



TopGain

SPECIFICATION

DESCRIPTION	Chip Antenna
PART NO.	CH2G4-6022-000D1-01
VERSION	V01

頂益科技有限公司

TOPGAIN TECHNOLOGY CO., LTD.

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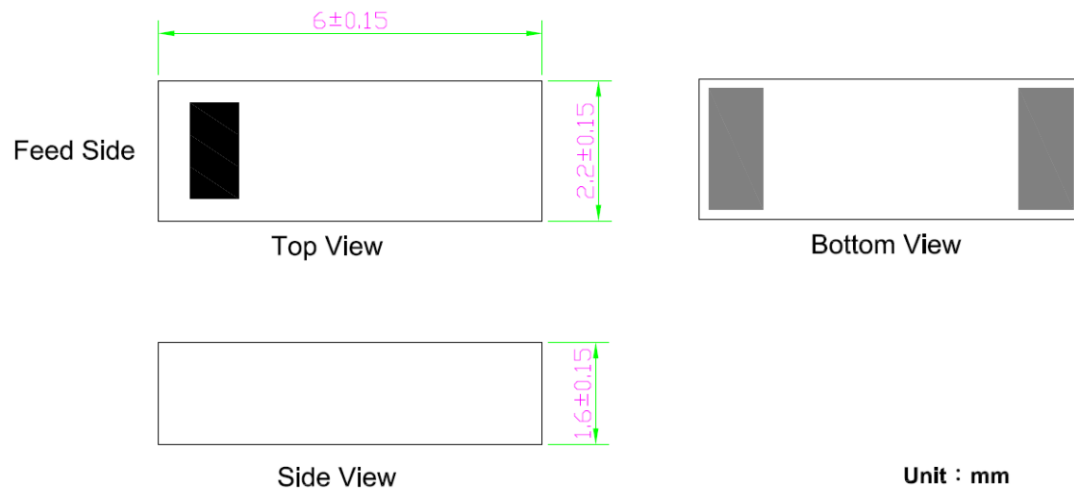
Contents

1. Antenna Specification	3
2. Antenna Dimension	4
3. Test Data	5~10
4. Layout Guide	11
5. Soldering Conditions	12

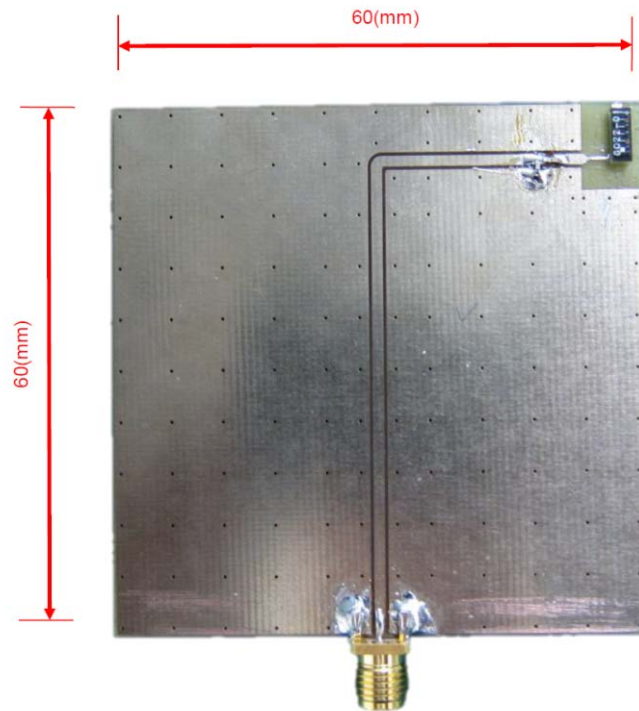
1. Antenna Specification

Outline Dimensions	6.0x2.2x1.6(mm)
Ground Plane	60×60(mm)
Frequency Range	2.4GHz ~ 2.5GHz
Impedance	50 Ohm Nominal
Bandwidth (under -10dB return loss)	100MHz (Typ.)
Radiation	Omni-directional
Peak Gain	2.3 dBi (Typ.)
Efficiency	60% (Typ.)
Polarization	Linear Polarization
Storage Temp	-25℃ ~ +85℃
Color	Black

