

Trabajo práctico N°2: Lectura de hojas de datos

Se busca poder extraer información de las hojas de datos referidas a las características de las antenas.

1er hoja de datos: AF-3G26-S45

airFiber® X Antenna

Modelo de 3 GHz



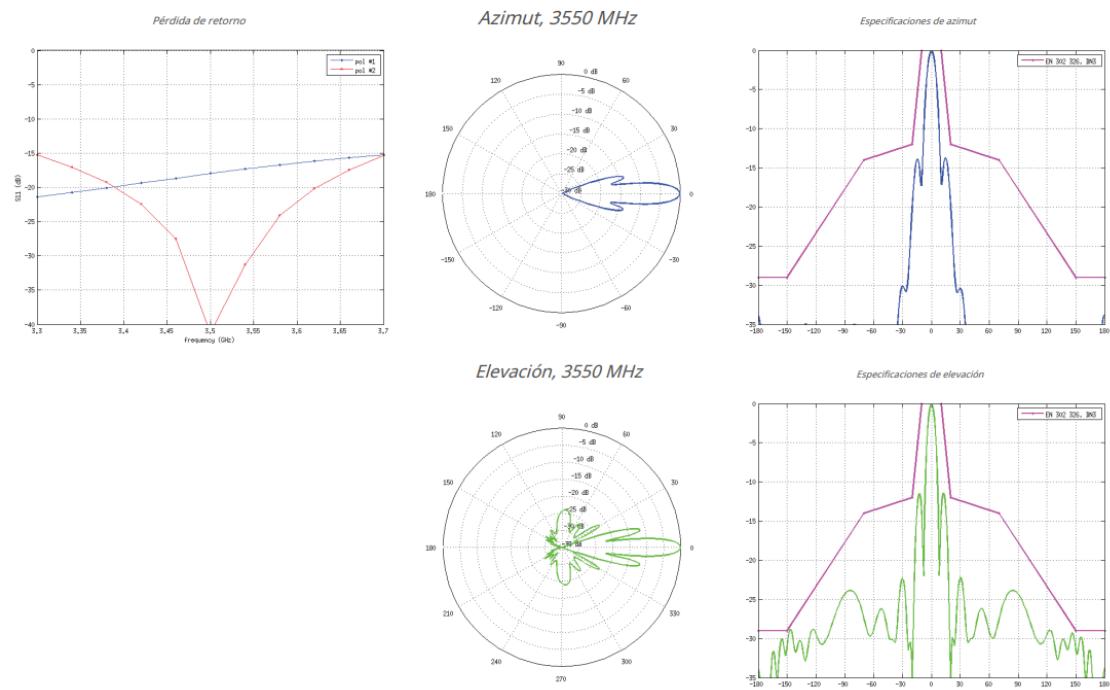
Modelo	Frecuencia	Ganar	Radomo *
AF-3G26-S45	3 GHz	26 dBi	RAD-RD2

El AF-3G26-S45 ofrece 26 dBi de ganancia en un tamaño de 650 mm de diámetro.

Especificaciones

Características de la antena					
Modelo	AF-2G24-S45	AF-3G26-S45	AF-5G23-S45	AF-5G30-S45	AF-5G34-S45
Dimensiones*	ø 650 x 295 mm (ø 25,59 x 11,61 ")	ø 650 x 300 mm (ø 25,59 x 11,81 ")	ø 378 x 290 mm (ø 14,88 x 11,42 ")	ø 650 x 386 mm (ø 25,59 x 15,20 ")	ø 1050 x 421 mm (ø 41,34 x 16,57 ")
Peso**	9,8 kg (21,61 libras)	9,8 kg (21,61 libras)	3,4 kg (7,50 libras)	7,4 kg (16,31 libras)	13,5 kg (29,76 libras)
Frecuencia Distancia	2,3 - 2,7 GHz	3,3 - 3,8 GHz	5,1 - 5,9 GHz	4,9 - 5,9 GHz	4,9 - 5,8 GHz
Ganar	24 dBi	26 dBi	23 dBi	4,9 GHz: 26 dBi 5 - 5,9 GHz: 30 dBi	4,9 GHz: 30 dBi 5 - 5,8 GHz: 34 dBi
+ 45 ° Amplitud de rayo	6,6 ° (3 dB)	7 ° (3 dB)	10 ° (3 dB)	5,8 ° (3 dB)	3 ° (3 dB)
- 45 ° Amplitud de rayo	6,8 ° (3 dB)	7 ° (3 dB)	10 ° (3 dB)	5,8 ° (3 dB)	3 ° (3 dB)
Relación F / B	28 dB	33 dB	30 dB	30 dB	42 dB
Max. VSWR	1,6: 1	1,4: 1	1,5: 1	1,6: 1	1,4: 1
Viento Cargando	787 N a 200 km / h (177 lbf a 125 mph)	787 N a 200 km / h (177 lbf a 125 mph)	190 N a 200 km / h (43 lbf a 125 mph)	790 N a 200 km / h (178 lbf a 125 mph)	1,779 N @ 200 km / h (400 lbf @ 125 mph)
Viento Supervivencia	200 km / h (125 mph)				
Polarización	Lineal dual				
Cross-pol Aislamiento	35 dB Mín.				
ETSI Especificación	EN 302 326 DN2				
Montaje	Montaje en poste universal, soporte de radio airFiber X y conectores RF resistentes a la intemperie incluidos				

Información de la antena AF-3G26-S45



- Se puede notar que se trata de una **antena direccional**.
- Se da la información de **máxima ganancia de 26 dBi** en una tabla de datos.
- Se da la información sobre el **HPBW** en la tabla de datos, siendo este de $\pm 7^\circ$.
- Se da información en forma de diagramas de radiación, su **azimut** y su **elevación** en forma polar, y también en forma de **coordenadas rectangulares**, con el eje “x” siendo los grados y siendo el eje “y” los dB respecto a la ganancia máxima.

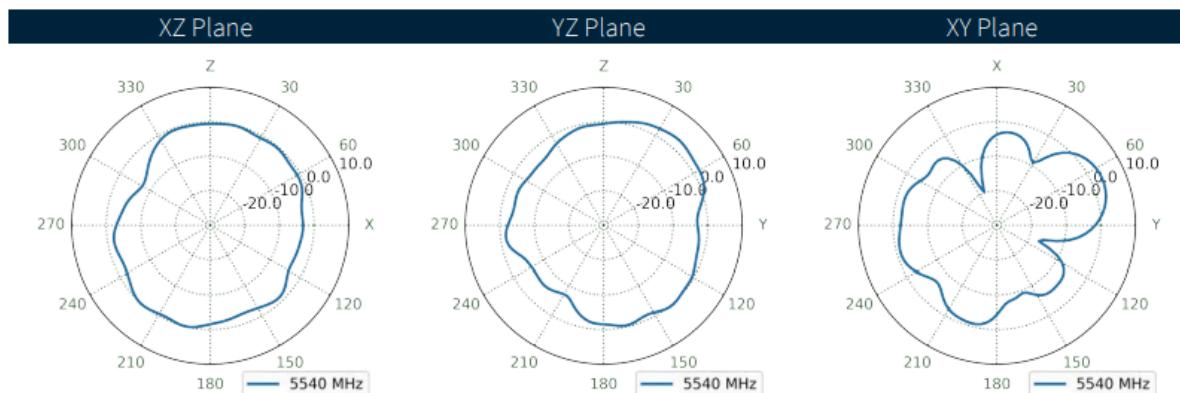
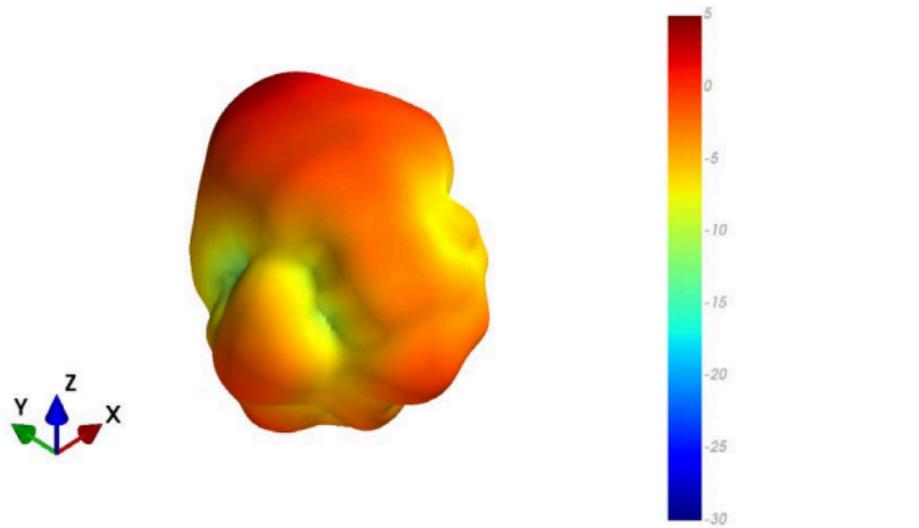
2da hoja de datos: MA322



The Taoglas Comet MA322 is a low profile, puck style, adhesive/magnetic mount antenna. The MA322 contains two 5G/4G high performance antennas for use in MIMO cellular systems. Through innovative antenna design techniques, it covers all worldwide cellular frequencies from 600MHz to 6GHz, with stable gain and high efficiency, normally difficult to achieve in smaller antennas.

LTE Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5G NR Band 71	617-698	FS LTE 1	25.0	-6.0	1.1	50 Ω	Linear	Omni	2W
		FS LTE 2	25.0	-6.0	1.1				
LTE700	698-824	FS LTE 1	42.7	-3.7	2.0	50 Ω	Linear	Omni	2W
		FS LTE 2	45.0	-3.5	1.7				
GSM800/900	824-960	FS LTE 1	53.3	-2.7	2.2	50 Ω	Linear	Omni	2W
		FS LTE 2	56.1	-2.5	2.1				
5G NR Band 1500	1427-1518	FS LTE 1	20.6	-6.9	-0.5	50 Ω	Linear	Omni	2W
		FS LTE 2	22.0	-6.6	-0.4				
5G NR N66	1710-2200	FS LTE 1	55.4	-2.6	4.6	50 Ω	Linear	Omni	2W
		FS LTE 2	54.7	-2.6	4.5				
LTE2600	2300-2690	FS LTE 1	55.8	-2.5	2.3	50 Ω	Linear	Omni	2W
		FS LTE 2	56.6	-2.5	4.2				
5G NR N77	3300-4200	FS LTE 1	46.1	-3.4	2.4	50 Ω	Linear	Omni	2W
		FS LTE 2	46.8	-3.3	2.0				
5G NR N78	3300-3800	FS LTE 1	48.9	-3.1	1.8	50 Ω	Linear	Omni	2W
		FS LTE 2	49.3	-3.1	1.5				
5G NR N79	4400-5000	FS LTE 1	59.9	-2.2	4.0	50 Ω	Linear	Omni	2W
		FS LTE 2	60.3	-2.2	3.6				
LTE5200	5150-5925	FS LTE 1	60.4	-2.2	4.5	50 Ω	Linear	Omni	2W
		FS LTE 2	64.7	-1.9	4.6				

4.20 FS LTE 1 Patterns at 5538 MHz for Gtotal



- Se trata de una **antena omnidireccional** que puede trabajar a **múltiples frecuencias**. En nuestro caso se analiza la marcada en la tabla de datos.
- Se da en una tabla de datos un valor de **4.5dBi de ganancia máxima**.
- Se da el **diagrama de radiación** de la antena en **3D**.
- Se da información sobre el **diagrama de radiación en 2D** referido a los planos cartesianos. En este caso el **azimut** sería el **plano XY** y la **elevación** los **planos YZ y XZ**.

Dhoja de cálculo



airFiber® X Antenna

Antena inclinada 45 para airFiber®

Modelo: AF-2G24-S45, AF-3G26-S45,
AF-5G23-S45, AF-5G30-S45, AF-5G34-S45

Potente rendimiento para enlaces de largo alcance

Diseño y construcción robustos para uso en exteriores

Integración perfecta con airFiber Radio



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NETWORKS

Visión general

Empareje una antena airFiber® X con una radio airFiber X para crear el punto final de un puente de alto rendimiento, punto a punto (PtP) o backhaul de red (la radio airFiber X se vende por separado).

La antena airFiber X utiliza la banda de frecuencia de 5 GHz y está disponible para las siguientes bandas de frecuencia:

- 2,4 GHz
- 3 GHz
- 4 GHz
- 5 GHz

Potente rendimiento

La antena airFiber X ofrece un rendimiento de doble polaridad 2x2. A la derecha hay un ejemplo de cómo la antena airFiber X con una radio airFiber X se puede implementar como puntos finales en un enlace de backhaul para entregar ancho de banda desde una red WISP a un torre de barrio. Desde allí, una antena AirMAX® Sector con una radio Rocket® entrega ancho de banda a los clientes de WISP.

Construcción de clase portadora

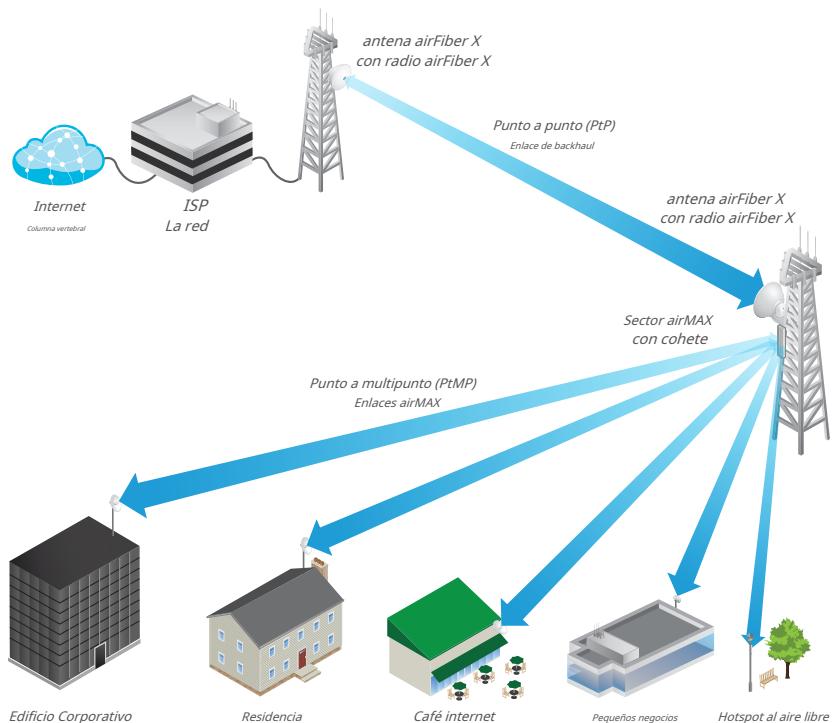
Al incorporar un diseño de reflector de plato para una excelente direcciónalidad del haz, las antenas airFiber X cuentan con un diseño mecánico robusto que utiliza hardware de resistencia industrial para uso en aplicaciones al aire libre.

Integración Plug and Play

Las antenas airFiber X y las radios airFiber X se han diseñado para funcionar juntas a la perfección. Cada antena airFiber X tiene un soporte de radio airFiber X incorporado, por lo que la instalación no requiere herramientas especiales.

Encage la radio airFiber X de forma segura en su lugar y monte la antena; Entonces tiene la combinación óptima de antena airFiber X y radio airFiber X para su aplicación PtP.

Ejemplo de aplicación



Montaje del AF-5X en el AF-5G23-S45

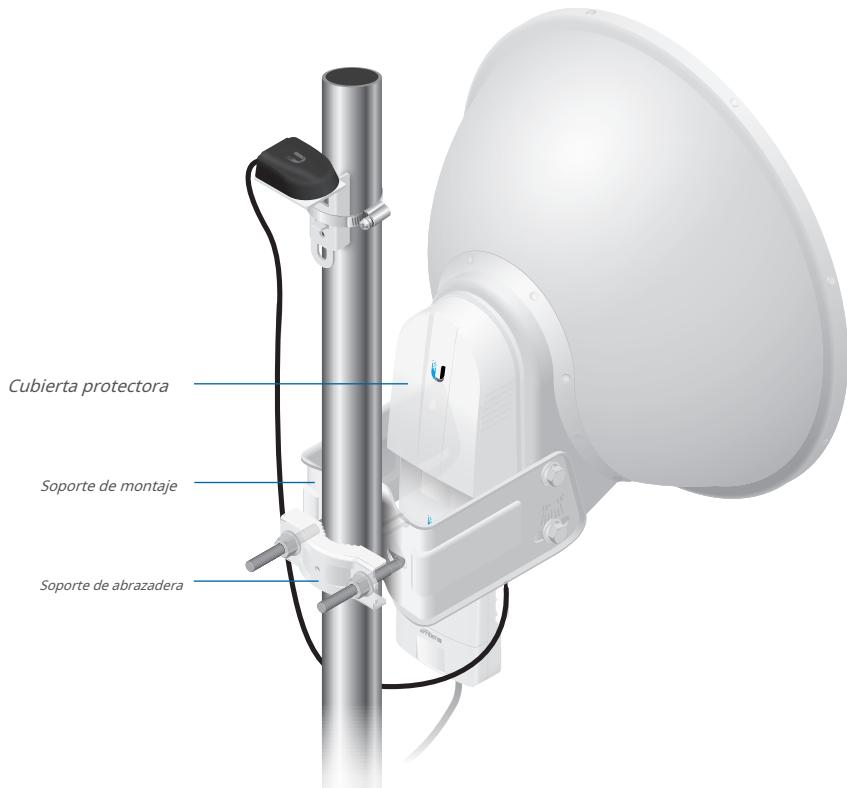
Descripción general del hardware

Diseño mecánico innovador

- **Montaje seguro en poste** Mantiene la posición del plato durante las duras condiciones exteriores.
- **Factor de forma de perfil bajo del AF-5G23-S45** Reduce la carga de viento.

Diseño resistente a la intemperie

- **Cubierta protectora** Protege los cables y conectores de los elementos.
- **Radomo integrado del AF-5G23-S45** Protege el medio ambiente de la radio.



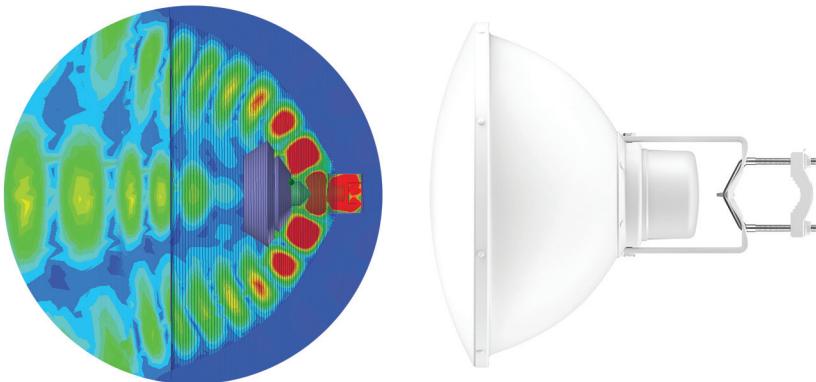
Diseño avanzado de aislamiento de RF

Modelo: AF-5G23-S45

El innovador diseño industrial mejora el aislamiento de RF para reducir significativamente la interferencia y ofrecer una ganancia superior para redes multipunto de alta capacidad.

El gráfico de campo cercano del AF-5G23-S45 se muestra en vatios y utiliza una escala lineal. La fuerza del campo electromagnético está codificada por colores:

- Rojo: mayor fuerza
- Verde: fuerza media
- Índigo: Fuerza más baja



Flexibilidad de implementación

El airFiber X admite una polarización inclinada de $\pm 45^\circ$ para mejorar la inmunidad al ruido y la relación señal / ruido (SNR). El factor de forma compacto del airFiber X le permite encajar en el soporte de radio de las antenas Ubiquiti, por lo que la instalación no requiere herramientas especiales.

Las antenas airFiber X están especialmente diseñadas con polaridad inclinada de 45° para una integración perfecta con airFiber X.

airFiber X Antenna

Modelo de 2,4 GHz



Modelo	Frecuencia	Ganar	Radomo *
AF-2G24-S45	2,4 GHz	24 dBi	RAD-RD2

El AF-2G24-S45 ofrece 24 dBi de ganancia en un tamaño de 650 mm de diámetro.

airFiber X Antenna

Modelo de 3 GHz



Modelo	Frecuencia	Ganar	Radomo *
AF-3G26-S45	3 GHz	26 dBi	RAD-RD2

El AF-3G26-S45 ofrece 26 dBi de ganancia en un tamaño de 650 mm de diámetro.

Modelos de 5 GHz

Modelo	Frecuencia	Ganar	Radomo
AF-5G23-S45	5,1 - 5,9 GHz	23 dBi	Integrado

Alojado en un factor de forma compacto (tamaño de 378 mm de diámetro), el AF-5G23-S45 ofrece 23 dBi de ganancia y presenta las siguientes ventajas:

- Los lóbulos laterales bajos reducen la interferencia de otros transmisores en el área.
- El alto aislamiento mejora el rendimiento para la ubicación conjunta en instalaciones montadas en torre.
- El diseño de perfil bajo con radomo integrado reduce la carga de viento.



Modelo	Frecuencia	Ganar	Radomo ₂
AF-5G30-S45	4,9 - 5,9 GHz	26 - 30 dBi	ISO-BEAM-620

El AF-5G30-S45 ofrece hasta 30 dBi de ganancia en un tamaño de 650 mm de diámetro.



Modelo	Frecuencia	Ganar	Radomo ₂
AF-5G34-S45	4,9 - 5,8 GHz	30 - 34 dBi	RAD-RD3

El AF-5G34-S45 ofrece hasta 34 dBi de ganancia en un tamaño de 1050 mm de diámetro.

¹ Consulte las normativas locales / regionales para conocer la ganancia máxima de antena permitida para su aplicación.

² Hay una cúpula disponible como accesorio opcional.

airFiber X Antenna

Accesorios AF-5G30-S45

IsoBeam™

Modelo: ISO-BEAM-620



El IsoBeam™ es un radomo aislante que está disponible como accesorio opcional para el AF-5G30-S45 y otros modelos de antena parabólica:

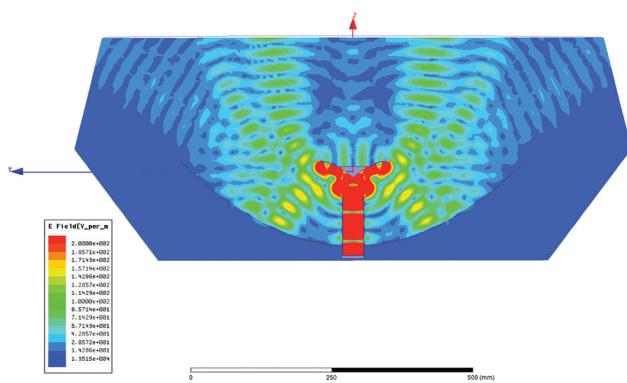
- RocketDisk® RD-5G30-LW
- PowerBeam™ PBE-5AC-620
- PowerBeam PBE-M5-620

El innovador perímetro de estrangulamiento de RF del IsoBeam ofrece una inmunidad al ruido superior en implementaciones de ubicación conjunta; su corrugación perimetral proporciona un blindaje de RF mejorado. Compare las dos gráficas de campo cercano a continuación y observe el rendimiento de aislamiento revolucionario del IsoBeam.

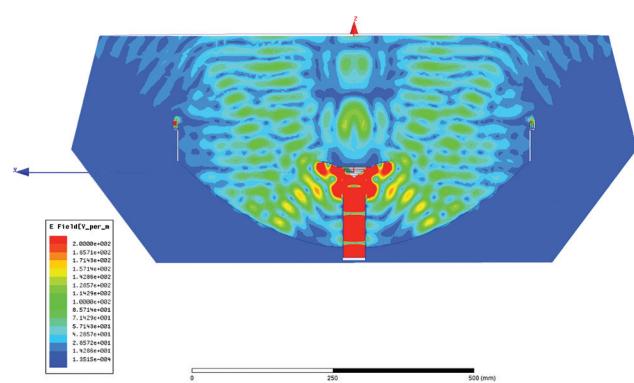
Ambos gráficos de campo cercano se muestran en vatios y utilizan una escala lineal. La intensidad del campo electromagnético está codificada por colores:

- Rojo: máxima resistencia
- Verde: fuerza media
- Índigo: resistencia más baja

Sin IsoBeam



Con IsoBeam



Precision Alignment Kit

Modelo: PAK-620



El kit de alineación de precisión está disponible como accesorio opcional para el AF-5G30-S45. Cuenta con 15 ° de ajuste de acimut y 15 ° de ajuste de elevación para permitir una orientación extremadamente precisa para un rendimiento óptimo del enlace PtP.

