

**Multilayer Ceramic Antenna**

# DATA SHEET

## 6230 GPS /LP Multilayer Ceramic Chip Antenna


March, 2007, V4

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	6230 GPS Multilayer Ceramic Antenna (Linear Polarization)			CAN431111301158 2K CAN431111302158 2K CAN431111303158 2K		
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**WIDE BAND MULTILAYER CERAMIC ANTENNA  
FOR 1575MHZ ; 1675MHZ APPLICATION**

**Product Specification**

**QUICK REFERENCE DATA**

Size	6.15*3.0*1.25 mm	
Central Frequency	1.575 GHz 1.675 GHz	
Bandwidth	100 MHz	
Gain	1 dBi Max	
VSWR	2 max	
Polarization	Linear	
Azimuth	Omni-directional	
Impedance	50Ω	
Operating Temperature	-55~125 °C	
Termination	Ni/Sn (Environmentally-Friendly Leadless)	
Resistance to soldering heats	260°C, 10 sec.	



*Special Environmental Concerns- Green Products Design: The foil making process is using environmentally friendly aqueous solvent technology. Termination is lead free and packing materials can be re-cycled*

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### Mechanical data

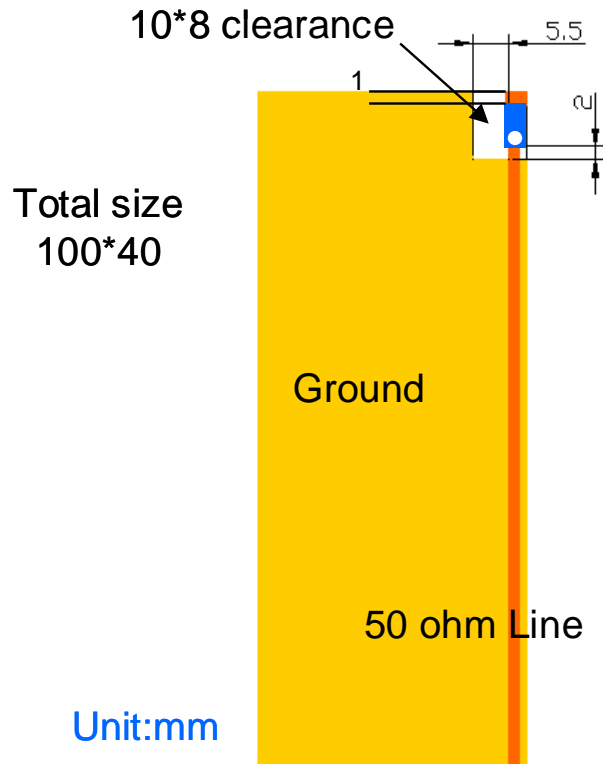
Figure	Dimension	Port
	<p>L     <math>6.15 \pm 0.25</math> mm</p> <p>W     <math>3.0 \pm 0.25</math> mm</p> <p>T     <math>1.25 \pm 0.15</math> mm</p> <p>F     <math>0.5 \pm 0.2</math> mm</p>	<p>-</p> <p>-</p> <p>-</p> <p>Feed termination</p> <p>-</p>

### Dimension of soldering pad

Figure	Dimensions	Remark
	<p>L     <math>6.70 \pm 0.15</math> mm</p> <p>W     <math>3.60 \pm 0.15</math> mm</p> <p>F     <math>0.9 \pm 0.15</math> mm</p>	<p>Feed pad</p>

