SPECIFICATION
FOR
APPROVAL

MESSRS:

MODEL:

No.	Customer P/N	Kwang Sung P/N	Descriptions	ERP Code
1		KMA93A2450X-M01	Multi-layer Chip Antenna 1. Center frequency : 2450MHz 2. Gain : 2dBi max. 3. VSWR : 2:1 max. 4. Polarization : Linear 5. Azimuth Beam Pattern: Omni-directional 6. Impedance : 50 Ω	

DATE: 2007. 01. 10

承認 (APPROVAL)		
作成	檢討	承認
年	月	日

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관리번호:KS03QR0010-A

A4 (210x297)mm

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	REV	0
MULTILAYER CHIP ANTENNA	PAGE	1/10

PART NO	KMA93A2450X-M01
ERP CODE	

APPROVED	DRAWN	DESIGNED	CHECKED	APPROVED
	I.K. LEE	*S.H.NOH*		*J.S. JEON*
	Jan. / 10	Jan. / 10		Jan. / 10

CONTENTS.

1. Scope

This specification covers the characteristics of the multi-layer chip antenna for the cordless phone, Wireless-LAN and Bluetooth.

2. Part Numbering

KMA	93	A	2450	X	M01
①	②	③	④	⑤	⑥

1) Product ID.

Product ID	Full Name
KMA	Kwang-Sung Multi-layer Chip Antenna

2) Dimension. (L x W)

Code	Dimension (L x W)
93	9.0 mm x 3.0 mm
62	6.0 mm x 2.0 mm

3) Type.

Code	Type
A	A-type
B	B-type

4) Nominal Center Frequency.

Code	Center Frequency
2450	2450MHz

5) Material.

Code	Material
X	X200-W

6) Serial no.

Code	Symbol name
M01	Series number

3. Materials

3-1. Materials : Dielectric Ceramic.

3-2. Internal Electrode : Silver(Ag)

3-3. External Electrode : Ag/Ni/Au or Ag/Ni/Sn.

4. Electric Characteristics

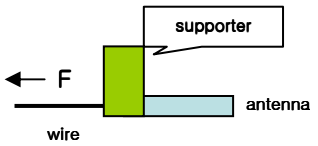
Characteristics	Specification
Nominal Center Frequency (fo)	2450MHz
Band Width	200 MHz min.
Gain	2dBi max. (at 25℃)
Polarization	Linear
V.S.W.R	2 : 1 max
Azimuth Beam Pattern	Omni-directional
Input / output impedance	50Ω
Measuring conditions	Equipment used : HP 8719ES
	Jigs used : Kwang-sung Standard Jig

※test condition : Temperature 25±2℃ Humidity 45~75%R

5. Environmental Characteristics

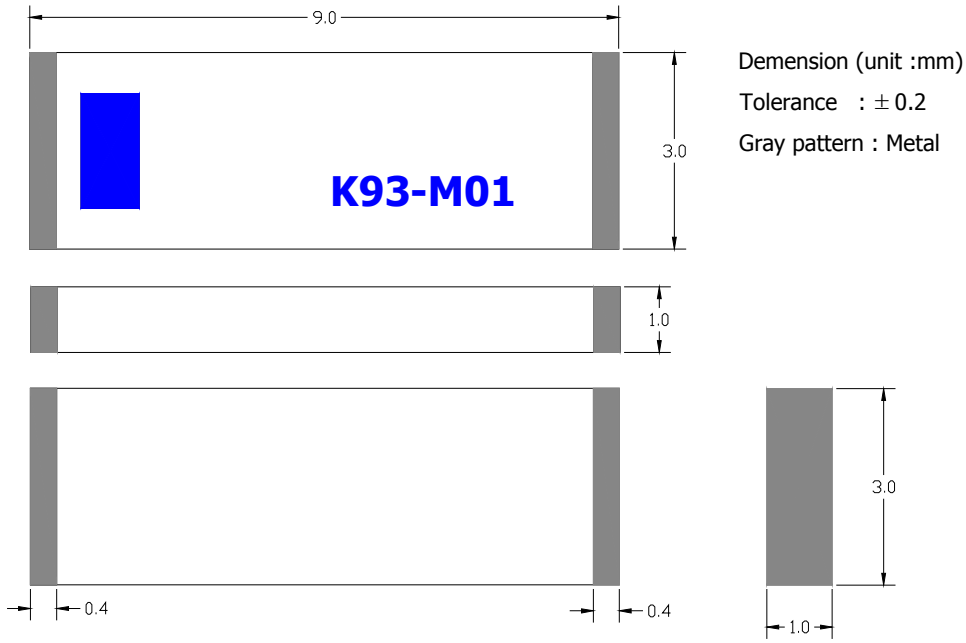
The device should satisfy the electrical characteristics specified in paragraph 4 after the following tests.
Measurements should be done after putting in the typical condition (20～30℃/ 55～75%RH) for 2hours minimum.