El kit de alineación de precisión también es compatible con otros modelos de antena parabólica:

- RocketDisk® RD-5G30-LW
- PowerBeam™ PBE-5AC-620
- PowerBeam PBE-M5-620

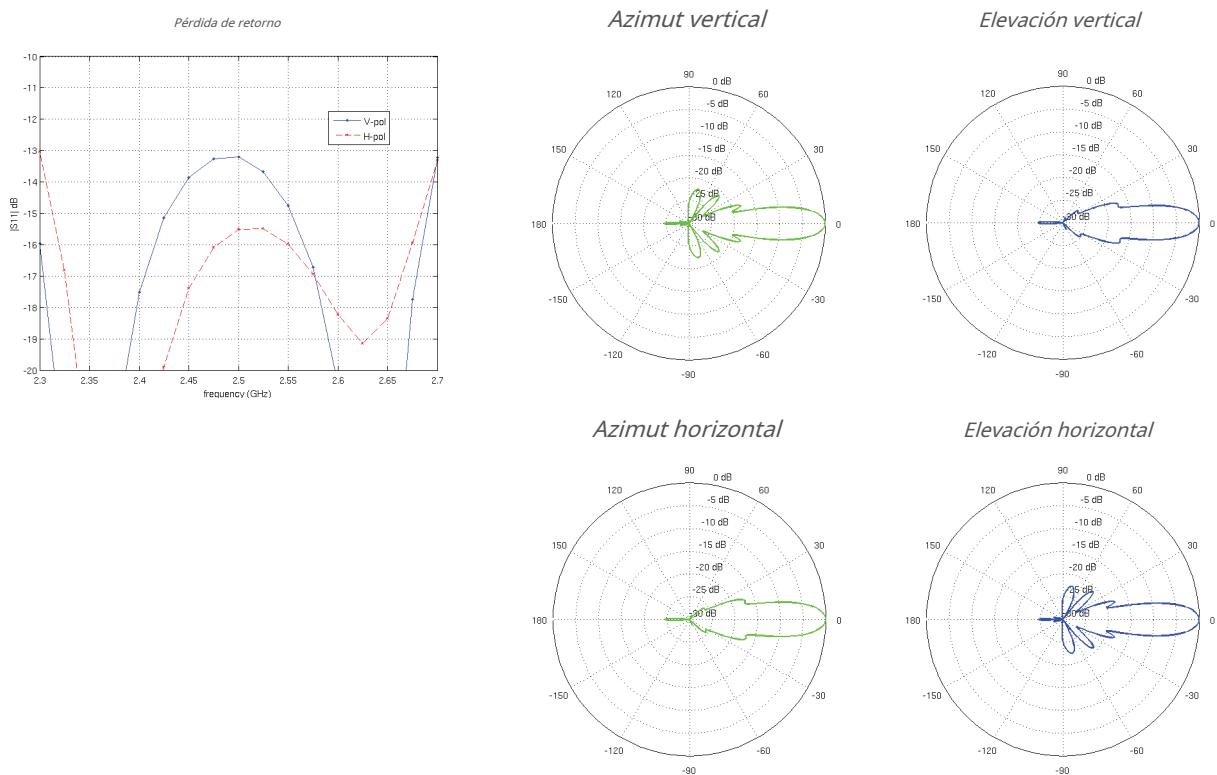
Especificaciones

Características de la antena					
Modelo	AF-2G24-S45	AF-3G26-S45	AF-5G23-S45	AF-5G30-S45	AF-5G34-S45
Dimensiones*	Ø 650 x 295 mm (Ø 25,59 x 11,61 ")	Ø 650 x 300 mm (Ø 25,59 x 11,81 ")	Ø 378 x 290 mm (Ø 14,88 x 11,42 ")	Ø 650 x 386 mm (Ø 25,59 x 15,20 ")	Ø 1050 x 421 mm (Ø 41,34 x 16,57 ")
Peso**	9,8 kg (21,61 libras)	9,8 kg (21,61 libras)	3,4 kg (7,50 libras)	7,4 kg (16,31 libras)	13,5 kg (29,76 libras)
Frecuencia Distancia	2,3 - 2,7 GHz	3,3 - 3,8 GHz	5,1 - 5,9 GHz	4,9 - 5,9 GHz	4,9 - 5,8 GHz
Ganar	24 dBi	26 dBi	23 dBi	4,9 GHz: 26 dBi 5 - 5,9 GHz: 30 dBi	4,9 GHz: 30 dBi 5 - 5,8 GHz: 34 dBi
+ 45 ° Amplitud de rayo	6,6 ° (3 dB)	7 ° (3 dB)	10 ° (3 dB)	5,8 ° (3 dB)	3 ° (3 dB)
- 45 ° Amplitud de rayo	6,8 ° (3 dB)	7 ° (3 dB)	10 ° (3 dB)	5,8 ° (3 dB)	3 ° (3 dB)
Relación F / B	28 dB	33 dB	30 dB	30 dB	42 dB
Max. VSWR	1,6: 1	1,4: 1	1,5: 1	1,6: 1	1,4: 1
Viento Cargando	787 N a 200 km / h (177 lbf a 125 mph)	787 N a 200 km / h (177 lbf a 125 mph)	190 N a 200 km / h (43 lbf a 125 mph)	790 N a 200 km / h (178 lbf a 125 mph)	1,779 N @ 200 km / h (400 lbf @ 125 mph)
Viento Supervivencia	200 km / h (125 mph)				
Polarización	Lineal dual				
Cross-pol Aislamiento	35 dB Mín.				
ETSI Especificación	EN 302 326 DN2				
Montaje	Montaje en poste universal, soporte de radio airFiber X y conectores RF resistentes a la intemperie incluidos				

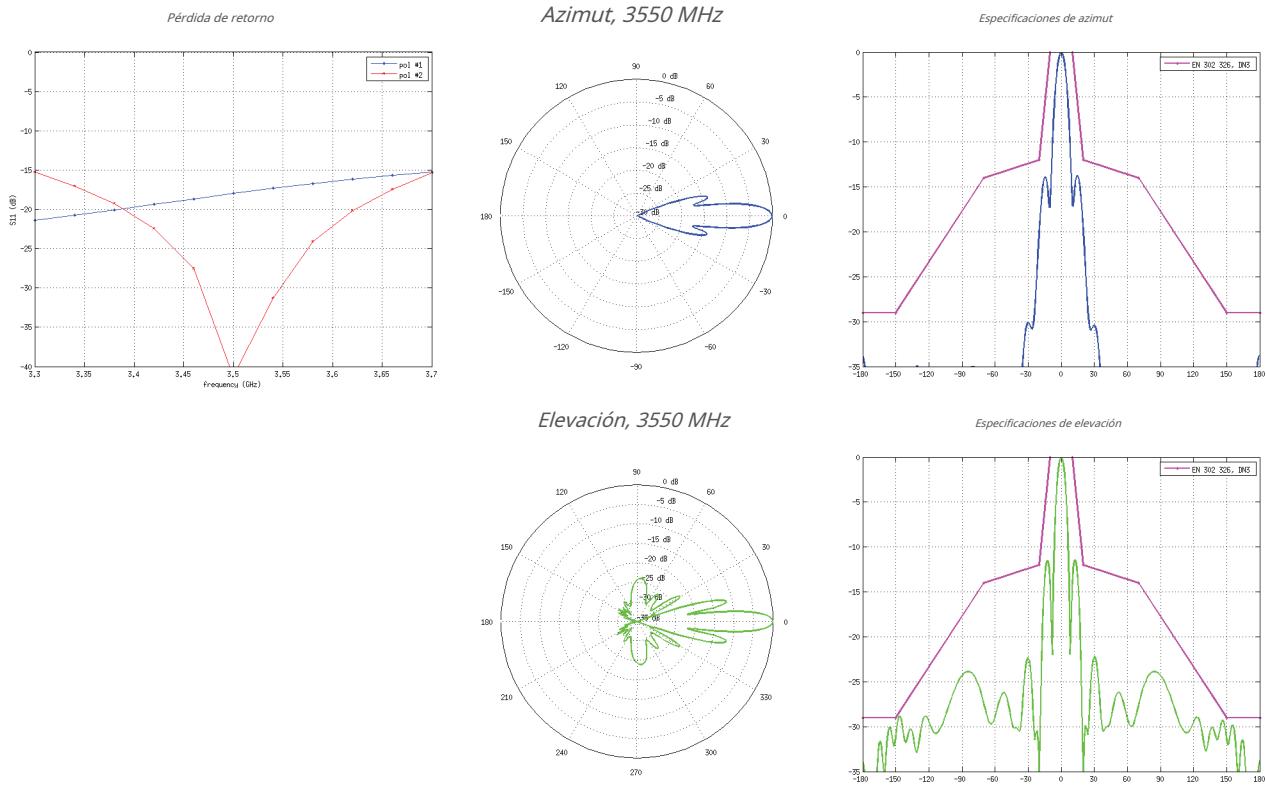
* Las dimensiones excluyen el montaje en poste y la radio airFiber X (la radio airFiber X se vende por separado)

** El peso incluye el montaje en poste y excluye la radio airFiber X (la radio airFiber X se vende por separado)

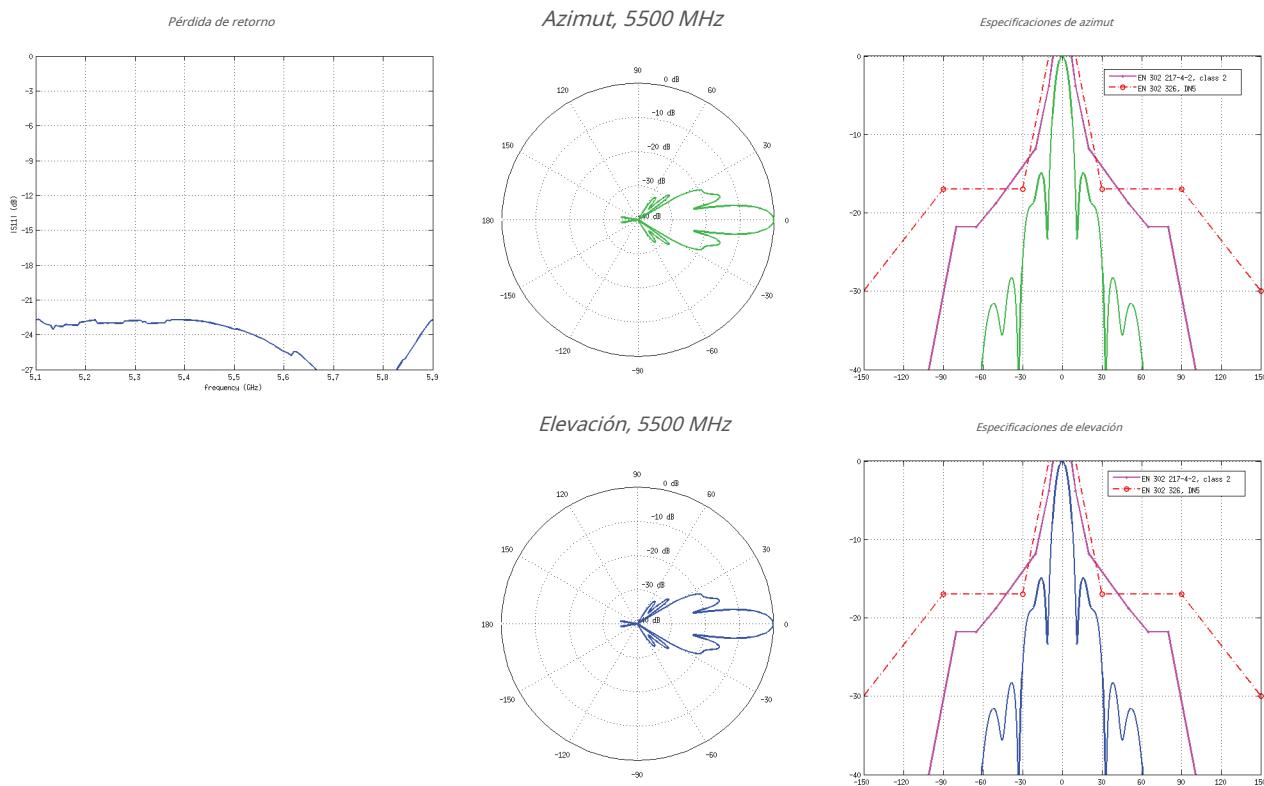
Información de la antena AF-2G24-S45



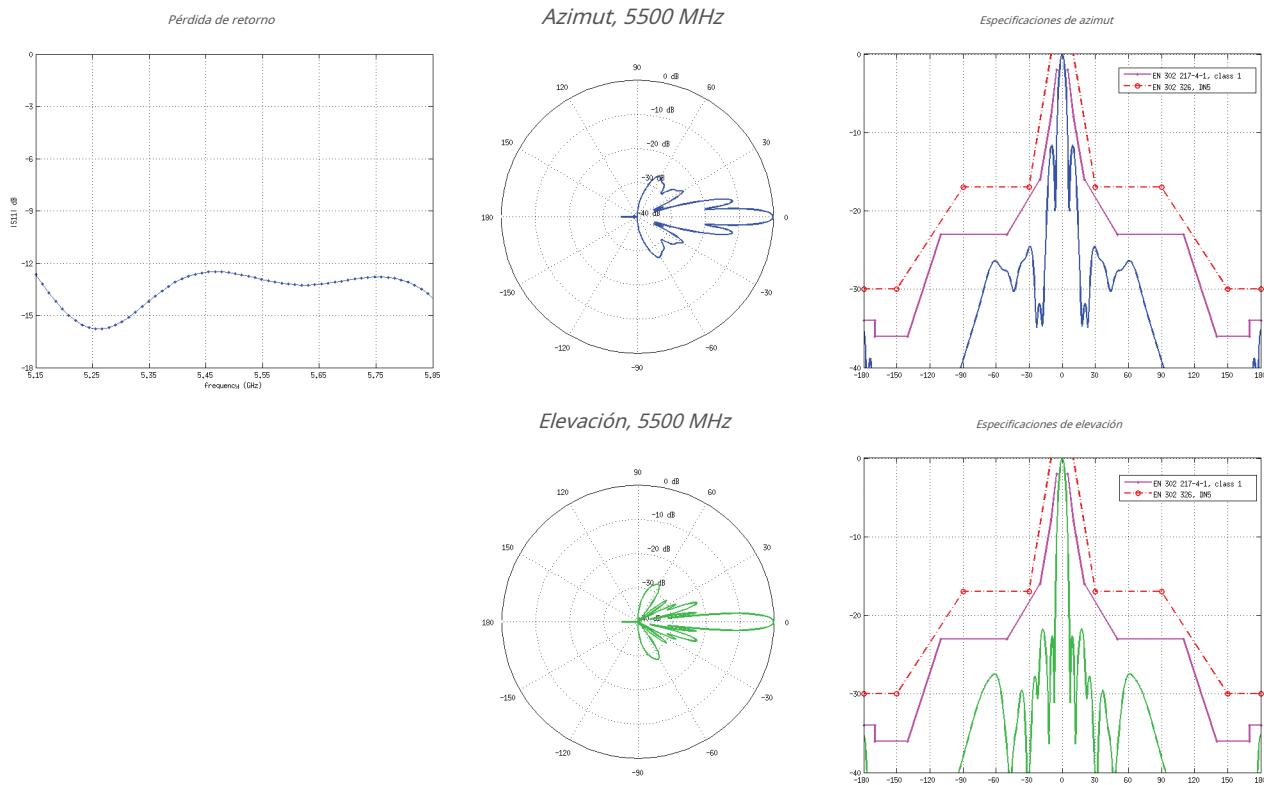
Información de la antena AF-3G26-S45



Información de la antena AF-5G23-S45

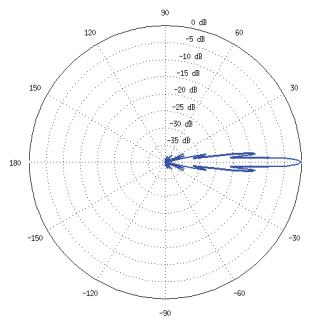


Información de la antena AF-5G30-S45

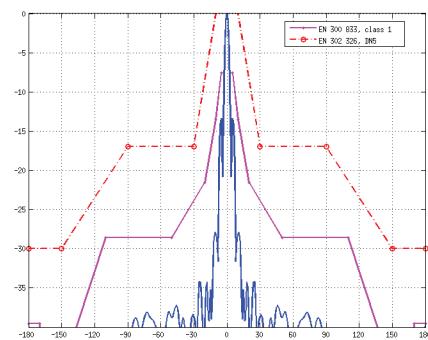


Información de la antena AF-5G34-S45

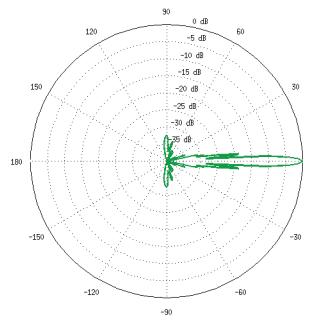
Azimut, 5500 MHz



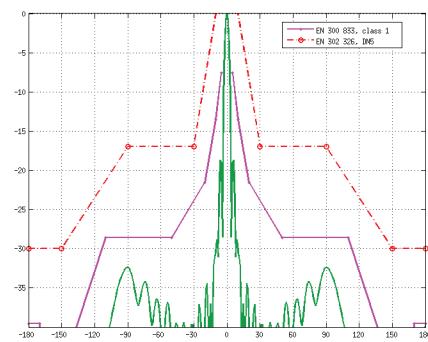
Especificaciones de azimut



Elevación, 5500 MHz



Especificaciones de elevación



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Datasheet



Comet Series

Part No:
MA322.A.001

Description

Comet 2-in-1 - 2*5G/4G MIMO Adhesive/Magnetic Mount Puck Antenna

Features:

- Low-profile Housing with Adhesive/Magnetic Mount
- 2* 5G/4G MIMO 600-6000MHz
- Worldwide 5G Bands including legacy 4G 3G and 2G bands
- IP67 Waterproof Enclosure
- Dimensions: Diameter 80mm * 18.1mm
- 2m Low Loss TGC-1.5DS cable with SMA(M) connectors
- Custom Cables and Connectors Available
- RoHS & Reach Compliant

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QUALITY MANAGEMENT SYSTEM
IATF16949

1. Introduction



The Taoglas Comet MA322 is a low profile, puck style, adhesive/magnetic mount antenna. The MA322 contains two 5G/4G high performance antennas for use in MIMO cellular systems. Through innovative antenna design techniques, it covers all worldwide cellular frequencies from 600MHz to 6GHz, with stable gain and high efficiency, normally difficult to achieve in smaller antennas.

The Comet series has been designed to be compact and low profile, measuring just 80x18mm, to be utilized in application areas where other larger and taller antennas are not appropriate. The Comet has been designed with an option for either magnetic or adhesive mounting. This allows it to be utilized and installed in applications where destructive installations are not allowed, such as drilling mounting holes to secure a permanent antenna on leased vehicles.

Typical Applications Include:

- Telematics
- Gateways and Routers
- Digital Signage
- First Responder and Emergency Services

The robust ASA magnetic mount enclosure is designed to be waterproof rated to IP67 and can be mounted internally or externally on devices or vehicles. The Comet comes with a separate 3M foam high-performance pad for adhesive mount application. Both MIMO 1 and 2 connections utilize 2m TGC-1.5DS coaxial cable with SMA(M) connectors as standard. Customized cable and connector versions are also available.

Contact your regional Taoglas customer support team for further information.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5G NR Band 71	617-698	FS LTE 1	25.0	-6.0	1.1	50 Ω	Linear	Omni	2W
		FS LTE 2	25.0	-6.0	1.1				
LTE700	698-824	FS LTE 1	42.7	-3.7	2.0	50 Ω	Linear	Omni	2W
		FS LTE 2	45.0	-3.5	1.7				
GSM800/900	824-960	FS LTE 1	53.3	-2.7	2.2	50 Ω	Linear	Omni	2W
		FS LTE 2	56.1	-2.5	2.1				
5G NR Band 1500	1427-1518	FS LTE 1	20.6	-6.9	-0.5	50 Ω	Linear	Omni	2W
		FS LTE 2	22.0	-6.6	-0.4				
5G NR N66	1710-2200	FS LTE 1	55.4	-2.6	4.6	50 Ω	Linear	Omni	2W
		FS LTE 2	54.7	-2.6	4.5				
LTE2600	2300-2690	FS LTE 1	55.8	-2.5	2.3	50 Ω	Linear	Omni	2W
		FS LTE 2	56.6	-2.5	4.2				
5G NR N77	3300-4200	FS LTE 1	46.1	-3.4	2.4	50 Ω	Linear	Omni	2W
		FS LTE 2	46.8	-3.3	2.0				
5G NR N78	3300-3800	FS LTE 1	48.9	-3.1	1.8	50 Ω	Linear	Omni	2W
		FS LTE 2	49.3	-3.1	1.5				
5G NR N79	4400-5000	FS LTE 1	59.9	-2.2	4.0	50 Ω	Linear	Omni	2W
		FS LTE 2	60.3	-2.2	3.6				
LTE5200	5150-5925	FS LTE 1	60.4	-2.2	4.5	50 Ω	Linear	Omni	2W
		FS LTE 2	64.7	-1.9	4.6				

5G/4G Bands				
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
	Uplink	Downlink	FS LTE 1	FS LTE 2
B1	1920 to 1980	2110 to 2170	✓	✓
B2	1850 to 1910	1930 to 1990	✓	✓
B3	1710 to 1785	1805 to 1880	✓	✓
B4	1710 to 1755	2110 to 2155	✓	✓
B5	824 to 849	869 to 894	✓	✓
B7	2500 to 2570	2620 to 2690	✓	✓
B8	880 to 915	925 to 960	✓	✓
B9*	1749.9 to 1784.9	1844.9 to 1879.9	✓	✓
B11	1427.9 to 1447.9	1475.9 to 1495.9	✓	✓
B12	699 to 716	729 to 746	✓	✓
B13	777 to 787	746 to 756	✓	✓
B14	788 to 798	758 to 768	✓	✓
B17	704 to 716	734 to 746	✓	✓
B18	815 to 830	860 to 875	✓	✓
B19	830 to 845	875 to 890	✓	✓
B20	832 to 862	791 to 821	✓	✓
B21	1447.9 to 1462.9	1495.9 to 1510.9	✓	✓
B22*	3410 to 3490	3510 to 3590	✓	✓
B23*	2000 to 2020	2180 to 2200	✓	✓
B24	1626.5 to 1660.5	1525 to 1559	✓	✓
B25	1850 to 1915	1930 to 1995	✓	✓
B26	814 to 849	859 to 894	✓	✓
B27*	807 to 824	852 to 869	✓	✓
B28	703 to 748	758 to 803	✓	✓
B29	717 to 728		✓	✓
B30	2305 to 2315	2350 to 2360	✓	✓
B31	452.5 to 457.5	462.5 to 467.5	✗	✗
B32	1452 to 1496		✓	✓
B34	2010 to 2025		✓	✓
B35	1850 to 1910		✓	✓
B36	1930 to 1990		✓	✓
B37	1910 to 1930		✓	✓
B38	2570 to 2620		✓	✓
B39	1880 to 1920		✓	✓
B40	2300 to 2400		✓	✓
B41	2496 to 2690		✓	✓
B42	3400 to 3600		✓	✓
B43	3600 to 3800		✓	✓
B45	1447 to 1467		✓	✓
B46	5150 to 5925		✓	✓
B47	5855 to 5925		✓	✓
B48	3550 to 3700		✓	✓
B49	3550 to 3700		✓	✓
B50	1432 to 1517		✓	✓
B51	1427 to 1432		✗	✗
B52	3300 to 3400		✓	✓
B53	2483.5 to 2495		✓	✓
B65	1920 to 2010	2110 to 2200	✓	✓
B66	1710 to 1780	2110 to 2200	✓	✓
B68	698 to 728	753 to 783	✓	✓
B69	2570 to 2620		✓	✓
B70	1695 to 1710	1995 to 2020	✓	✓
B71	663 to 698	617 to 652	✓	✓
B72	451 to 456	461 to 466	✗	✗
B73	450 to 455	460 to 465	✗	✗
B74	1427 to 1470	1475 to 1518	✓	✓

5G/4G Bands				
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
B75	1432 to 1517		✓	✓
B76	1427 to 1432		✓	✓
B77	3300 to 4200		✓	✓
B78	3300 to 3800		✓	✓
B79	4400 to 5000		✓	✓
B85	698 to 716	728 to 746	✓	✓
B87	410 to 415	420 to 425	✗	✗
B88	412 to 417	422 to 427	✗	✗

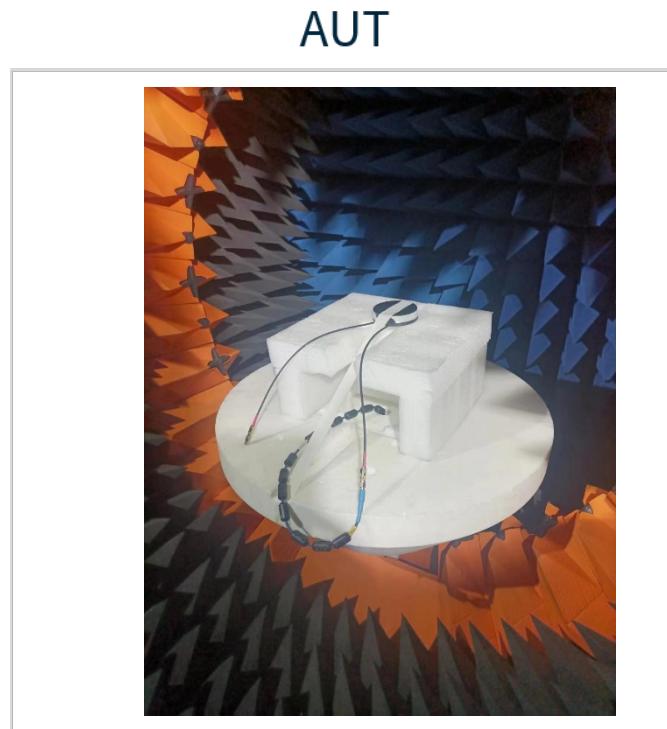
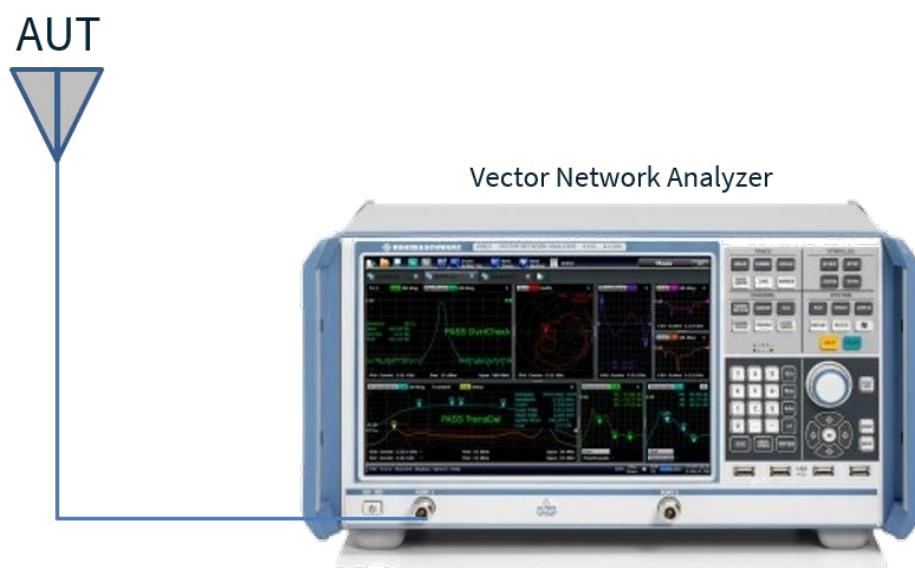
Mechanical	
Dimensions	Ø80mm x 18 mm
Weight	113g
Material	ASA
Connector	SMA(M)ST
Cable	2m TGC-1.5DS

Environmental	
Waterproof Rating	IP67
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH
RoHs Compliant	Yes

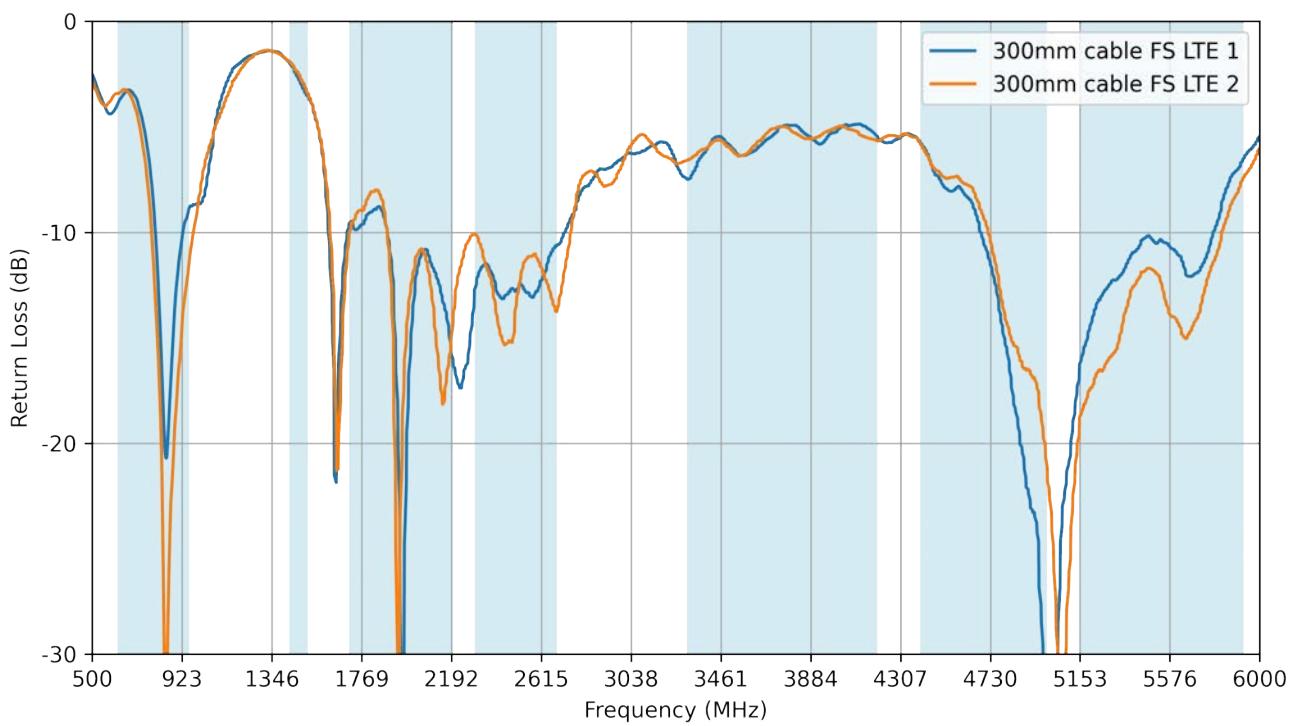
Note: The antenna was measured with 300mm 1.5DS cable in free space.

