



Features

- Small and lightweight
- No tuning components
- Available in tape and reel or tray packing for automatic mounting

Electrical

Frequency Range	2400 – 2500 MHz
Peak Gain ⁽¹⁾	0 dBi
VSWR ⁽¹⁾	less than 2.0:1
Polarization	linear
Azimuth Beamwidth	omnidirectional
Power Handling	10 Watt cw
Feed Point Impedance	50 Ohms unbalanced

Note (1) Figures dependent on ground plane size

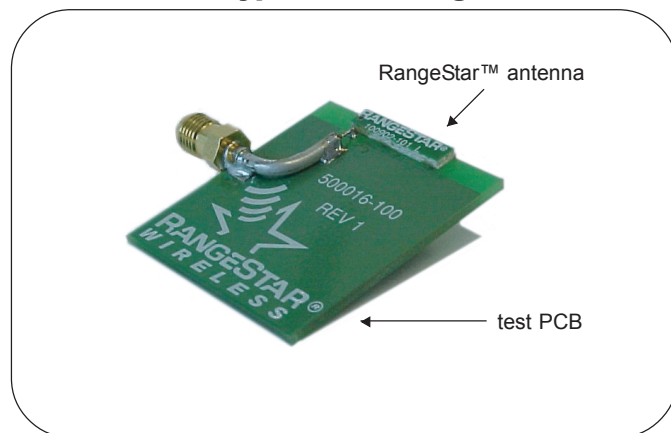
Mechanical

Size	18.2 x 3.9 x 1.6 mm
Weight	less than 1 g
Mounting	surface mount technology

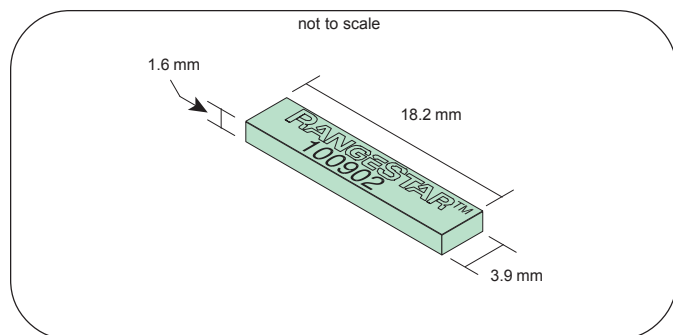
Ultima™ Series Antennas

This small embedded antenna provides the most reliable, easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers.

