

3.0 x 3.0 x 8.0 (mm), Wi-Fi 6E Band , Vertical Polarization Pillar

Antenna (CE807) Engineering Specification

1. Product Number

H 2 U M 6 D 1 K 2 T 0 1 0 0



2. Features

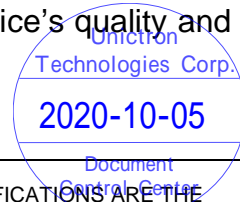
- *Stable and reliable performances
- *Vertical polarization
- *RoHS2.0 compliance
- *SMT processes compatible

3. Applications

- *For Wi-Fi 6E network communication products
- *Residential Wi-Fi Access Points, Routers and Repeaters
- *Set Top Box Clients

4. Description

Unictron's CE807 Pillar antenna is designed for Wi-Fi 6E band applications, covering 5925~7125 MHz frequency bands. Fabricated with proprietary design and processes, CE807 shows excellent performance and is fully compatible with SMT processes which can decrease the assembly cost and improve device's quality and consistency.



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Designed by : Michael

Checked by : Mike

Approved by : Herbert

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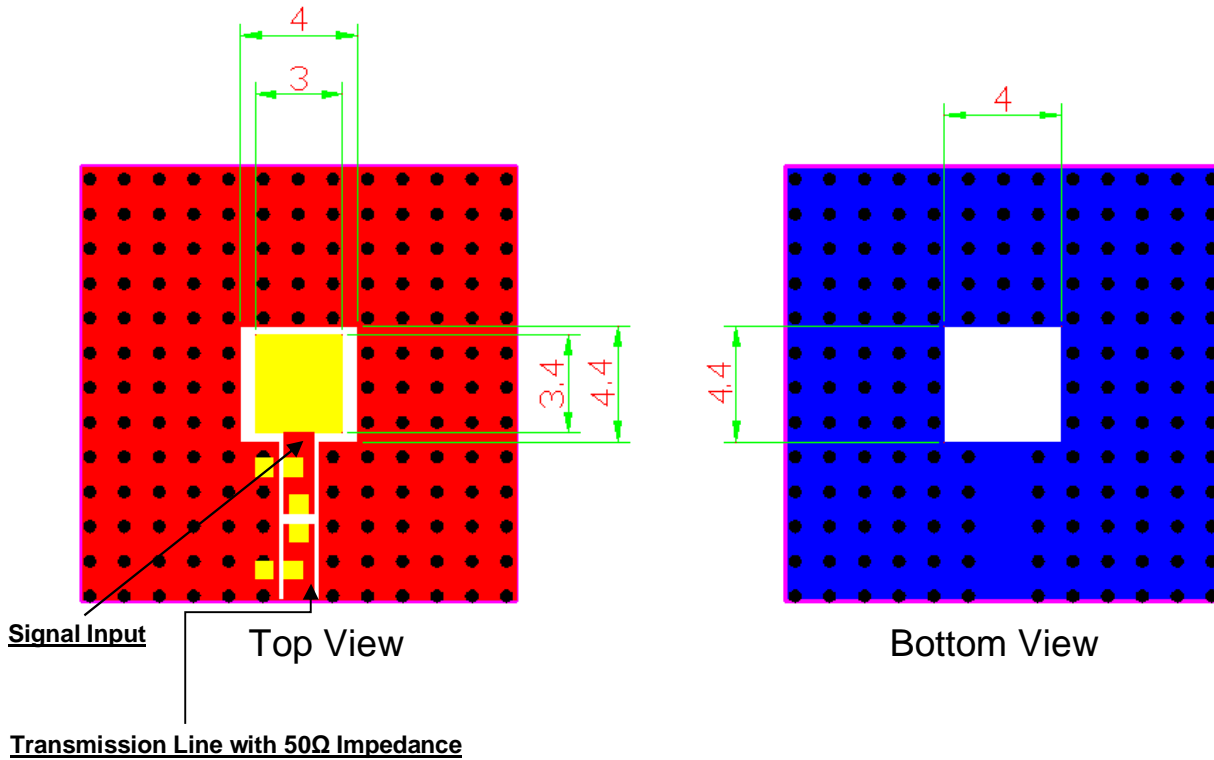
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5. Layout Guide & Electrical Specifications

5-1. Layout Guide (Unit : mm)

Solder Land Pattern:

The solder land pattern (gold marking areas) is shown below. Recommendation on matching circuit will be provided according to customer's installation conditions.