3. Antenna Characteristics

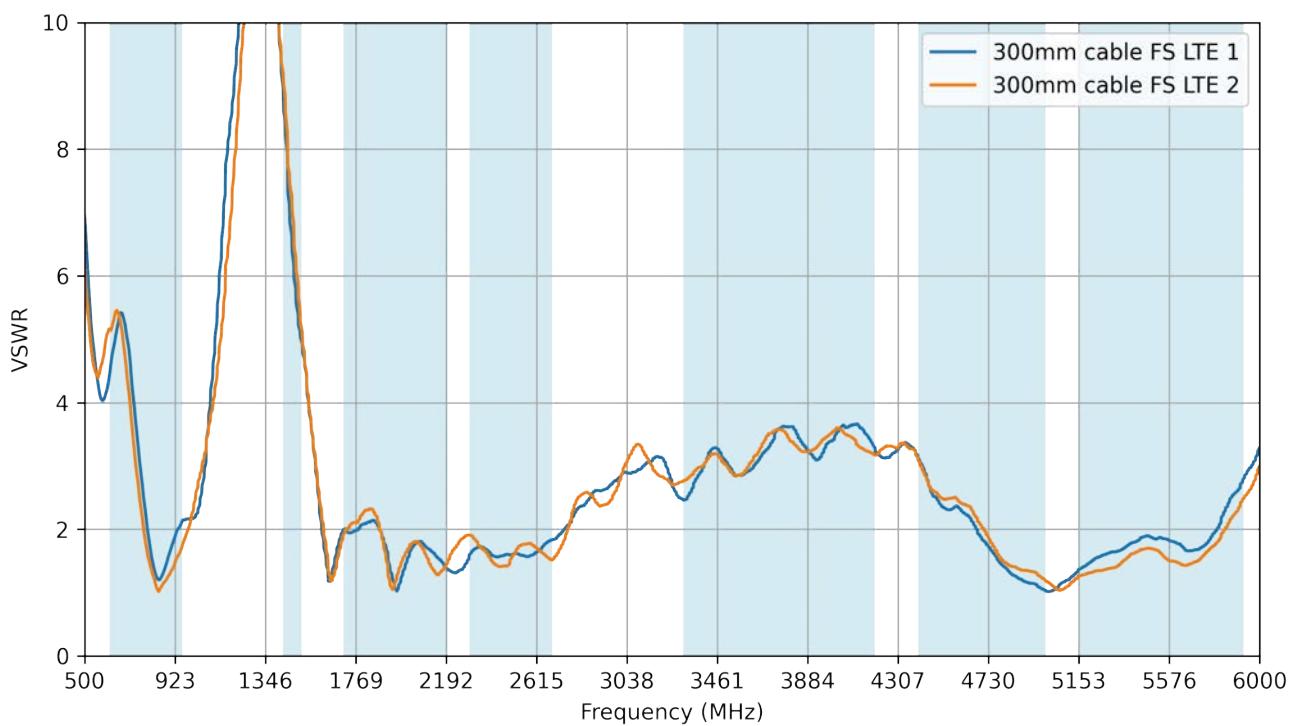
3.1 Test Setup



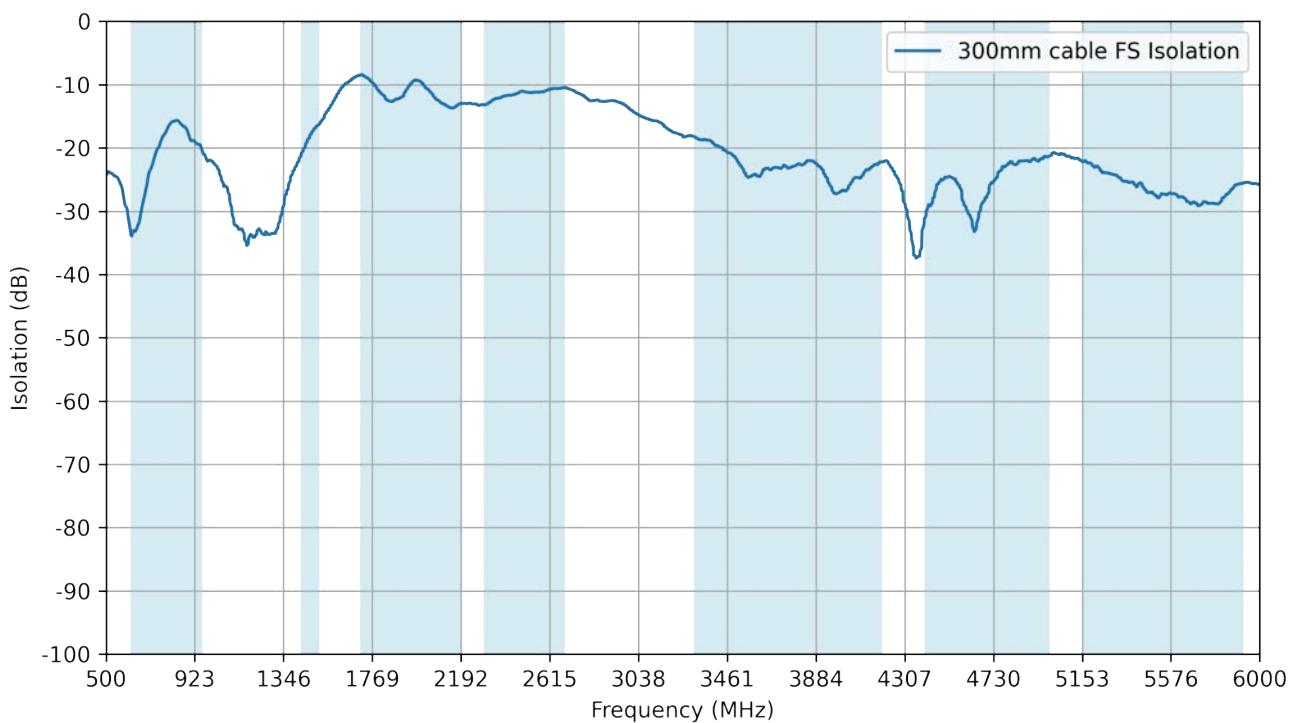
3.2 Return Loss



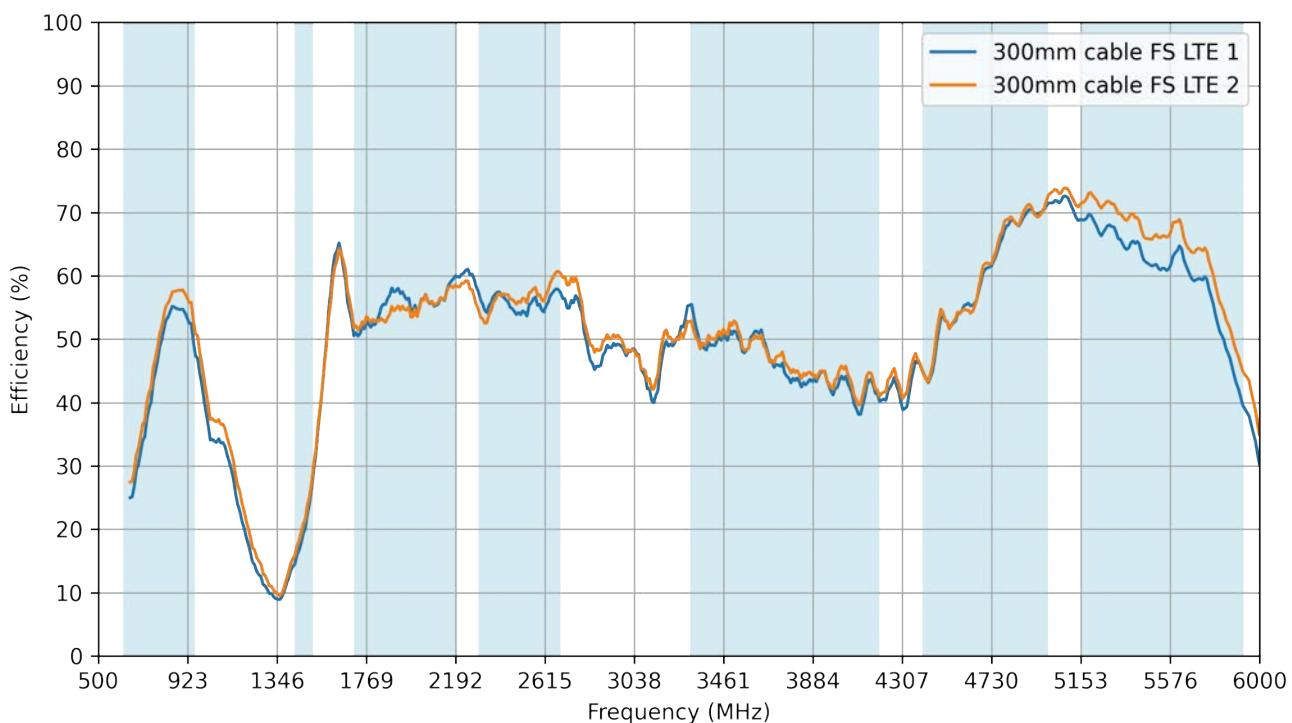
3.3 VSWR



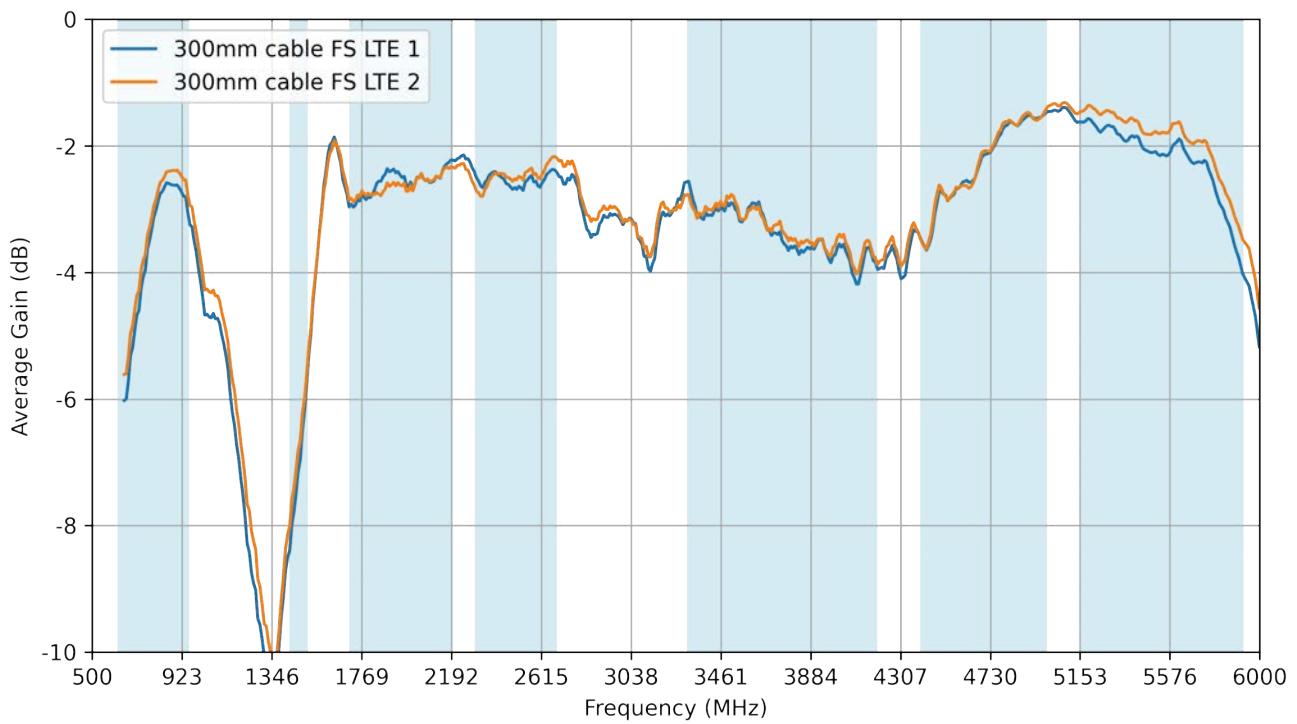
3.4 Isolation



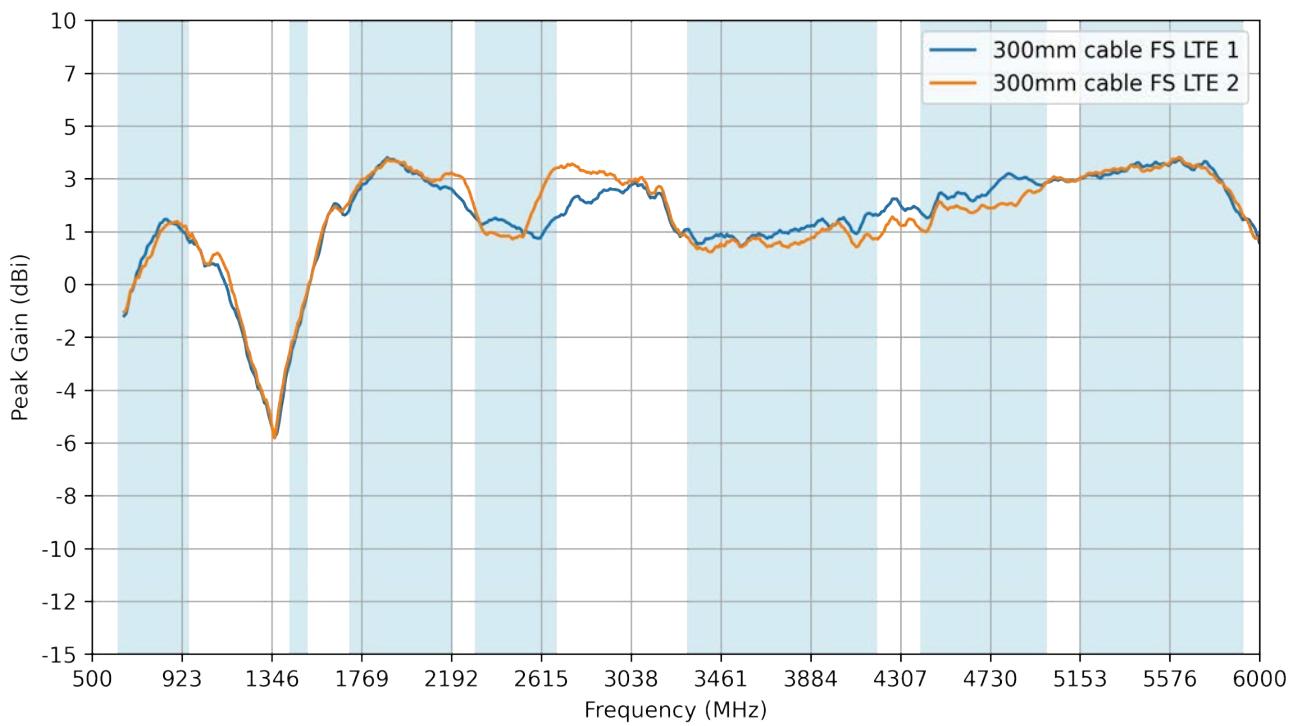
3.5 Efficiency



3.6 Average Gain

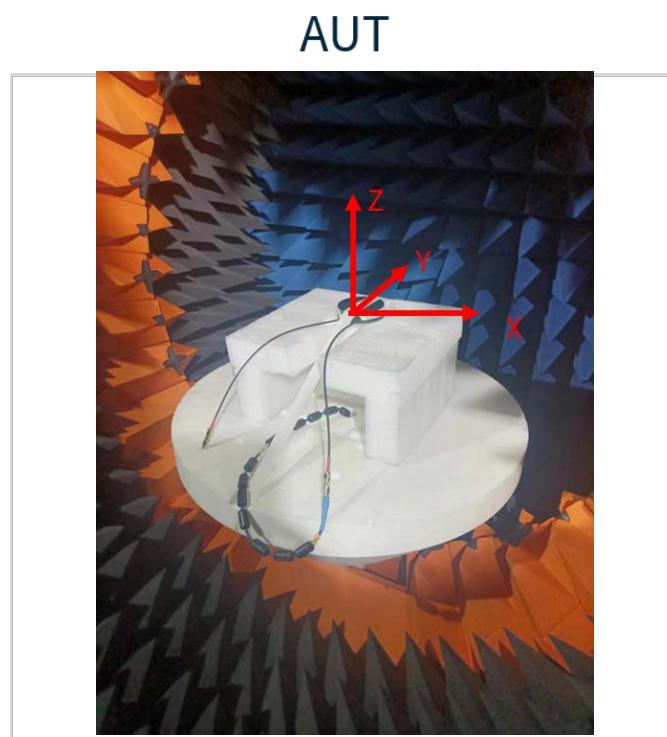
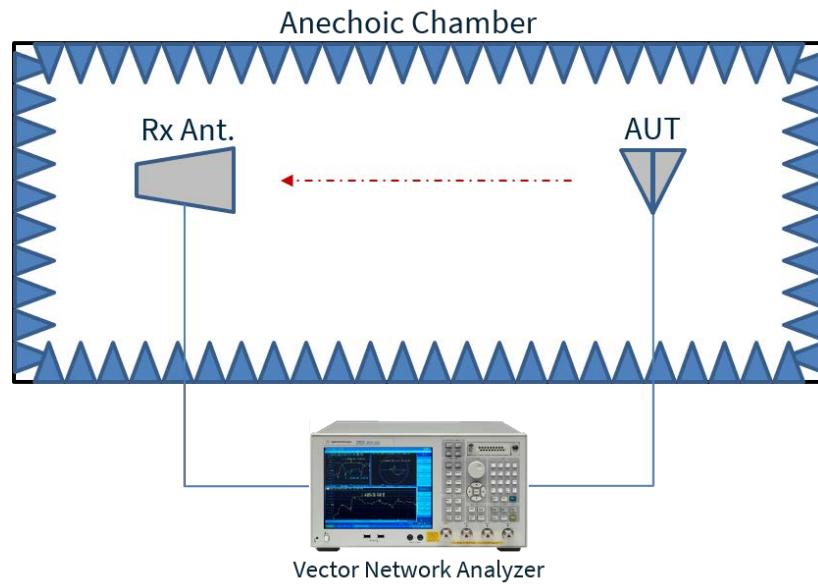


3.7 Peak Gain

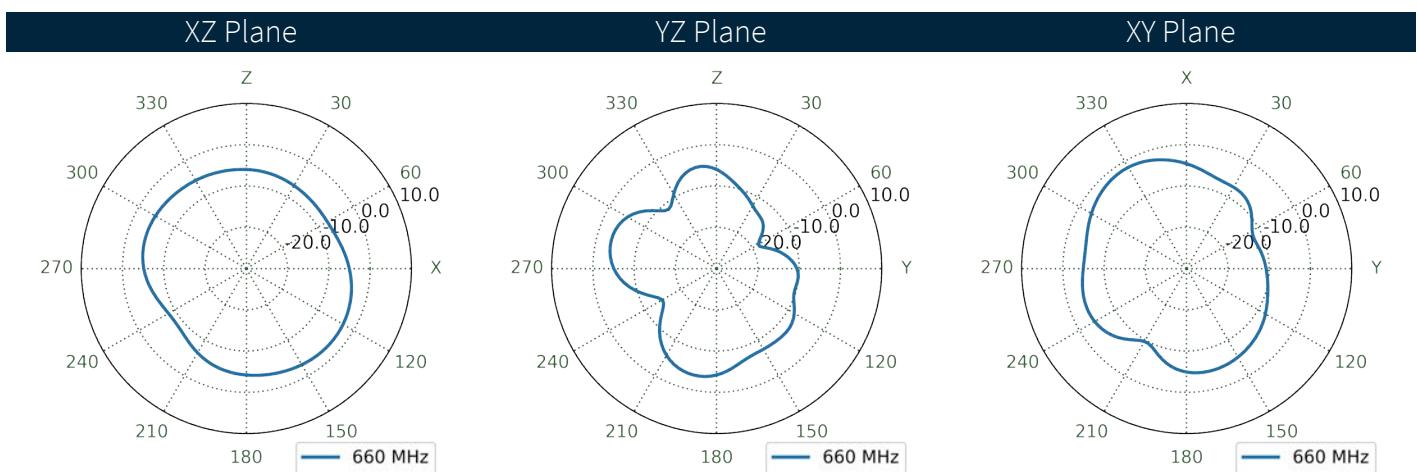
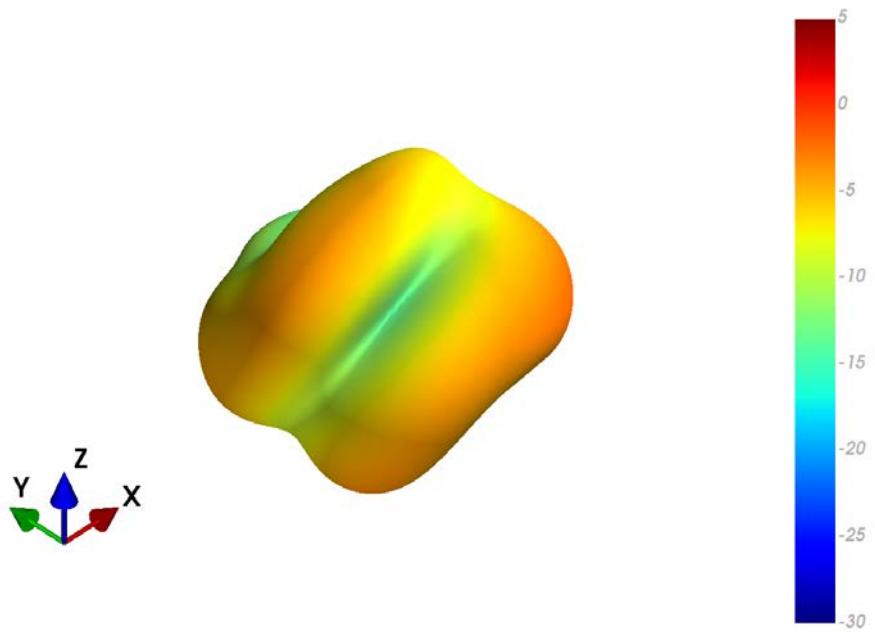


4. Radiation Patterns

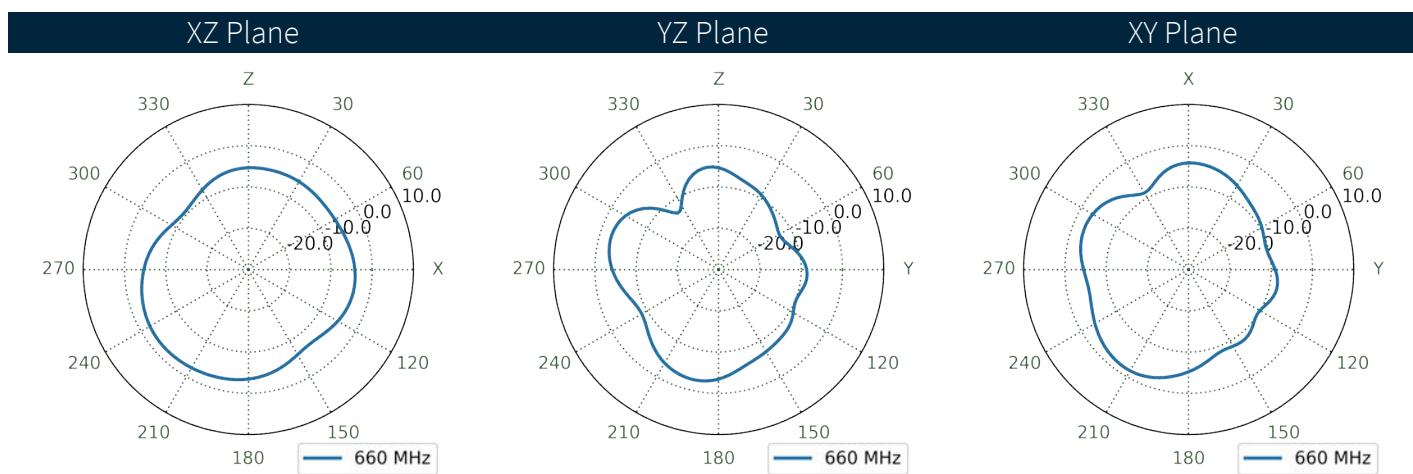
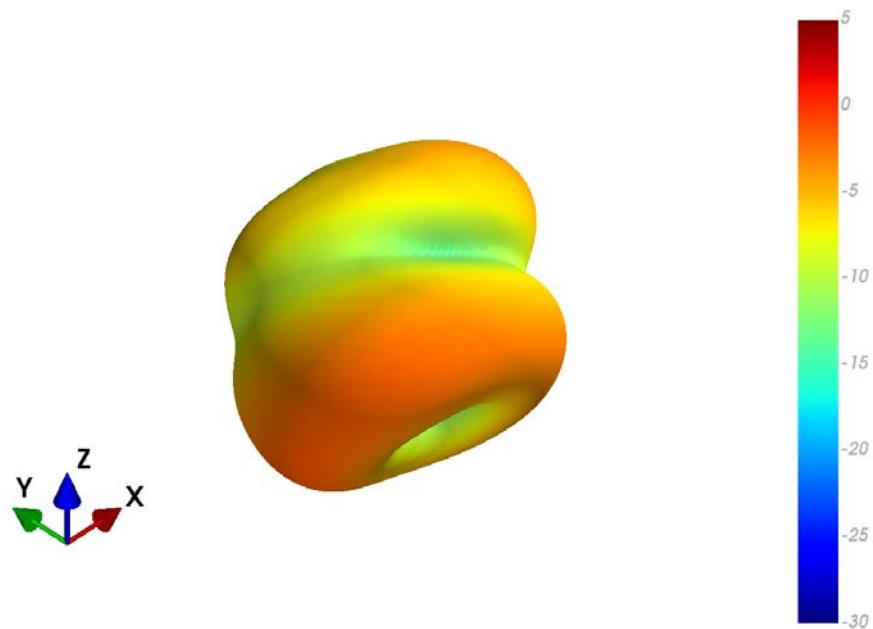
4.1 Test Setup



