Amigo MS30-N

Jun , 2024

Japan Aviation Electronics

Engineer: Jasper

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DVT Cover

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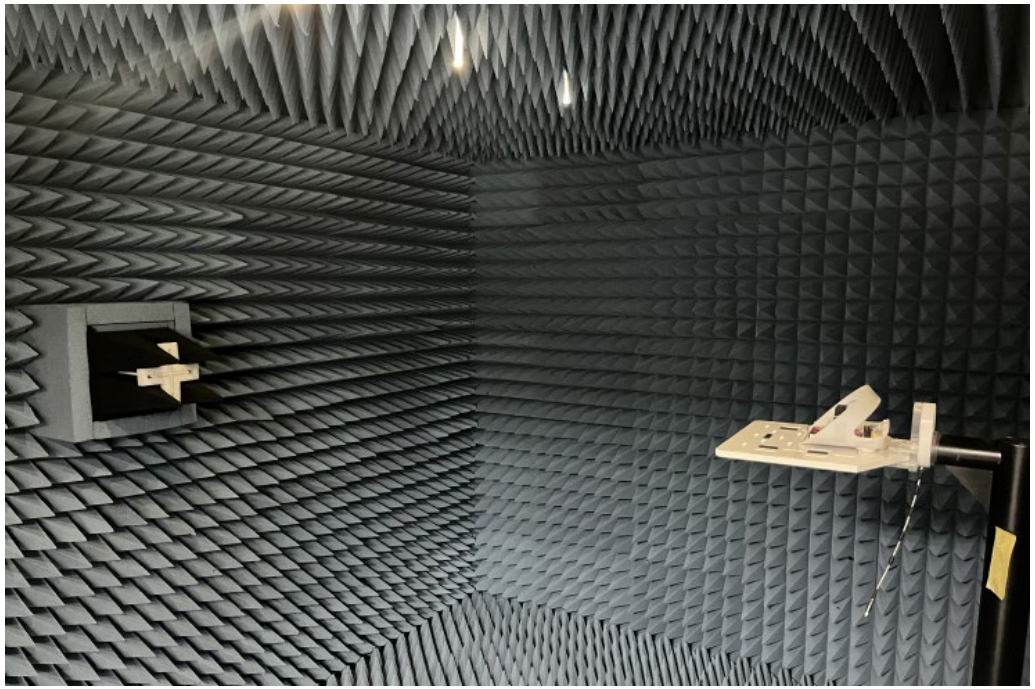
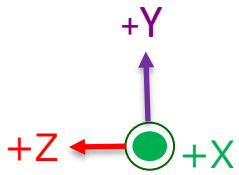
Measurement Environment





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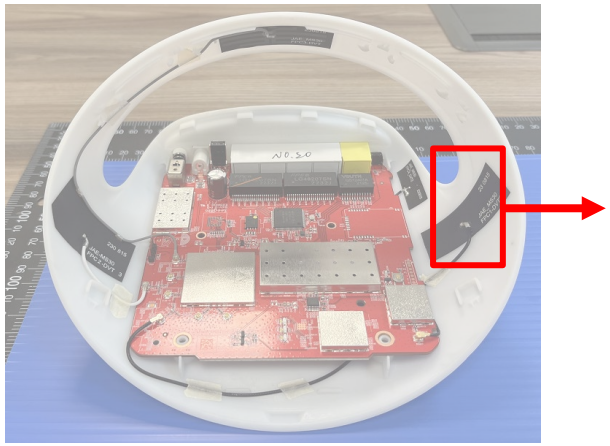
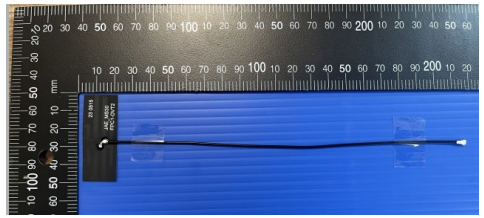
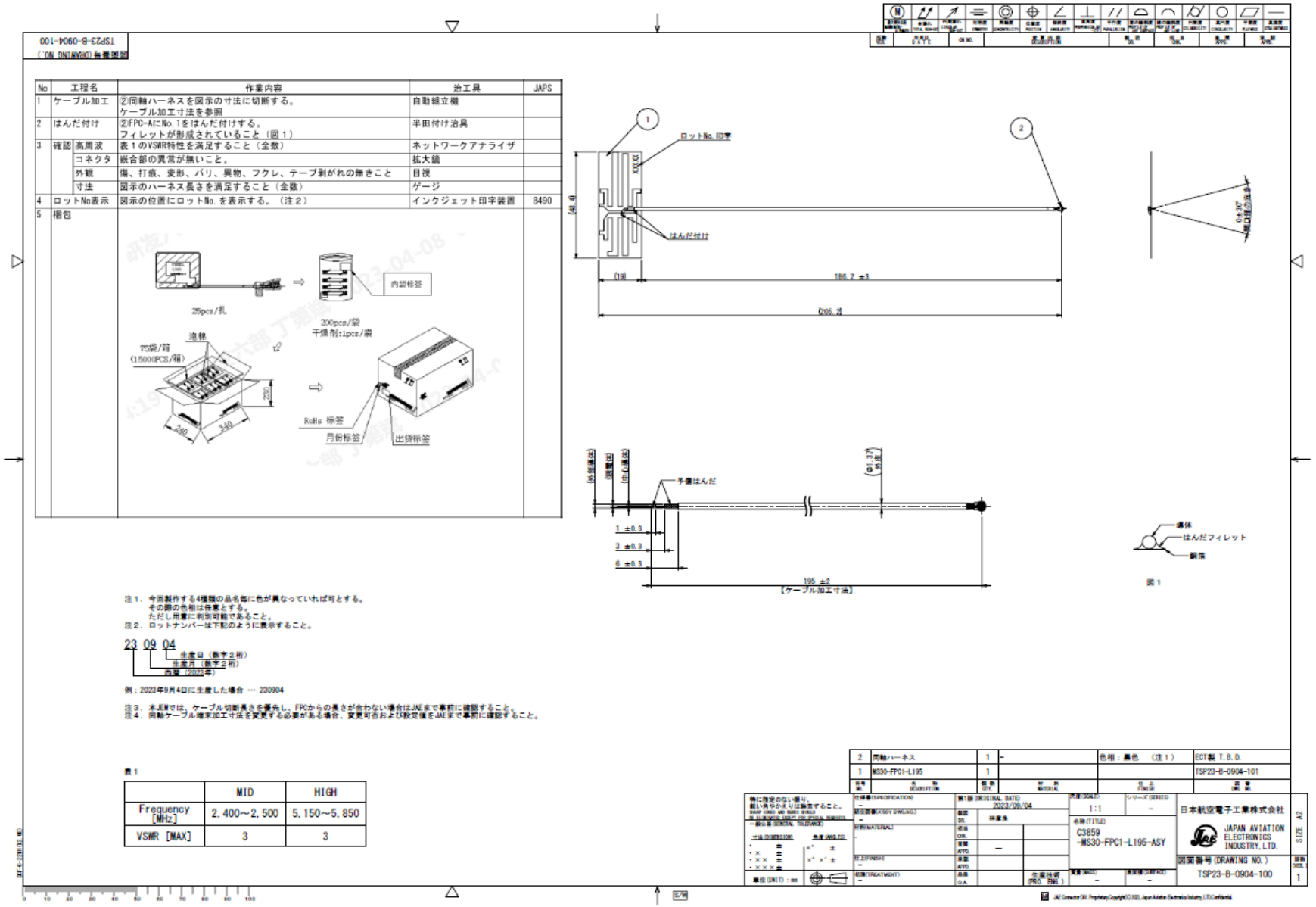
Ant1 Photo & mechanical chart







No	工程名		作業内容	治工具	JAPS
1	ケーブル加工		②同軸ハーネスを図示の寸法に切断する。 ケーブル加工寸法を参照	自動組立機	
2	はんだ付け		②FPC-AにNo.1をはんだ付けする。 フィレットが形成されていること（図1）	半田付け治具	
3	確認	高周波	表1のVSWR特性を満足すること（全数）	ネットワークアナライザ	
		コネクタ	嵌合部の異常が無いこと。	拡大鏡	
		外観	傷、打痕、変形、バリ、異物、フクレ、テープ剥がれの無きこと	目視	
		寸法	図示のハーネス長さを満足すること（全数）	ゲージ	
4	ロットNo表示		図示の位置にロットNo.を表示する。（注2）	インクジェット印字装置	8490
5	梱包				

注1．今回製作する4種類の品名個に色が異なっていれば可とする。
その際の色相は任意とする。
ただし用意に判別可能であること。
注2．ロットナンバーは下記のように表示すること。

23 09 04
生産日（数字2桁）
生産月（数字2桁）
西暦（2023年）

例：2023年9月4日に生産した場合 … 230904

注3．本品Wでは、ケーブル切断長さを優先し、FPCからの長さが合わない場合はJAEまで事前に確認すること。
注4．同軸ケーブル端末加工寸法を変更する必要がある場合、変更可否および設定値をJAEまで事前に確認すること。

表1

	MID	HIGH
Frequency [MHz]	2,400～2,500	5,150～5,850
VSWR [MAX]	3	3

2	同軸ハーネス	1	-	色相：黒色 （注1）
1	MS30-FPC1-L195	1		

ECT製 T.B.D.
TSP23-B-0904-101

日本航空電子工業株式会社
JAPAN AVIATION ELECTRONICS INDUSTRY, LTD.
C3859
-MS30-FPC1-L195-ASY
1:1
2023/09/04
図面番号(DRAWING NO.) TSP23-B-0904-100
A2

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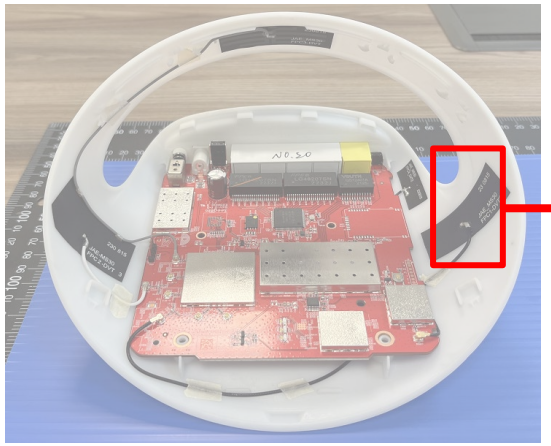
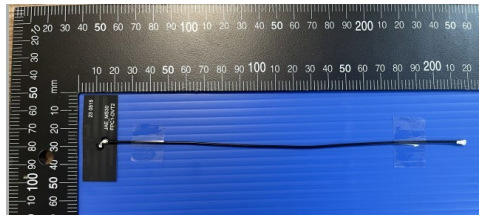
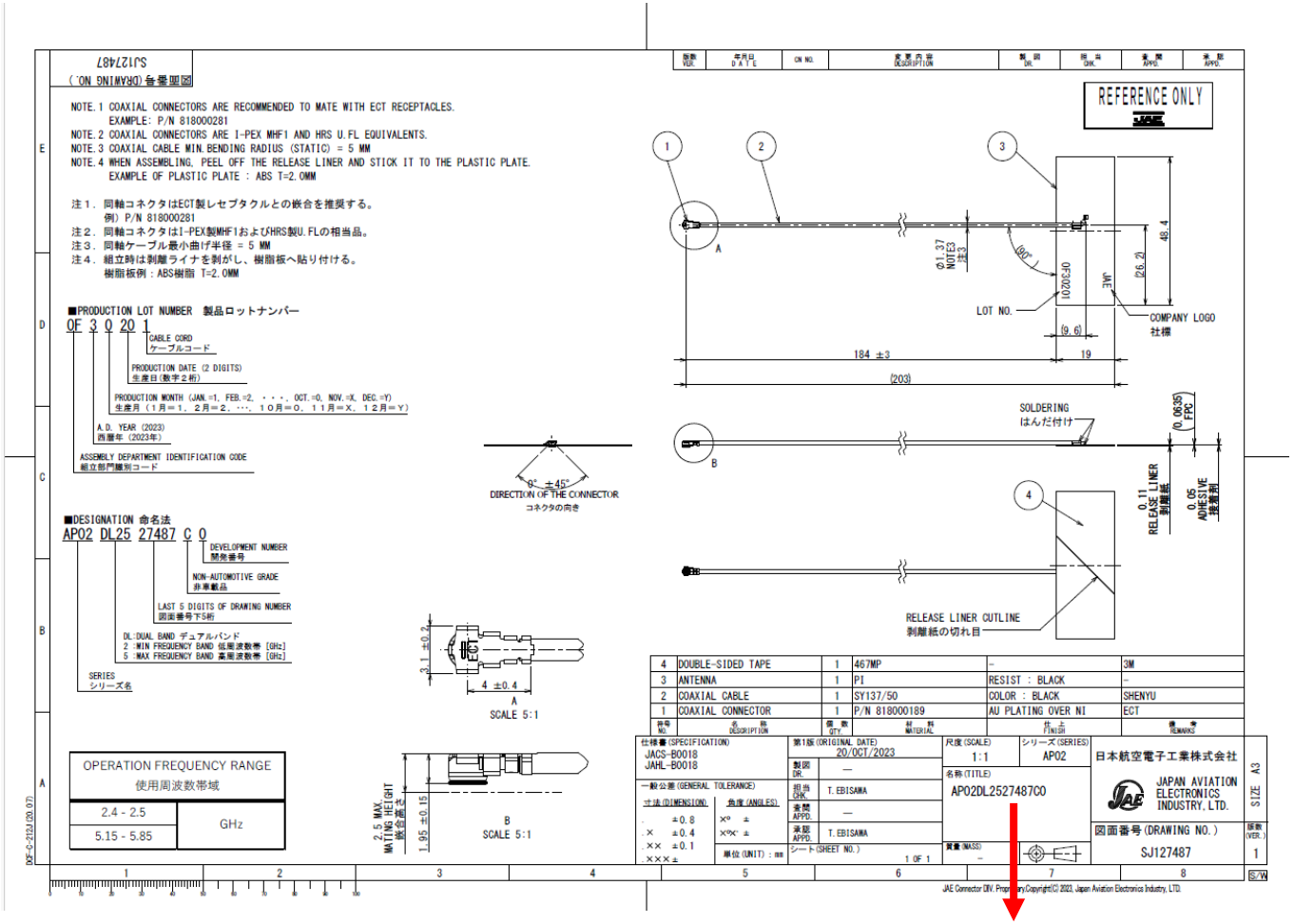
Ant1 Photo & mechanical chart







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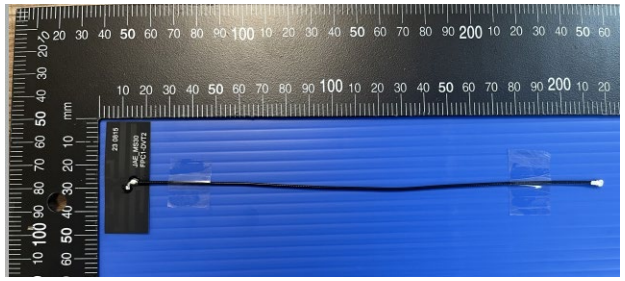
Ant1 Information

Technology to Inspire Innovation



Antenna Type	Dipole
Frequency(MHz)	2400-2500 5180-5875
Material	FPCB
Connector	MHF
Cable type	1.37Ø
Cable length	195mm
Polarization	Linear

