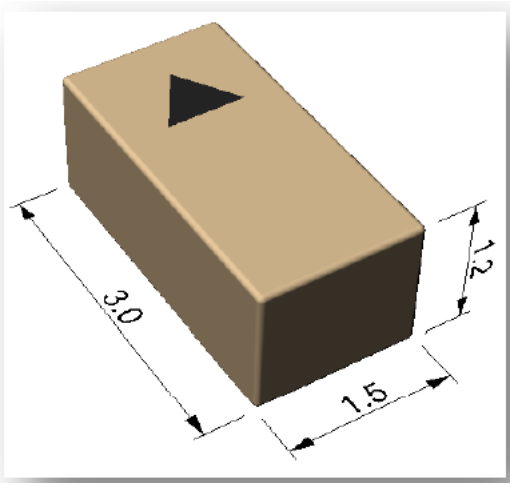
Antenna spec

Antenna size	56x5.8mm
Freq range	2.4GHz-2.48GHz
VSWR	2 Max
Gain	2.21dBi max
Inpedance	50ohm
Antenna type	SMT chip antenna
Polarization	Linear
Max Power	200mW
Operating temp	-20 to +55 deg celcius
Interconnection and cable assembly	Part of the PCB so no RF cable or Coax connection.
Manufacturer:	Amotech
PN:	AMAN301512ST01
Testing LAB	Hermon labs - https://hermonlabs.com/

Manufacturer and address	**AMOTECH Co., Ltd.** 5BL-1Lot, 617, Namchon-Dong, Namdong-Gu, Incheon, Korea **Dielectric Chip Antenna** P/N : AMAN301512ST01
Antennatesting laboratory	Hermon Laboratories Ltd. 66 Hatachana St., POB 23 Binyamina 3055001, Israel Tester: Stanislav Sugatov Test Engineer EMC & Radio stanislav.s@hermonlabs.com Phone: +972 4 628 8001

Antenna dimension:



Antenna Horn:	HL2432
Manufacturer:	EMC Test Systems
Model:	3115
Date of Calibration:	12-July-24
Calibration Service Provided:	Hermon Laboratories
Calibration Perioud:	1 year

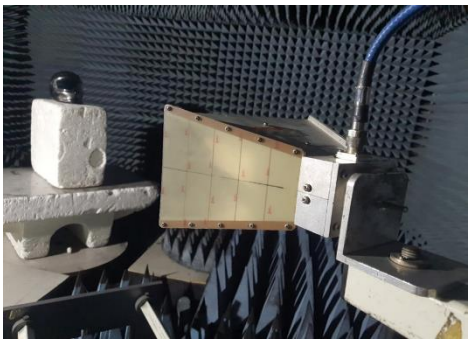
EXA Signal Analyzer:	HL5376
Manufacturer:	Keysight Technologies
Model:	N9010B
Date of Calibration:	8-Jan-24
Calibration Service Provided:	Hermon Laboratories
Calibration Perioud:	1 year

Cable:	HL5668
Manufacturer:	Huber-Suhner
Model:	SF126EA
Date of Calibration:	22-Jun-24
Calibration Service Provided:	Hermon Laboratories
Calibration Perioud:	1 year

