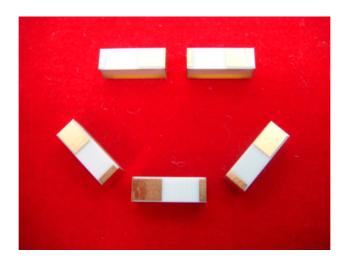
10 x 3.2 x 3.9 GPS Chip Antenna (AA064B)

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

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(AA064B)		NO.	1120100101710200	В

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 or 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 Dime	nsions	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	(@1575 WHZ)	83 (typical)	%
Temperature Coefficient of Frequency		0±20 max (@ -40°C~85°C)	ppm/°C

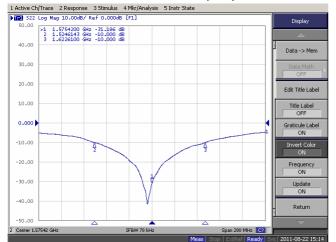
^{*}Center frequency means the frequency with the lowest value in return loss of the chip antenna on the evaluation board.

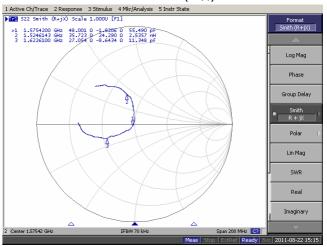
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5-2. Return Loss & Smith Chart

Return Loss(S₁₁)

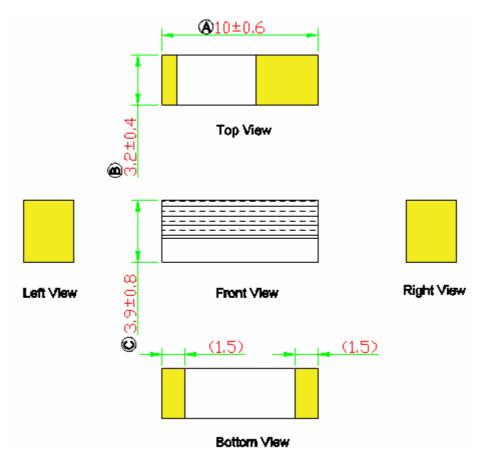
Smith Chart(S₁₁)





Antenna & Test Board Dimensions (unit: mm)

a. Antenna Dimensions



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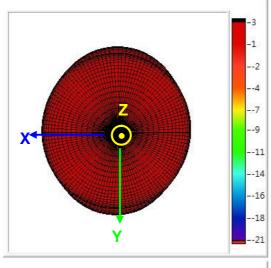
b. Test Board Dimensions

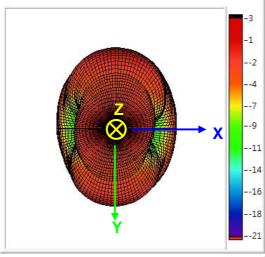
Unit : mm

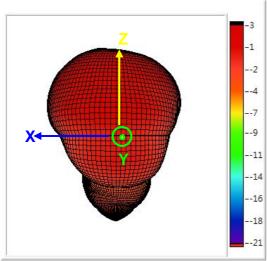
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(AA064B)		NO.	1120100101710200	В

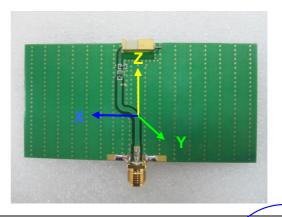
7. Radiation Pattern (80x40(mm) ground plane)

7-1. 3D Gain Pattern at 1575 MHz









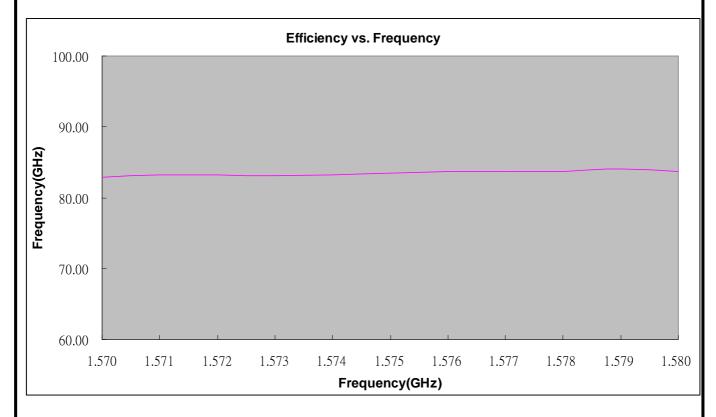
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7-2. Efficiency Table

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

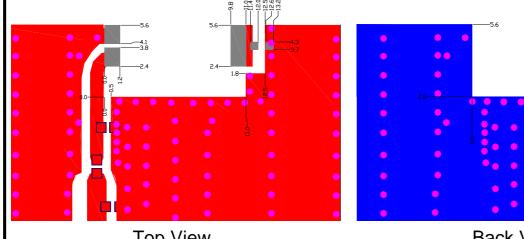


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(AA064B)		NO.		В

8. Layout Guide:

a. Solder Land Pattern:

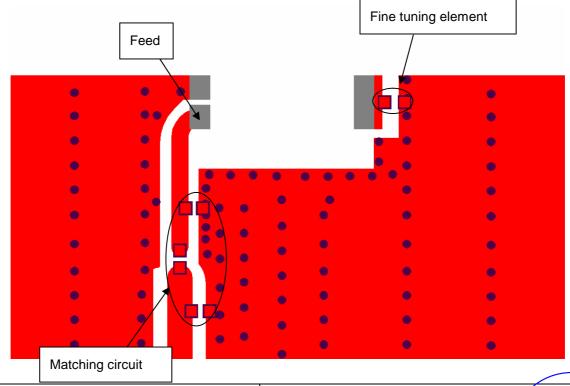
Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.



Top View Back View

9. Frequency tuning:

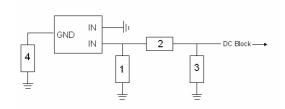
a. Chip antenna tuning scenario:



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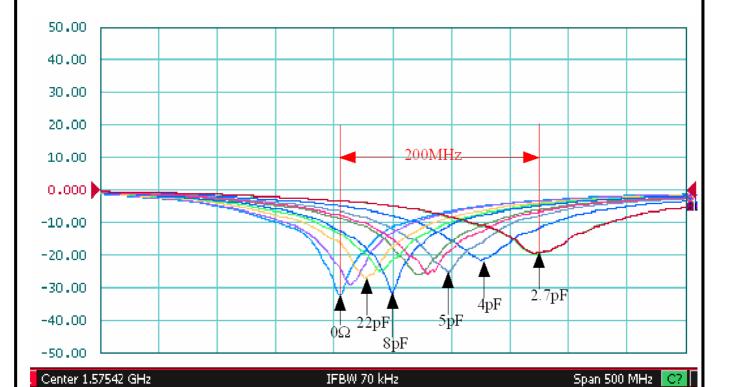
TITLE: 10x3.2x3.9 GPS Chip Antenna | DOCUMENT | H2U1631S1A0200 | B

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)		

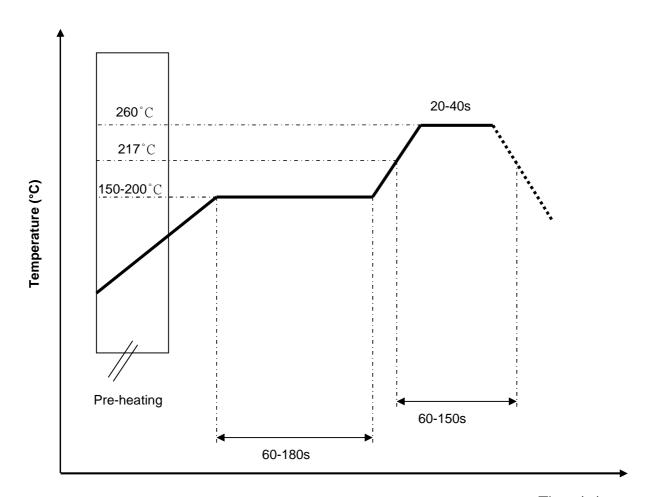
c. Fine tuning element vs. Center frequency



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(AA064B)		NO.	112010010170200	В

10. Soldering Conditions:

a. Typical Soldering Profile for Lead-free Process



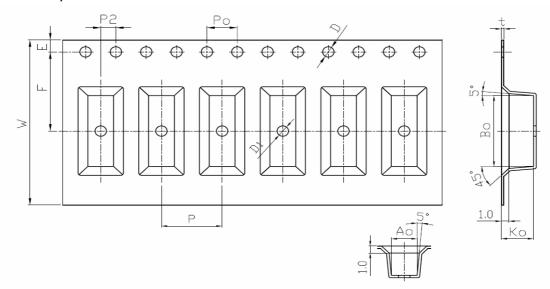
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(AA064B)		NO.	1120 100 10 1A0200	В

11. Packing:

(1) Quantity/Reel: 2000pcs/Reel

(2) Plastic tape:



- 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.

2.1 Tape Dimensions(unit: mm)

Feature	Specifications	Tolerances		
W	24.00	±0.30		
Р	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		

12. Storage Conditions:

(1) Temperature: -25°C to 85°C

(2) Relative Humidity: 20% to 70%

2.2 Pocket Dimensions(unit: mm)

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

Tolerances (Unless otherwise specified) $X: \pm 1$ $X.X: \pm 0.1$ $X.XX: \pm 0.01$ Angle: \pm Hole Dia.: \pm		Unictr Technologies	Unictron Technolog Website: www.u	Unictron Jies, Corporation Inictron.com 2016/9/23
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