

BB-2J7B83BC-150

4× 5GNR MIMO/GNSS Screw Mount

Key Features

Cable 1 - 4: 5GNR/GNSS

- 617-960 MHz
- 1175-1177 MHz
- 1427-2690 MHz
- 3300-5000 MHz
- 5150-5925 MHz

Screw Mount

Heavy Duty antenna

High Performance

Ground Plane Independent

Anti-Rotation Mounting

Dimensions: Ø 96 x H 130 mm

Certificates: IP67, IP69, IK09



1. Antenna and electrical specifications

Cable 1

Parameters	5G NR Antenna				
Technologies	5G, 4G, 3G and 2G, GNSS				
Standards	5G NR/4GLTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G				
Frequency (MHz)	617-960	1175-1177	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900		1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,		n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4GLTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85		B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3GCELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26		B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2GCELL Bands	710, 750, 810T, 850, 900P, 900E, 900R		1800DCS, 1900PCS		
CDMACELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19		BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
GNSS Bands		GPS(L5), BeiDou(B2a), QZSS(L5), Galileo(E5a), IRNSS(L5)	GPS(L1C), GLONAS(L1OF), BeiDou(B1), QZSS(L1C), Galileo(E1)		
Return Loss (dB)	~-4.3	~-2.3	~-11.7	~-14.8	~-11.9
VSWR	~-3.7:1	~-6.2:1	~-2.0:1	~-1.5:1	~-1.8:1
Efficiency (%)	~-16.9	~-6.6	~-36.4	~-39.2	~-32.3
Peak Gain (dBi)	~-2.3	~-3.3	~-3.9	~-4.4	~-3.5
Average Gain (dB)	~-7.1	~-7.8	~-4.1	~-3.7	~-4.3
Impedance (Ohm)			50		
Polarisation			Linear		
Radiation Pattern			Omni-Directional		
Max. Input Power (W)			25		
Connector Type			SMA-Male		
Cable Length			150 cm		
Cable Type			LL195		

Cable 2

Parameters	5G NR Antenna				
Technologies	5G, 4G, 3G and 2G, GNSS				
Standards	5G NR/4G LTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G				
Frequency (MHz)	617-960	1175-1177	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900		1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,		n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4G LTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85		B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3G CELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26		B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2G CELL Bands	710, 750, 810T, 850, 900P, 900E, 900R		1800DCS, 1900PCS		
CDMA CELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19		BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
GNSS Bands		GPS(L5), BeiDou(B2a), QZSS(L5), Galileo(E5a), IRNSS(L5)	GPS(L1C), GLONAS(L1OF), BeiDou(B1), QZSS(L1C), Galileo(E1)		
Return Loss (dB)	~-4.5	~-2.3	~-11.6	~-14.2	~-14.3
VSWR	~3.7:1	~6.8:1	~1.9:1	~1.7:1	~1.5:1
Efficiency (%)	~16.7	~6.2	~35.4	~40.1	~35.8
Peak Gain (dBi)	~-2.6	~-3.5	~-3.8	~-4.5	~-4.0
Average Gain (dB)	~-7.1	~-8.0	~-4.4	~-3.6	~-3.9
Impedance (Ohm)			50		
Polarisation			Linear		
Radiation Pattern			Omni-Directional		
Max. Input Power (W)			25		
Connector Type			SMA-Male		
Cable Length			150 cm		
Cable Type			LL195		

Cable 3

Parameters	5G NR Antenna				
Technologies	5G, 4G, 3G and 2G, GNSS				
Standards	5G NR/4G LTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G				
Frequency (MHz)	617-960	1175-1177	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900		1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,		n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4G LTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85		B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3G CELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26		B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2G CELL Bands	710, 750, 810T, 850, 900P, 900E, 900R		1800DCS, 1900PCS		
CDMA CELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19		BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
GNSS Bands		GPS(L5), BeiDou(B2a), QZSS(L5), Galileo(E5a), IRNSS(L5)	GPS(L1C), GLONAS(L1OF), BeiDou(B1), QZSS(L1C), Galileo(E1)		
Return Loss (dB)	~-4.4	~-2.5	~-11.9	~-13.2	~-13.5
VSWR	~3.9:1	~6.8:1	~2.0:1	~1.6:1	~1.5:1
Efficiency (%)	~16.4	~6.0	~36.1	~38.5	~34.2
Peak Gain (dBi)	~-2.6	~-3.8	~-3.8	~-4.1	~-3.6
Average Gain (dB)	~-7.2	~-8.2	~-4.2	~-3.6	~-4.1
Impedance (Ohm)			50		
Polarisation			Linear		
Radiation Pattern			Omni-Directional		
Max. Input Power (W)			25		
Connector Type			SMA-Male		
Cable Length			150 cm		
Cable Type			LL195		

Cable 4

Parameters	5G NR Antenna				
Technologies	5G, 4G, 3G and 2G, GNSS				
Standards	5G NR/4GLTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G				
Frequency (MHz)	617-960	1175-1177	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900		1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, n12, n20, n28, n71, n81, n82, n83,		n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4GLTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85		B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3GCELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26		B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2GCELL Bands	710, 750, 810T, 850, 900P, 900E, 900R		1800DCS, 1900PCS		
CDMA CELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19		BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
GNSS Bands		GPS(L5), BeiDou(B2a), QZSS(L5), Galileo(E5a), IRNSS(L5)	GPS(L1C), GLONAS(L1OF), BeiDou(B1), QZSS(L1C), Galileo(E1)		
Return Loss (dB)	~-4.6	~-2.5	~-12.1	~-12.4	~-12.3
VSWR	~3.6:1	~6.8:1	~1.9:1	~1.8:1	~1.6:1
Efficiency (%)	~17.1	~6.2	~35.0	~37.4	~33.1
Peak Gain (dBi)	~-2.2	~-3.0	~-3.7	~-4.2	~-3.5
Average Gain (dB)	~-7.0	~-8.0	~-4.3	~-3.9	~-4.2
Impedance (Ohm)			50		
Polarisation			Linear		
Radiation Pattern			Omni-Directional		
Max. Input Power (W)			25		
Connector Type			SMA-Male		
Cable Length			150 cm		
Cable Type			LL195		

Antenna Measurement Conditions:

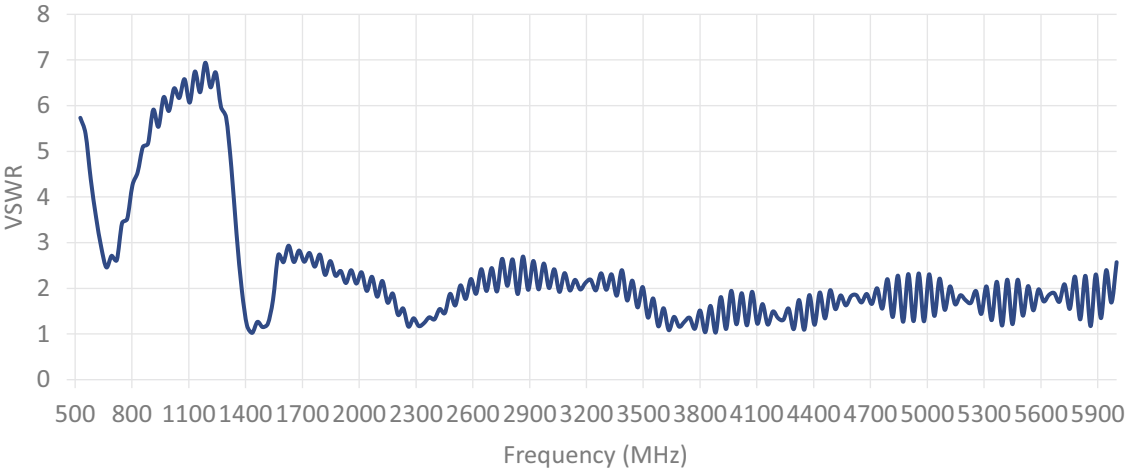
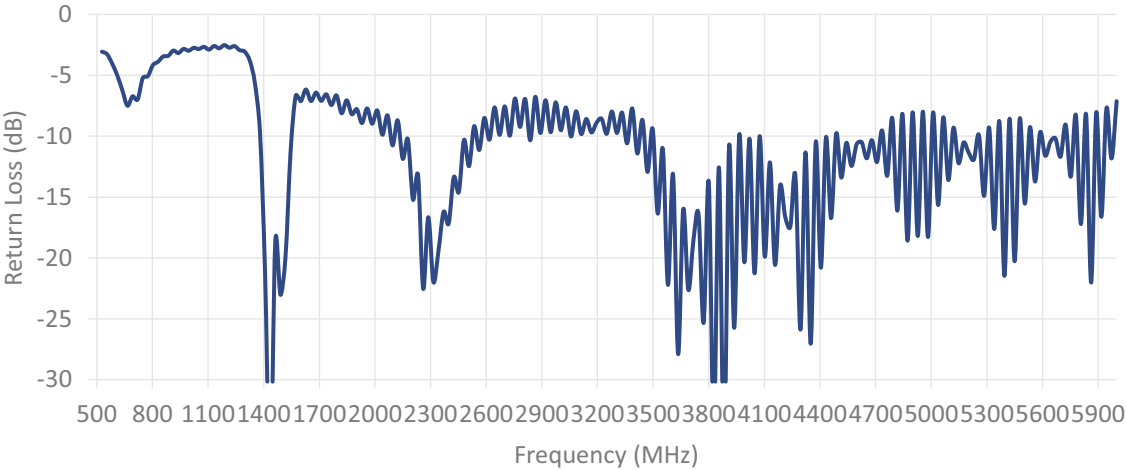
Mounted on Metal Plate of 30 x 30 cm, 200 cm of Cable LL195, Measured in Certified CTIA 3D Anechoic Chamber

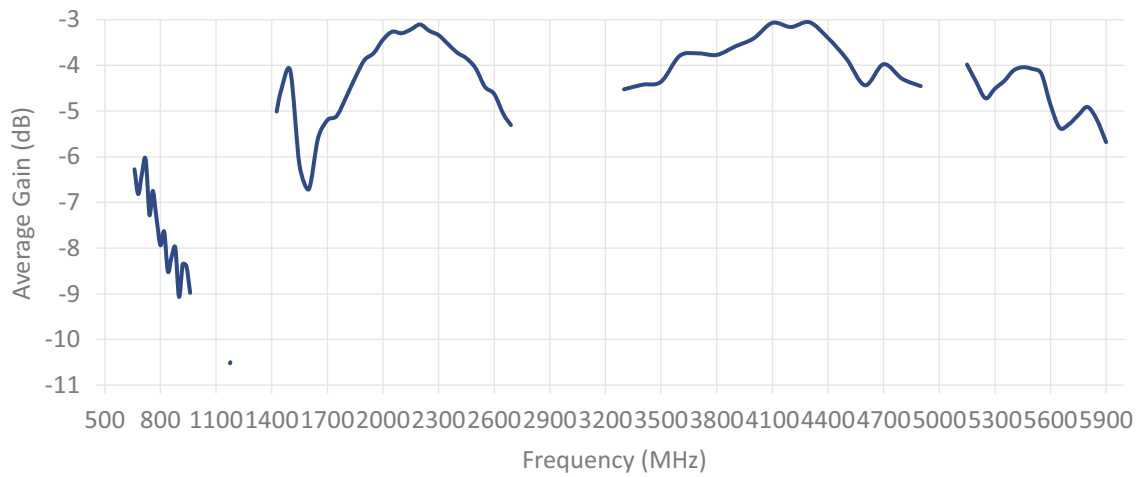
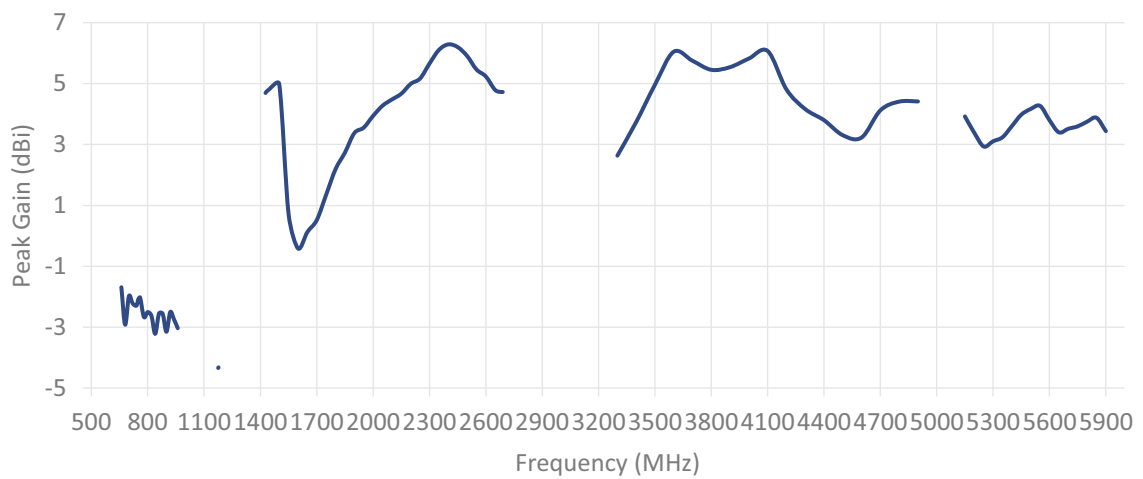
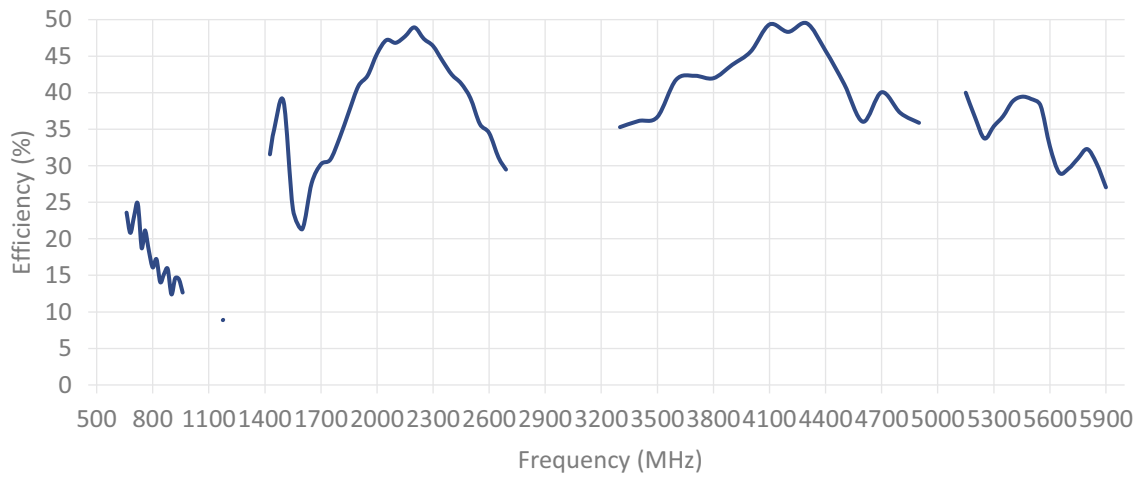
2. Mechanical and environmental specifications