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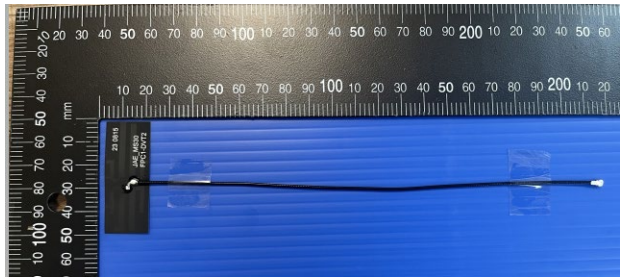
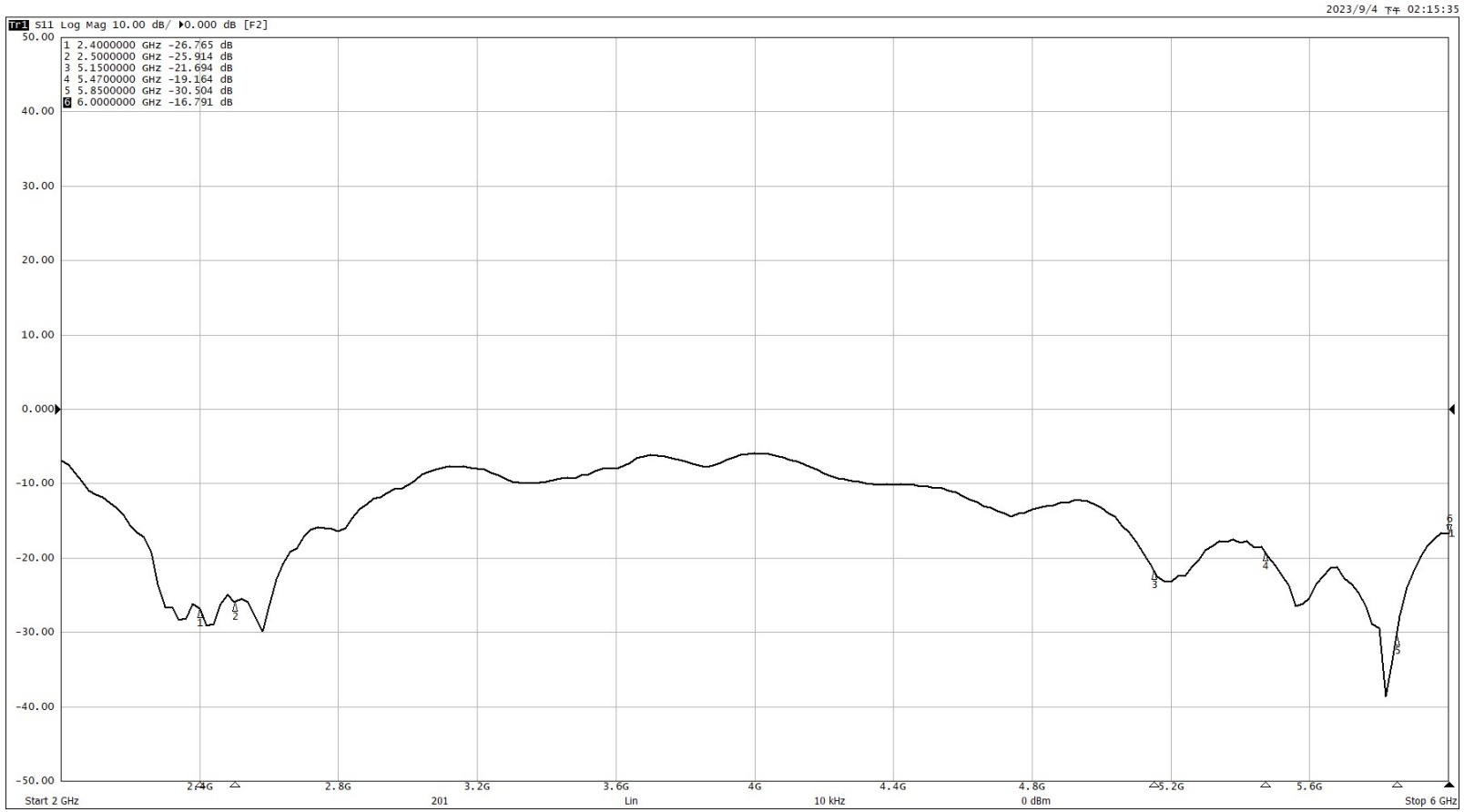
Ant1 S-Parameter

Technology to Inspire Innovation





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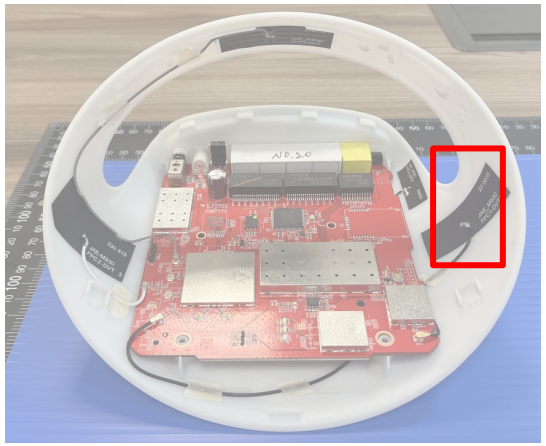
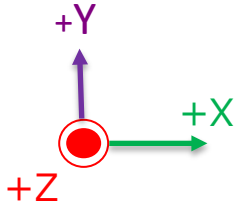
Ant1 Peak gain & Avg Gain & Efficiency





Frequency(MHz)	Peak Gain(dBi)	3D Avg Gain(dBi)	Efficiency(%)
2412	0.96	-1.21	76
2422	1.1	-1.30	74
2437	1.19	-1.51	71
2442	1.25	-1.55	70
2452	1.27	-1.58	70
2484	1.4	-1.58	69
5180	1.79	-1.86	65
5260	1.81	-1.77	66
5320	1.88	-1.90	65
5500	1.98	-2.13	61
5560	1.73	-2.10	62
5660	1.81	-2.04	62
5700	1.79	-1.96	64
5745	1.64	-1.85	65
5785	1.88	-1.90	65
5805	1.69	-1.87	65
5875	1.18	-1.95	64

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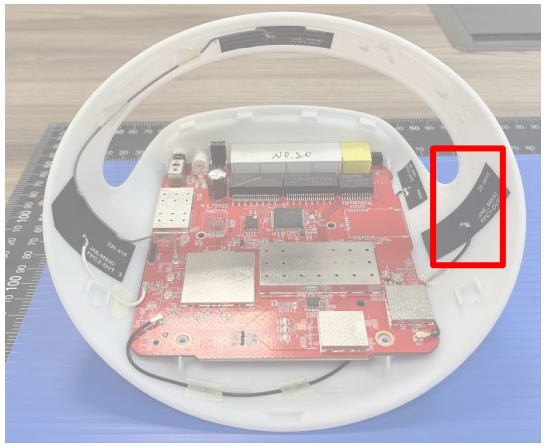
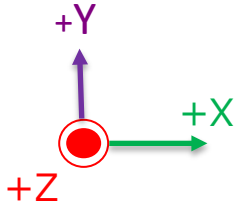
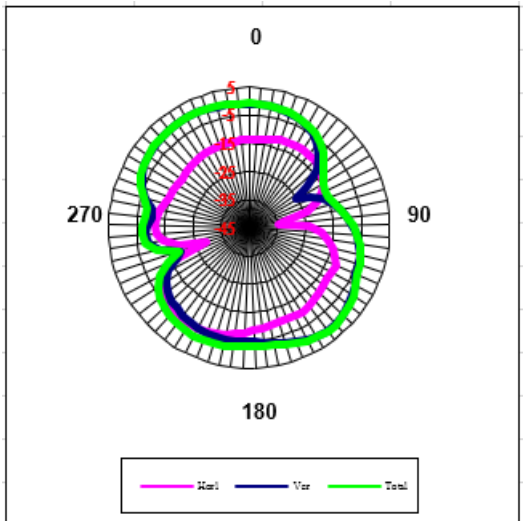
Ant1 Pattern





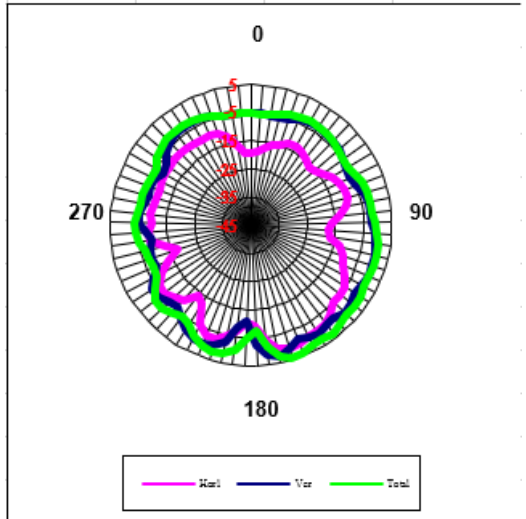
Frequency:2452 MHz

XY Plane



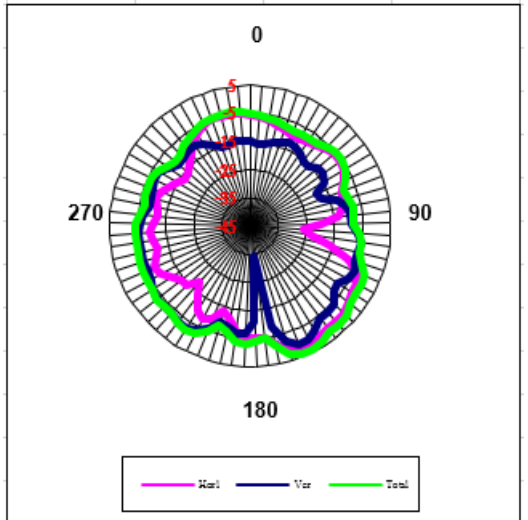
Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-4.71
Vertical peak gain (dBi)	0.93

XZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	1.03
Vertical peak gain (dBi)	2.47

YZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	2.27
Vertical peak gain (dBi)	0.45

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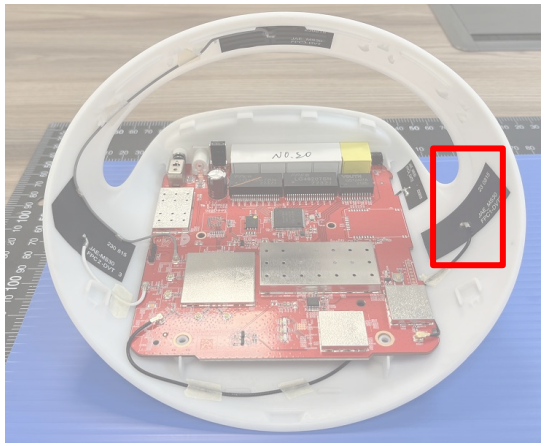
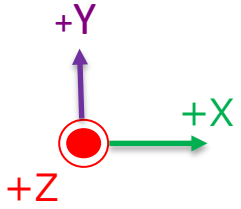
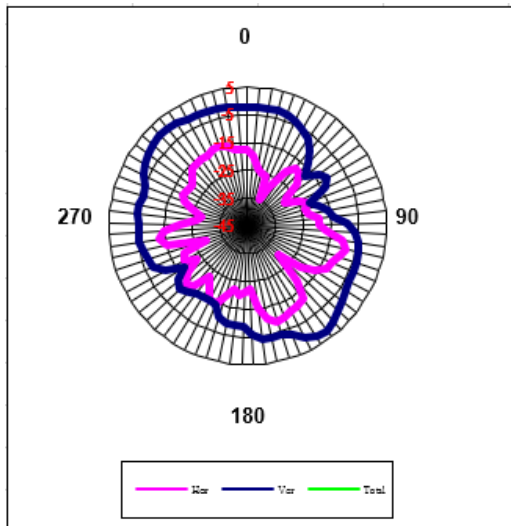
Ant1 Pattern





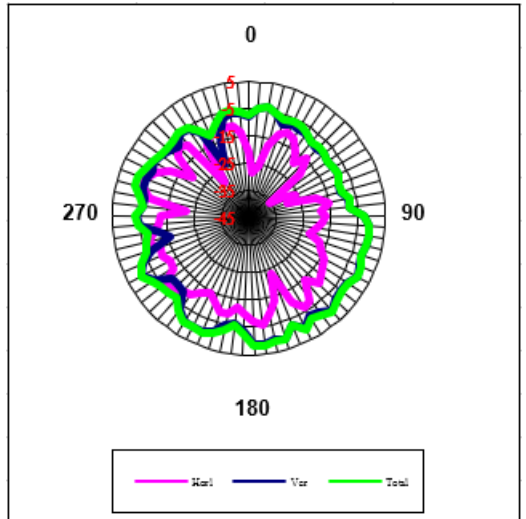
Frequency:5560 MHz

XY Plane



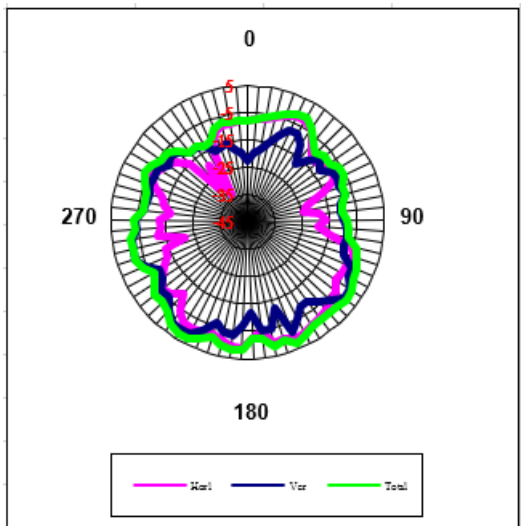
Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-8.47
Vertical peak gain (dBi)	1.29

XZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-4.40
Vertical peak gain (dBi)	1.66

YZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	1.08
Vertical peak gain (dBi)	1.18

WaveConnect
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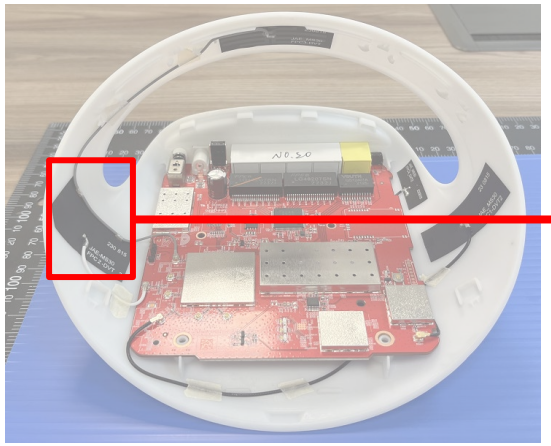
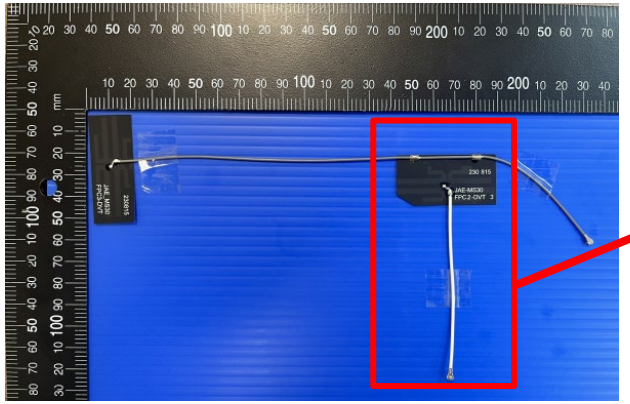
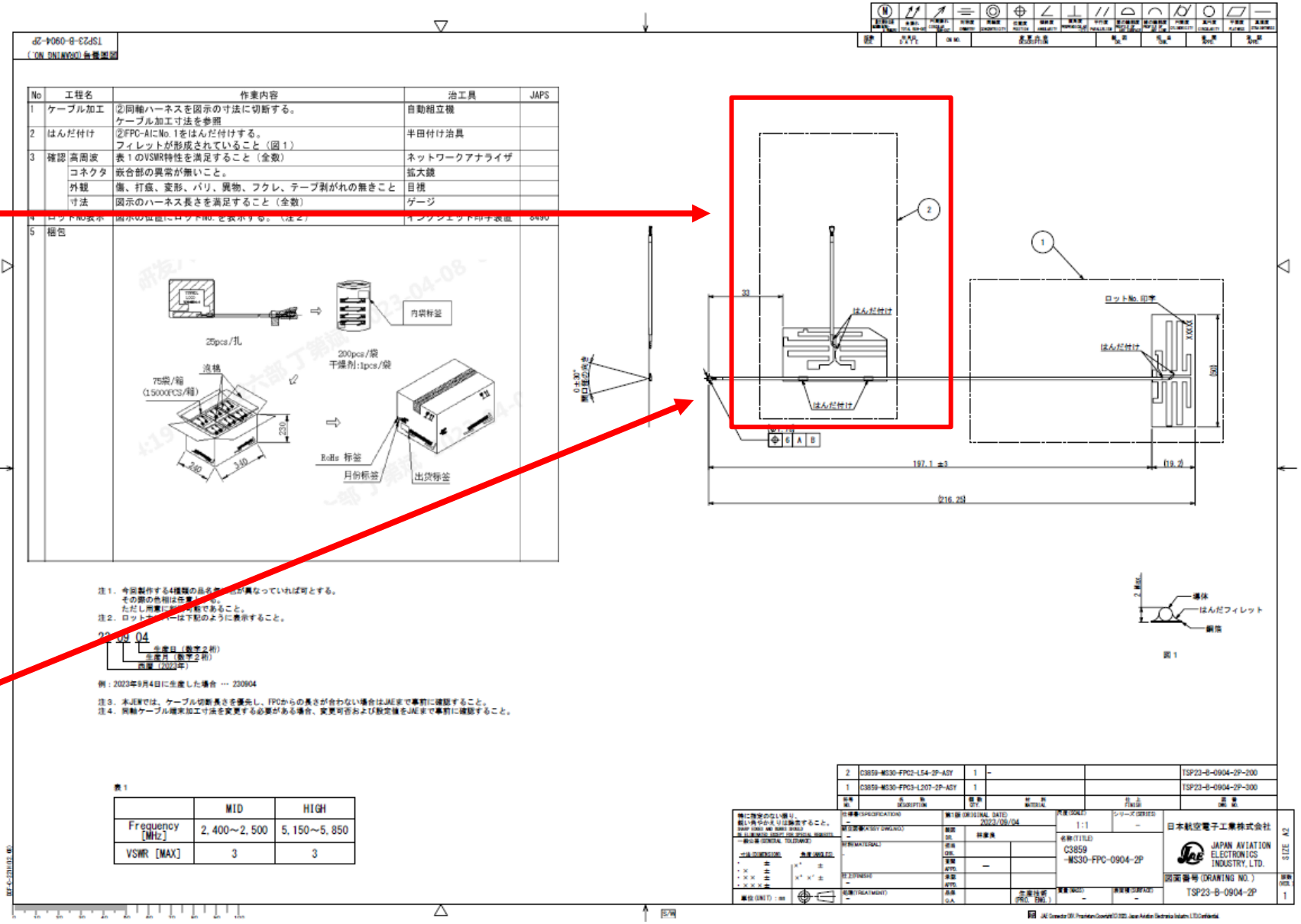
Ant2 Photo & mechanical chart