2. Antenna Dimension

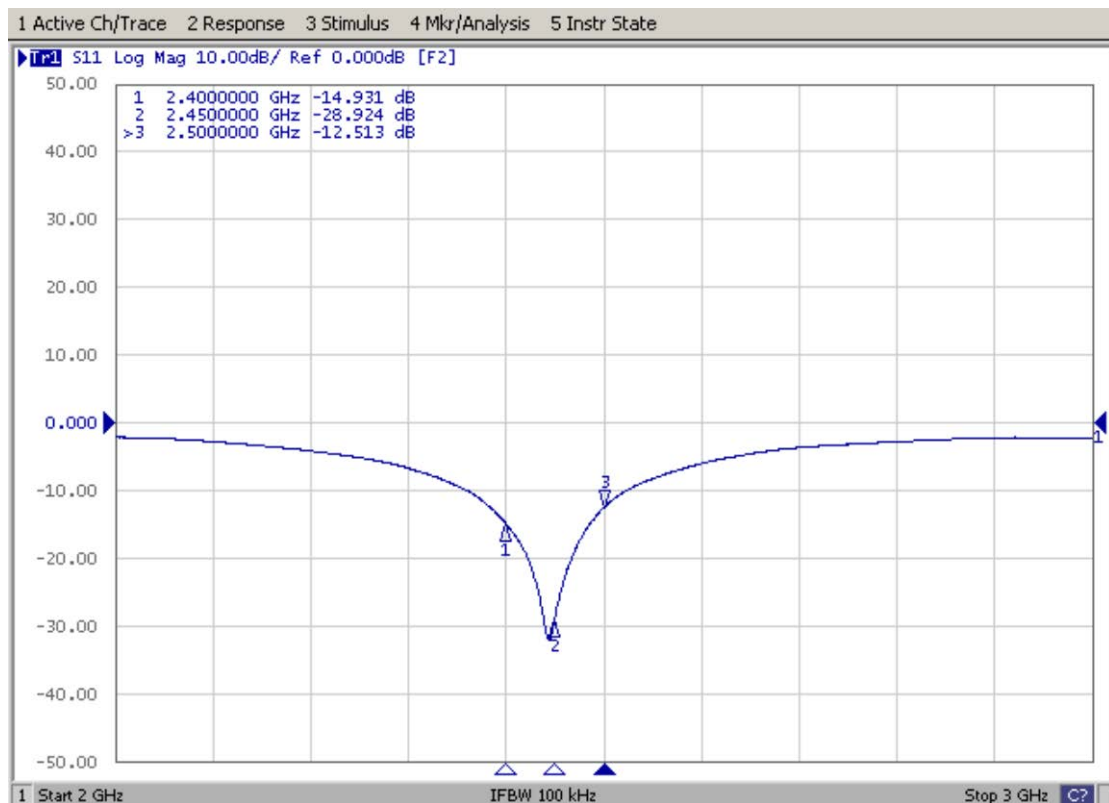


3. Test Data

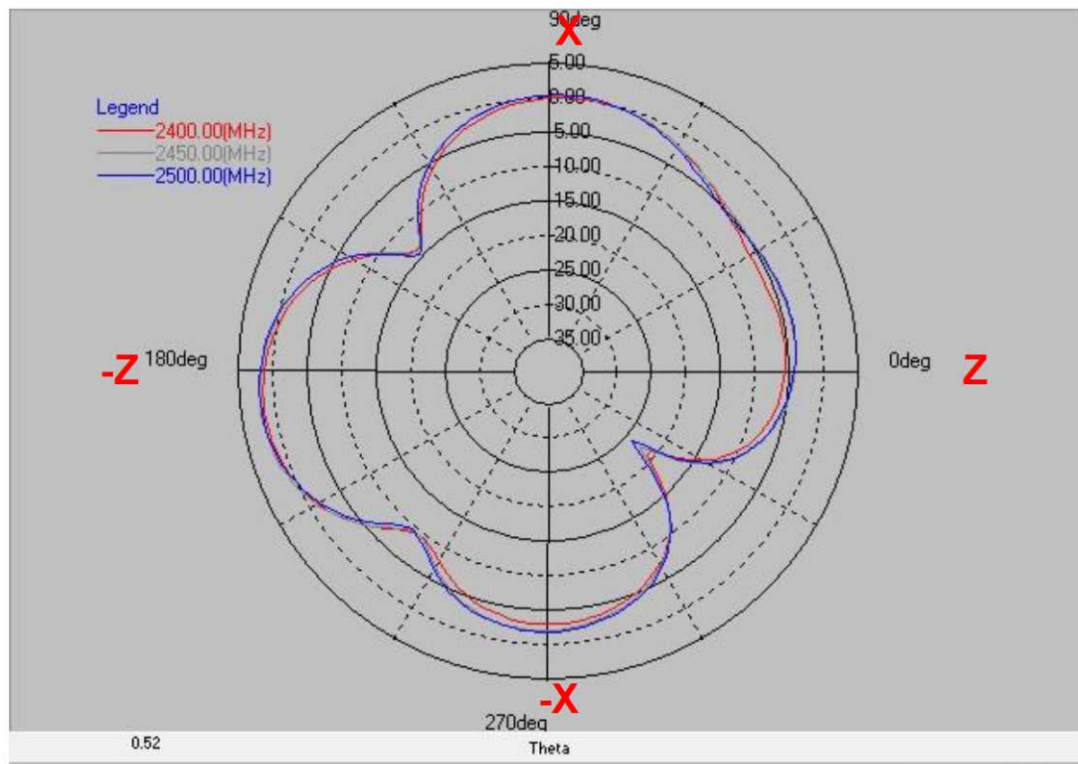


3.1 ELECTRICAL CHARACTERISTICS

S11

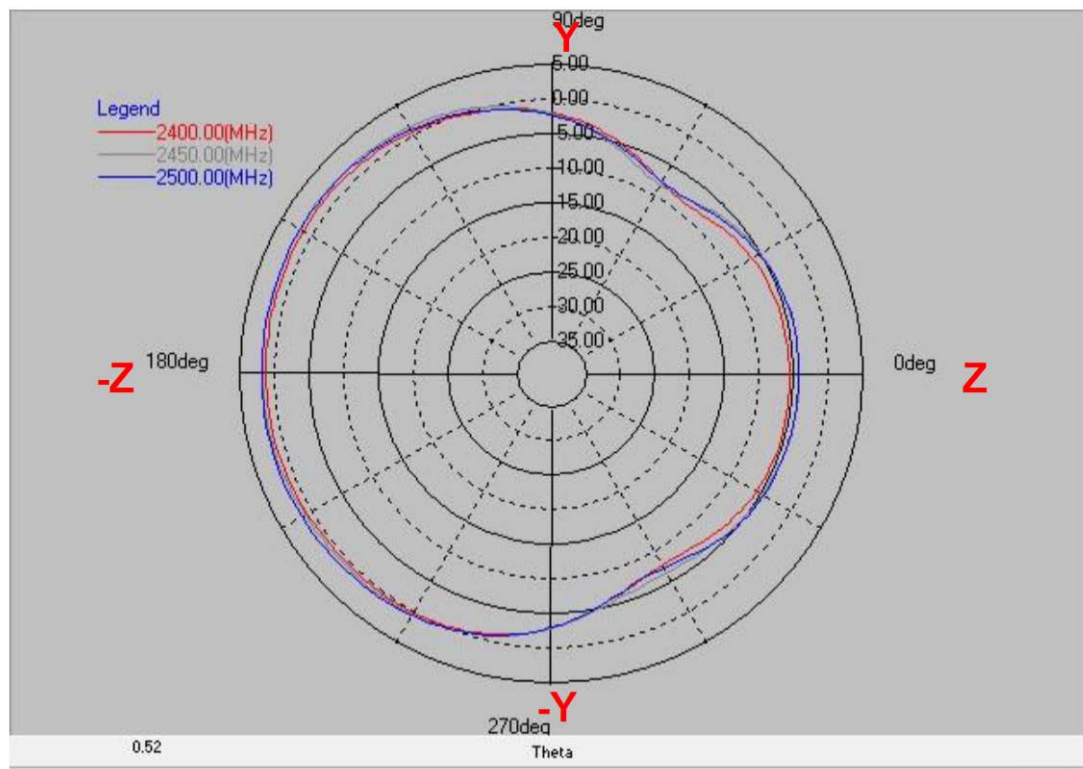


