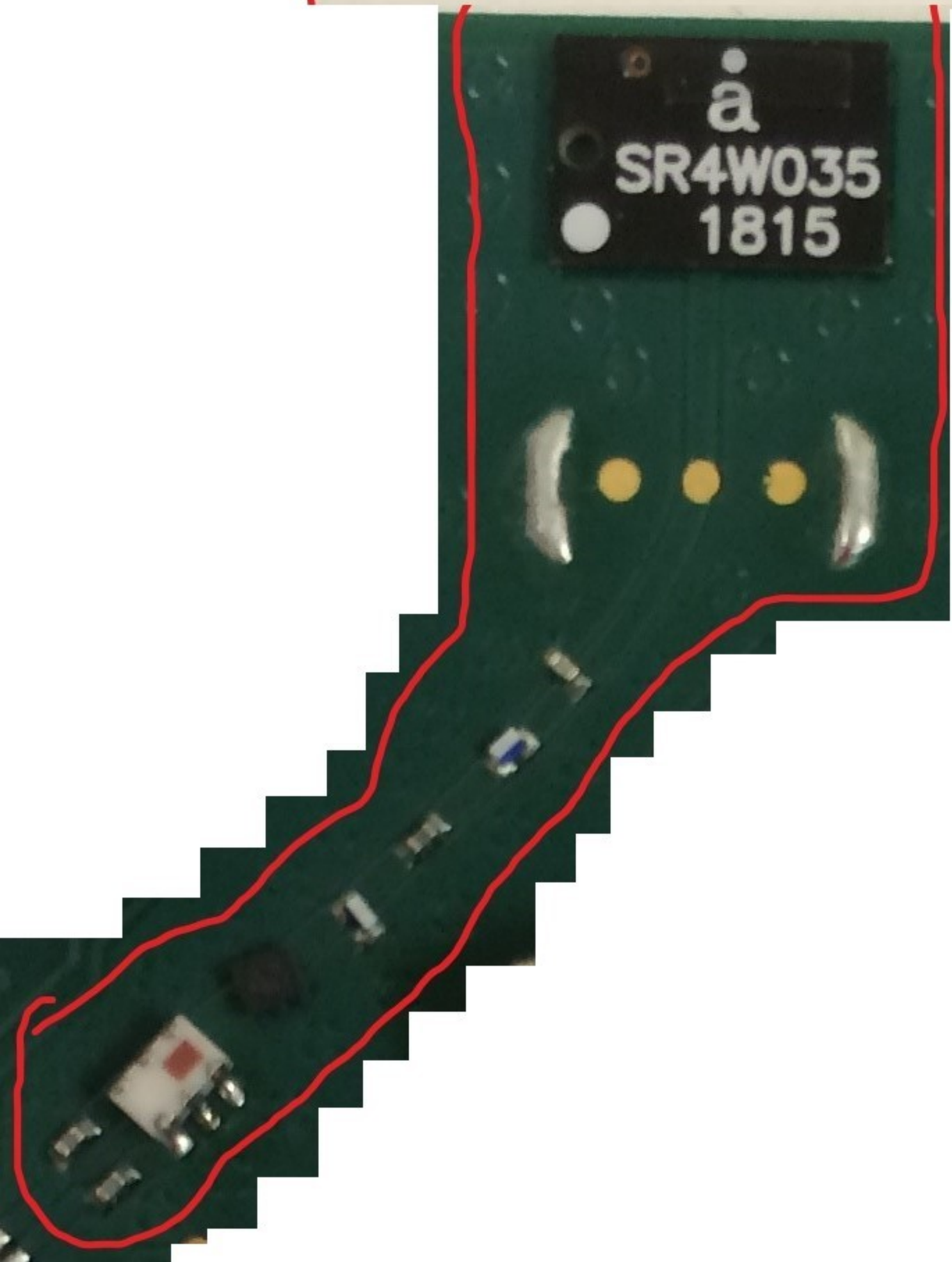


GEO10 Antenna System with SR4W035 Chip
Antenna
TX 2405 to 2475MHz
Gain -3.75 dBi



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch0 2405MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

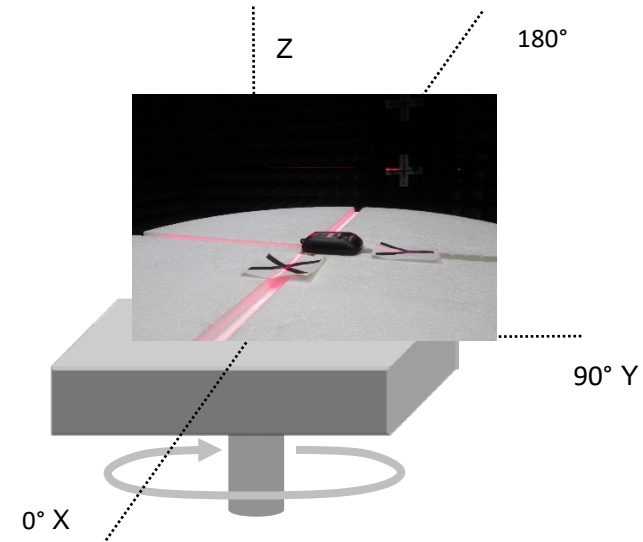
COMMENTS

None

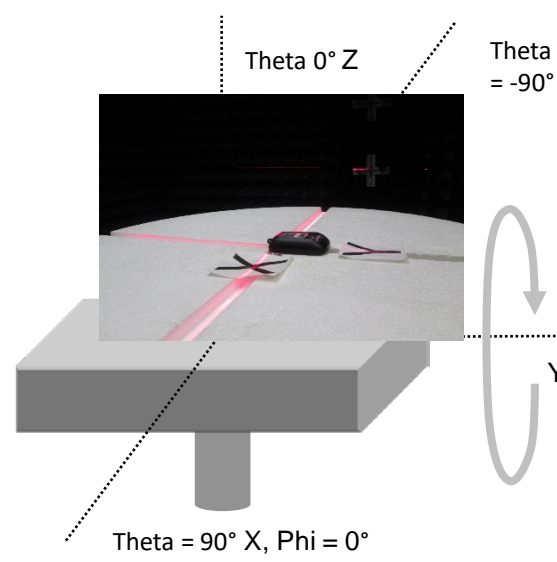
3D PATTERN DATA

Frequency (MHz)	2405
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.72
Peak EIRP (dBm)	-0.55
Directivity (dBi)	2.17
Efficiency (dB)	-6.72
Efficiency (%)	21.28
Gain (dBi)	-4.55
Average Gain (dB)	-6.72
E-Plane 3 dB BW (°)	329.00

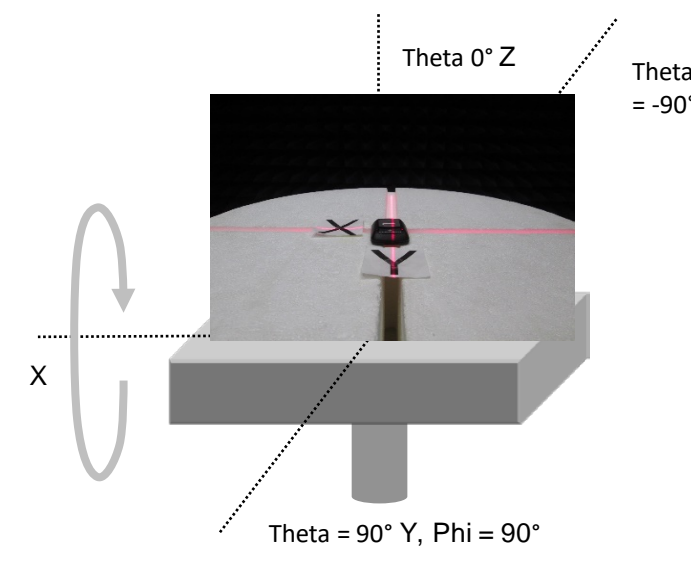
Azimuth Cut (Theta Axis = 90°)



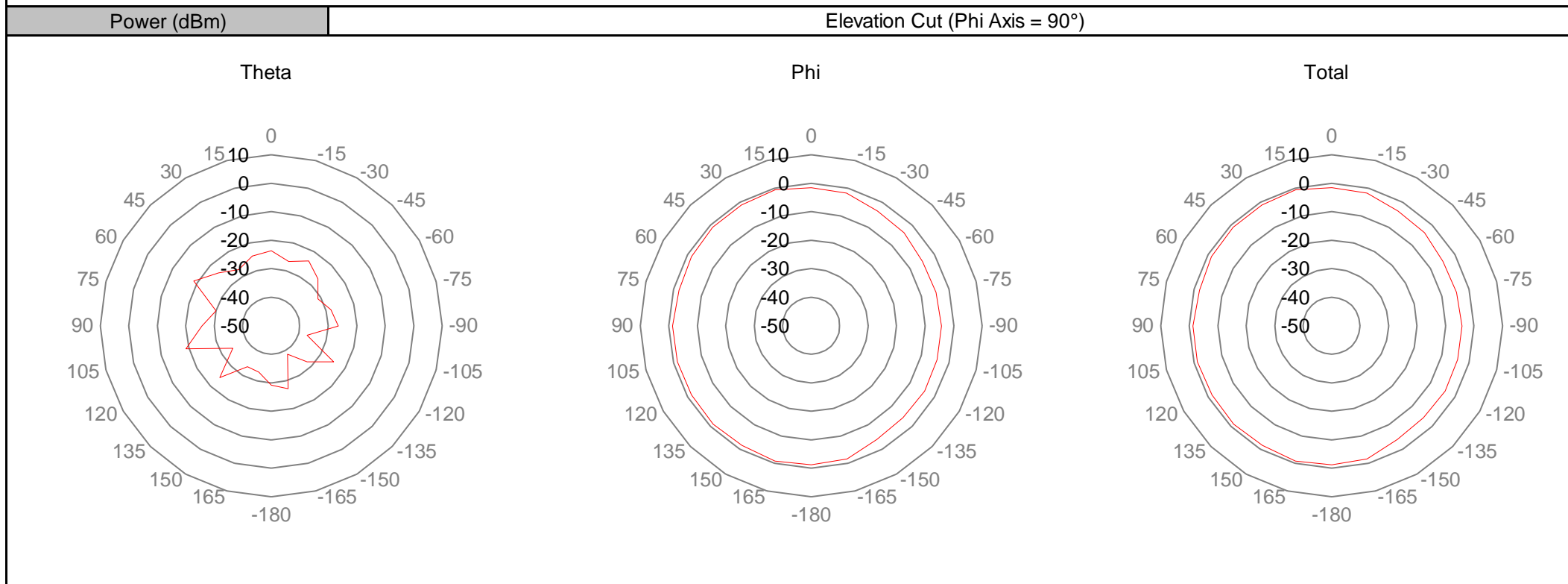
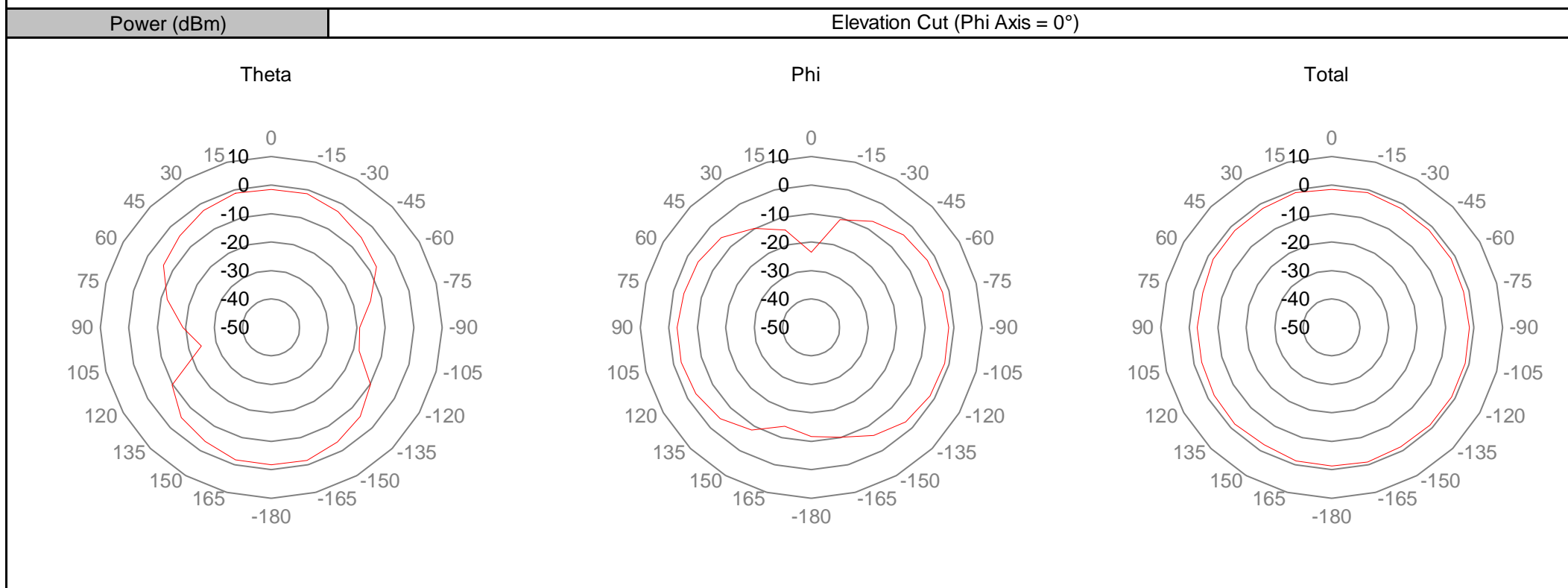
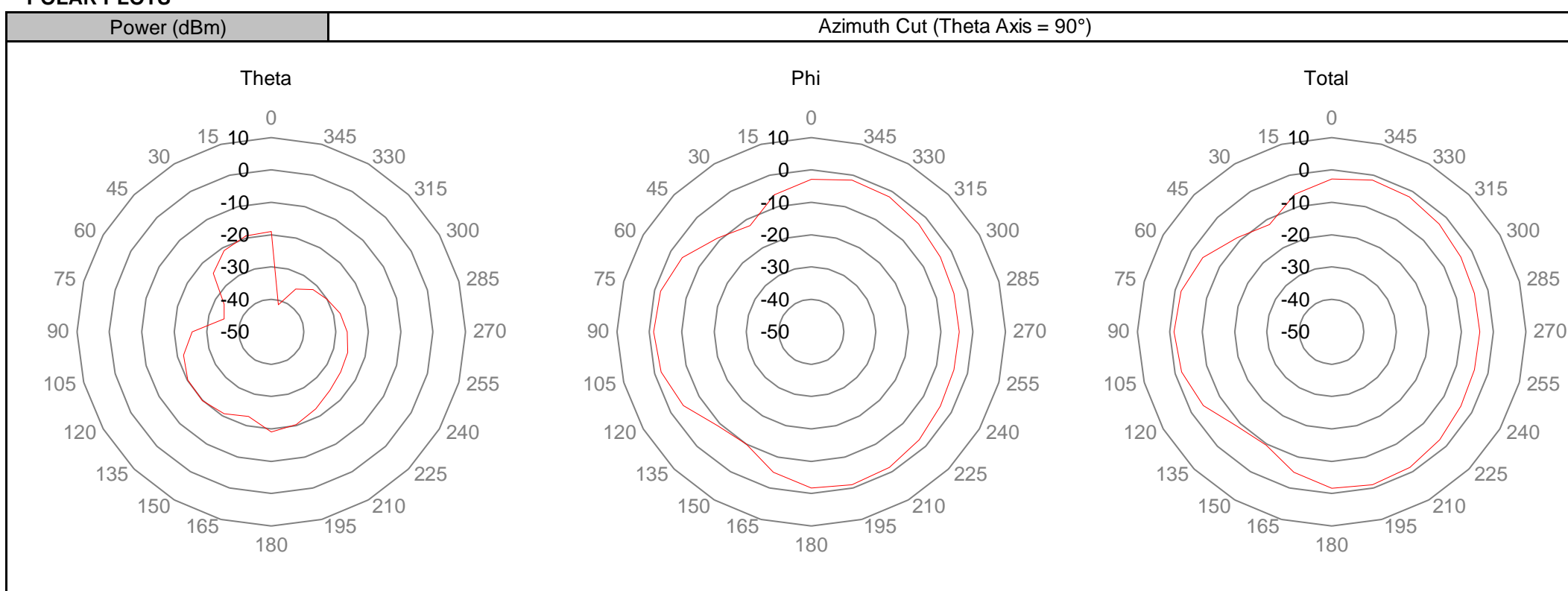
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch1 2410MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

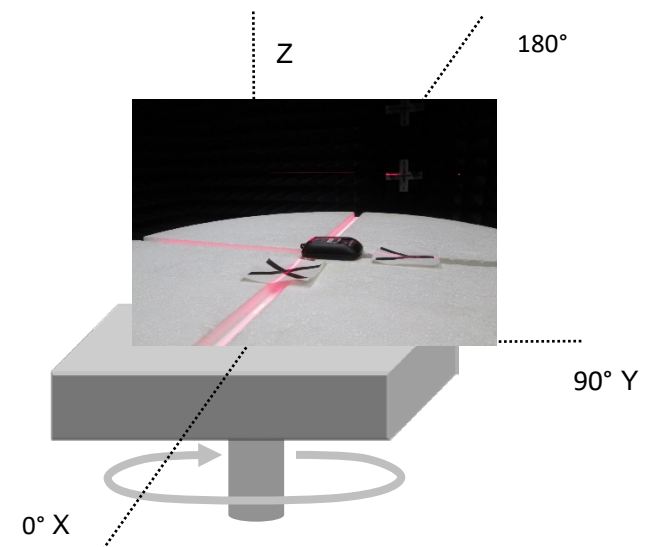
COMMENTS

None

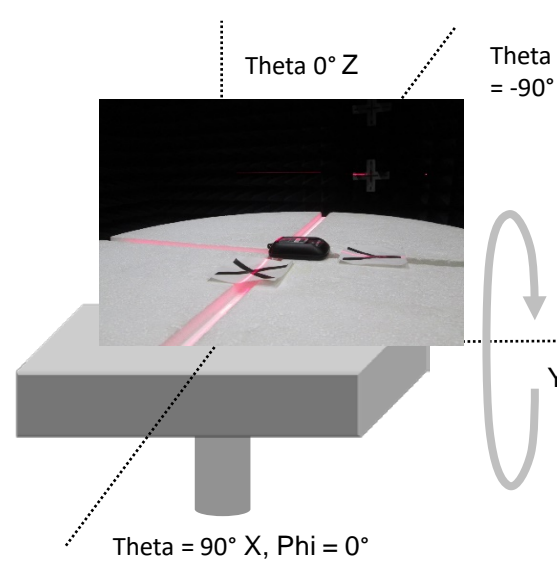
3D PATTERN DATA

Frequency (MHz)	2410
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.42
Peak EIRP (dBm)	-0.24
Directivity (dBi)	2.18
Efficiency (dB)	-6.42
Efficiency (%)	22.78
Gain (dBi)	-4.24
Average Gain (dB)	-6.42
E-Plane 3 dB BW (°)	326.00

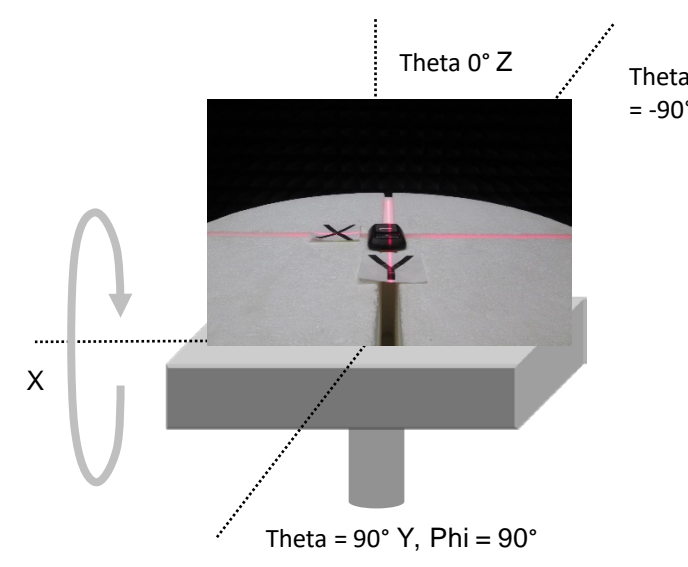
Azimuth Cut (Theta Axis = 90°)



