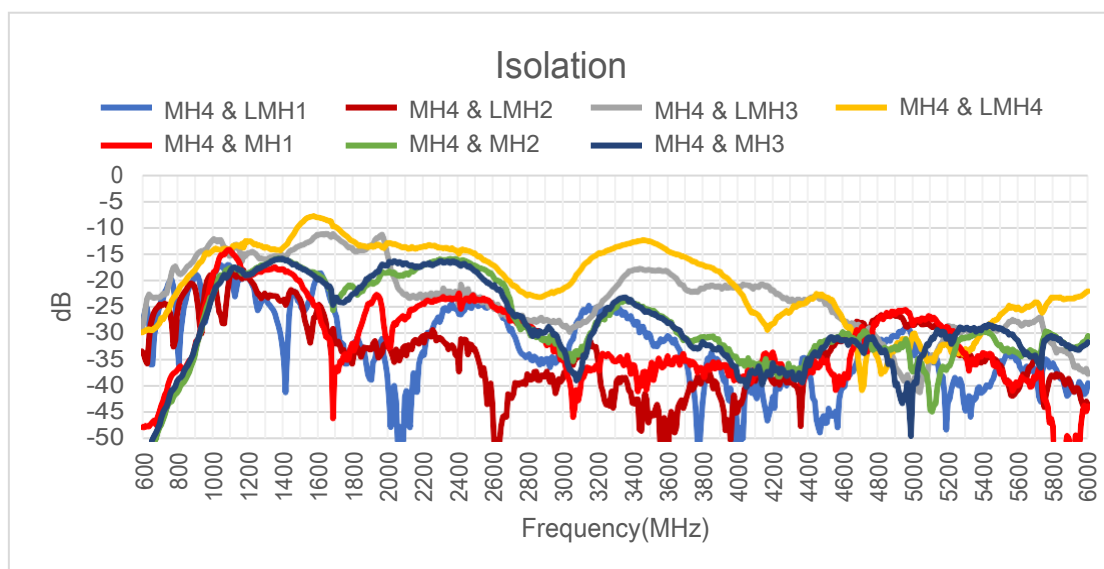
3.1.3.2.6. MH2



3.1.3.2.7. MH3



3.1.3.2.8. MH4



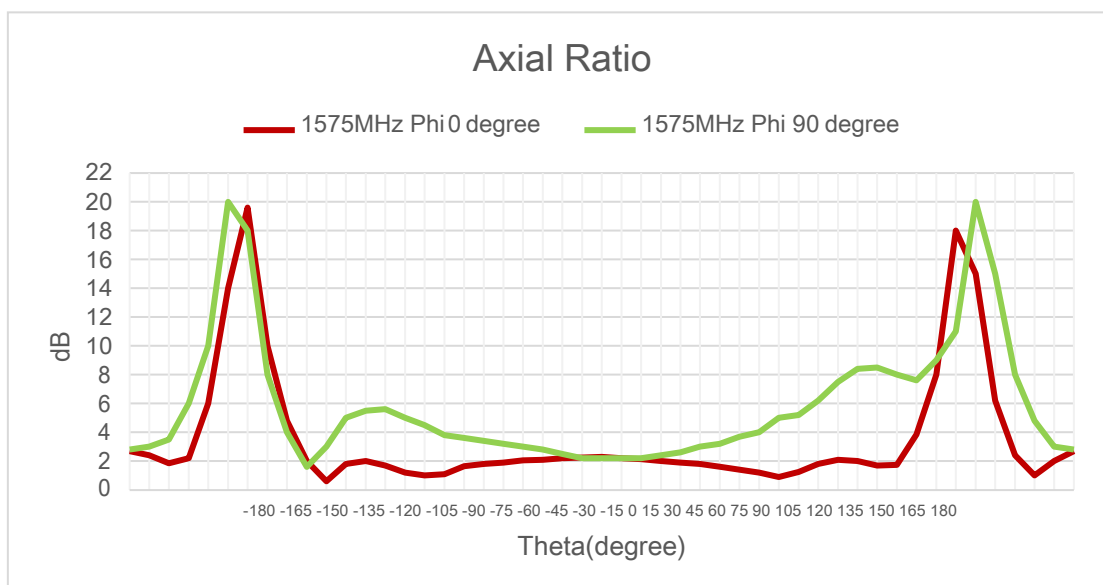
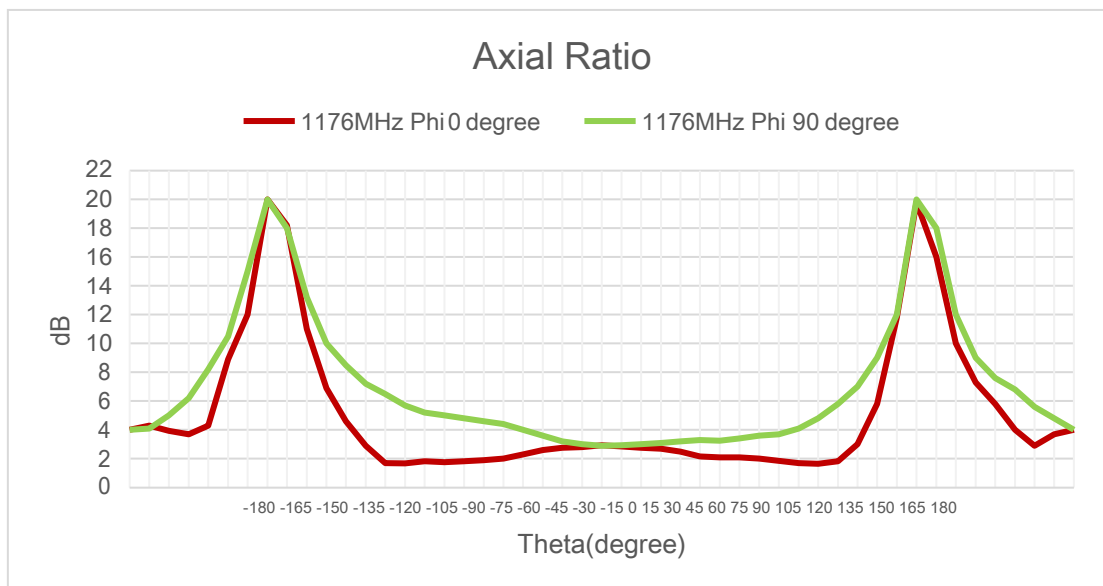
!

Max Isolation (dB)

	Band	B71	B12/ B13/ B28	B5/ B8/ B26	N74/ N75/ N76	B1/ B2/ B3	B40	Wi-Fi 2G	B38/ B41	B42/ B48/ N77	N79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850
LMH1	FS	-10.8	-10.1	-9.6	-9.7	-10.3	-14.2	-14.9	-16.4	-13.0	-22.8	-21.7
	MP	-9.9	-9.3	-8.8	-8.4	-10.0	-14.7	-15.4	-16.4	-13.1	-22.6	-24.0
LMH2	FS	-10.8	-10.1	-9.7	-9.2	-9.6	-13.9	-14.9	-16.6	-12.9	-23.9	-21.9
	MP	-9.2	-9.2	-8.8	-9.0	-9.8	-13.8	-14.1	-15.3	-11.6	-23.6	-24.4
LMH3	FS	-11.0	-10.8	-9.9	-9.4	-10.2	-14.4	-15.5	-16.4	-13.2	-22.8	-21.9
	MP	-10.0	-9.7	-9.6	-9.1	-9.7	-14.4	-14.9	-15.9	-12.5	-22.7	-23.3
LMH4	FS	-11.0	-10.3	-9.6	-10.0	-10.6	-13.8	-15.1	-15.9	-13.0	-23.9	-22.4
	MP	-9.2	-9.2	-9.4	-8.8	-9.7	-13.8	-14.1	-14.8	-12.3	-22.5	-23.2
MH1	FS	-23.7	-20.5	-17.9	-9.2	-9.6	-13.9	-14.9	-16.6	-12.9	-22.8	-21.9
	MP	-22.8	-18.6	-14.5	-9.0	-9.8	-13.8	-14.1	-15.3	-11.6	-23.3	-24.4
MH2	FS	-24.2	-20.5	-17.6	-9.7	-10.3	-14.2	-14.9	-16.4	-13.0	-24.5	-21.7
	MP	-22.7	-19.9	-15.1	-8.4	-9.8	-14.7	-15.4	-16.4	-13.1	-22.6	-24.0
MH3	FS	-24.0	-20.8	-17.7	-9.4	-10.2	-14.4	-15.5	-16.4	-13.2	-23.7	-21.9
	MP	-21.5	-16.7	-14.8	-9.1	-9.7	-14.4	-14.9	-15.9	-12.5	-22.7	-23.3
MH4	FS	-22.5	-19.8	-16.8	-10.0	-10.6	-13.8	-15.1	-15.9	-13.0	-22.8	-22.4
	MP	-22.6	-17.3	-14.3	-8.8	-9.7	-13.8	-14.1	-14.8	-12.3	-22.5	-23.2

