



Passive Antenna Radiation Pattern Test Report

Prepared in accordance with IEEE std 149

Customer:	Dejero Labs Inc. 410 Albert St. Waterloo, Ontario Canada		Mohamed Hussein (437) 388-5733 mohamed.hussein@dejero.com	
EUT Make & Model:	Titan Command, CommandM3E4, WiFi Port	Serial #: Antenna PN	NA 2-6111100-A01	
Date Tested:	10/31/2025			
Testing Location:	Wireless Research Center of NC 3331 Heritage Trade Drive, Suite 101 Wake Forest, NC 27587, USA		Tel: 919-435-1051 Alt: 919-435-1173	
Tested By: Jordan Stearns		Reviewed By: Koichiro Takamizawa		
 Signature / Date 11/17/2025		 Signature / Date 11/17/2025		
 ACCREDITED Testing Cert #3518.01				

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1 Introduction

1.1 Product Description

AUT is a WiFi antenna part number 2-6111100-A01, tested from 2,200 MHz to 6,000 MHz located inside the housing of a Titan Command model CommandM3E4

1.2 Test Description

The antenna test was performed in the Satimo SG-64 chamber at Wireless Research Center of North Carolina according to IEEE Standard 149, “*IEEE Standard Test Procedures for Antennas*”, “*WRC 08 SG64 Satimo Passive Testing Procedures*”, “*WRC 20 SG64 Passive Gain Cal Procedures*”.

1.3 Test Setup and Alignment

The AUT's were placed on WRC's Styrofoam mast, mounted horizontally such that the center (width) of the AUT is in line with the X axis of the WRC antenna test chamber. The RF ports were oriented in the chambers -Z axis and the Heatsink in the +Z axis. Pink RF Transparent foam was used to lift the housing and align the center of it with the phase center of the chamber.

1.4 Antenna Pattern Measurements

The antenna patterns, peak gain and antenna efficiencies were measured using the Satimo SG-64 chamber which is a multi-probe spherical near-field antenna test chamber. The antenna patterns were measured from 2,200 MHz to 6,000 MHz. All unused ports were terminated with a 50 Ω load. The testing was conducted using a Keysight E8257D Signal Generator to generate CW signals of interest and routing the signal through the AUT. The radiated signals are received by one of the 63 probes within the Satimo SG-64's arch that is 1.61 m in radius from the center of the chamber. The received signal's amplitude and phase were recorded using Satimo NPAC receiver. The far-field radiation patterns were calculated mathematically from the measured complex near-field patterns using Near-to-Far Field transform implemented in Satimo's SatEnv software. The peak gains of the radiation patterns were determined using the gain substitution method defined in IEEE 149 using WRC's SH400 horn for frequencies between 400 MHz to 790 MHz, and SH800 horn for frequencies above 800 MHz as the gain references.

1.5 Coordinate Systems

Several coordinate systems are used in the test reports to represent various antenna pattern plots. The DUT antenna was tested, and raw data is stored in theta dominant spherical coordinate system as shown in Figure 1(a) In the theta dominant spherical coordinate system which follows the right-hand rule, theta angle in the vertical planes goes from -180 degrees at -Z axis to 0 degree at +Z axis to + 180 degrees at -Z axis, and phi angle in XY plane goes from 0 degree at +X axis to 180 degree at -X axis.

During the testing, the antennas were internal to the chassis with the housing aligned to the phase center of the chamber with the length of the housing along the X axis, width along the Y axis, and height along the Z axis.

The antenna pattern polar plots presented in Section 3.2.4 show 3 principal axis. The elevation cuts at phi=0 degree and phi=90 degrees show the antenna pattern in XZ plane and YZ plane as indicated in Figure 1(b) and (c). The azimuth cut at theta=90 degree shows the antenna pattern in XY plane as indicated in Figure 1(d).

The contour plots in Section 3.2.4 are 2D projection of 3D antenna pattern similar to the equirectangular projection of the world map. The horizontal axis of the contour plots represents phi angle from 0 degree at +X axis to +180 degree at -X axis to +360 degree at +X axis and the vertical axis of the contour plots represent 0 degree at +Z axis to +180 degrees at -Z axis as shown in Figure 1(e). The contour plot with corresponding spherical coordinate points are shown in Figure 1(f). At the +Z (theta=0 degree) and -Z axis (theta=180 degrees) on the spherical coordinate, the phi angle becomes ambiguous, and thus the points on the north pole and south pole of the spherical coordinate maps to lines on the contour plot. The average gain and average cross-pol discrimination plots are generated based on the azimuth and elevation coordinate system as indicated in Figure 1 (g). The azimuth and elevation angles are defined based on compass heading which follows the left-hand rule.

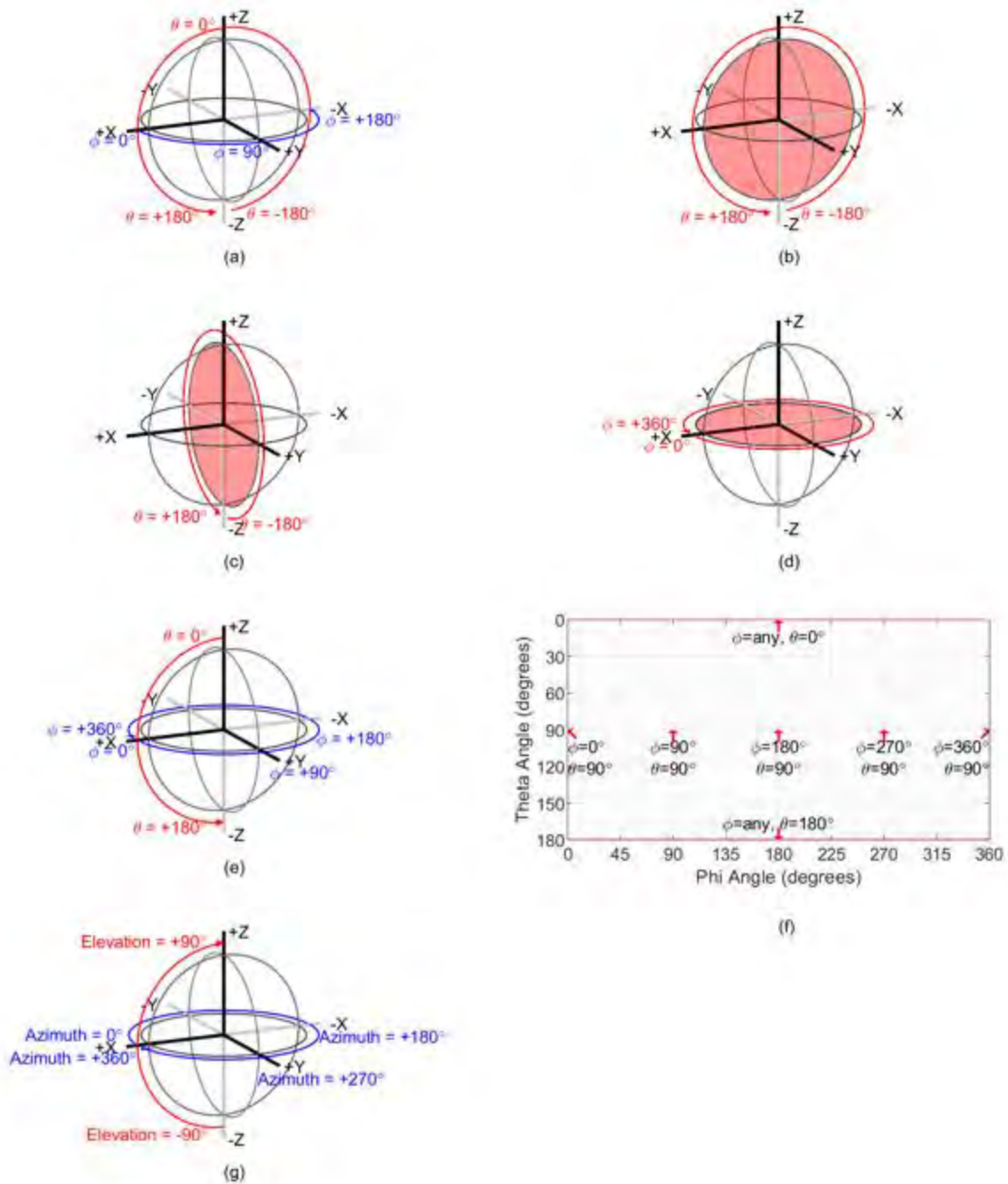


Figure 1. Coordinate systems used in the measurements and the report (a) Theta/Phi spherical coordinate system, (b) $\phi = 0^\circ$ degree cut (XZ plane), (c) $\phi = 90^\circ$ degree cut (YZ plane), (d) $\theta = 90^\circ$ degree cut (XY plane), (e) spherical coordinate projected to a rectangle

1.6 Contact Information

Any questions, comments or concerns relating to the report should be directed to:

Jordan Stearns, Operations Manager
Wireless Research Center of North Carolina
3331 Heritage Trade Drive, Suite 101
Wake Forest, NC 27587, USA
Phone: 919-435-1051

1.7 Testing Facilities

All tests as indicated in section 3 were performed at Wireless Research Center of North Carolina (USA) Inc., in Wake Forest, NC. All tests were performed, and results recorded by Jordan Stearns on 10/31/2025.



Figure 2 WRC workstation and Chamber Equipment

1.7.1 Test Equipment

Equipment Type	Model Number	Manufacturer	Serial Number	Calibration Due Date
Antenna Test Chamber	SG-64	MVG	ATL0169S	04/11/2026
Signal Generator	E8257D	Keysight	MY51110555	12/05/2025
Signal Generator	E8257D	Keysight	MY51110603	12/22/2025
Torque Wrench	74 Z-0-0-21/Ncm100	Huber-Suhner	19298	06/30/2026
Dual Ridge Horn	SH-400	MVG	114	Calibrated on 05/07/2012. Validated by Satimo on 1/13/2020. No Expiration Date
Dual Ridge Horn	SH-800	MVG	253	Calibrated on 5/14/2012. Validated by Satimo on 1/13/2020. No Expiration Date

1.7.2 Gain Measurement Uncertainty

Frequency Range	Measurement Uncertainty
400 MHz to 800 MHz	± 1.25 dB
800 MHz to 1000 MHz	± 1.01 dB
1000 MHz to 6000 MHz	± 0.66 dB
6000 MHz to 18000 MHz	± 0.84 dB

1.8 Test Set-up Photos

1.8.1 Antenna & DUT



Figure 3 DUT WiFi Antenna and Housing

1.8.2 DUT antenna facing -Y Axis

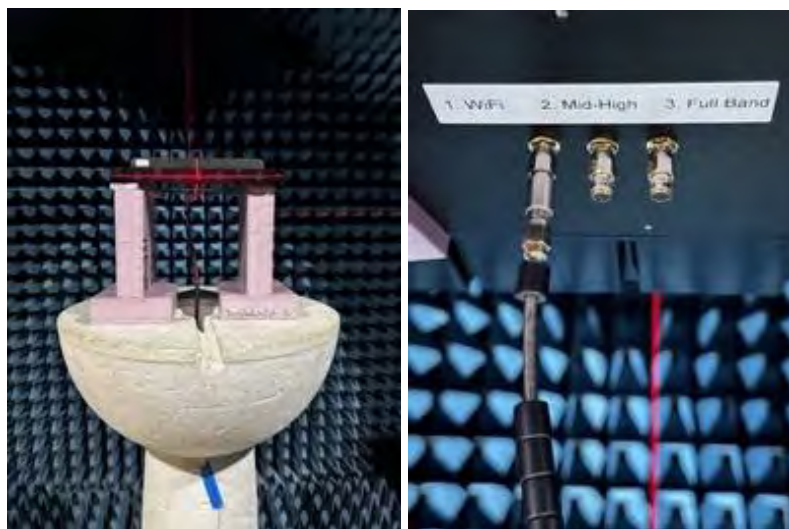


Figure 4 DUT in SG-64 facing -Y axis & WiFi Port with Mast Cable



2 Raw Data

Raw data is provided in the following file formats.

{AUT}-F{XXXX}.txt	Full 3D pattern data at a single frequency: {XXXX} MHz
{AUT}-phi=0.txt	2D cut data at $\phi=0^\circ$, all frequencies
{AUT}-phi=90.txt	2D cut data at $\phi=90^\circ$, all frequencies
{AUT}-theta=90.txt	2D cut data at $\theta=90^\circ$, all frequencies
{AUT}-efficiency.txt	Efficiency, all frequencies
{AUT}-gain.txt	Peak Gain, all frequencies

3 Test Results

3.1 Summary Tables

3.1.1 Measured Gain and Efficiency

Frequency (MHz)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)
2200	1.23	-4.35	36.7
2225	1.13	-4.25	37.6
2410	3.40	-2.29	59.1
2420	2.62	-2.54	55.7
2430	2.15	-2.72	53.4
2440	2.18	-2.65	54.3
2450	3.45	-2.37	57.9
2460	3.39	-2.31	58.7
2470	2.53	-2.14	61.1
2480	2.92	-2.11	61.5
2490	2.15	-2.35	58.2
2500	3.61	-2.22	59.9
5000	3.79	-1.16	76.6
5010	3.85	-1.13	77.1
5020	3.87	-1.11	77.5
5030	3.71	-1.30	74.1
5040	3.55	-1.38	72.8
5050	3.36	-1.62	68.9
5060	3.68	-1.55	70.0
5070	3.94	-1.52	70.5
5080	4.10	-1.49	70.9
5090	4.19	-1.44	71.8
5100	4.26	-1.44	71.7
5110	4.21	-1.45	71.6
5120	4.29	-1.56	69.8
5130	4.76	-1.75	66.9
5140	4.81	-1.76	66.7
5150	4.72	-1.80	66.1
5160	4.21	-2.08	61.9
5170	4.33	-2.04	62.5
5180	4.59	-2.04	62.5
5190	4.80	-1.73	67.2
5200	4.42	-1.84	65.4
5210	4.79	-1.67	68.1



Frequency (MHz)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)
5220	4.62	-1.85	65.4
5230	4.53	-1.93	64.1
5240	4.42	-1.92	64.3
5250	4.83	-1.96	63.7
5260	5.02	-1.93	64.1
5270	5.06	-1.93	64.1
5280	5.09	-1.94	64.0
5290	4.32	-2.54	55.7
5300	3.55	-2.86	51.8
5310	3.90	-2.63	54.6
5320	3.76	-2.69	53.8
5330	4.08	-2.52	55.9
5340	4.33	-2.30	58.9
5350	3.93	-2.53	55.8
5360	4.04	-2.26	59.4
5370	4.29	-2.20	60.2
5380	4.55	-1.97	63.5
5390	4.33	-2.29	59.0
5400	5.05	-1.70	67.6
5410	5.11	-1.87	65.0
5420	5.19	-1.84	65.4
5430	5.07	-2.07	62.0
5440	4.73	-2.15	60.9
5450	4.35	-2.22	60.0
5460	4.56	-2.20	60.2
5470	4.55	-2.29	59.0
5480	4.95	-2.29	59.1
5490	5.25	-2.07	62.1
5500	5.30	-1.76	66.6
5510	4.88	-1.91	64.5
5520	4.62	-1.97	63.6
5530	4.64	-1.99	63.3
5540	4.81	-1.89	64.7
5550	4.97	-2.00	63.0
5560	5.16	-1.93	64.2
5570	4.98	-1.90	64.5
5580	4.81	-1.99	63.2
5590	4.71	-2.14	61.1
5600	4.78	-2.03	62.7
5610	4.66	-2.04	62.5
5620	4.35	-2.29	59.0
5630	4.69	-2.23	59.9
5640	4.67	-2.09	61.8
5650	4.62	-2.34	58.4
5660	4.42	-2.41	57.4
5670	4.58	-2.38	57.9
5680	4.38	-2.52	56.0
5690	4.10	-2.69	53.9
5700	4.23	-2.44	57.0

Frequency (MHz)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)
5710	3.68	-2.99	50.2
5720	3.92	-2.78	52.7
5730	4.33	-2.50	56.3
5740	4.22	-2.64	54.4
5750	3.93	-2.91	51.2
5760	4.31	-2.74	53.2
5770	4.20	-2.74	53.2
5780	4.21	-2.64	54.4
5790	4.58	-2.22	60.0
5800	4.19	-2.59	55.1
5810	4.36	-2.66	54.2
5820	4.68	-2.34	58.3
5830	4.76	-2.50	56.2
5840	4.51	-2.71	53.6
5850	4.66	-2.25	59.6
5860	4.90	-2.22	59.9
5870	4.72	-2.26	59.5
5880	4.72	-2.43	57.2
5890	4.82	-2.50	56.3
5900	4.66	-2.65	54.3
5910	4.83	-2.28	59.1
5920	4.68	-2.20	60.2
5930	4.92	-2.23	59.9
5940	4.71	-2.39	57.7
5950	4.77	-2.39	57.7
5960	4.87	-2.44	57.1
5970	4.99	-2.53	55.9
5980	5.25	-2.46	56.7
5990	5.03	-2.52	56.0
6000	4.42	-2.69	53.8

3.1.2 Measured Return Loss and VSWR

Frequency (MHz)	Return Loss (dB)	VSWR
2200	4.11	4.30
2225	4.16	4.26
2410	7.22	2.54
2420	7.35	2.50
2430	7.52	2.45
2440	7.56	2.44
2450	7.69	2.41
2460	7.90	2.35
2470	8.13	2.29
2480	8.29	2.25
2490	8.27	2.26
2500	8.23	2.27
5000	13.66	1.52
5010	14.67	1.45
5020	15.81	1.39



Frequency (MHz)	Return Loss (dB)	VSWR
5030	17.17	1.32
5040	18.46	1.27
5050	20.08	1.22
5060	22.14	1.17
5070	24.08	1.13
5080	25.30	1.11
5090	25.30	1.11
5100	23.99	1.13
5110	21.97	1.17
5120	19.91	1.22
5130	17.28	1.32
5140	15.35	1.41
5150	14.61	1.46
5160	13.80	1.51
5170	12.98	1.58
5180	12.28	1.64
5190	11.72	1.70
5200	11.20	1.76
5210	10.68	1.83
5220	10.27	1.88
5230	9.95	1.93
5240	9.59	1.99
5250	9.27	2.05
5260	8.94	2.11
5270	8.78	2.14
5280	8.71	2.16
5290	8.58	2.19
5300	8.52	2.20
5310	8.54	2.20
5320	8.59	2.18
5330	8.60	2.18
5340	8.68	2.16
5350	8.84	2.13
5360	8.95	2.11
5370	9.16	2.07
5380	9.39	2.03
5390	9.63	1.98
5400	9.93	1.94
5410	10.25	1.89
5420	10.76	1.82
5430	11.31	1.75
5440	11.85	1.69
5450	12.60	1.61
5460	13.45	1.54
5470	14.40	1.47
5480	15.53	1.40
5490	16.92	1.33
5500	18.69	1.26
5510	21.04	1.19



Frequency (MHz)	Return Loss (dB)	VSWR
5520	24.32	1.13
5530	30.08	1.06
5540	47.23	1.01
5550	32.36	1.05
5560	26.03	1.11
5570	21.76	1.18
5580	19.05	1.25
5590	17.18	1.32
5600	15.68	1.39
5610	14.41	1.47
5620	13.30	1.55
5630	12.53	1.62
5640	11.82	1.69
5650	11.20	1.76
5660	10.67	1.83
5670	10.29	1.88
5680	9.91	1.94
5690	9.64	1.98
5700	9.39	2.03
5710	9.19	2.06
5720	9.07	2.09
5730	8.90	2.12
5740	8.89	2.12
5750	8.88	2.12
5760	8.90	2.12
5770	9.04	2.09
5780	9.18	2.06
5790	9.43	2.02
5800	9.72	1.97
5810	10.12	1.91
5820	10.56	1.84
5830	11.14	1.77
5840	11.82	1.69
5850	12.58	1.61
5860	13.57	1.53
5870	14.64	1.45
5880	16.03	1.38
5890	18.10	1.28
5900	20.40	1.21
5910	23.37	1.15
5920	27.13	1.09
5930	27.61	1.09
5940	23.62	1.14
5950	20.69	1.20
5960	18.21	1.28
5970	16.15	1.37
5980	14.65	1.45
5990	13.46	1.54
6000	12.44	1.63

3.2 Plots of Measured Results

3.2.1 Measured peak gain

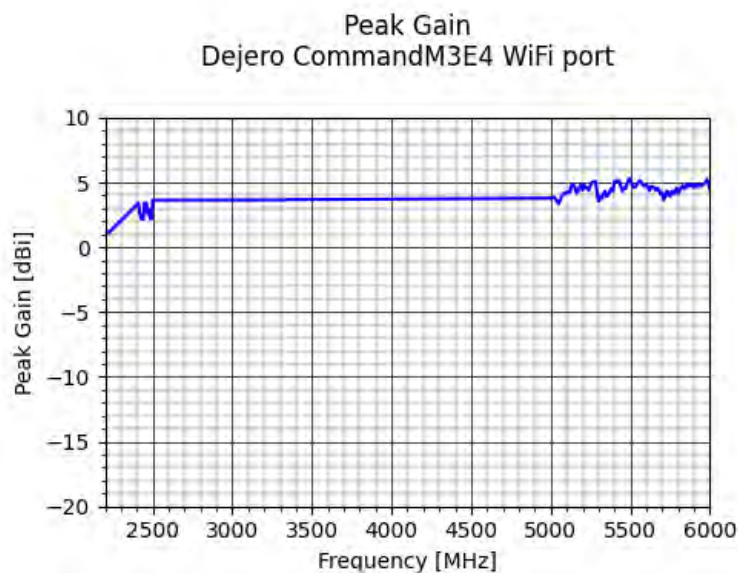


Figure 5 Peak Gain of Dejero CommandM3E4 WiFi port.

3.2.2 Measured radiation efficiency

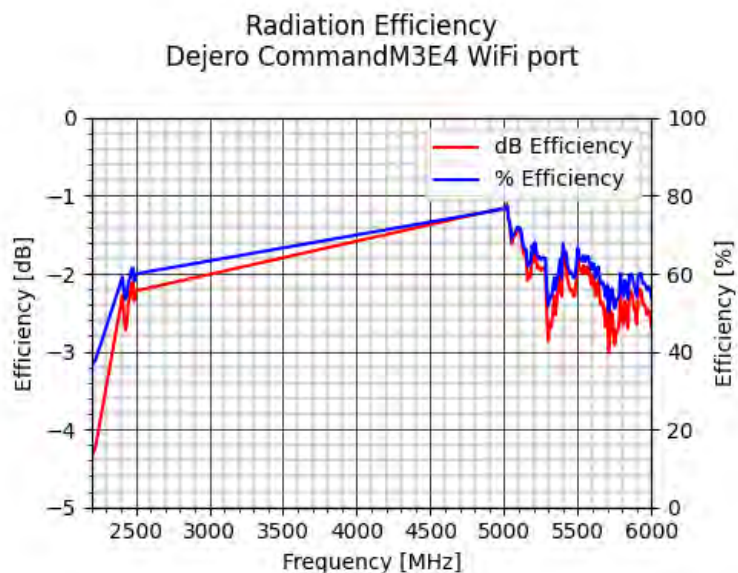


Figure 6 Radiation efficiency of Dejero CommandM3E4 WiFi port.

3.2.3 Measured return loss plot

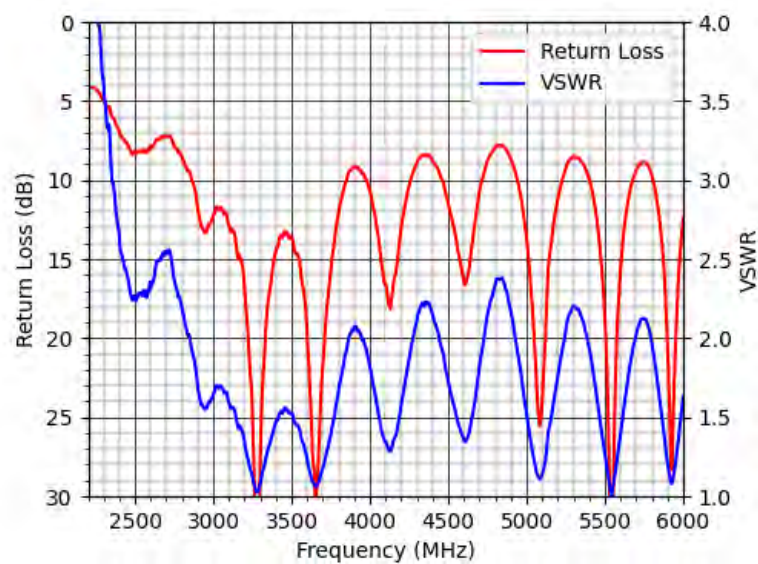
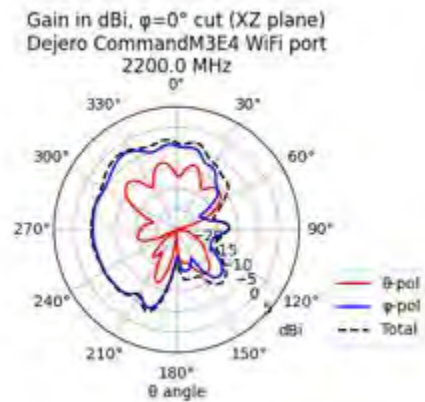


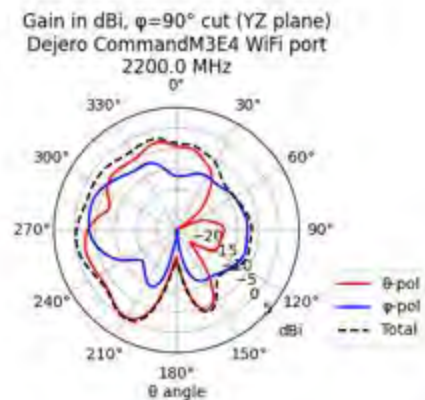
Figure 7 Return Loss of Dejero CommandM3E4 WiFi port.



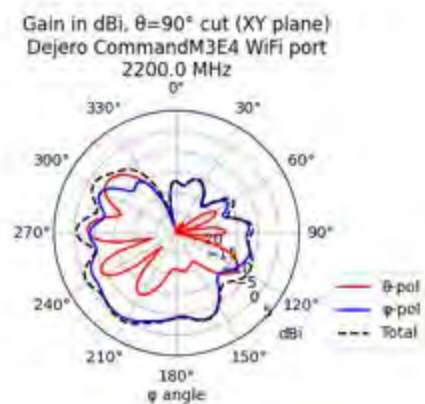
3.2.4 Measured patterns



(a) $\Phi=0$ degree cut (XZ-plane).

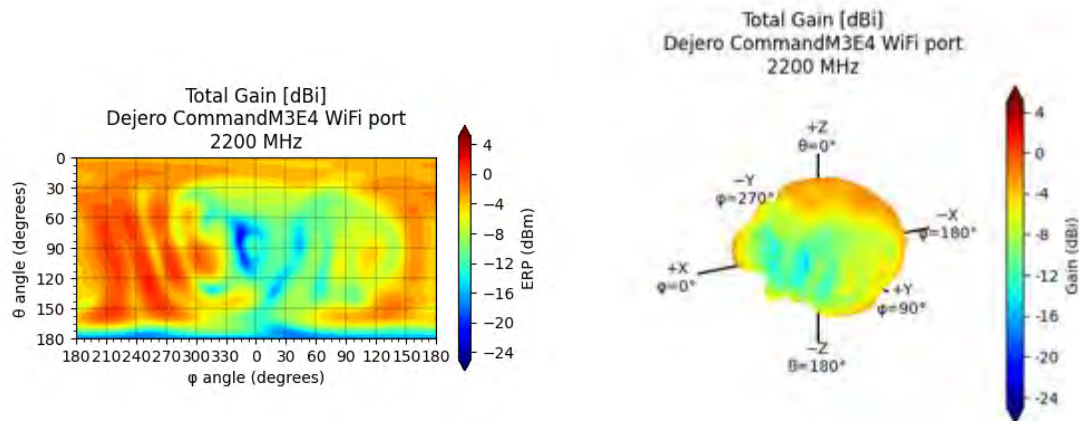


(b) $\Phi=90$ degree cut (YZ-plane).

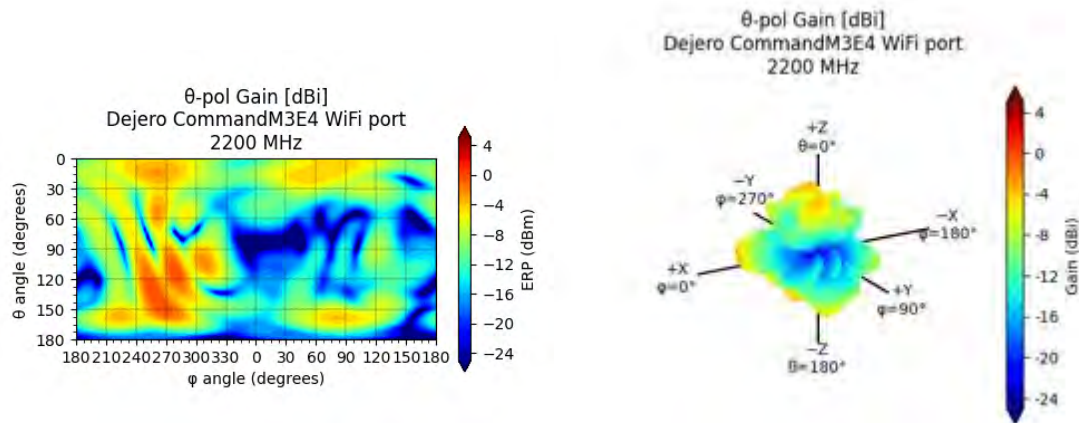


(c) $\Theta=90$ degree cut (XY-plane).

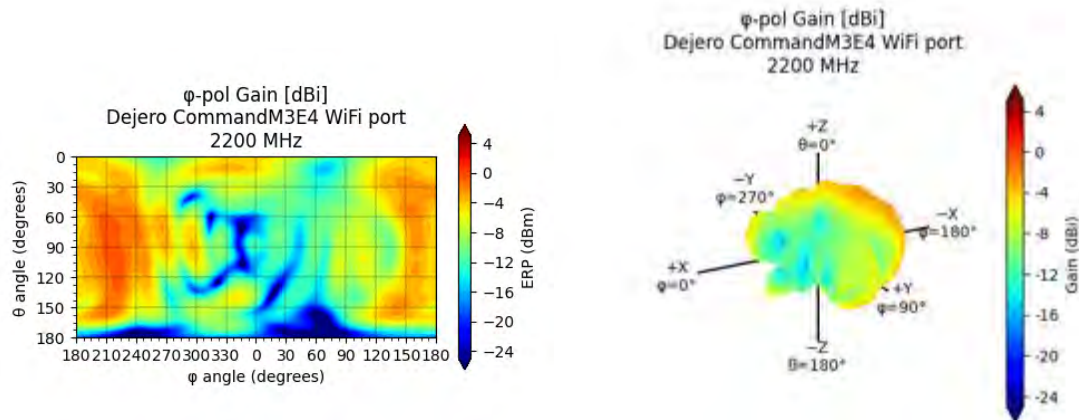
Figure 8 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2200 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 9 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2200 MHz.

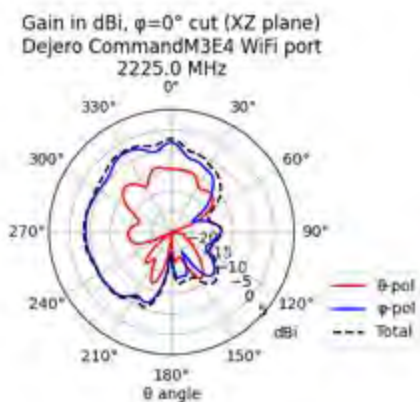
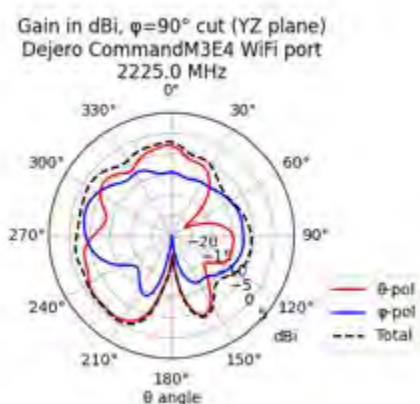
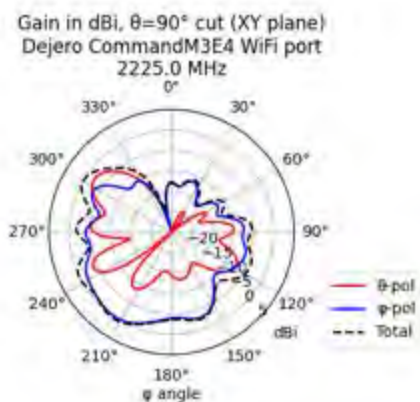
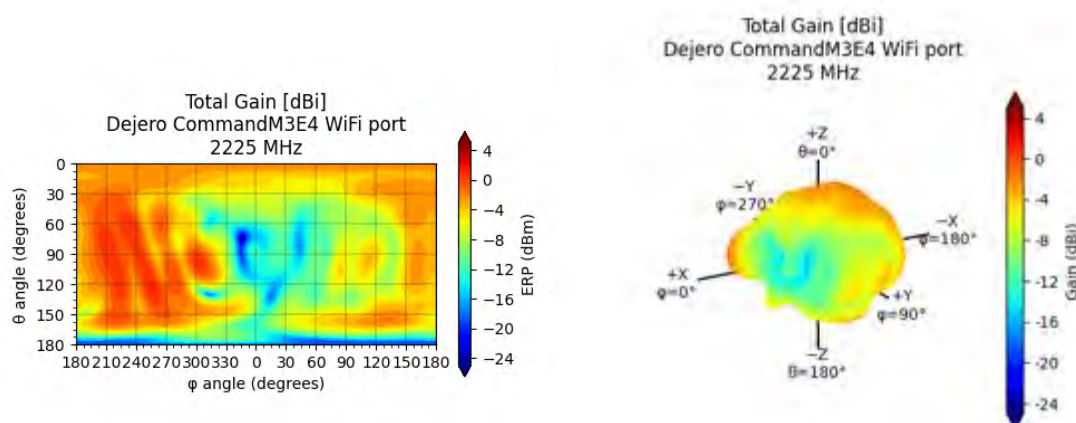
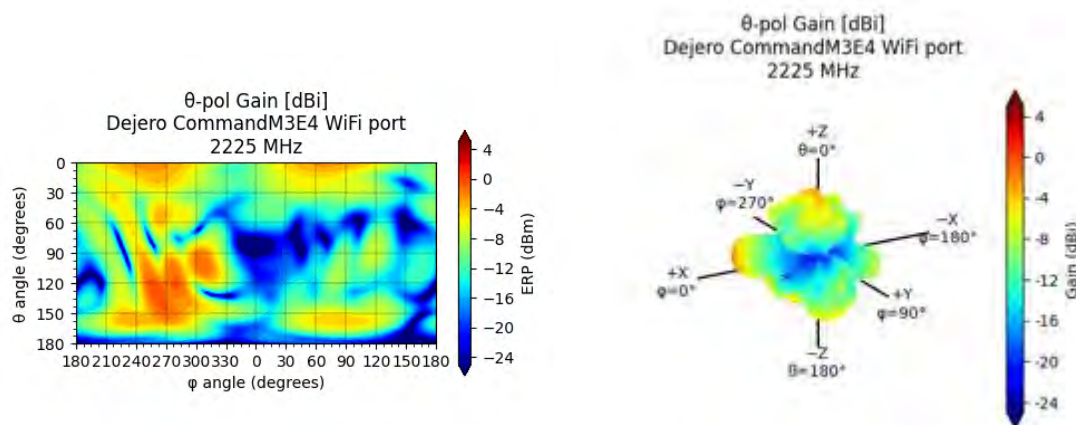
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

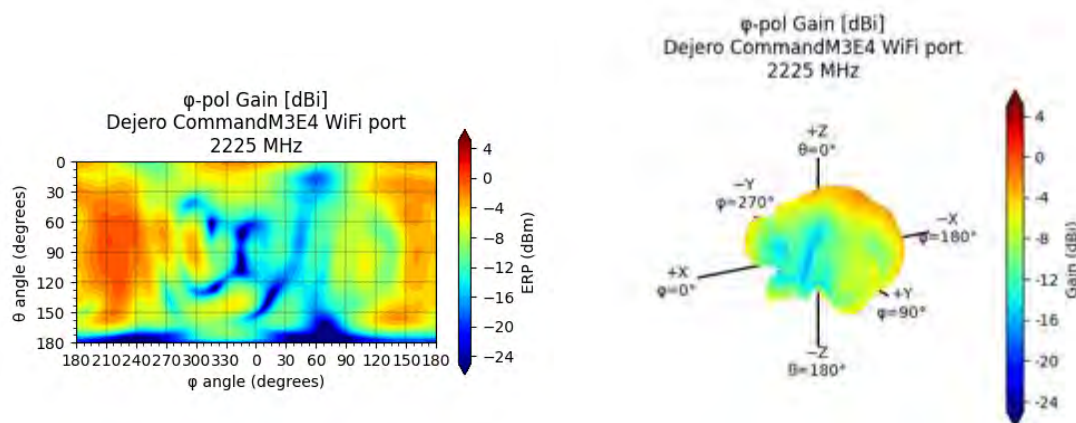
Figure 10 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2225 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 11 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2225 MHz.