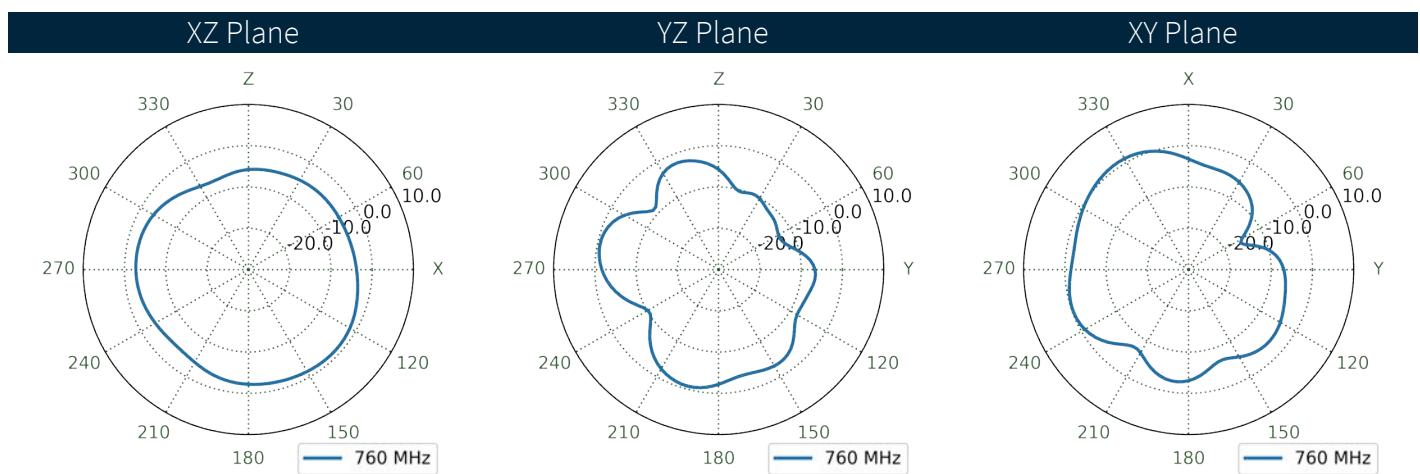
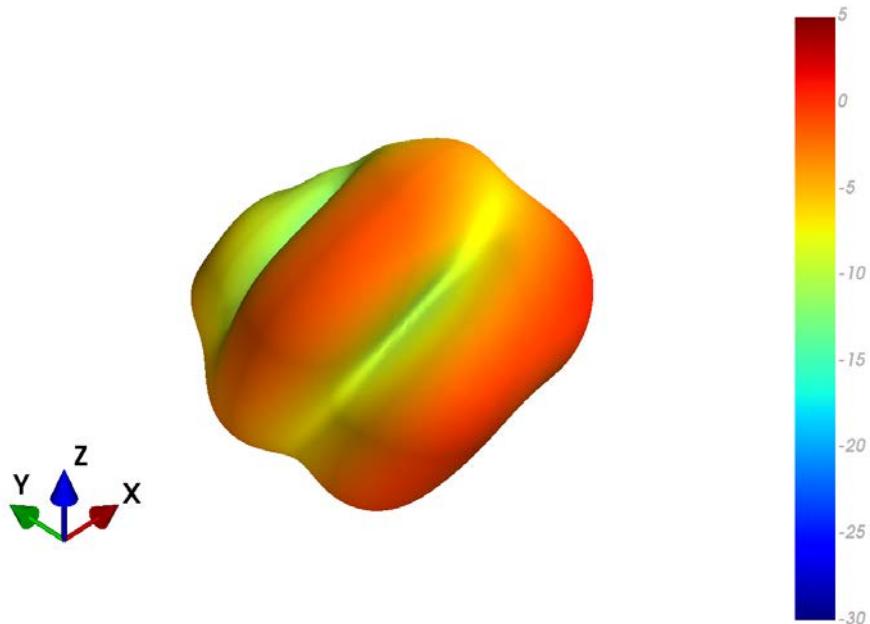
4.2 FS LTE 1 Patterns at 658 MHz for Gtotal



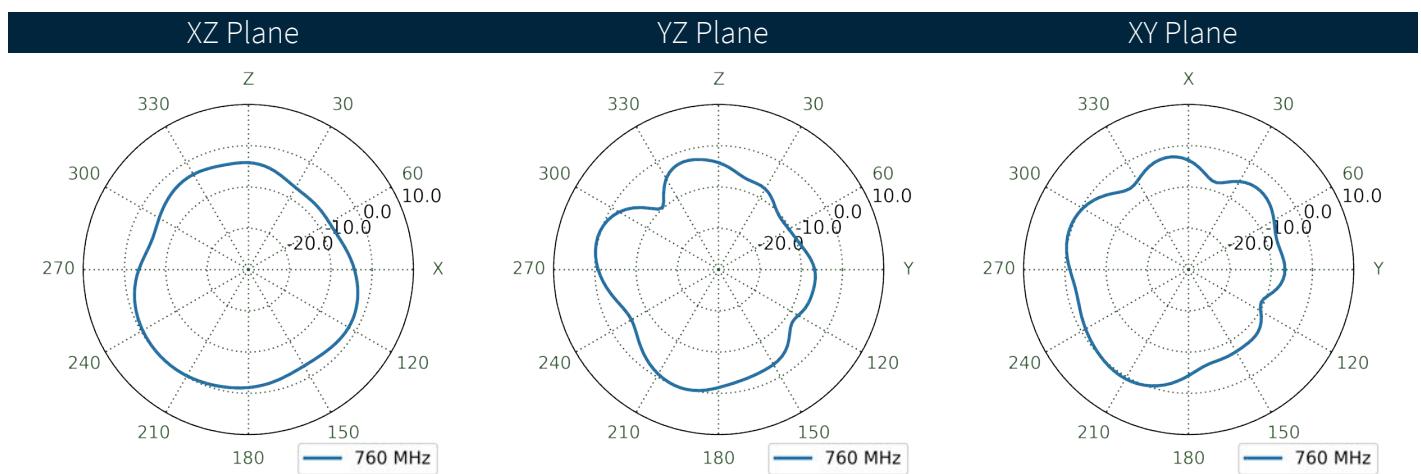
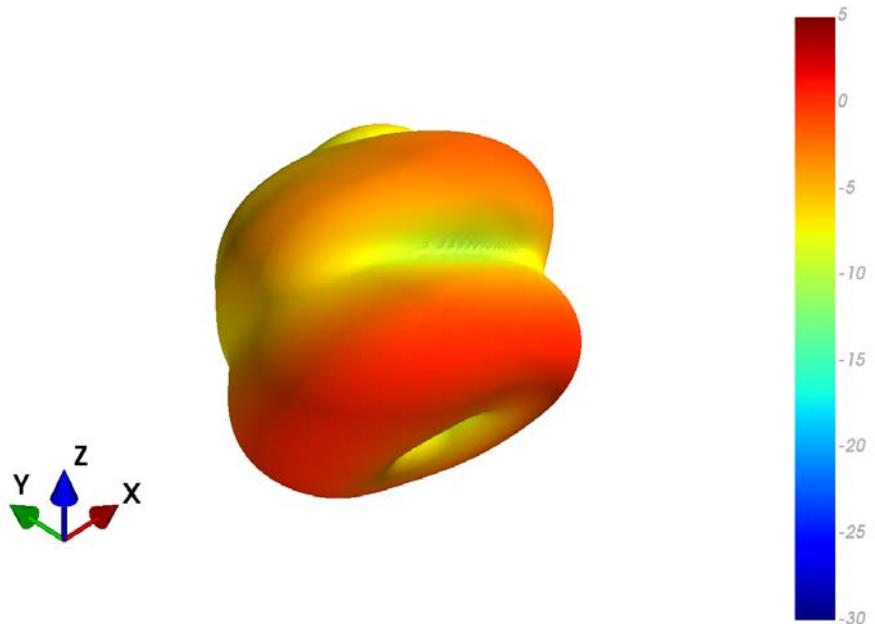
4.3 FS LTE 2 Patterns at 658 MHz for Gtotal



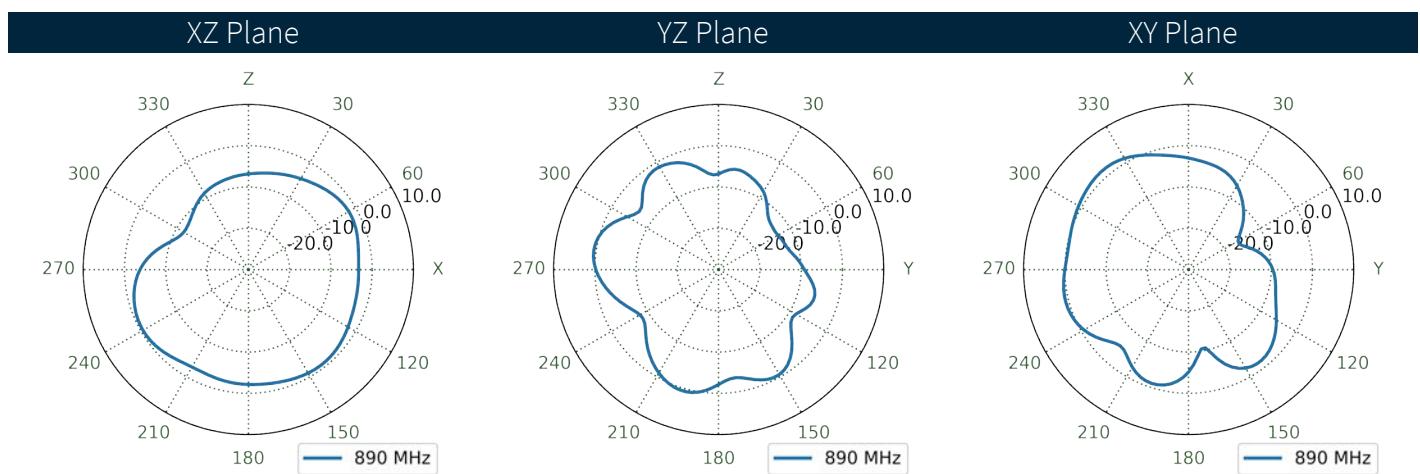
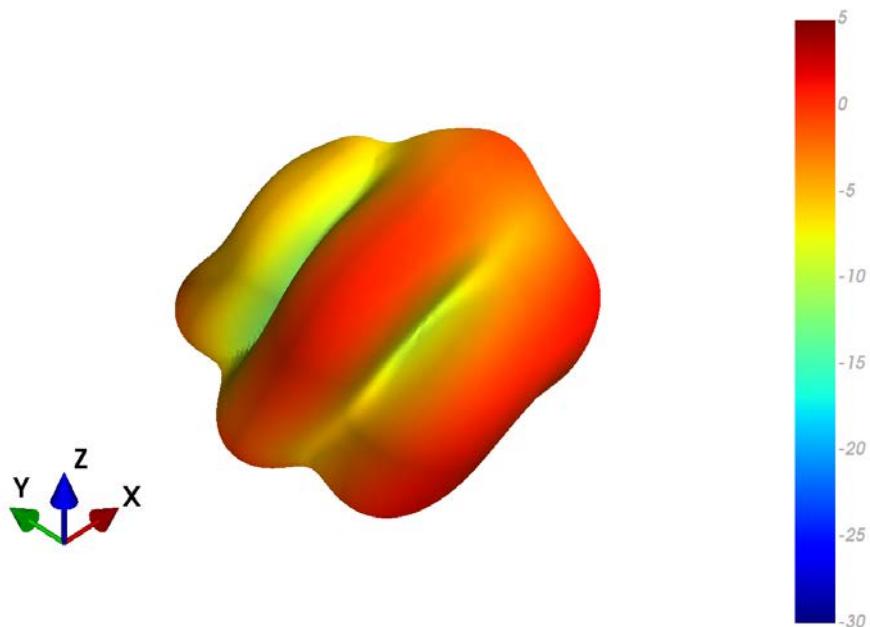
4.4 FS LTE 1 Patterns at 761 MHz for Gtotal



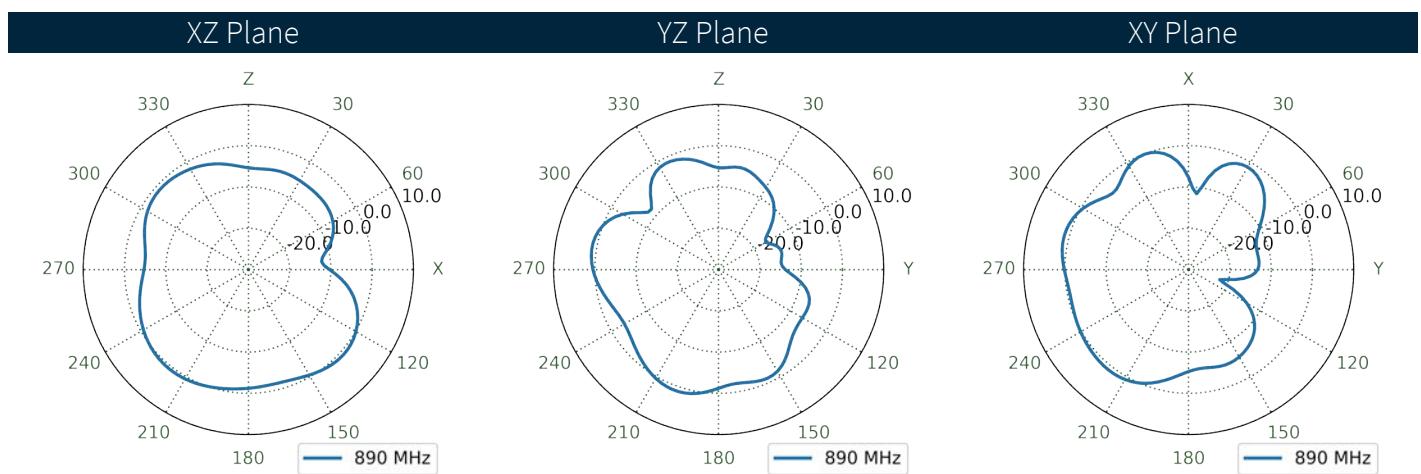
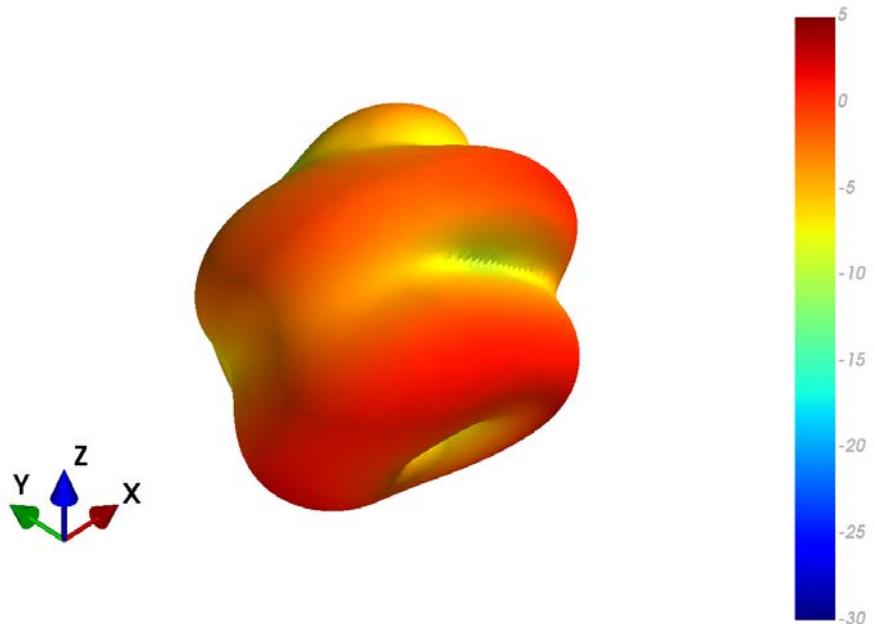
4.5 FS LTE 2 Patterns at 761 MHz for Gtotal



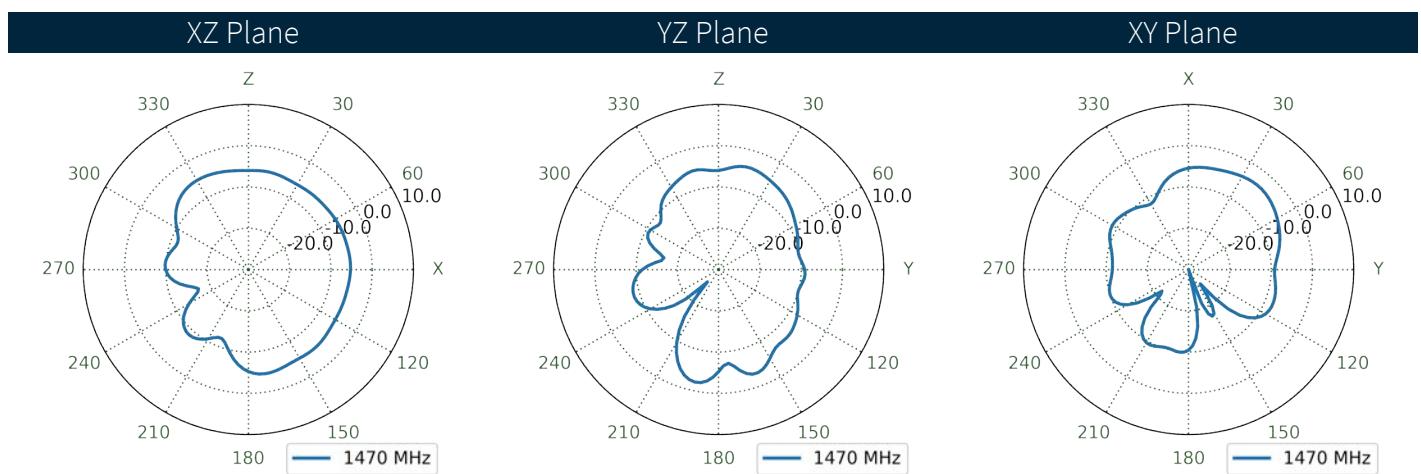
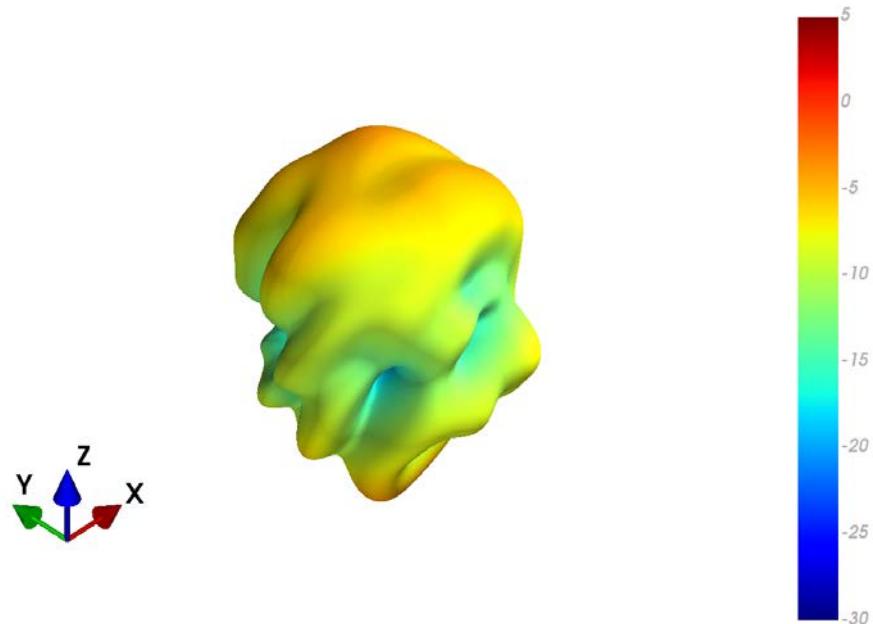
4.6 FS LTE 1 Patterns at 892 MHz for Gtotal



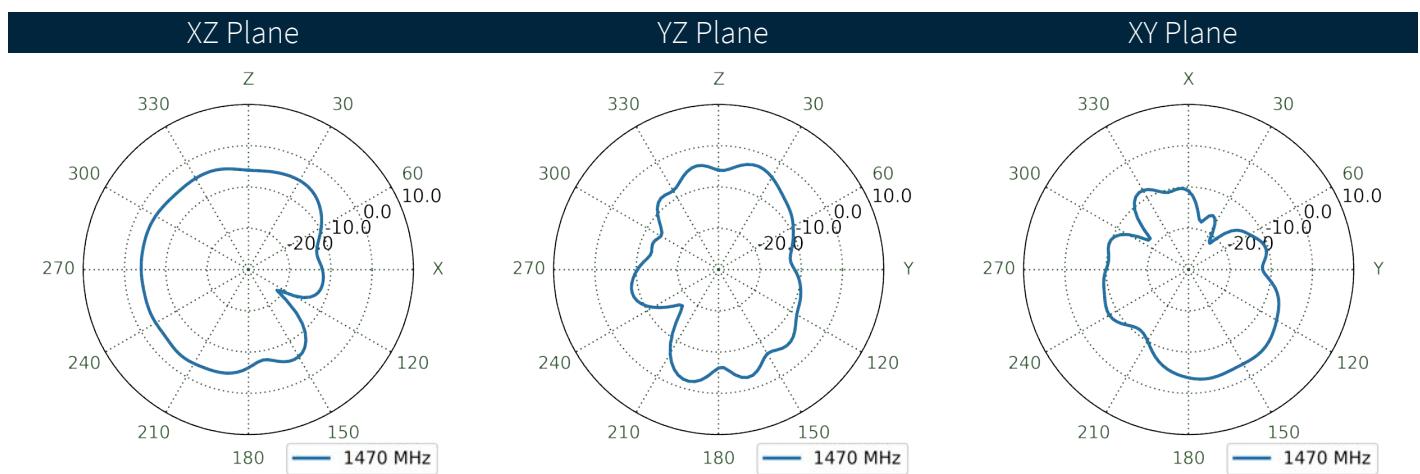
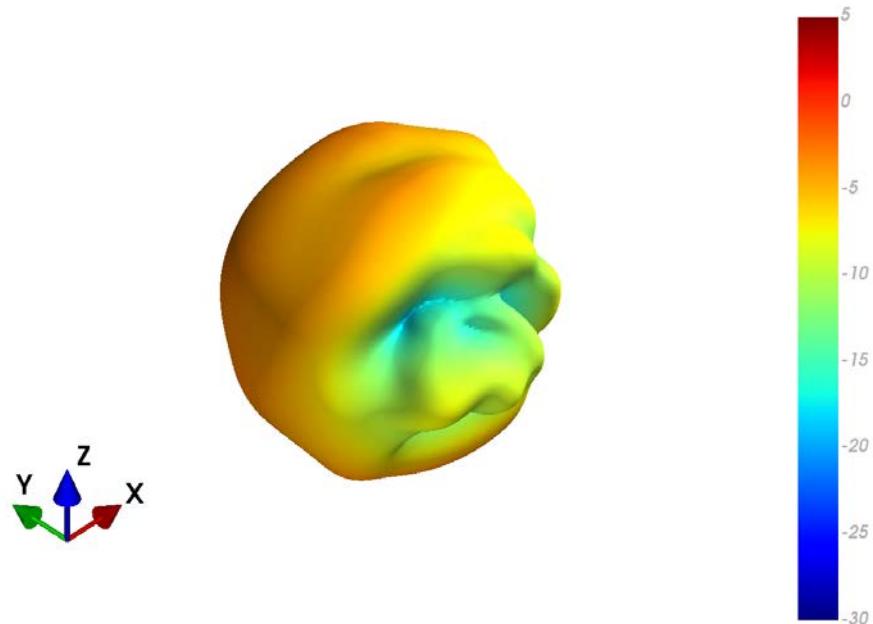
4.7 FS LTE 2 Patterns at 892 MHz for Gtotal



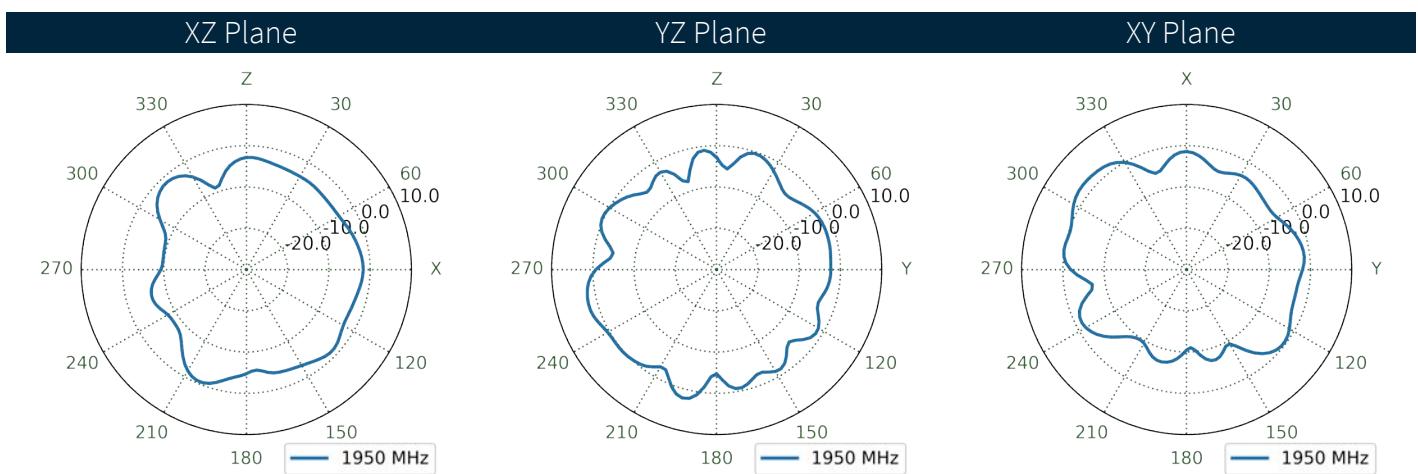
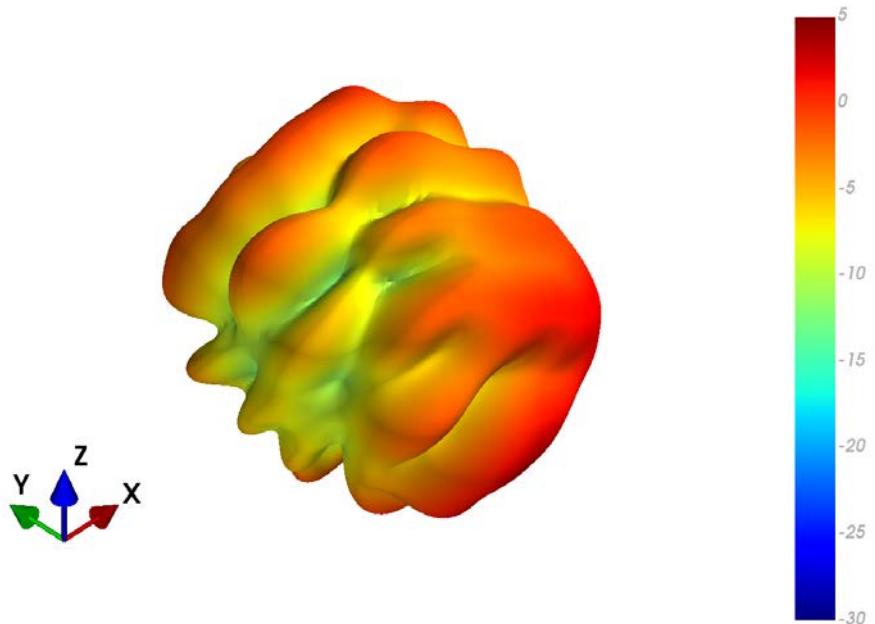
4.8 FS LTE 1 Patterns at 1473 MHz for Gtotal



