

# DATA SHEET

## WIRELESS COMPONENTS

PCB type antenna  
ANTX150P001BWPEN3  
850/900/1800/1900/2100 MHz



**FEATURES & BENEFITS**

- The smallest PCB antenna in the market
- Miniature design allows users to save required space
- Double-side adhesive tape makes it easy to instal in device
- Ranges of types of connector and cable provide a flexible design options
- Halogen free and RoHS compliant

**APPLICATIONS**

- Tablet / Desktop PC
- Internet TV / STB / Game console / DS
- WiFi network devices (IEEE 802.11 b/g/n)
- Bluetooth / ZigBee devices
- Car Infotainment
- Smart meter
- Smart home
- POS terminal
- Wireless Industrial Control

**ORDERING INFORMATION - GLOBAL PART NUMBER, PHYCOMP****CTC & I2NC**

All part numbers are identified by the series, packing type, material, size, antenna type, working frequency and packing quantity.

**YAGEO BRAND ordering code****GLOBAL PART NUMBER (PREFERRED)**

**ANT X150 P 001 B WPEN 3**

(1) (2) (3) (4) (5) (6) (7)

**(1) FAMILY**

ANT = Antenna products

**(2) CONNECTOR & CABLE LENGTH (MM)**

X = I-PEX

150 = 150mm

**(3) ANTENNA TYPE**

P=PCB

**(4) SERIAL NUMBER**

001 = SERIAL NUMBER 001