- FS: In Free Space
- MP: On 300 × 400 mm Metal Plane

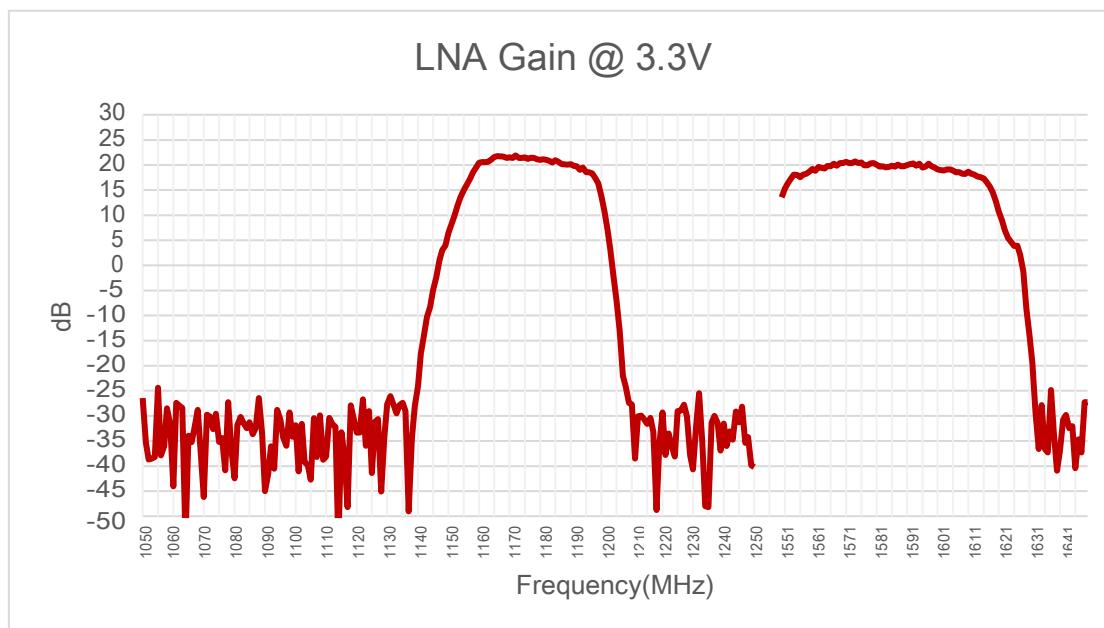
3.1.4. GNSS Axial Ratio



Axial Ratio (dB)

Frequency (MHz)		1176	1227	1575
GNSS	Phi = 0 (deg) Theta = 0 (deg)	2.8	-	2.2
	Phi = 90 (deg) Theta = 0 (deg)	2.8	-	2.2

3.1.5. GNSS LNA Gain

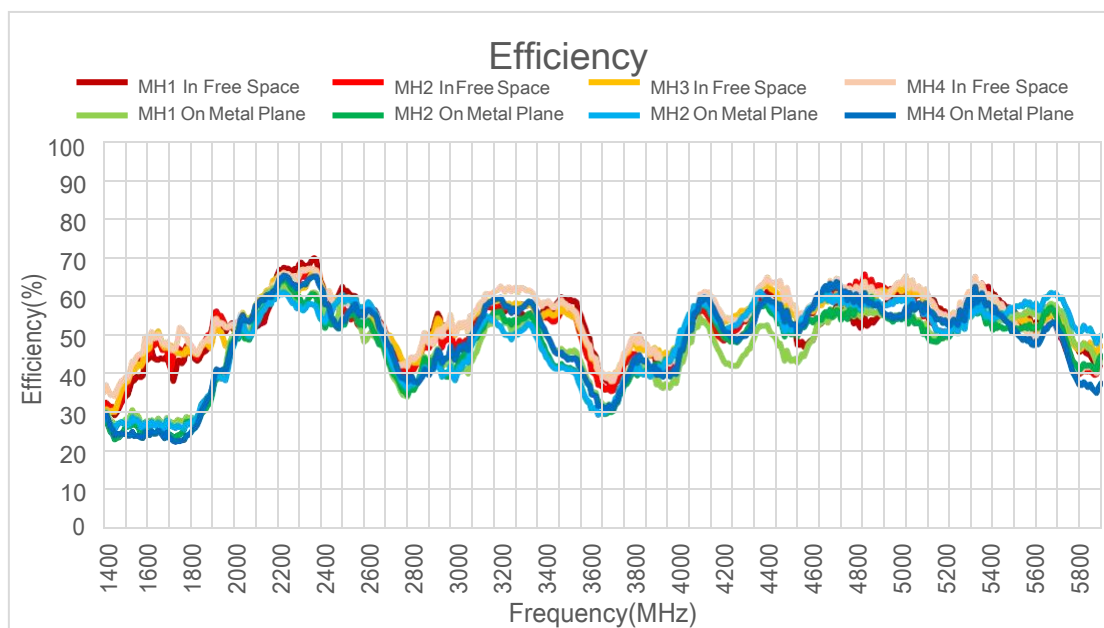
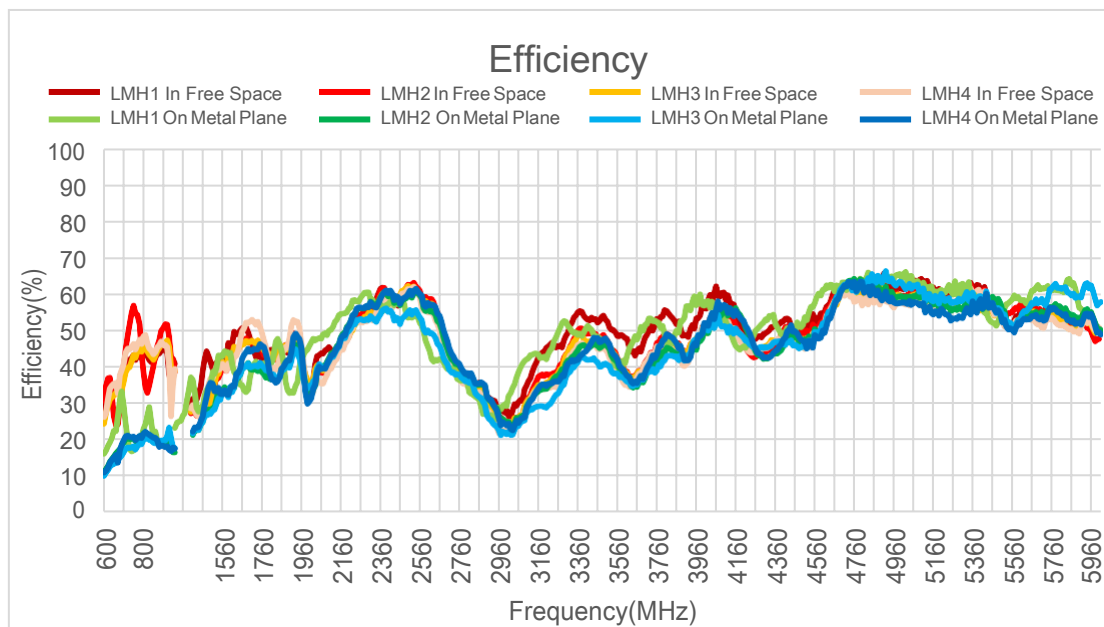


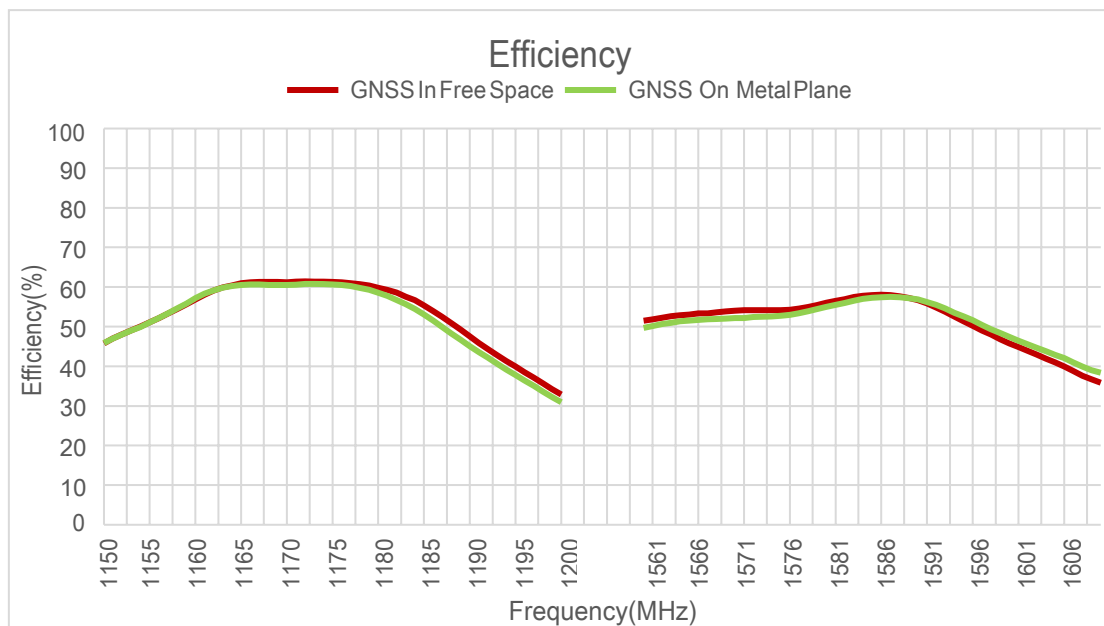
LNA Gain (dB)

