

Test report

N° : **SPEC26AA1346_V3**

Cancels and replaces test report number SPEC26AA1346 V2

RF Test Report

Delivered to : Eliwell Controls srl Via Dell'Industria, 15 Zona Industriale Paludi
32016 Alpago (BL), Italy

Device under test : AIR EDGE WiFi Ethernet RS485 SD 100-240V

Reference : AEBWE0T0001100

Trade mark : Eliwell by SCHNEIDER ELECTRIC

Manufacturer : Eliwell Controls srl

Type/Nature of test : Antenna gain & pattern measurement WIFI 5GHz

Standard : Non standard test method

Date(s) of the tests : From 14/01/2026 to 15/01/2026

Place of tests : F-Lab Site Volta

Results

Gain value :

U EUT (V)	Channel		Frequency (MHz)	2D peak Gain (dBi)	3D peak Gain (dBi)
230 Vac	Low	36	5180	7.73	8.41
230 Vac	Medium	100	5500	7.99	8.61
230 Vac	High	165	5825	8.02	8.71

The results obtained during the tests consigned in this test report justify the above assigned characteristics stated by the manufacturer. To declare, or not, the compliance according the standard, it was not taken into account of uncertainty measurements in the test results. This document results from tests carried out on a sample. It does not prejudice the compliance of the whole manufactured products with the tested specimen.

In the case of an amendment to this test report, we draw your attention to the risks of keeping obsolete version.

Each new version cancels and replaces the previous one. Any expired copies must be destroyed. Any modification to this report is identified by a line in the margin.

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This report contains 50 pages

Dispatch date of report: 26/03/2026

Writer

MICHALLET-FERRIER Lylian



Approver

BOURET Loïc
Technical leader



SUMMARY

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History table

Version	Dated	Author	Description
V1	12/02/2026	MICHALLET-FERRIER Lylian	Initial version
V2	09/03/2026	Loïc Bouret	Addition a comment for explain screenshot P.8, P.9 & P.10 Adding the formula via software to the results table P.11
V3	26/03/2026	loïc Bouret	Addition conducted power measurement P.11

TEST ENGINEERS

Person	Title / Function	Company
MICHALLET-FERRIER Lylian	Test engineer	Schneider Electric

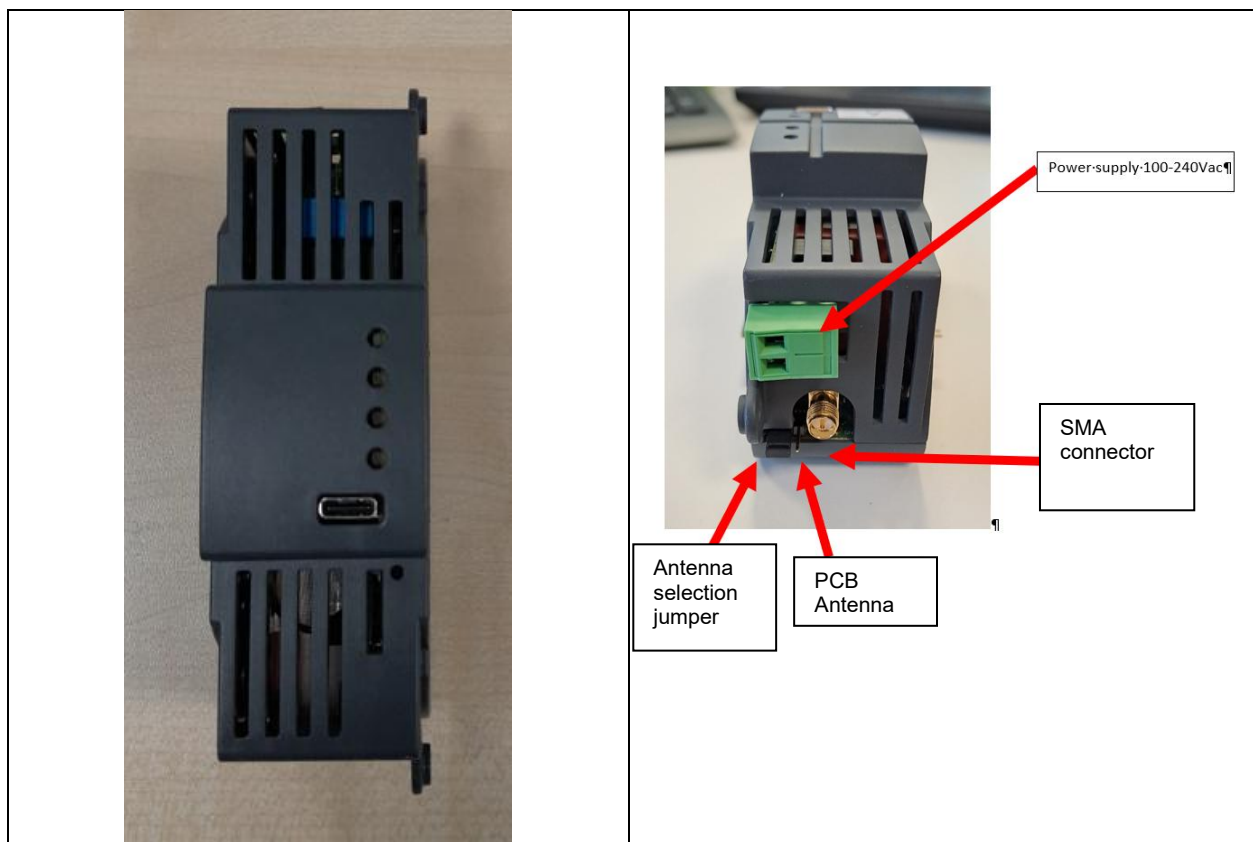
1 CONFIGURATION OF TEST INFORMATION ①

(①): All information contained in this clause and its sub-clauses is provided by the customer; the laboratory declines all responsibility for this information.

1.1 Equipment under test (EUT)

The equipment under test,

Configuration 1	Reference	software	Power supply	Wireless Com.	I/O	Earth access
EUT SMPL25AI8176	AEBWE0T0001100	0.1.21t	230 Vac 50 Hz	WIFI	No wired	No wired



1.2 Equipment Power Supply

230 Vac 50Hz

1.3 Equipment informations

Frequency band	5180-5825 MHz
Number of channels	24
Spacing channel	20 MHz
Channel bandwidth	2.25 MHz
PCB antenna type	Microstrip antenna

1.4 Channel informations

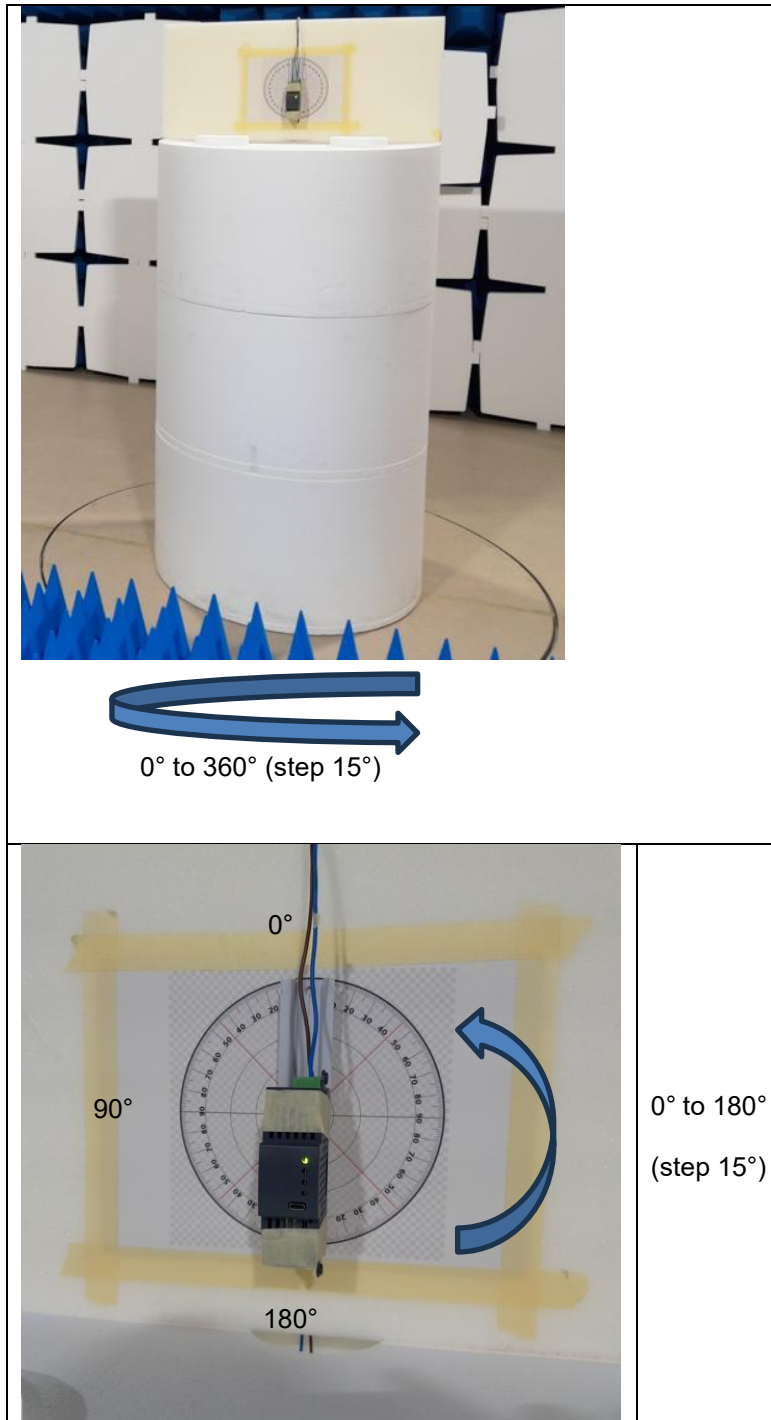
Wifi 5 GHz

Channel		Frequency (MHz)
Low	36	5180
	40	5200
	44	5220
	48	5240
	52	5260
	56	5280
	60	5300
	64	5320
Medium	100	5500
	104	5520
	108	5540
	112	5560
	116	5580
	120	5600
	124	5620
	128	5640
	132	5660
	136	5680
	140	5700
	149	5745
	153	5765
	157	5785
	161	5805
High	165	5825

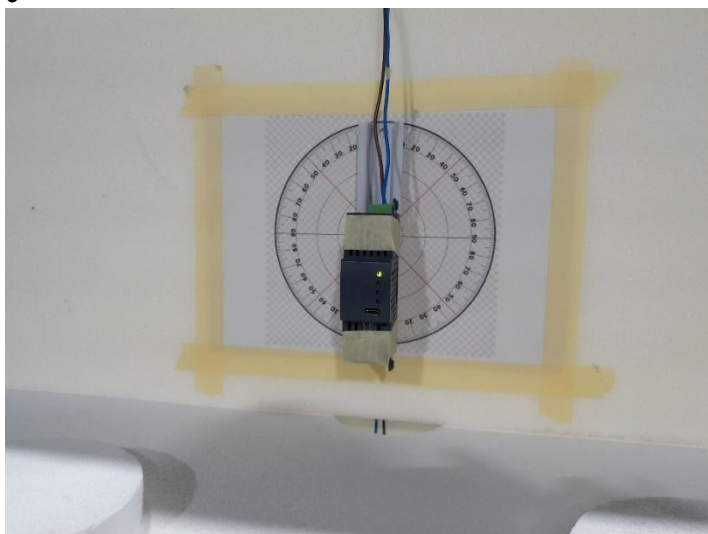
2 MEASUREMENT SETUP AND TEST DETAILS

2.1 Test arrangement and setup

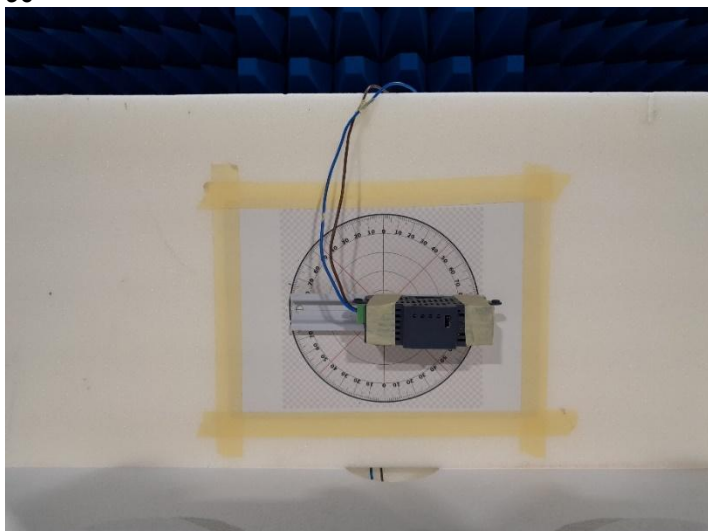
Measurements, in vertical and horizontal polarization, of the 3D radiation pattern of the EUT's internal PCB antenna along the X, Y, and Z axes, for 3 channels (low channel, middle channel, and high channel) in room FAR . Measurements were taken every 15° of rotation from 0° to 360° and for each position from 0° to 180° in 15° increments.



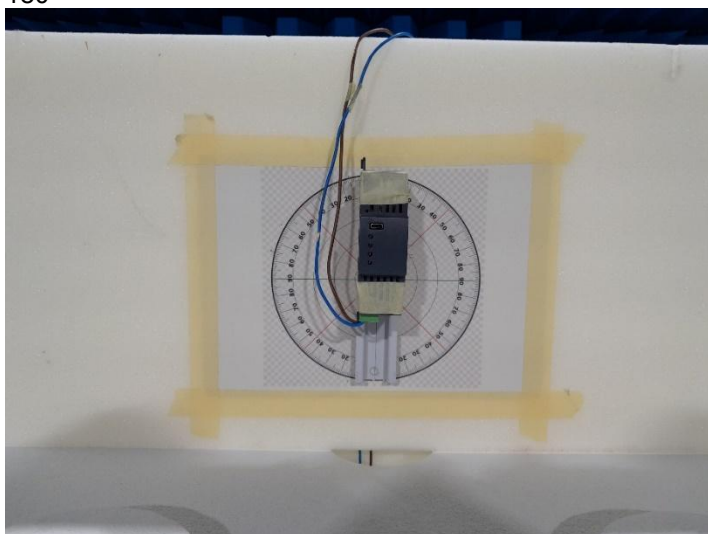
0°



90°

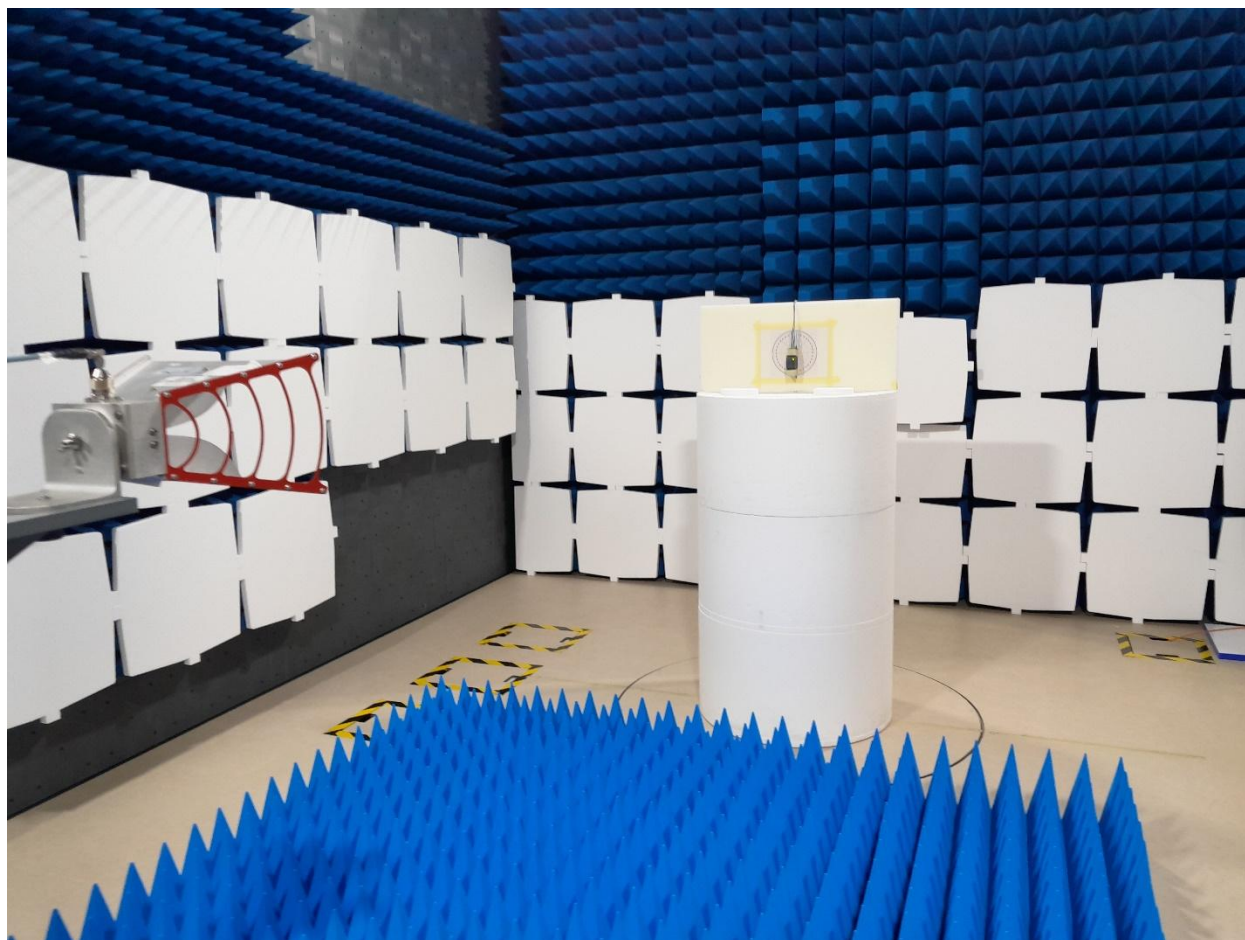


180 °



2.2 Photo

FAR room 7



2.3 Test means

Identification	Description	Manufacturer	Reference	Characteristic
CEC771RF	FAR room 7	SIEPEL		30MHz-26GHz
RF657	Software RF	ACCSYS	AcEMC 7.4.8.4	
CEC648	Power Sensor	DARE	RPR3006W	10MHz-6GHz
CEC412	Horn antenna	ETS LINDGREN	3115	750MHz-18GHz
RF757	Cable 1.5 m ext FAR room 7			SMA 1.5 m
RF759	Cable 5 m int FAR room 7			SMA 5 m
48378	Multimeter	FLUKE	FLUKE 45	

2.4 EUT Setup

EUT SMPL25AI8176 :

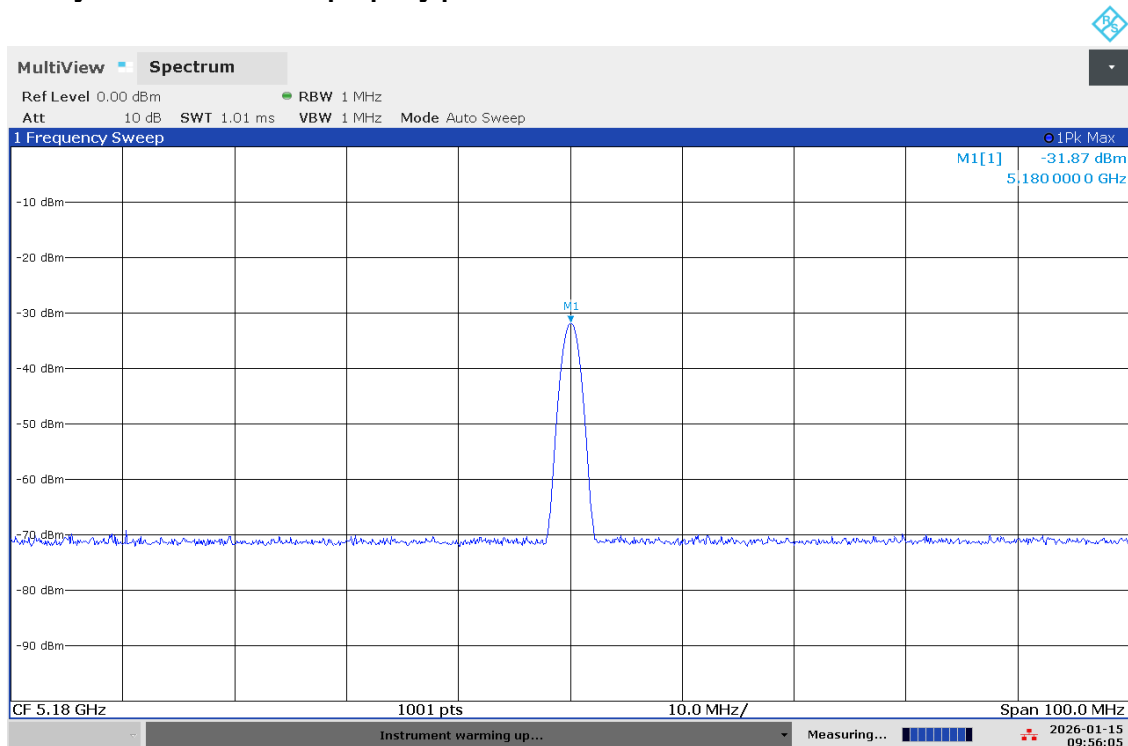
Power 230 Vac 50Hz / internal PCB antenna selected / Mode emission continuous

