

Antenna Description

Podcatcher Pro

Date: 2026-03-05

Version: 1.0

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1 Antenna overview

The Podcatcher Pro contains these transmitters for which antenna details are provided here:

- Bluetooth Low Energy (BLE)
- Bluetooth Classic (BT)
- Ultra-Wideband (UWB)
- Digital Enhanced Cordless Telecommunications (DECT)

2 Antenna Details

2.1 Bluetooth Low Energy

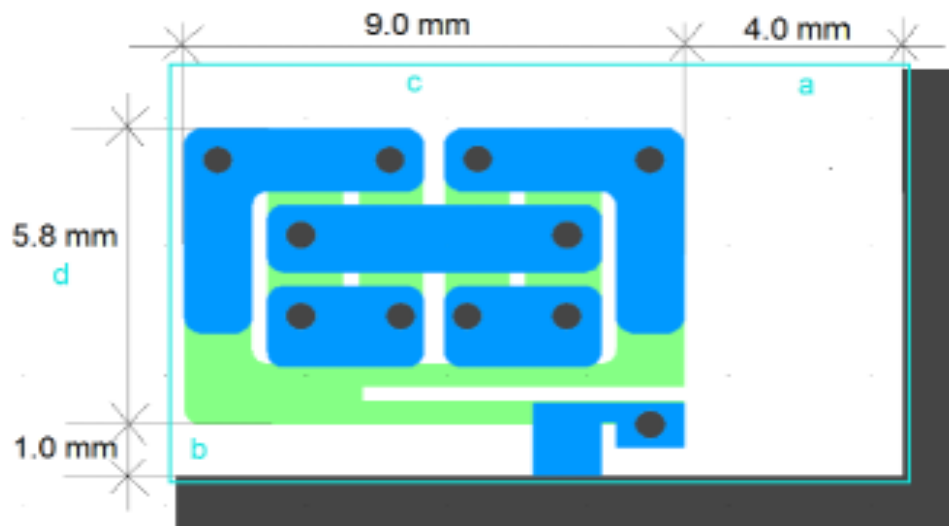
The Podcatcher Pro uses an integrated ZOR PCB antennas for the BLE radio.

The following antenna gain measurements were taken by Cetecom as part of the certification process with more detail of the testing available in the test report (1-9938-25-02-03_TR1-R01).

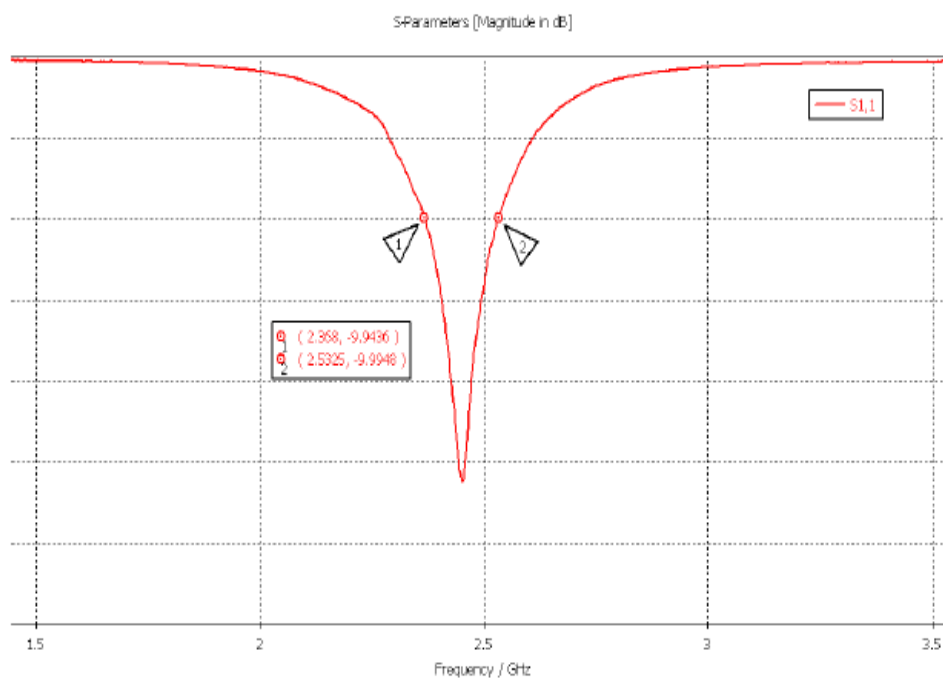
Frequency (MHz)	Antenna Gain (dBi)
2402	0.8
2440	0.4
2480	1.3

The original reference design utilises a 1.6 mm substrate. All specifications provided hereafter are those provided with the reference design.