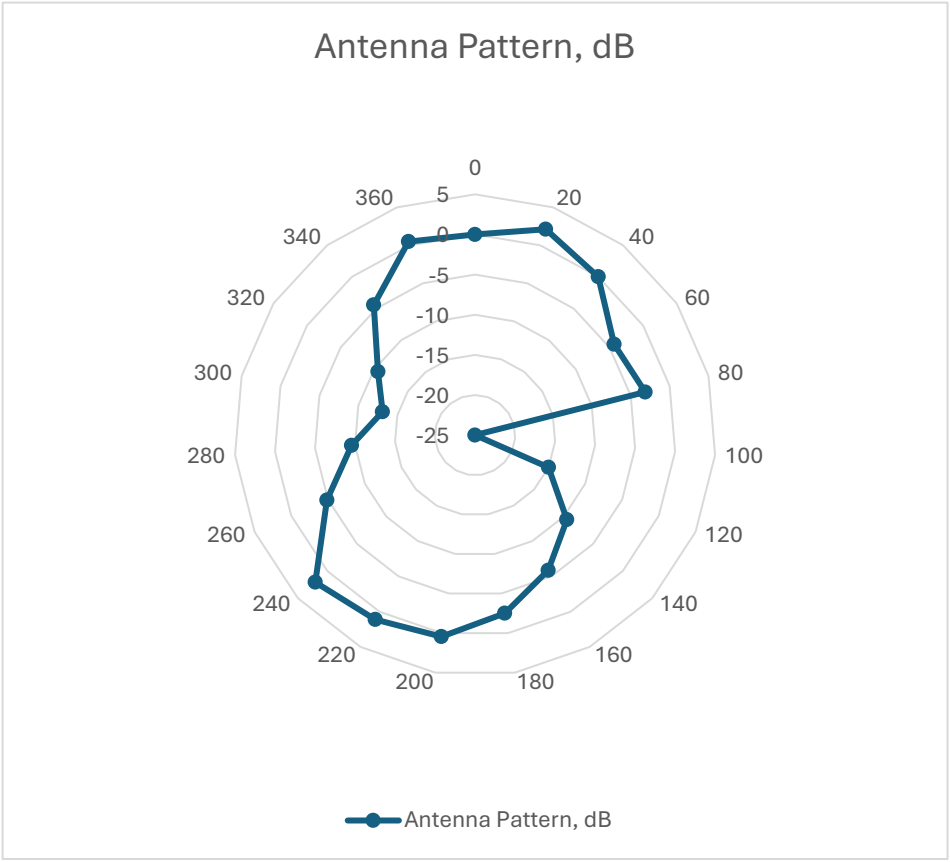
Antenna Horn:	HL5673
Manufacturer:	Huber-Suhner
Model:	SF126EA
Date of Calibration:	19-May-24
Calibration Service Provided:	Hermon Laboratories
Calibration Perioud:	1 year

	Name and Title	**Date**	**Signature**
Tested by:	Mr. S. Sugatov, test engineer, EMC & Radio	19-Jun-24	
Reviewed by:	Mrs. S. Peysahov Sheynin, certification specialist, EMC & Radio	18-Jul-24	

2480 MHz vertical poz Y



V pozition of EUT			
Frequency:	2480	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	70	-26.74	0.00
20	72.12	-24.62	2.12
40	70	-26.74	0.00
60	65.7	-31.04	-4.30
80	66.87	-29.87	-3.13
100	45	-51.74	-25.00
120	55	-41.74	-15.00
140	60.55	-36.19	-9.45
160	64.15	-32.59	-5.85
180	67.5	-29.24	-2.50
200	70.45	-26.29	0.45
220	71.12	-25.62	1.12
240	72.05	-24.69	2.05
260	65.15	-31.59	-4.85
280	60.43	-36.31	-9.57
300	56.89	-39.85	-13.11
320	59.45	-37.29	-10.55
340	65.55	-31.19	-4.45
360	70.5	-26.24	0.50



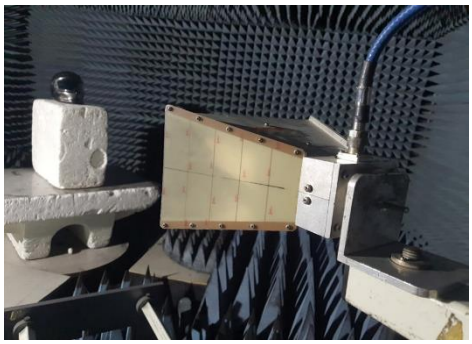
Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2480	MHz	
SA reading	103.87	dBuV/m	Substitution
AG, dBi	10.3	dBi	
Cable Loss	3.17	dB	
Antenna polarization Vertical			
Antenna Horn HL 4474			