Frequency(MHz) : **2400~2500.** Pattern Field : **Z-X plane**



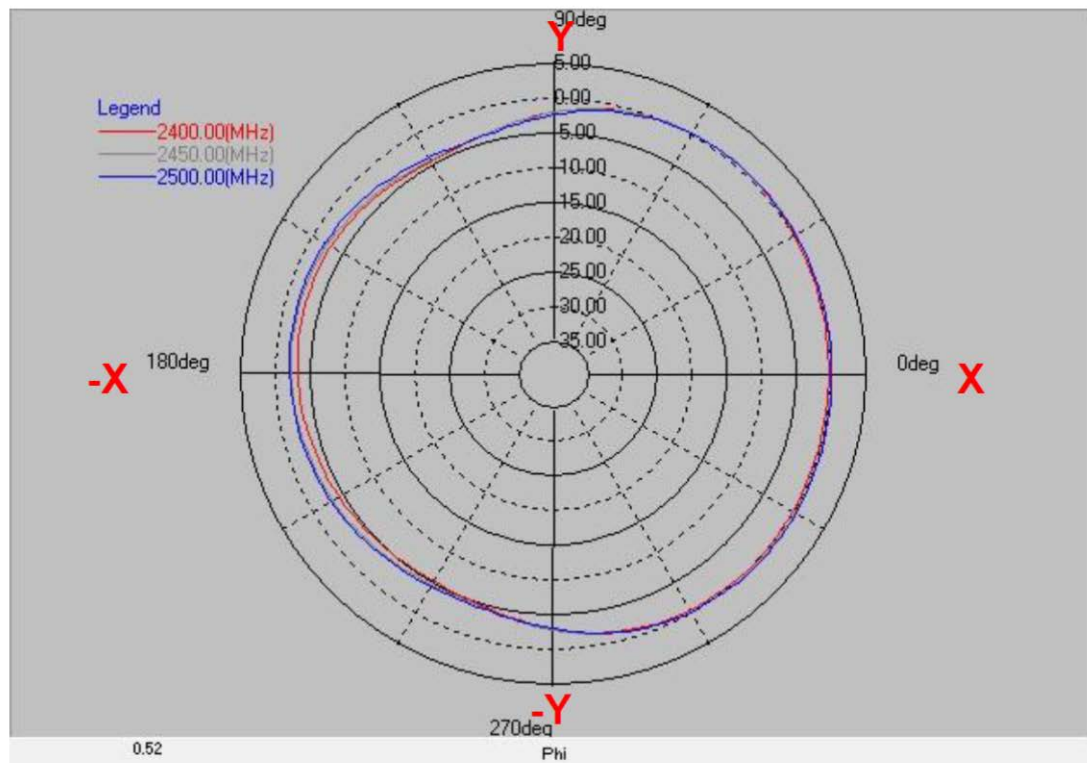
Frequency	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	1.64	-21.05	-3.40
2450(MHz)	2.12	-22.47	-2.82
2500(MHz)	2.08	-24.13	-2.88

Frequency(MHz) : **2400~2500.** Pattern Field : **Z-Y plane**



Frequency	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	1.45	-8.68	-1.62
2450(MHz)	2.00	-8.51	-1.09
2500(MHz)	1.92	-8.10	-1.08

