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Pulse
a YAGEO company

Series: Composite SMD Antenna

TECHNICAL DATA SHEET

Description: 617-6000MHz SMD 4G/5G IoT Antenna

PART NUMBER: W3415



Features:

- 4G/5G antenna
- Frequency 617-6000MHz
- Gain 0 / 2.5dBi
- Size 40 x 7 x 3 mm
- Fully SMT compatible
- Tape & Reel packing
- MSL-3

Applications:

- Broad band antenna, combines all sub 6GHz 4G and 5G bands
- Devices requiring high performance compact internal 4G/5G antenna
- Suitable for 2xMiMo use when mounting two pcs W3415 onto radio board

All dimensions are in mm / inches

Issue: 2042

RoHS COMPLIANT

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For more information:

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Pulse (Suzhou) Wireless Products Co, Inc.
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Suzhou New District
Jiangsu Province, Suzhou 215009 PR China
Tel: 86 512 6807 9998

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ELECTRICAL SPECIFICATIONS

Antenna Type	PCB
Frequency	617-960/1430-6000MHz
Nominal Impedance	50 Ω
Return Loss	<-4
Radiation Pattern	Omni
Gain 617~960MHz	-1 to 1dBi
Gain 1430~6000MHz	1 to 7 dBi
Efficiency 617~960MHz	>40% typical
Efficiency 1430-6000MHz	>45% typical
Polarization	Linear
Power Withstanding	2W

MECHANICAL SPECIFICATIONS

Color	Black
Size	40mm(L) * 7mm(W) * 3mm(T)
Weight	1.65 g
Fixing system	SMT
MSL (MOISTURE SENSITIVITY LEVEL)	3

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 ~ +85° C
Storage Temperature	-40 ~ +85° C
RoHS Compliant	Yes

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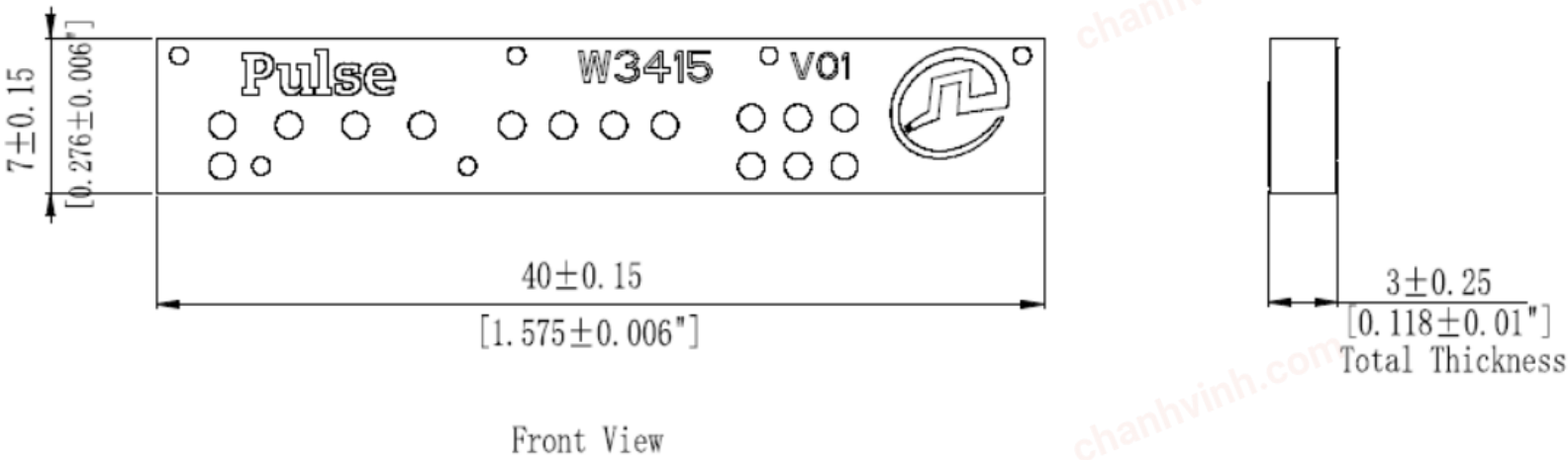
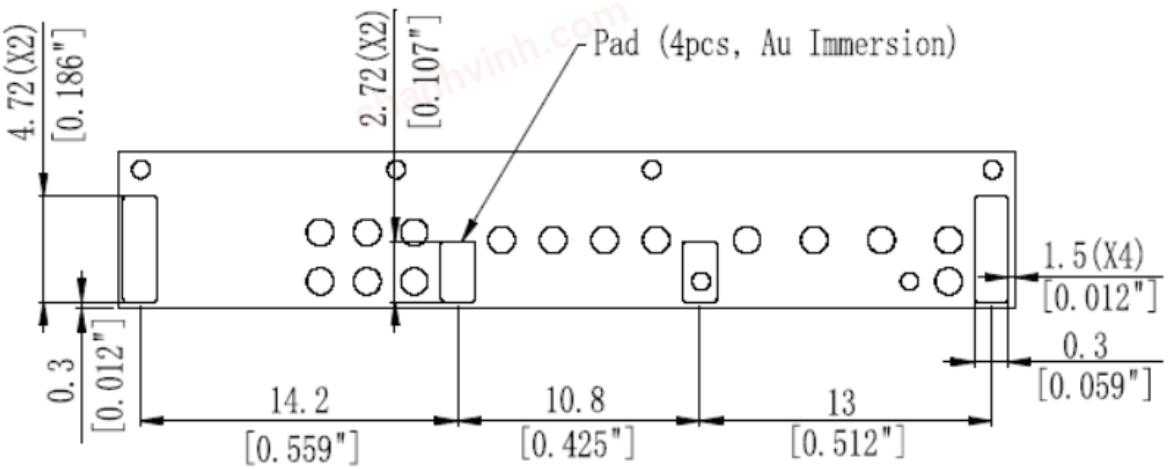
MECHANICAL DRAWING



Front View



Back View

Unit: mm[in]

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Recommendation for reflow soldering process

Printing stencil thickness 0,15 - 0,25 mm is recommended for the solder paste. The maximum soldering temperature should not exceed 260°C. The temperature profile recommendations for reflow soldering process is presented in the Figures 1 and 2. The reflow profile presented in figure 1 describes minimum reflow temperatures. The reflow profile presented in figure 2 describes maximum reflow temperatures. located at the center of the coverage area.

