GW-CU2L ANTENNAS DATASHEET

PUBLIC DOCUMENT

REV. 1 – 2023-01-31

ABSTRACT

Datasheet for the antennas used in the GW-CU2L product.

ANTENNA MODEL NUMBERS

All the antennas are part of the PCB copper pattern.

Manufacturer: Verisure

Antenna	Model number
Cellular main antenna	CU2-ANT-CELL-MAIN
Cellular diversity antenna	CU2-ANT-CELL-DRX
DECT1 and ISM1 antenna	CU2-ANT-DECT-ISM-1
DECT2 and ISM2 antenna	CU2-ANT-DECT-ISM-2
ISM3 antenna	CU2-ANT-ISM-3
Wi-Fi chain 0 antenna	CU2-ANT-WIFI-A
Wi-Fi chain 1 antenna	CU2-ANT-WIFI-B

DESCRIPTION OF THE ANTENNAS

CELLULAR ANTENNAS

Both the primary (main) antenna and the diversity antenna are of monopole type, i.e., they have a feed connection but not a ground connection. The primary antenna also has a parasitic element that only has a ground connection. Please note that the cellular diversity antenna is for reception only.

ISM AND DECT ANTENNAS

GW-CU2L has three ISM-antennas and two of those antennas also include a DECT-1900MHz branch. All three antennas are of IFA/PIFA type, i.e., they have one feed connection each and one ground connection each.

WI-FI ANTENNAS

Both the WiFi-antenna A (chain 0) and the WiFi-antenna B (chain 1) are of monopole type, i.e., they have a feed connection but not a ground connection.

FREQUENCY RANGE, EFFICIENCY & GAIN

The following tables include relevant efficiency and gain data can for the antennas in this product.

Cellular main antenna				
Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
699 - 960	960	-4.8	3.9	-0.9
1710 - 2690	2500	-3.2	5.4	2.2

Figures at maximum gain over the frequency band

Cellular diversity antenna				
Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
699 - 960	925	-4.0	4.7	0.7
1710 - 2690	2600	-4.7	6.1	1.4

Figures at maximum gain over the frequency band

DECT1 and ISM1 antenna					
	Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
ISM	916 - 926	916	-4.3	2.7	-1.6
DECT	1905 - 1930	1930	-3.5	3.6	0.1

Figures at maximum gain over the frequency band

DECT2 and ISM2 antenna					
	Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
ISM	916 - 926	916	-4.2	4.5	0.3
DECT	1905 - 1930	1930	-3.6	5.1	1.5

Figures at maximum gain over the frequency band

ISM3 antenna					
	Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
ISM	916 - 926	926	-5.4	2.7	-2.7

Figures at maximum gain over the frequency band

Wi-Fi chain 0 antenna					
	Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
2.4 GHz band	2401 - 2484	2412	-2.5	N/A	1.3
5 GHz band	5180 - 5825	5500	-1.9	N/A	3.1

Figures at maximum gain over the frequency band

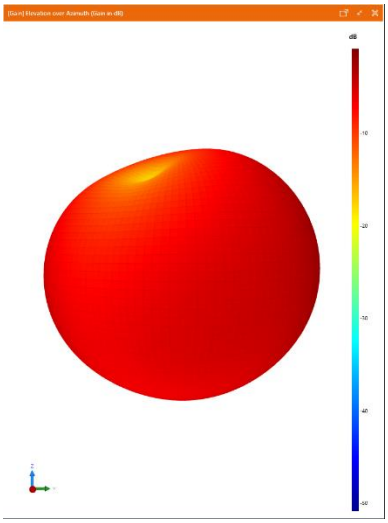
Wi-Fi chain 1 antenna					
	Frequency band [MHz]	**Frequency [MHz]**	**Efficiency [dB]**	**Directivity [dBi]**	**Gain [dBi]**
2.4 GHz band	2401 - 2484	2401	-4.6	N/A	2.2
5 GHz band	5180 - 5825	5700	-1.9	N/A	5.0

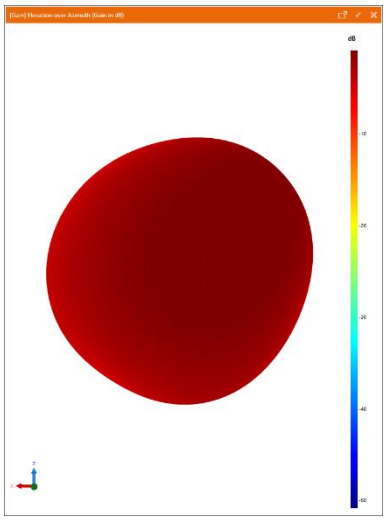
Figures at maximum gain over the frequency band

