

Antenna Test Report

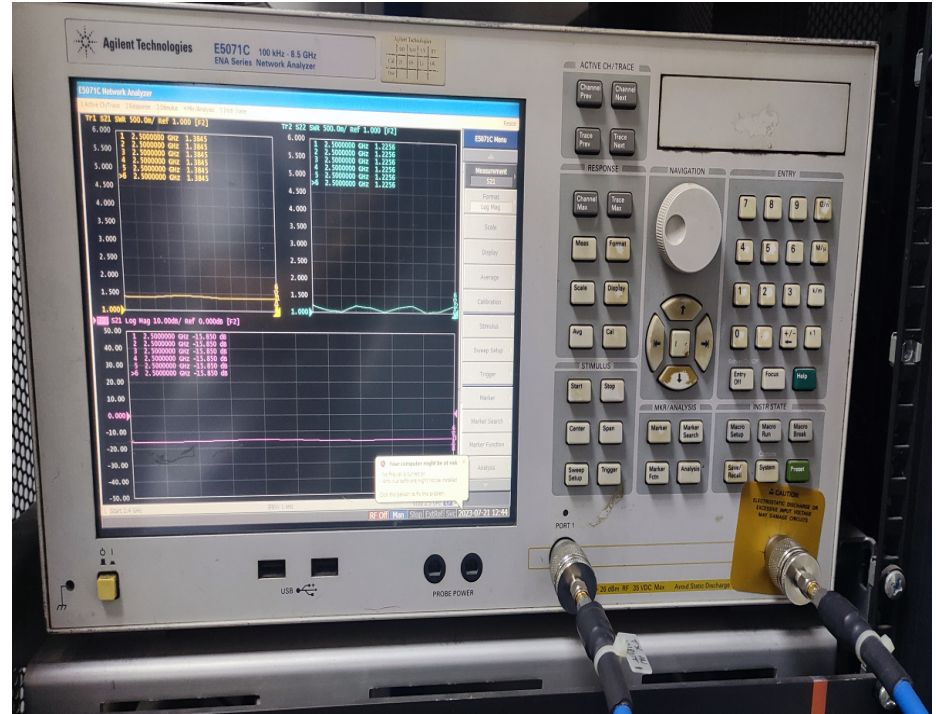
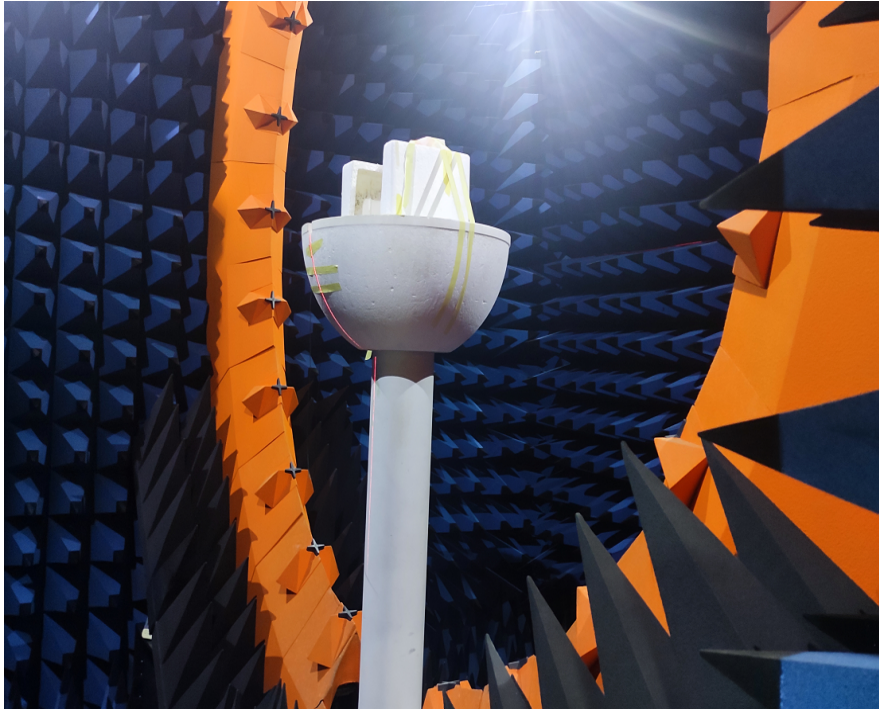
*Test Lab:Exceltek Electronics Technology
(Dongguan) Co.,Ltd*

*manufacturer:Exceltek Electronics Technology
(Dongguan) Co.,Ltd*

1. The Equipment of Active Test

1: SATIMO SG24S 4x4x4 m (3D)

