

**ANTENNA PRODUCTS**

# DATA SHEET

## 3216 Ceramic Chip Antenna for Bluetooth/WLAN Application

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	<b>3216 Ceramic Chip Antenna for Bluetooth/WLAN Application</b>			<b>CAN4311712002453K</b>			2005.4.4
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## 3216 Ceramic Chip Antenna for Bluetooth/WLAN Application

### Preliminary Product Specification

#### Quick Reference Data

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Centre Frequency	2.45 GHz* <sup>1</sup>
Bandwidth	at least 100 MHz* <sup>2</sup>
VSWR	2.5 (Max.)* <sup>2</sup>
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	3.1 dBi* <sup>2</sup>
Impedance	50Ω
Operating Temperature	-25~85 °C
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to soldering heats	260°C , 10sec.
Maximum Power	1W

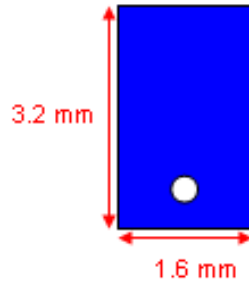
<sup>1</sup> All the technical data and information contained herein are subject to change without prior notice

<sup>2</sup> Testing under evaluation board of page2

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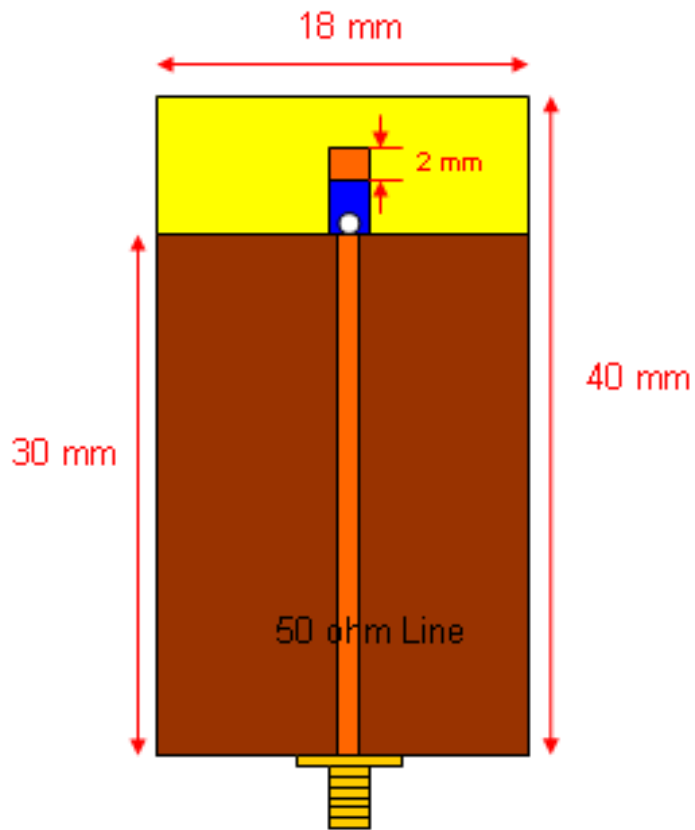
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**1. Mechanical Data (3.2 x 1.6 x 1.2 mm<sup>3</sup>)**



**Unit: mm**

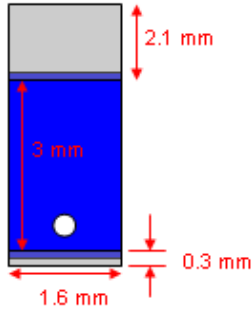
**2. Evaluation Board Dimension and Outlook**