Specifications	BB-2J7B83BC-150
Mounting Type	Screw Mount
Dimensions (mm)	Ø 96 x H 130
Max. Tighten Torque (Nm)	6 Nm
Radome	ASA
Radome color	White, Black
Antenna Base	ASA
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Certificates	IP67, IP69, IK09

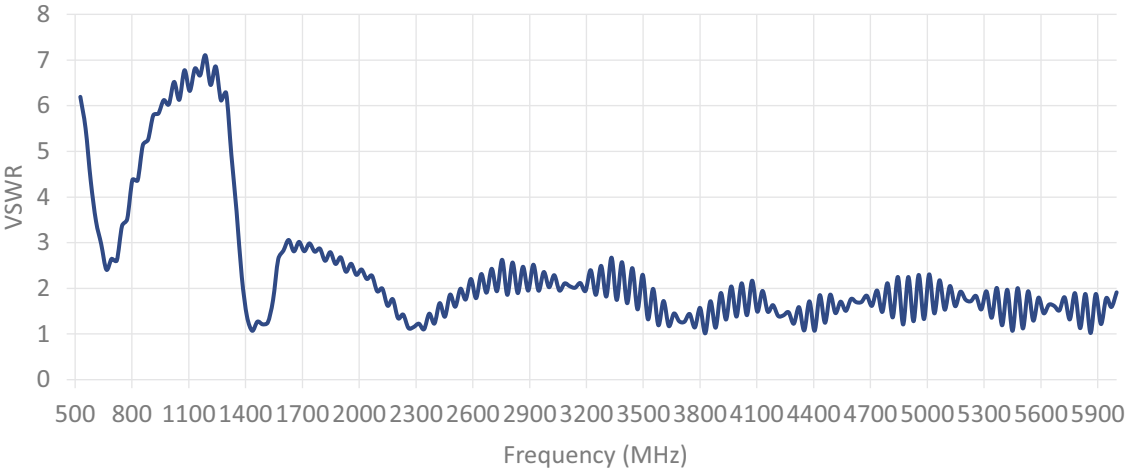
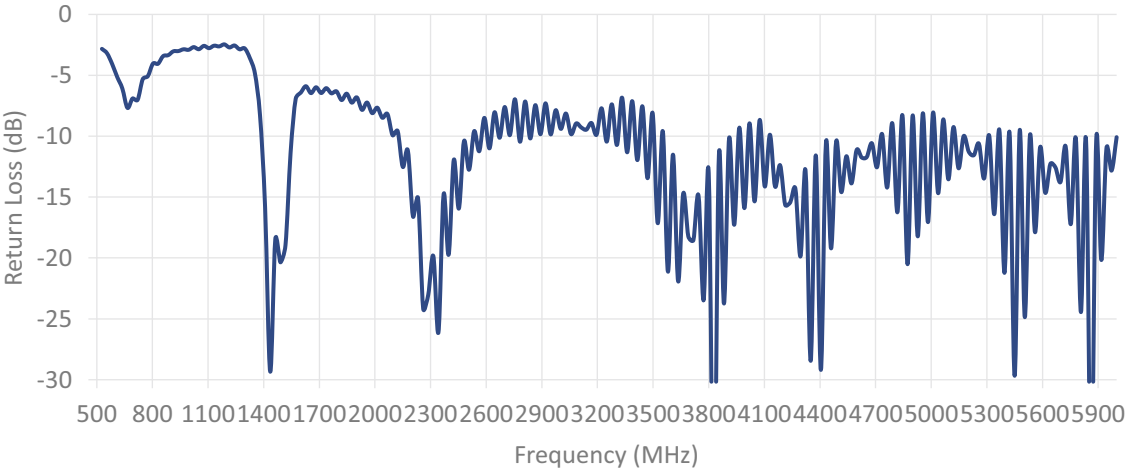
3. Antenna parameters

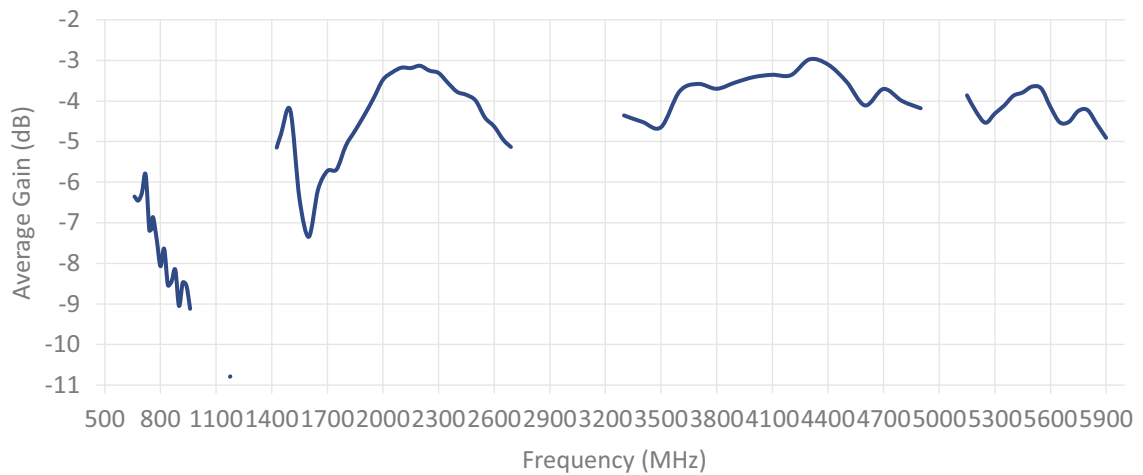
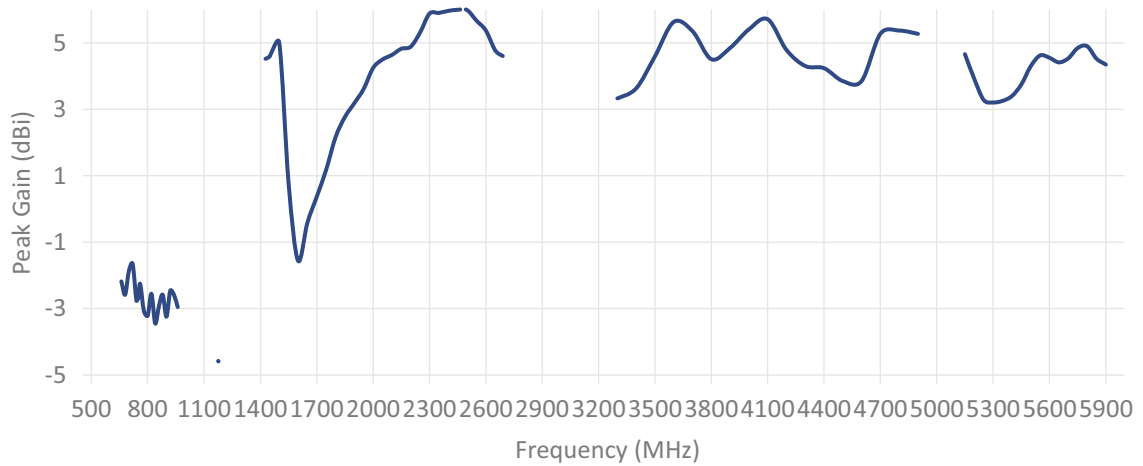
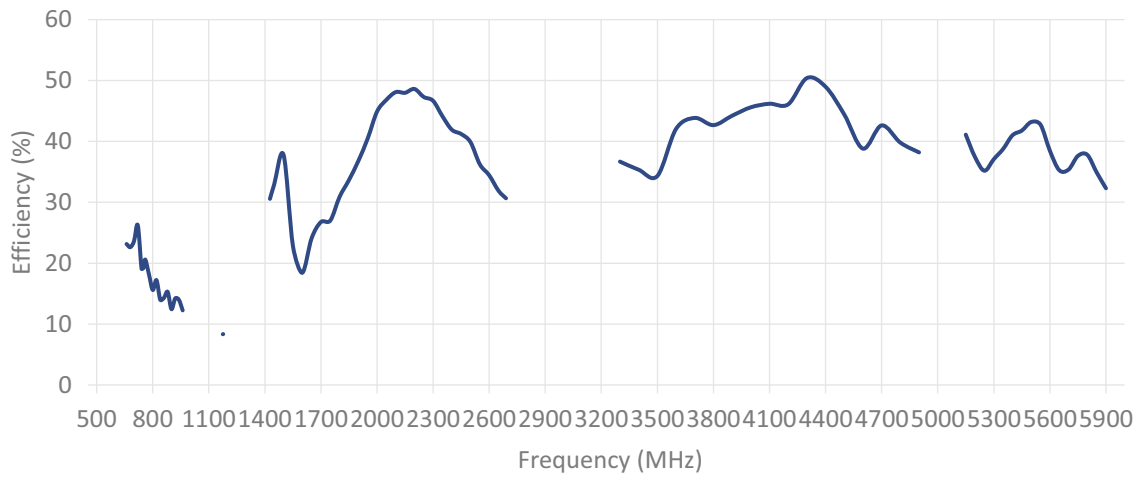
Cable 1: 5GNR