Technology to Inspire Innovation







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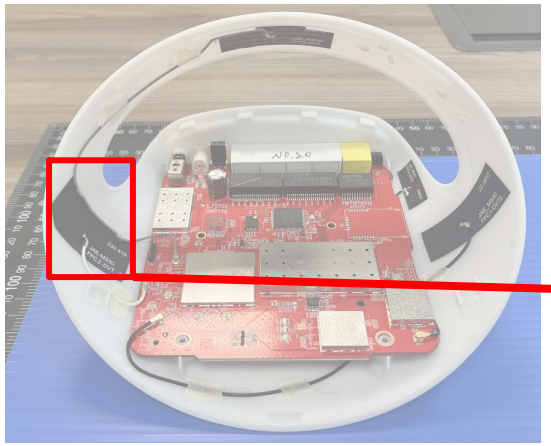
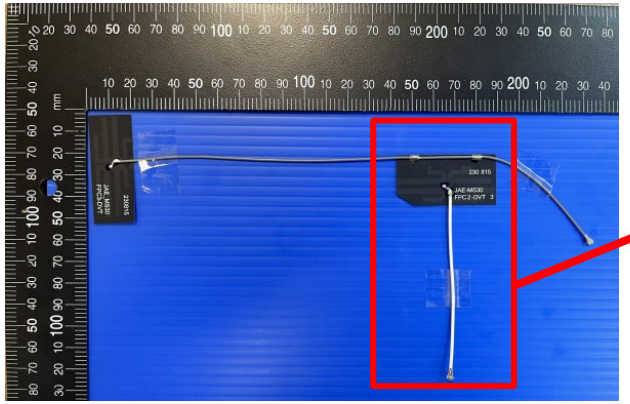
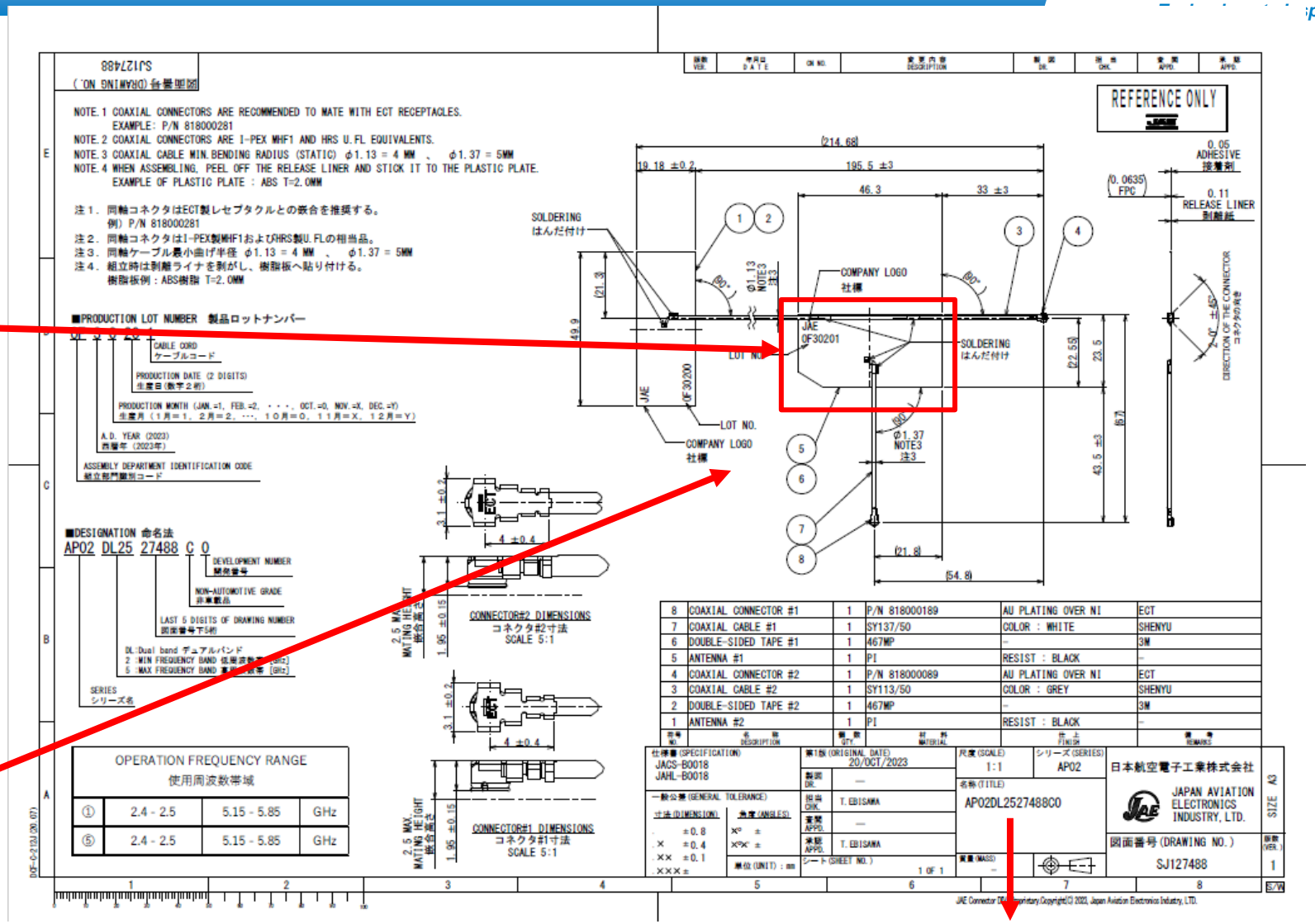
Ant2 Photo & mechanical chart







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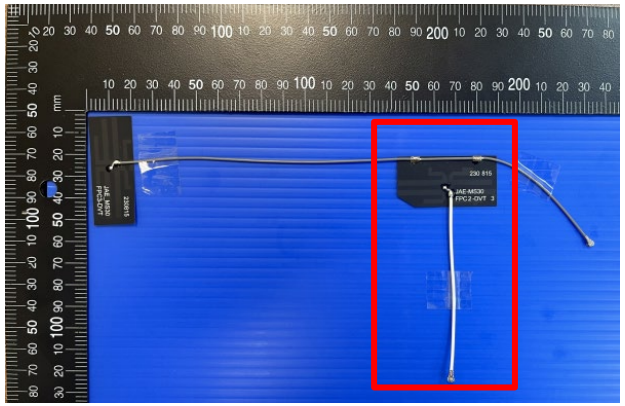
Ant2 Information

Technology to Inspire Innovation



Antenna Type	Dipole
Frequency(MHz)	2400-2500 5180-5875
Material	FPCB
Connector	MHF
Cable type	1.37Ø
Cable length	54mm
Polarization	Linear

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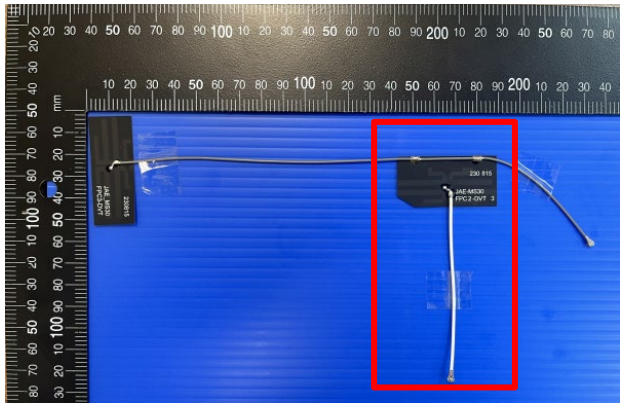
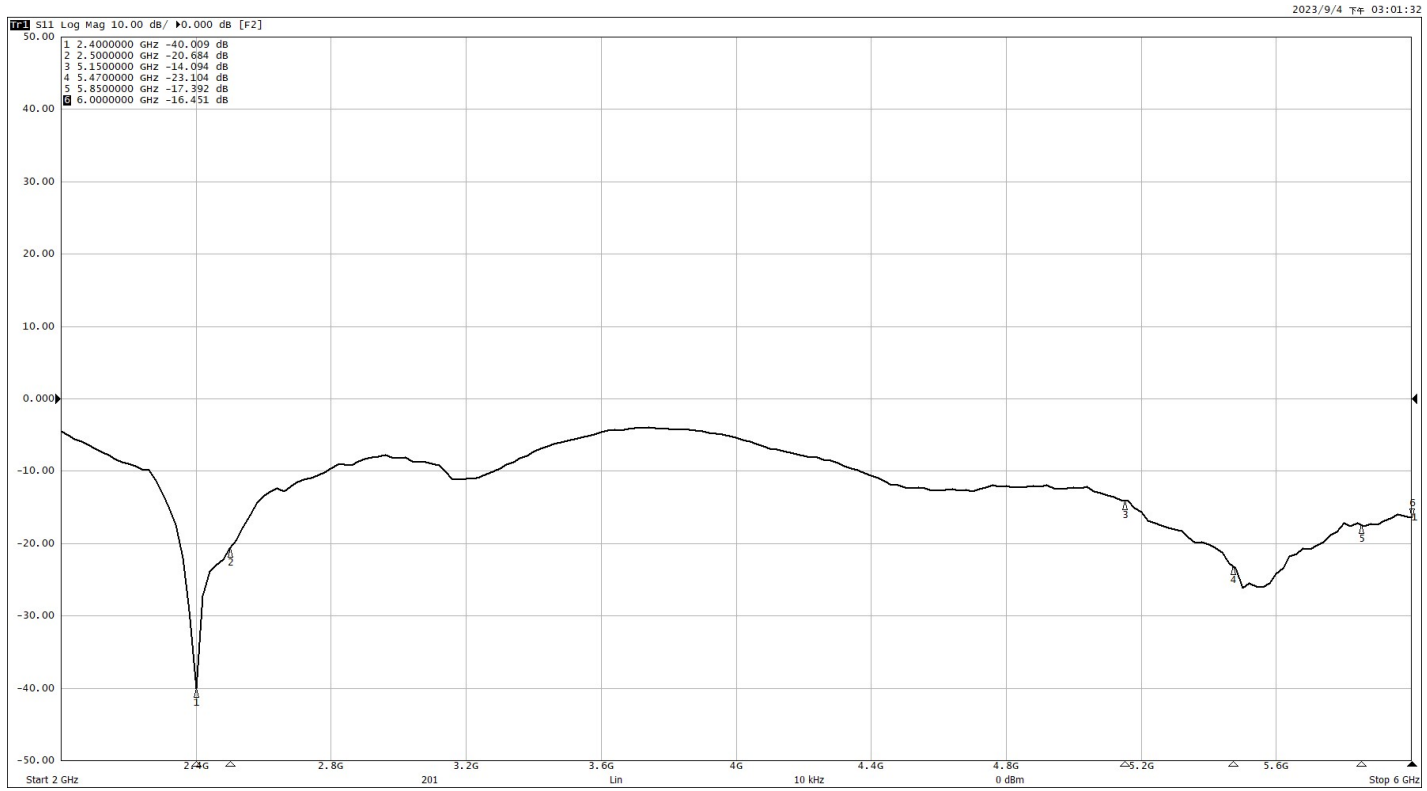
Ant2 S-Parameter





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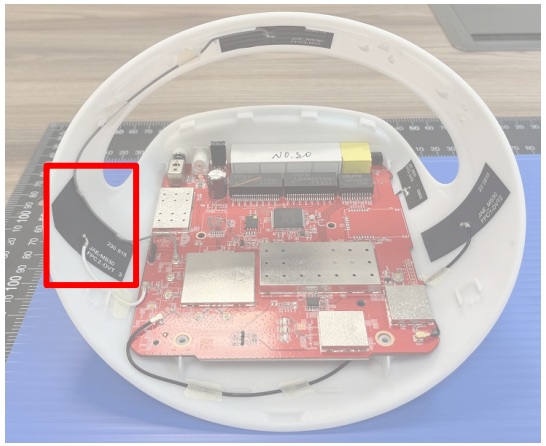
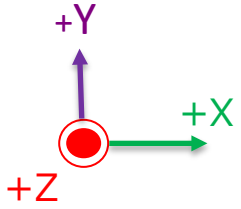
Ant2 Peak gain & Avg Gain & Efficiency





Frequency(MHz)	Peak Gain(dBi)	3D Avg Gain(dBi)	Efficiency(%)
2412	1.65	-1.39	73
2422	1.79	-1.57	70
2437	1.47	-1.89	65
2442	1.4	-1.95	64
2452	1.48	-1.97	64
2484	1.73	-1.72	67
5180	1.64	-1.07	78
5260	1.55	-1.13	77
5320	1.73	-1.27	75
5500	1.6	-1.73	67
5560	1.87	-1.62	69
5660	2.01	-1.51	71
5700	2.1	-1.47	71
5745	2.08	-1.40	72
5785	2.11	-1.44	72
5805	2.15	-1.41	72
5875	2.19	-1.43	72

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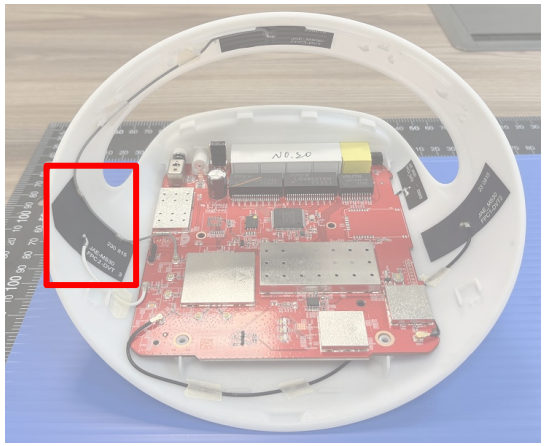
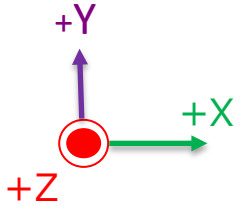
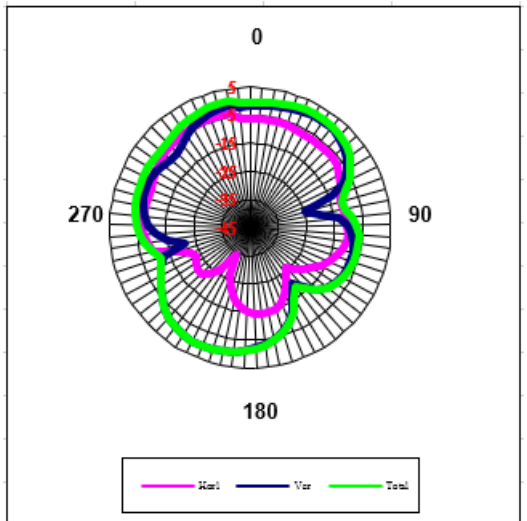
Ant2 Pattern





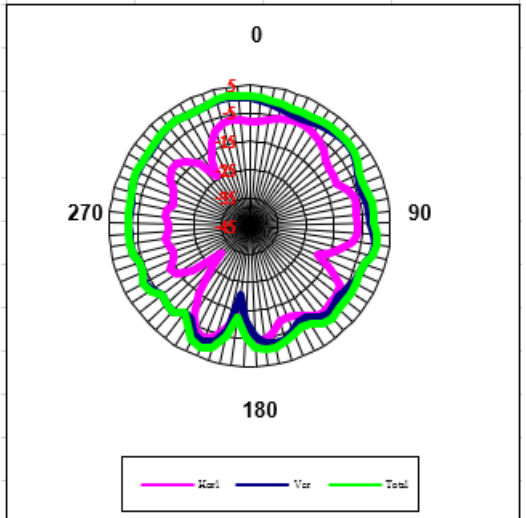
Frequency:2452 MHz

XY Plane



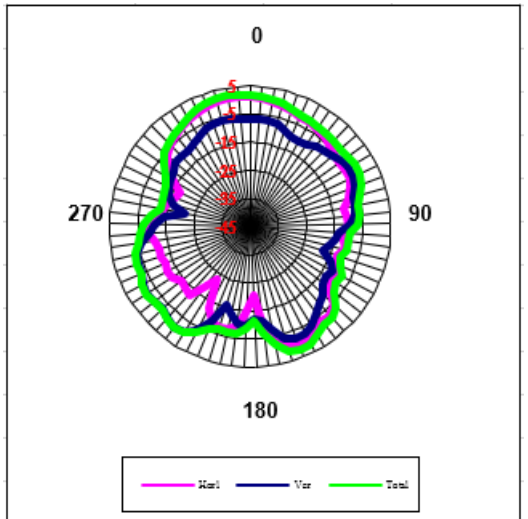
Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-3.68
Vertical peak gain (dBi)	0.81

XZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-2.18
Vertical peak gain (dBi)	1.15

YZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	1.59
Vertical peak gain (dBi)	-0.12

WaveConnect
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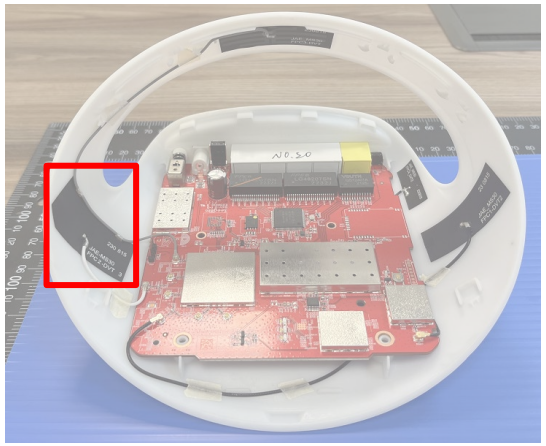
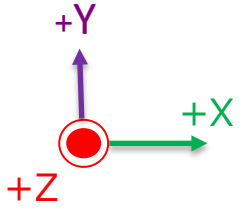
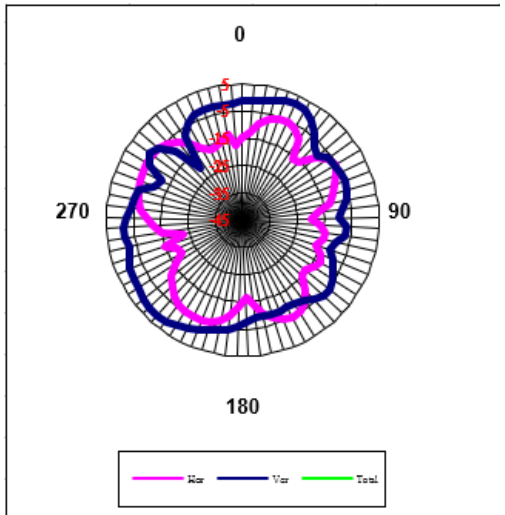
Ant2 Pattern





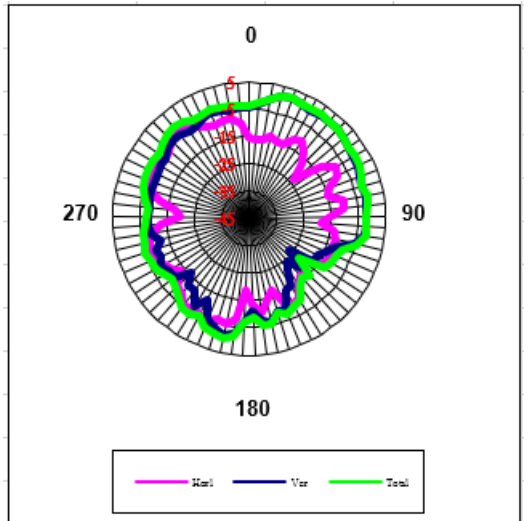
Frequency:5560 MHz

XY Plane



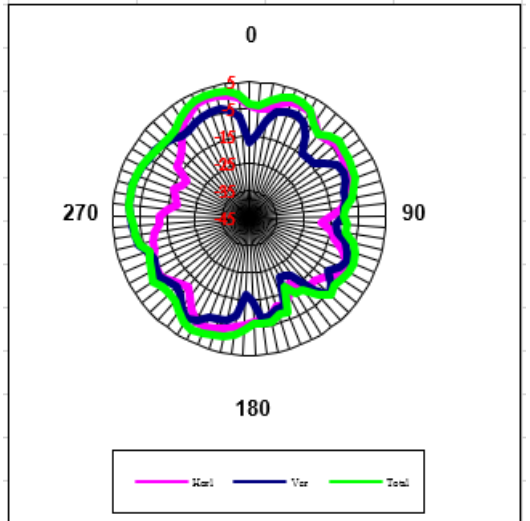
Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-4.08
Vertical peak gain (dBi)	1.29

XZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-3.72
Vertical peak gain (dBi)	1.73

YZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	1.40
Vertical peak gain (dBi)	-0.50

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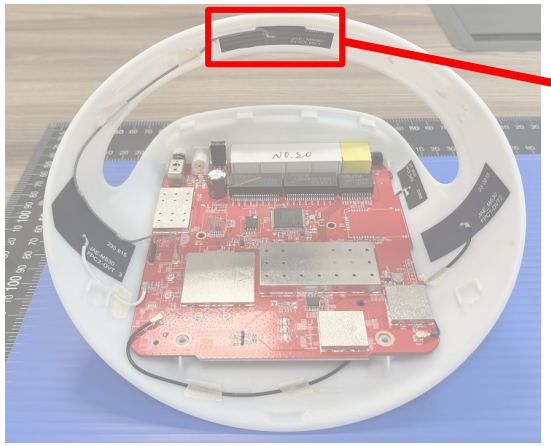
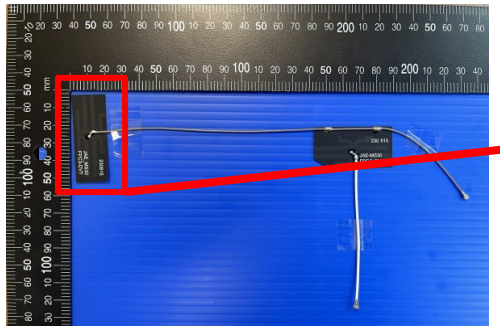
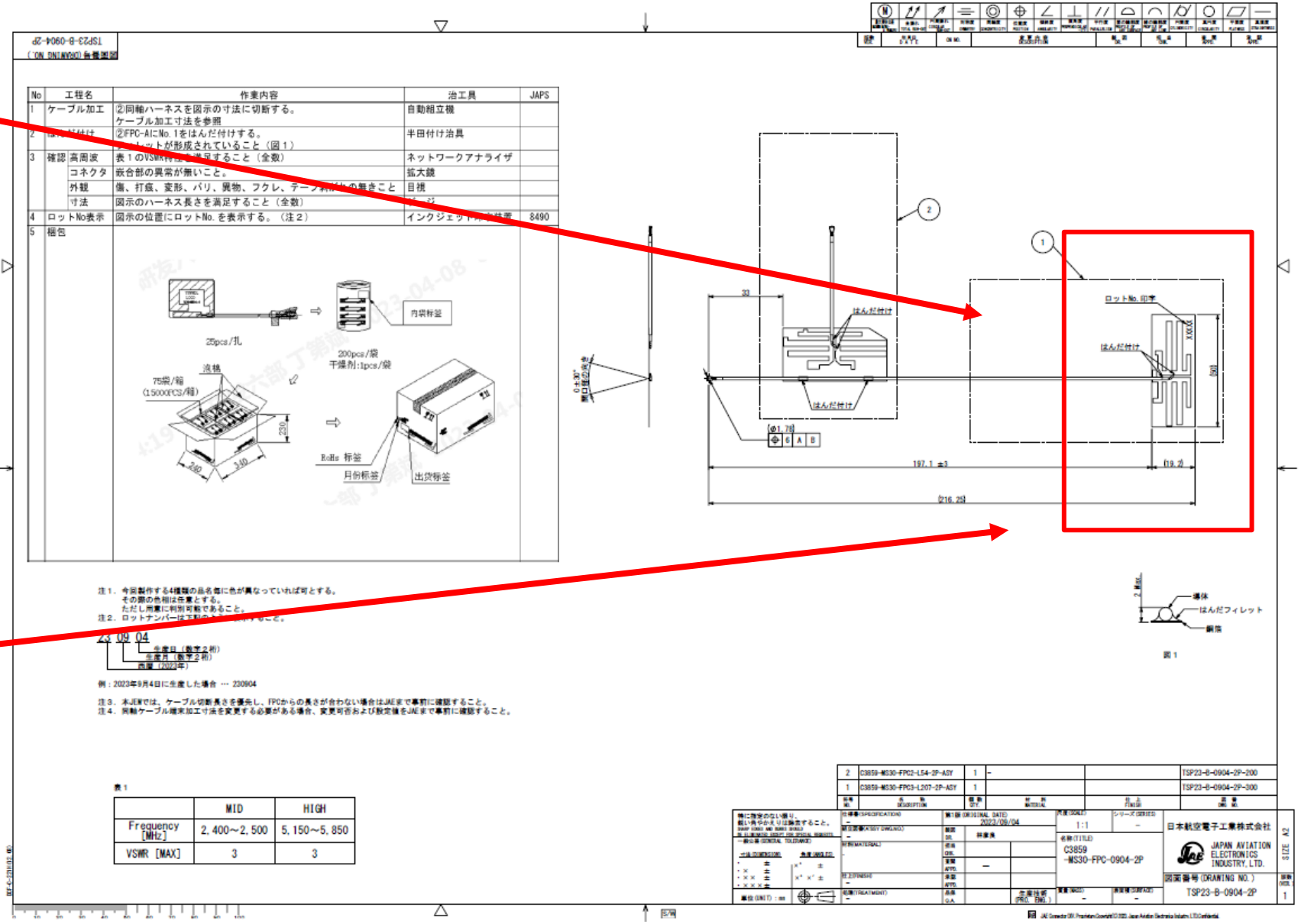
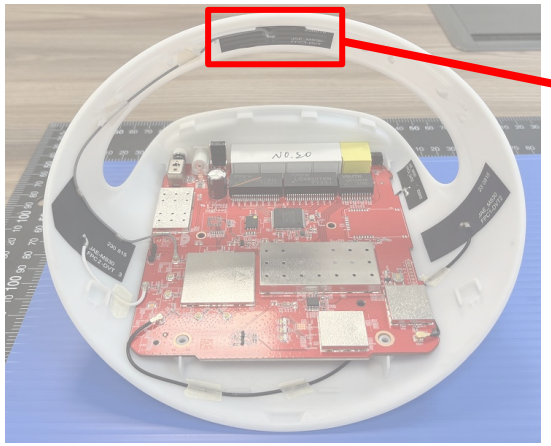
Ant3 Photo & mechanical chart

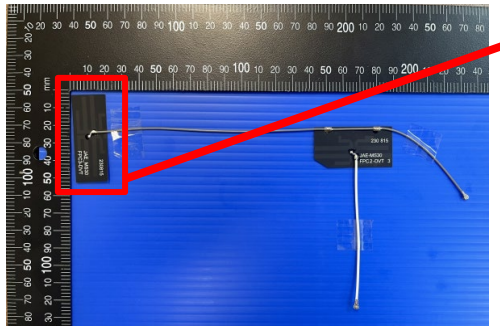


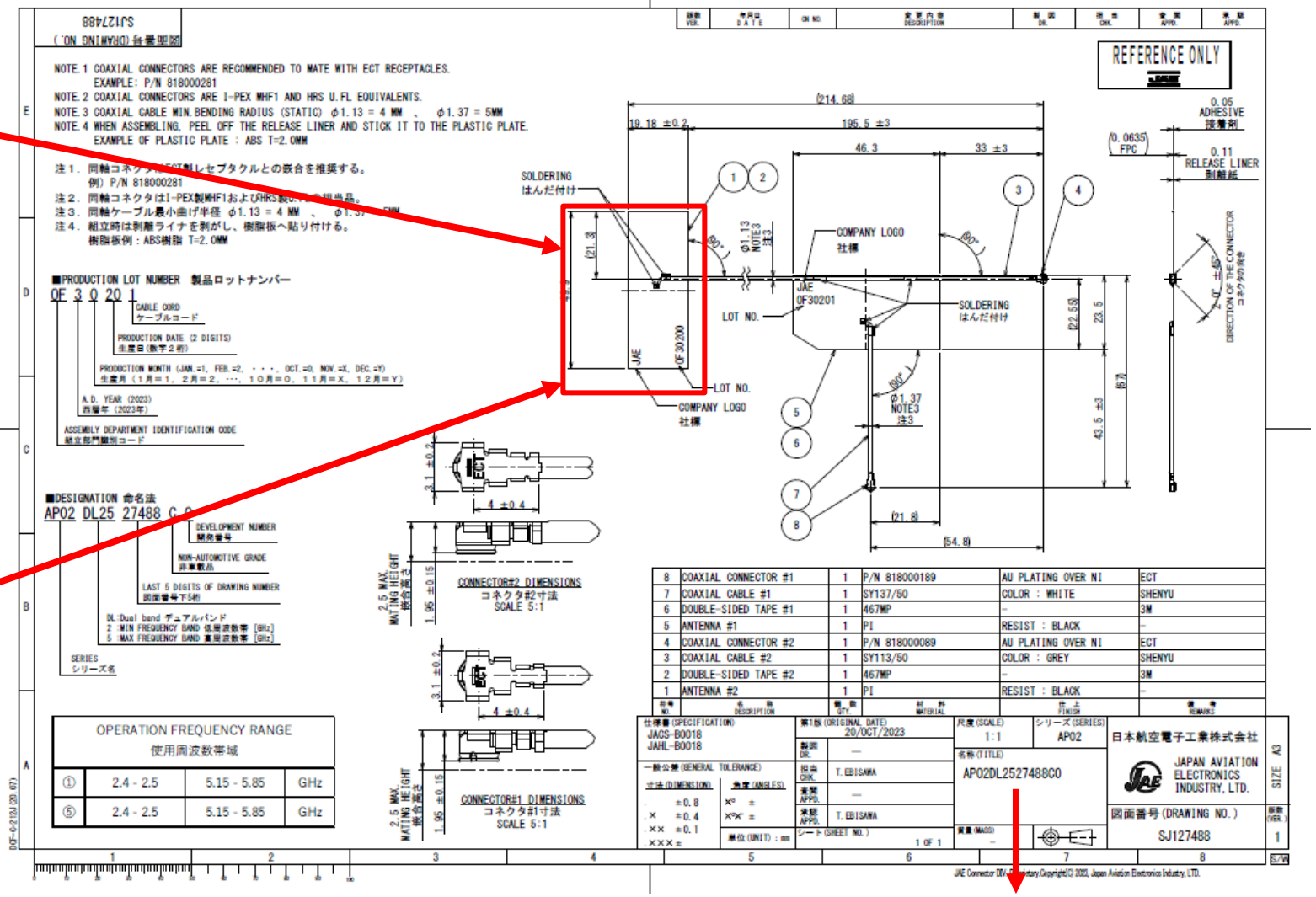




Ant3 Photo & mechanical chart







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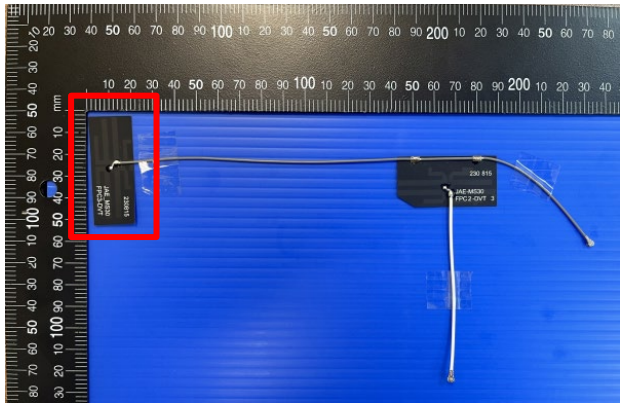
Ant3 Information



Antenna Type	Dipole
Frequency(MHz)	2400-2500 5180-5875
Material	FPCB
Connector	MHF
Cable type	1.13Ø
Cable length	207mm
Polarization	Linear