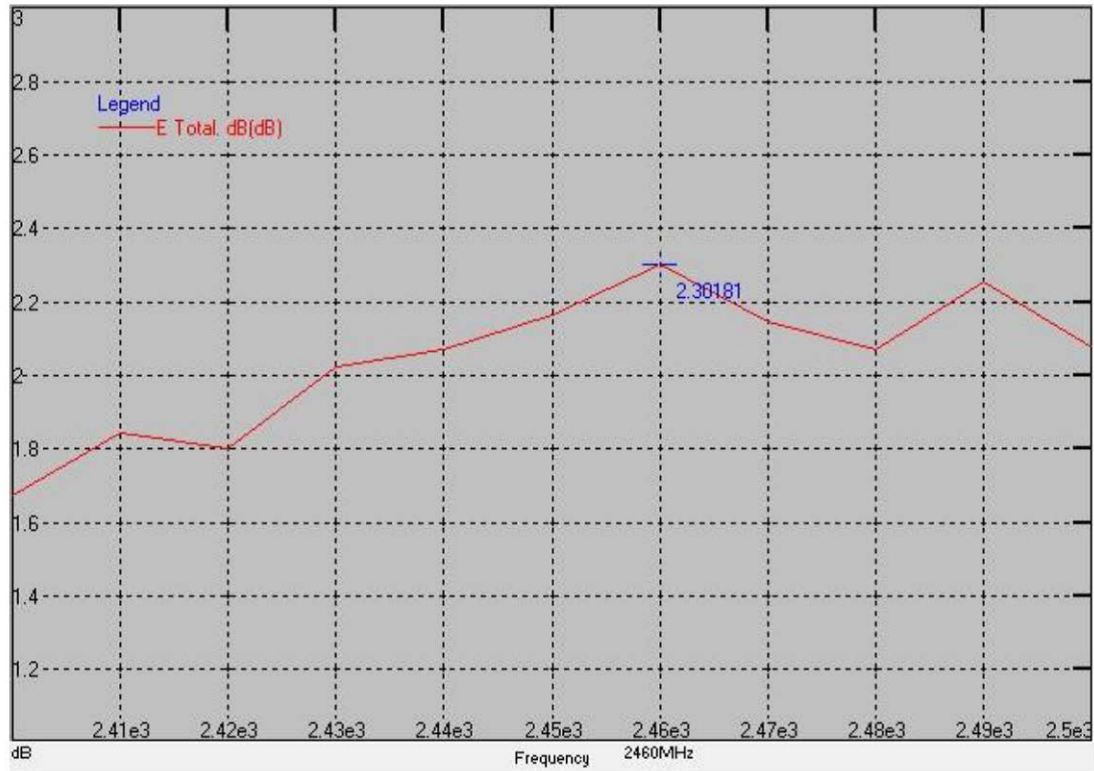
Frequency(MHz) : **2400~2500.** Pattern Field : **X-Y plane**



Frequency	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	0.30	-5.40	-1.82
2450(MHz)	0.41	-4.87	-1.47
2500(MHz)	0.38	-4.66	-1.40

3.2 Antenna Peak Gain

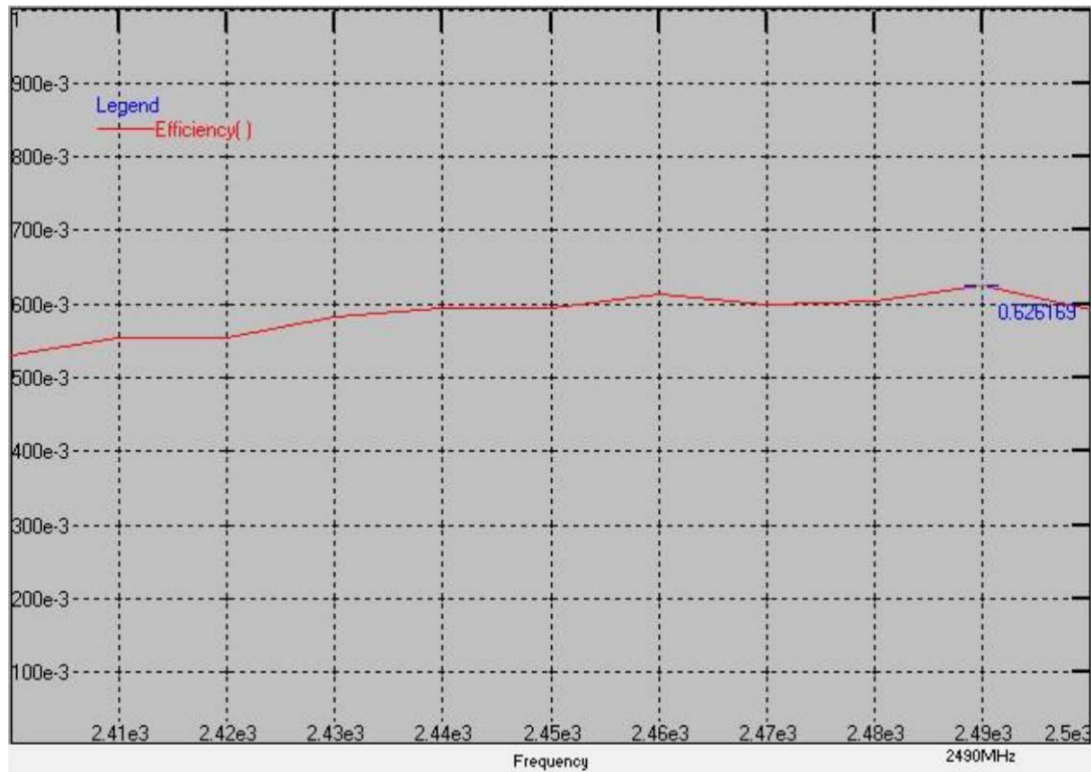
Frequency(MHz) : 2400~2500.