**Unit: mm**

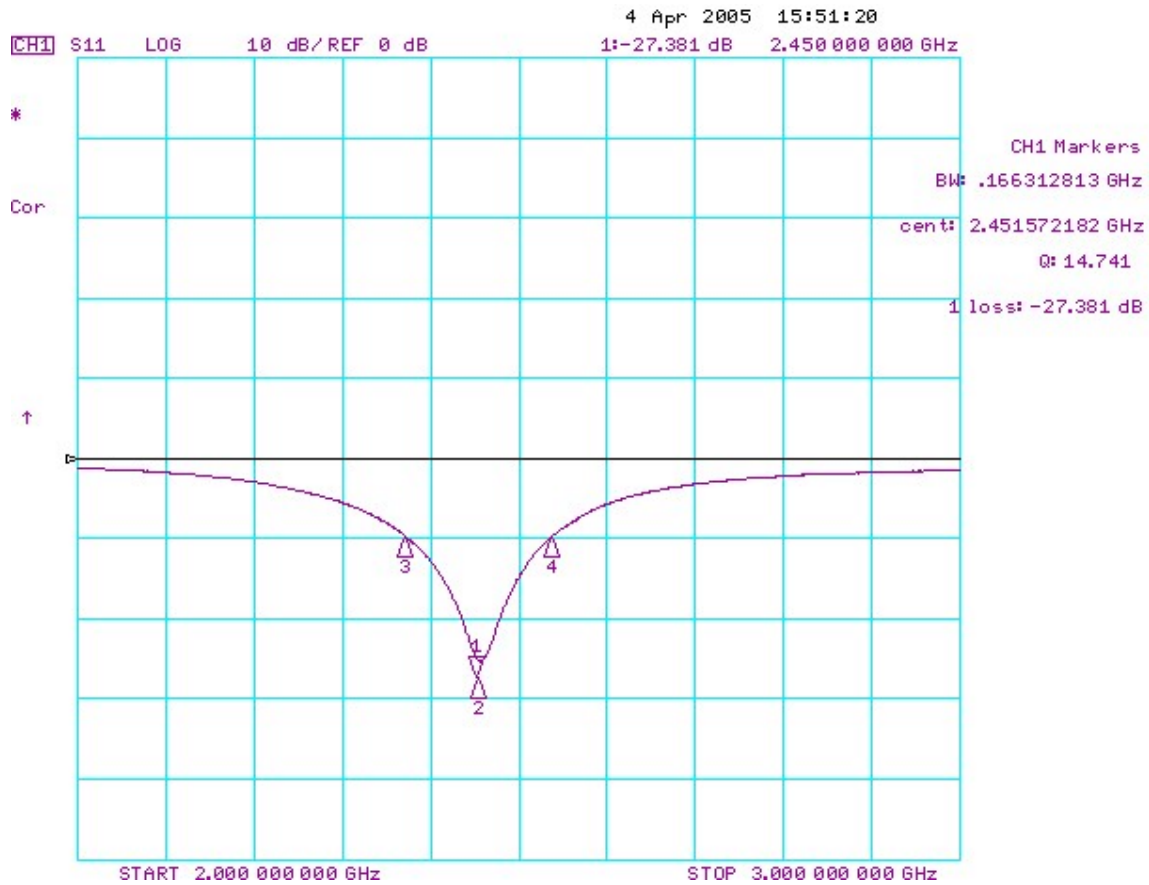
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### 3. Soldering Pads Dimension