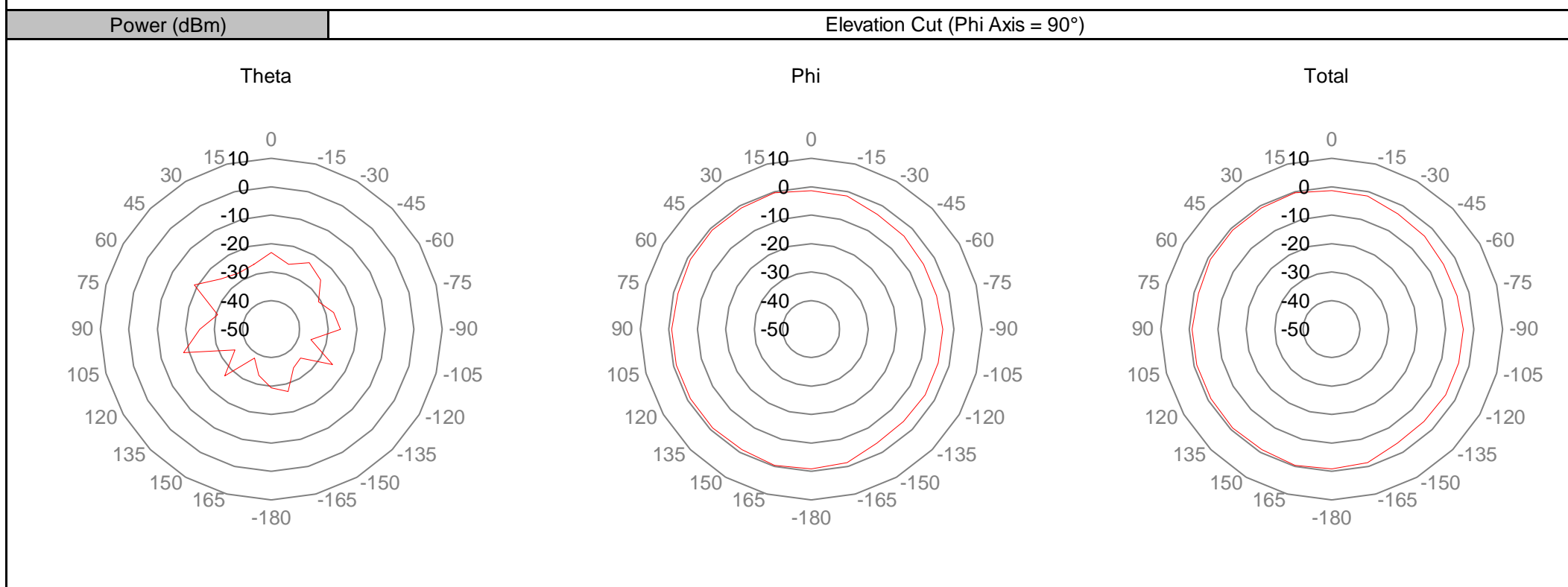
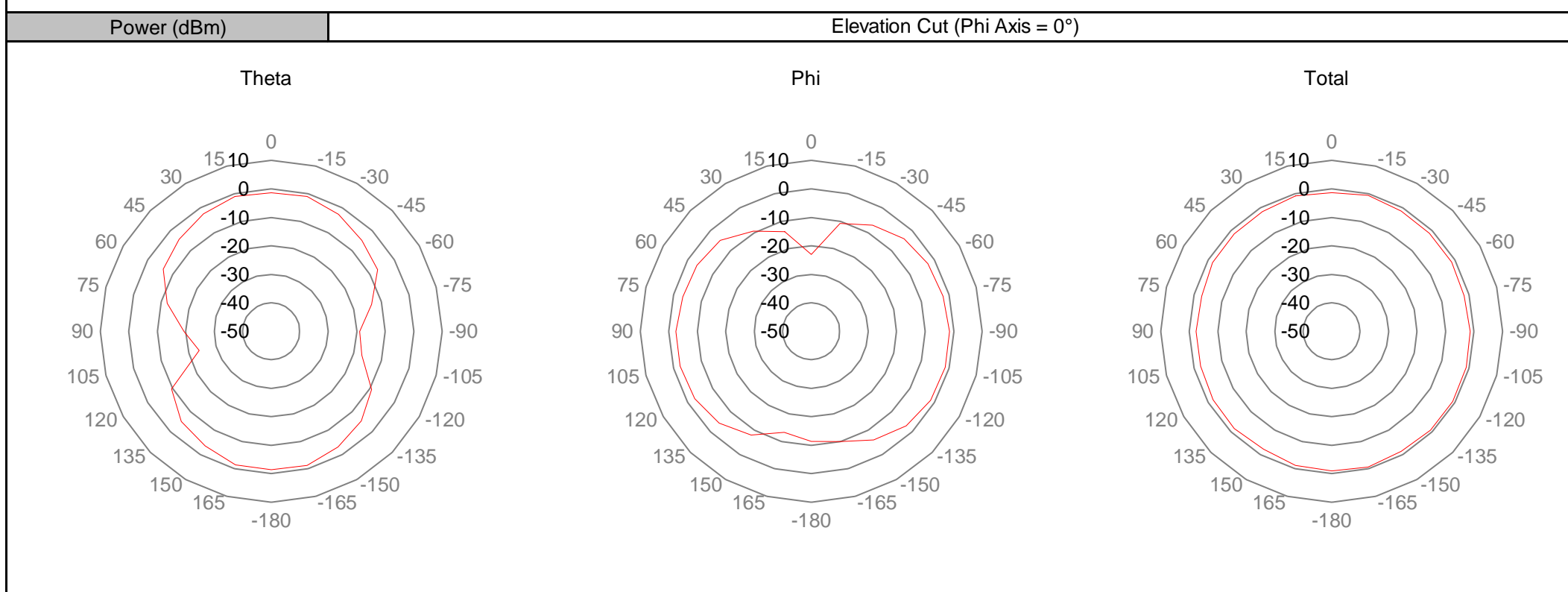
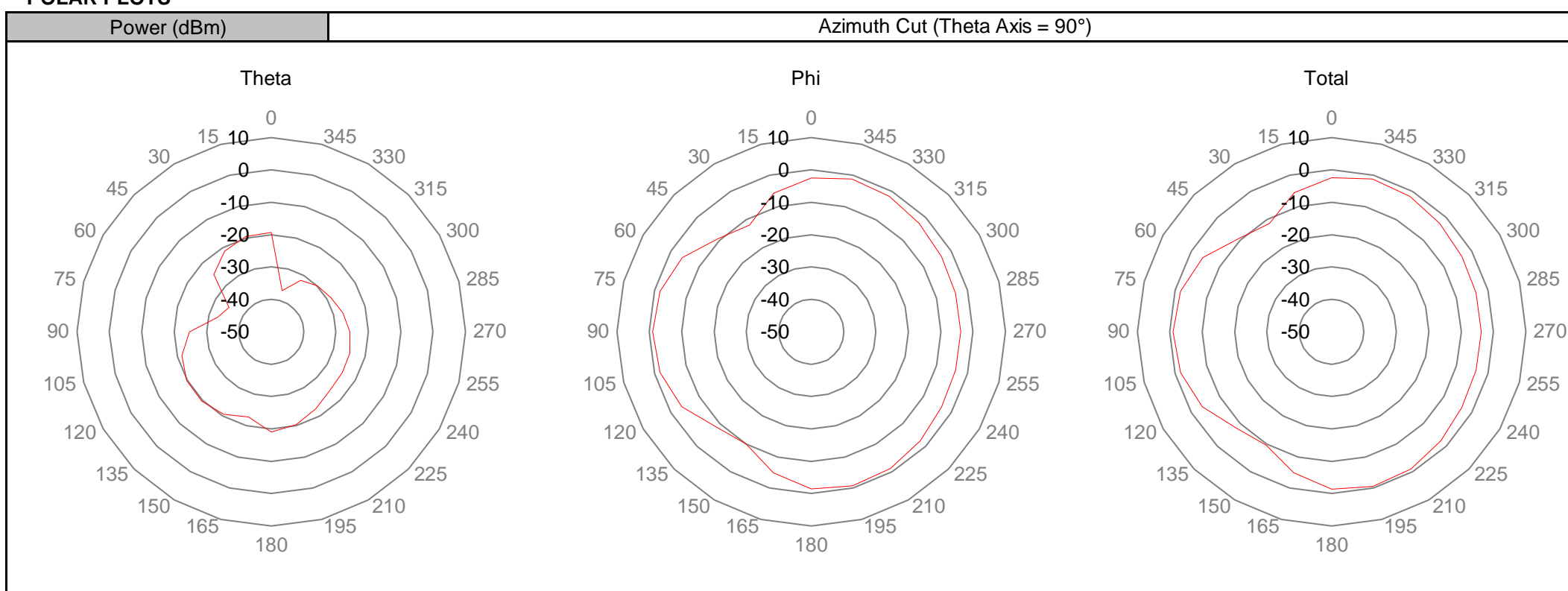
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch2 2415MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

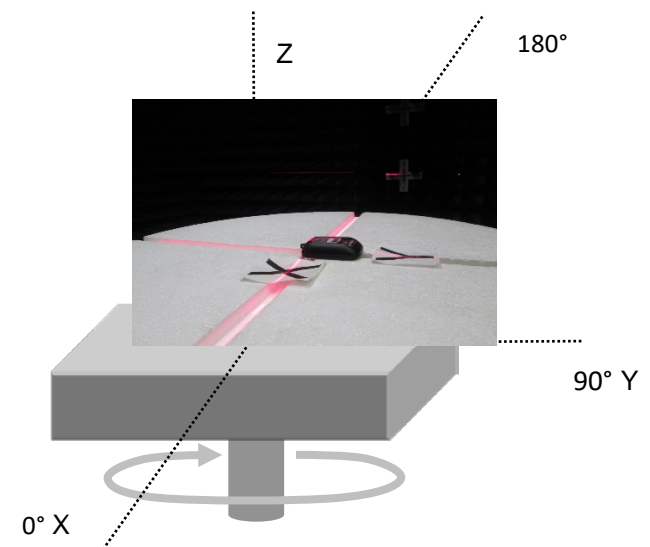
COMMENTS

None

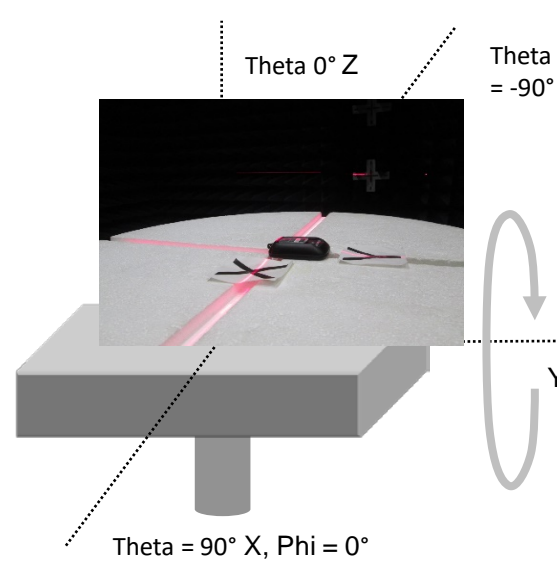
3D PATTERN DATA

Frequency (MHz)	2415
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.26
Peak EIRP (dBm)	-0.07
Directivity (dBi)	2.19
Efficiency (dB)	-6.26
Efficiency (%)	23.68
Gain (dBi)	-4.07
Average Gain (dB)	-6.26
E-Plane 3 dB BW (°)	330.00

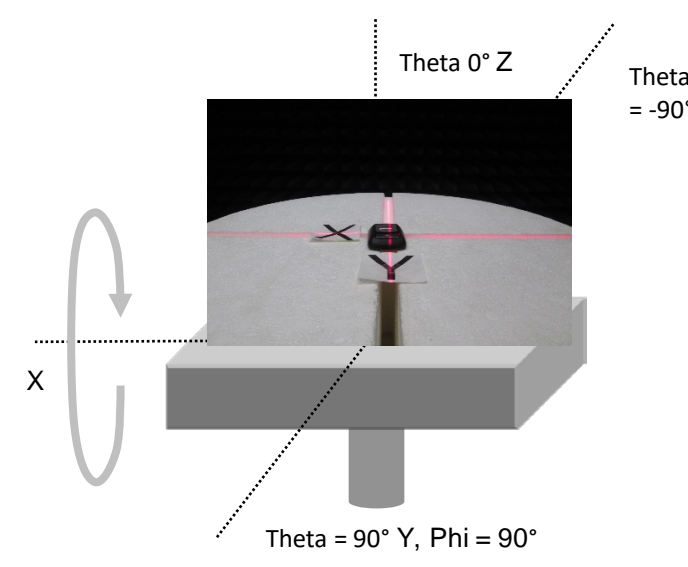
Azimuth Cut (Theta Axis = 90°)



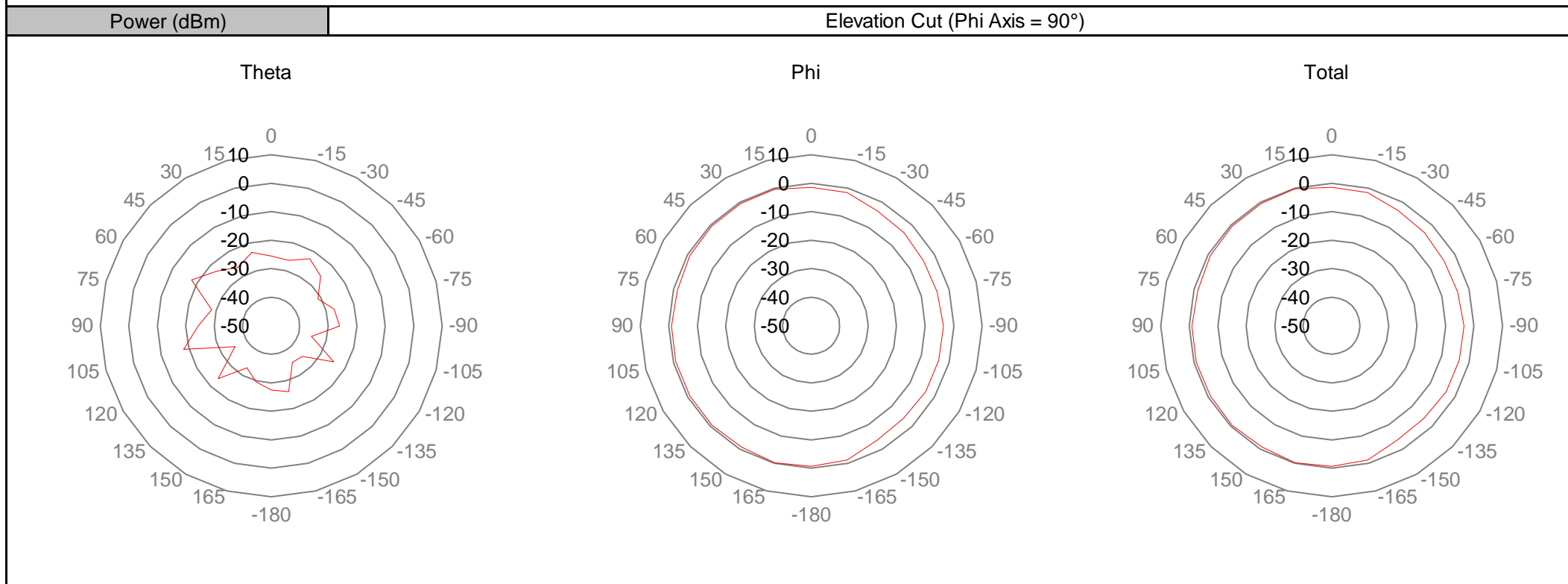
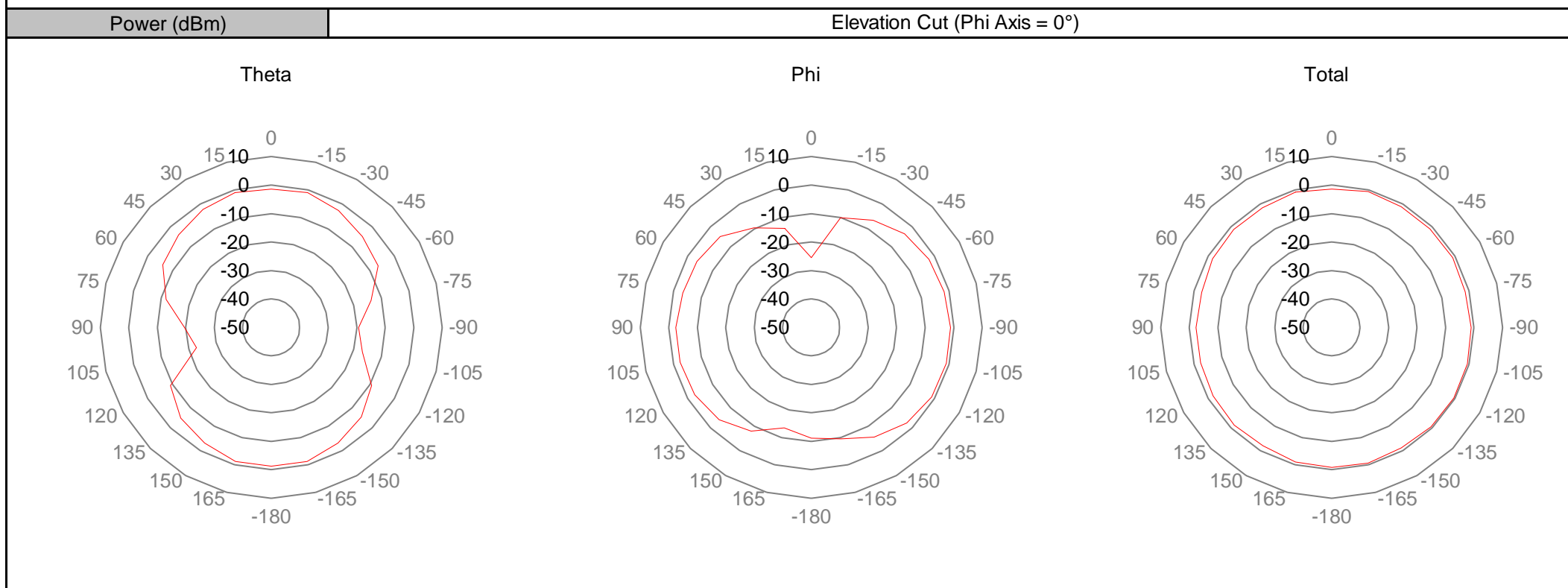
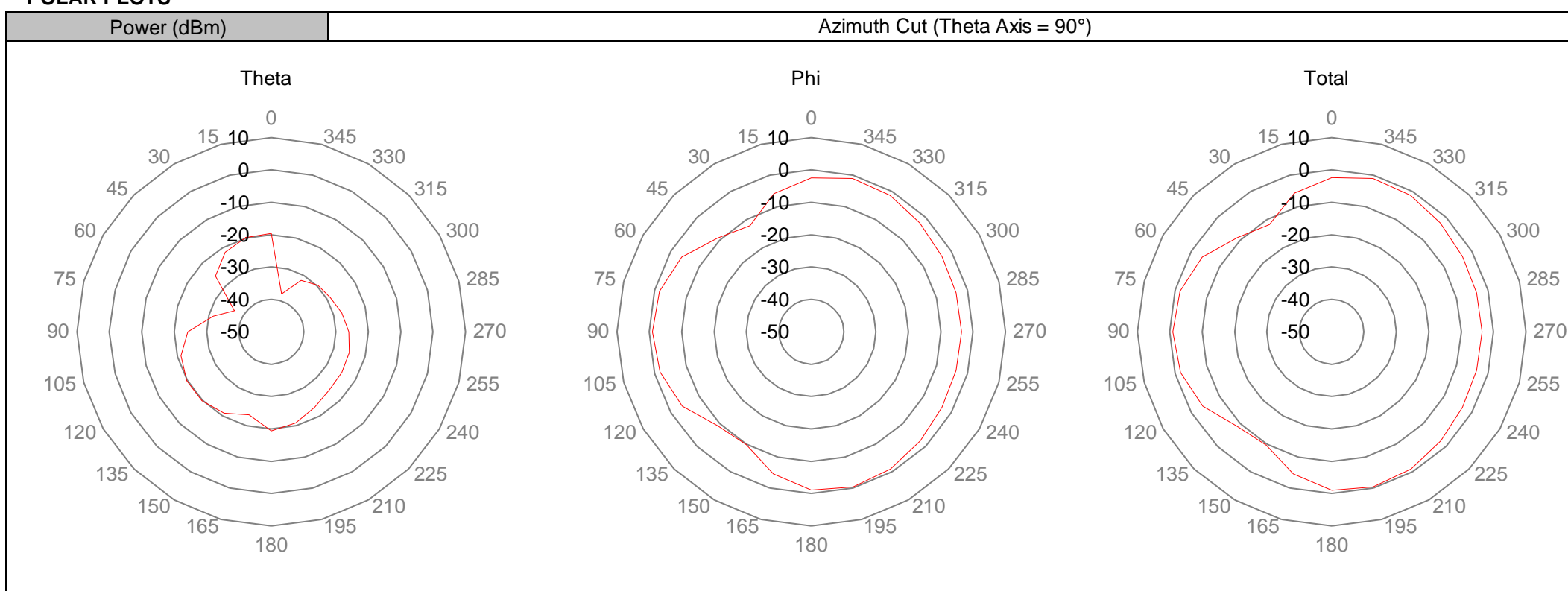
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch3 2420MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

