

# DATA SHEET

**WIRELESS COMPONENTS**

Ceramic Chip Antenna

ANT1003LL15R1524A

2.4GHZ AND GPS

**1003 Series**



FEATURES

- Cover dual frequency bands in 2.4 & 1.575 GHz
- Compact size
- Omni-directional Radiation
- Tape & reel automatic mounting
- Reflow process compatible
- RoHS compliant

APPLICATIONS

- Tablet
- Navigation device
- Telematics box
- Fleet management
- 2.4 GHz WiFi device
- Bluetooth gadget
- Zigbee device
- ISM band equipment

ORDERING INFORMATION

All part numbers are identified by the series, packing type, material, size, antenna type, working frequency and packing quantity.

**PART NUMBER**

**ANT I003 L L15 R I524A**  
 (1) (2) (3) (4) (5) (6)

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**(1) PRODUCT**

ANT = Antenna

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**(2) SIZE**

I003 = 10 x 3 mm

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**(3) ANTENNA TYPE**

L,F,A = Chip Antenna

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**(4) SERIAL NO.**

L15

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**(5) PACKING STYLE**

R = Tape and Reel

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**(6) WORKING FREQUENCY**

I524 = 1.575 / 2.4GHz

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**PHYCOMP CTC**

CAN4311756151521K

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**I2NC**

431175615152

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**SPECIFICATION**

Table 1

DESCRIPTION	VALUE
Centre Frequency	1.575 GHz / 2.45 GHz
Bandwidth	15 MHz (Typ.) / 84 MHz (Typ.)
Return Loss	6.49 dB min
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	1.15dBi / 2.90 dBi
Impedance	50 Ω
Operating Temperature	- 40~105 °C
Maximum Power	1 W
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to Soldering Heats	260°C , 10sec.

**NOTE**

I. The specification is defined on Yageo evaluation board

**DIMENSIONS**

Table 2 Machinical Dimension

	DIMENSION
L (mm)	9.90±0.15
W (mm)	3.20±0.15
T (mm)	1.47±0.15
A (mm)	2.81±0.15
B (mm)	1.23±0.15
C (mm)	1.03±0.15
D (mm)	1.03±0.15
E (mm)	1.03±0.15
F (mm)	1.03±0.15
G (mm)	0.60±0.15
H (mm)	0.83±0.15
I (mm)	0.83±0.15
J (mm)	0.83±0.15
K (mm)	0.83±0.15
M (mm)	2.81±0.15
N (mm)	1.23±0.15

**OUTLINES**

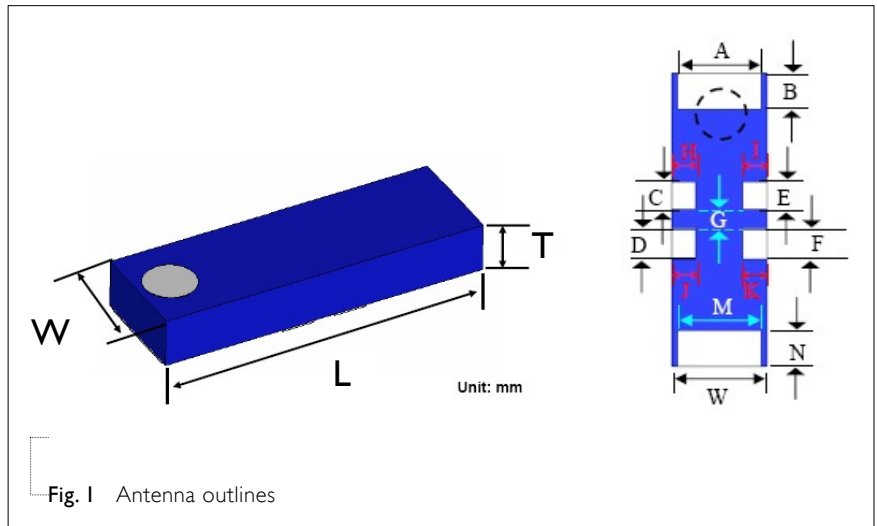


Fig. 1 Antenna outlines

Table 3 Termination configuration

TERMINAL NAME	FUNCTION	TERMINAL NAME	FUNCTION
A	Feed BT/GND	H	Ground
B	Feed BT/GND	I	Ground
C	Ground	J	Ground
D	Ground	K	Ground
E	Ground	M	Feed GPS/GND
F	Ground	N	Feed GPS/GND