**(5) PACKAGE TYPE**

B = Bulk

**(6) WORKING FREQUENCY**

WPEN = 850/900/1800/1900/2100 MHz

**(7) CABLE TYPE**

3 = 1.13mm diameter Mini-Coaxial Cable

**SPECIFICATIONS**

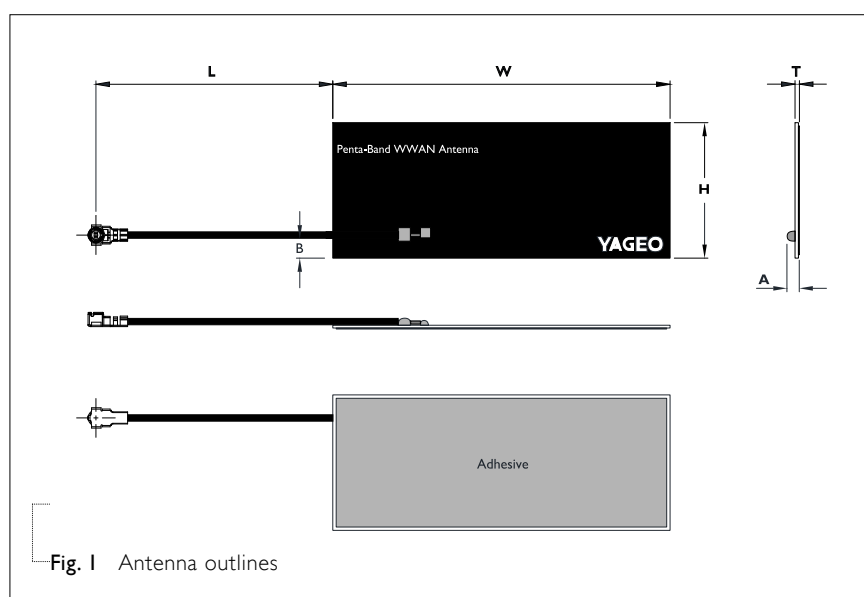
Table 1

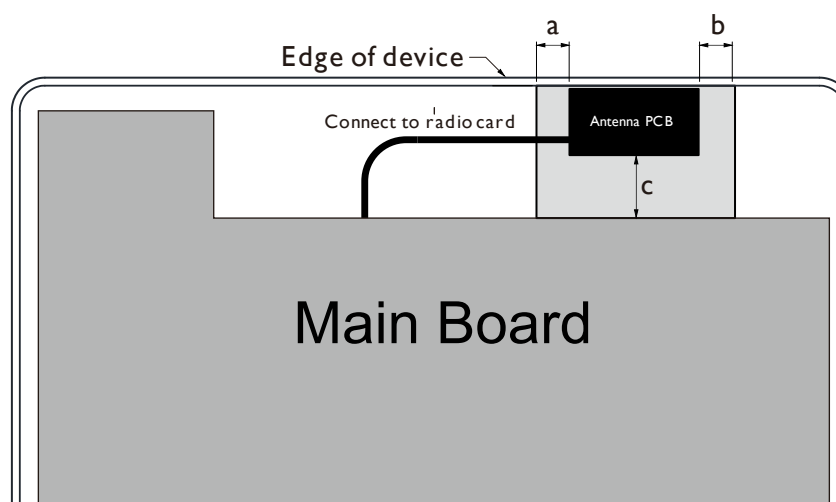
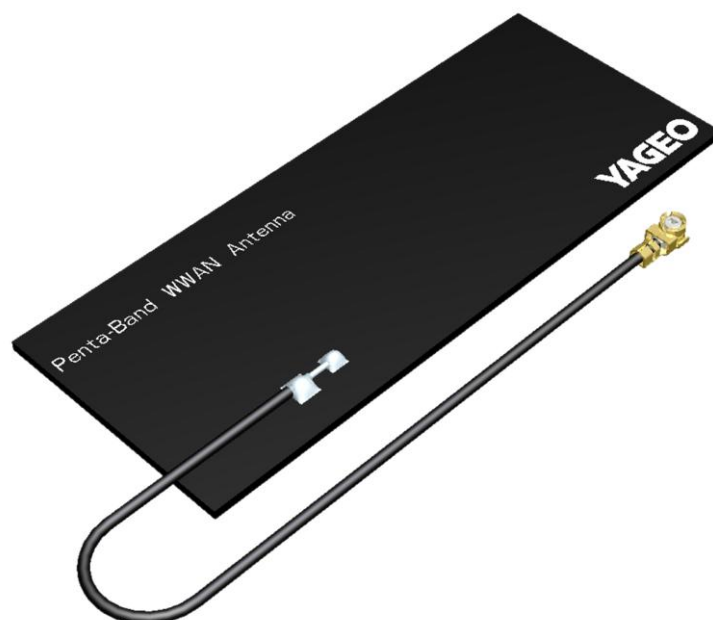
DESCRIPTION	VALUE
Working Frequency	850/900/1800/1900/2100MHz
VSWR	3.0:1 max
Peak Gain	850MHz /4.2dbi(Typ) 900MHz/5.1dbi(Typ) 1800MHz /3.9dbi(Typ) 1900MHz /5.0dbi(Typ) 2100MHz /4.5dbi(Typ)
Polarization	Linear
Radiation Pattern	Omni-directional
Impedance	50 $\Omega$ Nominal
Operating Temperature	- 40 °C to 85 °C
Maximum Power	1 W
PCB Dimension	50mm x 20mm x 0.95mm
Radio Connector	I-PEX (20278-112R-13)
Cable Diameter / Length / Color	1.13mm / 150mm / Black
Mounting	Adhesive Tape (HF-DS)

**DIMENSIONS**

Table 2 Mechanical Dimension

DIMENSION	VALUE
L (mm)	150 $\pm$ 3.00
W (mm)	50 $\pm$ 0.30
H (mm)	20 $\pm$ 0.30
T (mm)	0.95 $\pm$ 0.15
A (mm)	2.30 Max
B (mm)	1.80 $\pm$ 1.00

**OUTLINES**

APPLICATION INSTRUCTION

Antenna element should be placed at the edge of device, has minimum clearance from metallic object:

A: 5 mm Min

B: 5 mm Min

C: 10 mm Min

Fig. 2 Application Instruction

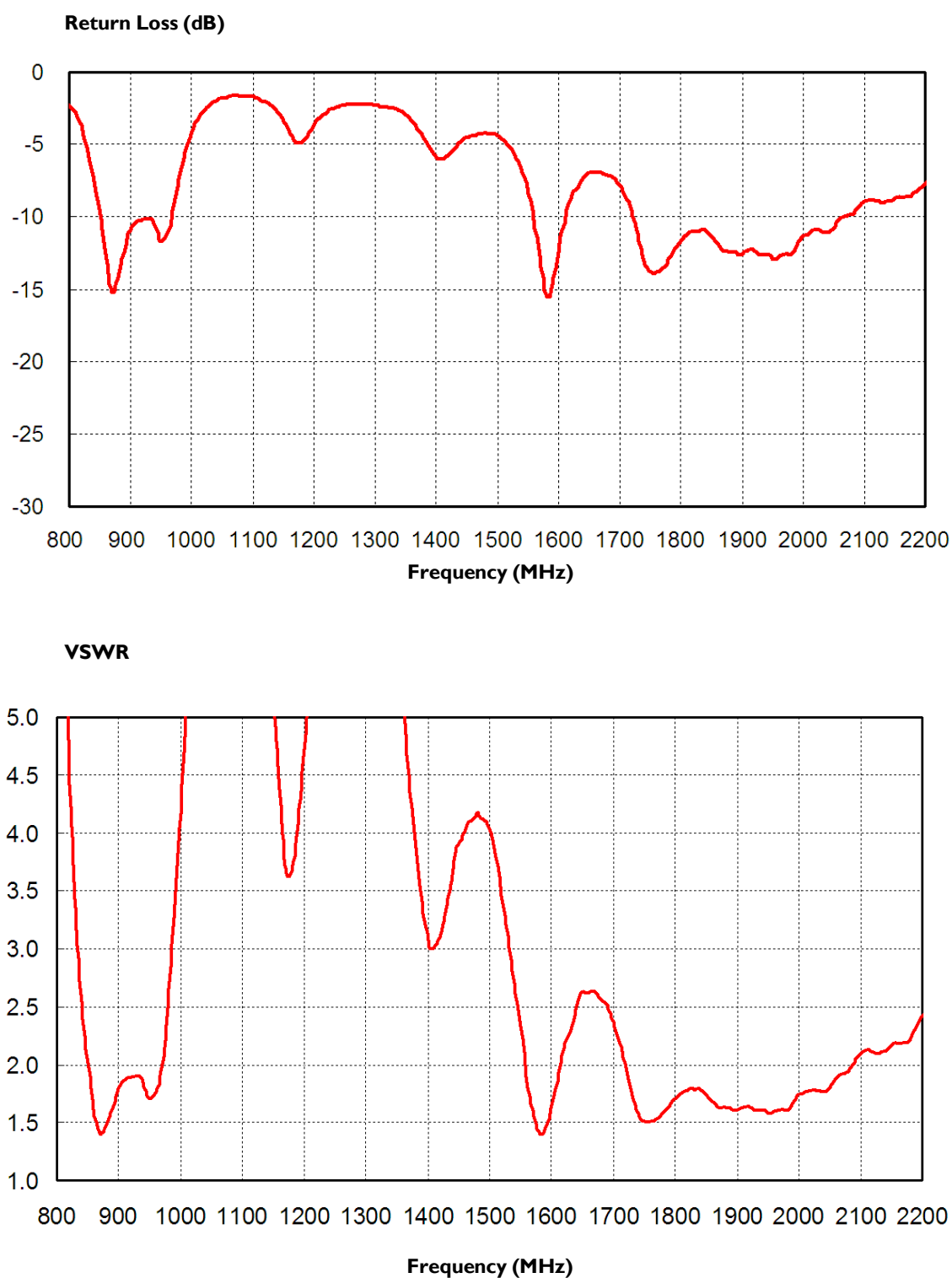
RETURN LOSS & VSWR

Fig. 3 Return loss & VSWR Measurement

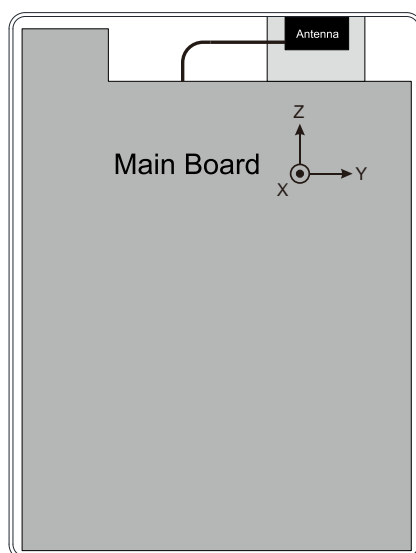
### ANTENNA GAIN & EFFICIENCY

Table 3

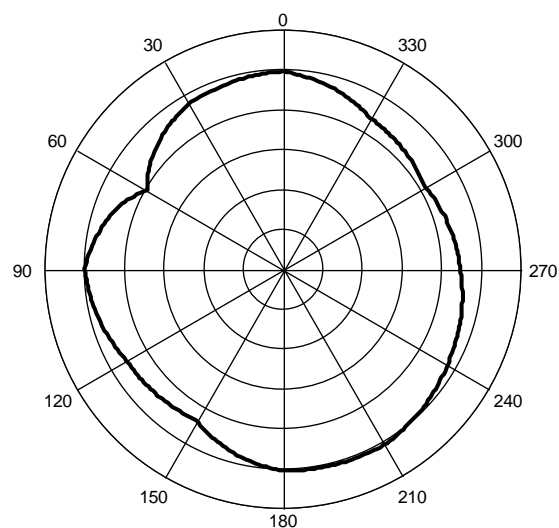