EUT configuration and command for channel 036 measurements

CMD Channel 036:

```
echo "rf_test_mode=1" > /proc/mwlan/adapter0/config
echo "tx_continuous=0" > /proc/mwlan/adapter0/config
echo "band=1" > /proc/mwlan/adapter0/config
echo "bw=0" > /proc/mwlan/adapter0/config
echo "channel=36" > /proc/mwlan/adapter0/config
echo "tx_power=20 2 0" > /proc/mwlan/adapter0/config
echo "tx_continuous=1 1 0xAAA 0 3 7" > /proc/mwlan/adapter0/config
```

Here you see that we are properly paired and on the correct channel :



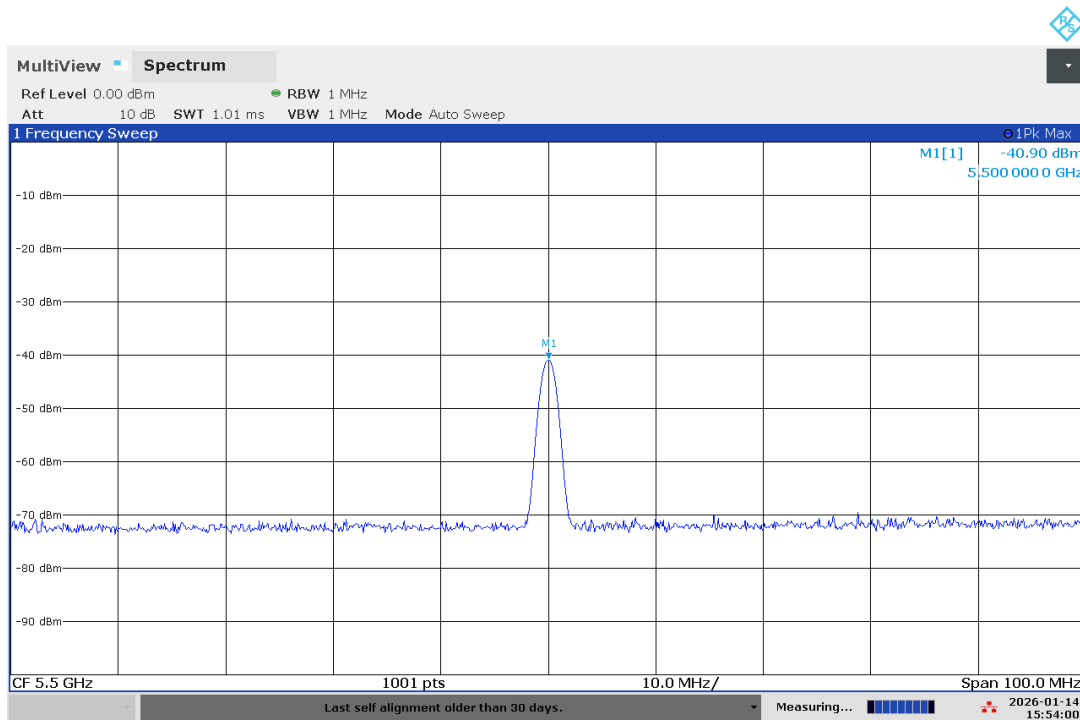
09:56:05 AM 01/15/2026

EUT configuration and command for channel 100 measurements

CMD Channel 100:

```
echo "rf_test_mode=1" > /proc/mwlan/adapter0/config
echo "tx_continuous=0" > /proc/mwlan/adapter0/config
echo "band=1" > /proc/mwlan/adapter0/config
echo "bw=0" > /proc/mwlan/adapter0/config
echo "channel=100" > /proc/mwlan/adapter0/config
echo "tx_power=20 2 0" > /proc/mwlan/adapter0/config
echo "tx_continuous=1 1 0xAAA 0 3 7" > /proc/mwlan/adapter0/config
```

Here you see that we are properly paired and on the correct channel :



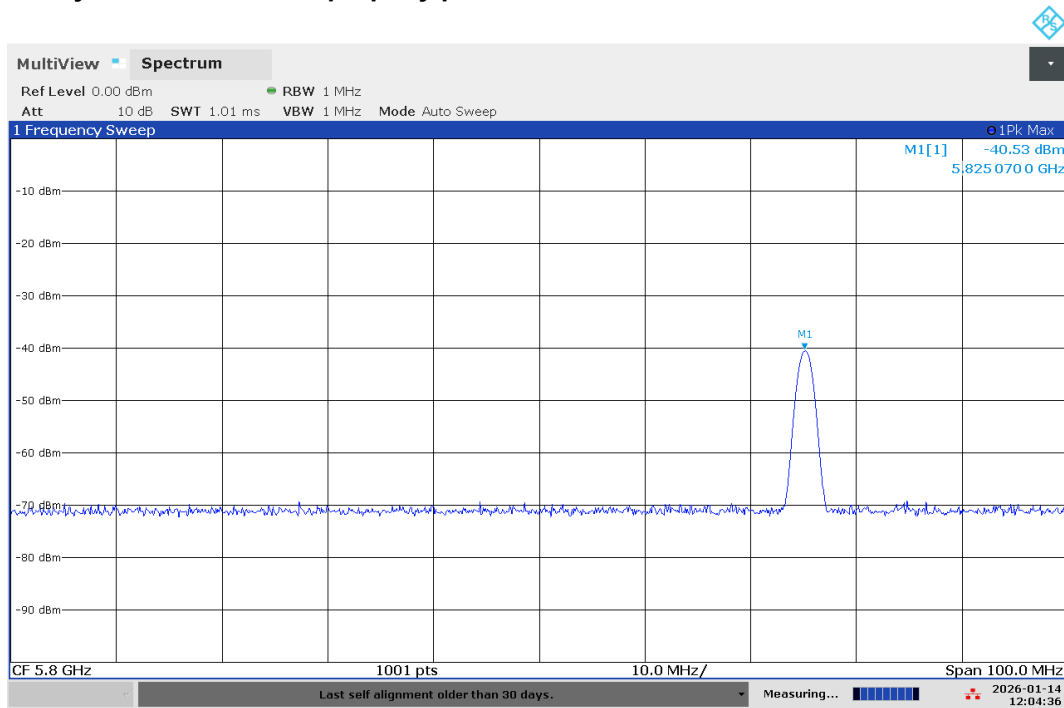
03:54:01 PM 01/14/2026

EUT configuration and command for channel 165 measurements

CMD Channel 165:

```
echo "rf_test_mode=1" > /proc/mwlan/adapter0/config
echo "tx_continuous=0" > /proc/mwlan/adapter0/config
echo "band=1" > /proc/mwlan/adapter0/config
echo "bw=0" > /proc/mwlan/adapter0/config
echo "channel=165" > /proc/mwlan/adapter0/config
echo "tx_power=20 2 0" > /proc/mwlan/adapter0/config
echo "tx_continuous=1 1 0xAAA 0 3 7" > /proc/mwlan/adapter0/config
```

Here you see that we are properly paired and on the correct channel :



12:04:36 PM 01/14/2026

2.5 Date of tests and environmental conditions

Date (dd/mm/yyyy) :	15/01/2026	16/01/2026
Temperature:	22°C	22 °C
Humidity:	27 %	29 %
Pressure:	1020 hPa	1017 hPa

3 RESULTS

3.1 Results

EUT SMPL25AI8176 :

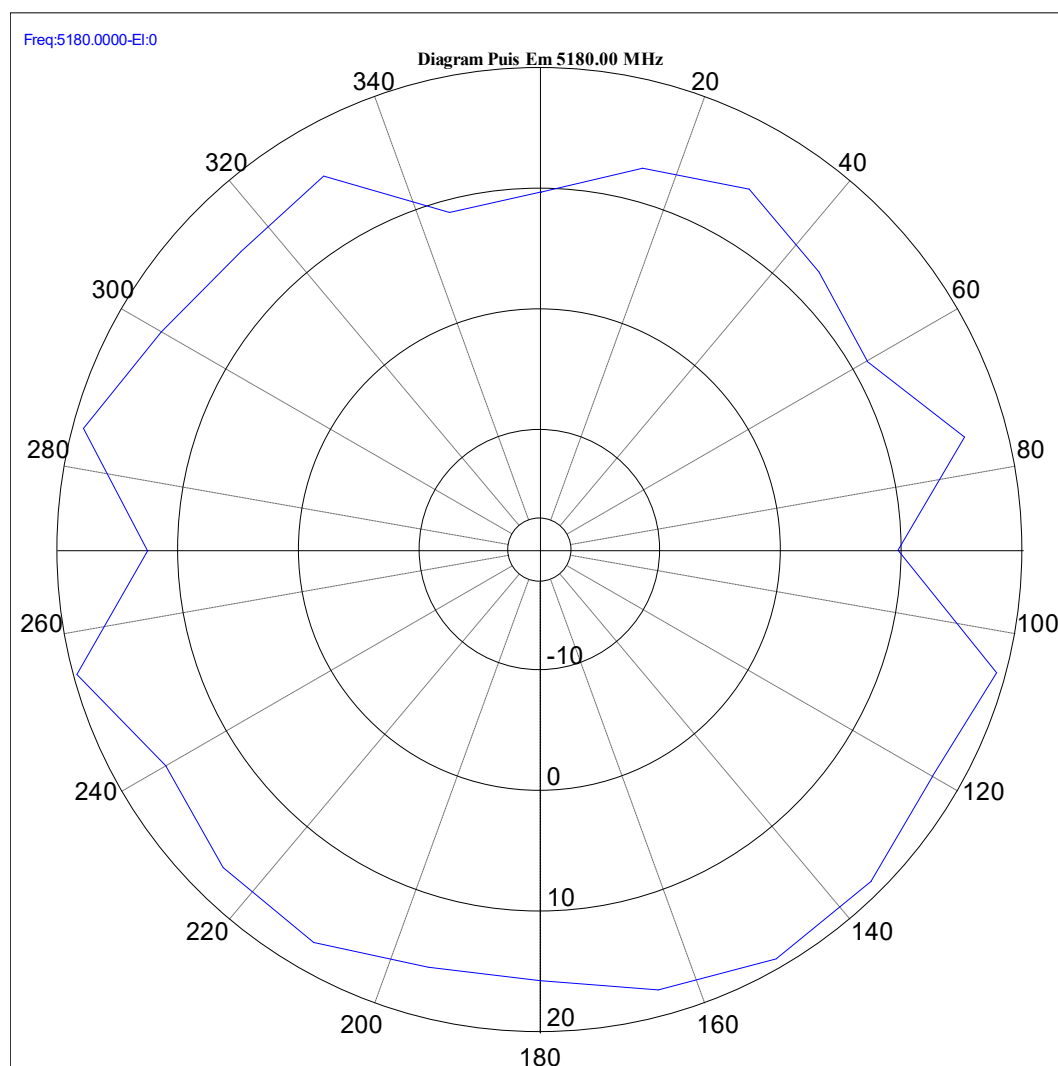
Power 230 Vac 50Hz / internal PCB antenna selected / Mode emission continuous

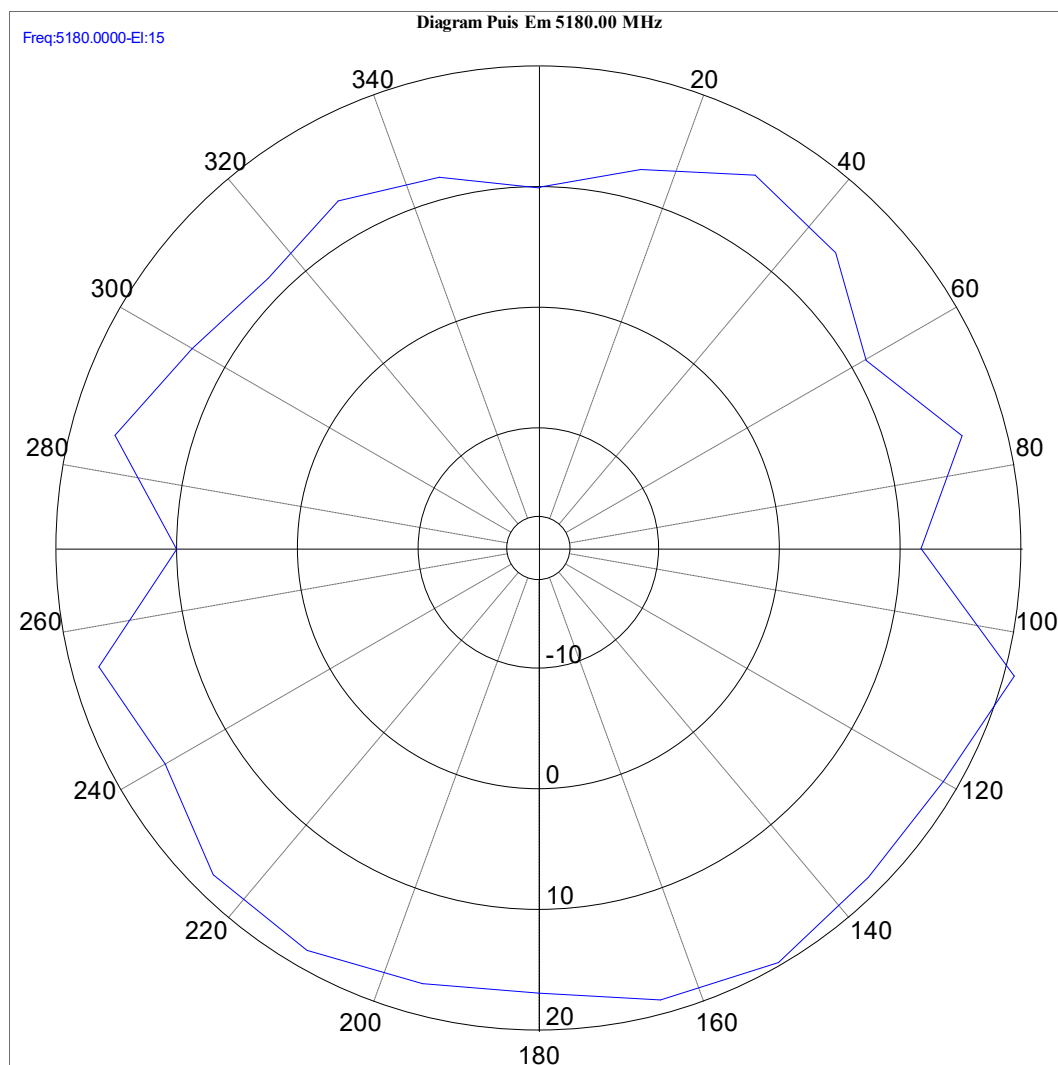
U EUT (V)	Channel		Frequency (MHz)	2D EIRP (dBm)	Cond. Power (dBm)	2D peak Gain (dBi)
230 Vac	Low	036	5180	20.75	13.02	7.73
230 Vac	Medium	100	5500	20.82	12.83	7.99
230 Vac	High	165	5825	20.67	12.65	8.02
Gain=EIRP-Cond. power						

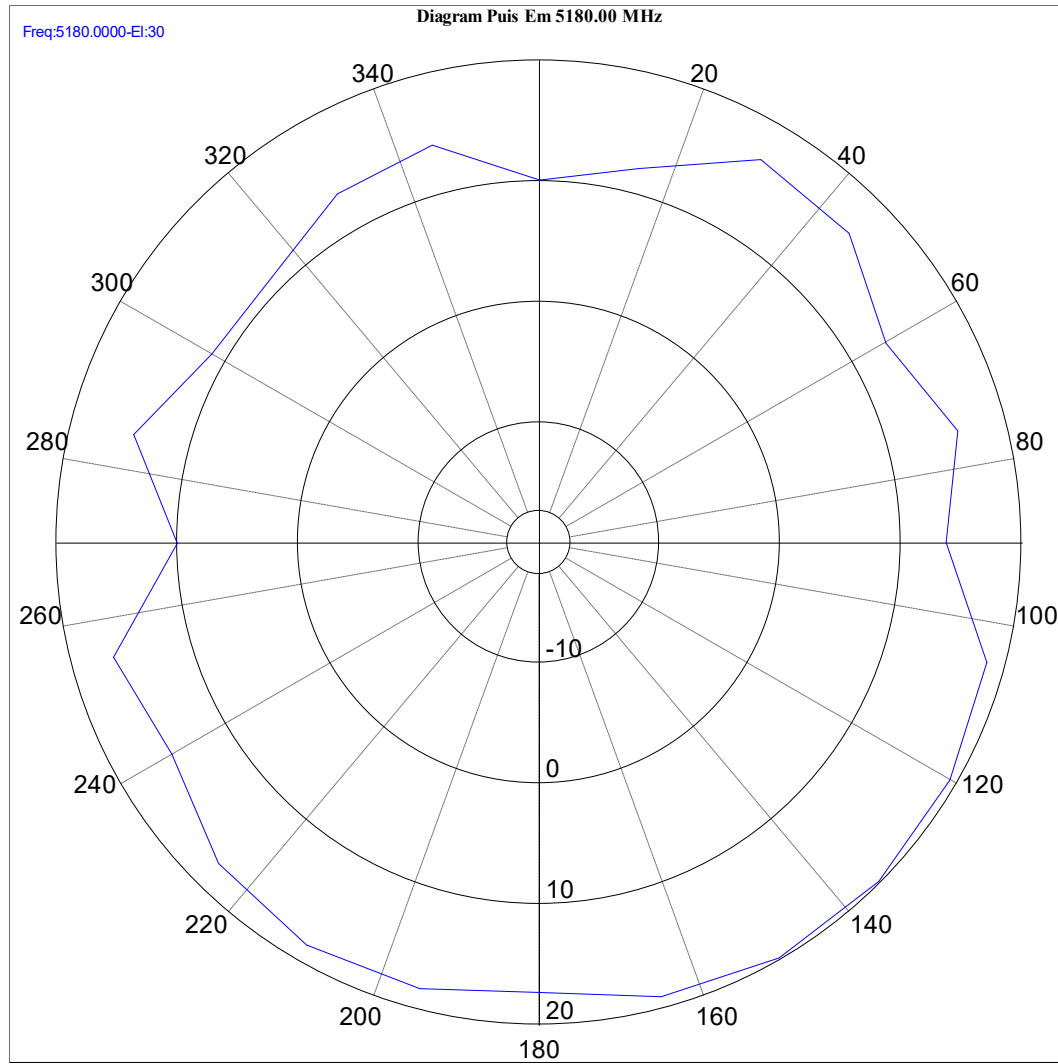
U EUT (V)	Channel		Frequency (MHz)	3D EIRP (dBm)	Cond. Power (dBm)	3D peak Gain (dBi)
230 Vac	Low	036	5180	21.43	13.02	8.41
230 Vac	Medium	100	5500	21.44	12.83	8.61
230 Vac	High	165	5825	21.36	12.65	8.71
Gain=EIRP-Cond. power						

