

SPECIFICATION FOR APPROVAL

CUSTOMER/PROJECT: Zhejiang Okai Vehicle Co., Ltd.

CUSTOMER P.N: _____

PRODUCT NAME: BT ANT

MODEL NO: EB80-ANT

SPECIFICATION: _____

Date of Issue: 2024.10.15

SUPPLIER AUTHORIZED SIGNATURE		
PREPARED	CHECKED	APPROVED
WDH	CY	WEQ 

CUSTOMER AUTHORIZED SIGNATURE			
PM		QE	

Test laboratory:Shanghai Jesoncom Communication Engineering Co., Ltd

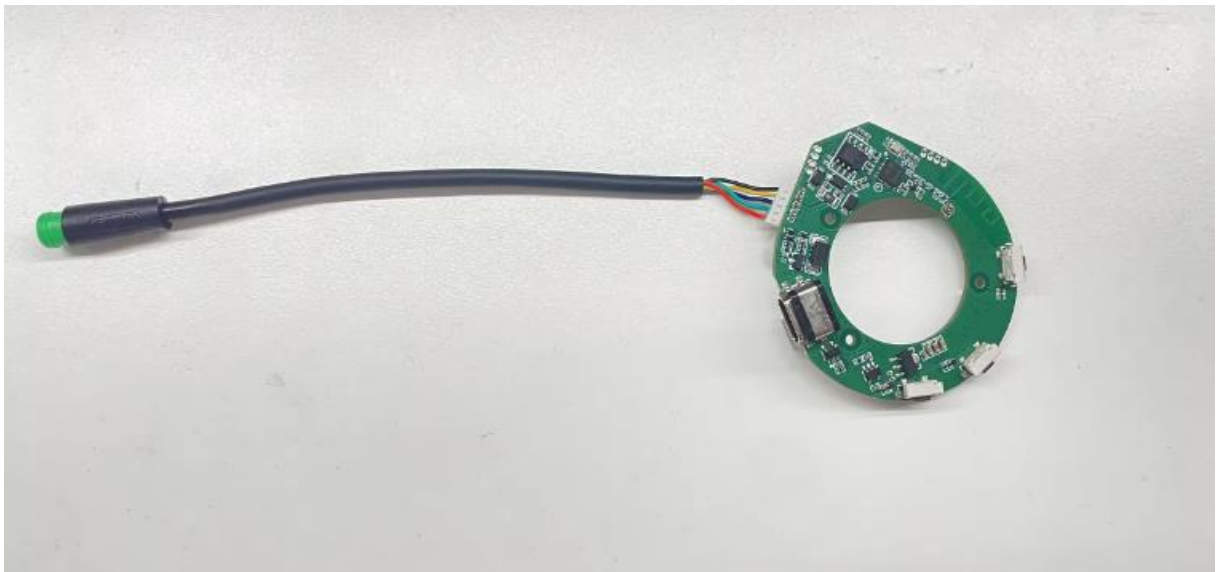
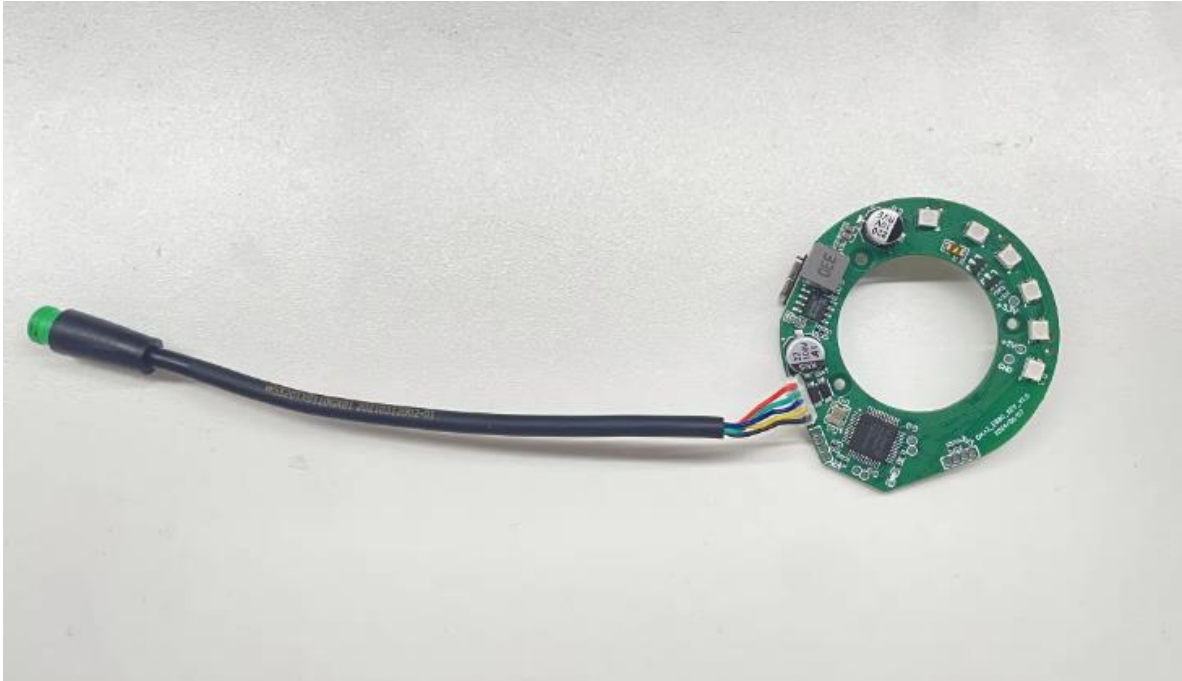
ADD: No.358 Liuyuan RD., Baoshan Urban Industrial District.,Shanghai,PR.
China.