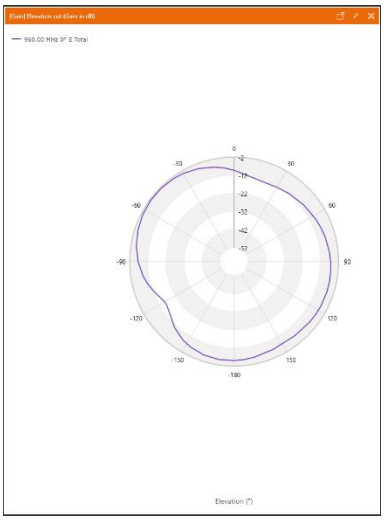
RADIATION PATTERNS, 3D-CUTS & 2D-CUTS

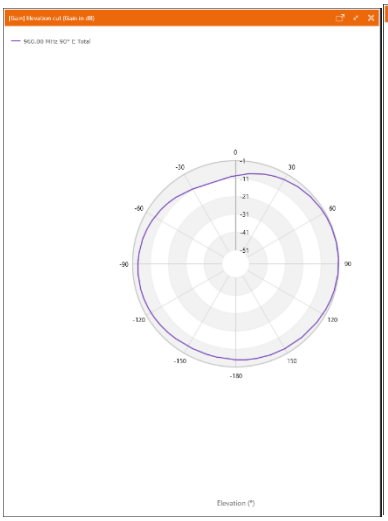
CELLULAR MAIN ANTENNA

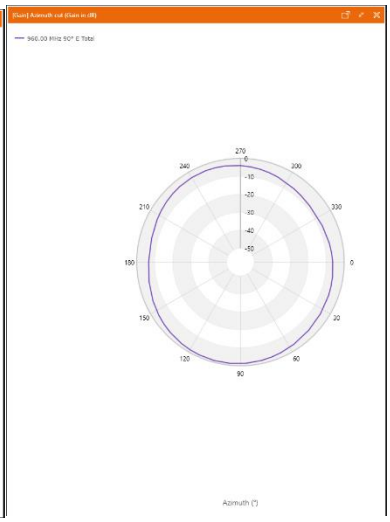
At 960 MHz





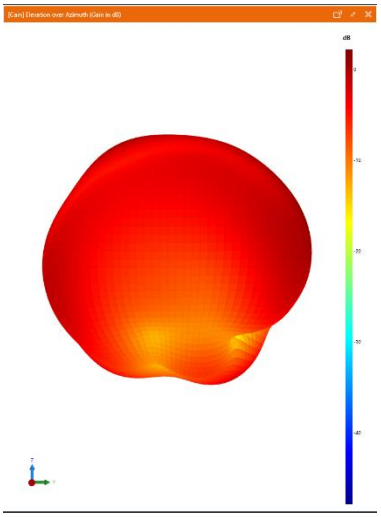


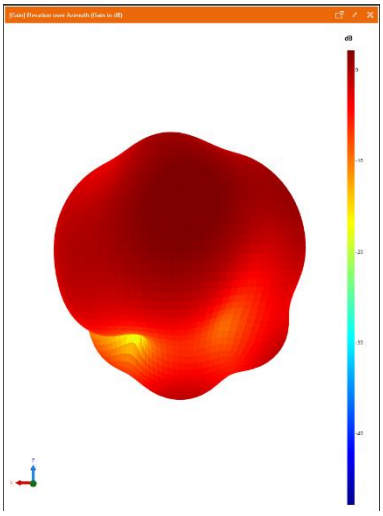


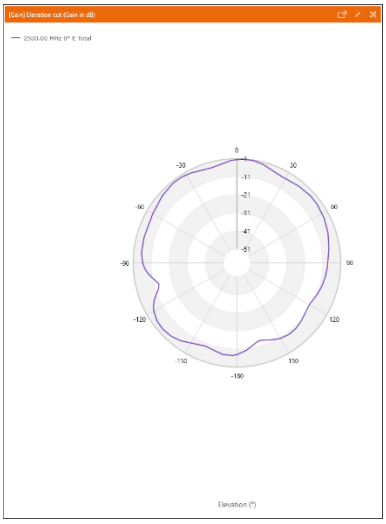


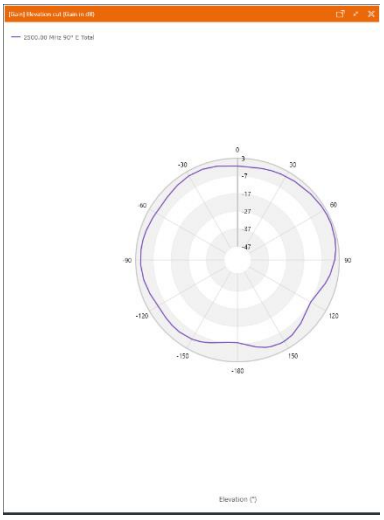
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

