

样品承认书

物料名称：RRA1250301/1

物料规格：214mm*185mm/黑色 PCB/黑色 FPC/黑色支架/8in1 antenna
module/ROHS2.0

物料编号：RRA1250301/1

签样状态：☐ 批量供货 ☐ 限制数量：

☐ 临时签样 ☐ 限制日期：

部门	专业	签署	日期
研发	☐ 基带工程师		
	☐ 射频工程师		
	☐ 结构工程师		
	☐ 安规工程师		
	☐ 包装工程师		
产品	☐ ID 工程师		
	☐ 产品经理		
品质	☐ SQE 工程师		
批准	☐ 研发负责人		

承认书

SPECIFICATION FOR APPROVAL

Project/机型： pRRU

Product Name/物料名称： RRA1250301/1

Descriptions/规格描述： 214mm*185mm/黑色 PCB/黑色 FPC/黑色 支架
/8in1 antenna module/ROHS2.0

P/N /料号： 001-J011-1001

Revision/版本： LV1.0

Date/日期： 2025-10-24

Design by	RF		Checked by	RF	Kevin
	ME	Zhangjie		ME	Quincy
	QC	yong	Remark		
Customer					
Date					
Confirmed by		PUR			
		QE			
		R&D			

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Change history

Ver	Date	Change Description	Remarks
LV1.0	2025.10.24	first release	

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1 General Information

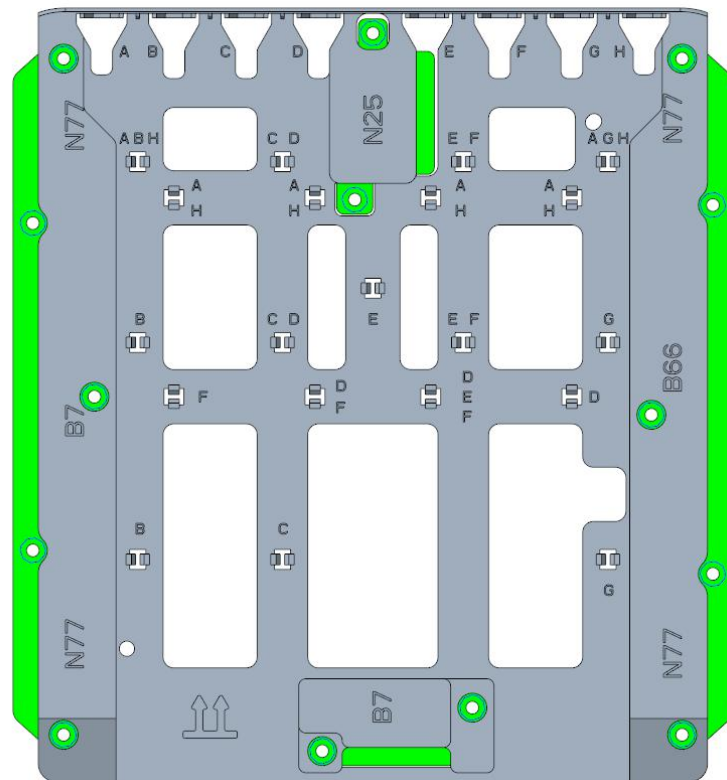
- This approval sheet supports for pRRU project.
8 internal antennas include in this project. This report is for the performance of 8in1 antenna module.
- Antenna shape size: Meet the requirement of pRRU.
- Antenna band: Meet the requirement of pRRU;
- Antenna material: Meet the requirement of pRRU.
- Adhesive performance: Meet the requirement of pRRU;
- Electrical Characteristics

Antenna Type	PIFA
Frequency Range	B66: 1710-1780MHz, 2110-2200MHz B25: 1850-1915MHz, 1930-1995MHz B7: 2500-2570MHz, 2620-2690MHz N77: 3450-3900MHz
Efficiency	40~75%
RL	B66: <-6dB B25: <-8dB B7: <-8dB N77: <-8dB
Feed Impedance	50ohm
Polarization	Linear
Peak Gain	1~4dbi

□ Mechanical Information

Mechanical Dimension	
Overall dimensions	214mm*185mm
Description	Material
Stamping Metal	FPC
Bracket	Plastic
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

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2 Mechanical drawing

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3 Test information

3.1 The test environment

- The testing equipment for the Return loss and VSWR of the antenna is the Keysight E5071C Vector network analyzer.
As shown in the following figure:



Figure 1 Keysight E5071C Vector network analyzer.

