

Date: 08/11/2022

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Málaga, España

Ref: Cover letter for antenna document for FCC ID: INW5J

To whom it may concern:

Polar Electro Oy hereby requests that the antenna document remains confidential. Main information of the antenna hosted in the product stated above are as follows:

Antennas:

- Dual-band, 1164-1215MHz GNSS L5 Antenna + 2402-2480MHz Bluetooth Antenna
- 1559 – 1610 MHz GNSS L1 antenna

Antenna type: integrated monopole antenna

Features:

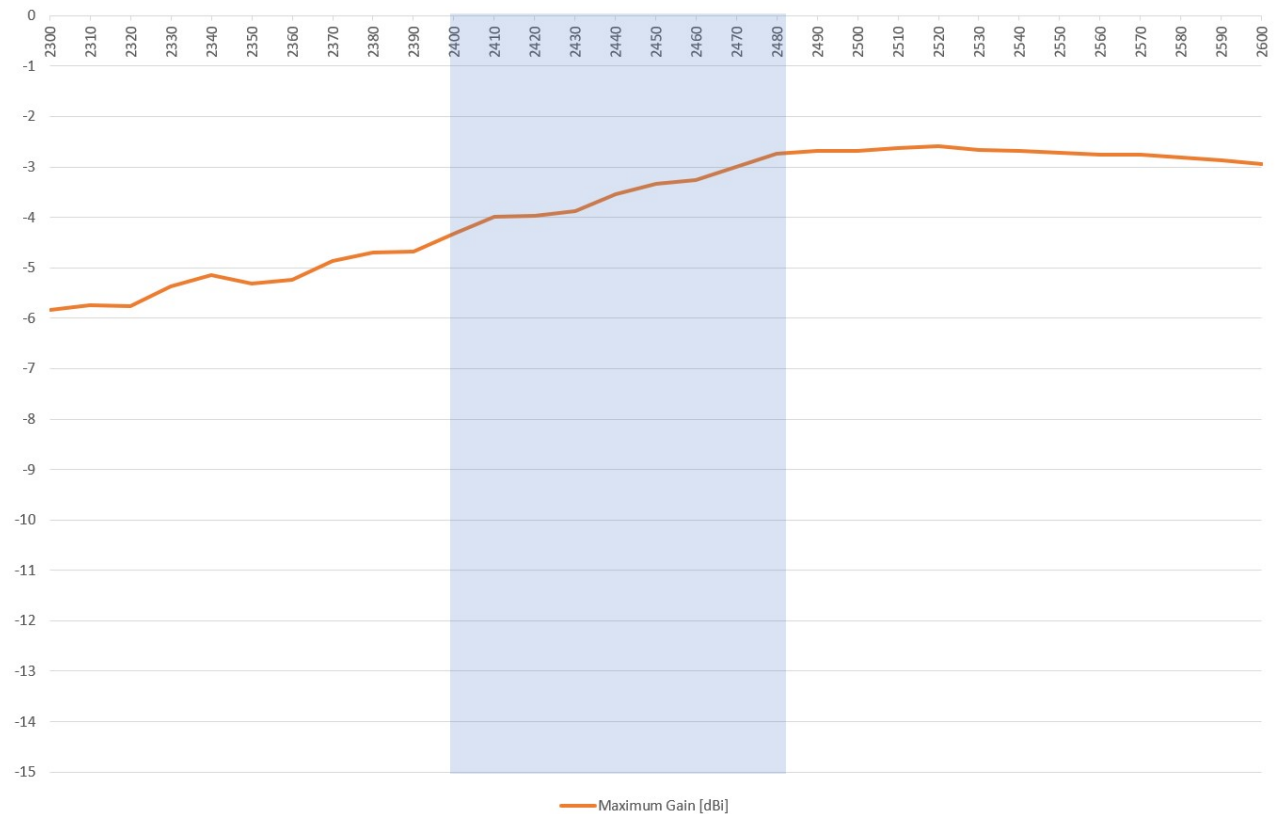
- size:
- GNSS L1 WxLxH (0.05x25x2) 3 mm
- GNSS L5 + Bluetooth WxLxH (0.05x62.5x1) 3 mm
- linear/omnidirectional

Antenna location: Antenna radiators are on the inner surface of the front cover of the device.

