

APPLICATION REPORT

FtVNS-M07 2.4-GHz PCB Pattern Antenna

Product Model	FtVNS-M07
BLE MCU	ABOV Semiconductor A31R118
Antenna Type	PCB Pattern Antenna (Printed Antenna)
Operating Frequency	2.4 GHz BLE Band
Antenna Gain	3 dBi

815MnB Co., Ltd.

FtVNS-M07 PCB Pattern Antenna Design Justification

1. Measurement Results

1-1 Radiation Pattern

The radiation patterns were measured with the FtVNS-M07 operating in the 2.4 GHz BLE band (GFSK, 0 dBm).

Figure 1-1 to Figure 1-3 show the measured radiation patterns in the XY, XZ, and YZ planes, respectively.

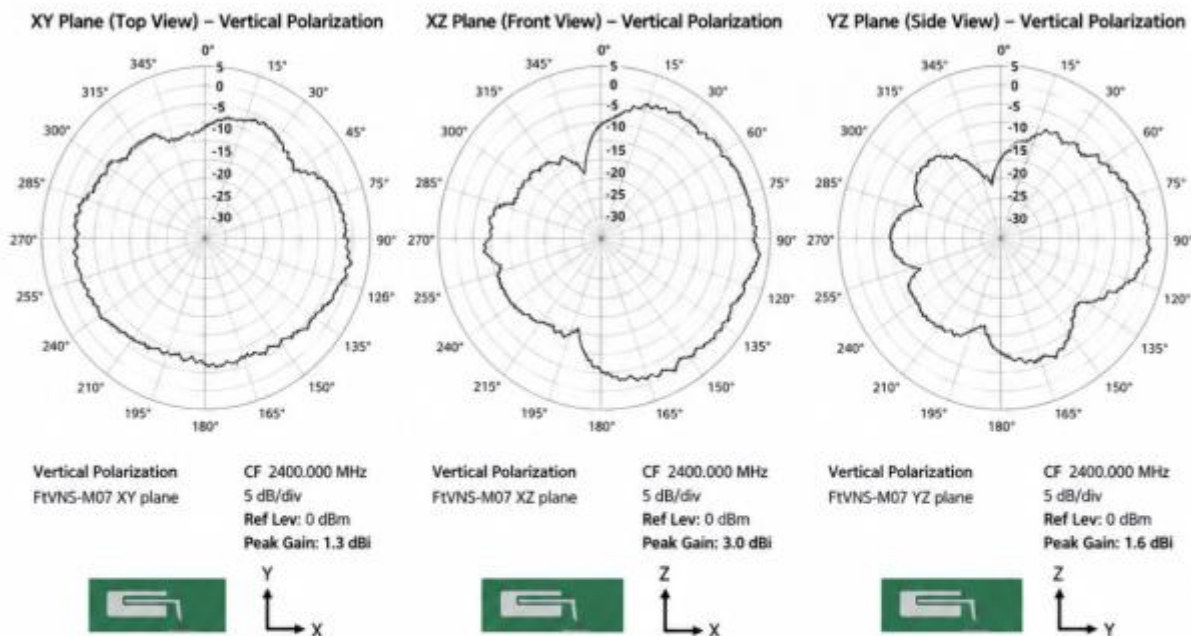


Figure 1-1. XY Plane Radiation Pattern

Figure 1-2. XZ Plane Radiation Pattern

Figure 1-3. YZ Plane Radiation Pattern

Table 1-1. Peak Gain by Plane

Plane	Peak Gain (dBi)	Measurement Condition	Remarks
XY	1.3	2.4 GHz (GFSK, 0 dBm)	Vertical Polarization
XZ	3.0	2.4 GHz (GFSK, 0 dBm)	Vertical Polarization
YZ	1.6	2.4 GHz (GFSK, 0 dBm)	Vertical Polarization
Overall (Peak)	3.0	-	Maximum gain across all planes

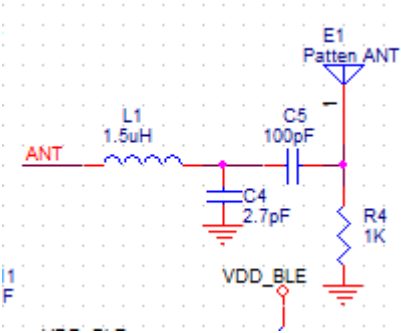
Note:

- The radiation patterns and gain values are measured from the completed FtVNS-M07 in an anechoic chamber.
- Measurement was performed at 2.4 GHz (BLE, GFSK, 0 dBm).
- Radiation pattern may vary depending on the actual product configuration, surrounding components, housing, and ground conditions.

Figure 8-1.FtVNS-M07 Radiation Pattern and Peak Gain by Plane

2.Circuit Configuration

• Figure 2-1. RF Matching and Antenna Feed Circuit



3.PCB Layout

• Figure 3-1. FtVNS-M07 Final PCB Antenna Pattern

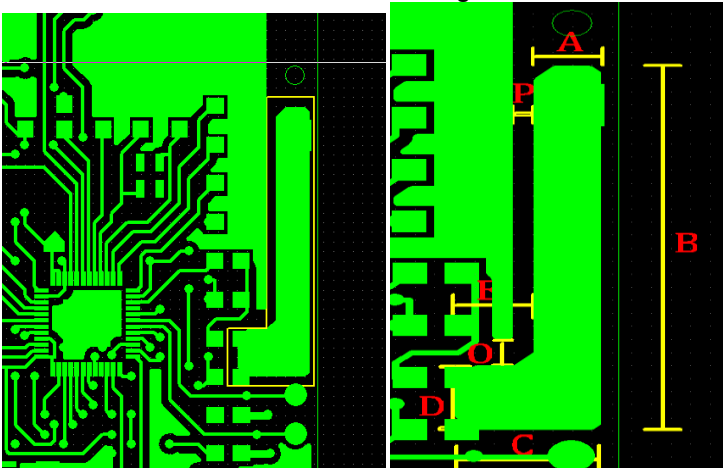


Table 3-1. PCB Antenna Pattern Dimensions

A	1.89mm	B	17.27mm	C	4.61mm
D	2.87mm	E	2.72mm	P	0.94mm
O	1.22mm				
Dimensions					