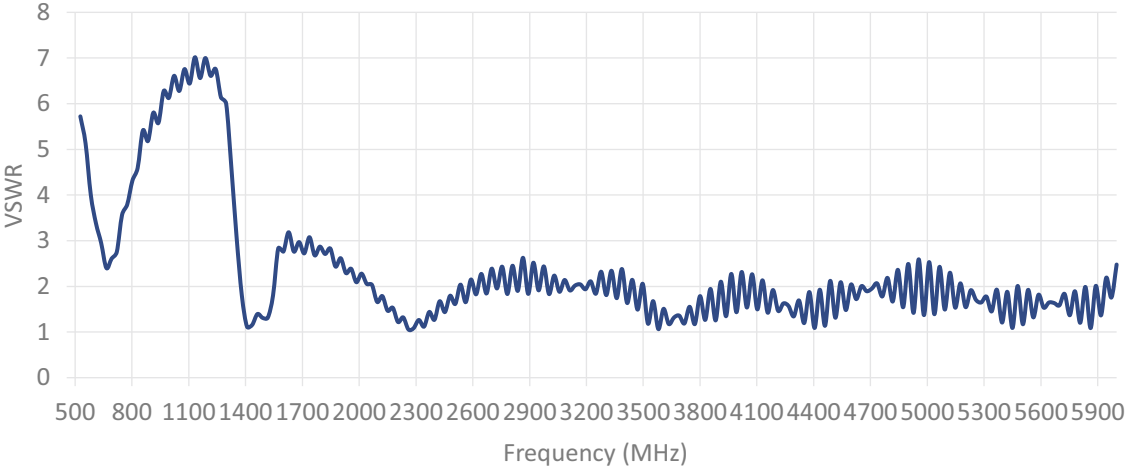
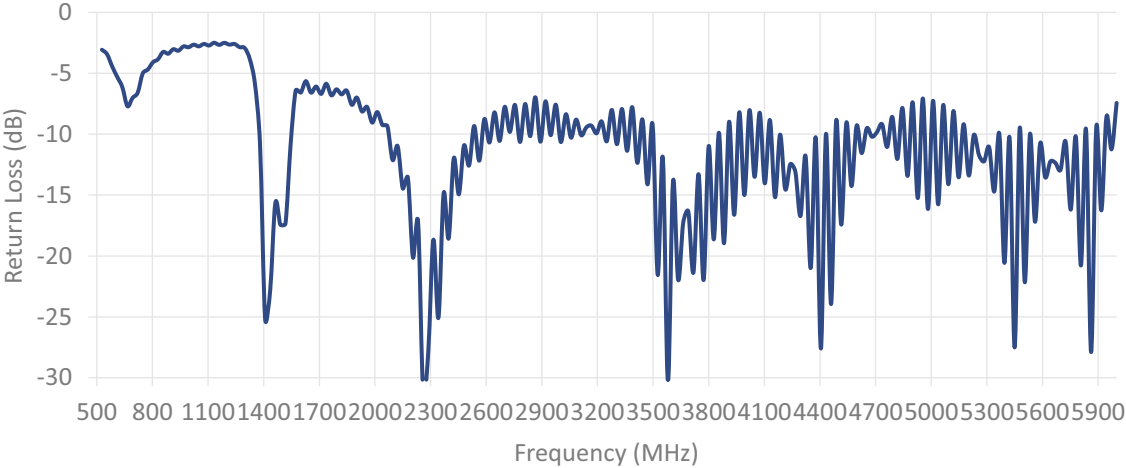


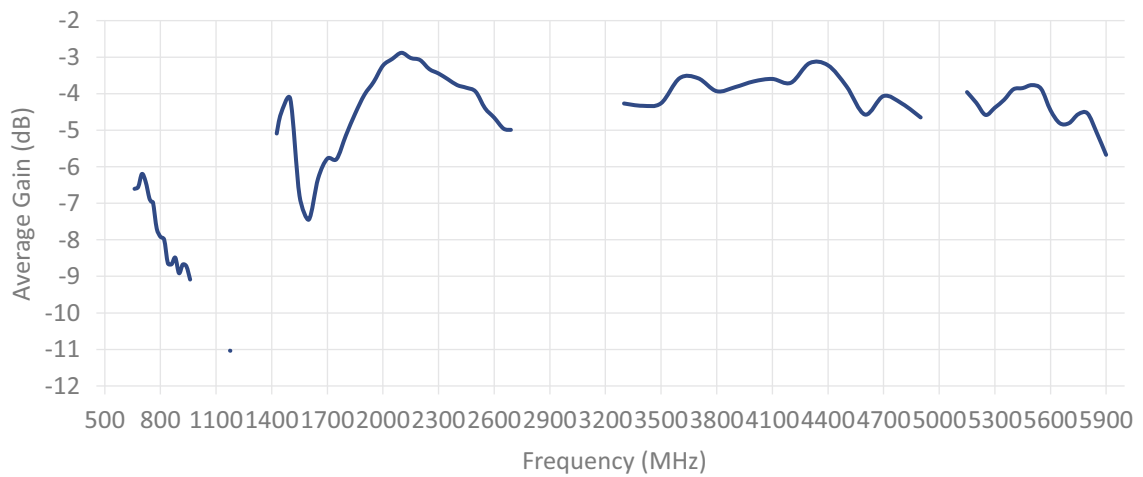
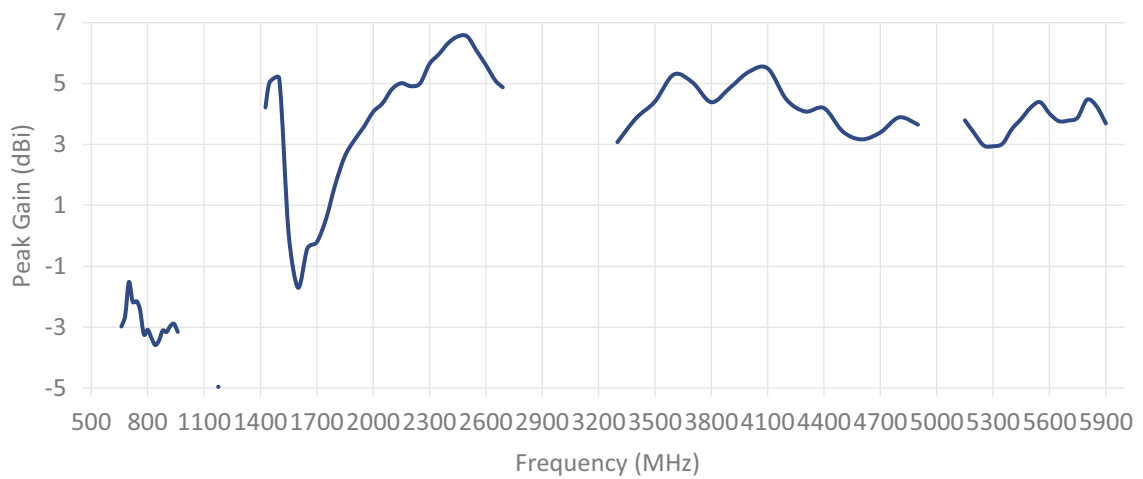
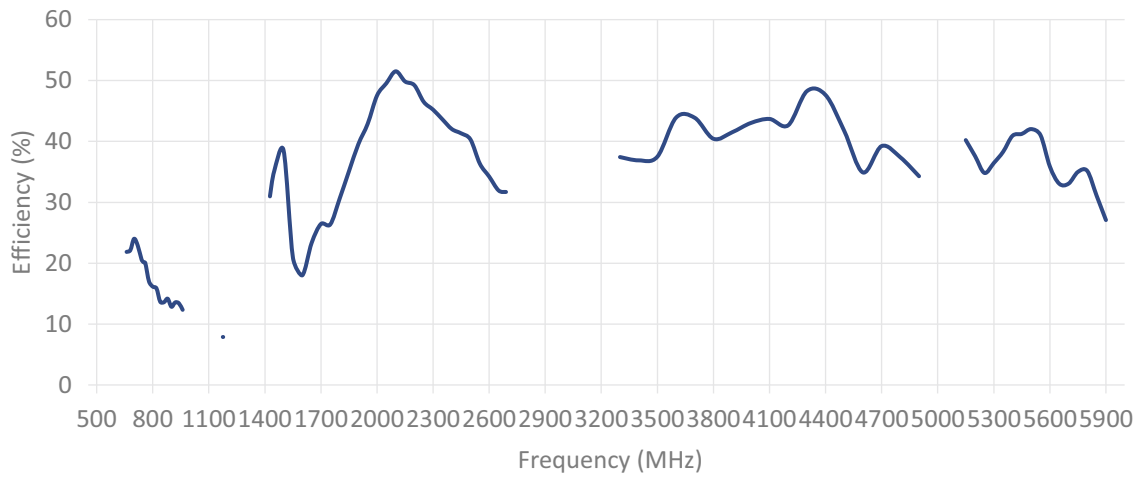
Cable 2: 5GNR



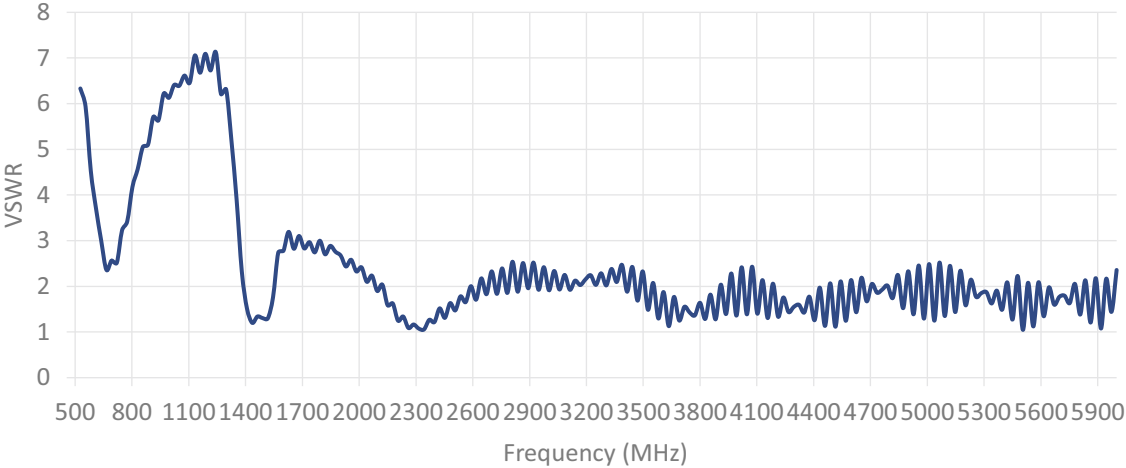
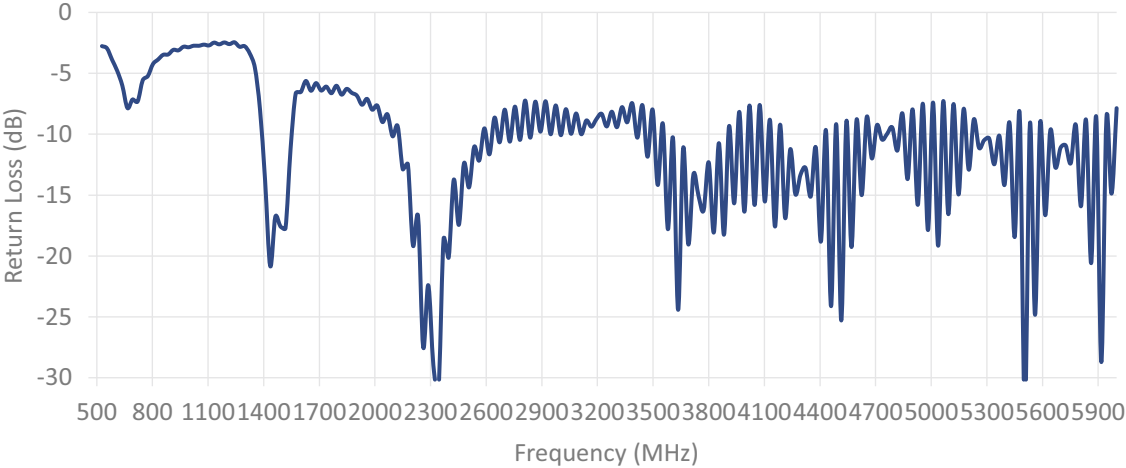


