

# **MD1506**

## **Multilayer Chip Antenna for Extra Wide Band (Preliminary Information)**

## MD1506-12N Multilayer Chip Antenna

### ◆ Features

- Size : 14.7mm(L)X6.5mm(W)X1.6mm(H)
  - Light weight and low profile
  - Omni-directional in azimuth
- Lead (Pb) Free

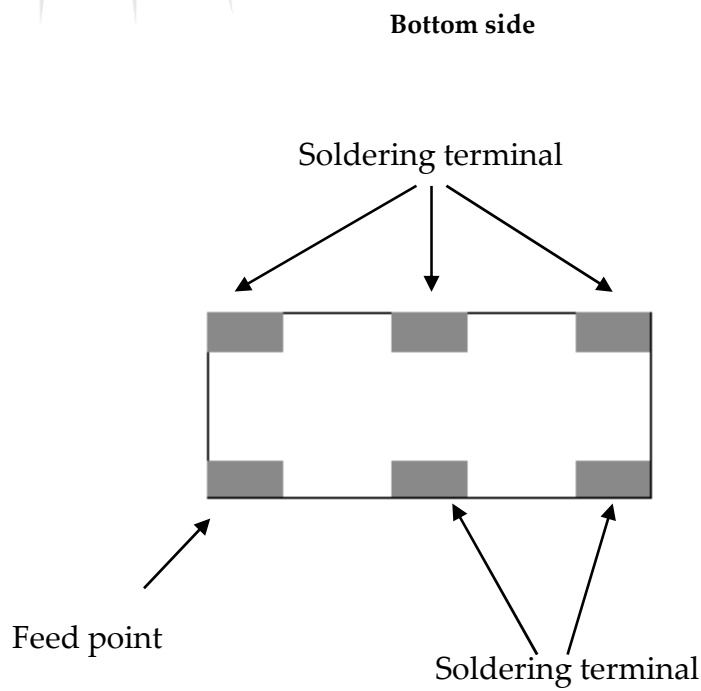
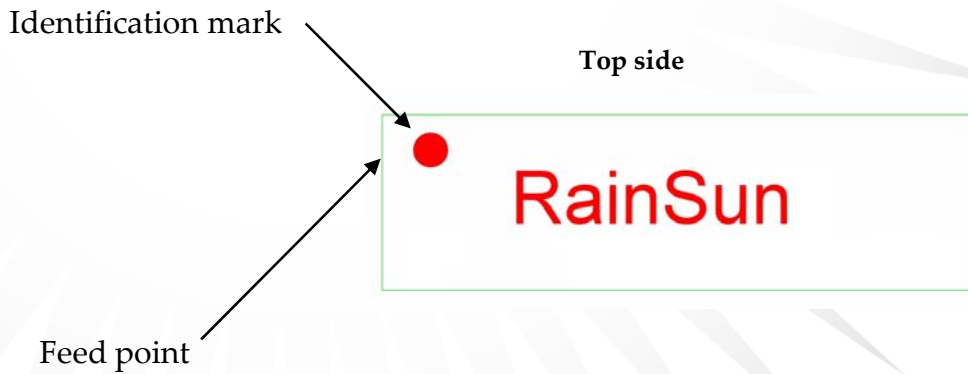
### ◆ Applications

- Broad Band wireless communications
- GSM/DCS of 890-960, 1710-1880 MHz
- CDMA/PCS of 825-894, 1820-1990 MHz

### Specifications

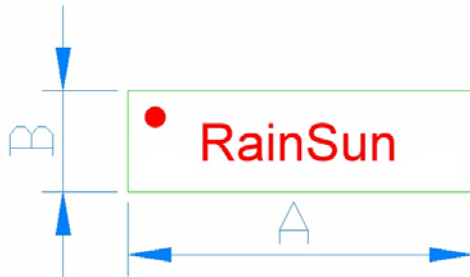
Frequency range	820~1950MHz
Peak gain	-0.3 dBi
Operation temperature	-40 ~ +85 °C
Storage temperature	-40 ~ +100 °C
VSWR	2.5 (Max)
Input Impedance	50 Ohm
Power handling	5W (Max)
Bandwidth	1130MHz (typ.)
Azimuth beam width	Omni-directional
Polarization	Linear
Soldering pad	Natural tin