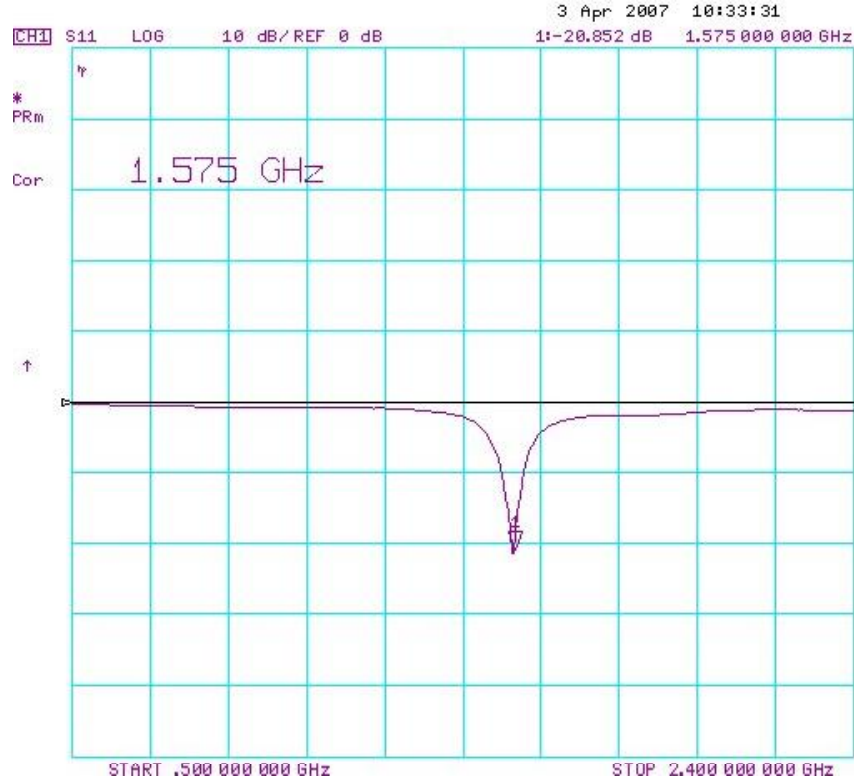
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### 3. Layout Recommendation in Application



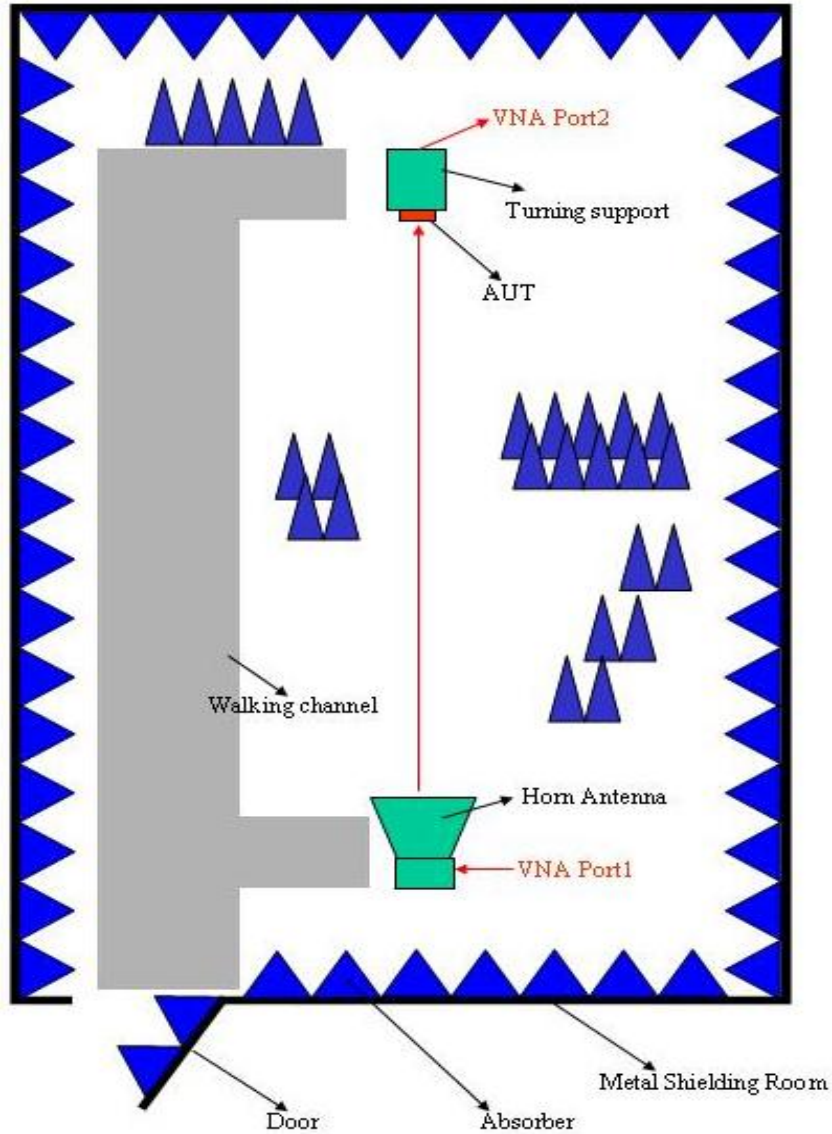
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#### 4. Measurement of S-parameter



