

Radiation pattern and Antenna system description

Manufacturer: Suunto Oy

**Manufacturer Address: Tammiston kauppatie
7 A, 01510 Vantaa, Finland**

Product model: DW253

E. Varjonen 15.9.2025

Antenna system structure DW253

- 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 49.5mm, height 3.7mm

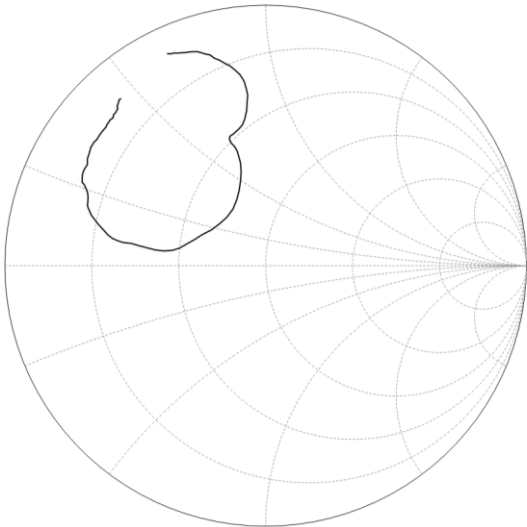
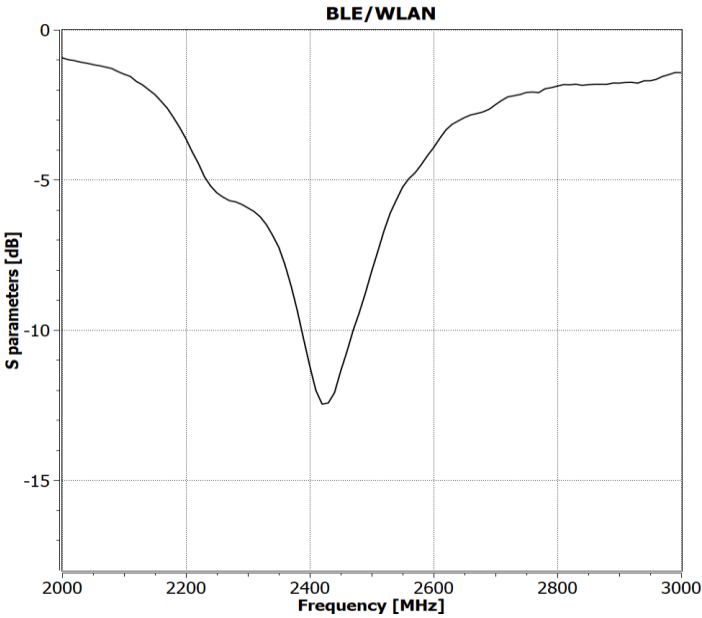
Radiation parameters

- BLE/WLAN 2.4 GHz antenna

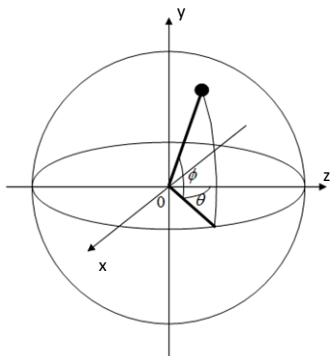
Frequency (MHz)	2400	2440	2480
Peak Gain (dBi)	-4.2	-4.1	-4.3
Efficiency (%)	13.0	13.1	12.3

- Dualband GNSS antenna L5-L1
 - L5 Center frequency = 1175 MHz
 - L1 Center frequency = 1575 MHz
 - L5 Bandwidth = 25 MHz
 - L1 Bandwidth = 55 MHz
 - L5 Peak gain = -6.8 dBi
 - L1 Peak gain = -7 dBi
 - L5 Efficiency = -10.2 dB
 - L1 Efficiency = -9.5 dB