- The efficiency, gain, and directional pattern of the antenna were all tested in a French MVG microwave shielding chamber. The microwave shielding room uses 24 probes to electronically scan the radiation performance of the antenna, collect data, and then analyze and organize it through a computer. It can provide antenna testing in the 400MHz to 6GHz frequency band.

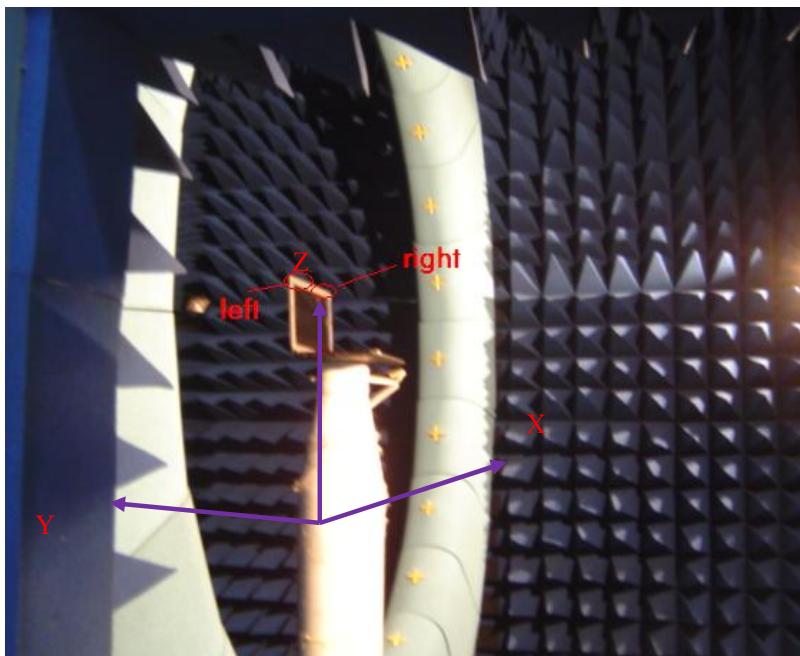
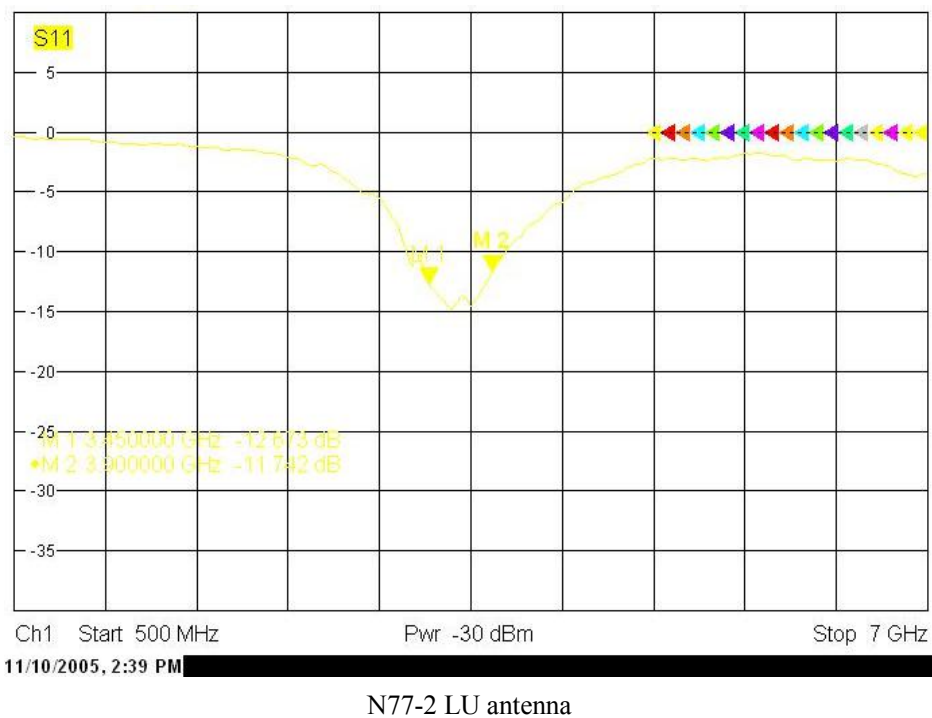
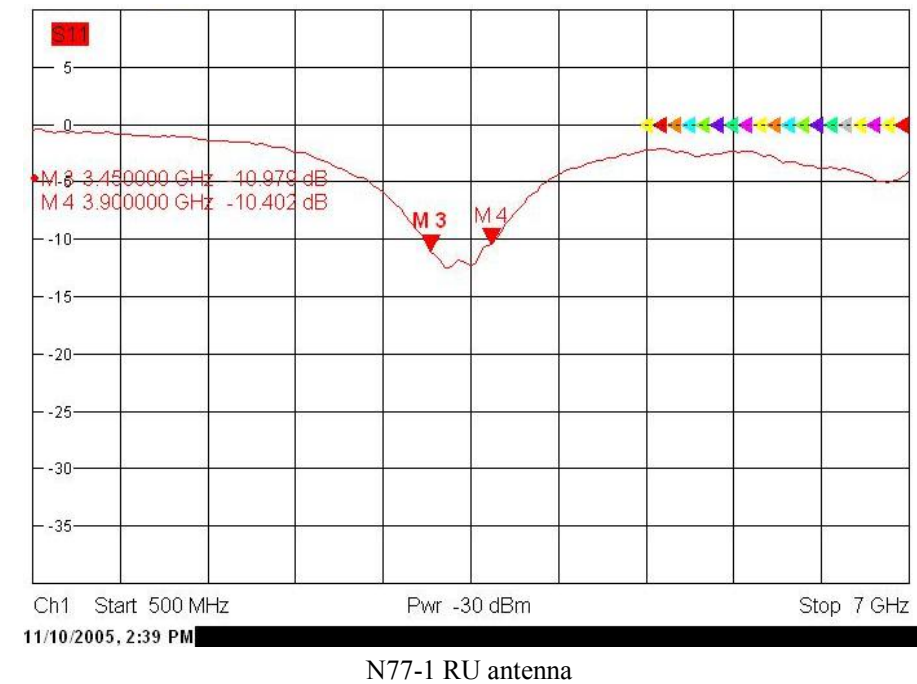