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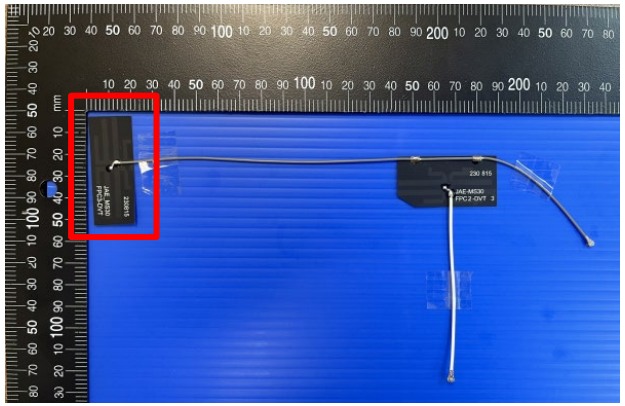
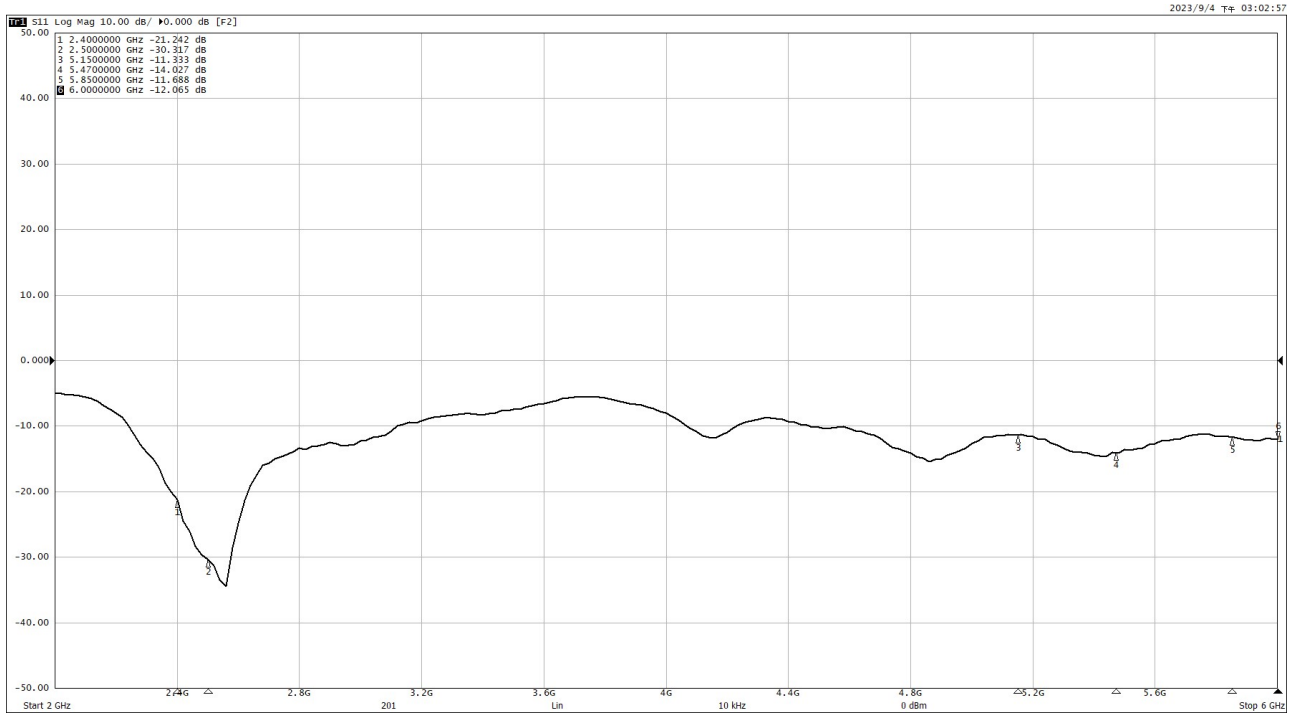
Ant3 S-Parameter





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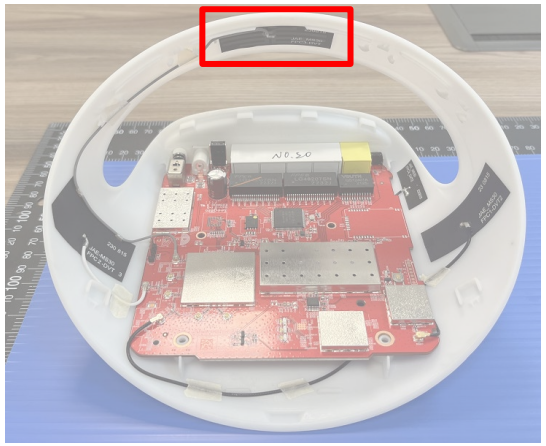
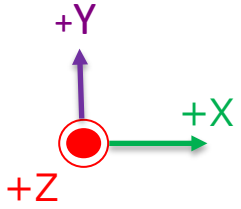
Ant3 Peak gain & Avg Gain & Efficiency





Frequency(MHz)	Peak Gain(dBi)	3D Avg Gain(dBi)	Efficiency(%)
2412	1.75	-1.30	74
2422	1.72	-1.37	73
2437	1.73	-1.58	69
2442	1.71	-1.62	69
2452	1.78	-1.66	68
2484	1.75	-1.72	67
5180	1.48	-2.81	52
5260	2	-2.64	54
5320	2.11	-2.56	56
5500	1.53	-3.15	48
5560	1.58	-3.16	48
5660	2.11	-3.05	50
5700	2.07	-2.88	52
5745	2.1	-2.69	54
5785	2.17	-2.71	54
5805	2.12	-2.67	54
5875	2.14	-2.81	52

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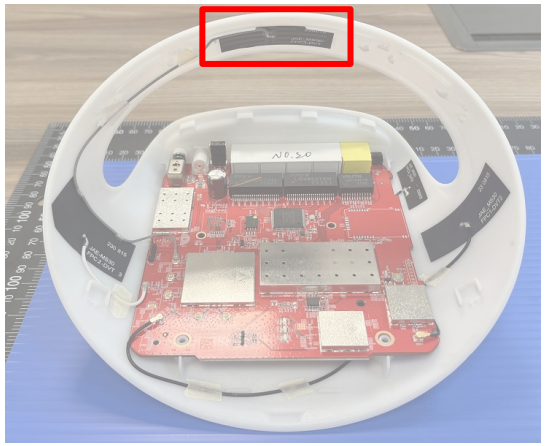
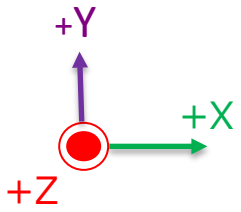
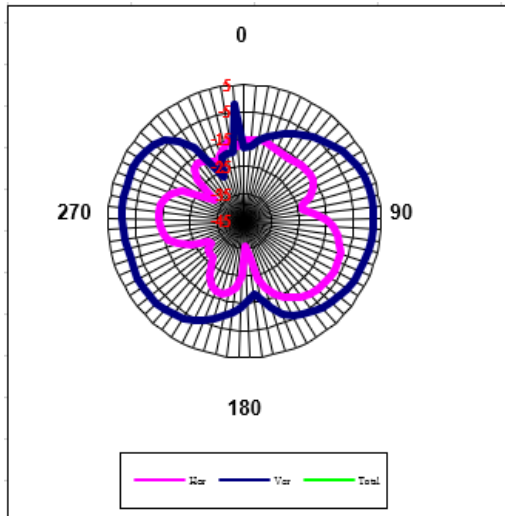
Ant3 Pattern





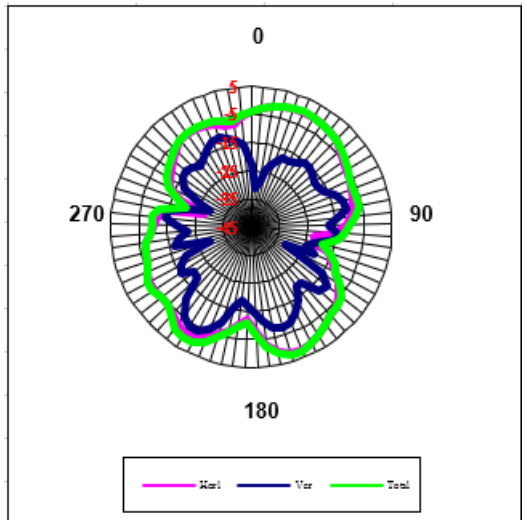
Frequency:2452 MHz

XY Plane



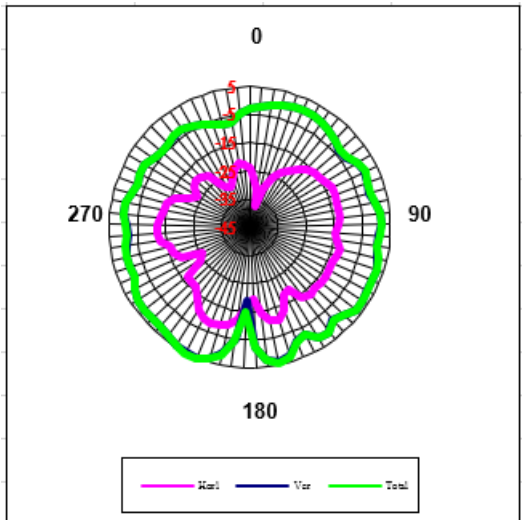
Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-7.22
Vertical peak gain (dBi)	1.29

XZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	2.34
Vertical peak gain (dBi)	-3.13

YZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-8.27
Vertical peak gain (dBi)	5.12

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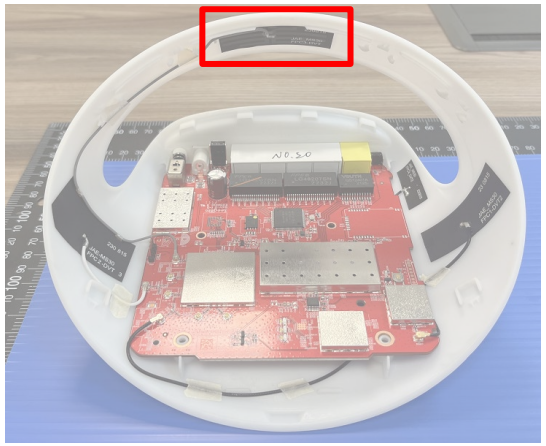
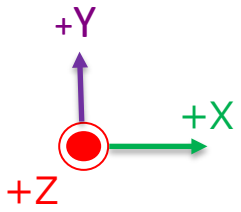
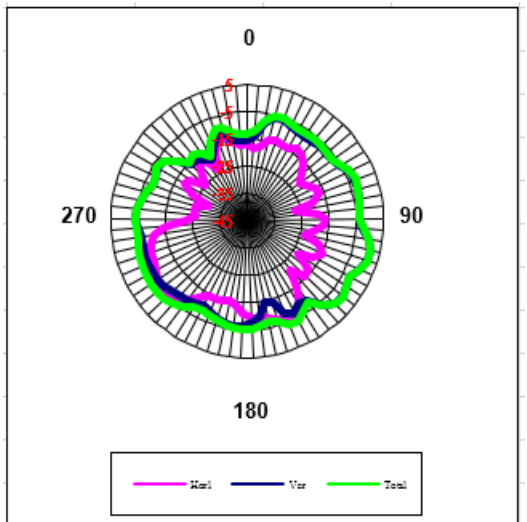
Ant3 Pattern





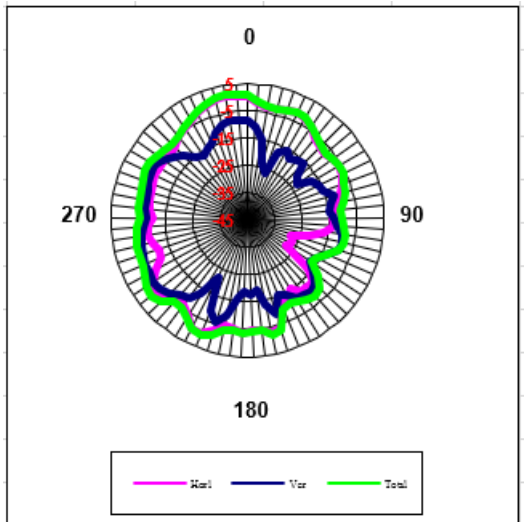
Frequency:5560 MHz

XY Plane



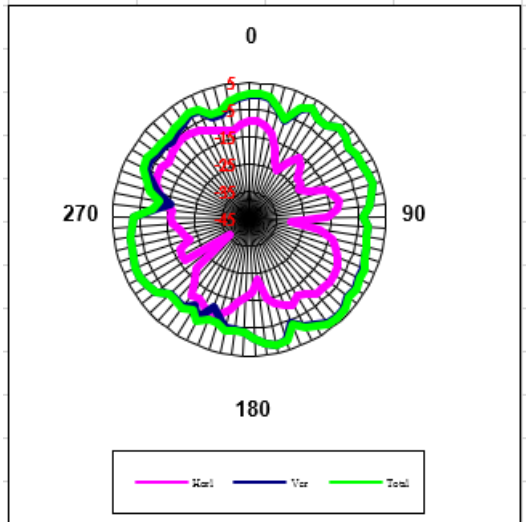
Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-5.70
Vertical peak gain (dBi)	1.57

XZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	1.32
Vertical peak gain (dBi)	-3.93

YZ Plane



Frequency (Mhz)	5560
Horizontal peak gain (dBi)	-6.32
Vertical peak gain (dBi)	2.92

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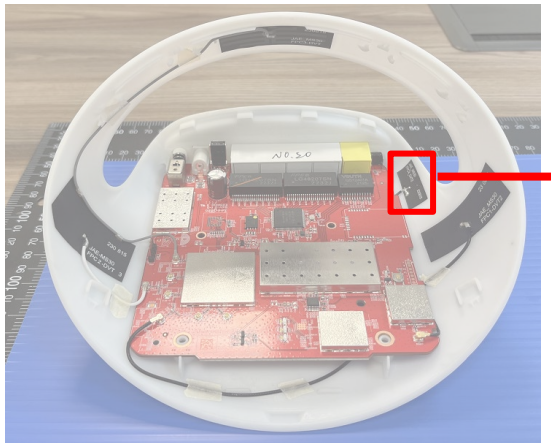
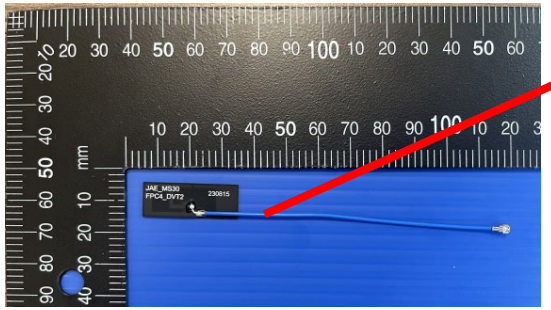
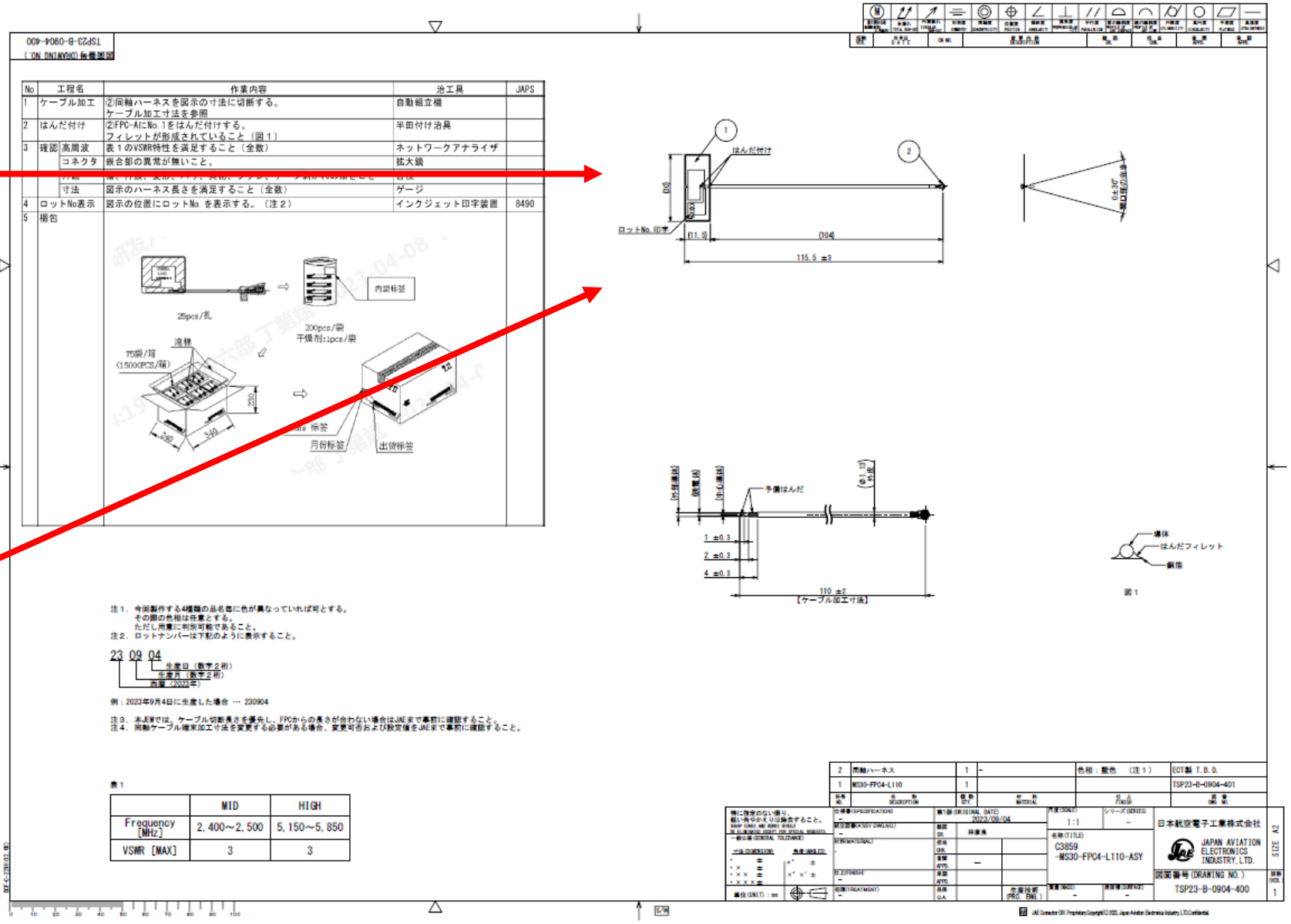
Ant4 Photo & mechanical chart