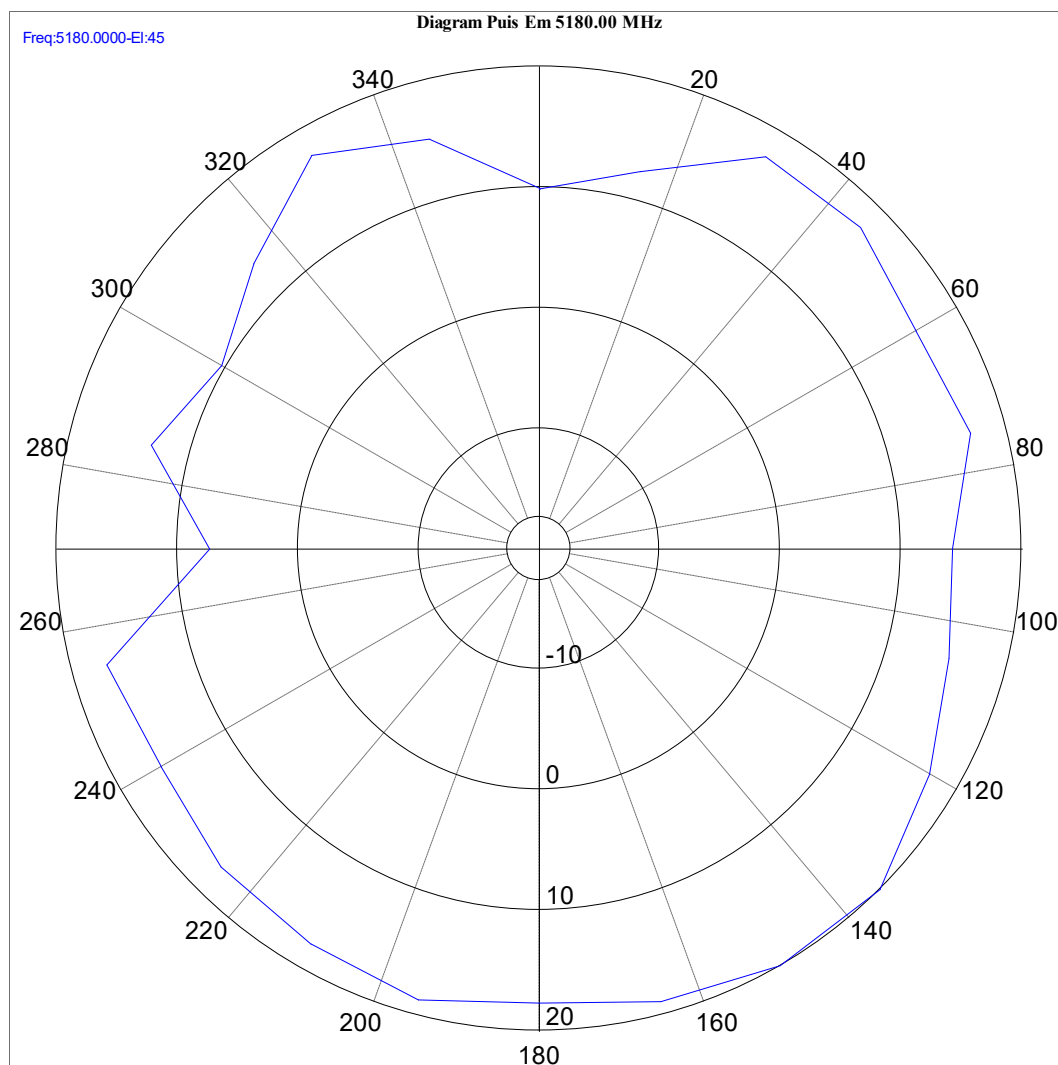
4 CURVES EIRP LOW CHANNEL (5180 MHZ)

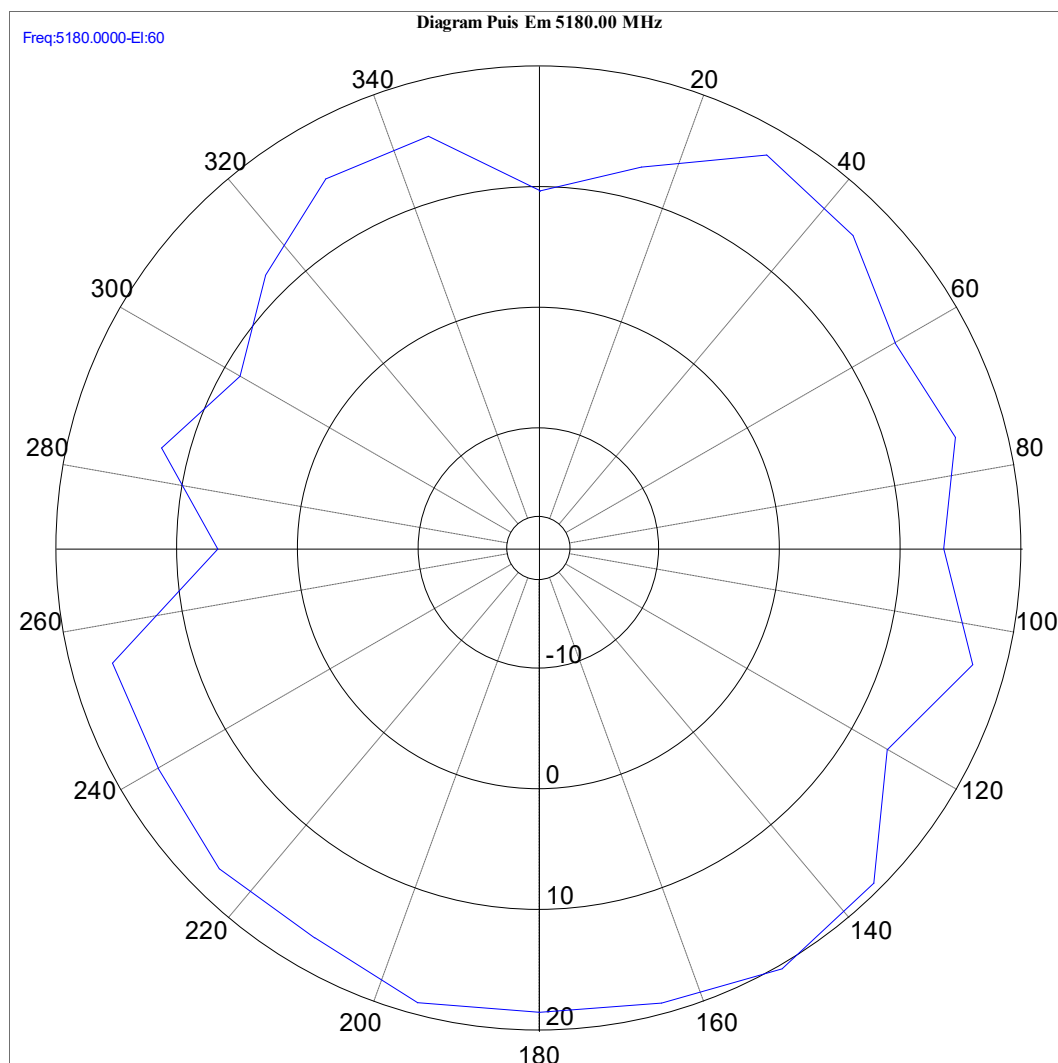
13 Curves : Curve at 0° to Curve at 180° (Step 15°)