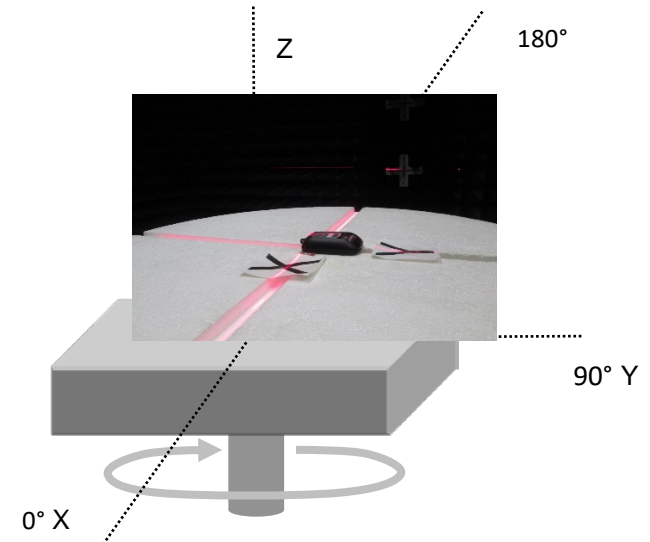
COMMENTS

None

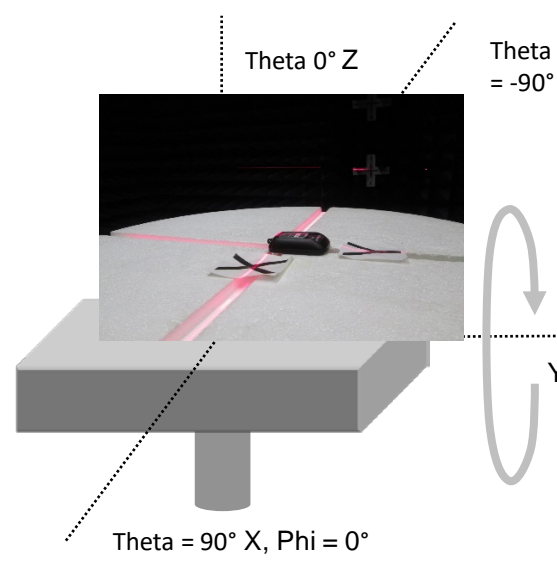
3D PATTERN DATA

Frequency (MHz)	2420
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.10
Peak EIRP (dBm)	0.12
Directivity (dBi)	2.22
Efficiency (dB)	-6.10
Efficiency (%)	24.57
Gain (dBi)	-3.88
Average Gain (dB)	-6.10
E-Plane 3 dB BW (°)	338.00

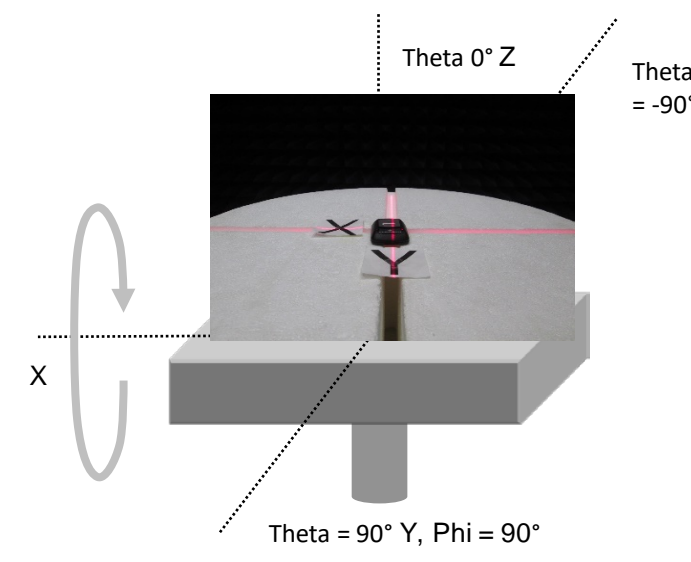
Azimuth Cut (Theta Axis = 90°)



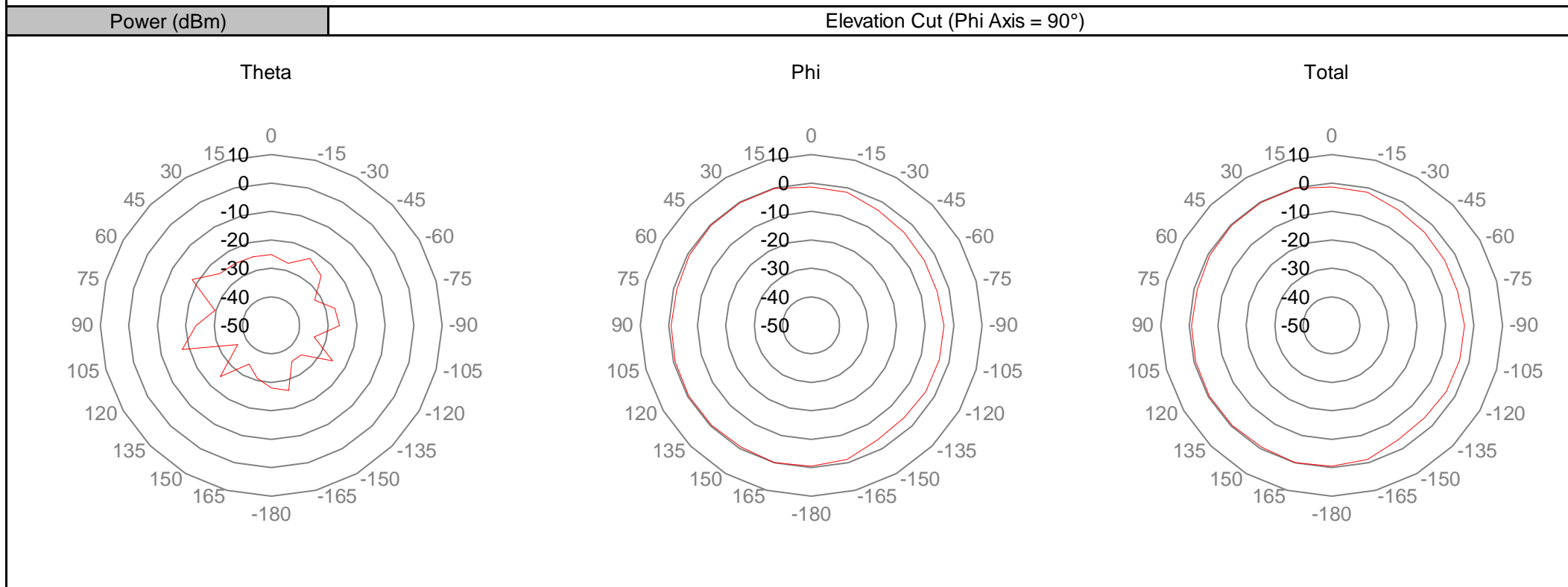
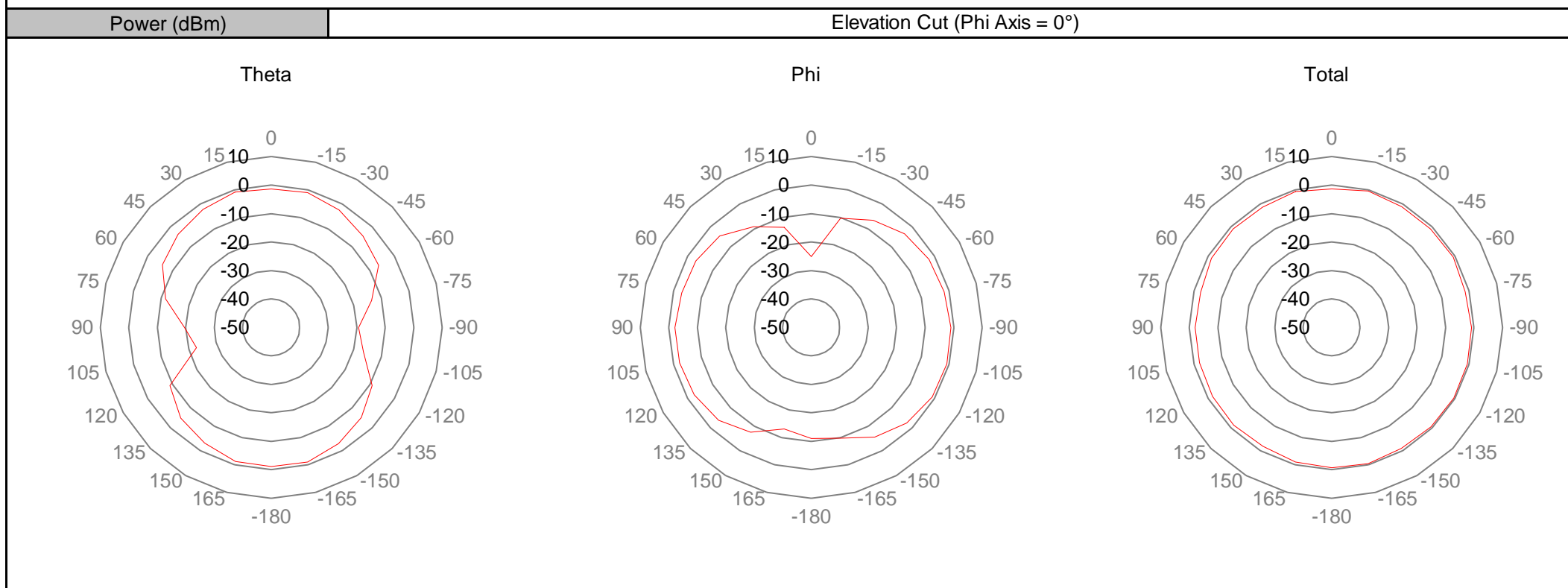
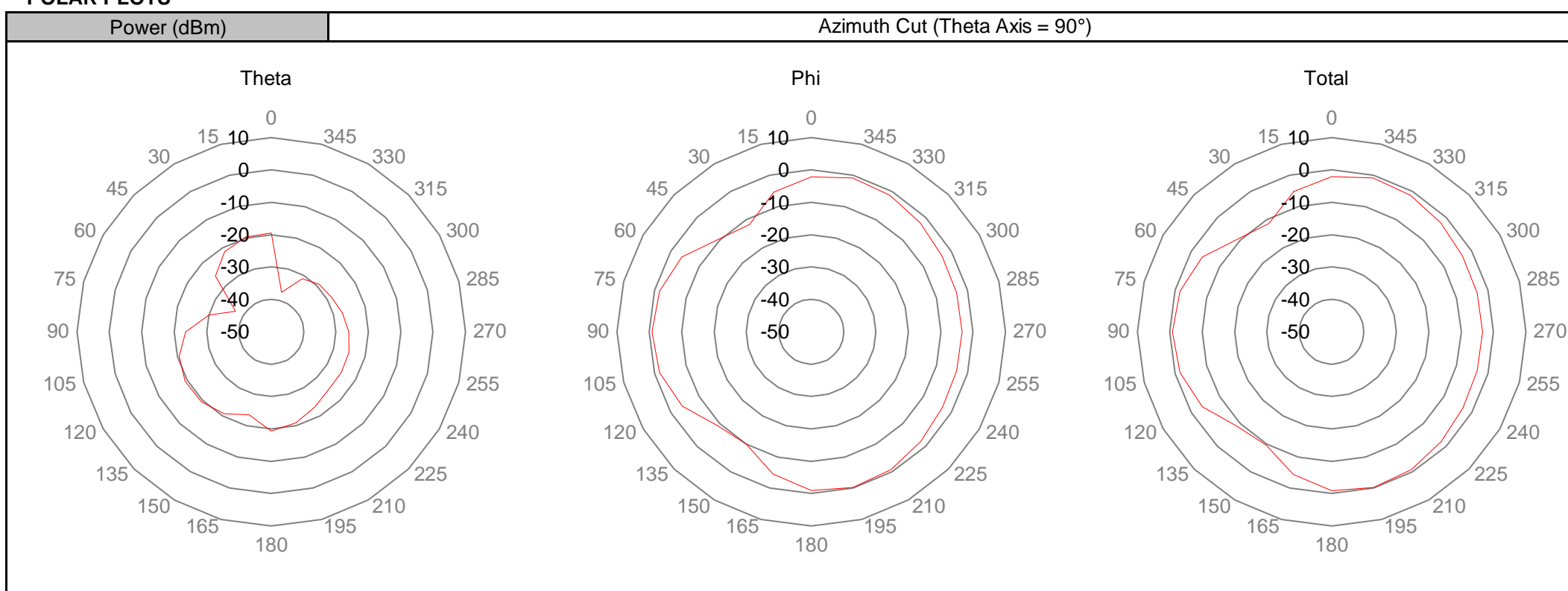
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch4 2425MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

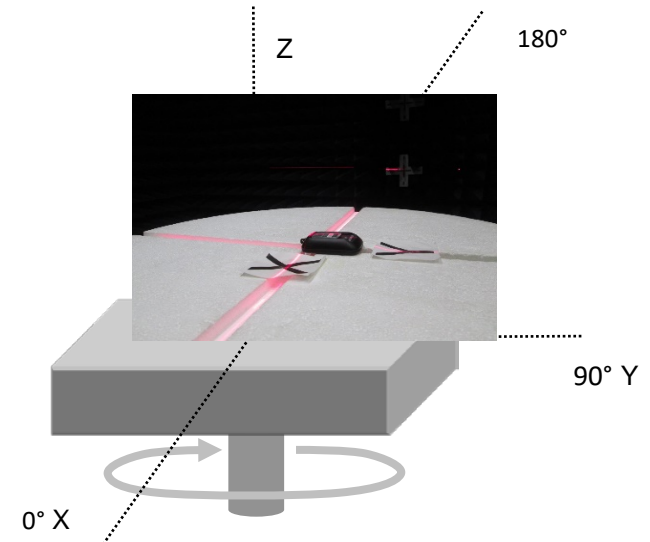
COMMENTS

None

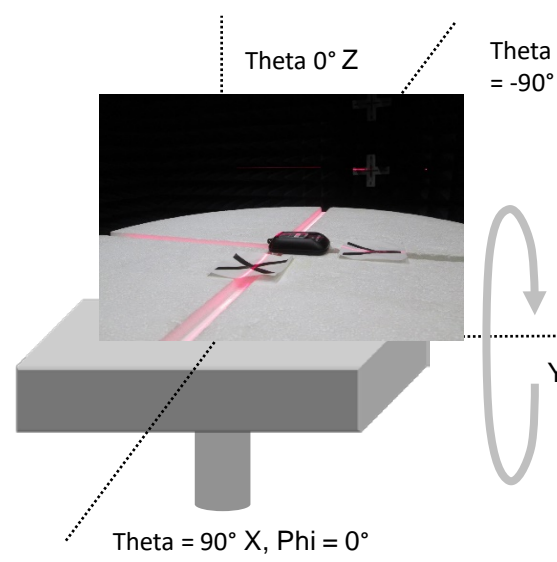
3D PATTERN DATA

Frequency (MHz)	2425
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-1.97
Peak EIRP (dBm)	0.25
Directivity (dBi)	2.23
Efficiency (dB)	-5.97
Efficiency (%)	25.28
Gain (dBi)	-3.75
Average Gain (dB)	-5.97
E-Plane 3 dB BW (°)	360.00

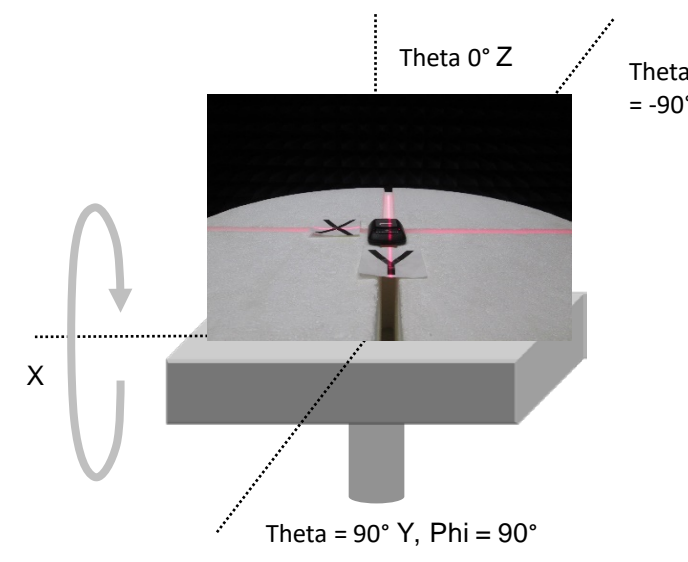
Azimuth Cut (Theta Axis = 90°)



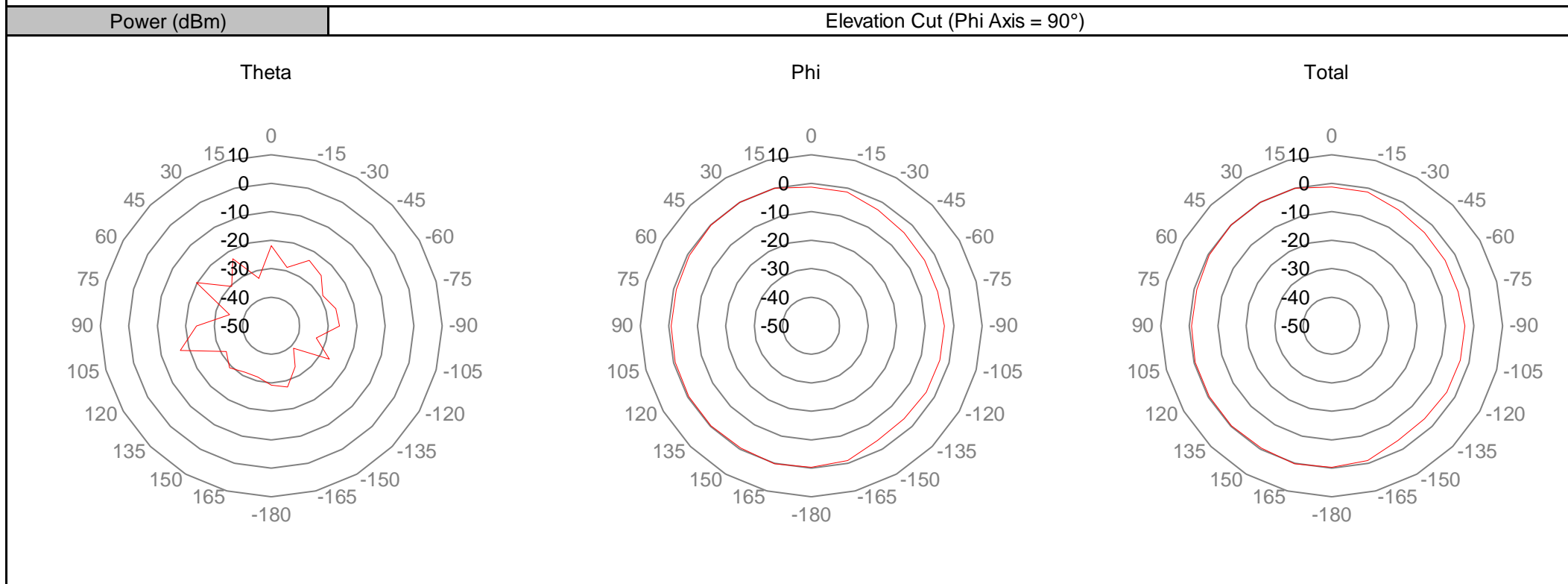
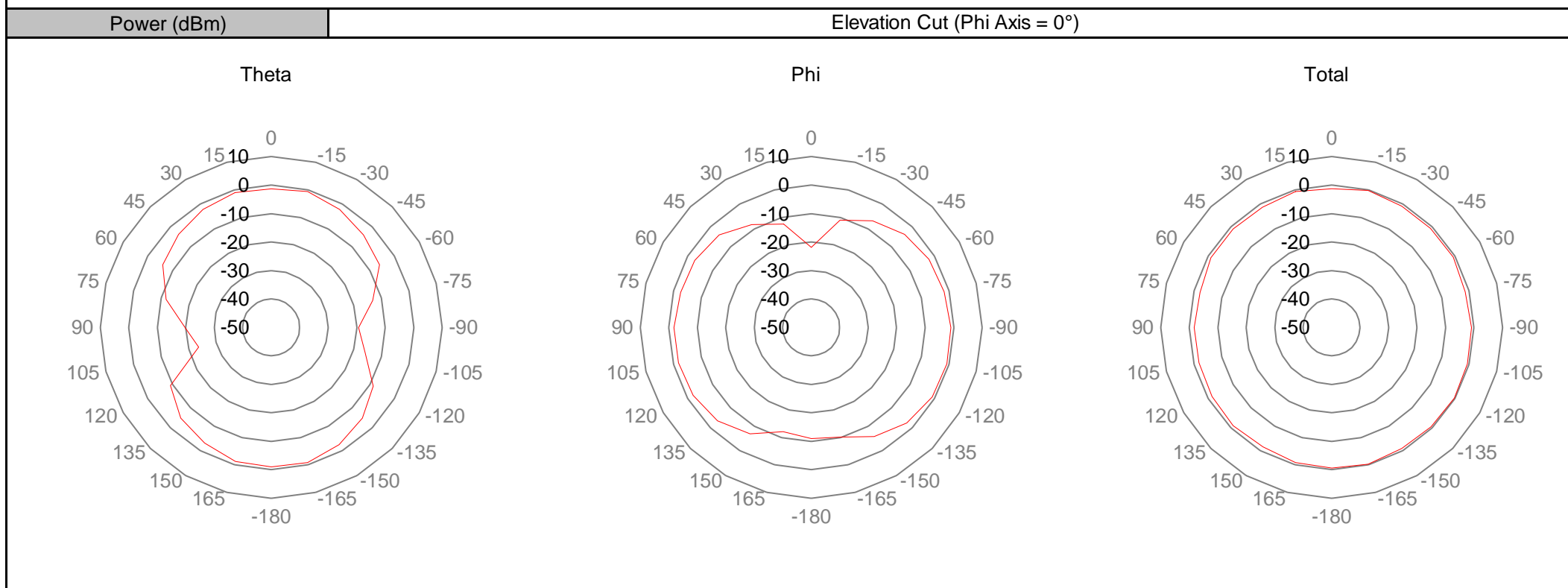
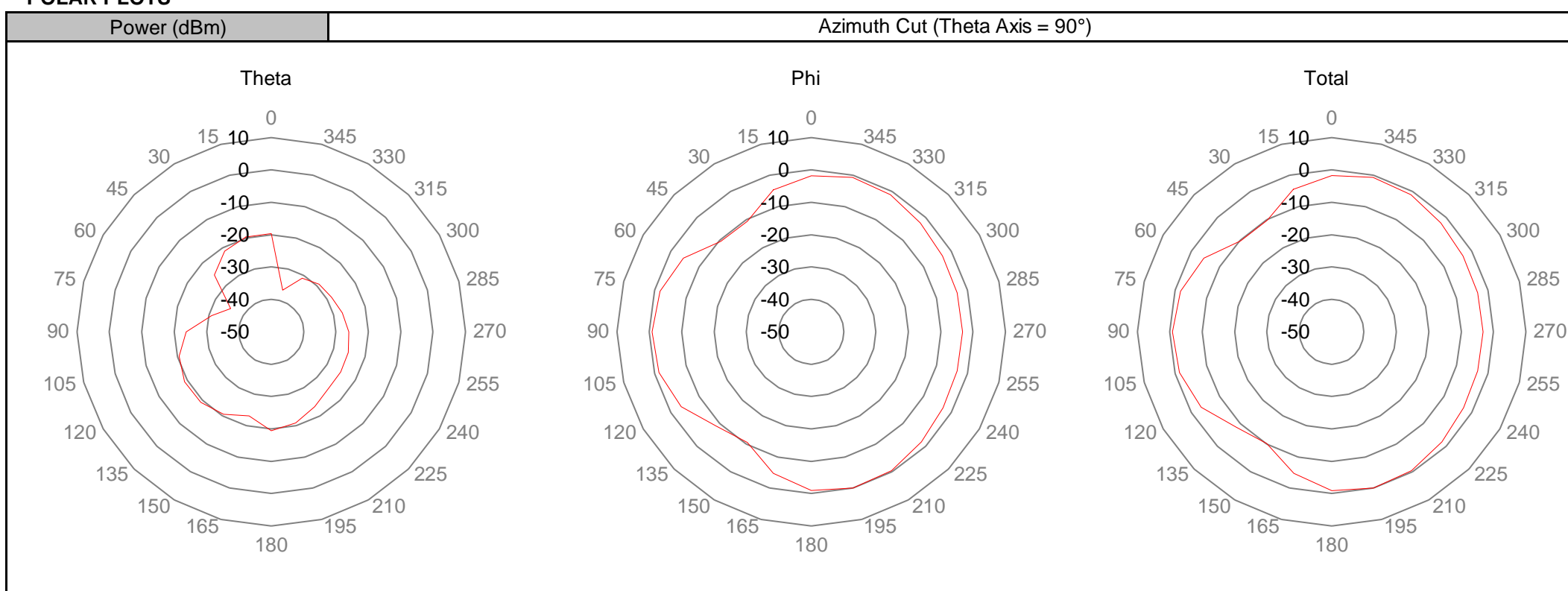
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch5 2430MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