-96.74

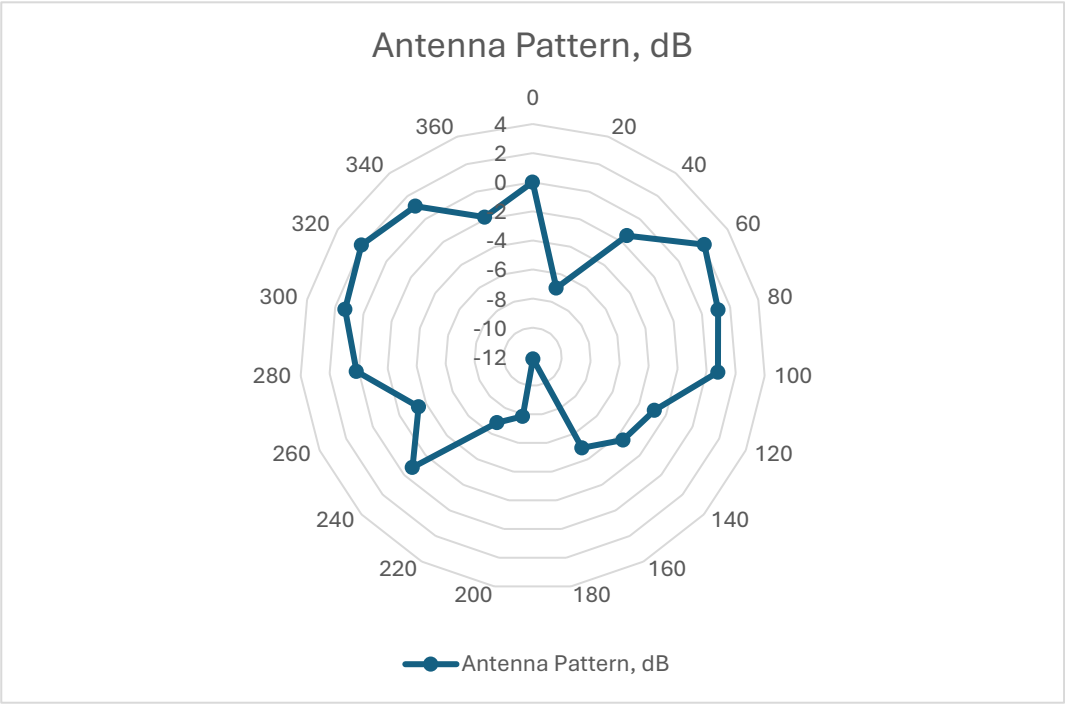
Gain measurement calculation:

(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)

2480 MHz Horizontal poz X



H pozition of EUT			
Frequency:	2480	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	67	-29.74	0.00
20	60	-36.74	-7.00
40	65.55	-31.19	-1.45
60	69.1	-27.64	2.10
80	68.15	-28.59	1.15
100	67.78	-28.96	0.78
120	64.15	-32.59	-2.85
140	63.45	-33.29	-3.55
160	62.12	-34.62	-4.88
180	55.15	-41.59	-11.85
200	59.15	-37.59	-7.85
220	60.15	-36.59	-6.85
240	66.23	-30.51	-0.77
260	63.56	-33.18	-3.44
280	67.15	-29.59	0.15
300	68.3	-28.44	1.30
320	69.05	-27.69	2.05
340	68.12	-28.62	1.12
360	65.15	-31.59	-1.85



Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2480	MHz	
SA reading	103.87	dBuV/m	Substitution
AG, dBi	10.3	dBi	
Cable Loss	3.17	dB	
Antenna polarization Vertical			
Antenna Horn HL 4474			