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 30 sec
5	Peak temperature in reflow	230 °C for 10 seconds
6	Temperature gradient in cooling	Max -5 °C/s

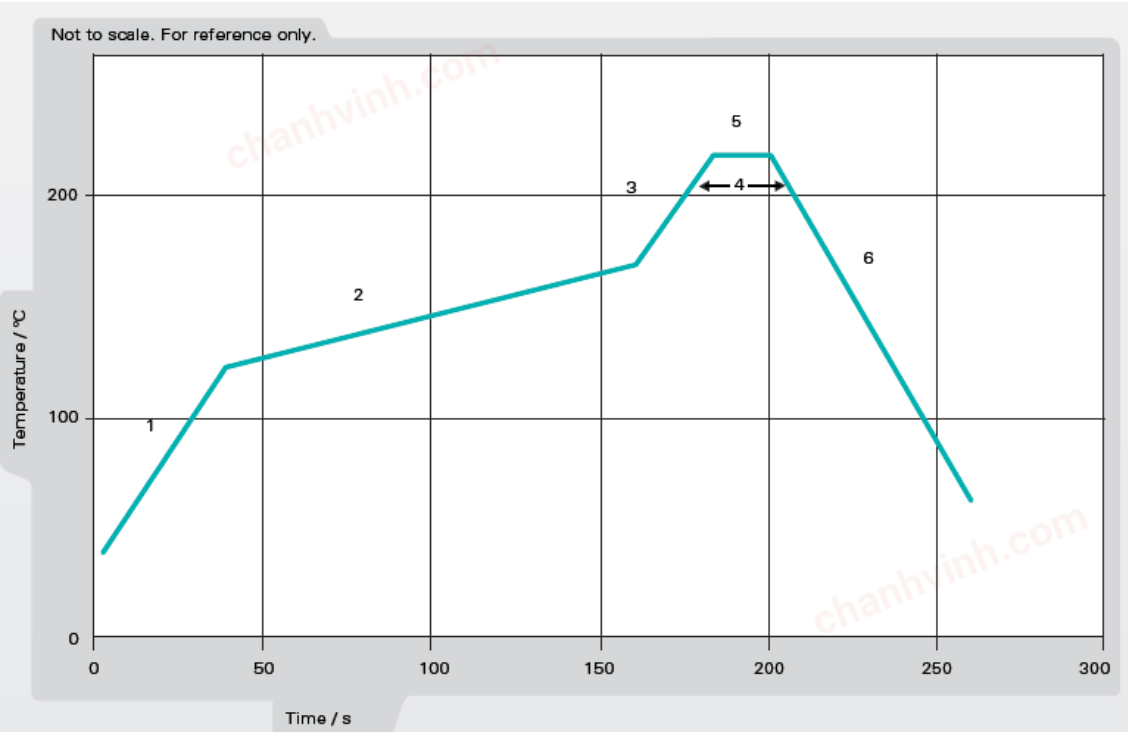

Figure 1. Minimum temperature profile recommendation for reflow soldering process

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Recommendation for reflow soldering process

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260 °C for 5 seconds
8	Temperature gradient in cooling	Max -5 °C/s