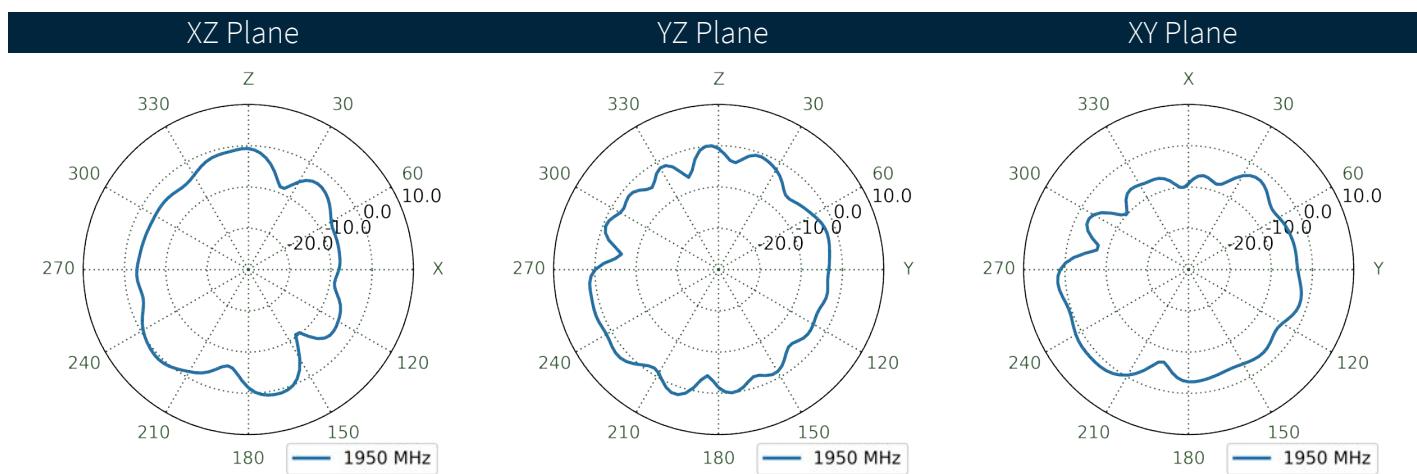
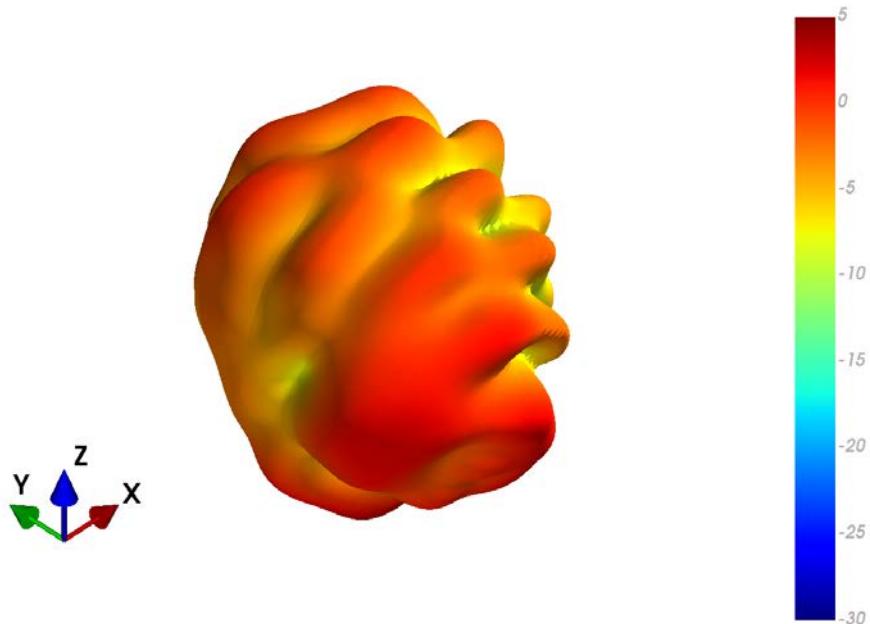
4.9 FS LTE 2 Patterns at 1473 MHz for Gtotal



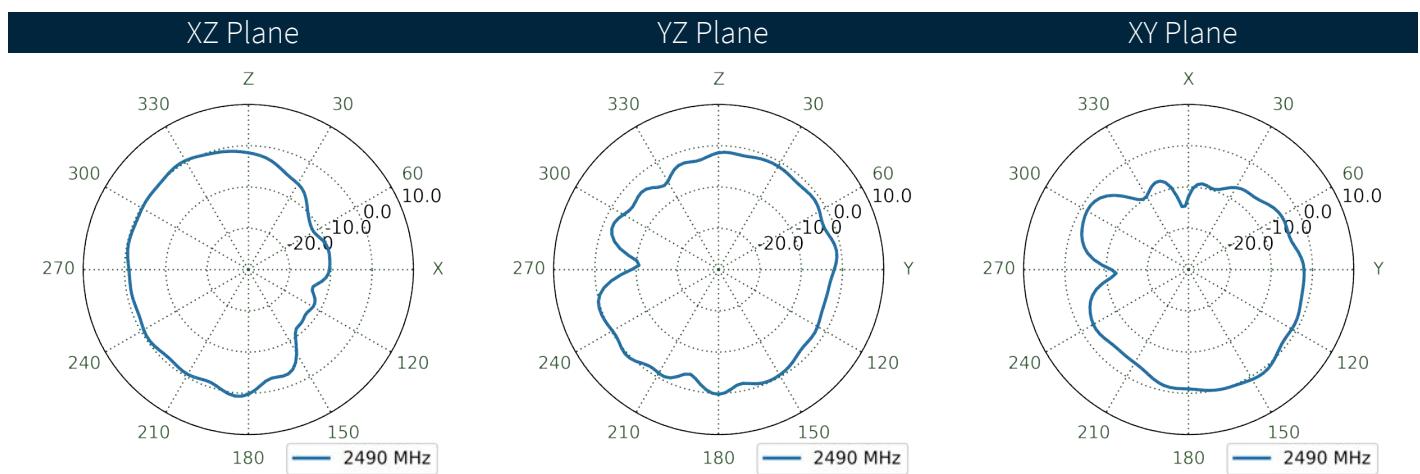
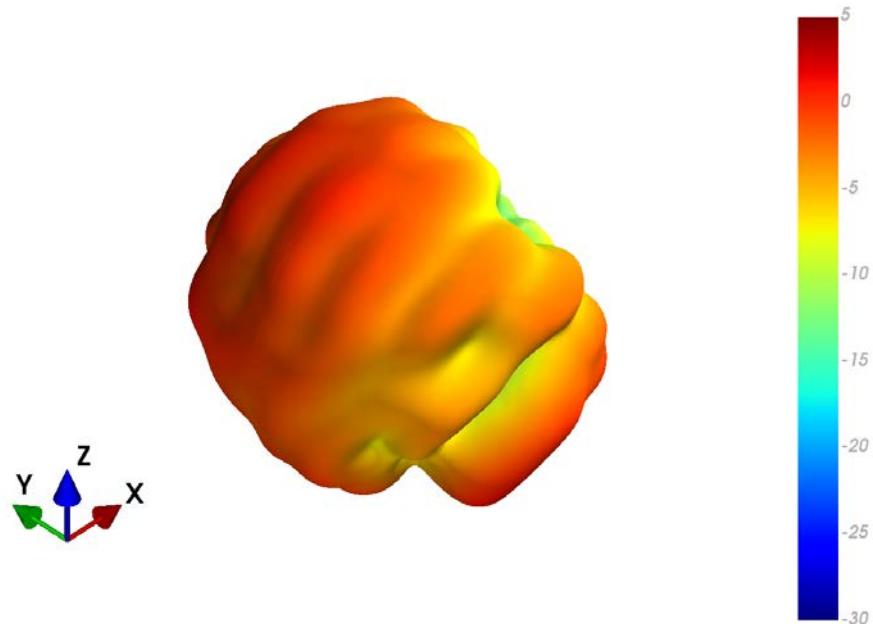
4.10 FS LTE 1 Patterns at 1955 MHz for Gtotal



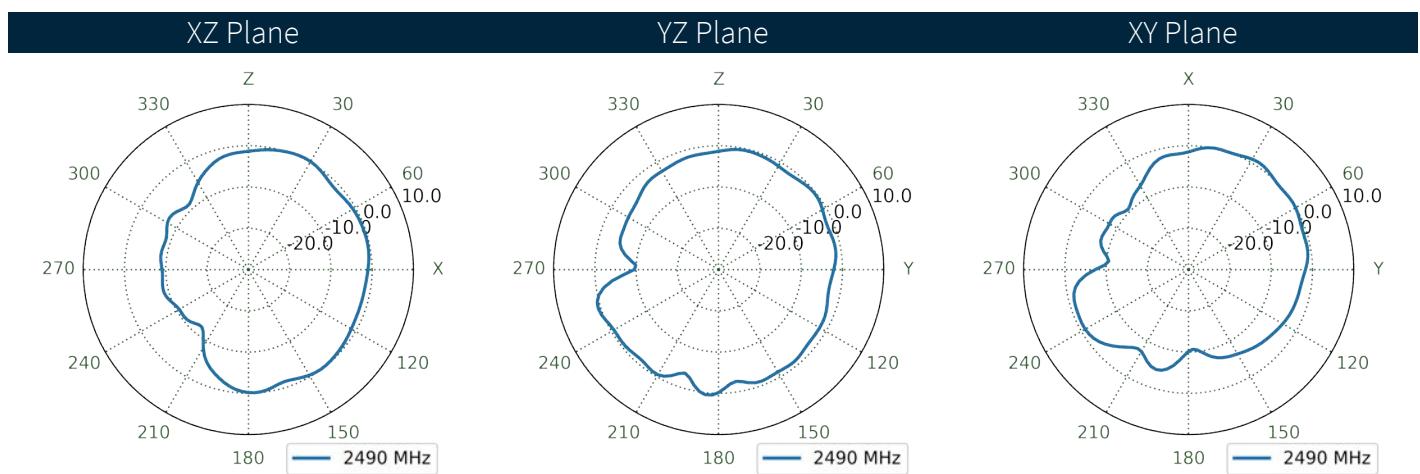
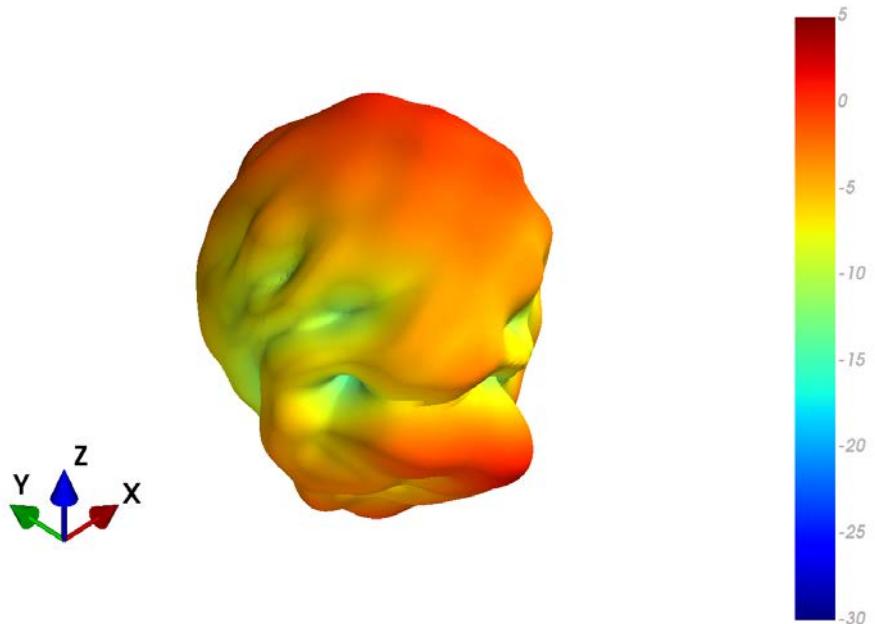
4.11 FS LTE 2 Patterns at 1955 MHz for Gtotal



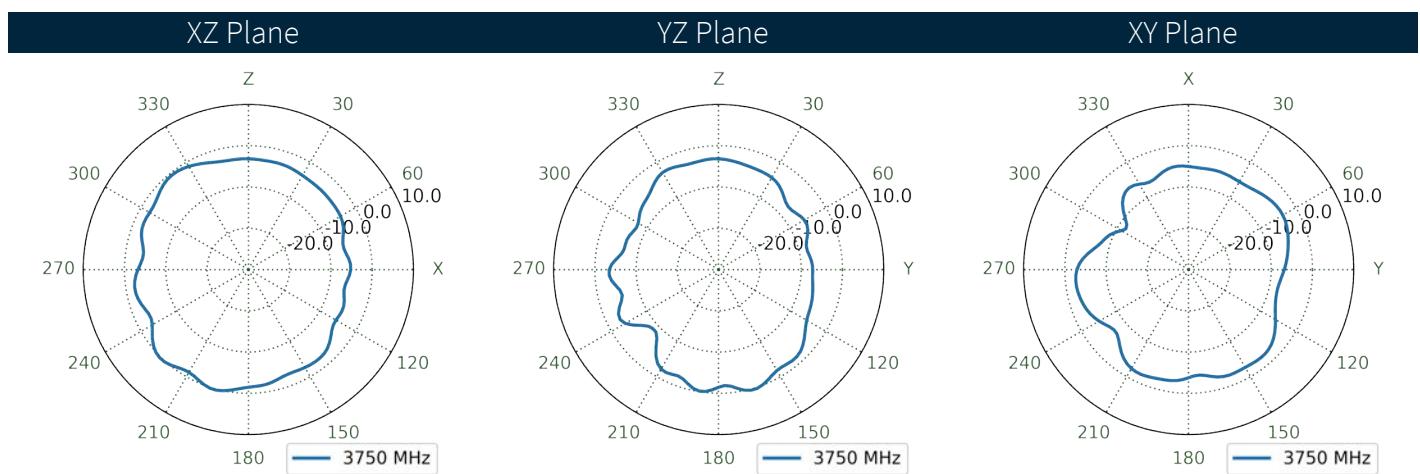
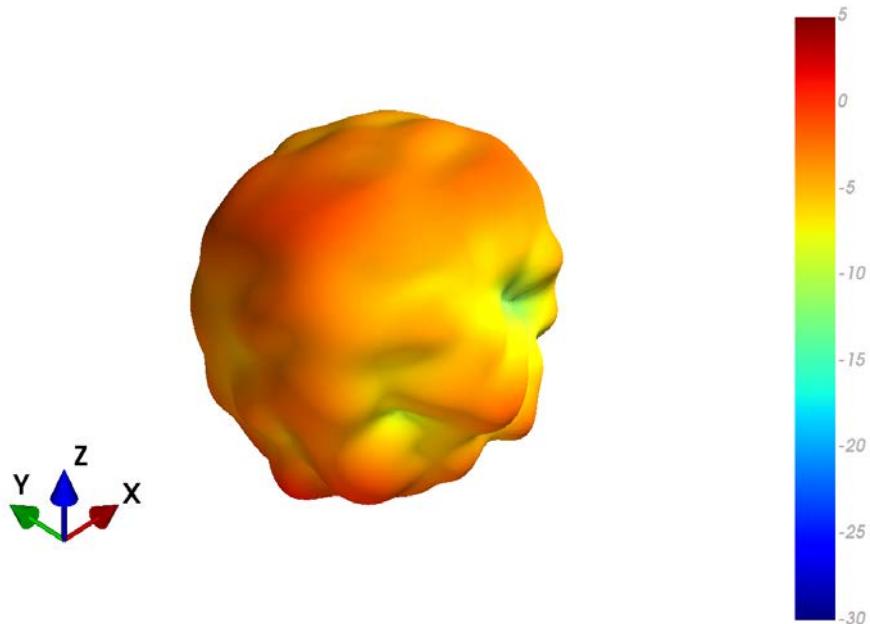
4.12 FS LTE 1 Patterns at 2495 MHz for Gtotal



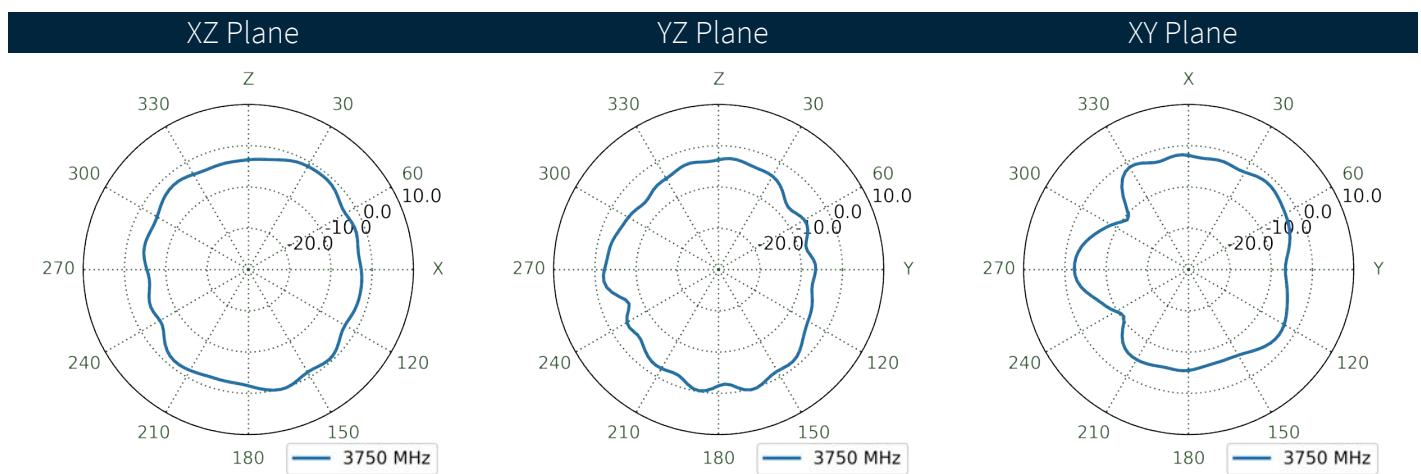
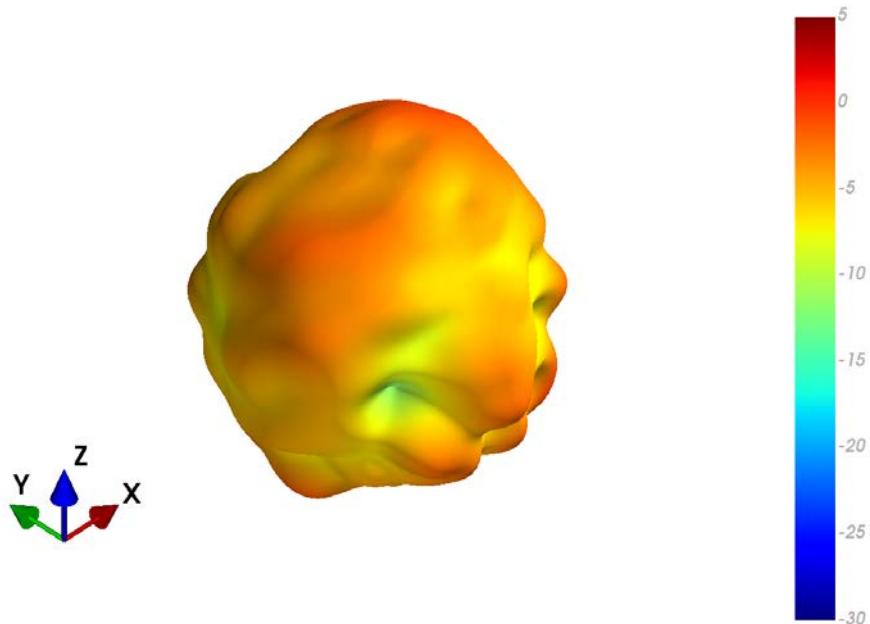
4.13 FS LTE 2 Patterns at 2495 MHz for Gtotal



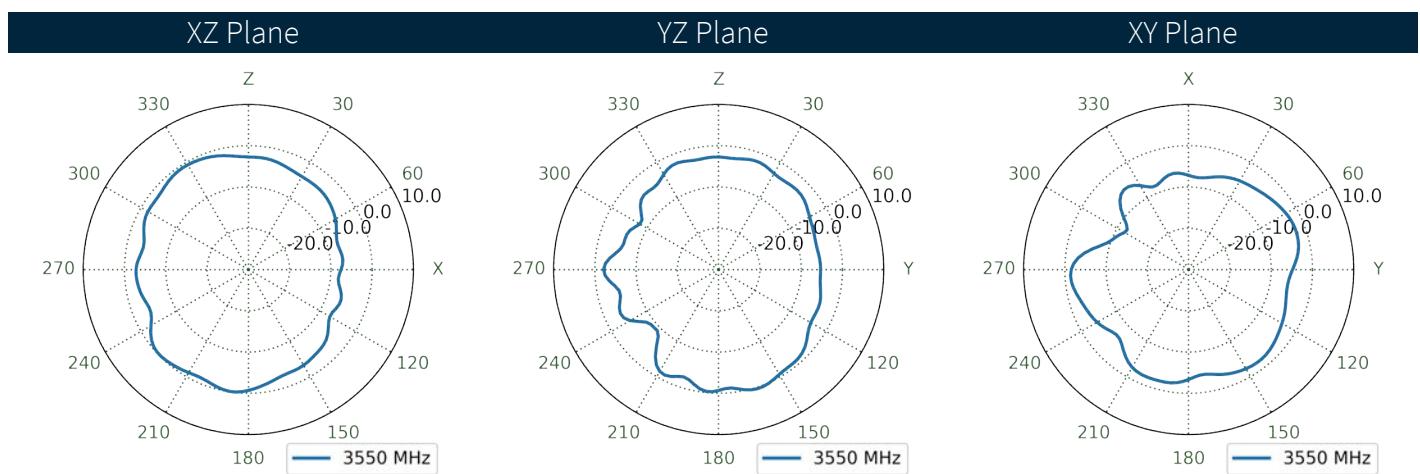
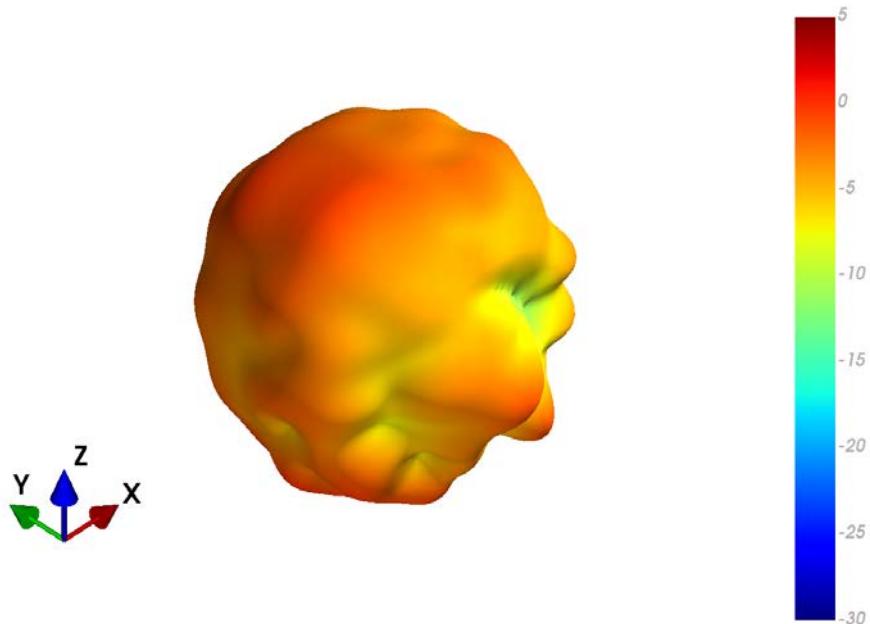
4.14 FS LTE 1 Patterns at 3750 MHz for Gtotal



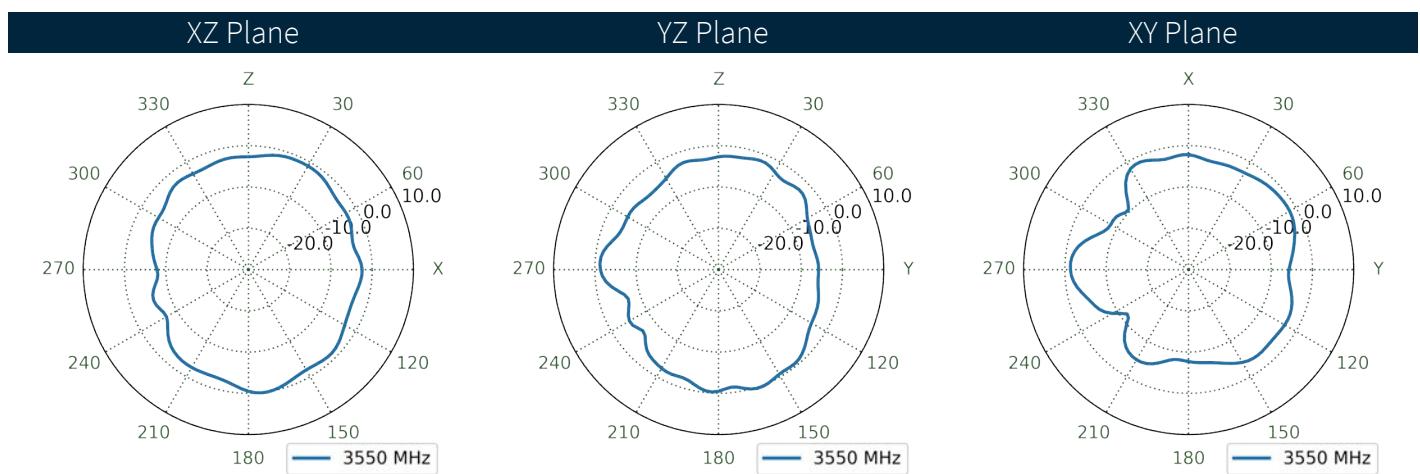
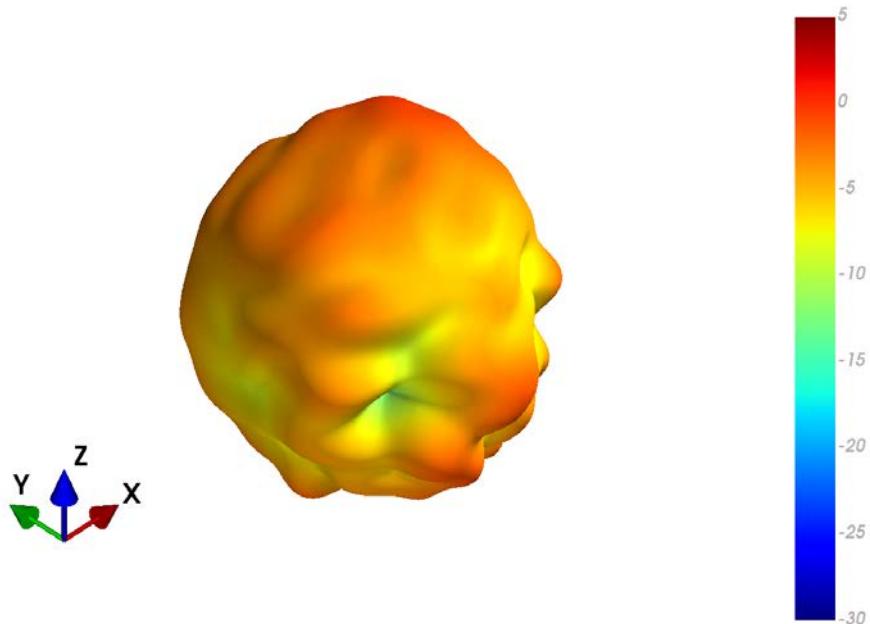
4.15 FS LTE 2 Patterns at 3750 MHz for Gtotal