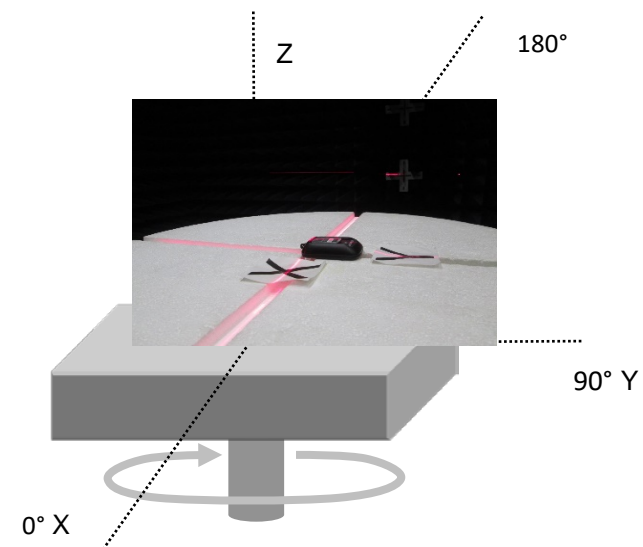
COMMENTS

None

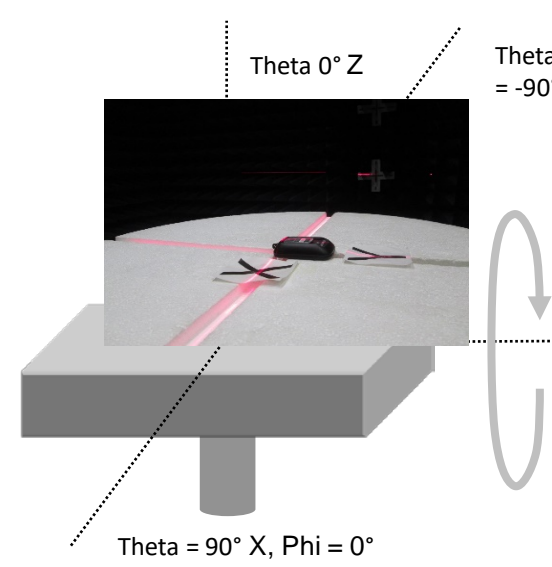
3D PATTERN DATA

Frequency (MHz)	2430
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.04
Peak EIRP (dBm)	0.18
Directivity (dBi)	2.22
Efficiency (dB)	-6.04
Efficiency (%)	24.87
Gain (dBi)	-3.82
Average Gain (dB)	-6.04
E-Plane 3 dB BW (°)	360.00

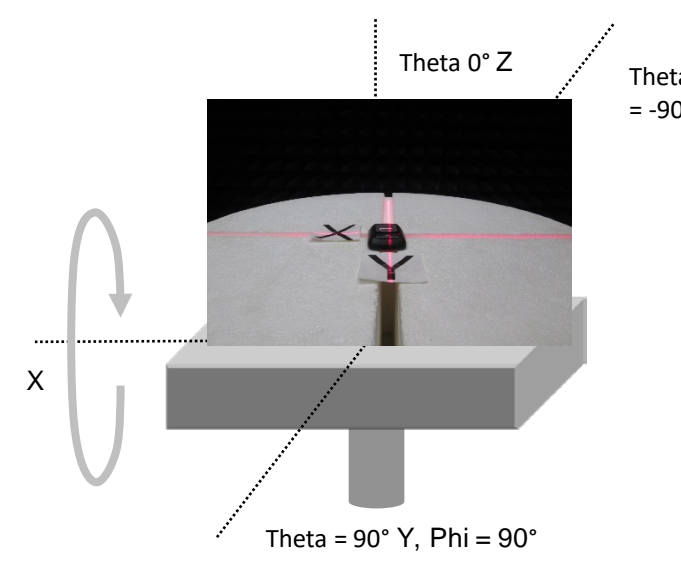
Azimuth Cut (Theta Axis = 90°)



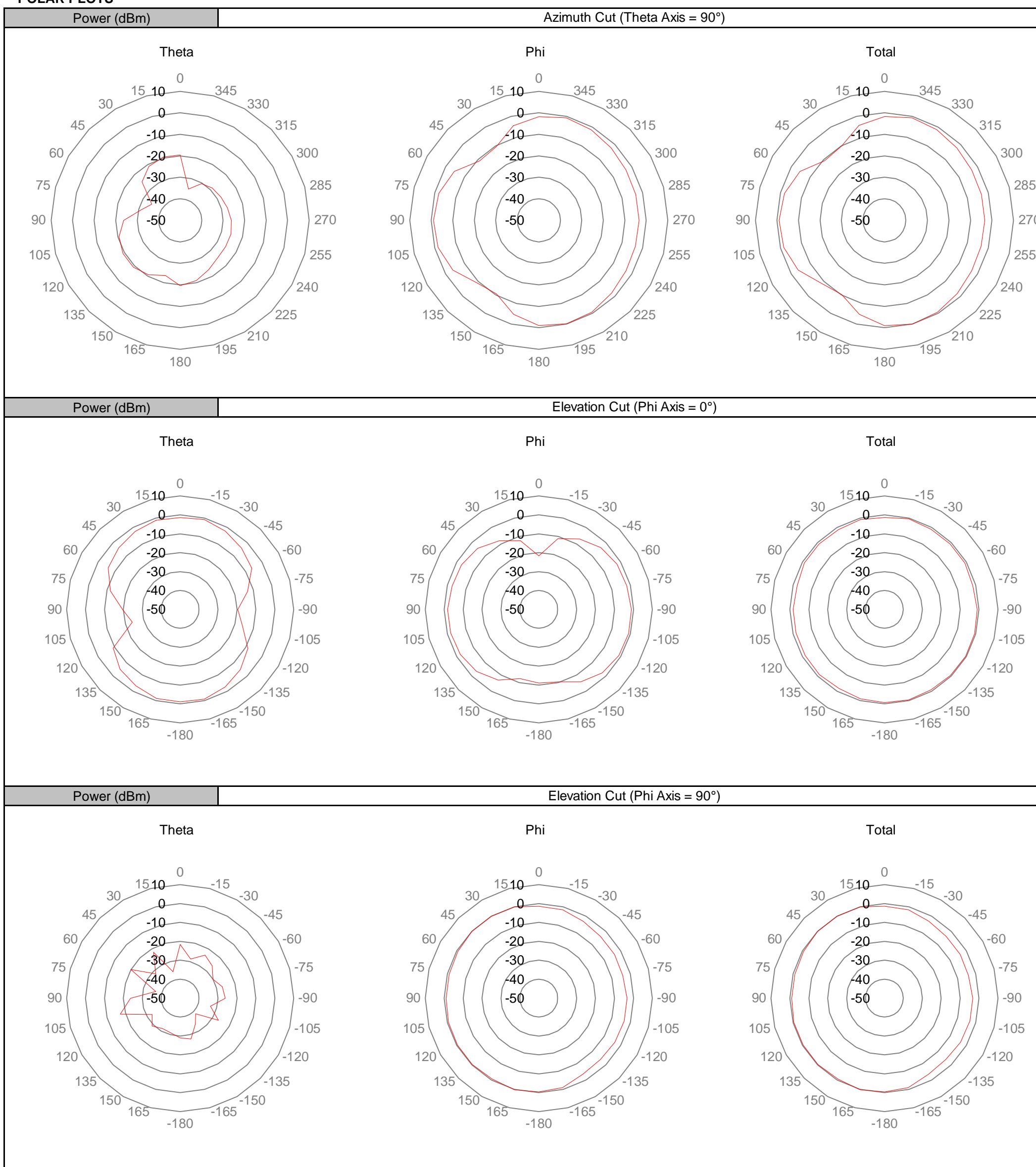
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch6 2435MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

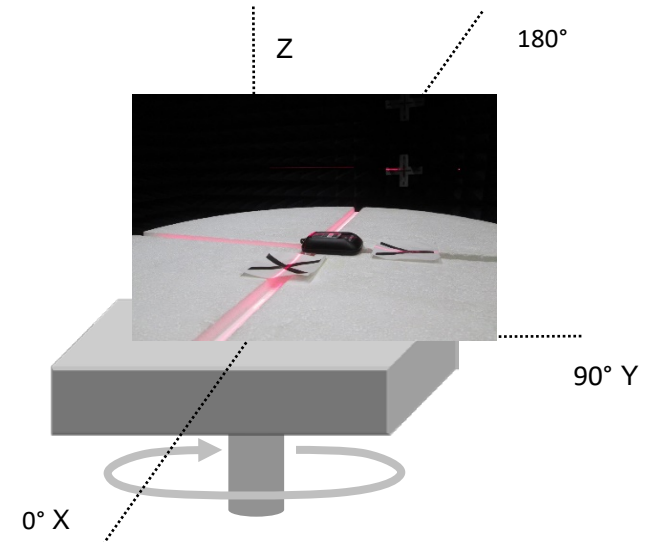
COMMENTS

None

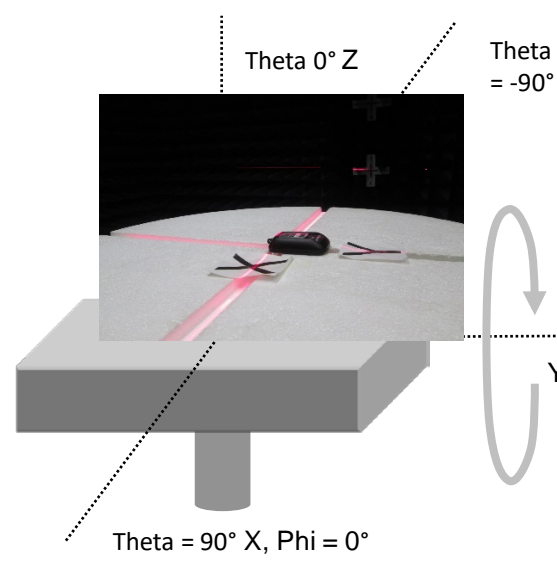
3D PATTERN DATA

Frequency (MHz)	2435
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.16
Peak EIRP (dBm)	0.07
Directivity (dBi)	2.22
Efficiency (dB)	-6.16
Efficiency (%)	24.23
Gain (dBi)	-3.93
Average Gain (dB)	-6.16
E-Plane 3 dB BW (°)	360.00

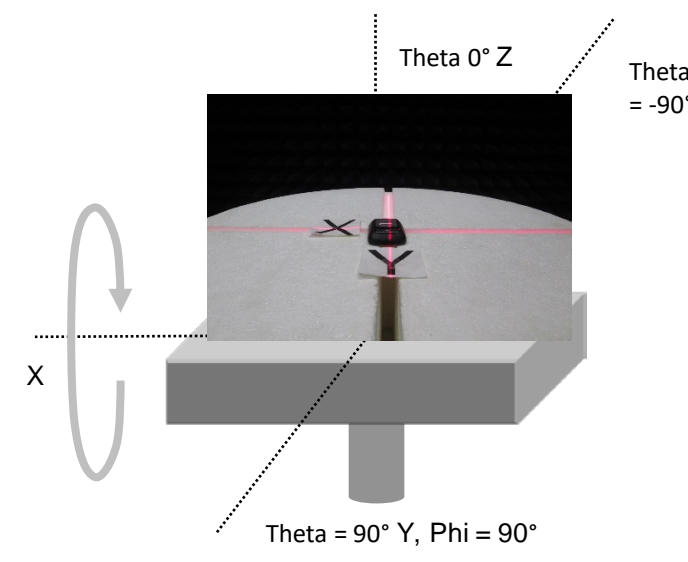
Azimuth Cut (Theta Axis = 90°)



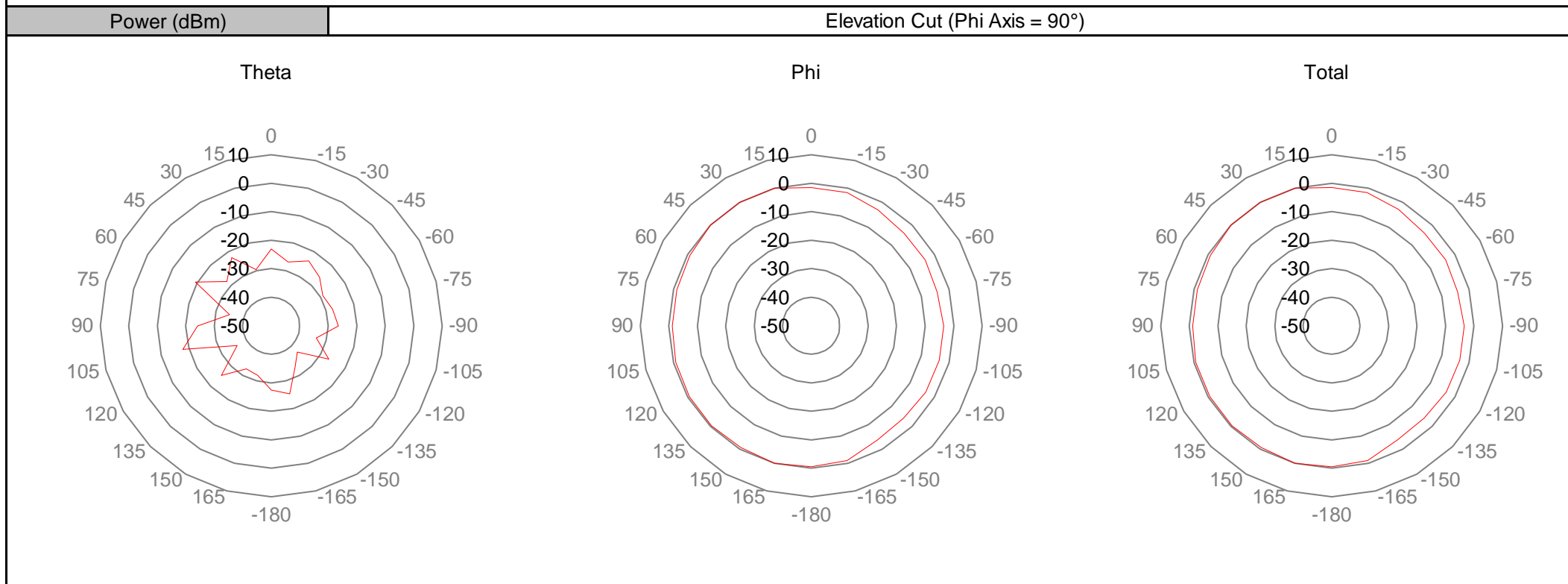
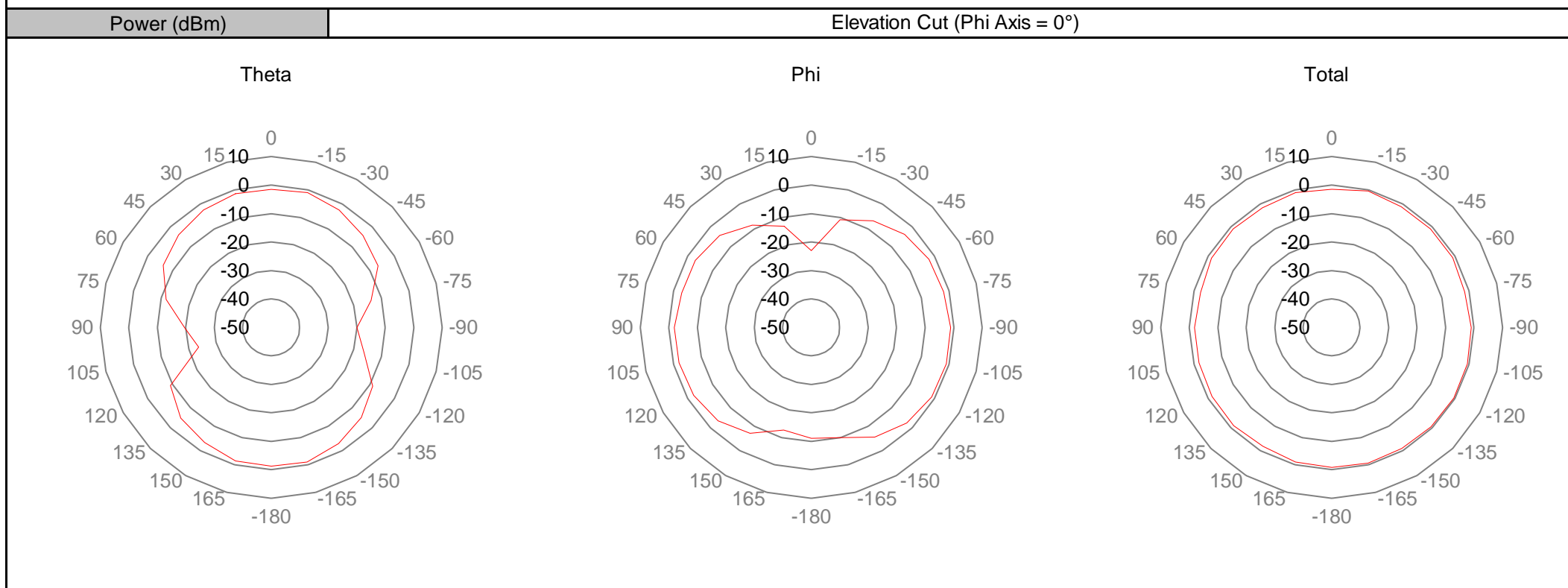
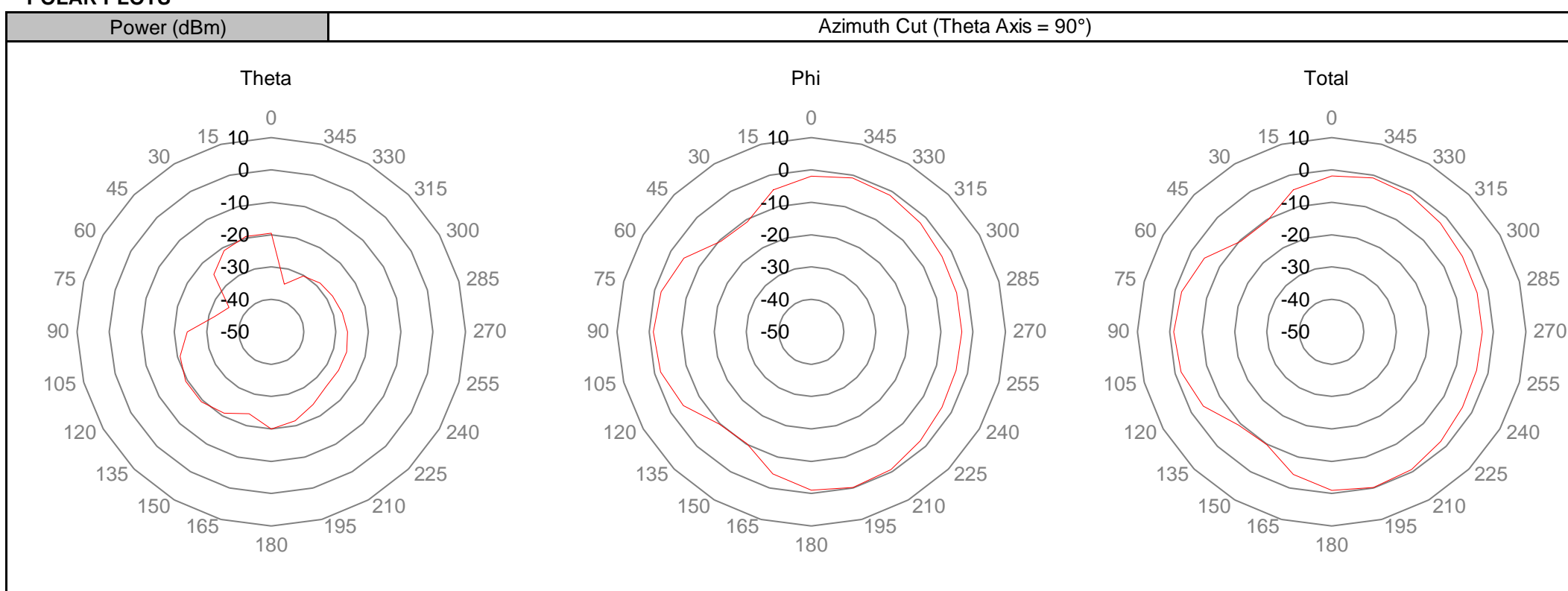
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch7 2440MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