※**Test condition :** Temperature 25±2℃
Humidity 45～75%RH

Sub clause number and Test item		Condition of test	Performance requirements
5-1	Tensile strength	 Wire: 0.6~0.8 tined Cu wire	No visual damage and strength(F) > 4kgf
5-2	Heat Proof	Temperature 85±2℃for 96±2 hours Measure condition : left for 24hrs min. at room temp. (used KSE standard board)	No visual damage and Δf < 1.5% (Δf = | fi-fc | / fi) fi : center frequency of initial condition (room temp.) fc : center frequency after being cycled.
5-3	Cold Proof	Temperature -30±2℃for 96±2 hours Measure condition : left for 24hrs min. at room temp. (used KSE standard board)	No visual damage and Δf < 1.5% (Δf = | fi-fc | / fi) fi : center frequency of initial condition (room temp.) fc : center frequency after being cycled.
5-4	Moisture Proof	Temperature 40±2℃ Humidity95%RH for 96hours Measure condition : left for 24hrs min. at room temp. (used KSE standard board)	No visual damage and Δf < 1.5% (Δf = | fi-fc | / fi) fi : center frequency of initial condition (room temp.) fc : center frequency after being cycled.
5-5	Adhesive Strength of Termination	Applied force on SMD chip till detached point from PCB.	No mechanical damage and strength(F) > 7kgf
5-7	Solder Heat Proof	Re-flowed at 250±5℃ for 10±1seconds	More than 40% of the terminal electrode shall be covered with new solder.

6. Dimensions and Mechanical Specifications.

6-1. Dimensions



Demension (unit :mm)
Tolerance : ±0.2
Gray pattern : Metal

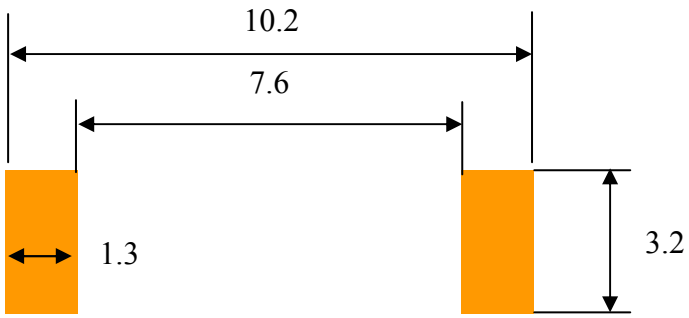
L=9.0, W=3.0, t=1.0

6-2. Mechanical Specifications.

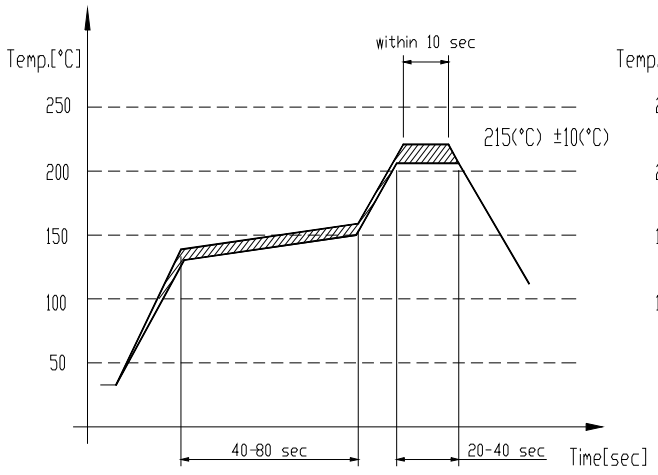
Items	Specification
Dimensions(L x W x H)	9.0 x 3.0 x 1.0 mm
Operating Temp.	-35 ~ +85 ℃
Internal Electrode	Ag
External Electrode	Ag/Ni/Au or Ag/Ni/Sn

7. Recommended Land Pattern

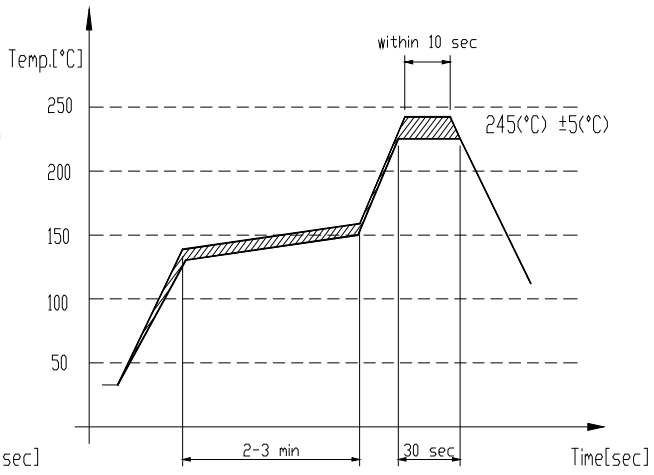
7-1. Land pattern. (Top View)