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5-2. Electrical Specifications

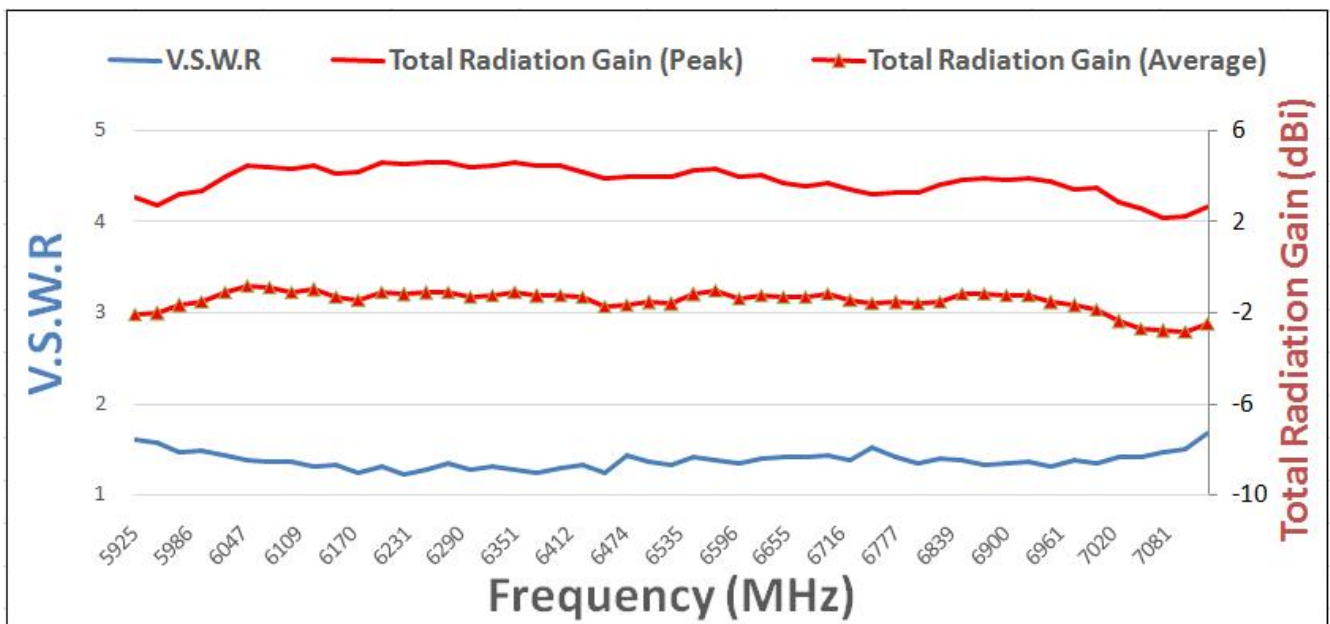
5-2-1. Electrical Table

Characteristics		Specifications	Unit
Outline Dimensions		3.0 x 3.0 x 8.0	mm
EVB Dimensions		80 x 80	mm
Working Frequency		5925~7125	MHz
VSWR (@ center frequency)*		2 Max.	
Characteristic Impedance		50	Ω
Polarization		Vertical Polarization	
Peak Gain	(@Center Frequency) *	3.5 (Typical**)	dBi
Efficiency		72.2 (Typical**)	%

*Center frequency means the frequency with the lowest value in return loss of the chip antenna on the evaluation board.

