

33.30T01.001

33.30T02.001

**SmartAnt Internal Antennas
for
WP120 webpad**

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1. Introduction

1.1 Features

Designed for IEEE 802.11b wireless-LAN.

The antennas are designed in 2.4~2.5 GHz for ISM band use.

Special design for Embedded use.

According the WP120 structure and available design size, the antennas are special designed for this environment.

Ultra-Fine Teflon coaxial cable and connector.

HRS connector U.FL series

HRS Teflon coaxial cable =1.13 mm

Space diversity

These two antennas are arrayed in different space to accomplish diversified radiation pattern.

1.2 Application

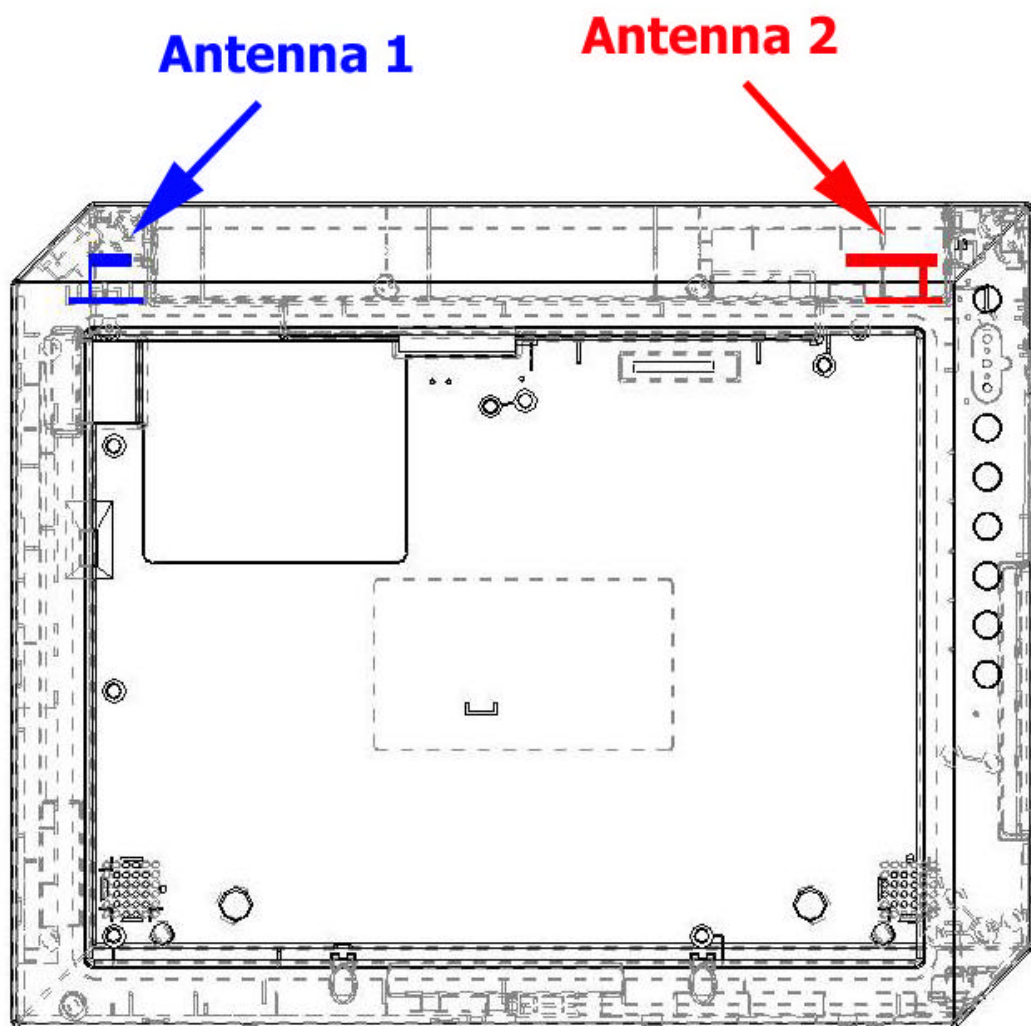
Use for WP120 system only

The antennas are special design for WP120 Webpad.