2: Network Analyzer-AGILENT E5071C



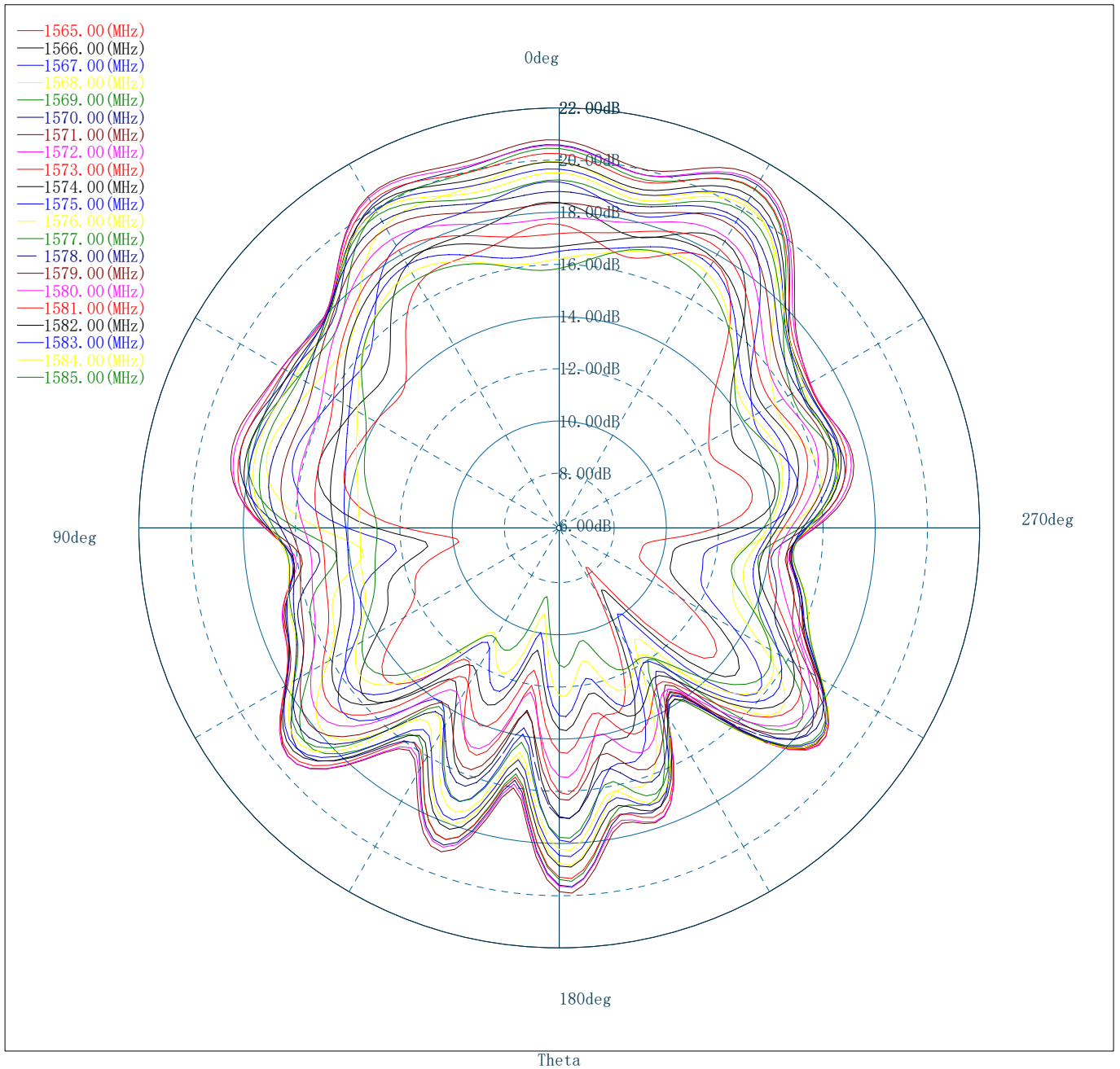
2 .GPS antenna Efficiency and Gain

(Test results at 5m RG174 Length)