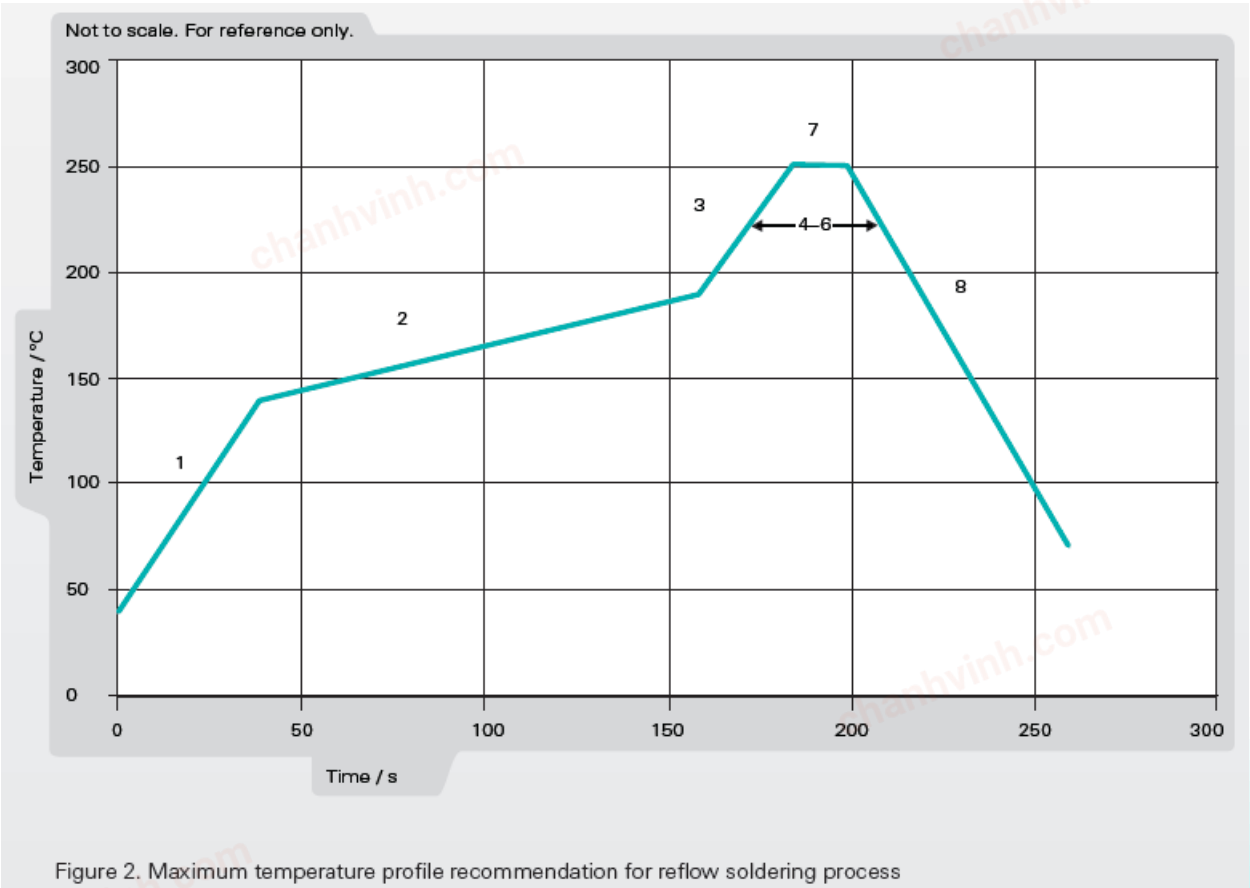

Figure 2. Maximum temperature profile recommendation for reflow soldering process

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TEST SETUP



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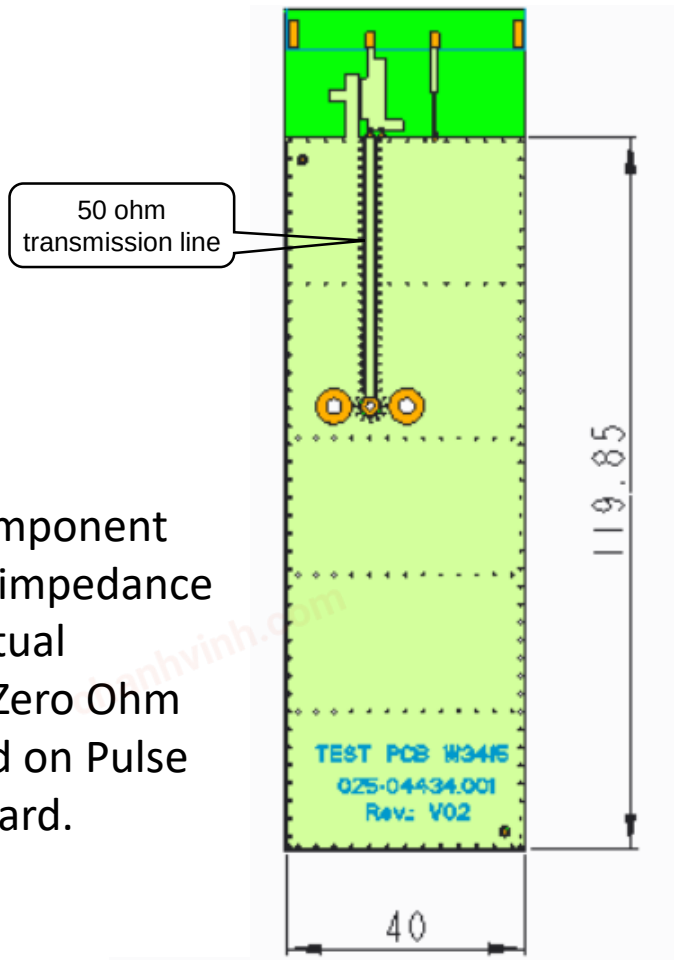
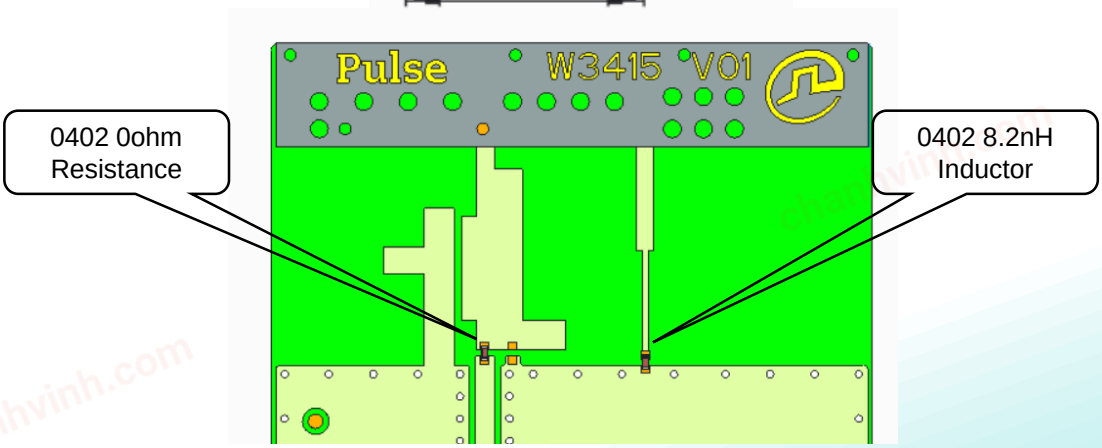
TEST SETUP

Pulse reference test PCB for W3415 antenna



Matching component reserved for impedance tuning on actual application. Zero Ohm jumpers used on Pulse reference board.