Figure 2MVG StarGate-24

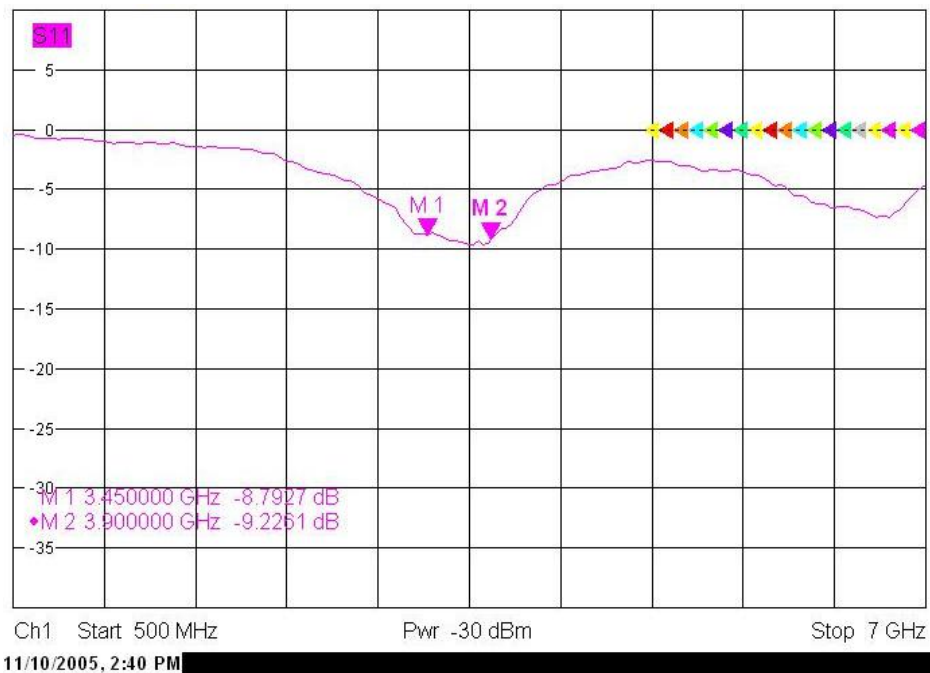
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4 Measurement information