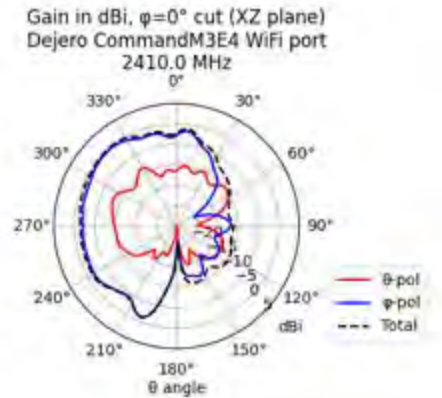
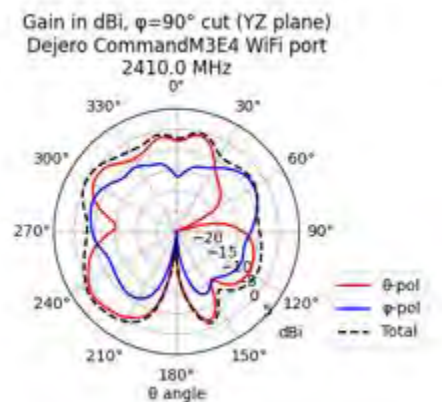
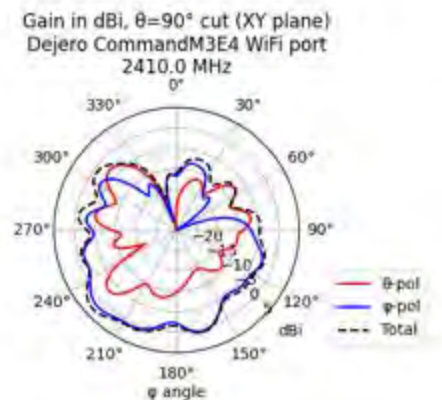
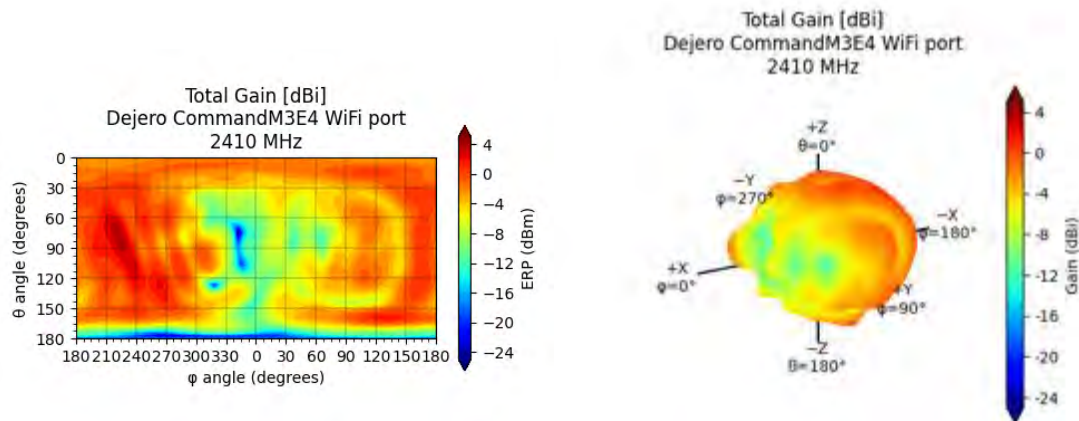
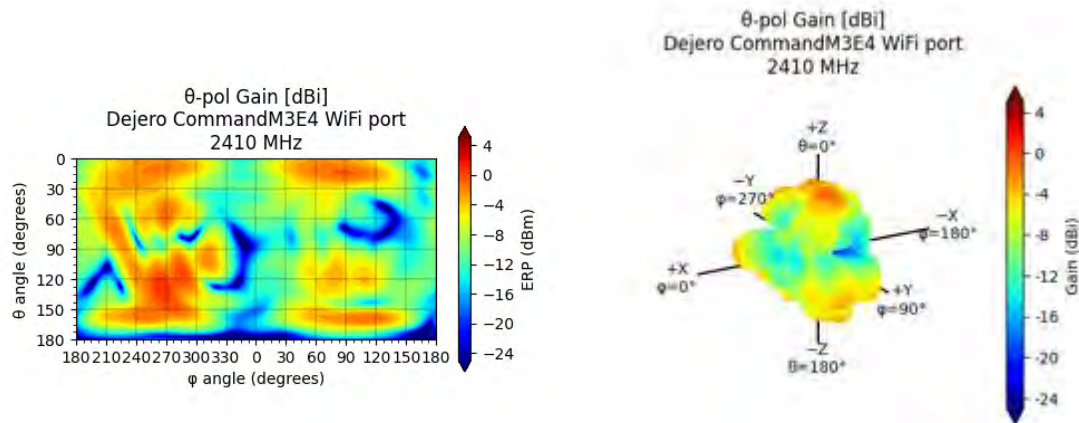
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

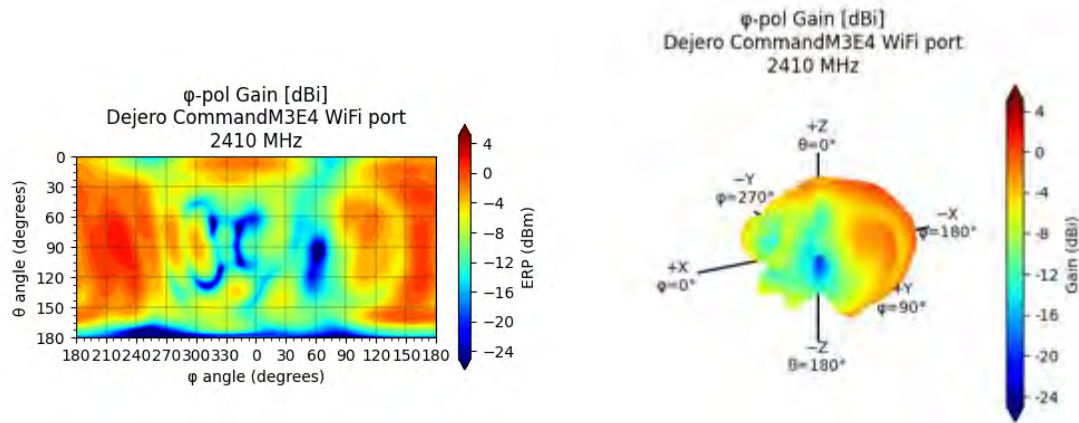
Figure 12 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2410 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 13 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2410 MHz.

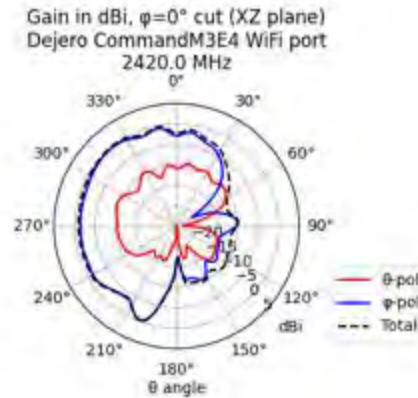
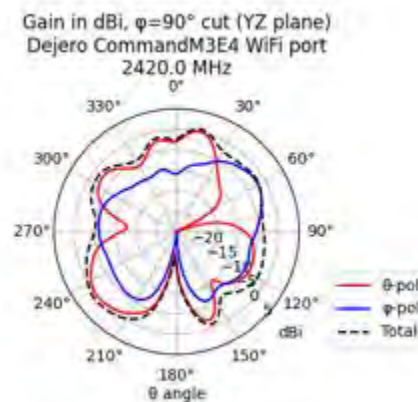
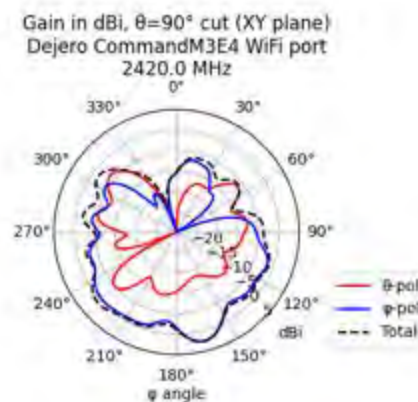
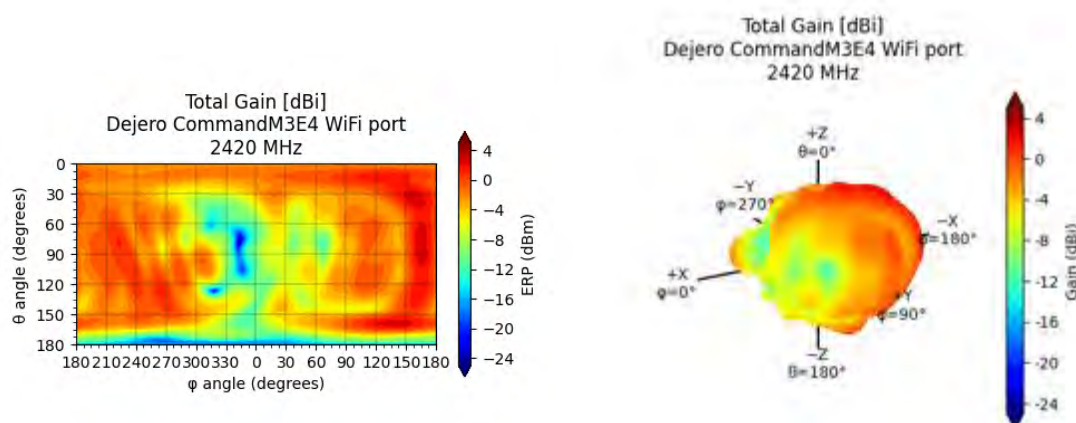
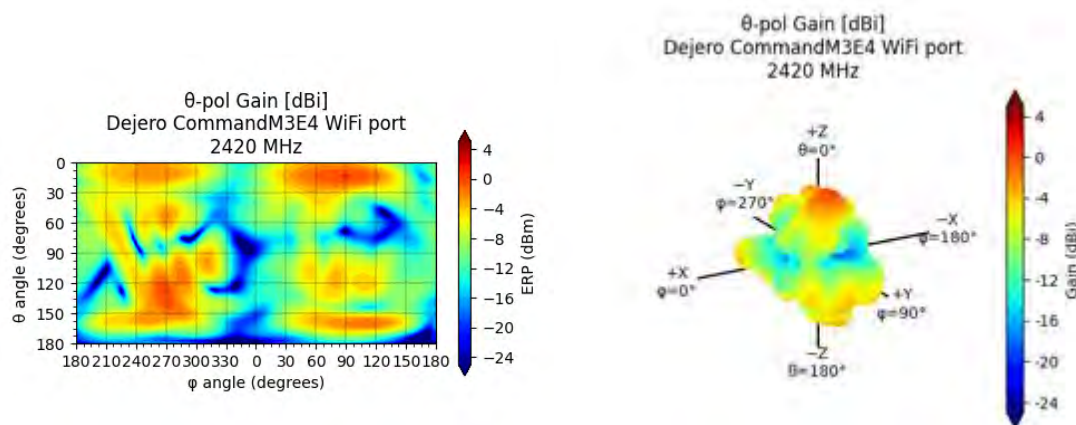
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

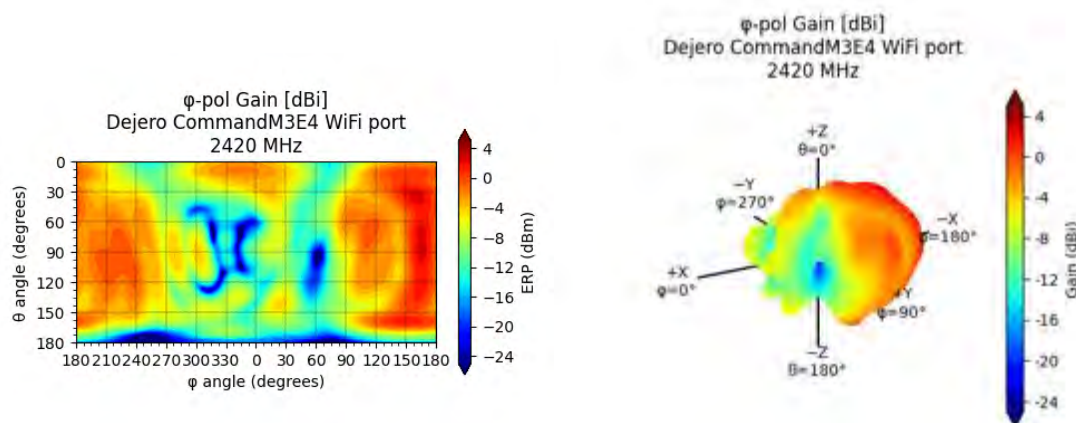
Figure 14 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2420 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 15 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2420 MHz.

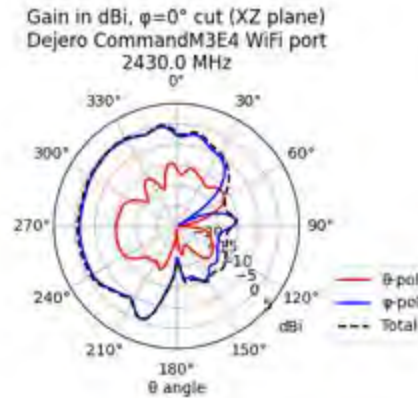
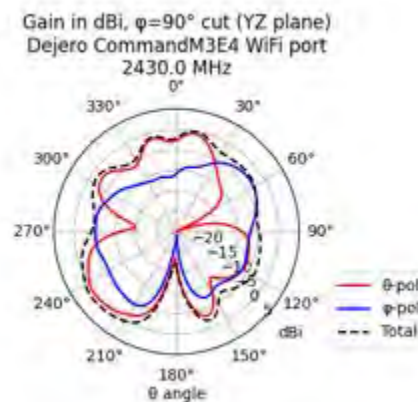
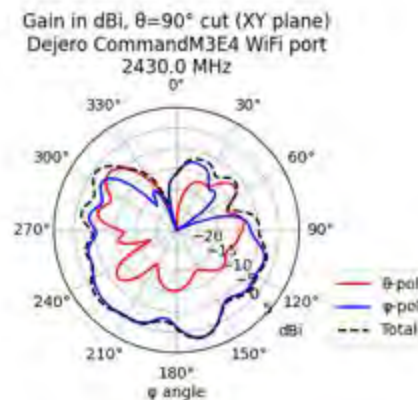
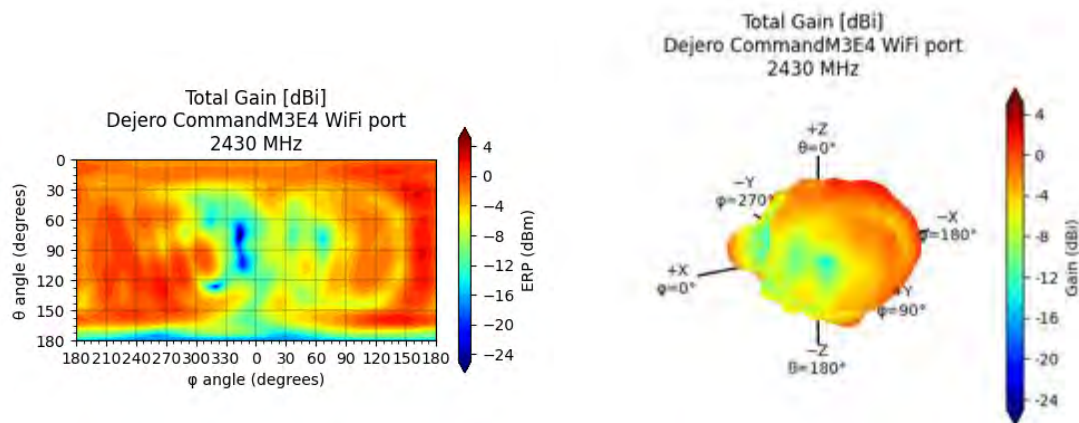
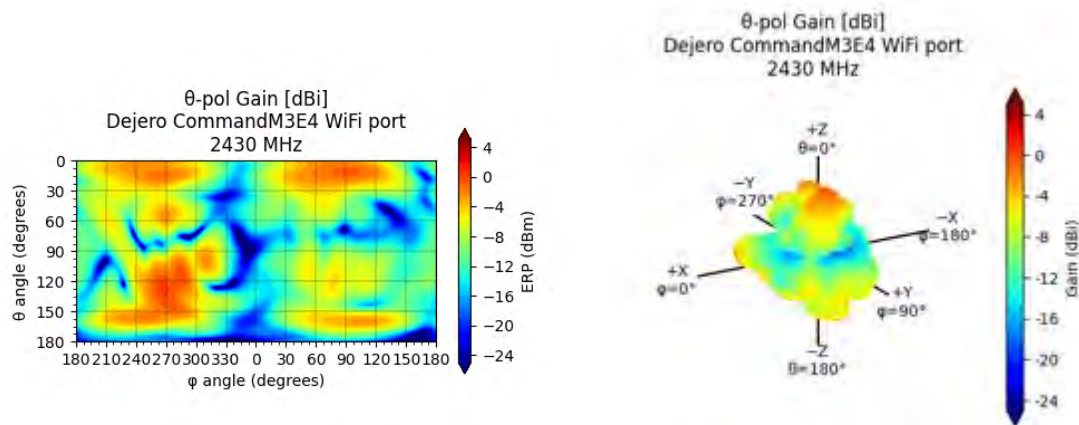
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

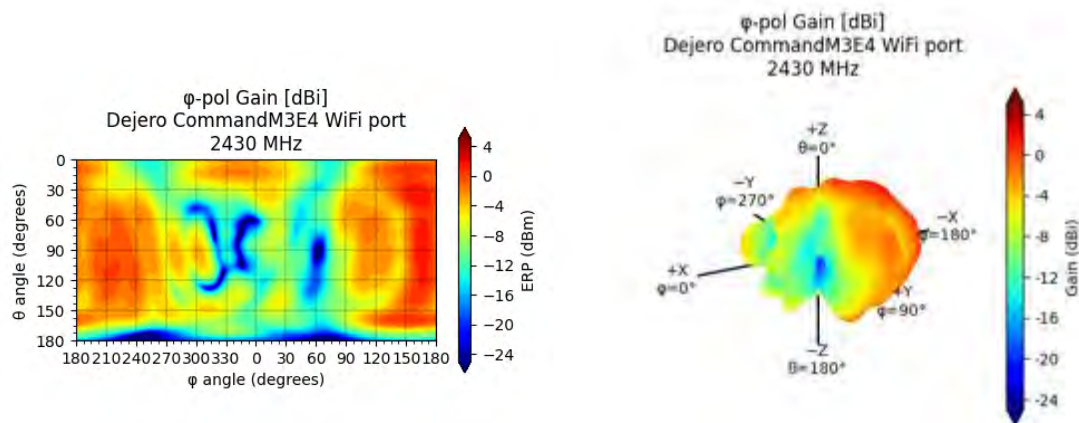
Figure 16 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2430 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 17 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2430 MHz.

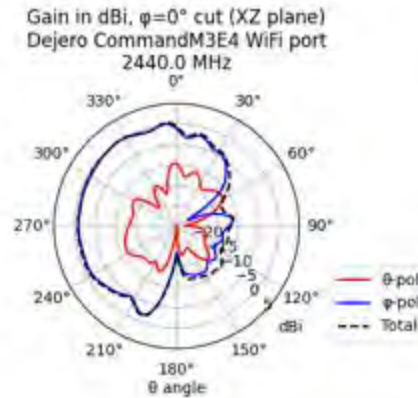
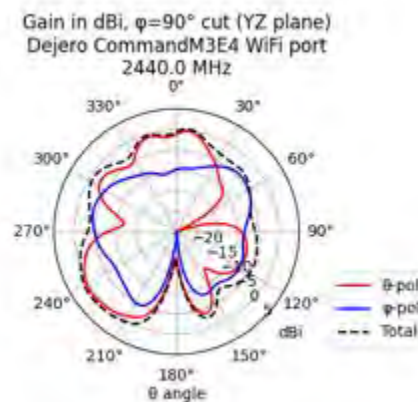
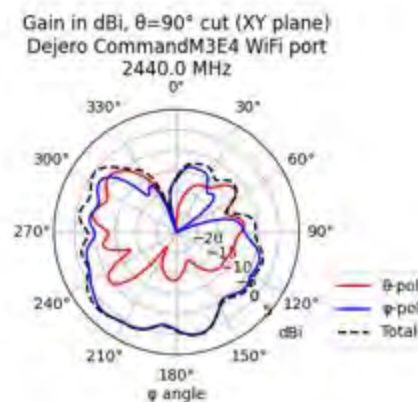
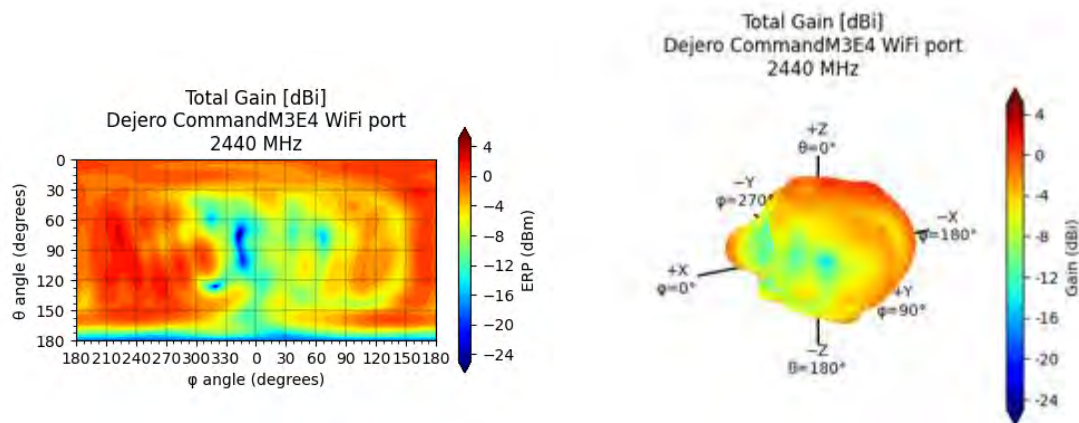
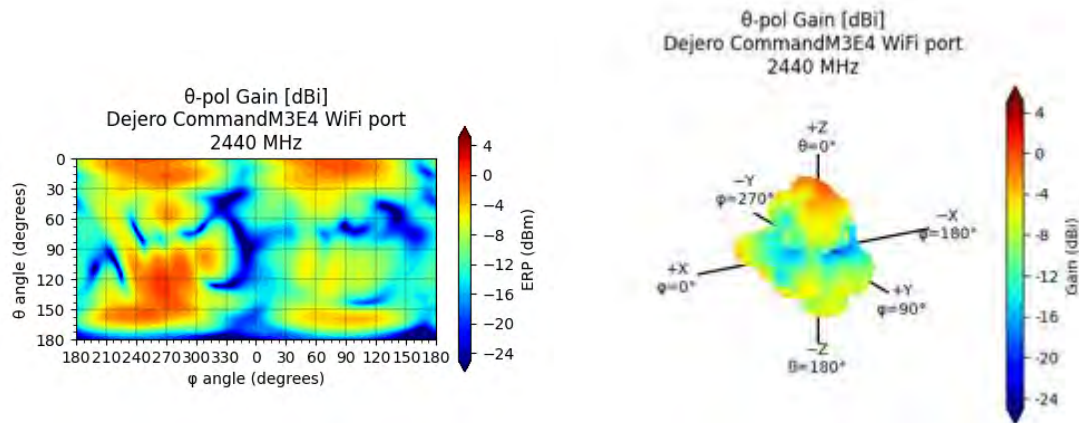
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

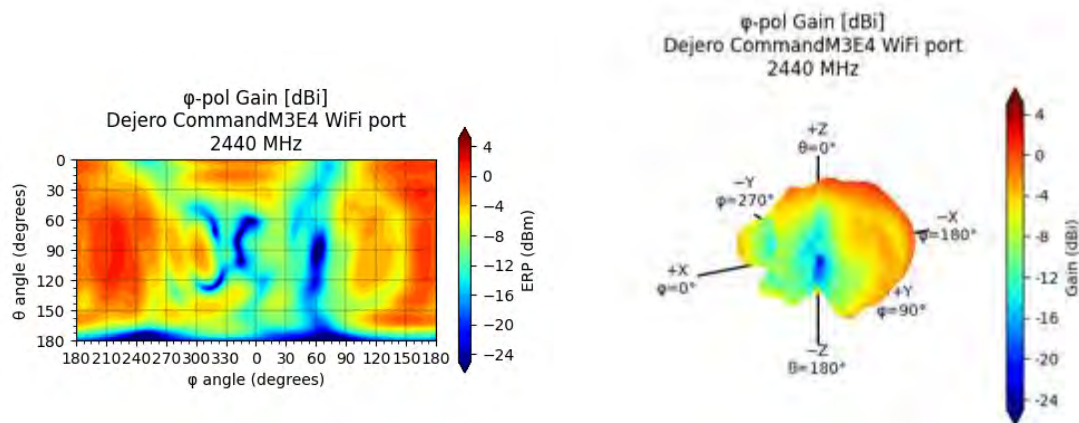
Figure 18 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2440 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 19 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2440 MHz.

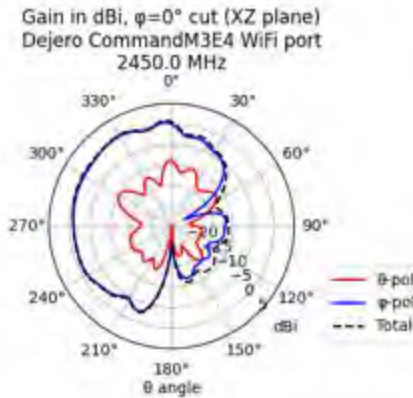
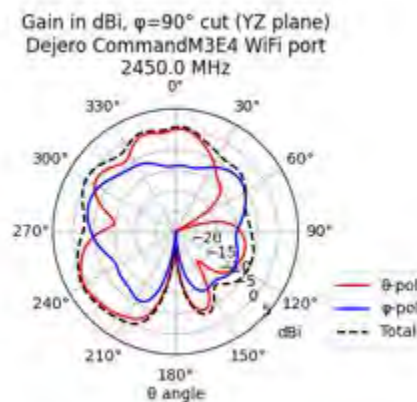
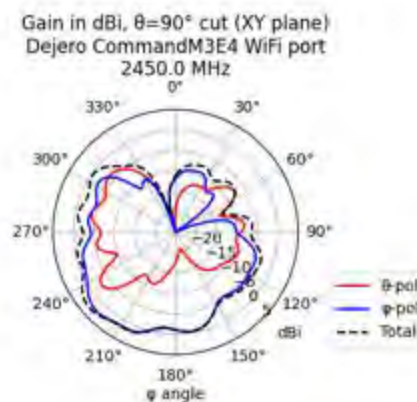
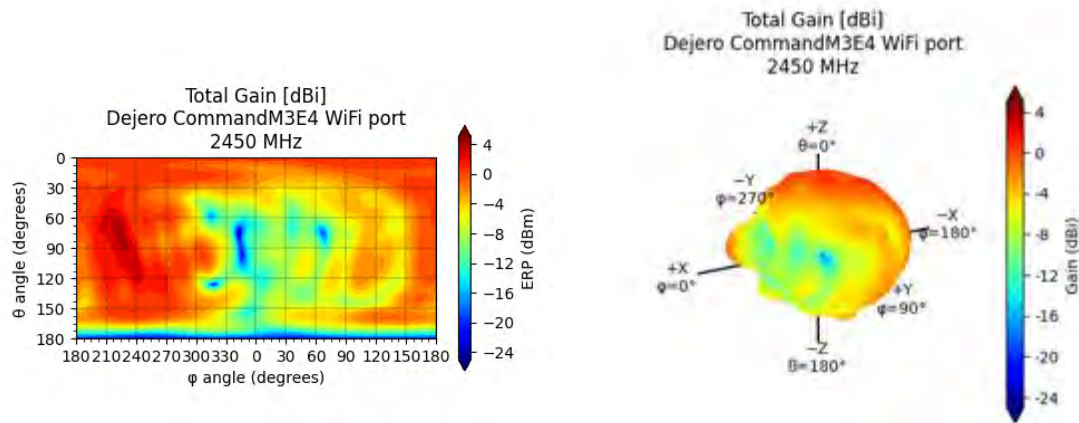
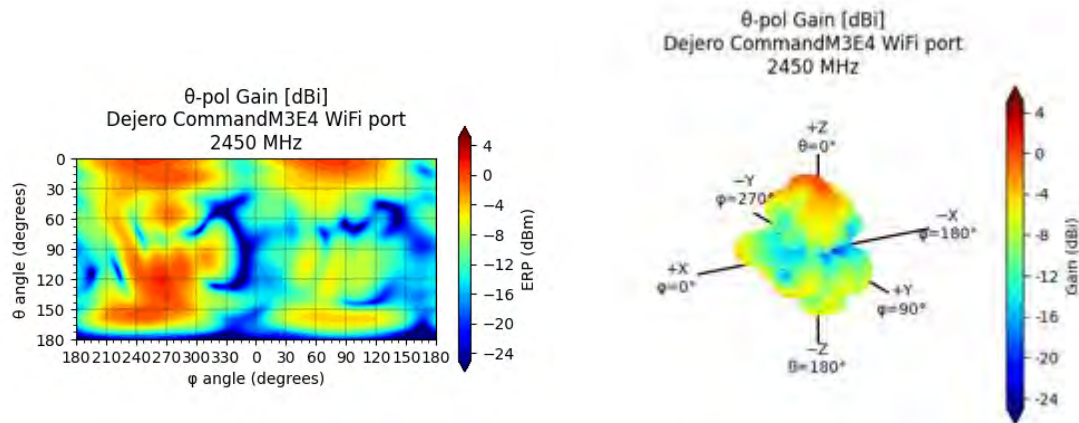
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

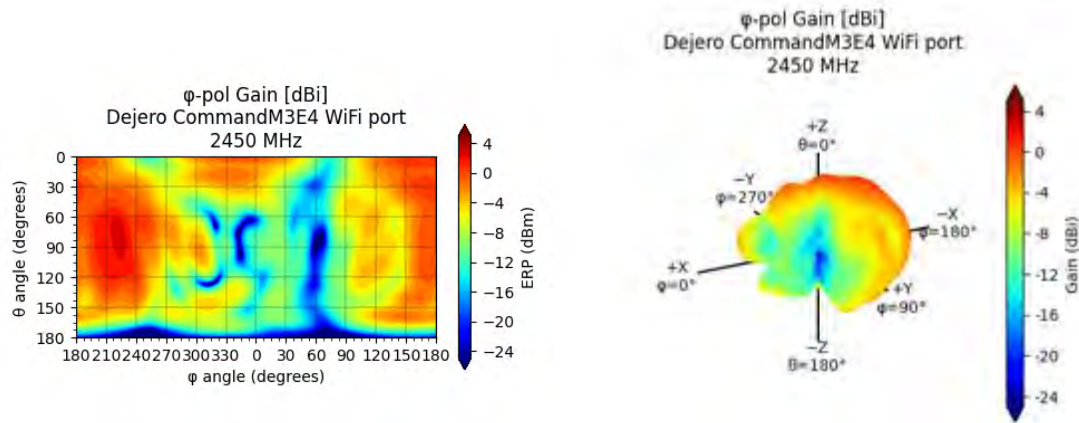
Figure 20 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2450 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 21 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2450 MHz.