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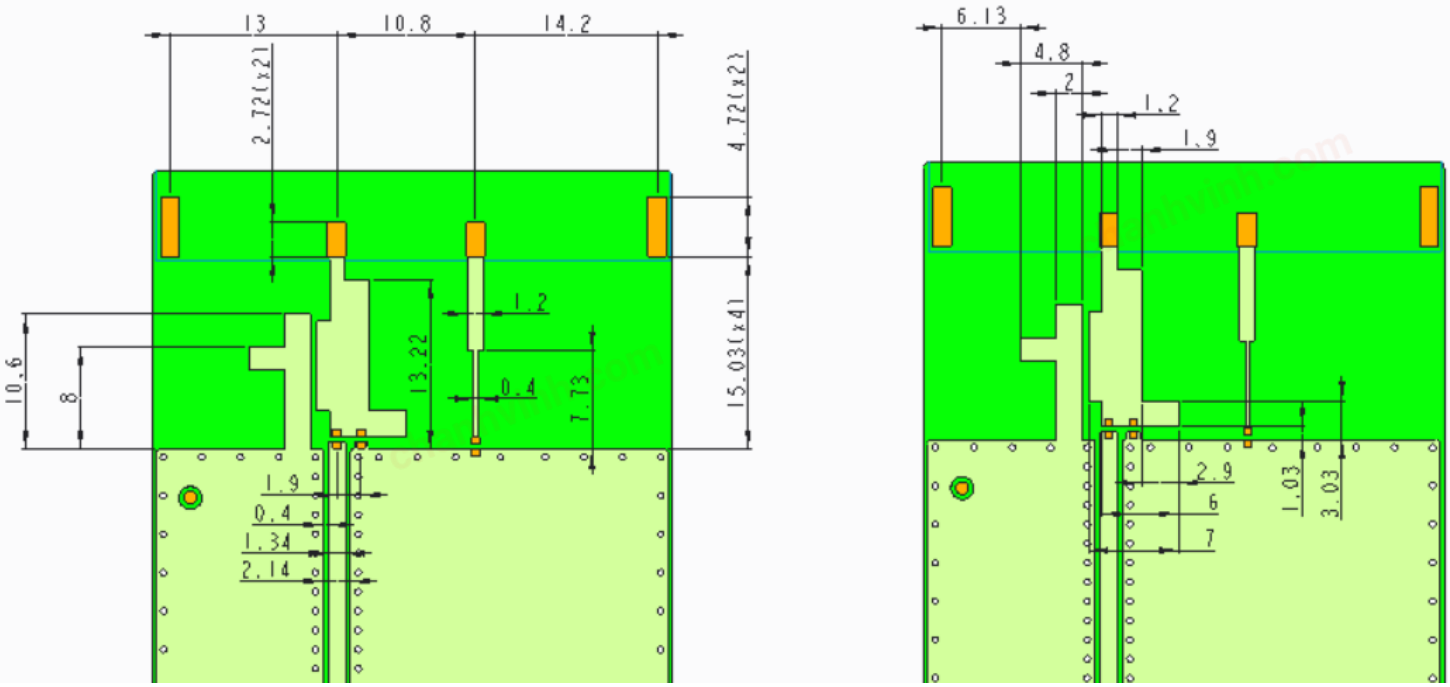

Recommended test board PCB layout for electrical characteristic measurement.

Substrate material: ISOLA 185HR.

Total thickness: 1mm

All dimensions are in mm

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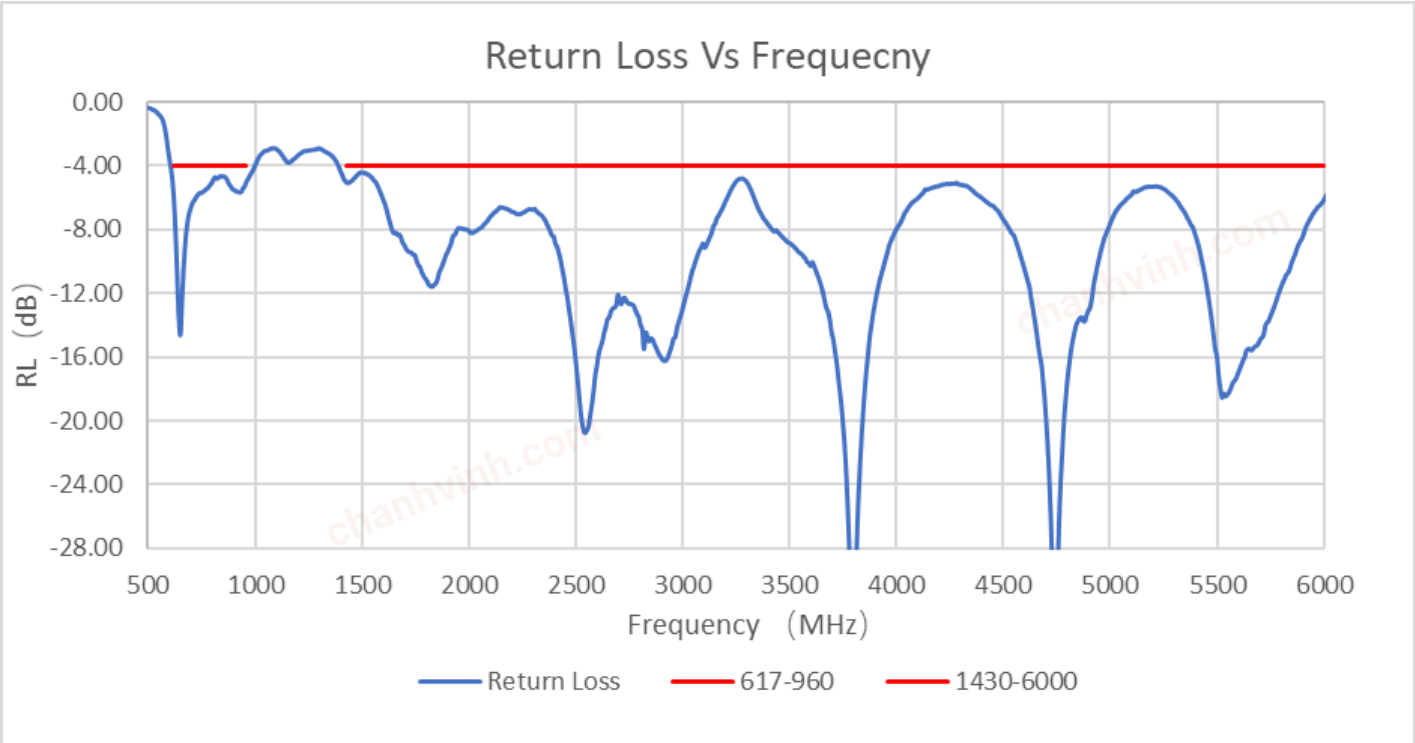
CHARTS