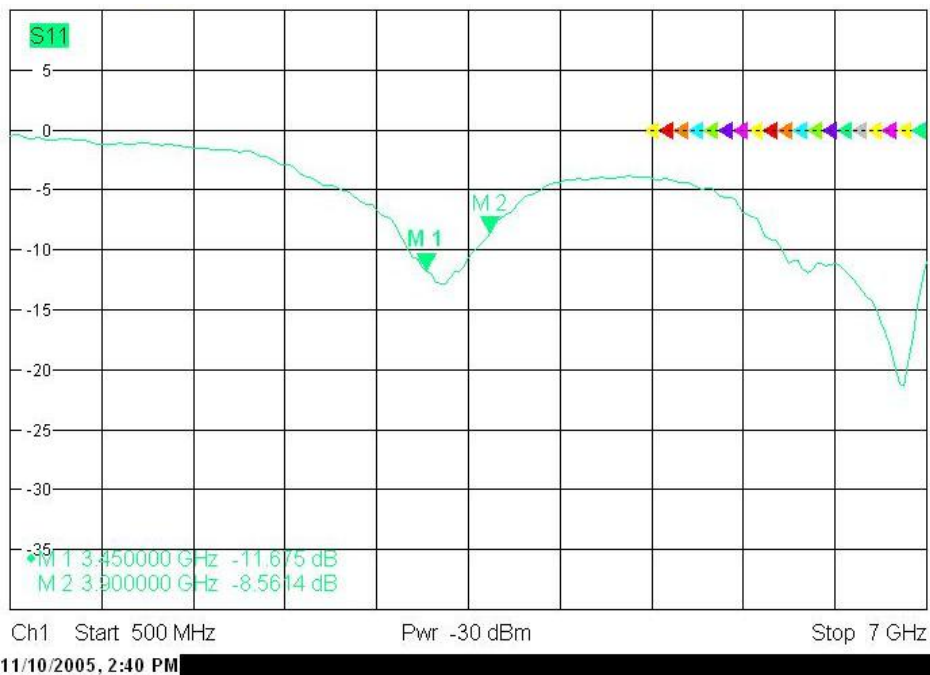
4.1 VSWR



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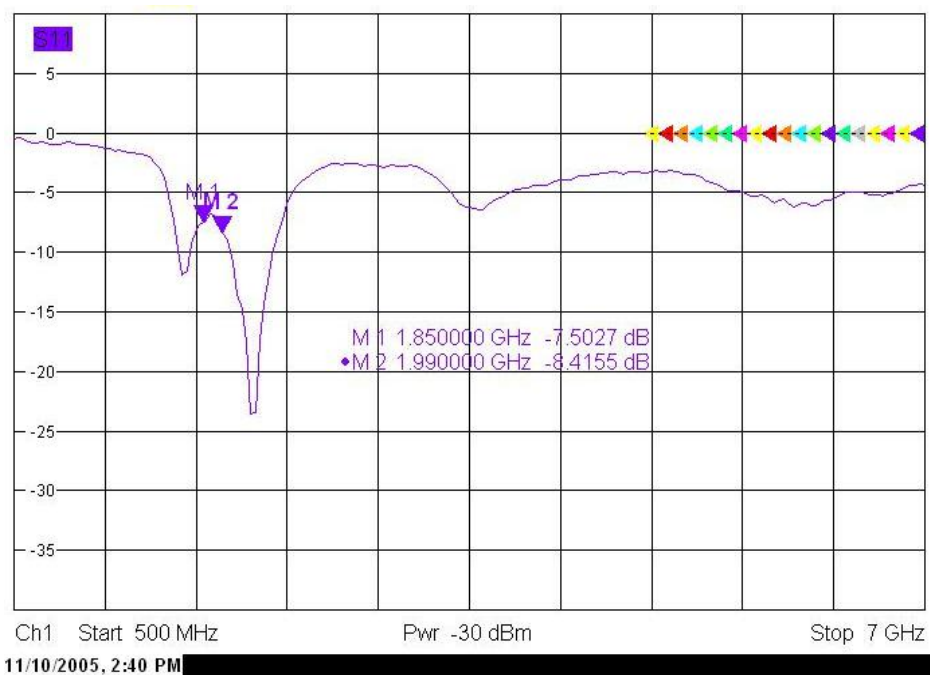