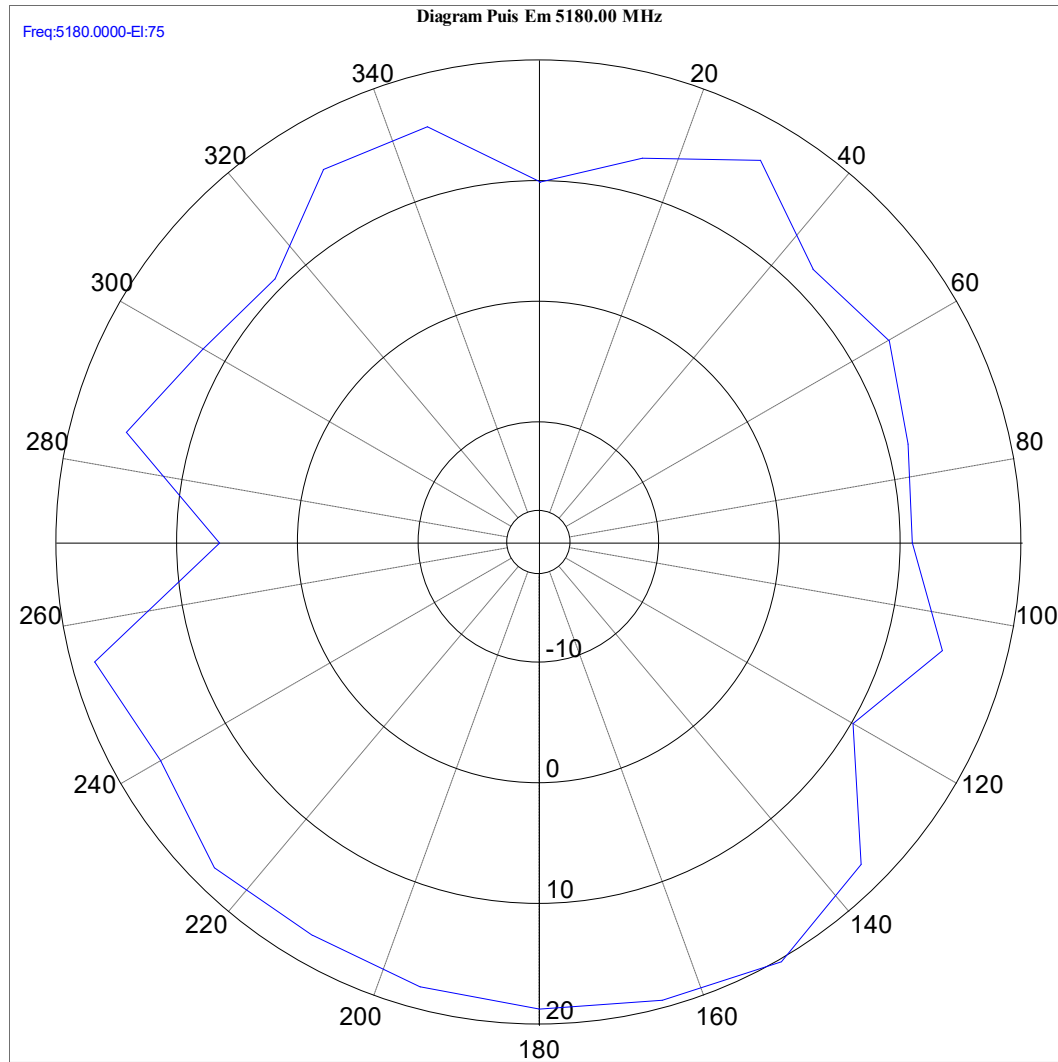


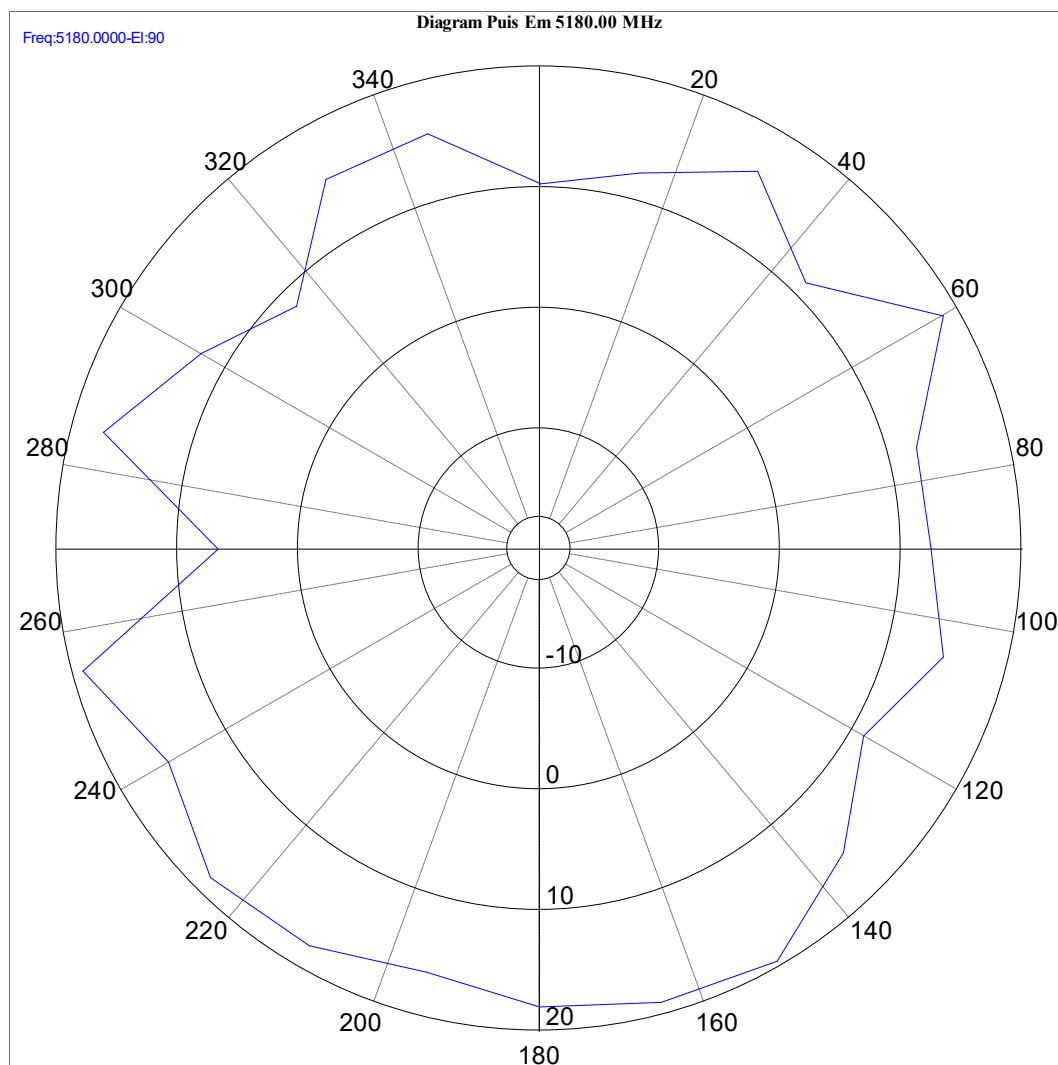


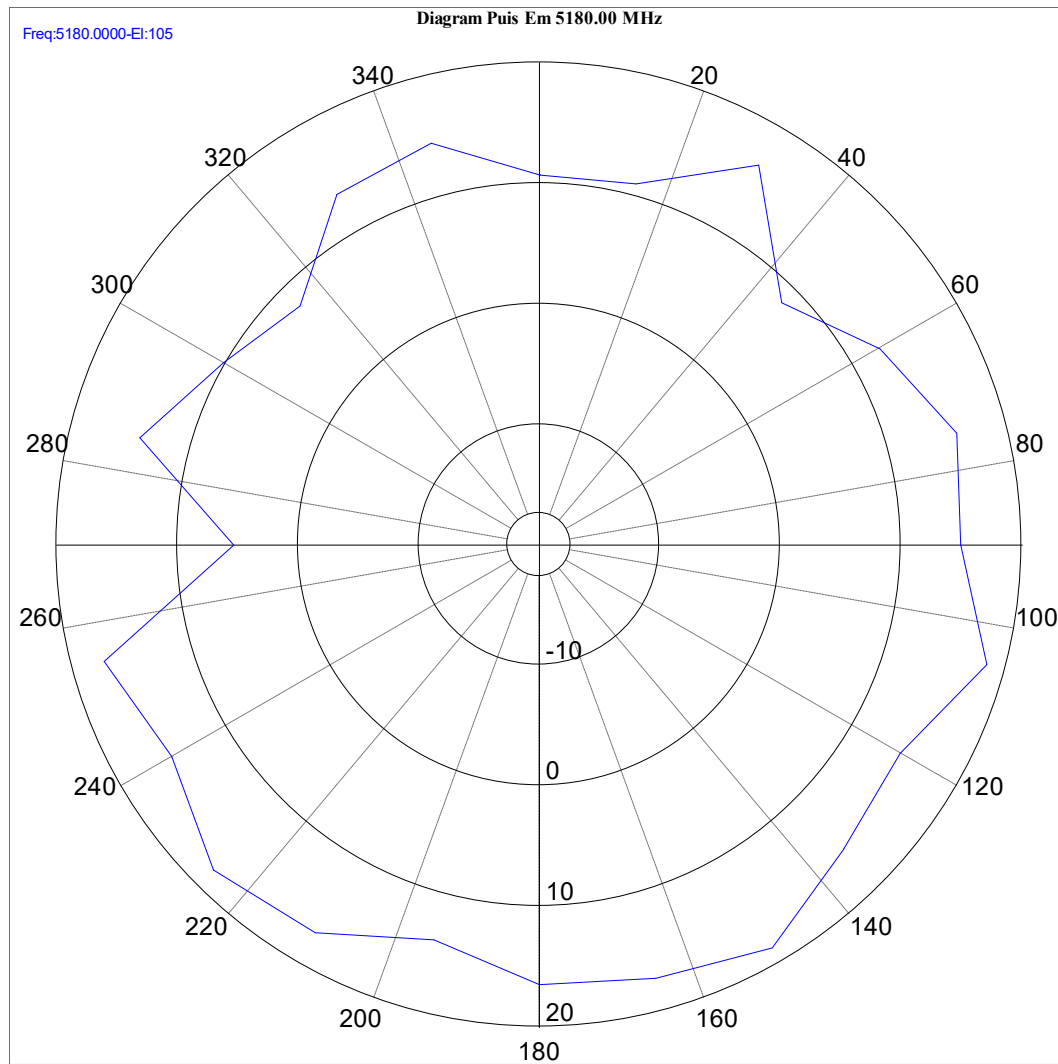


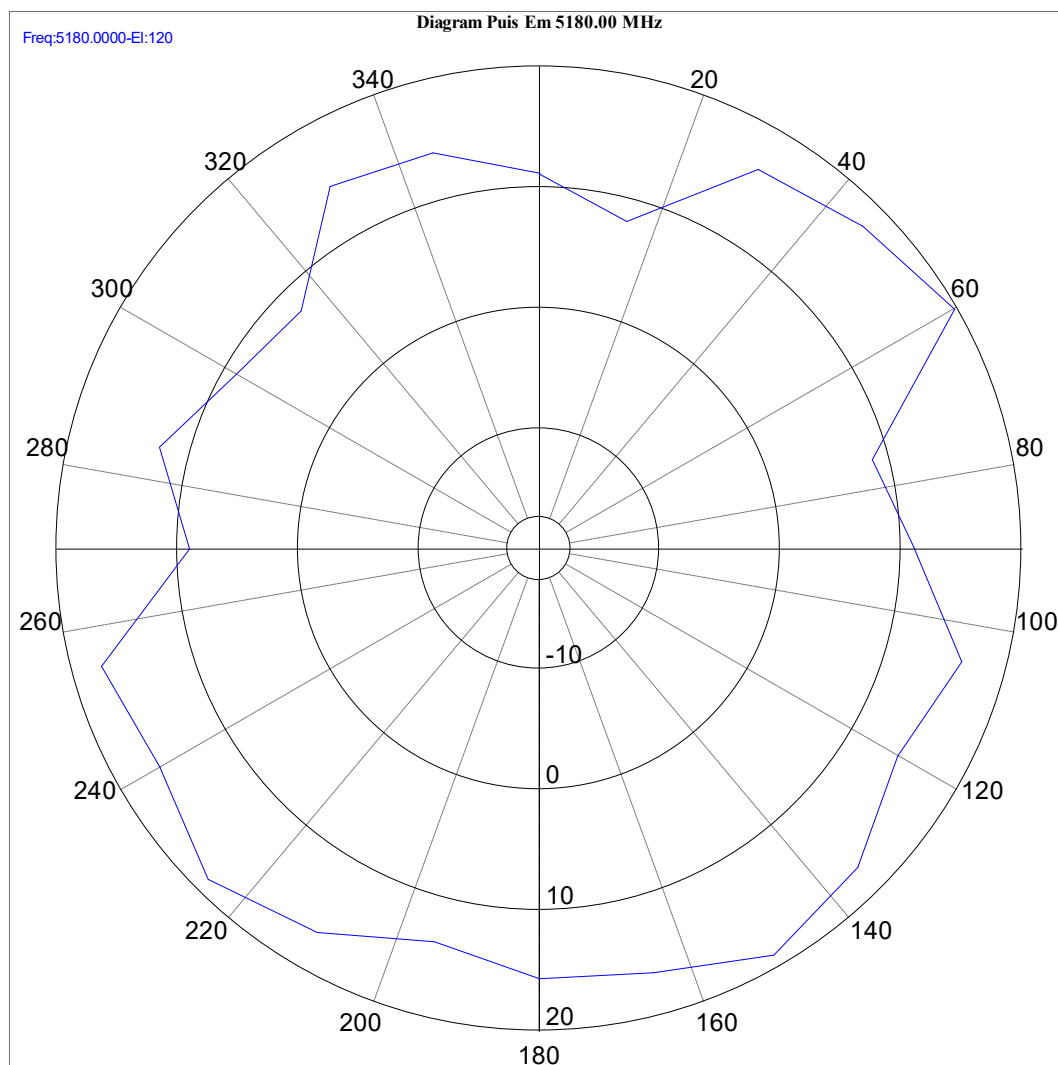


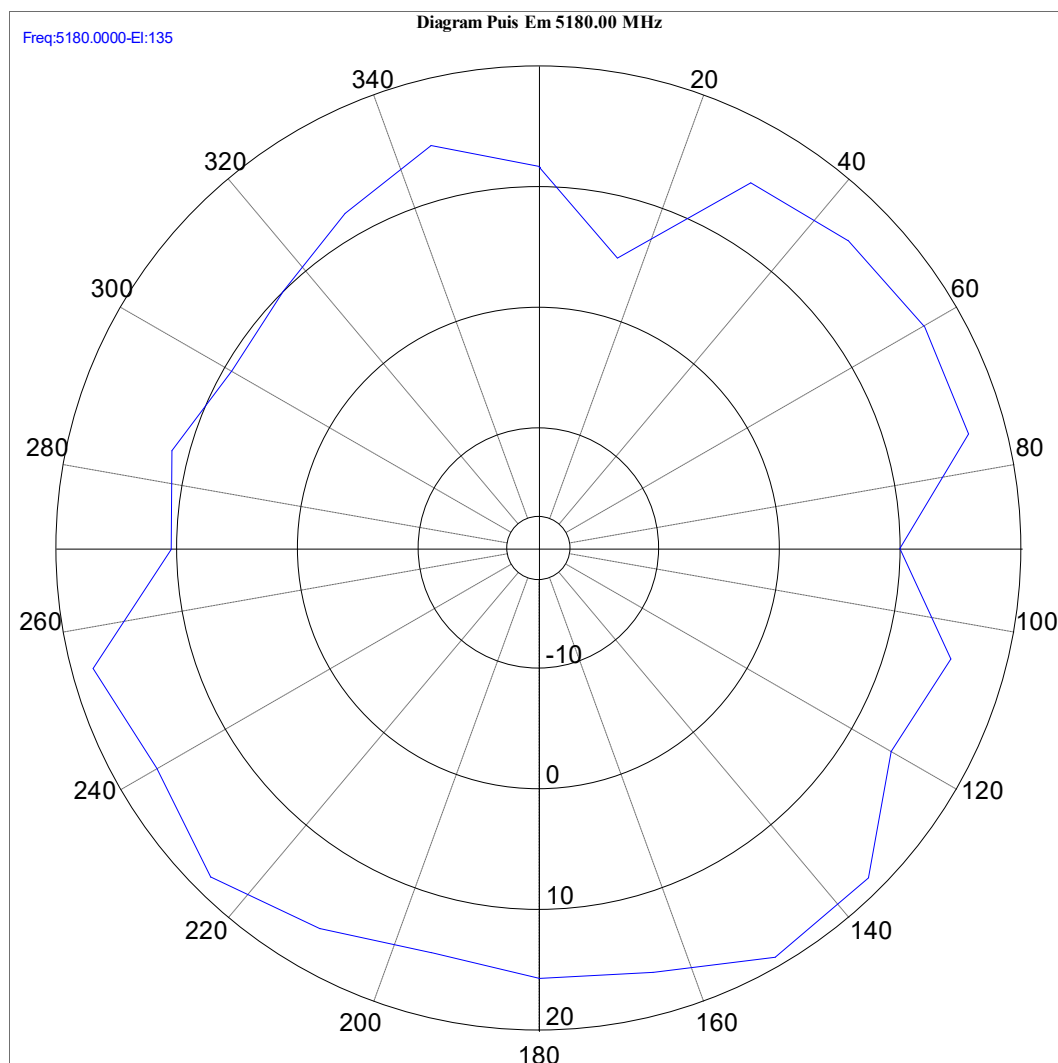


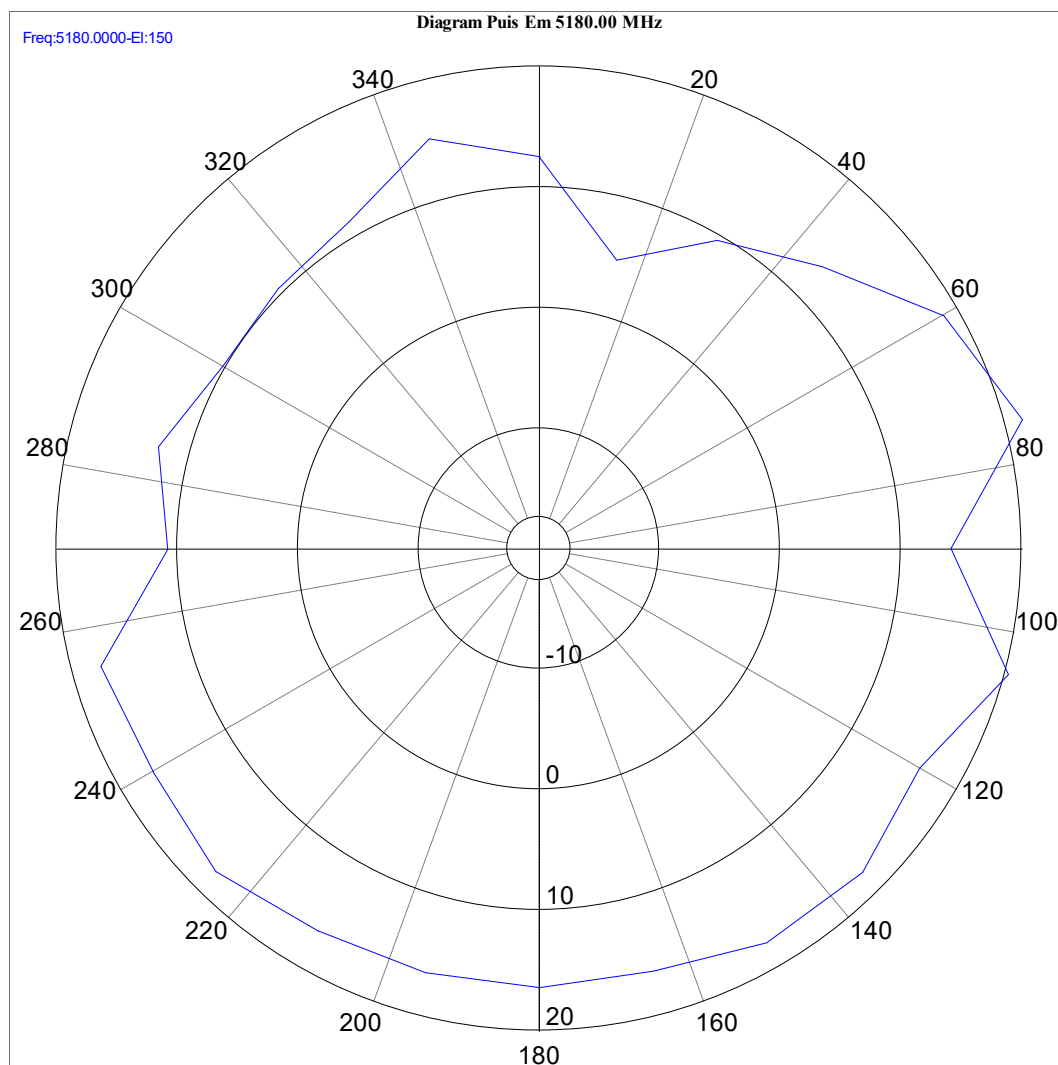


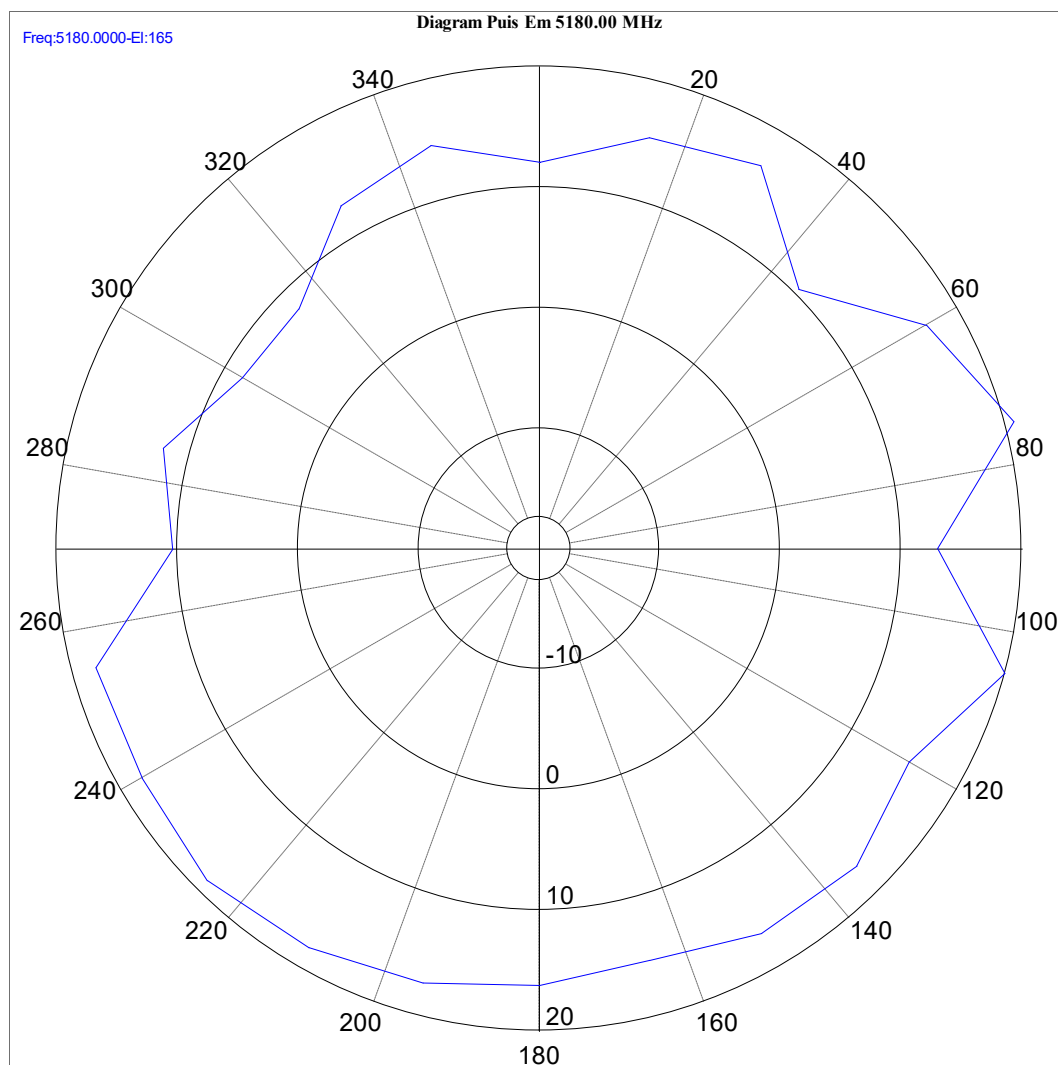


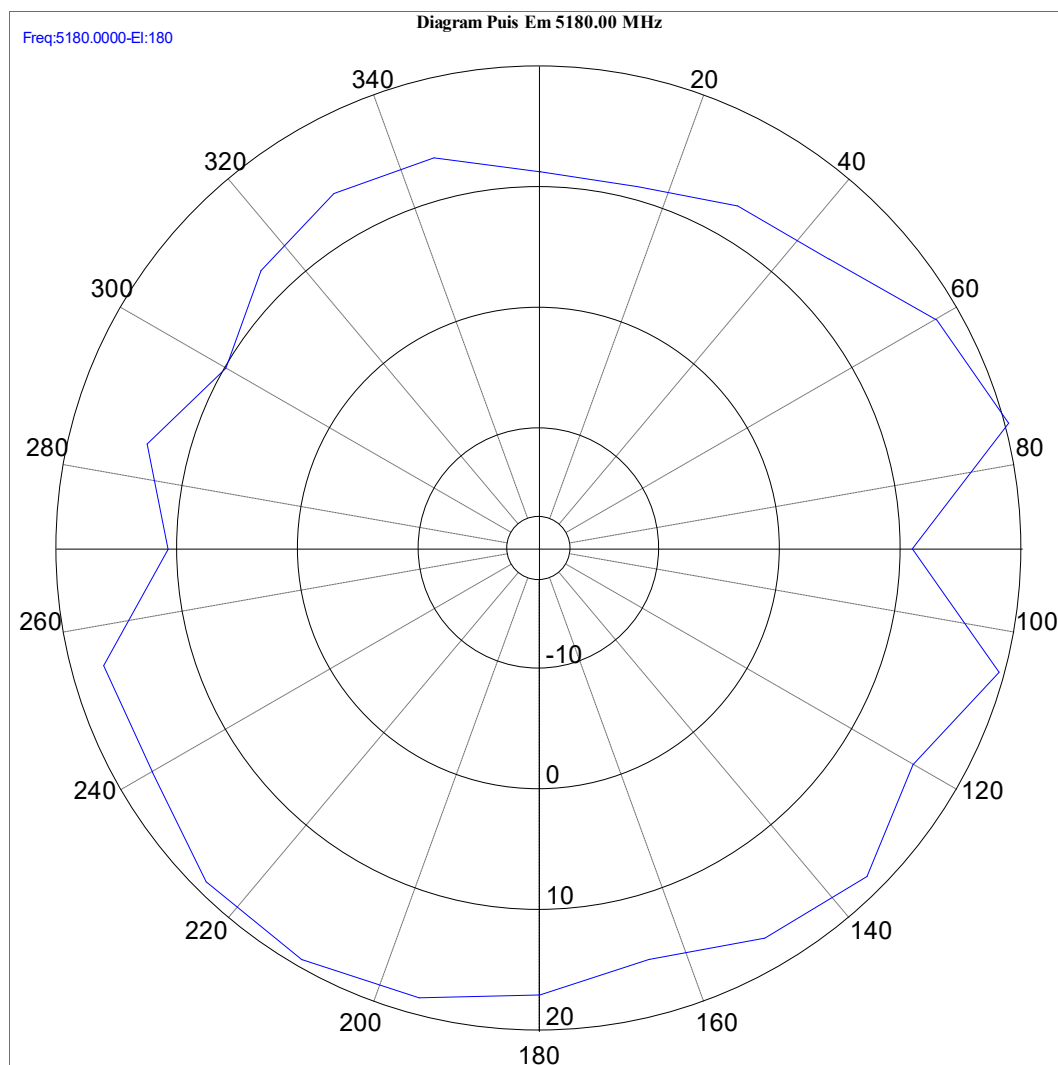