2. Antenna Dimension & Placement

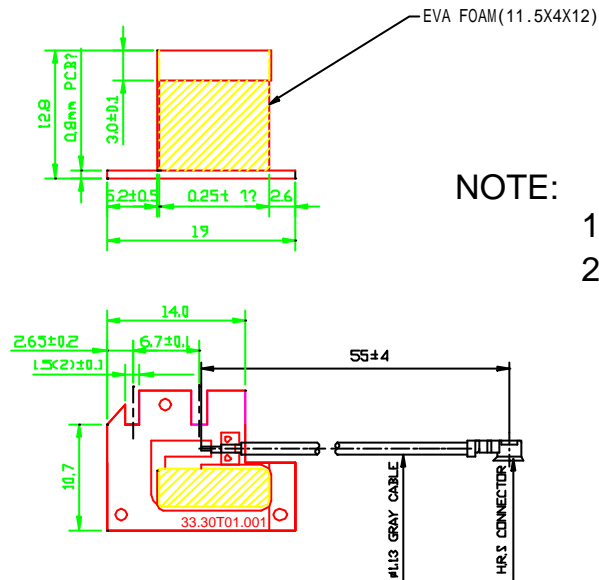
2.1 Placement

Antenna are set in the up side of WP120 , as below



2.2 Dimension & material

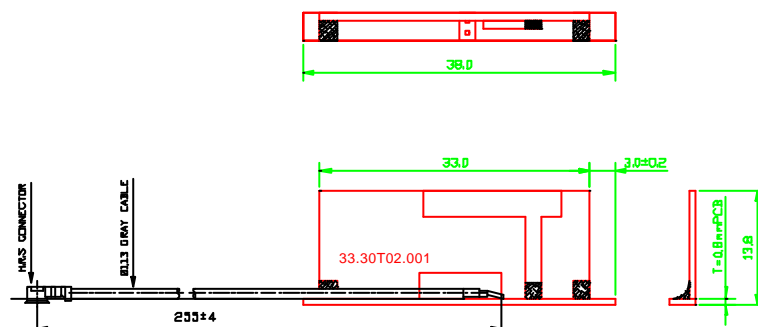
Antenna 1 (left-side antenna)



NOTE:

1. 未標示公差為 ± 0.3
2. 材質為 0.25mm 白銅

Antenna 2 (right-side antenna)



NOTE:

1. 未標示公差為 ± 0.3
2. 表示為焊點
3. 材質為 0.8mm PCB板

3.Product Specification

3.1 Electrical Specification

Frequency	2.4GHz~2.5GHz
VSWR	2.0 max
Power	1W max
Input Impedance	50 ohm
Average Gain	>-5dBi

3.2 Environmental Specification

Temperature	-10 ⁰ C~55 ⁰ C
Humidity	95

4. Antenna Test

4.1 Test Equipments & Methods

4.1.1 Equipments

Network Analyzer

HP 8722D 30kHz ~ 40 GHz

Standard gain horn

EMCO Model 3115 Double Ridged Guide Antenna 1GHz ~ 18 GHz

Anechoic Chamber

Test software

Antcom NFH003 (5'x5'x5') Hybrid Near-field System

450 MHz – 40 GHz

7 axes scanner system

Planar, cylindrical, and spherical scanning
measurement

Size

3.5 x 3.5 x 4.5 m³

Specimens

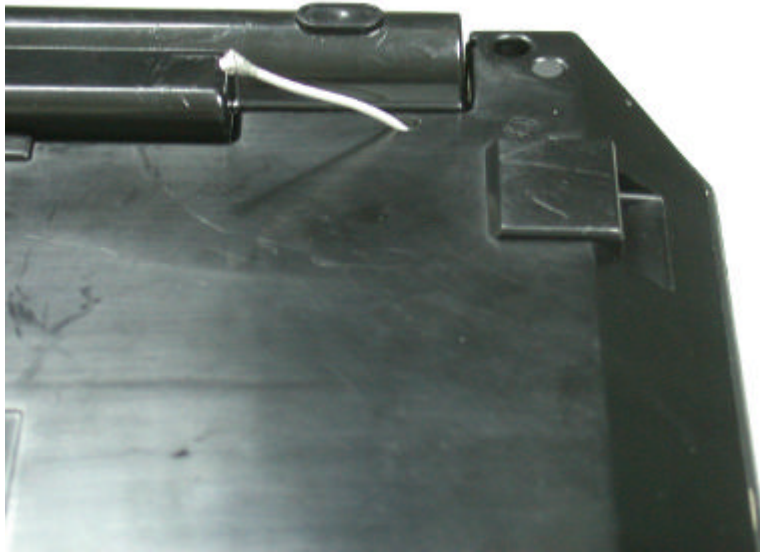
1. SmartAnt internal Antenna (Left Side Antenna)
2. SmartAnt internal Antenna (Right Side Antenna)

4.1.1 Test Methods

Left Antenna

Pull the cable though back-side of WP120 when test execute.

As below figure



Right Antenna

Pull the cable though Left-side of WP120 when test execute.