GPS antenna

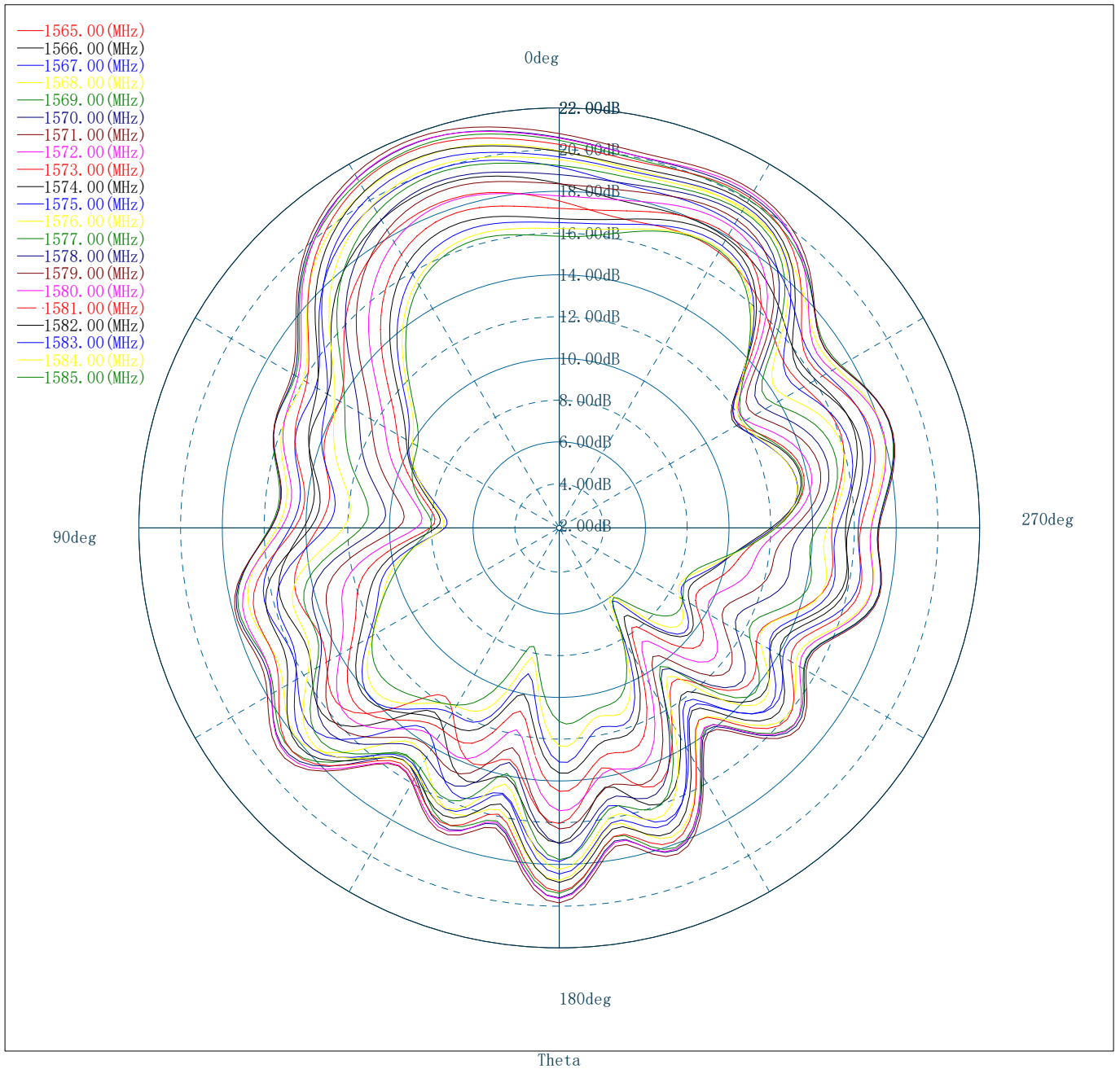
Frequency(MHz)	Efficiency (%)	Peak GAIN (dBi)
1565	26	18
1566	32	19
1567	39	20
1568	47	20
1569	54	20
1570	57	21
1571	60	21
1572	58	21
1573	55	21
1574	51	21
1575	48	20
1576	46	20
1577	43	20
1578	40	20
1579	37	19
1580	32	19
1581	29	18
1582	26	18
1583	24	18

