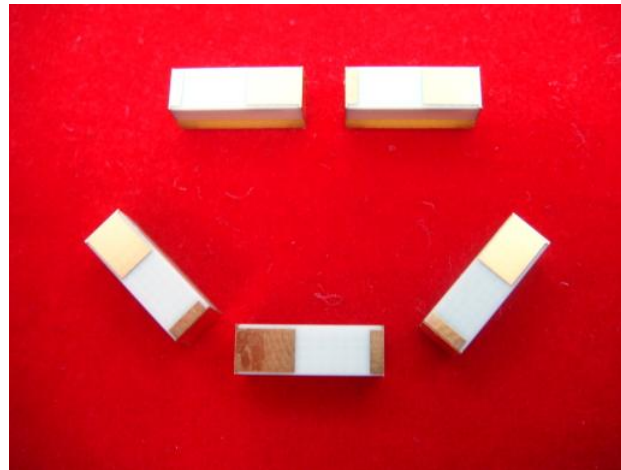


10 x 3.2 x 3.9 GPS Chip Antenna (AA064B)

1. Explanation of Product Number

H	2	U	1	6	3	1	S	1	A	0	2	0	0
				(1)	(2)	(3)	(4)	(5)					



Product Code:

- (1) Product Categories:
6: polymer substrate antenna
- (2) Dimensions:
31: 10 x 3.2 x 3.9 (mm)
- (3) Material:
S: RGF
- (4) Working Frequency:
1A: 1575.42MHz
- (5) Antenna Series:
02: serial number



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen	Designed by : Mike	Checked by : Mike	Approved by : Herbert	UNIT : mm
TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)		DOCUMENT NO.	H2U1631S1A0200	REV. C

2. Features

- *Stable and reliable in performances
- *Low temperature coefficient of frequency
- *Compact size
- *RoHS compliance

3. Applications

- *Navigation systems or position tracking systems
- *Hand-held devices when GPS function is needed, e.g., PDA, Smart phone, PND.

4. Description

Unictron's chip antenna series are specially designed for GPS application. Based on Unictron's proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications (80x40(mm) ground plane)

5-1. Electrical Table:

Characteristics		Specifications	Unit
Outline Dimensions		10 x 3.2 x 3.9	mm
Ground Plane Dimensions		80 x 40	mm
Working Frequency		1575.42	MHz
VSWR (@ center frequency)*		2 Max.	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@ 1575 MHz)	3 (typical)	dBi
Efficiency		83 (typical)	%
Temperature Coefficient of Frequency		0 \pm 20 max (@ -40 $^{\circ}$ C ~85 $^{\circ}$ C)	ppm/ $^{\circ}$ C

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

Unictron
Technologies Corp.

2019-05-20

Document
Control Center



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : **Wen** Designed by : **Mike** Checked by : **Mike** Approved by : **Herbert** UNIT : **mm**

TITLE : **10x3.2x3.9 GPS Chip Antenna (AA064B)**

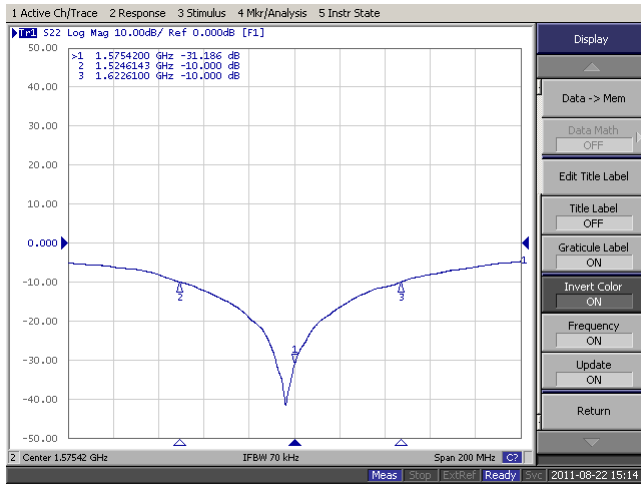
DOCUMENT NO.