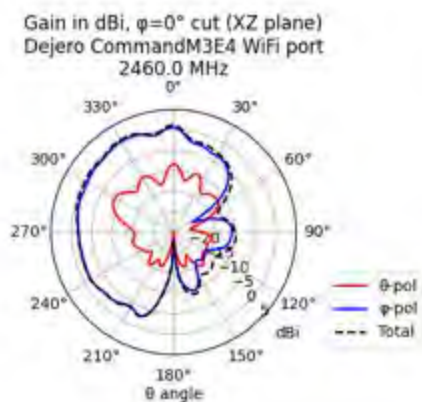
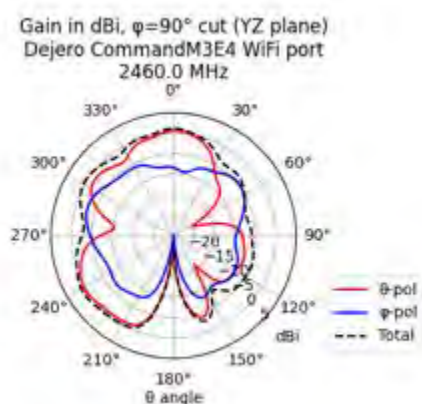
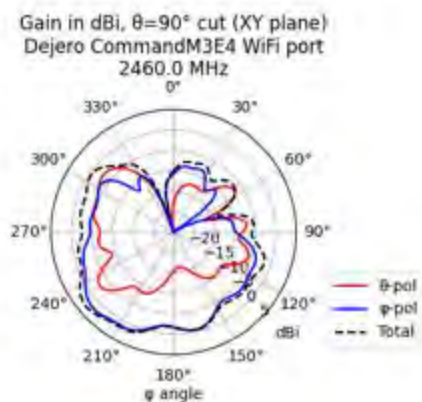
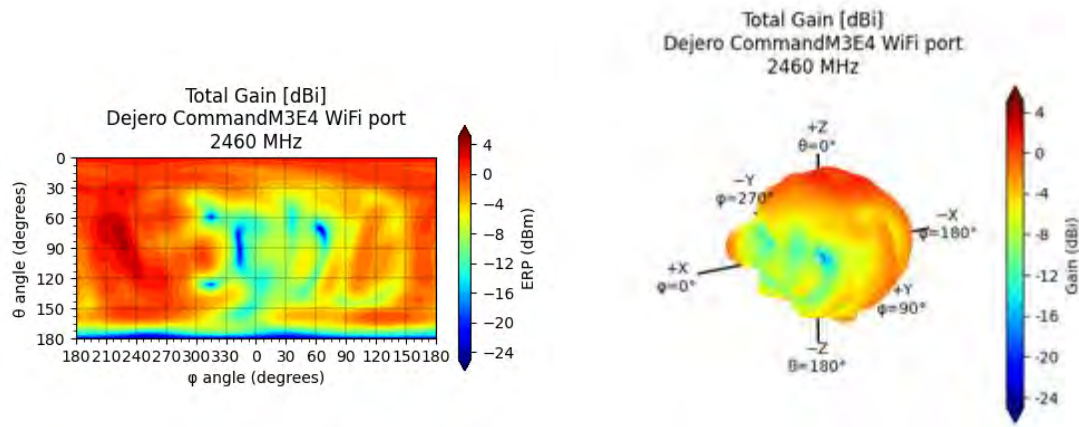
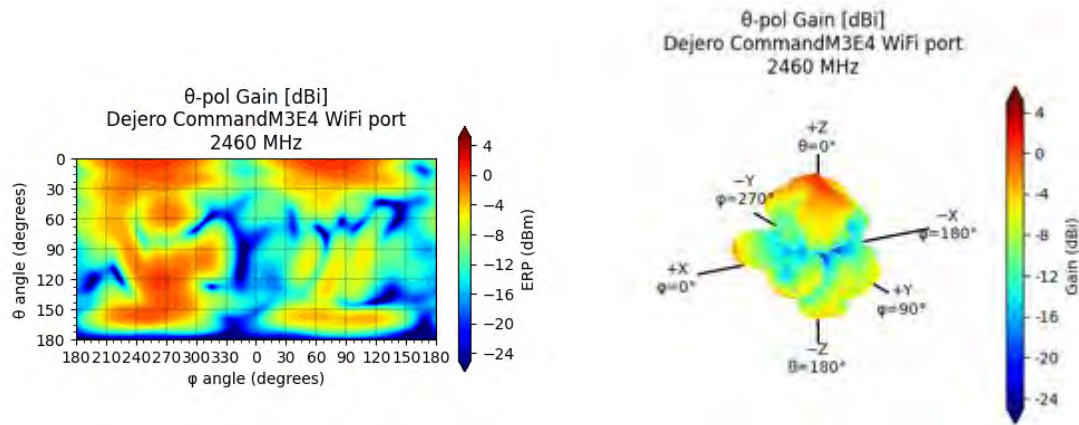
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

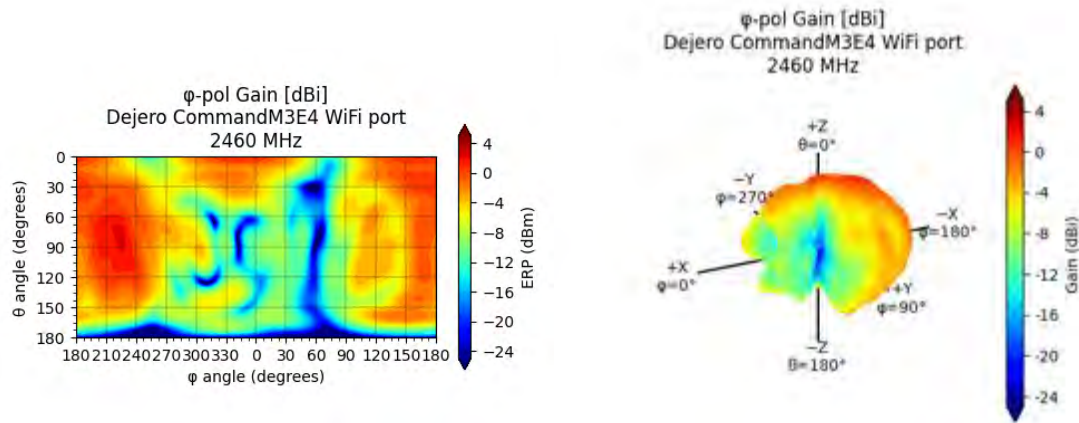
Figure 22 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2460 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 23 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2460 MHz.

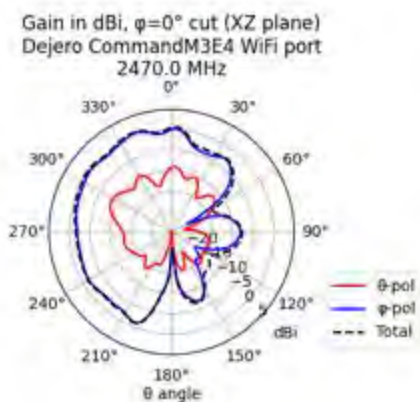
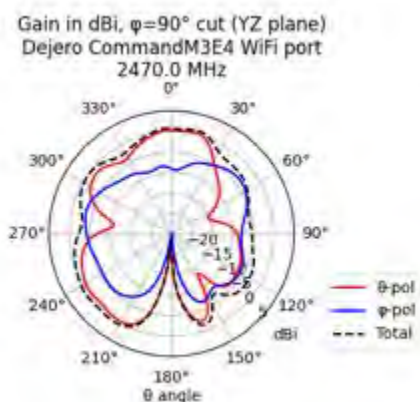
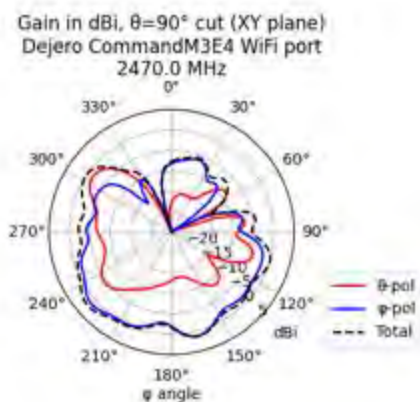
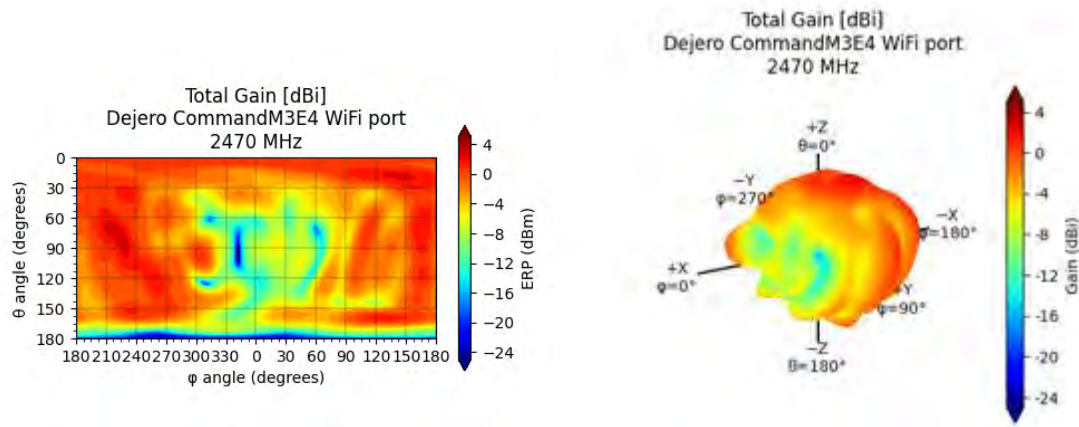
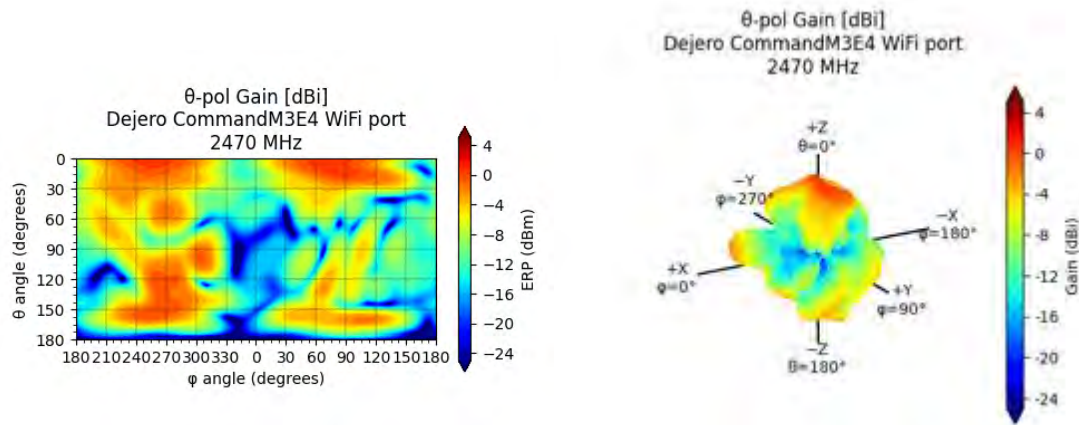
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

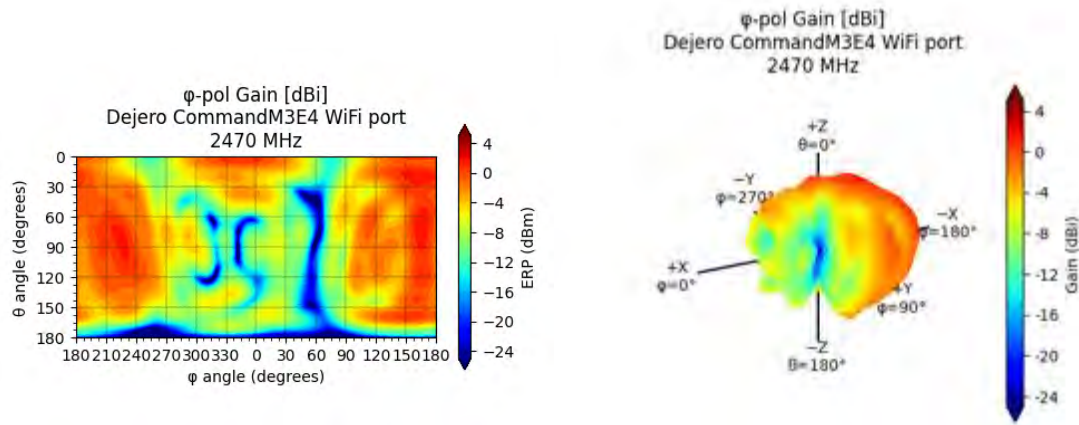
Figure 24 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2470 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 25 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2470 MHz.

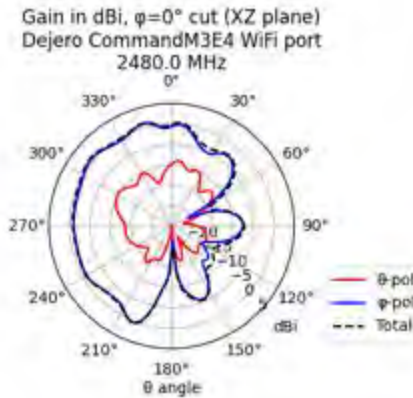
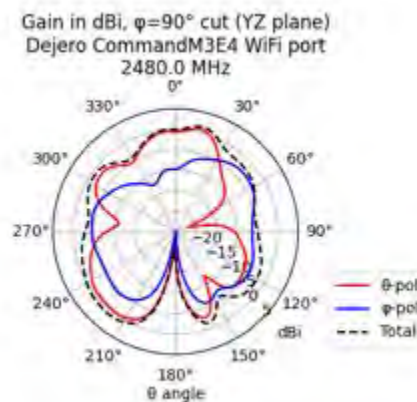
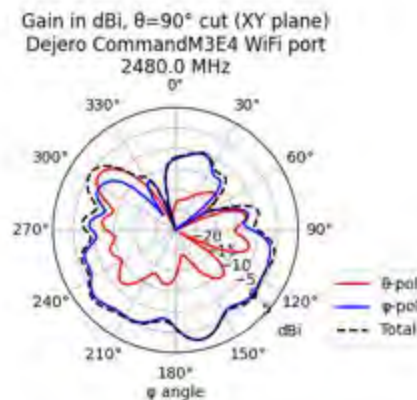
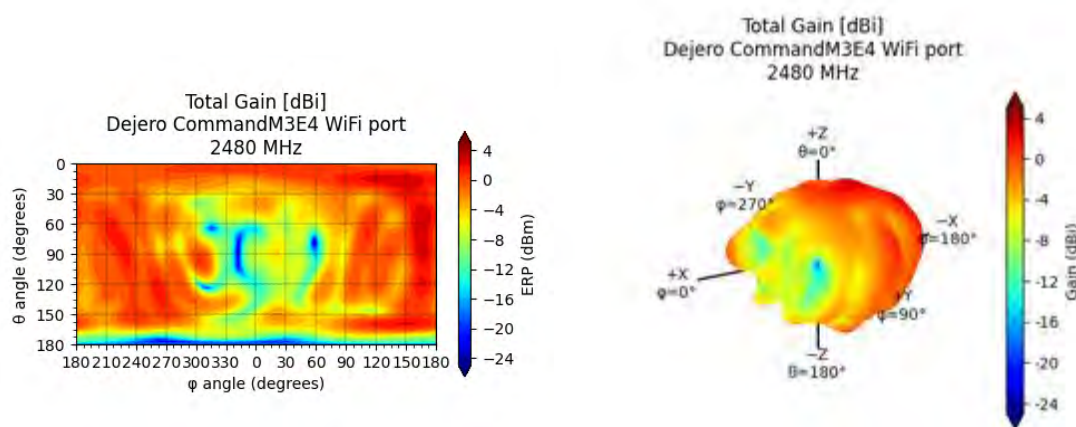
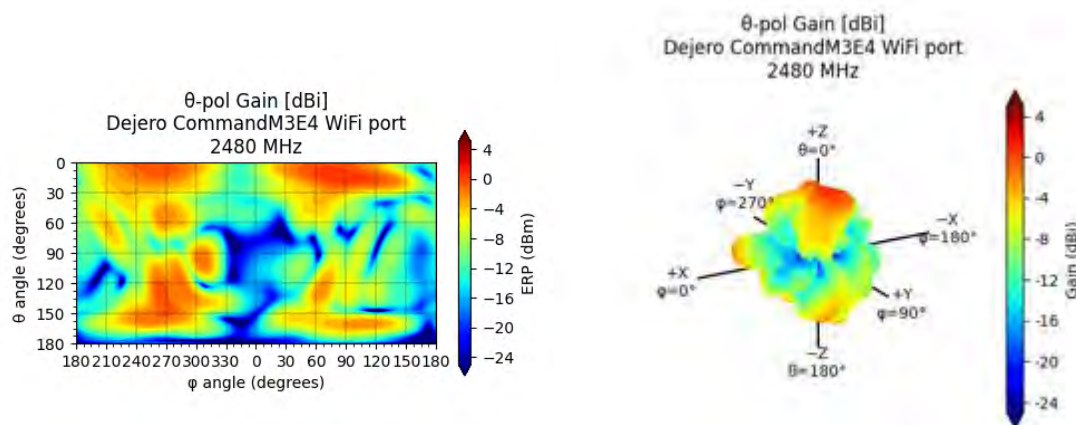
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

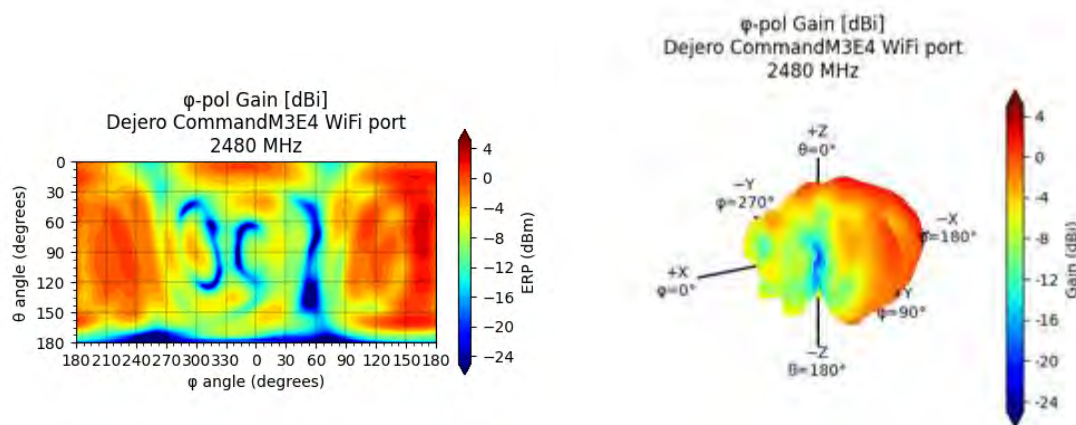
Figure 26 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2480 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 27 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2480 MHz.

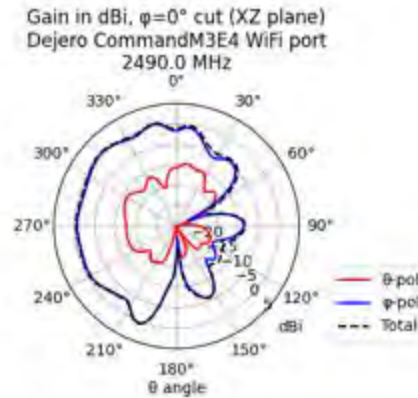
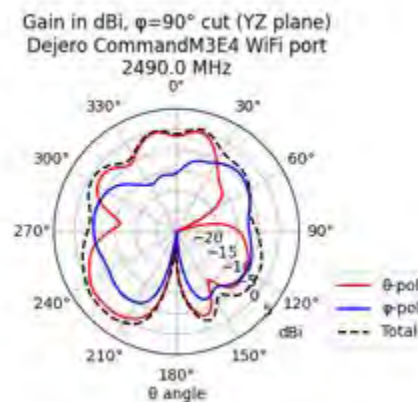
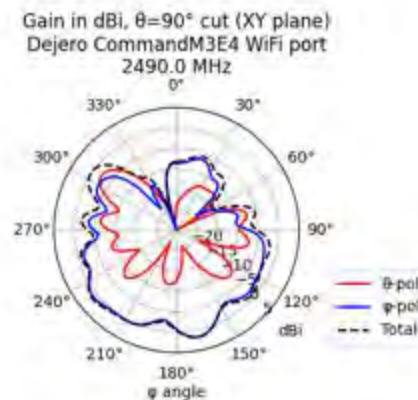
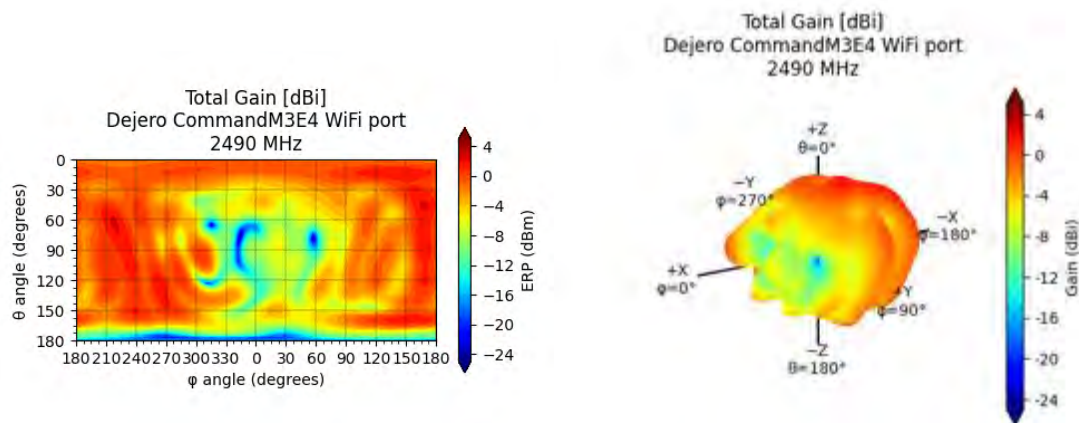
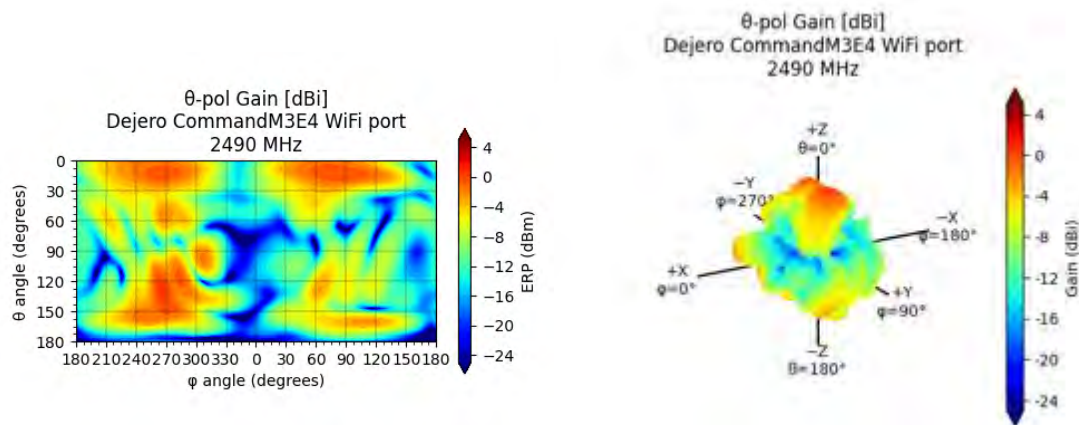
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

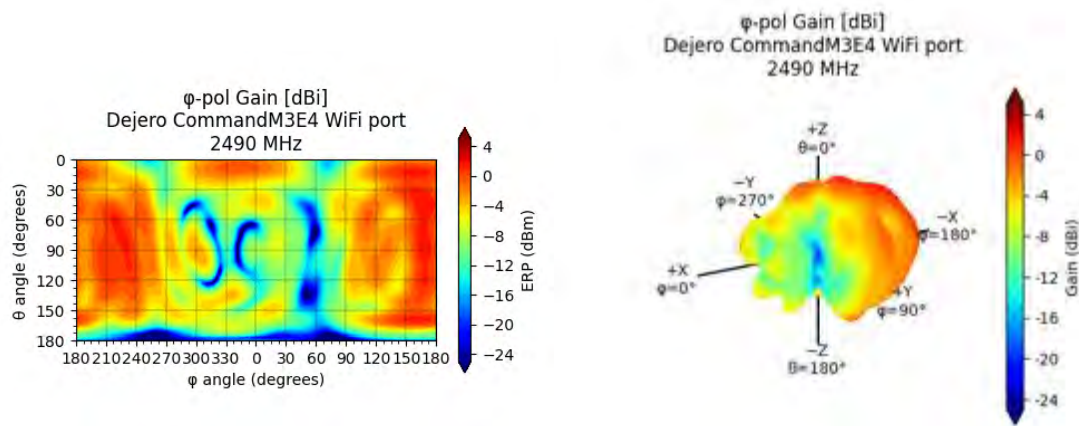
Figure 28 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2490 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 29 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2490 MHz.

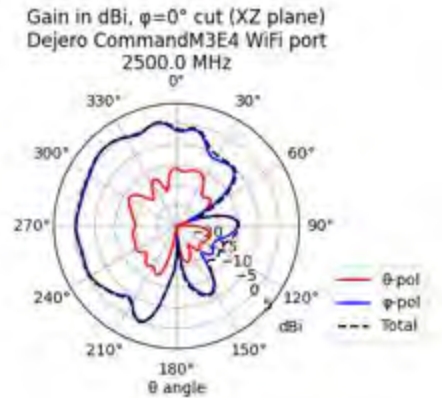
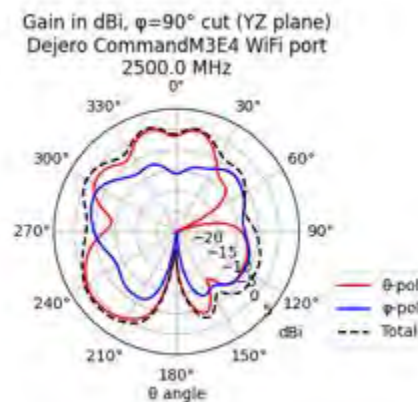
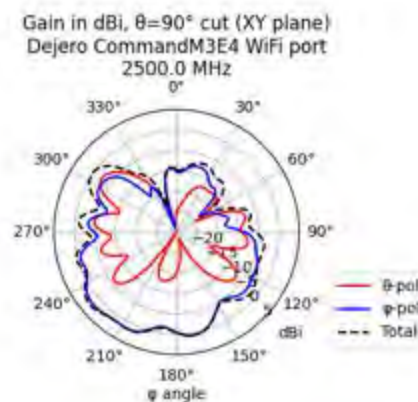
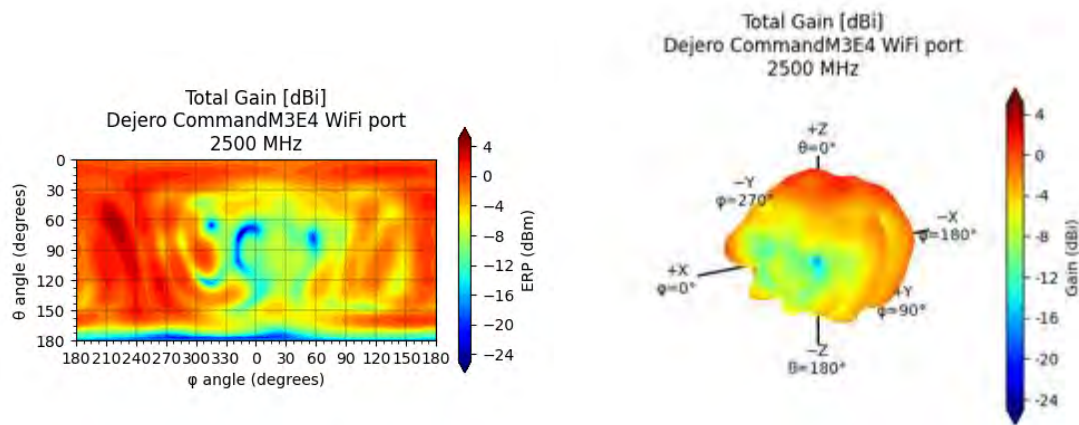
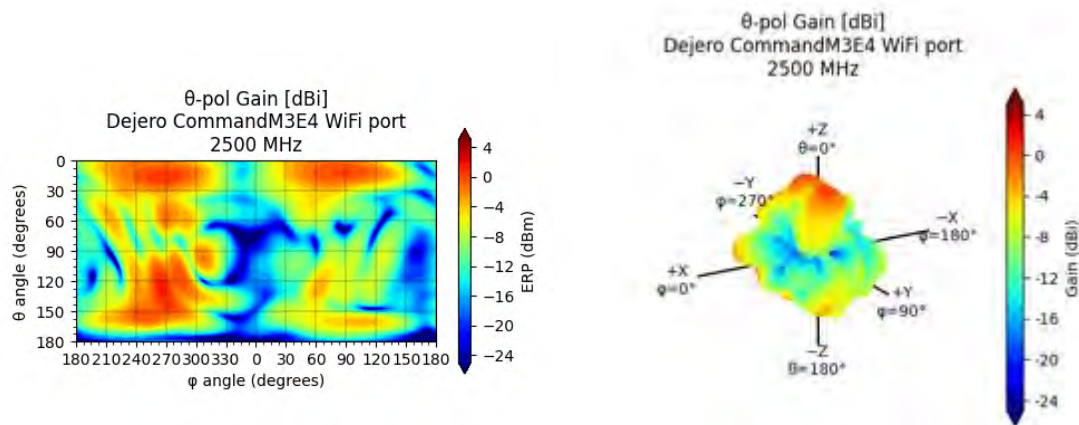
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

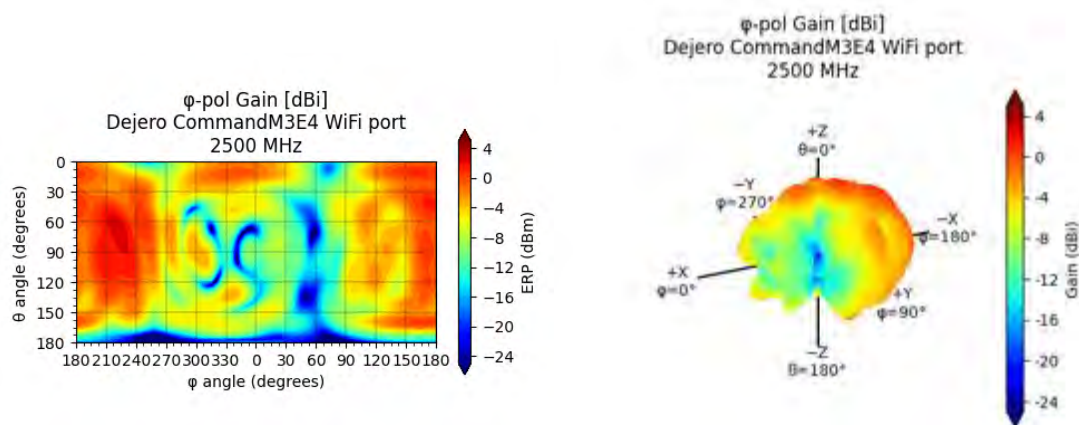
Figure 30 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 2500 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 31 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 2500 MHz.

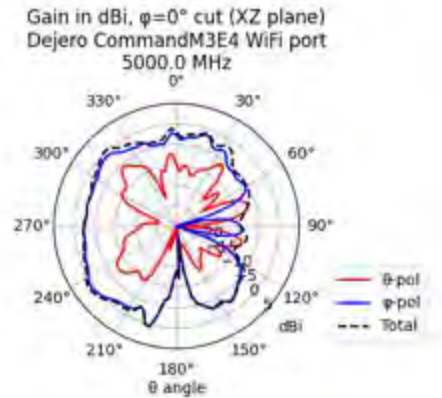
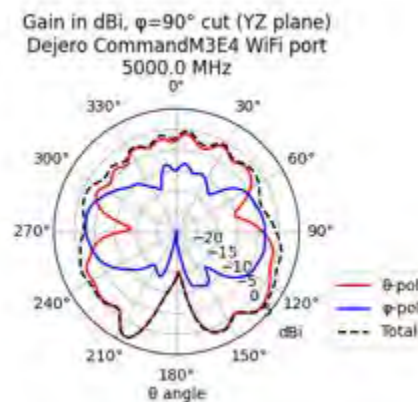
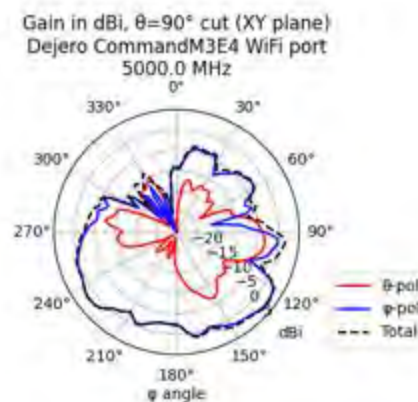
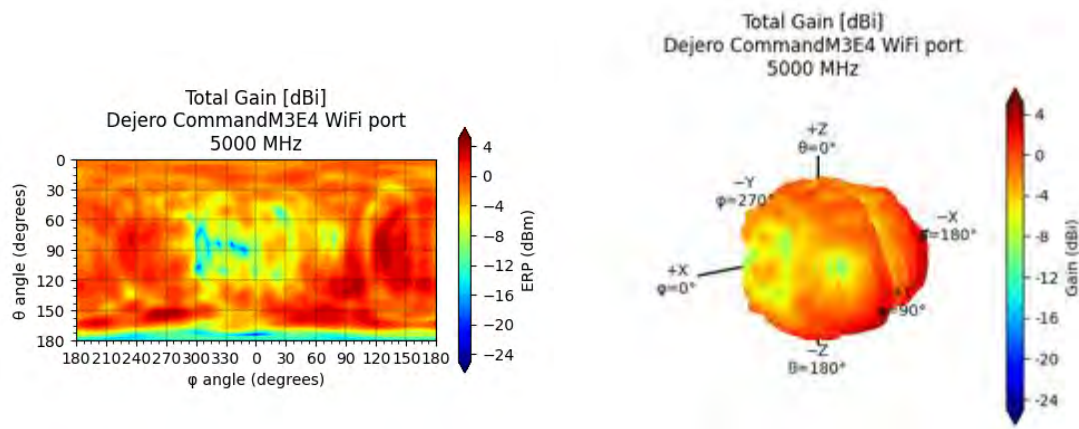
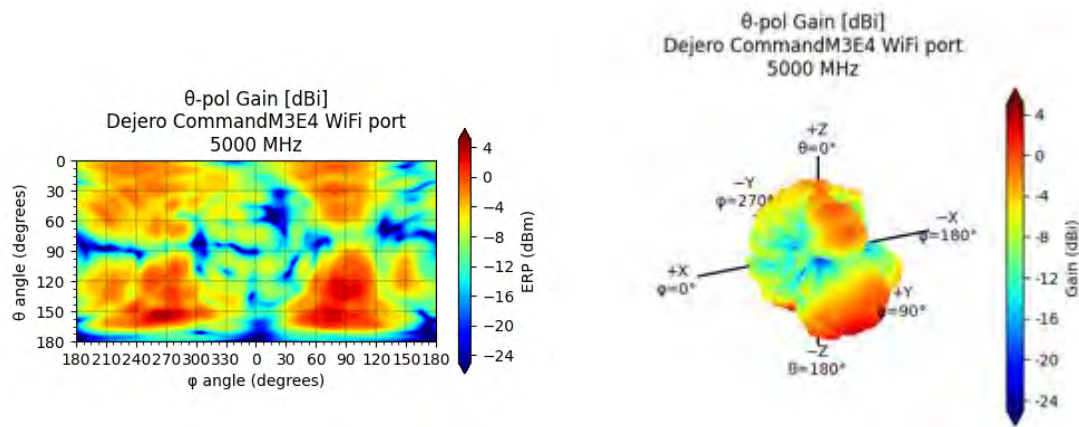
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

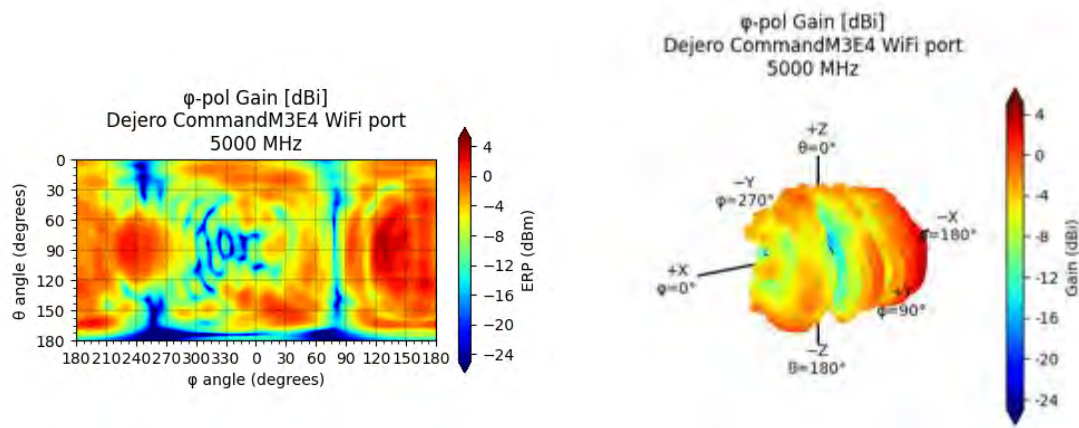
Figure 32 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5000 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 33 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5000 MHz.