TEL: +86-21-66276925(26/29/35) - 615

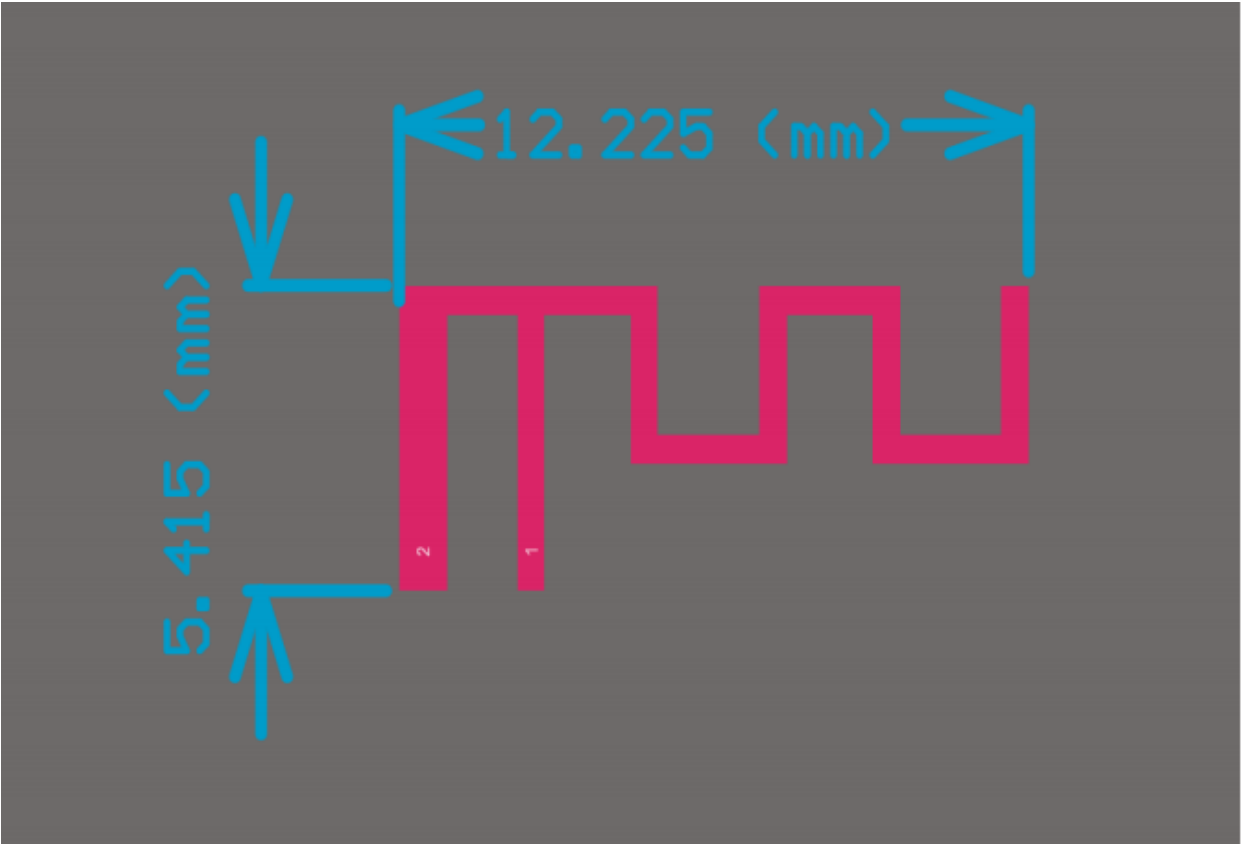
(1 Sample antenna description

Sample antenna description	
Manufacturer's Internal ID	ExI: EB80-ANT
category	EXI: BT
Band	EX: 2400-2500M
morphology	ExI: Plannar Inverted F Antenna on board
polarization	EXI: Linea r
Vswr	EXI: ≤ 4 @2400-2500M
Efficiency	EXI: $\geq 28\%$ @2400-2500M
Gain	EXI: $\leq 1\text{dbi}$ @2400-2500M
Radiation pattern	EX: Please find attached
connector type	ExI: /
Connector properties	ExI: /
Active/qualifiedive	ExI: /
Color and material	ExI: Cuprum
Antenna size	ExI: 12.2*5.4 (mm)
Cable type and size	ExI: /
Cable loss	Ex: /
Work temperature	ExI: -40~85°C
Storage temperature	Ex: -40~85°C
Power capacity	ExI: /
waterproofing grade	ExS: /
Salt spray grade	ExI: Please find attached
High and low temperature	ExI: Please find attached
Vibration、fall	ExS: /
Suction test	EX: /
characteristic impedance	EX: 50Ω
contact impedance	EX: 0Ω
Medium pressure	EX:/
radiation direction	EX: Horizontal (azimuth) and vertical (elevation)
version	T:A (new)