1583	22	17
1584	21	17
1585	24	17

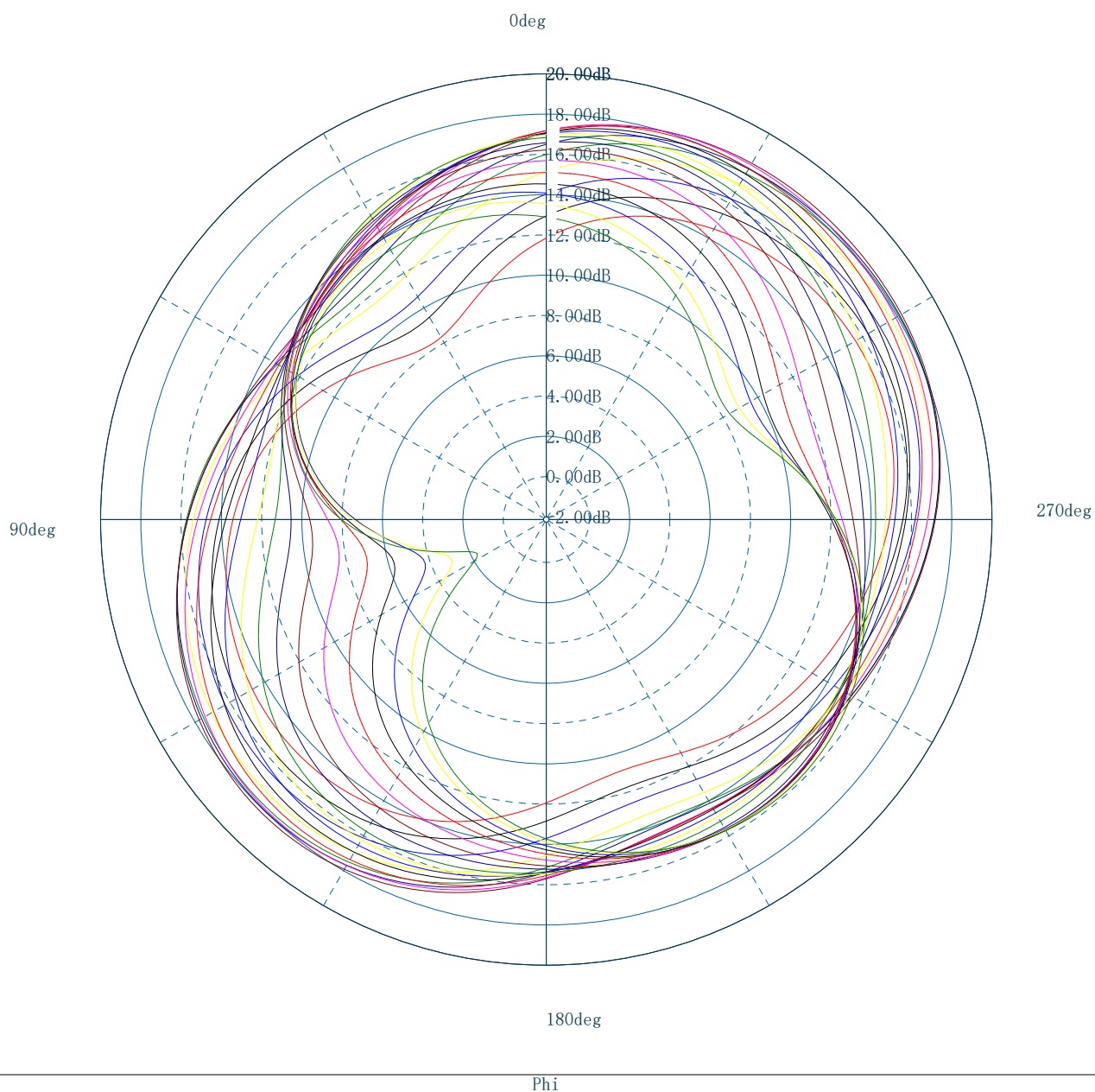


GPS Antenna Radiation Pattern

GPS+4G_GPS Phi90



GPS Antenna Radiation Pattern