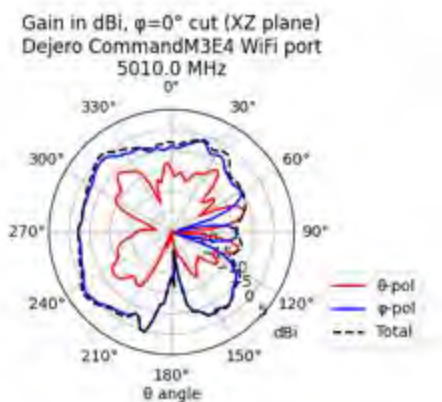
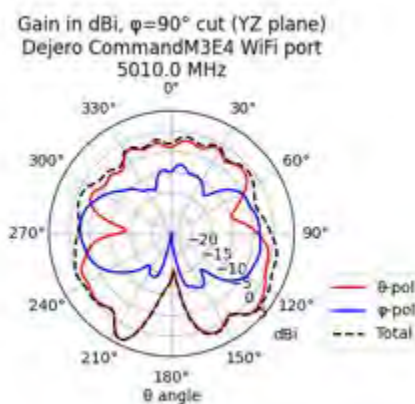
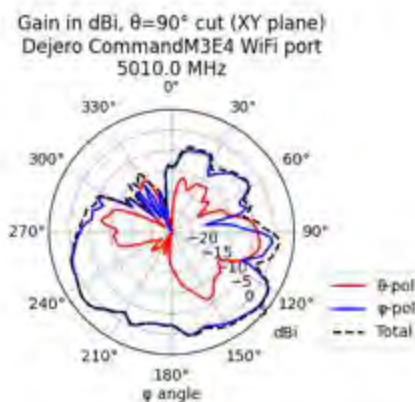
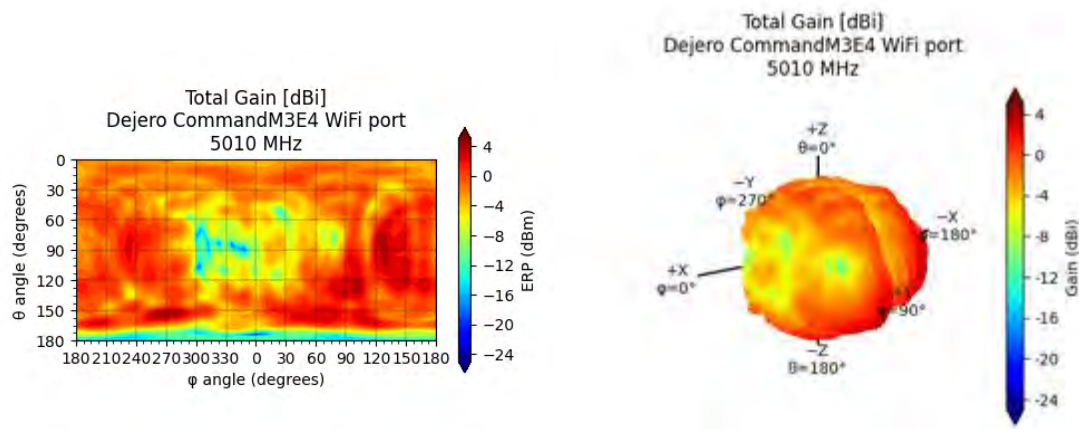
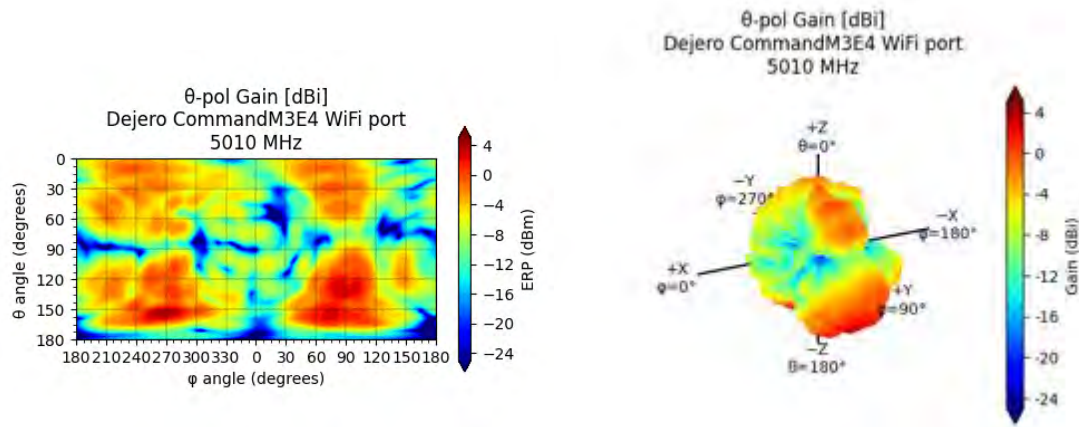
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

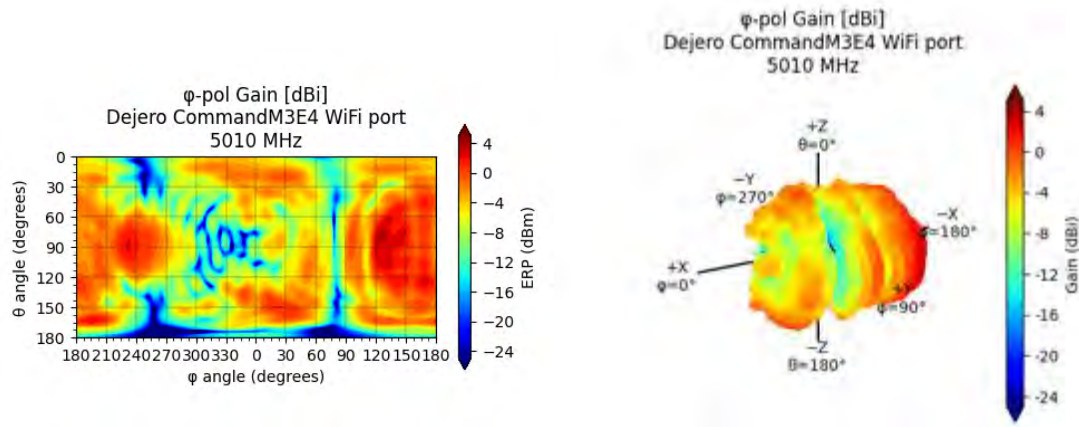
Figure 34 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5010 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 35 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5010 MHz.

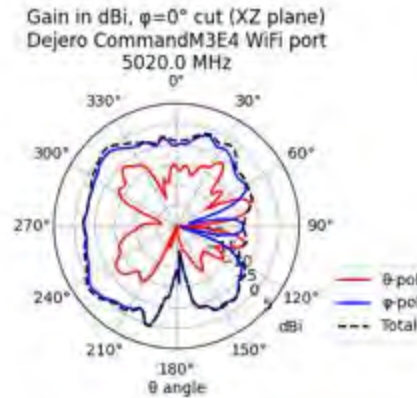
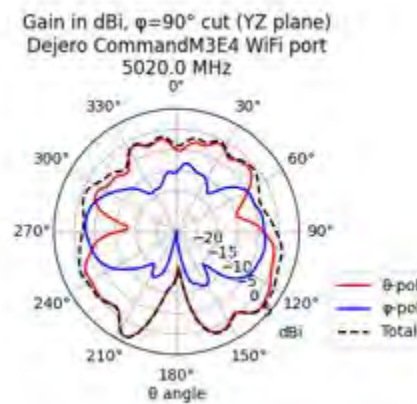
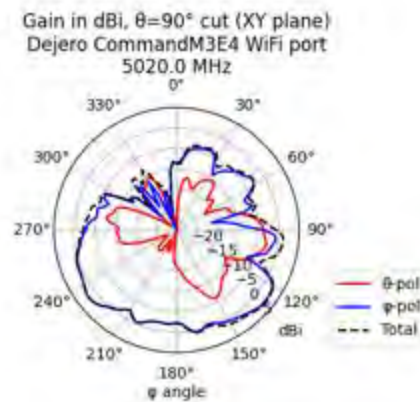
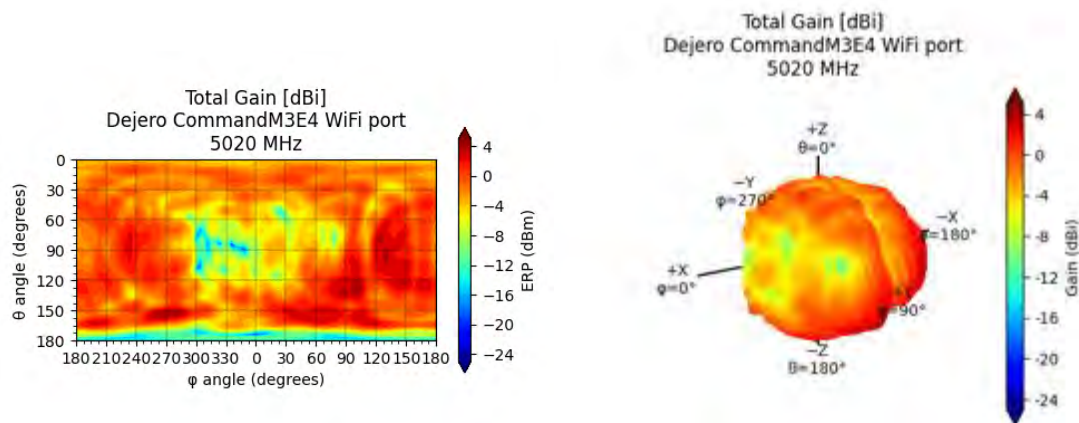
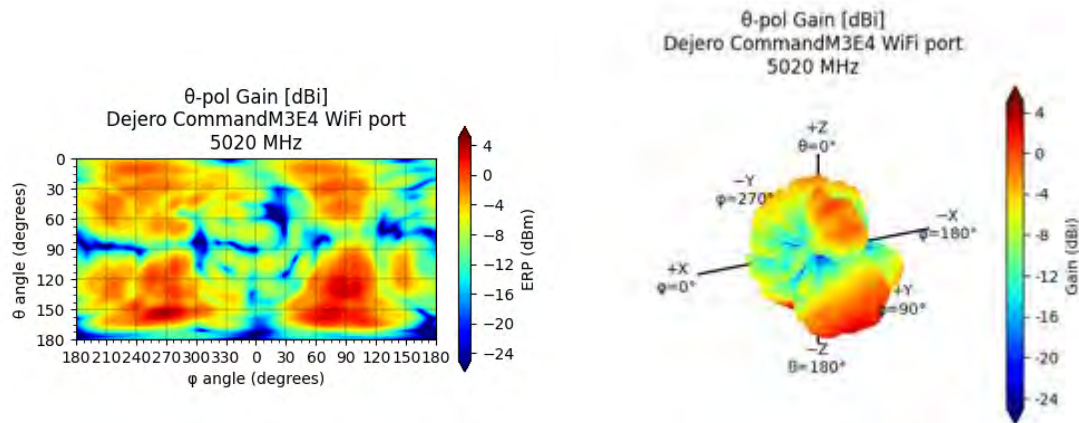
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

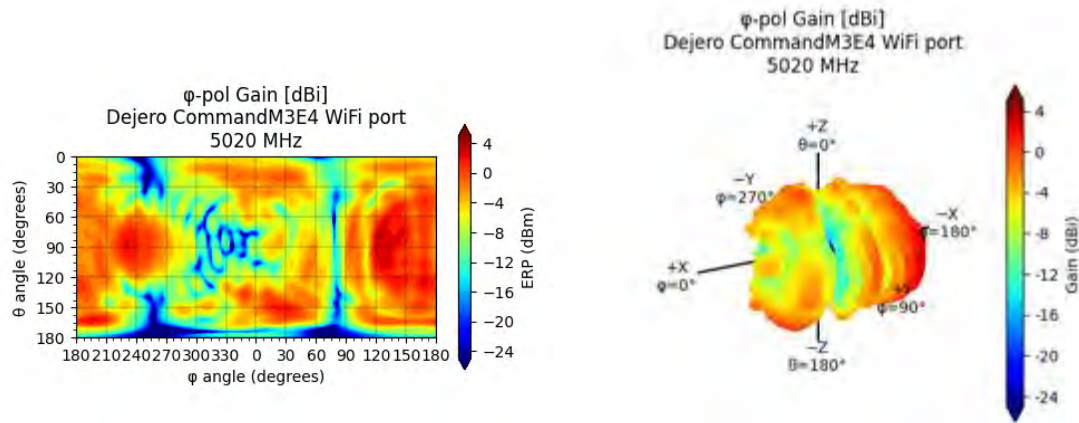
Figure 36 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5020 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 37 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5020 MHz.

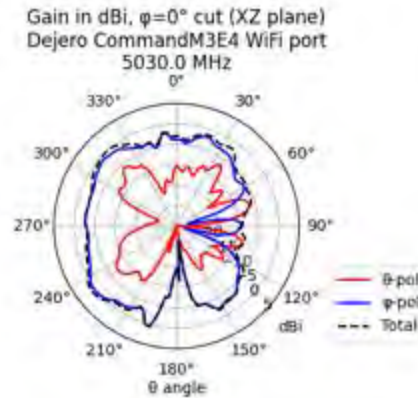
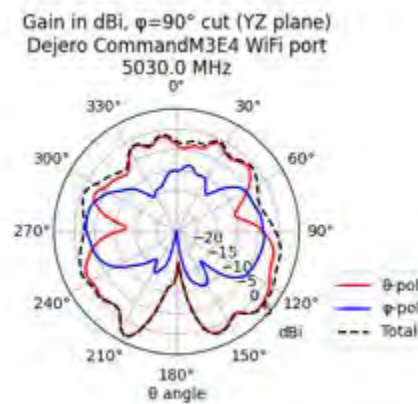
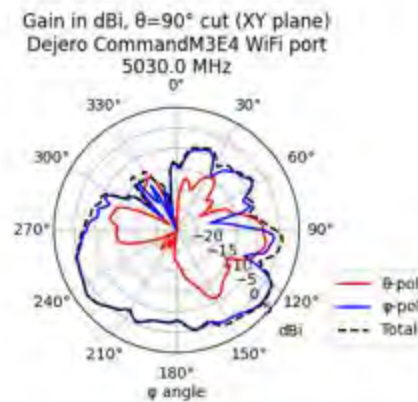
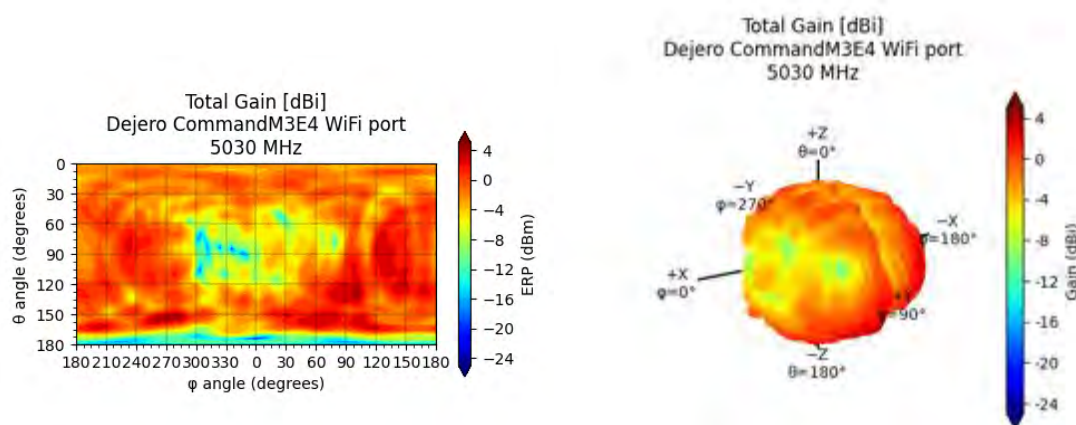
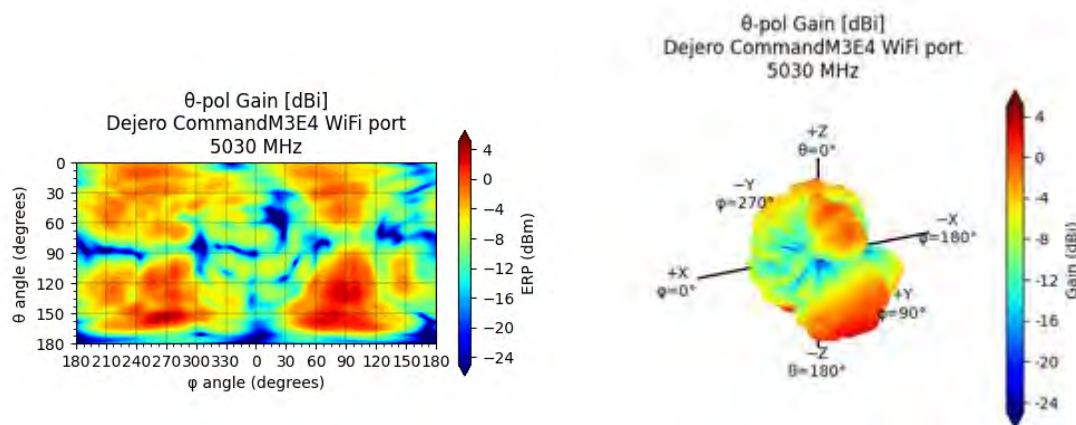
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

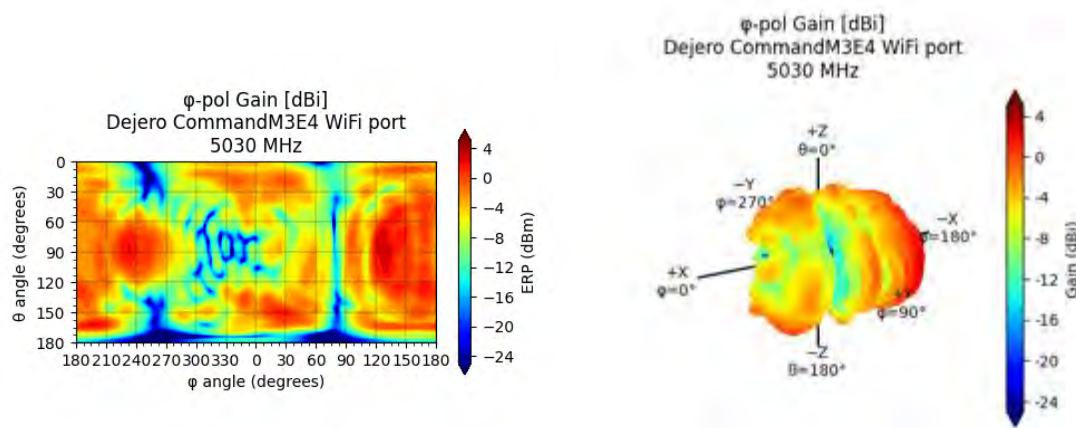
Figure 38 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5030 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 39 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5030 MHz.

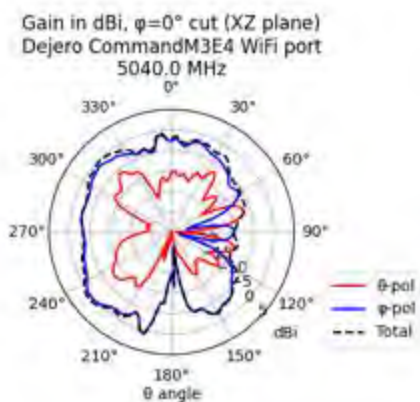
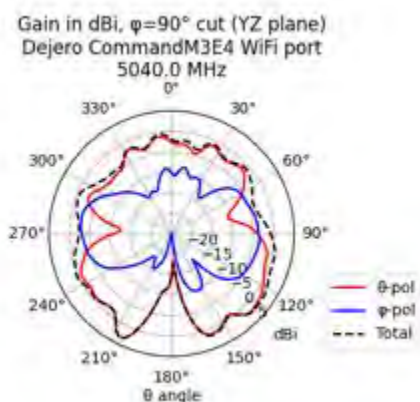
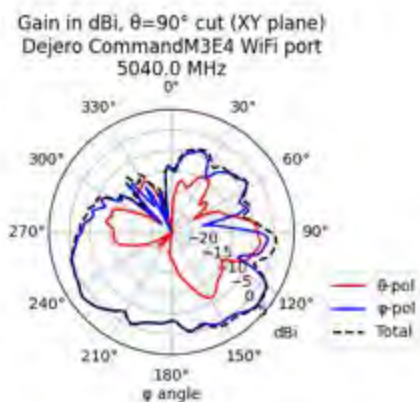
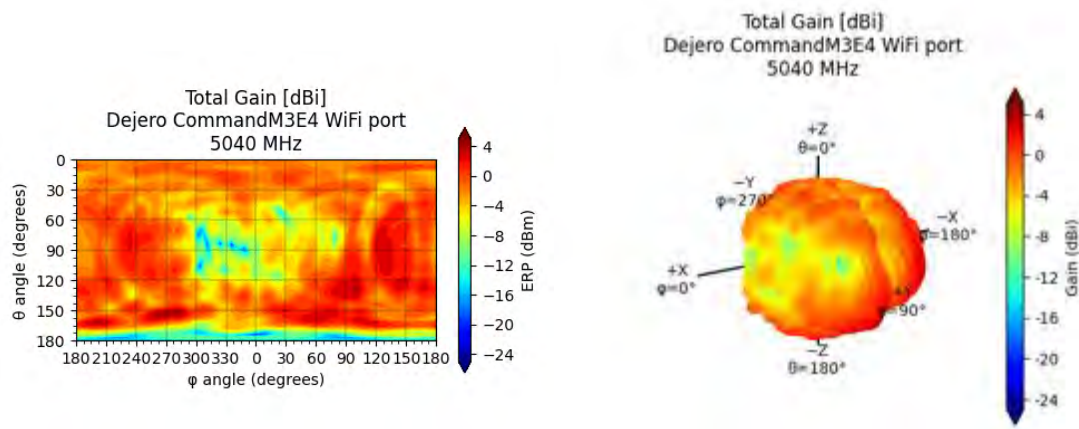
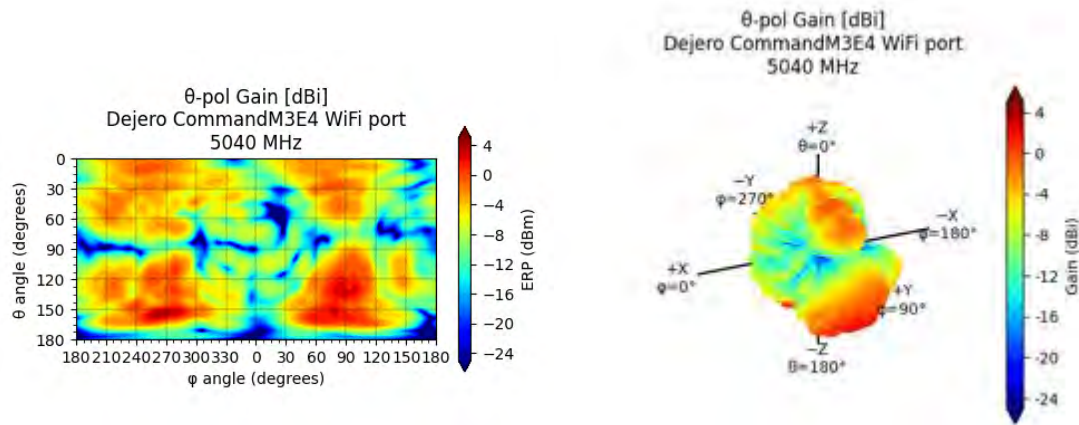
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

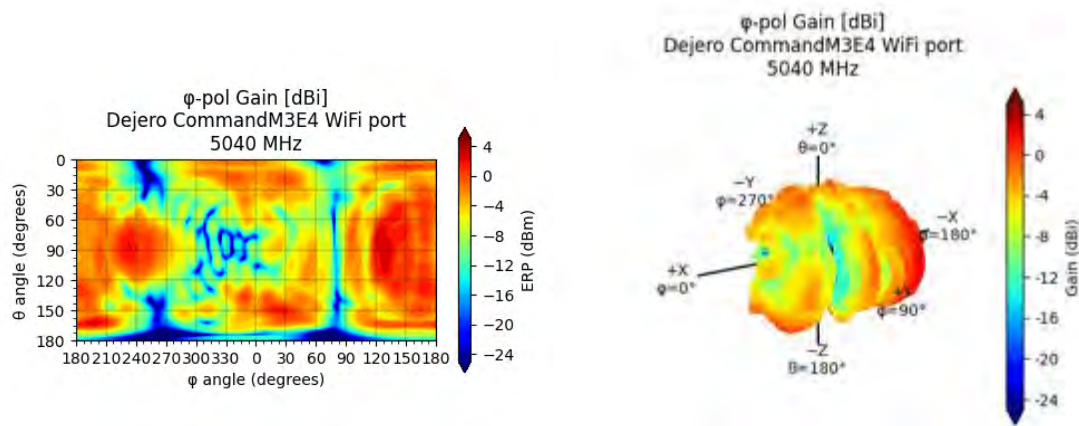
Figure 40 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5040 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 41 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5040 MHz.

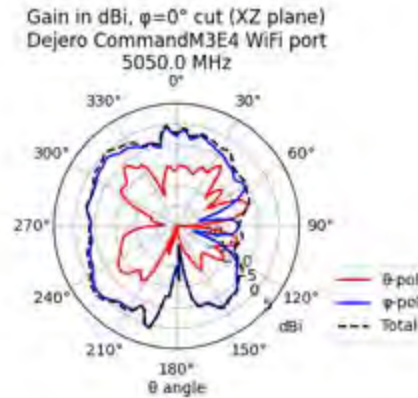
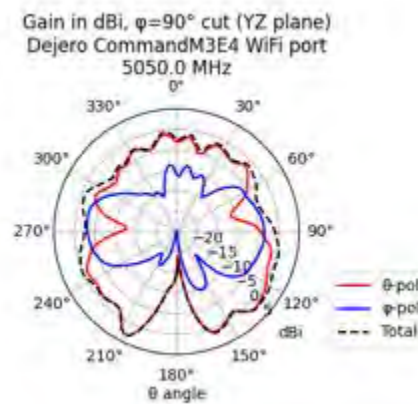
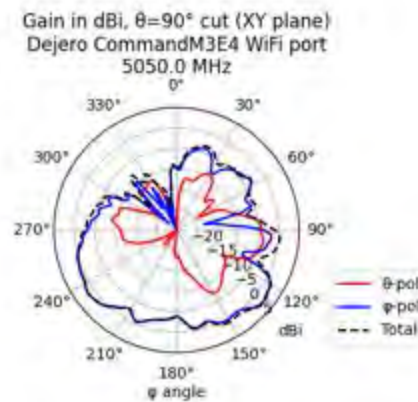
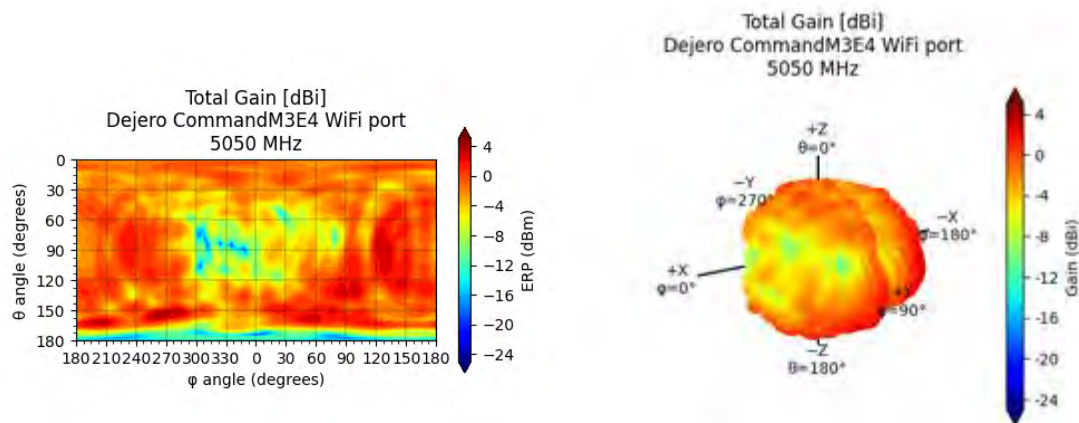
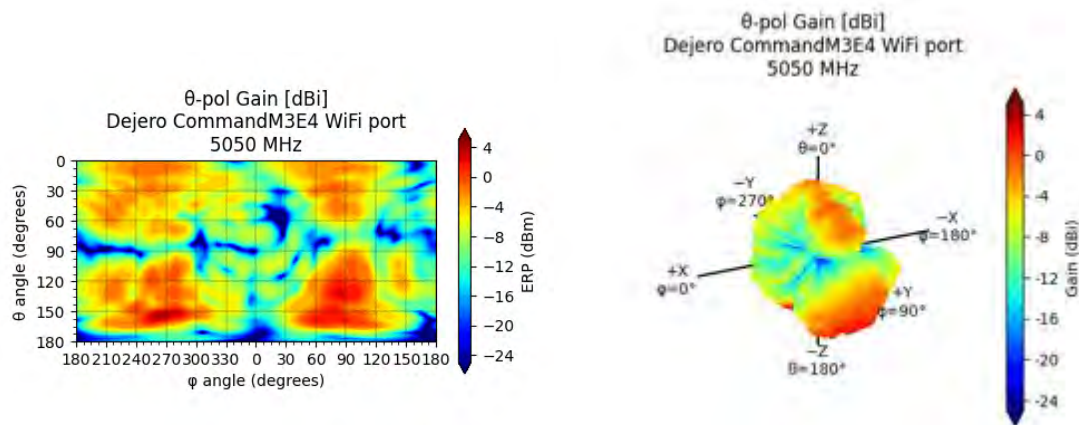
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

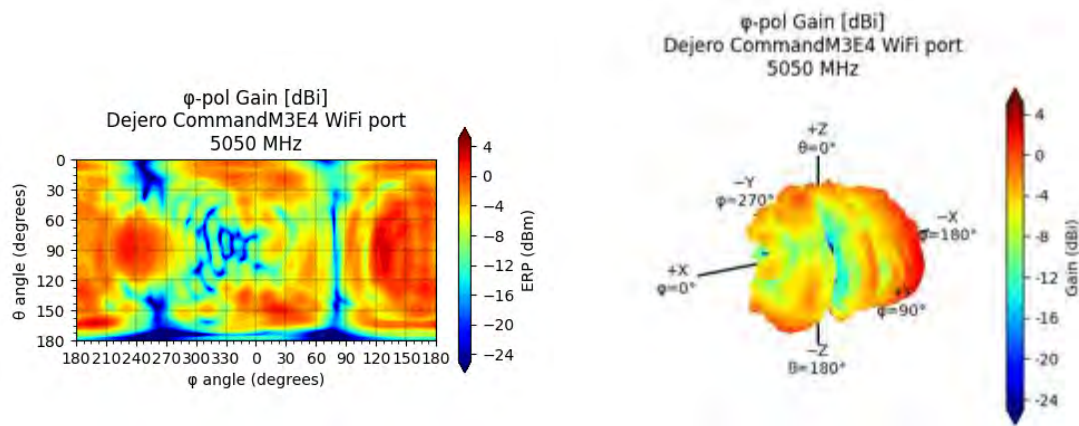
Figure 42 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5050 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 43 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5050 MHz.

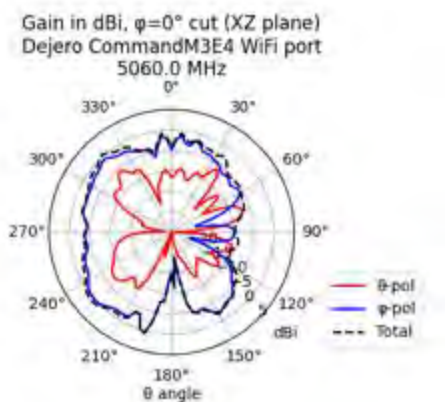
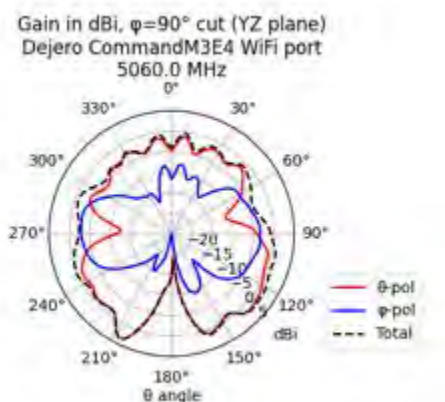
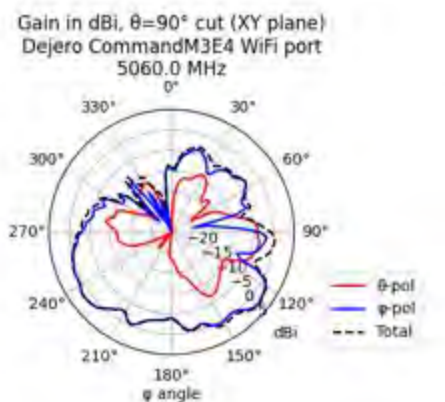
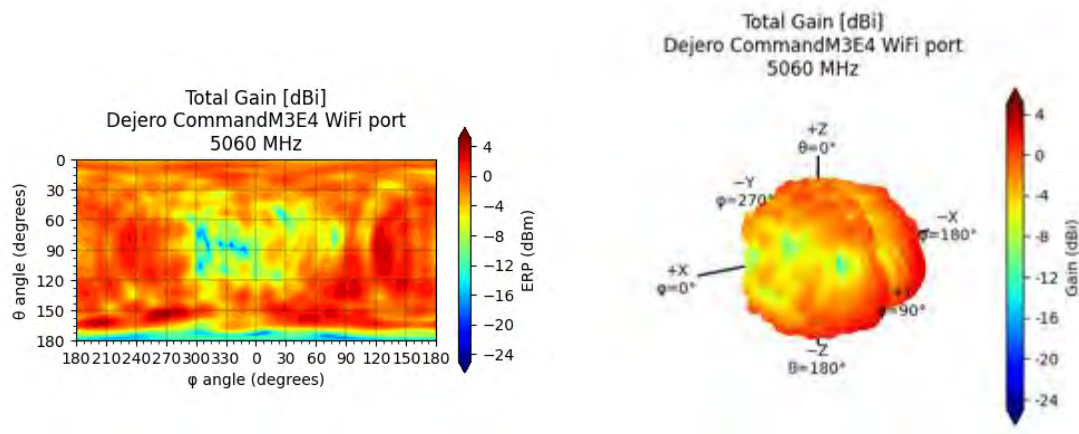
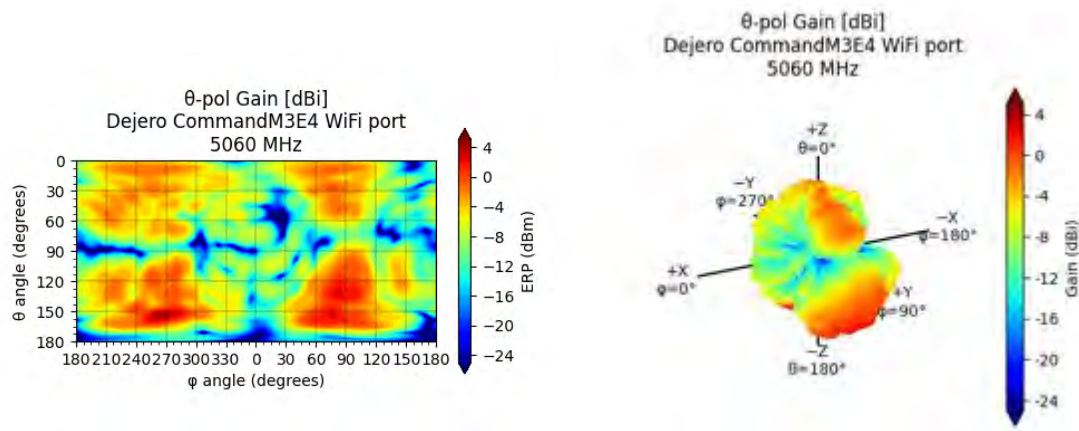
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

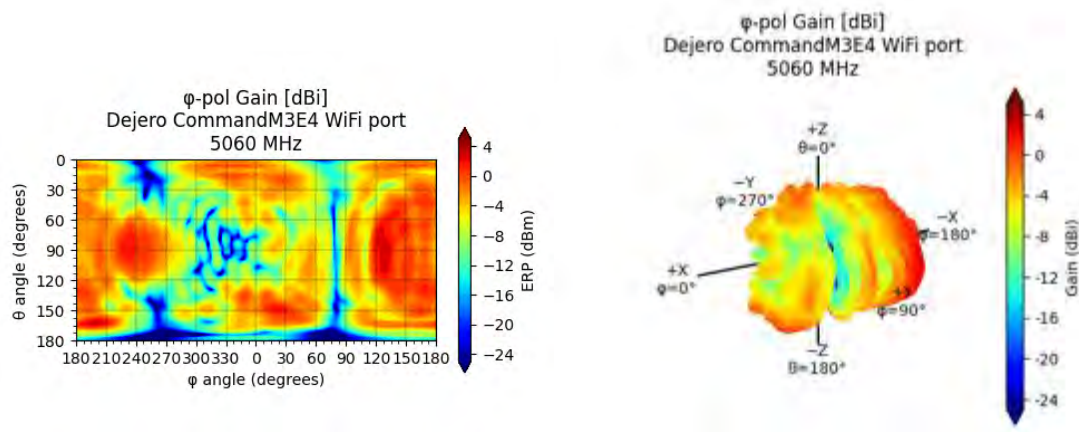
Figure 44 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5060 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 45 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5060 MHz.