(2 Sample pictures



(3 Product drawings

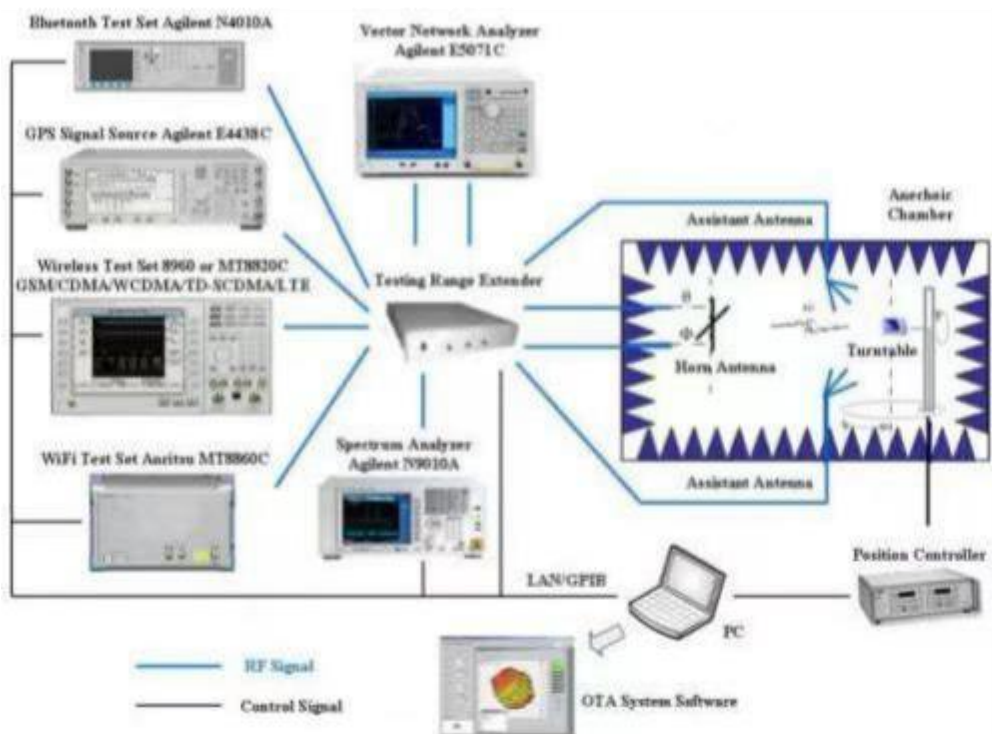
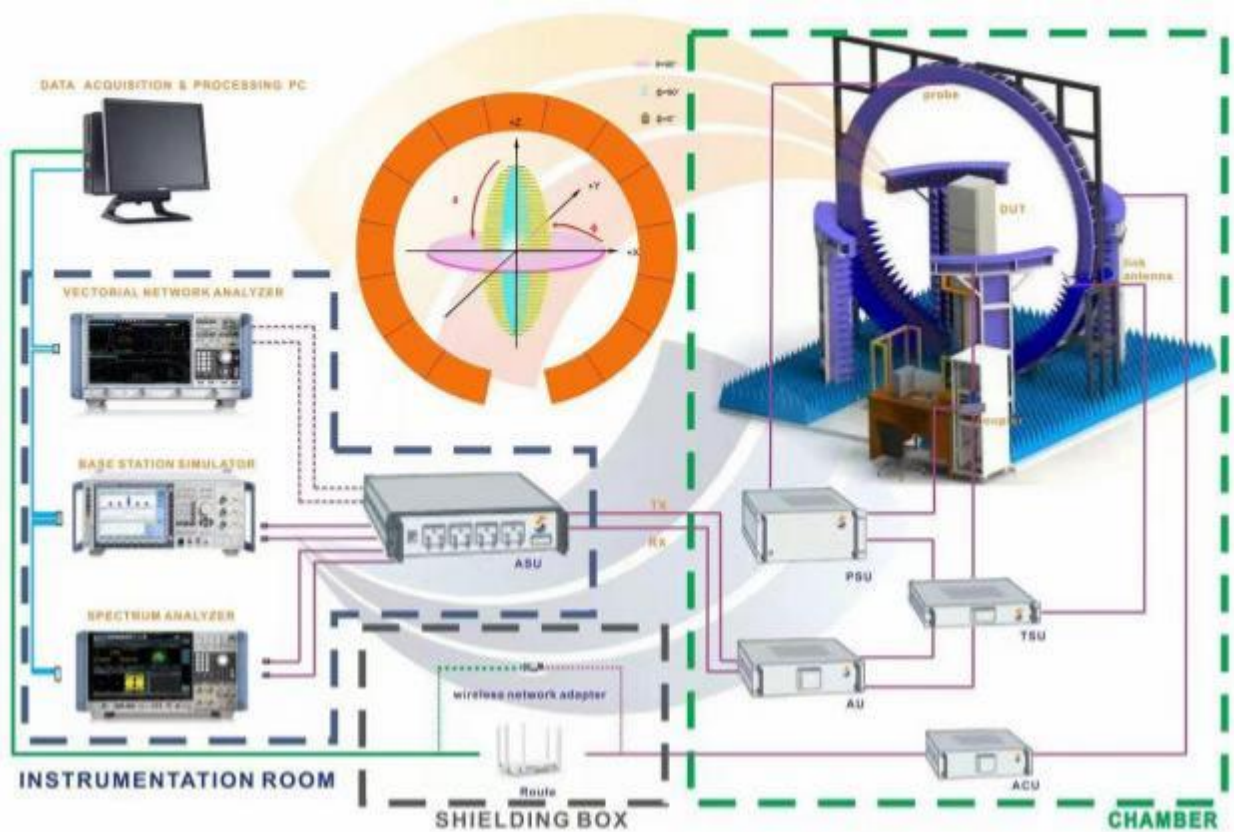


(4) Antenna test environment diagram

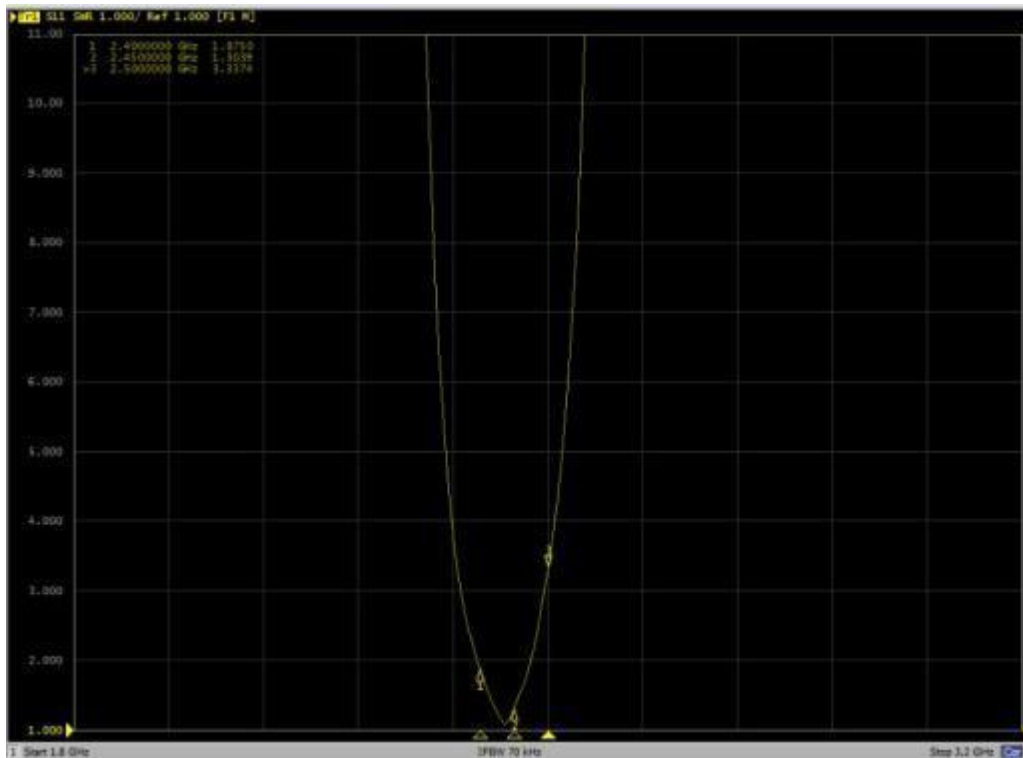
Temperature: 24.1 °C
Relative Humidity: 52 %
ATM Pressure: 101.0 kPa



