



Antenna Datasheet

Product OC: YECA000M1A

Version: 1.2

Date: 2024-01-22

Status: Released

Product Name: 4G External Antenna

Key Features:

Frequency Band: 700–960 MHz & 1710–2690 MHz

Dimensions: Φ 99.98 mm × 17.46 mm

Efficiency: Up to 52 % (FS)

RoHS and REACH Compliant

IP68, IP69K, IK10

Pressure load: 1500 lbs MAX

Overview

The YECA000M1A antenna is a self-developed Quectel design that delivers exceptional performance and stability, making it suitable for the challenging environments found in municipal road applications. This antenna features a paste-on installation method, allowing for easy attachment to roads, sidewalks, or manholes. Its robust, non-reflective, and low-profile design ensures consistent and reliable operation in diverse settings.

Operating within the 4G LTE frequency bands, the YECA000M1A provides high-speed and stable signal transmission. It comes with an integrated SMA-M direct mount connector for seamless connectivity with other communication devices. To meet customer demands, the YECA000M1A 4G antenna also offers customizable cable and connector options.

The YECA000M1A 4G antenna is instrumental in smart city initiatives and is widely applied in intelligent transportation, monitoring, and security systems, making it an ideal choice for 4G communications. This weather-resistant, paste-on marking antenna ensures a stable and reliable wireless connection in various environments. For installation ease, it is recommended to use durable adhesive solutions like 3M VHB 4955 to securely attach the antenna to its intended location.

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1 Specification

Test Condition: In Free Space

1.1. Electrical

Electrical	
Frequency Range	700–960 MHz & 1710–2690 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

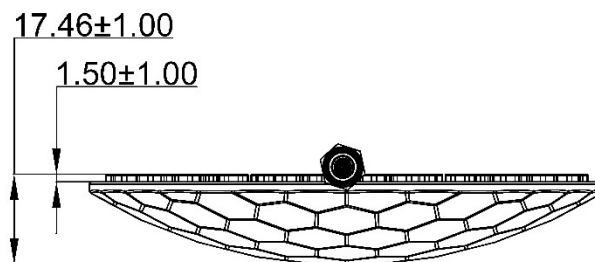
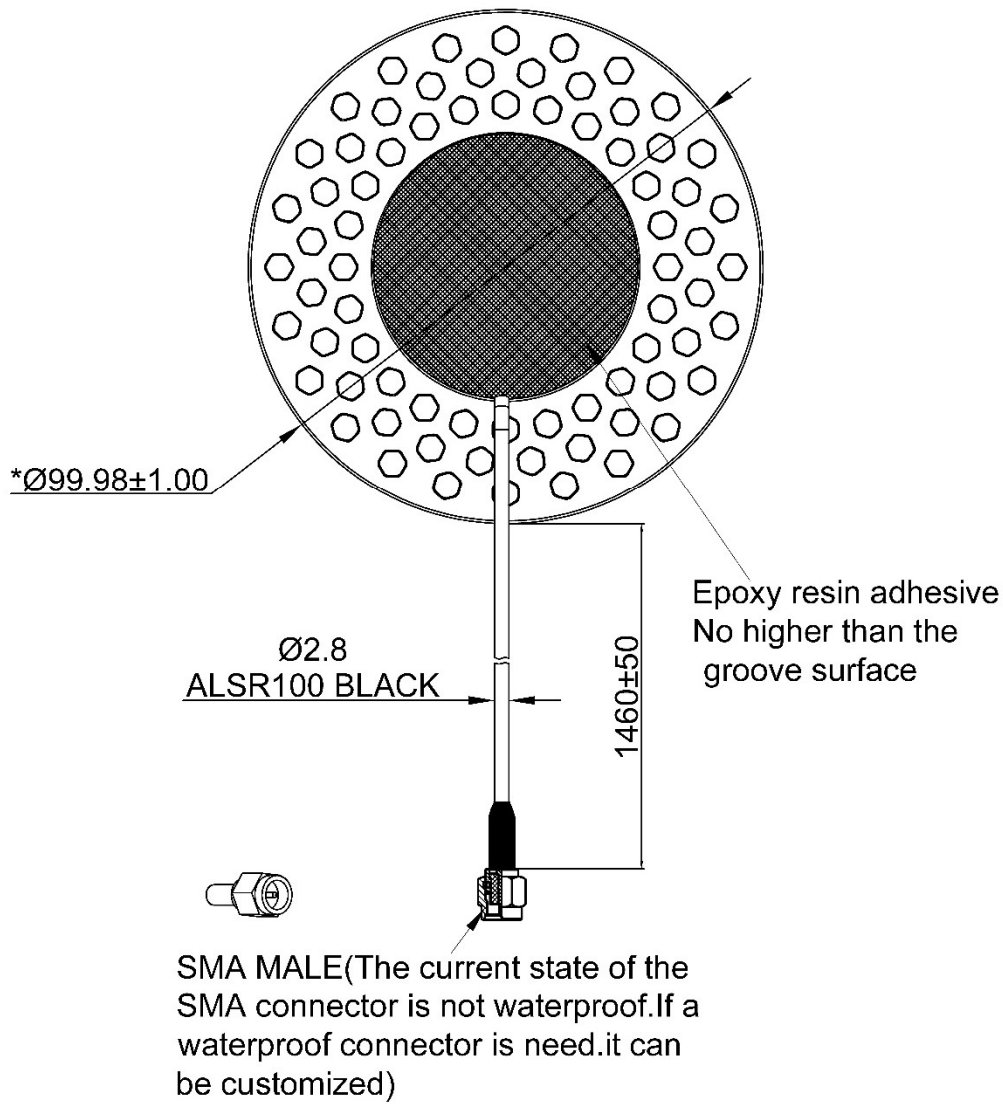
Electrical - Detail													
SPEC	Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /N77	N79	Wi-Fi 5G
	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850	
Max. VSWR	FS	-	2.1	4.2	-	2.6	2.9	2.7	2.8	-	-	-	
Max. Return Loss (dB)	FS	-	-9.1	-4.2	-	-7.0	-6.3	-6.7	-6.5	-	-	-	
AVG Eff. (%)	FS	-	49.4	31.7	-	33.7	27.8	28.5	26.1	-	-	-	
AVG Gain (dB)	FS	-	-3.1	-5.3	-	-4.7	-5.6	-5.5	-5.8	-	-	-	
Max. Peak Gain (dBi)	FS	-	2.9	2.6	-	1.8	-1.0	-0.7	-1.5	-	-	-	
VSWR	FS						≤ 4.2						
Return Loss	FS						≤ -4.2 dB						
Peak Gain	FS						≤ 2.9 dBi						