Frequency (MHz)	1176	1227	1561	1575	1602
GNSS	21.2	-	18.8	20.4	19.0

3.2. Radiation Performance Test

3.2.6. Efficiency





Efficiency (%)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
LMH1	FS	28.6	34.5	40.6	41.9	44.7	40.7	32.6	46.7	43.6	45.3
	MP	11.1	17.3	18.2	16.7	24.2	19.8	26.5	37.7	35.0	41.8
LMH2	FS	30.7	37.0	44.8	34.8	50.7	38.5	26.6	46.9	47.0	46.0
	MP	10.9	13.9	20.2	20.1	18.8	16.4	24.1	39.4	39.4	41.1
LMH3	FS	24.4	31.2	38.4	43.3	46.4	38.8	27.9	47.1	47.2	45.8
	MP	10.0	12.6	17.5	19.9	19.8	17.6	24.1	40.2	41.0	40.2
LMH4	FS	26.2	34.0	43.7	45.0	45.9	39.4	26.3	52.9	52.3	45.3
	MP	11.0	13.7	20.9	21.4	18.2	17.5	25.1	44.9	46.1	41.8
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
LMH1	FS	43.7	43.5	60.1	56.7	55.7	47.9	62.6	61.4	55.2	50.6
	MP	41.0	47.7	59.6	55.1	53.4	45.7	62.4	63.9	54.8	55.0
LMH2	FS	45.4	43.4	59.1	57.5	58.4	38.8	61.6	59.2	54.3	47.6
	MP	41.8	46.2	59.0	56.8	55.2	36.3	62.3	58.9	55.2	50.1
LMH3	FS	44.8	43.7	57.7	57.8	57.1	38.5	60.6	58.8	52.5	49.6
	MP	40.3	45.4	54.4	51.6	49.2	35.9	62.6	62.3	54.0	57.7

LMH4	FS	50.7	42.1	56.6	57.2	54.9	34.9	60.4	57.6	52.4	50.7
	MP	45.3	45.7	58.7	57.3	56.8	37.5	62.2	57.7	52.2	48.8

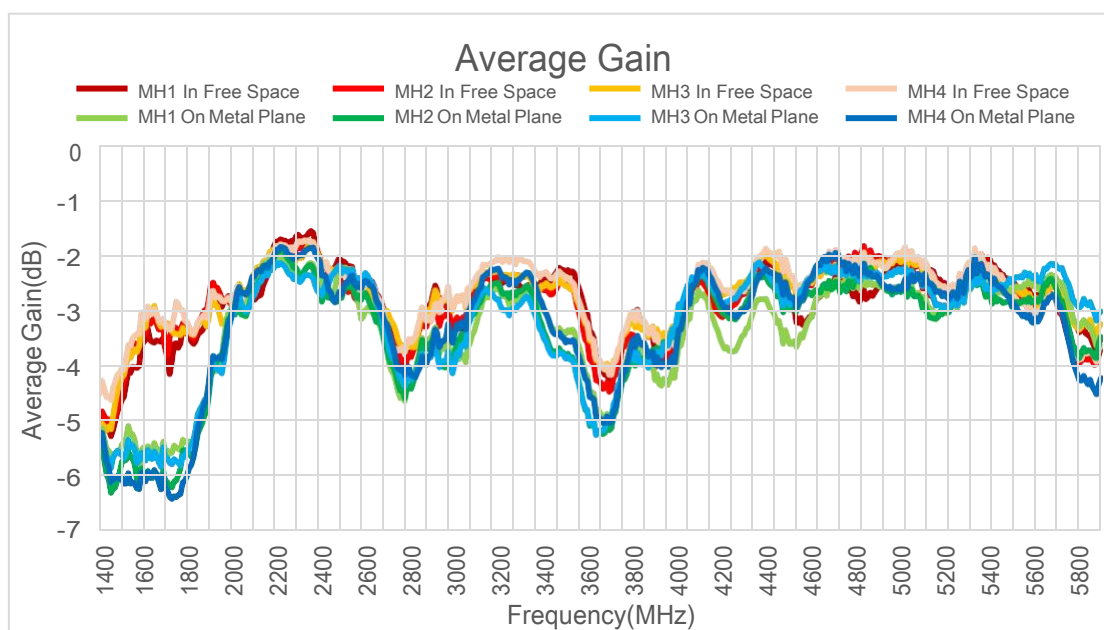
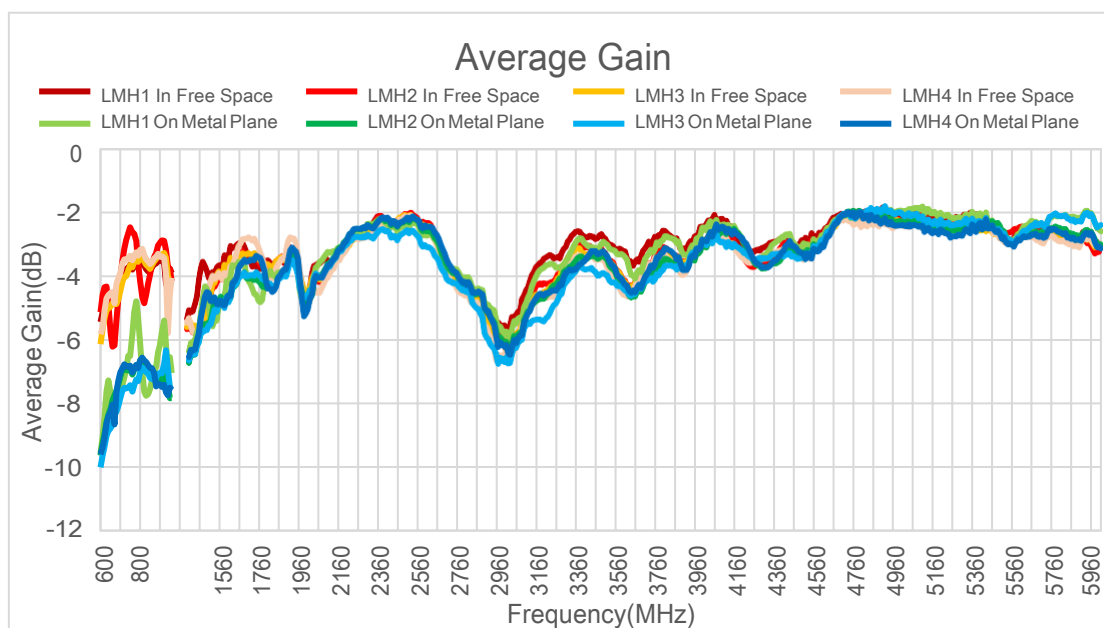
Efficiency (%)

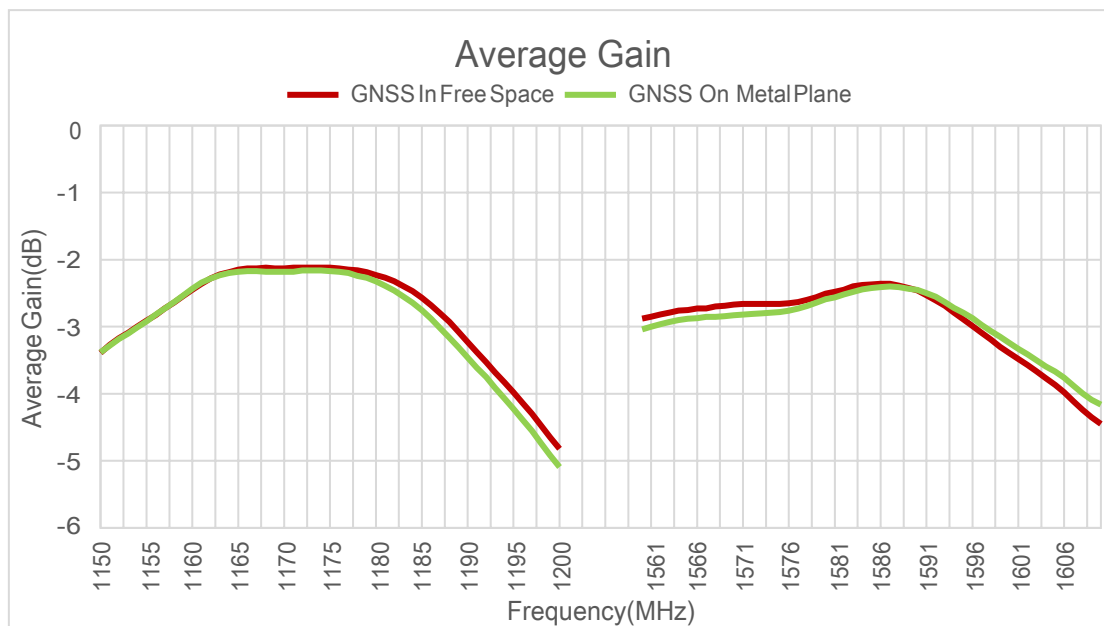
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
MH1	FS	-	-	-	-	-	-	30.7	41.5	43.9	47.3
	MP	-	-	-	-	-	-	28.1	28.1	28.7	34.7
MH2	FS	-	-	-	-	-	-	32.0	41.9	47.1	50.4
	MP	-	-	-	-	-	-	24.9	24.6	24.6	32.5
MH3	FS	-	-	-	-	-	-	31.1	47.8	45.7	48.1
	MP	-	-	-	-	-	-	27.1	27.2	27.1	34.6
MH4	FS	-	-	-	-	-	-	35.2	47.2	49.4	49.6
	MP	-	-	-	-	-	-	26.1	23.7	23.2	34.2
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
MH1	FS	51.4	53.8	68.9	59.3	56.1	55.4	53.1	58.4	60.5	44.8
	MP	40.2	59.7	60.6	54.0	48.7	43.6	53.3	55.8	54.6	45.1
MH2	FS	54.3	58.1	66.8	58.7	53.0	50.2	58.8	62.8	56.4	43.1
	MP	41.7	57.3	60.4	53.1	52.7	37.5	54.5	55.6	51.8	45.1
MH3	FS	49.6	60.6	65.3	59.7	56.1	51.8	58.5	62.0	57.6	47.7
	MP	39.2	56.9	58.4	56.1	57.0	37.0	59.3	58.1	54.5	50.3
MH4	FS	53.3	58.0	67.5	59.6	54.6	52.5	61.1	60.3	59.0	43.4
	MP	41.4	59.5	65.0	54.9	55.4	41.7	61.2	56.1	56.3	38.0