H2U1631S1A0200

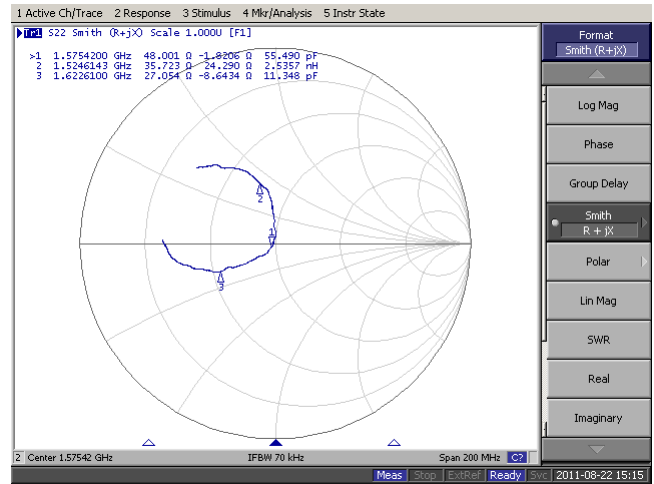
REV.
C

5-2. Return Loss & Smith Chart

Return Loss(S₁₁)

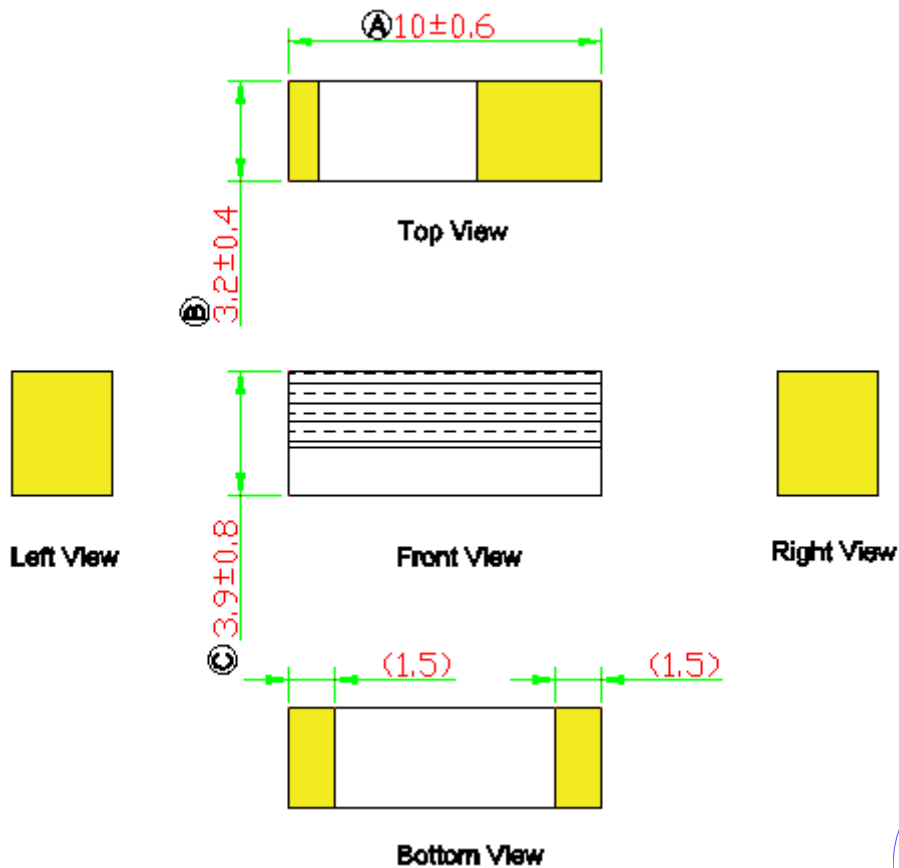


Smith Chart(S₁₁)



6. Antenna & Test Board Dimensions (unit: mm)

a. Antenna Dimensions



Unictron
Technologies Corp.
2019-05-20
Document
Control Center



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen Designed by : Mike Checked by : Mike Approved by : Herbert UNIT : mm

