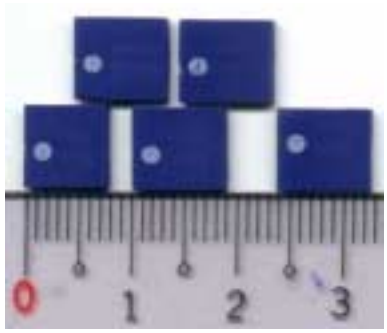
MULTILAYER CERAMIC ANTENNA
FOR BLUETOOTH/WLAN IEEE 802.11b & WLAN IEEE 802.11a (2.45/5.2GHz)
(Surface Mounted Ceramic Dual Band Antenna)

Product Specification[1] (Preliminary)

QUICK REFERENCE DATA

Dimension	8.7* 8 * 0.9 mm
Central Frequency*	2.45 GHz /5.2GHz
Bandwidth	>100 MHz
Gain*	0 dBi max
VSWR	2.5 max
Polarization	Linear
Azimuth	Omni-directional
Impedance	50Ω
Operating Temperature	-55~125 ^{O}C
Termination	Ni/Sn (Environmentally-Friendly Leadless)
Resistance to soldering heat	260^{O}C, 10 sec.
Maximum Power	1W



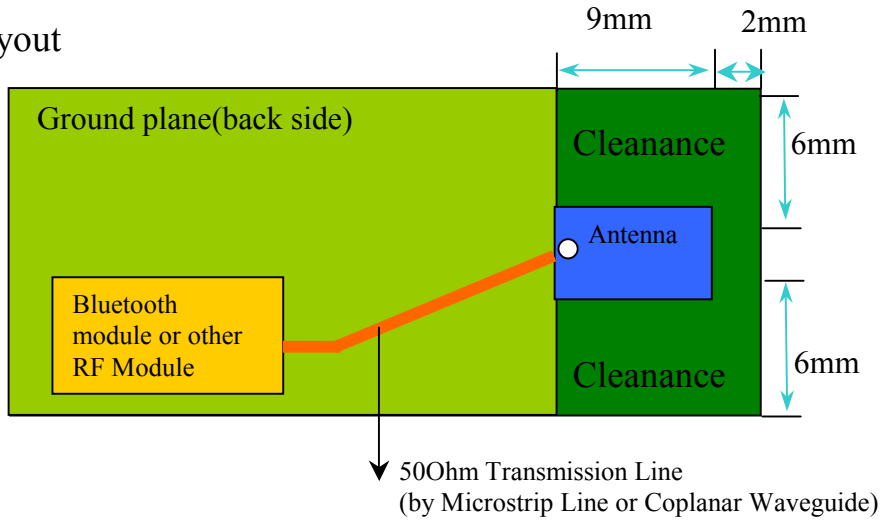
* Actual value will depend on size of customer ground plane

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

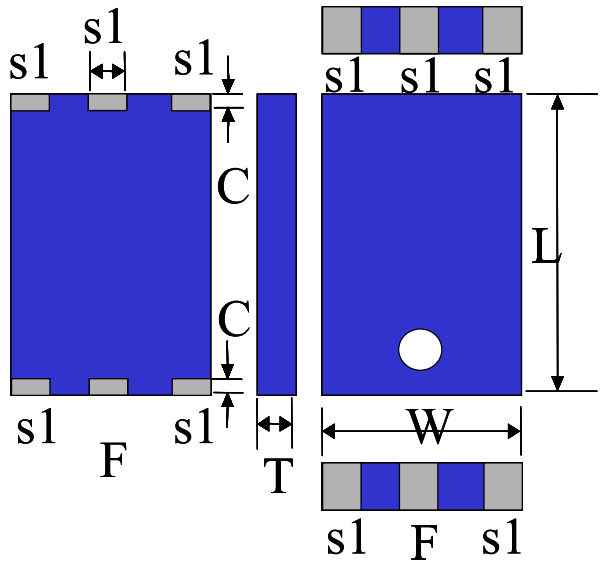
[1] All the technical data and information contained herein are subject to change without prior notice