Impedance



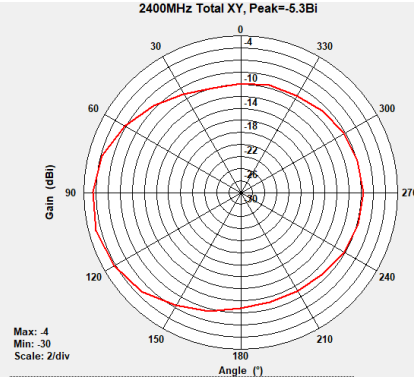
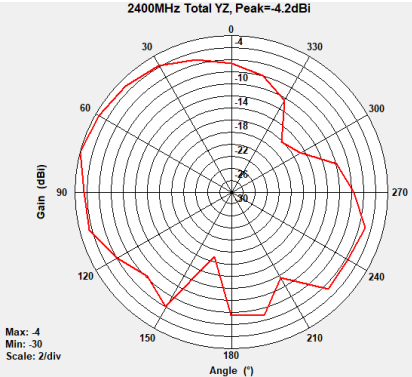
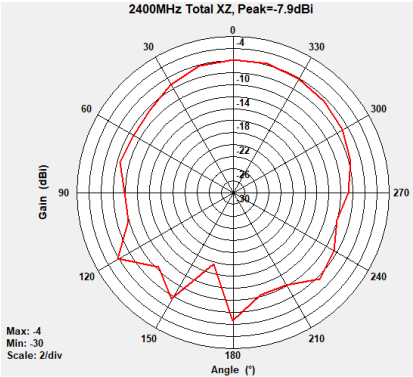
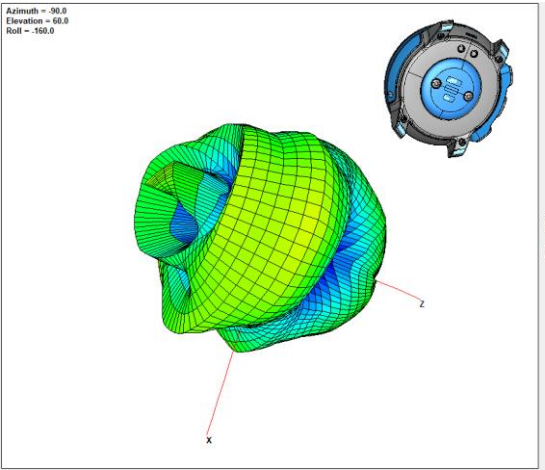
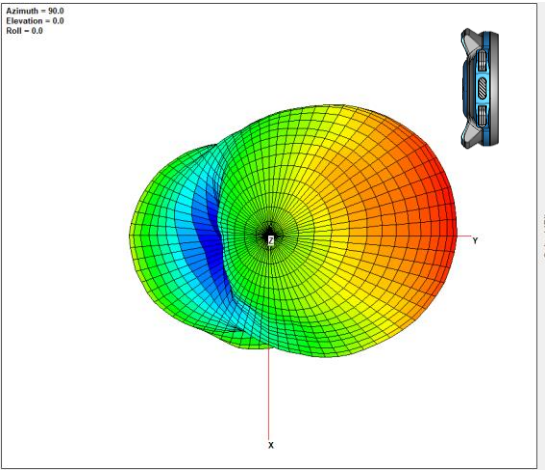
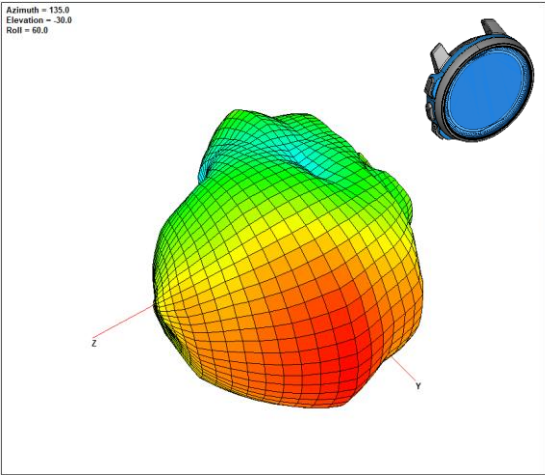
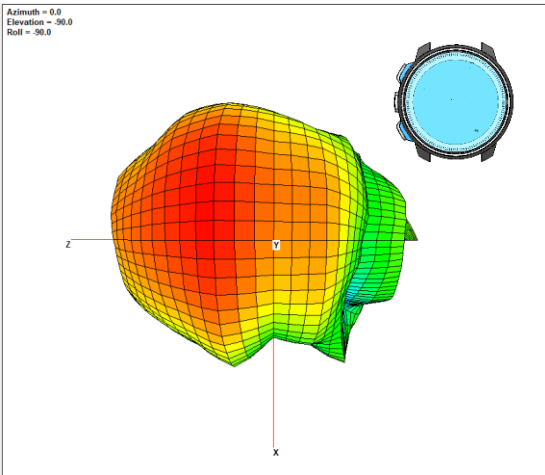
Measurement