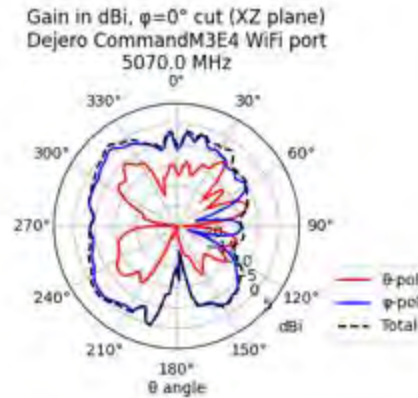
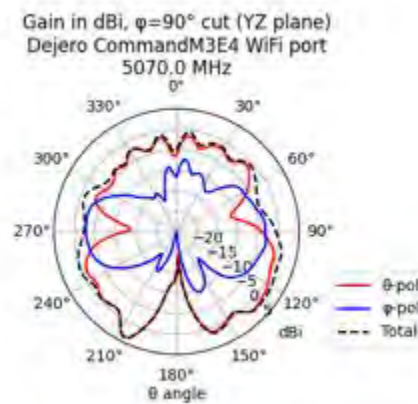
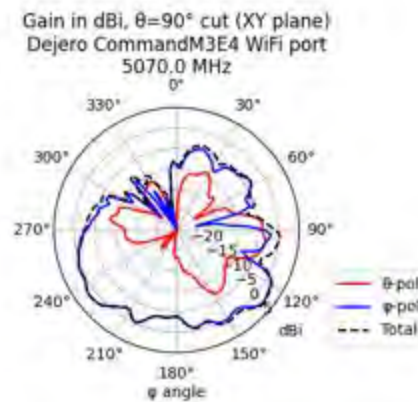
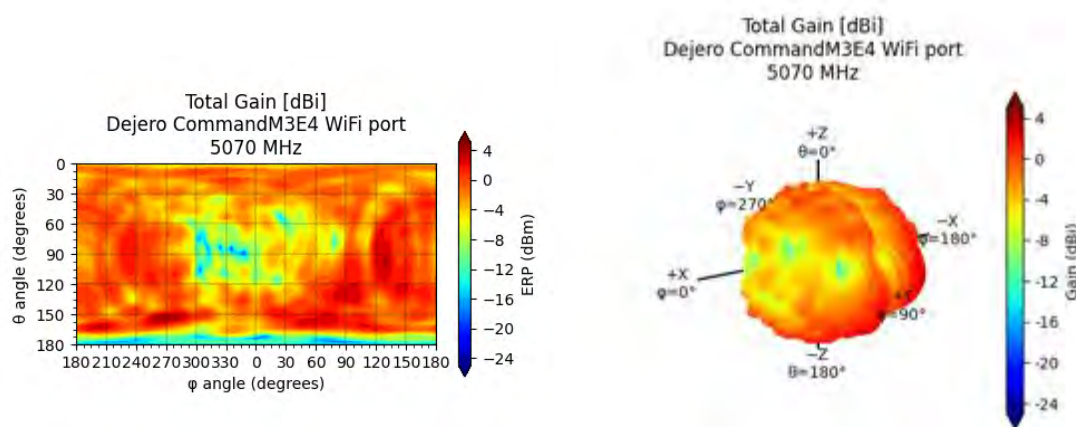
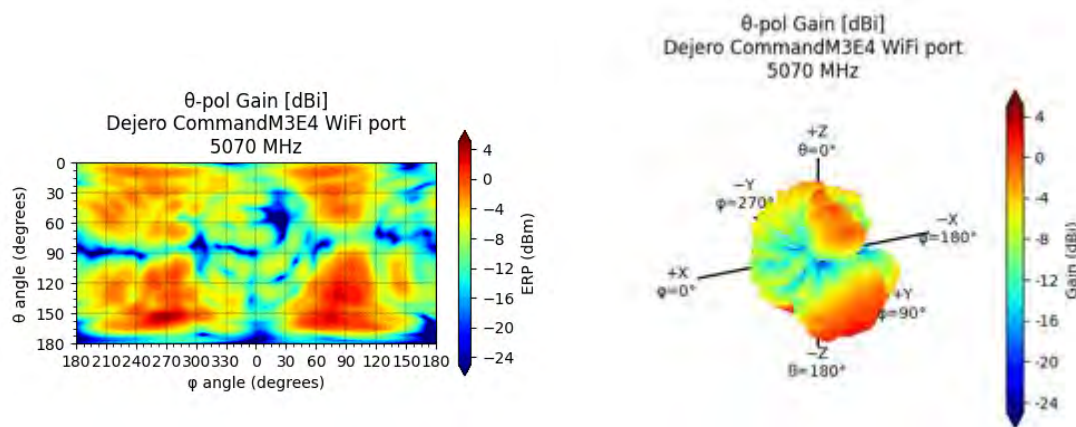
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

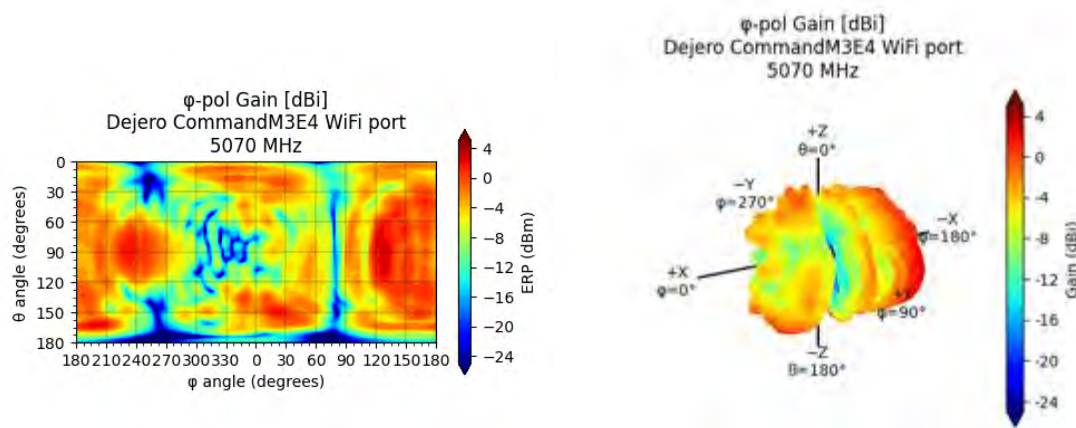
Figure 46 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5070 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 47 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5070 MHz.

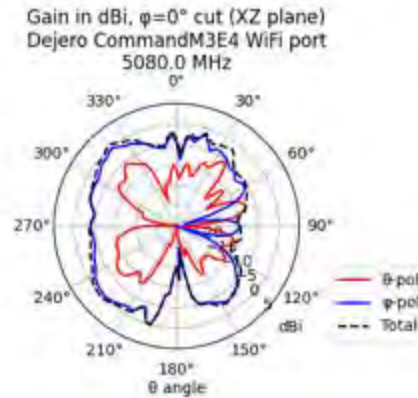
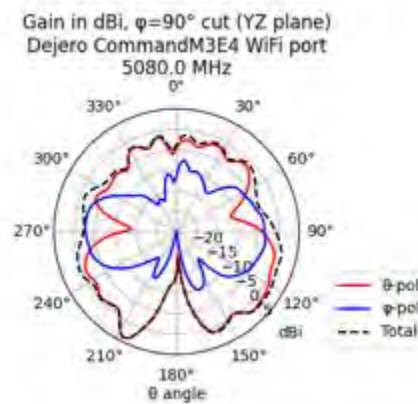
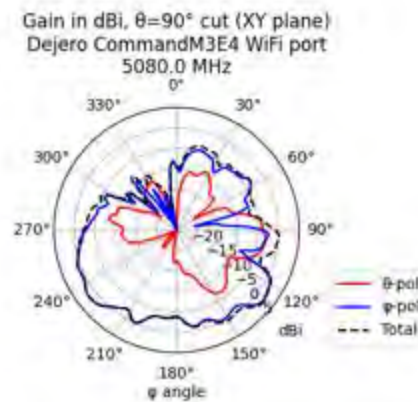
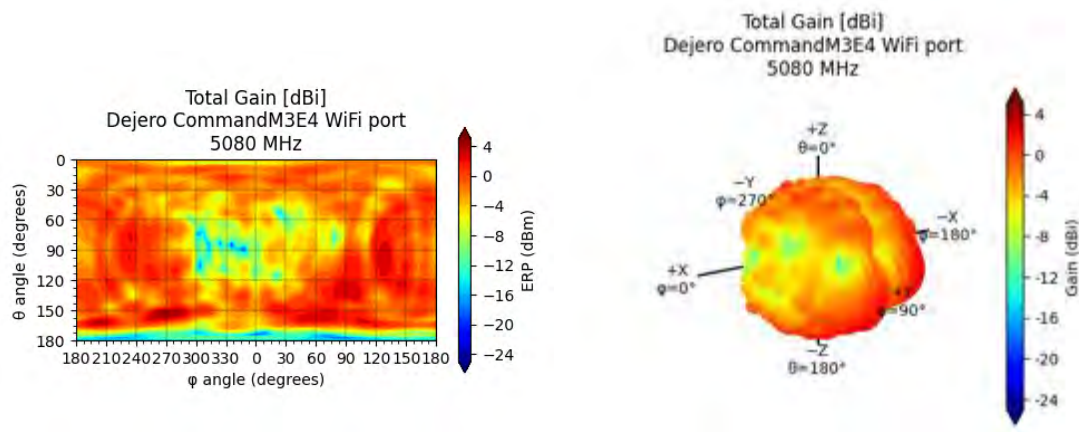
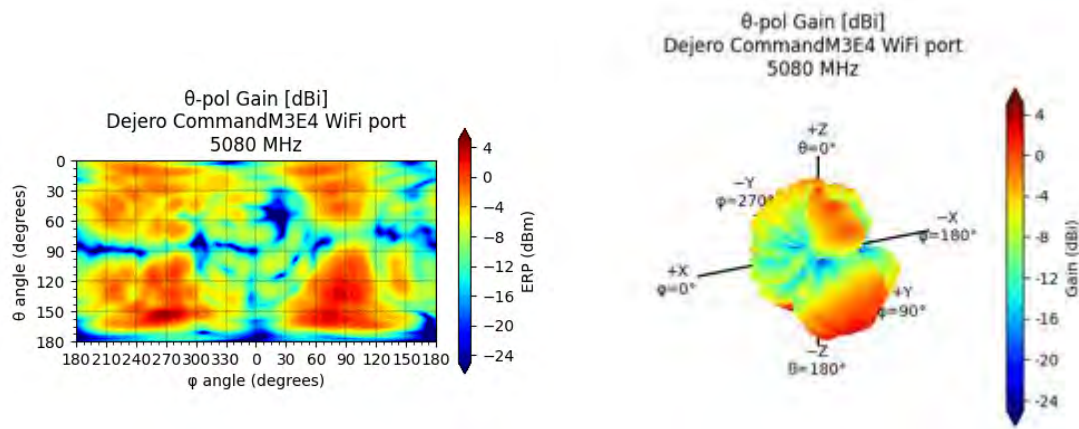
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

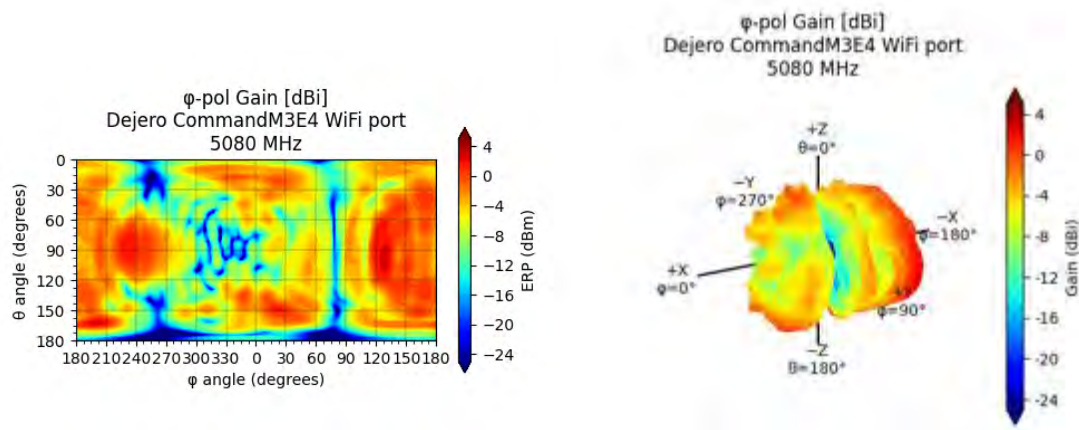
Figure 48 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5080 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 49 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5080 MHz.

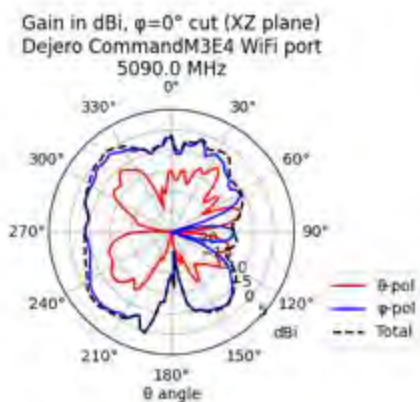
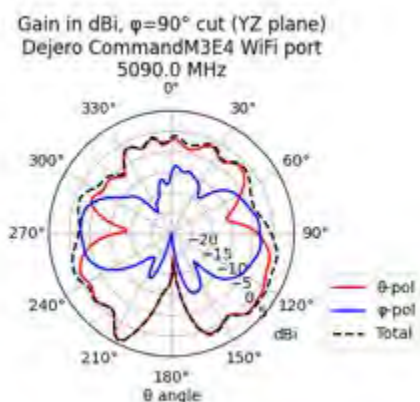
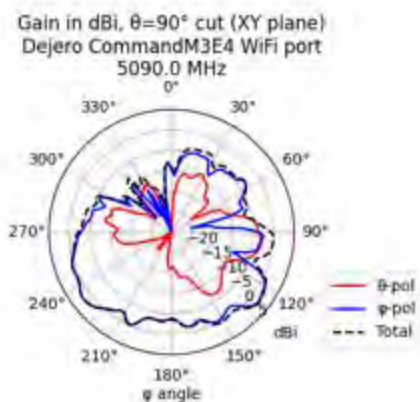
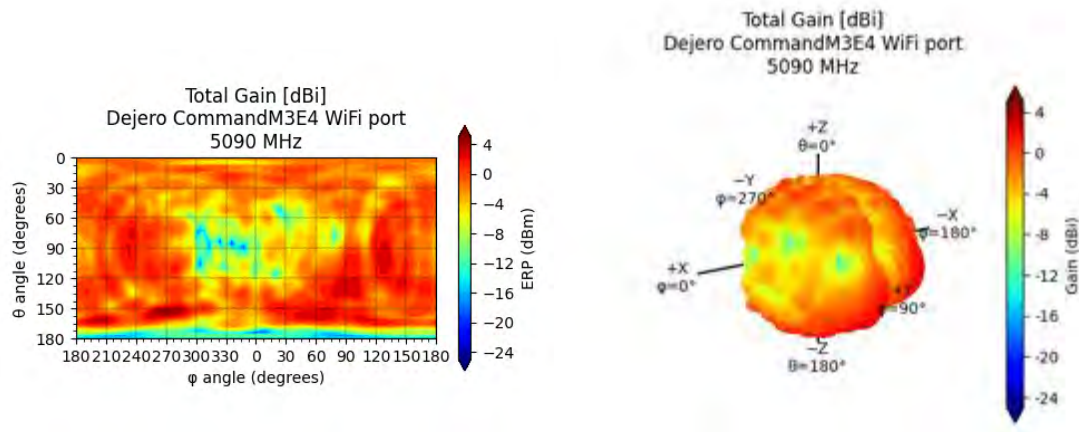
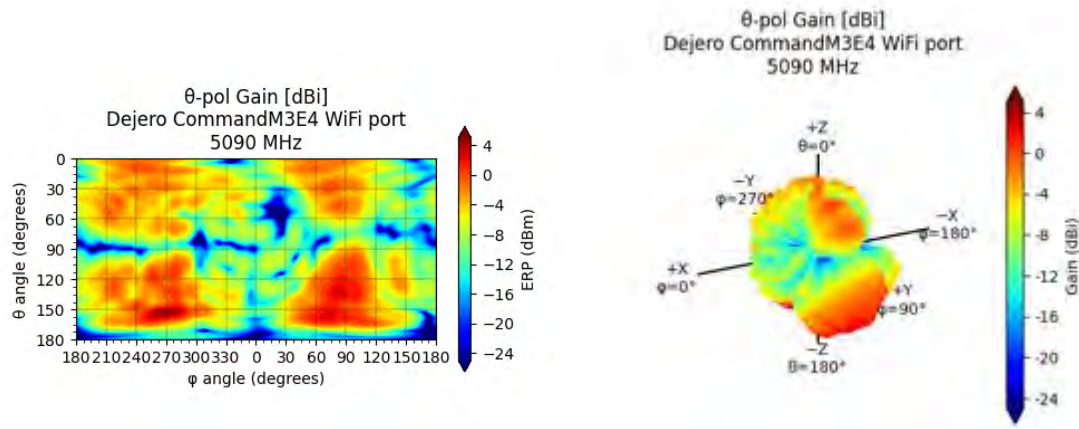
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

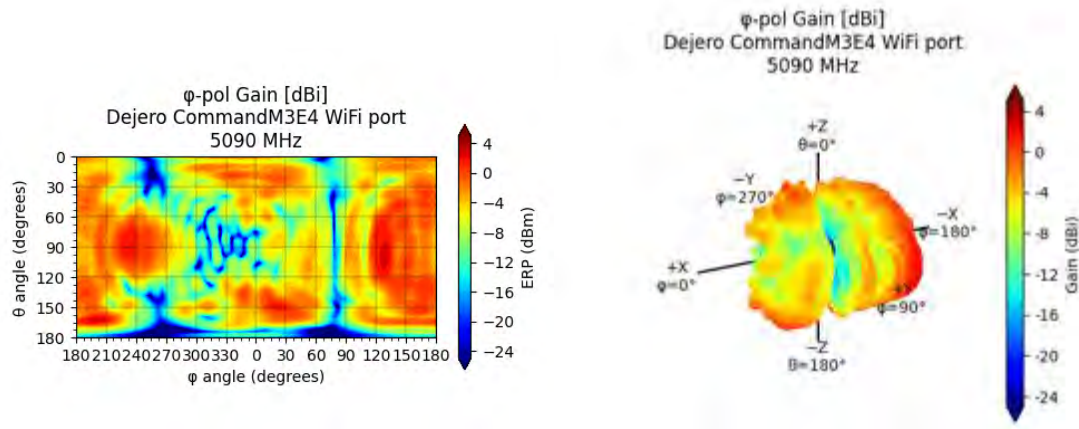
Figure 50 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5090 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 51 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5090 MHz.

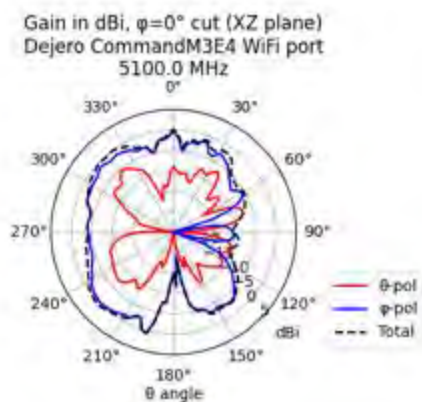
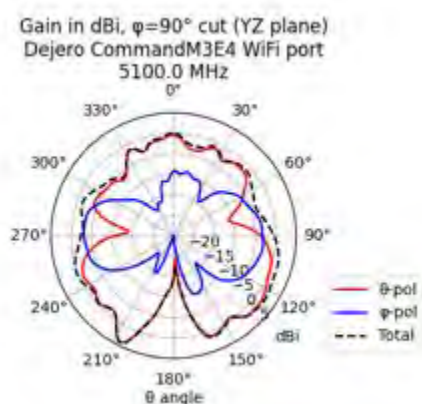
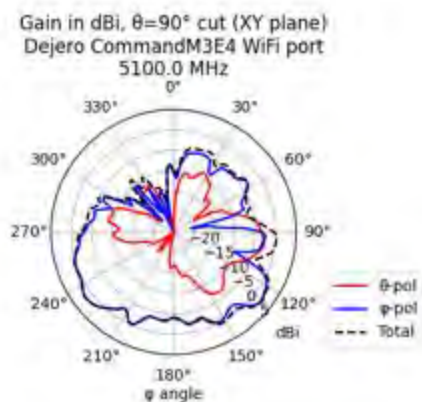
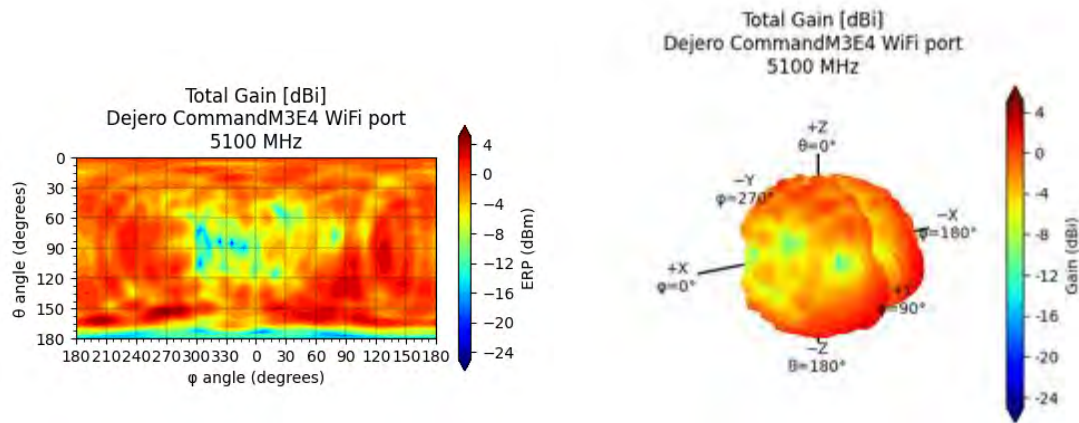
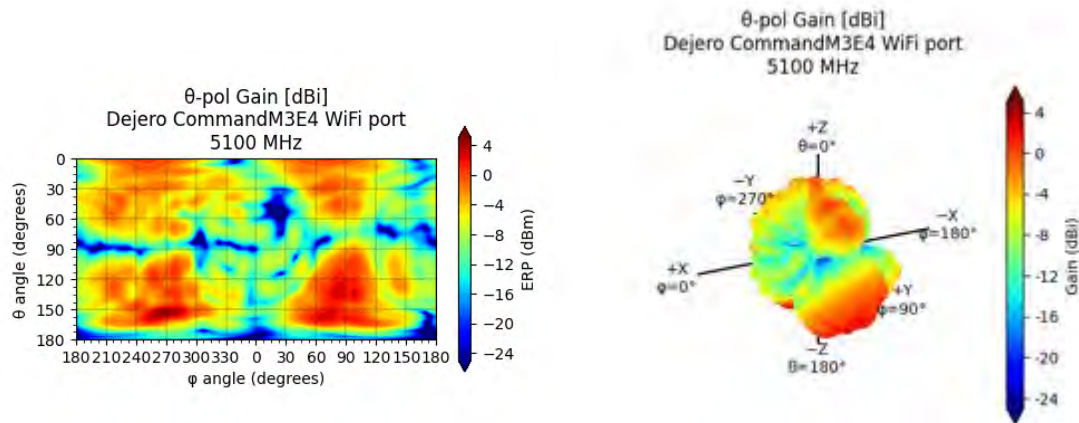
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

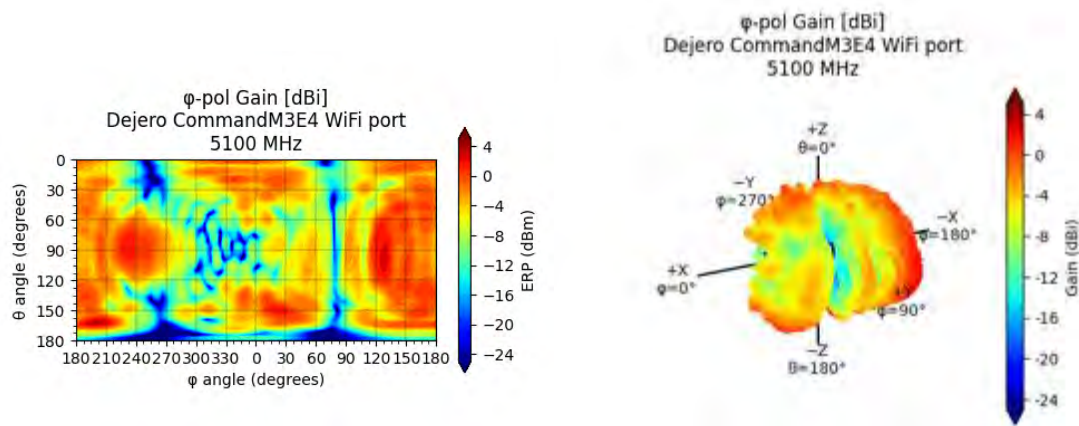
Figure 52 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5100 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 53 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5100 MHz.

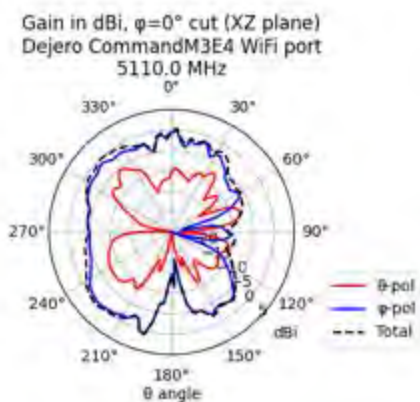
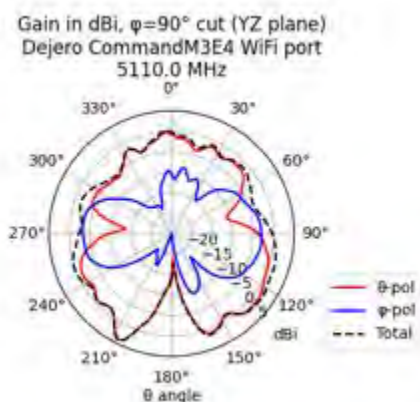
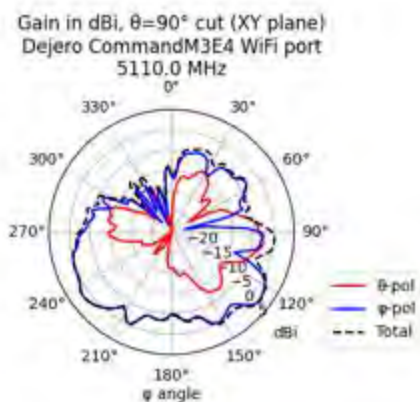
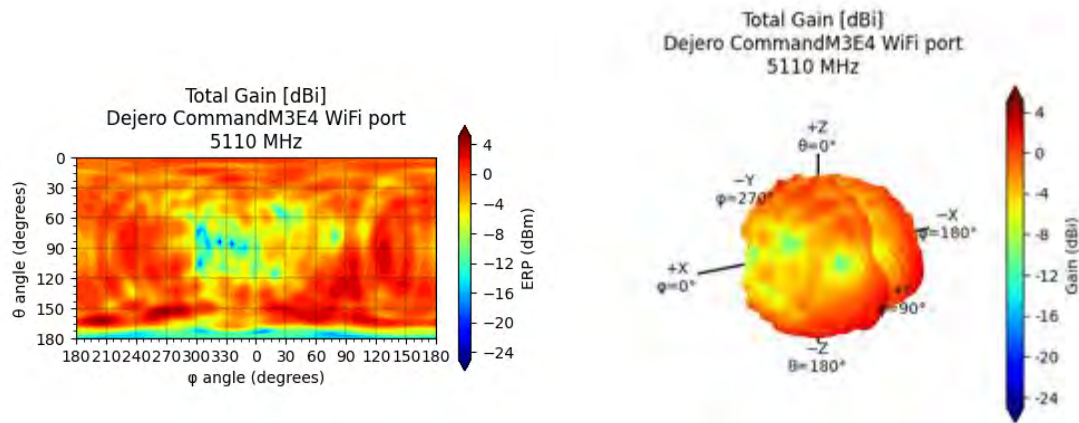
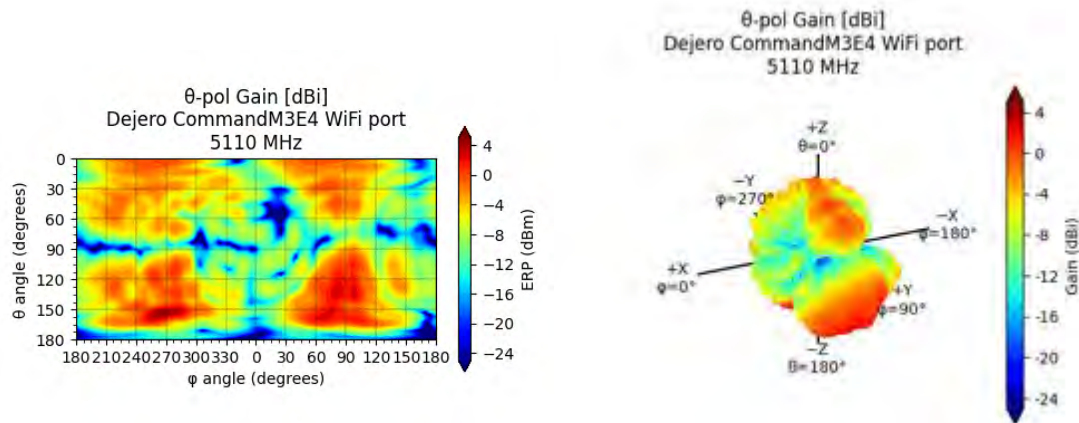
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

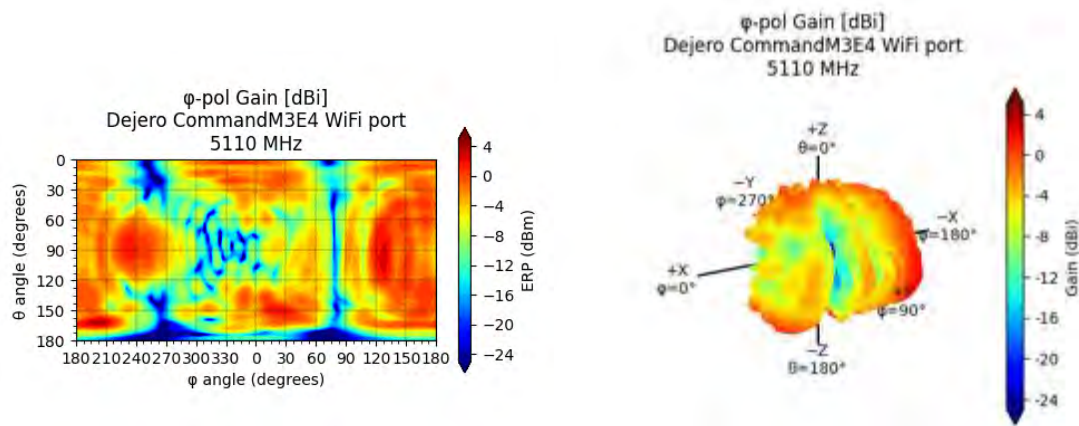
Figure 54 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5110 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 55 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5110 MHz.