## Pin configuration

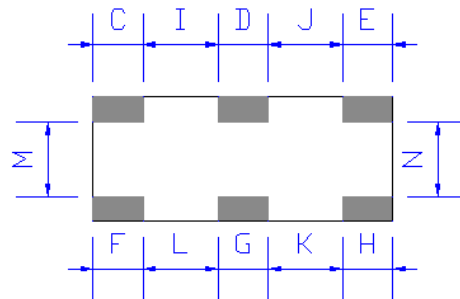


# Dimensions

Top view

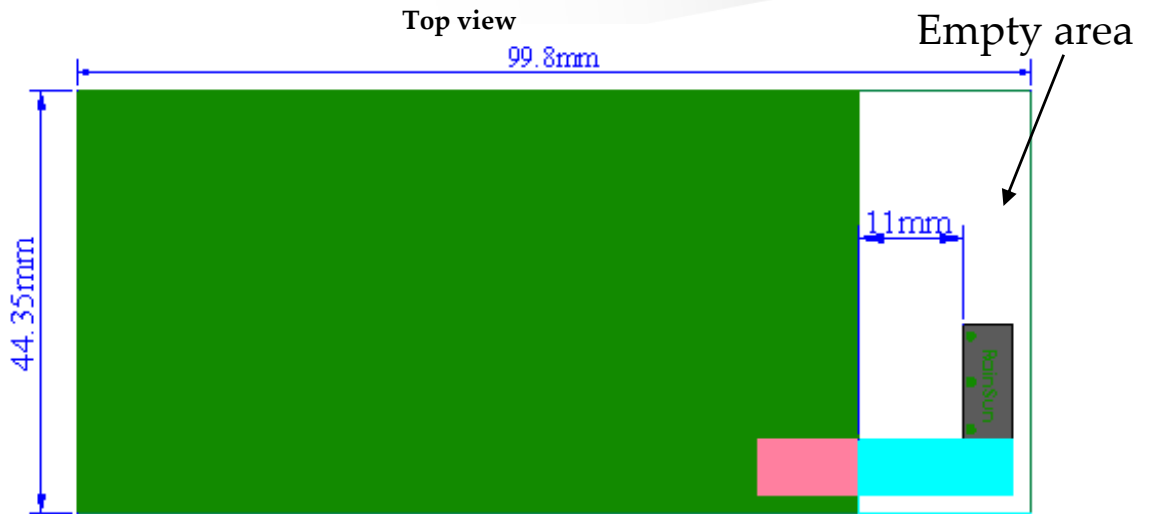


Bottom view



Symbol	Dimensions (mm)
A	$14.7 \pm 0.3$
B	$6.0 \pm 0.1$
C	$3.8 \pm 0.1$
D	$3.1 \pm 0.1$
E	$3.8 \pm 0.1$
F	$3.8 \pm 0.1$
G	$3.1 \pm 0.1$
H	$3.8 \pm 0.1$
I	$2.0 \pm 0.1$
J	$2.0 \pm 0.1$
K	$1.9 \pm 0.1$
L	$1.9 \pm 0.1$
M	$1.8 \pm 0.1$
N	$1.8 \pm 0.1$

# Recommended Test Board Pattern

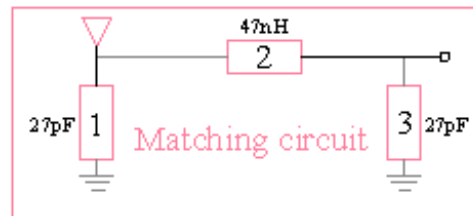


- GND plane
- Matching circuit
- 50 Ohm feeding line

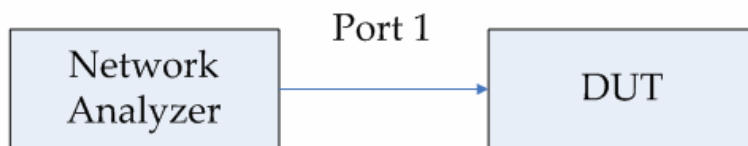
Unit : mm

Board thickness : 0.8mm  
Board material : FR4

**Fig-1**



## Testing Setup



## Measurement



### Testing Instrument:

Anritsu 37369C VNA( Vector Network Analyzer)

VNA calibrate with 1 path reflection only calibration sequence on test board feed point.