FREQUENCY (MHz)	AVERAGE GAIN (dBi)	EFFICIENCY (%)	PEAK GAIN (dBi)
850	-2.2	60	4.2
900	-1.7	68	5.1
1800	-2.6	55	3.9
1900	-1.2	76	5.0
2100	-2.1	62	4.5

### ANTENNA RADIATION PATTERNS

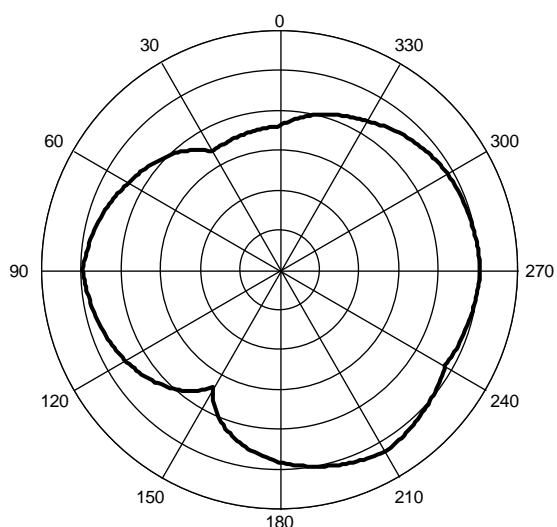
Scale: 5 dBi / div    Max : 5 dBi    Min : -25 dBi