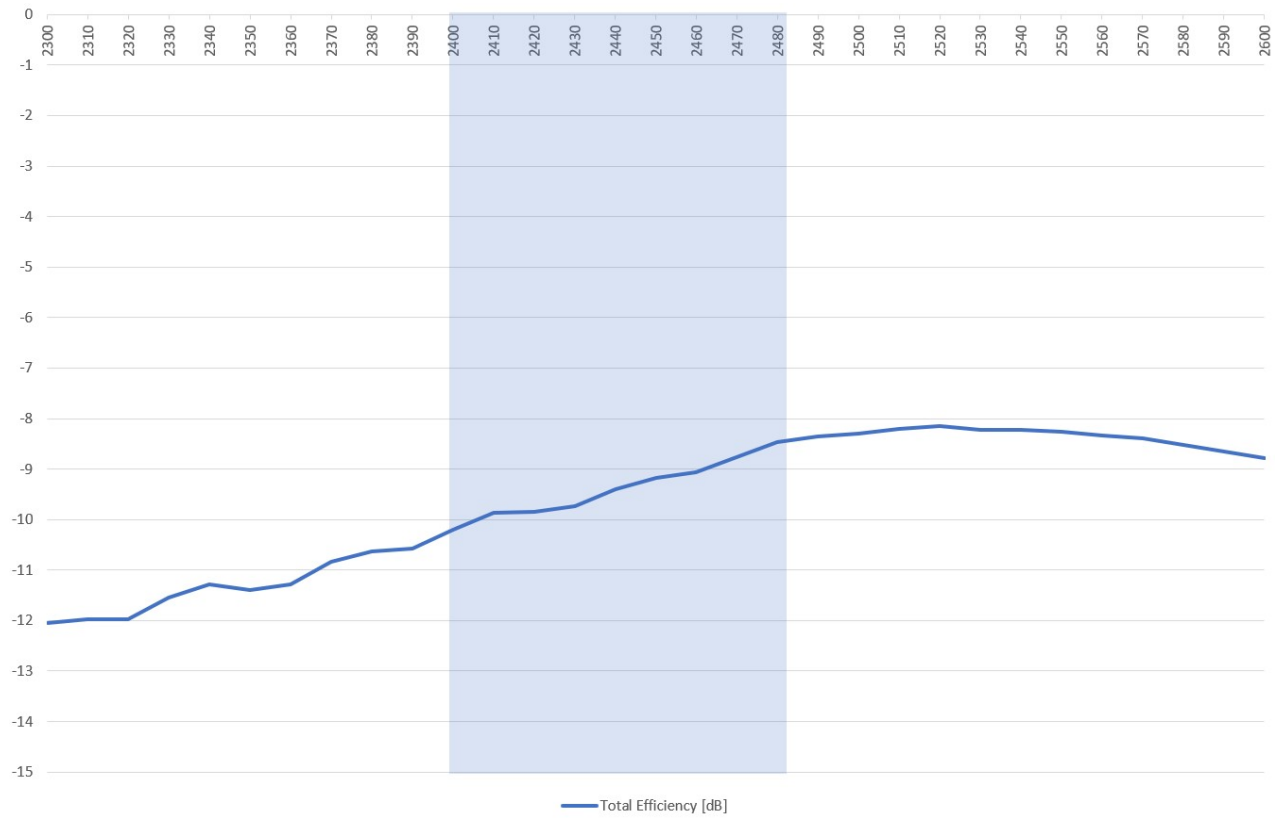
Antenna gain: -2,7dBi (Bluetooth), -3,8dBi (GNSS).