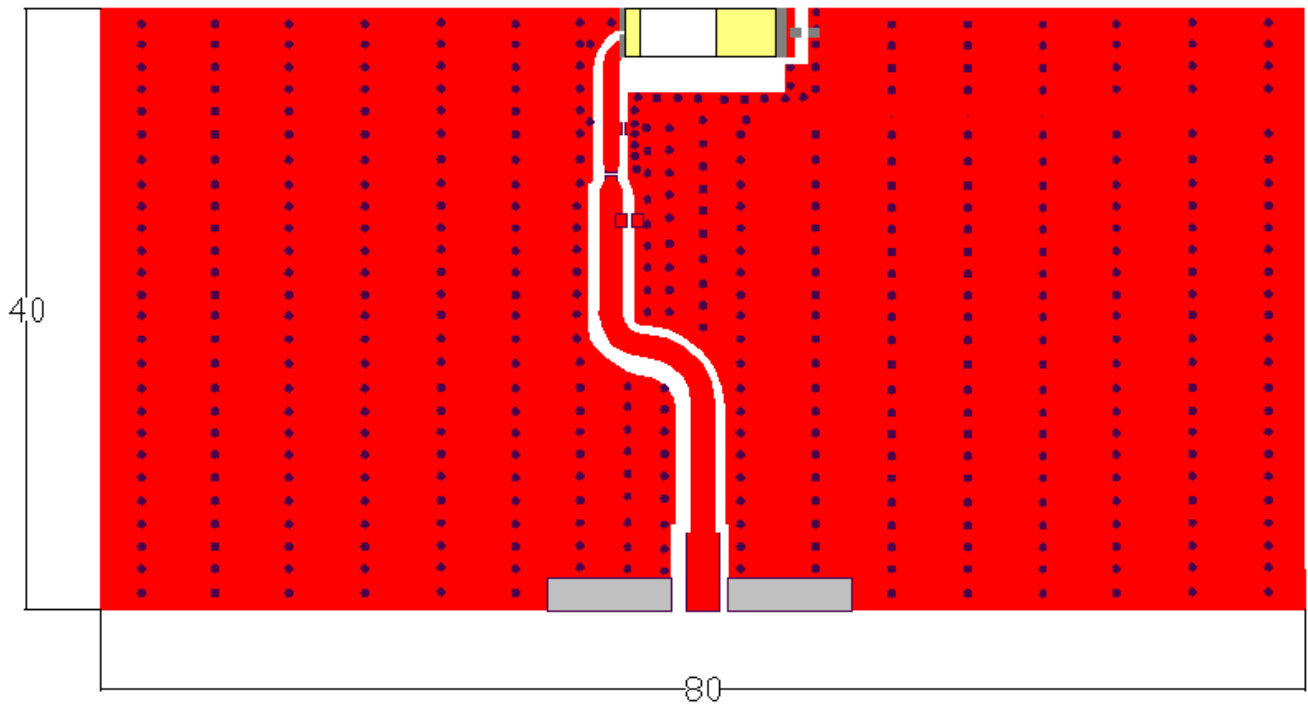
TITLE : 10x3.2x3.9 GPS Chip Antenna
(AA064B)

DOCUMENT
NO.

H2U1631S1A0200

REV.
C

b. Test Board Dimensions



Unit : mm



詠業科技股份有限公司
Unictron Technologies Corporation
Website:www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen Designed by : Mike Checked by : Mike Approved by : Herbert UNIT : mm

TITLE : 10x3.2x3.9 GPS Chip Antenna
(AA064B)

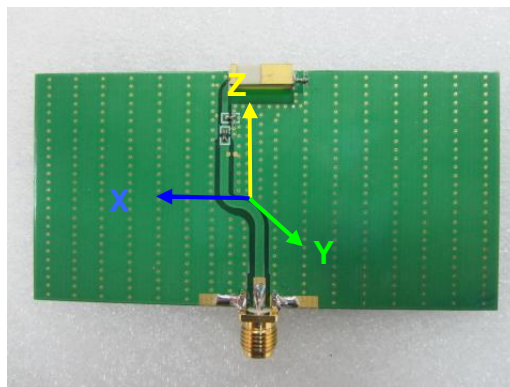
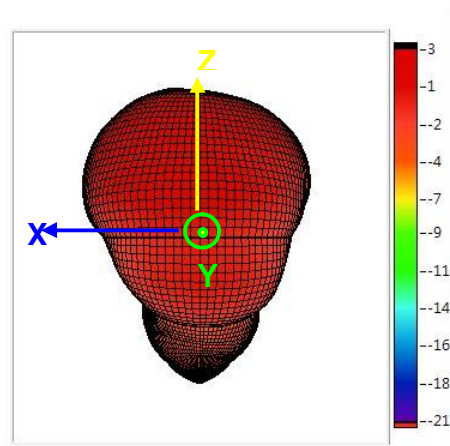
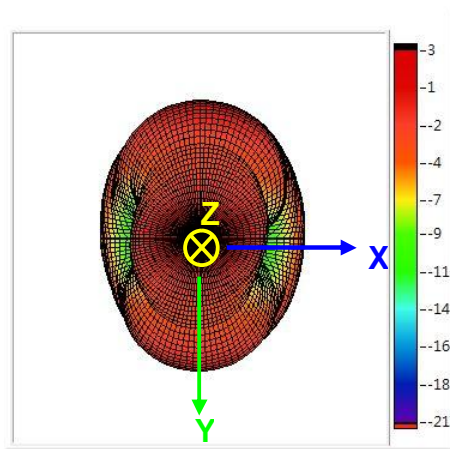
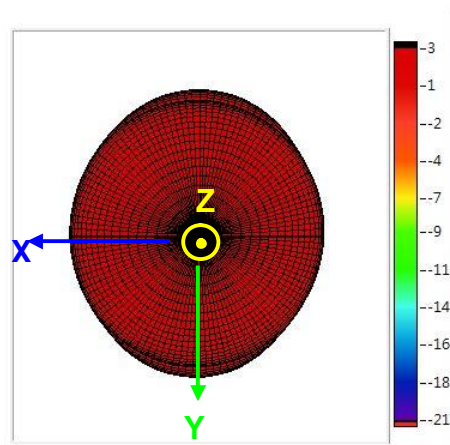
DOCUMENT
NO.