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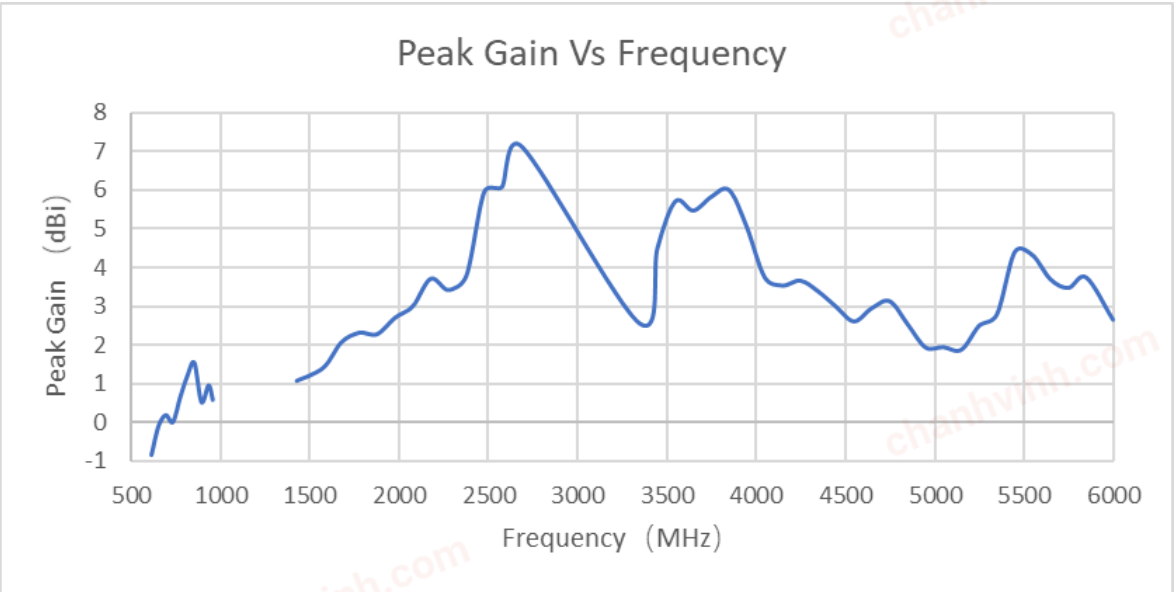
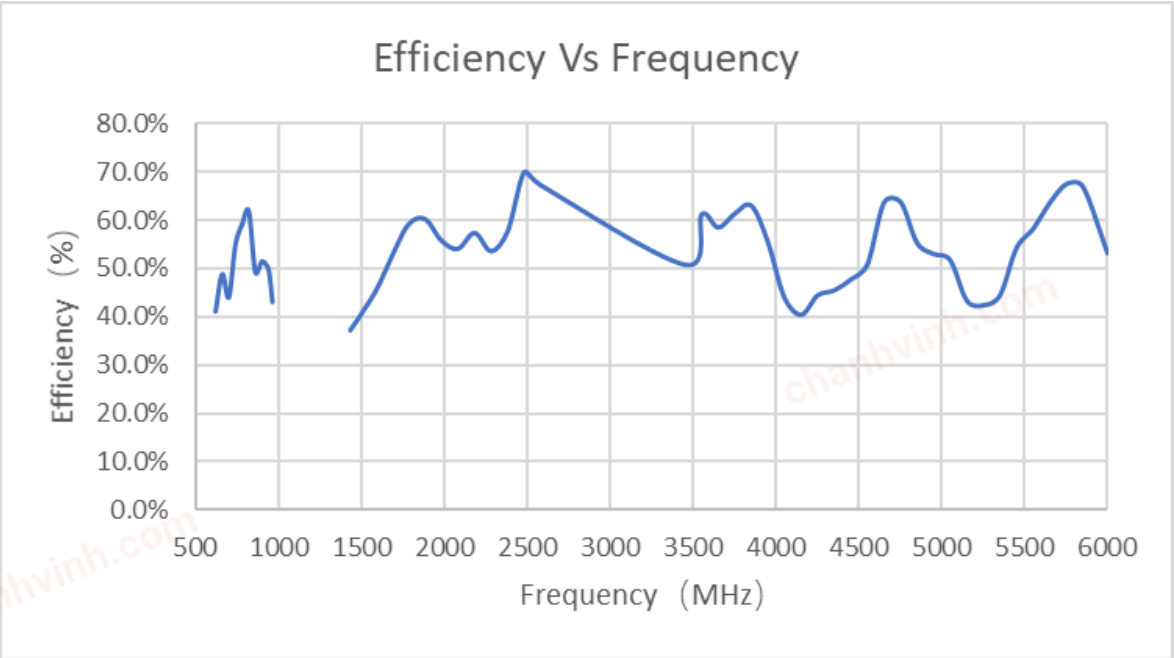
CHARTS

Gain(dBi)



Efficiency(%)



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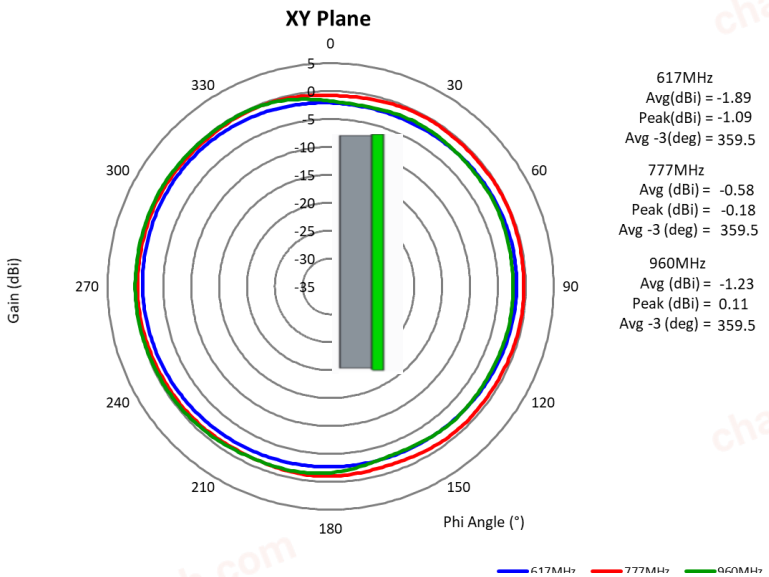