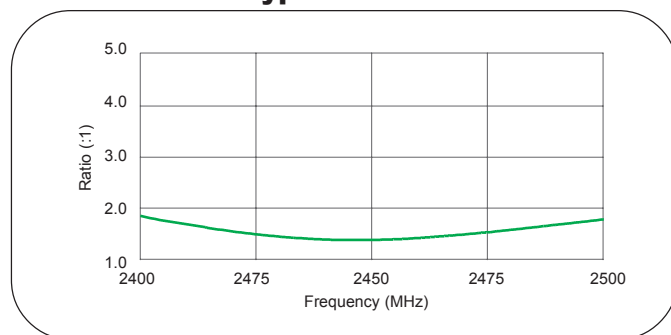
Typical Mounting



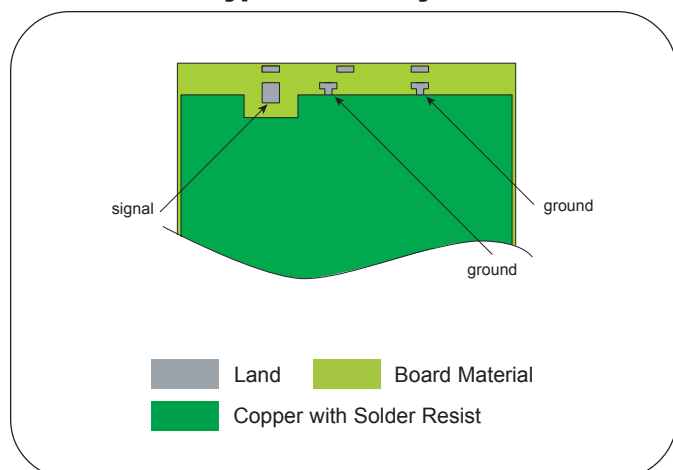
Dimensions



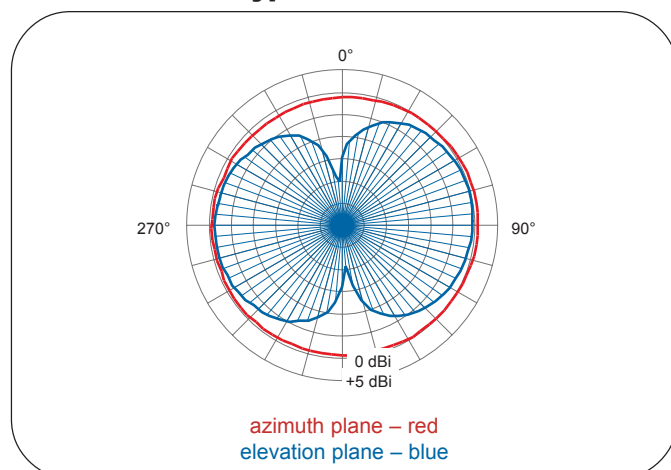
Typical VSWR



Typical Pad Layout



Typical Pattern



4

3

2

1

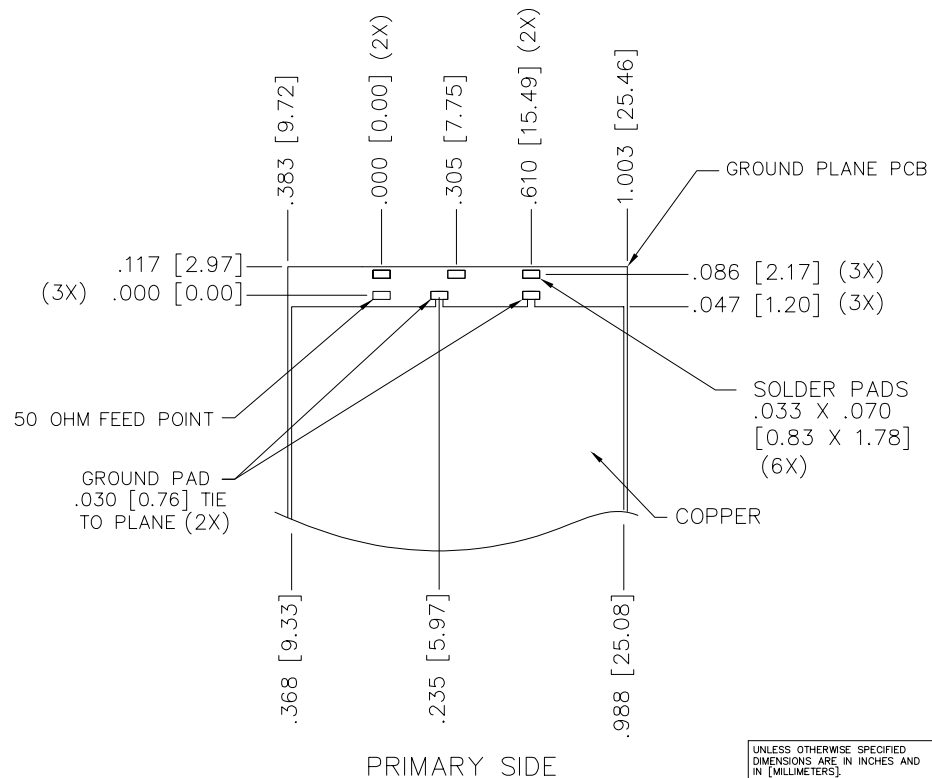
D

C

B

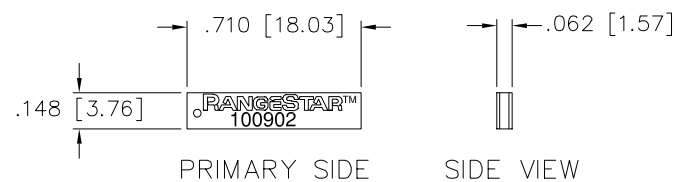
A

SUGGESTED PCB PAD LAYOUT FOR GROUND PLANE



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	ENG REL	3/31/00	
2	REVISED	4/5/00	
A	PROD REL PER ECO#150	7/5/00	
B	REVISED PER ECO#164	10/10/00	

ANTENNA (REF)



NOTE - SOLDER PADS ARE ON THE SECONDARY SIDE OF ANTENNA

D

C

B

A

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	2.4GHz ISM
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES AND
IN [MILLIMETERS]
TOLERANCES ARE:
INCHES .XX± .01 ± [.25]
.XXX± .005 ± [.127]