Test system	microwave chamber SY-24	Calibration Date 2024.03.06
VNA	Agilent E5071C	Calibration Date 2024.02.25
Wireless Test	Agilent 8960	Calibration Date 2024.02.25
Wireless Test	R&S CMW500	Calibration Date 2024.02.25
Wireless Test	Anritsu MT8821C	Calibration Date 2024.02.25



(4 VSWR plot

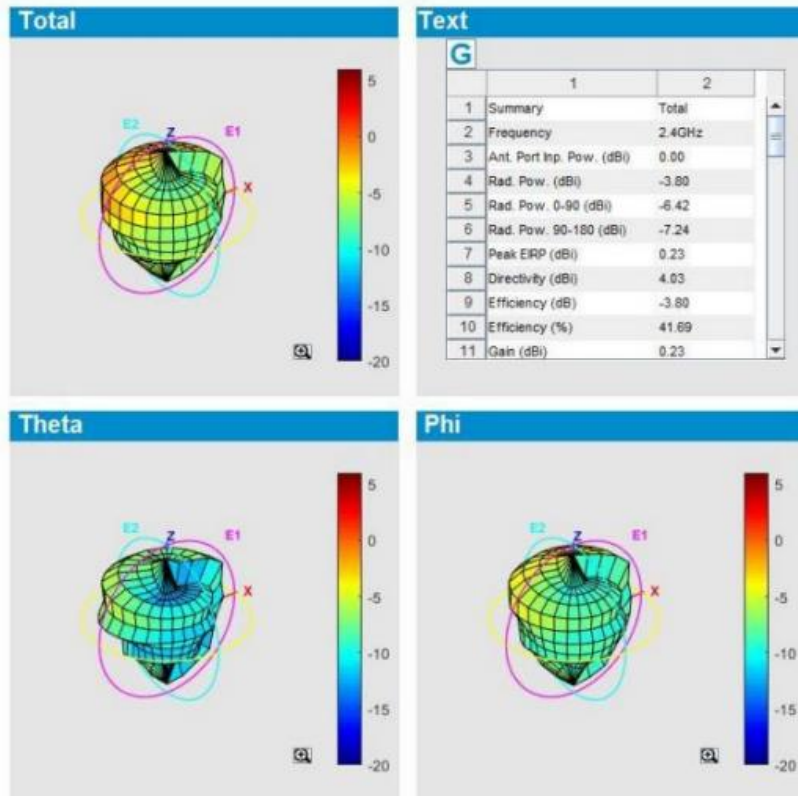


(5 Antenna gain test method

Reference IEEE149-1979, The efficiency and gain of the antenna, through the 3D microwave chamber and network analyzer, the antenna under test is placed in the center of the rotating table, and the signal strength of the whole space sphere is tested. Through the microwave chamber system calculation, the gain value of the antenna under test is obtained.

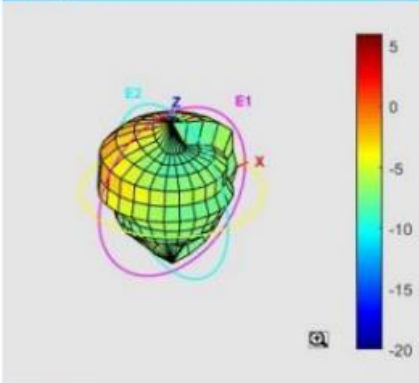
(6) Radiation pattern

2.40GHz



2.41GHz

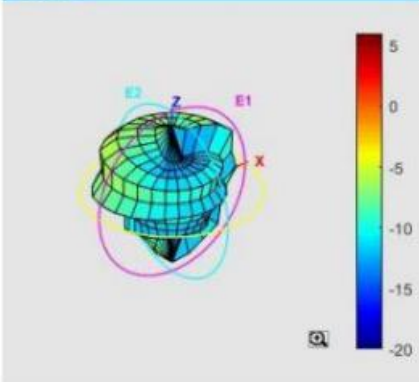
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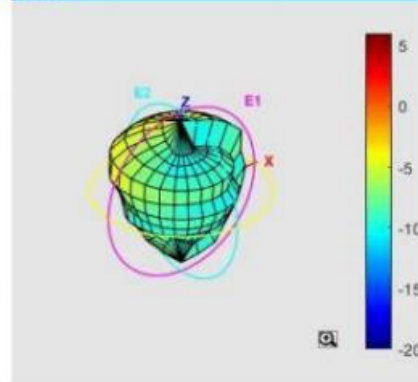
Text

G		
	1	2
1	Summary	Total
2	Frequency	2.41GHz
3	Ant. Port Inp. Pow. (dB)	0.00
4	Rad. Pow. (dB)	-4.38
5	Rad. Pow. 0-90 (dB)	-6.90
6	Rad. Pow. 90-180 (dB)	-7.95
7	Peak EIRP (dB)	-0.68
8	Directivity (dB)	3.70
9	Efficiency (dB)	-4.38
10	Efficiency (%)	36.48
11	Gain (dB)	-0.68