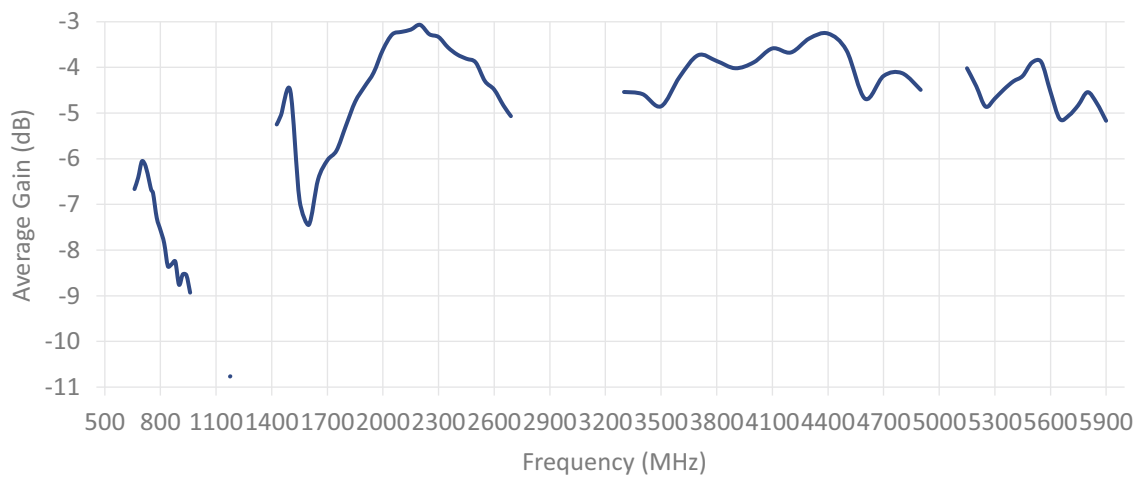
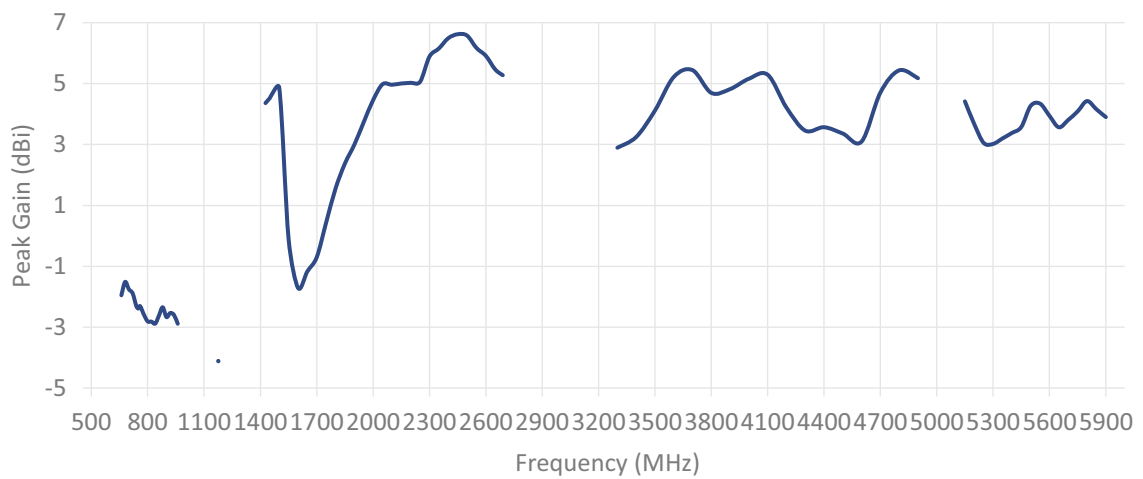
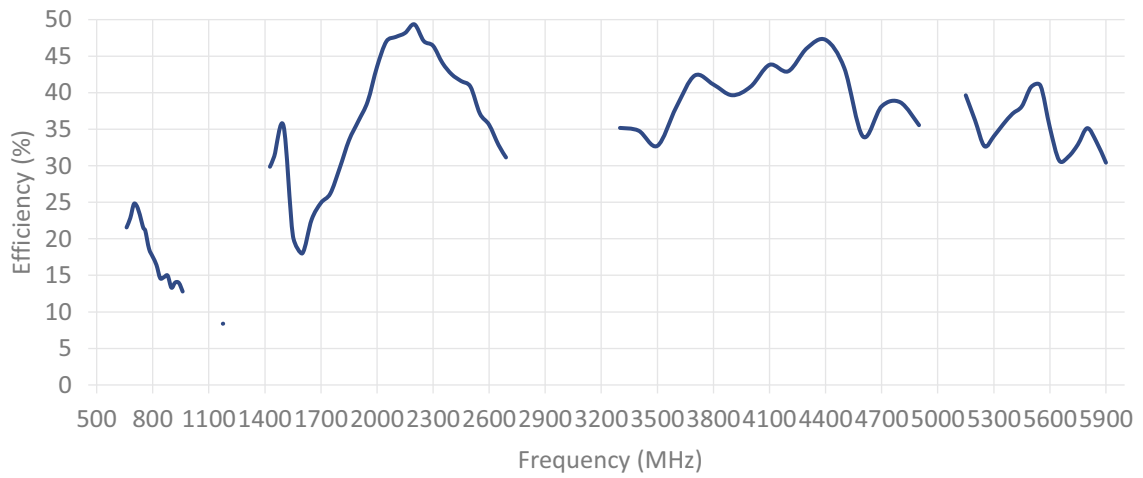
Cable 3: 5GNR