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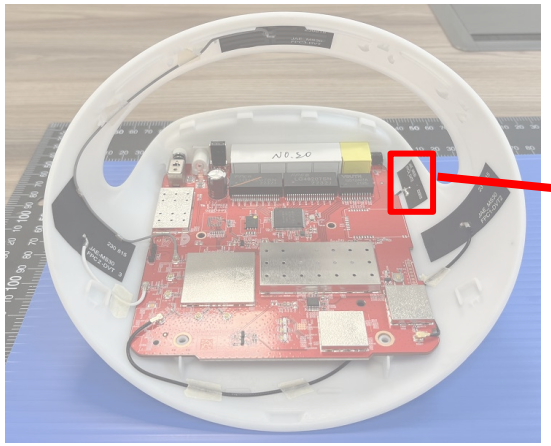
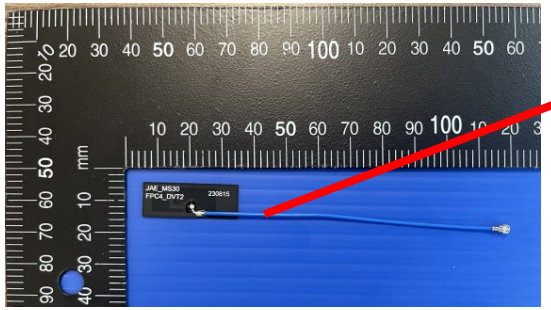
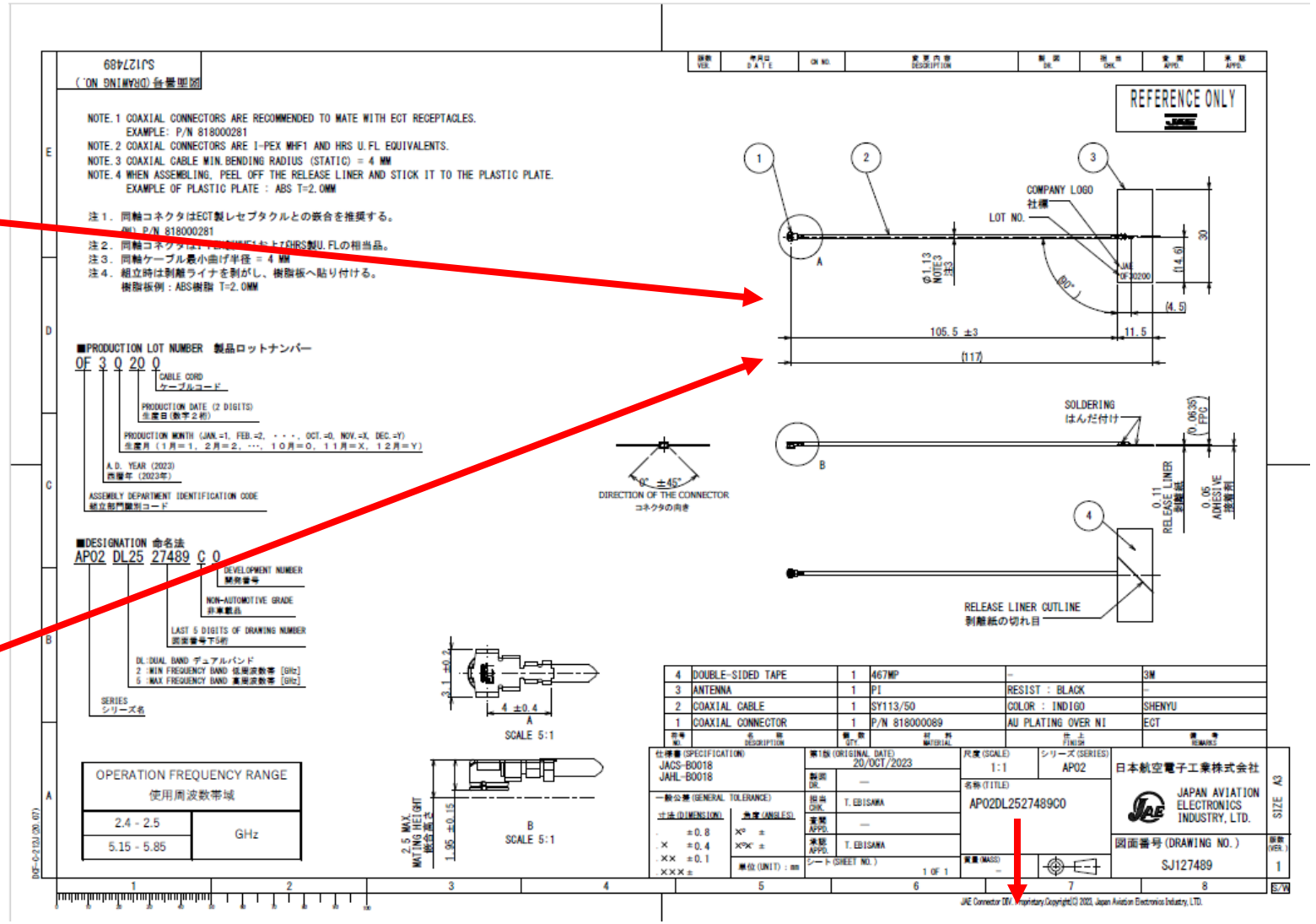
Ant4 Photo & mechanical chart







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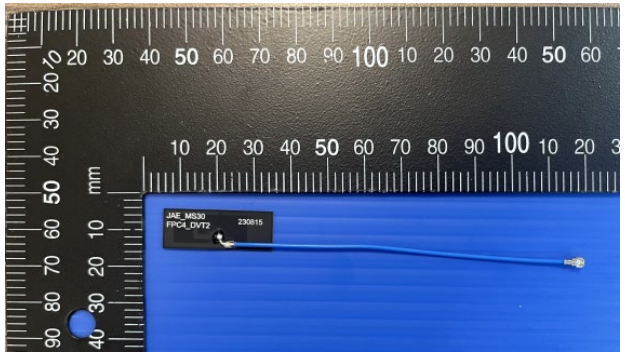
Ant4 Information

Technology to Inspire Innovation



Antenna Type	Dipole
Frequency(MHz)	2400-2500
Material	FPCB
Connector	MHF
Cable type	1.13Ø
Cable length	110mm
Polarization	Linear

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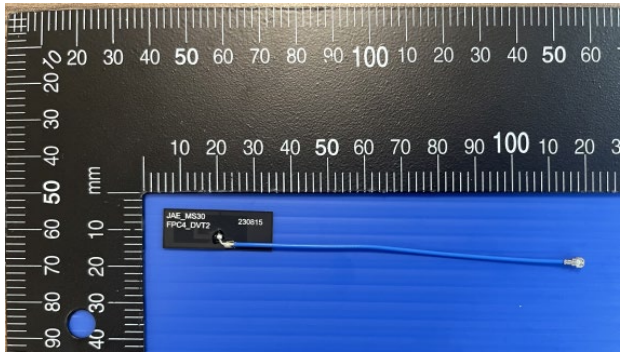
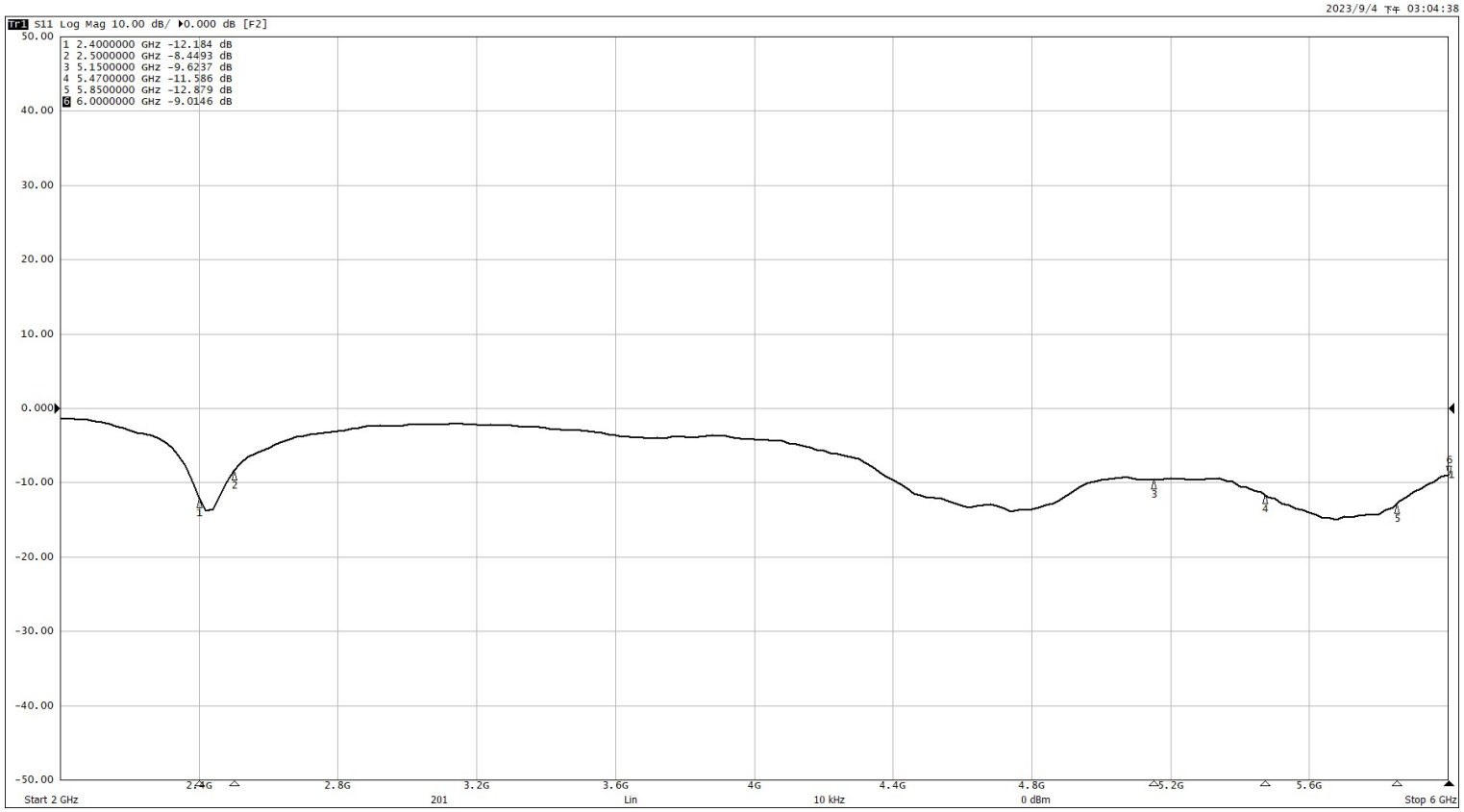
Ant4 S-Parameter





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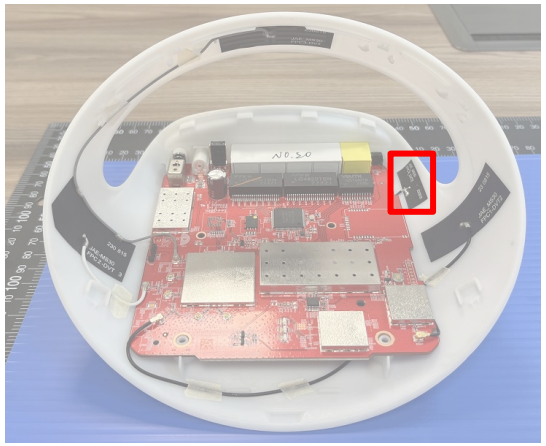
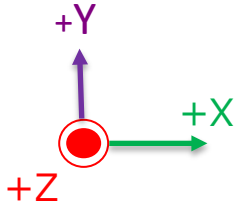
Ant4 Peak gain & Avg Gain & Efficiency



Frequency(MHz)	Peak Gain(dBi)	3D Avg Gain(dBi)	Efficiency(%)
2412	0.29	-3.46	45
2422	0.34	-3.45	45
2437	0.31	-3.44	45
2442	0.16	-3.58	44
2452	0.21	-3.60	44
2484	0.28	-3.66	43



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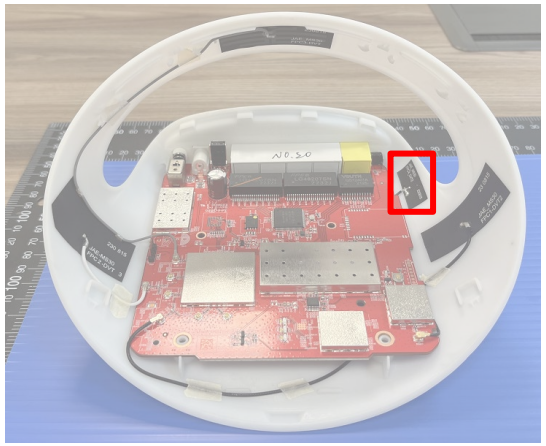
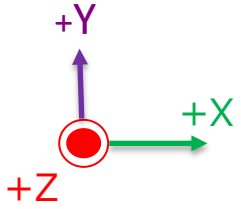
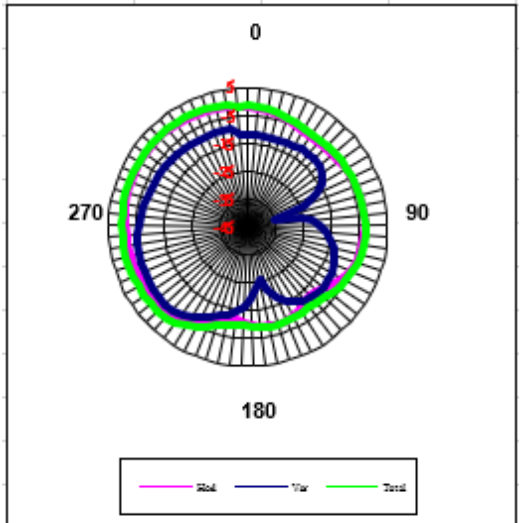
Ant4 Pattern





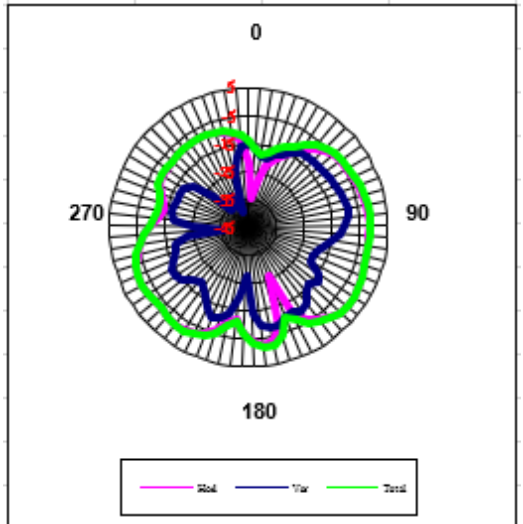
Frequency:2452 MHz

XY Plane



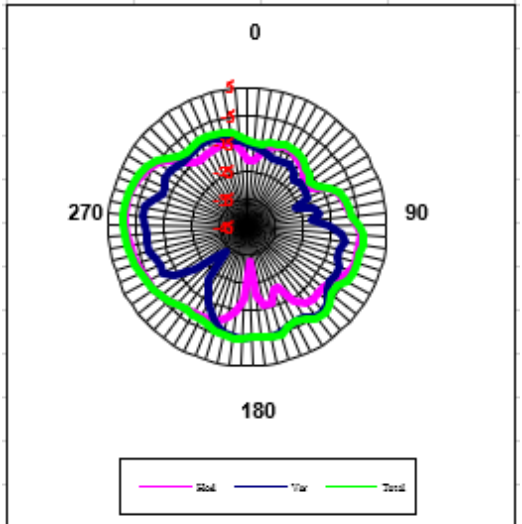
Frequency (Mhz)	2452
Horizontal peak gain (dBi)	0.23
Vertical peak gain (dBi)	-4.34

XZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	0.18
Vertical peak gain (dBi)	-8.00

YZ Plane



Frequency (Mhz)	2452
Horizontal peak gain (dBi)	-0.74
Vertical peak gain (dBi)	-4.31

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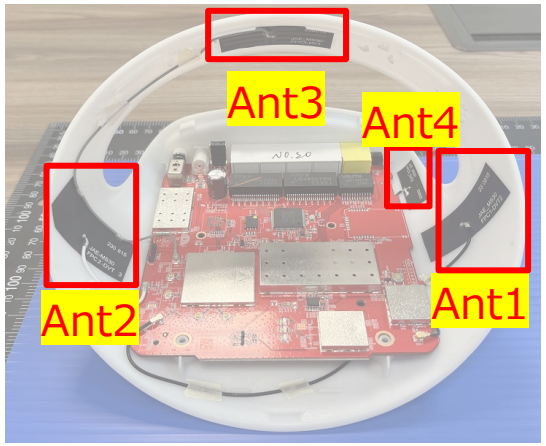
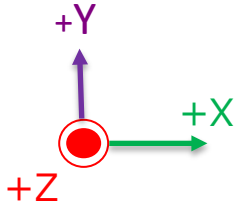
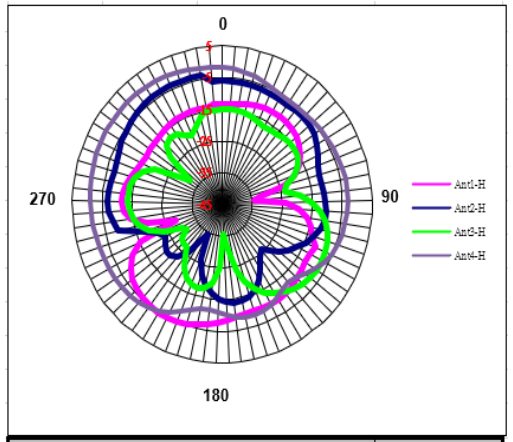
Ant1-4 Pattern