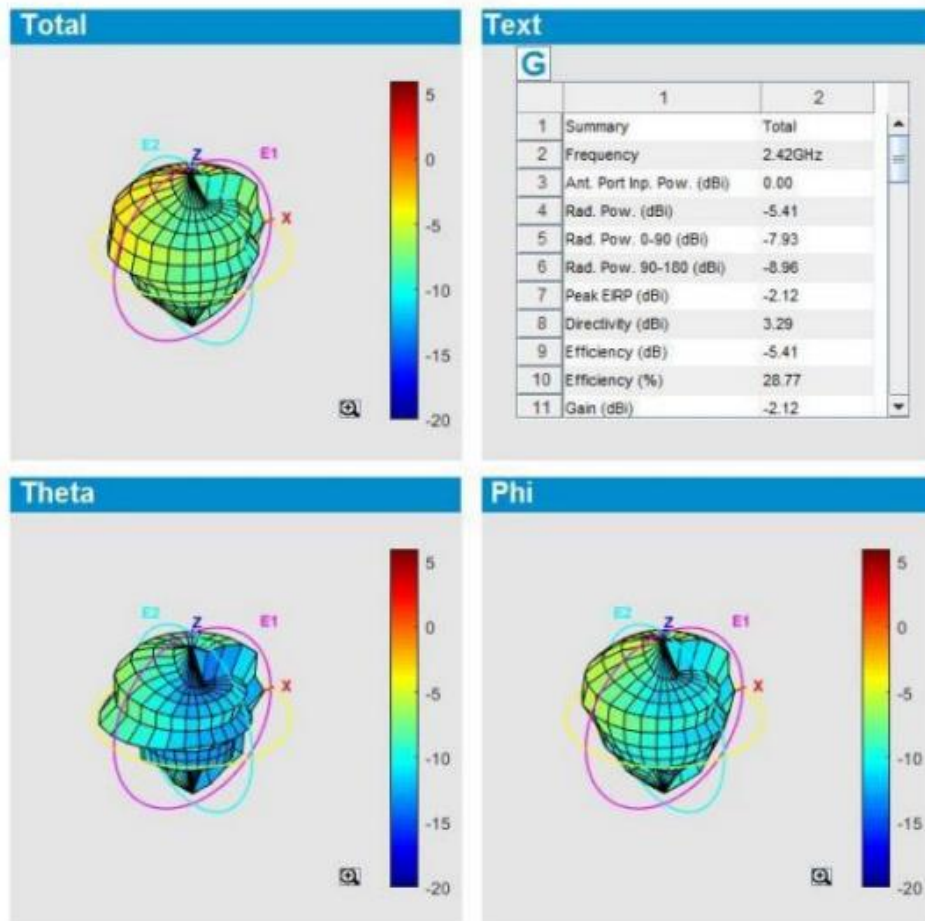
Theta



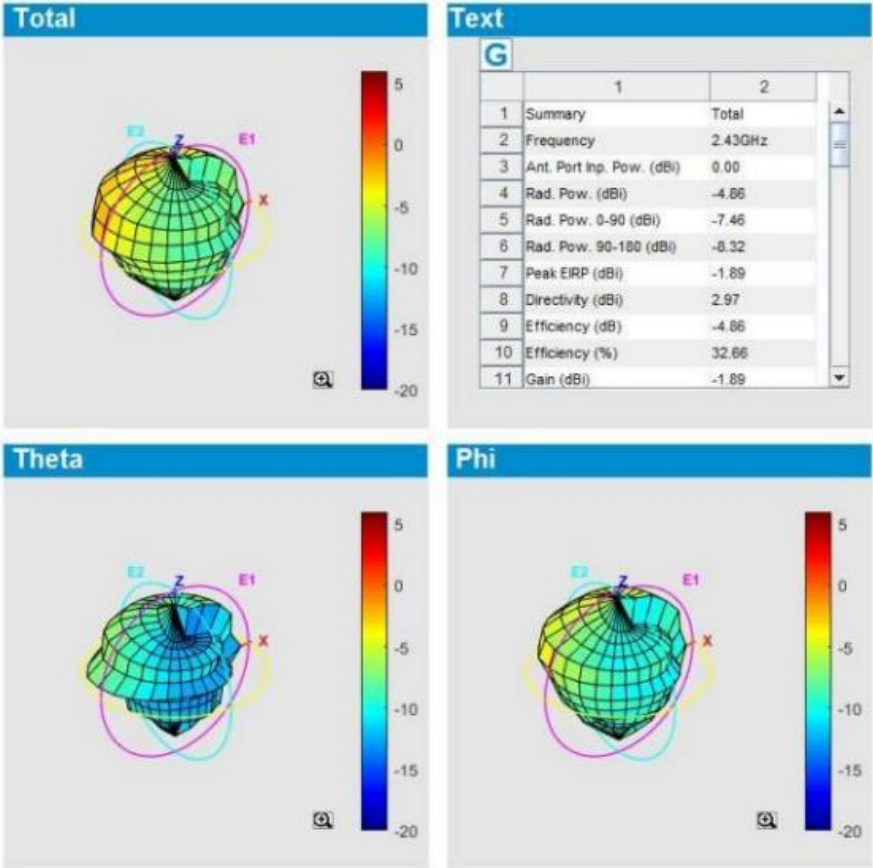
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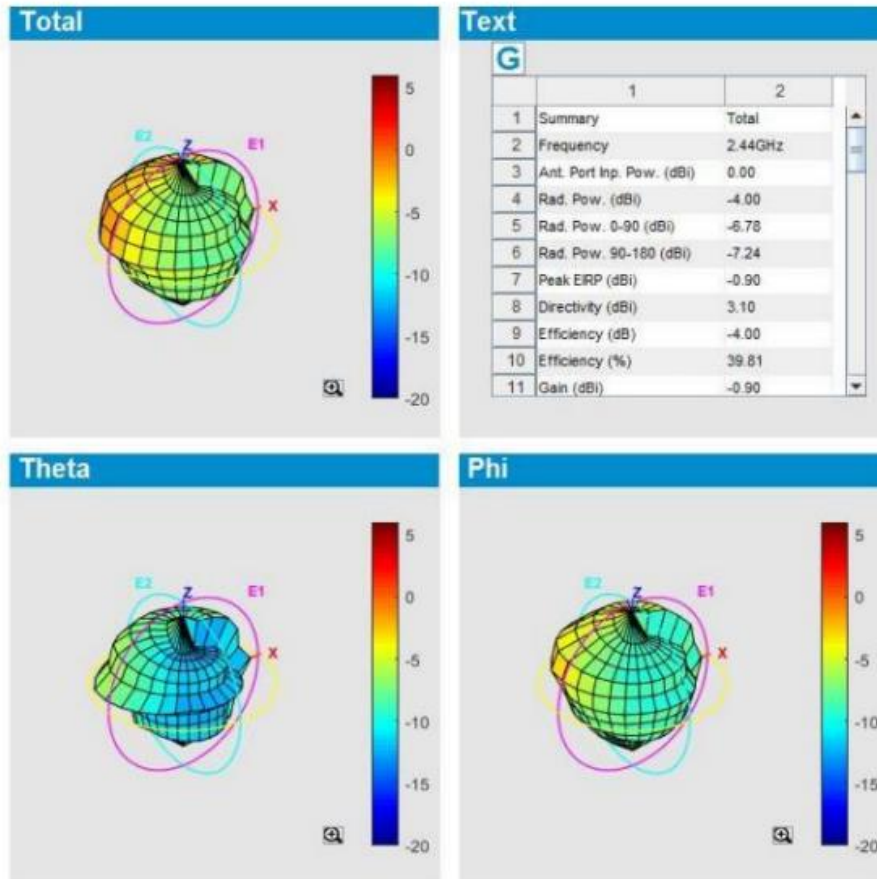
2.42GHz