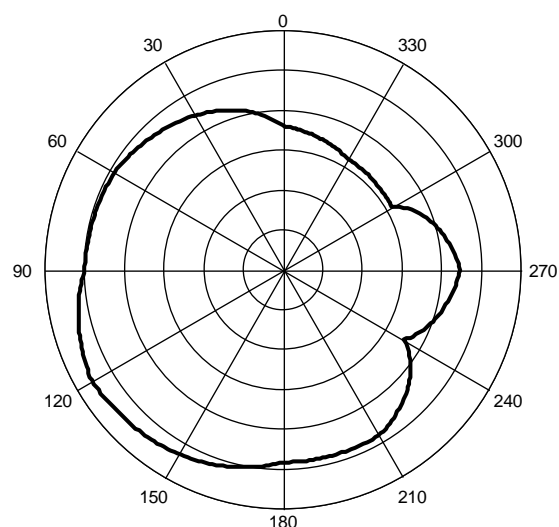
Device Setup &amp; Coordinates



X-Y Plane



X-Z Plane



Y-Z Plane

**Fig. 4** Antenna radiation patterns at 850 MHz

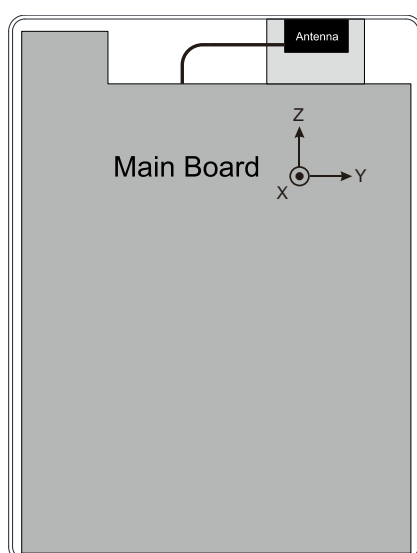
**ANTENNA GAIN & EFFICIENCY**

Table 4

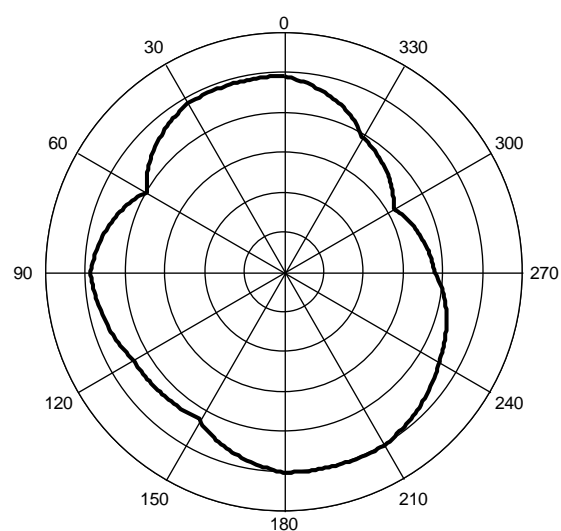
FREQUENCY (MHz)	AVERAGE GAIN (dBi)	EFFICIENCY (%)	PEAK GAIN (dBi)
850	-2.2	60	4.2
900	-1.7	68	5.1
1800	-2.6	55	3.9
1900	-1.2	76	5.0
2100	-2.1	62	4.5

**ANTENNA RADIATION PATTERNS**

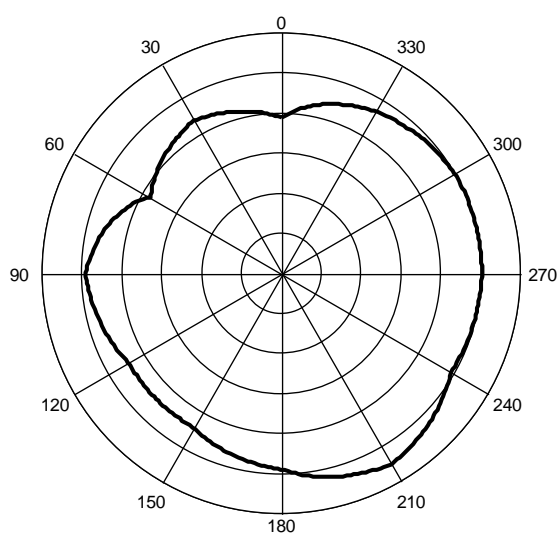
Scale: 5 dBi / div    Max : 5 dBi    Min : -25 dBi



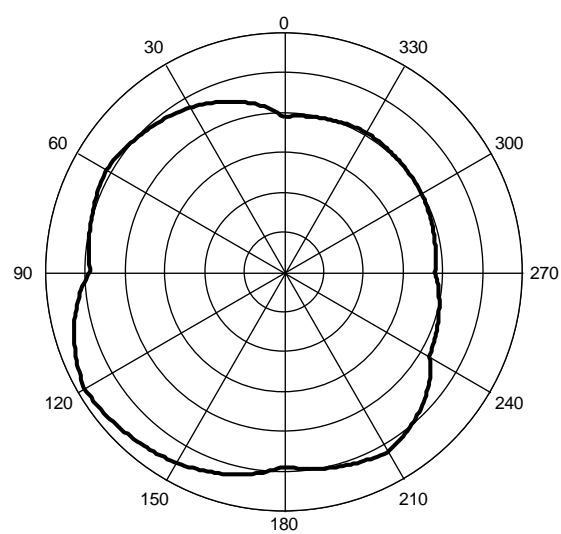
Device Setup &amp; Coordinates



X-Y Plane



X-Z Plane



Y-Z Plane

Fig. 5 Antenna radiation patterns at 900 MHz

# ANTENNA GAIN & EFFICIENCY

Table 4

FREQUENCY (MHz)	AVERAGE GAIN (dBi)	EFFICIENCY (%)	PEAK GAIN (dBi)
850	-2.2	60	4.2
900	-1.7	68	5.1
1800	-2.6	55	3.9
1900	-1.2	76	5.0
2100	-2.1	62	4.5