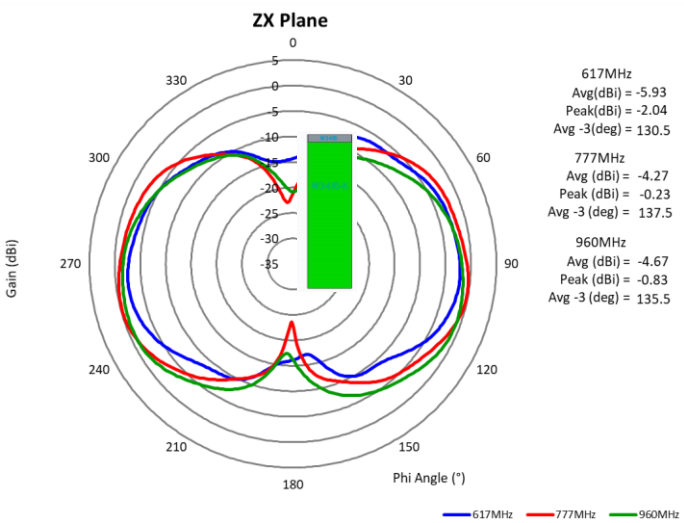

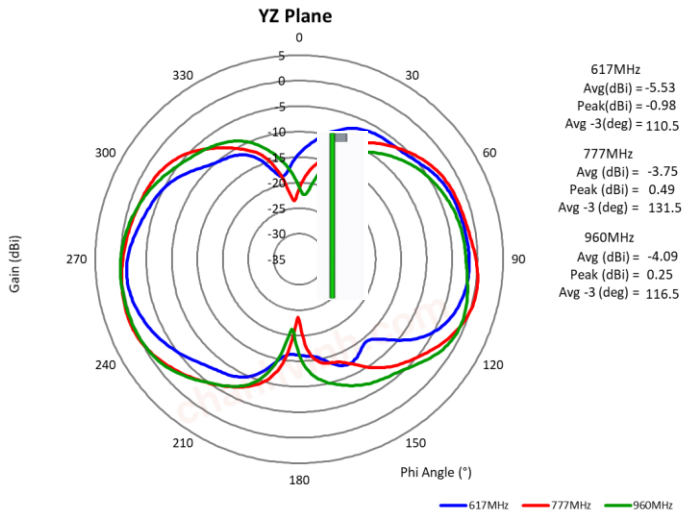

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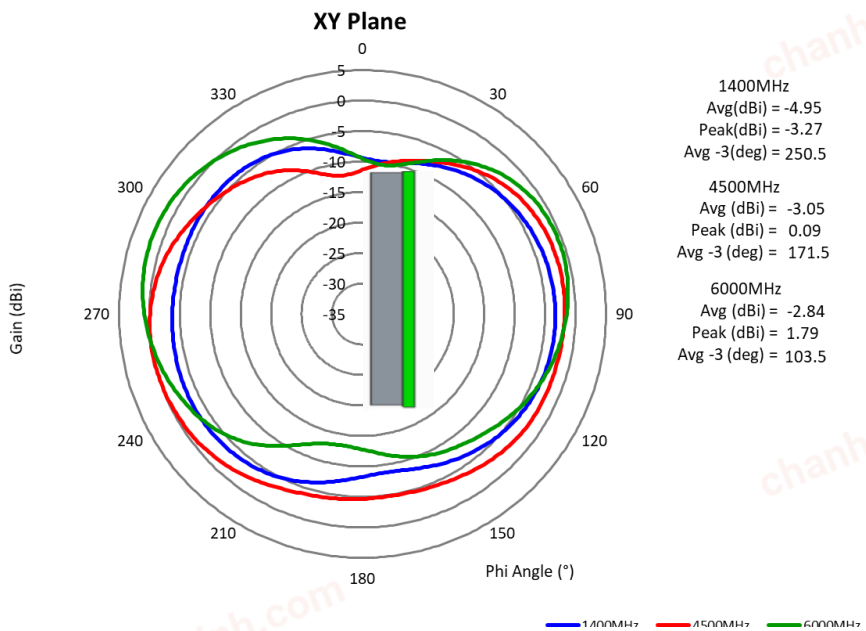