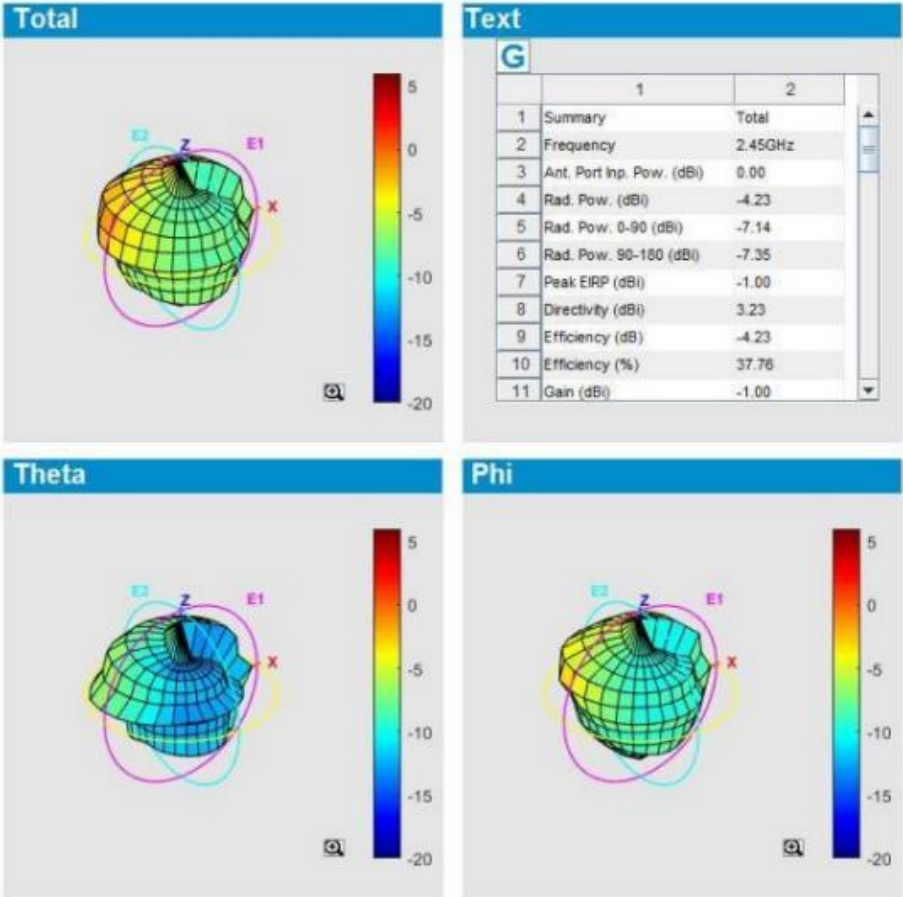
2.43GHz



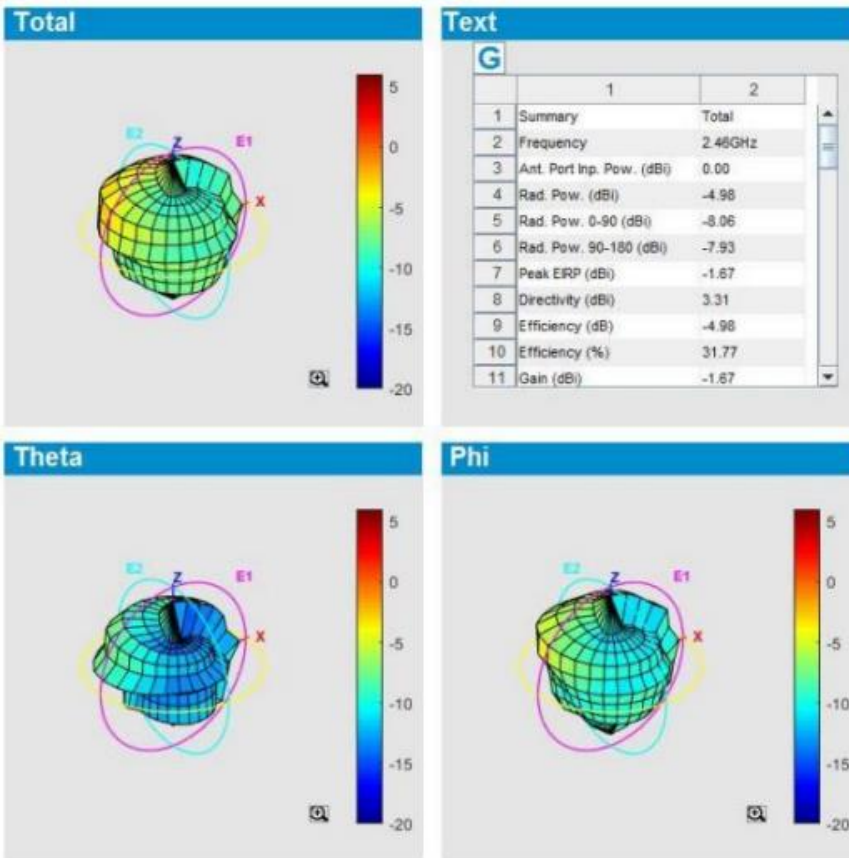
2.44GHz



2.45GHz

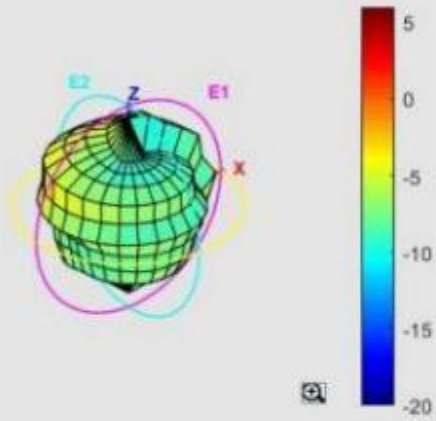


2.46GHz



2.47GHz

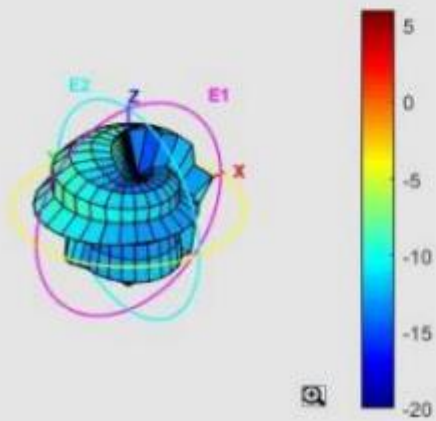
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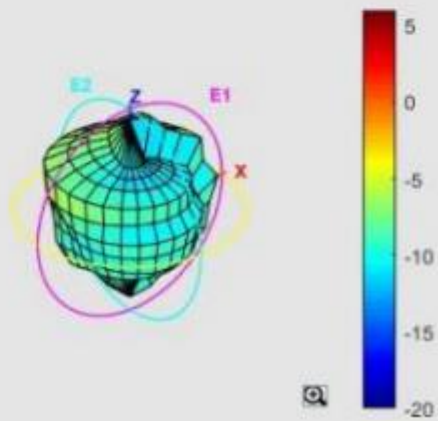
Text

G		
	1	2
1	Summary	Total
2	Frequency	2.47GHz
3	Ant. Port Inp. Pow. (dBi)	0.00
4	Rad. Pow. (dBi)	-5.21
5	Rad. Pow. 0-90 (dBi)	-8.40
6	Rad. Pow. 90-180 (dBi)	-8.04
7	Peak EIRP (dBi)	-1.49
8	Directivity (dBi)	3.72
9	Efficiency (dB)	-5.21