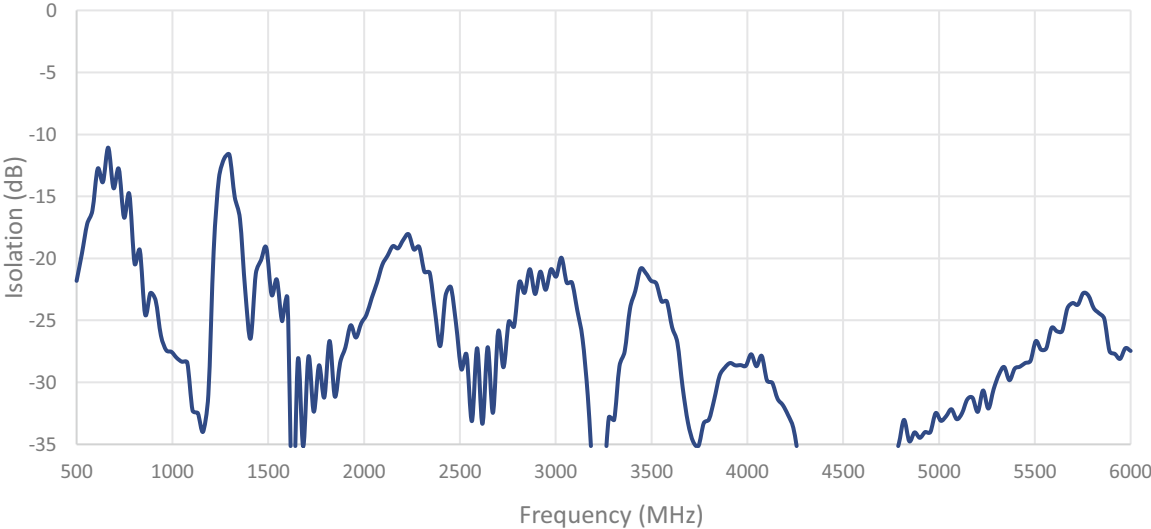


Cable 4: 5GNR

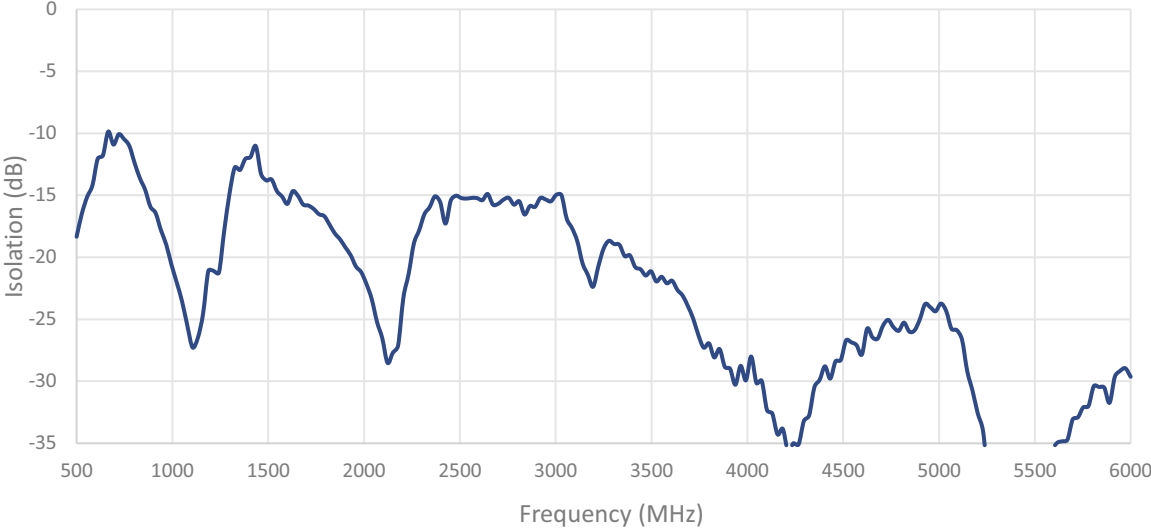




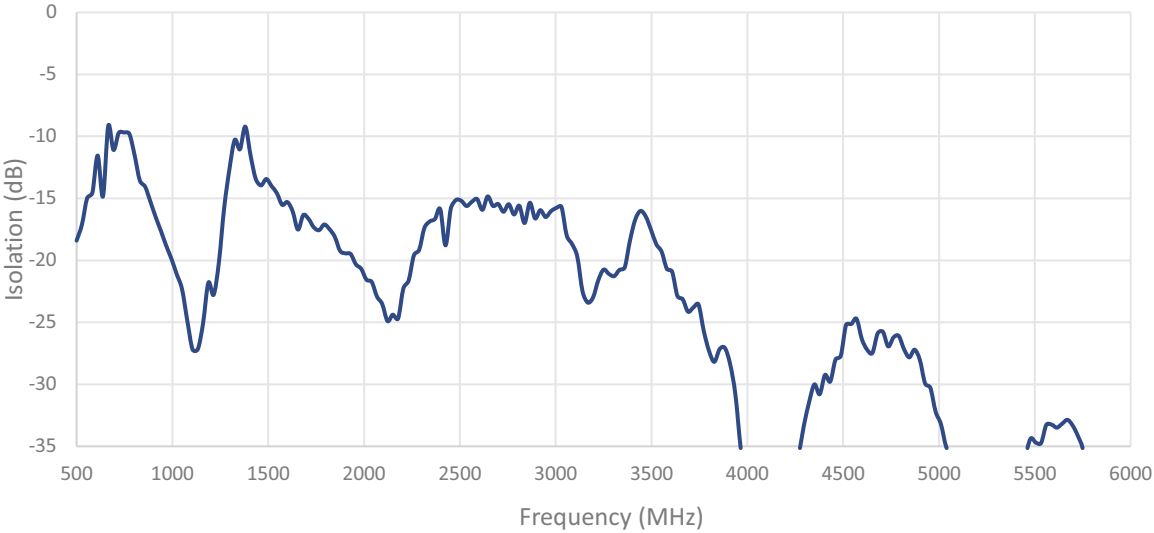
ISOLATION FOR CABLES 1 AND 2



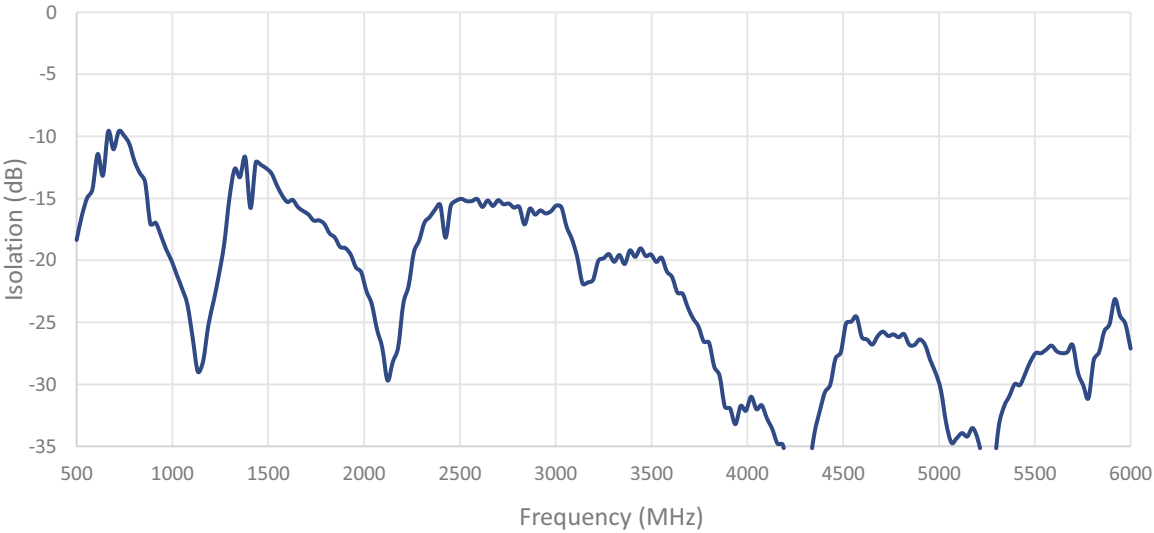
ISOLATION FOR CABLES 1 AND 3



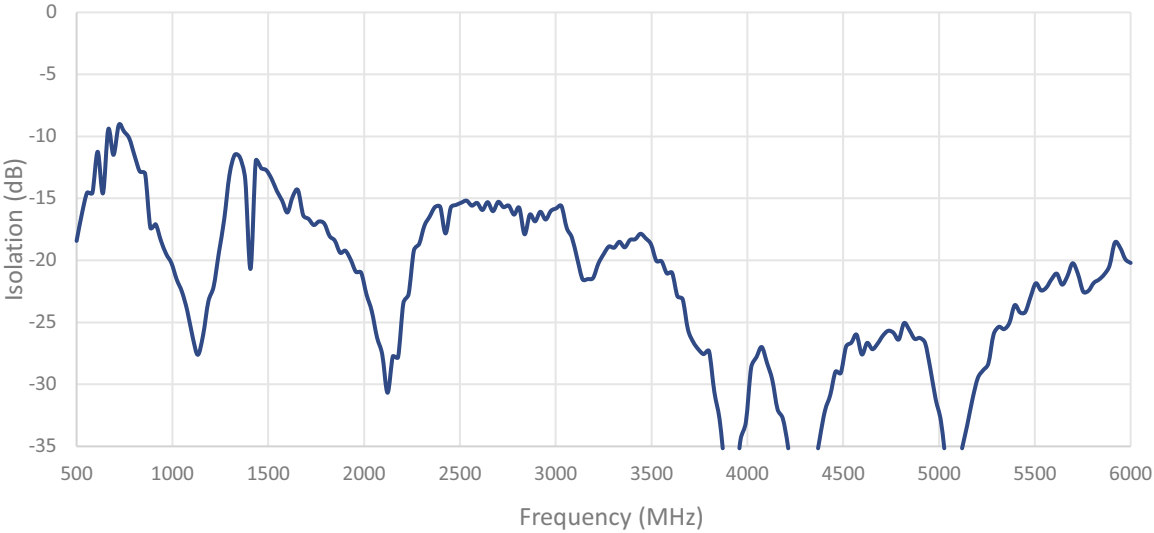
ISOLATION FOR CABLES 1 AND 4



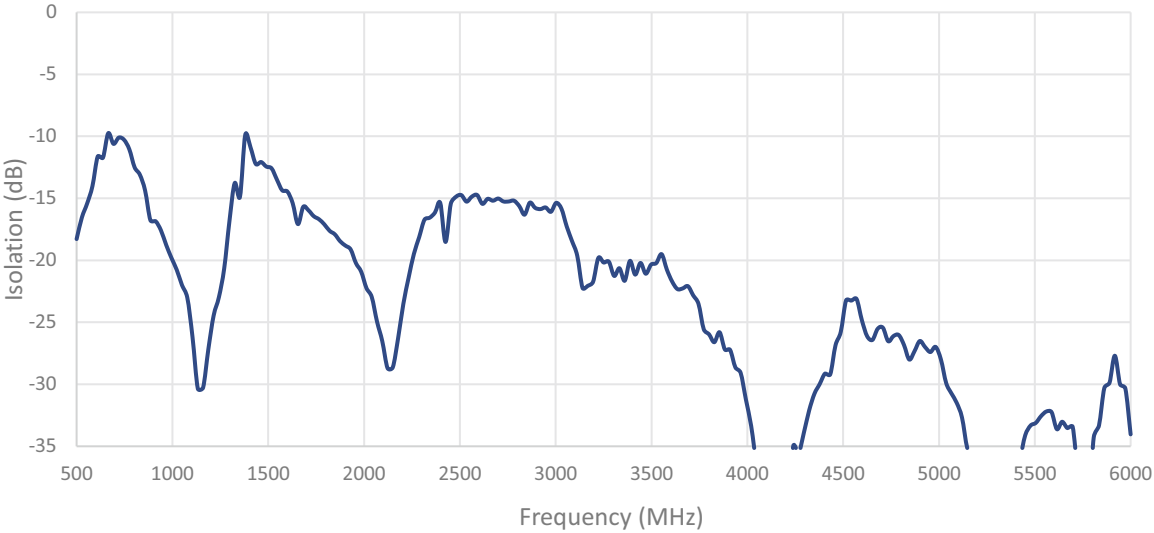
ISOLATION FOR CABLES 2 AND 3



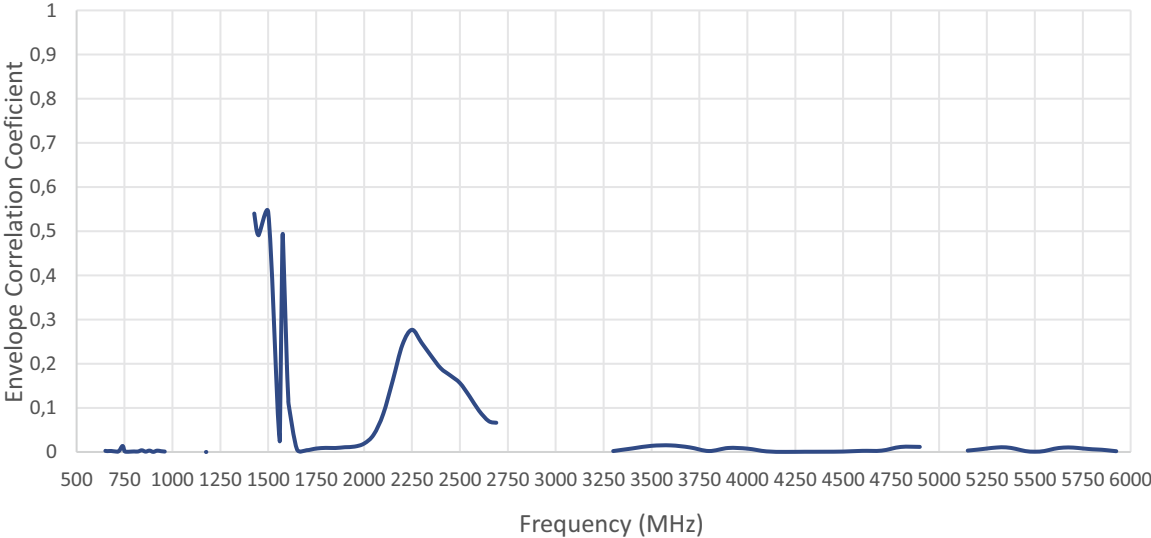
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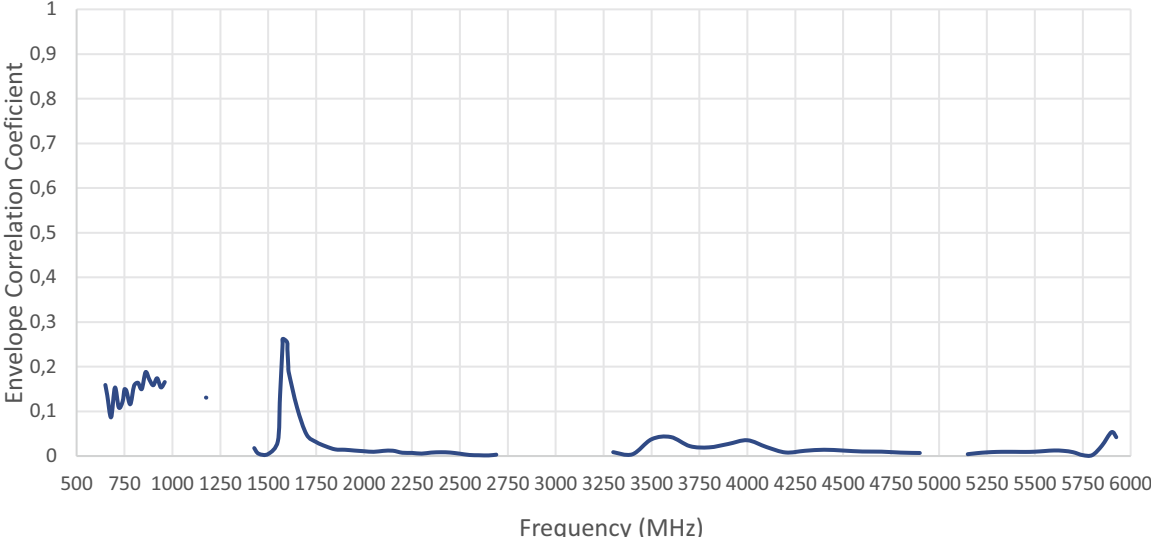
ISOLATION FOR CABLES 3 AND 4



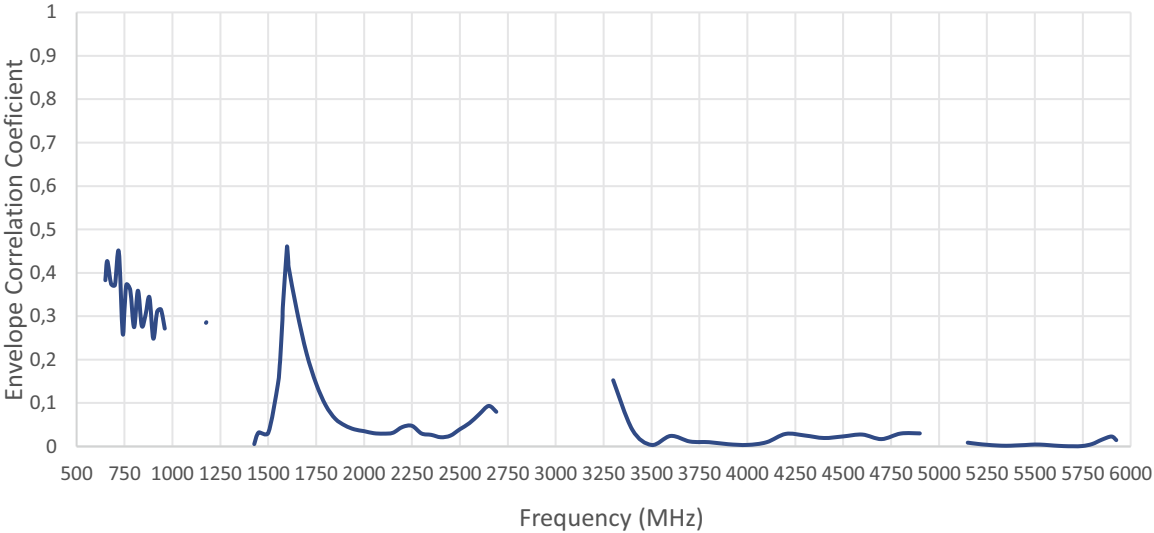
ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2



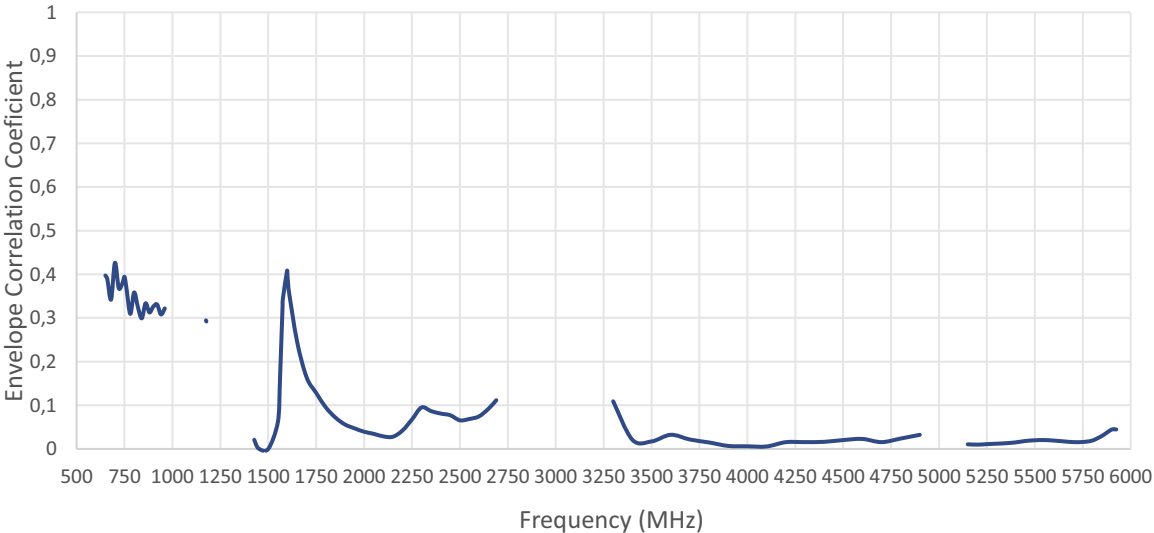
ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 3