Efficiency (%)

Frequency (MHz)		1176	1227	1561	1575	1602
GNSS	FS	61.2	-	51.9	54.2	43.9
	MP	60.5	-	50.1	52.8	45.6

3.2.7. Average Gain





Average Gain (dB)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
LMH1	FS	-5.4	-4.6	-3.9	-3.8	-3.5	-3.9	-4.9	-3.3	-3.6	-3.4
	MP	-9.6	-7.6	-7.4	-7.8	-6.2	-7.0	-5.8	-4.2	-4.6	-3.8
LMH2	FS	-5.1	-4.3	-3.5	-4.6	-3.0	-4.2	-5.8	-3.3	-3.3	-3.4
	MP	-9.6	-8.6	-6.9	-7.0	-7.3	-7.8	-6.2	-4.0	-4.0	-3.9
LMH3	FS	-6.1	-5.1	-4.2	-3.6	-3.3	-4.1	-5.5	-3.3	-3.3	-3.4
	MP	-10.0	-9.0	-7.6	-7.0	-7.0	-7.6	-6.2	-4.0	-3.9	-4.0
LMH4	FS	-5.8	-4.7	-3.6	-3.5	-3.4	-4.1	-5.8	-2.8	-2.8	-3.4
	MP	-9.6	-8.6	-6.8	-6.7	-7.4	-7.6	-6.0	-3.5	-3.4	-3.8
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
LMH1	FS	-3.6	-3.6	-2.2	-2.5	-2.5	-3.2	-2.0	-2.1	-2.6	-3.0
	MP	-3.9	-3.2	-2.3	-2.6	-2.7	-3.4	-2.1	-2.0	-2.6	-2.6
LMH2	FS	-3.4	-3.6	-2.3	-2.4	-2.3	-4.1	-2.1	-2.3	-2.7	-3.2
	MP	-3.8	-3.4	-2.3	-2.5	-2.6	-4.4	-2.1	-2.3	-2.6	-3.0
LMH3	FS	-3.5	-3.6	-2.4	-2.4	-2.4	-4.1	-2.2	-2.3	-2.8	-3.1
	MP	-4.0	-3.4	-2.6	-2.9	-3.1	-4.4	-2.0	-2.1	-2.7	-2.4

LMH4	FS	-3.0	-3.8	-2.5	-2.4	-2.6	-4.6	-2.2	-2.4	-2.8	-3.0
	MP	-3.4	-3.4	-2.3	-2.4	-2.5	-4.3	-2.1	-2.4	-2.8	-3.1

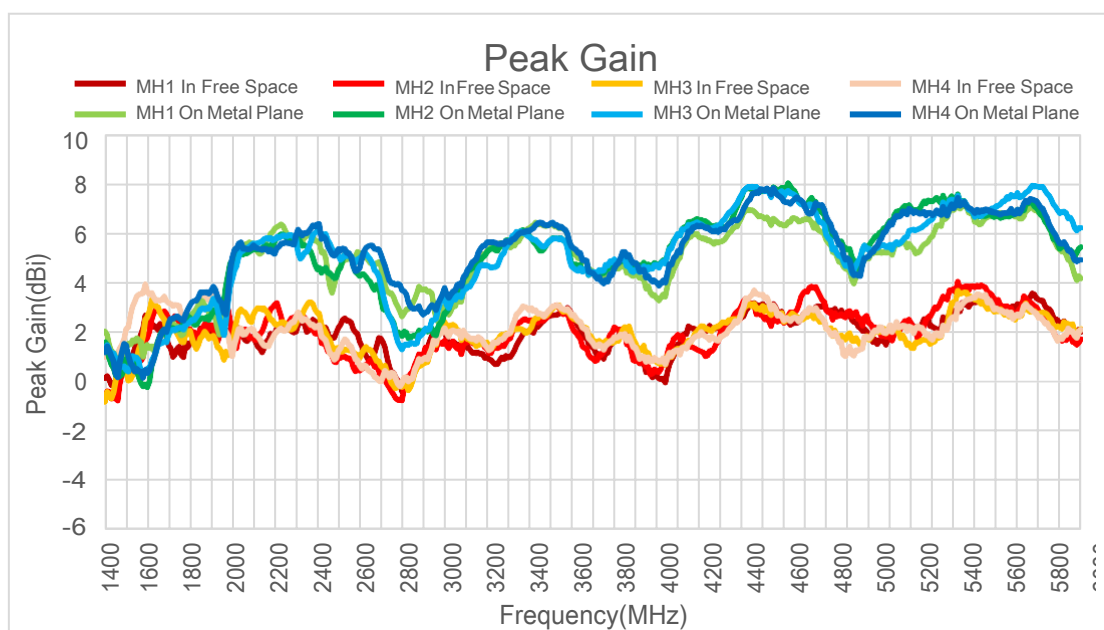
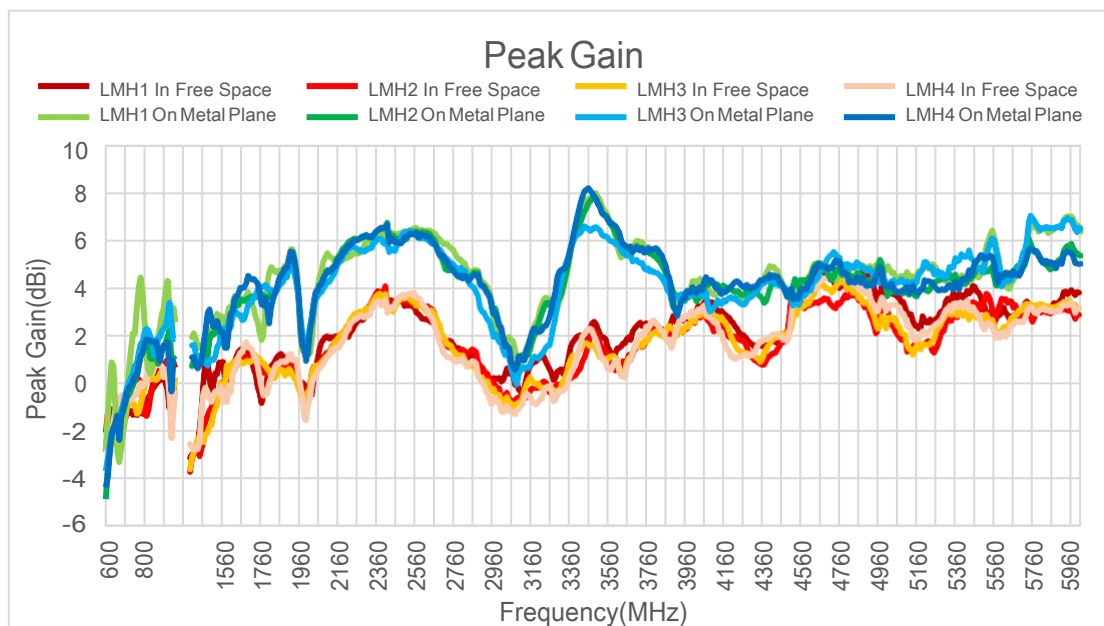
Average Gain (dB)