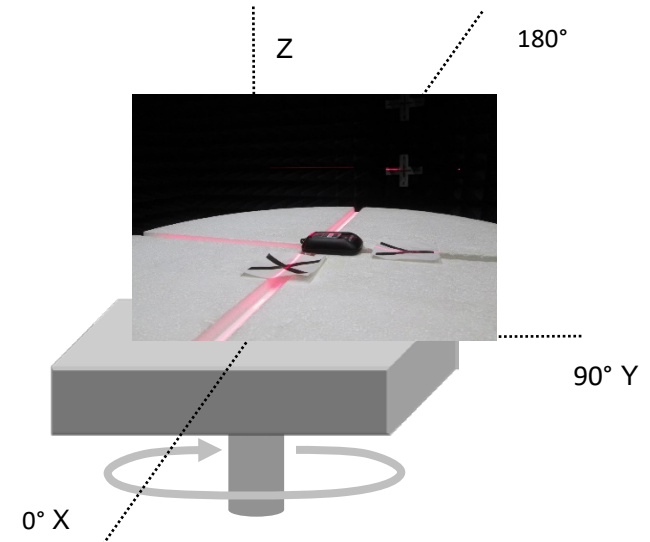
COMMENTS

None

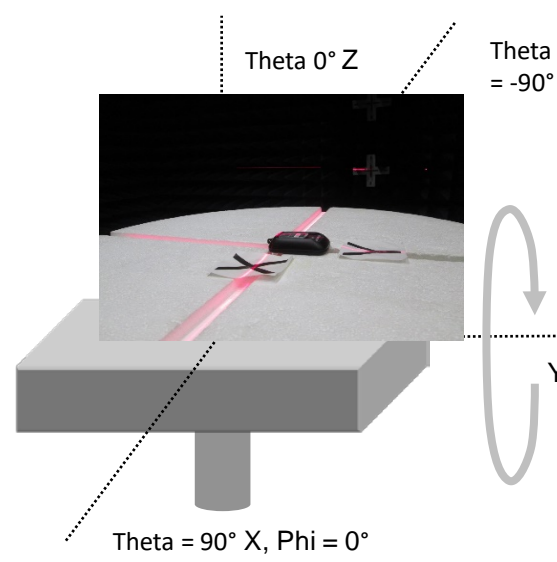
3D PATTERN DATA

Frequency (MHz)	2440
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.26
Peak EIRP (dBm)	-0.06
Directivity (dBi)	2.20
Efficiency (dB)	-6.26
Efficiency (%)	23.68
Gain (dBi)	-4.06
Average Gain (dB)	-6.26
E-Plane 3 dB BW (°)	360.00

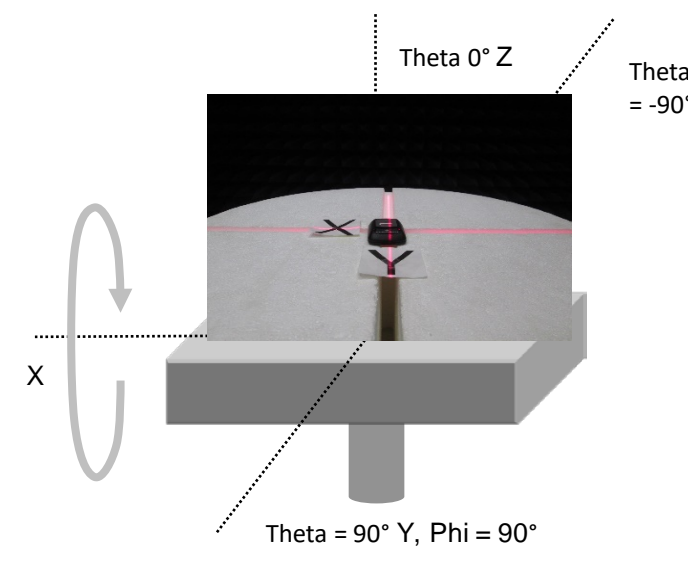
Azimuth Cut (Theta Axis = 90°)



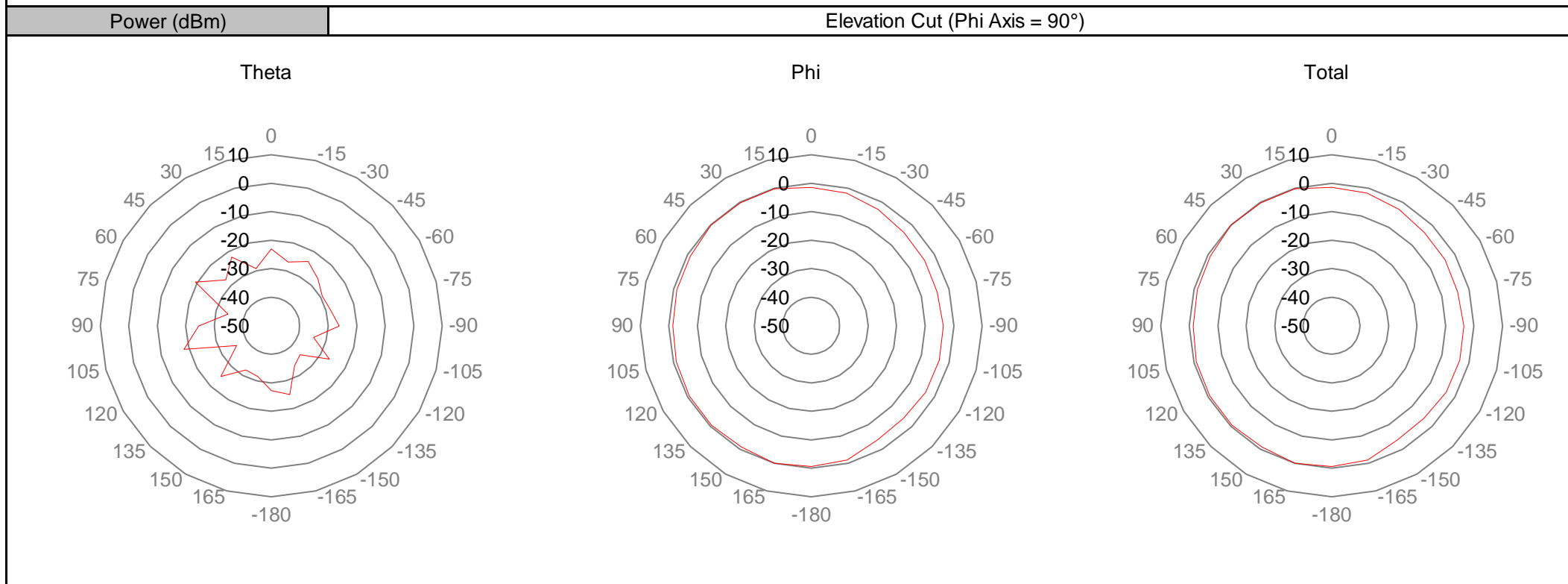
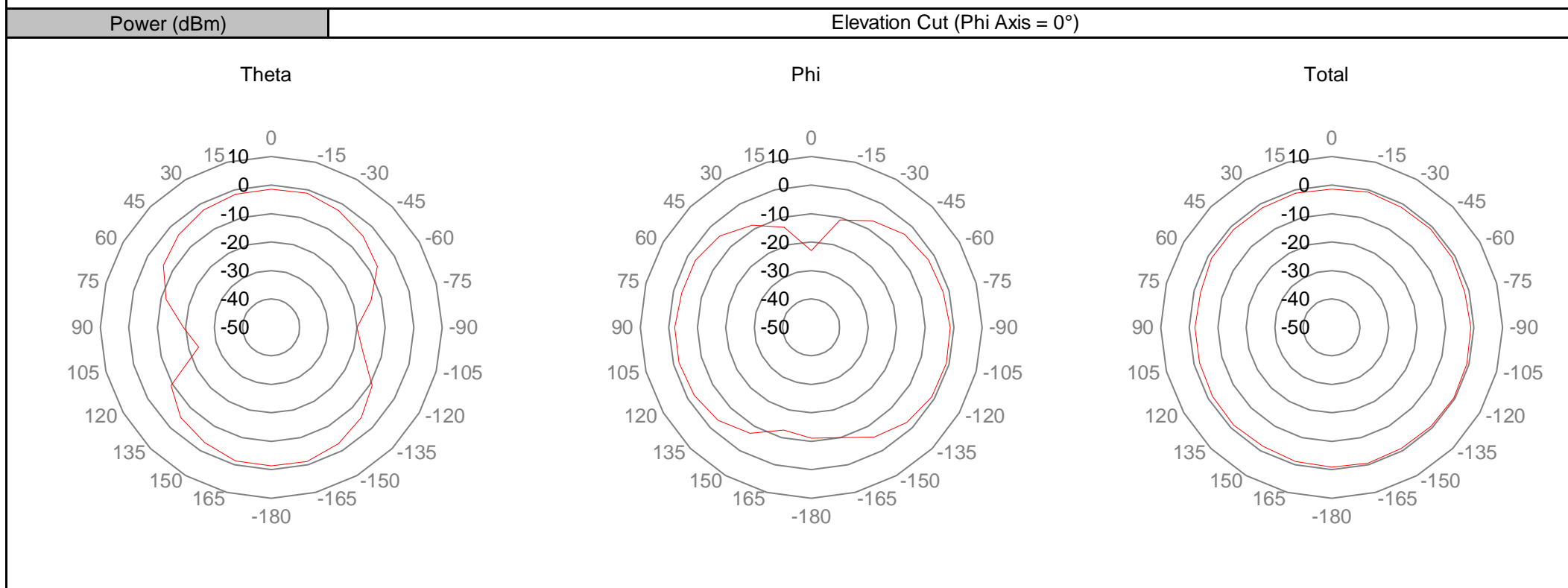
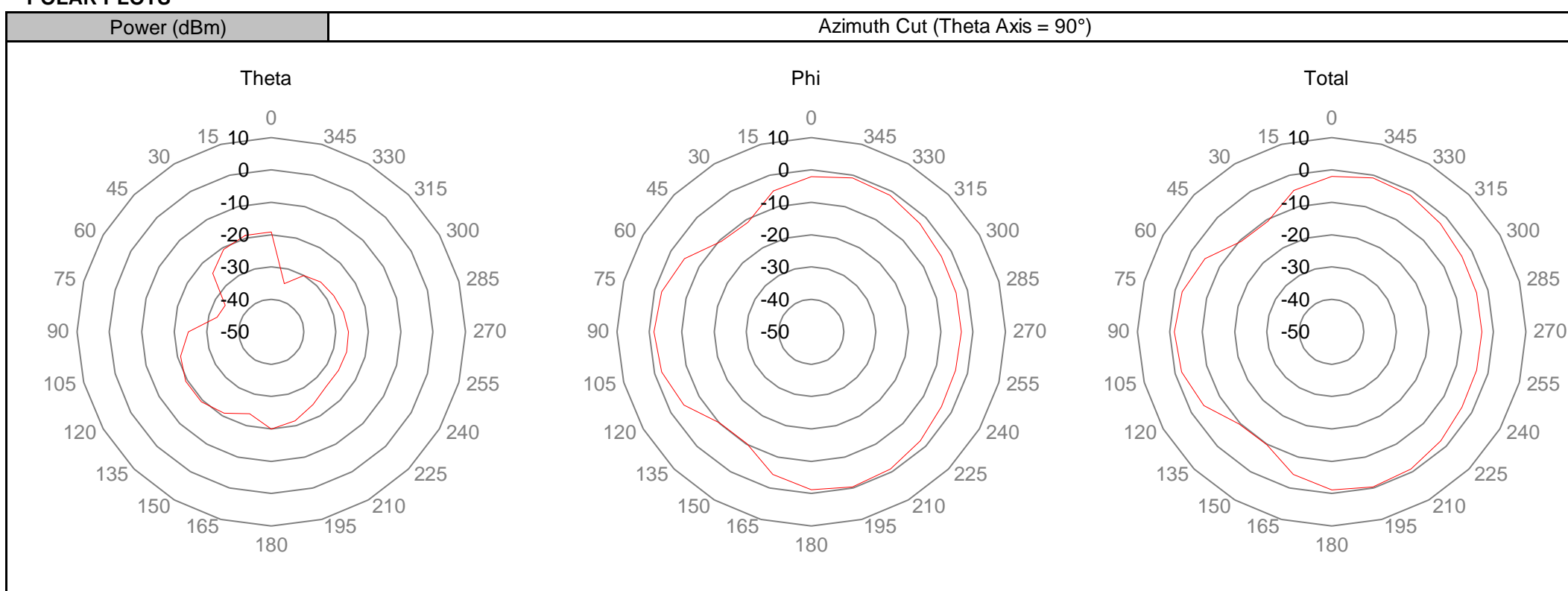
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch8 2445MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

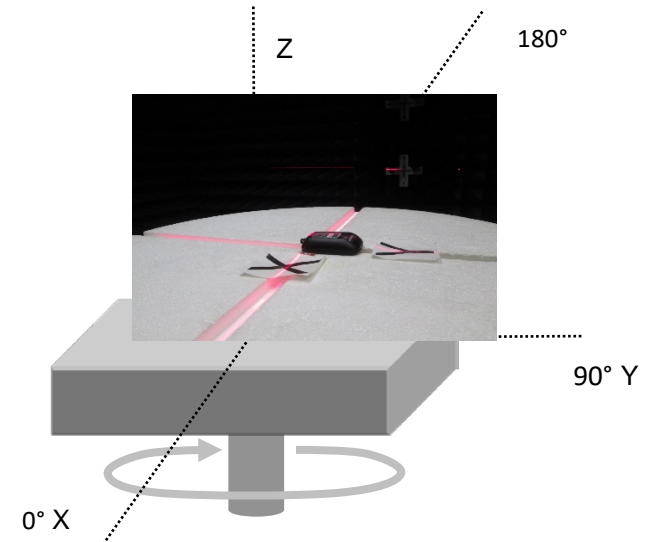
COMMENTS

None

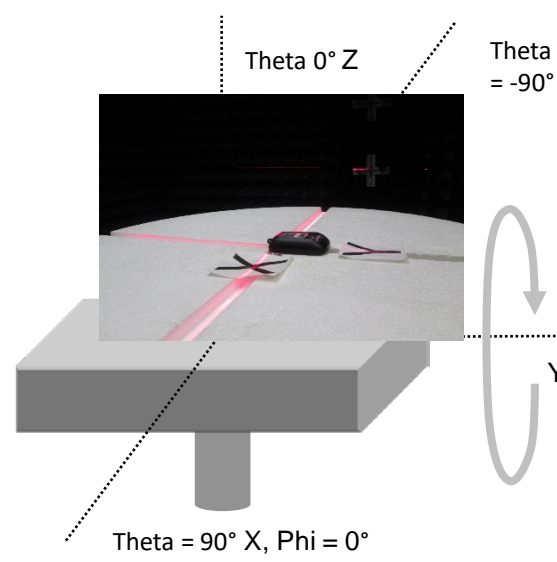
3D PATTERN DATA

Frequency (MHz)	2445
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.25
Peak EIRP (dBm)	-0.05
Directivity (dBi)	2.20
Efficiency (dB)	-6.25
Efficiency (%)	23.69
Gain (dBi)	-4.05
Average Gain (dB)	-6.25
E-Plane 3 dB BW (°)	72.00

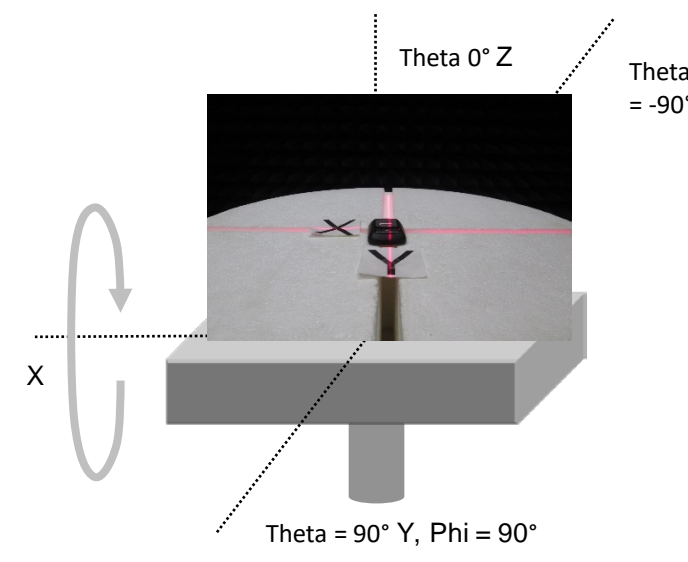
Azimuth Cut (Theta Axis = 90°)