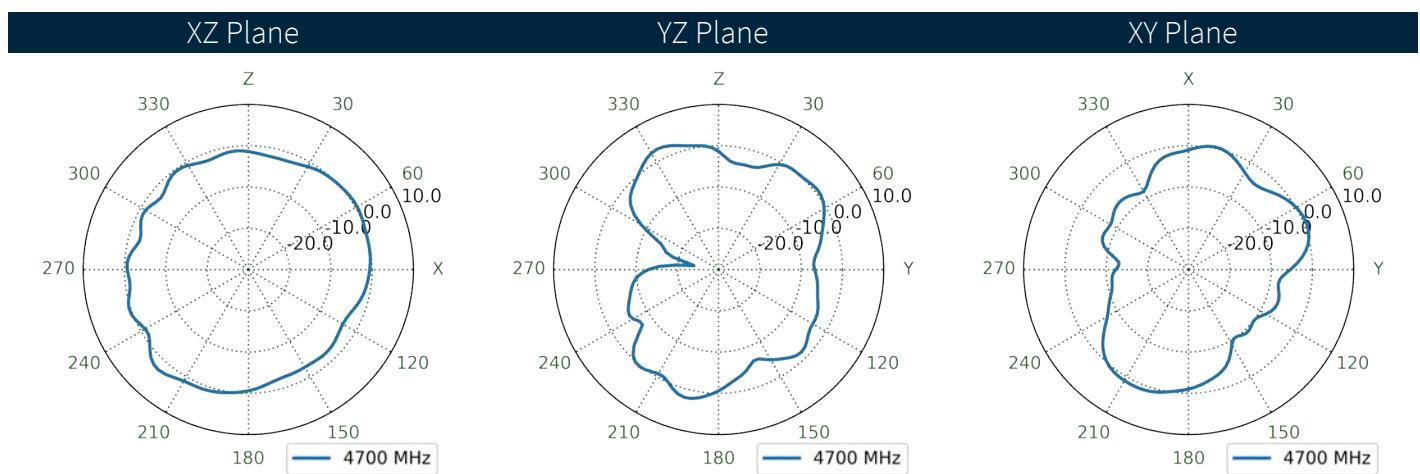
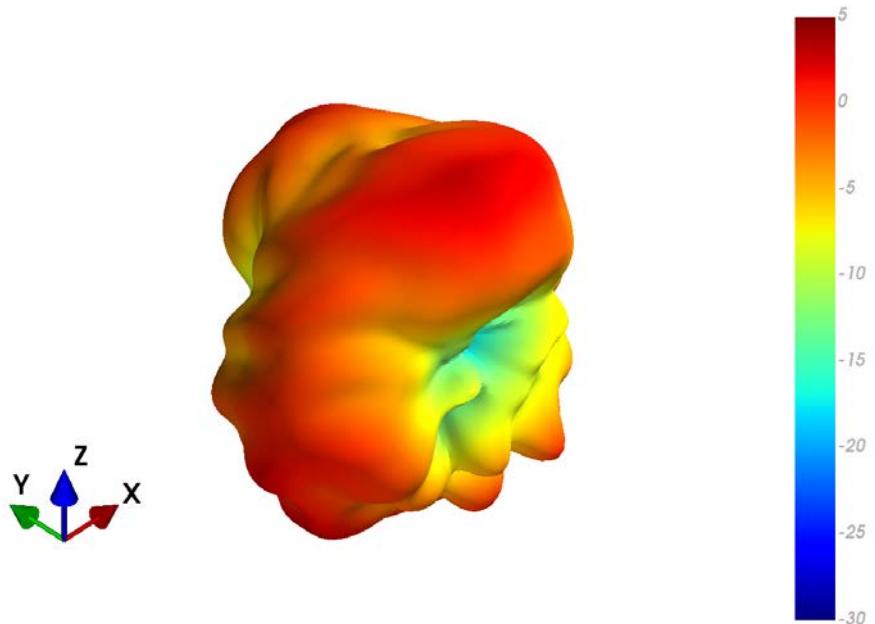
4.16 FS LTE 1 Patterns at 3550 MHz for Gtotal



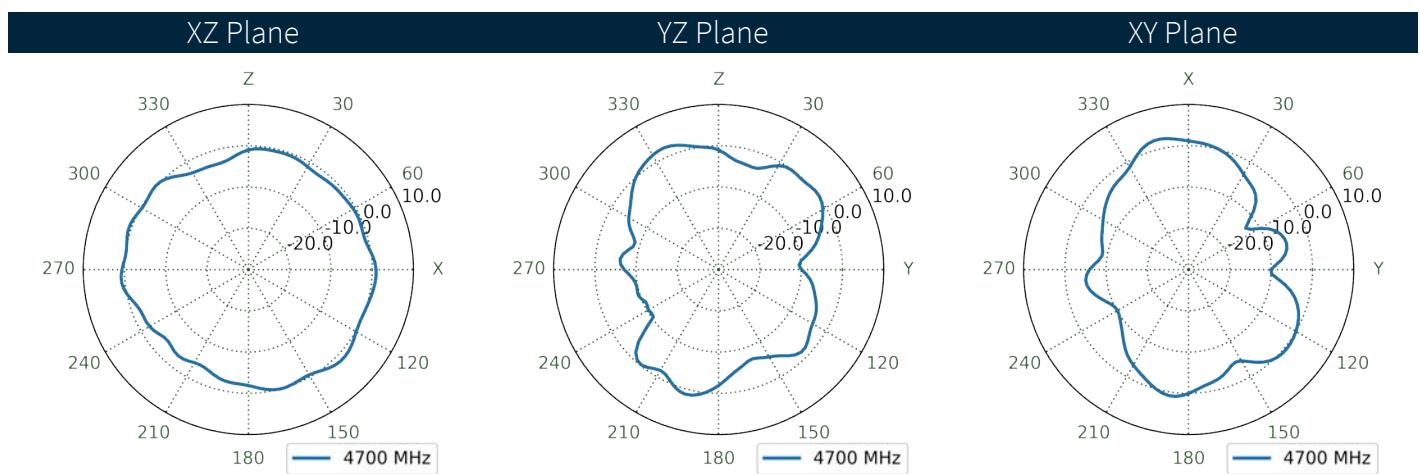
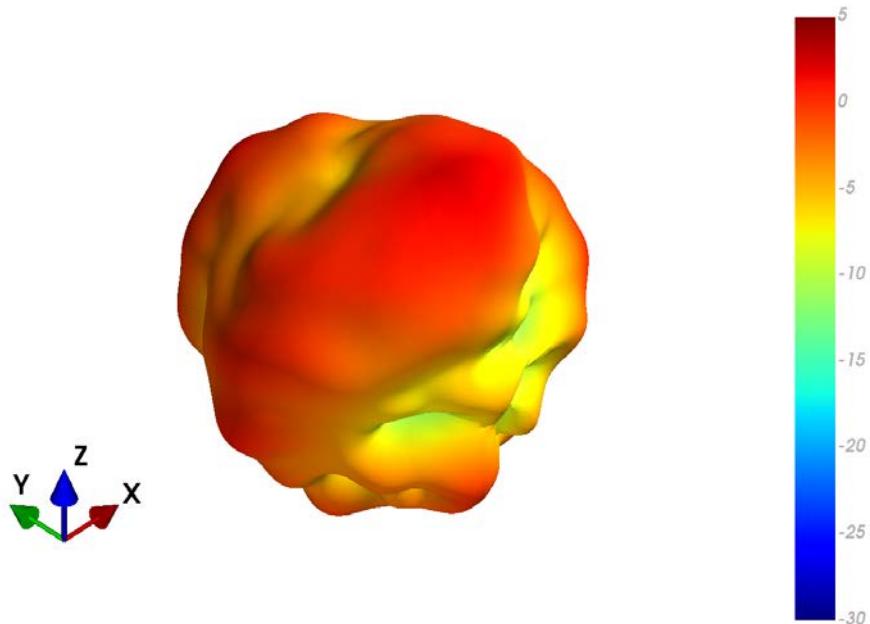
4.17 FS LTE 2 Patterns at 3550 MHz for Gtotal



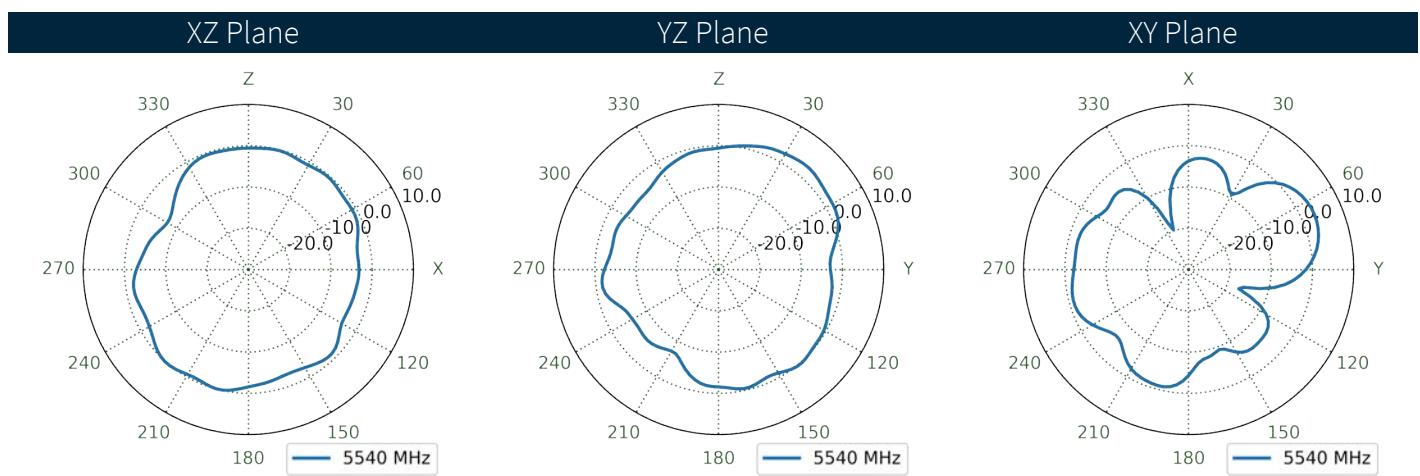
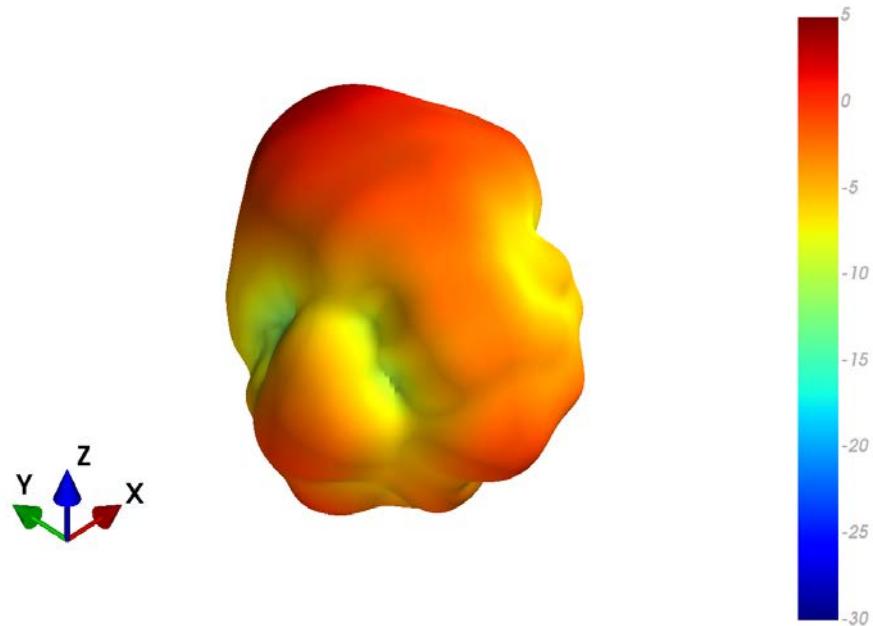
4.18 FS LTE 1 Patterns at 4700 MHz for Gtotal



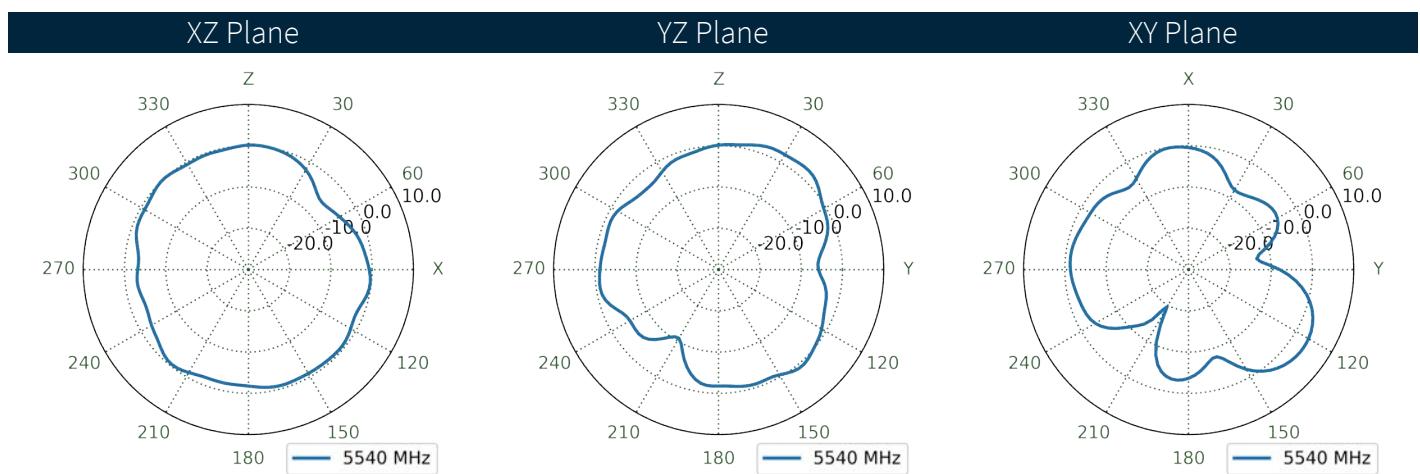
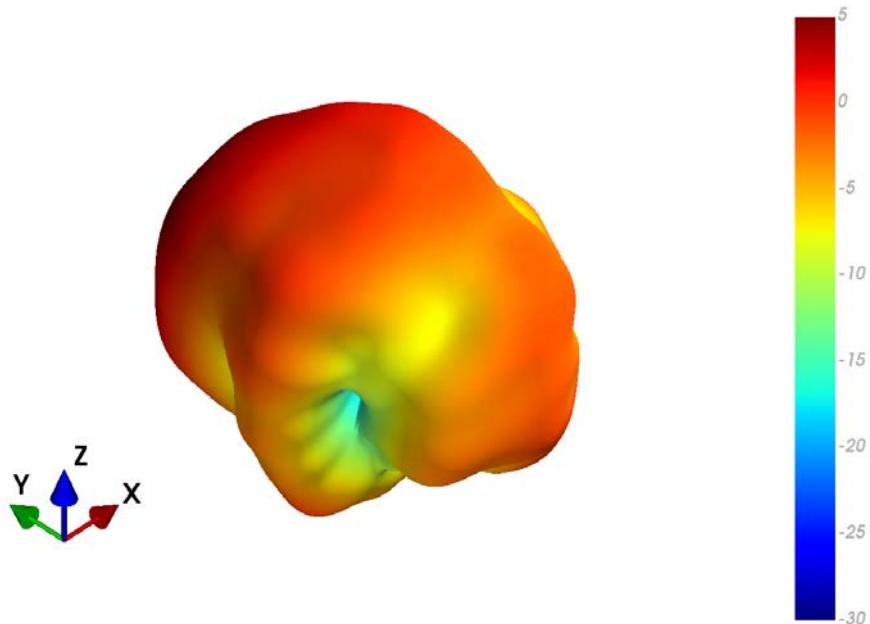
4.19 FS LTE 2 Patterns at 4700 MHz for Gtotal



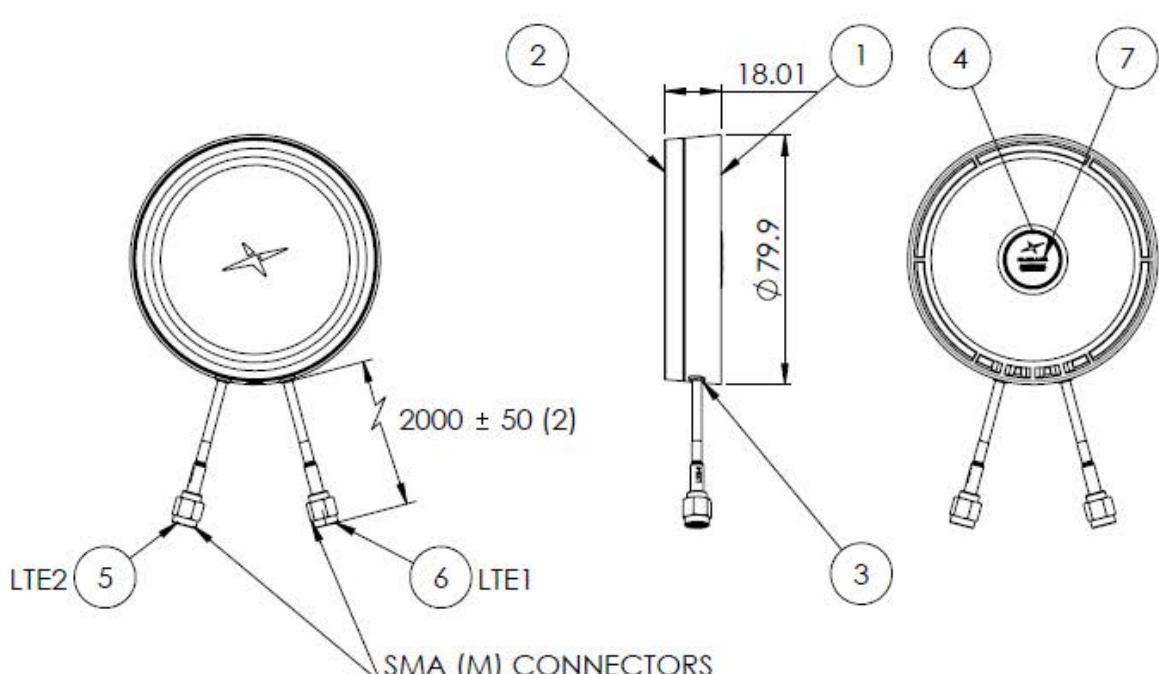
4.20 FS LTE 1 Patterns at 5538 MHz for Gtotal



4.21 FS LTE 2 Patterns at 5538 MHz for Gtotal



5. Mechanical Drawing

ISO NO.:	EDW-23-8-0253																																																																												
STATE:	RELEASE																																																																												
NOTES:	ALL MATERIAL MUST BE ROHS COMPLIANT.																																																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>ZONE</th> <th>DESCRIPTION</th> <th>ENG</th> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>D01</td> <td>All</td> <td>Initial design</td> <td>G. Samson</td> <td>I. Mendez</td> <td>3/14/2023</td> </tr> </tbody> </table>						REV	ZONE	DESCRIPTION	ENG	APPROVED	DATE	D01	All	Initial design	G. Samson	I. Mendez	3/14/2023																																																												
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">APPROVED BY:</td> <td colspan="2">N. Baird</td> <td colspan="3"></td> </tr> <tr> <td>CHECK BY:</td> <td colspan="2">I. Mendez</td> <td colspan="3"></td> </tr> <tr> <td>DRAWN BY:</td> <td colspan="2">G. Samson</td> <td colspan="3"></td> </tr> <tr> <td>DATE:</td> <td colspan="2">3/14/2023</td> <td colspan="3"></td> </tr> <tr> <td>UNLESS OTHERWISE SPECIFIED</td> <td>X045</td> <td>X043</td> <td colspan="3"></td> </tr> <tr> <td>TOLERANCES ON:</td> <td>X042</td> <td>X041</td> <td colspan="3"></td> </tr> <tr> <td>X040.05</td> <td></td> <td></td> <td colspan="3"></td> </tr> <tr> <td colspan="2">THIRD ANGLE PROJECTION</td> <td></td> <td>UNIT: mm</td> <td>SCALE: 1:2</td> <td>PAGES: 1/1</td> </tr> <tr> <td colspan="2"></td> <td></td> <td>REV: D01</td> <td colspan="2"></td> </tr> <tr> <td colspan="6" style="text-align: right;"> TAOGLAS. US Design Centre <small>This drawing is TAOGLAS Confidential information and the released design concepts are property of TAOGLAS. It is not to be copied or disclosed with third parties without the prior written consent of TAOGLAS.</small> </td> </tr> <tr> <td colspan="6" style="text-align: center;">TITLE: 2 in1 2x4G MIMO Adhesive/Mag Mt Puck Antenna w 2m 1.5DS and SMA(M)</td> </tr> <tr> <td colspan="6" style="text-align: center;">PART NO.: MA322.A.001</td> </tr> </table>						APPROVED BY:	N. Baird					CHECK BY:	I. Mendez					DRAWN BY:	G. Samson					DATE:	3/14/2023					UNLESS OTHERWISE SPECIFIED	X045	X043				TOLERANCES ON:	X042	X041				X040.05						THIRD ANGLE PROJECTION			UNIT: mm	SCALE: 1:2	PAGES: 1/1				REV: D01			TAOGLAS. US Design Centre <small>This drawing is TAOGLAS Confidential information and the released design concepts are property of TAOGLAS. It is not to be copied or disclosed with third parties without the prior written consent of TAOGLAS.</small>						TITLE: 2 in1 2x4G MIMO Adhesive/Mag Mt Puck Antenna w 2m 1.5DS and SMA(M)						PART NO.: MA322.A.001					
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THIRD ANGLE PROJECTION			UNIT: mm	SCALE: 1:2	PAGES: 1/1																																																																								
			REV: D01																																																																										
TAOGLAS. US Design Centre <small>This drawing is TAOGLAS Confidential information and the released design concepts are property of TAOGLAS. It is not to be copied or disclosed with third parties without the prior written consent of TAOGLAS.</small>																																																																													
TITLE: 2 in1 2x4G MIMO Adhesive/Mag Mt Puck Antenna w 2m 1.5DS and SMA(M)																																																																													
PART NO.: MA322.A.001																																																																													

6. Packaging



1 PCS Tape / Small PE Bag



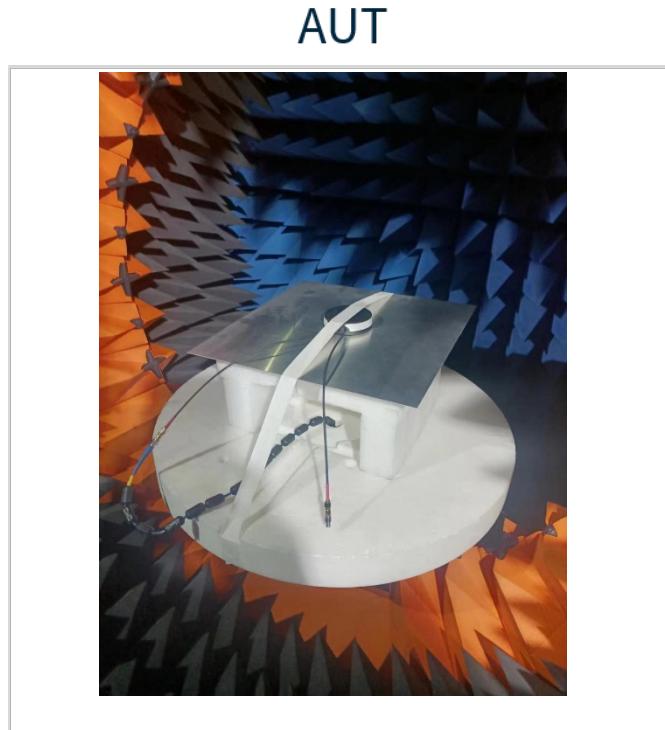
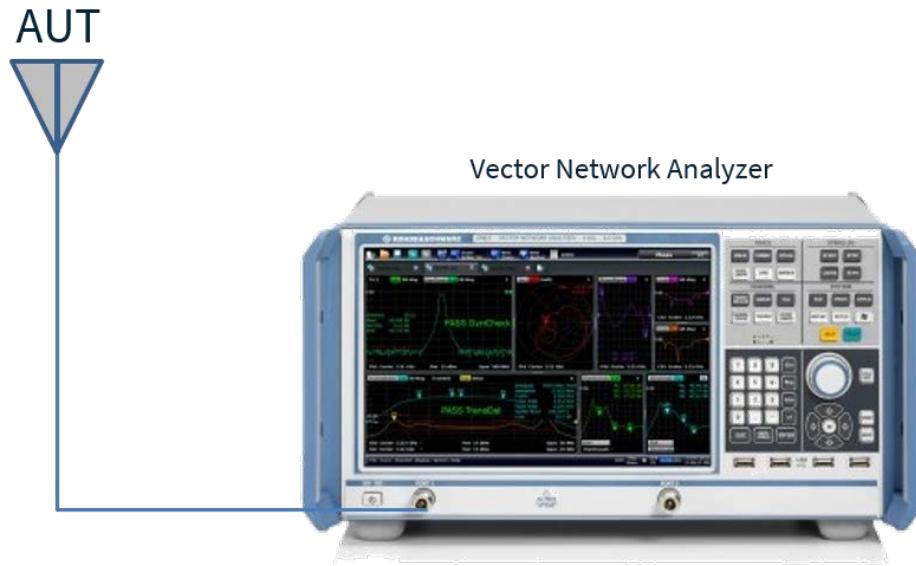
1 PCS / PE Bag



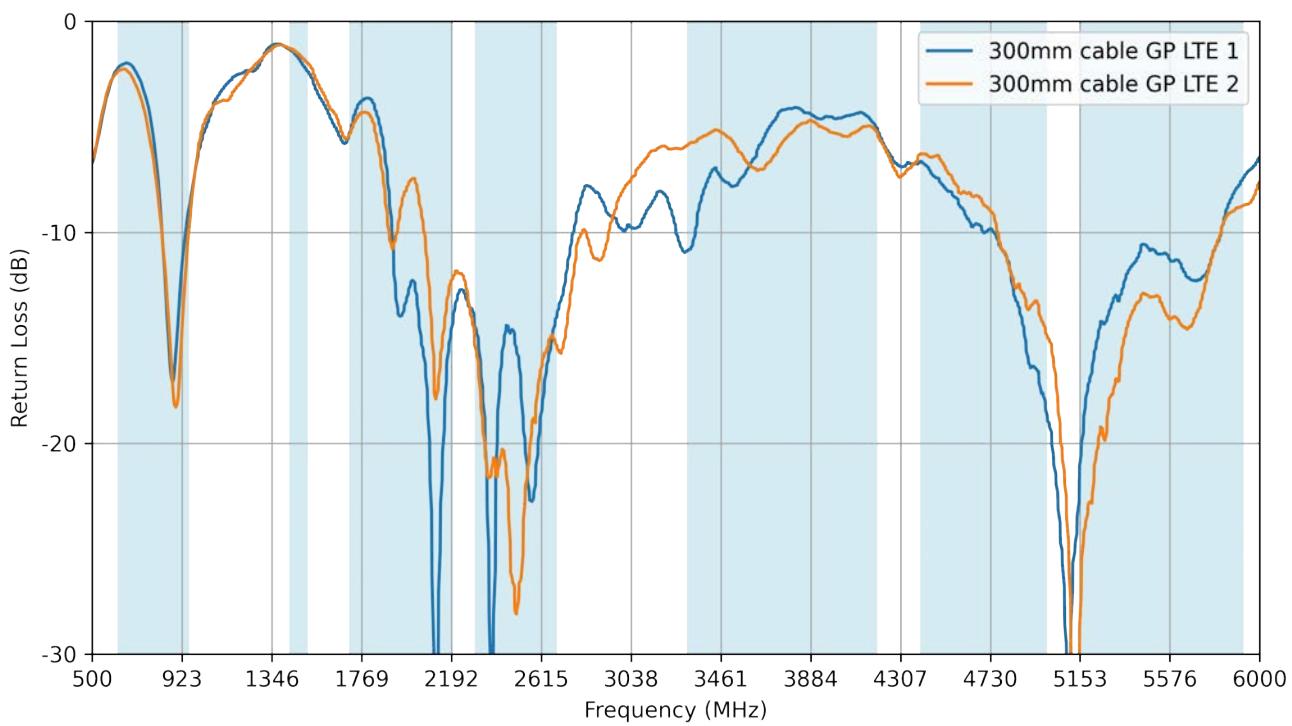
- 70 PCS / Carton
- 2 PCS Carton board
- Carton(mm): 355*355*275mm
- Carton Label