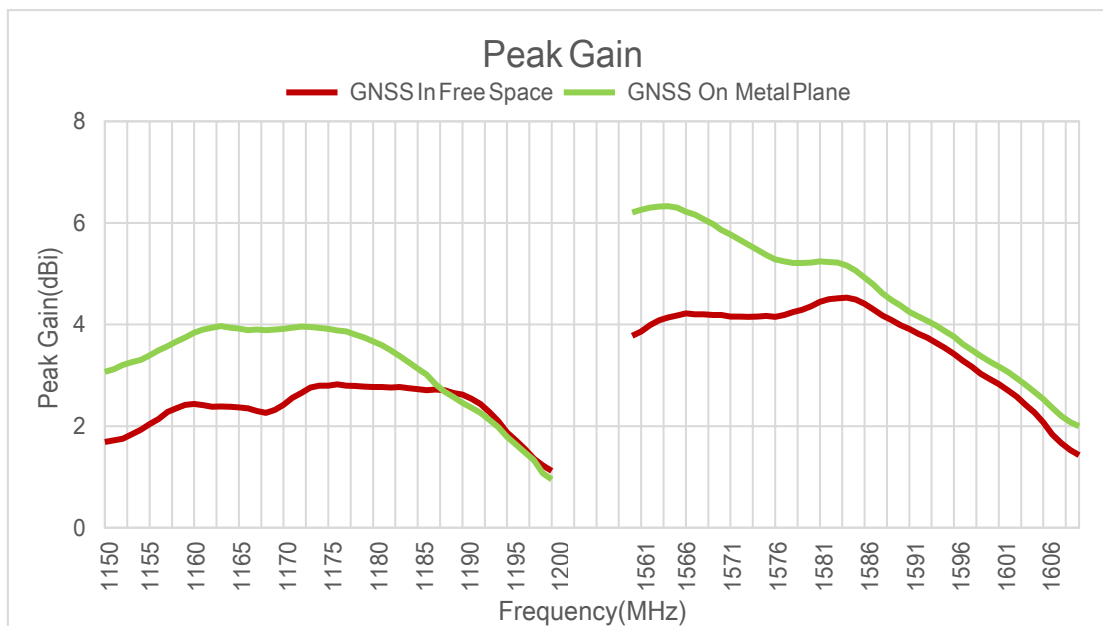
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
MH1	FS	-	-	-	-	-	-	-5.1	-3.8	-3.6	-3.3
	MP	-	-	-	-	-	-	-5.5	-5.5	-5.4	-4.6
MH2	FS	-	-	-	-	-	-	-5.0	-3.8	-3.3	-3.0
	MP	-	-	-	-	-	-	-6.1	-6.1	-6.1	-4.9
MH3	FS	-	-	-	-	-	-	-5.1	-3.2	-3.4	-3.2
	MP	-	-	-	-	-	-	-5.7	-5.7	-5.7	-4.6
MH4	FS	-	-	-	-	-	-	-4.5	-3.3	-3.1	-3.0
	MP	-	-	-	-	-	-	-5.8	-6.3	-6.4	-4.7
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
MH1	FS	-2.9	-2.7	-1.6	-2.3	-2.5	-2.6	-2.8	-2.3	-2.2	-3.5
	MP	-4.0	-2.2	-2.2	-2.7	-3.1	-3.6	-2.7	-2.5	-2.6	-3.5
MH2	FS	-2.7	-2.4	-1.8	-2.3	-2.8	-3.0	-2.3	-2.0	-2.5	-3.7
	MP	-3.8	-2.4	-2.2	-2.8	-2.8	-4.3	-2.6	-2.6	-2.9	-3.5
MH3	FS	-3.1	-2.2	-1.9	-2.2	-2.5	-2.9	-2.3	-2.1	-2.4	-3.2
	MP	-4.1	-2.5	-2.3	-2.5	-2.4	-4.3	-2.3	-2.4	-2.6	-3.0
MH4	FS	-2.7	-2.4	-1.7	-2.3	-2.6	-2.8	-2.1	-2.2	-2.3	-3.6
	MP	-3.8	-2.3	-1.9	-2.6	-2.6	-3.8	-2.1	-2.5	-2.5	-4.2

Average Gain (dB)

Frequency (MHz)		1176	1227	1561	1575	1602
GNSS	FS	-2.1	-	-2.9	-2.7	-3.6
	MP	-2.2	-	-3.0	-2.8	-3.4

3.2.8. Peak Gain





Peak Gain (dBi)

Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
LMH1	FS	-5.4	-4.6	-3.9	-3.8	-3.5	-3.9	-4.9	-3.3	-3.6	-3.4
	MP	-9.6	-7.6	-7.4	-7.8	-6.2	-7.0	-5.8	-4.2	-4.6	-3.8
LMH2	FS	-5.1	-4.3	-3.5	-4.6	-3.0	-4.2	-5.8	-3.3	-3.3	-3.4
	MP	-9.6	-8.6	-6.9	-7.0	-7.3	-7.8	-6.2	-4.0	-4.0	-3.9
LMH3	FS	-6.1	-5.1	-4.2	-3.6	-3.3	-4.1	-5.5	-3.3	-3.3	-3.4
	MP	-10.0	-9.0	-7.6	-7.0	-7.0	-7.6	-6.2	-4.0	-3.9	-4.0
LMH4	FS	-5.8	-4.7	-3.6	-3.5	-3.4	-4.1	-5.8	-2.8	-2.8	-3.4
	MP	-9.6	-8.6	-6.8	-6.7	-7.4	-7.6	-6.0	-3.5	-3.4	-3.8
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
LMH1	FS	-3.6	-3.6	-2.2	-2.5	-2.5	-3.2	-2.0	-2.1	-2.6	-3.0
	MP	-3.9	-3.2	-2.3	-2.6	-2.7	-3.4	-2.1	-2.0	-2.6	-2.6
LMH2	FS	-3.4	-3.6	-2.3	-2.4	-2.3	-4.1	-2.1	-2.3	-2.7	-3.2
	MP	-3.8	-3.4	-2.3	-2.5	-2.6	-4.4	-2.1	-2.3	-2.6	-3.0
LMH3	FS	-3.5	-3.6	-2.4	-2.4	-2.4	-4.1	-2.2	-2.3	-2.8	-3.1
	MP	-4.0	-3.4	-2.6	-2.9	-3.1	-4.4	-2.0	-2.1	-2.7	-2.4

LMH4	FS	-3.0	-3.8	-2.5	-2.4	-2.6	-4.6	-2.2	-2.4	-2.8	-3.0
	MP	-3.4	-3.4	-2.3	-2.4	-2.5	-4.3	-2.1	-2.4	-2.8	-3.1

Peak Gain (dBi)

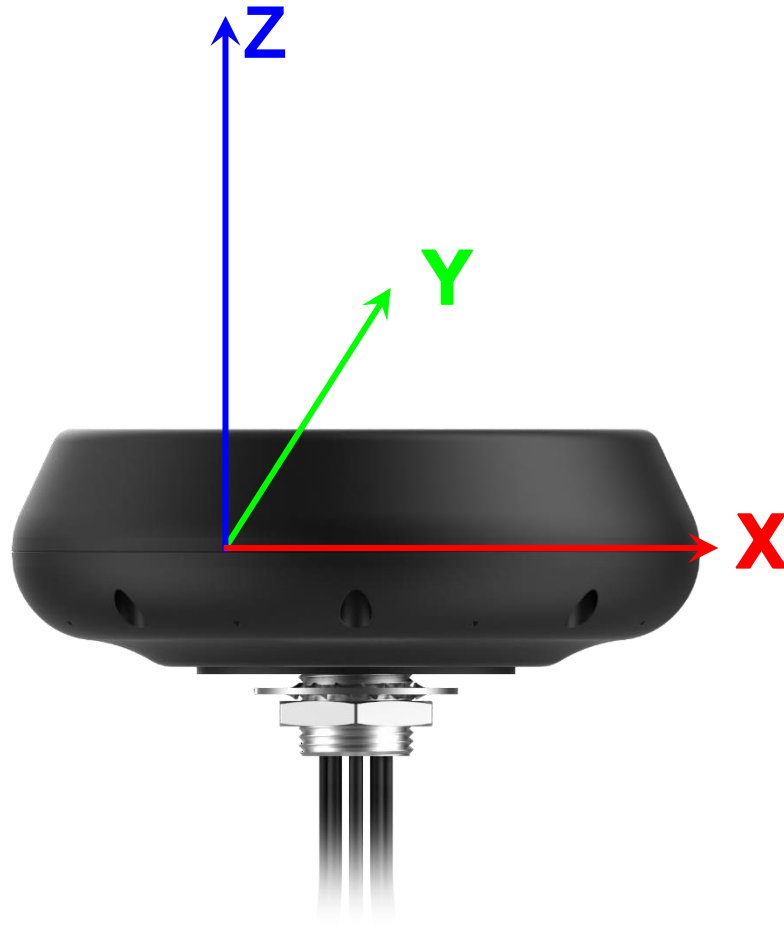
Frequency (MHz)		600	630	710	830	900	960	1440	1710	1740	1880
MH1	FS	-	-	-	-	-	-	-5.1	-3.8	-3.6	-3.3
	MP	-	-	-	-	-	-	-5.5	-5.5	-5.4	-4.6
MH2	FS	-	-	-	-	-	-	-5.0	-3.8	-3.3	-3.0
	MP	-	-	-	-	-	-	-6.1	-6.1	-6.1	-4.9
MH3	FS	-	-	-	-	-	-	-5.1	-3.2	-3.4	-3.2
	MP	-	-	-	-	-	-	-5.7	-5.7	-5.7	-4.6
MH4	FS	-	-	-	-	-	-	-4.5	-3.3	-3.1	-3.0
	MP	-	-	-	-	-	-	-5.8	-6.3	-6.4	-4.7
Frequency (MHz)		1950	2140	2350	2450	2600	3600	4700	5000	5500	6000
MH1	FS	-2.9	-2.7	-1.6	-2.3	-2.5	-2.6	-2.8	-2.3	-2.2	-3.5
	MP	-4.0	-2.2	-2.2	-2.7	-3.1	-3.6	-2.7	-2.5	-2.6	-3.5
MH2	FS	-2.7	-2.4	-1.8	-2.3	-2.8	-3.0	-2.3	-2.0	-2.5	-3.7
	MP	-3.8	-2.4	-2.2	-2.8	-2.8	-4.3	-2.6	-2.6	-2.9	-3.5
MH3	FS	-3.1	-2.2	-1.9	-2.2	-2.5	-2.9	-2.3	-2.1	-2.4	-3.2
	MP	-4.1	-2.5	-2.3	-2.5	-2.4	-4.3	-2.3	-2.4	-2.6	-3.0
MH4	FS	-2.7	-2.4	-1.7	-2.3	-2.6	-2.8	-2.1	-2.2	-2.3	-3.6
	MP	-3.8	-2.3	-1.9	-2.6	-2.6	-3.8	-2.1	-2.5	-2.5	-4.2