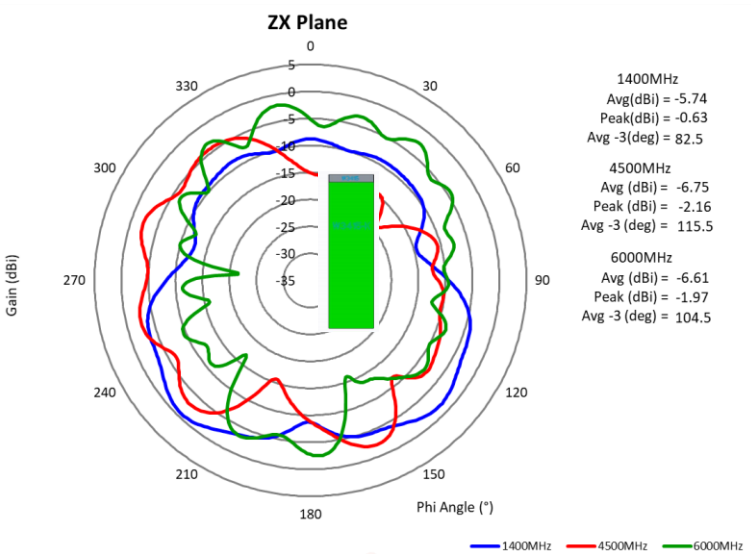

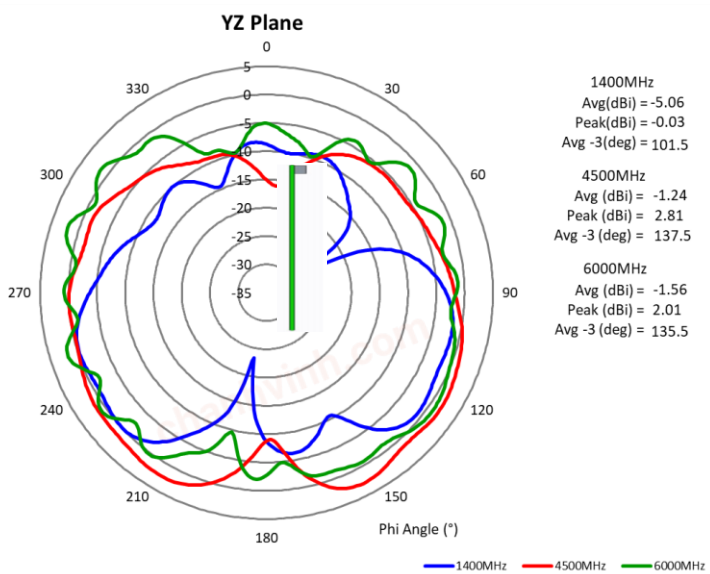

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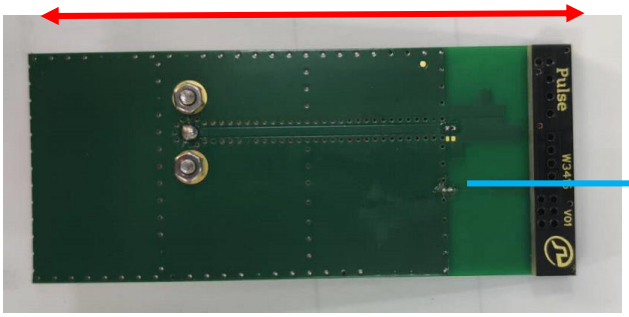
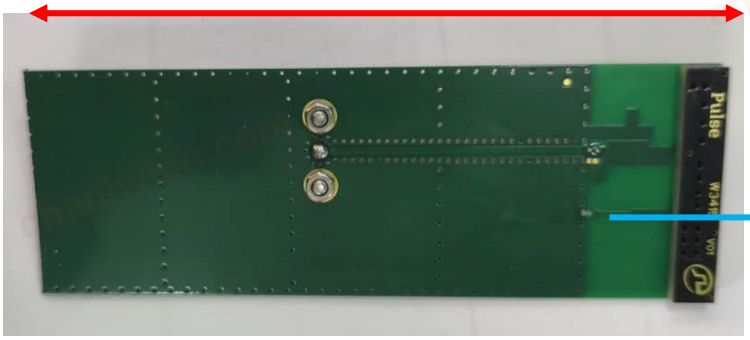
PCB length effect