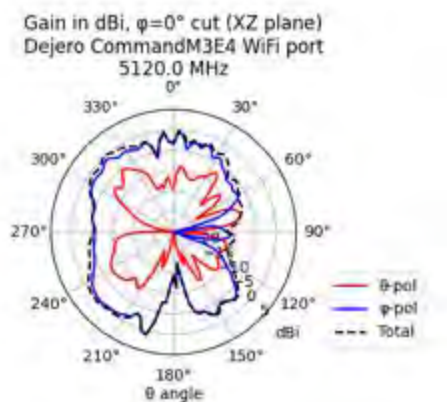
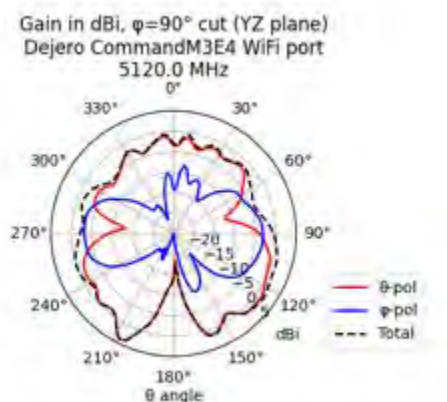
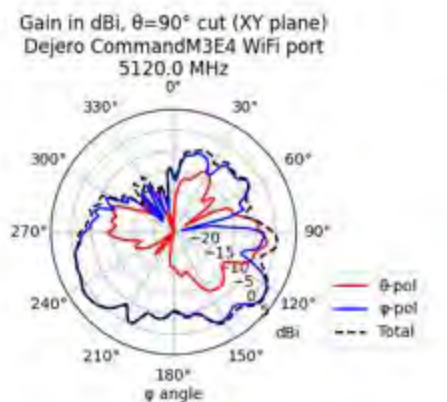
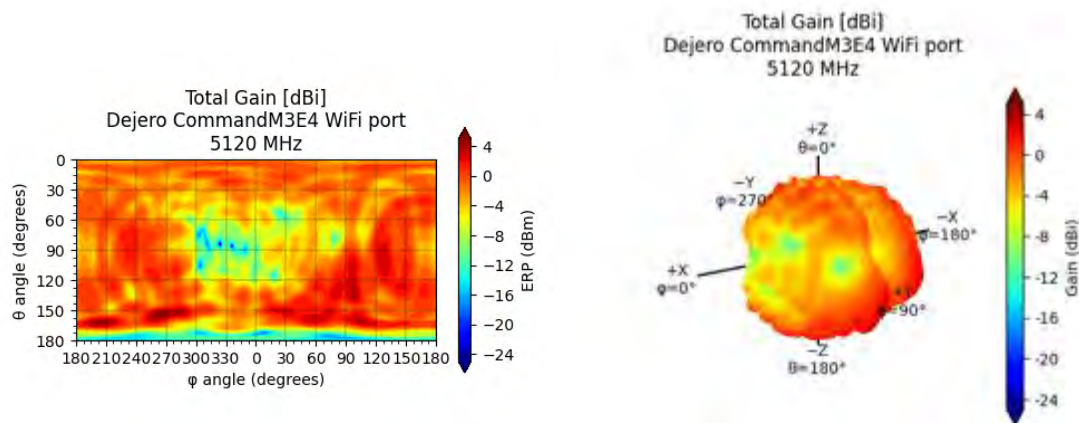
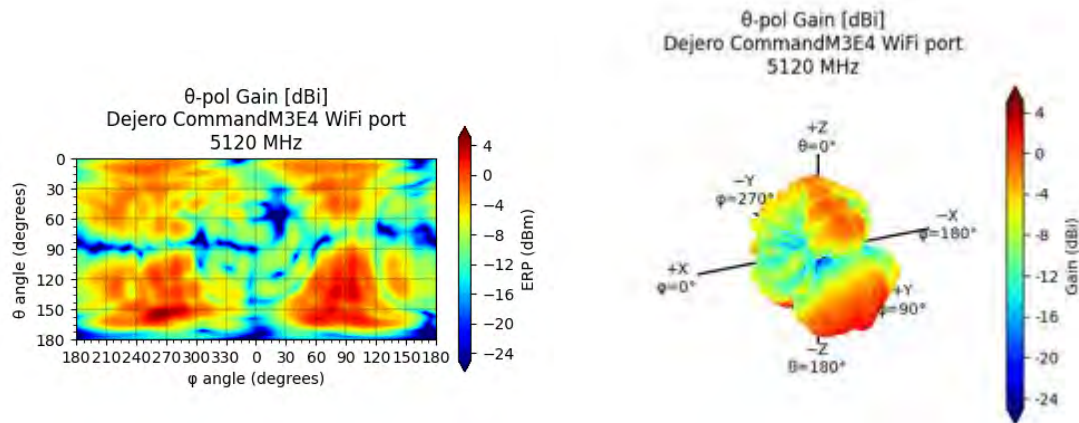
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

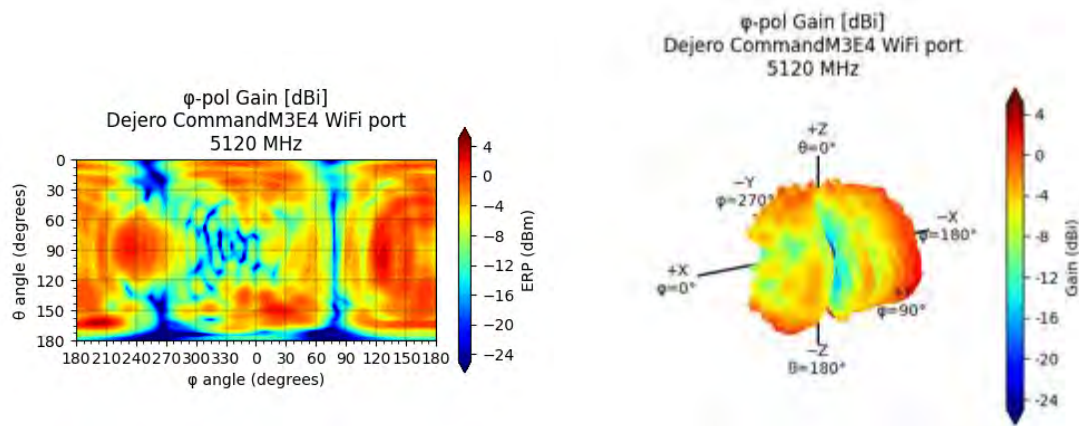
Figure 56 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5120 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 57 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5120 MHz.

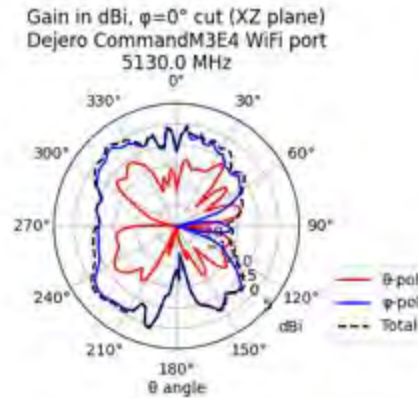
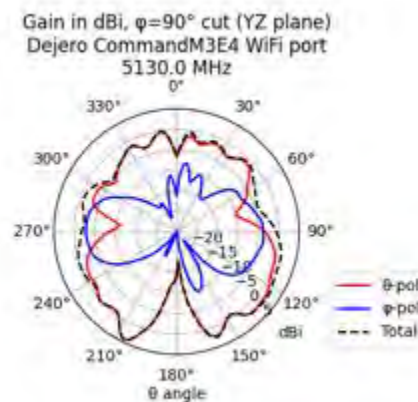
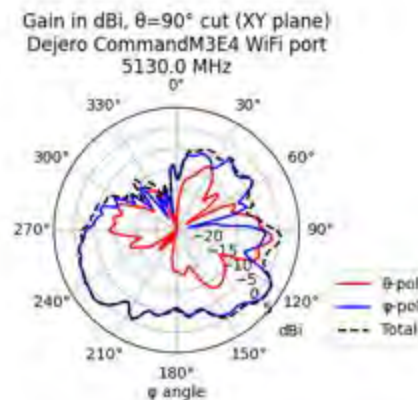
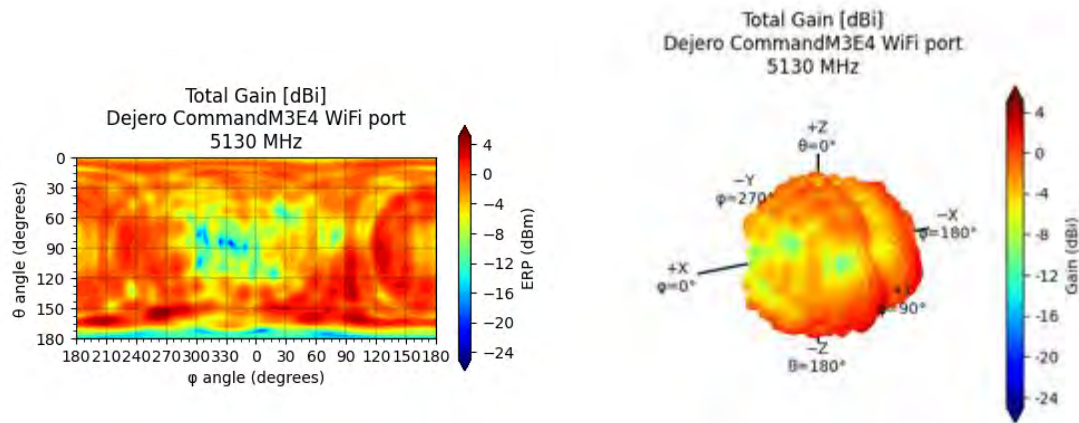
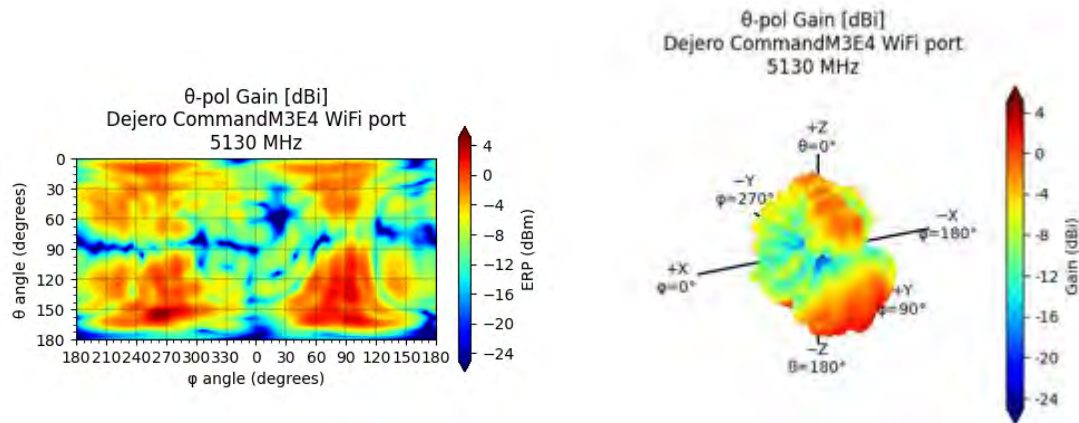
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

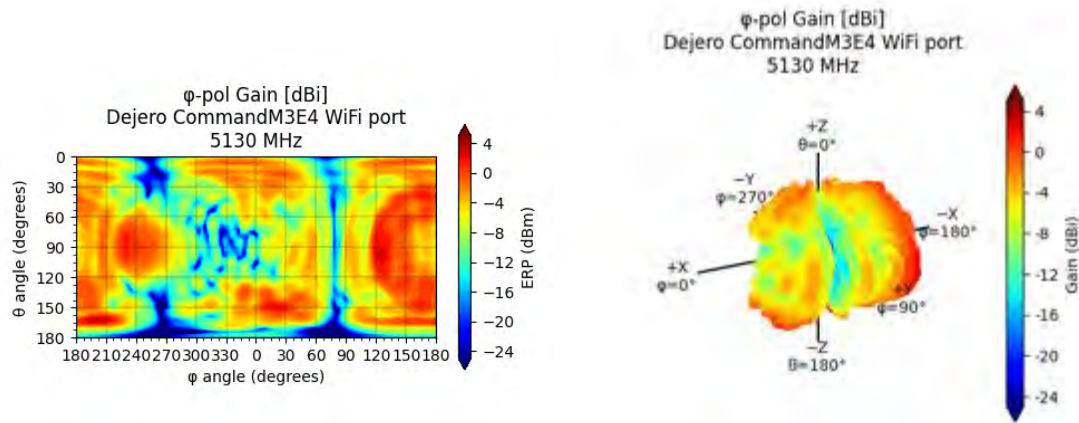
Figure 58 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5130 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 59 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5130 MHz.

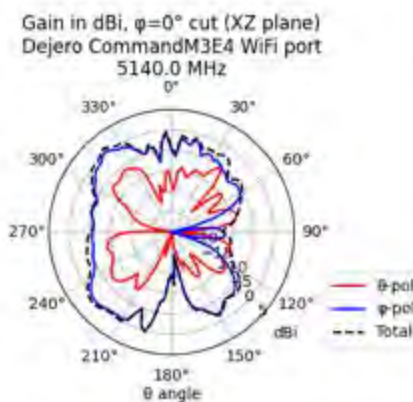
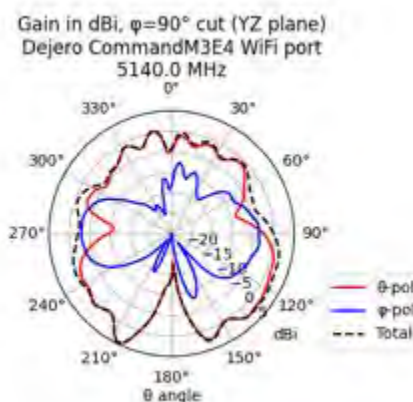
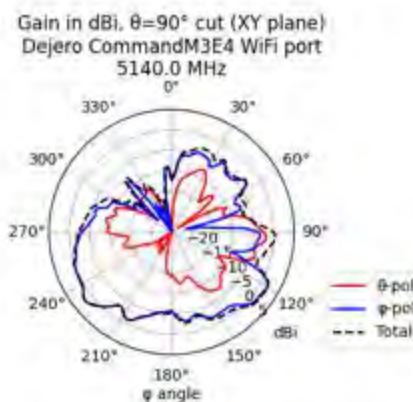
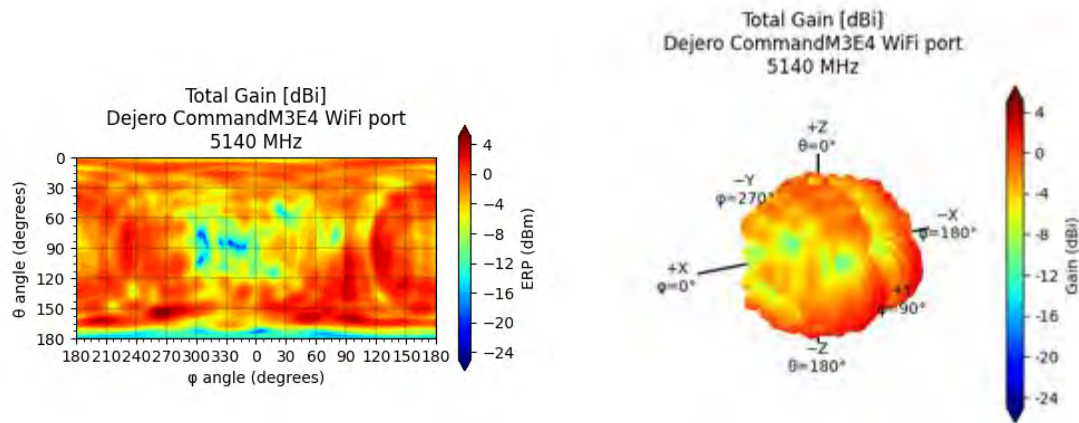
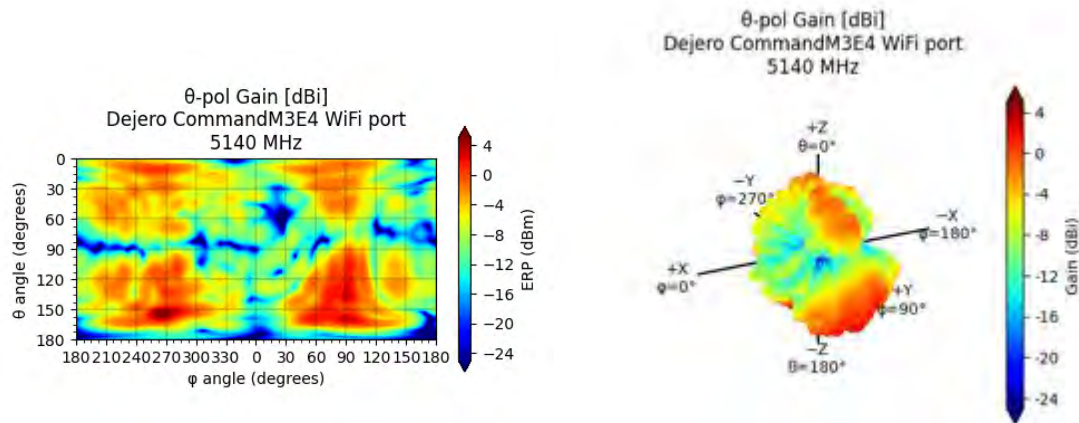
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

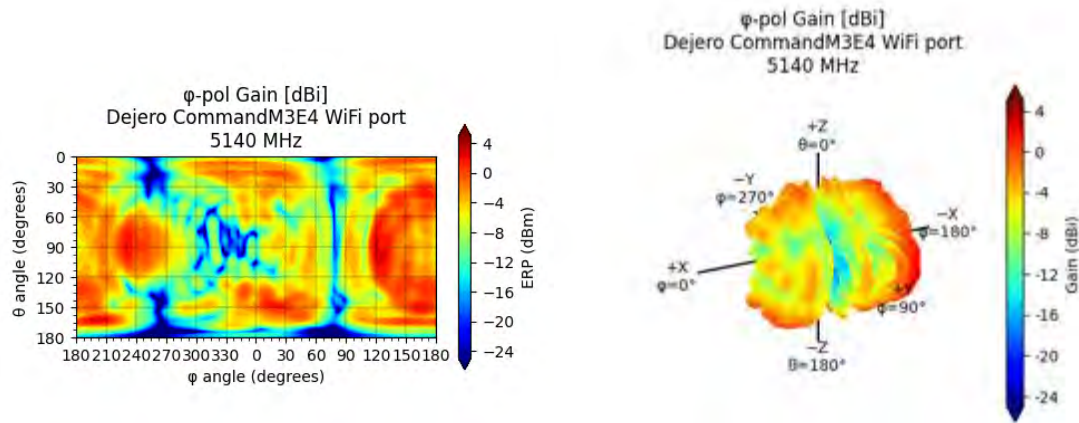
Figure 60 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5140 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 61 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5140 MHz.

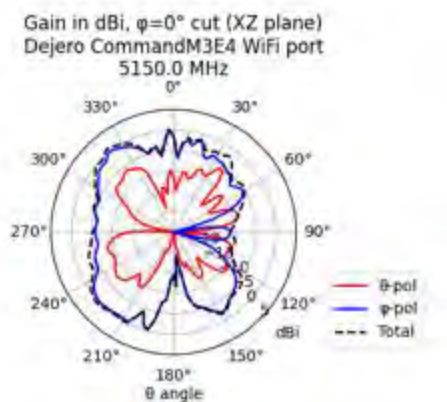
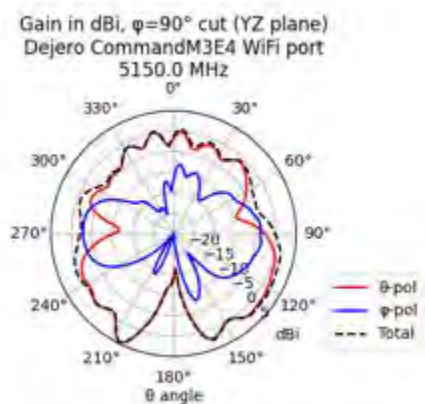
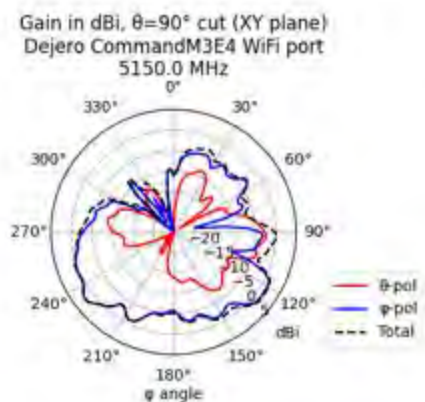
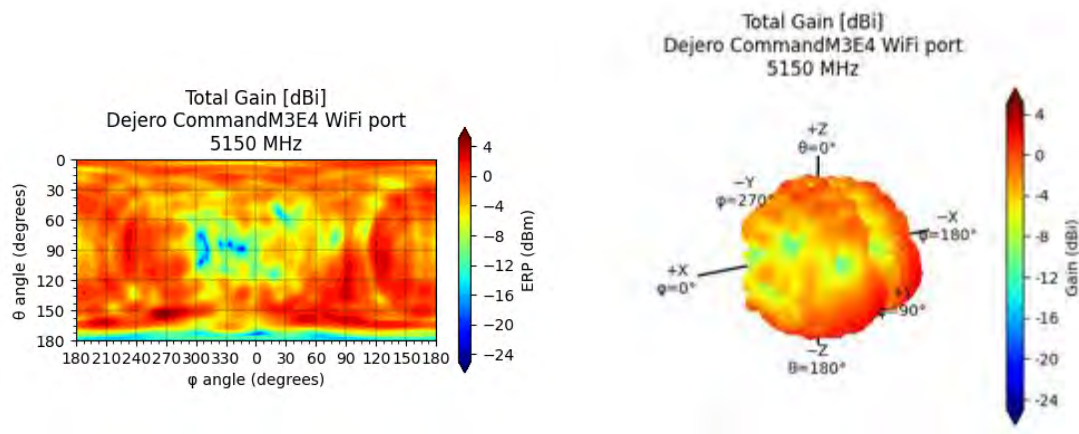
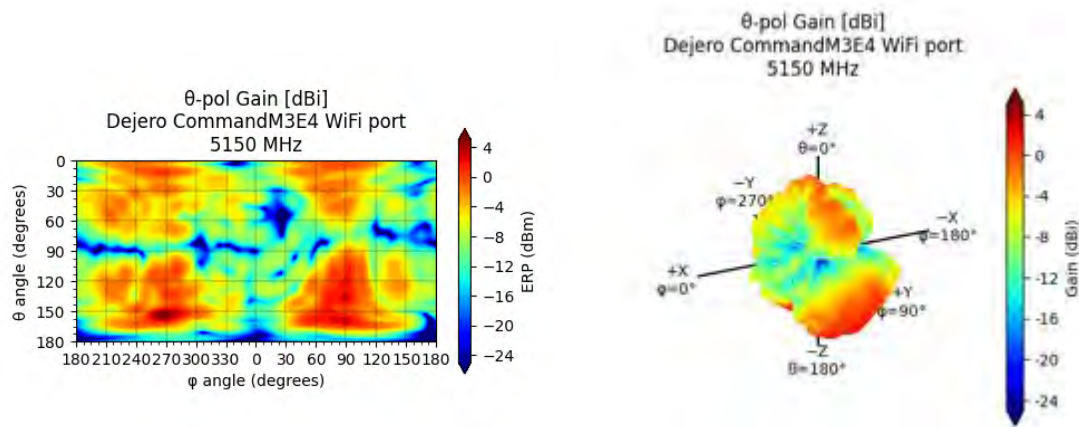
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

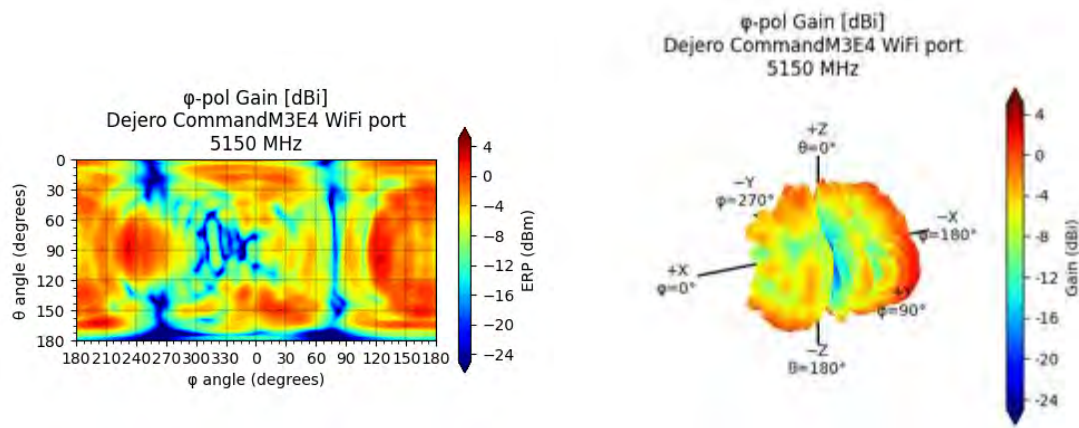
Figure 62 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5150 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 63 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5150 MHz.

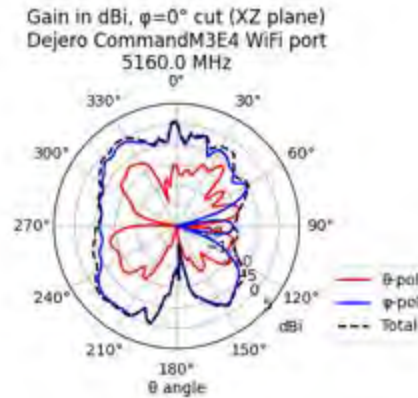
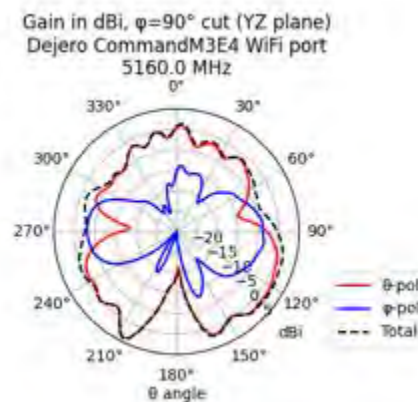
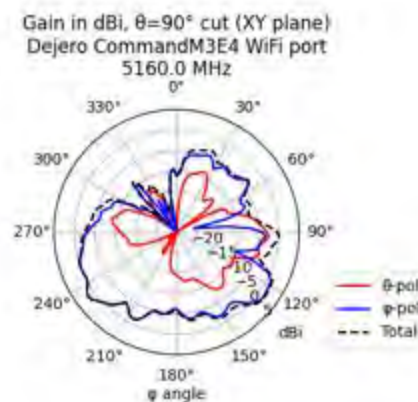
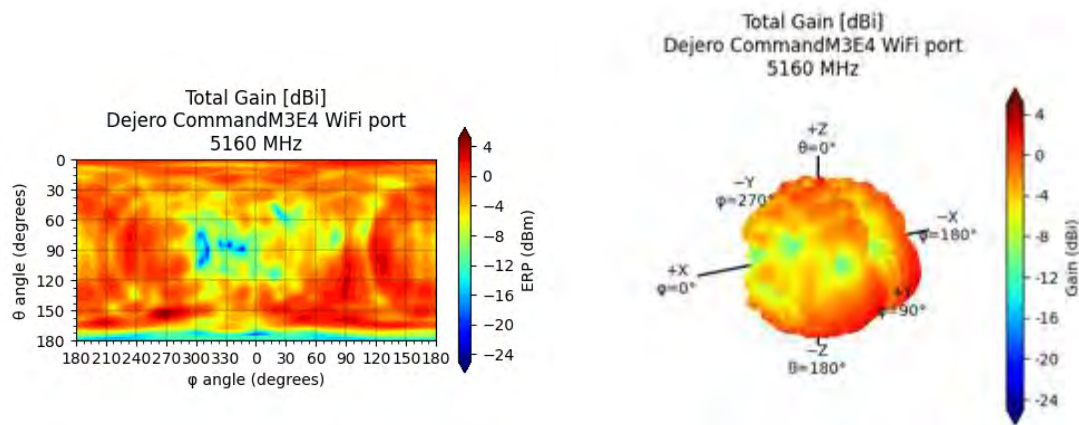
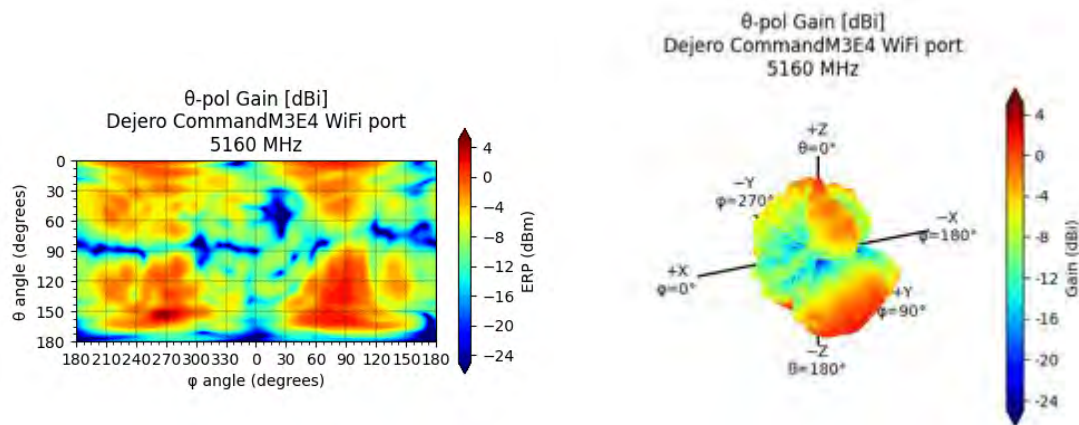
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

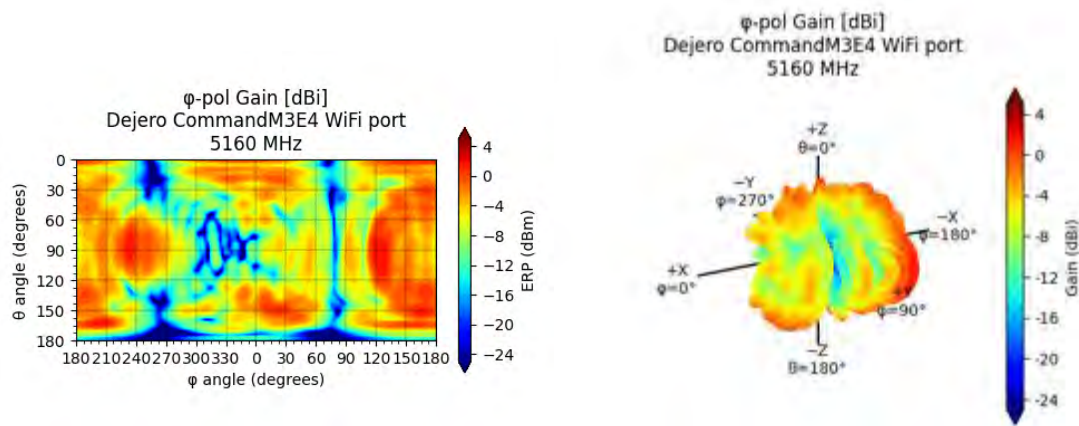
Figure 64 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5160 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 65 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5160 MHz.

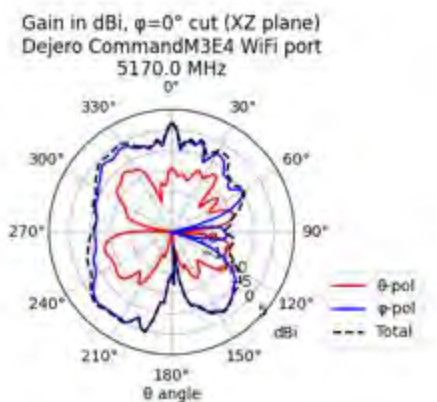
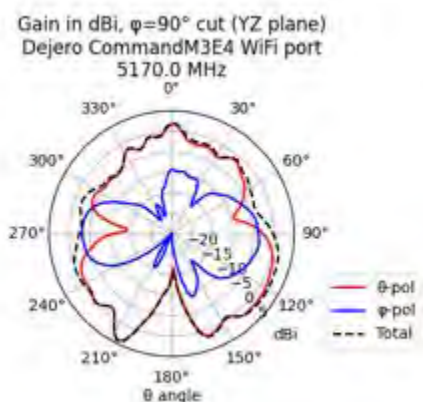
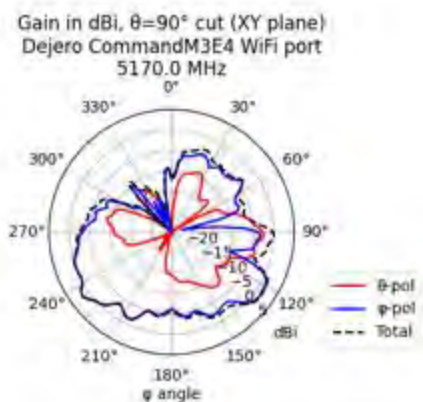
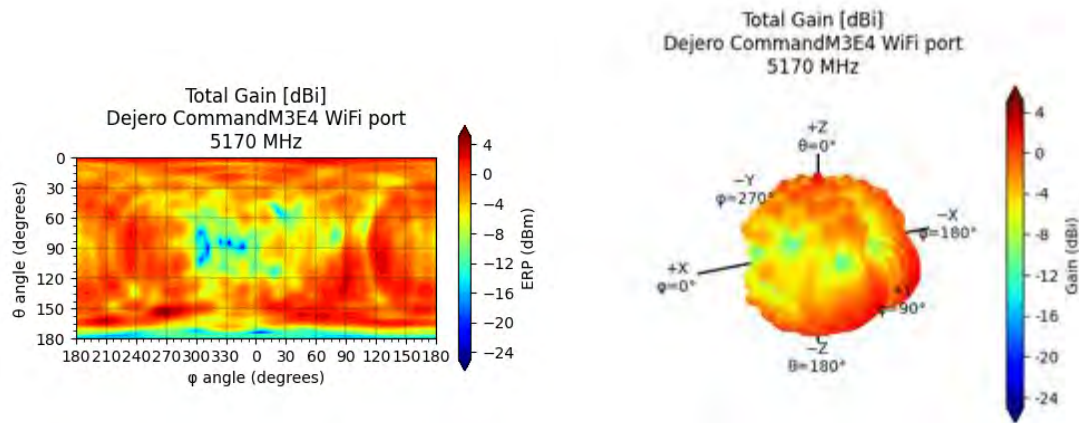
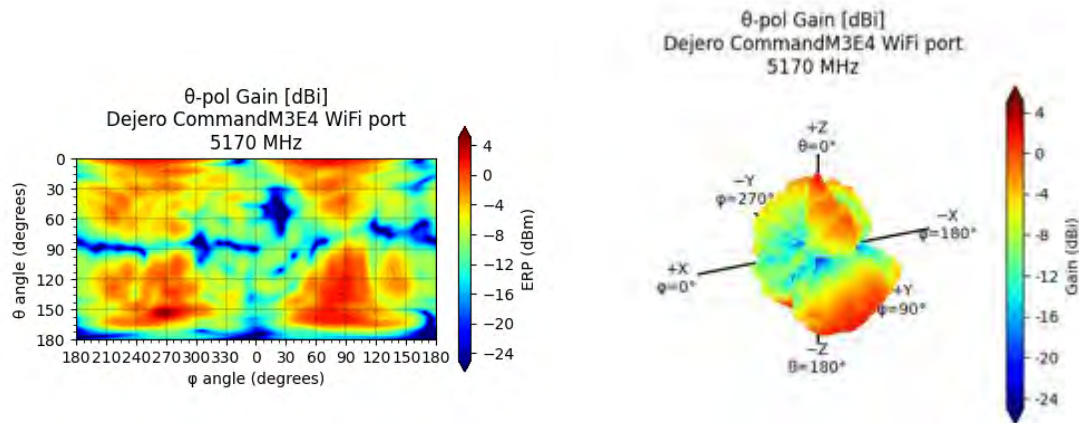
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

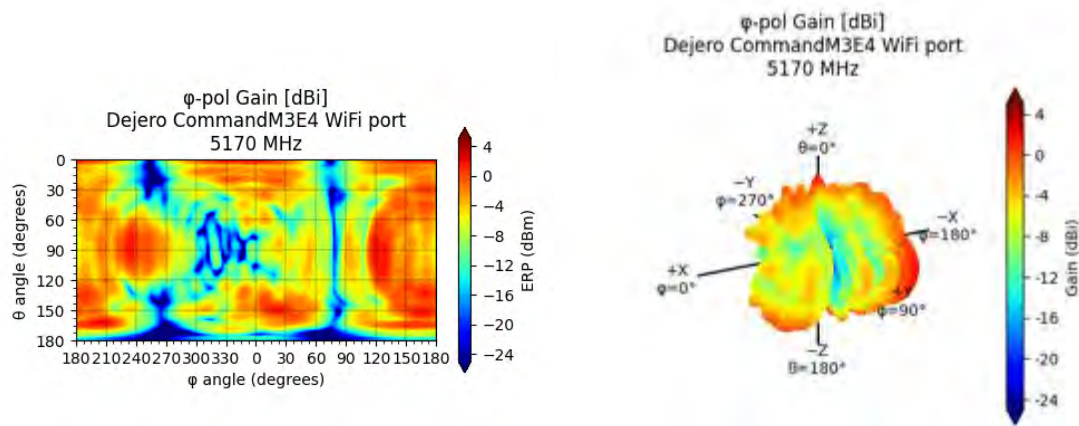
Figure 66 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5170 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 67 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5170 MHz.