H2U1631S1A0200

REV.
C

7. Radiation Pattern (80x40(mm) ground plane)

7-1. 3D Gain Pattern at 1575 MHz



Unictron
Technologies Corp.
2019-05-20
Document
Control Center



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen Designed by : Mike Checked by : Mike Approved by : Herbert UNIT : mm

TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)

DOCUMENT NO.

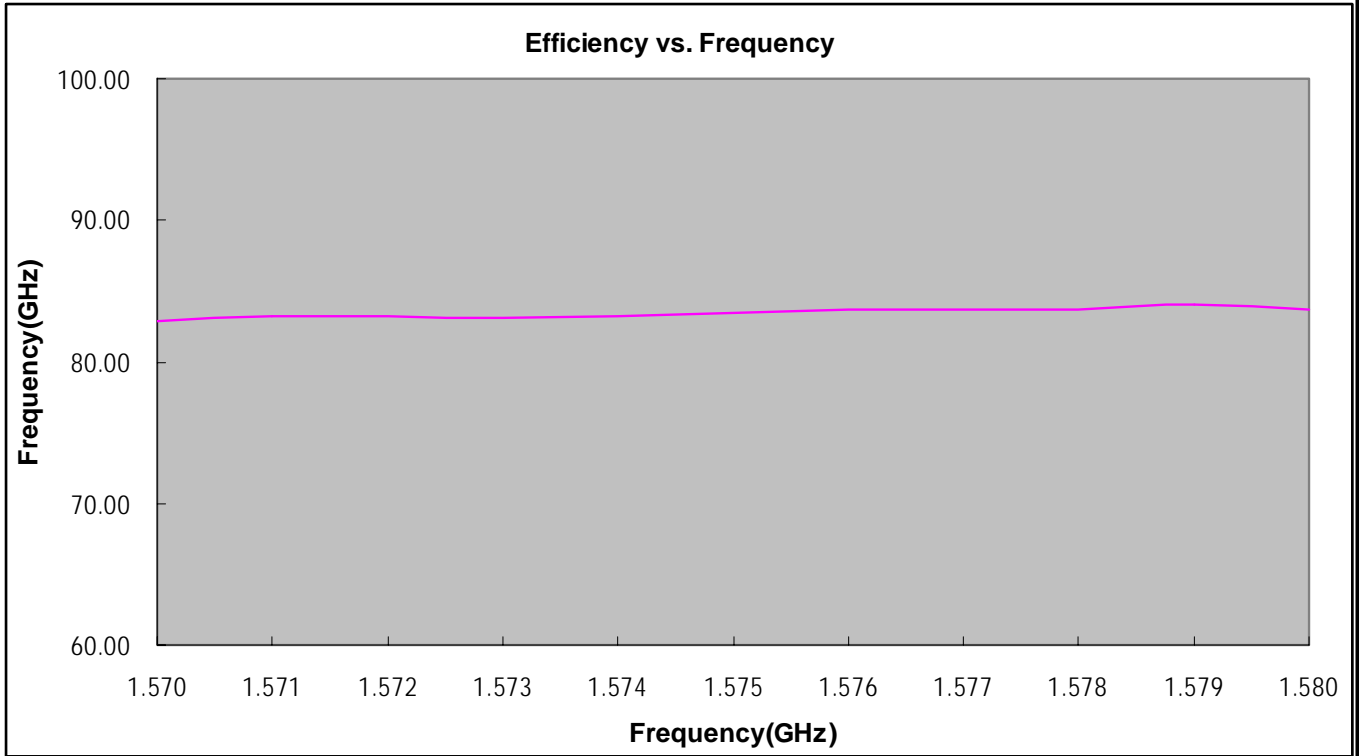
H2U1631S1A0200

REV. C

7-2. Efficiency Table

Frequency(GHz)	1.570	1.571	1.572	1.573	1.574	1.575	1.576	1.577	1.578	1.579	1.580
Efficiency(dB)	-0.81	-0.79	-0.79	-0.80	-0.79	-0.78	-0.77	-0.77	-0.77	-0.76	-0.77