**A Typical value is for reference only, not guaranteed.

5-2-2. Frequency vs. V.S.W.R and Radiation Gain



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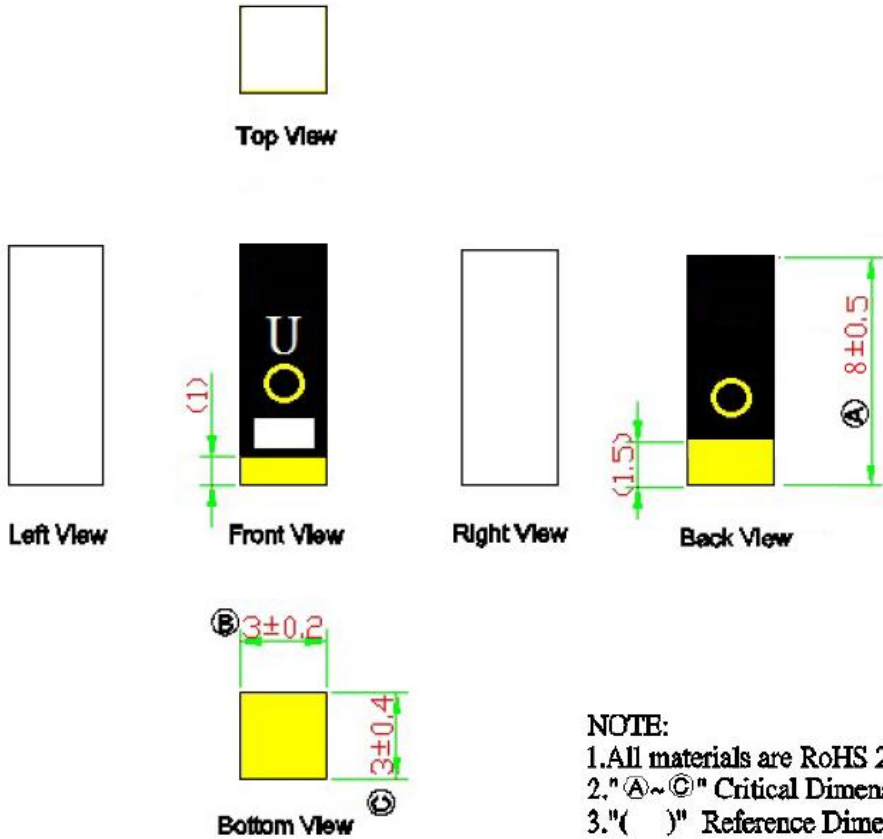
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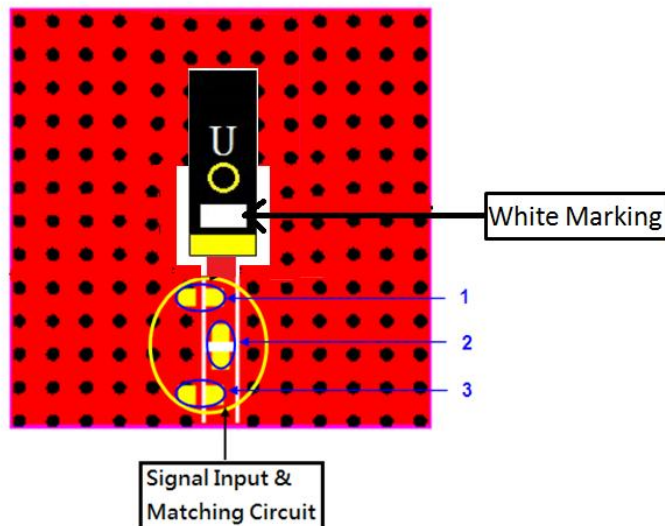
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6. Outline Dimensions of Antenna (unit: mm)