As below figure



4.2 VSWR Test

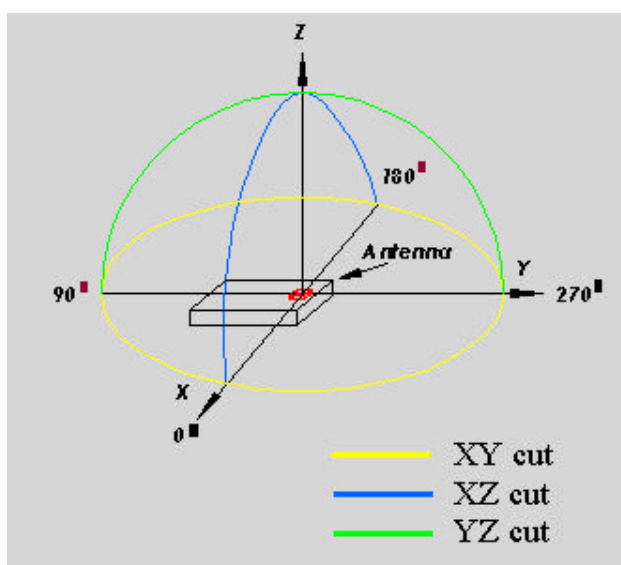
Antenna 1 (Left Antenna)

Frequency \ VSWR	2.4GHz	2.45GHz	2.5GHz
VSWR	1.07	1.13	1.27

Antenna 2 (Right Antenna)

Frequency \ VSWR	2.4GHz	2.45GHz	2.5GHz
VSWR	1.17	1.41	1.47

4.3 Pattern & Gain Test



Test configuration

Far-field test with scan in two orthogonal cut (XY, YZ) as the figure.

Average Gain Test

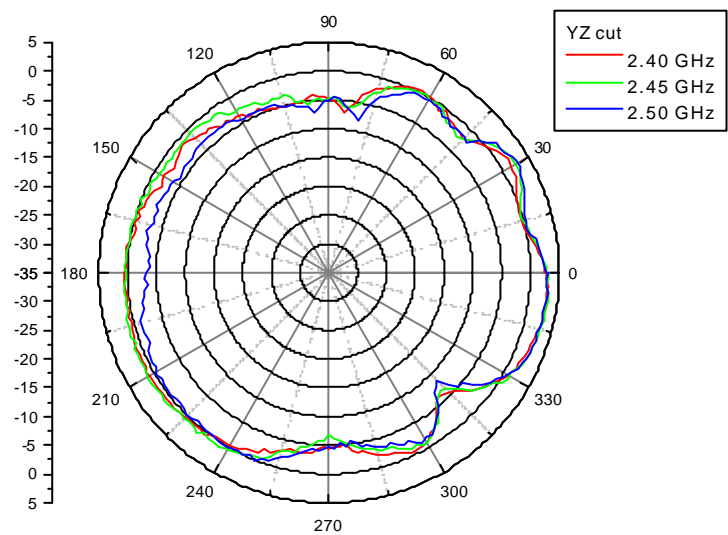
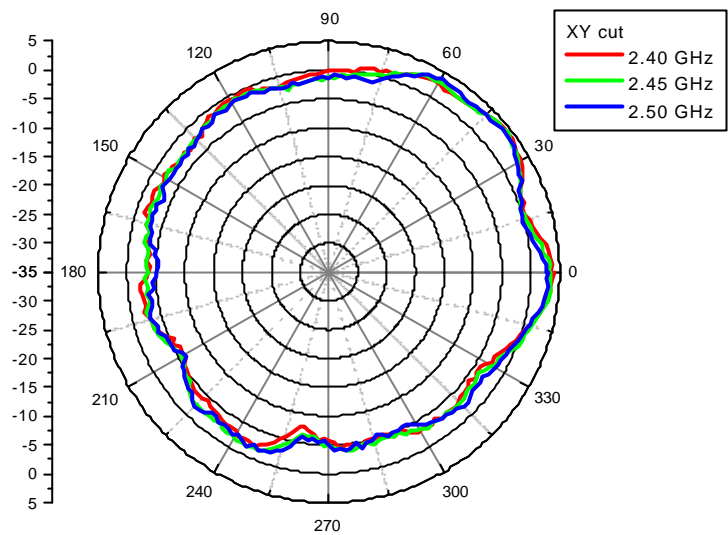
Antenna 1

Frequency Antenna	2.4GHz	2.45GHz	2.5GHz
XY cut	-0.56	-0.52	-0.75
YZ cut	-0.60	-0.28	-1.09

Antenna 2

Frequency Cut	2.4GHz	2.45GHz	2.5GHz
XY cut	-3.53	-3.62	-3.96
YZ cut	-3.63	-3.47	-3.68

Radiation Pattern **Antenna 1 (left-side)**



Radiation Pattern

Antenna 2 (right-side)