Efficiency(%)	82.91	83.28	83.28	83.10	83.28	83.47	83.66	83.66	83.66	84.04	83.66
Gain(dBi)	3.09	3.08	3.06	3.03	3.04	3.02	2.99	2.98	2.97	2.96	2.95

7-3. Efficiency vs. Frequency



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

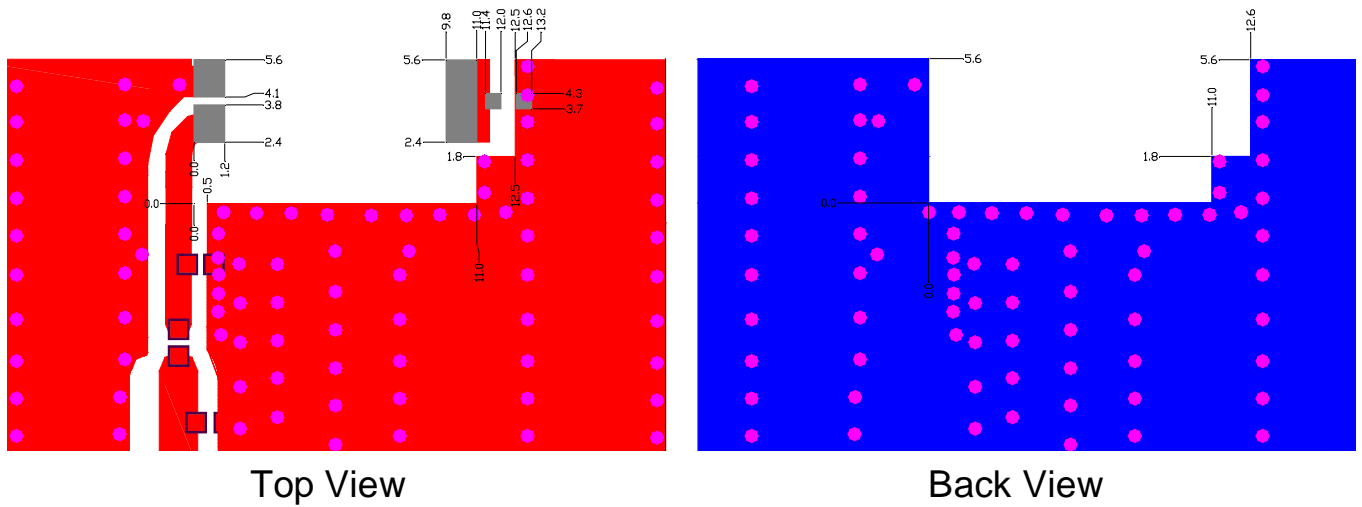
Prepared by : **Wen** Designed by : **Mike** Checked by : **Mike** Approved by : **Herbert** UNIT : **mm**

TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)	DOCUMENT NO.	H2U1631S1A0200	REV.
			C

8. Layout Guide:

a. Solder Land Pattern:

Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.