# ANTENNA RADIATION PATTERNS

Scale: 5 dBi / div    Max : 5 dBi    Min : -25 dBi

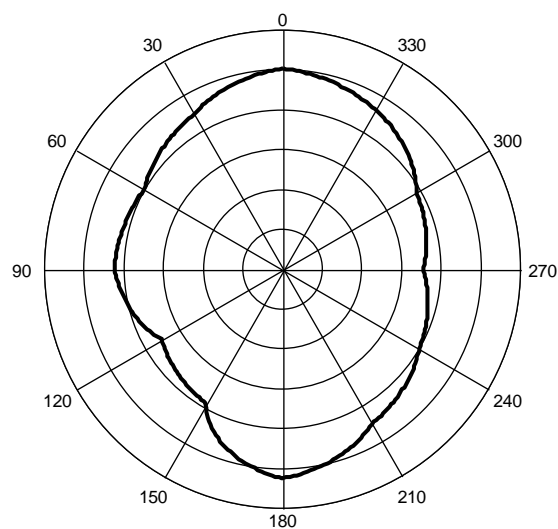
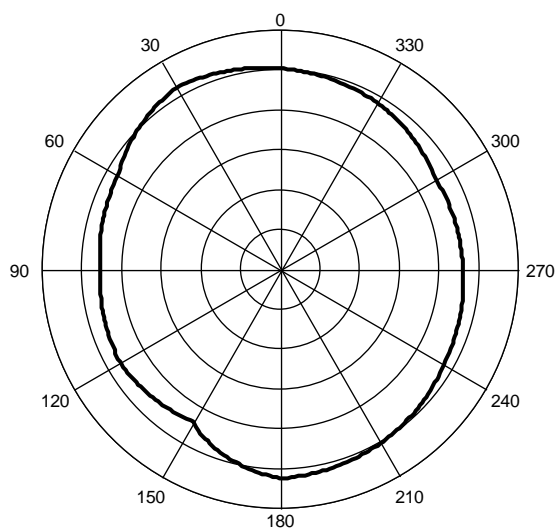
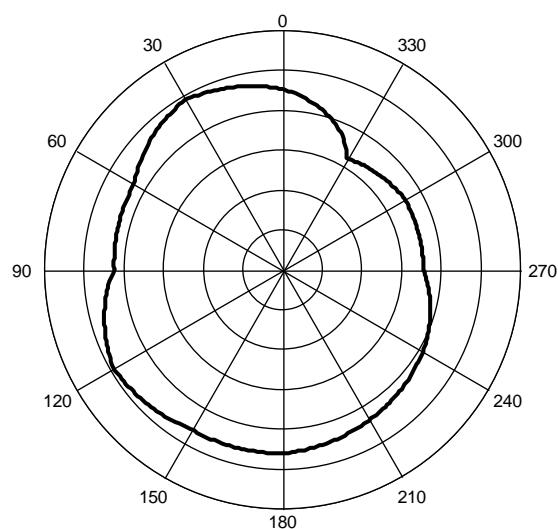
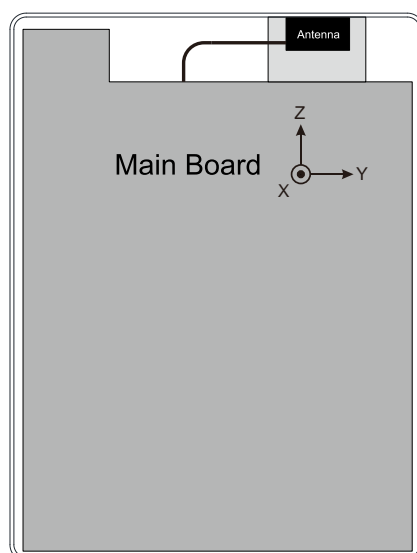


Fig. 5 Antenna radiation patterns at 1800 MHz



### ANTENNA GAIN & EFFICIENCY

Table 4

FREQUENCY (MHz)	AVERAGE GAIN (dBi)	EFFICIENCY (%)	PEAK GAIN (dBi)
850	-2.2	60	4.2
900	-1.7	68	5.1
1800	-2.6	55	3.9
1900	-1.2	76	5.0
2100	-2.1	62	4.5