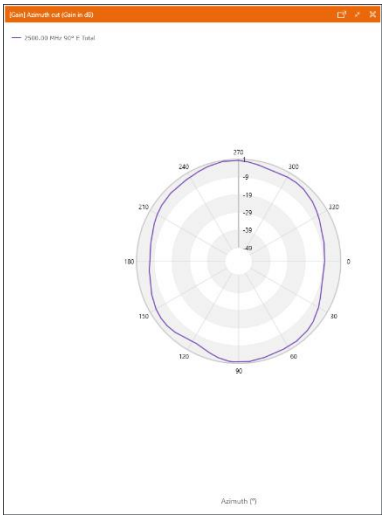
At 2500 MHz











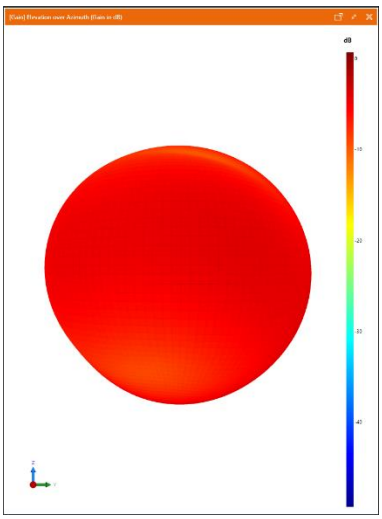
Elevation, azimuth 0deg

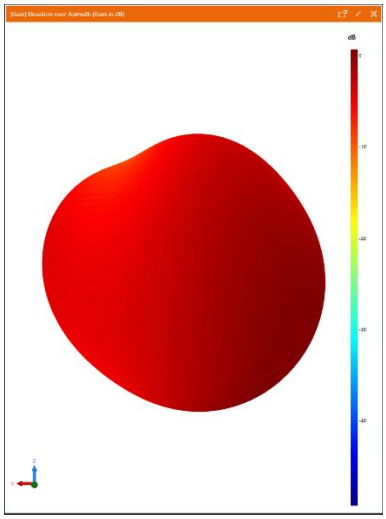
Elevation, azimuth 90deg

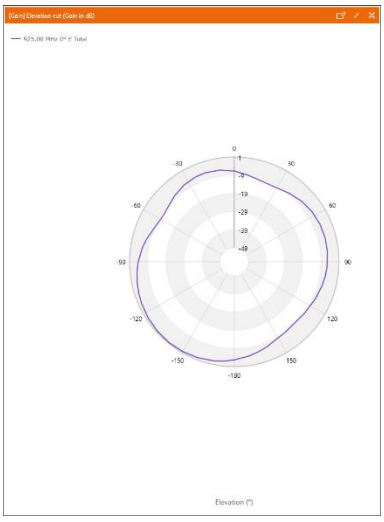
Azimuth

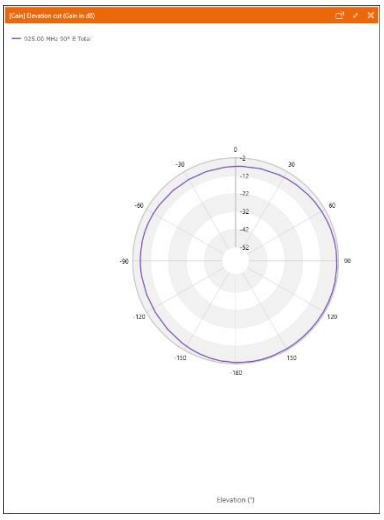
CELLULAR DIVERSITY

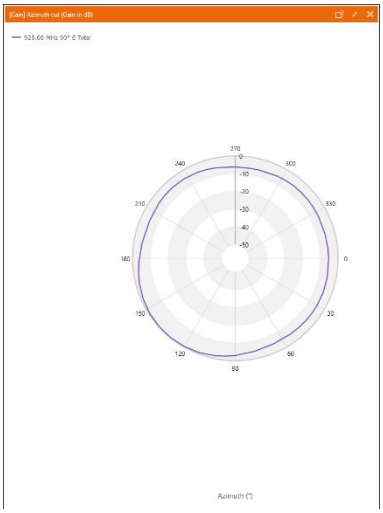
At 925 MHz





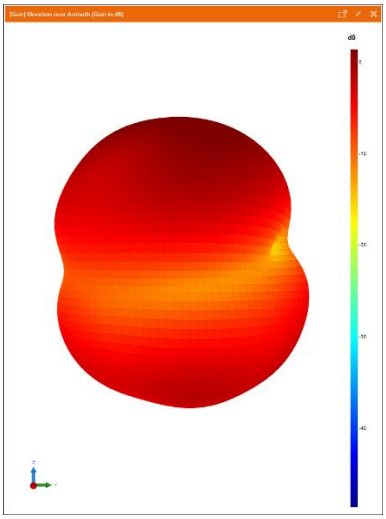


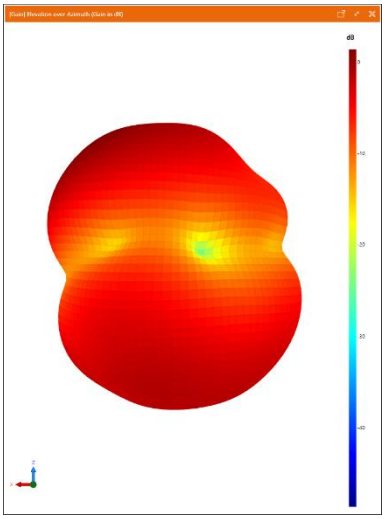


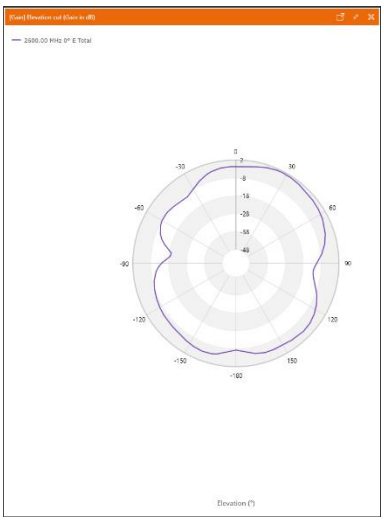


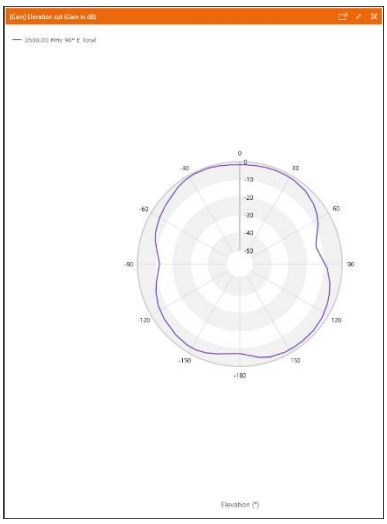
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