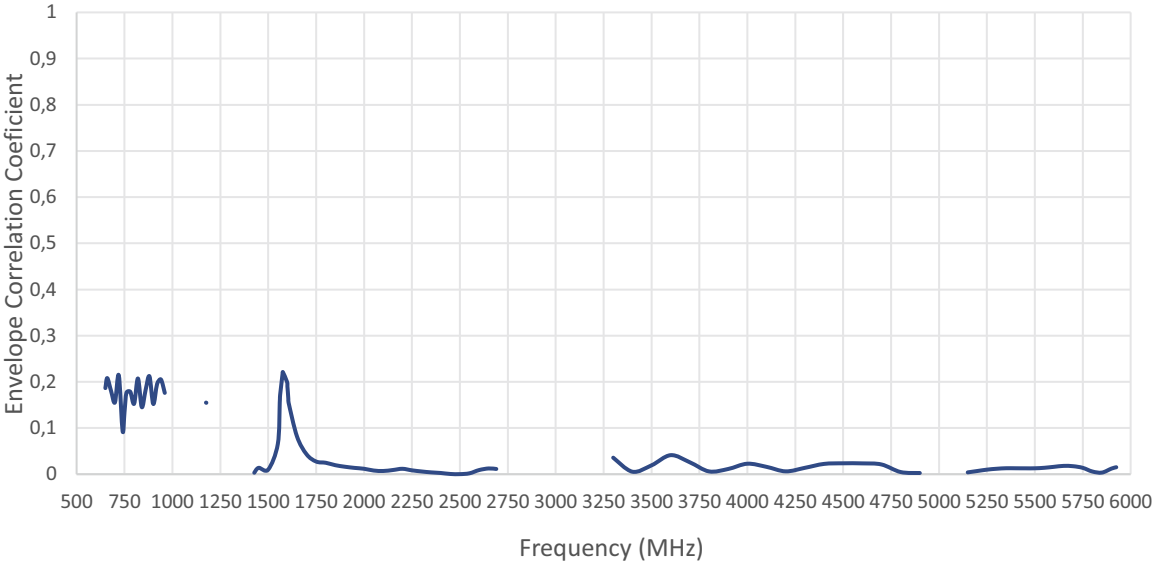
ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 4