Peak Gain (dBi)

Frequency (MHz)		1176	1227	1561	1575	1602
GNSS	FS	2.8	-	3.9	4.2	2.7
	MP	3.9	-	6.3	5.4	3.1

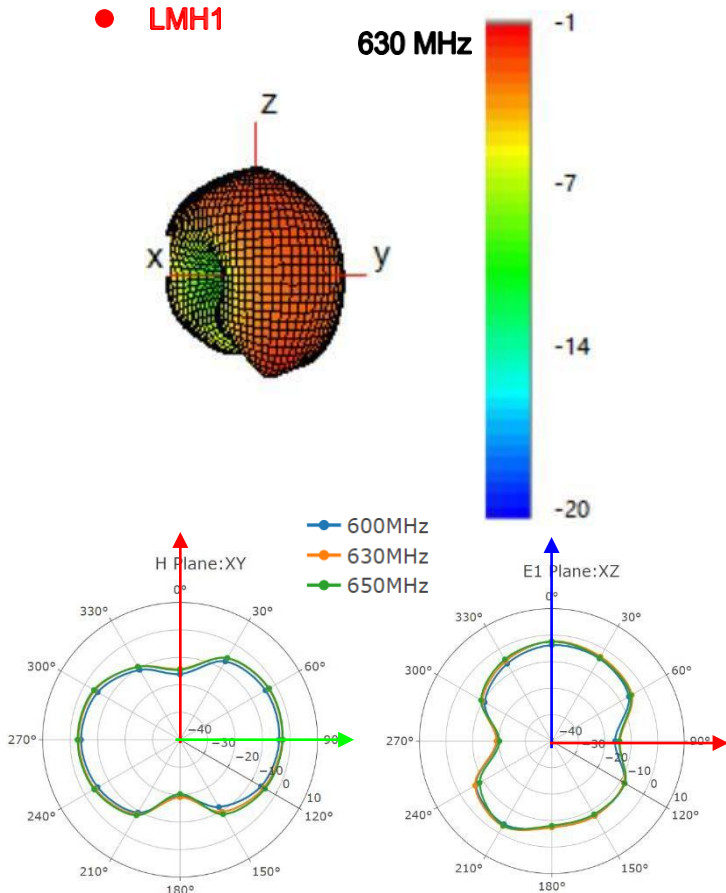
3.2.9. 3D & 2D Radiation Pattern

3.2.9.1. Test Status: In Free Space

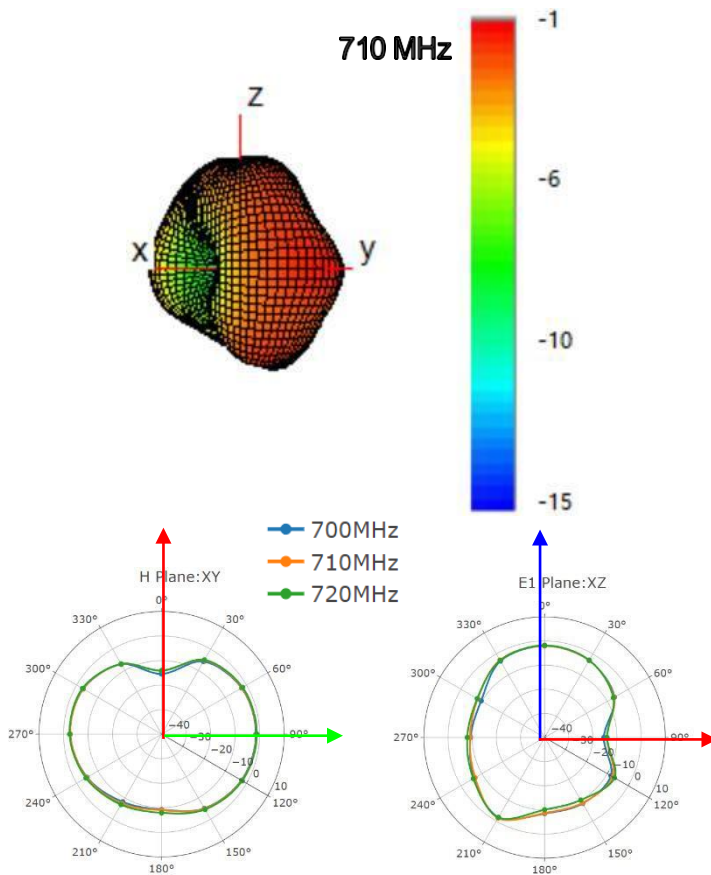


● **LMH1**

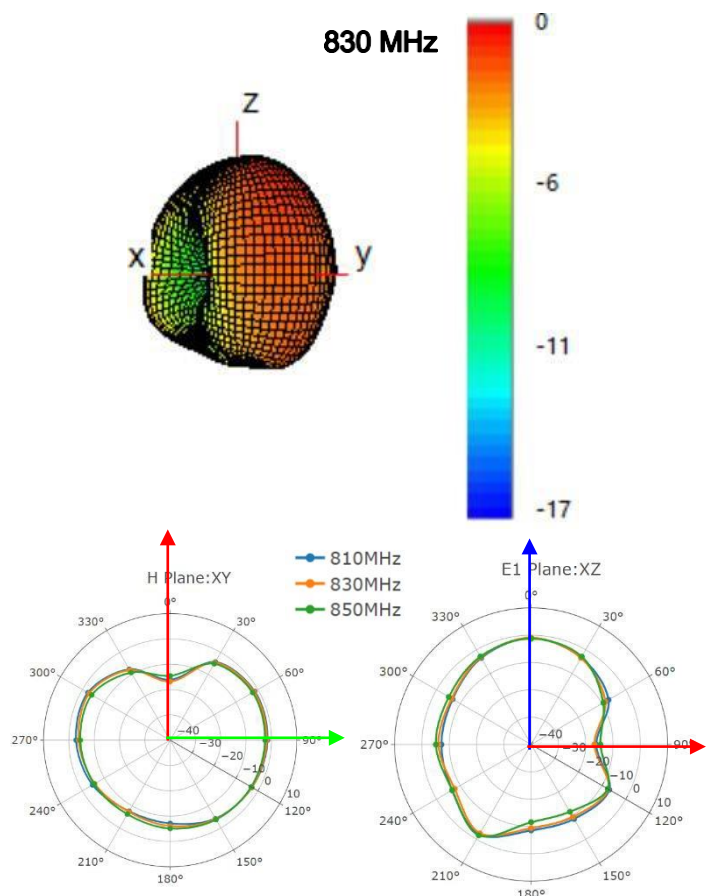
630 MHz



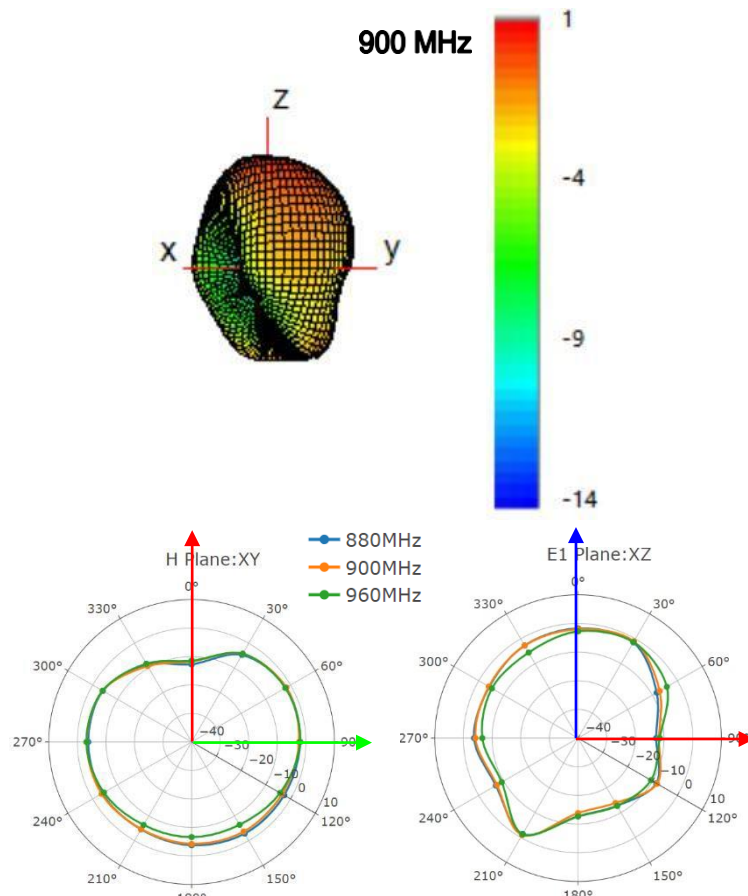
710 MHz



830 MHz

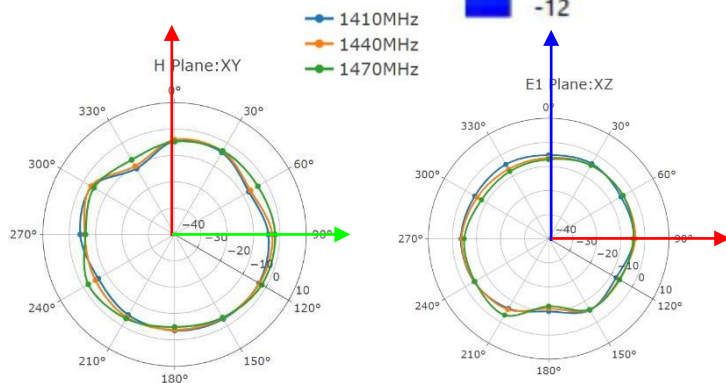


900 MHz

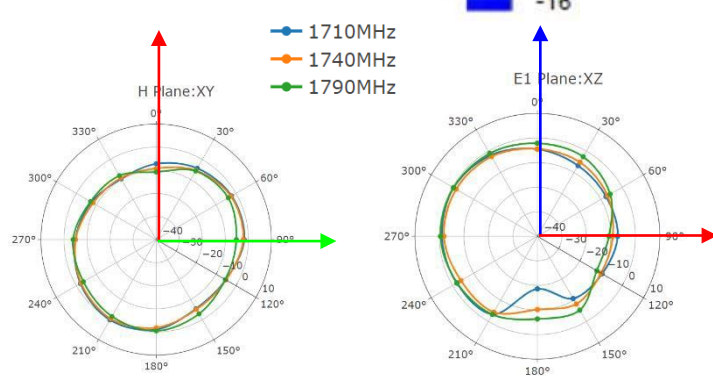
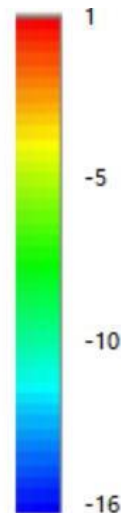


● **LMH1**

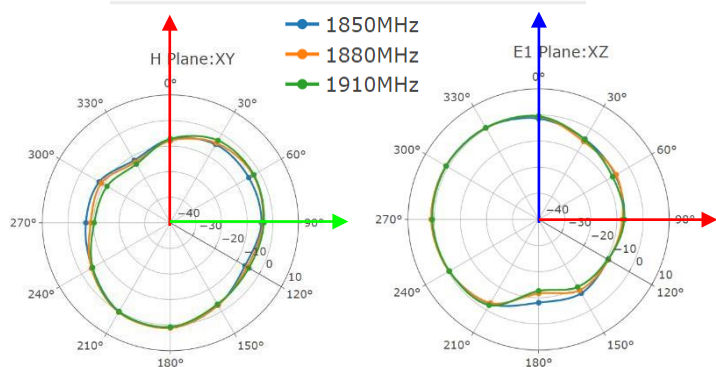
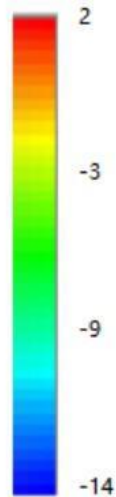
1440 MHz