APPLICATION

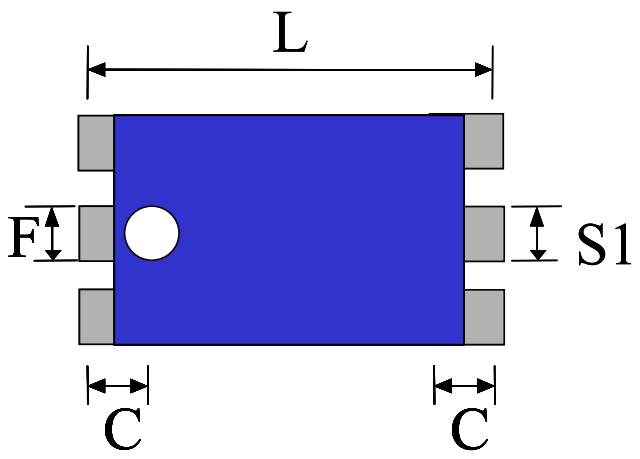
Suggested Layout



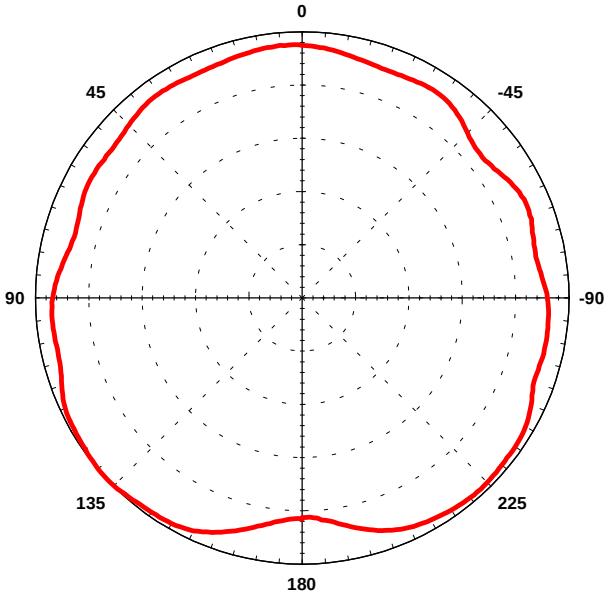
DIMENSIONAL DATA

Figure	Dimension		Port
	L	8.7 ±0.25 mm	-
	W	8 ±0.2 mm	-
	T	0.9 ±0.2 mm	-
	F	1.25 ±0.25 mm	Feed Termination
	C	0.5 ±0.3 mm	-
	S1	1.25 ±0.35 mm	NC Solder Termination

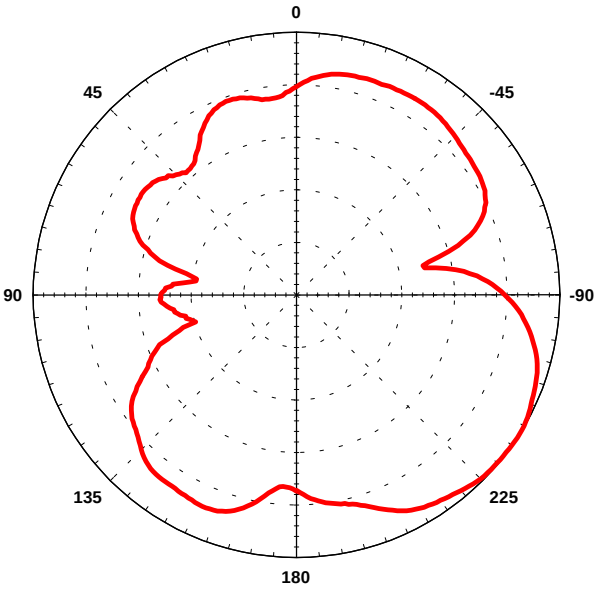
SOLDER LAND PATTERN

Figure	Dimensions		Remark
	L	10 ± 0.10 mm	
	F	1.40 ± 0.10 mm	Feed Pad
	C	0.90 ± 0.10 mm	
	S1	1.40 ± 0.10 mm	NC Mount Pad

Typical Radiation Pattern Polar Plot (Based on Suggested Layout)