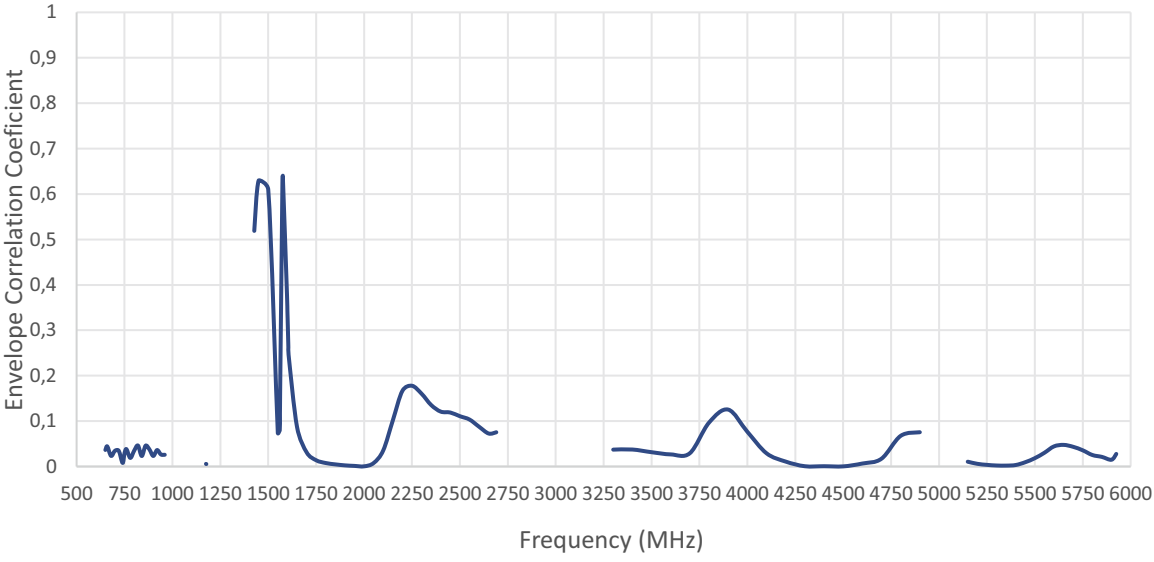
ENVELOPE CORRELATION COEFFICIENT FOR CABLES 2 AND 3



ENVELOPE CORRELATION COEFFICIENT FOR CABLES 2 AND 4



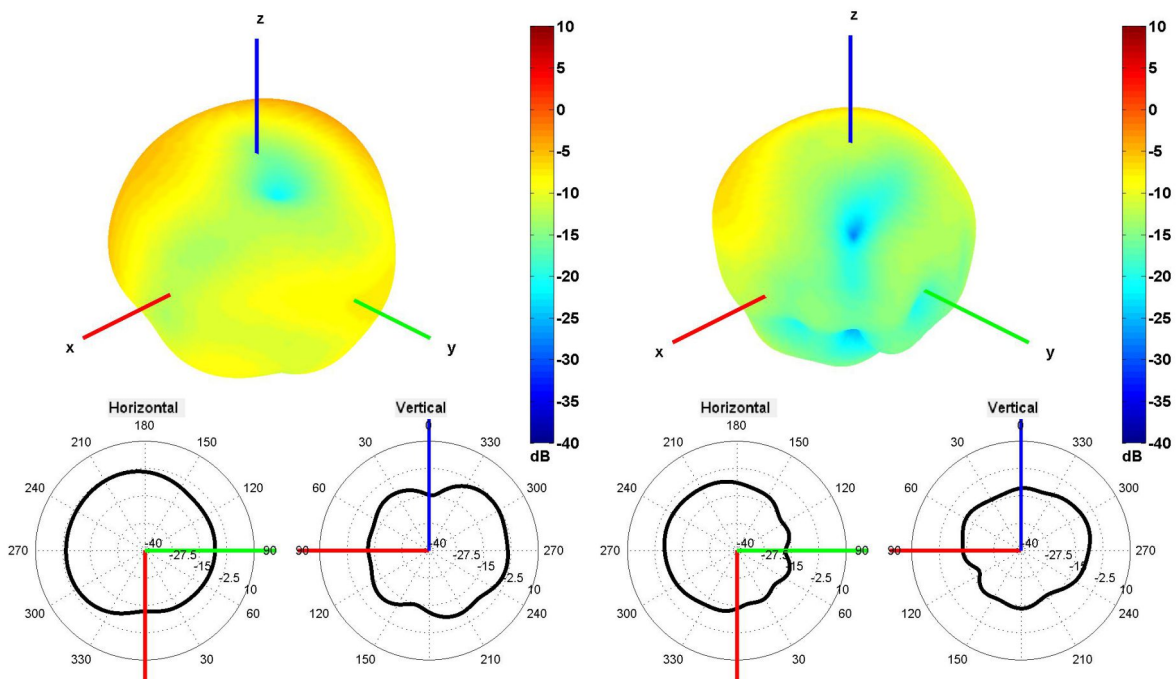
ENVELOPE CORRELATION COEFFICIENT FOR CABLES 3 AND 4



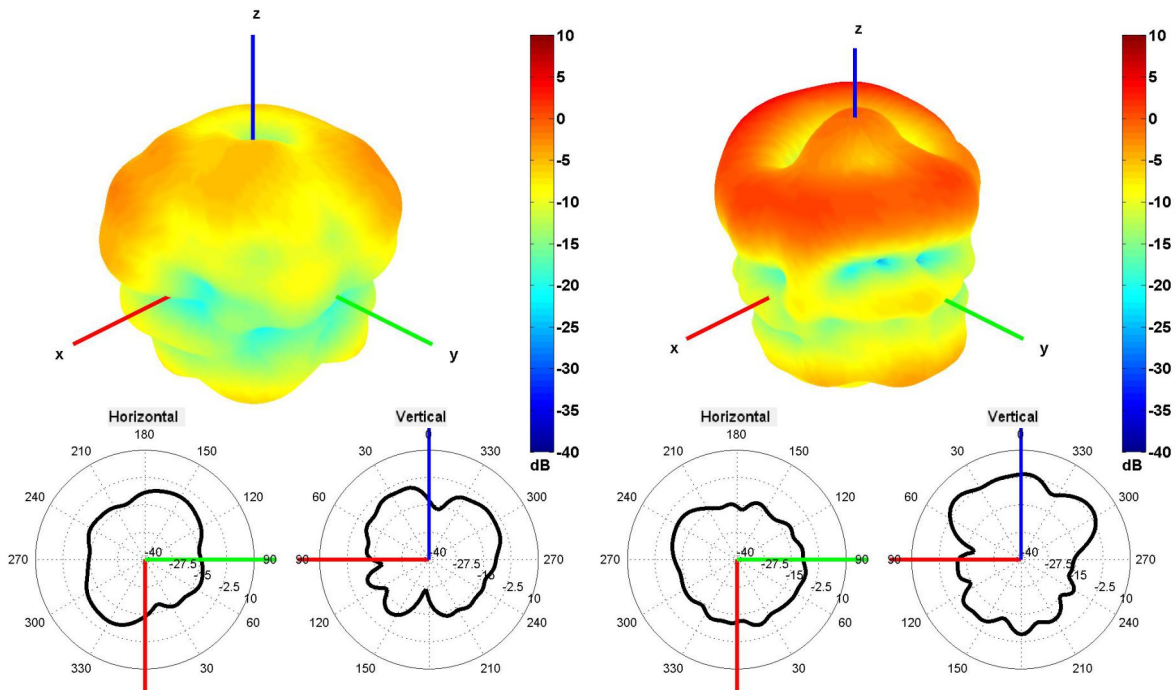


Radiation pattern reference

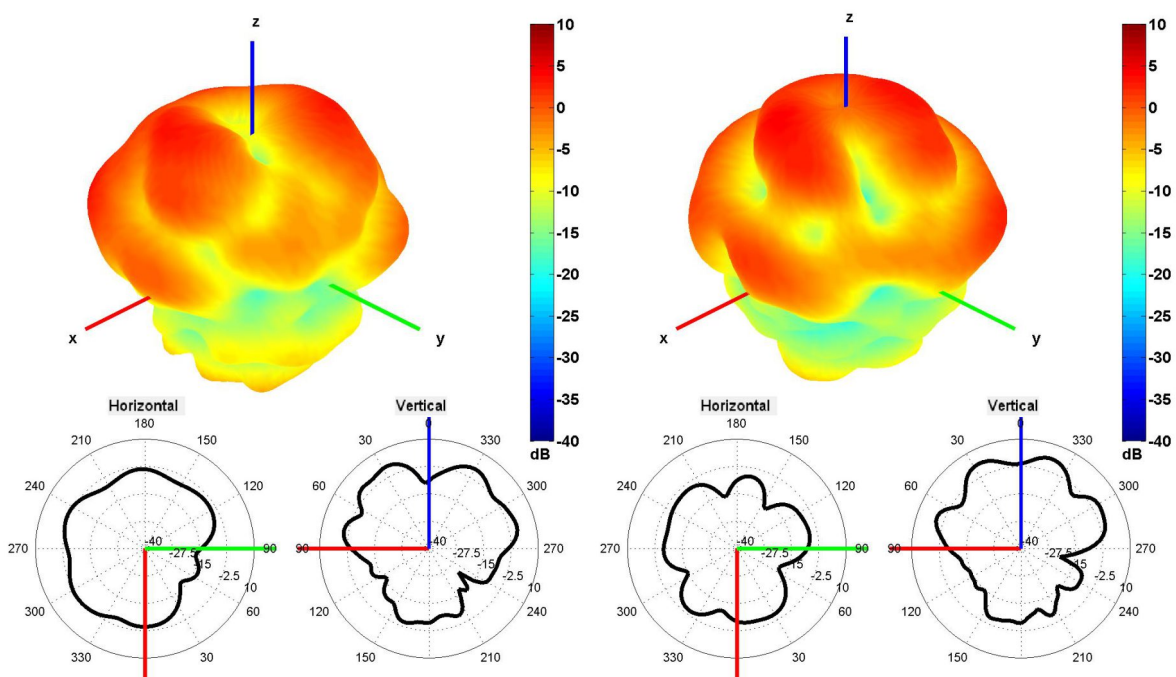
Cable 1: 5GNR



750 and 1176 MHz Radiation pattern

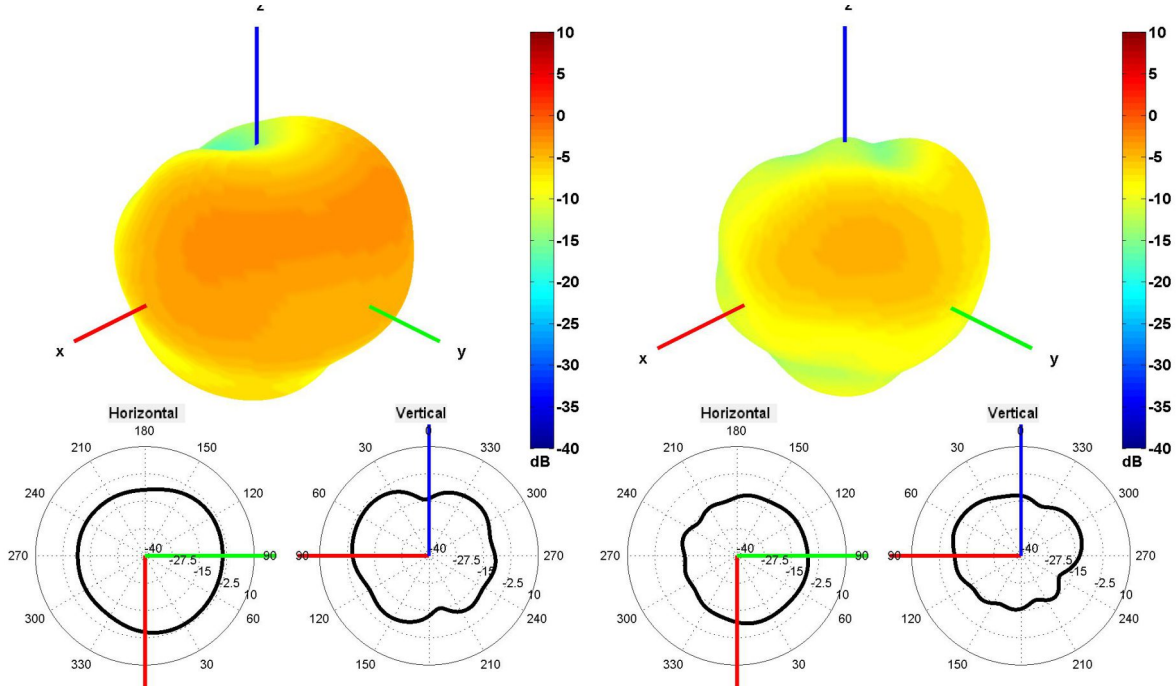


1575 and 2500 MHz Radiation pattern

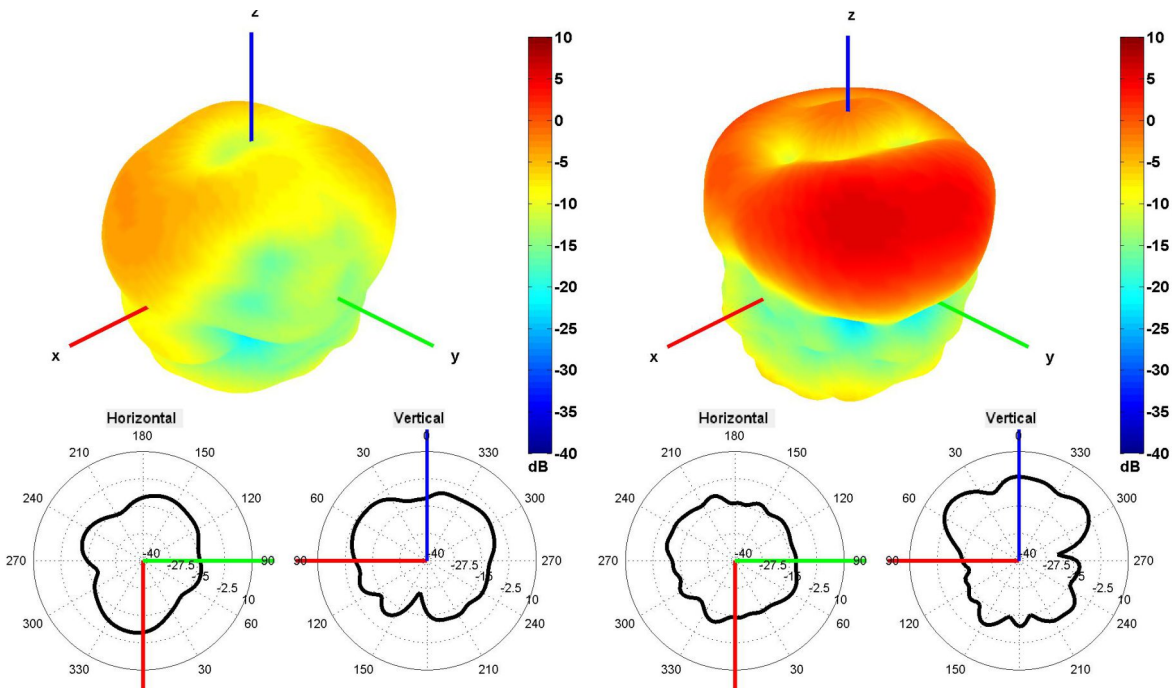


4500 and 5500 MHz Radiation pattern

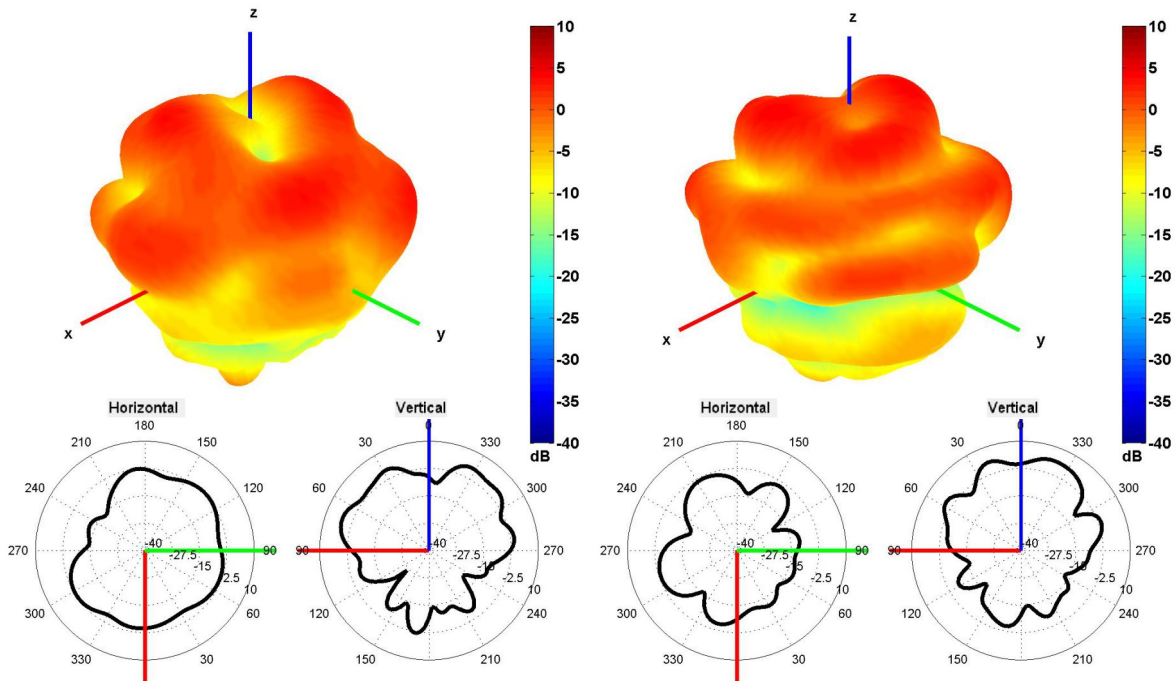
Cable 2: 5GNR



750 and 1176 MHz Radiation pattern

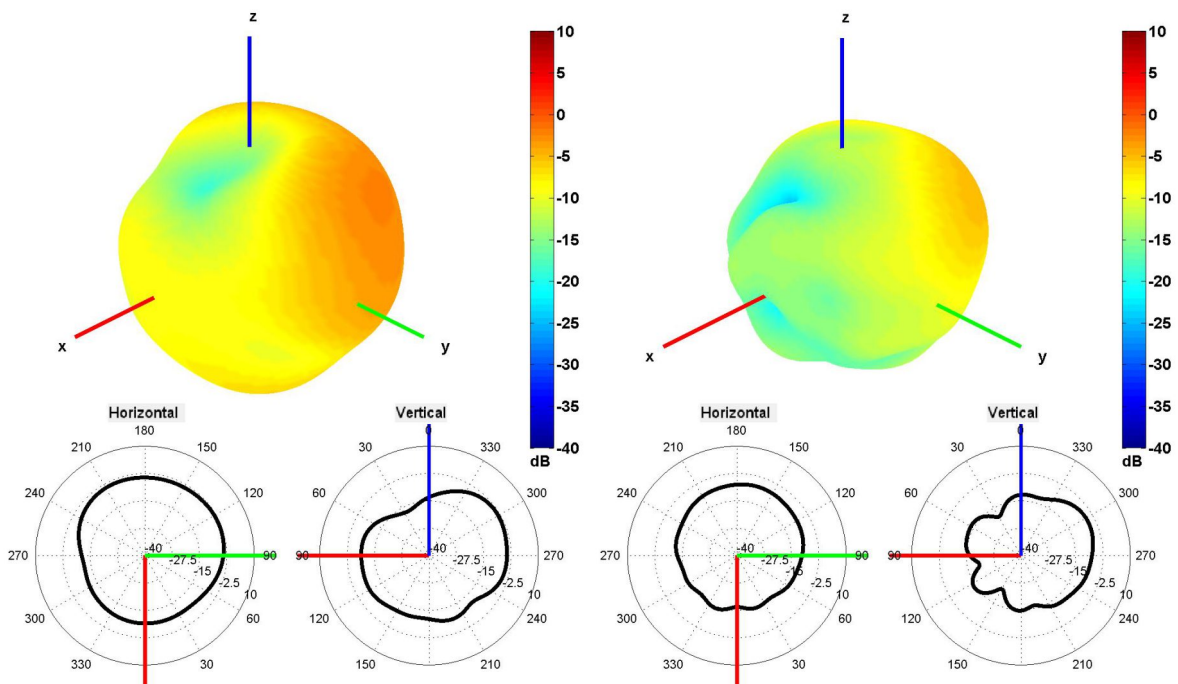


1575 and 2500 MHz Radiation pattern

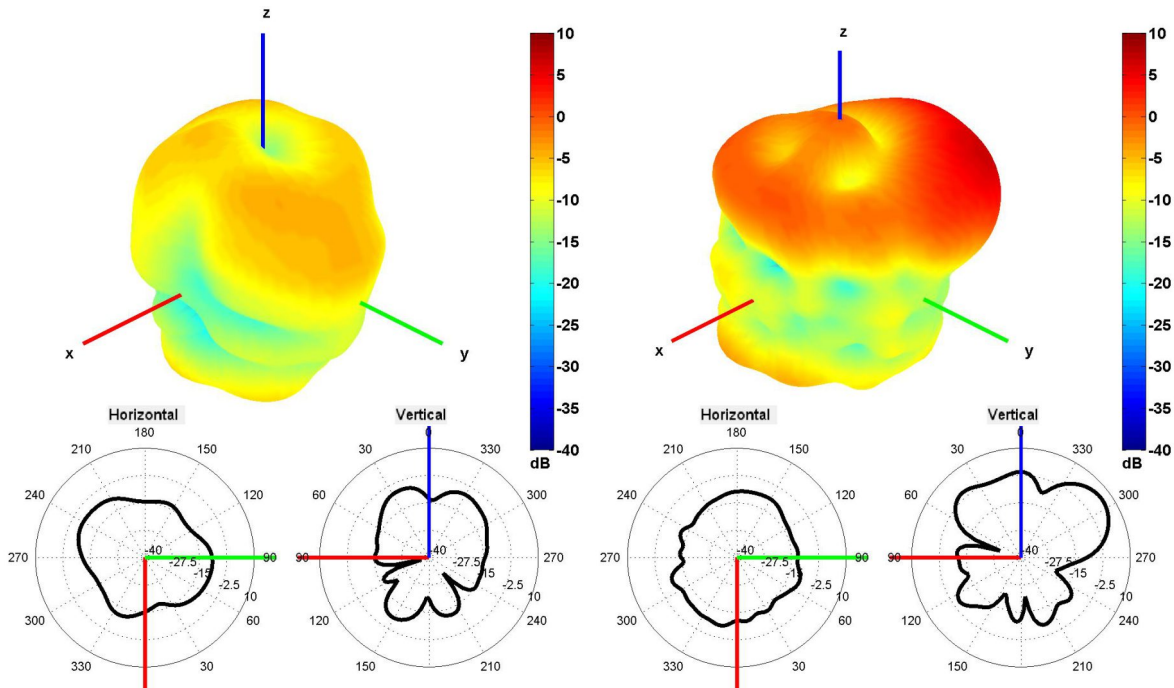