- FS: In Free Space

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	Φ 99.98 mm × 17.46 mm
Casing Material & Color	ASA & Grey
Cable Type & Color & Length	ALSR 100 & Black & 1460 mm
Connector Type	SMA Male
Mounting Type	Adhesive
Weight	Typ. 101.5 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Ingress Protection (IP) Rating	IP68 (water depth 2 m for 1 hour), IP69K
Impact Protection (IK) Rating	IK10
RoHS & REACH Compliant	Yes

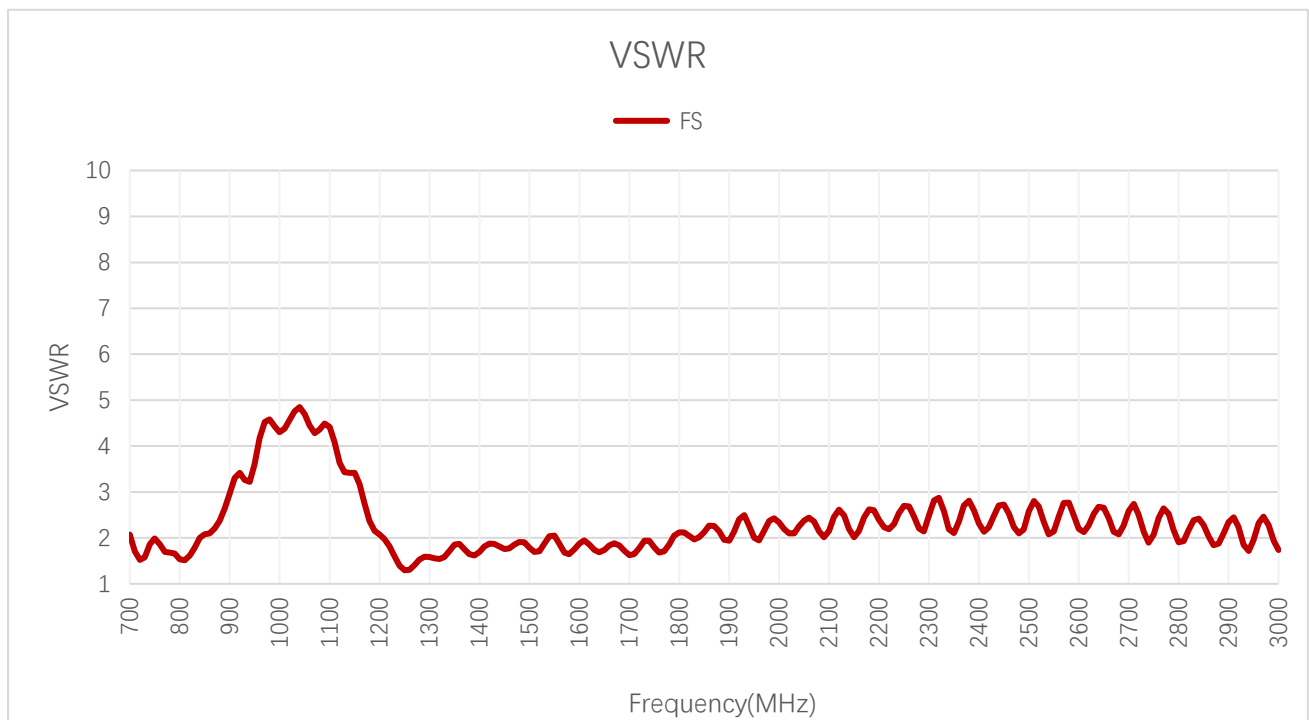
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