### ANTENNA RADIATION PATTERNS

Scale: 5 dBi / div    Max : 5 dBi    Min : -25 dBi

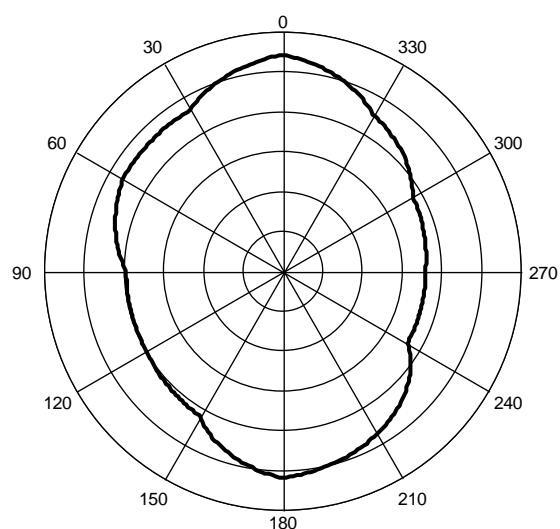
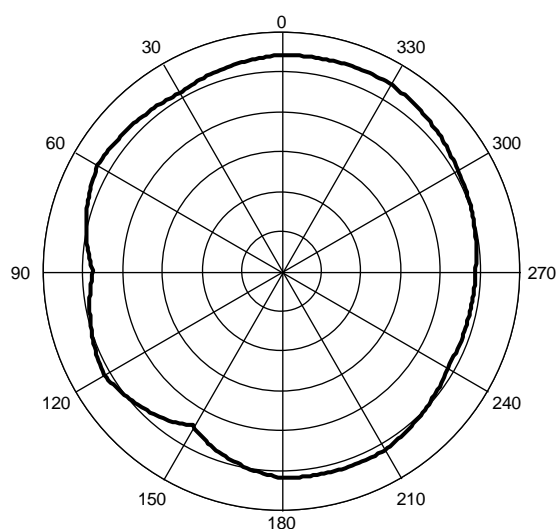
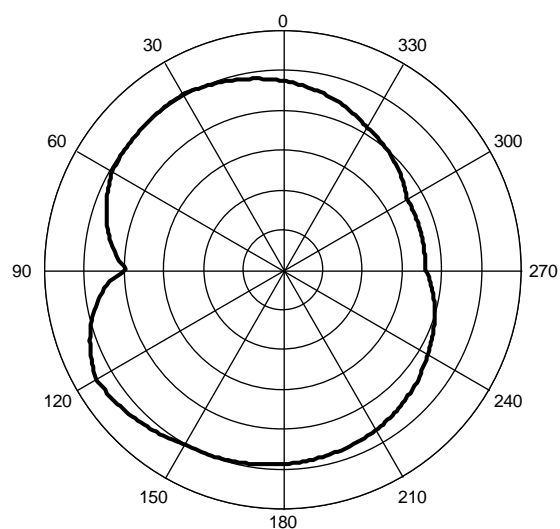
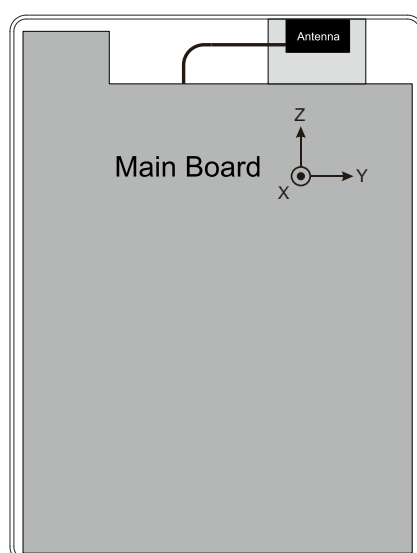


Fig. 5 Antenna radiation patterns at 1900 MHz

### ANTENNA GAIN & EFFICIENCY

Table 4

FREQUENCY (MHz)	AVERAGE GAIN (dBi)	EFFICIENCY (%)	PEAK GAIN (dBi)
850	-2.2	60	4.2
900	-1.7	68	5.1
1800	-2.6	55	3.9
1900	-1.2	76	5.0
2100	-2.1	62	4.5