MATERIAL

SEE NOTES

FINISH

SEE NOTES

DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN R JONEZ	6/19/00
CHECK	
ENG	
MKTNG	
ISSUED	



RANGESTAR WIRELESS™

9565 SOQUEL DRIVE
APTOS, CALIFORNIA 95003DATA SHEET, 2.4GHz,
ISM BAND BLUETOOTH ANT.

SIZE B	DWG. NO. 100902-300	REV B
SCALE NONE	SHEET 1 of 1	

4

3

2

1

SPECIFICATIONS:

ANTENNA TYPE: OMNIDIRECTIONAL, MONOPOLE ANTENNA

1. ELECTRICAL CHARACTERISTICS:

- 1-1 **LOW LEVEL CONTACT RESISTANCE:** 20 mini- ohms Max..
- 1-2 **PRODUCT VSWR IN 2.4 GHZ TO 2.5 GHZ IN FREE AIR :** 2.0 Max..
- 1-3 **INSULATION RESISTANCE :** 5000 M ohms Min.
- 1-4 **DIELECTRIC WITHSTANDING VOLTAGE :** 500 VAC
- 1-5 **IMPEDANCE :** 50 ohms.
- 1-6 **CONNECTOR VSWR :** 1.5 Max..
- 1-7 **PRODUCT AVERAGE GAIN IN 2.4 TO 2.5 GHZ IN FREE AIR :** -9.0 TO -11.0 dB

2. MECHANICAL CHARACTERISTICS:

- 2-1 **MECHANICAL SHOCK :** No discontinuity > 1 μ s per Method EIA-364-27B.
- 2-2 **VIBRATION:** No discontinuity > 1 μ s per Method EIA-364-28D, Condition V, letter D.
- 2-3 **DURABILITY :** 500 cycles.
- 2-4 **FERRITE RETENTION FORCE :** 10 kg Min..
- 2-5 **CONNECTOR CRIMP FORCE :** 3 kg Min..

3. ENVIRONMENTAL CHARACTERISTICS:

- 3-1 **OPERATING TEMPERATURE:** -40°C TO +125°C
- 3-2 **TEMPERATURE LIFE:** Subject mated samples at 105 $\pm$ 3°C for 1000 hours per Method EIA-364-17B.
- 3-3 **TEMPERATURE HUMIDITY CYCLING:** Subject mated samples to 10 cycles between 25 to 65°C at 95% RH for 240 hours per Method EIA-364-31A, Method III and Condition C unpowered, omitting sub-cycle 7b.
- 3-4 **THERMAL SHOCK:** Subject mated samples to 5 cycles between -40 to 125°C per Method EIA-364-32.



X1	SMKTB18-11108	H.C.YU
REV	ECN.NO.	APPD.

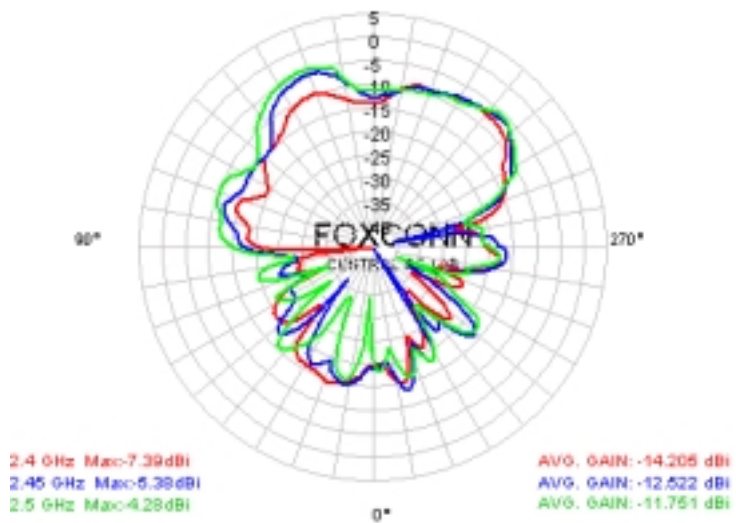
FOXCONN HON HAI PRECISION INDUSTRY CO.,LTD. TAIPEI TAIWAN R.O.C.