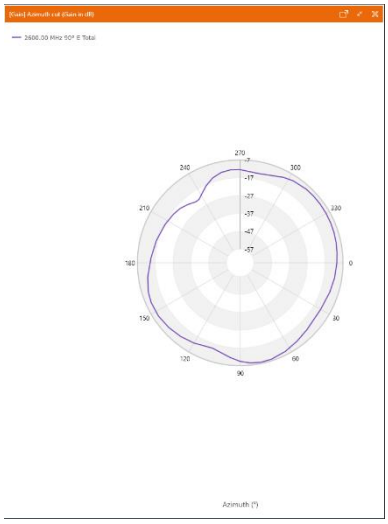
At 2600 MHz











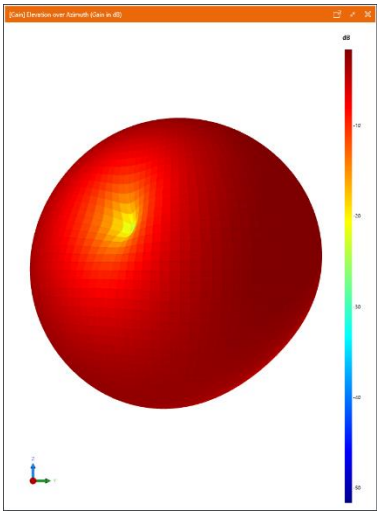
Elevation, azimuth 0deg

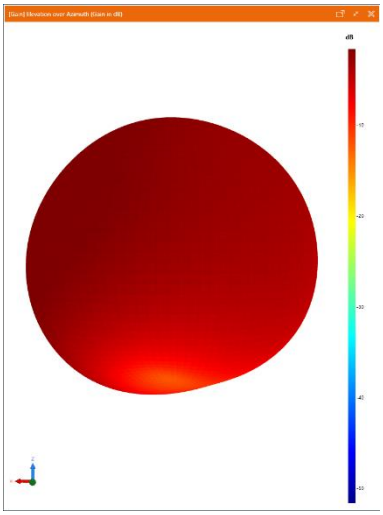
Elevation, azimuth 90deg

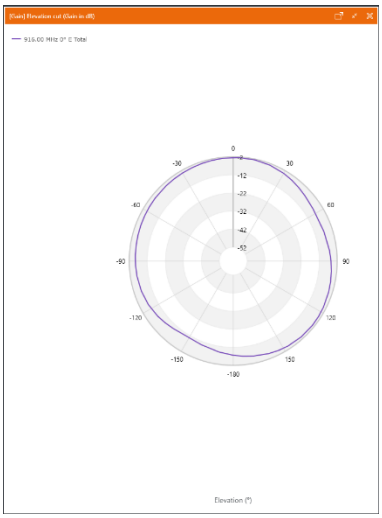
Azimuth

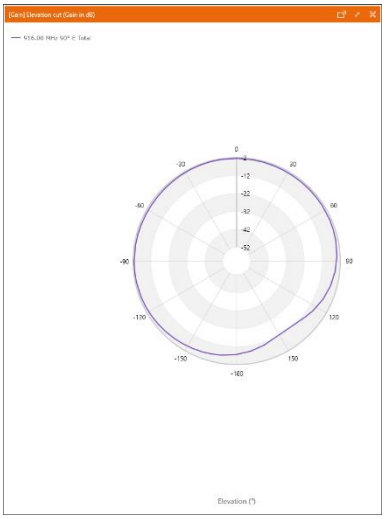
DECT1 AND ISM1 ANTENNA

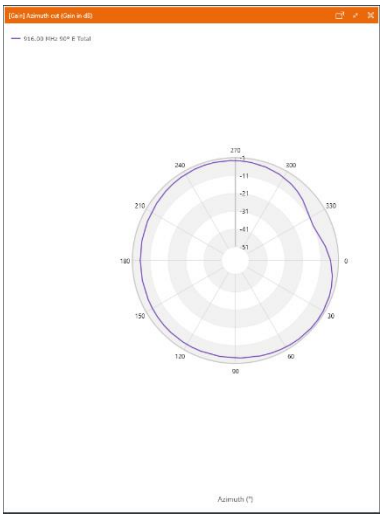
At 916 MHz (ISM)





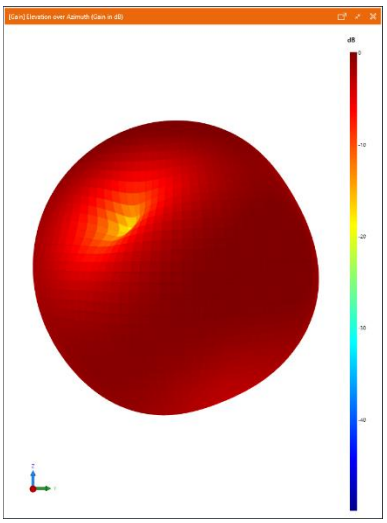


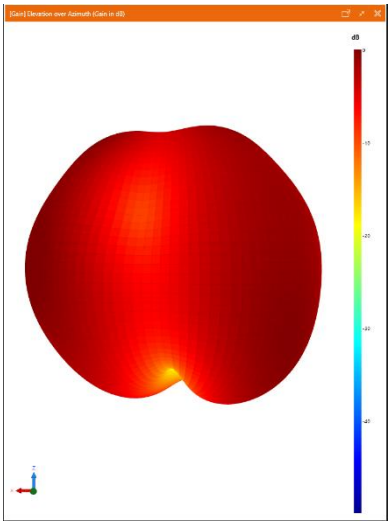


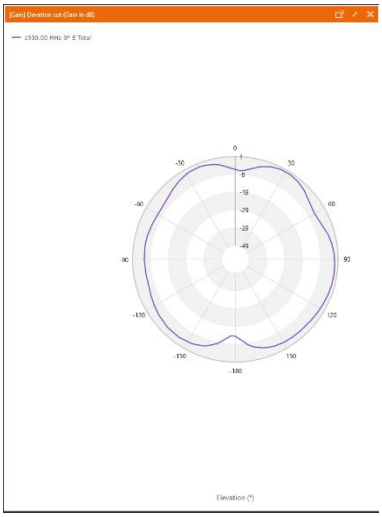


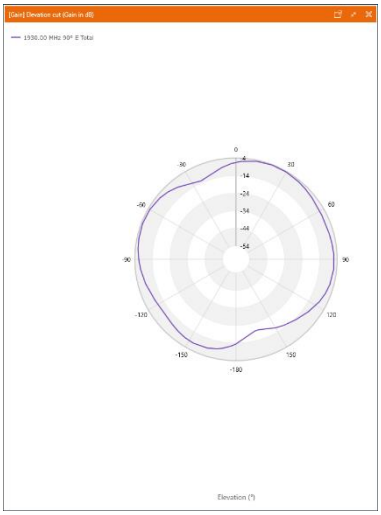
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

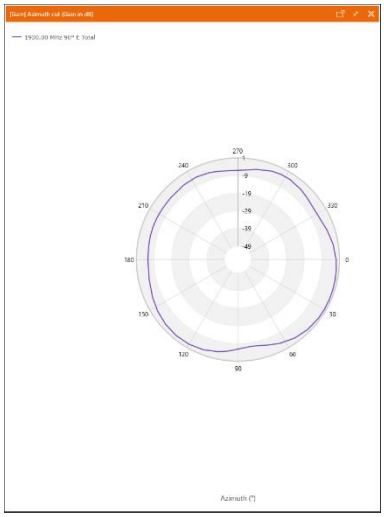
At 1930MHz (DECT)