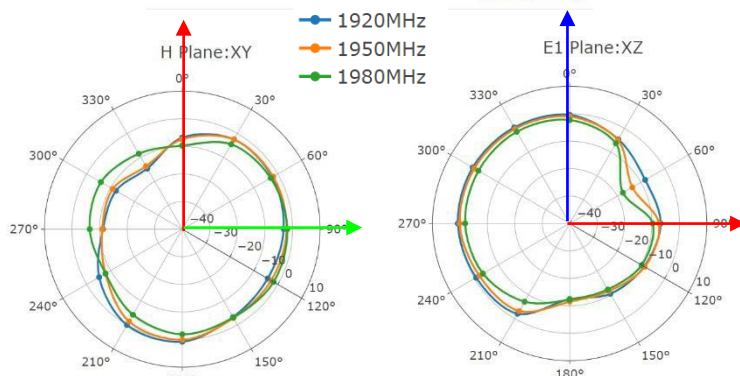
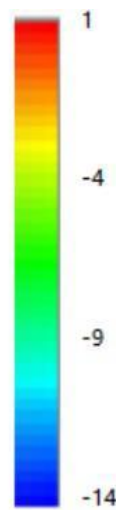
1740 MHz



1880 MHz

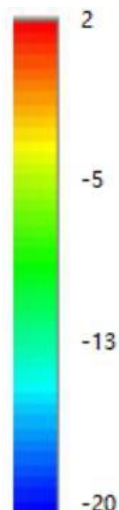
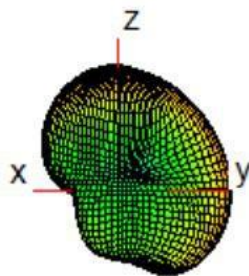


1950 MHz

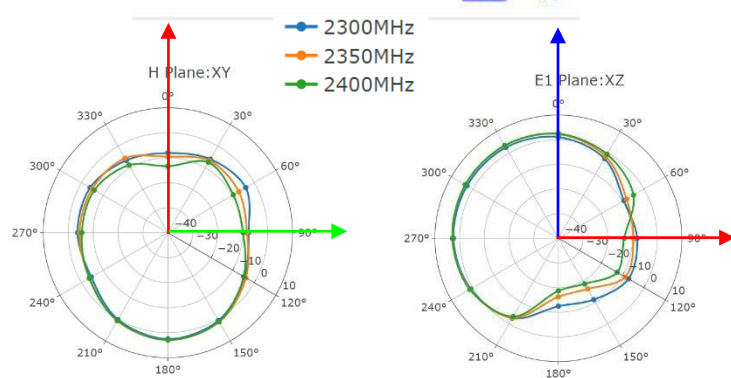
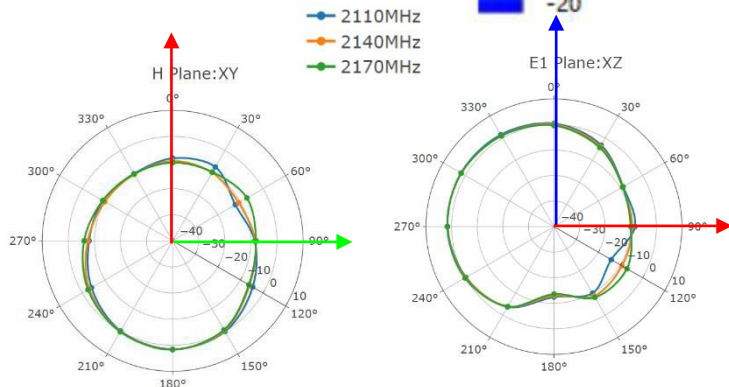
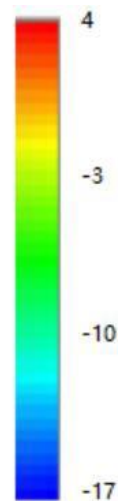
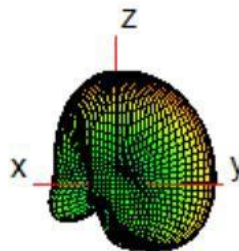


● **LMH1**

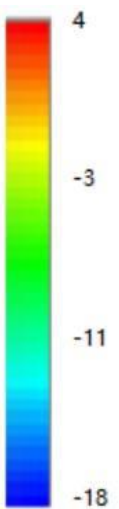
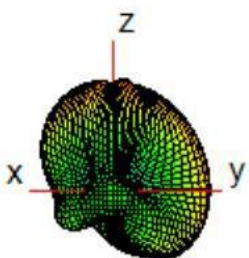
2140 MHz



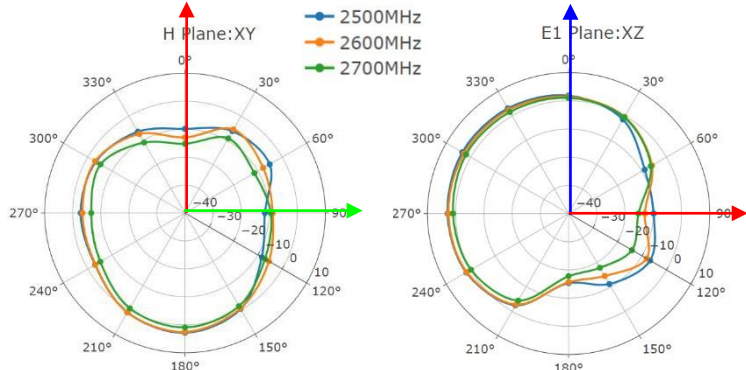
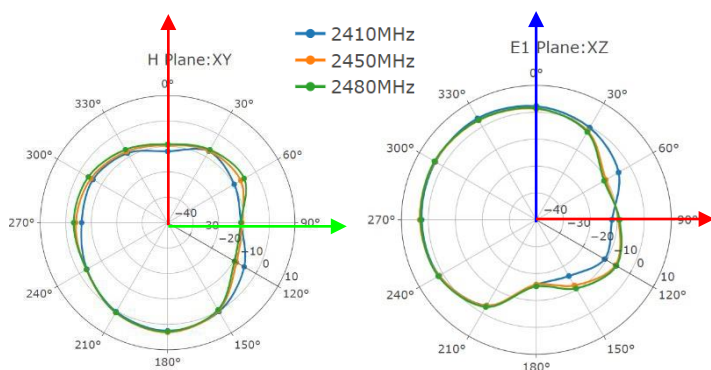
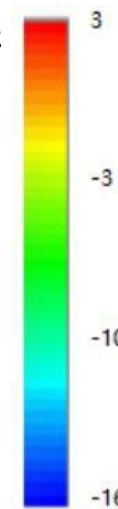
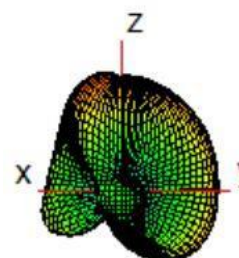
2350 MHz



