SUUNTO

Radiation pattern and Antenna system description

Suunto OW222

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Antenna system structure OW222

- Antenna system consists of a radiator, connection elements and a ground plane.
- Bezel is utilized as the radiating element for all protocols (Dualband GNSS&BLE-WLAN)
- Radiator is connected to GNSS receiver, WLAN&BLE transceivers and PCB ground using galvanically connected clips between bezel and corresponding PCB connections.
- Bezel diameter 48.8mm, height 4.4mm

Antenna main structure: bezel

Radiation parameters

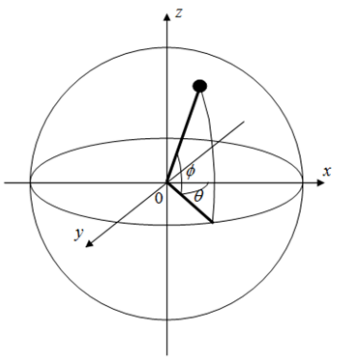
- BLE/WLAN 2.4 GHz antenna
  - Peak gain = -3.6 dBi
  - Efficiency = -8.4dB
  - Center frequency= 2442 MHz
  - Bandwidth = 85 MHz

- Dualband GNSS antenna L5-L1
  - L5 Center frequency = 1175 MHz
  - L1 Center frequency = 1575 MHz
  - L5 Bandwidth = 3 MHz
  - L1 Bandwidth = 3 MHz

  - L5 Peak gain = -6.8 dBi
  - L1 Peak gain = -7 dBi

  - L5 Efficiency = -10.2 dB
  - L1 Efficiency = -9.5 dB

Measurement



Coordinate system

Spherical polar coordinate system used. Measuring antenna is located along z-axis

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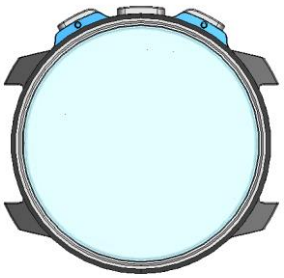
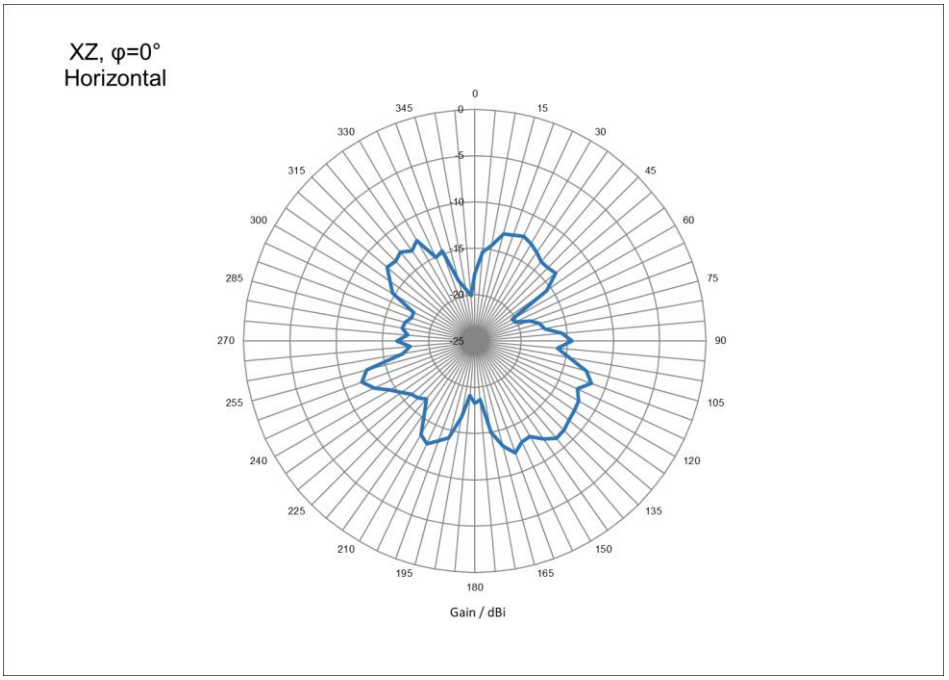
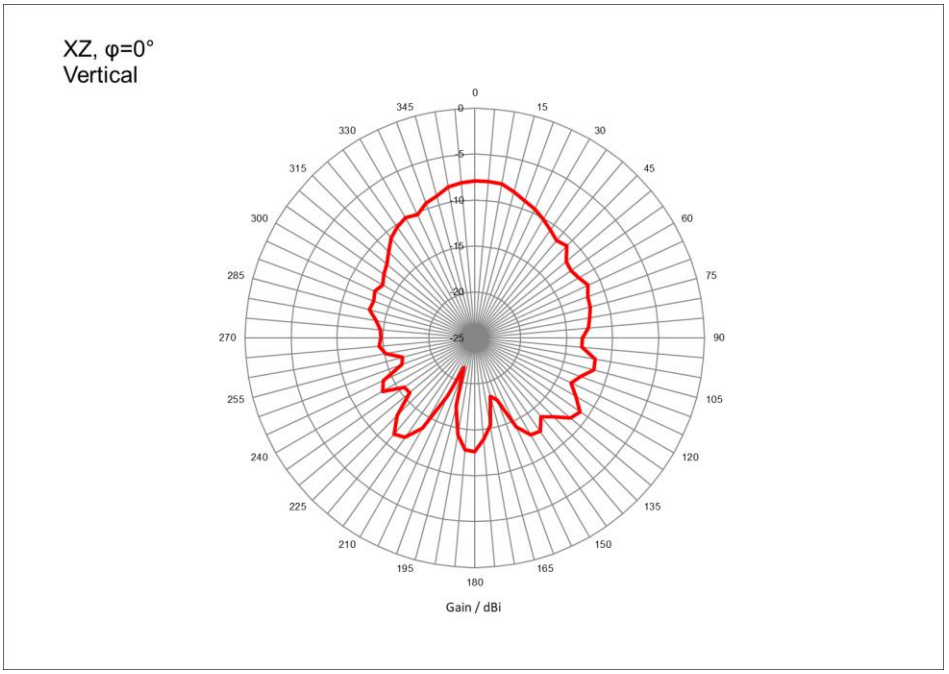
Radiation pattern, XZ-plane, f_c=2442MHz