N77-3 LD antenna

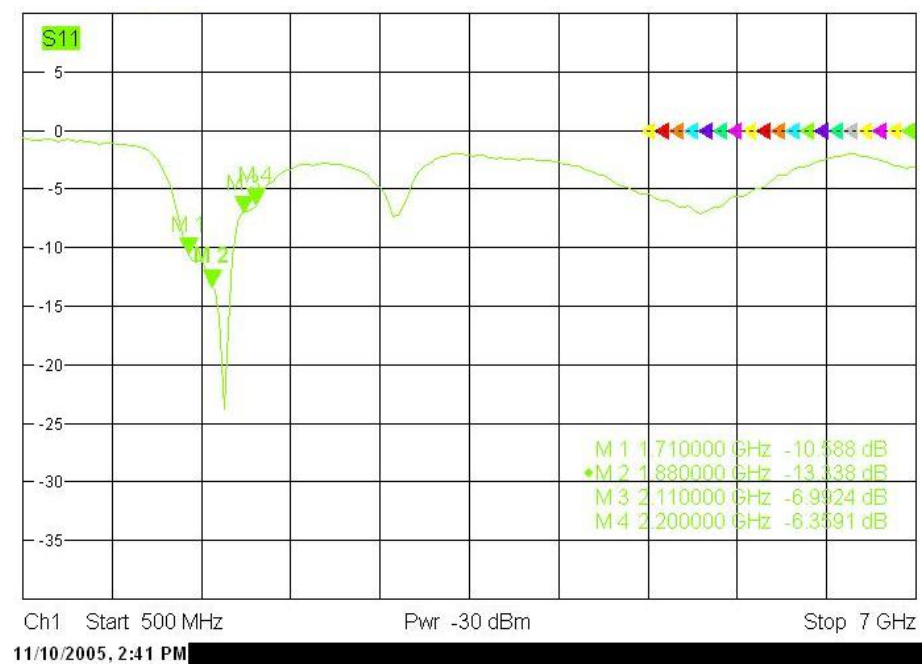


N77-4 RD antenna

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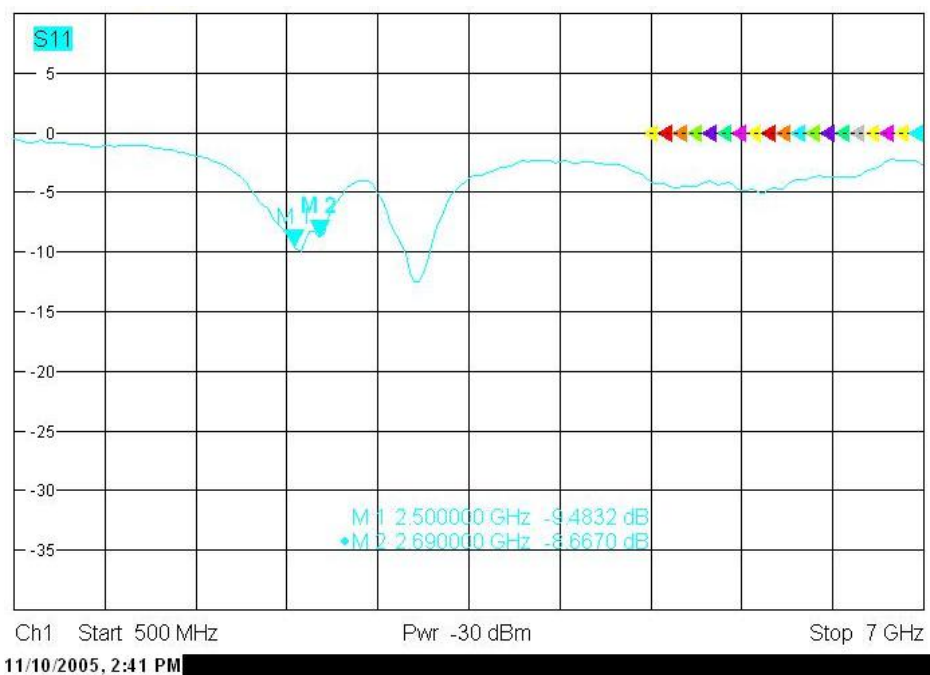