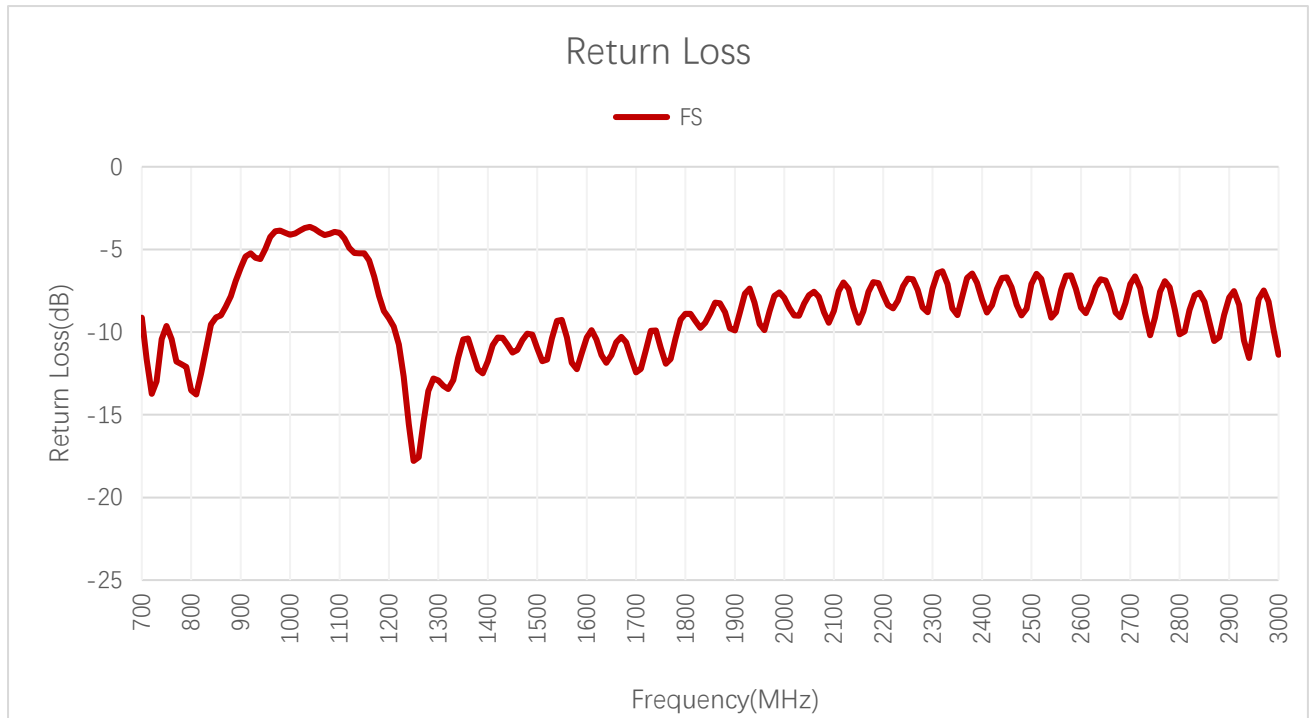
3.1.1. VSWR



VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	1.7	1.8	3.0	4.2	-	1.6	1.9	2.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	2.0	2.2	2.1	2.7	2.2	-	-	-	-	-