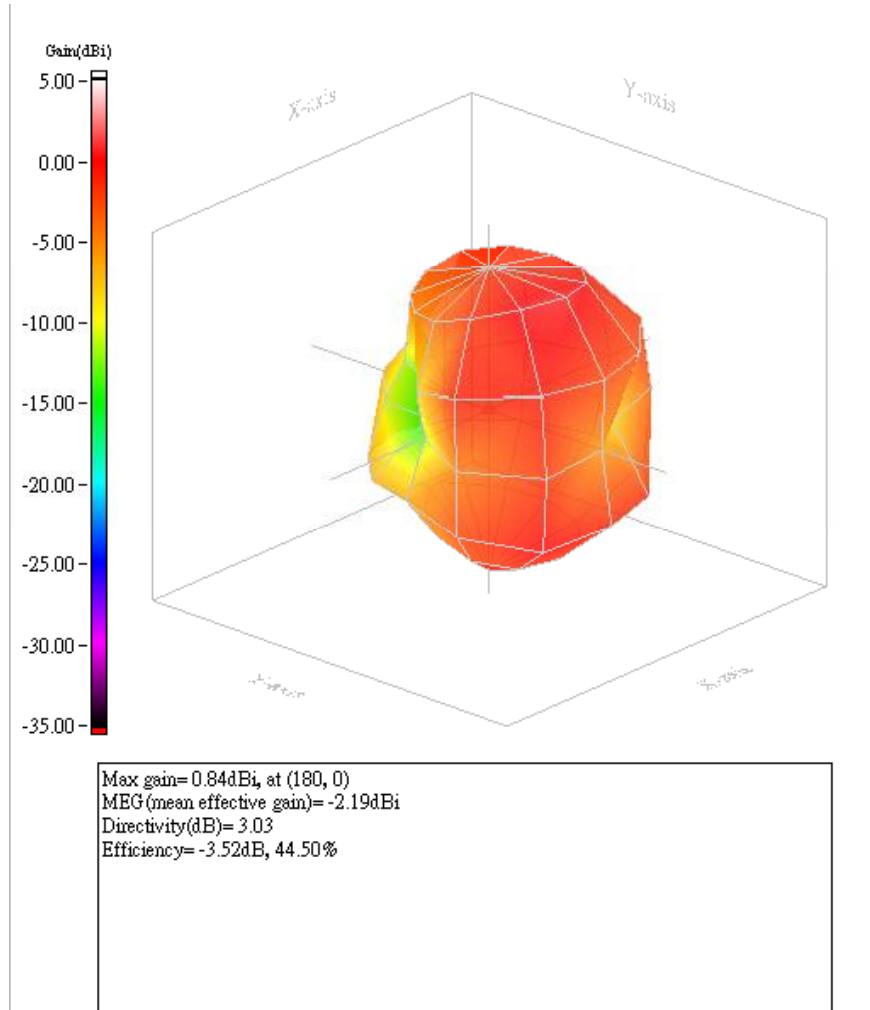
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**5.The Environment of Antenna Radiation Pattern**  
**Anechoic Chamber Dimension=8(m) × 4(m) × 4(m)**