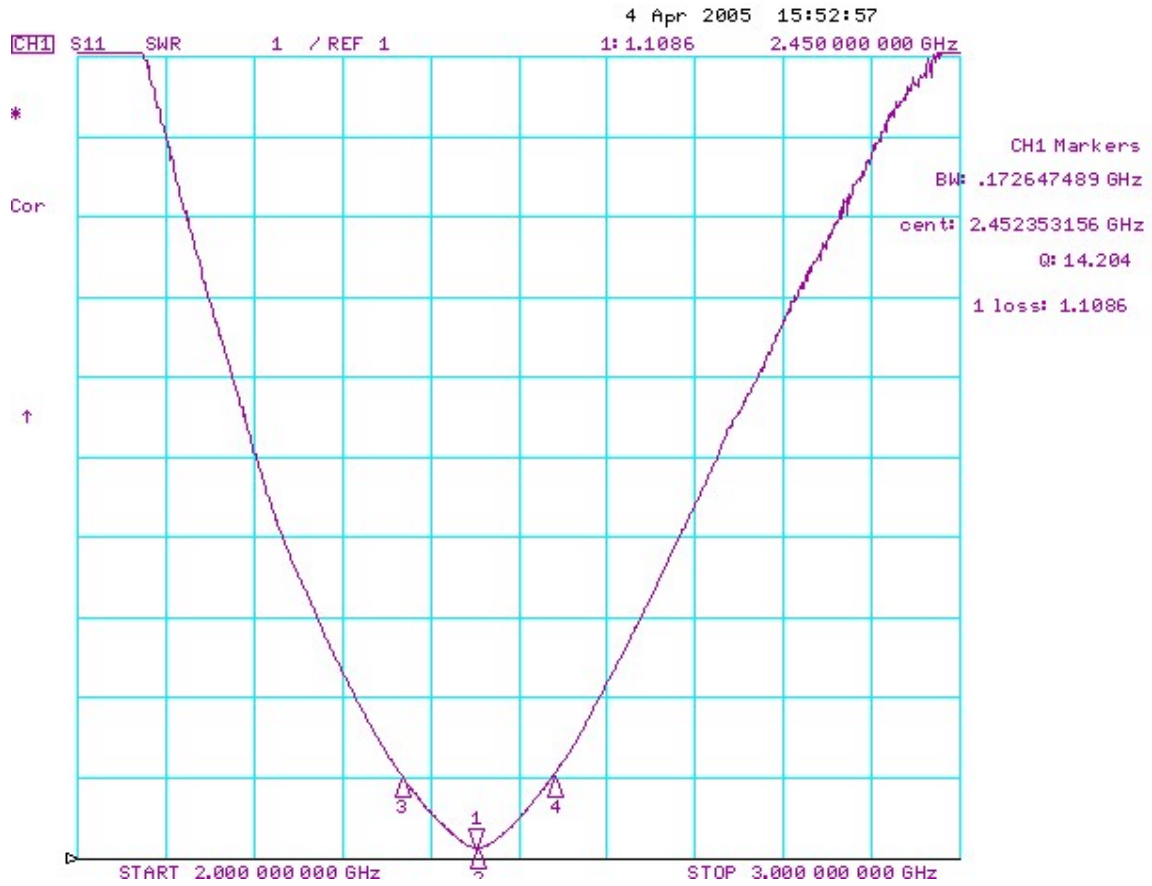
Unit: mm

### 4. Return Loss



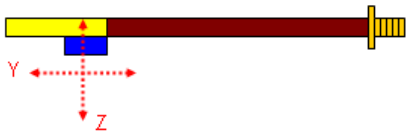
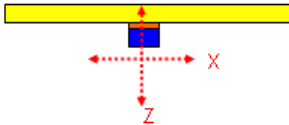
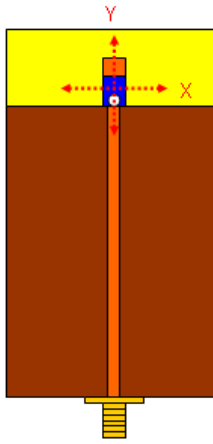
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## 5. VSWR



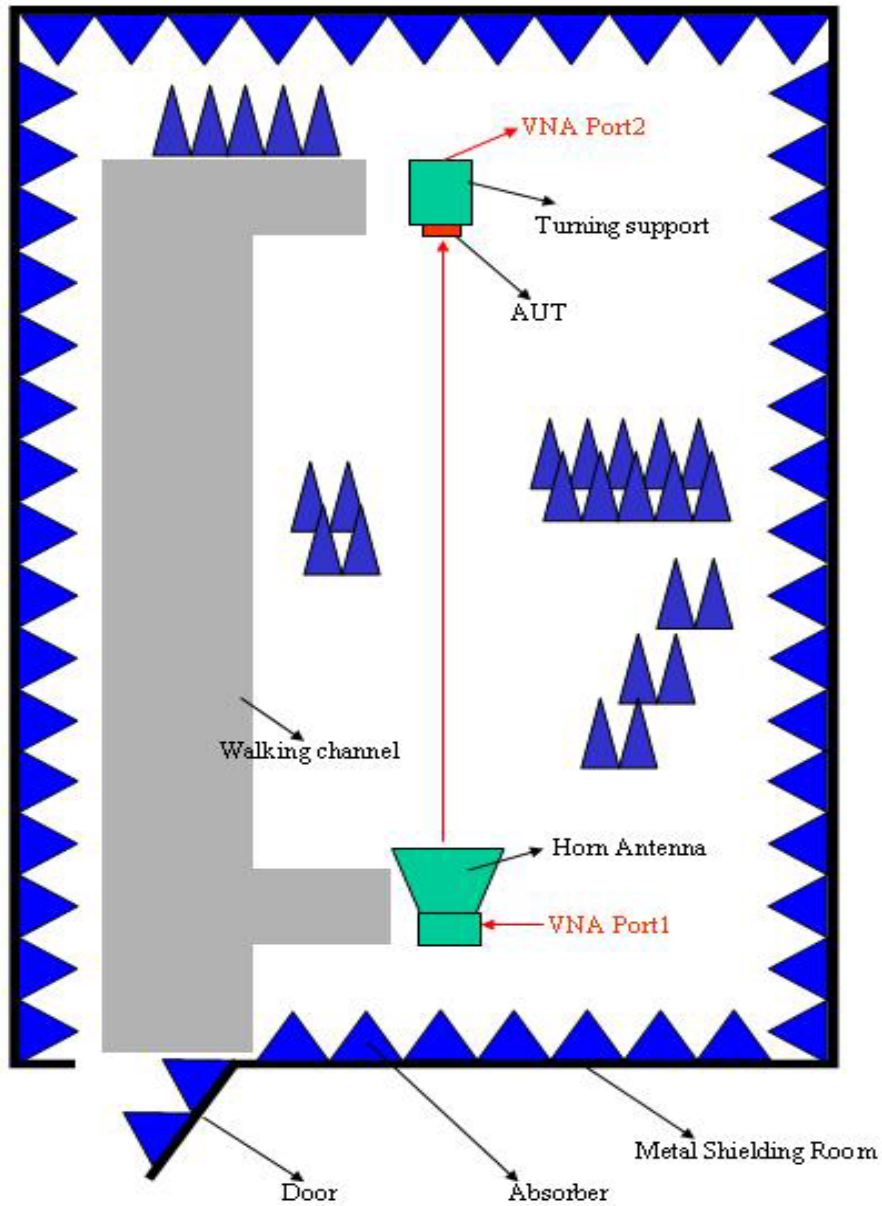
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## 6. The Definition of X-Y-Z Plane and Angle