N25 antenna

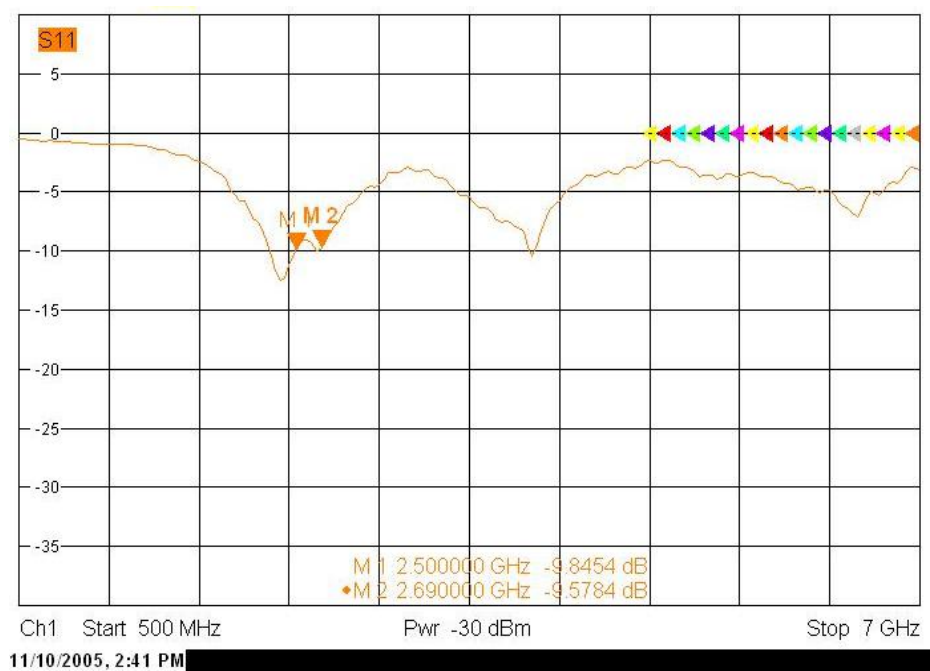


N66 antenna

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N7-1 antenna



N7-2 antenna

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4.2 Efficiency&MaximumGain&AverageGain(azimuth plane)

The efficiency is tested in Satimo stagate chamber.

The data point are 1728/Frequency (SATIMO@24*72@)

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
3450000000	71%	-1.46	3450000000	2.33
3500000000	72%	-1.43	3500000000	2.53
3550000000	72%	-1.42	3550000000	2.43
3600000000	76%	-1.18	3600000000	2.47
3650000000	76%	-1.21	3650000000	2.84
3700000000	71%	-1.47	3700000000	3.00
3750000000	74%	-1.30	3750000000	3.14
3800000000	72%	-1.45	3800000000	3.36
3850000000	70%	-1.53	3850000000	3.58
3900000000	68%	-1.64	3900000000	3.31

N77-1 RU antenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
3450000000	65%	-1.90	3450000000	2.43
3500000000	65%	-1.90	3500000000	2.01
3550000000	65%	-1.84	3550000000	1.98
3600000000	69%	-1.63	3600000000	2.19
3650000000	70%	-1.57	3650000000	2.38
3700000000	68%	-1.67	3700000000	2.90
3750000000	70%	-1.54	3750000000	3.08
3800000000	70%	-1.53	3800000000	3.23
3850000000	70%	-1.53	3850000000	3.48
3900000000	70%	-1.57	3900000000	3.50

N77-2 LU antenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
3450000000	65%	-1.85	3450000000	2.56
3500000000	69%	-1.62	3500000000	2.83
3550000000	69%	-1.63	3550000000	2.70
3600000000	69%	-1.61	3600000000	2.86
3650000000	71%	-1.48	3650000000	2.97
3700000000	70%	-1.56	3700000000	3.18
3750000000	67%	-1.74	3750000000	3.17

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3800000000	66%	-1.79	3800000000	3.38
3850000000	68%	-1.66	3850000000	3.78
3900000000	68%	-1.67	3900000000	3.81

N77-3 LDantenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
3450000000	74%	-1.29	3450000000	3.06
3500000000	75%	-1.23	3500000000	3.12
3550000000	78%	-1.09	3550000000	3.12
3600000000	77%	-1.12	3600000000	3.20
3650000000	77%	-1.16	3650000000	3.22
3700000000	73%	-1.38	3700000000	3.33
3750000000	72%	-1.41	3750000000	3.38
3800000000	68%	-1.66	3800000000	3.51
3850000000	67%	-1.73	3850000000	3.82
3900000000	65%	-1.87	3900000000	3.77

