

# Test Report- Maxwell

**Brand:** Unictron  
**Model:** CW324S  
**Antenna type:** Chip antenna  
**Version:** A  
**Release date:** 2022/08/18

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# Report Outline

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## 2. Measurement Setup

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2.2 Radiation pattern measurement

2.3 Mechanical setting

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3.1 S Parameters

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3.3 Conclusion

# Background

# Background

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## Sample information

1. Adjust CW324S to optimize the result.

# Measurement Setup

## Reflection Coefficient Measurement

- a. Equipment : Network Analyzer(Agilent E5071A)
- b. Test items : S-parameters (Impedance, return loss, VSWR)



Figure. Network Analyzer(Agilent E5071A)

# Measurement Setup

## Radiation Pattern Measurement

- a. Equipment : Anechoic Chamber, Network Analyzer (Agilent E5071C), Standard Horn.
- b. Test items : Gain, efficiency, 2D gain pattern, 3D gain pattern

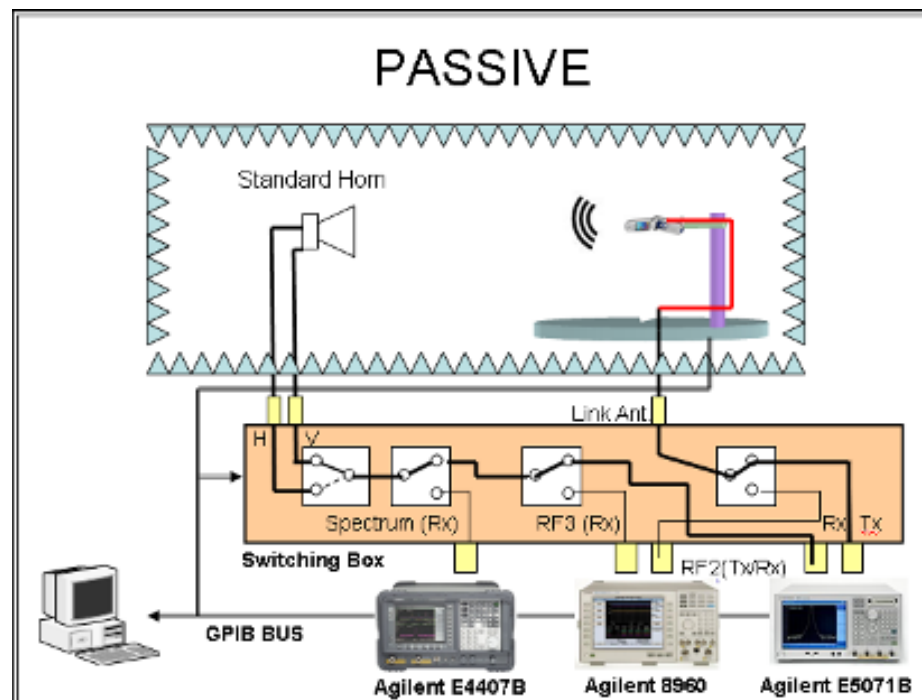
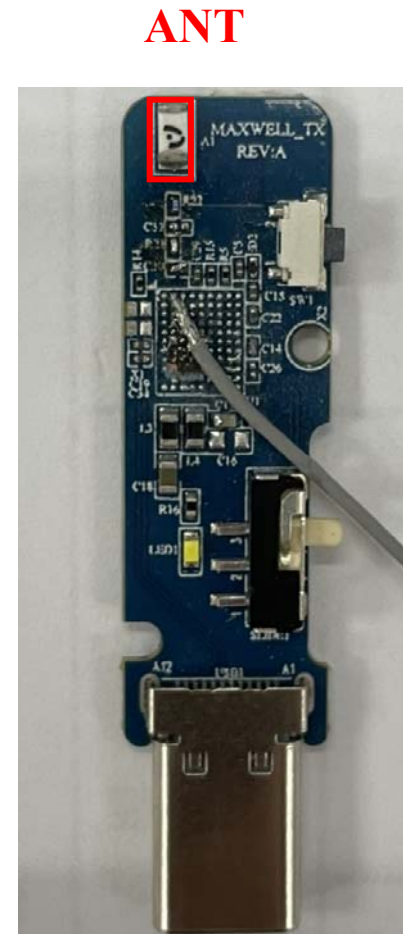