8. Reflow Soldering Standard Conditions.



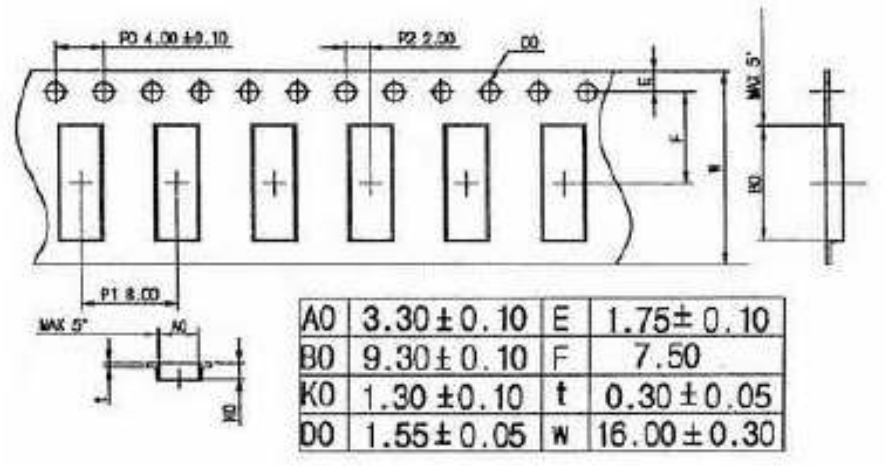
a) non Pb-free



b) Pb free

9. Package specifications

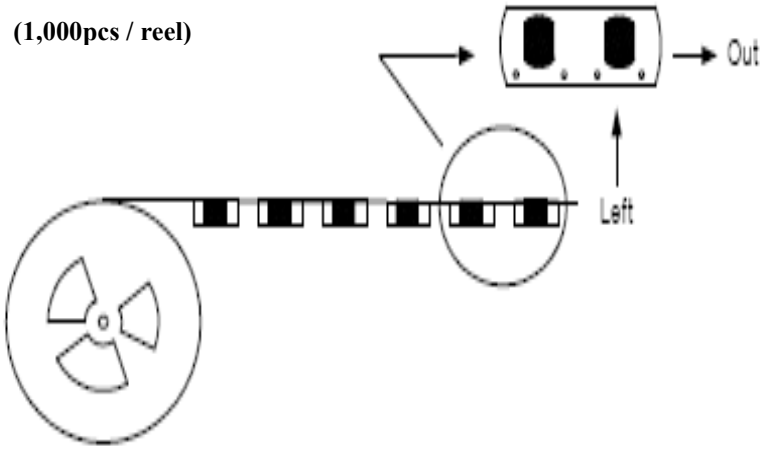
9-1. Dimensions of Carrier Tape (unit: mm)



A0	3.30±0.10	E	1.75±0.10
B0	9.30±0.10	F	7.50
K0	1.30±0.10	t	0.30±0.05
D0	1.55±0.05	W	16.00±0.30

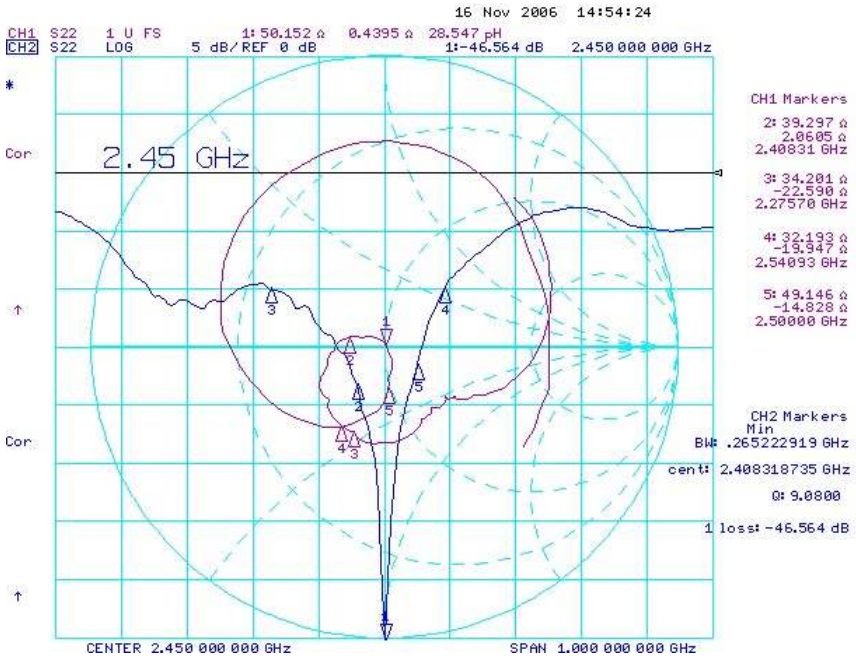
9-2. style of Reel

(1,000pcs / reel)