- 3 o'clock towards 0°







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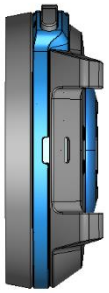
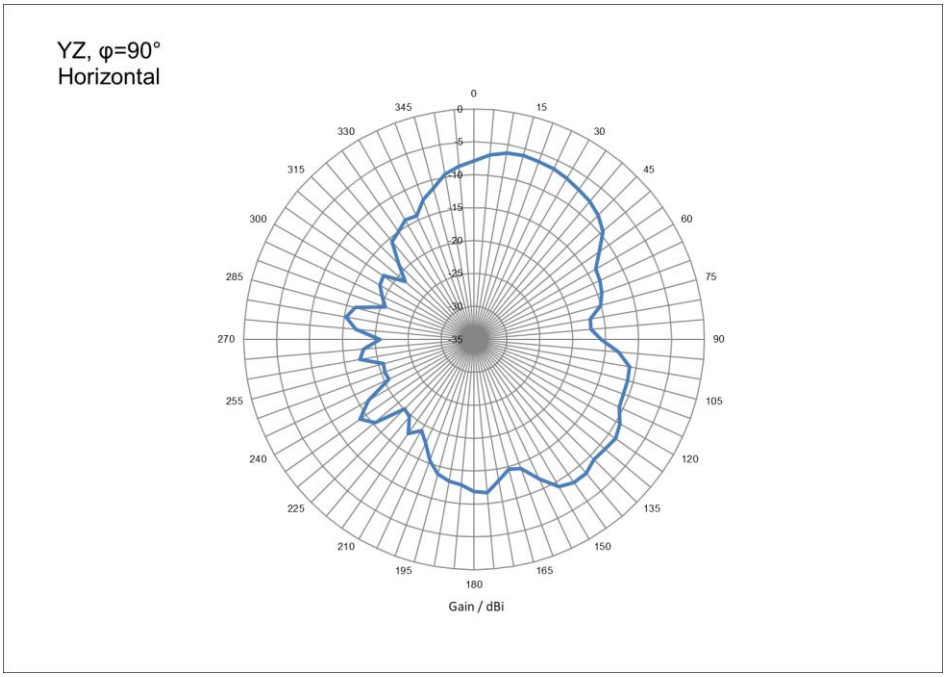
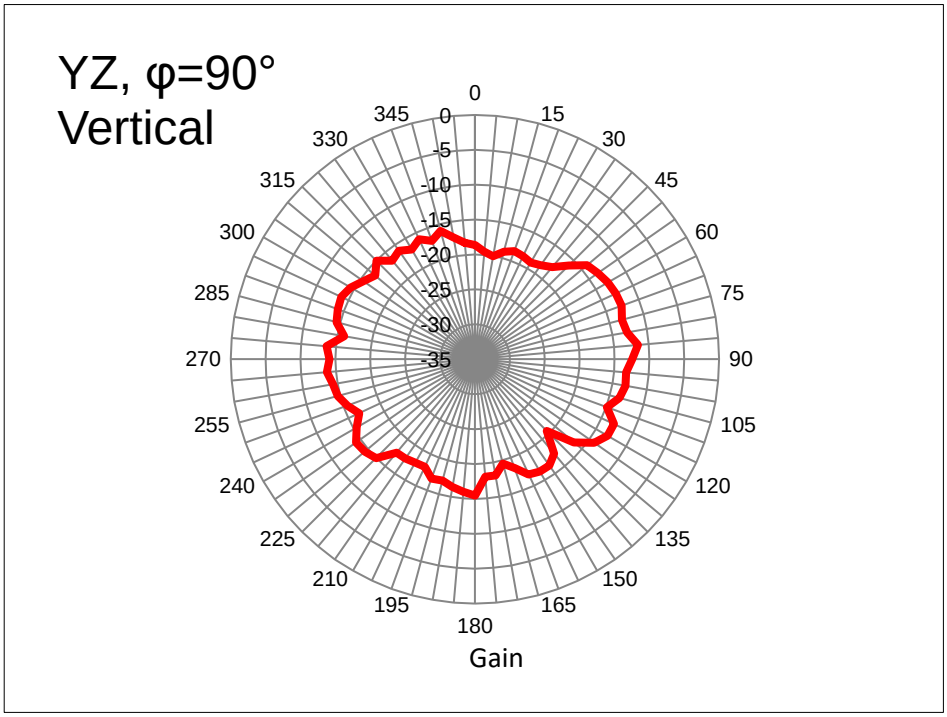
Radiation pattern, YZ-plane, f_c=2442MHz

- 3 o'clock towards 0°







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Radiation pattern, XY-plane, f_c=2442MHz

- 6 o'clock towards 0°