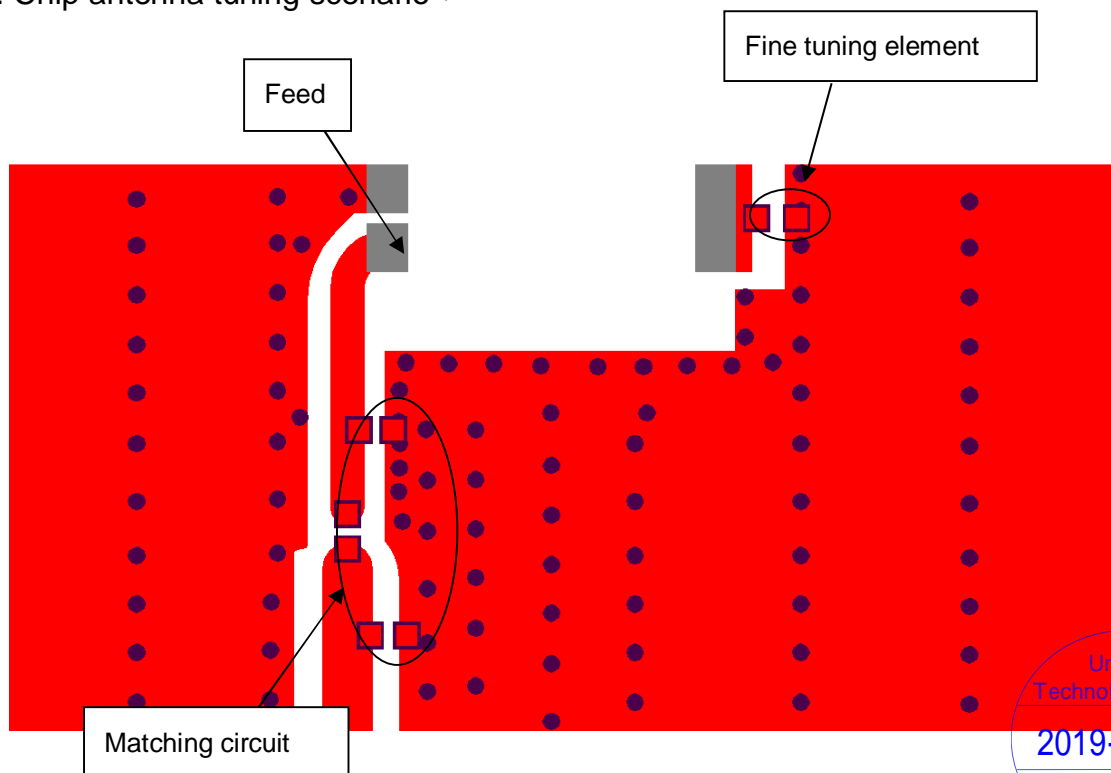


Top View

Back View

9. Frequency tuning:

a. Chip antenna tuning scenario :

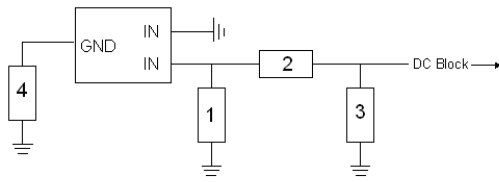


詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

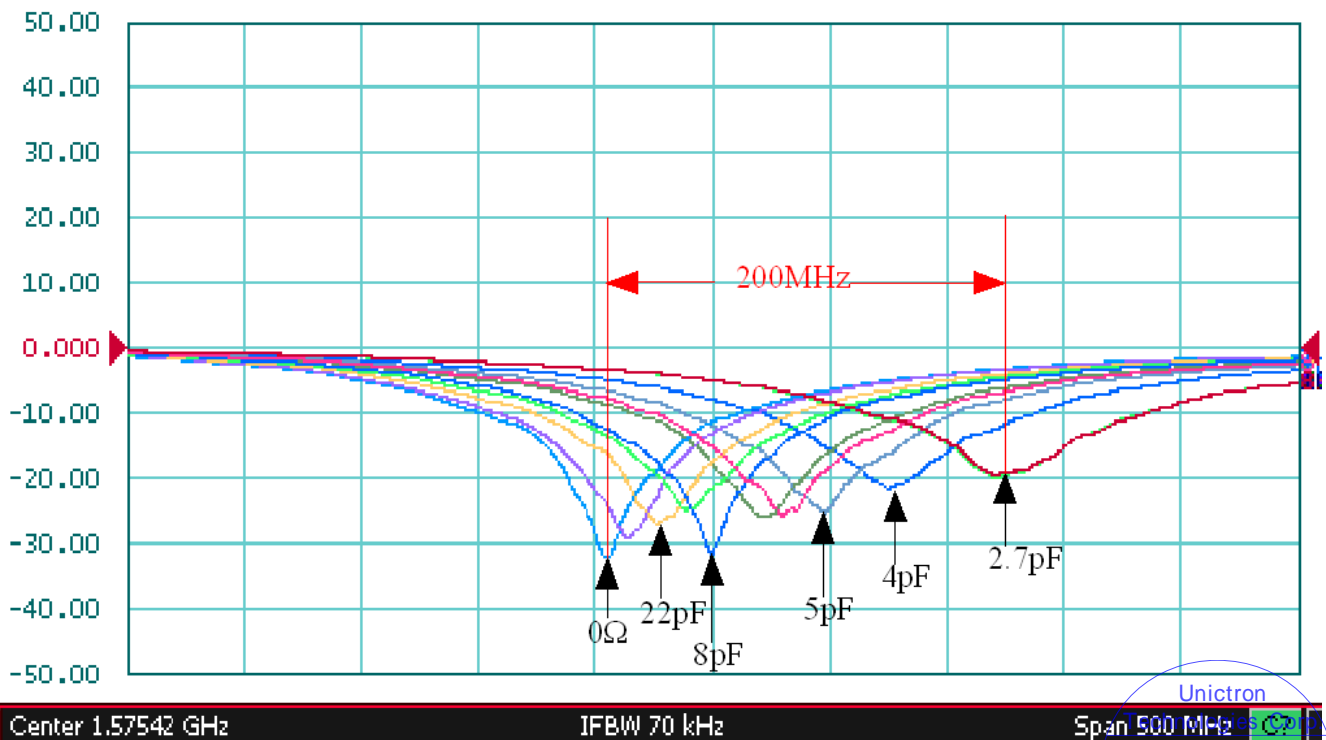
Prepared by : Wen	Designed by : Mike	Checked by : Mike	Approved by : Herbert	UNIT : mm
TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)		DOCUMENT NO.	H2U1631S1A0200	REV. C