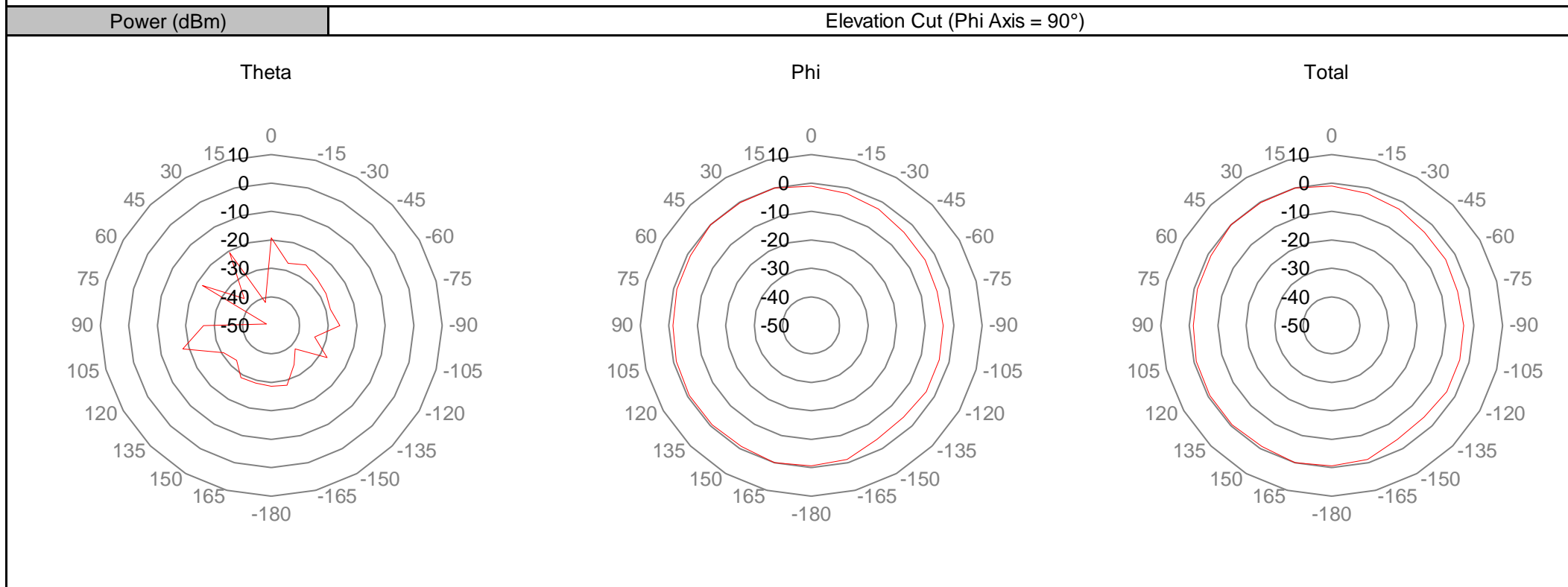
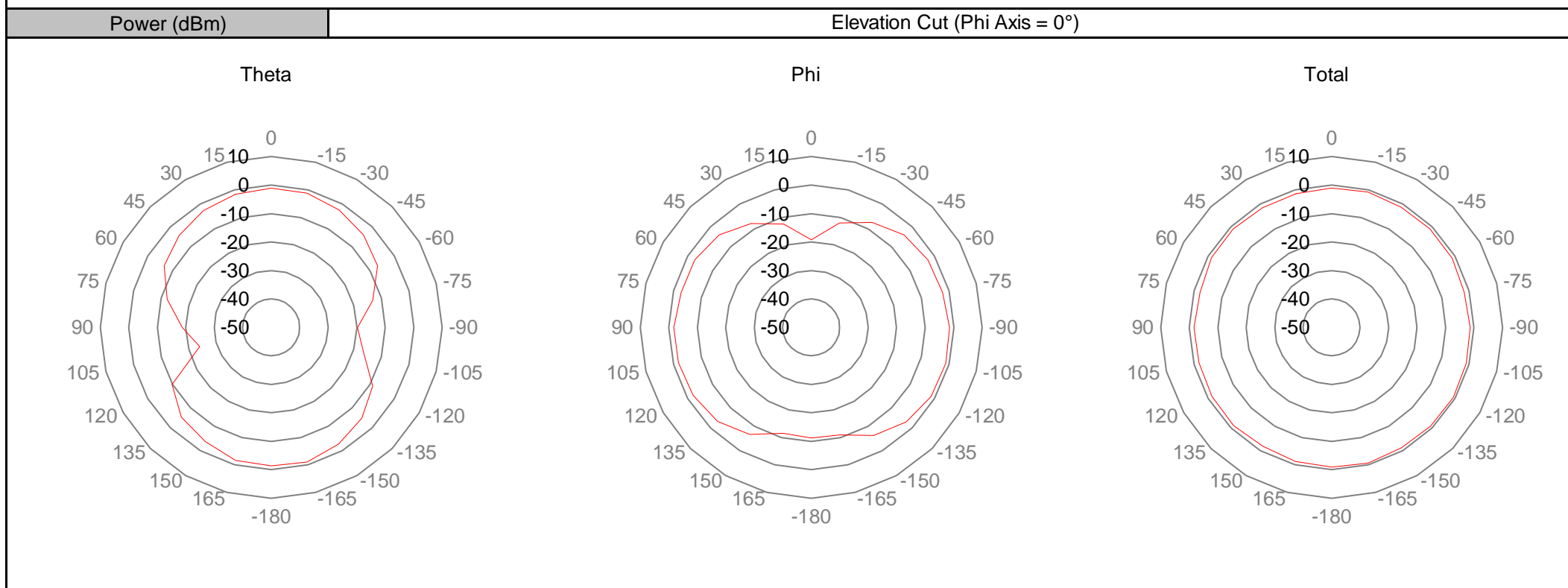
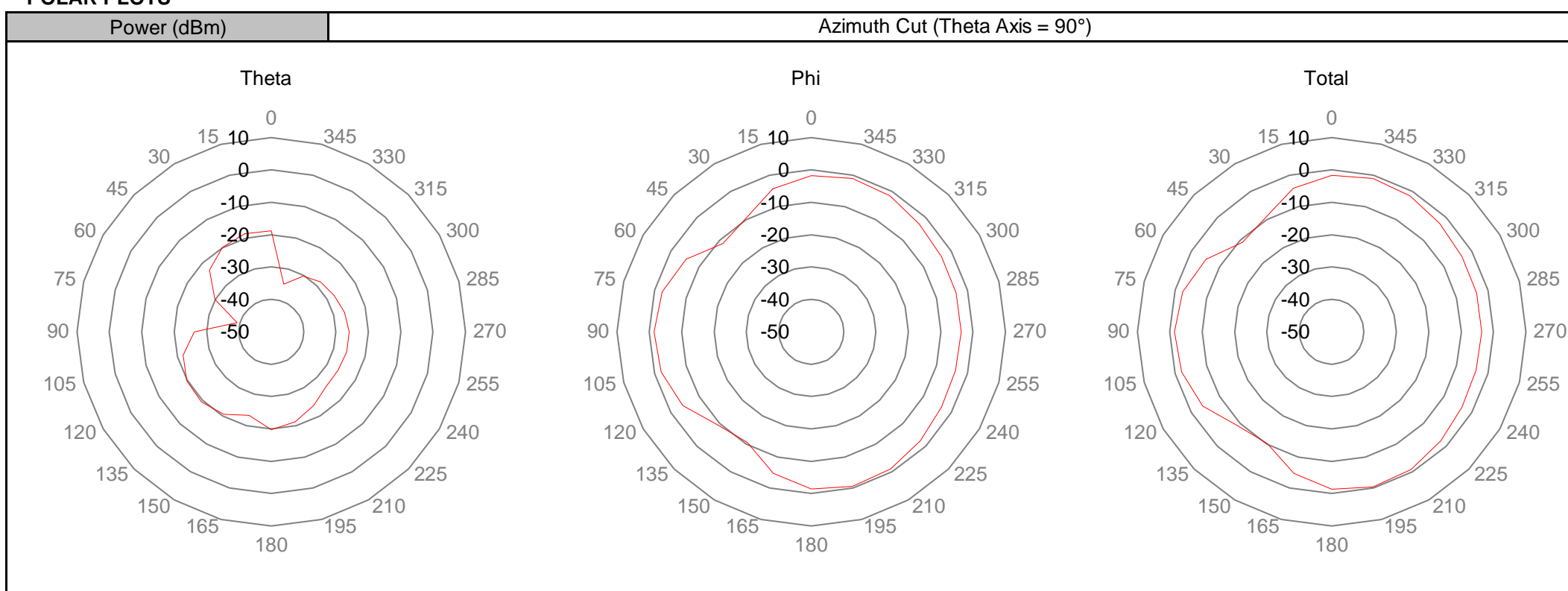
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch7 2450MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

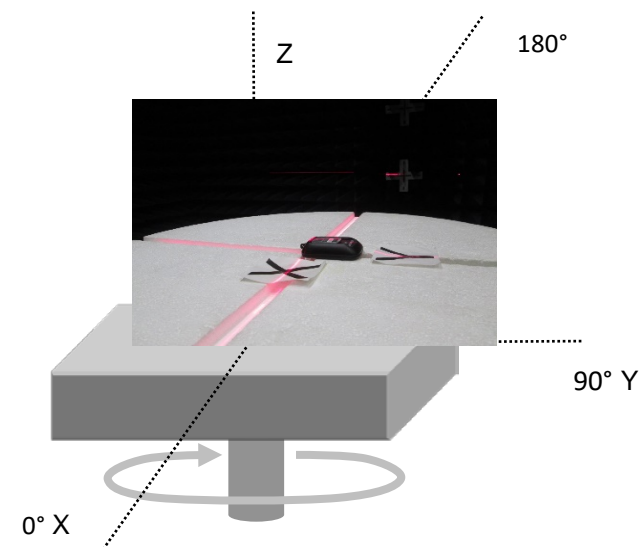
COMMENTS

None

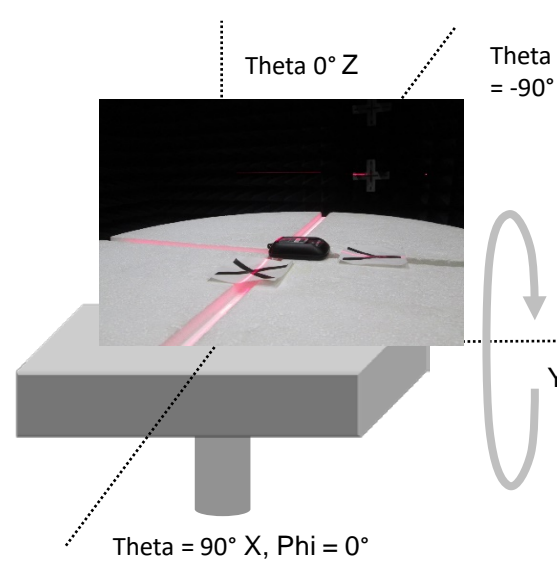
3D PATTERN DATA

Frequency (MHz)	2450
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.31
Peak EIRP (dBm)	-0.14
Directivity (dBi)	2.17
Efficiency (dB)	-6.31
Efficiency (%)	23.38
Gain (dBi)	-4.14
Average Gain (dB)	-6.31
E-Plane 3 dB BW (°)	72.00

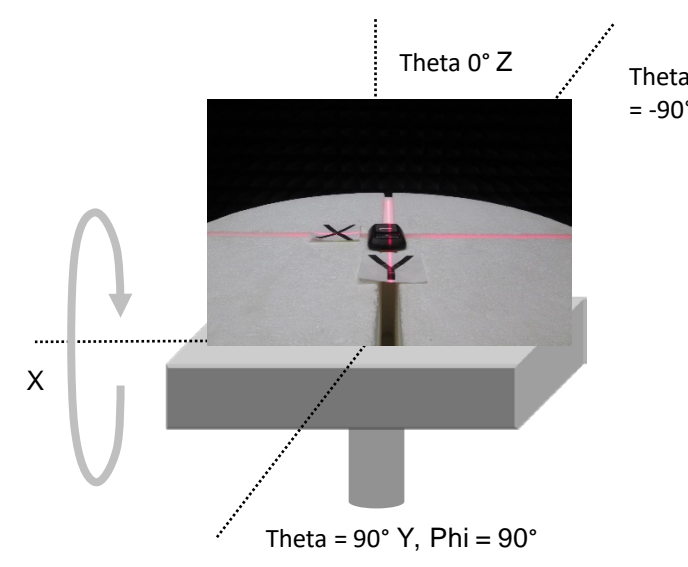
Azimuth Cut (Theta Axis = 90°)



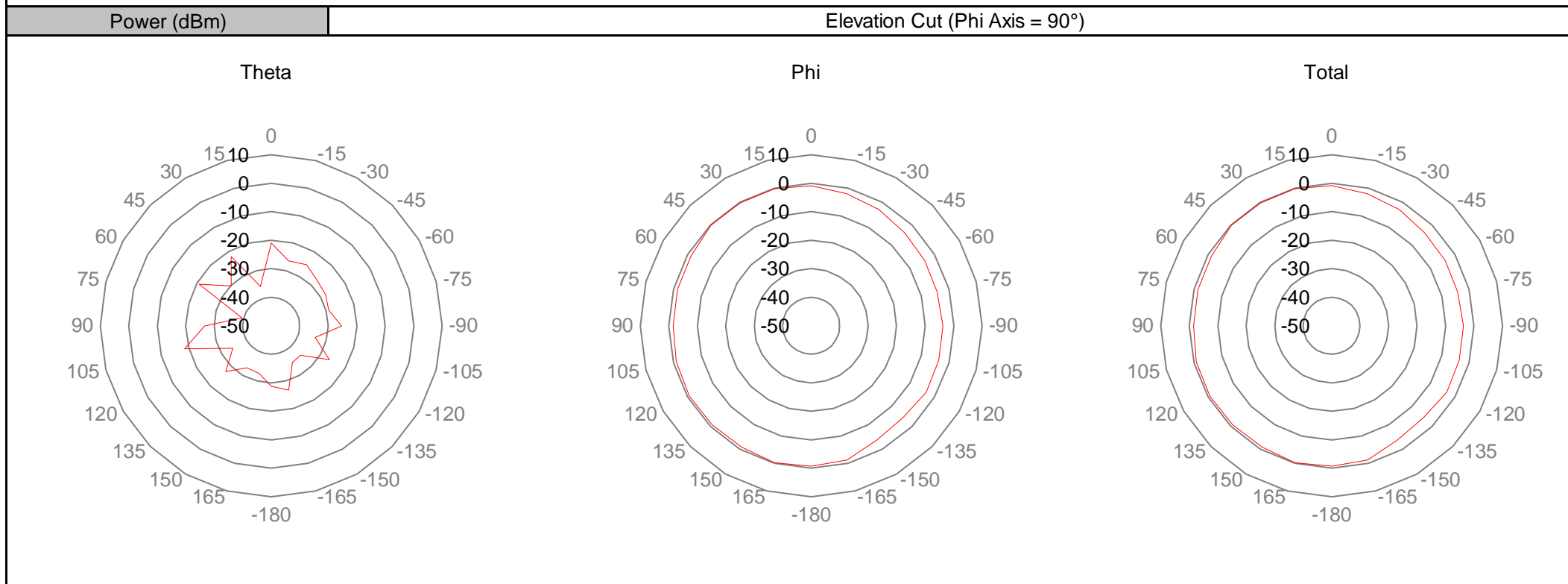
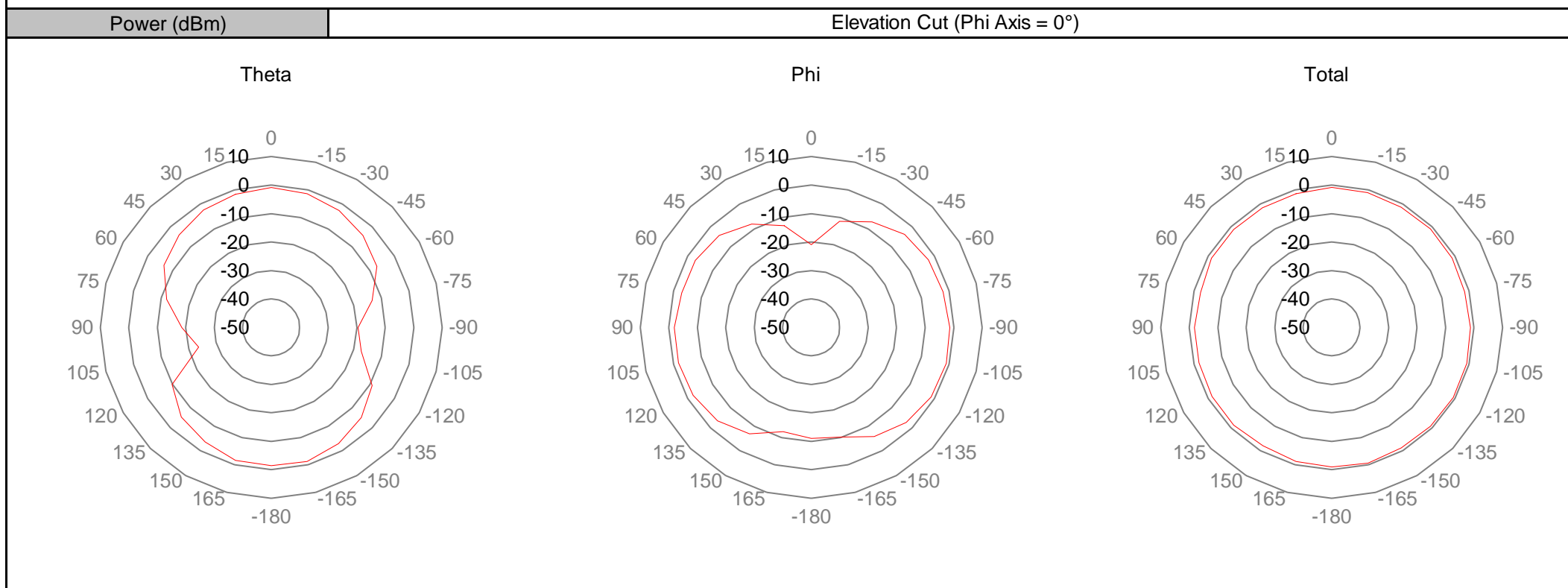
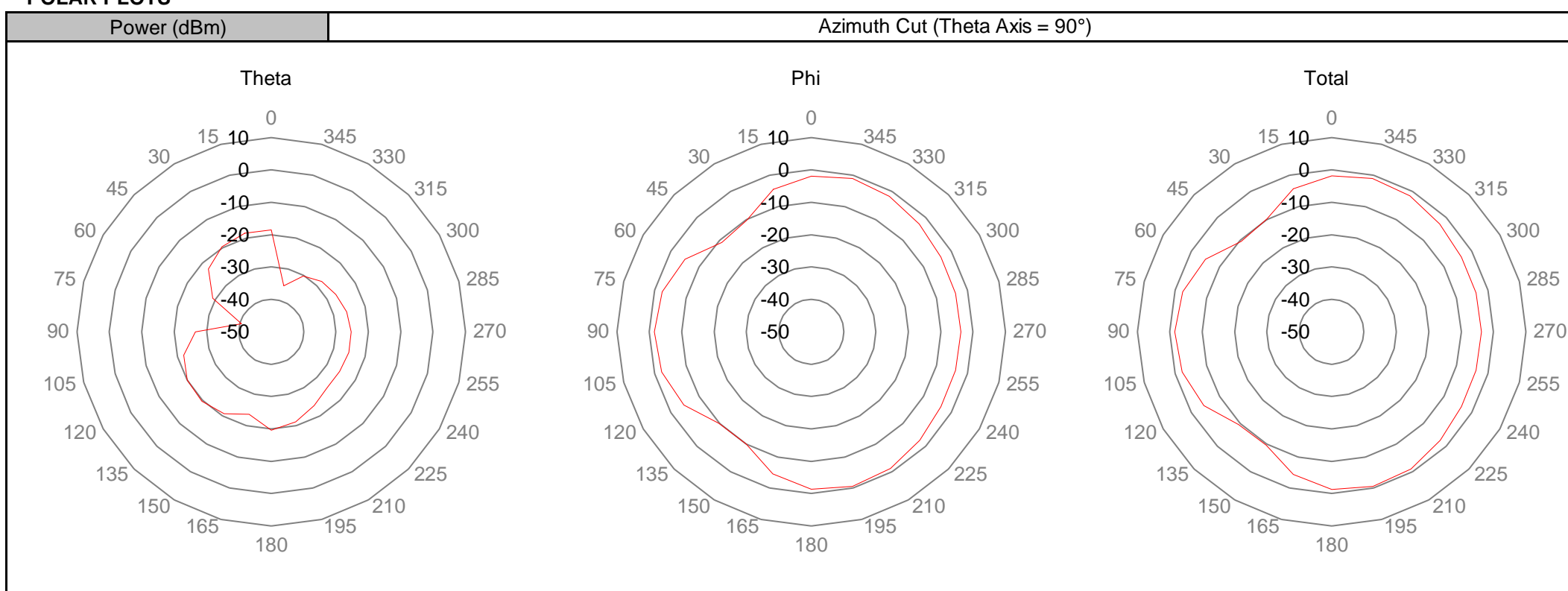
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch7 2455MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

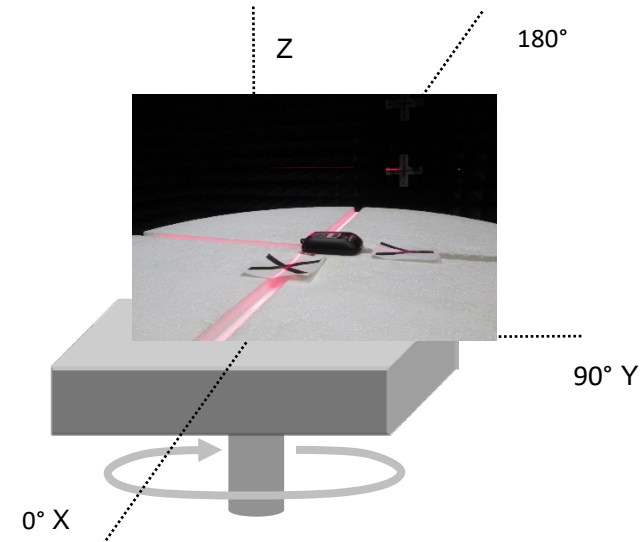
COMMENTS

None

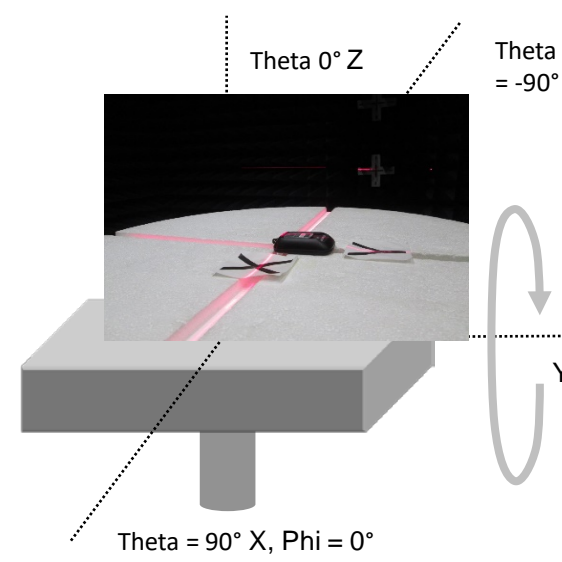
3D PATTERN DATA

Frequency (MHz)	2455
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.15
Peak EIRP (dBm)	0.02
Directivity (dBi)	2.18
Efficiency (dB)	-6.15
Efficiency (%)	24.25
Gain (dBi)	-3.98
Average Gain (dB)	-6.15
E-Plane 3 dB BW (°)	72.00