TITLE: IEEE 802.11B WHIP WIRELESS ANTENNA		APPD: H.C.YU 11/26/01	
		CHKD: H.C.YU 11/26/01	
PROD.NO.:	2RAN005-00 2RAN005-01 2RAN005-02	DR.: H.L.HSIAO 11/23/01	
DWG. NO.: 389-0000-025		REV.:x1	SHEET: 1 OF 1

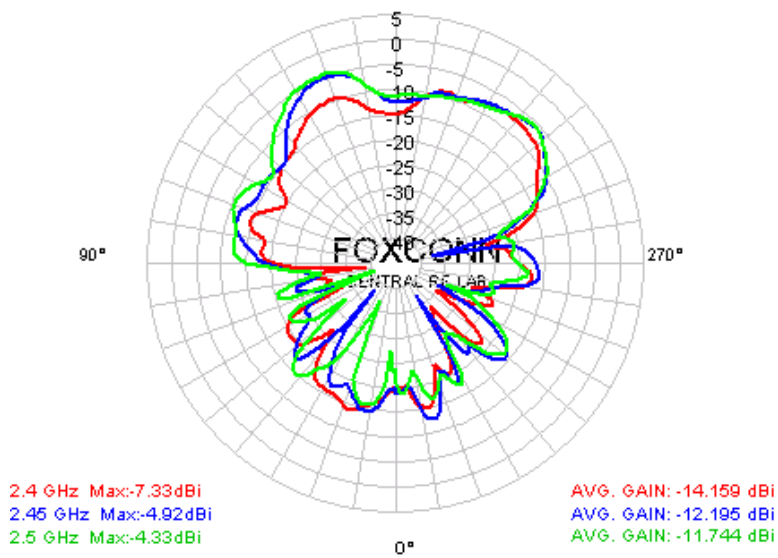
Samples of Rickshaw B with -4.0 dB gain

Radiation pattern in desktop

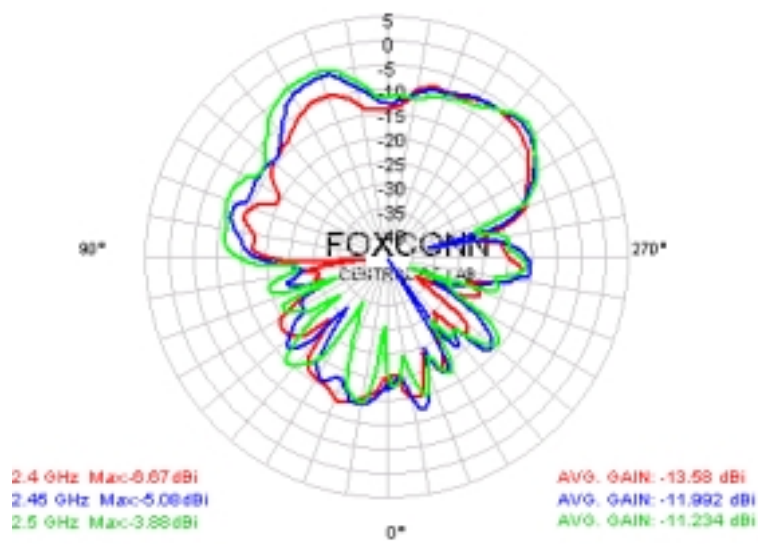
Sample 1



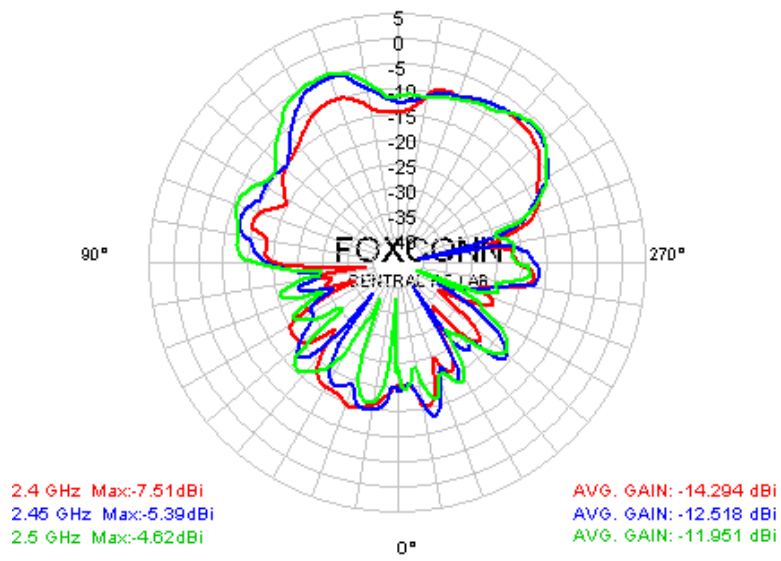
Sample 2



Sample 3



Sample 4



Sample 5