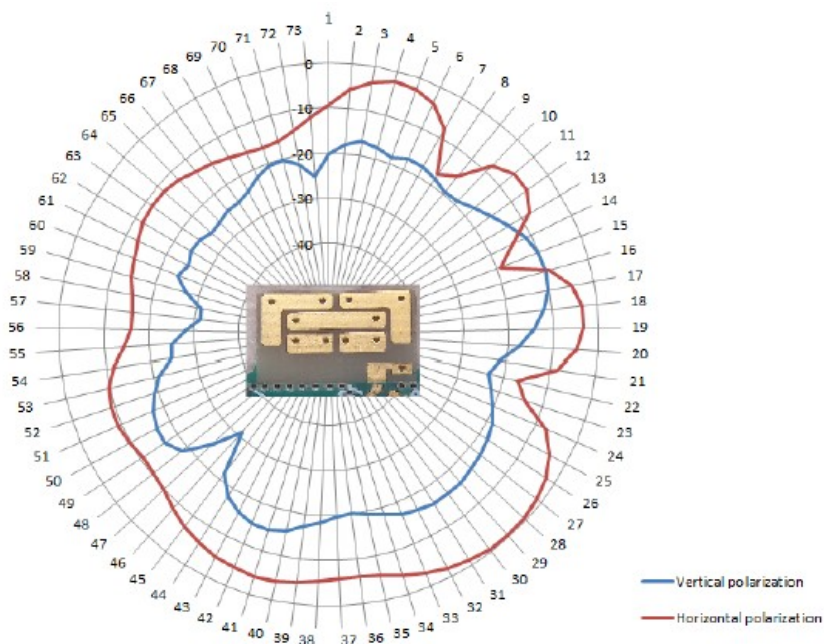
Bluetooth Antenna PCB layout:



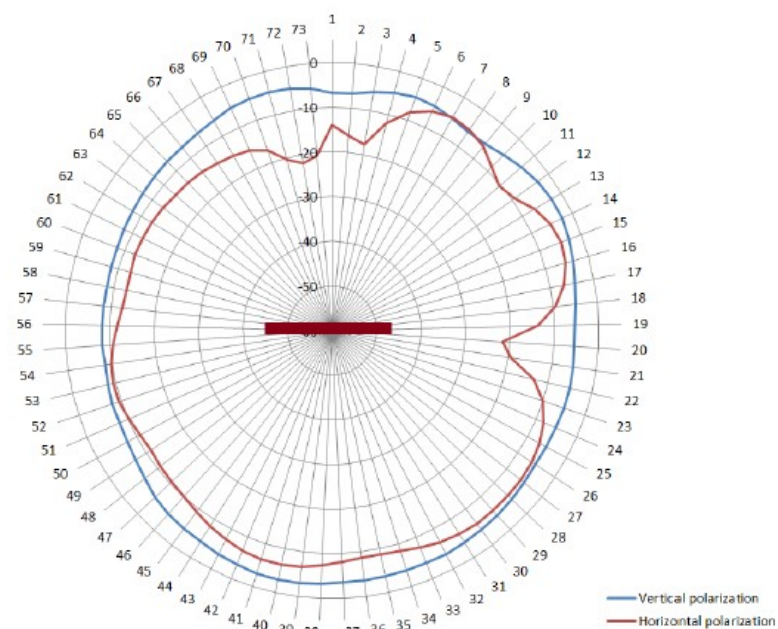
Return loss vs frequency plot:



Horizontal Radiation Pattern:



Vertical radiation pattern



2.2 Bluetooth Classic

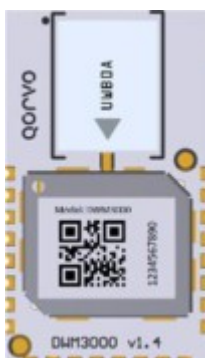
The Podcatcher Pro uses an integrated ZOR antennas for the Bluetooth classic radio. It is identical in design to the antenna noted in section 2.1.

The following antenna gain measurements were taken by Cetecom as part of the certification process with more detail of the testing available in the test report (1-9938-25-02-02_TR1-R01).