3.1.2. Return Loss

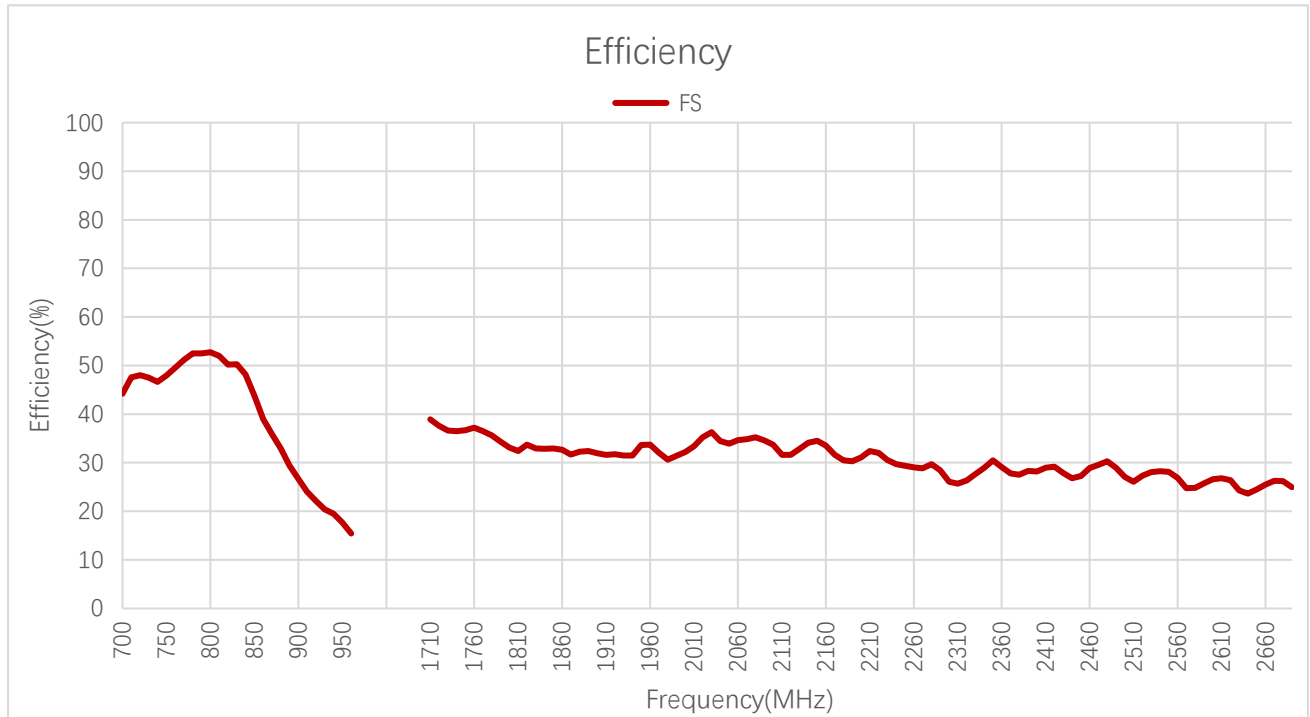


Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-11.6	-11.0	-6.1	-4.2	-	-12.2	-9.9	-8.8
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	-9.5	-8.5	-9.0	-6.7	-8.5	-	-	-	-	-

3.2. Radiation Performance Test

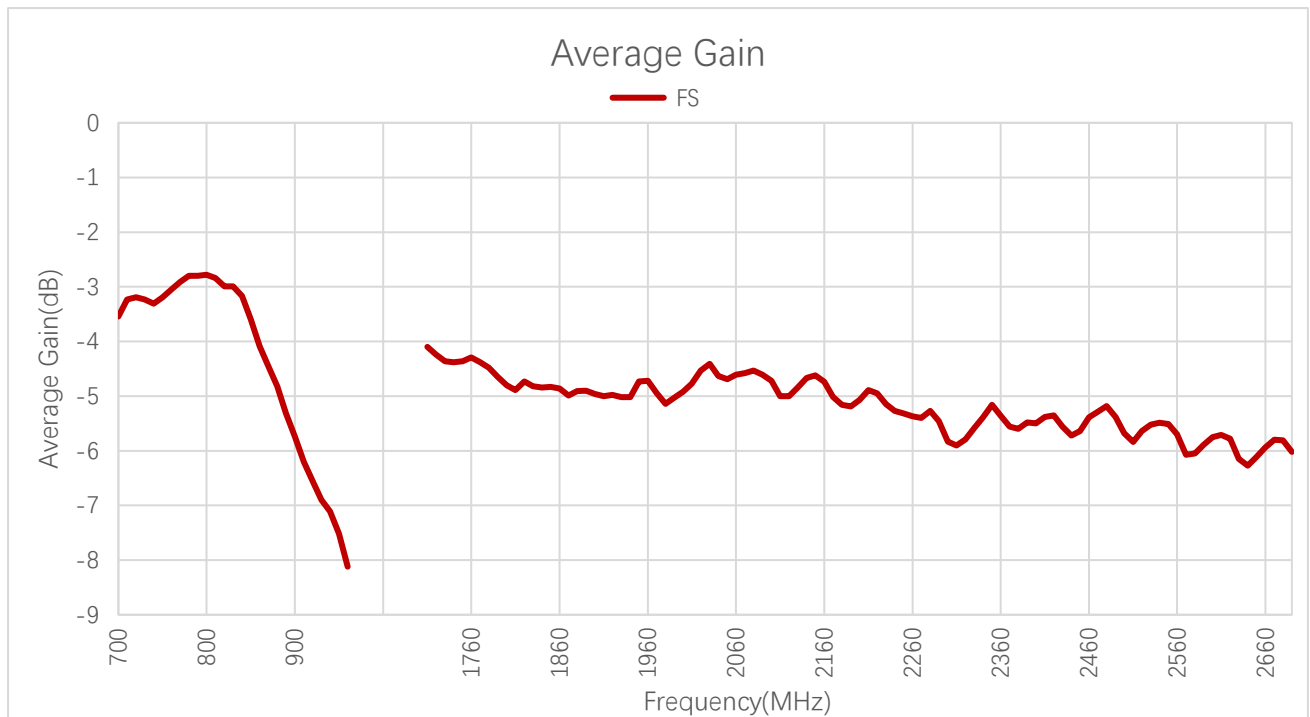
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	47.6	50.3	26.7	15.4	-	38.9	36.5	32.3
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	33.6	34.1	30.5	27.3	26.6	-	-	-	-	-