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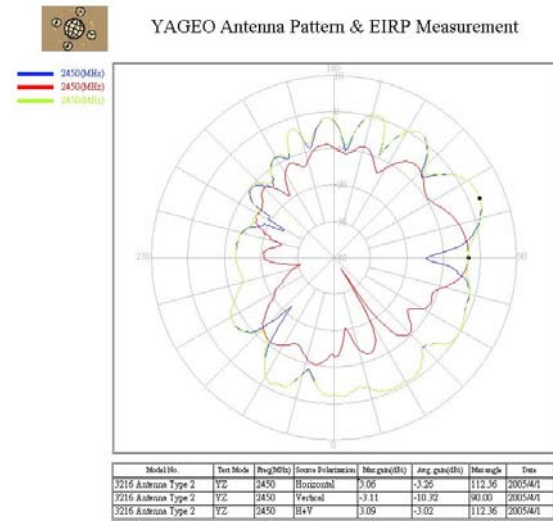
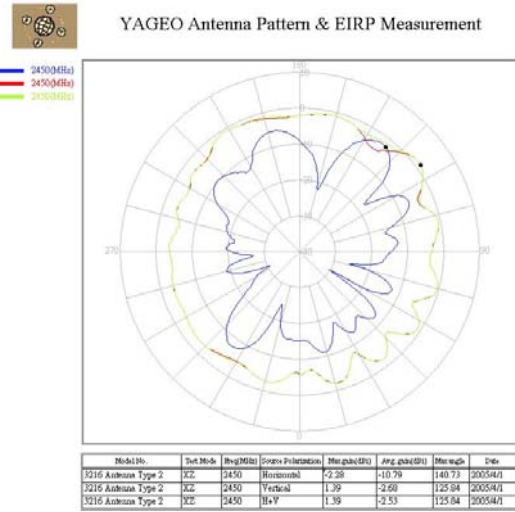
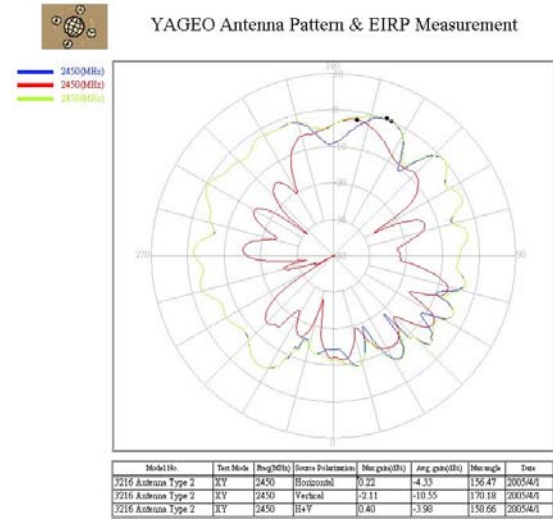
**7. The Environment of Antenna Radiation Pattern**  
**Anechoic Chamber Dimension=8(m) × 4(m) × 4(m)**



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## 8. Radiation Pattern

### 2450 MHz



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IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 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 (chip off 4mm)
4.6.1		Antenna	Central Frequency at 20 °C	Standard test board in page 4
4.8		Adhesion	A force of 3 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
			Conditions: bending 0.5 mm at a rate of 1mm/s, radius jig. 340 mm, 2mm warp on FR4 board of 90 mm length	No visible damage
4.10	20(Tb)	Resistance to soldering heat	260 $\pm$ 5 °C for 10 $\pm$ 0.5 s in a static solder bath	The terminations shall be well tinned after recovery and Central Freq. Change $\pm$ 6%
		Resistance to leaching	260 $\pm$ 5 °C for 30 $\pm$ 1 s in a static solder bath	Using visual enlargement of $\times 10$ , dissolution of the termination shall not exceed 10%