7. Application Note

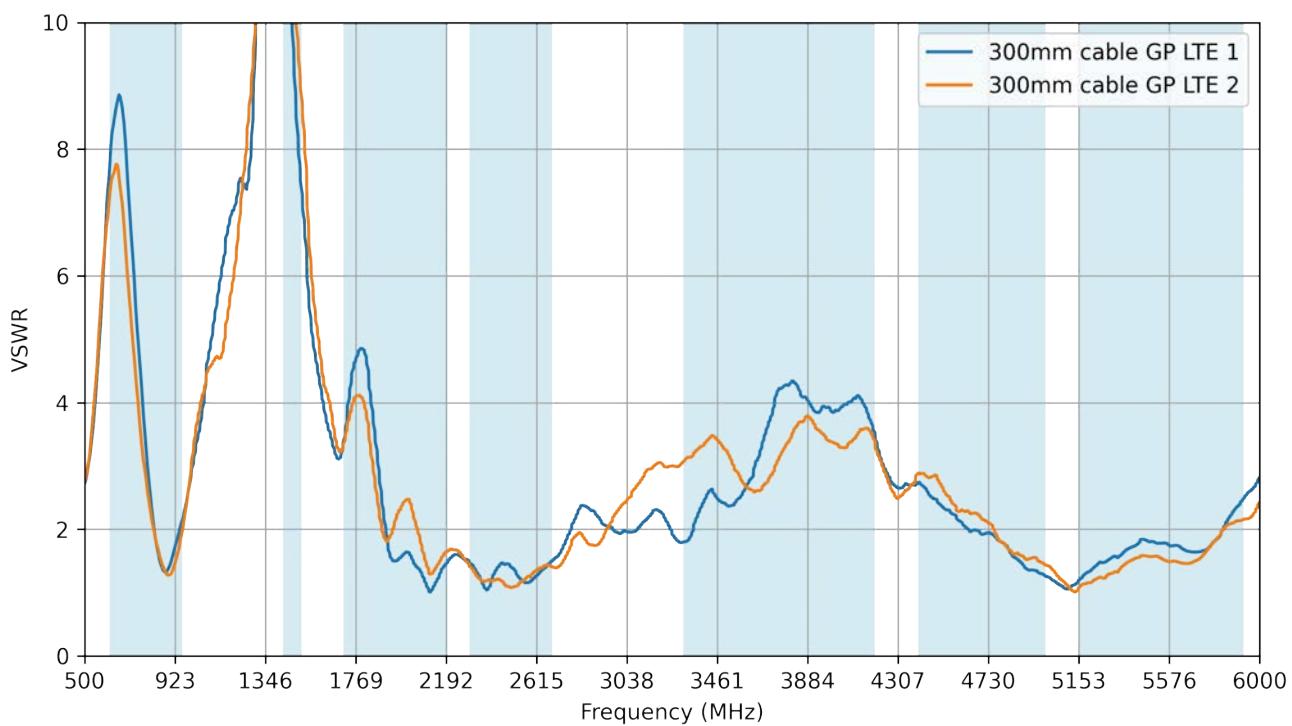
7.1 Test Setup



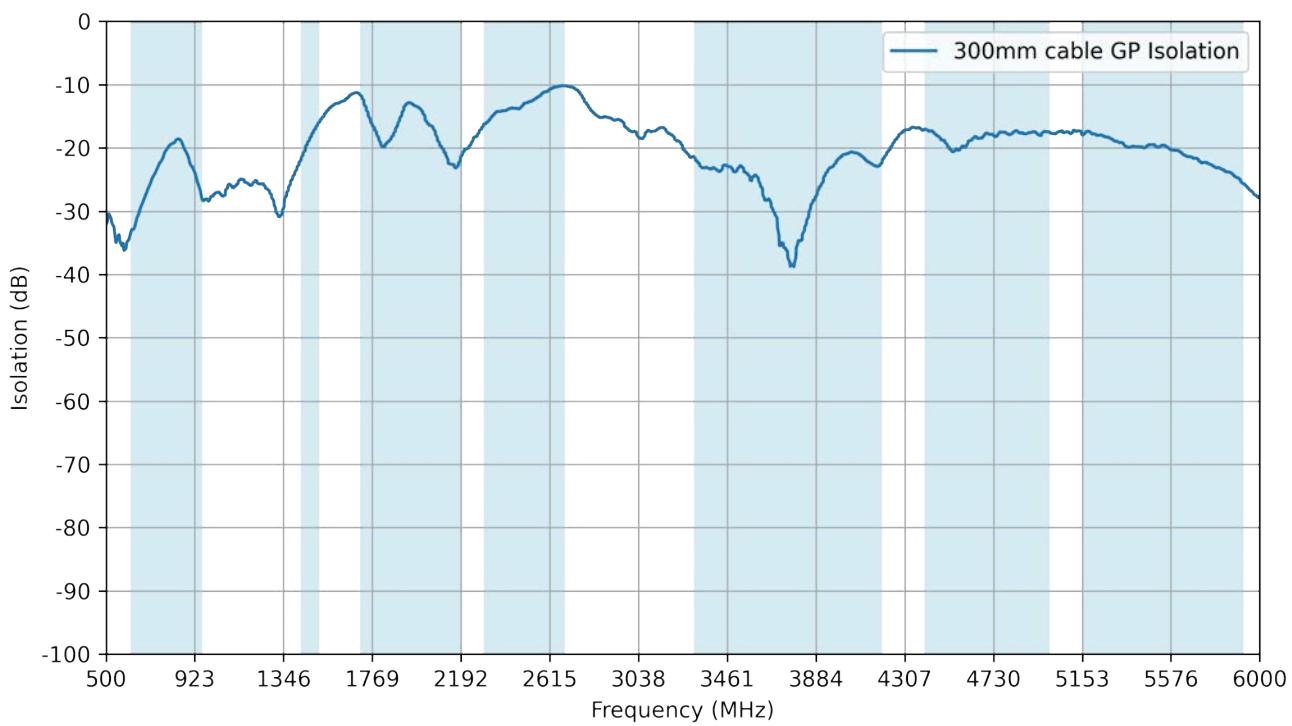
7.2 Return Loss



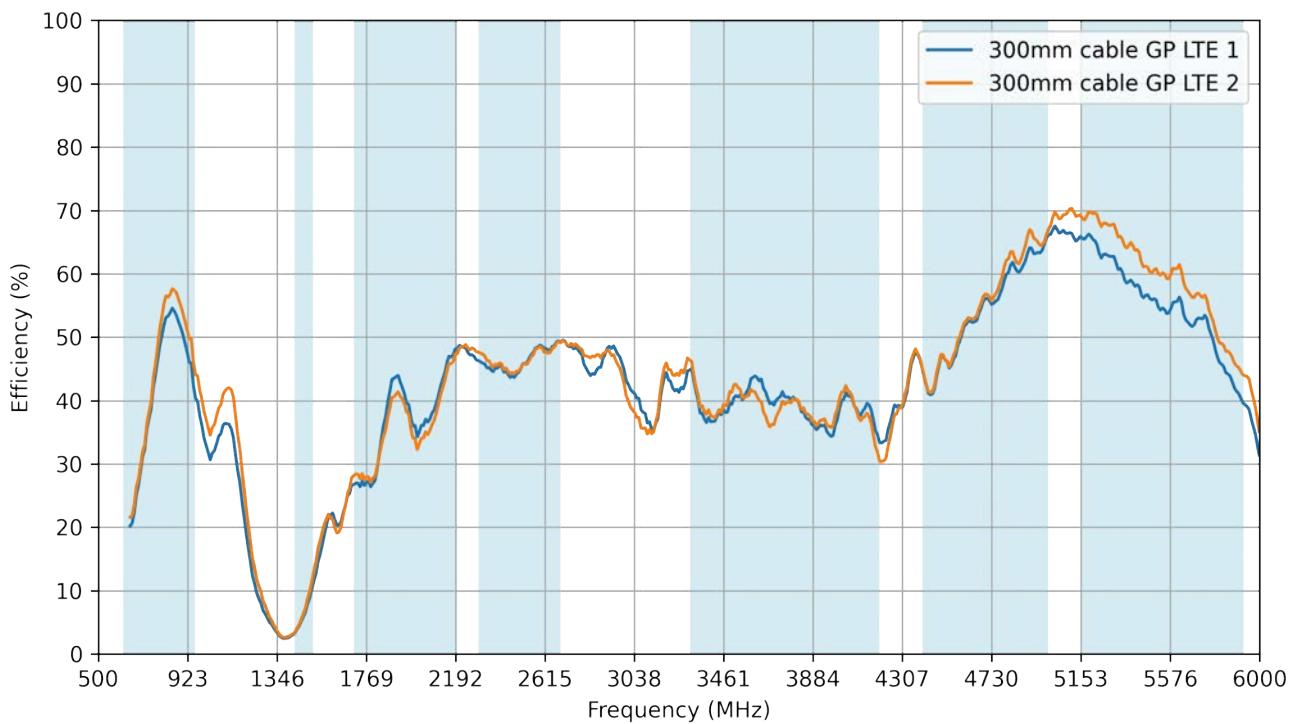
7.3 VSWR



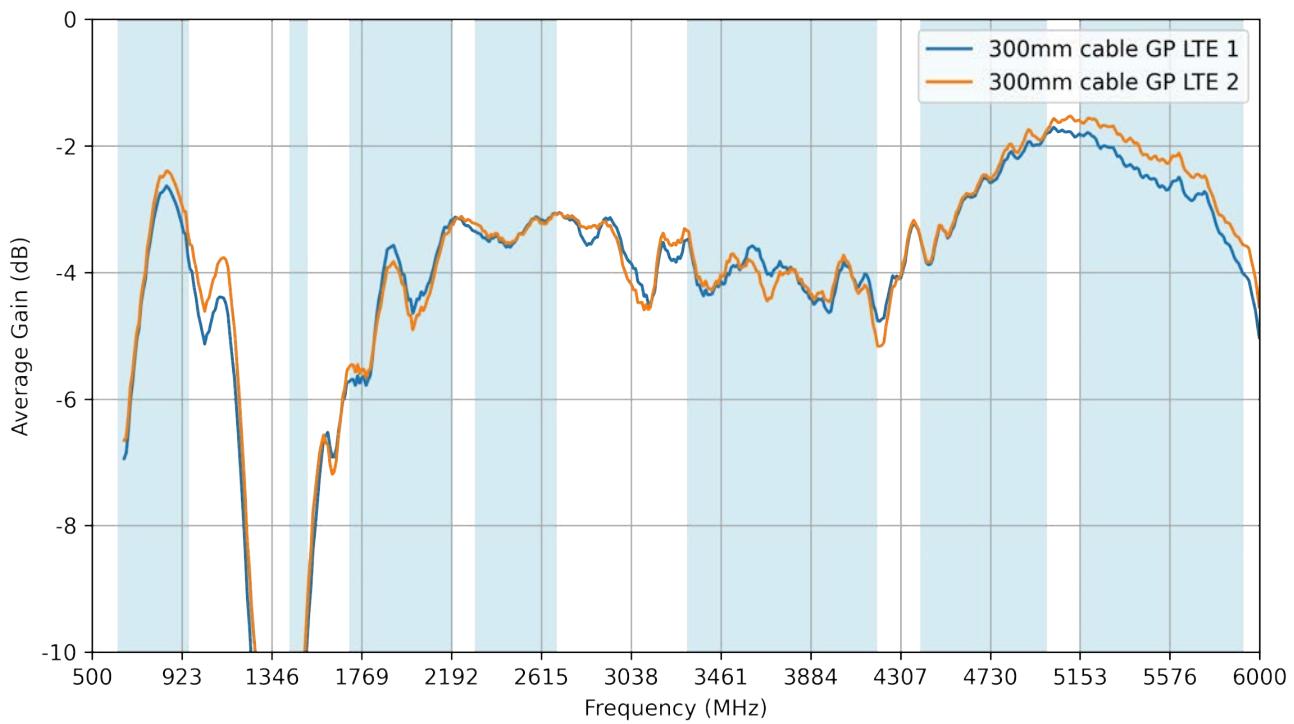
7.4 Isolation



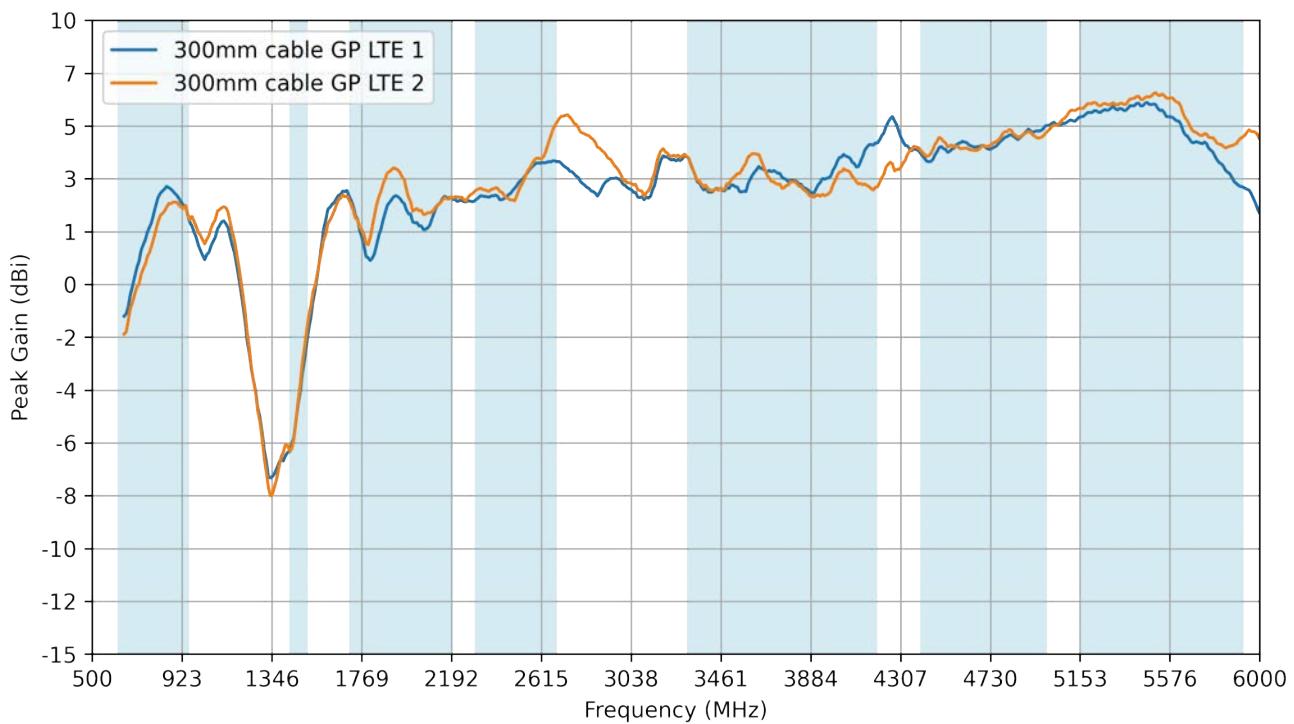
7.5 Efficiency



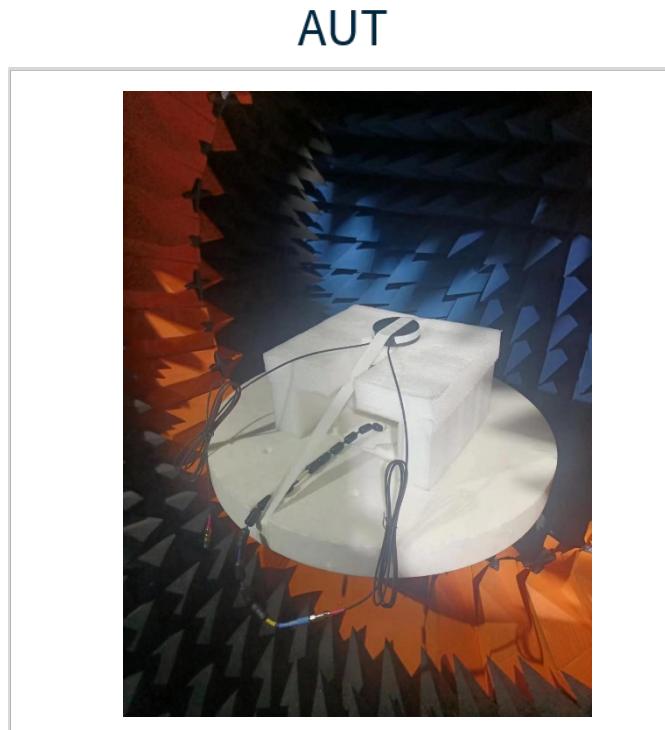
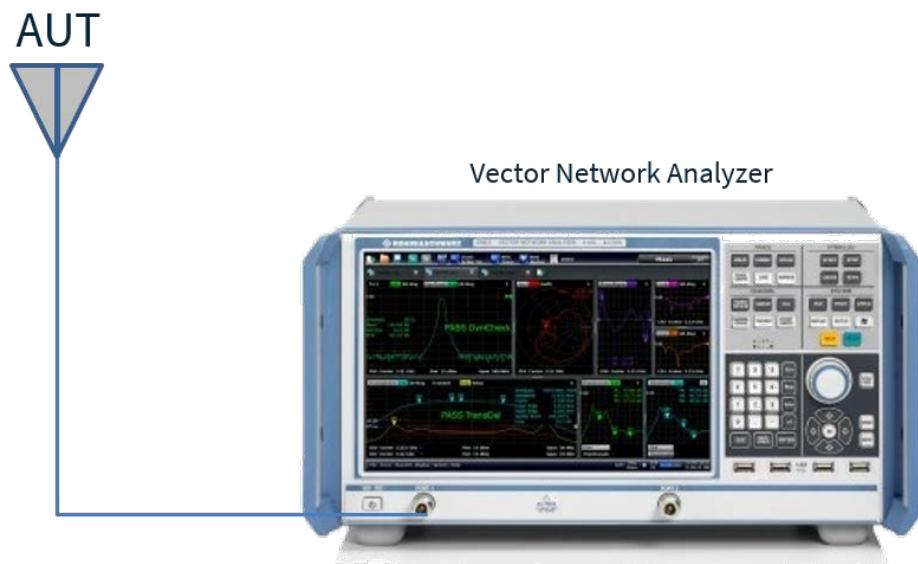
7.6 Average Gain