b. Matching circuit :



System Matching Circuit Component		
Location	Description	Vendor
1	1.8pF	TDK(0402)
2	4.7pF	TDK(0402)
3	N/A	-
4 (Fine tuning element)	8pF	TDK(0402)

c. Fine tuning element vs. Center frequency



Unictron
2019-05-20
Document
Control Center



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen Designed by : Mike Checked by : Mike Approved by : Herbert UNIT : mm

TITLE : 10x3.2x3.9 GPS Chip Antenna
(AA064B)

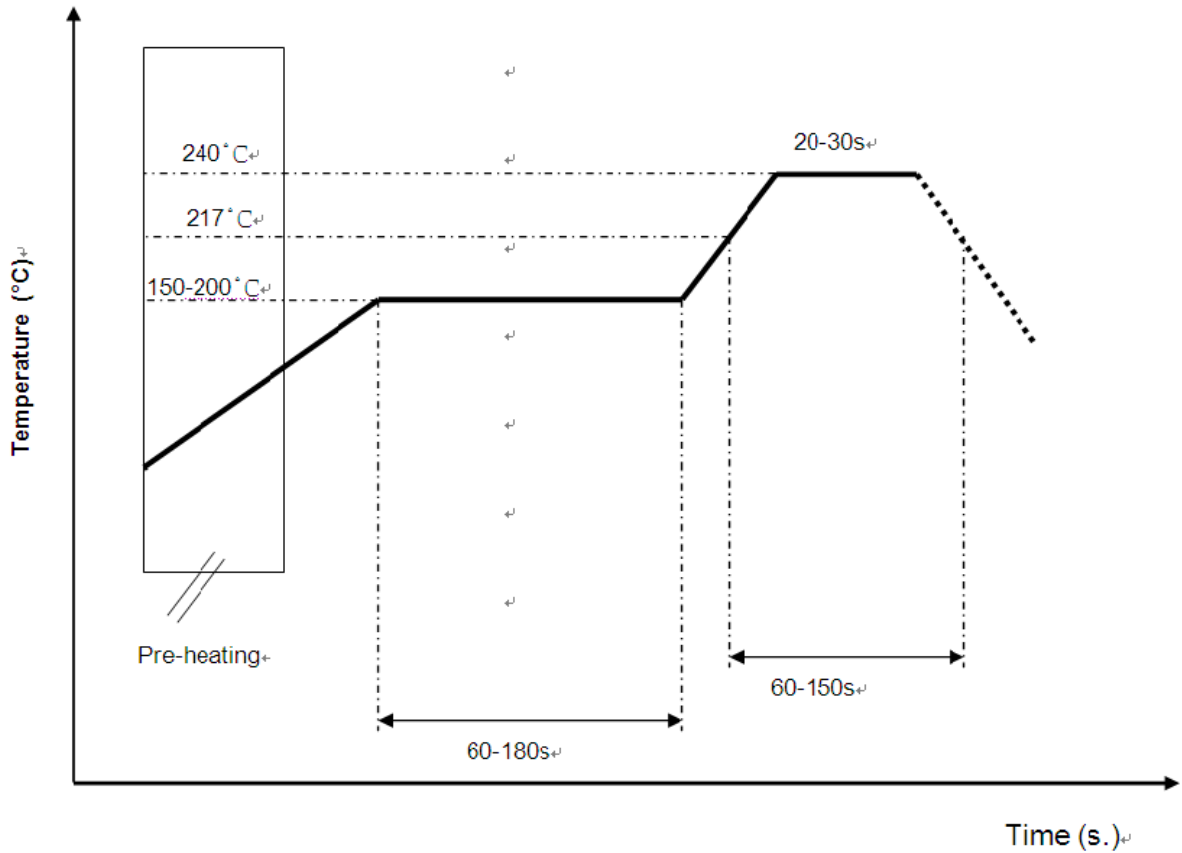
DOCUMENT
NO.