GPS Antenna Radiation Pattern

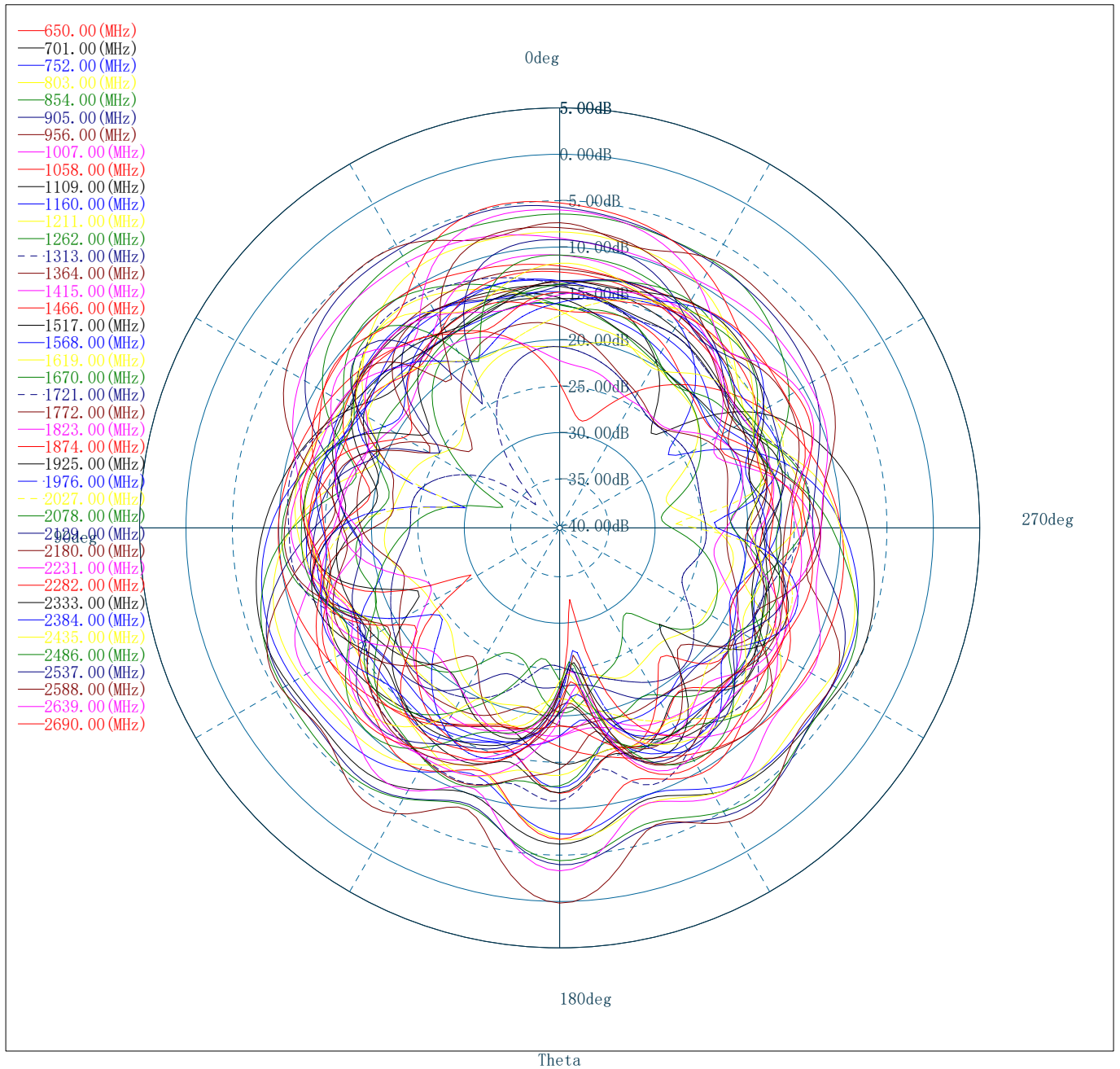
3. 4G antenna Efficiency and Gain

(Test results at 5 m RG174 length)