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### 6. 3D Radiation Pattern (100x40 mm demo board)



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**RELIABILITY DATA (Reference to IEC Specification)**

IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.4		Mounting	The antenna can be mounted on printed-circuit boards or ceramic substrates by applying wave soldering, reflow soldering (including vapour phase soldering) or conductive adhesive	No visible damage
4.5		Visual inspection and dimension check	Any applicable method using $\times 10$ magnification	In accordance with specification (no chip off 3 mm)
4.6.1		Antenna	Central Frequency at 20 °C	Standard test board in page 4
4.8		Adhesion	A force of 5 N applied for 10 s to the line joining the terminations and in a plane parallel to the substrate	No visible damage
4.9		Bond strength of plating on end face	Mounted in accordance with CECC 32 100, paragraph 4.4	No visible damage

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IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
			Conditions: bending 0.25 mm at a rate of 1mm/s, radius jig. 340 mm, 1 mm warp on FR4 board of 90 mm length	No visible damage
4.10	Tb	Resistance to soldering heat	260 ± 5 °C for 10 ± 0.5 s in a static solder bath	The terminations shall be well tinned after recovery and Central Freq. Change ± 6%
		Resistance to leaching	260 ± 5 °C for 30 ± 1 s in a static solder bath	Using visual enlargement of 10, dissolution of the termination shall not exceed 15%
4.11	Ta	Solderability	Zero hour test, and test after storage (20 to 24 months) in original atmosphere; un-mounted chips completely immersed for 2 ± 0.5 s in 235 ± 5°C.	The termination must be well tinned, at least 75% is well tinned at termination
4.12	Na	Rapid change of temperature	-25 °C (30 minutes) to +85 °C (30 minutes); 5 cycles	No visible damage
4.14	Ca	Damp heat	500 ± 12 hours at 60 °C; 90 to 95 % RH	No visible damage 2 hours recovery

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IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.15		Endurance	500 ± 12 hours at 125 °C;	No visible damage 2 hours recovery

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**ORDERING INFORMATION: 12NC Ordering Code**

These code numbers can be determined by the following rules:

CAN43 11 1 13 01 158 2K  
 F C M S T A K

F. Family Code

**CAN43** = Antenna

C. Packing Type Code

**11** = Tape, 1000 pcs

M. Materials Code

**1** = High Frequency Material

S. Size Code

**13** = 6.2 \* 3.0 mm

T. Type

**01** = Type A, center frequency 1.6GHz

**02** = Type B, center frequency 1.7GHz

**03** = Type C, center frequency 1.9GHz

A. Working Frequency

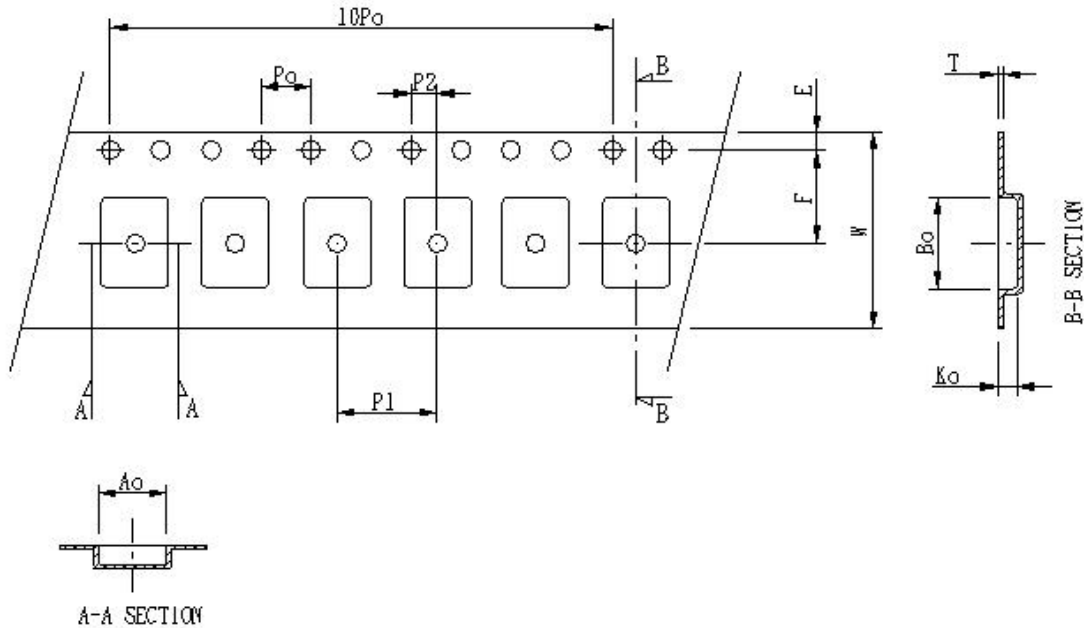
**158** = 1.575 GHz

K. Packing amount

2K = 2000pcs / reel

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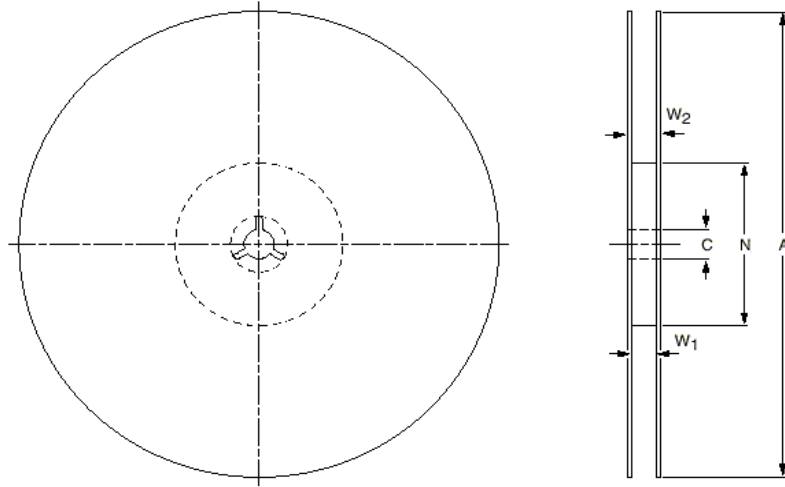
**Taping Blister Tape**



**DIMENSION:**

Serial no	Checking note	Index	Spec(mm)
1	Sprocket hole		1.50±0.10
2	Pocket hole		≥1
3	Distance sprocket hole/sprocket hole	Po	4.0±0.10
4	Distance pocket/pocket	P1	4.0±0.10
5	Distance sprocket hole/pocket	P2	2.0±0.10
6	Tape width	W	12±0.30
7	Distance sprocket hole/outside	E	1.75±0.10
8	Distance sprocket hole/pocket	F	5.5±0.10
9	Pocket length nominal clearance	Ao	3.38±0.20
10	Pocket length nominal clearance	Bo	6.68±0.20
11	Pocket depth minimum clearance	Ko	1.32±0.20
12	Thickness of tape	T	0.23±0.1
13	10x sprocket hole pitch	10Po	40.0±0.20

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Dimensions in mm.  
For reel dimensions see Table 3.

HBK039

TAPE WEITH (mm)	A (mm)	N (mm)	C (mm)	W <sub>1</sub> (mm)	W <sub>2</sub> MAX. (mm)
12	180	60±1	13 <sup>+0.50</sup> / <sub>-0.20</sub>	12.4 <sup>+2.0</sup> / <sub>-0.0</sub>	18.4

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**Revision Control:**

Revision	Date	Content	Remark
1	Feb. 15, 2006	New Issued	
2	April. 18, 2006	Modification of dimension	
3	Oct. 4, 2006	Add description of antenna types in code nr.	
4	March, 2007	Add 3D radiation pattern and layout suggestion	

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