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IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.11	20(Ta)	Solderability	Zero hour test, and test after storage (20 to 24 months) in original atmosphere; un-mounted chips completely immersed for $2 \pm 0.5$ s in $235 \pm 5^\circ\text{C}$ .	The termination must be well tinned, at least 75% is well tinned at termination
4.12	4(Na)	Rapid change of temperature	$-25^\circ\text{C}$ (30 minutes) to $+85^\circ\text{C}$ (30 minutes); 100 cycles	No visible damage Central Freq. Change $\pm 6\%$
4.14	3(Ca)	Damp heat	$500 \pm 12$ hours at $60^\circ\text{C}$ ; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$
4.15		Endurance	$500 \pm 12$ hours at $85^\circ\text{C}$ ;	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$

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**Ordering Information**

The antennas may be ordered by using the Yageo ordering code. These code numbers can be determined by the following rules:

**CAN 43 11 7 12 00 245 3K**

**CAN** = Yageo Part No. for Antenna

Family Code

**43** = Antenna

Packing Type Code

**11** = 180 mm/ 7" reel , blister taping

Materials Code

**7** = High Frequency Material

Size Code

**11** = 3.2 \* 2.5

**12** = 3.2 \* 1.6

**13** = 2.5 \* 2.0

**14** = 2.0 \* 1.2

**15** = 1.6 \* 0.8

Tolerance

**00** = at least 200 MHz Impedance Bandwidth

Working Frequency

**245** = 2.45 GHz

Packing Type Code

**3K** = 3000 pcs for tape

<b>CAN4311712002453K (Clear Text Code Example)</b>						
CAN43	11	7	12	00	245	3K
Product	Pacing tape code	Material Code	Size	Tolerance	Working frequency	Packing
CAN= Ceramic Antenna	<b>11</b> = 180 mm/ 7" blister	<b>7</b> = High frequency material	3.2*1.6 mm	At least 200MHz Impedence Bandwidth	245 = 2.45GHz	3= 3 Kpcs K=7" plastic F =13" plastic B = Bulk

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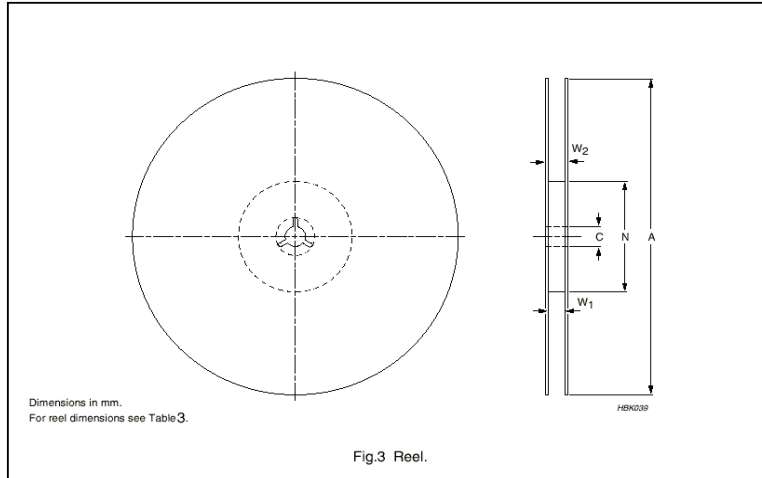
## Taping Blister Tape

### DIMENSION:

Serial no	Checking note	Index	Spec(mm)
1	Sprocket hole	Do	1.50±0.10
2	Pocket hole	D1	1.0±0.05
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±0.05
6	Tape width	W	12.0±0.30
7	Distance sprocket hole/outside	E	1.75±0.10
8	Distance sprocket hole/pocket	F	5.50±0.05
9	Pocket length	Ao	1.47±0.20
10	Pocket length	Bo	3.4±0.20
11	Pocket depth	Ko	1.8±0.20
12	Thickness of tape	T	0.279±0.02
13	10x sprocket hole pitch	10Po	40.0±0.20

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**7”(180mm) Reel Specifications**



Dimensions in mm.  
For reel dimensions see Table 3.

<b>TAPE WEITH (mm)</b>	<b>A (mm)</b>	<b>N (mm)</b>	<b>C (mm)</b>	<b>W<sub>1</sub> (mm)</b>	<b>W<sub>2</sub> MAX. (mm)</b>
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

**Revision Control:**

Revision	Date	Content	Remark
	4 <sup>th</sup> , April, 2005	New Issued	

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