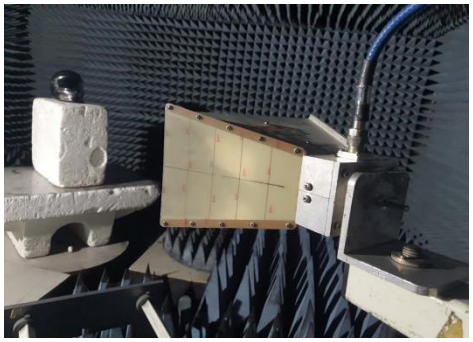
-96.74

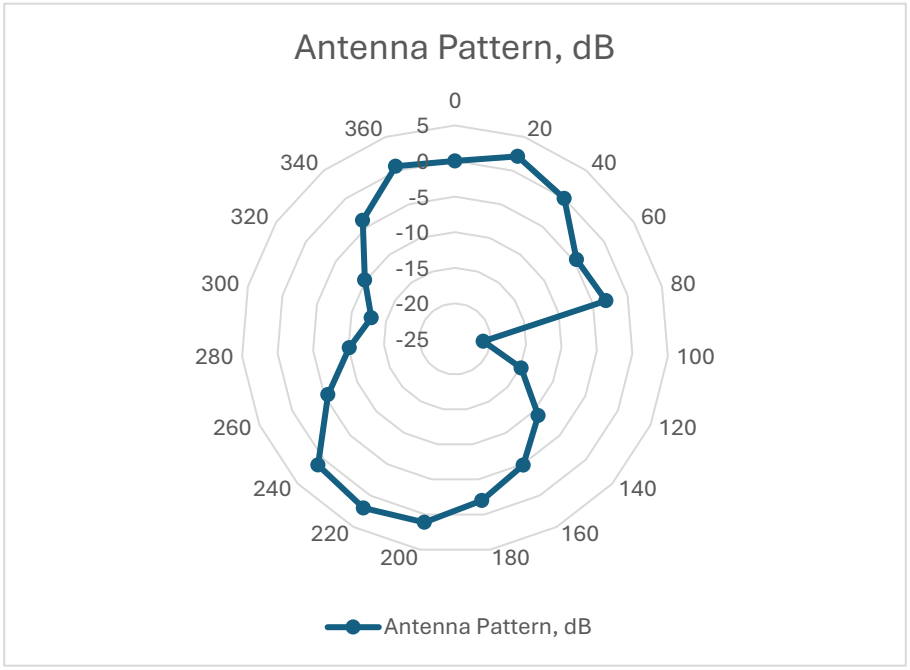
Gain measurement calculation:

=-(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)

2440 MHz vertical poz.Y

V pozition of EUT			
Frequency:	2440	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	70	-26.42	0.00
20	72.12	-24.3	2.12
40	70	-26.42	0.00
60	65.4	-31.02	-4.60
80	66.89	-29.53	-3.11
100	49	-47.42	-21.00
120	55.15	-41.27	-14.85
140	60.89	-35.53	-9.11
160	65.15	-31.27	-4.85
180	68	-28.42	-2.00
200	71.12	-25.3	1.12
220	72	-24.42	2.00
240	71.15	-25.27	1.15
260	64.48	-31.94	-5.52
280	59.89	-36.53	-10.11
300	57.12	-39.3	-12.88
320	60.13	-36.29	-9.87
340	66.11	-30.31	-3.89
360	70.65	-25.77	0.65





Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2440	MHz	
SA reading	103.5	dBuV/m	Substitution
AG, dBi	10.2	dBi	
Cable Loss	3.12	dB	
Antenna polarization Vertical Antenna Horn HL 4474			