REFERENCE DESIGN OF EVALUATION BOARD

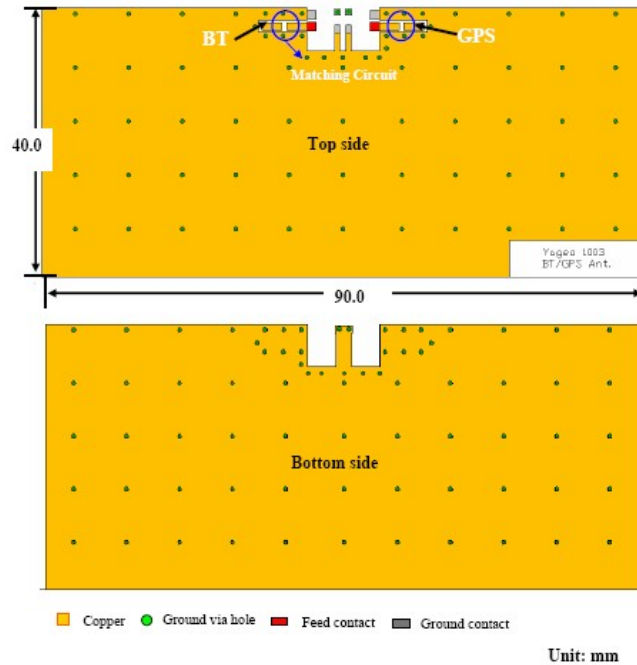


Fig. 2 Outlook and dimension of evaluation board

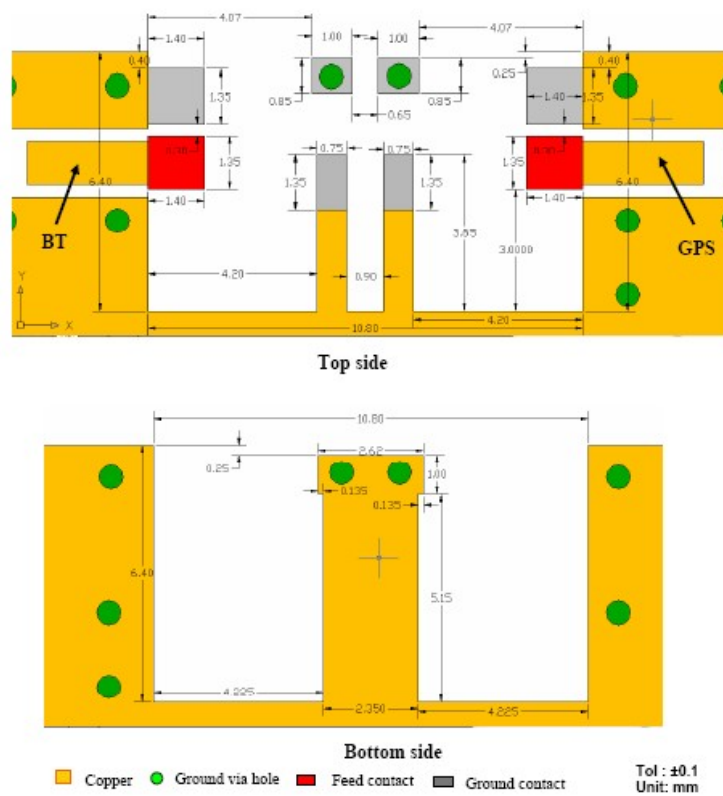
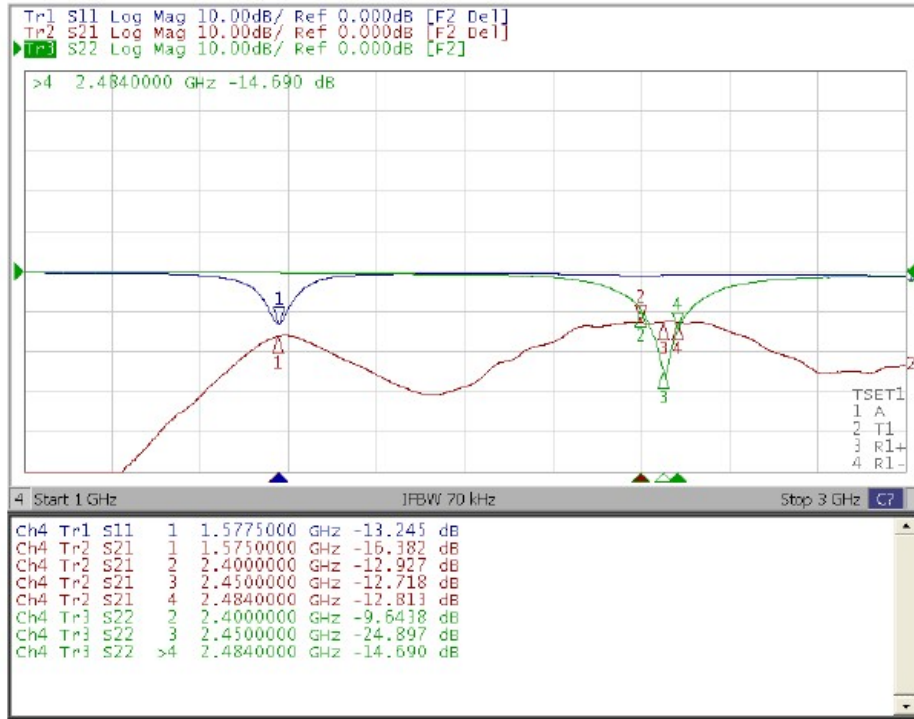