Frequency (MHz)	Antenna Gain (dBi)
2402	-1.1
2440	-2.8
2480	-2.9

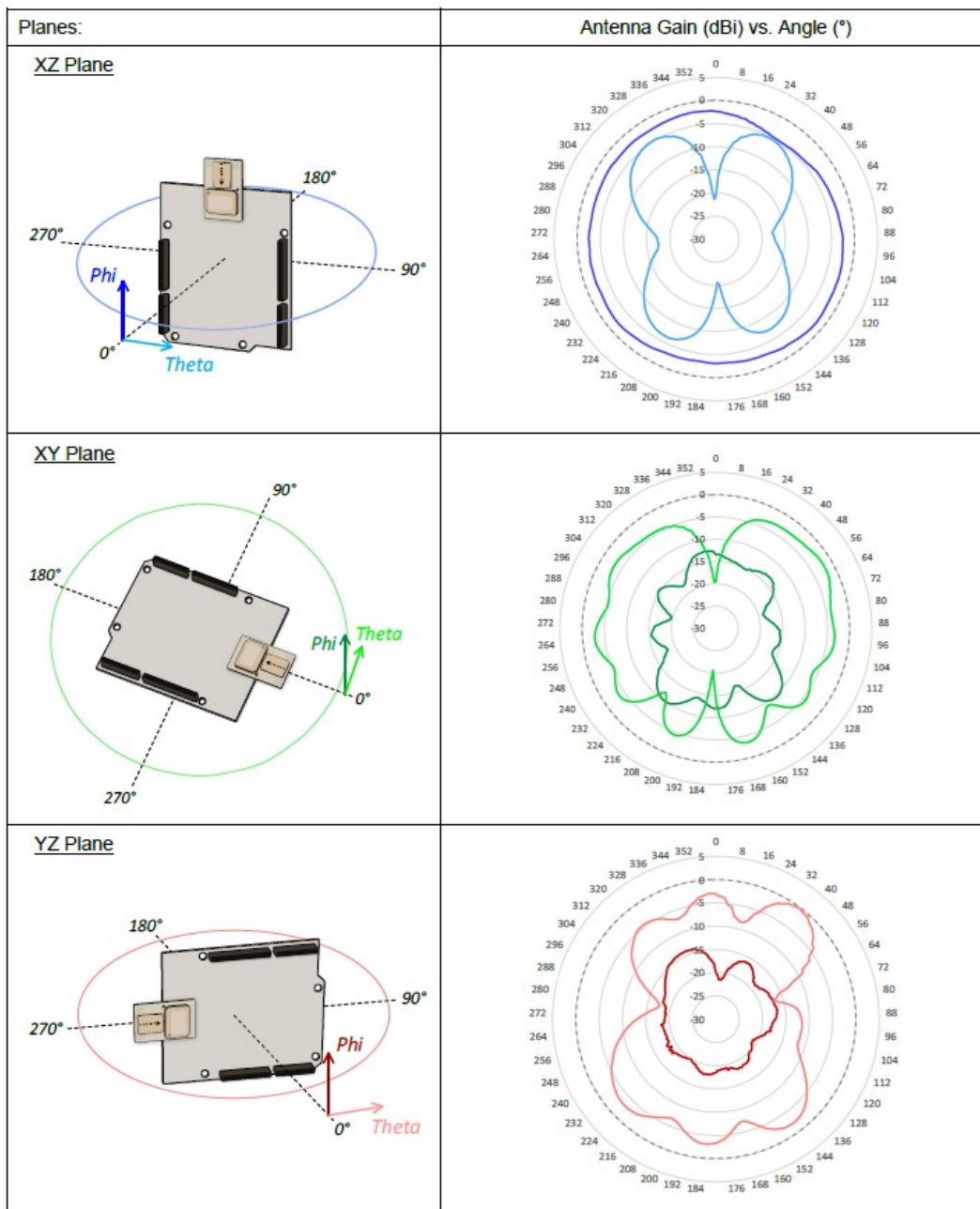
2.3 Ultra-Wideband

The Ultra wideband module uses an on-board ceramic monopole antenna.