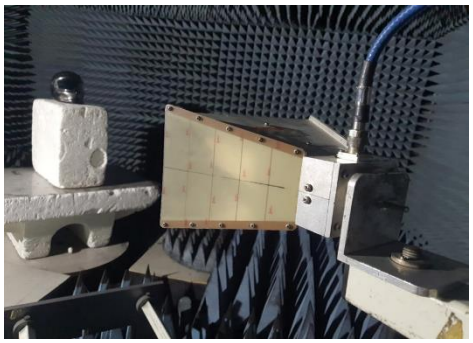
-96.42

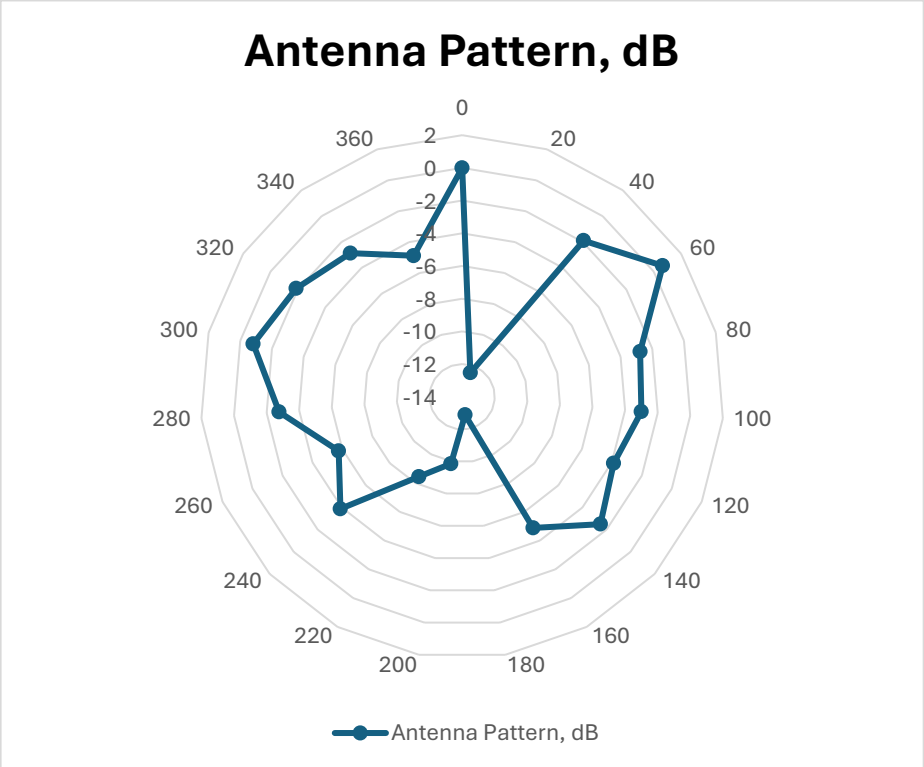
Gain measurement calculation:

=-(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)

2440 MHz horizontal poz.X

H pozition of EUT			
Frequency:	2440	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	67	-29.42	0.00
20	54.55	-41.87	-12.45
40	65.1	-31.32	-1.90
60	67.65	-28.77	0.65
80	64.23	-32.19	-2.77
100	64	-32.42	-3.00
120	63.12	-33.3	-3.88
140	64.5	-31.92	-2.50
160	62.12	-34.3	-4.88
180	54.12	-42.3	-12.88
200	57.15	-39.27	-9.85
220	58.56	-37.86	-8.44
240	63.12	-33.3	-3.88
260	61.25	-35.17	-5.75
280	64.23	-32.19	-2.77
300	66.18	-30.24	-0.82
320	65.12	-31.3	-1.88
340	64.13	-32.29	-2.87
360	62.12	-34.3	-4.88





Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2440	MHz	
SA reading	103.5	dBuV/m	Substitution
AG, dBi	10.2	dBi	
Cable Loss	3.12	dB	
Antenna polarization Vertical			
Antenna Horn HL 4474			