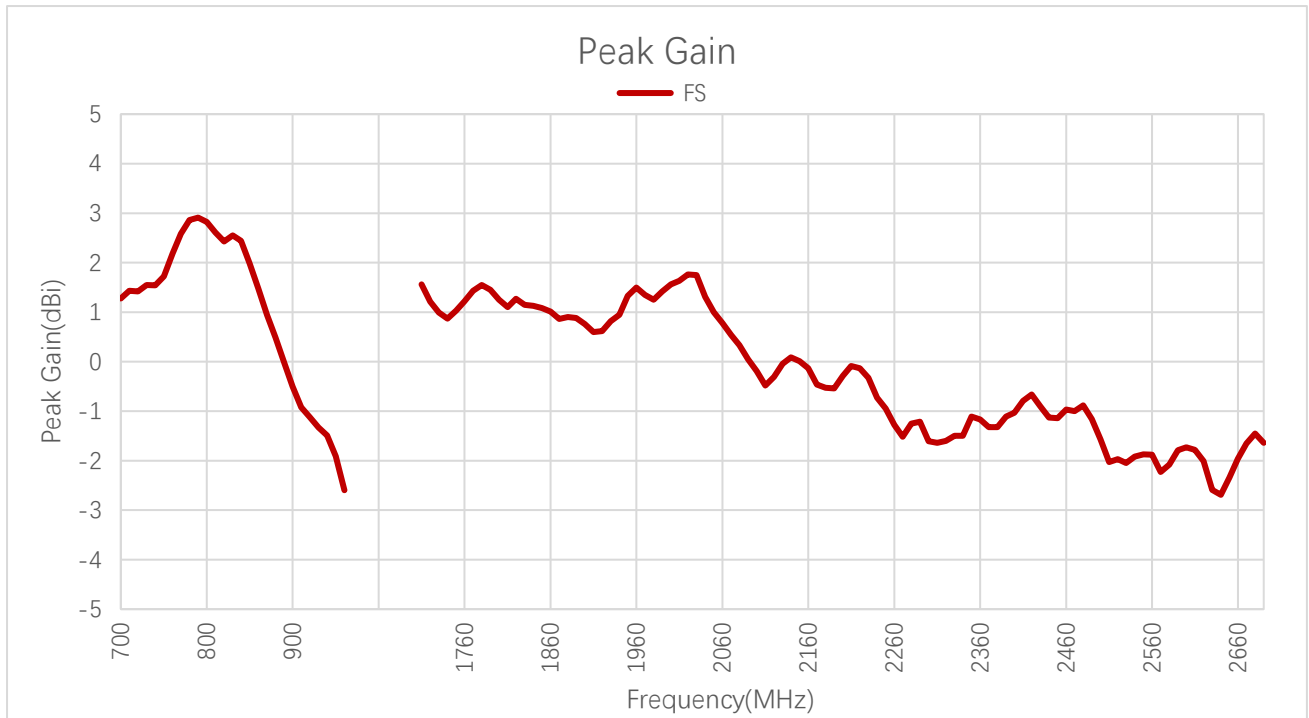
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-3.2	-3.0	-5.7	-8.1	-	-4.1	-4.4	-4.9
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	-4.7	-4.7	-5.2	-5.6	-5.8	-	-	-	-	-

3.2.3. Peak Gain



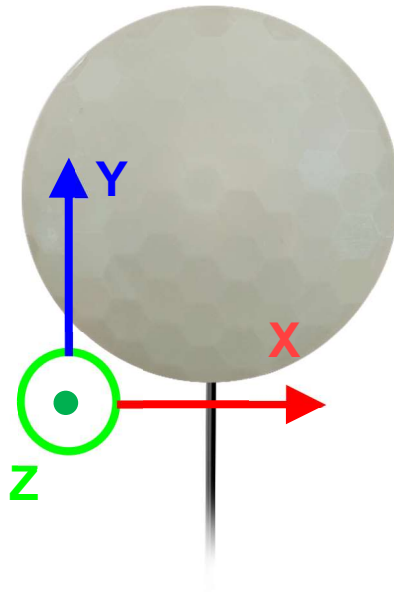
Peak Gain (dBi)