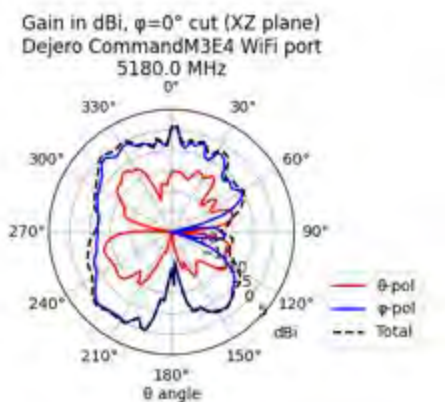
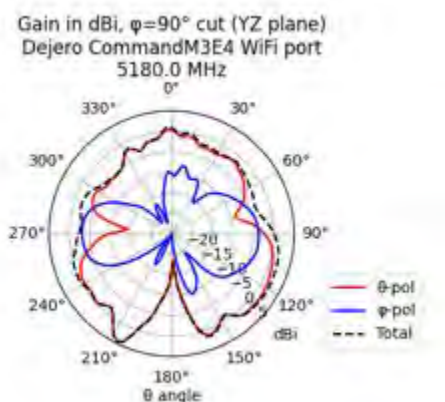
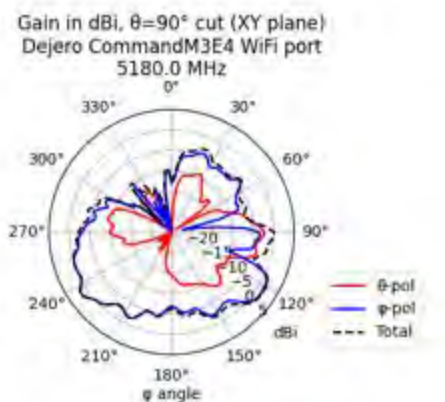
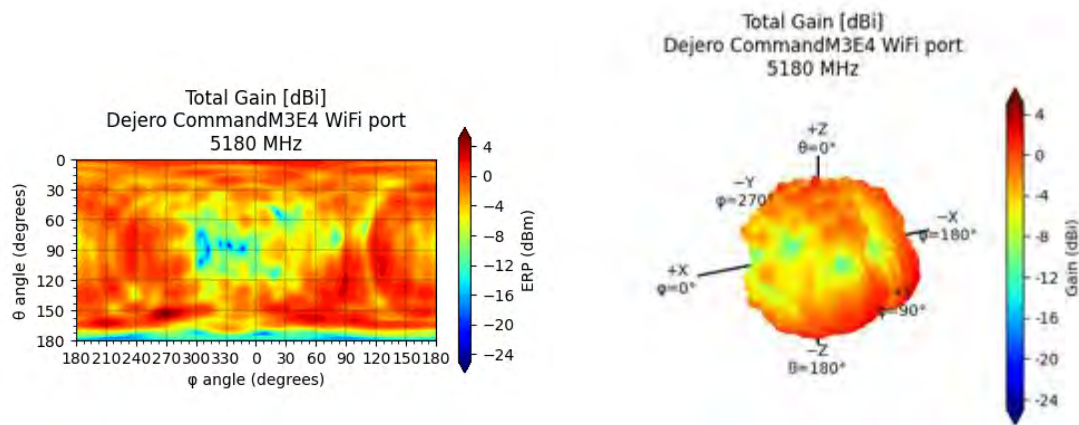
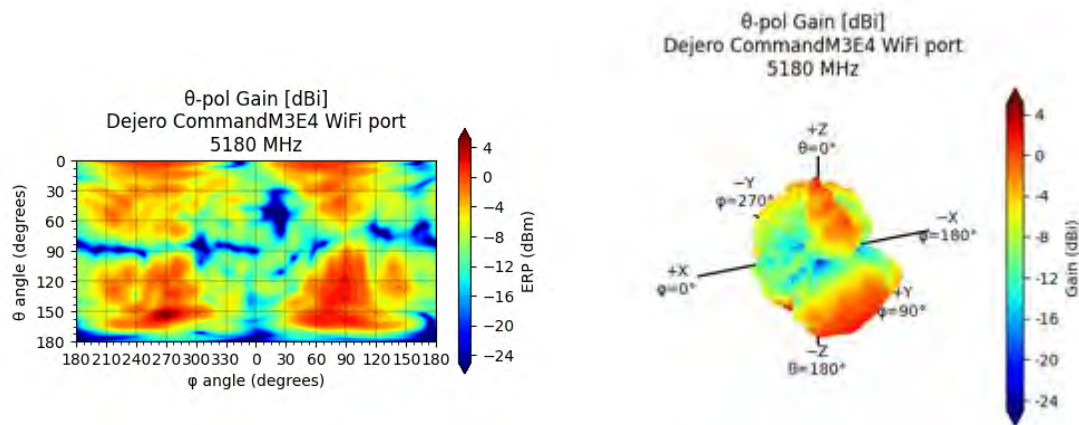
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

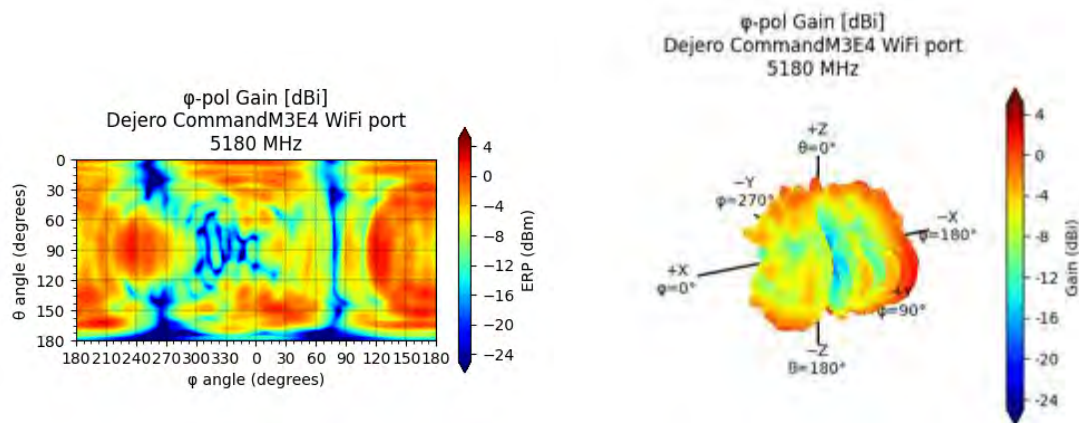
Figure 68 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5180 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 69 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5180 MHz.

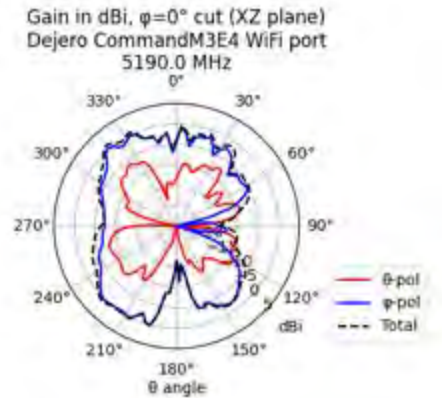
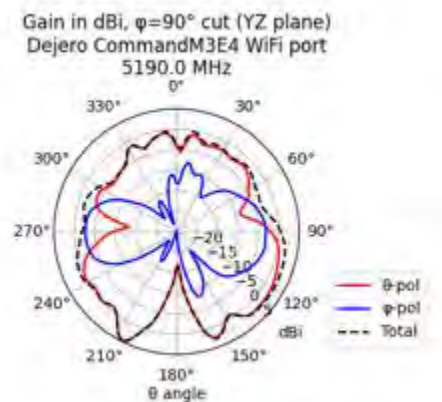
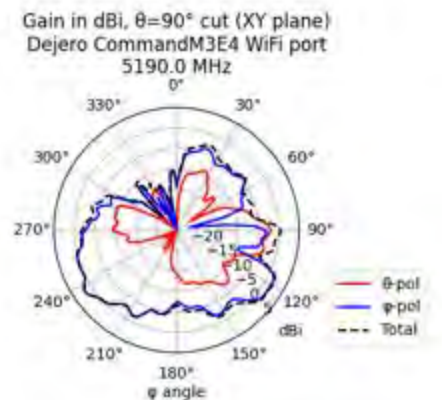
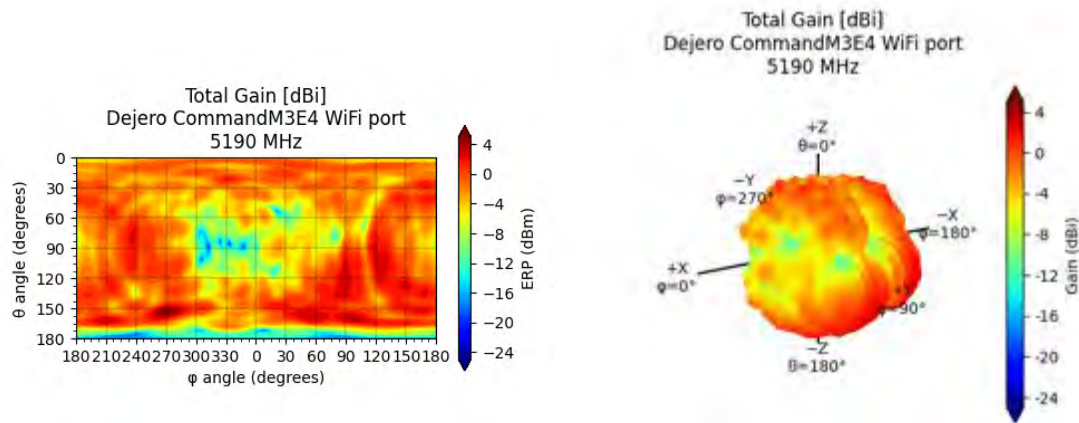
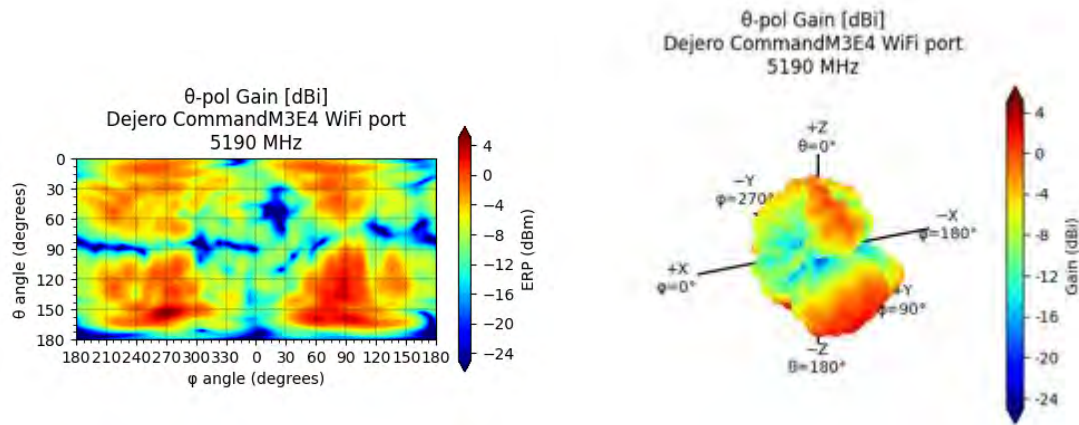
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

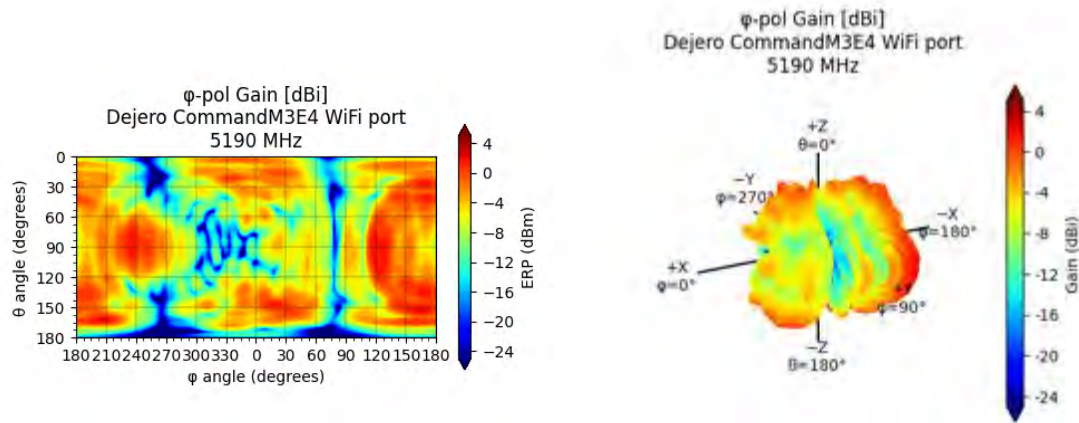
Figure 70 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5190 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 71 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5190 MHz.

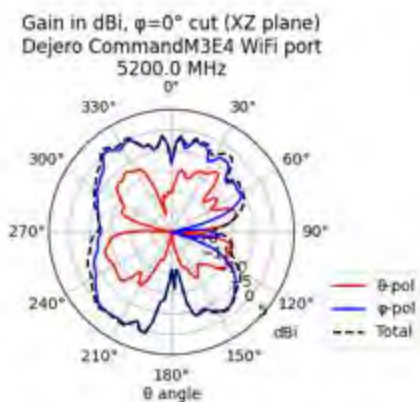
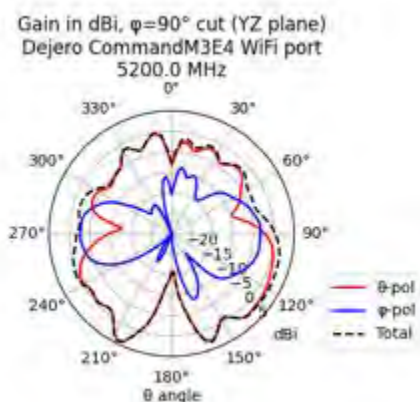
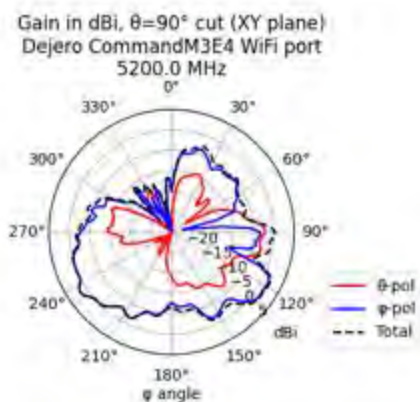
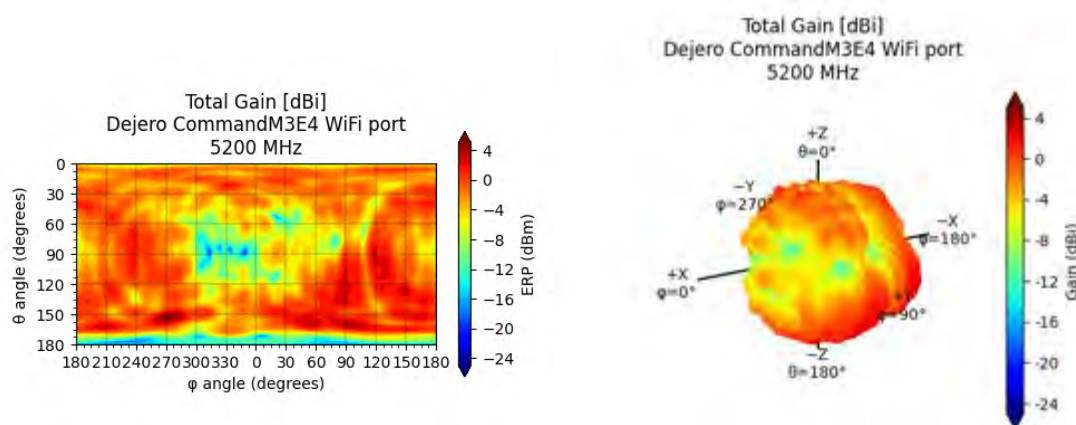
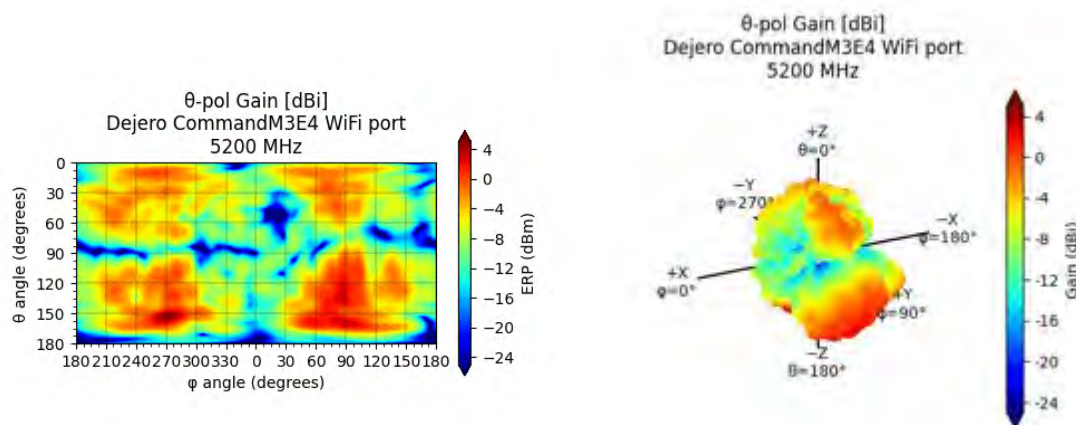
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

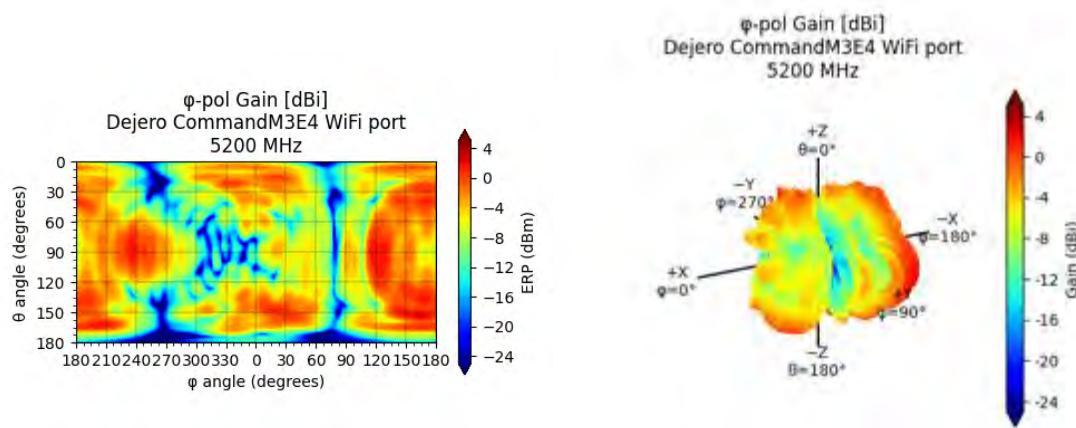
Figure 72 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5200 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 73 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5200 MHz.

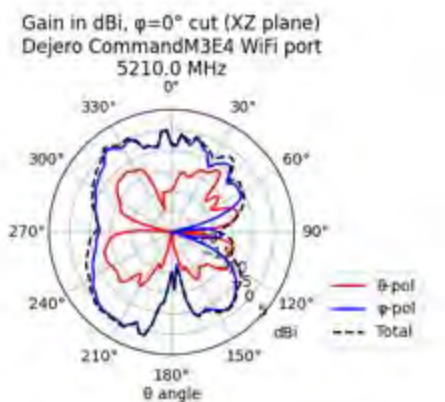
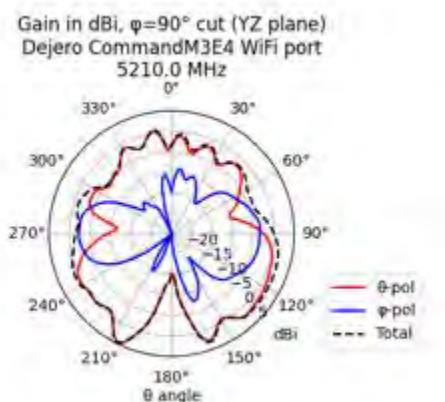
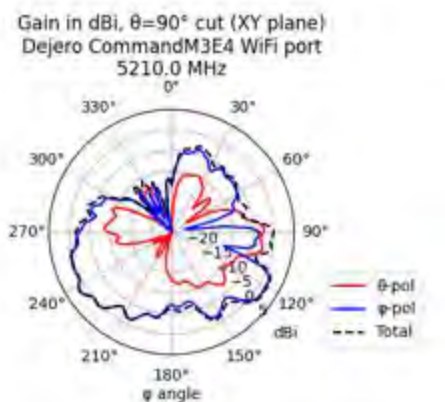
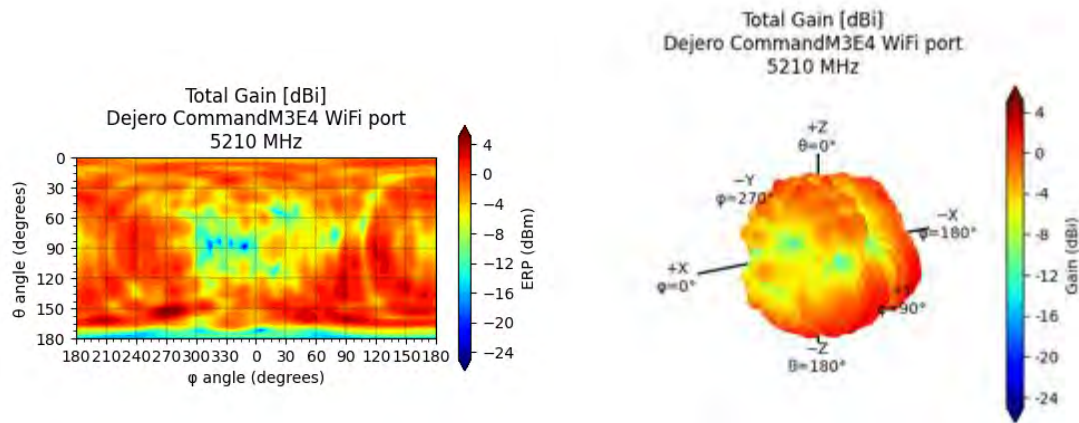
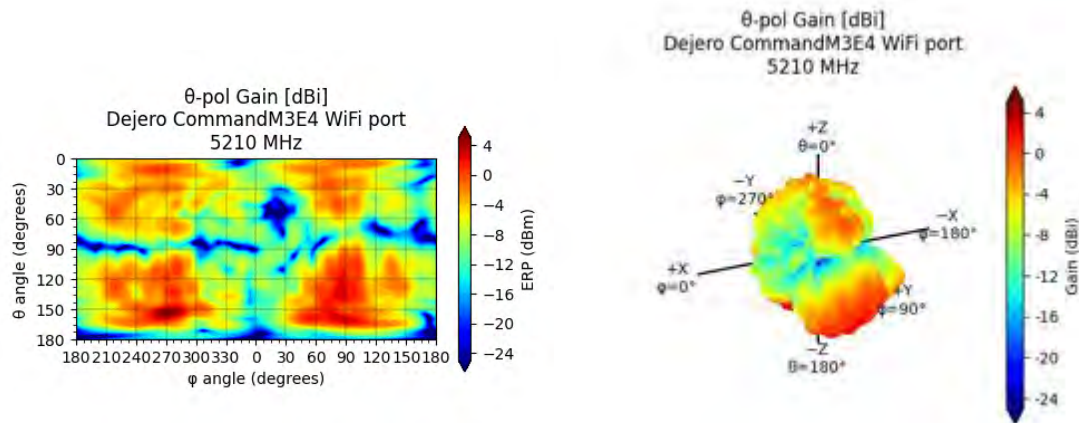
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

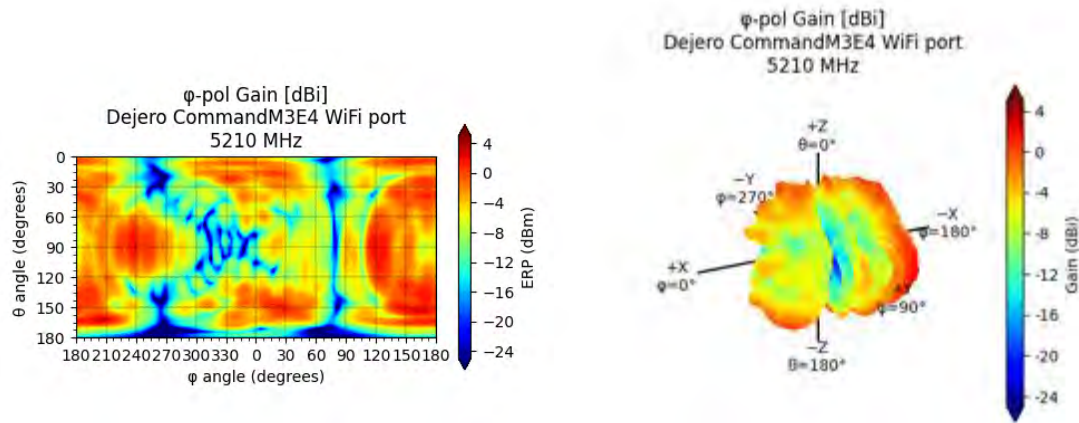
Figure 74 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5210 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 75 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5210 MHz.

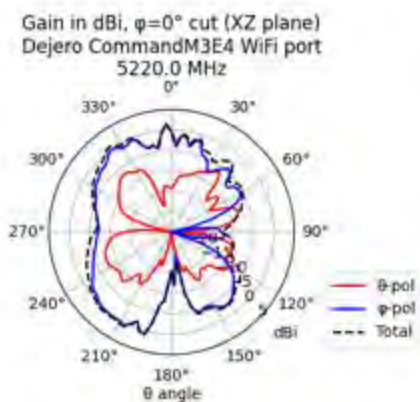
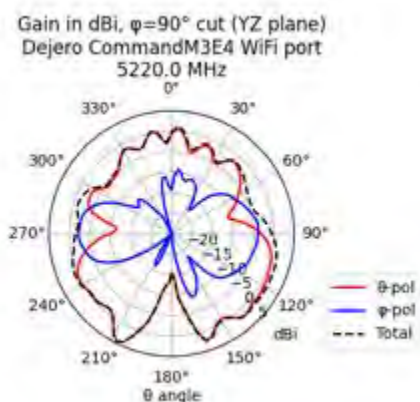
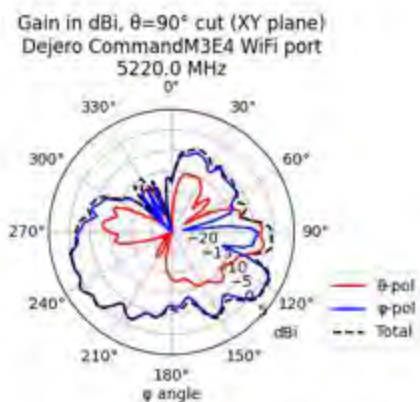
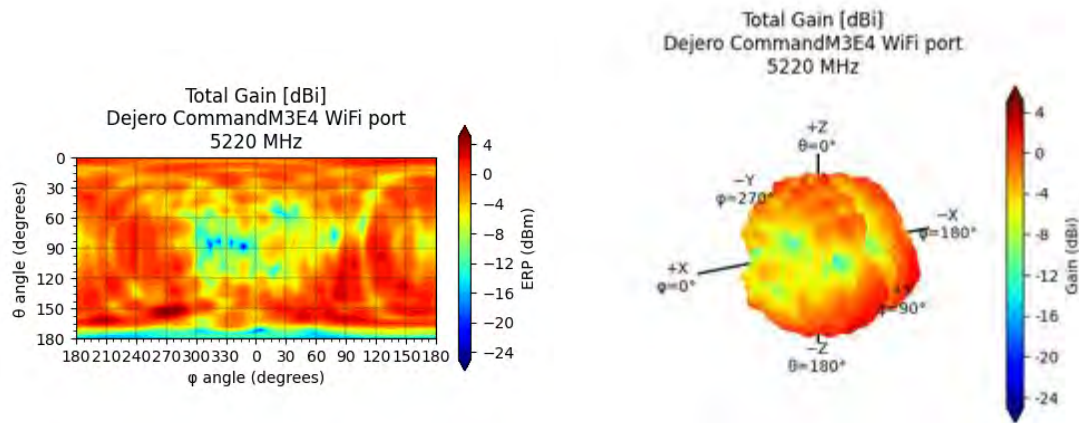
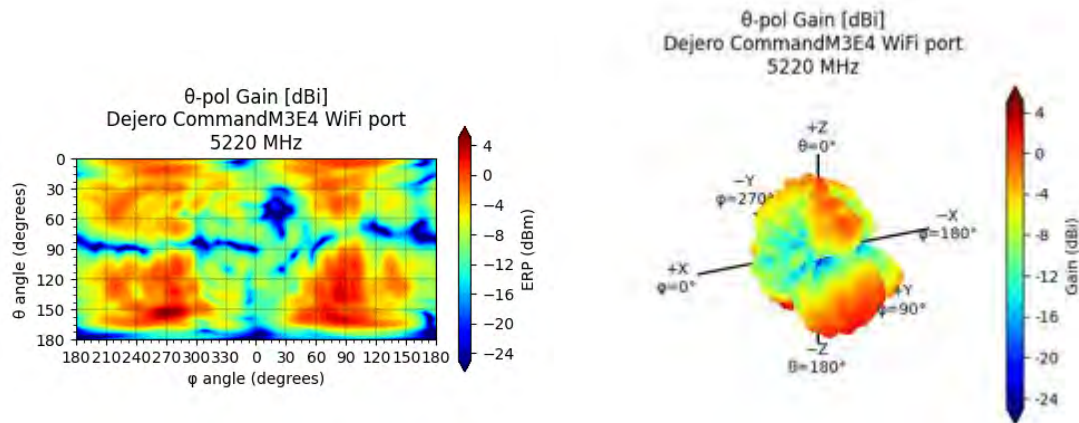
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

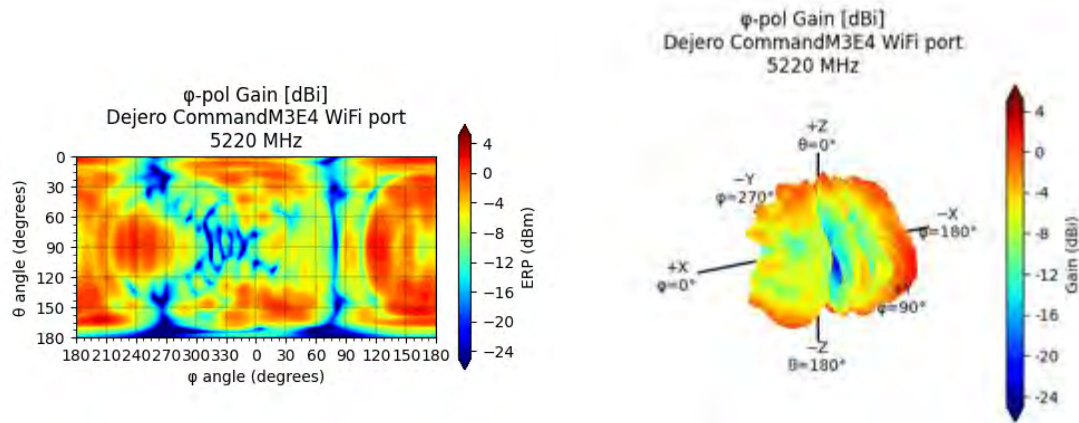
Figure 76 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5220 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 77 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5220 MHz.

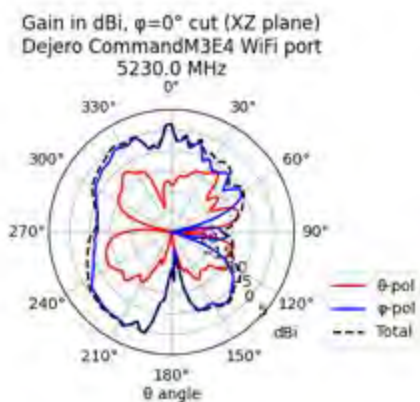
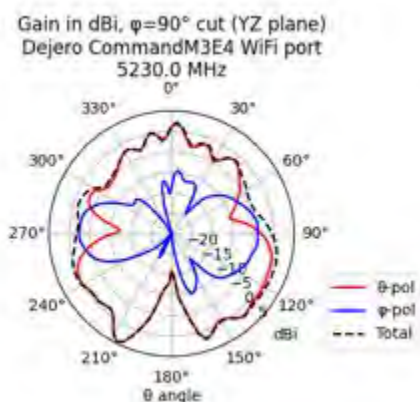
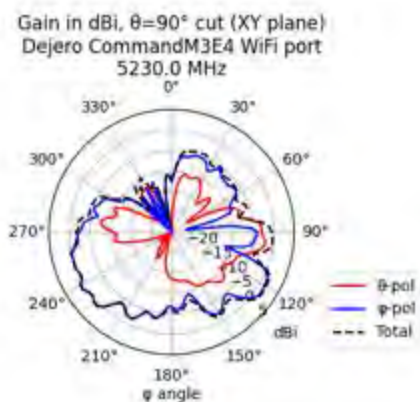
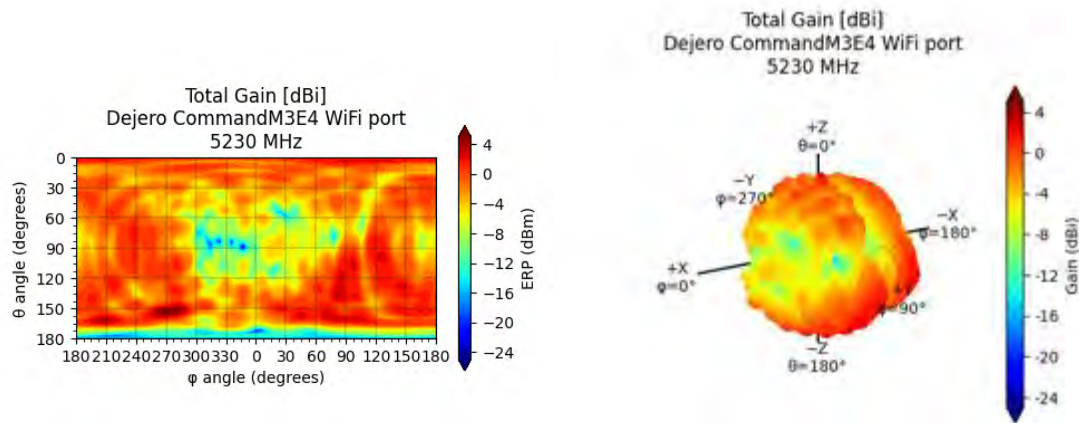
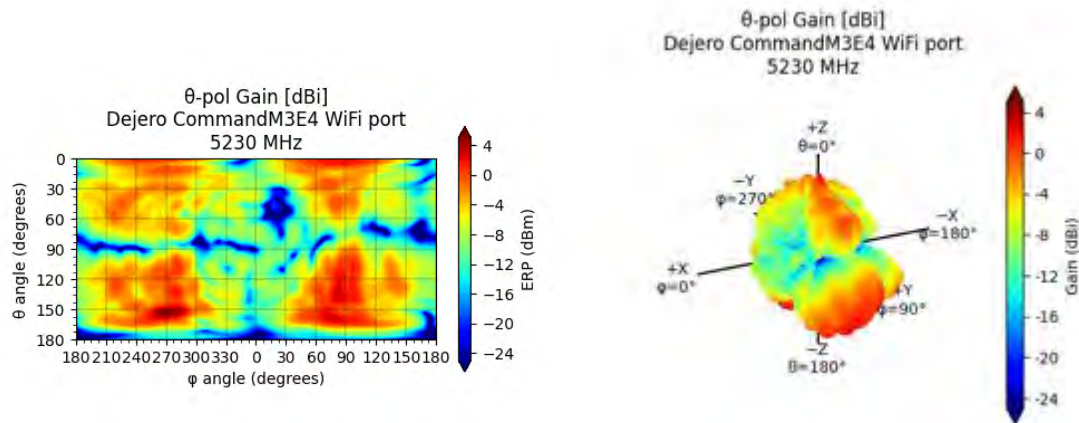
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

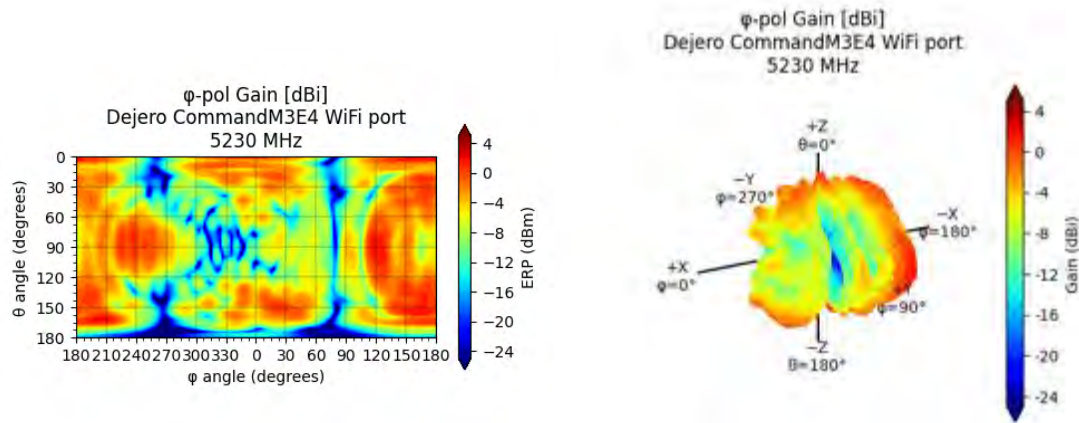
Figure 78 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5230 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 79 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5230 MHz.