Figure. Scheme of radiation pattern measurement system

# Measurement Setup

## Mechanical setting

### Placement of antenna



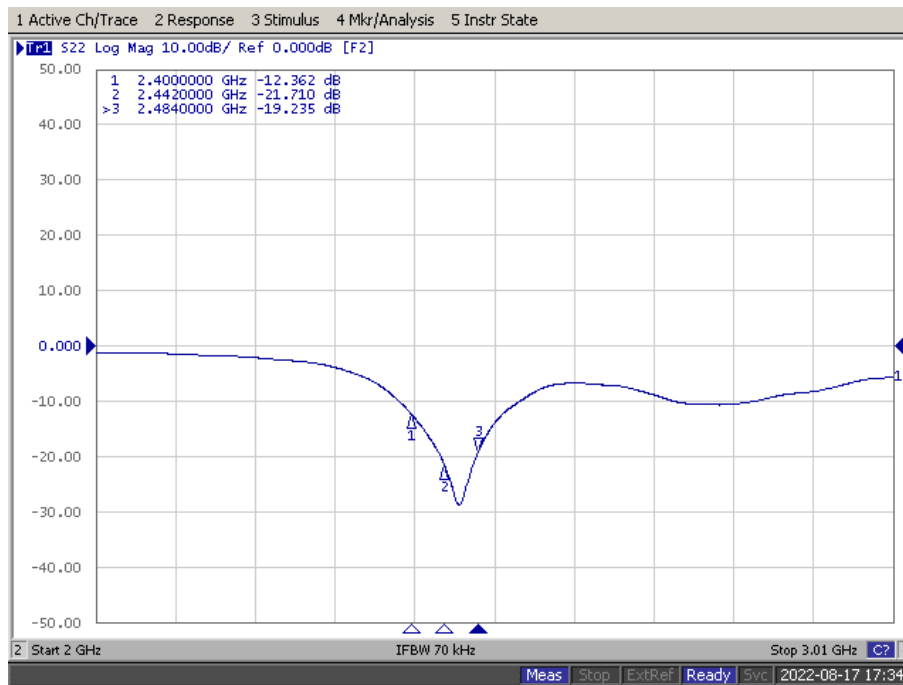


# Experimental results

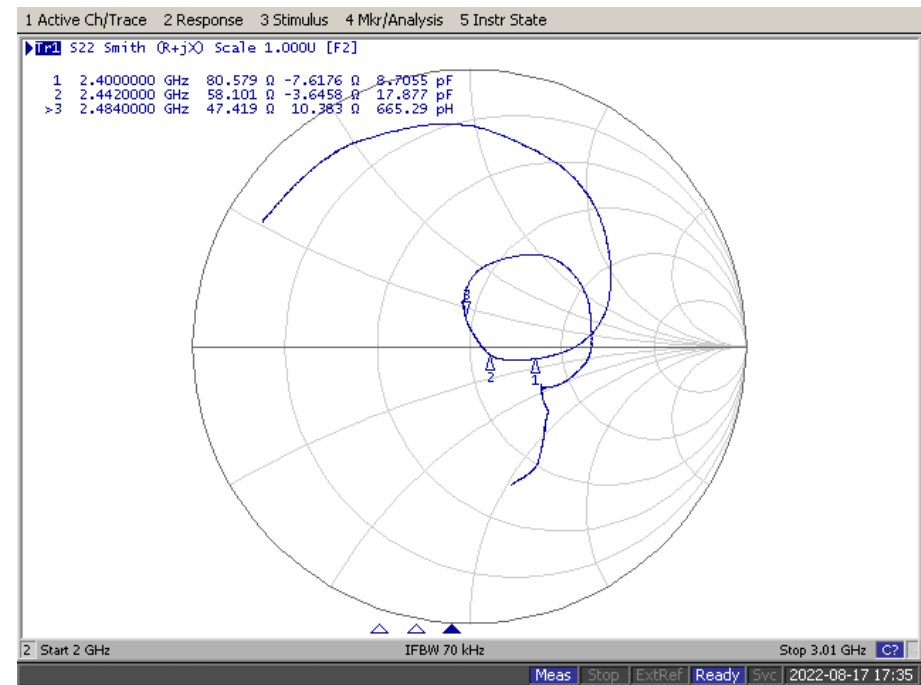
# Experimental results

## S-Parameters

### Return Loss

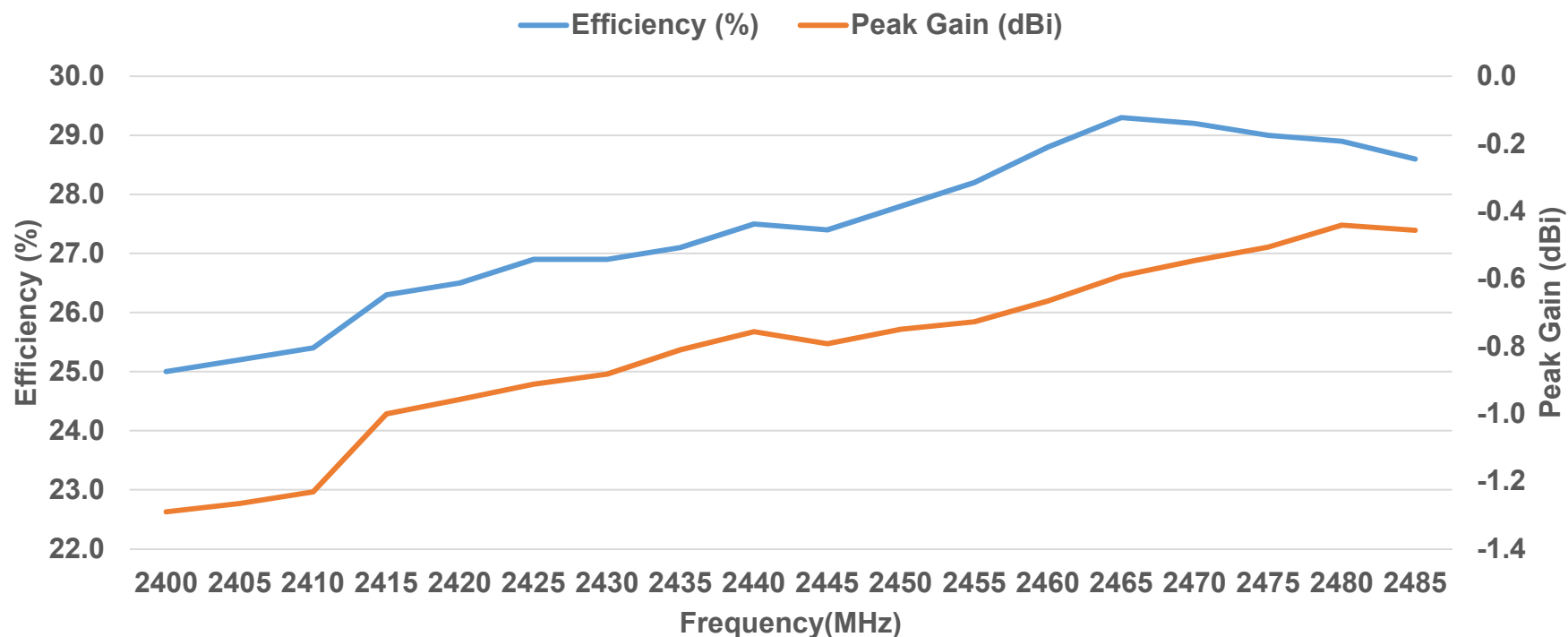


### Smith



# Experimental results

## Radiation efficiency and peak gain

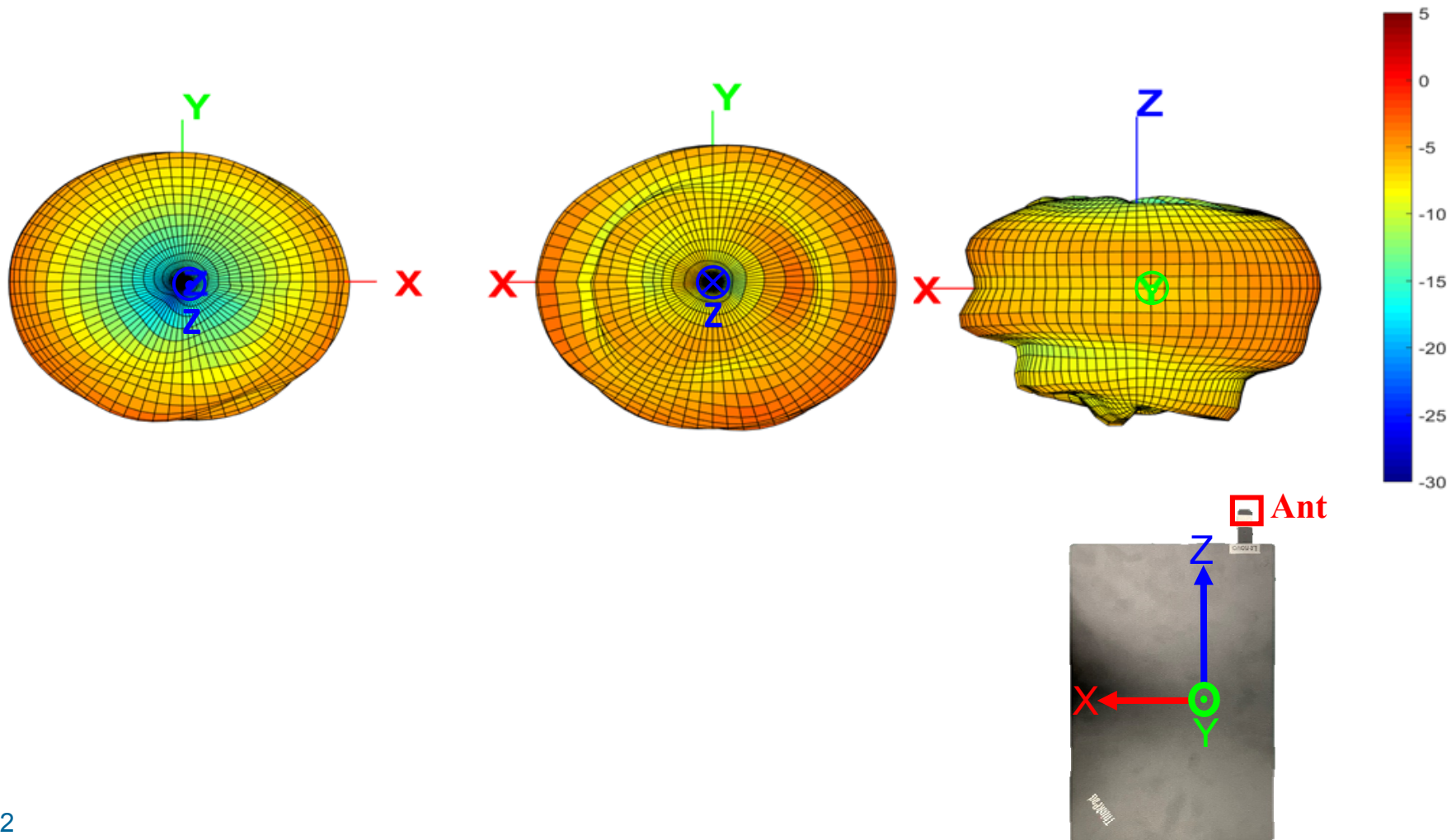