4G antenna

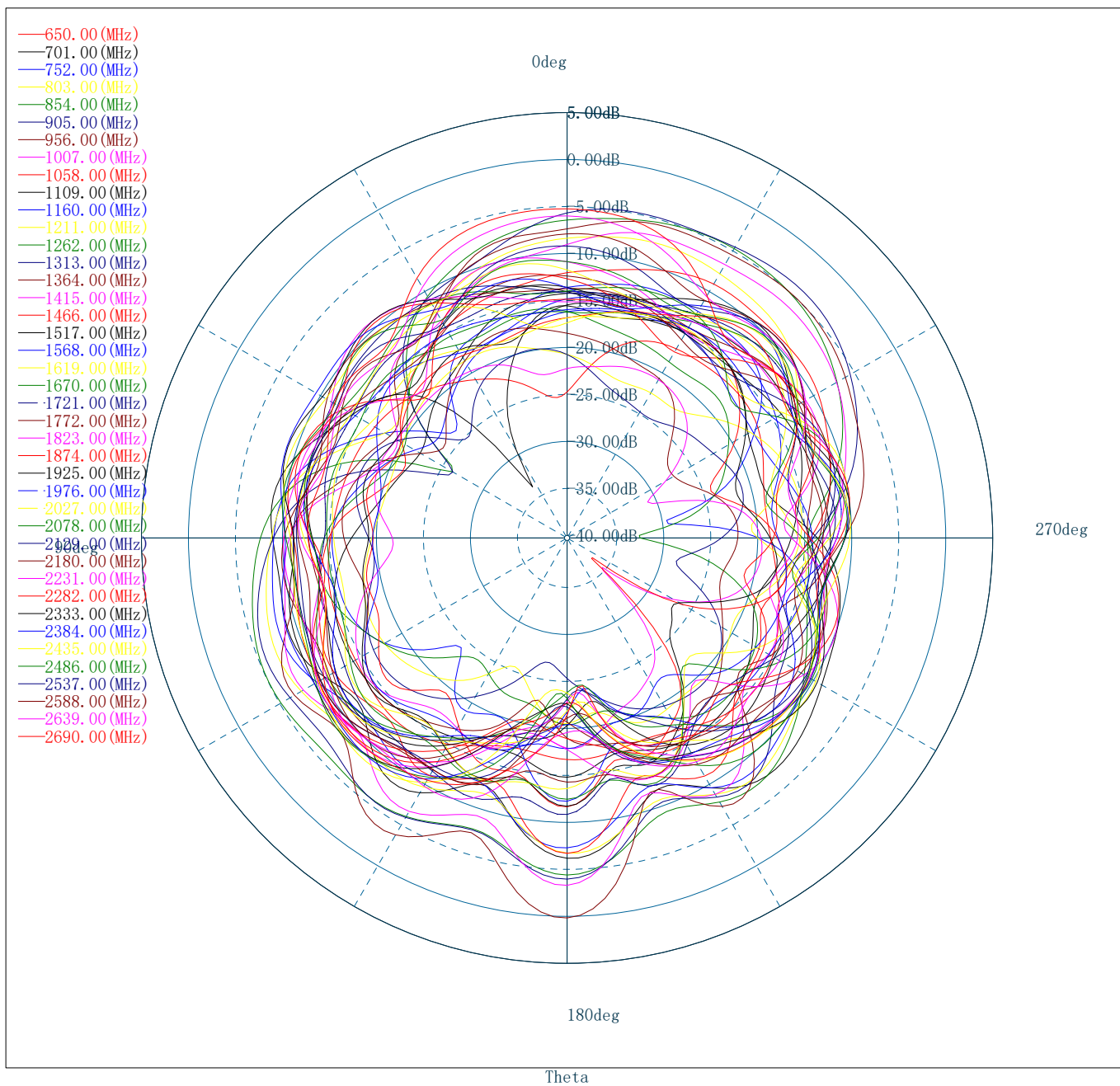
Frequency(Hz)	Efficiency (%)	Peak GAIN (dBi)
650000000	5%	-8.97
701000000	11%	-5.05
752000000	9%	-5.93
803000000	10%	-6.17
854000000	16%	-4.36
905000000	16%	-3.95
956000000	16%	0.16
1007000000	11%	-3.32
1058000000	6%	-6.72
1109000000	3%	-12.53
1160000000	2%	-12.27
1211000000	1%	-15.13
1262000000	1%	-13.77
1313000000	1%	-15.36
1364000000	1%	-13.30
1415000000	1%	-13.18
1466000000	2%	-11.67
1517000000	2%	-11.73
1568000000	3%	-12.35
1619000000	4%	-10.39
1670000000	4%	-9.62
1721000000	5%	-9.62
1772000000	5%	-9.65
1823000000	5%	-7.47
1874000000	4%	-7.56
1925000000	3%	-10.34
1976000000	3%	-10.82
2027000000	4%	-9.32
2078000000	3%	-9.79
2129000000	4%	-10.04
2180000000	4%	-9.49
2231000000	4%	-9.18
2282000000	5%	-8.40
2333000000	5%	-8.20
2384000000	5%	-8.54
2435000000	5%	-7.76
2486000000	5%	-7.94
2537000000	5%	-8.83
2588000000	5%	-7.70
2639000000	5%	-5.88
2690000000	6%	-4.79