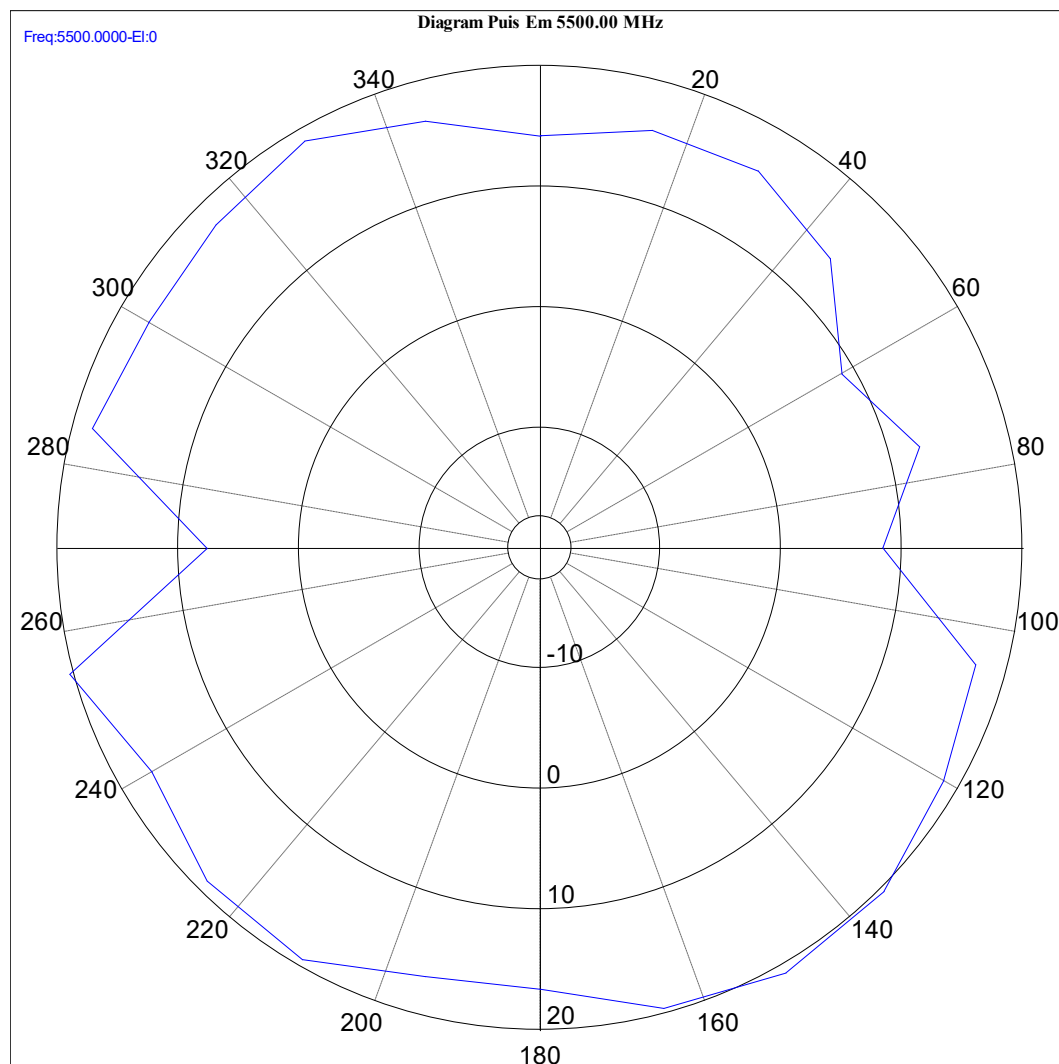


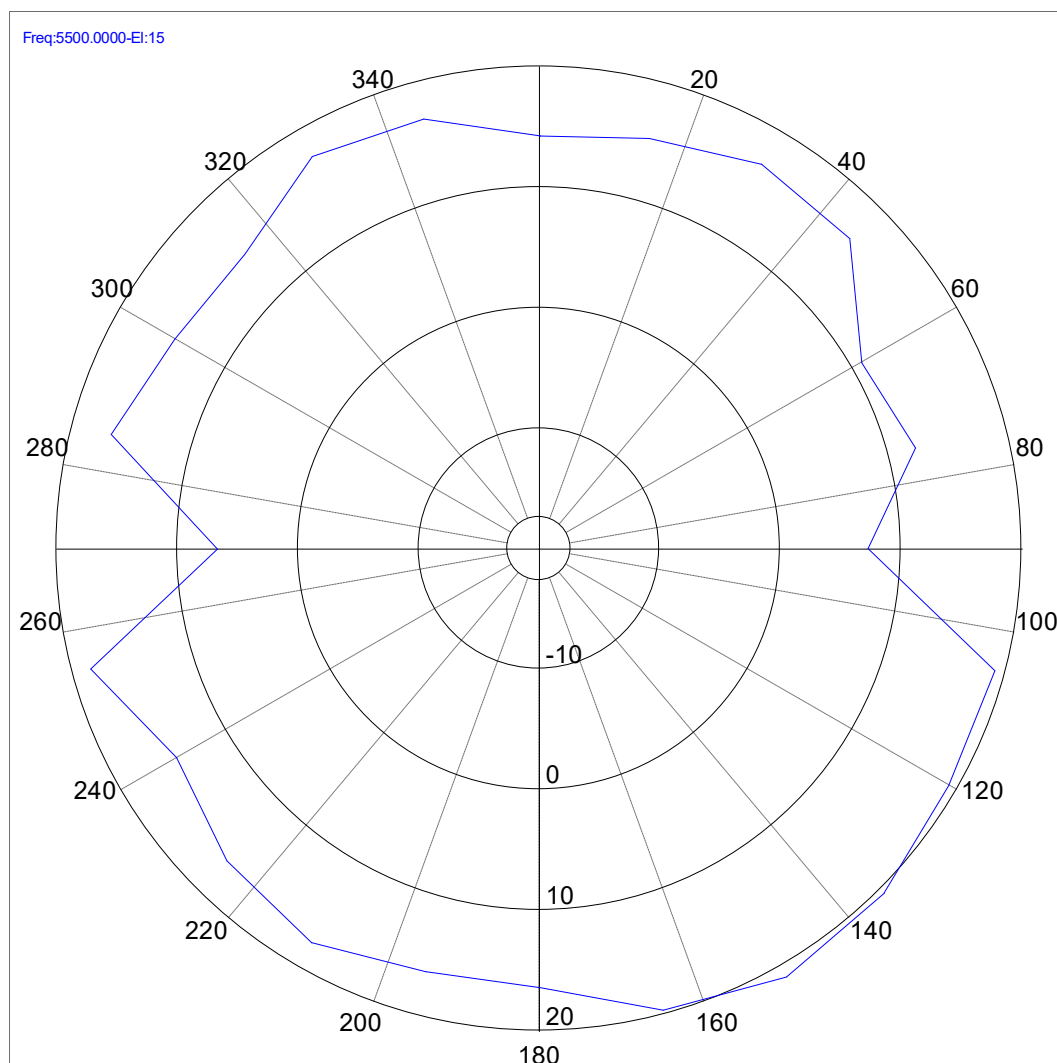


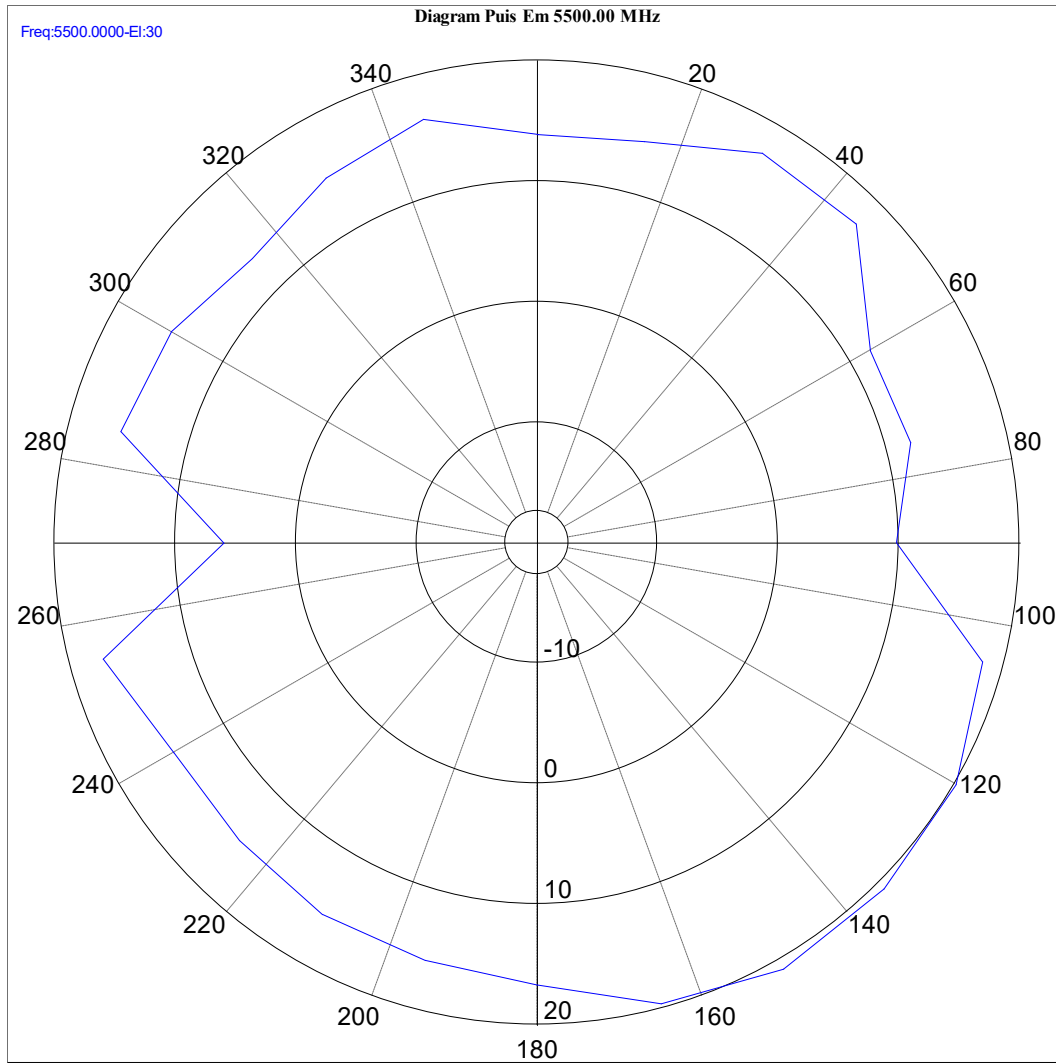


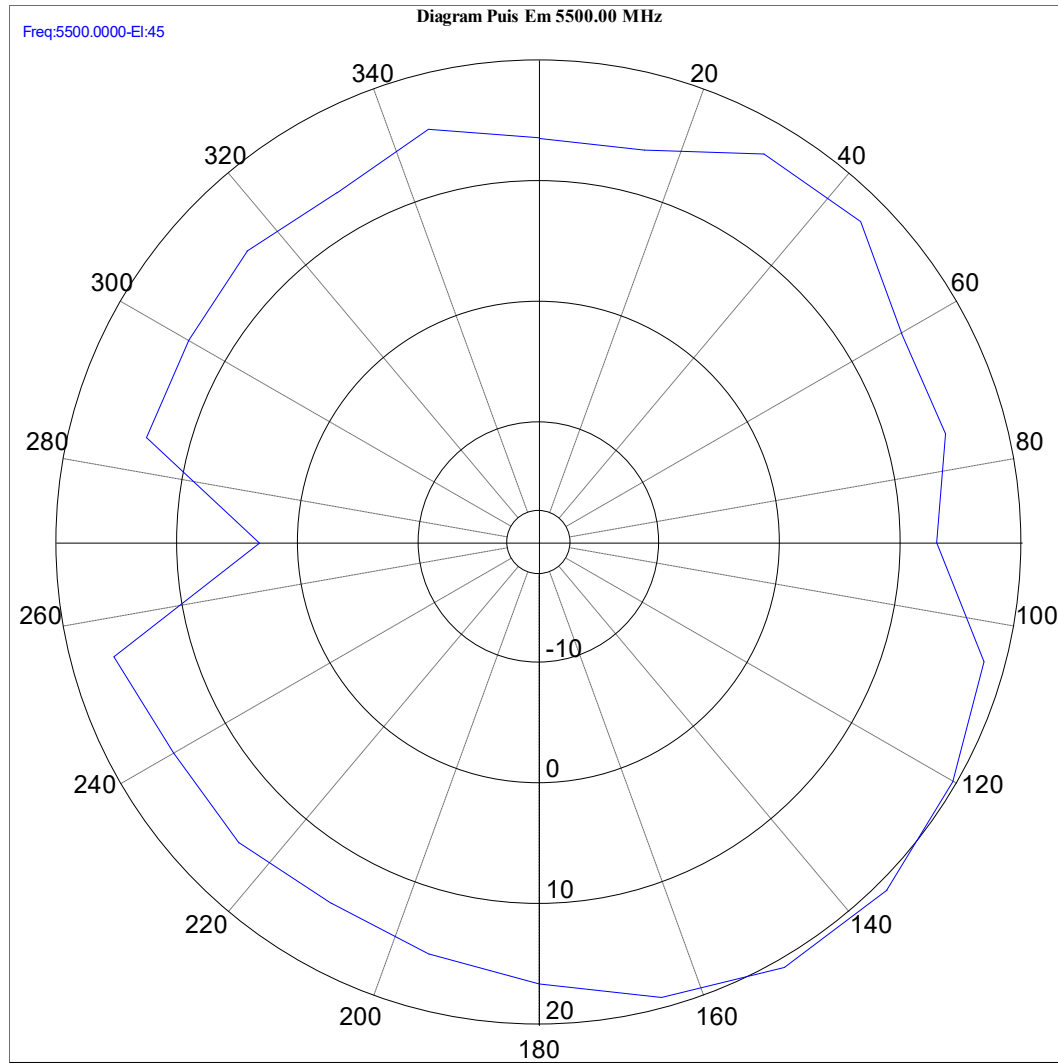
5 CURVES EIRP MIDLE CHANNEL (5500 MHZ)

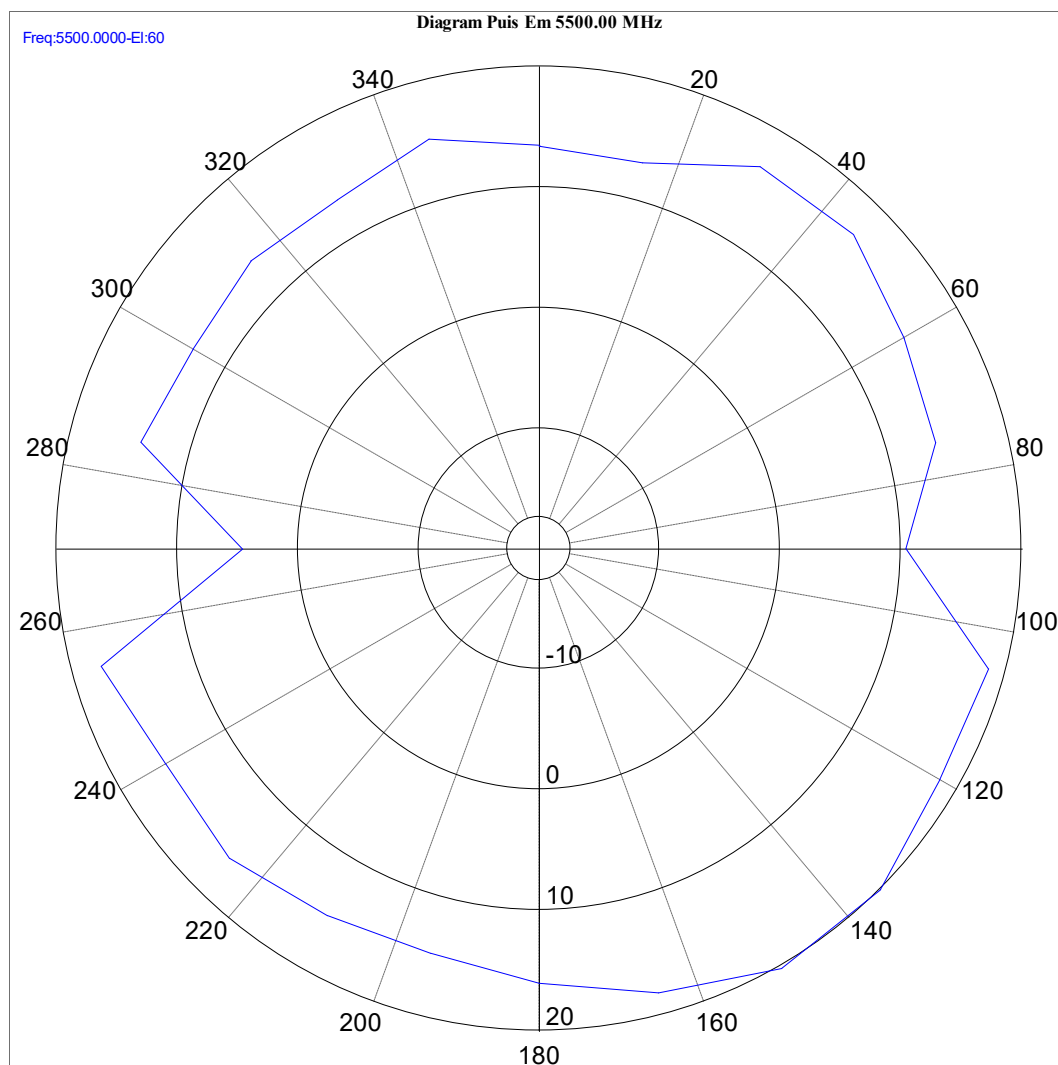
13 Curves : Curve at 0° to Curve at 180° (Step 15°)