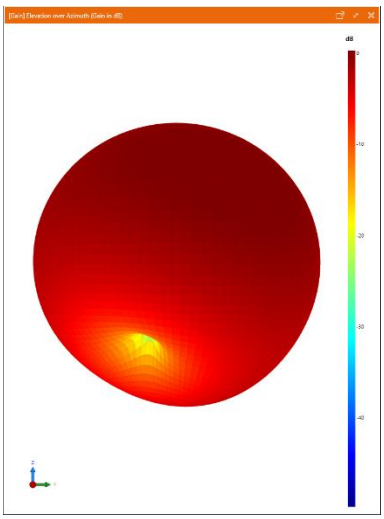


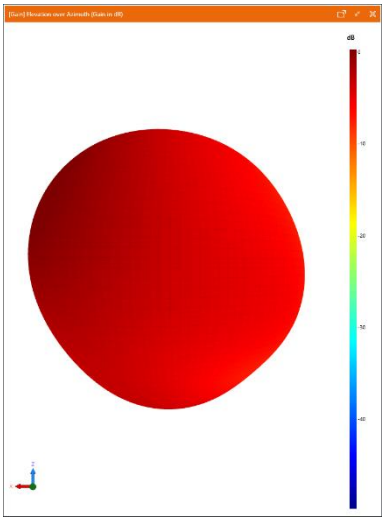


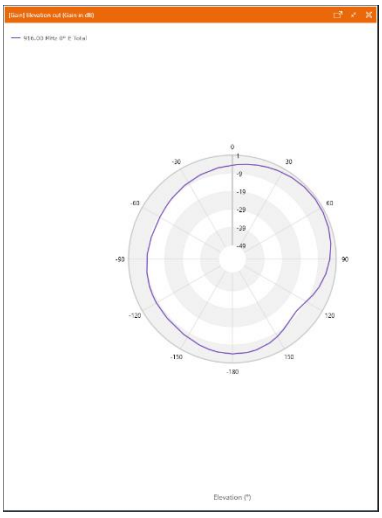
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

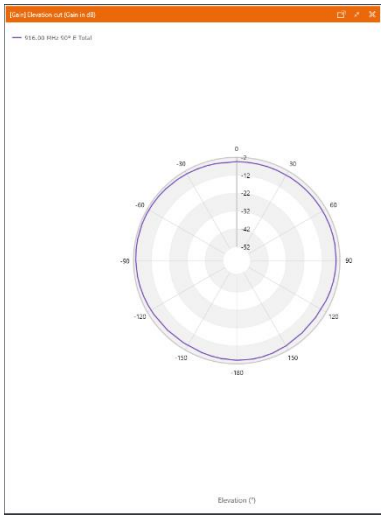
DECT2 AND ISM2 ANTENNA

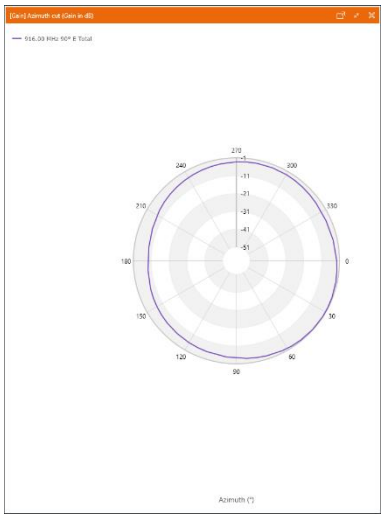
At 916 MHz (ISM)





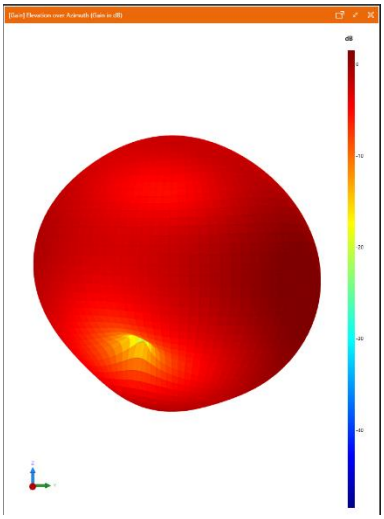


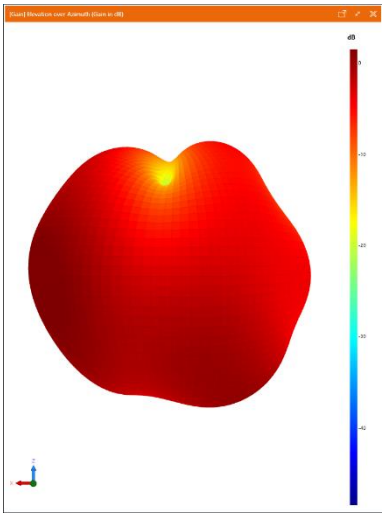


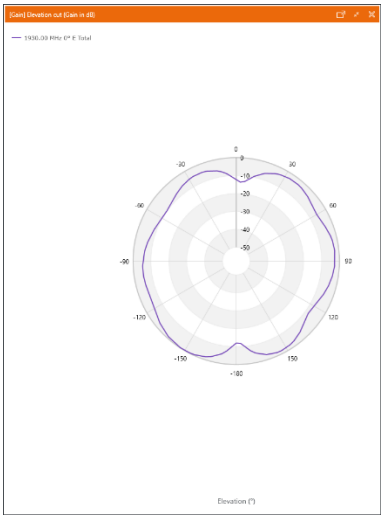


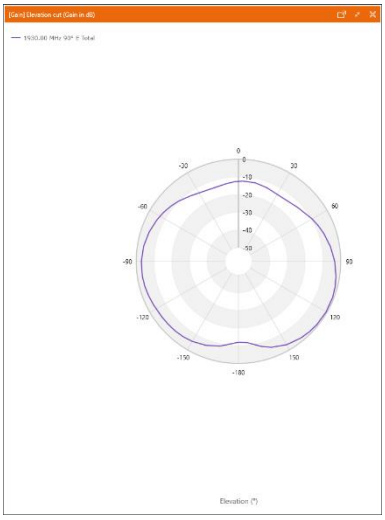
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