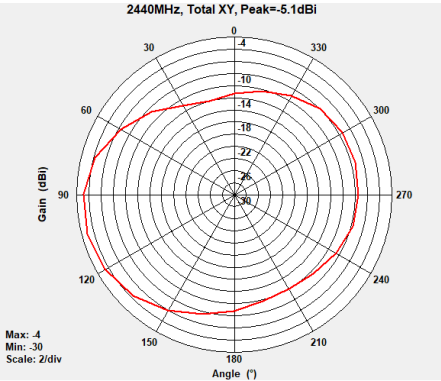
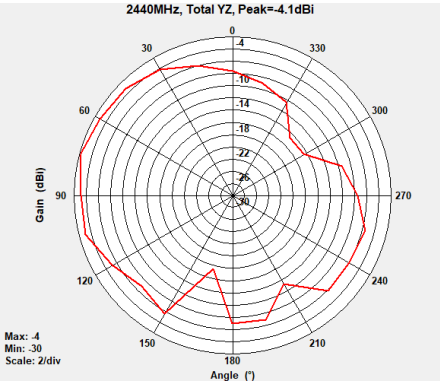
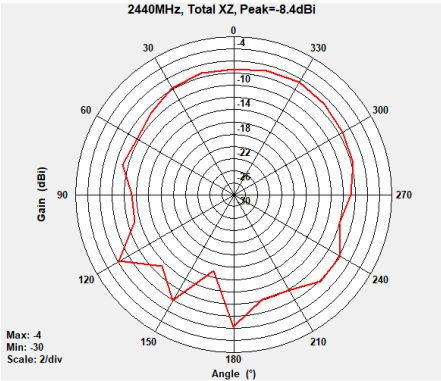
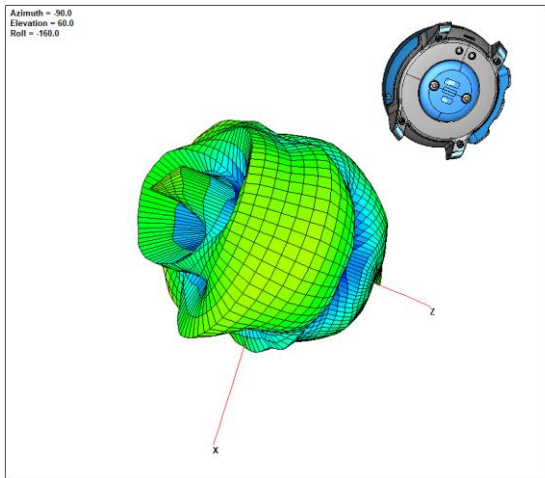
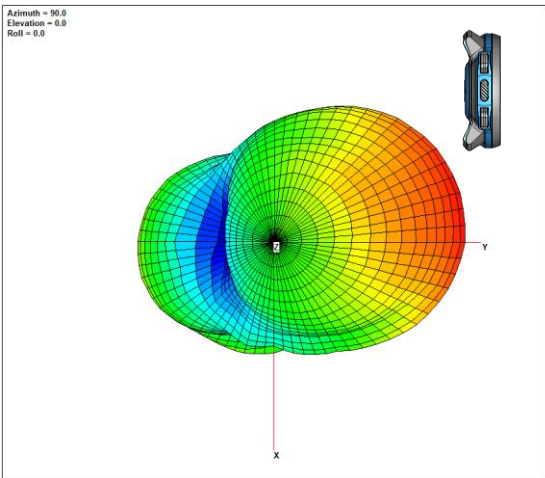
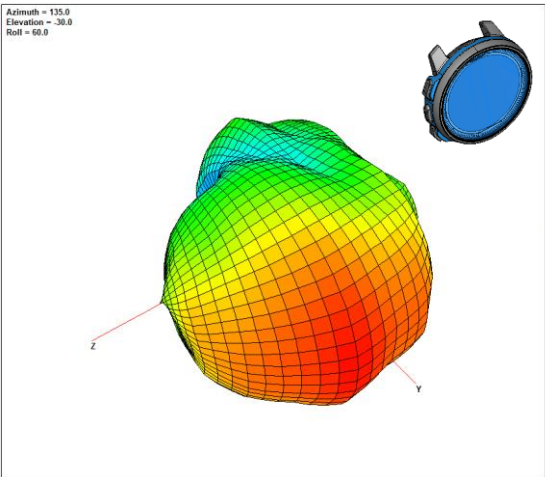
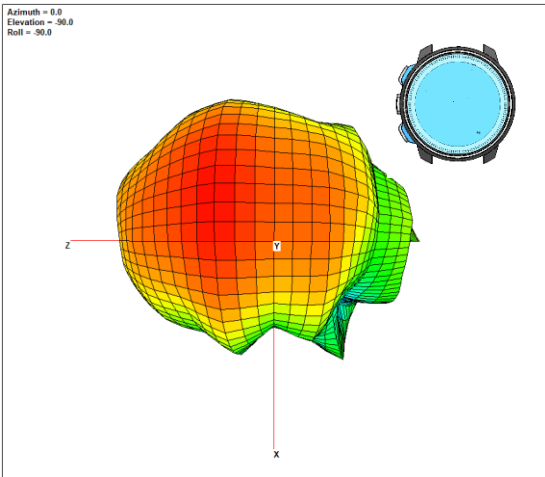
Coordinate system

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

Radiation pattern, 2400MHz



Radiation pattern, 2440MHz



Radiation pattern, 2480MHz