Peak Gain : Max 2.3dBi @ 2460 MHz

3.3 Antenna Efficiency

Frequency(MHz) : 2400~2500.



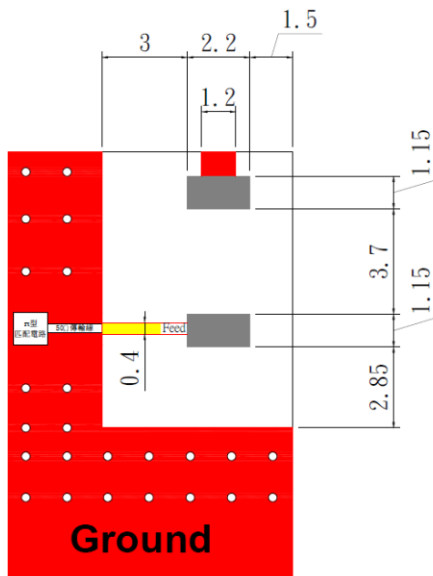
Efficiency : Max 62 % @ 2490 MHz

4. Layout Guide:

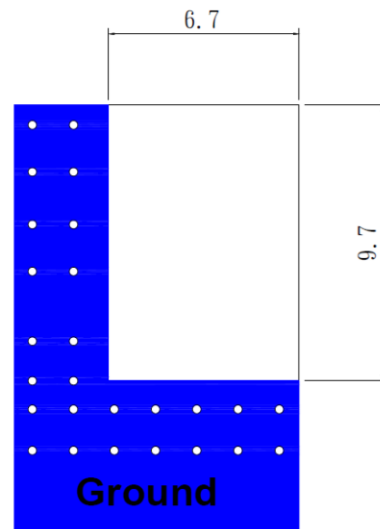
a. Solder Land Pattern:

Land pattern for soldering (black marking areas) is as shown below.

Matching circuit is needed for good performance, when customer's device is different.