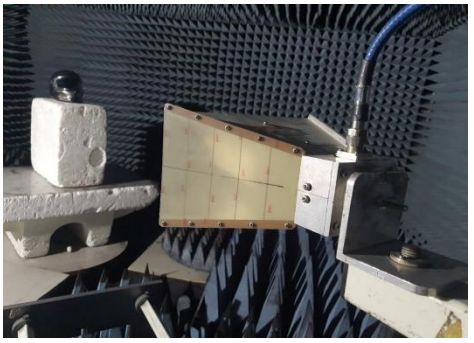
-96.42

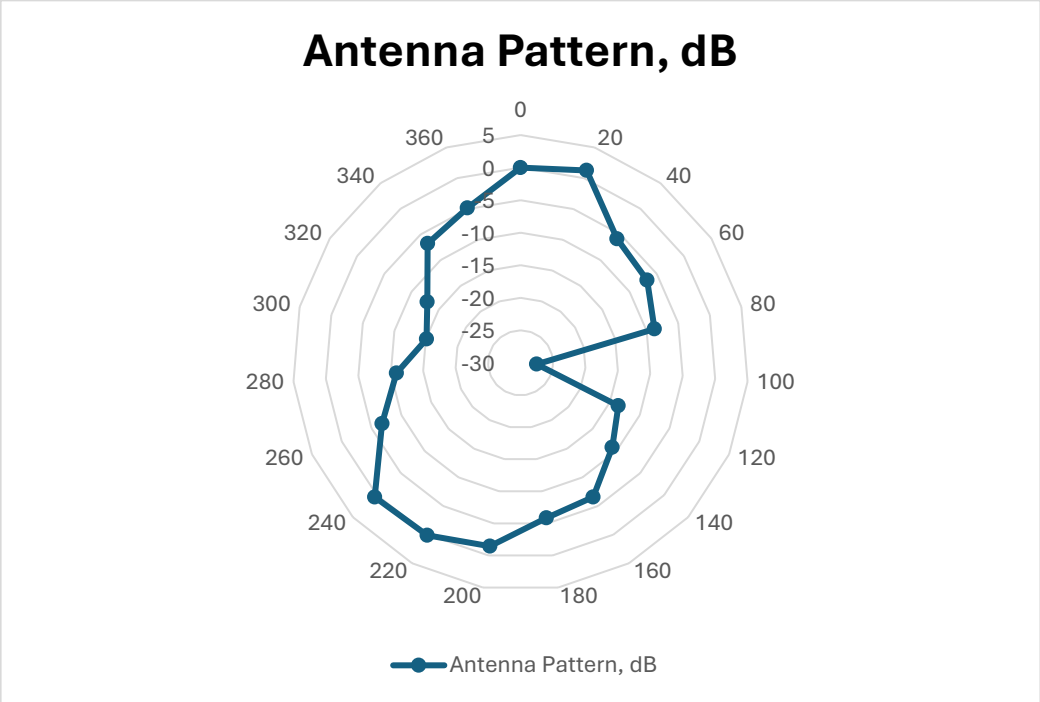
Gain measurement calculation:

=-(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)

2405 MHz vertical poz.Y

V pozition of EUT			
Frequency:	2405	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	70	-26.39	0.00
20	71.26	-25.13	1.26
40	64.15	-32.24	-5.85
60	63.23	-33.16	-6.77
80	61.23	-35.16	-8.77
100	42.5	-53.89	-27.50
120	56.41	-39.98	-13.59
140	59.15	-37.24	-10.85
160	63.45	-32.94	-6.55
180	64.15	-32.24	-5.85
200	68.56	-27.83	-1.44
220	70.12	-26.27	0.12
240	70.45	-25.94	0.45
260	63.23	-33.16	-6.77
280	59.12	-37.27	-10.88
300	54.89	-41.5	-15.11
320	57.12	-39.27	-12.88
340	63.23	-33.16	-6.77
360	65.15	-31.24	-4.85





Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2405	MHz	
SA reading	103.2	dBuV/m	Substitution
AG, dBi	9.9	dBi	
Cable Loss	3.09	dB	
Antenna polarization Vertical Antenna Horn HL 4474			