10	Efficiency (%)	30.13
11	Gain (dBi)	-1.49

Theta

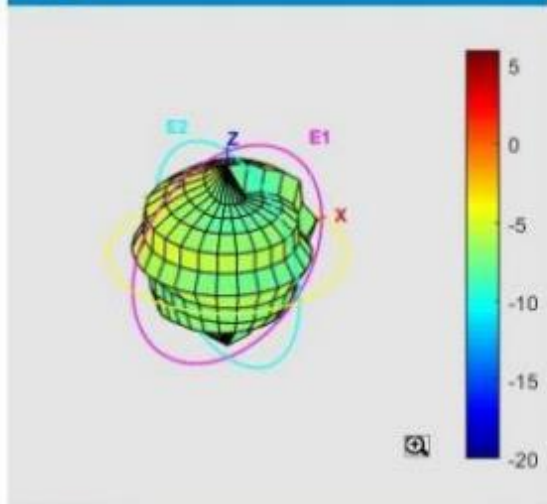


Phi



2.48GHz

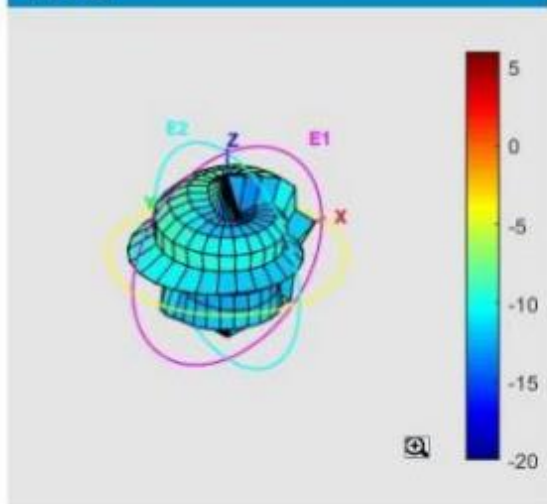
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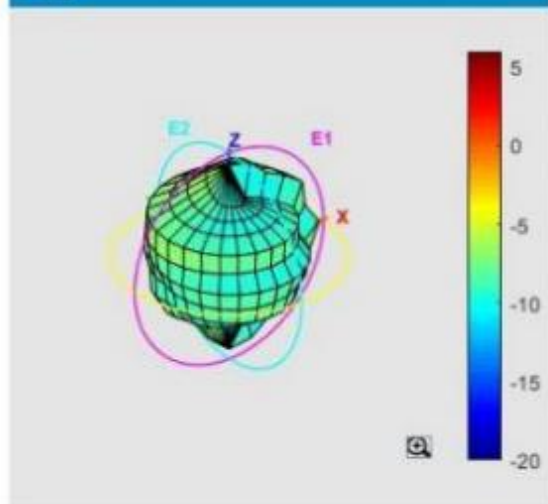
Text

G		
	1	2
1	Summary	Total
2	Frequency	2.48GHz
3	Ant. Port Inp. Pow. (dBi)	0.00
4	Rad. Pow. (dBi)	-4.71
5	Rad. Pow. 0-90 (dBi)	-7.88
6	Rad. Pow. 90-180 (dBi)	-7.58
7	Peak EIRP (dBi)	-1.00
8	Directivity (dBi)	3.71
9	Efficiency (dB)	-4.71
10	Efficiency (%)	33.81
11	Gain (dBi)	-1.00