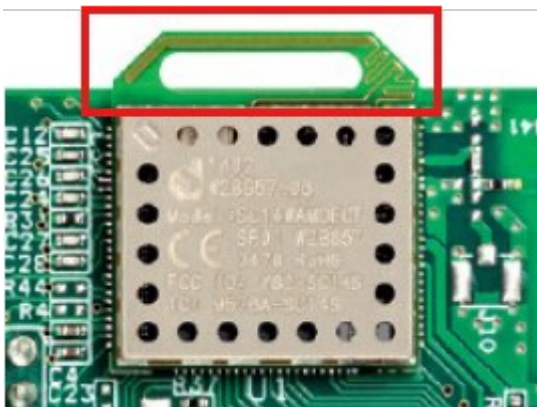
The radiation patterns for the antenna shown below are taken from the DWM3000 module data sheet and were measured for the module development kit.

Please refer to chapter 5 of the DWM3000 module data sheet for more information.

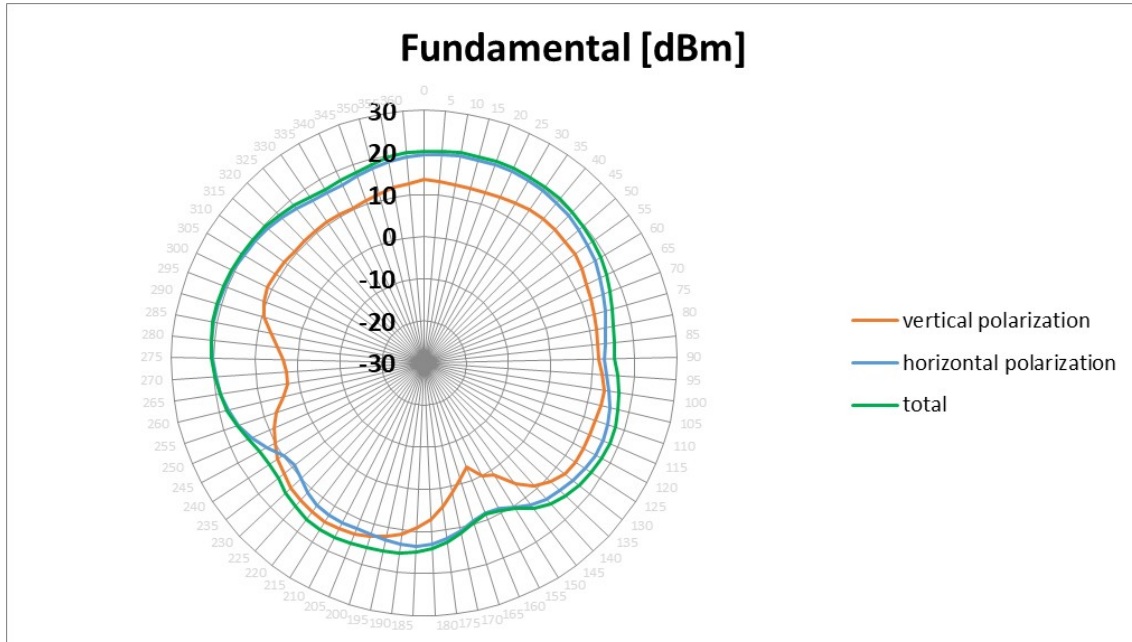


2.4 DECT

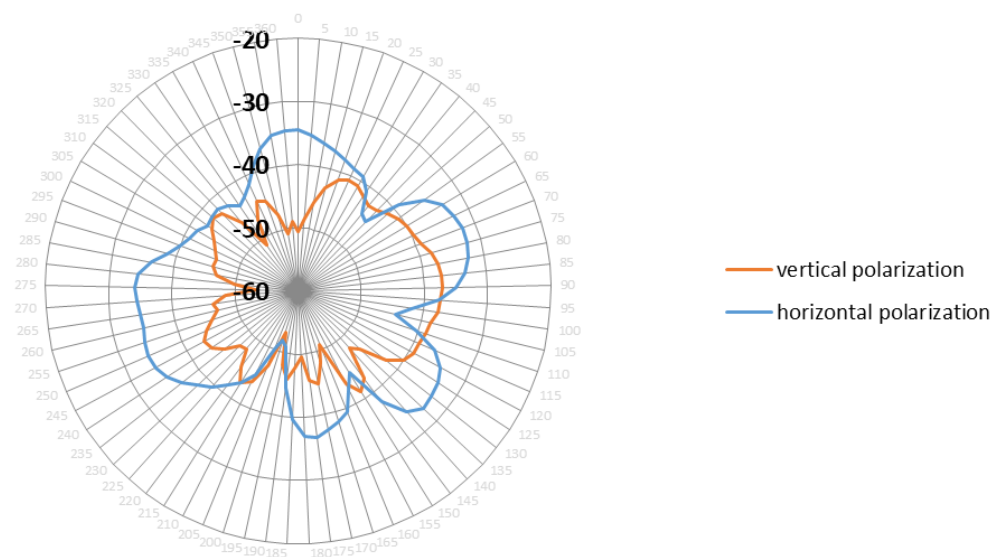
The DECT radio module utilises an on board PCB antenna on the DECT module itself.