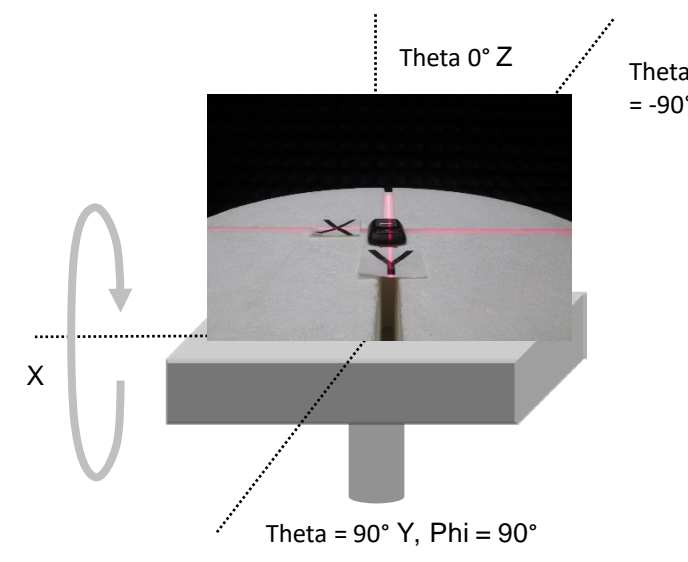
Azimuth Cut (Theta Axis = 90°)



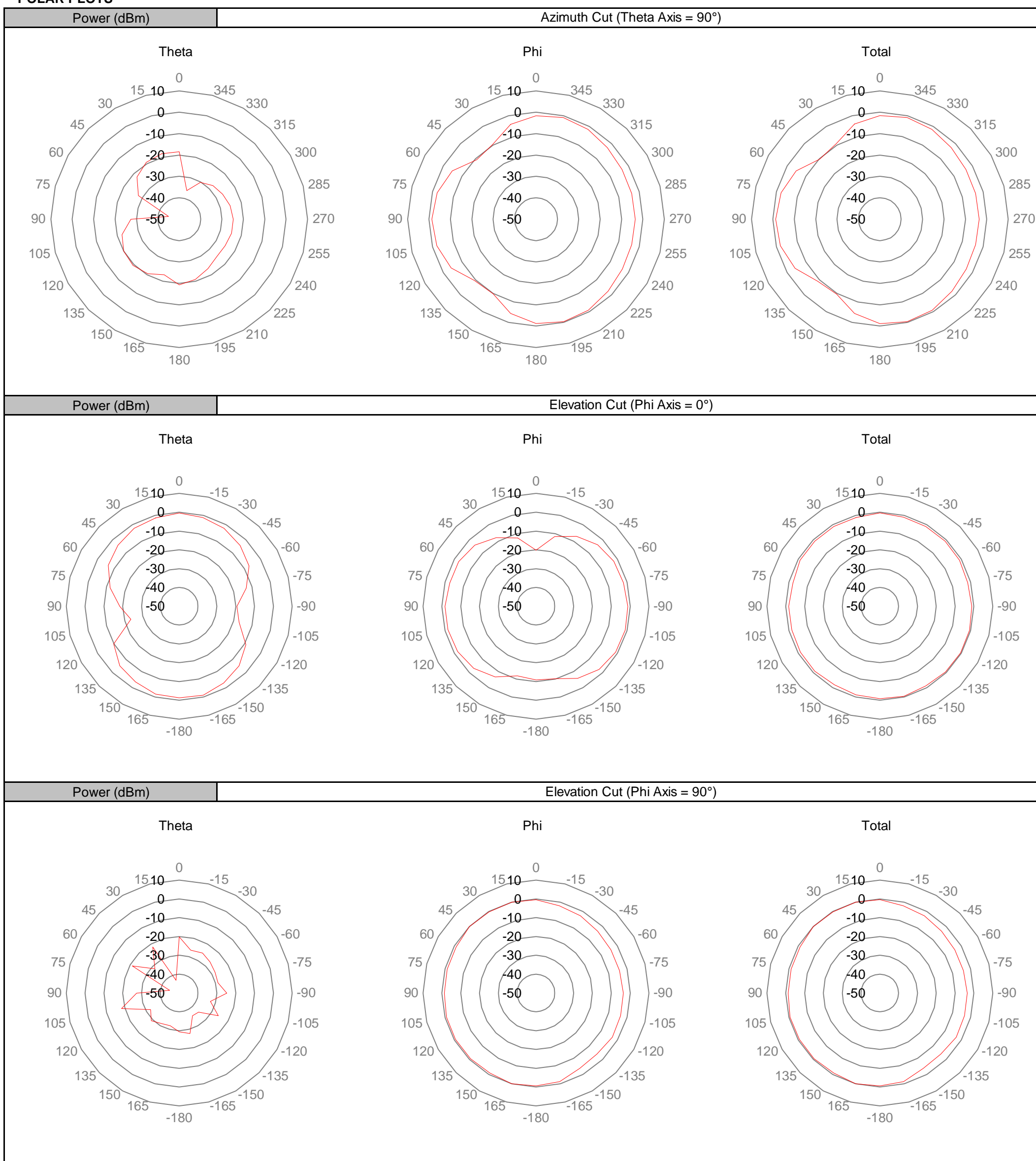
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch7 2460MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

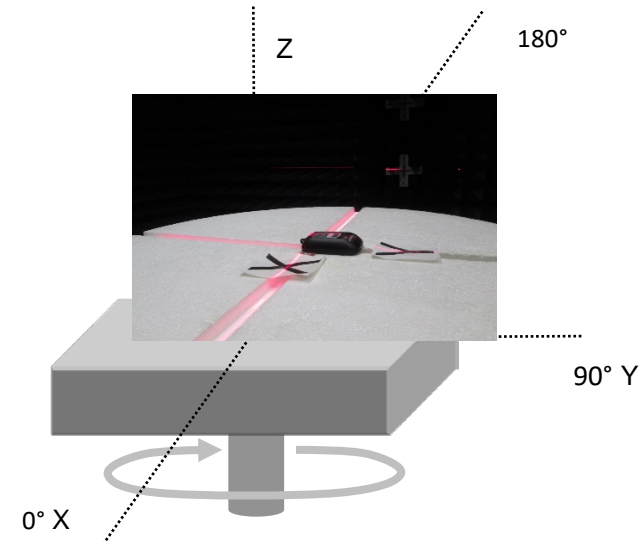
COMMENTS

None

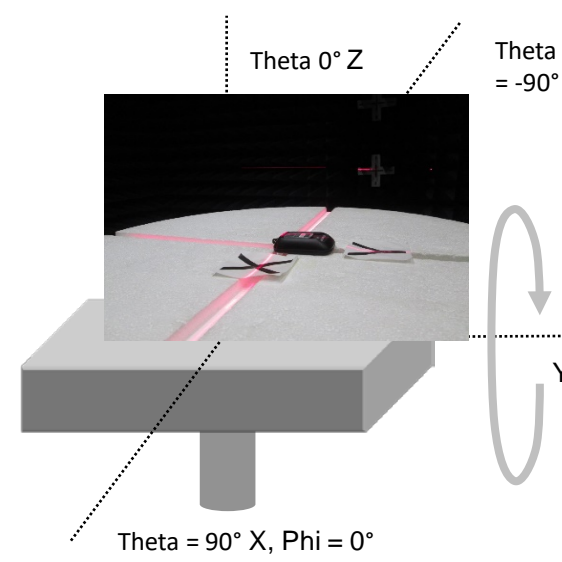
3D PATTERN DATA

Frequency (MHz)	2460
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.08
Peak EIRP (dBm)	0.14
Directivity (dBi)	2.22
Efficiency (dB)	-6.08
Efficiency (%)	24.68
Gain (dBi)	-3.86
Average Gain (dB)	-6.08
E-Plane 3 dB BW (°)	70.00

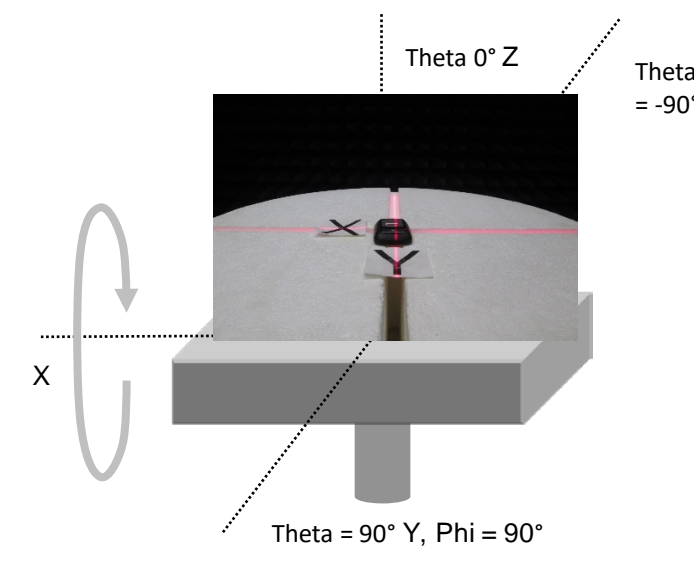
Azimuth Cut (Theta Axis = 90°)



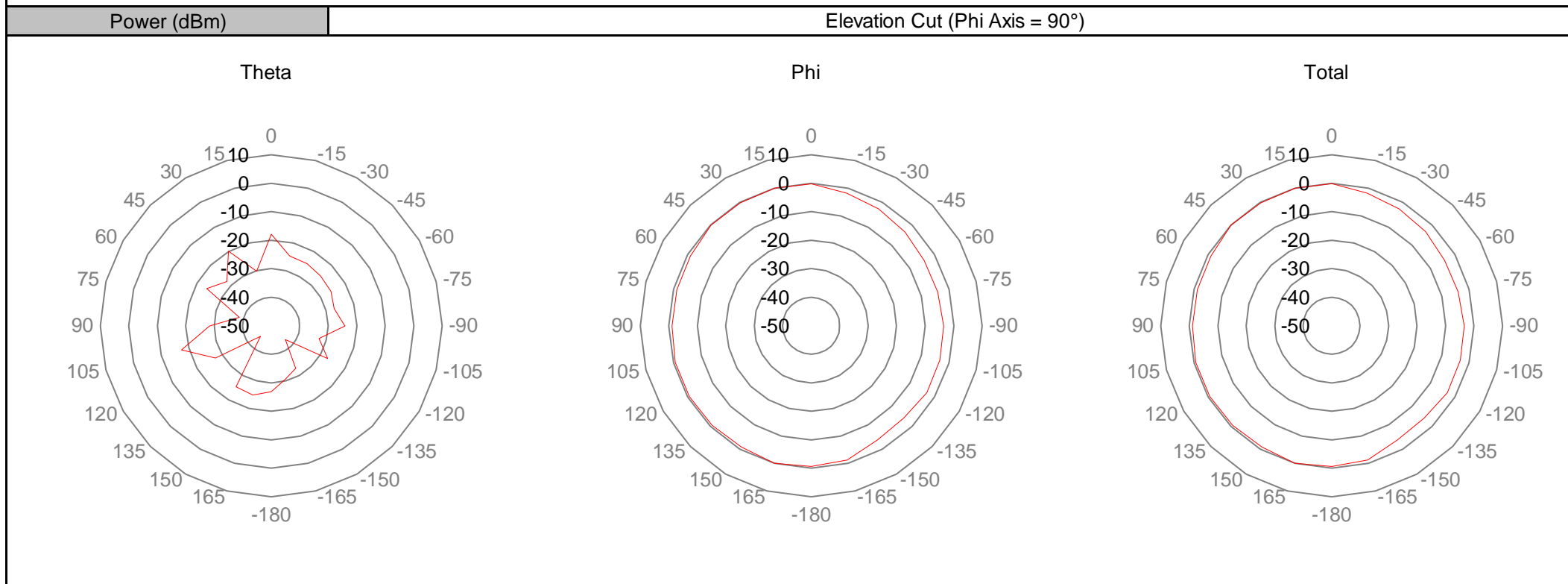
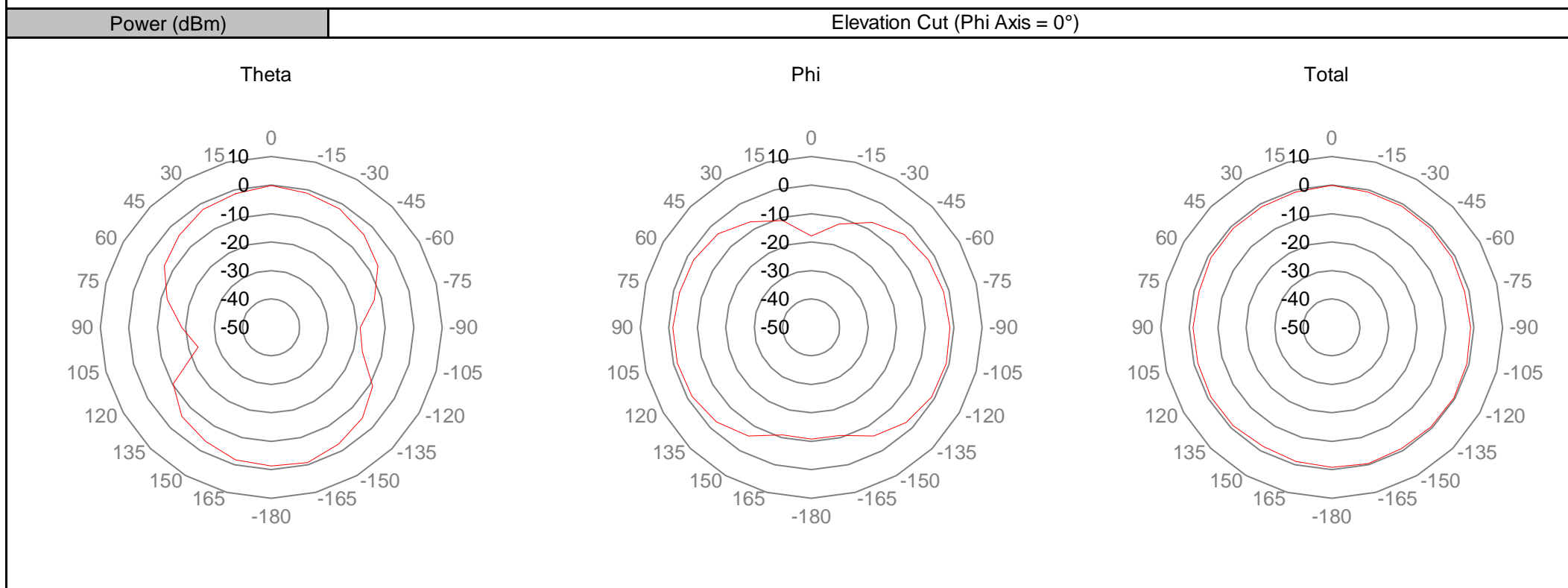
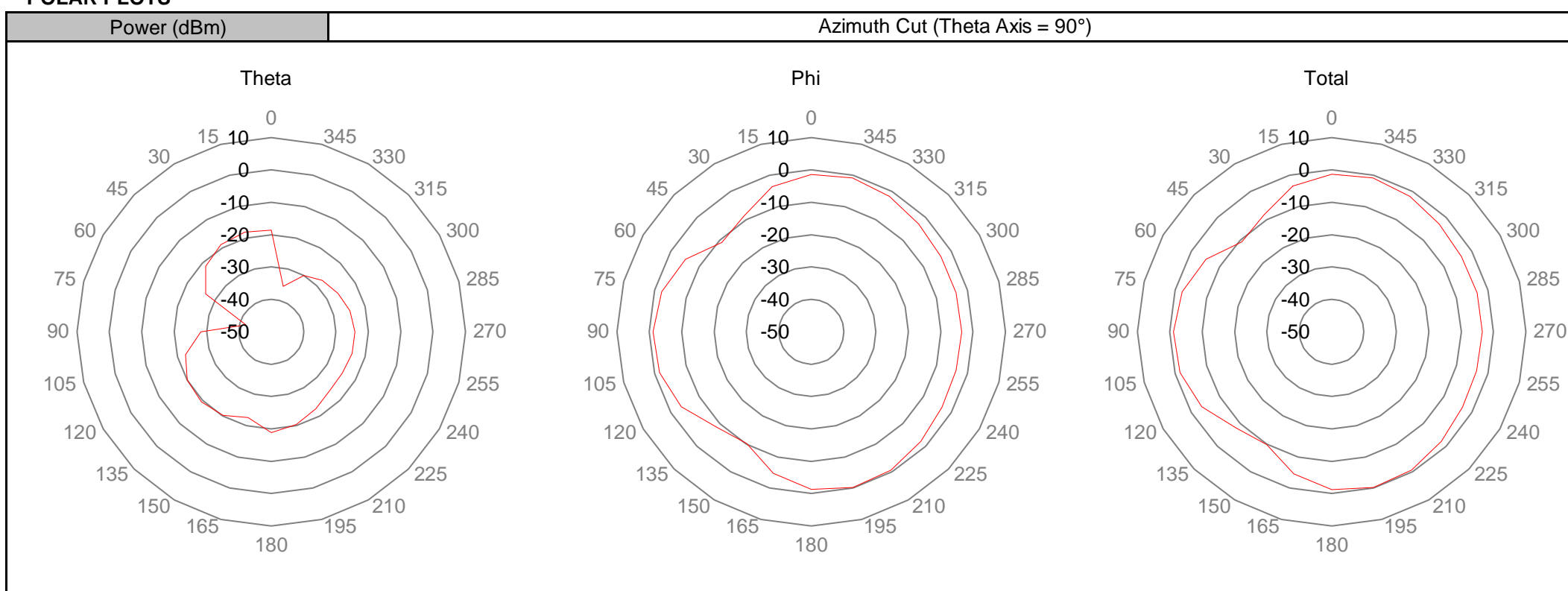
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch12 2465MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

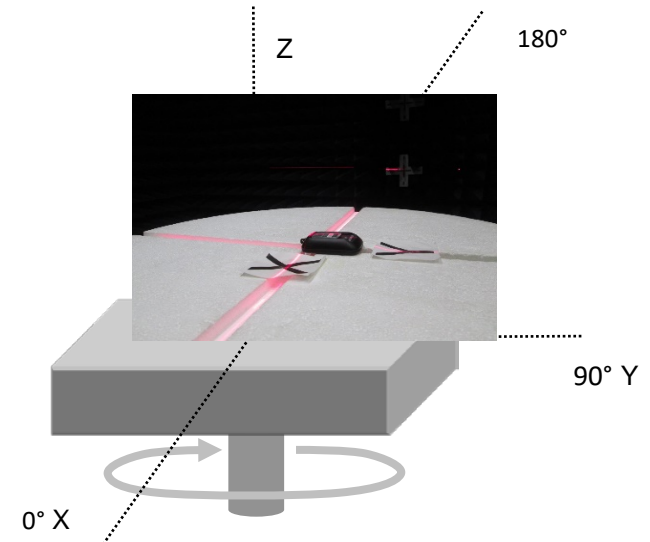
COMMENTS

None

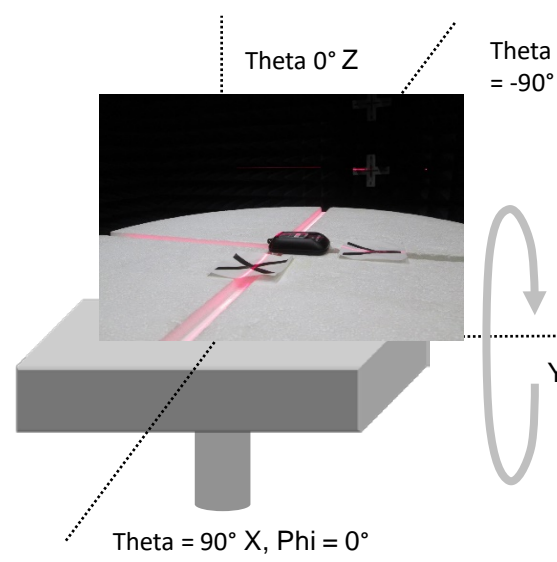
3D PATTERN DATA

Frequency (MHz)	2465
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.26
Peak EIRP (dBm)	0.05
Directivity (dBi)	2.31
Efficiency (dB)	-6.26
Efficiency (%)	23.66
Gain (dBi)	-3.95
Average Gain (dB)	-6.26
E-Plane 3 dB BW (°)	70.00

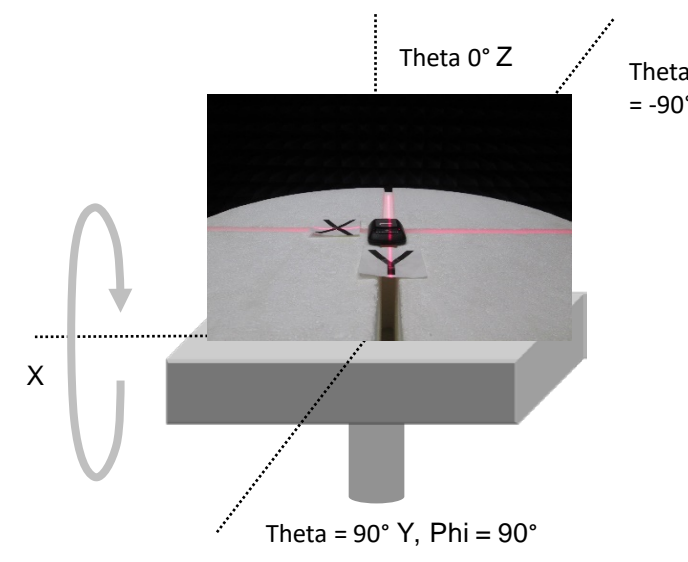
Azimuth Cut (Theta Axis = 90°)