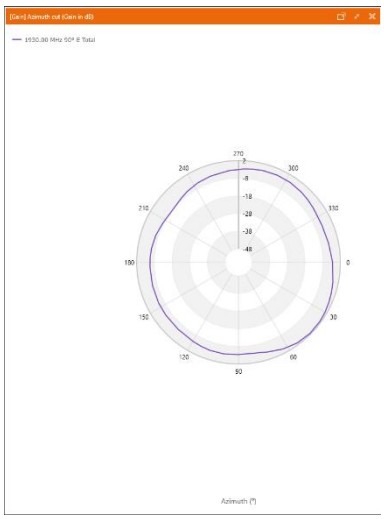
At 1930 MHz (DECT)







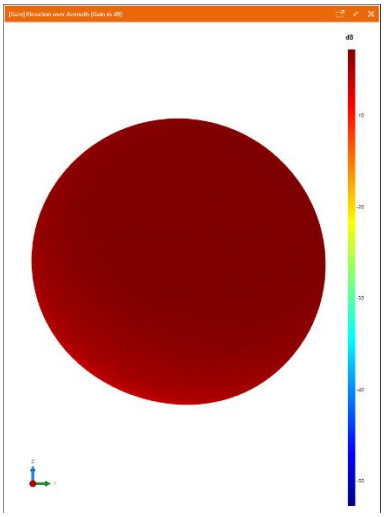


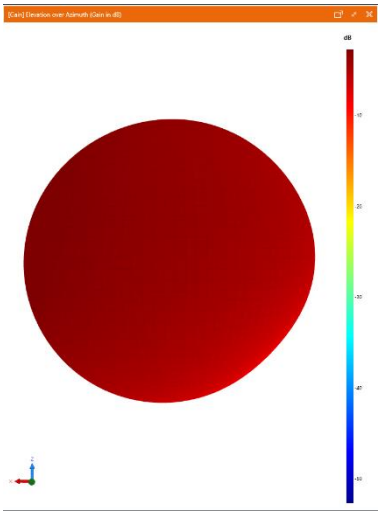


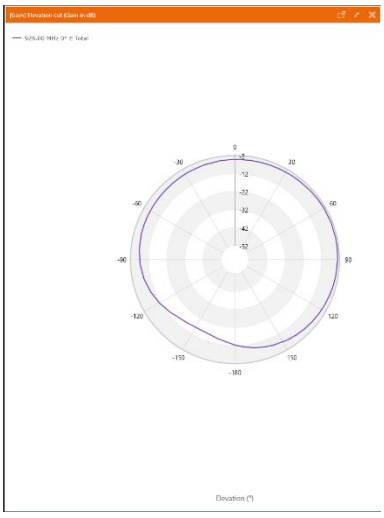
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

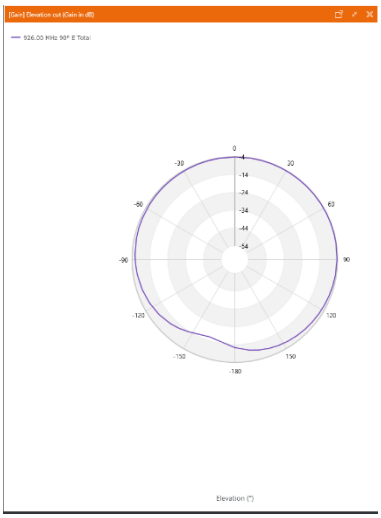
ISM3 ANTENNA

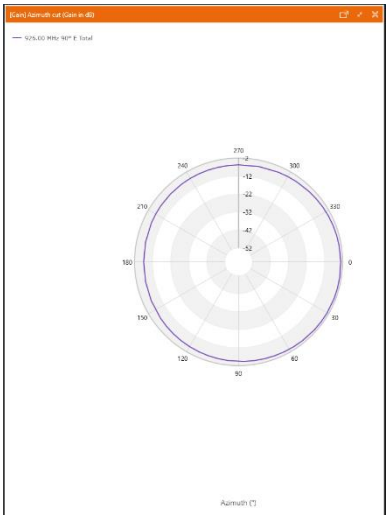
At 926 MHz (ISM)







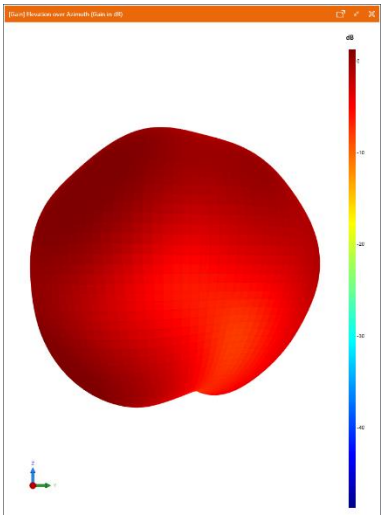


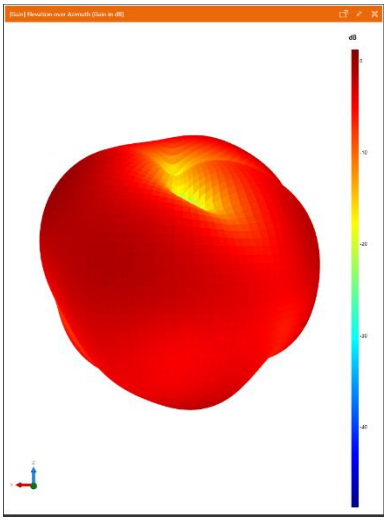


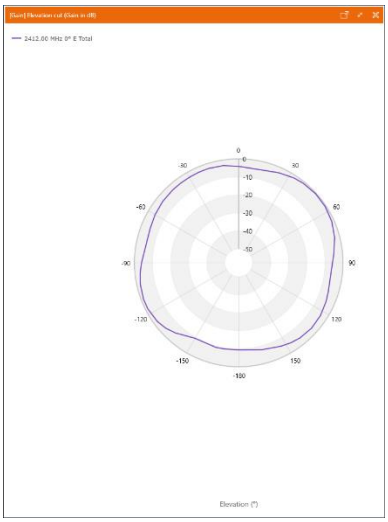
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