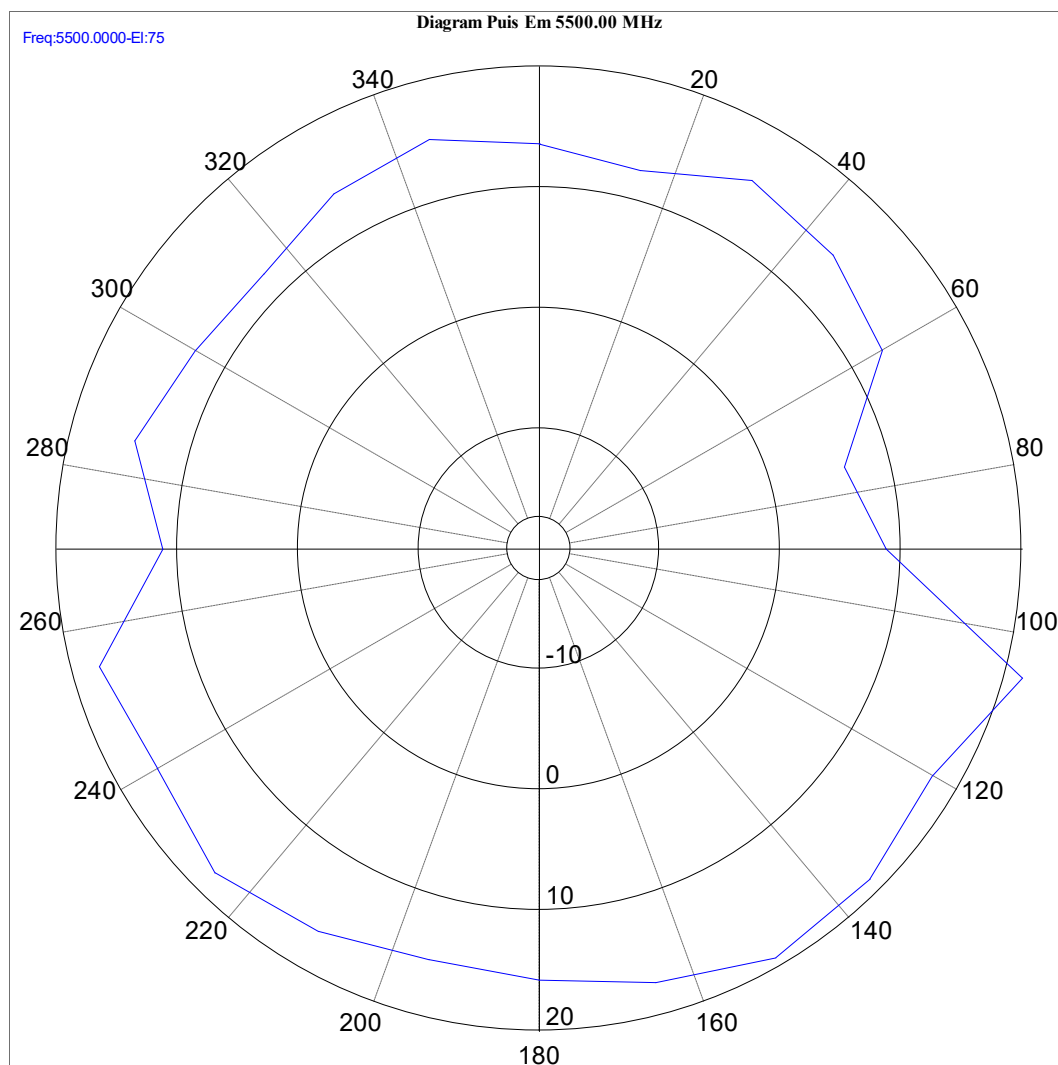


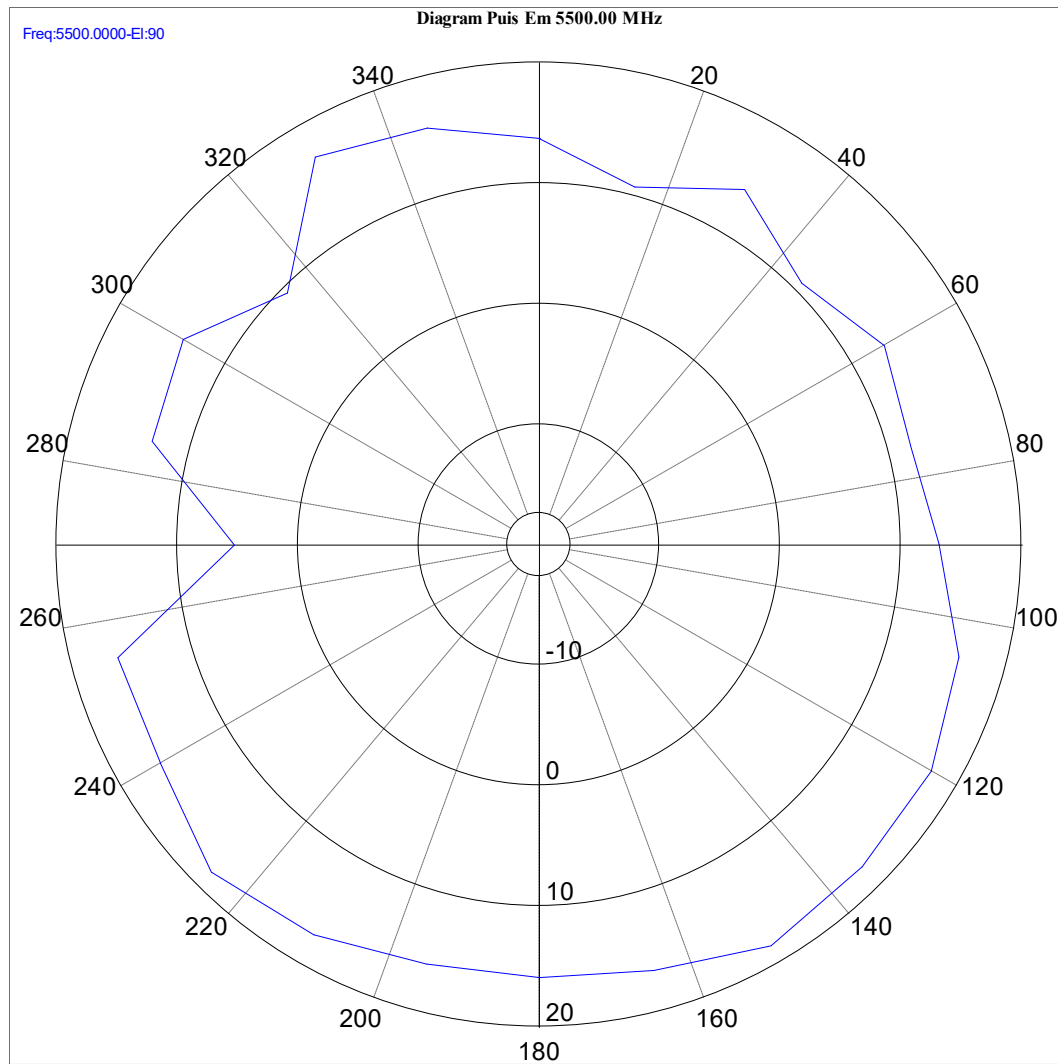


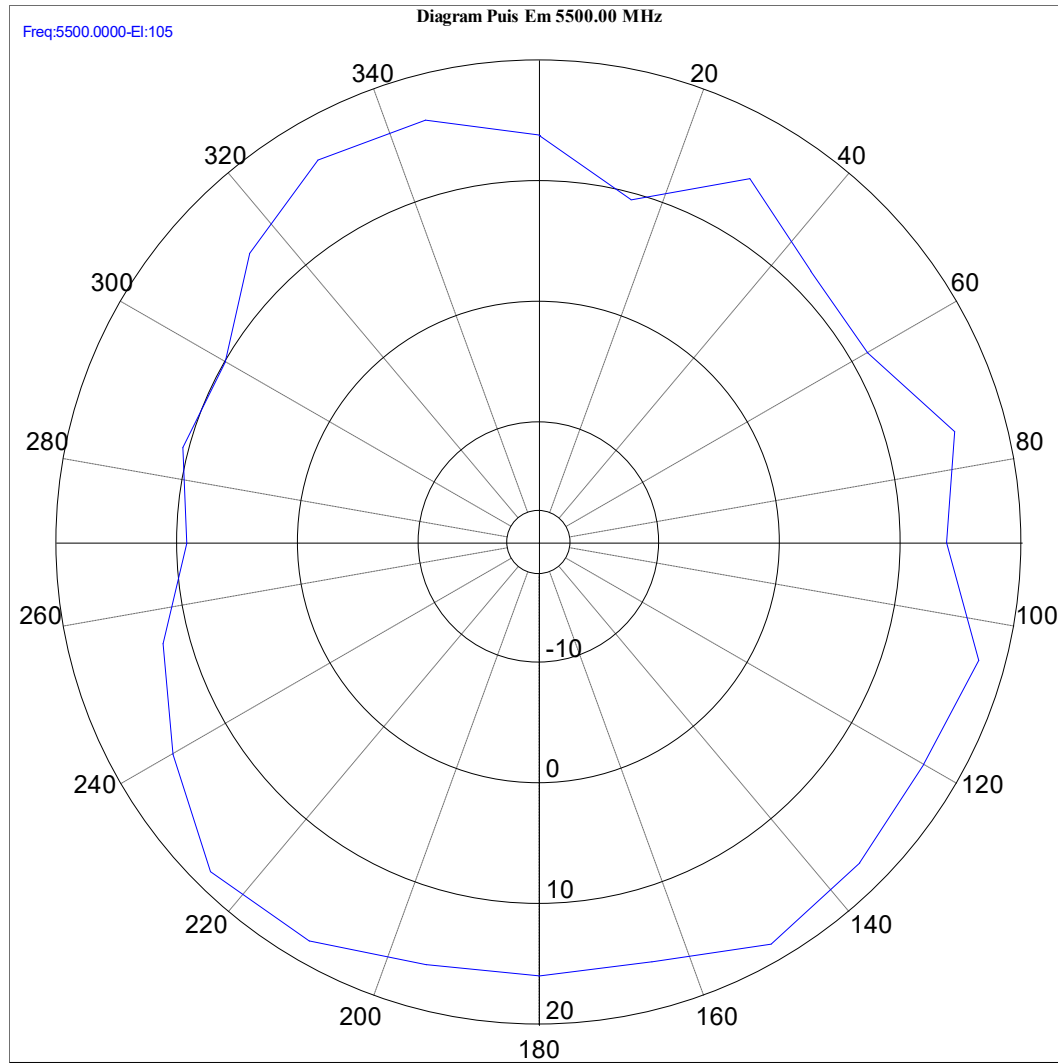


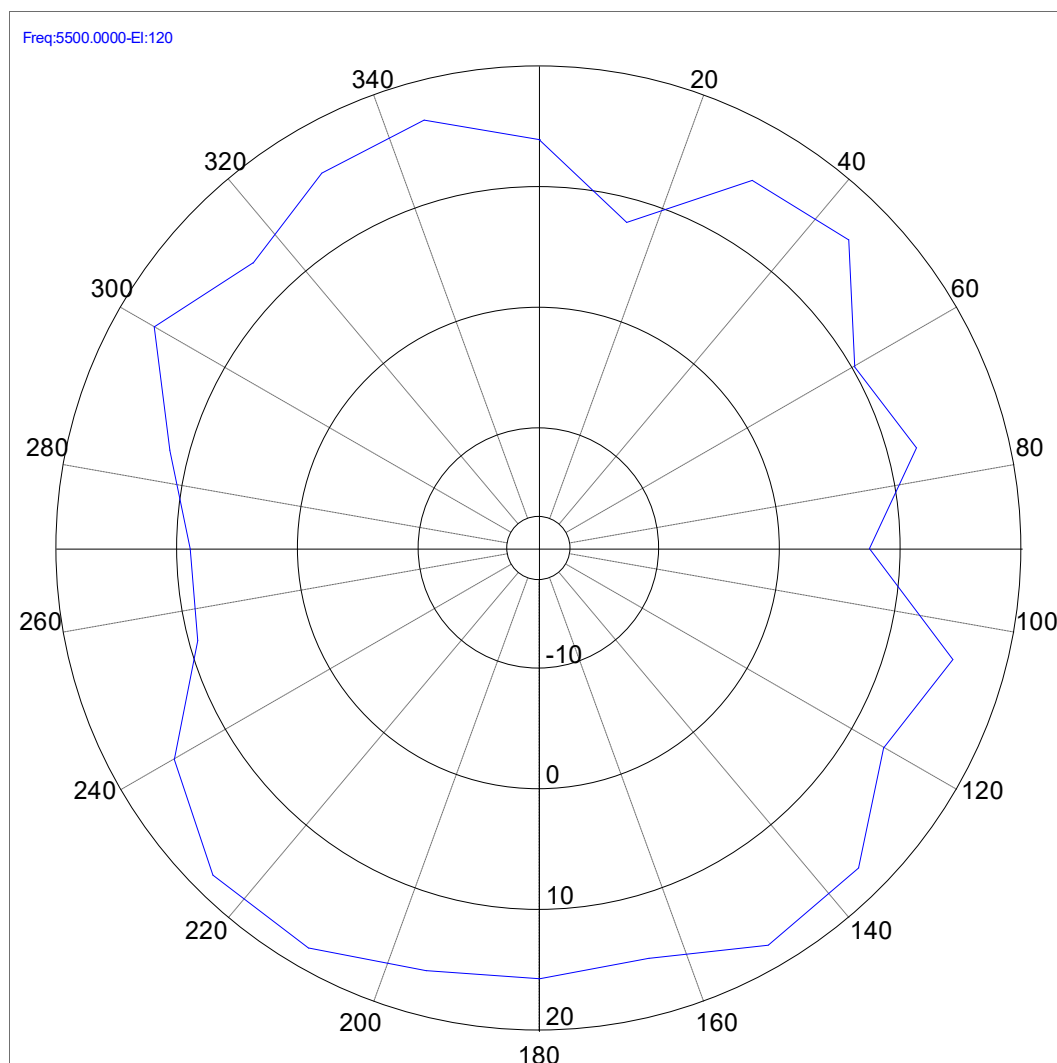


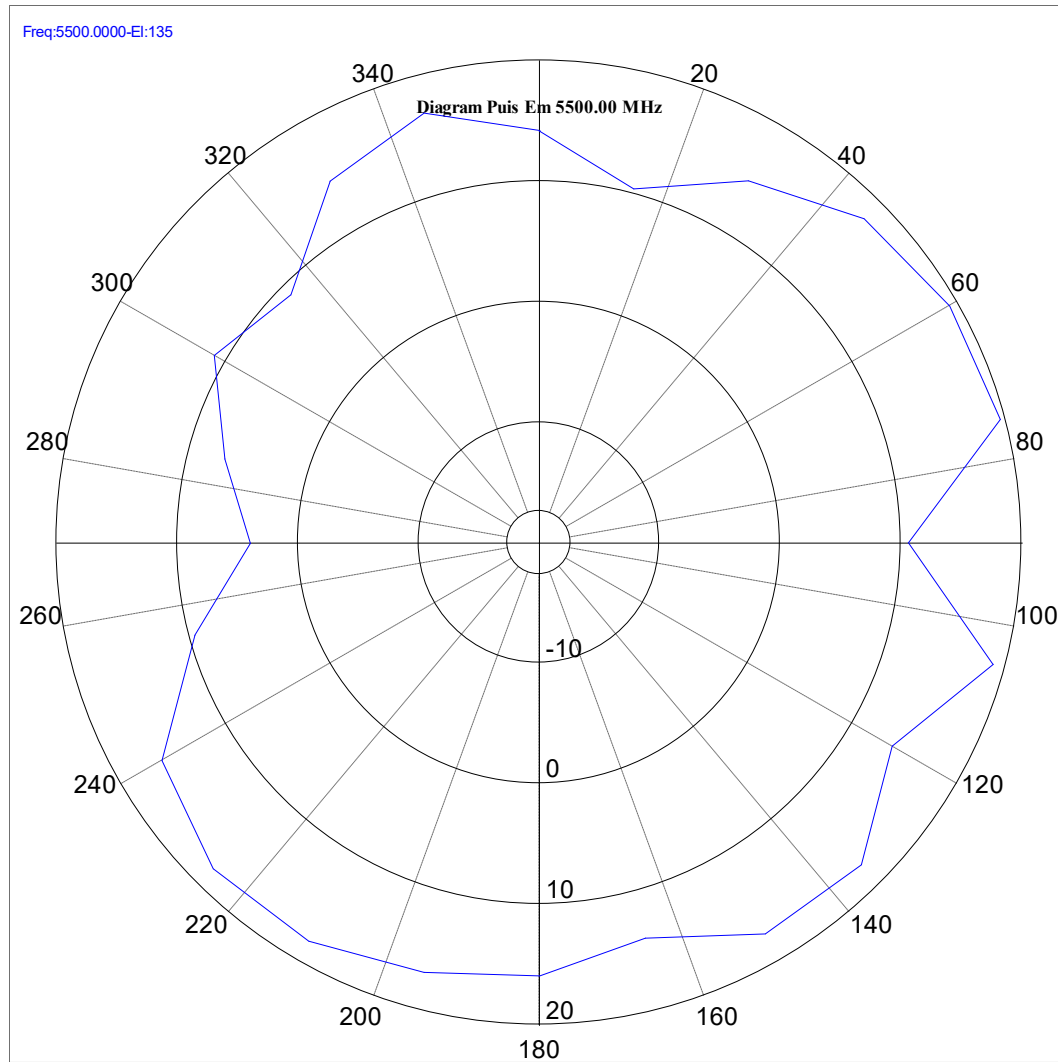


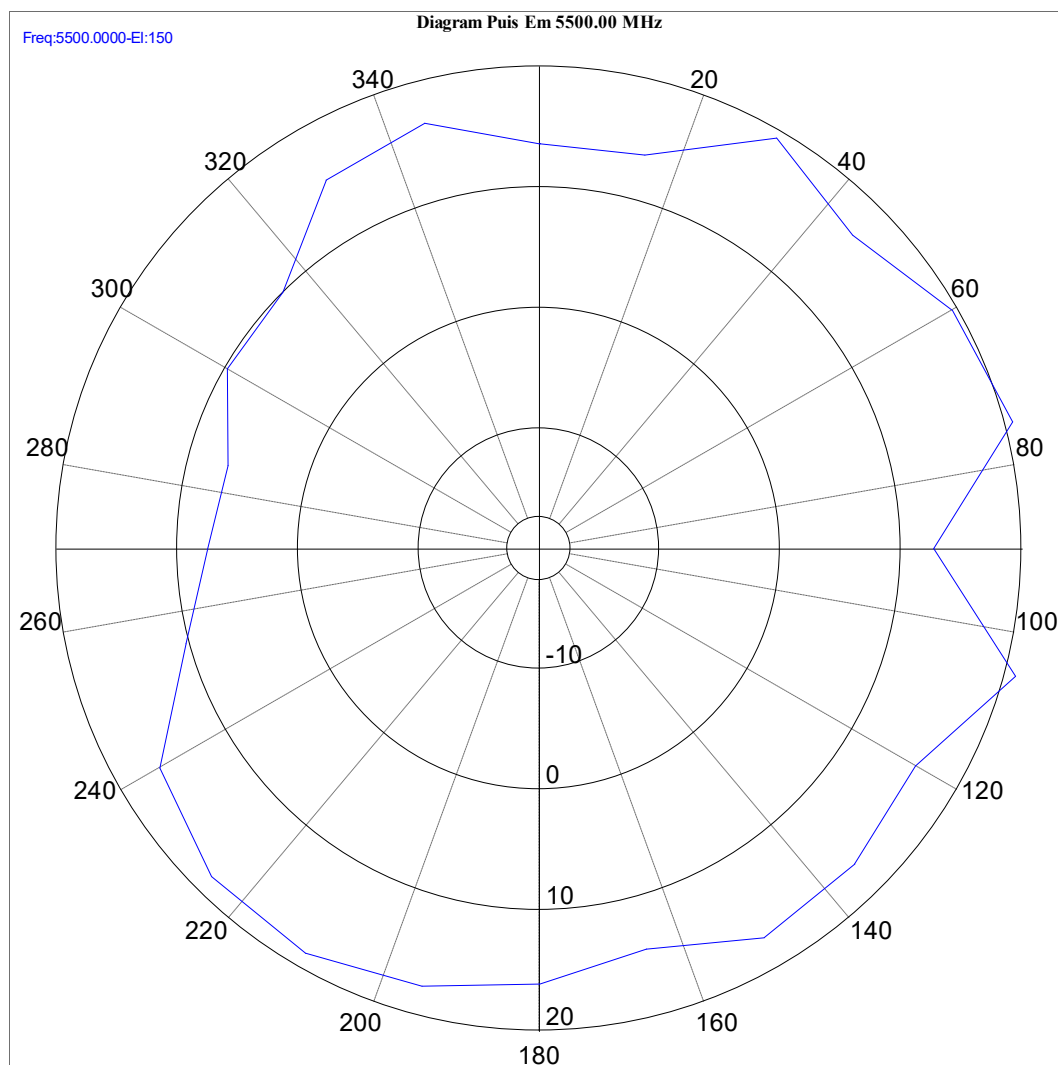


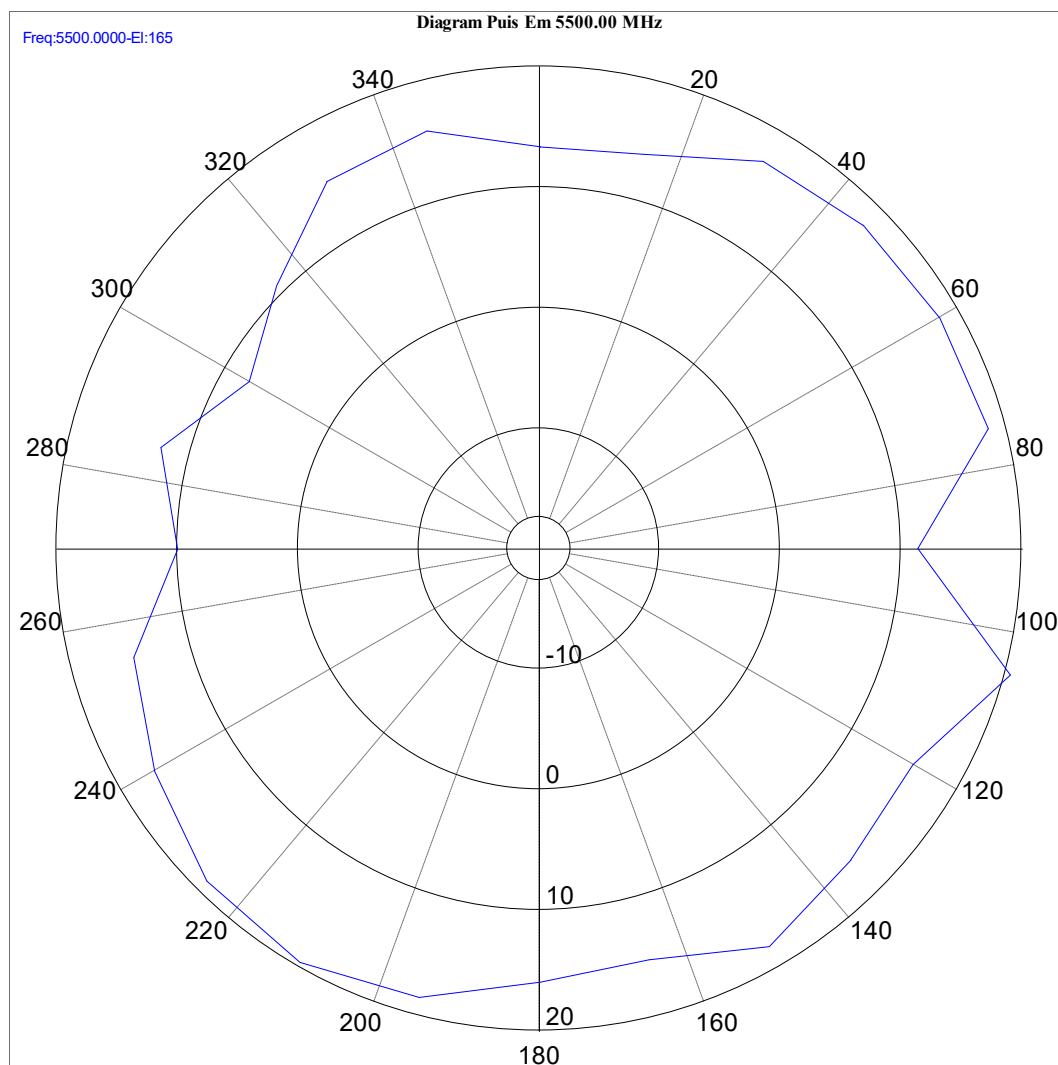


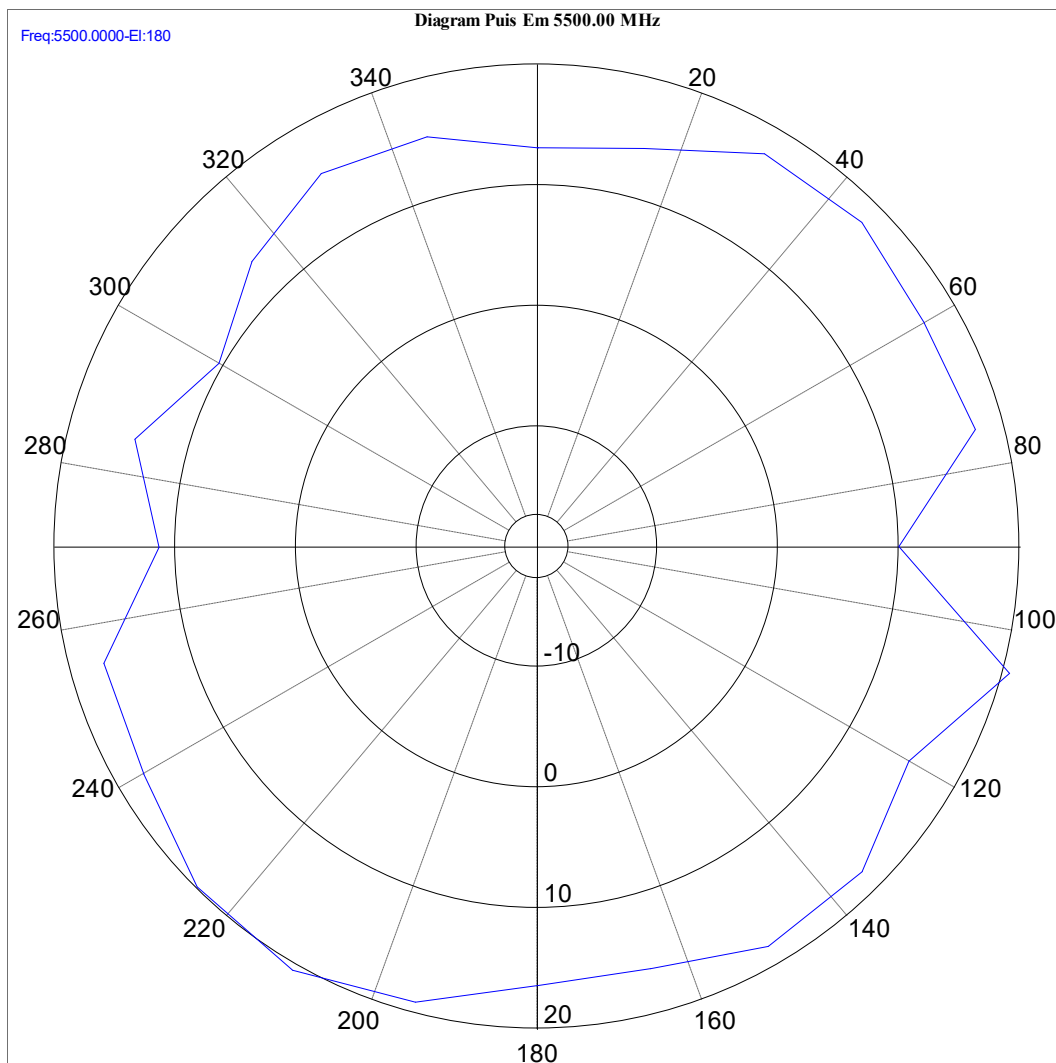