6-1. Antenna Dimensions



6-2. Direction of antenna signal feed-in



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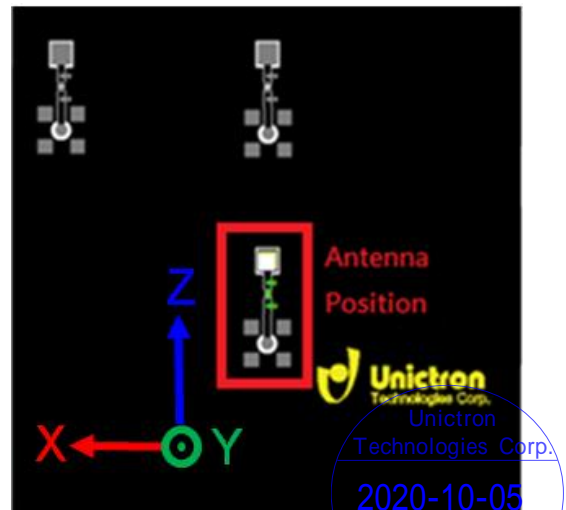
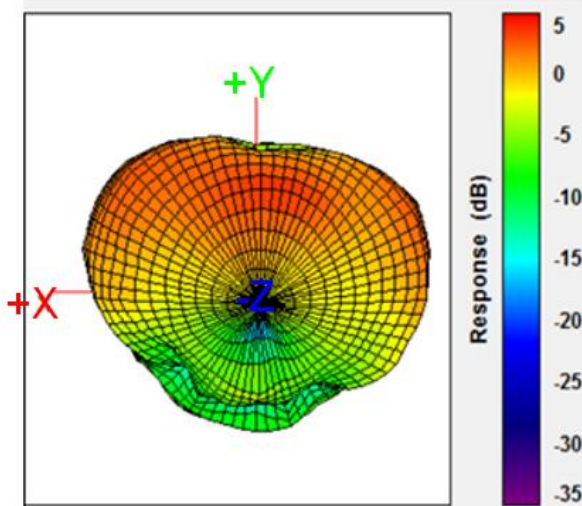
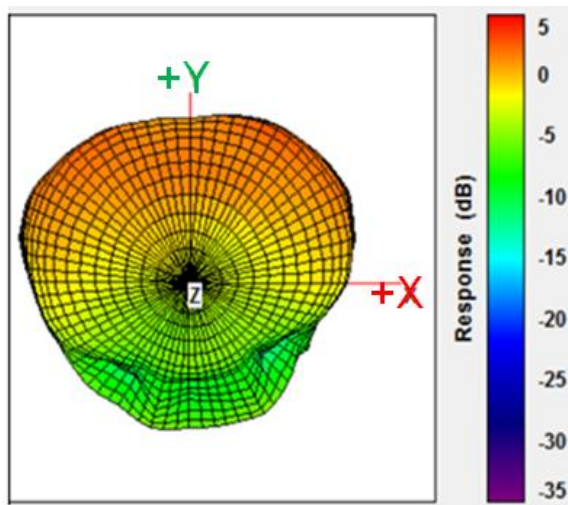
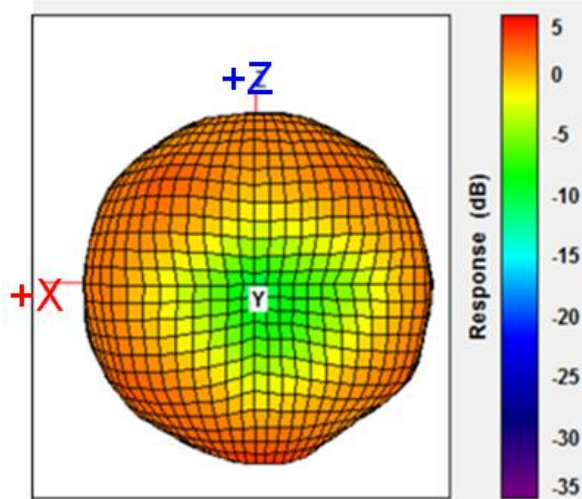
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7. 3D Radiation Gain Pattern

7-1. 3D Radiation Gain Pattern@ 6500 MHz (Unit: dBi)