GPS+4G_4G Phi0



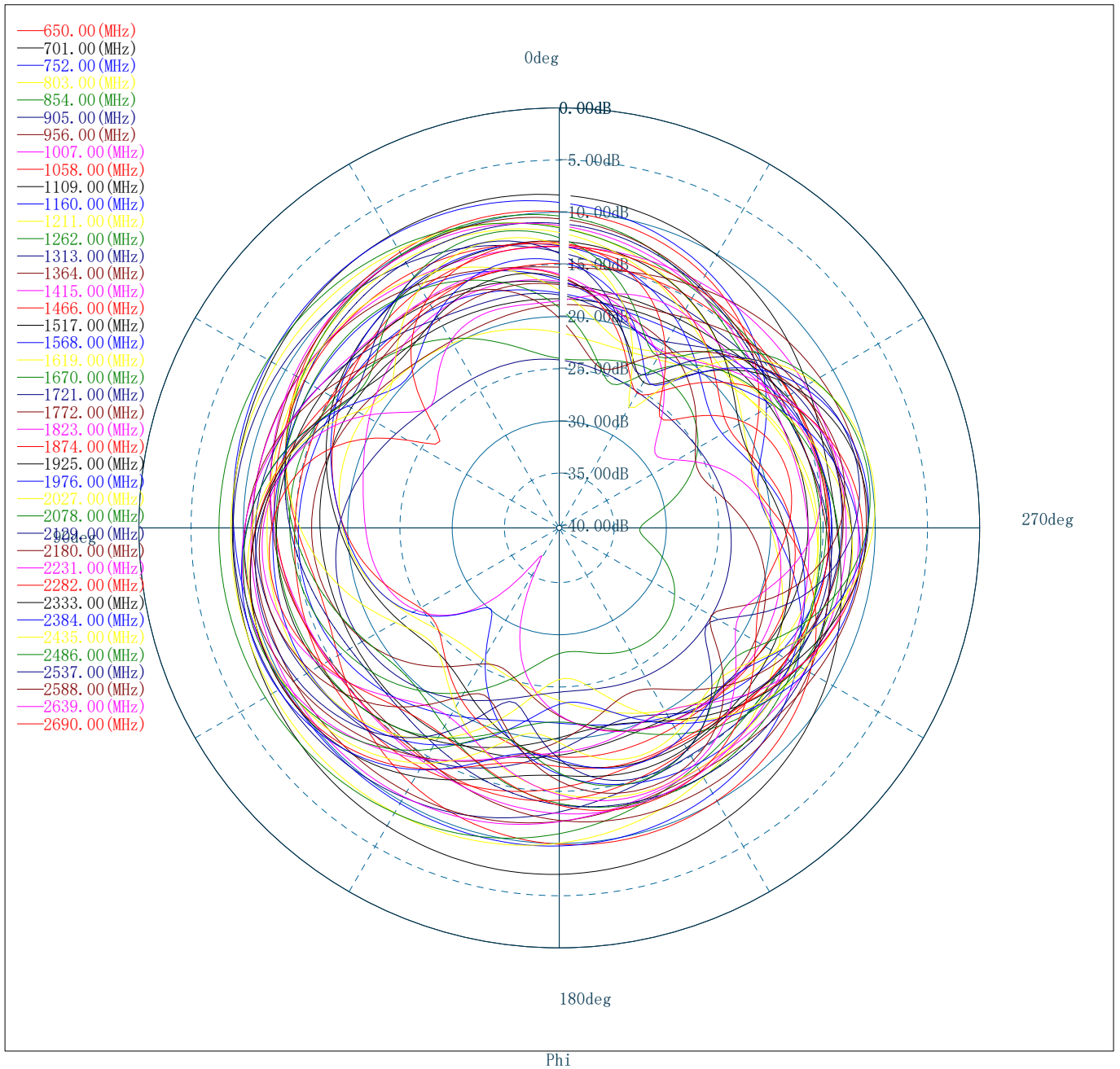
4G Antenna Radiation Pattern

GPS+4G_4G Phi90

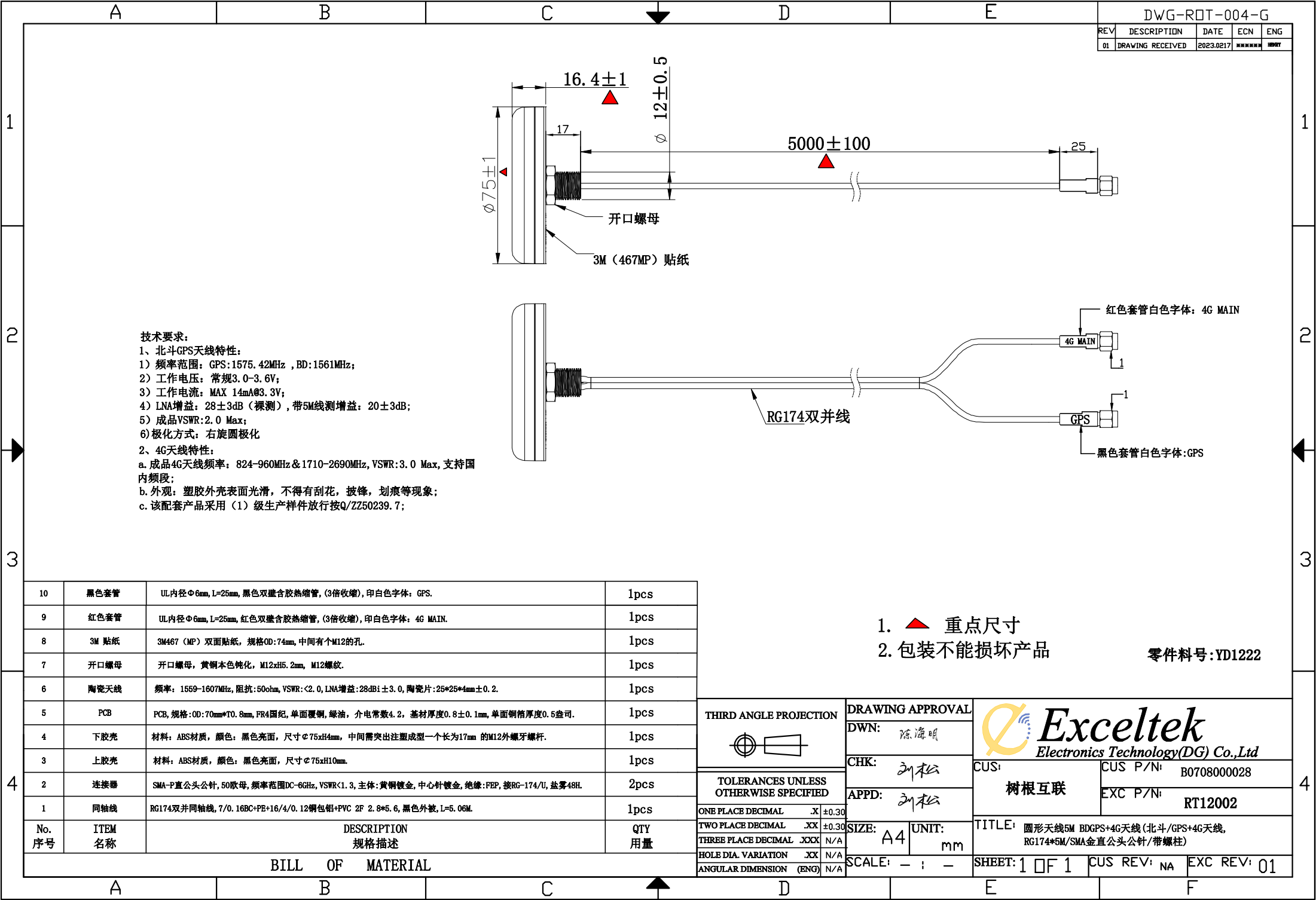


4G Antenna Radiation Pattern

GPS+4G_4G Theta90

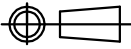


4G Antenna Radiation Pattern



10	黑色套管	UL内径 $\phi 6$ mm, L=25mm, 黑色双壁含胶热缩管, (3倍收缩), 印白色字体: GPS.	1pcs
9	红色套管	UL内径 $\phi 6$ mm, L=25mm, 红色双壁含胶热缩管, (3倍收缩), 印白色字体: 4G MAIN.	1pcs
8	3M 贴纸	3M467 (MP) 双面贴纸, 规格OD:74mm, 中间有个M12的孔.	1pcs
7	开口螺母	开口螺母, 黄铜本色钝化, M12xH5.2mm, M12螺纹.	1pcs
6	陶瓷天线	频率: 1559-1607MHz, 阻抗: 50ohm, VSWR: <2.0, LNA增益: $28\text{dB} \pm 3.0$, 陶瓷片: $25 \times 25 \times 4 \text{mm} \pm 0.2$.	1pcs
5	PCB	PCB, 规格: OD:70mm* T0.8mm , FR4国纪, 单面覆铜, 绿油, 介电常数4.2, 基材厚度 $0.8 \pm 0.1 \text{mm}$, 单面铜箔厚度0.5盎司.	1pcs
4	下胶壳	材料: ABS材质, 颜色: 黑色亮面, 尺寸 $\phi 75 \times H4 \text{mm}$, 中间需突出注塑成型一个长为17mm 的M12外螺牙螺杆.	1pcs