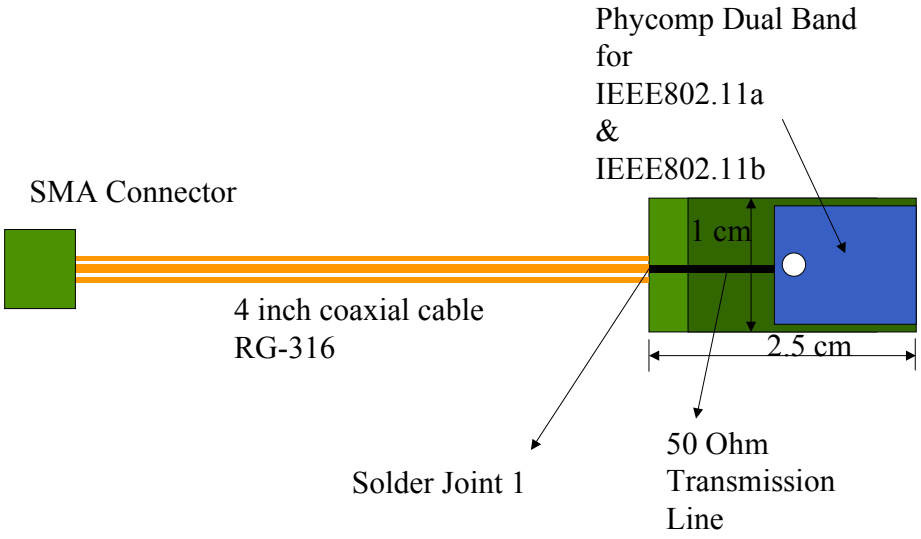


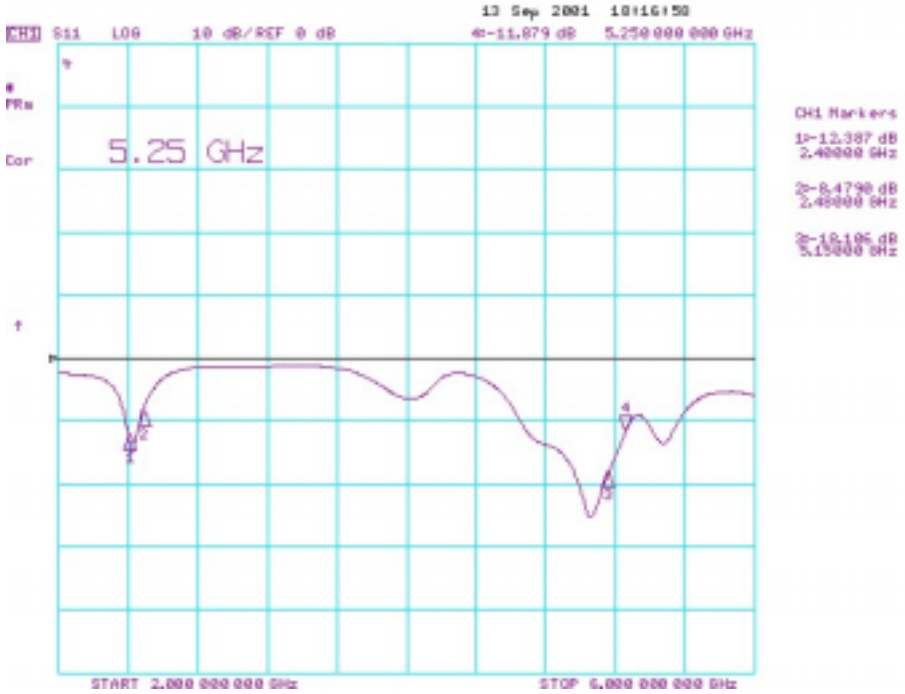
H-Plane



E-Plane

CUSTOMERIZED TEST BOARD FOR RETURN LOSS





HF R&D	Print date 01/12/13				Preliminary internal use only			
	Multilayer Ceramic Antenna for IEEE802.11a & IEEE802.11b			**4313 117 00252**			Sep. 13, 01	
Grant Lin/Cliff		2001-9-13		Page 4	sheet 190-4			A4
spec.doc	Phycomp Taiwan Ltd.							

RELIABILITY DATA (Reference to IEC Specification)

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 × 10 magnification	In accordance with specification (chip off 4mm)
4.6.1		Antenna	Frequency = 2.45/5.2 GHz; at 20 ^{o}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

IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.10	20(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 10%
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 ± 0.5 s in 235 ± 5°C.	The termination must be well tinned, at least 75% is well tinned at termination
4.12	4(Na)	Rapid change of temperature	-55 °C (30 minutes) to +125 °C (30 minutes); 100 cycles	No visible damage Central Freq. Change ± 6%
4.14	3(Ca)	Damp heat	500 ± 12 hours at 60 °C; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change ± 6%
4.15		Endurance	500 ± 12 hours at 125 °C;	No visible damage 2 hours recovery Central Freq. Change ± 6%

ORDERING INFORMATION: Method I- by 12NC Ordering Code

The antennas may be ordered by using the 12 NC ordering code. These code numbers can be determined by the following rules:

4313 1 17 00 252
F C M S T A

F. Family Code
43 = Antenna

C. Packing Type Code
13 = 180 mm/ 7" blister (1000pcs)

M. Materials Code
1 = High Frequency Material

S. Size Code
17 = 8.7 * 8 * 0.9 mm

T. Tolerance
00 = 100 M Hz Band Width

A. Working Frequency
252 = 2.45/5.2 GHz Dual Band

Example: 12NC 4313 117 00252
Product description: Antenna (43) by 180 mm blister (11) of High Frequency Material (1), Size 8.7*8*0.9 mm (17);
Tolerance (00) of 100 MHz (VSWR<2.5)
Working Frequency (252) = 2.45/5.2G Hz Dual Band

ORDERING INFORMATION: Method II- by Clear Text Code

The antennas may be ordered by using the 16-digit clear text ordering code. These code numbers can be determined by the following rules:

AN2520000708081K (Clear Text Code Example)						
AN	2520	00	07	0808	1	K
Product	Central Freq.	Bandwidth	Material	Size	Quantities	Packing
AN= Antenna	2520=2.45GHz + 5.2GHz	00= >100MHz	07=K7	0808=8.7*8* 0.9 mm	1 = 1K 4 = 4K	K=7" plastic