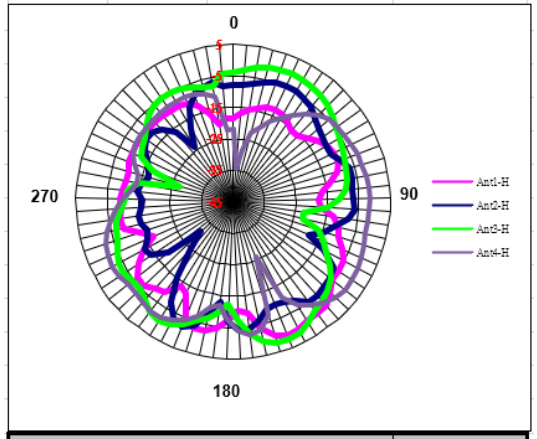
Frequency:2452 MHz

XY-H Plane



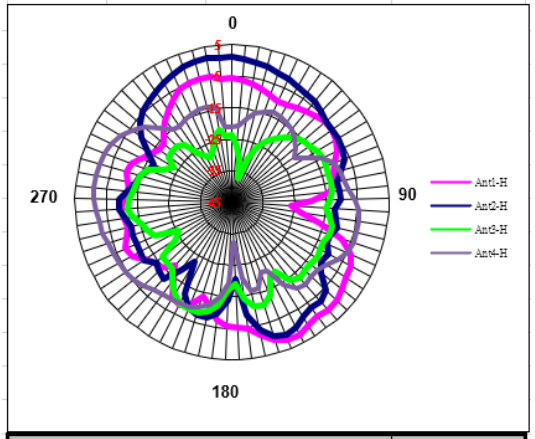
Frequency (Mhz)	2452
Ant1 Horizontal peak gain (dBi)	-4.71
Ant2 Horizontal peak gain (dBi)	-3.68
Ant3 Horizontal peak gain (dBi)	-7.22
Ant4 Horizontal peak gain (dBi)	0.23

XZ-H Plane



Frequency (Mhz)	2452
Ant1 Horizontal peak gain (dBi)	1.03
Ant2 Horizontal peak gain (dBi)	-2.18
Ant3 Horizontal peak gain (dBi)	2.34
Ant4 Horizontal peak gain (dBi)	0.18

YZ-H Plane



Frequency (Mhz)	2452
Ant1 Horizontal peak gain (dBi)	2.27
Ant2 Horizontal peak gain (dBi)	1.59
Ant3 Horizontal peak gain (dBi)	-8.27
Ant4 Horizontal peak gain (dBi)	-0.74

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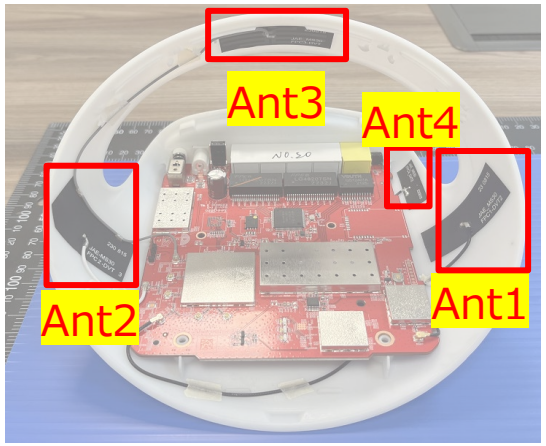
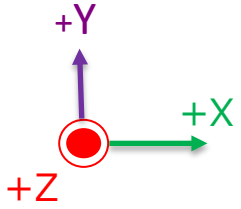
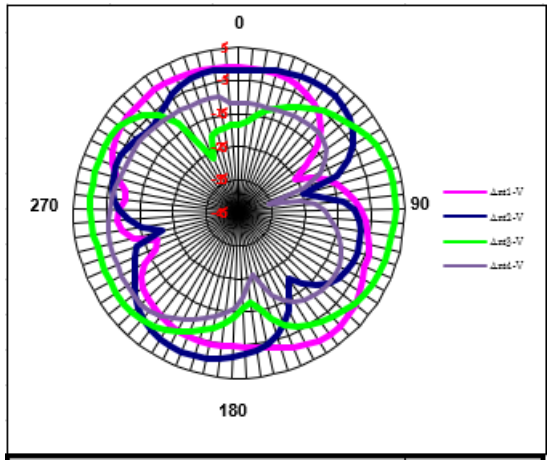
Ant1-4 Pattern





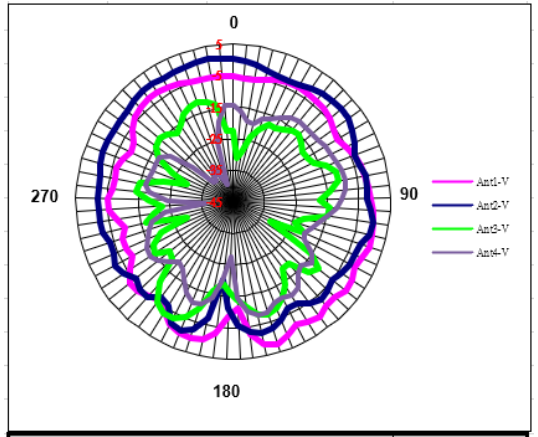
Frequency:2452 MHz

XY-V Plane



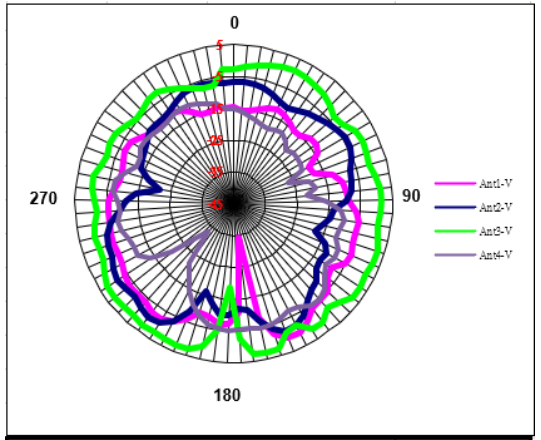
Frequency (Mhz)	2452
Ant1 Vertical peak gain (dBi)	0.93
Ant2 Vertical peak gain (dBi)	0.81
Ant3 Vertical peak gain (dBi)	1.57
Ant4 Vertical peak gain (dBi)	-4.34

XZ-V Plane



Frequency (Mhz)	2452
Ant1 Vertical peak gain (dBi)	2.47
Ant2 Vertical peak gain (dBi)	1.15
Ant3 Vertical peak gain (dBi)	-3.13
Ant4 Vertical peak gain (dBi)	-8.00

YZ-V Plane



Frequency (Mhz)	2452
Ant1 Vertical peak gain (dBi)	0.45
Ant2 Vertical peak gain (dBi)	-0.12
Ant3 Vertical peak gain (dBi)	3.08
Ant4 Vertical peak gain (dBi)	-4.31

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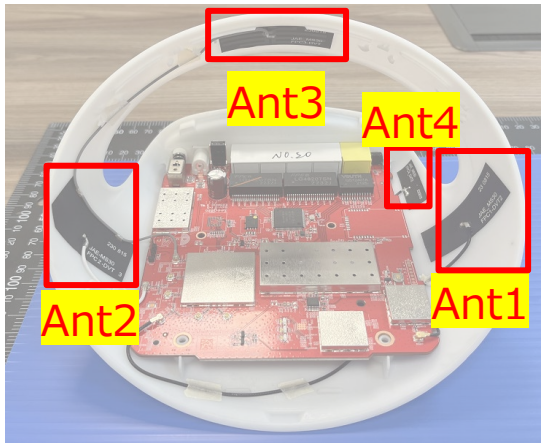
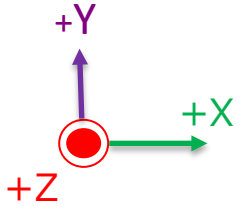
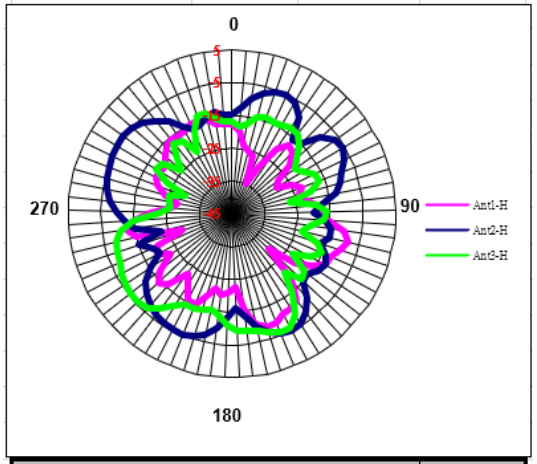
Ant1-4 Pattern





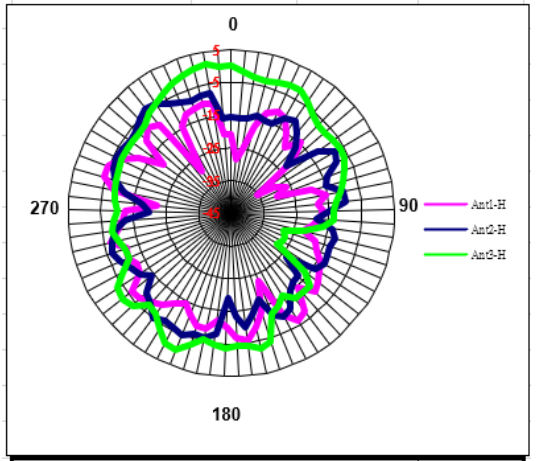
Frequency:5560 MHz

XY-H Plane



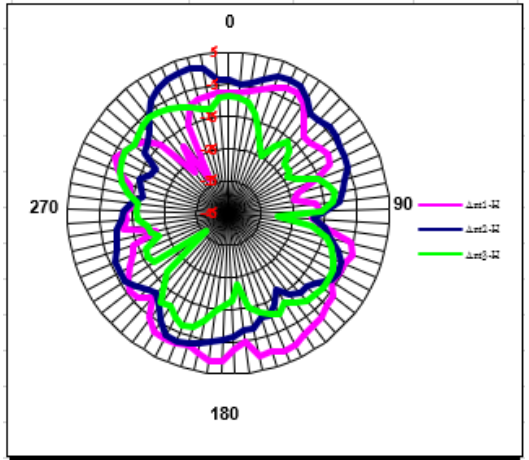
Frequency (Mhz)	5560
Ant1 Horizontal peak gain (dBi)	-8.47
Ant2 Horizontal peak gain (dBi)	-4.08
Ant3 Horizontal peak gain (dBi)	-5.70

XZ-H Plane



Frequency (Mhz)	5560
Ant1 Horizontal peak gain (dBi)	-4.40
Ant2 Horizontal peak gain (dBi)	-3.72
Ant3 Horizontal peak gain (dBi)	1.32

YZ-H Plane



Frequency (Mhz)	5560
Ant1 Horizontal peak gain (dBi)	1.08
Ant2 Horizontal peak gain (dBi)	1.40
Ant3 Horizontal peak gain (dBi)	-6.32

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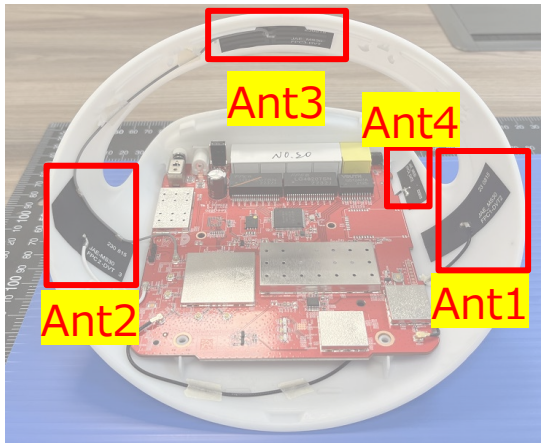
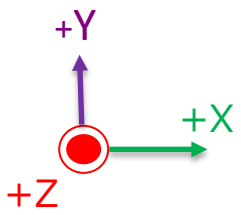
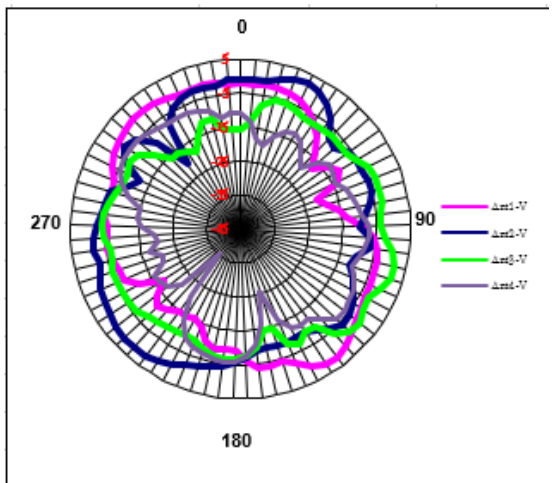
Ant1-4 Pattern





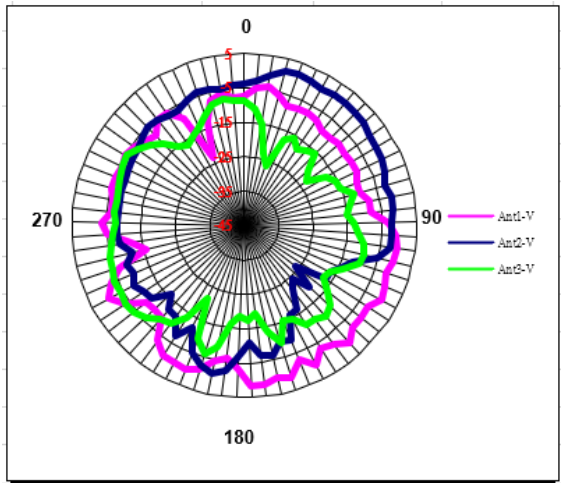
Frequency:5560 MHz

XY-V Plane



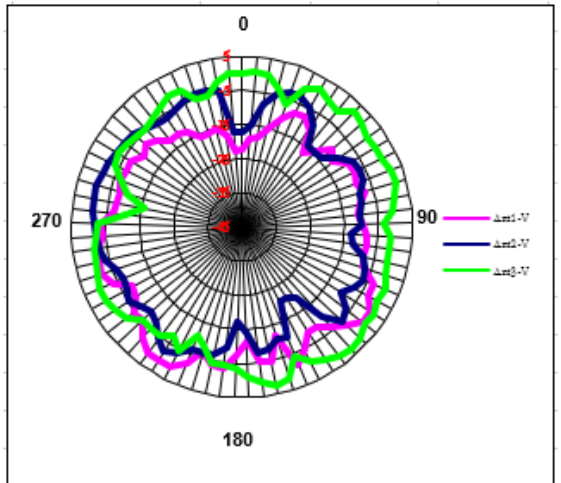
Frequency (Mhz)	5560
Ant1 Vertical peak gain (dBi)	1.29
Ant2 Vertical peak gain (dBi)	1.14
Ant3 Vertical peak gain (dBi)	1.57

XZ-V Plane



Frequency (Mhz)	5560
Ant1 Vertical peak gain (dBi)	1.66
Ant2 Vertical peak gain (dBi)	1.73
Ant3 Vertical peak gain (dBi)	-3.93

YZ-V Plane



Frequency (Mhz)	5560
Ant1 Vertical peak gain (dBi)	1.18
Ant2 Vertical peak gain (dBi)	-0.50
Ant3 Vertical peak gain (dBi)	2.92