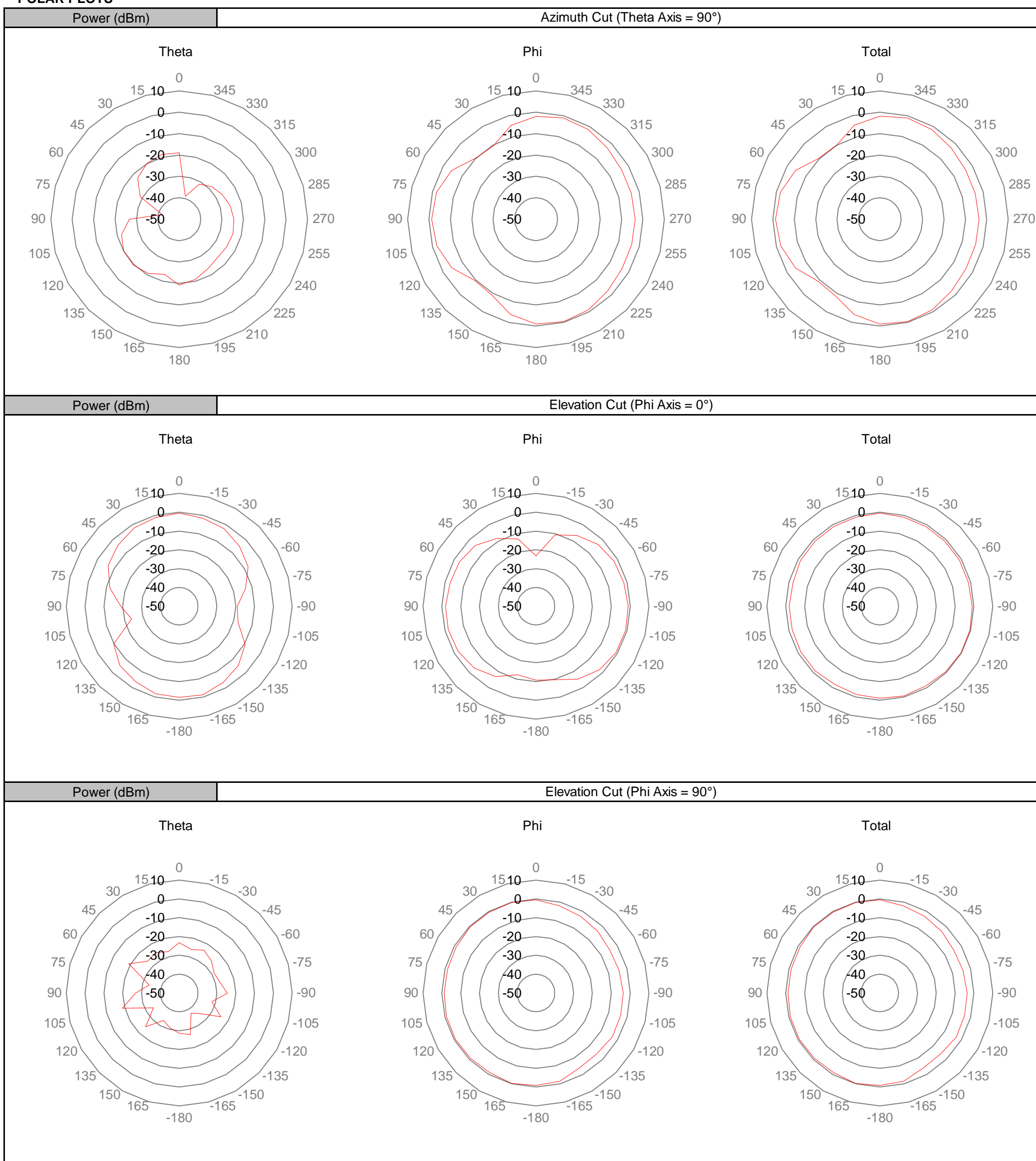
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch12 2470MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

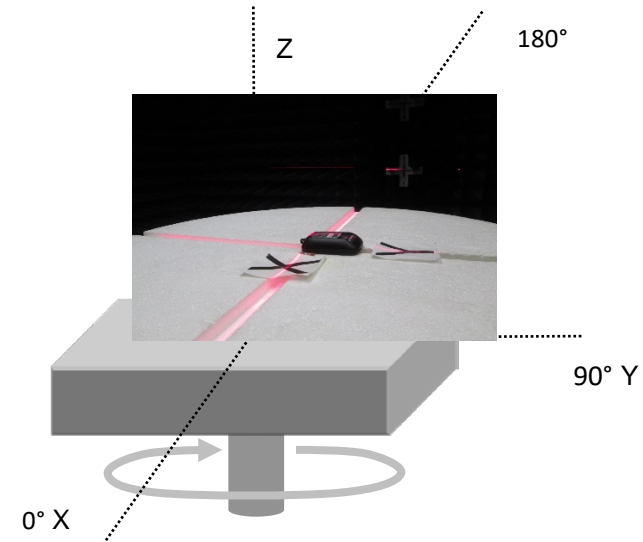
COMMENTS

None

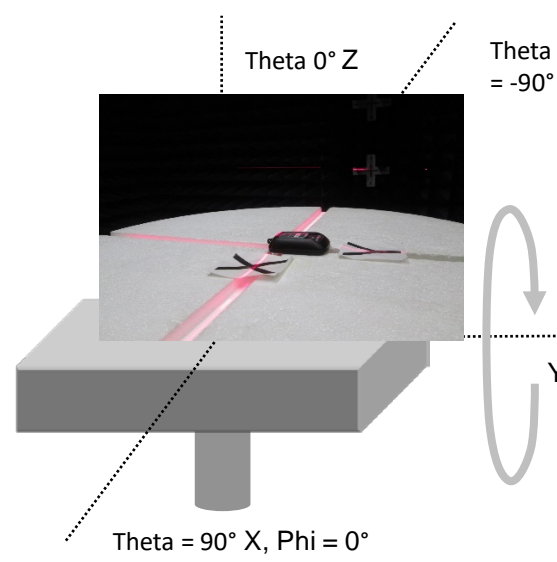
3D PATTERN DATA

Frequency (MHz)	2470
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-2.75
Peak EIRP (dBm)	-0.34
Directivity (dBi)	2.41
Efficiency (dB)	-6.75
Efficiency (%)	21.14
Gain (dBi)	-4.34
Average Gain (dB)	-6.75
E-Plane 3 dB BW (°)	68.00

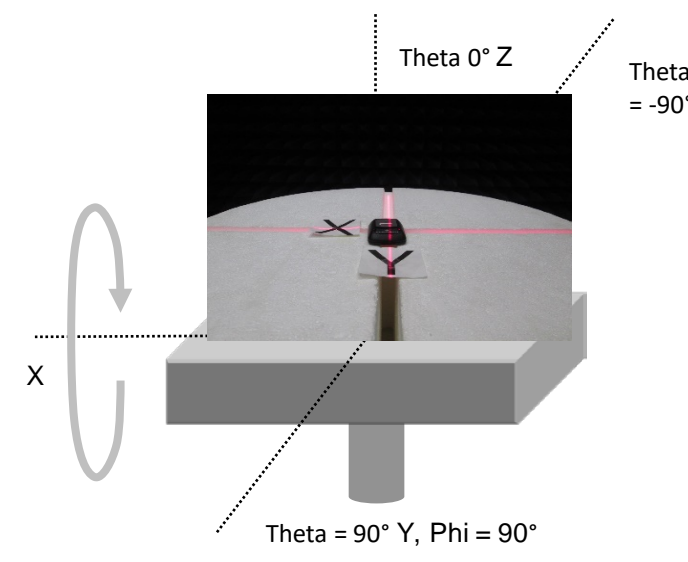
Azimuth Cut (Theta Axis = 90°)



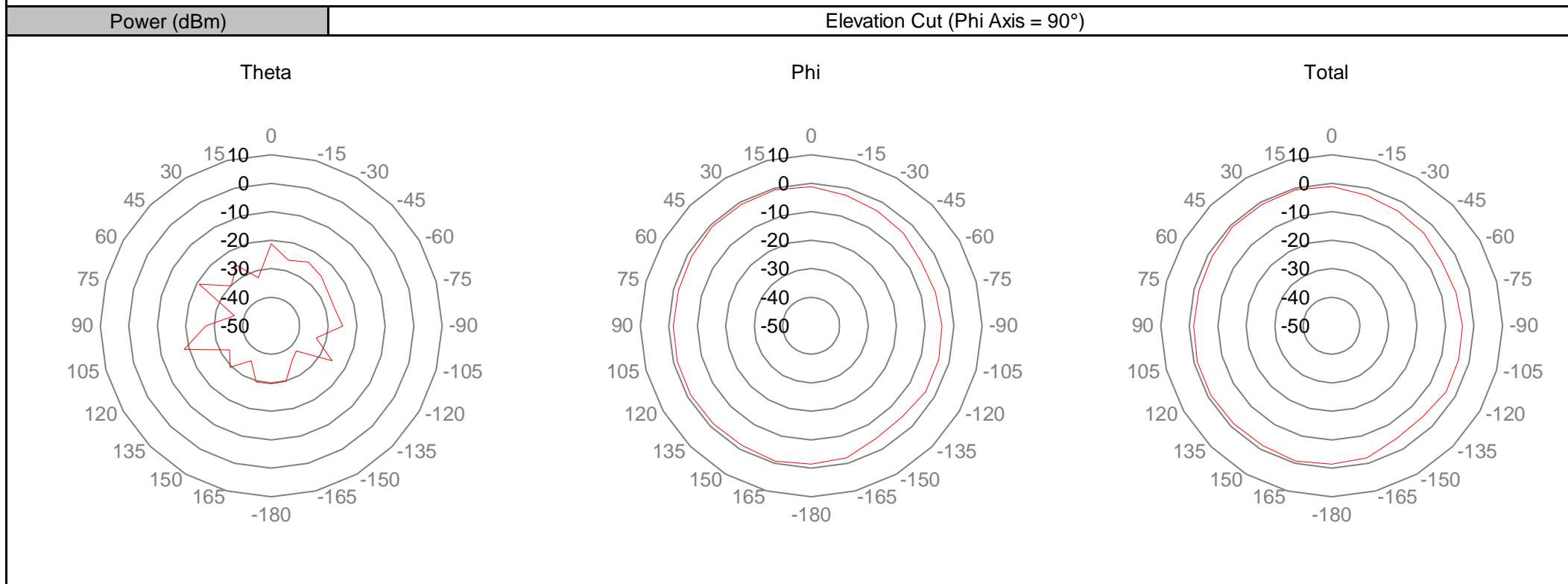
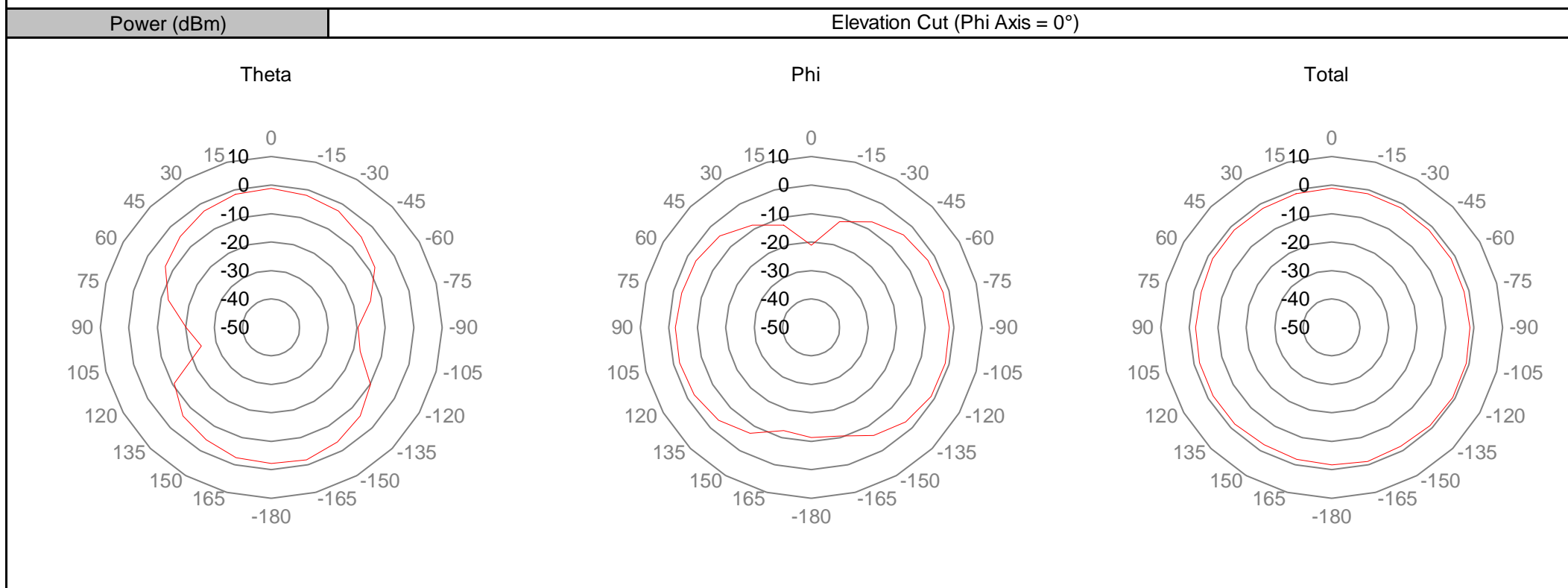
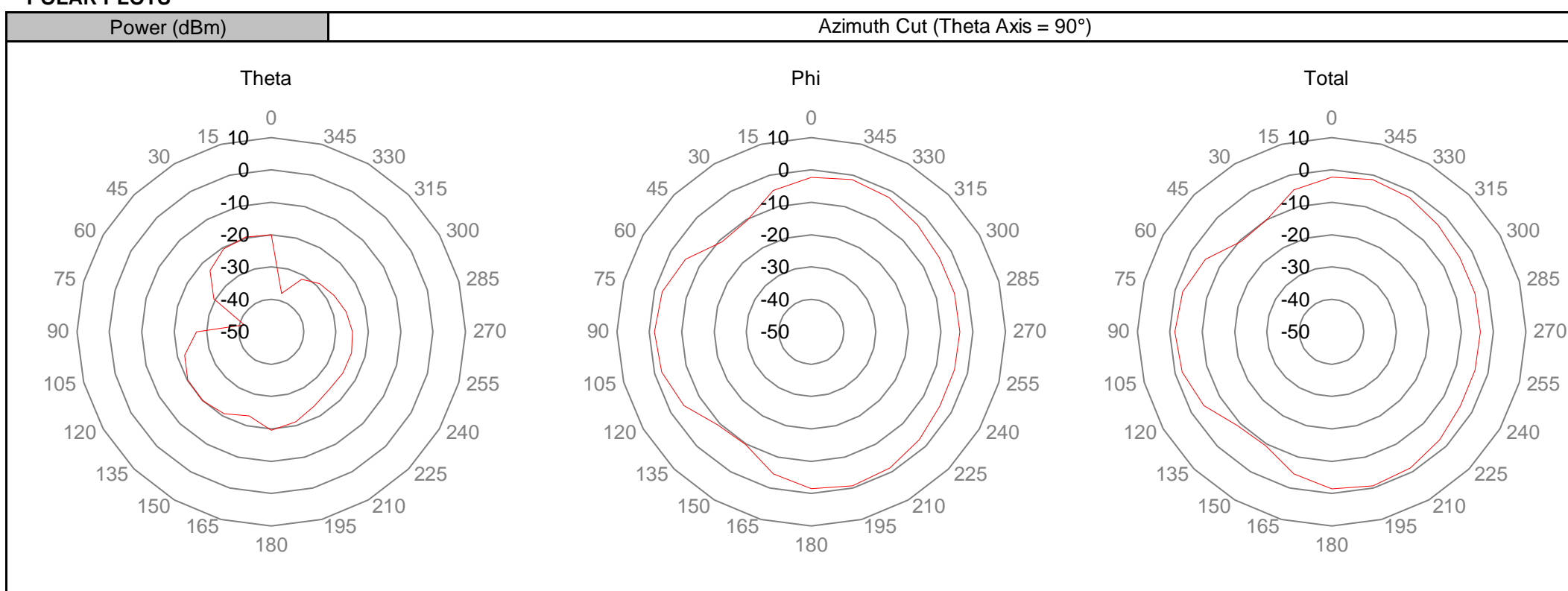
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



OTA 2018.01.04

EUT:	Geo 10
Serial Number:	3401B
Customer:	Emerson Process Management
Attendees:	Merritt Pulkrabek
Customer Project:	None
Tested By:	Kyle McMullan
Test Run Description:	Geo10 Ch12 2475MHz

Work Order:	EMPM0079
Date:	11/12/2019
Temperature:	21.5 °C
Relative Humidity:	19.2% RH
Bar. Pressure:	1031 mbar
Job Site:	MN10

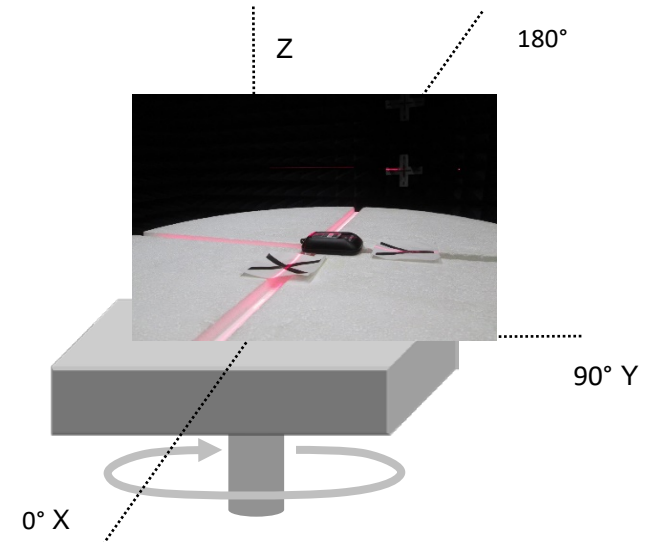
COMMENTS

None

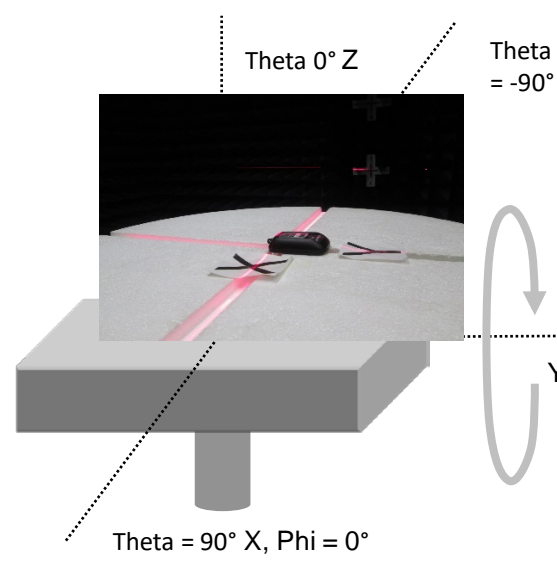
3D PATTERN DATA

Frequency (MHz)	2475
Ant. Port Input Pwr. (dBm)	4.00
Tot. Rad. Pwr. (dBm)	-3.31
Peak EIRP (dBm)	-0.82
Directivity (dBi)	2.49
Efficiency (dB)	-7.31
Efficiency (%)	18.60
Gain (dBi)	-4.82
Average Gain (dB)	-7.31
E-Plane 3 dB BW (°)	67.00

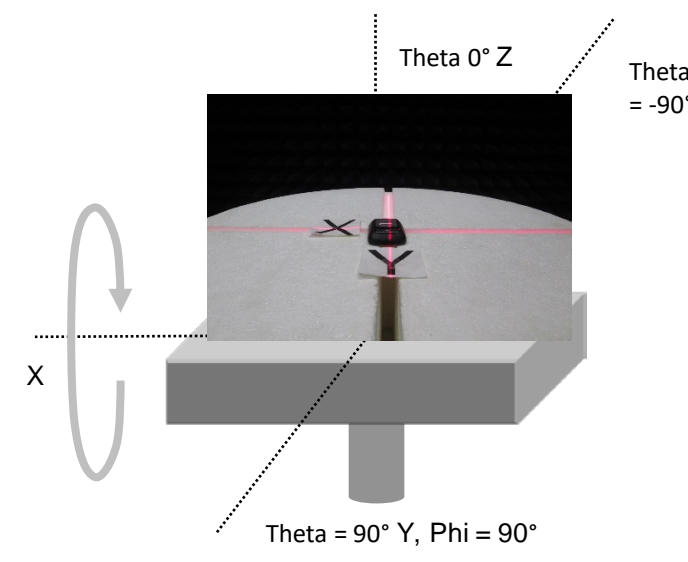
Azimuth Cut (Theta Axis = 90°)



Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS