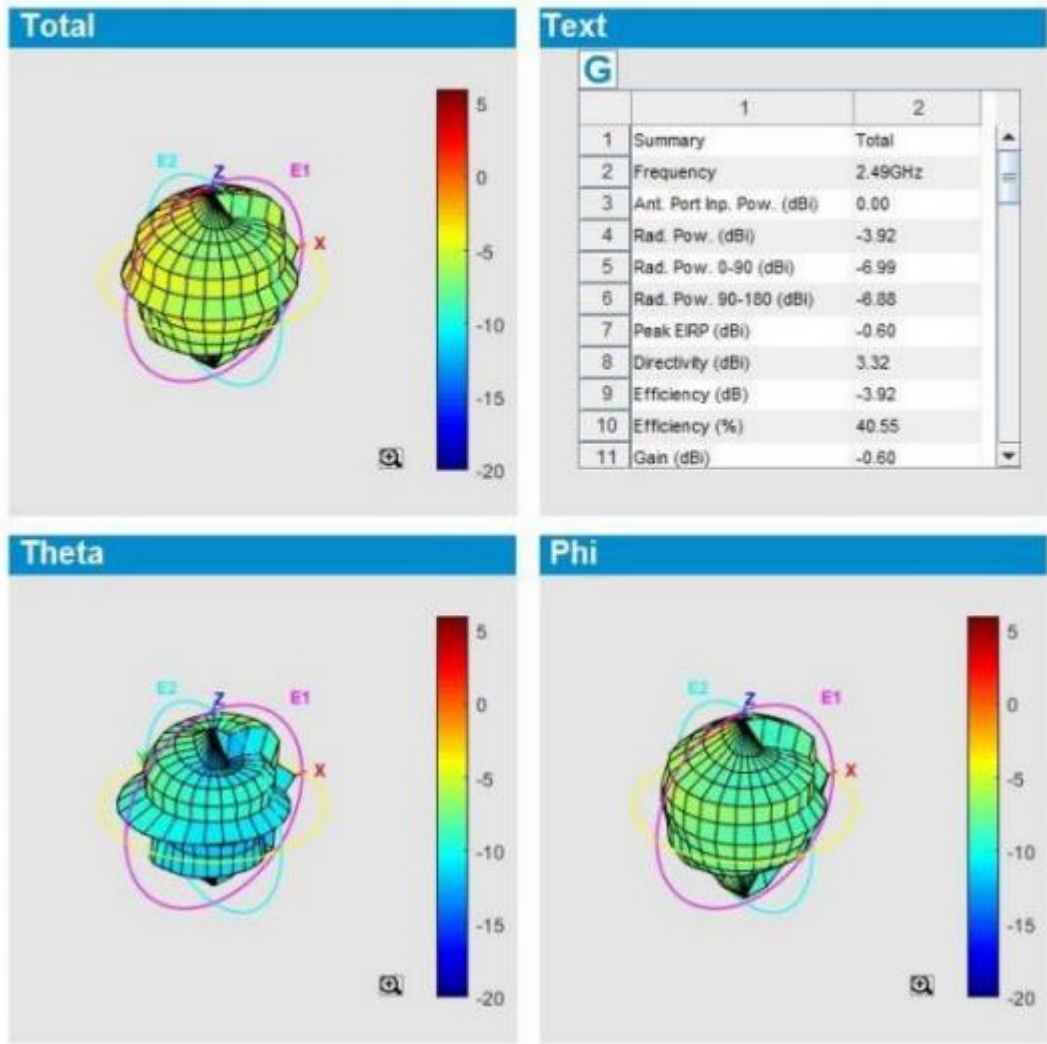
Theta



Phi

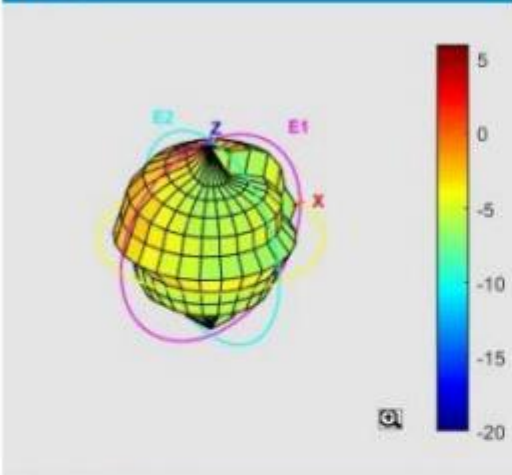


2.49GHz



2.50GHz

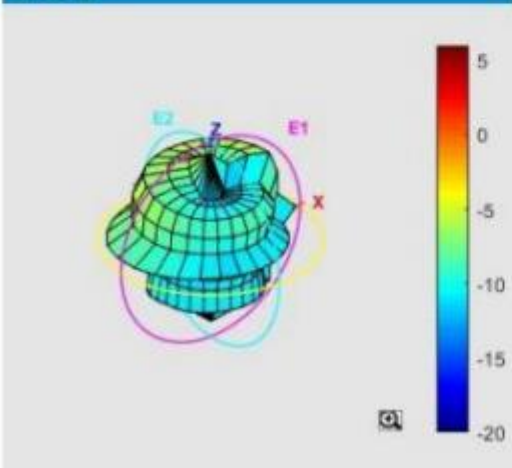
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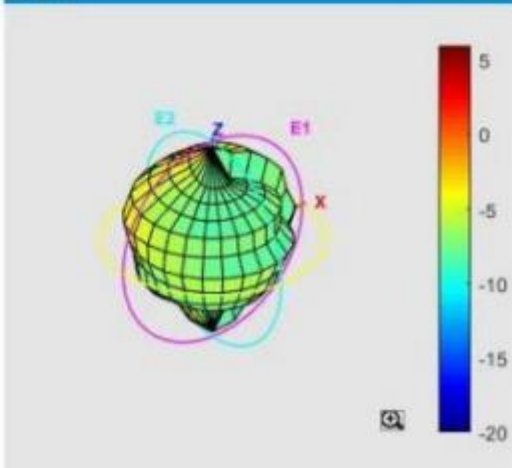
Text

G		
	1	2
1	Summary	Total
2	Frequency	2.5GHz
3	Ant. Port Inp. Pow. (dBm)	0.00
4	Rad. Pow. (dBm)	-3.13
5	Rad. Pow. 0-90 (dBm)	-6.01
6	Rad. Pow. 90-180 (dBm)	-6.27
7	Peak EIRP (dBm)	0.14
8	Directivity (dBi)	3.27
9	Efficiency (dB)	-3.13
10	Efficiency (%)	48.64
11	Gain (dBi)	0.14

Theta



Phi



(7 Efficiency&Gain

Freq (MHz)	Avg Gain	Peak Gain	Directivity	Efficiency	Efficiency (%)	Gain (dBi)
2400	-3.8	0.2	4.0	-3.8	41.7	0.2
2410	-4.4	-0.7	3.7	-4.4	36.5	-0.7
2420	-5.4	-2.1	3.3	-5.4	28.8	-2.1
2430	-4.9	-1.9	3.0	-4.9	32.7	-1.9
2440	-4.0	-0.9	3.1	-4.0	39.8	-0.9
2450	-4.2	-1.0	3.2	-4.2	37.8	-1.0
2460	-5.0	-1.7	3.3	-5.0	31.8	-1.7
2470	-5.2	-1.5	3.7	-5.2	30.1	-1.5
2480	-4.7	-1.0	3.7	-4.7	33.8	-1.0
2490	-3.9	-0.6	3.3	-3.9	40.6	-0.6
2500	-3.1	0.1	3.3	-3.1	48.6	-0.1