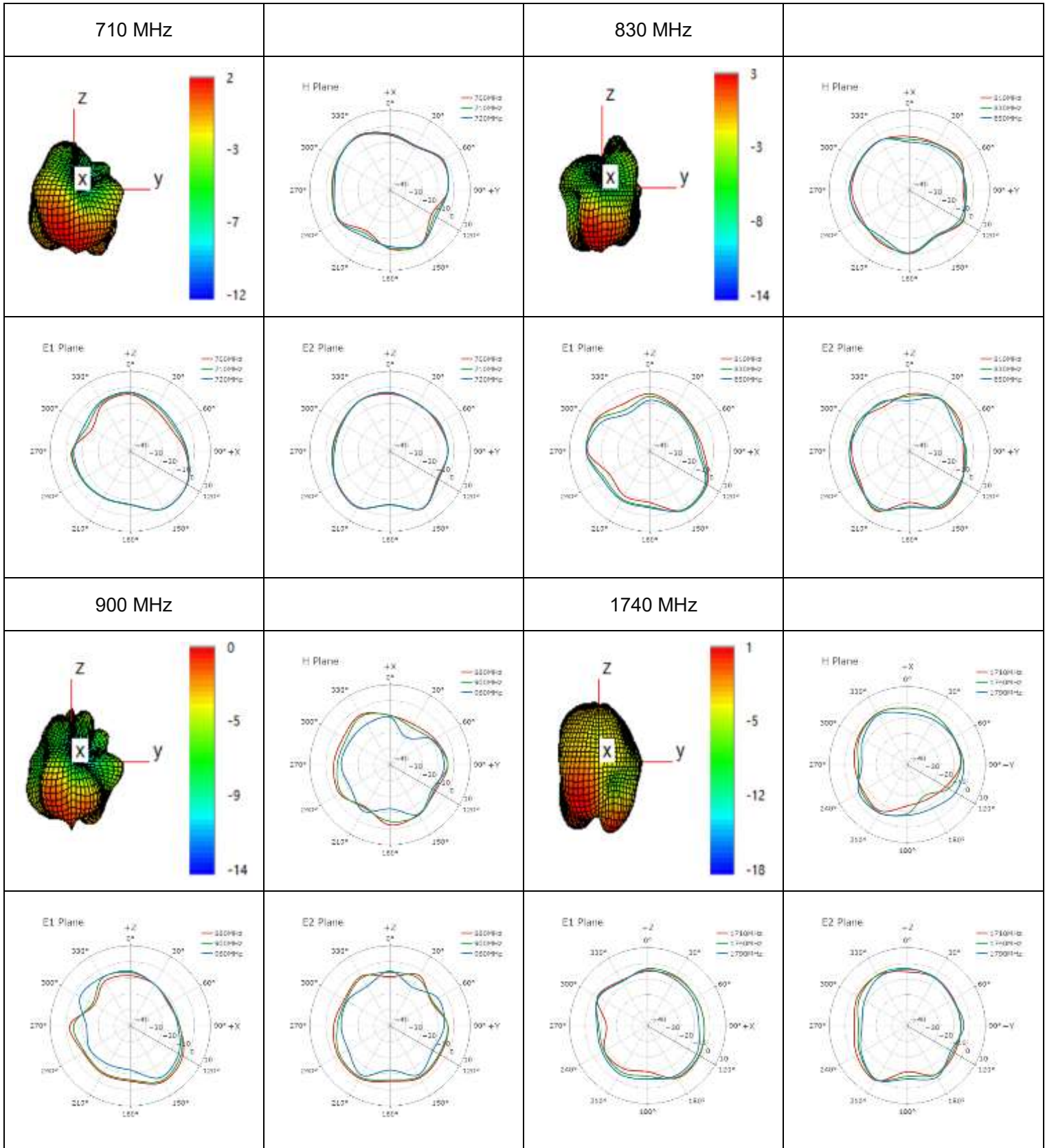
Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	1.4	2.6	-0.5	-2.6	-	1.6	0.9	0.9
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	1.3	0.1	-1.1	-1.1	-1.7	-	-	-	-	-