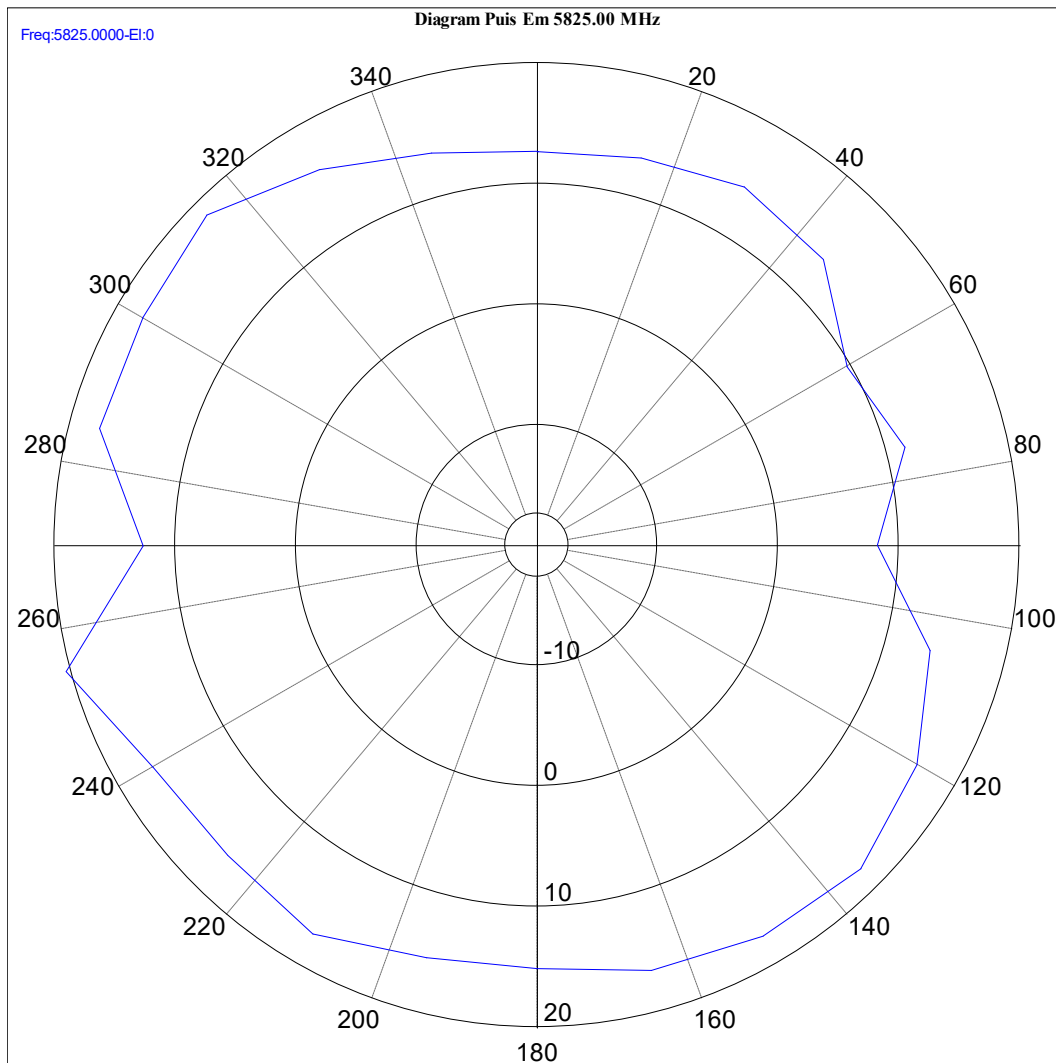


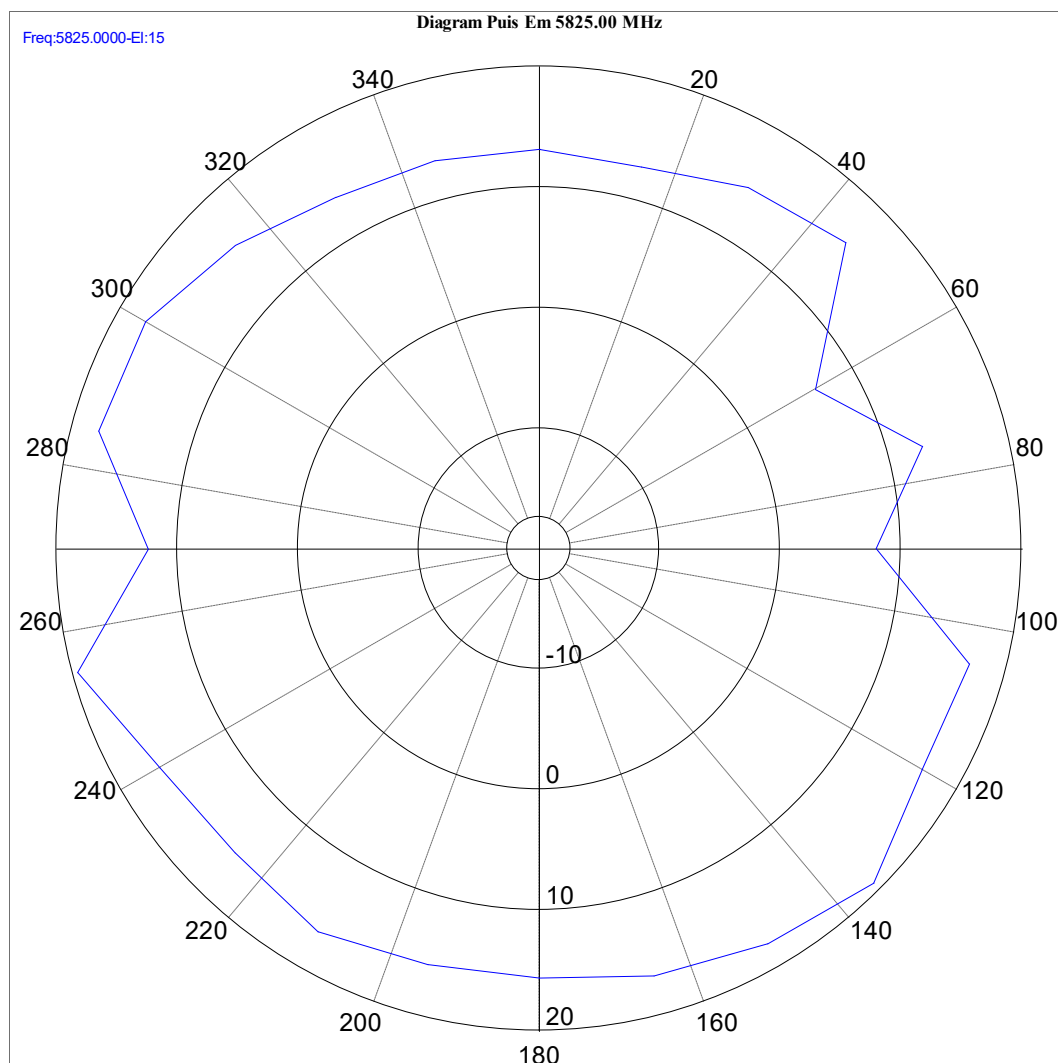


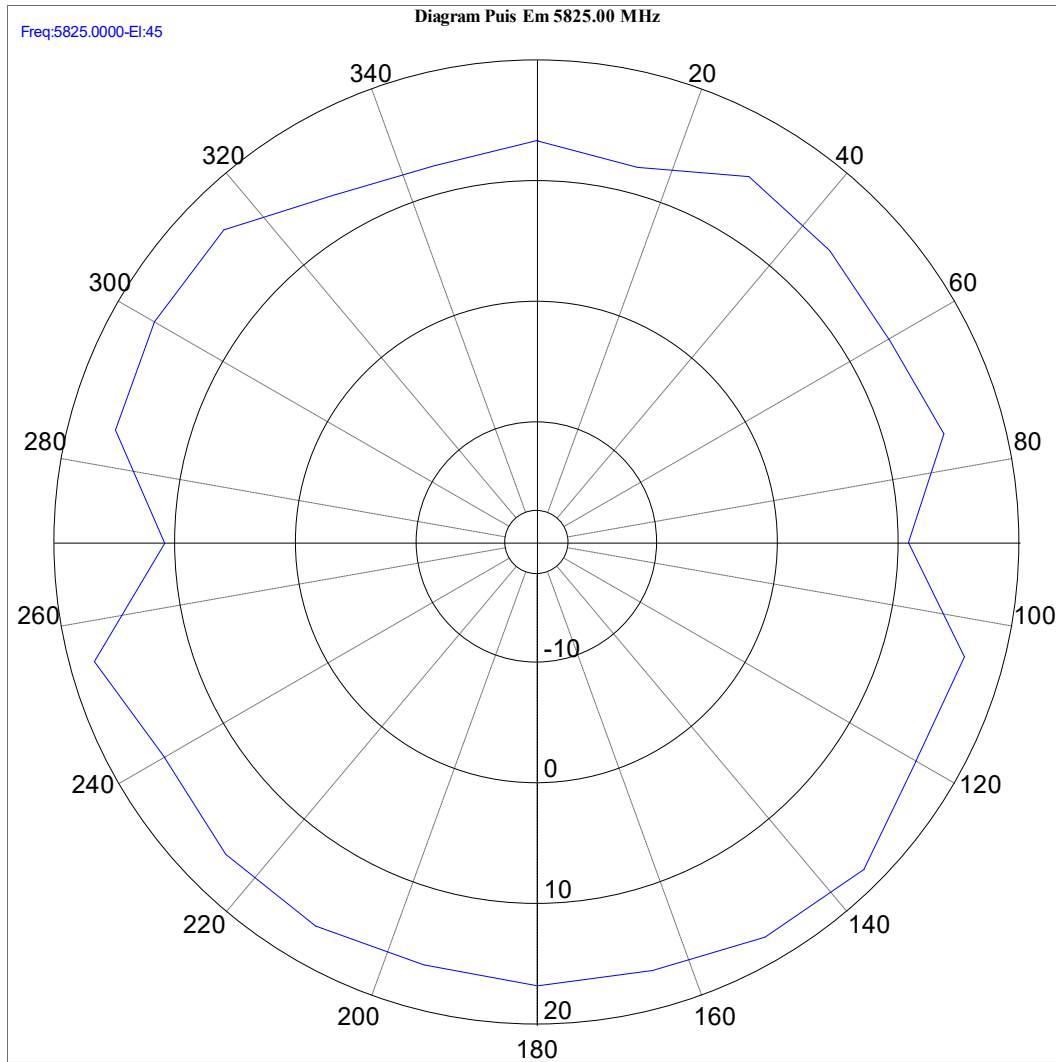


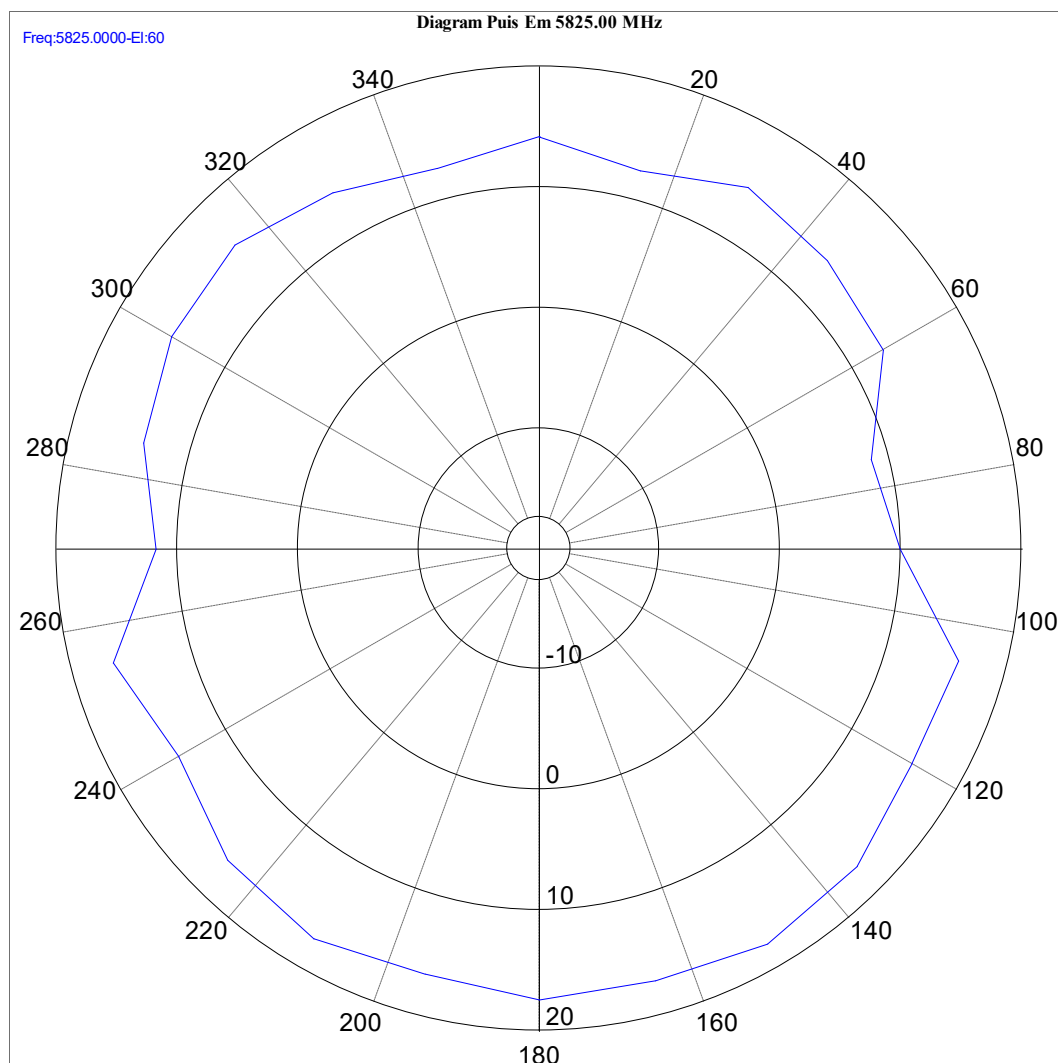
6 CURVES EIRP HIGHT CHANNEL (5825 MHZ)

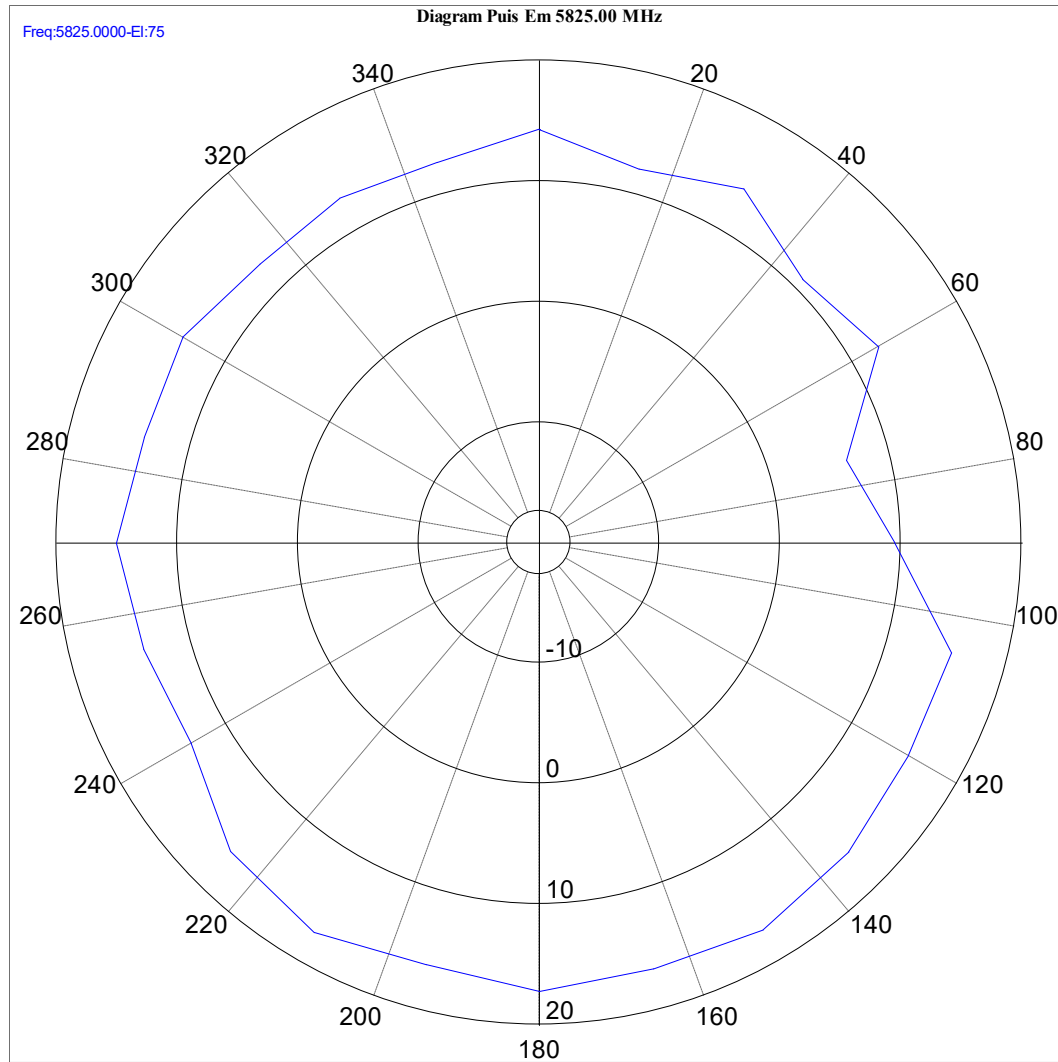
13 Curves : Curve at 0° to Curve at 180° (Step 15°)