Top Layout

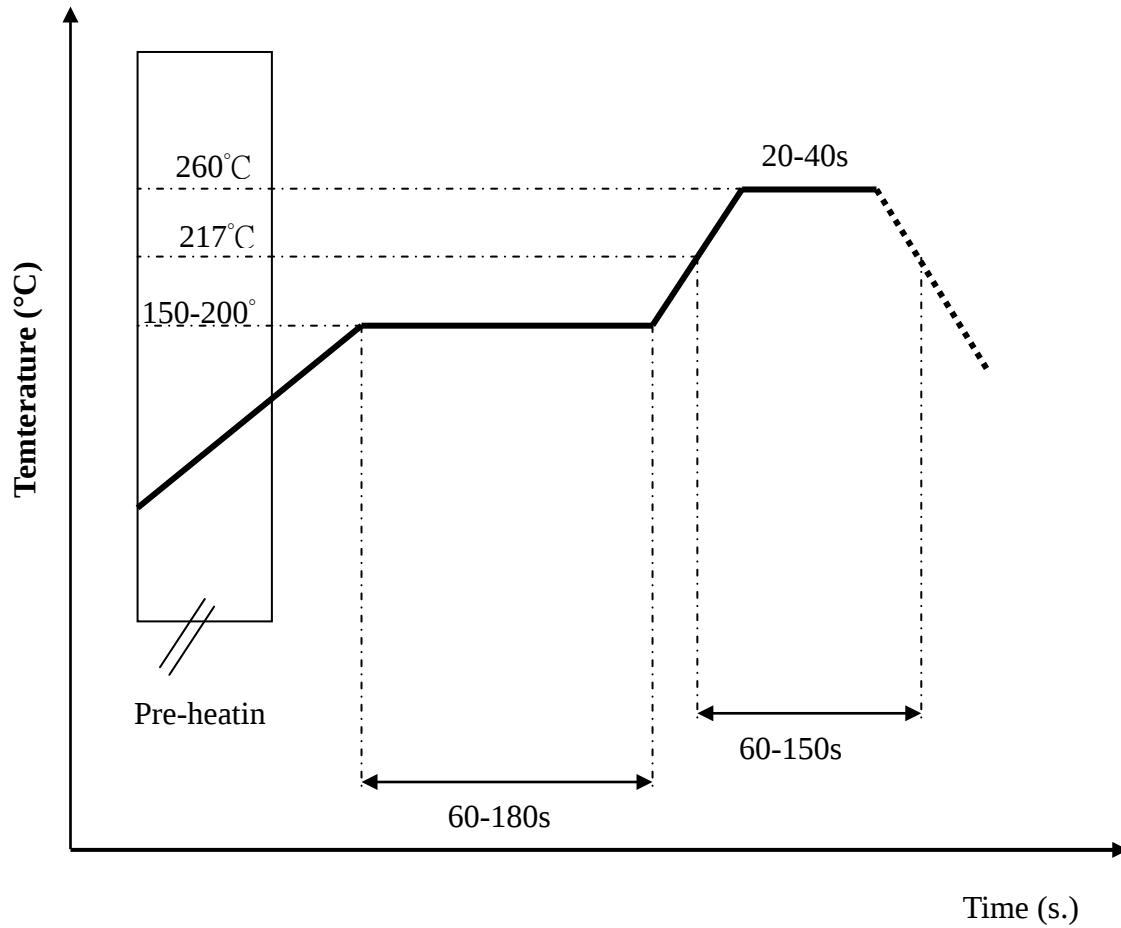


Bottom Layout

Unit:mm

5. Soldering Conditions:

a. Typical Soldering Profile for Lead-free Process

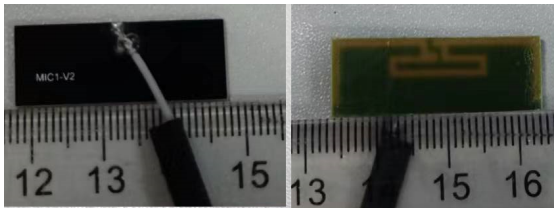


Baby Yoda Antenna specification

Date: 2022-08-29

P/N	WA-P-LA-03-301	WA-P-LA-03-307	WA-P-LA-03-308
Manufacture	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.
Frequency range	2400Hz ~2500MHz	2400Hz ~2500MHz	2400Hz ~2500MHz
Type	IFA	IFA	IFA
Cable Length	375 mm	400 mm	450 mm
Peak Gain	4.2dBi @2440MHz	4.1dBi @2440MHz	3.9dBi @2440MHz
Peak Gain From	Page 51 on data sheet "WA-P-LA-03-301.pdf file"	Evaluated based on length difference from data sheet "WA-P-LA-03-301.pdf file"	Evaluated based on length difference from data sheet "WA-P-LA-03-301.pdf file"

Antenna	Line Color Type	Size
Mic1	Gray	30*12*0.8mm
Mic2	Blue	30*12*0.8mm

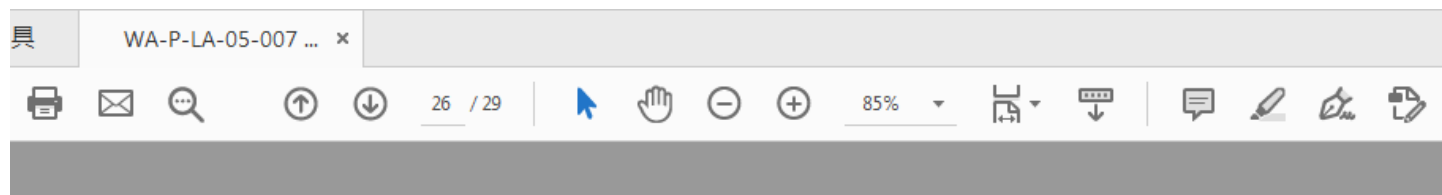
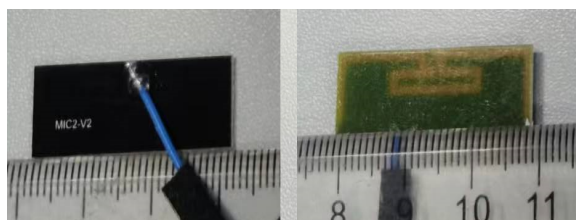