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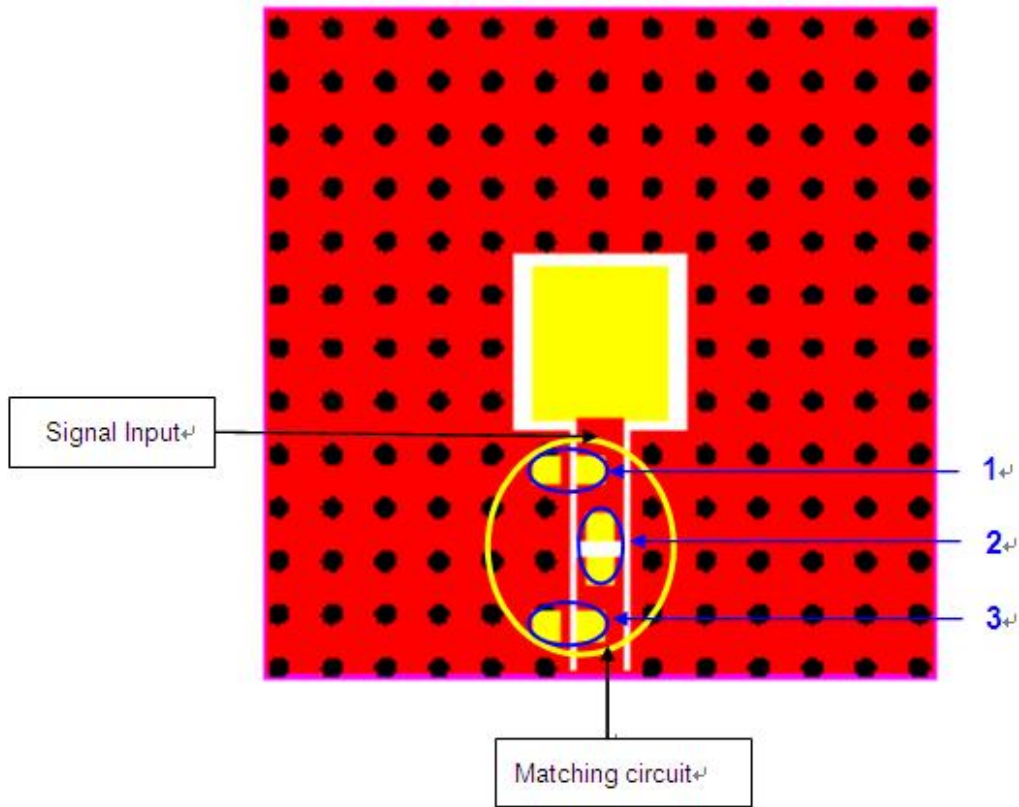
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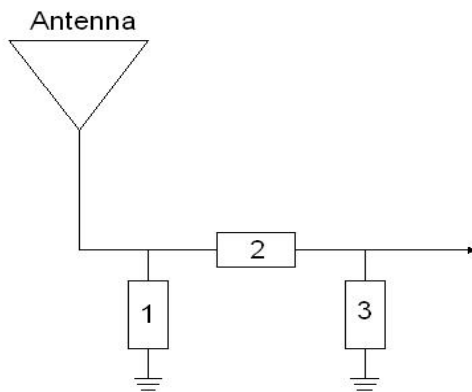
8. Frequency Tuning

8-1. Chip antenna tuning scenario :



8-2. Matching circuit :

With the following recommended values of matching and tuning components, the center frequencies will be about 6500 MHz at our standard 80 x 80 mm² evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	0.3 pF, (0402)	MURATA	±0.05 pF
2	0.7 pF, (0402)	MURATA	±0.05 pF
3	0.4 pF, (0402)	MURATA	±0.05 pF