N77-4 RDantenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
1850000000	59%	-2.28	1850000000	2.47
1860000000	59%	-2.26	1860000000	2.37
1870000000	61%	-2.16	1870000000	2.25
1880000000	61%	-2.17	1880000000	2.36
1890000000	59%	-2.26	1890000000	2.35
1900000000	59%	-2.28	1900000000	2.45
1910000000	58%	-2.37	1910000000	2.44
1920000000	57%	-2.41	1920000000	2.44
1930000000	57%	-2.43	1930000000	2.37
1940000000	58%	-2.35	1940000000	2.36
1950000000	61%	-2.15	1950000000	2.46
1960000000	61%	-2.11	1960000000	2.45
1970000000	61%	-2.18	1970000000	2.08
1980000000	59%	-2.29	1980000000	2.18
1990000000	58%	-2.37	1990000000	2.24

N25 antenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
1710000000	75%	-1.28	1710000000	3.61
1720000000	76%	-1.19	1720000000	3.64
1730000000	75%	-1.24	1730000000	3.56

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1740000000	77%	-1.16	1740000000	3.60
1750000000	77%	-1.13	1750000000	3.63
1760000000	75%	-1.25	1760000000	3.52
1770000000	73%	-1.36	1770000000	3.36
1780000000	73%	-1.38	1780000000	3.20
2110000000	52%	-2.87	2110000000	3.58
2120000000	53%	-2.76	2120000000	3.70
2130000000	53%	-2.72	2130000000	3.71
2140000000	54%	-2.66	2140000000	3.73
2150000000	57%	-2.47	2150000000	3.73
2160000000	57%	-2.44	2160000000	3.28
2170000000	56%	-2.48	2170000000	3.24
2180000000	56%	-2.53	2180000000	3.19
2190000000	56%	-2.55	2190000000	3.20
2200000000	55%	-2.63	2200000000	3.08

N66 antenna

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
2500000000	72%	-1.44	2500000000	3.48
2510000000	72%	-1.43	2510000000	3.41
2520000000	72%	-1.43	2520000000	3.41
2530000000	72%	-1.43	2530000000	3.46
2540000000	73%	-1.40	2540000000	3.58
2550000000	71%	-1.49	2550000000	3.57
2560000000	69%	-1.59	2560000000	3.55
2570000000	68%	-1.70	2570000000	3.48
2580000000	67%	-1.72	2580000000	3.44
2590000000	69%	-1.62	2590000000	3.44
2600000000	70%	-1.56	2600000000	3.39
2610000000	70%	-1.53	2610000000	3.38
2620000000	69%	-1.60	2620000000	3.37
2630000000	69%	-1.62	2630000000	3.43
2640000000	69%	-1.61	2640000000	3.50
2650000000	68%	-1.69	2650000000	3.43
2660000000	67%	-1.76	2660000000	3.38
2670000000	65%	-1.87	2670000000	3.32
2680000000	65%	-1.85	2680000000	3.34
2690000000	65%	-1.90	2690000000	3.28

N7-1 antenna

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Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
2500000000	81%	-0.93	2500000000	3.50
2510000000	80%	-0.96	2510000000	3.47
2520000000	80%	-0.97	2520000000	3.43
2530000000	80%	-0.99	2530000000	3.46
2540000000	79%	-1.00	2540000000	3.51
2550000000	77%	-1.12	2550000000	3.51
2560000000	75%	-1.25	2560000000	3.43
2570000000	73%	-1.37	2570000000	3.33
2580000000	73%	-1.39	2580000000	3.29
2590000000	74%	-1.29	2590000000	3.36
2600000000	75%	-1.28	2600000000	3.36
2610000000	74%	-1.30	2610000000	3.34
2620000000	73%	-1.38	2620000000	3.23
2630000000	72%	-1.41	2630000000	3.15
2640000000	73%	-1.40	2640000000	3.15
2650000000	71%	-1.51	2650000000	3.13
2660000000	69%	-1.59	2660000000	3.20
2670000000	68%	-1.68	2670000000	3.24
2680000000	68%	-1.70	2680000000	3.26
2690000000	67%	-1.77	2690000000	3.16

N7-2 antenna

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