### 2400-2485 MHz

Frequency (MHz)	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480	2485
Efficiency (dB)	-6.0	-6.0	-6.0	-5.8	-5.8	-5.7	-5.7	-5.7	-5.6	-5.6	-5.6	-5.5	-5.4	-5.3	-5.3	-5.4	-5.4	-5.4
Efficiency (%)	25.0	25.2	25.4	26.3	26.5	26.9	26.9	27.1	27.5	27.4	27.8	28.2	28.8	29.3	29.2	29.0	28.9	28.6
Peak Gain (dBi)	-1.3	-1.3	-1.2	-1.0	-1.0	-0.9	-0.9	-0.8	-0.8	-0.8	-0.7	-0.7	-0.7	-0.6	-0.5	-0.5	-0.4	-0.5

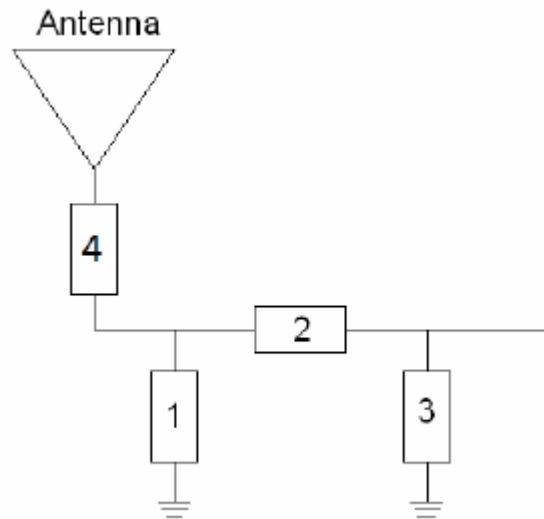
# Experimental results

## 3D Gain Pattern (Radiation Pattern @ 2442 MHz) (unit: dBi)



# Experimental results

## Matching Circuit



System Matching Circuit Component			
Location	Description	Vendor	P/N
1	NA	-	-
2	0Ω, (0201)	-	-
3	1.5pF,(0201)	MURATA	GRM0335C1H1R5WA01D
4	6.8nH, (0201)	MURATA	LQP03TG6N8H02D