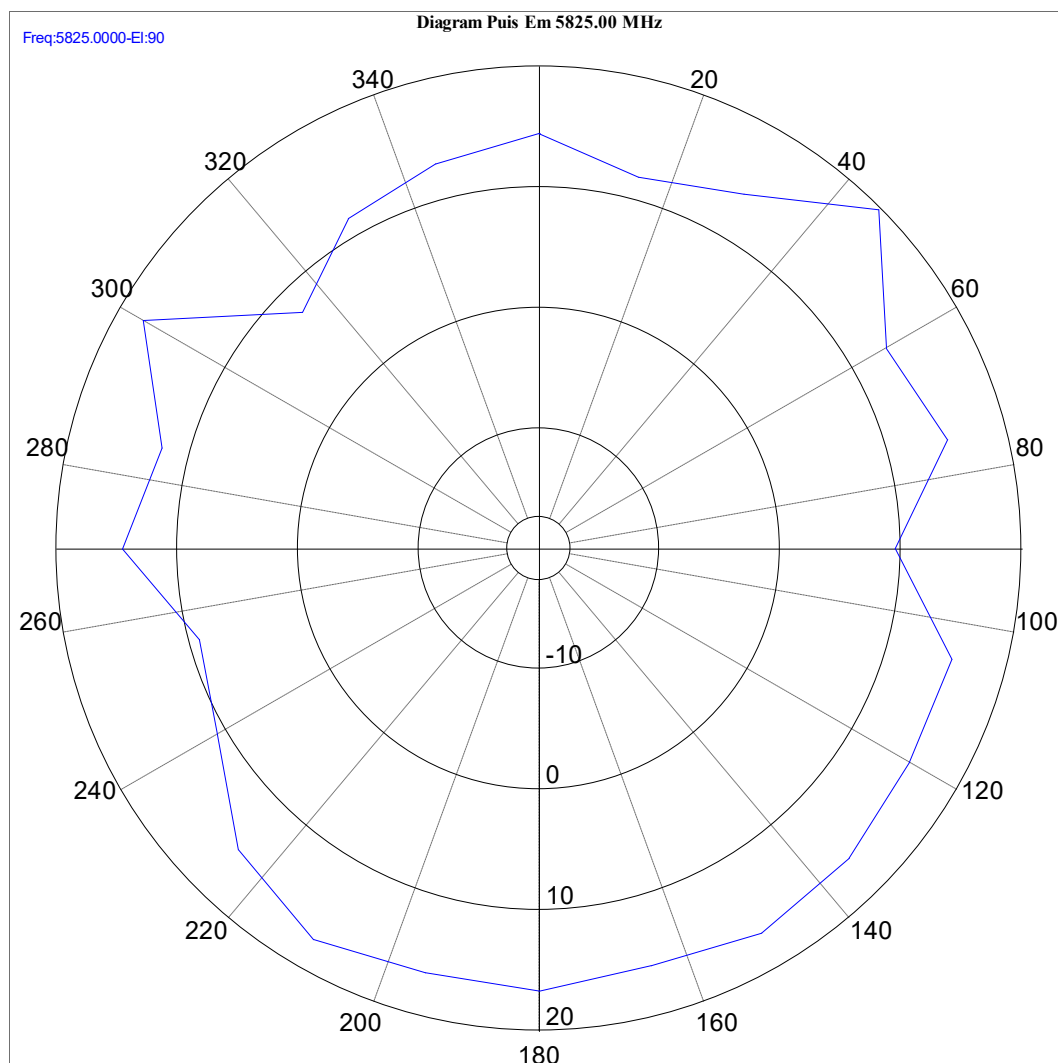


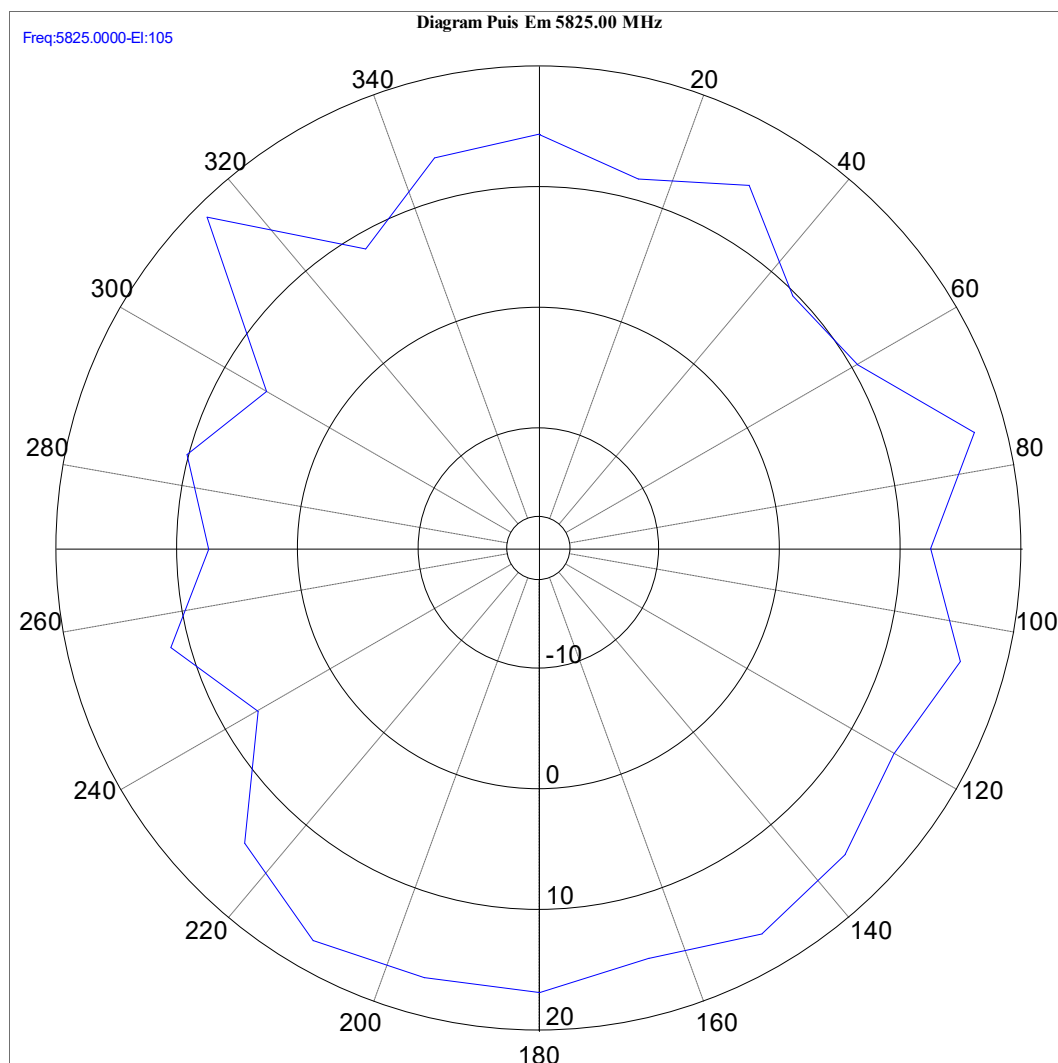


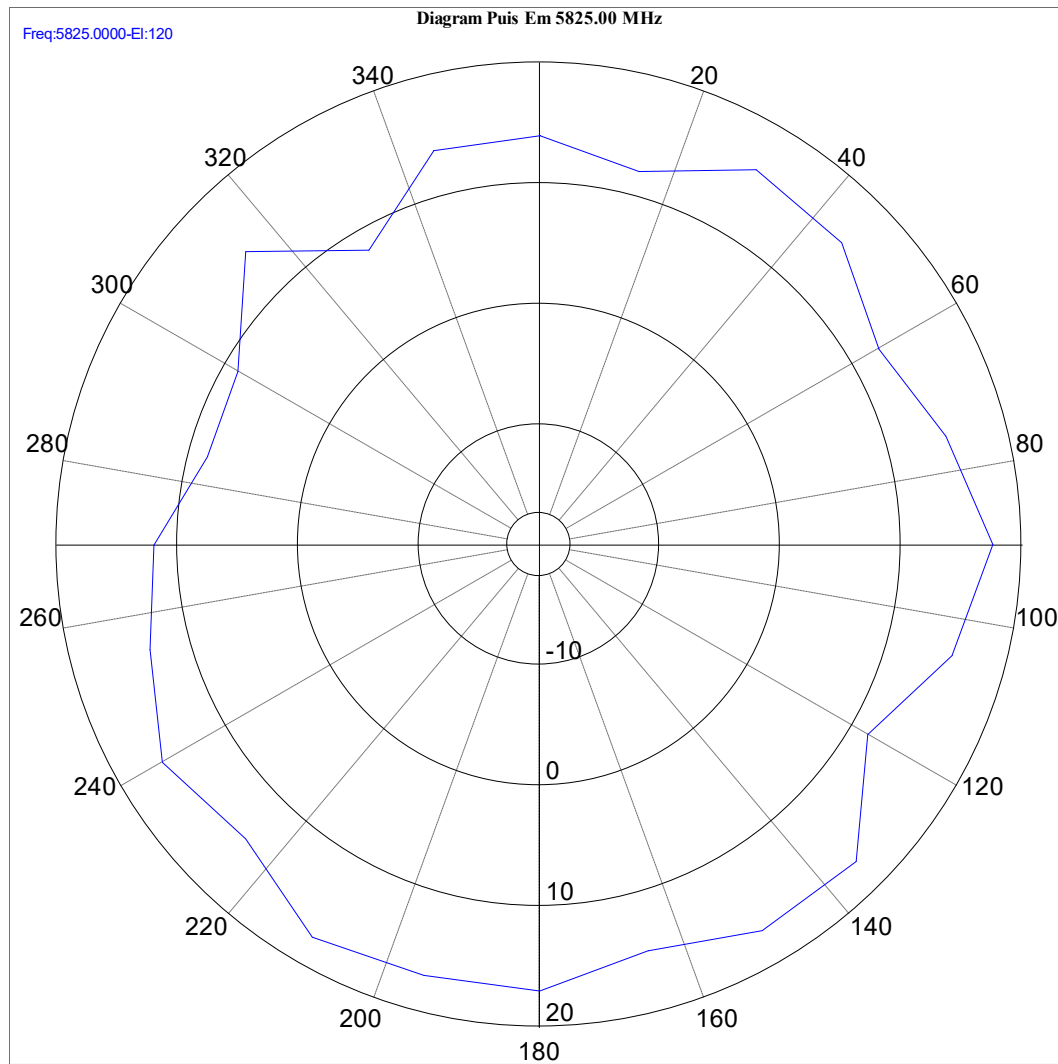


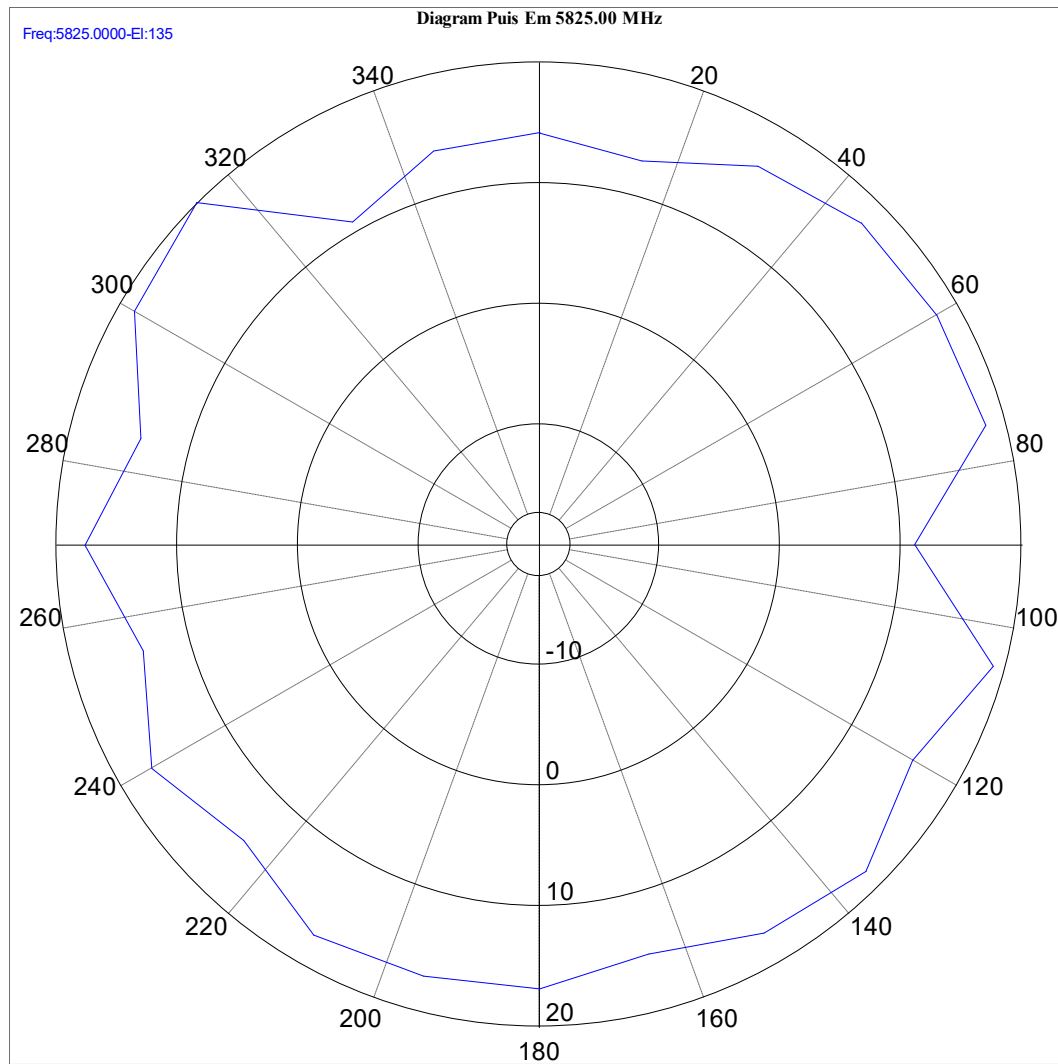


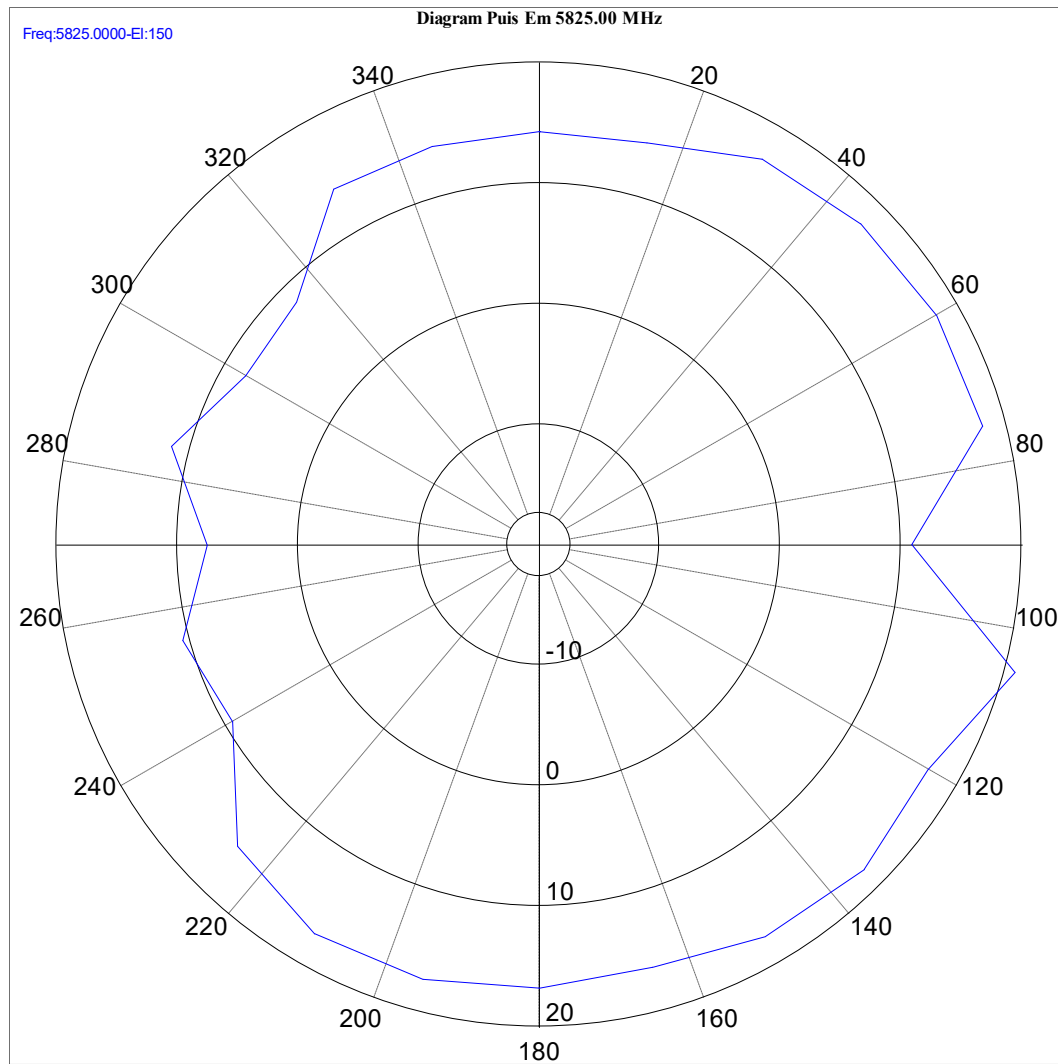


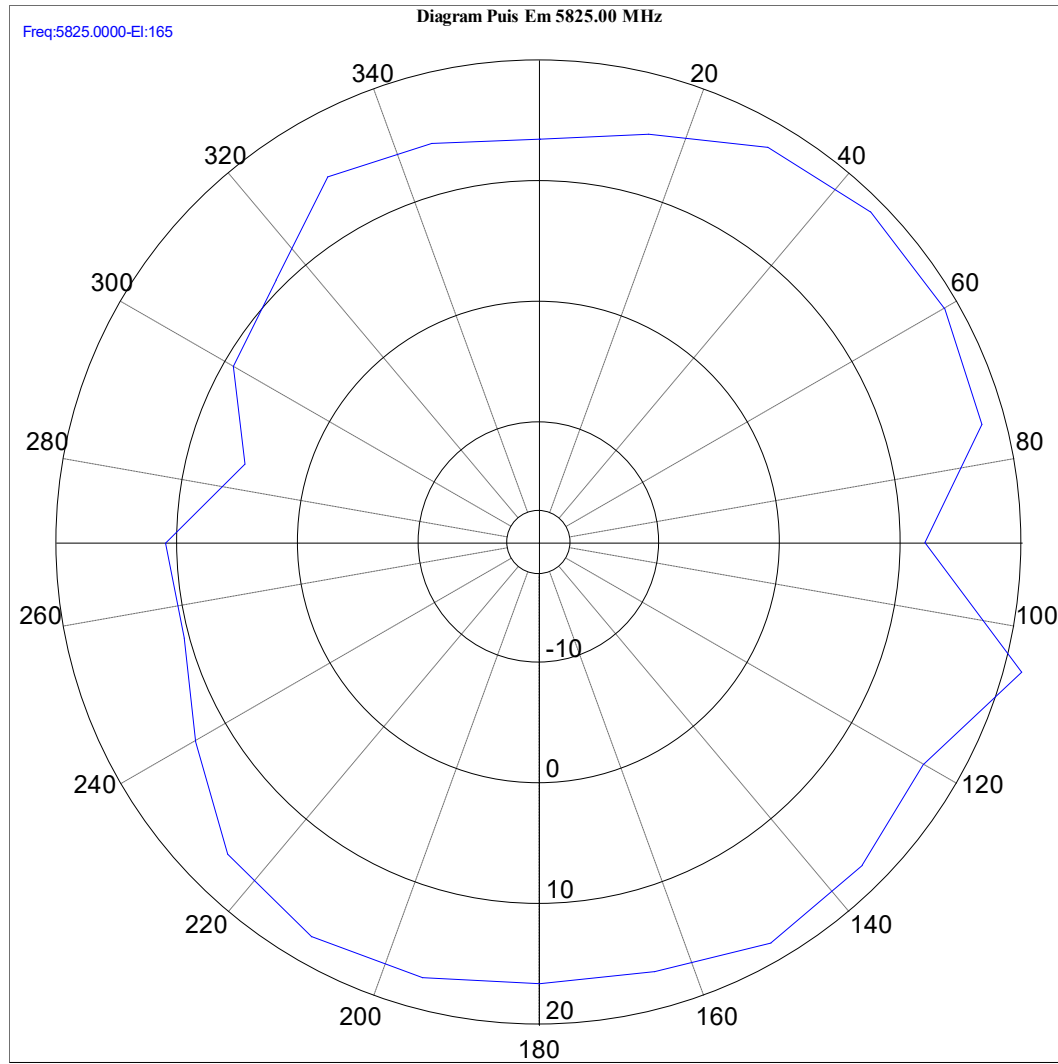


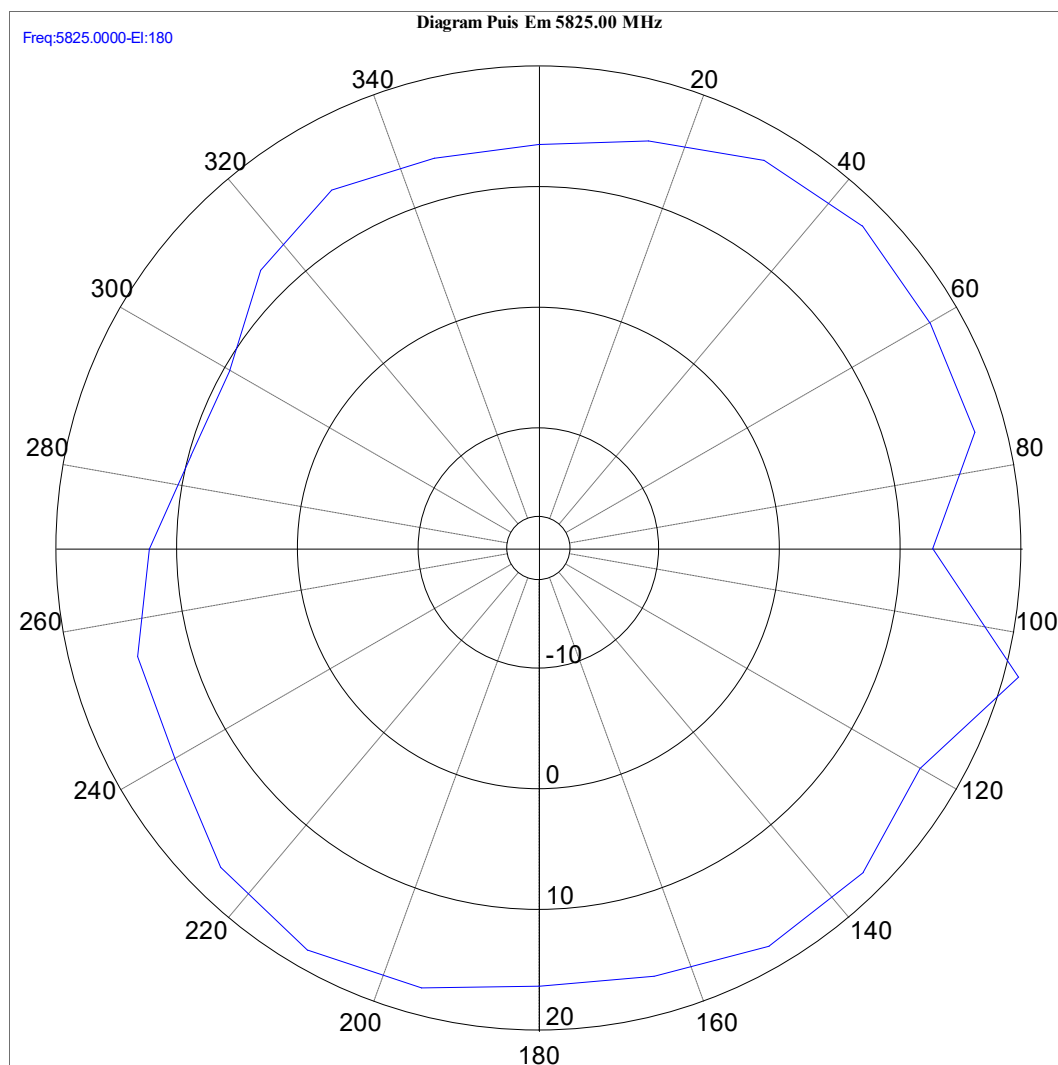












7 ANNEX 2 – VALIDITY OF TEST MEANS

Identification	Description	Manufacturer	Reference	Characteristic	Validity
CEC771RF	FAR room 7	SIEPEL		30MHz-26GHz	02/2029
RF657	Software RF	ACCSYS	AcEMC 7.4.8.4		07/2026
CEC722	Spectrum analyser	R&S	FSW43		02/2027
CEC648	Power Sensor	DARE	RPR3006W	10MHz-6GHz	11/2026
CEC412	Horn antenna	ETS LINDGREN	3115	750MHz-18GHz	12/2027
RF554	PB 2.4GHz	MICRO-TRONICS	BPC17301	2380/2500 MHz	07/2026
RF757	Cable 1.5 m ext FAR room 7			SMA 3 m	03/2030
RF759	Cable 5 m int FAR room 7			SMA 5 m	03/2030
48378	Multimeter	FLUKE	FLUKE 45		10/2026

End of document