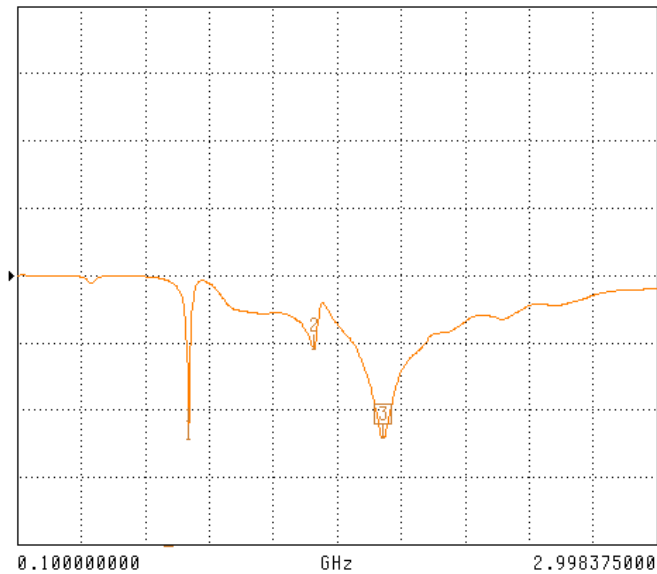
The test board dimension and it's layout is the same as Fig-1.

# Typical Electrical Characteristics

## Return loss

S11 FORWARD REFLECTION

POWER OUT REF=0.000 dBm 10.000 dB/DIV



CH 1 - S11  
0.0000 mm REF  
0.000 dB OFFSET  
0.00° OFFSET

MARKER 3  
1.759375000 GHz  
-24.100 dBm

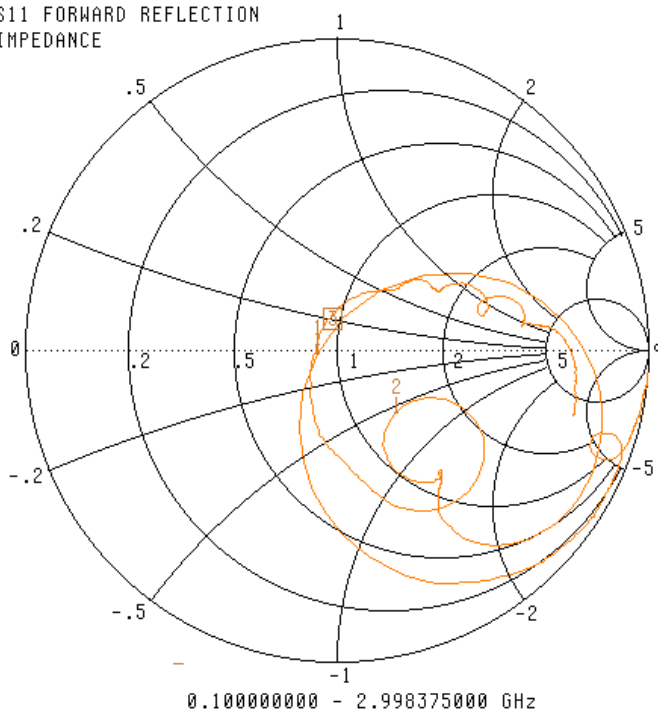
MARKER TO MAX  
▶ MARKER TO MIN

- 1 0.878062500 GHz  
-24.371 dBm
- 2 1.445937500 GHz  
-11.001 dBm

MARKER READOUT  
FUNCTIONS

## Smith Chart

S11 FORWARD REFLECTION  
IMPEDANCE



CH 1 - S11  
0.0000 mm REF  
0.000 dB OFFSET  
0.00° OFFSET

MARKER 3  
1.759375000 GHz  
44.271 Ω  
1.323 jΩ

MARKER TO MAX  
▶ MARKER TO MIN

- 1 0.878062500 GHz  
44.442 Ω  
-1.310 jΩ
- 2 1.445937500 GHz  
66.975 Ω  
-29.449 jΩ

MARKER READOUT  
FUNCTIONS