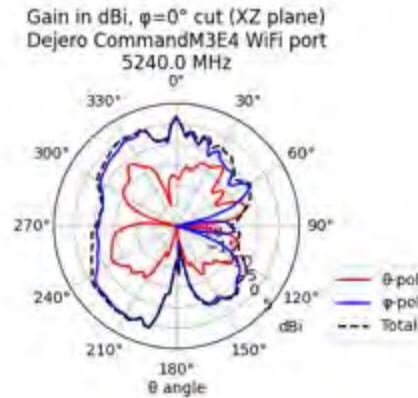
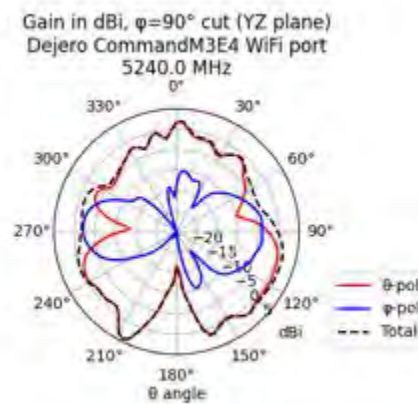
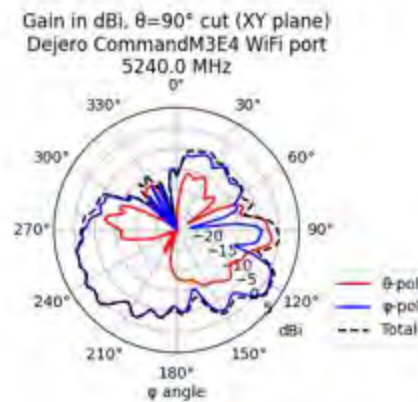
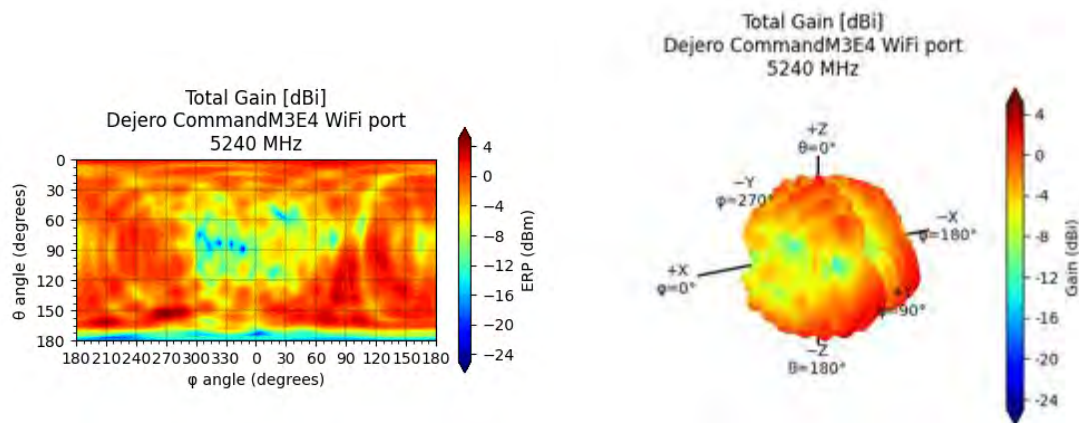
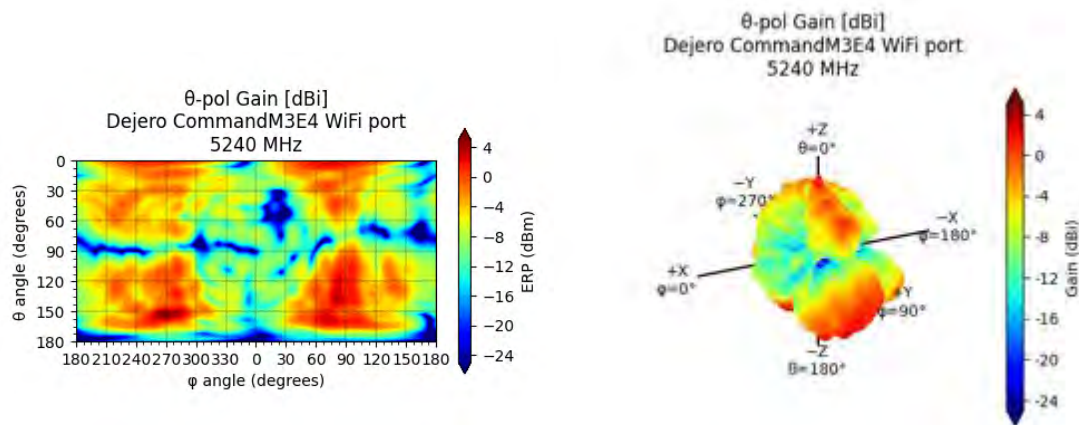
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

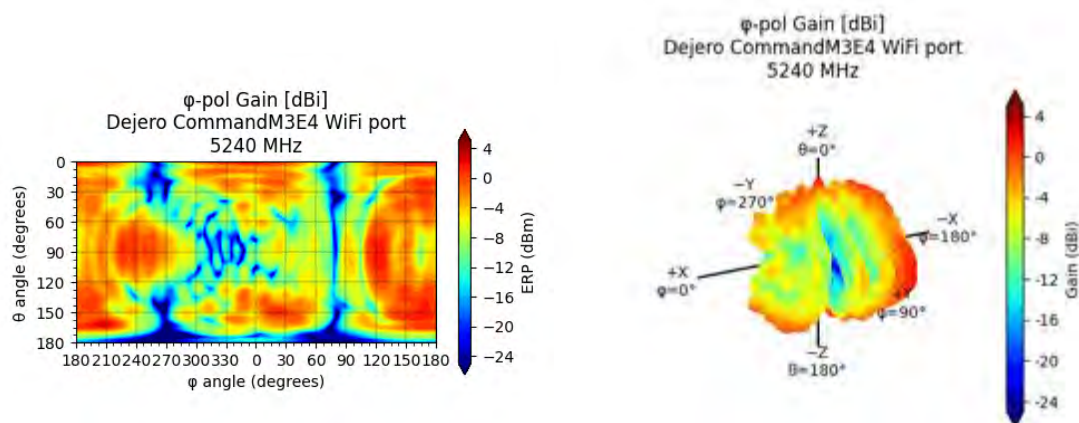
Figure 80 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5240 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 81 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5240 MHz.

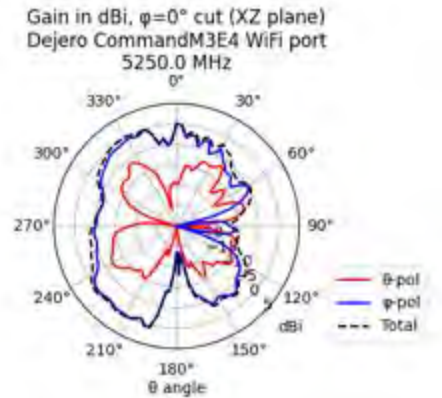
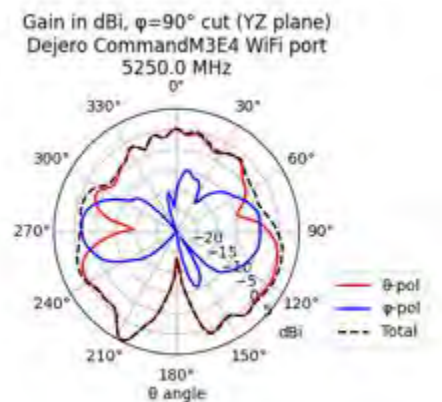
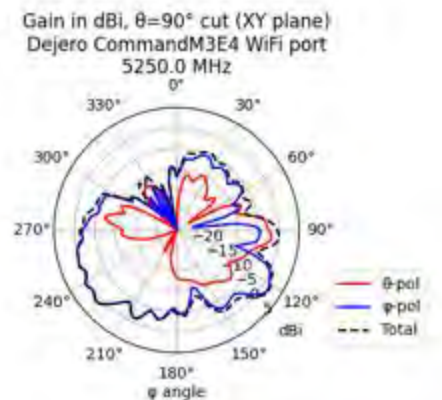
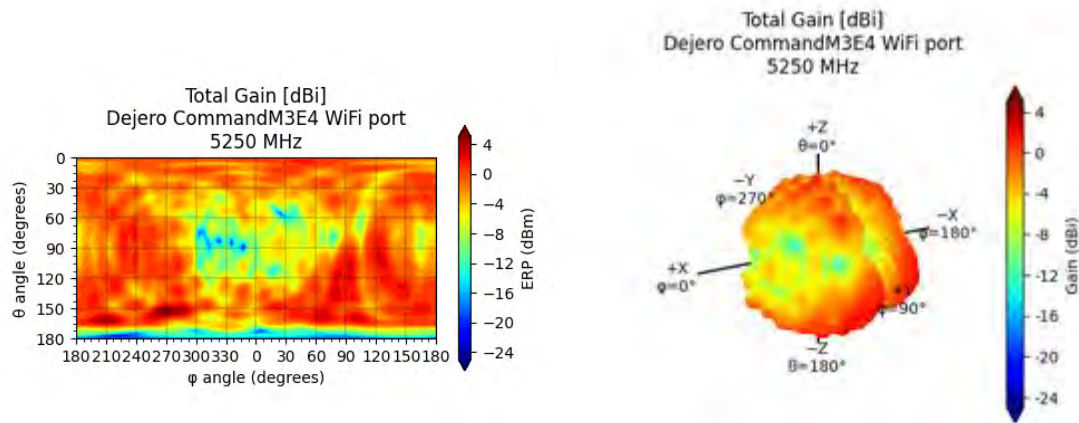
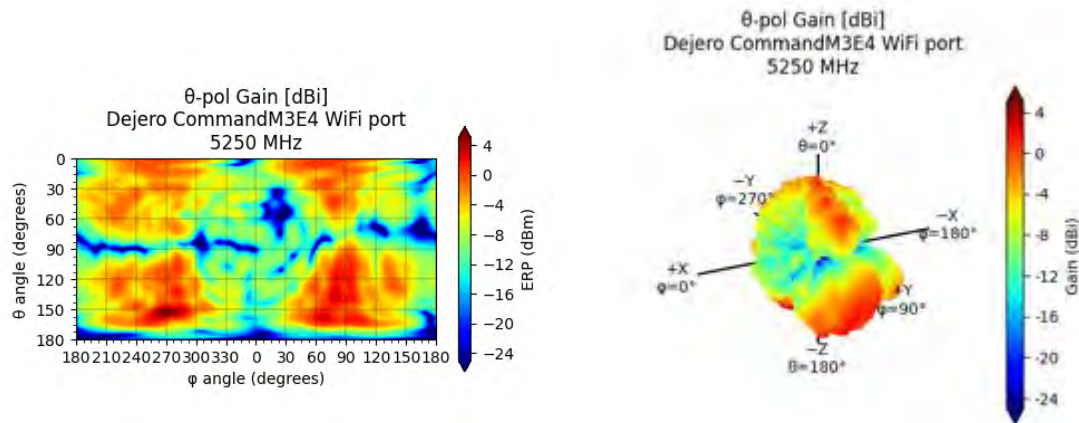
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

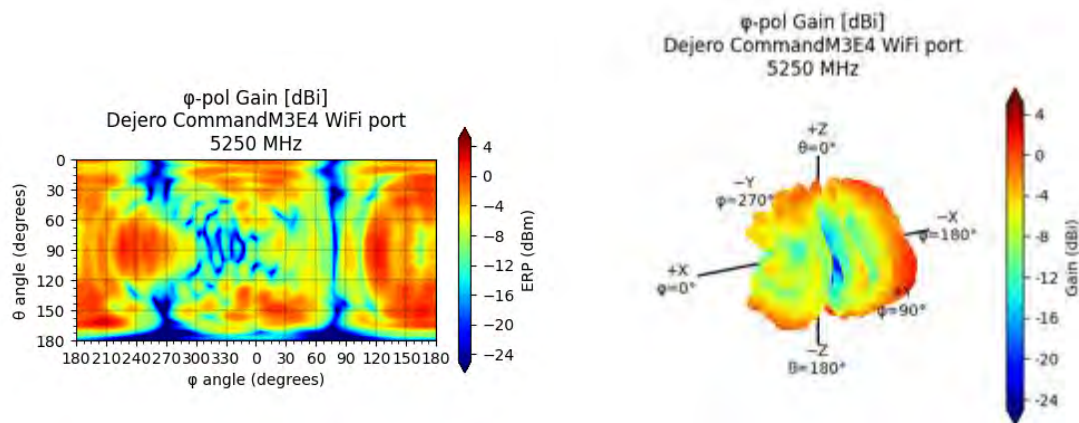
Figure 82 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5250 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 83 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5250 MHz.

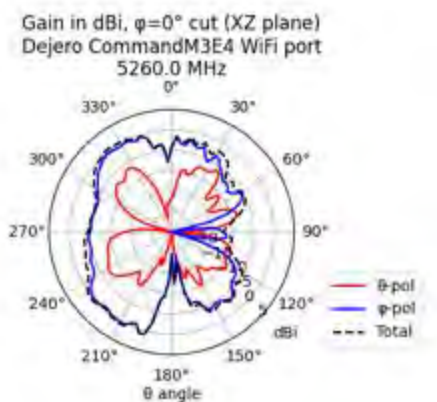
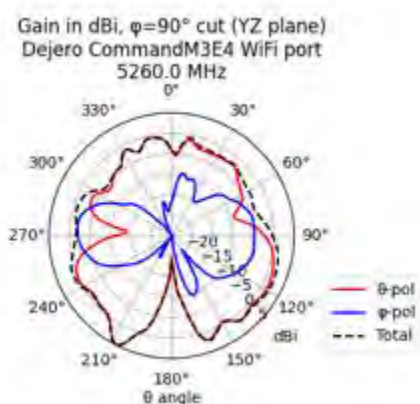
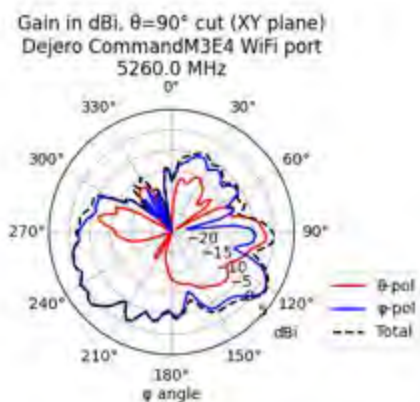
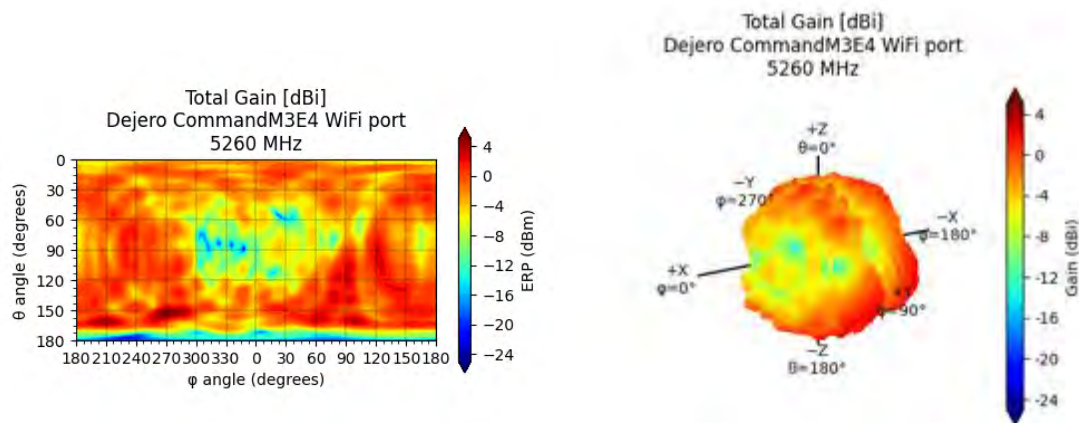
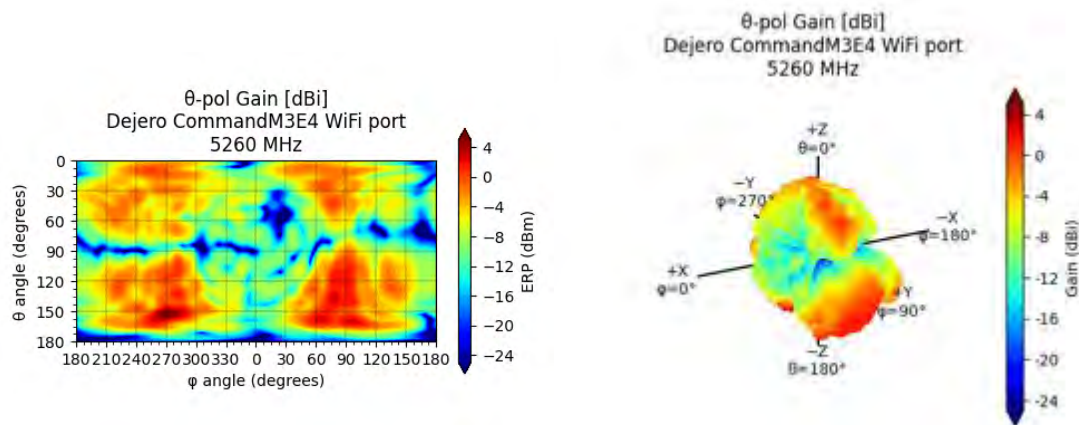
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

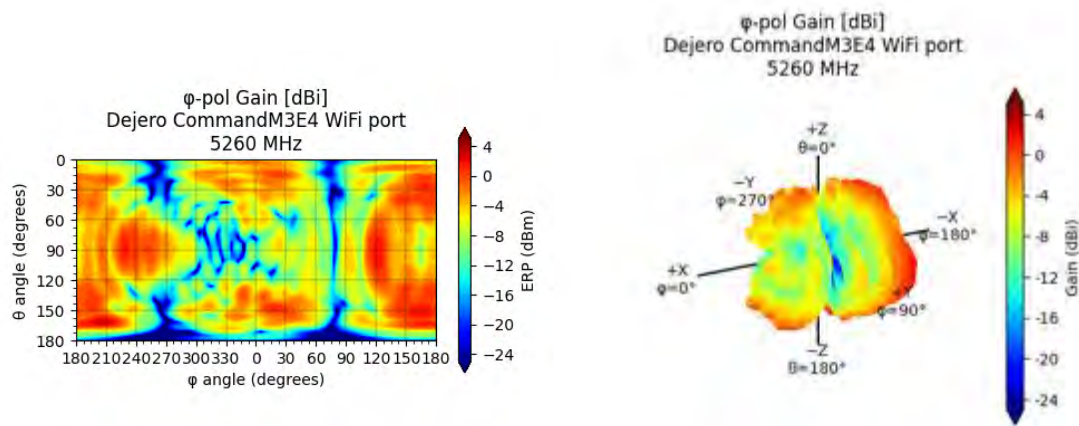
Figure 84 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5260 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 85 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5260 MHz.

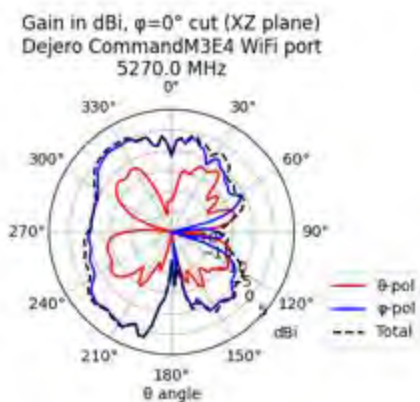
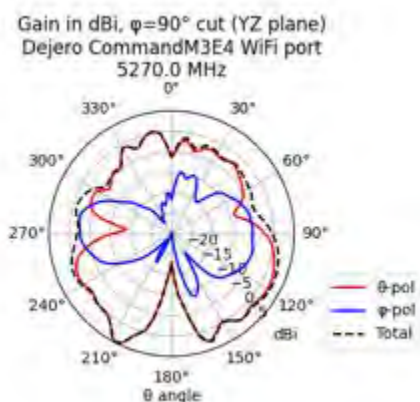
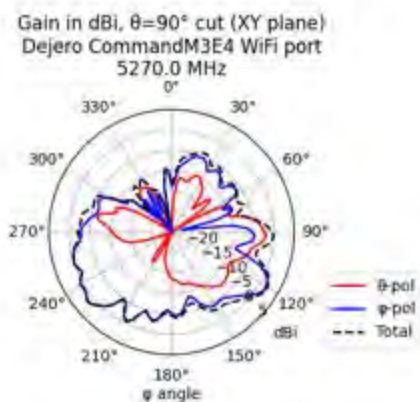
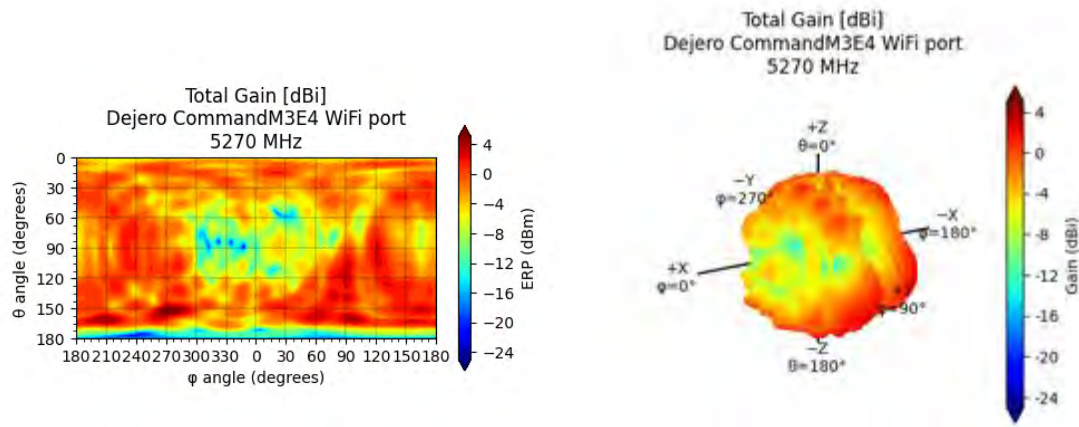
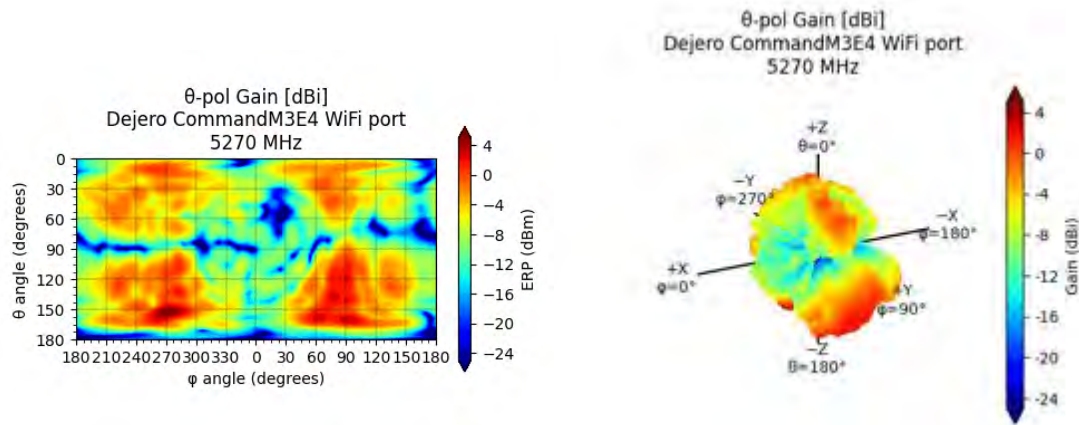
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

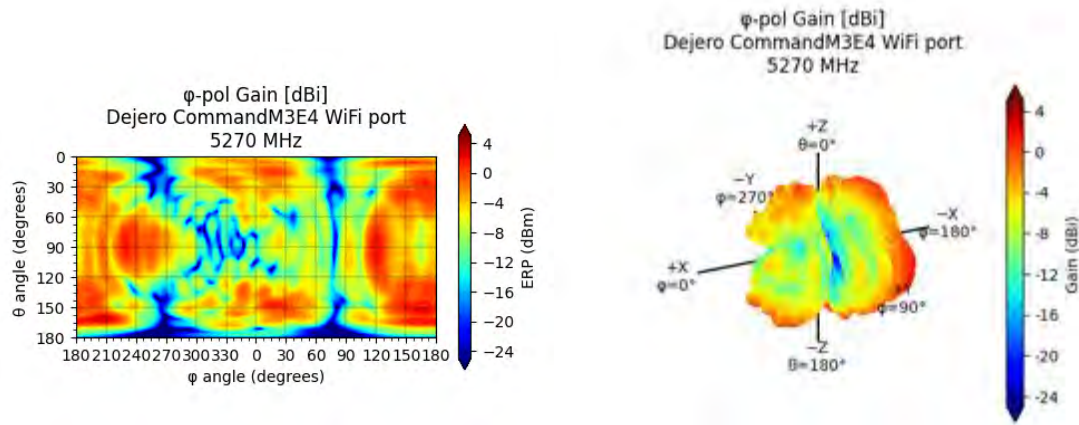
Figure 86 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5270 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 87 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5270 MHz.

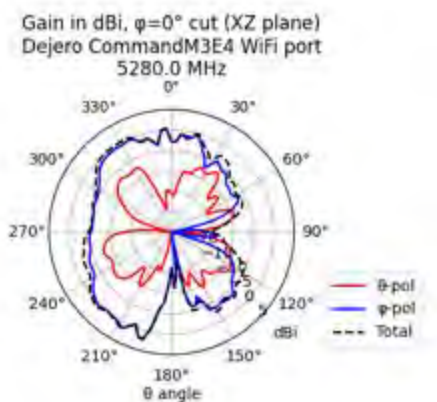
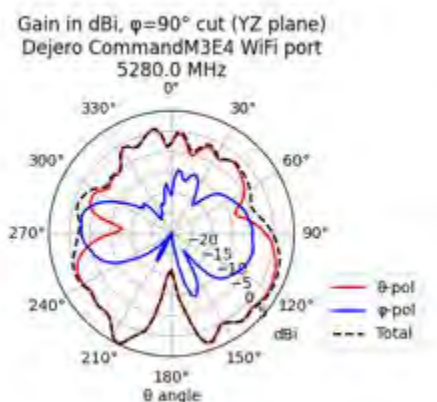
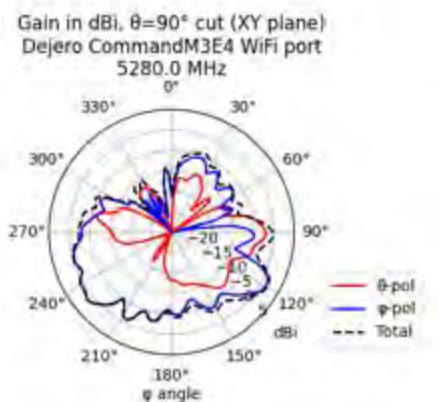
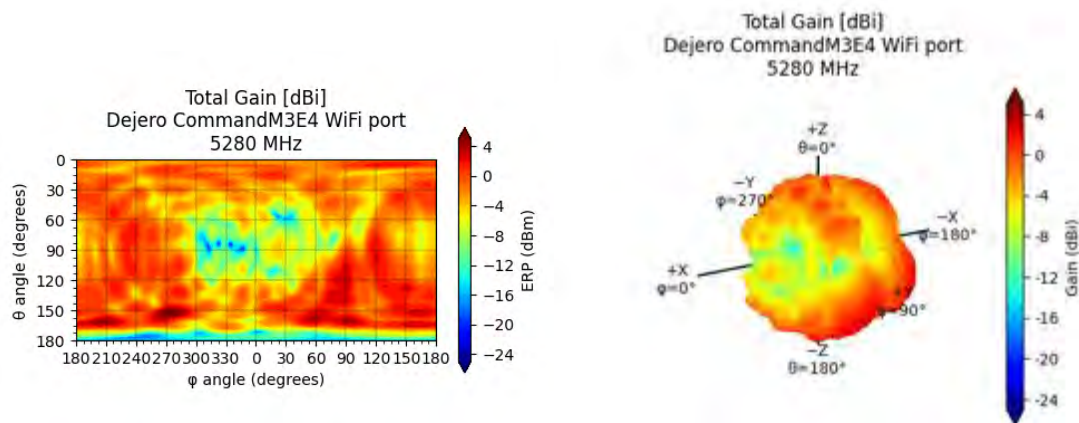
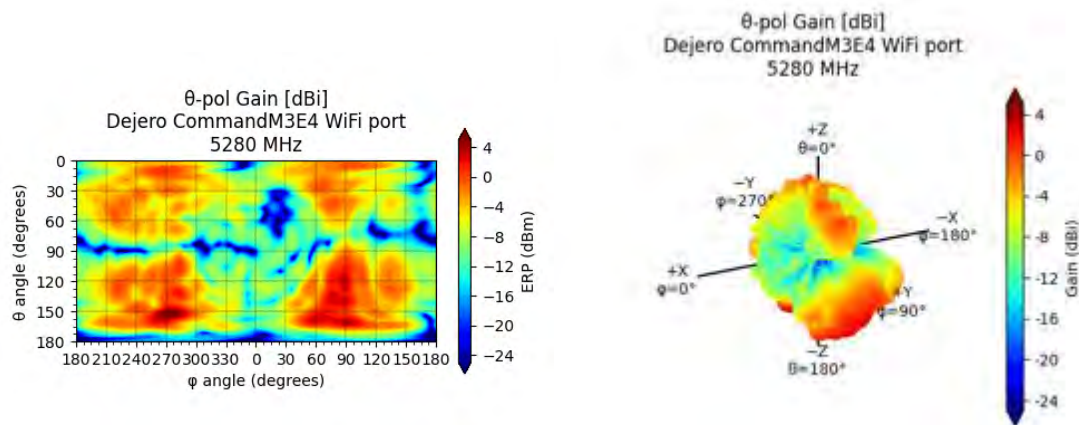
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

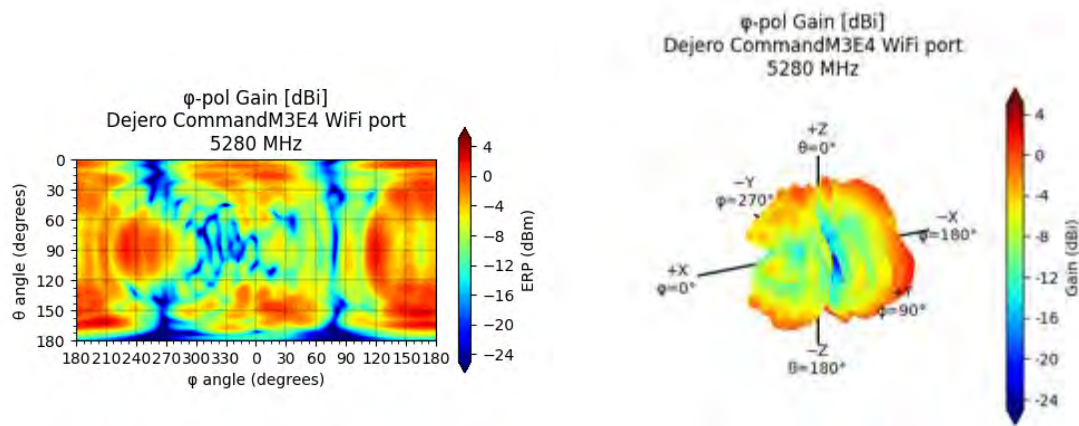
Figure 88 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5280 MHz.



(a) Total gain contour and 3d plots.



(b) Theta-pol gain contour and 3d plots.



(c) Phi-pol gain contour and 3d plots.

Figure 89 Gain contour and 3d patterns of Dejero CommandM3E4 WiFi port at 5280 MHz.

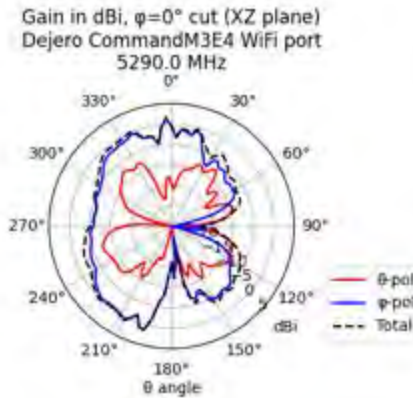
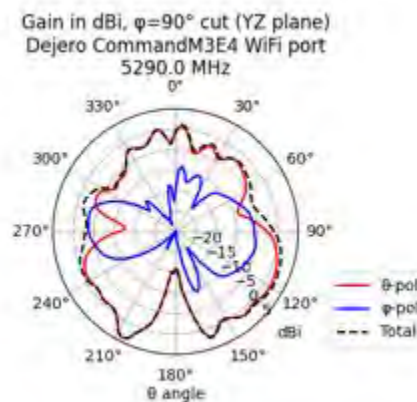
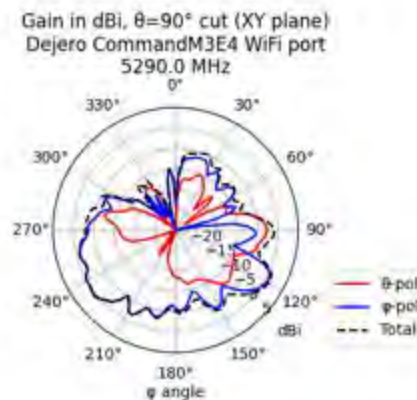
(a) $\Phi=0$ degree cut (XZ-plane).(b) $\Phi=90$ degree cut (YZ-plane).(c) $\Theta=90$ degree cut (XY-plane).

Figure 90 Gain pattern cuts of Dejero CommandM3E4 WiFi port at 5290 MHz.