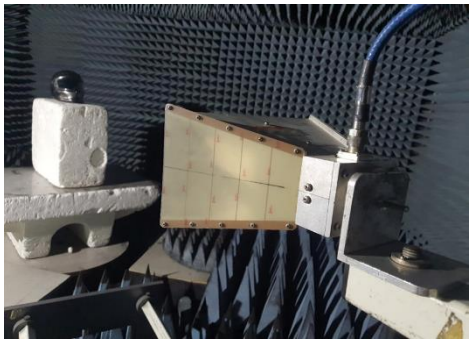
-96.39

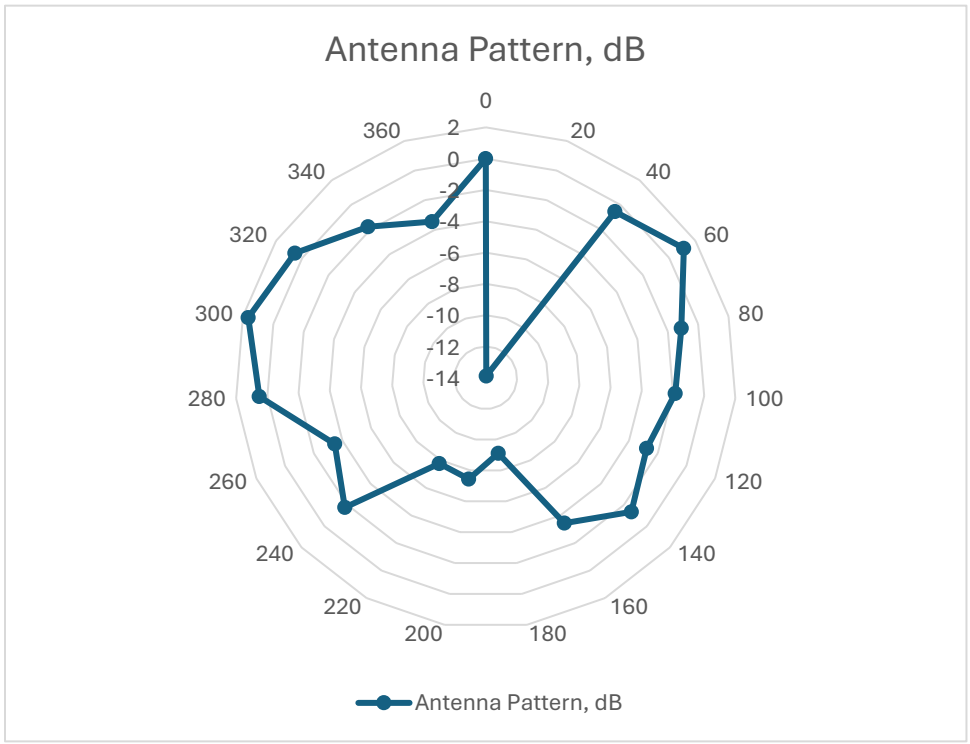
Gain measurement calculation:

=-(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)

2405 MHz horizontal poz.X

H pozition of EUT			
Frequency:	2405	MHz	
Angle (deg)	Spectrum Analyzer reading (dBuV/m)	EIRP, dBm	Antenna Pattern, dB
0	67	-29.39	0.00
20	53.12	-43.27	-13.88
40	66.45	-29.94	-0.55
60	68.12	-28.27	1.12
80	65.89	-30.5	-1.11
100	65.15	-31.24	-1.85
120	64.23	-32.16	-2.77
140	65.65	-30.74	-1.35
160	63.56	-32.83	-3.44
180	57.89	-38.5	-9.11
200	59.56	-36.83	-7.44
220	59.23	-37.16	-7.77
240	65.23	-31.16	-1.77
260	63.53	-32.86	-3.47
280	67.51	-28.88	0.51
300	68.65	-27.74	1.65
320	67.56	-28.83	0.56
340	65.23	-31.16	-1.77
360	63.55	-32.84	-3.45





Spectrum Analizer Data			
Span	10	MHz	sweep time 20 ms
RBW	1000	kHz	
VBW	3000	kHz	
Ref Level	120	dBuV/m	
SG	0	dBm	
F, MHz	2405	MHz	
SA reading	103.2	dBuV/m	Substitution
AG, dBi	9.9	dBi	
Cable Loss	3.09	dB	
Antenna polarization Vertical Antenna Horn HL 4474			

-96.39

Gain measurement calculation:

=-(Refernce SA reading)+(SA reading of Antenna Power)+(Refernce Signal Generator RF Power)+(Ref Antenna gain)-(Refrence Antenna cable loss)