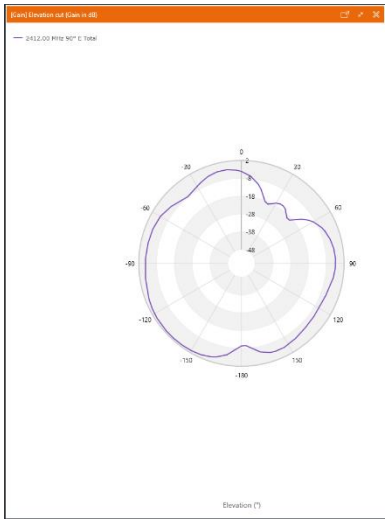
WI-FI CHAIN 0 ANTENNA

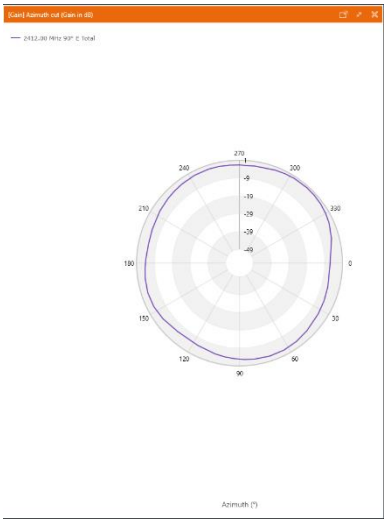
At 2412 MHz





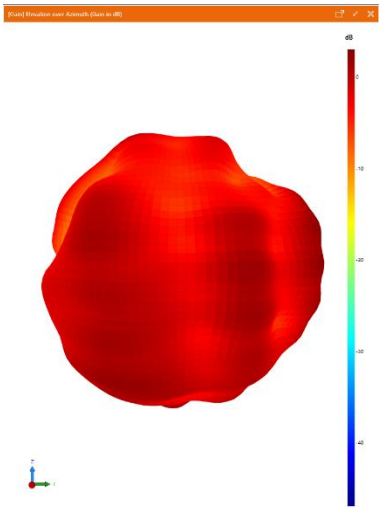


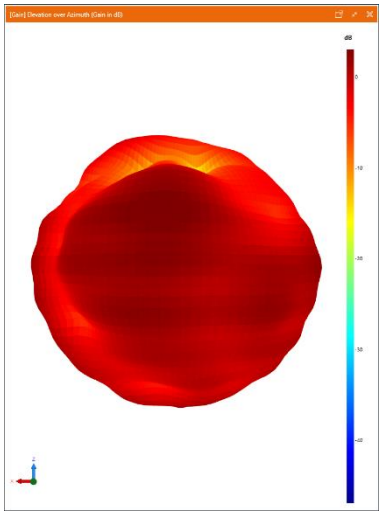


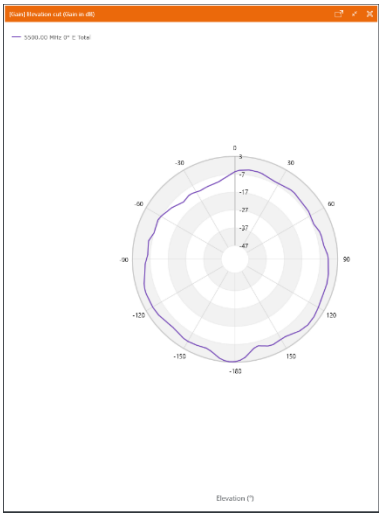


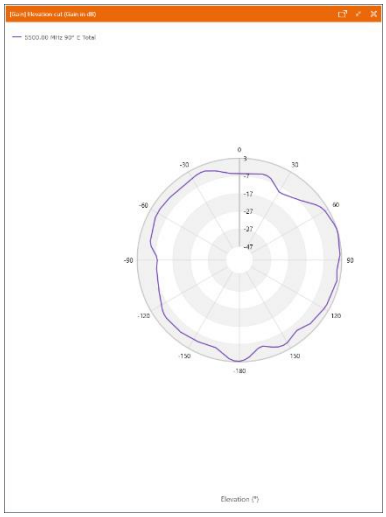
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