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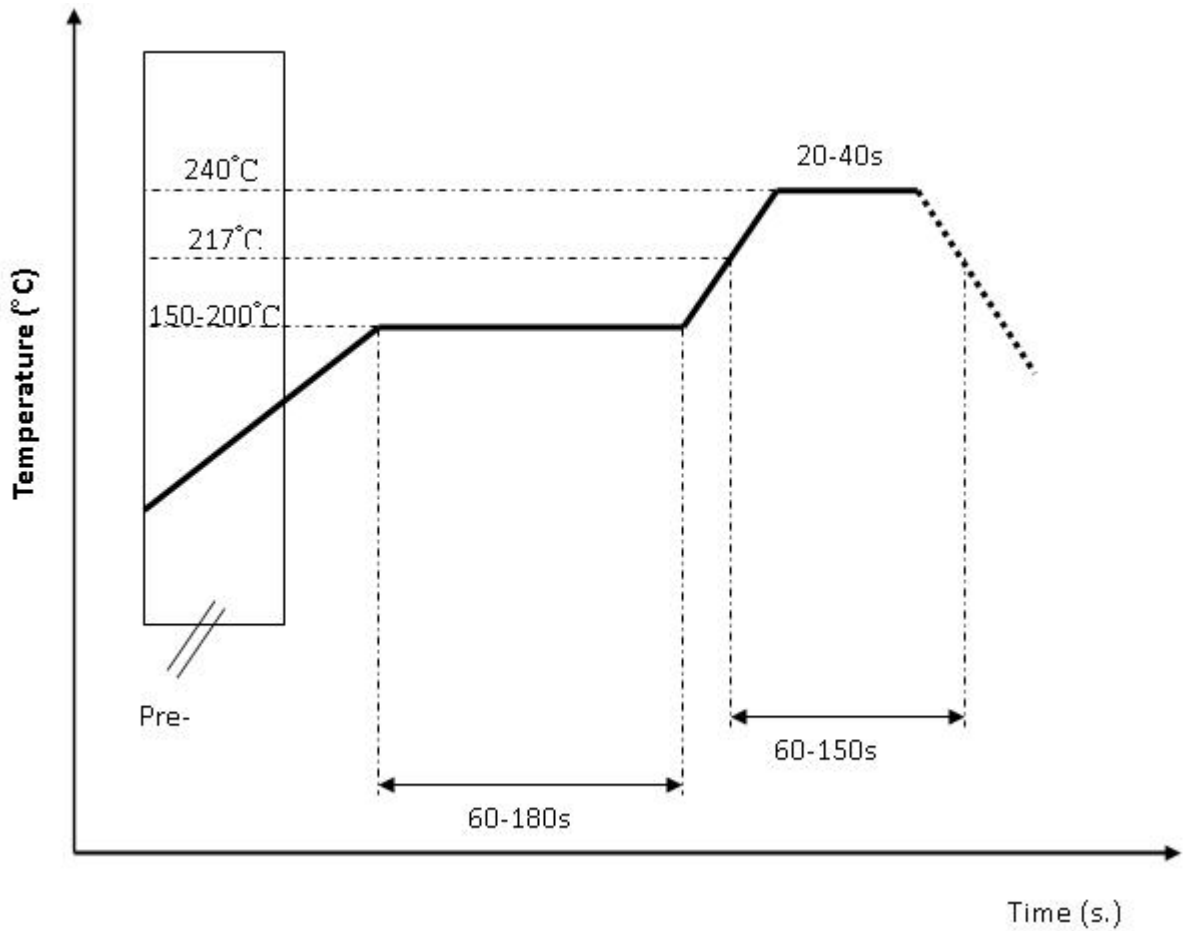
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9. Soldering Conditions

Typical Soldering Profile for Lead-free Process



*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste



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11. Operating & Storage Conditions

10-1. Operating

- (1) Maximum Input Power: 2 W
- (2) Operating Temperature: -40°C to 85°C
- (3) Relative Humidity: 10% to 70%

10-2. Storage (sealed)

- (1) Storage Temperature: -5°C to 40°C
- (2) Relative Humidity: 20% to 70%
- (3) Shelf Life: 1 year

10-3. Storage (unsealed)

Meet the criteria of J-STD-033 MSL2a

10-4. Storage (After mounted on customer's PCB with SMT process)

- (1) Storage Temperature: -40°C to 85°C
- (2) Relative Humidity: 10% to 70%

12. Notice

(1) Installation Guide:

Please refer to Unictron's application note "General guidelines for the installation of Unictron's chip antennas" for further information.

(2) All specifications are subject to change without notice.



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