100 mm



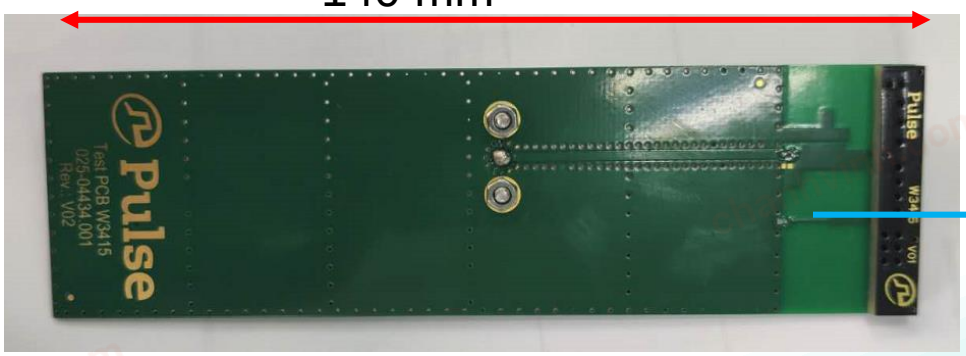
6.8nH

120 mm



7.5nH

140 mm



8.2nH

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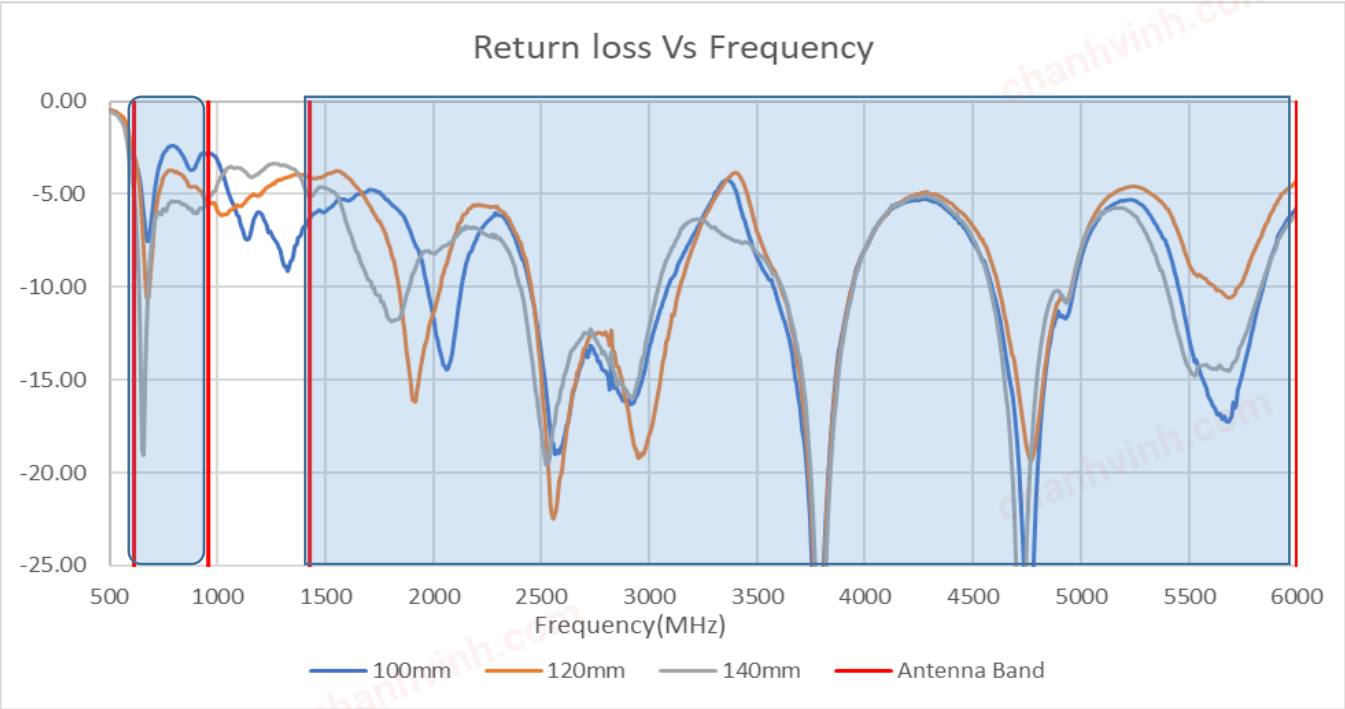
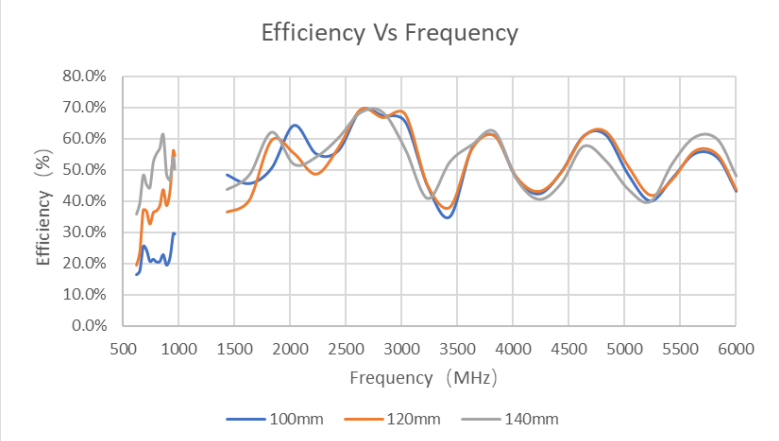
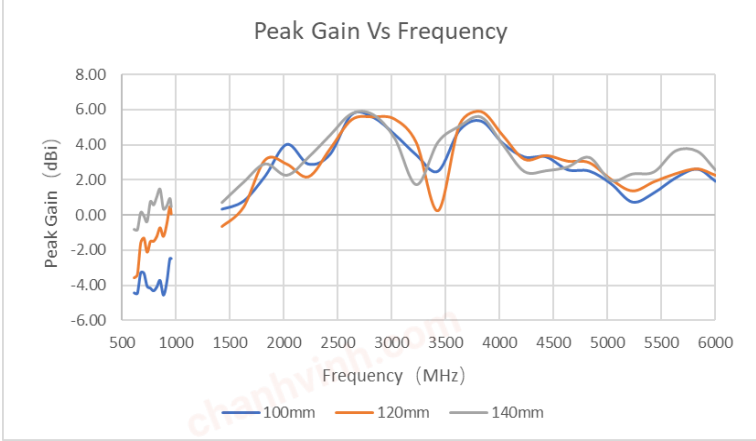
PCB length effect







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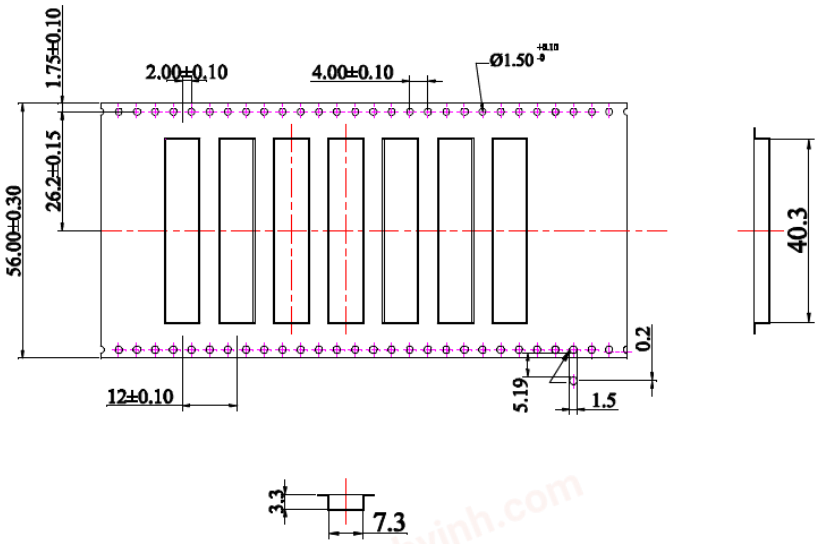
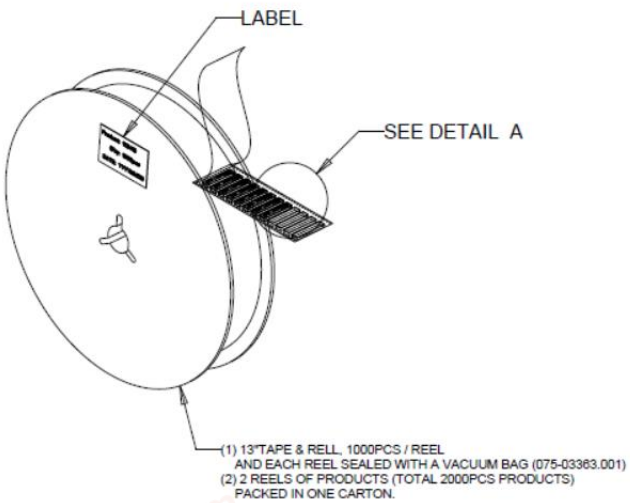
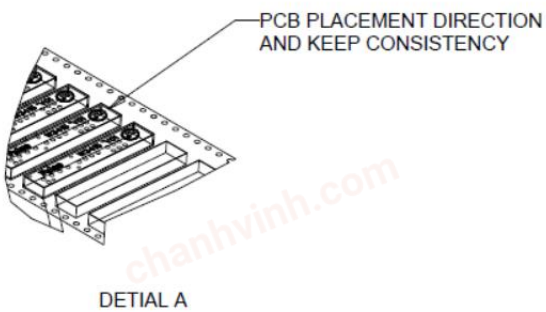
PACKAGING

1000pcs Antennas Per 1pcs 13” Tape & Reel
2 pcs 13” Tape & Reel (total 2000pcs Antennas) per 1 box









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