Results Summary-Peak Gain & Efficiency-Mic1&2

Frequency (MHz)	Mic1		Frequency (MHz)	MIC2	
	Efficiency (%)	Peak Gain (dBi)		Efficiency (%)	Peak Gain (dBi)
2400	56.09	3.72	2400	54.98	2.6
2410	54.7	3.81	2410	55.61	2.59
2420	55.39	3.98	2420	55.96	2.7
2430	56.52	4.11	2430	56.16	2.78
2440	56.66	4.2	2440	57.16	2.88
2450	56.52	4.12	2450	57.21	2.95
2460	56.52	3.86	2460	57.86	2.82
2470	56.8	3.65	2470	56.86	2.64
2480	55.26	3.2	2480	56.44	2.45
2490	55.81	2.83	2490	55.29	2.24
2500	55.12	2.49	2500	53.76	1.89

P/N	WA-P-LA-05-007	WA-P-LA-05-008	WA-P-LA-05-009
Manufacture	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.
Frequency range	2400Hz ~2500MHz	2400Hz ~2500MHz	2400Hz ~2500MHz
Type	IFA	IFA	IFA
Cable Length	270 mm	400 mm	450 mm
Peak Gain	3.26dBi @2460MHz	2.74dBi @2460MHz	2.59dBi @2460MHz
Peak Gain From	Page 26 on data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"	Evaluated based on length difference from data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"	Evaluated based on length difference from data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"

Antenna	Line Color Type	Size
Mic1	Gray	30*12*0.8mm
Mic2	Blue	30*12*0.8mm

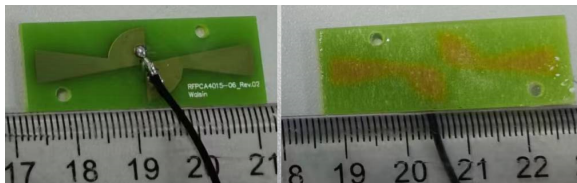


Results Summary-Peak Gain & Efficiency-Mic1&2

Frequency (MHz)	Mic1		Frequency (MHz)	MIC2	
	Efficiency (%)	Peak Gain (dBi)		Efficiency (%)	Peak Gain (dBi)
2400	54.37	3.62	2400	55.29	1.44
2410	57.46	3.76	2410	56.53	1.94
2420	53.8	3.72	2420	55.61	2.21
2430	52.95	3.66	2430	56.22	2.75
2440	52.53	3.54	2440	56.83	3.11
2450	51.29	3.39	2450	56.68	3.23
2460	51.7	3.5	2460	57.14	3.26
2470	52.67	3.61	2470	57.45	3.1
2480	53.52	3.63	2480	57.3	2.89
2490	53.38	3.63	2490	56.83	2.67
2500	54.66	3.82	2500	54.45	2.72

P/N	RFPCA401535IMAB301	RFPCA401540IMAB302	RFPCA401545IMAB301
Manufacture	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.	INPAQ TECHNOLOGY CO., LTD.
Frequency range	2400Hz ~2500MHz	2400Hz ~2500MHz	2400Hz ~2500MHz
Type	Dipole	Dipole	Dipole
Cable Length	350 mm	400 mm	450 mm
Peak Gain	3.75dBi @2450MHz	3.57dBi @2450MHz	3.39dBi @2450MHz
Peak Gain From	Page 27 on data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"	Evaluated based on length difference from data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"	Evaluated based on length difference from data sheet "WA-P-LA-05-007 and RFPCA401540IMAB302.pdf"

Antenna	Line Color Type	Size	Cable Length (mm)	Cable Type
BT	Black	40*16*1.6mm	Constant	$\Phi=1.13$



Results Summary-Peak Gain & Efficiency-BT

Frequency (MHz)	BT	
	Efficiency (%)	Peak Gain (dBi)
2400	57.92	3.1
2410	56.96	3.2
2420	56.68	3.21
2430	54.27	3.22
2440	53.39	3.22
2450	52.23	3.57
2460	51.8	2.93
2470	51.52	2.77
2480	51.52	2.72
2490	51.8	2.67
2500	52.09	2.69