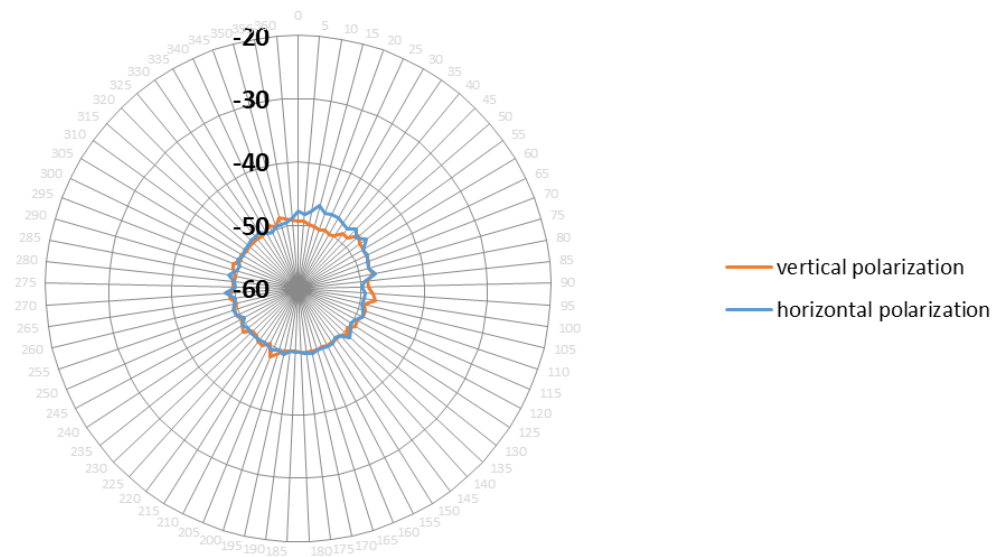
The following antenna measurements were made by Renesas on the Podcatcher Pro:



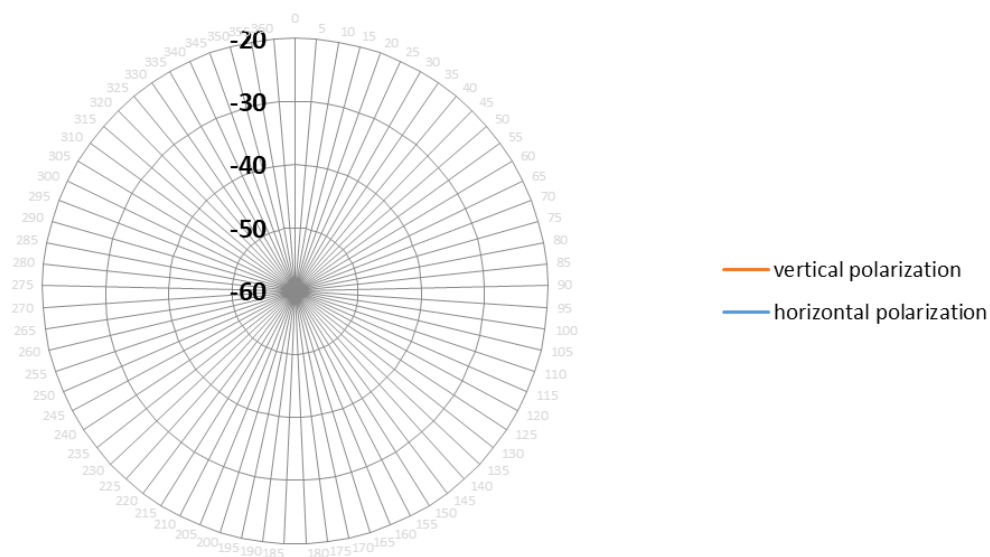
2nd harmonic [dBm]



3rd harmonic [dBm]



4th harmonic [dBm]



5th harmonic [dBm]