2450 MHz

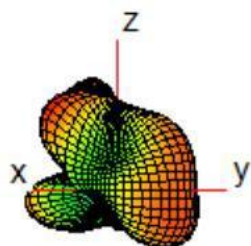


2600 MHz

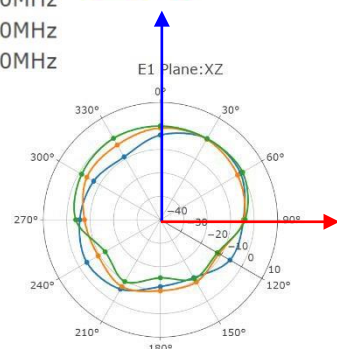
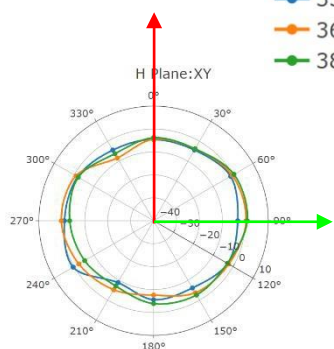


● **LMH1**

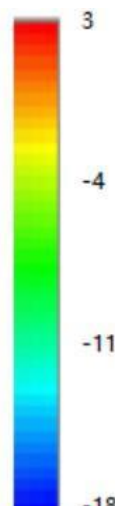
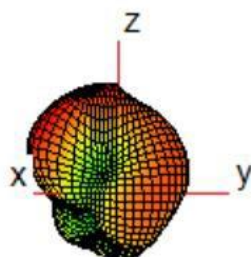
3600 MHz



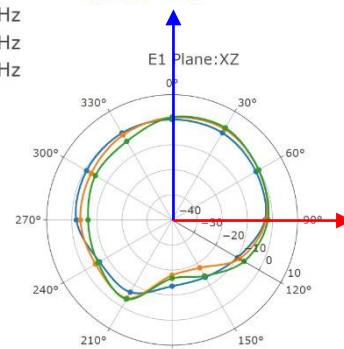
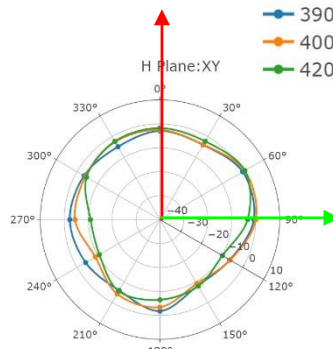
— 3300MHz
— 3600MHz
— 3800MHz



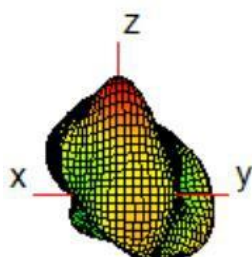
4000 MHz



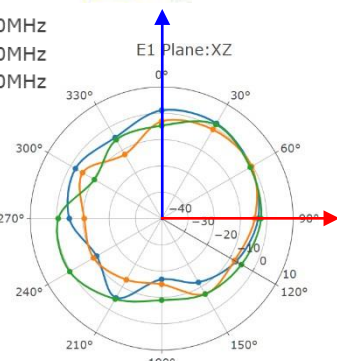
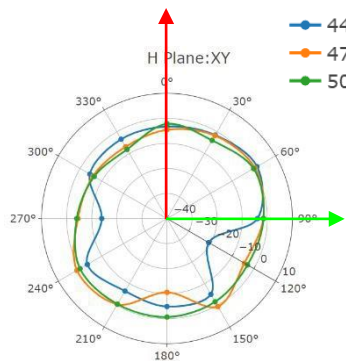
— 3900MHz
— 4000MHz
— 4200MHz



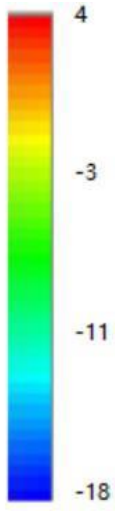
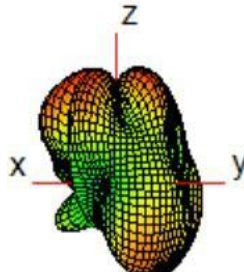
4700 MHz



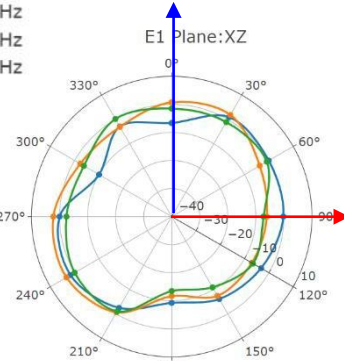
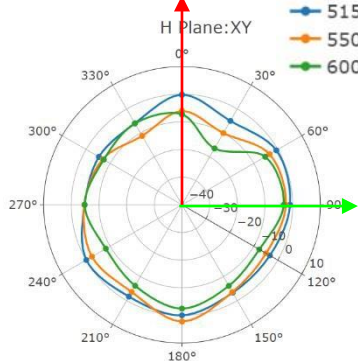
— 4400MHz
— 4700MHz
— 5000MHz



5500 MHz

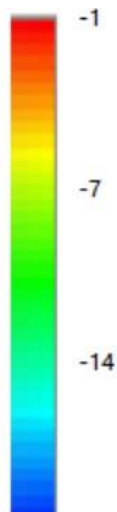
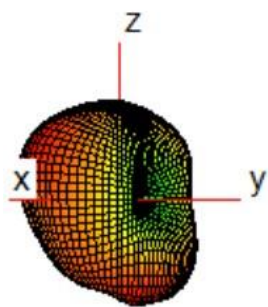


— 5150MHz
— 5500MHz
— 6000MHz

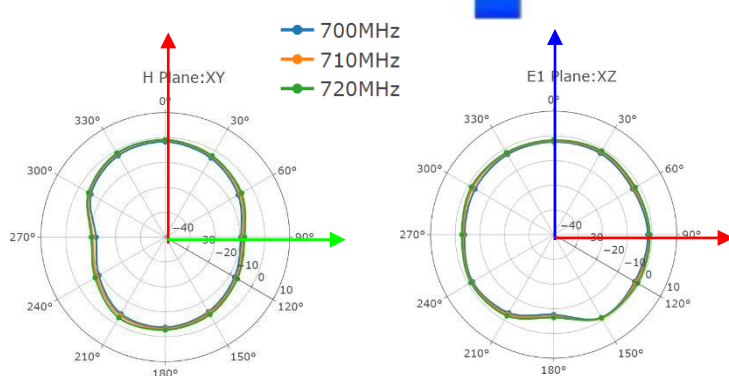
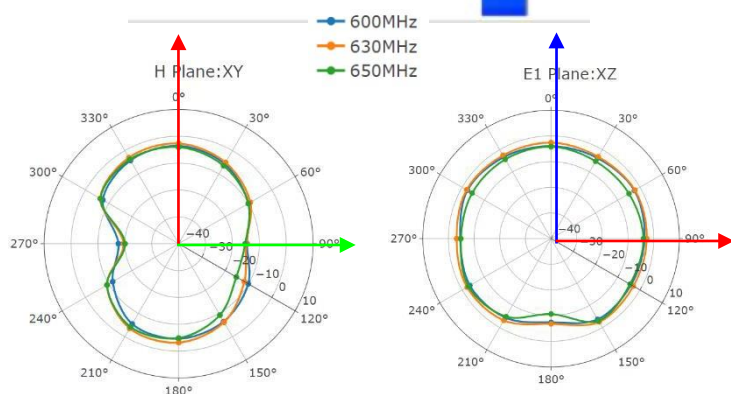
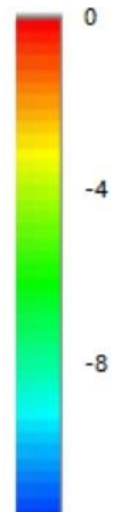
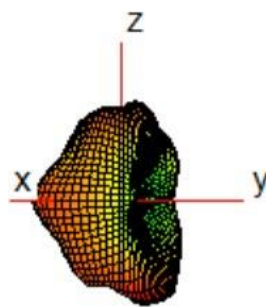


● **LMH2**

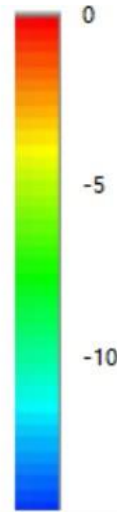
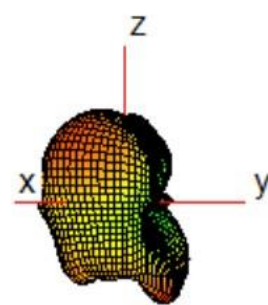
630 MHz



710 MHz



830MHz



900MHz