### ANTENNA RADIATION PATTERNS

Scale: 5 dBi / div    Max : 5 dBi    Min : -25 dBi

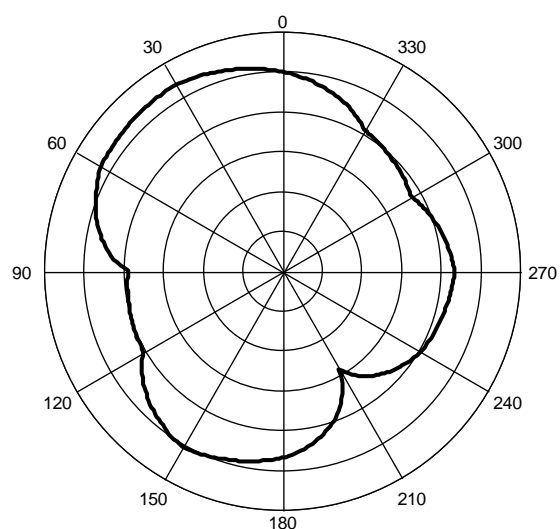
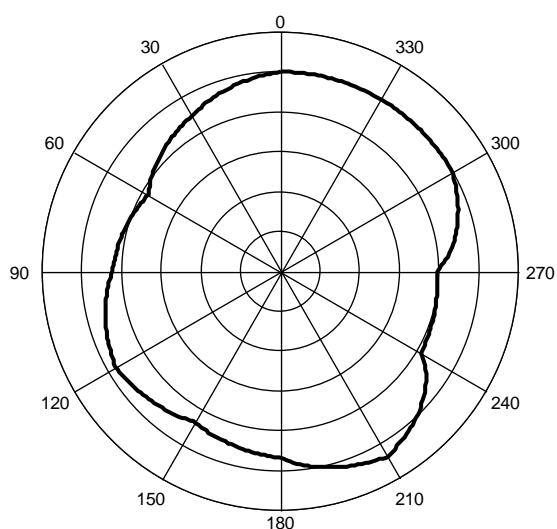
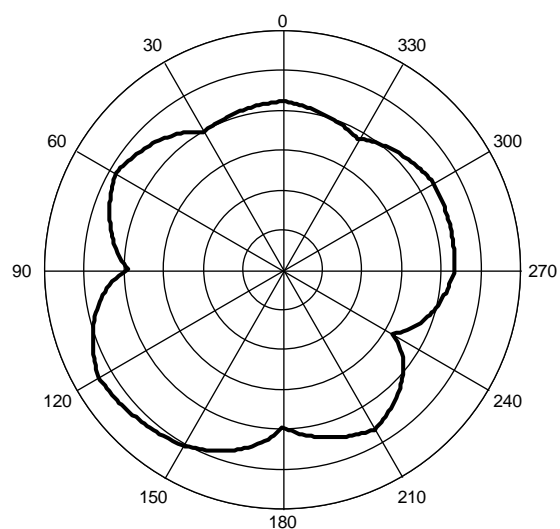
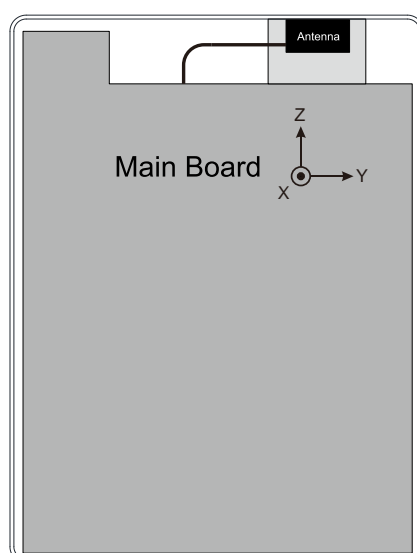


Fig. 5 Antenna radiation patterns at 2100 MHz

# REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	Jun. 18, 2014	-	- New data sheet for PCB type antenna, 850/900/1800/1900/2100 MHz