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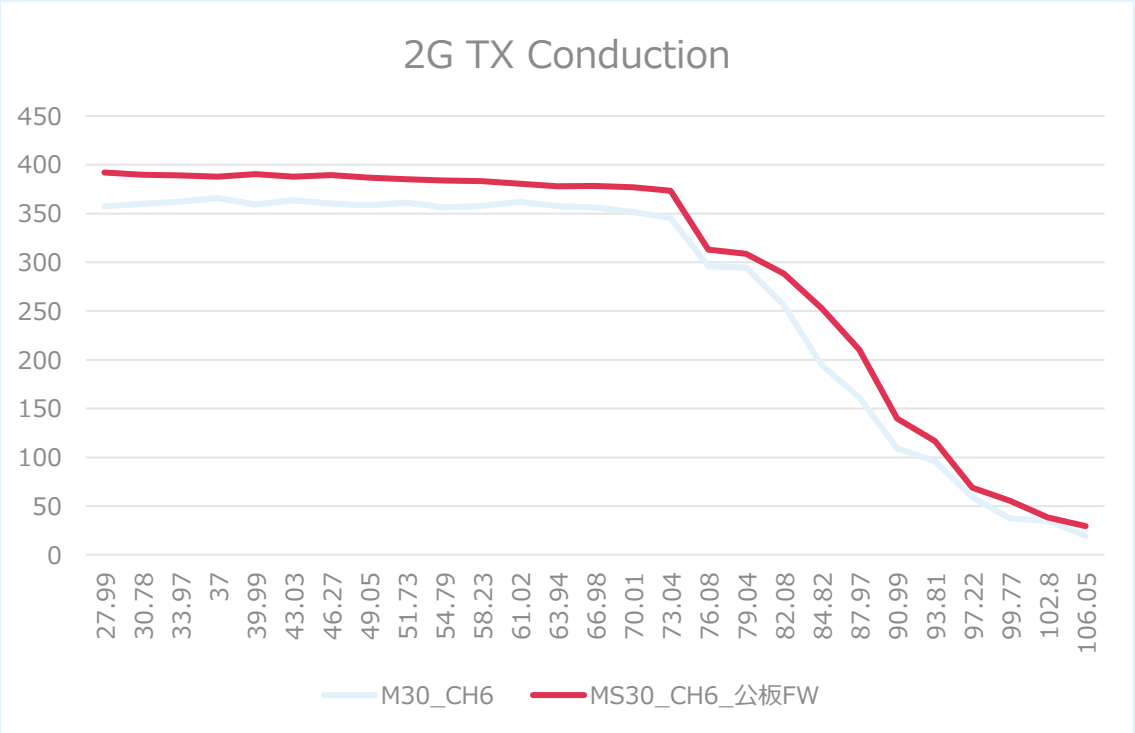
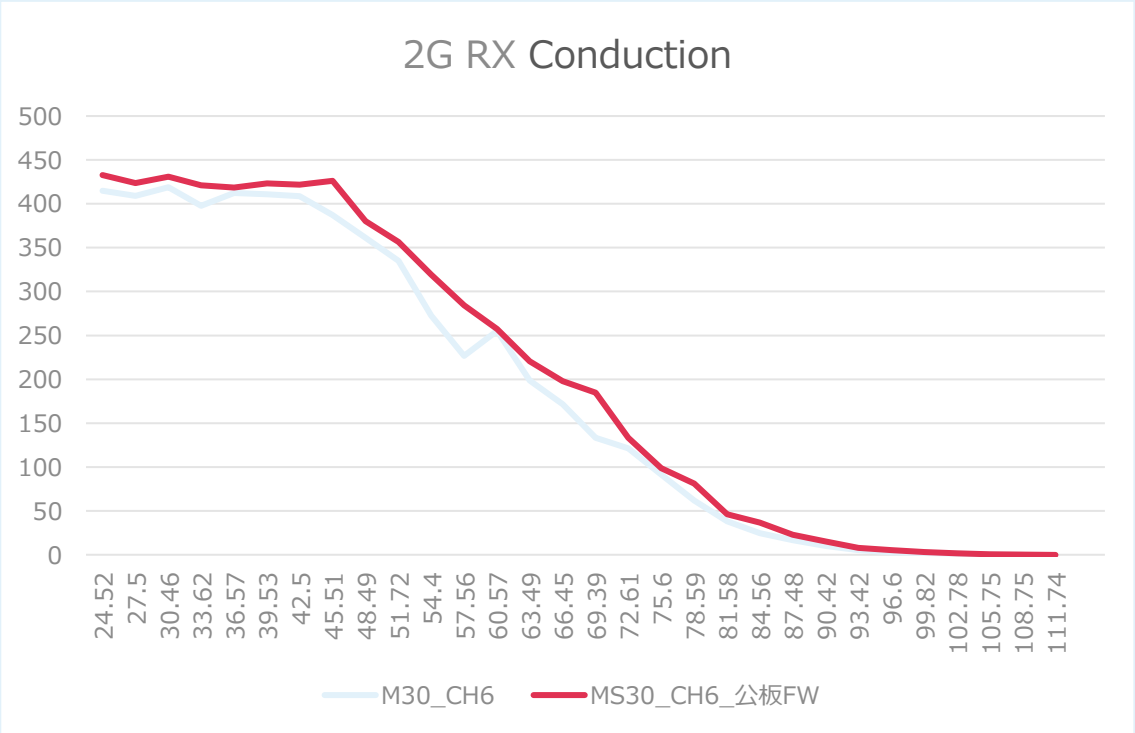
Active measurement (2G Conduction)





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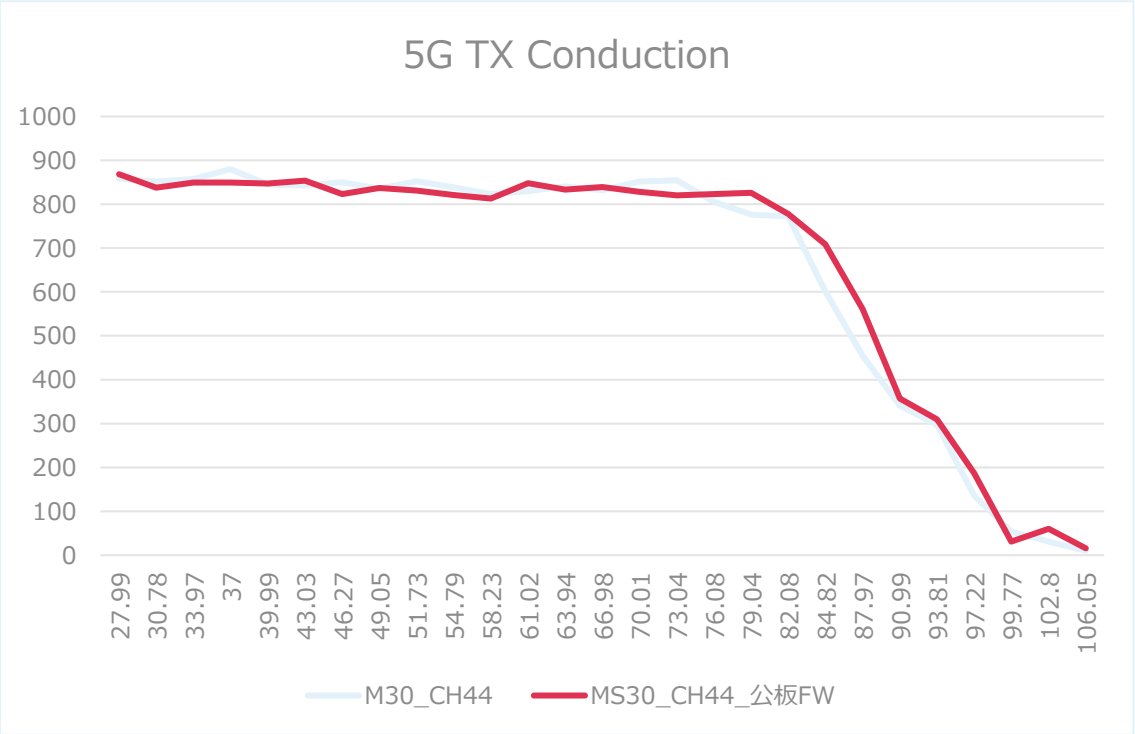
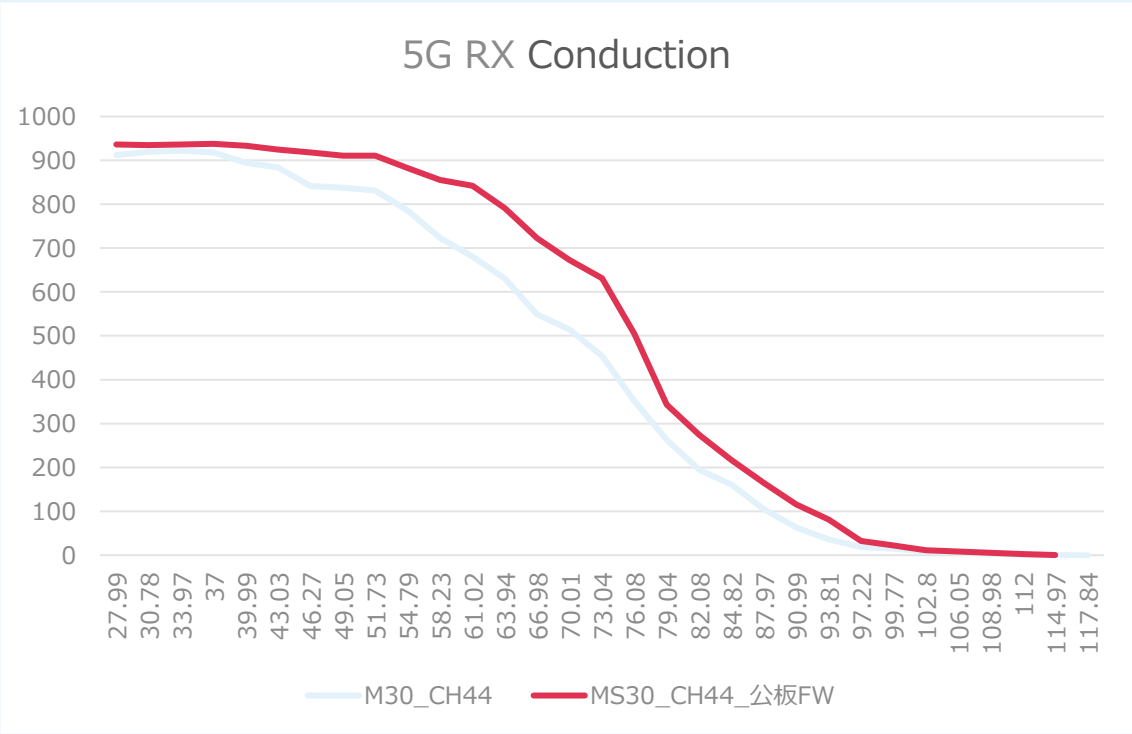
Active measurement (5G Conduction)

Technology to Inspire Innovation





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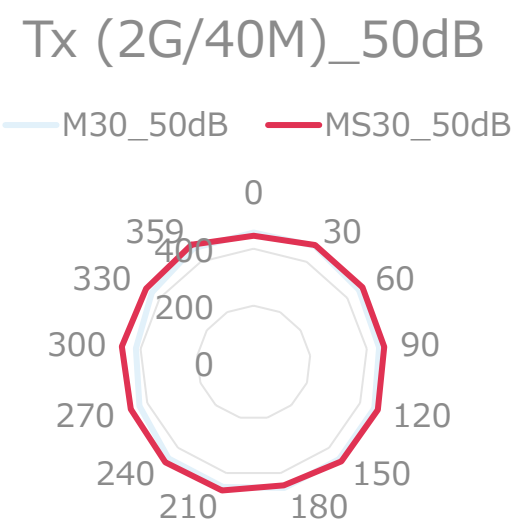
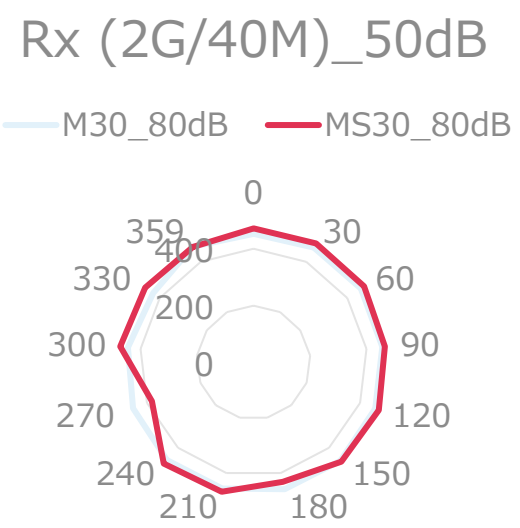
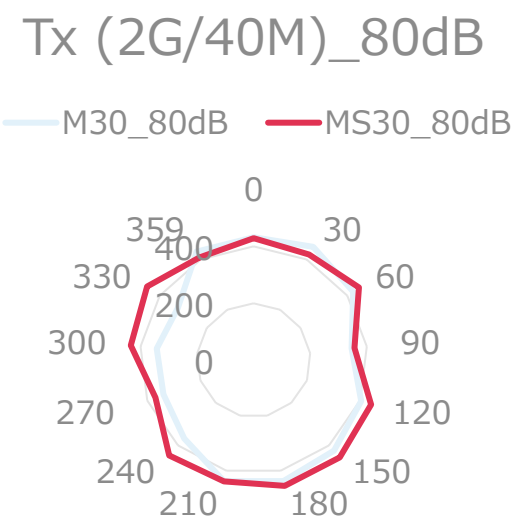
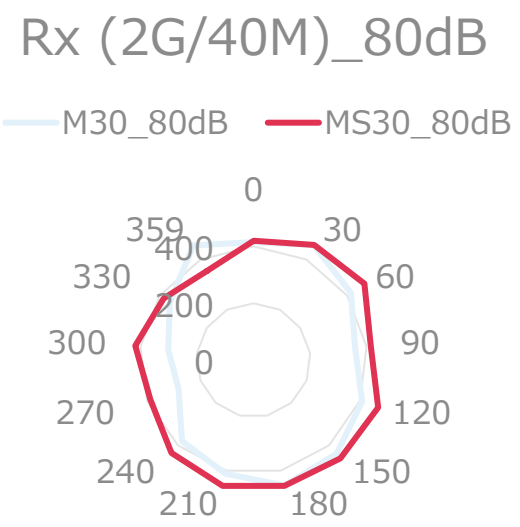
Active measurement RVR360 2G/40M

Technology to Inspire Innovation









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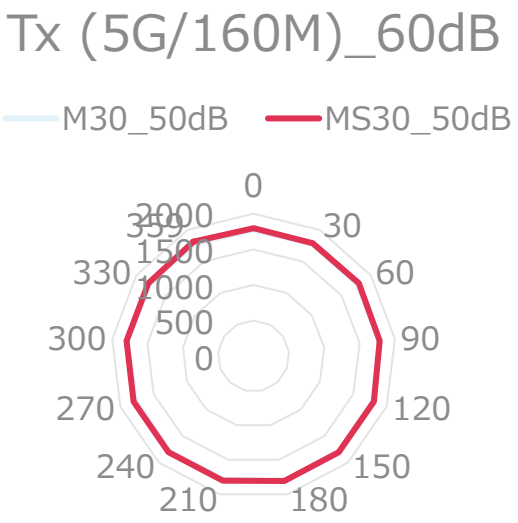
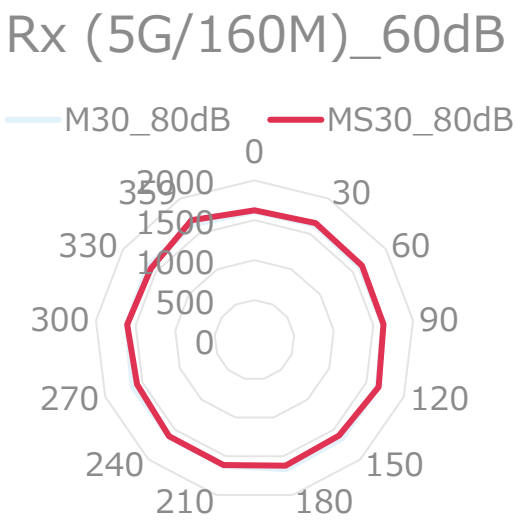
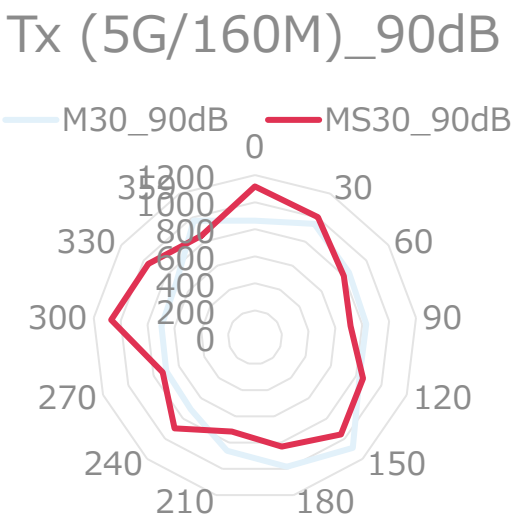
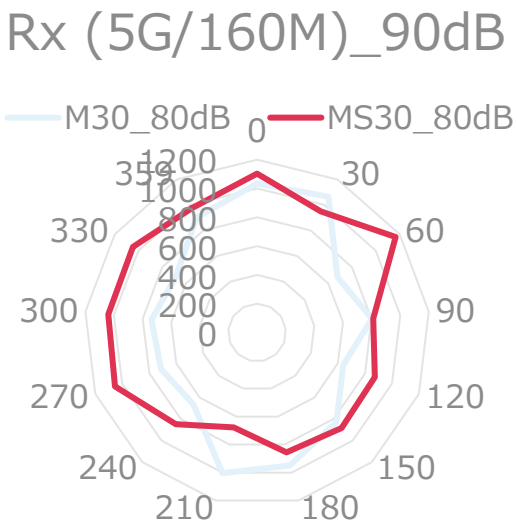
Active measurement RVR360 5G/160M

Technology to Inspire Innovation









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Thank you

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