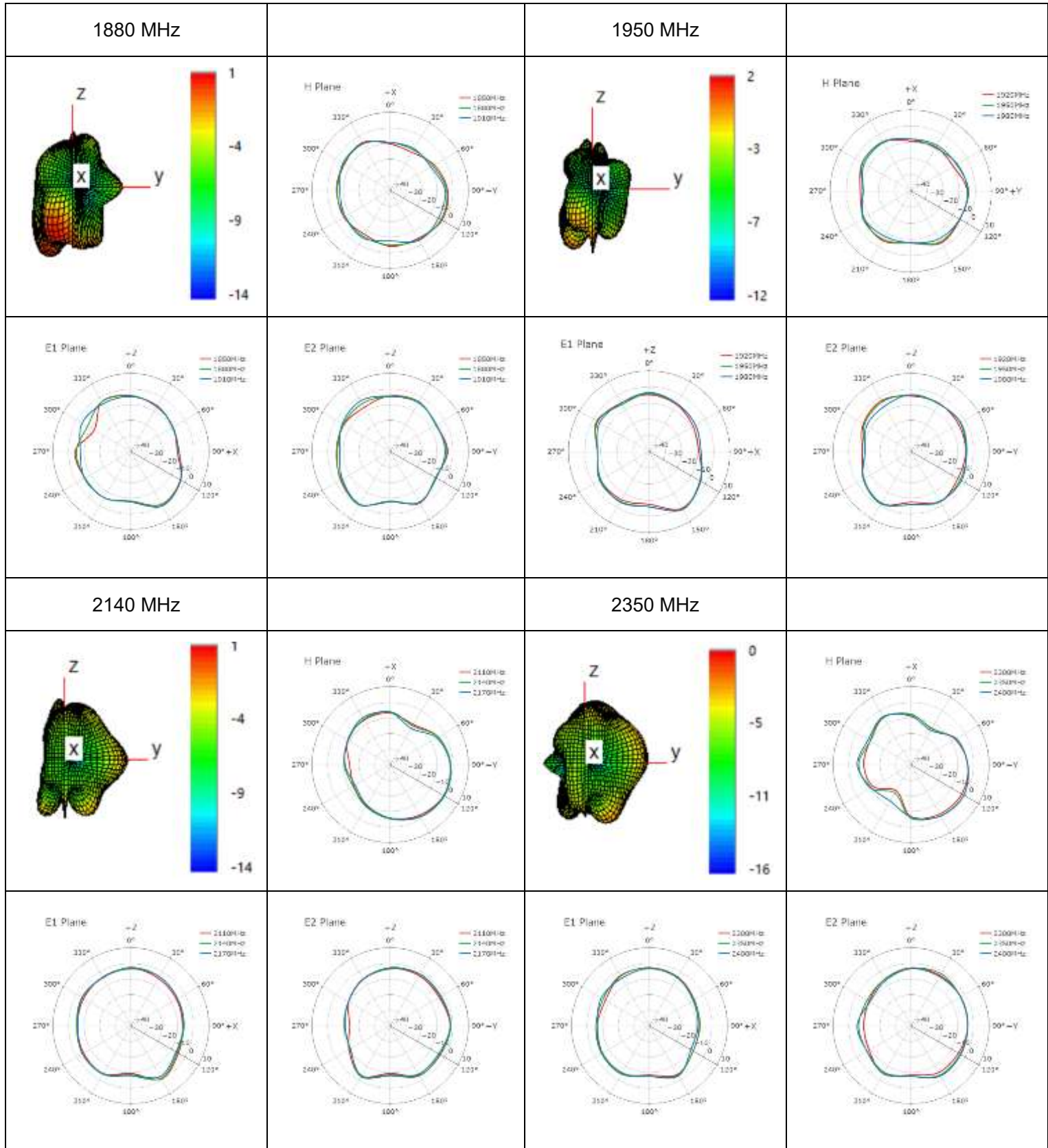
3.2.4. 3D & 2D Radiation Pattern

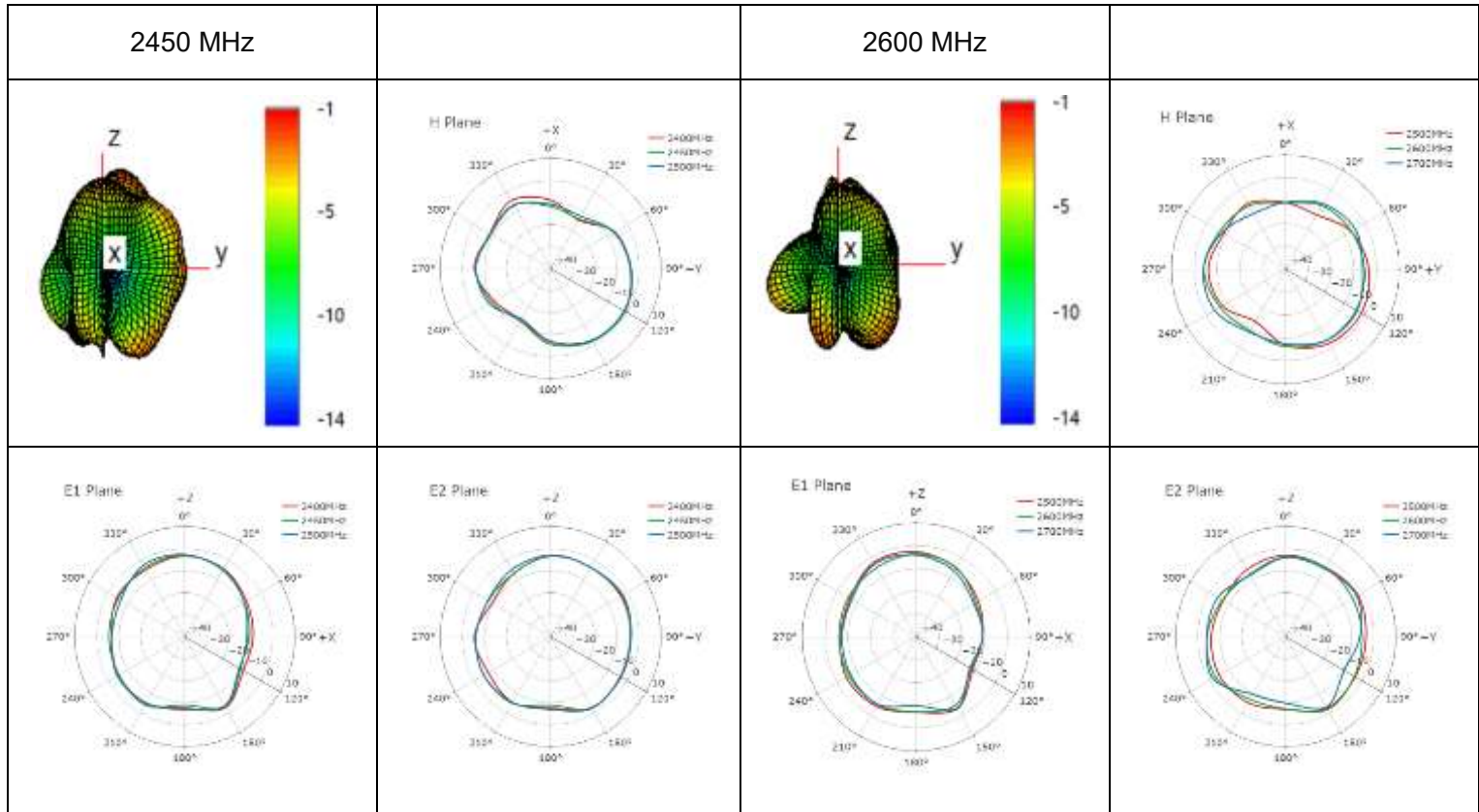
3.2.4.1. Test Condition: Free Space

- Test Chamber: GL-S-1


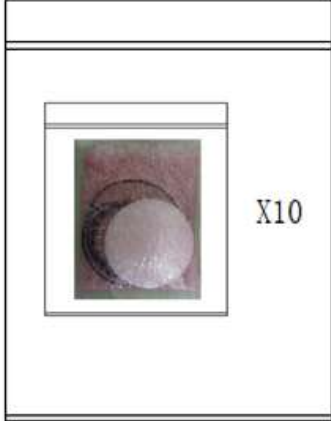


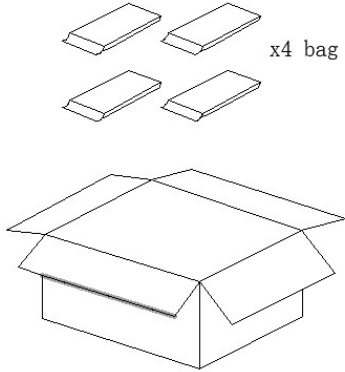
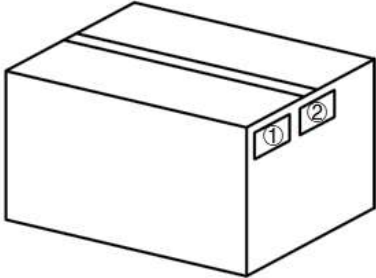
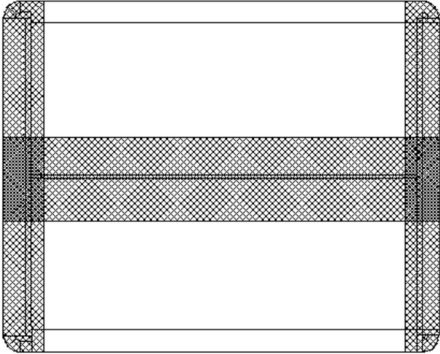






4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		<p>After covering the bubble bag, the product is put into the PE bag. 1 pc antenna product in a PE bag. (1 PC / PE Bag)</p>
2		<p>10 pcs PE bags in a big PE bag. (10 PCS / Big PE Bag)</p>

<p>3</p>	 <p style="text-align: right;">x4 bag</p>	<p>(4 Big PE Bag / Carton Box) (40 PCS Antennas / Carton Box) Carton Size: <u>L × W × H = 405 × 293 × 185 mm</u></p>
<p>4</p>		<p>Position for Attaching Labels</p> <ul style="list-style-type: none"> ① Carton Label ② Quality Label
<p>5</p>		<p>Sealing Cartons “工” type sealing cartons</p>

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Or our local offices. For more information, please visit:

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Revision History

Version	Date	Author	Note
-	2023-07-10	Andy YAN/ Toby WANG/ David LIU/ Vinnie LIU	Creation of the document
1.0	2023-07-10	Andy YAN/ Toby WANG/ David LIU/ Vinnie LIU	First official release
1.1	2023-12-05	Toby WANG/ Vinnie LIU	Updated casing color (Chapter 1.2).
1.2	2024-01-22	Toby WANG	Updated cable type to ALSR 100 (Chapters 1.2 and 2).

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