Fig. 3 Details of soldering Pad

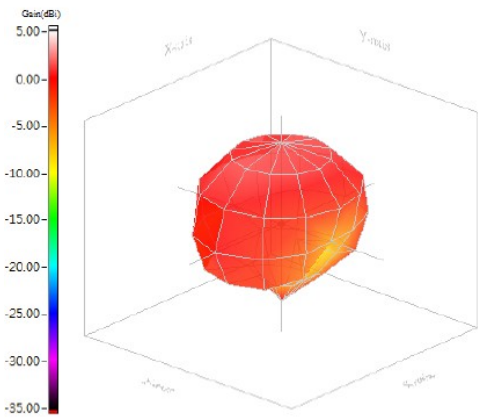
**ELECTRICAL PERFORMANCES**



**Fig. 4** Return loss

**Radiation Pattern\_1.575z GHz**

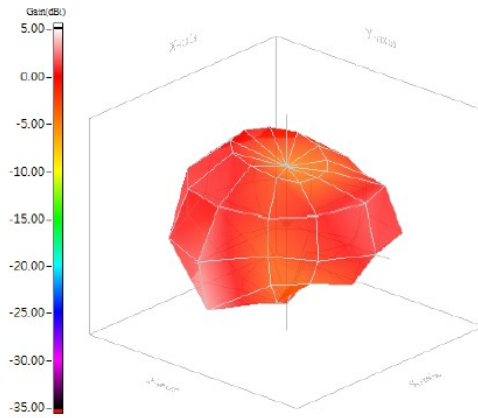
Model name: 1003 GPS  
 Test mode: 3D  
 Test frequency / Polarization: 1575.00 MHz / Vector sum  
 Test date: 2011/12/15



Max gain= 1.15dBi, at (0, 0)  
 MEG(mean effective gain)= -0.79dBi  
 Directivity(dB)= 2.90  
 Efficiency= -1.75dB, 66.83%

**Radiation Pzzattern\_2.45 GHz**

Model name: 1003 BT  
 Test mode: 3D  
 Test frequency / Polarization: 2450.00 MHz / Vector sum  
 Test date: 2011/12/15



Max gain= 2.90dBi, at (120, 0)  
 MEG(mean effective gain)= -1.41dBi  
 Directivity(dB)= 3.79  
 Efficiency= -0.89dB, 81.55%

**Fig. 5** Radiation pattern

REVISION HISTORYREVISION   DATE   CHANGE NOTIFICATION   DESCRIPTION

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Version 0	Mar. 28, 2013	-	- New data sheet for Ceramic Chip Antenna, 2.4 GHz and GPS, size 10 × 3 mm
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