3	上胶壳	材料: ABS材质, 颜色: 黑色亮面, 尺寸 $\phi 75 \times H10 \text{mm}$.	1pcs
2	连接器	SMA-P直公头公针, 50欧姆, 频率范围DC-6GHz, VSWR<1.3, 主体: 黄铜镀金, 中心针镀金, 绝缘: FEP, 接RG-174/U, 盐雾48H.	2pcs
1	同轴线	RG174双并同轴线, 7/0.16BC+PE+16/4/0.12铜包铝+PVC 2F 2.8*5.6, 黑色外被, L=5.06M.	1pcs
No. 序号	ITEM 名称	DESCRIPTION 规格描述	QTY 用量

BILL OF MATERIAL

THIRD ANGLE PROJECTION 	DRAWING APPROVAL		 Exceltek Electronics Technology(DG) Co.,Ltd	
	DWN:	陈海明		
	CHK:	刘松		
	APPD:	刘松		
TOLERANCES UNLESS OTHERWISE SPECIFIED		CUS:	树根互联	CUS P/N: B0708000028
ONE PLACE DECIMAL .X ± 0.30		SIZE: A4		UNIT: mm
TWO PLACE DECIMAL .XX ± 0.30		SCALE: - : -		SHEET: 1 OF 1
THREE PLACE DECIMAL .XXX N/A		TITLE: 圆形天线5M BDGPS+4G天线(北斗/GPS+4G天线, RG174*5M/SMA金直公头公针/带螺柱)		CUS REV: NA
HOLE DIA. VARIATION .XX N/A		EXC REV: 01		
ANGULAR DIMENSION (ENG) N/A				