H2U1631S1A0200

REV.
C

10. Soldering Conditions:

a. Typical Soldering Profile for Lead-free Process



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



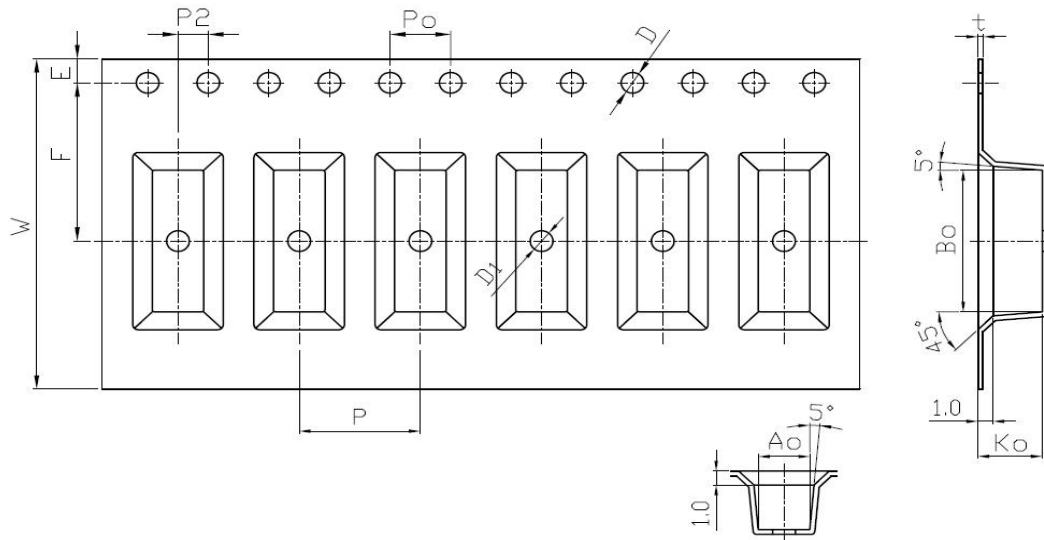
詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen	Designed by : Mike	Checked by : Mike	Approved by : Herbert	UNIT : mm
TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)		DOCUMENT NO.	H2U1631S1A0200	REV. C

11. Packing:

- (1) Quantity/Reel: 2000pcs/Reel
- (2) Plastic tape:



2.1 Tape Dimensions(unit: mm)

Feature	Specifications	Tolerances
W	24.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	11.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
D1	1.50	±0.10
Po	4.00	±0.10
10Po	40.00	±0.20

- 1. Cumulative tolerance of 10 sprocket hole pitch: ±0.20mm
- 2. Carrier camber not to exceed 1mm in 250mm
- 3. Ao and Bo measured on a plane above the inside bottom of the pocket.
- 4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
- 5. All dimensions meet EIA-481-B requirements.
- 6. Material: □ Clear Non Anti-Static Polystyrene.
■ Black Conductive Polystyrene.

2.2 Pocket Dimensions(unit: mm)

Feature	Specifications	Tolerances
Ao	3.40	+0.20
Bo	10.30	-0.10
Ko	4.25	+0.20 -0.10
t	0.35	±0.05

12. Storage Conditions:

- (1) Temperature: -25°C to 85°C
- (2) Relative Humidity: 20% to 70%



詠業科技股份有限公司
Unictron Technologies Corporation
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen Designed by : Mike Checked by : Mike Approved by : Herbert UNIT : mm

TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)

DOCUMENT NO.

H2U1631S1A0200

REV. C