4500 and 5500 MHz Radiation pattern

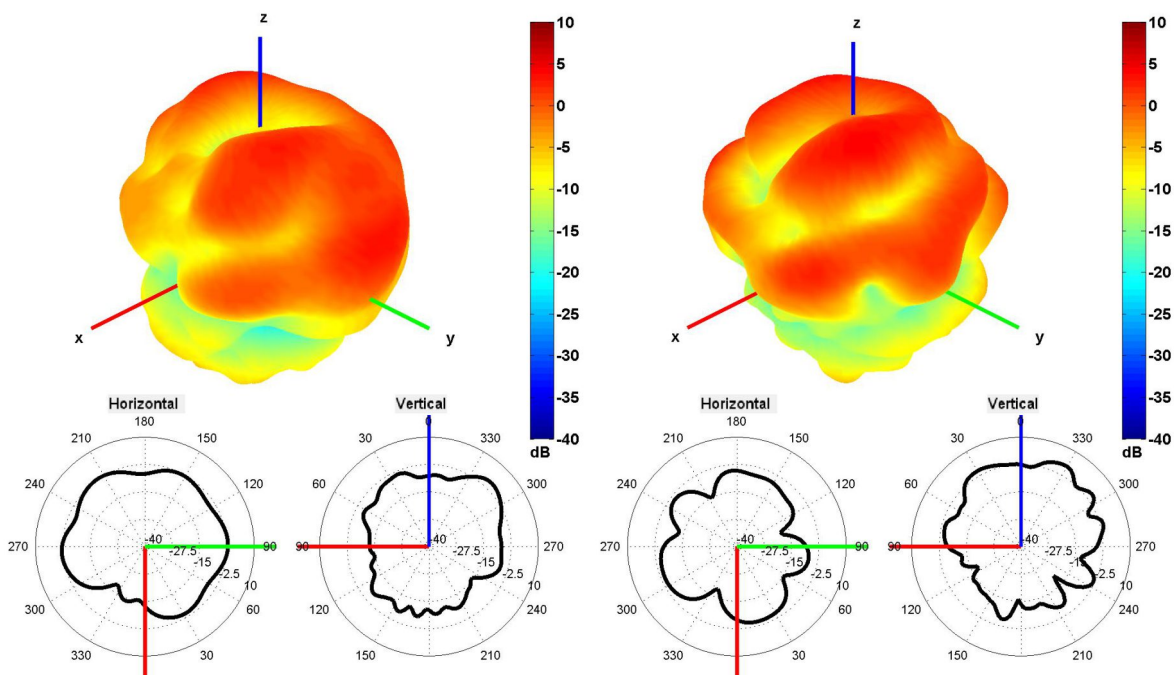
Cable 3: 5GNR



750 and 1176 MHz Radiation pattern

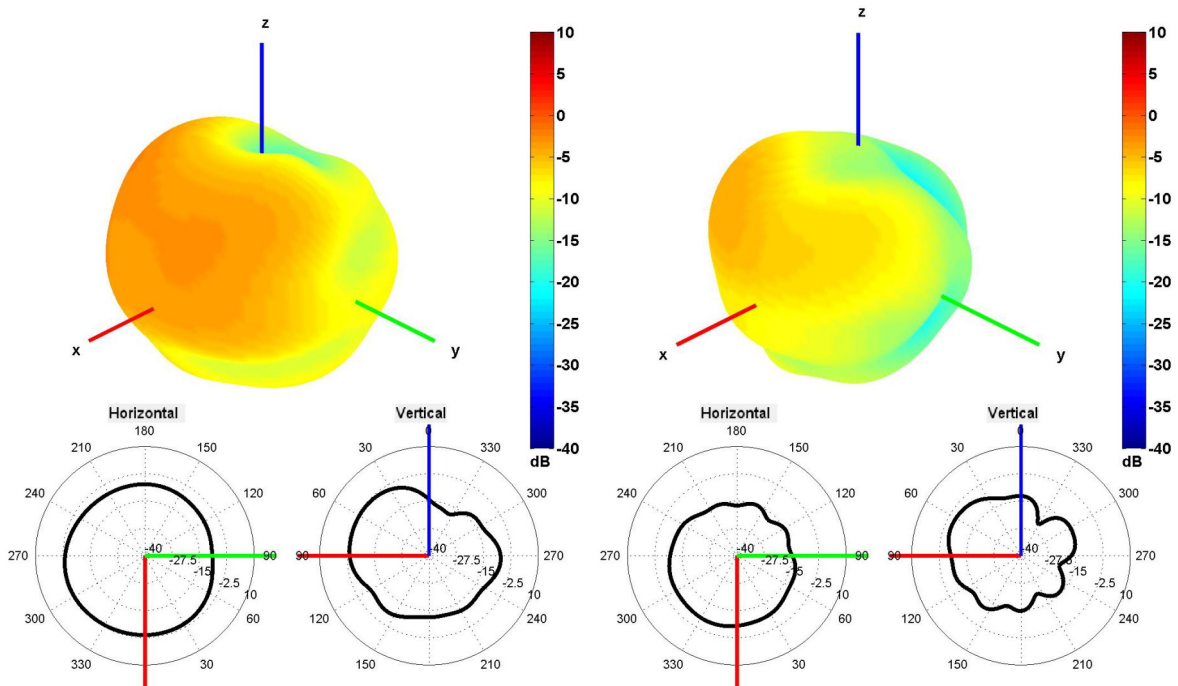


1575 and 2500 MHz Radiation pattern

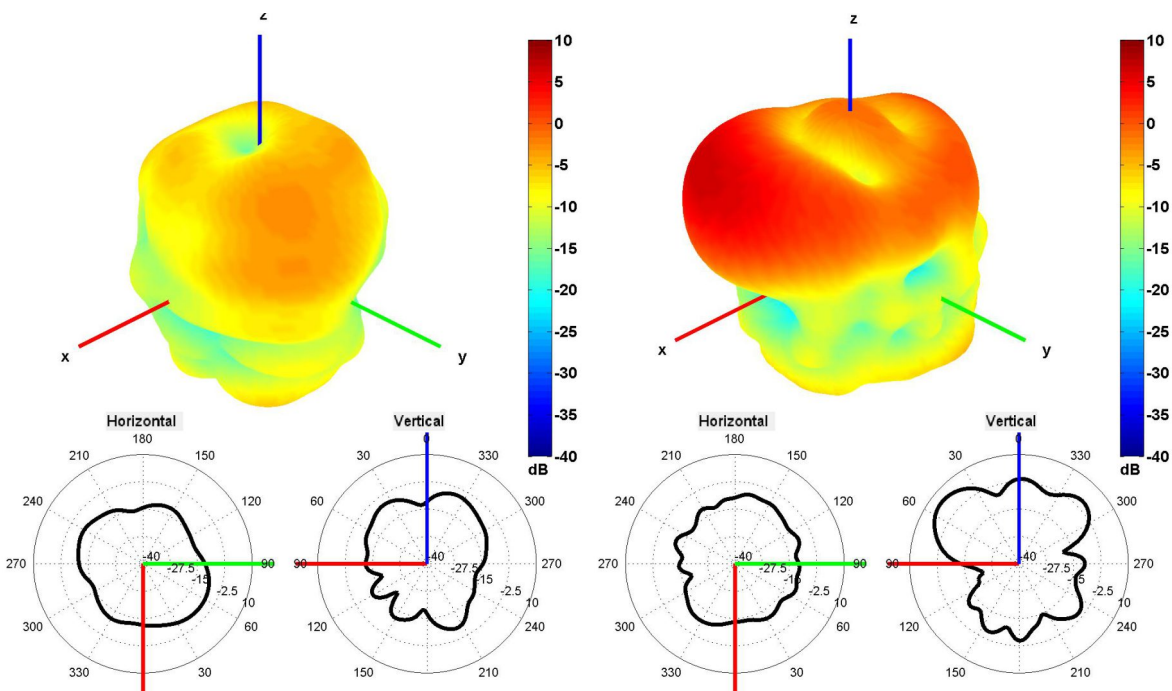


4500 and 5500 MHz Radiation pattern

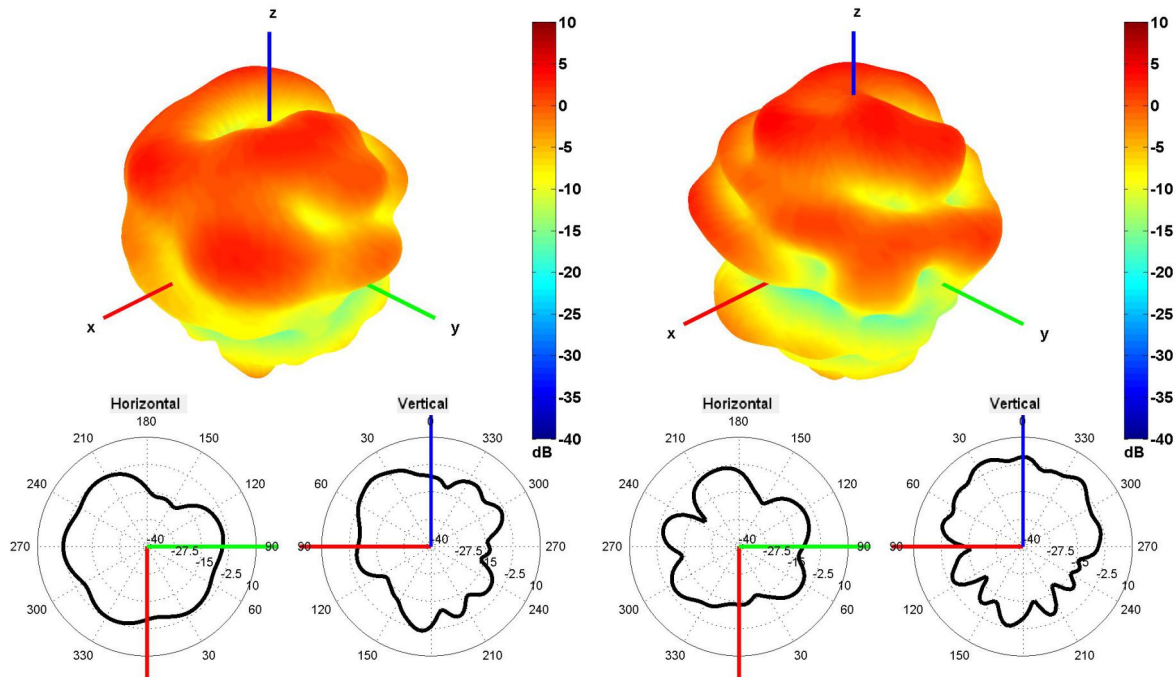
Cable 4: 5GNR



750 and 1176 MHz Radiation pattern

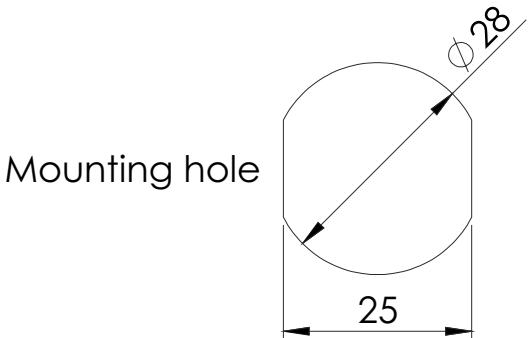
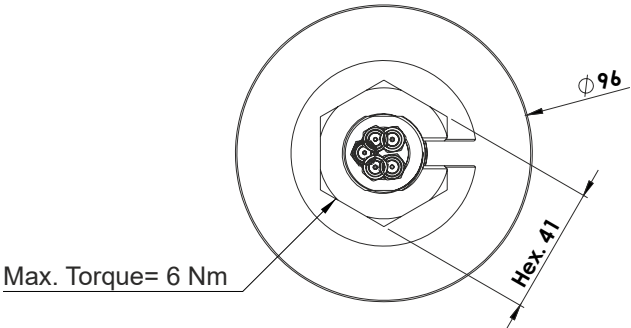
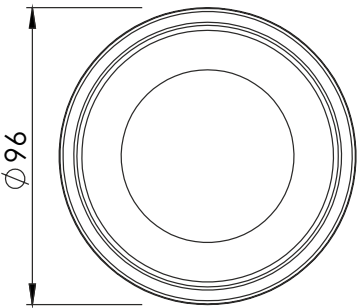
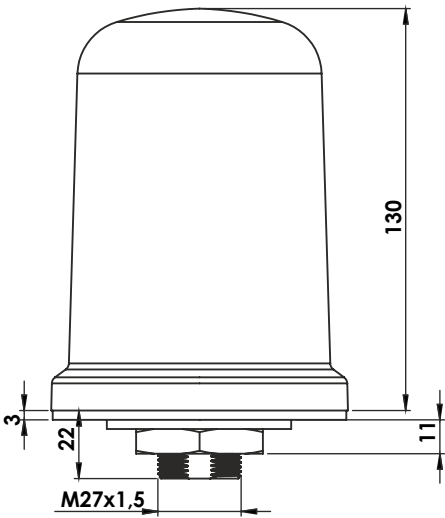


1575 and 2500 MHz Radiation pattern



4500 and 5500 MHz Radiation pattern

4. Antenna drawings



Note: Dimensions are in millimeters
*Dimensions are after mounting
**Max. Torque= 6 Nm

5. Antenna Images