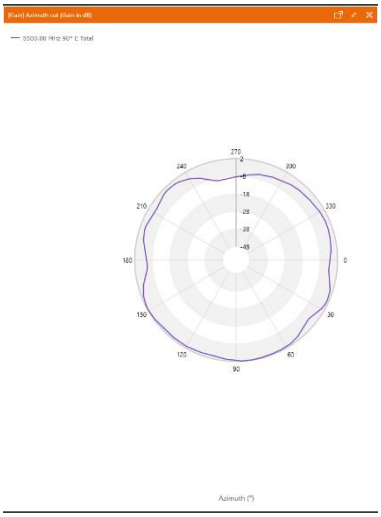
At 5500 MHz











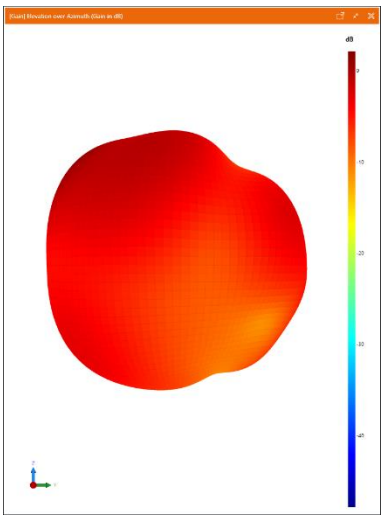
Elevation, azimuth 0deg

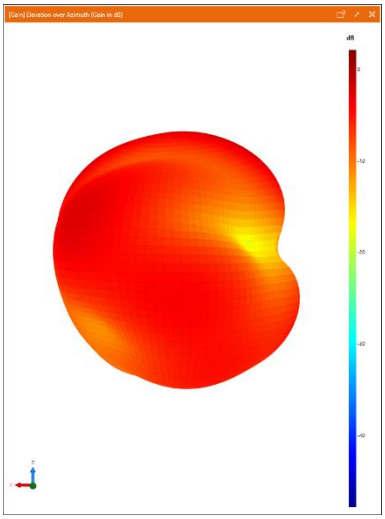
Elevation, azimuth 90deg

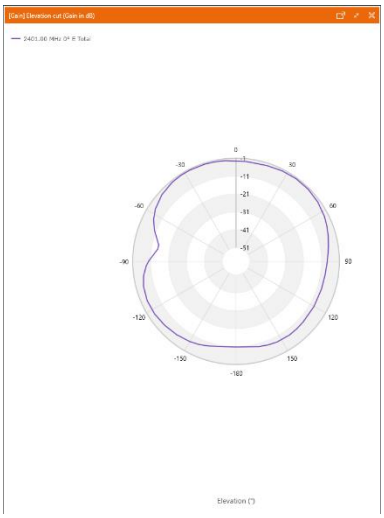
Azimuth

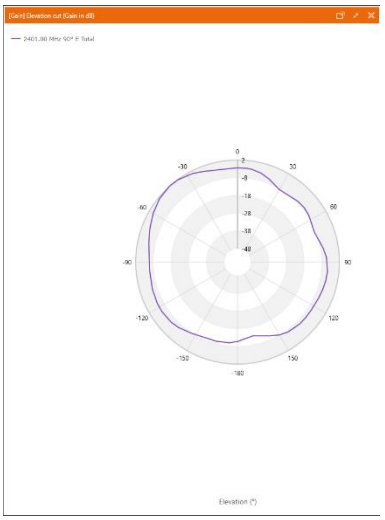
WI-FI CHAIN 1 ANTENNA

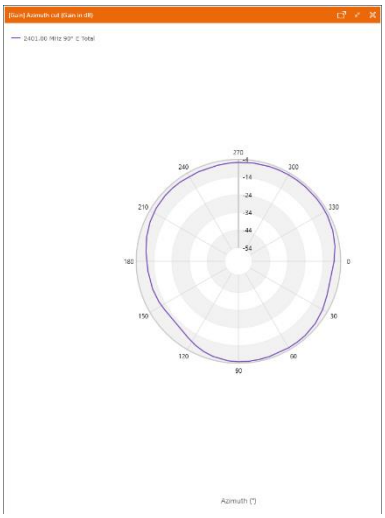
At 2401 MHz





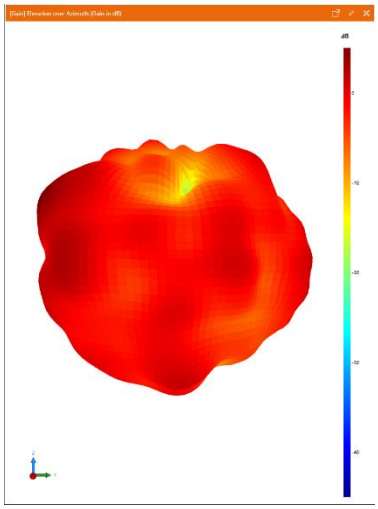


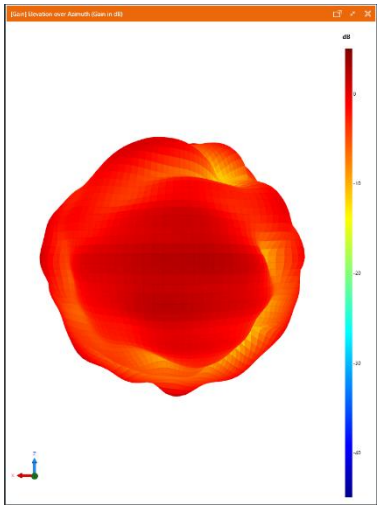


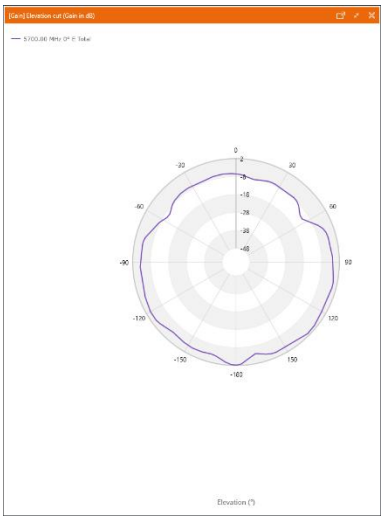


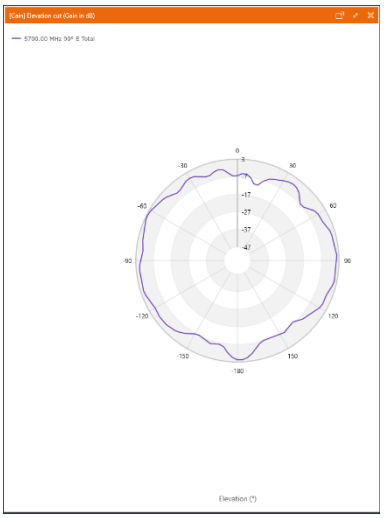
Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth

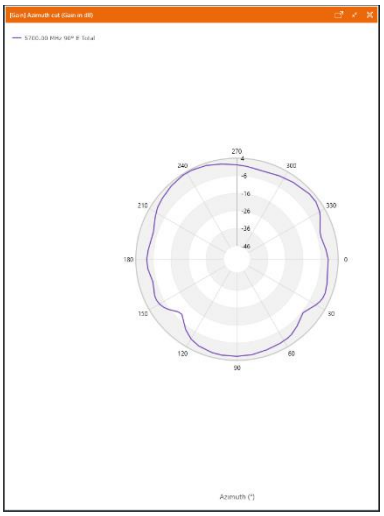
At 5700 MHz











Elevation, azimuth 0deg Elevation, azimuth 90deg Azimuth