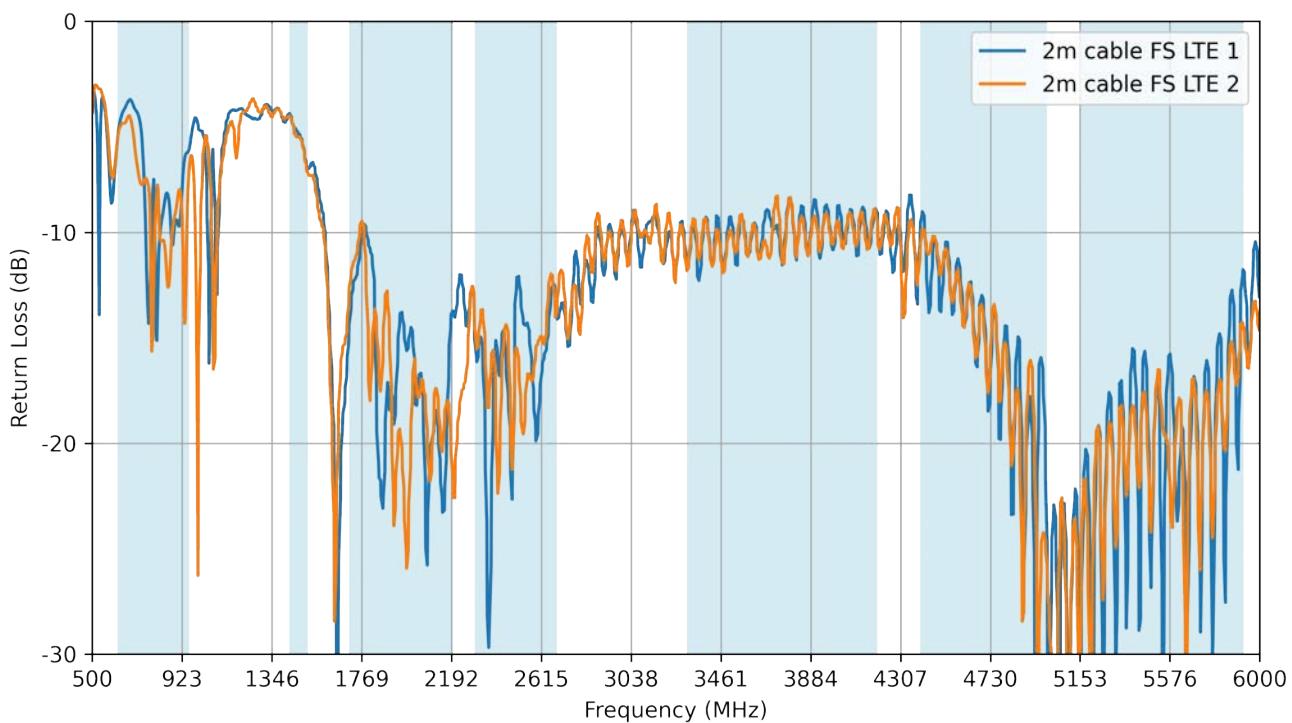
7.7 Peak Gain



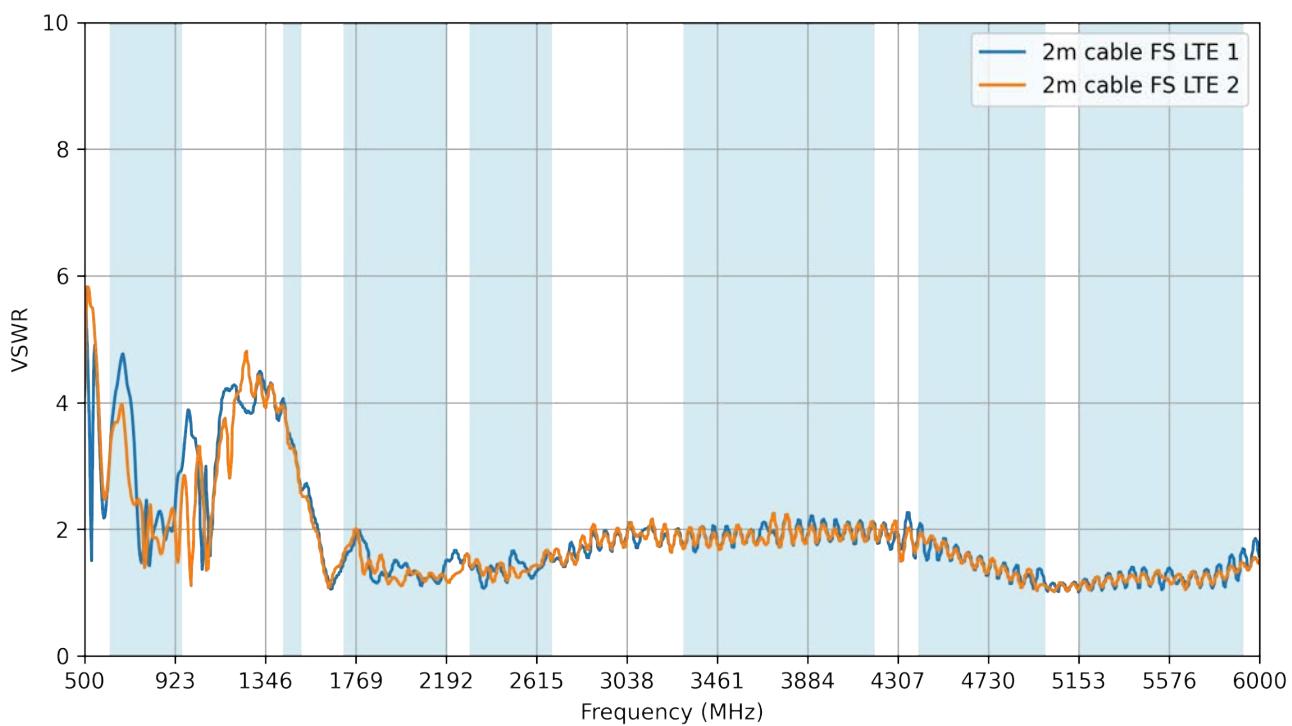
7.8 Test Setup



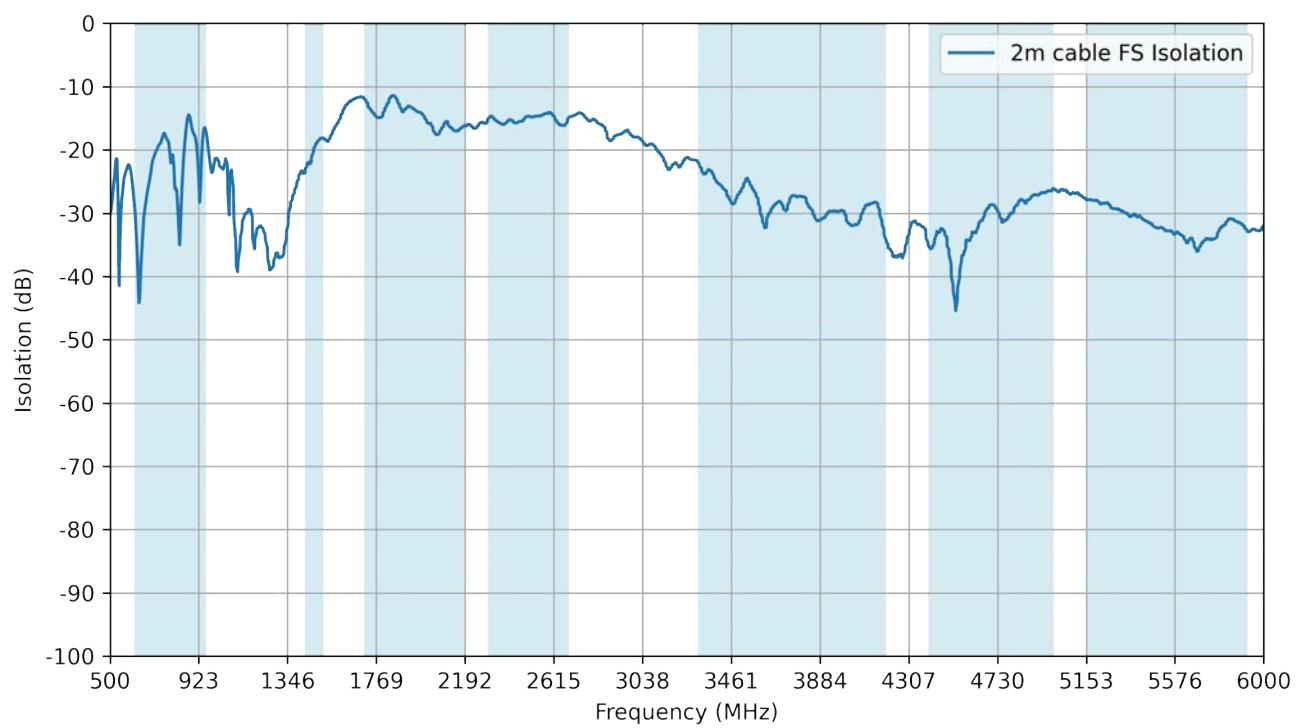
7.9 Return Loss



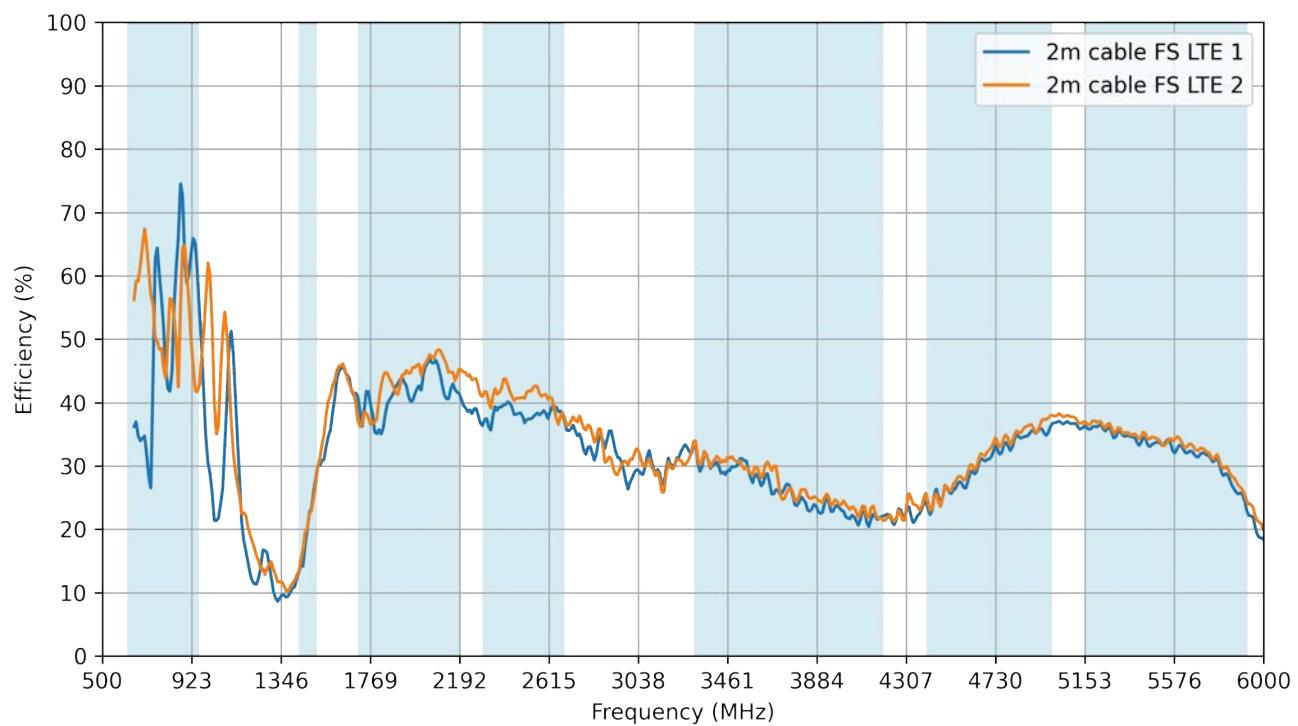
7.10 VSWR



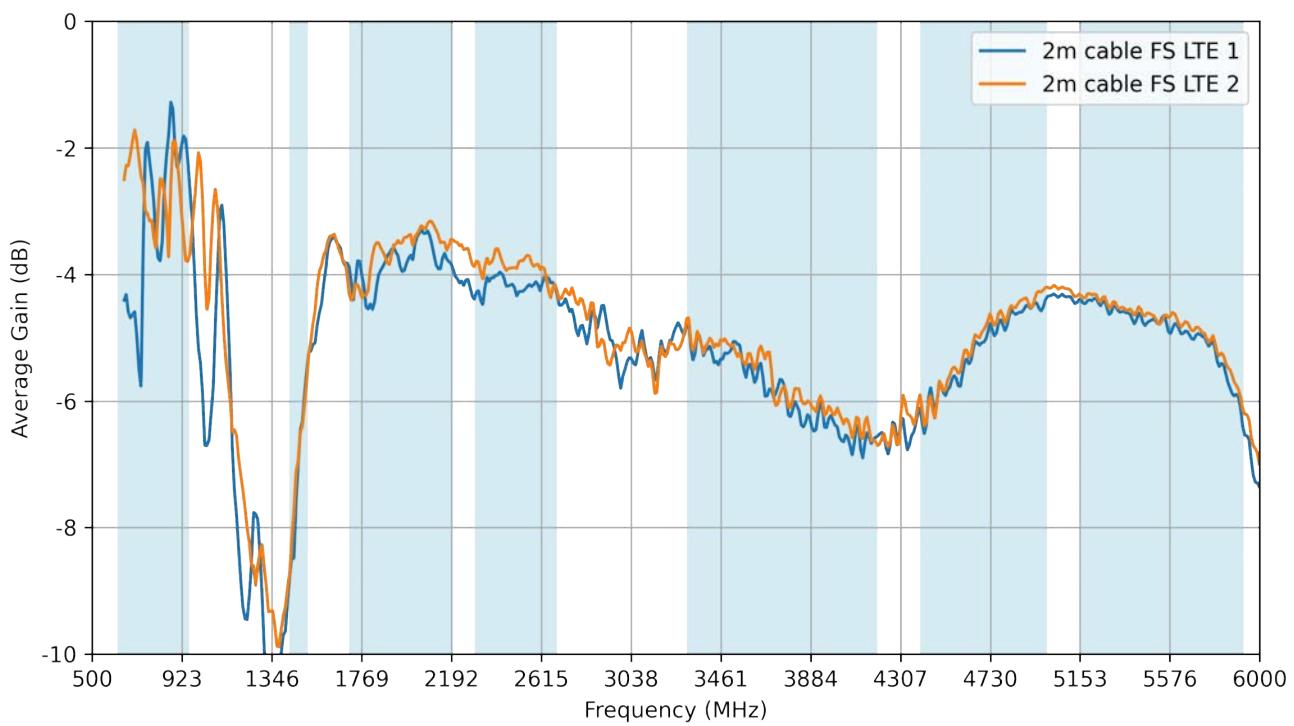
7.11 Isolation



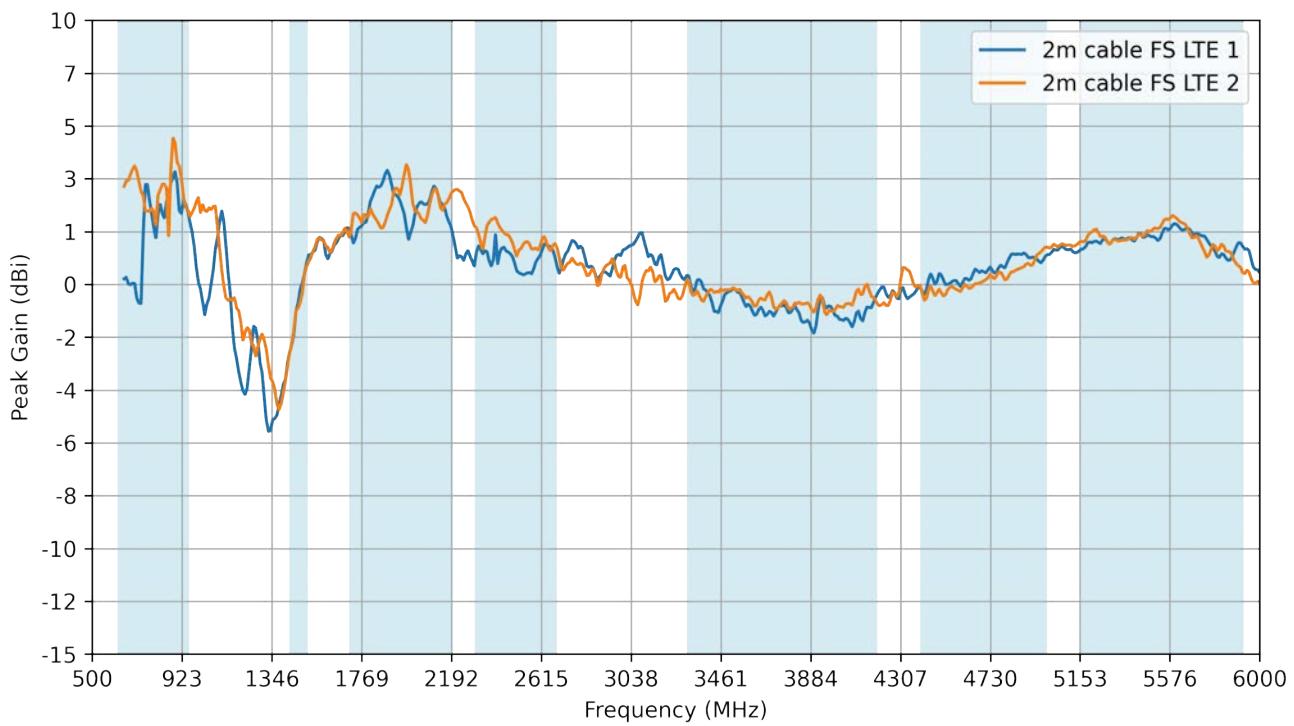
7.12 Efficiency



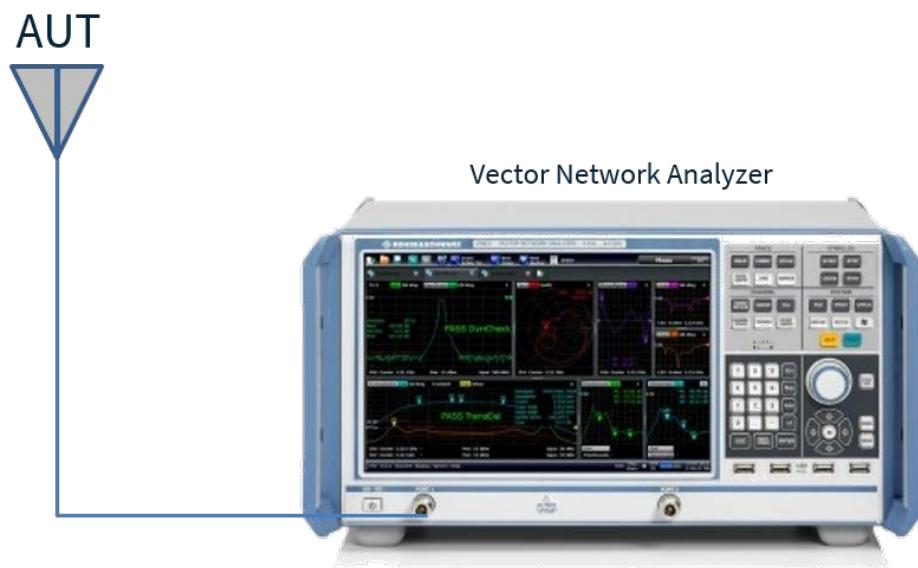
7.13 Average Gain



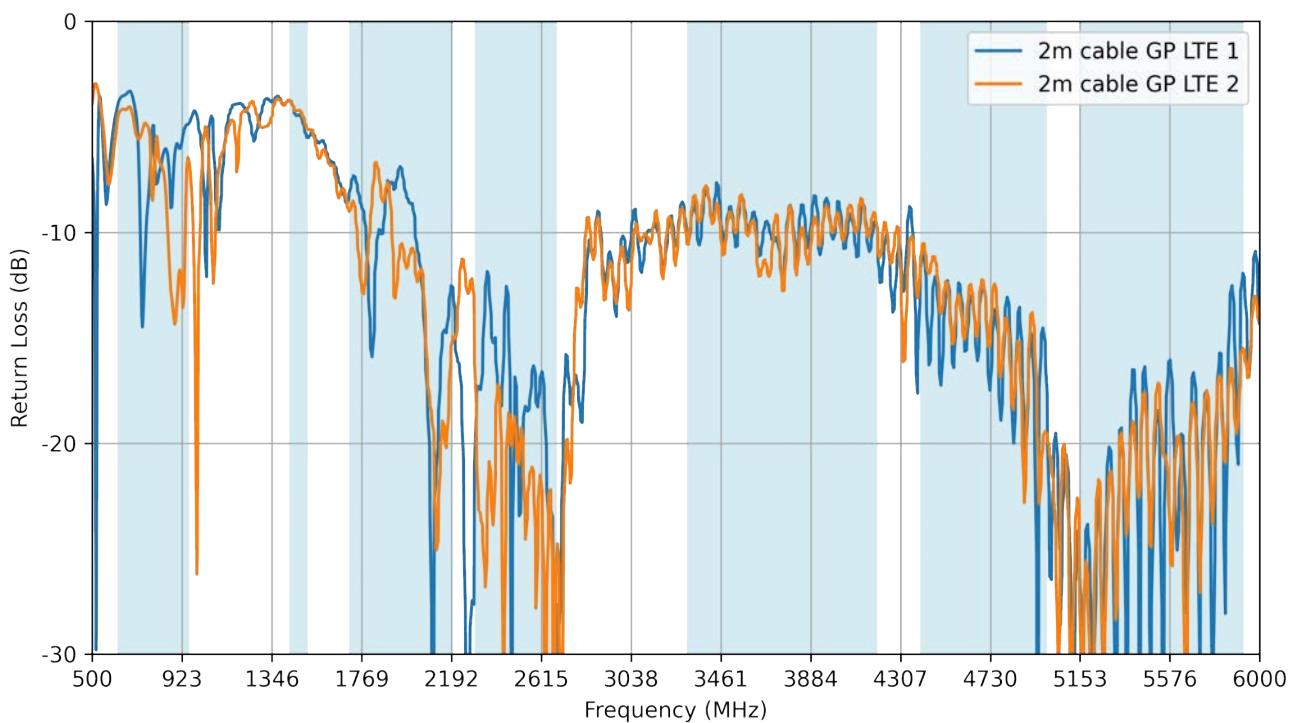
7.14 Peak Gain



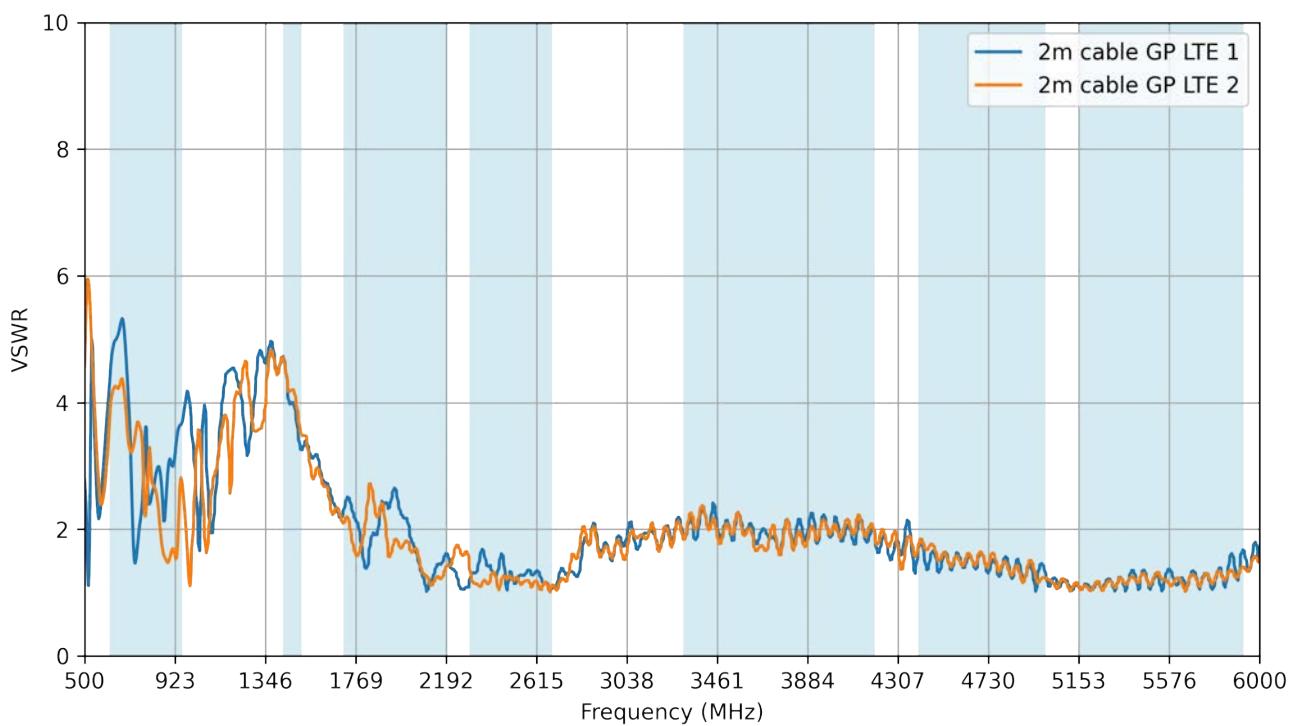
7.15 Test Setup



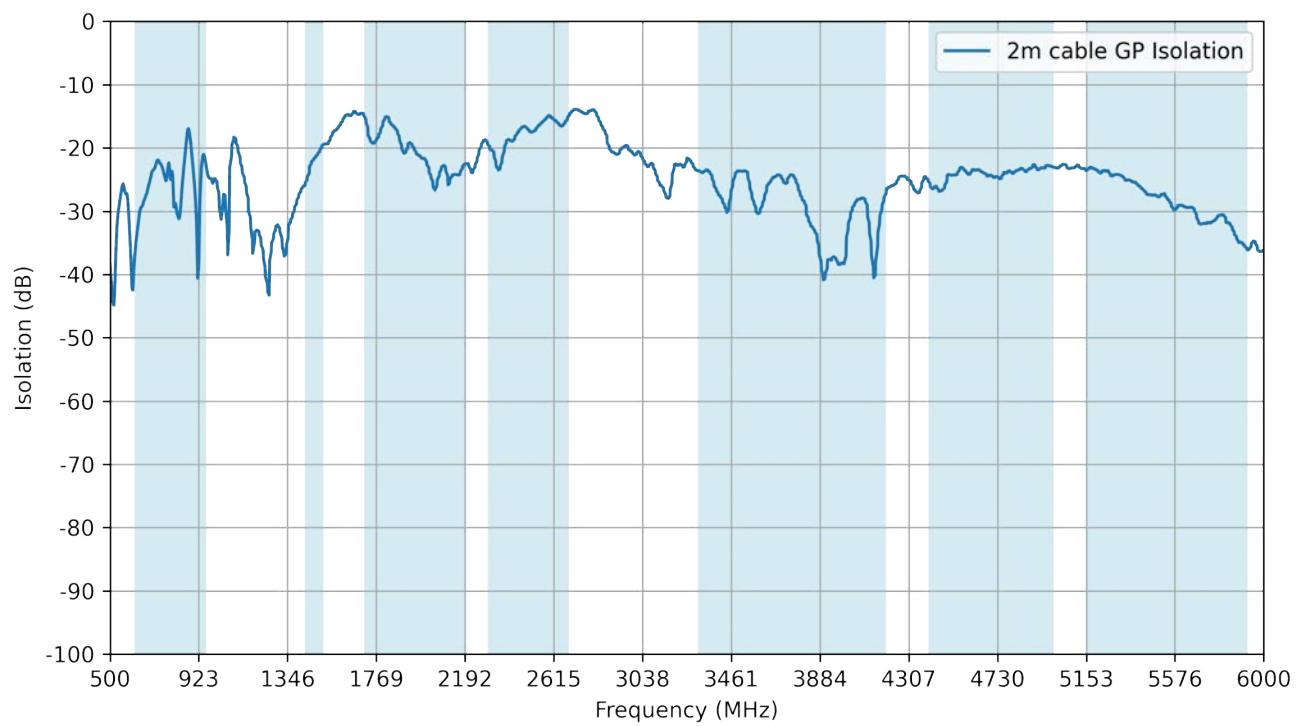
7.16 Return Loss



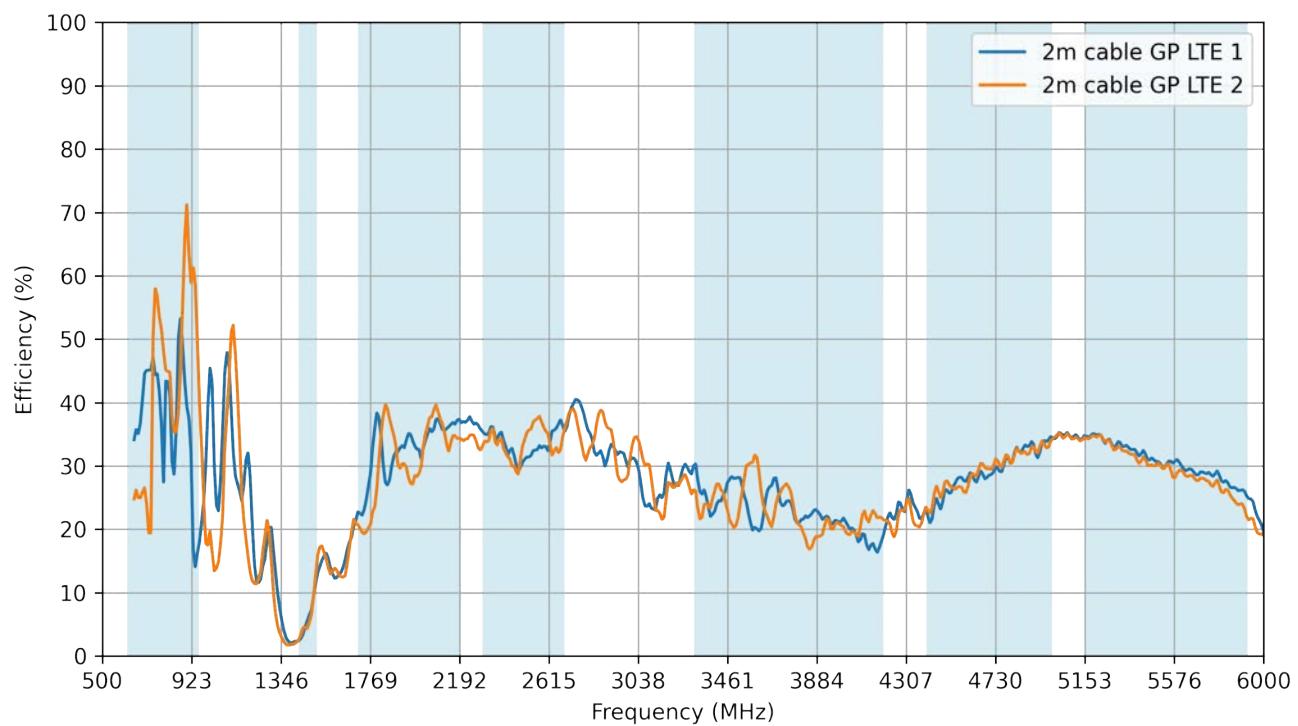
7.17 VSWR



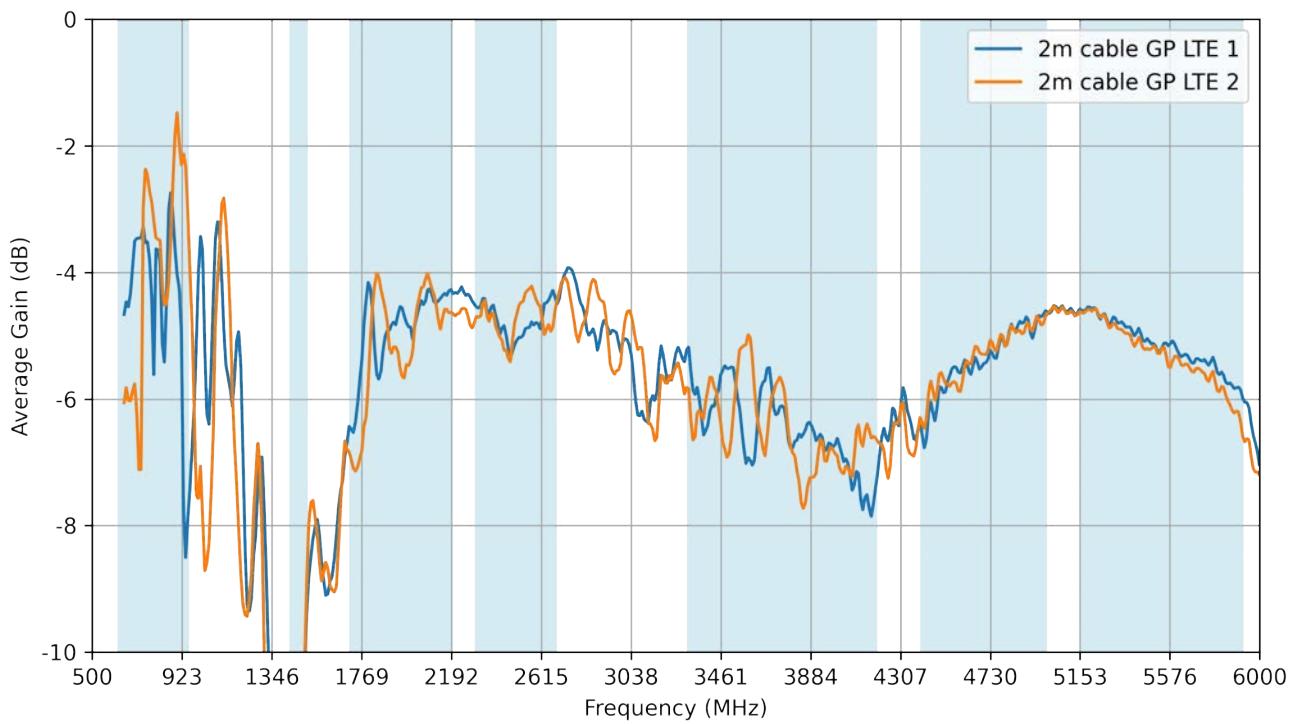
7.18 Isolation



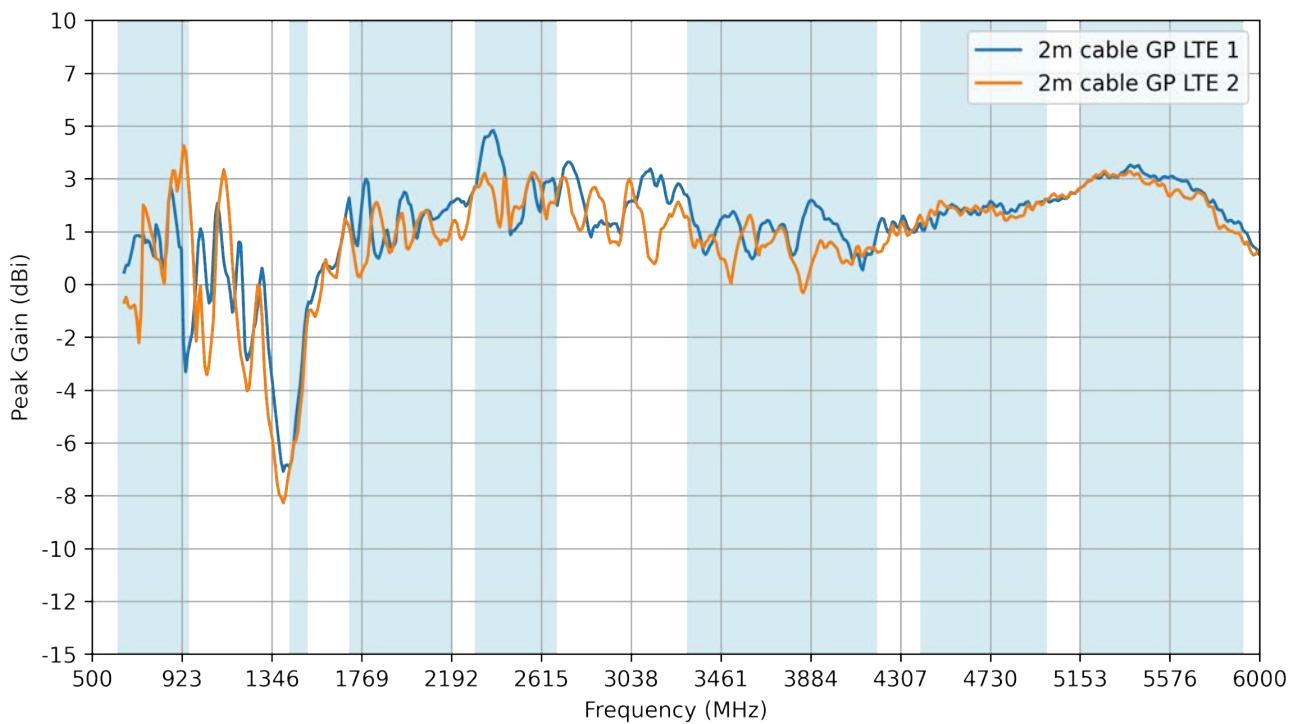
7.19 Efficiency



7.20 Average Gain



7.21 Peak Gain



Changelog for the datasheet

SPE-23-8-173- MA322.A.001

Revision: A (Original First Release)

Date:	2023-06-14
Notes:	
Author:	Jack Conroy

Previous Revisions



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