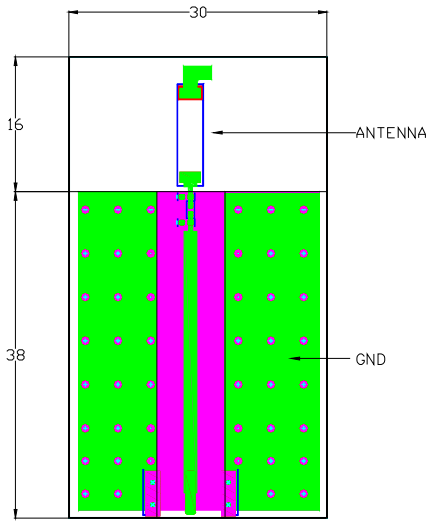


10. Frequency Characteristic.

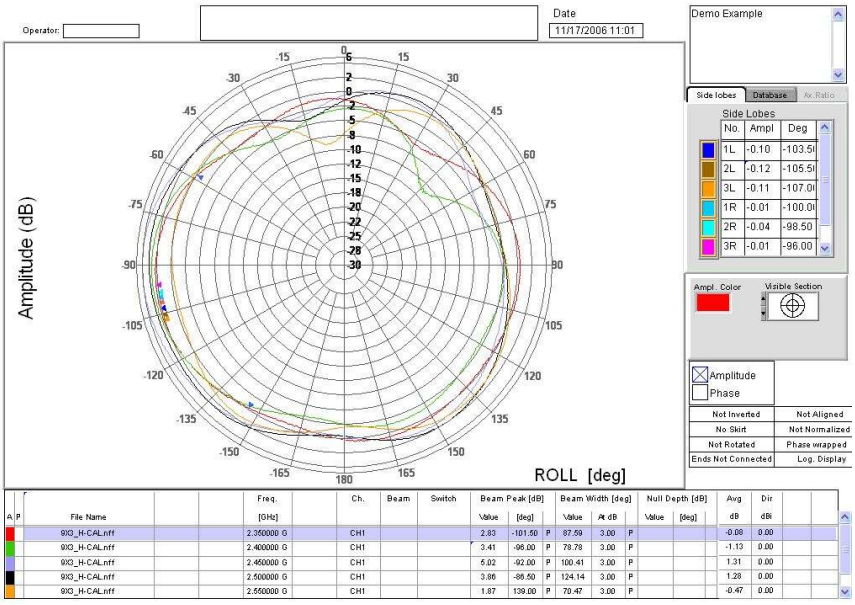
10-1. S11 (return loss and Smith chart)



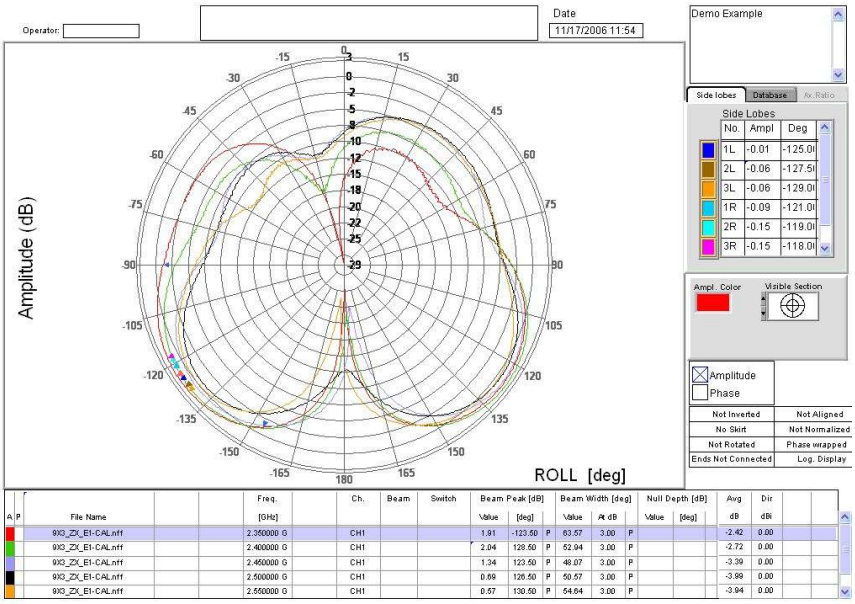
10-2. Bluetooth matching on the reference board



11. Radiation Characteristic.



a) Azimuth



b) Elevation