Bluetooth antenna measurements

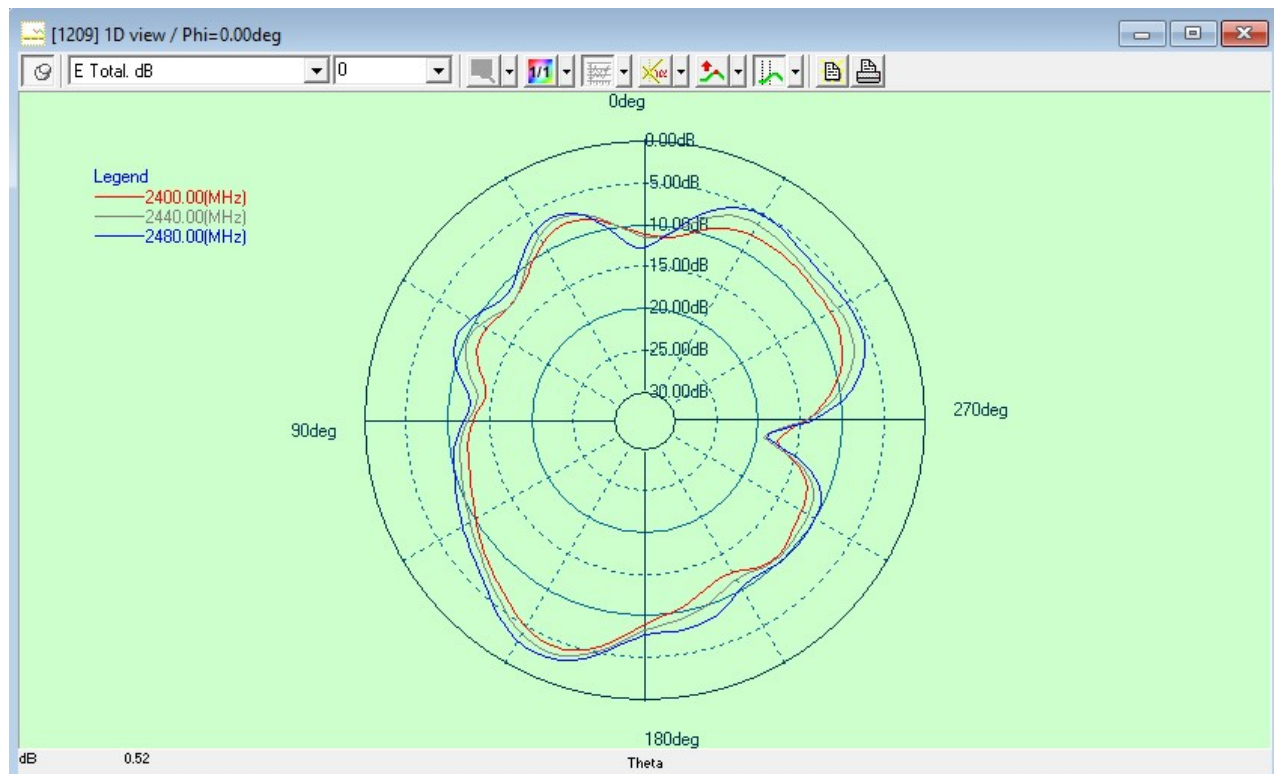
Bluetooth antenna maximum gain



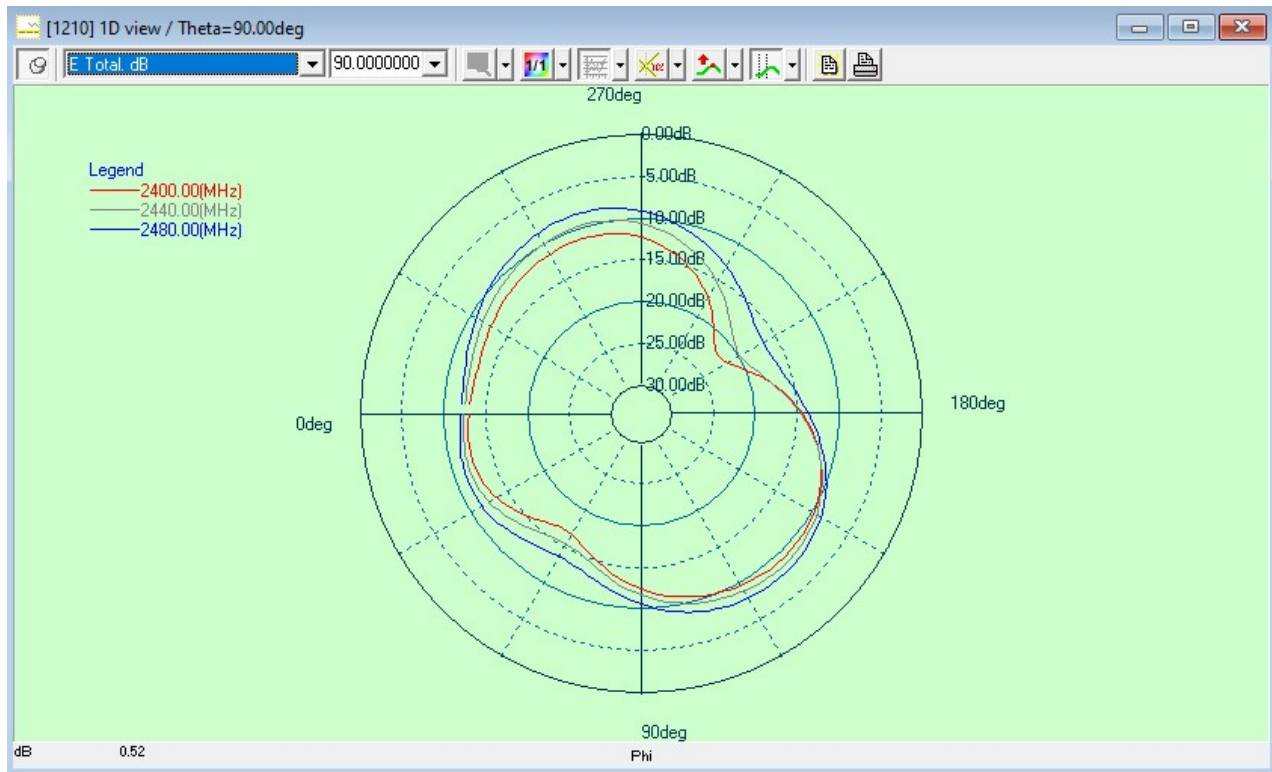
Bluetooth antenna efficiency



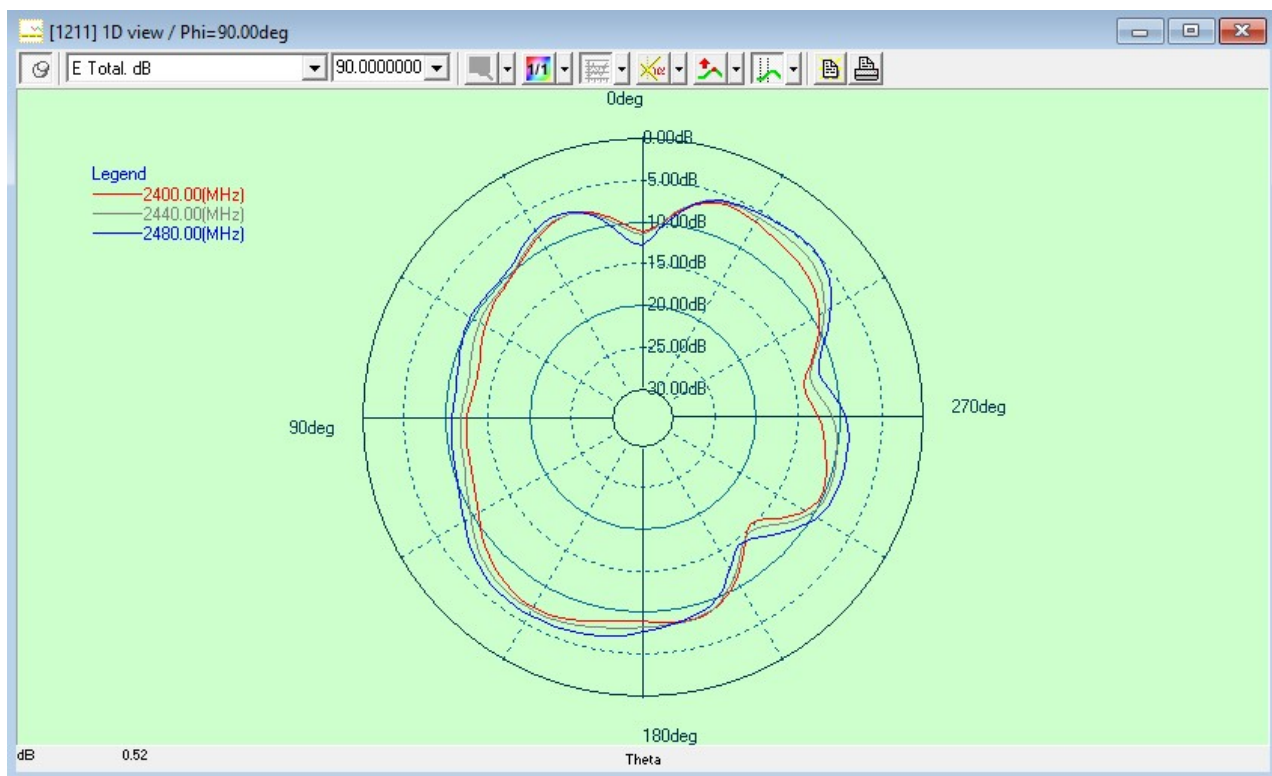
Bluetooth antenna cut diagrams Phi = 0 deg (XZ-plane)



Theta = 90 deg (XY-plane)



Phi = 90 deg (YZ-plane)



Above information and rest of antenna information are available in document 'Antenna technical document for Polar 5J'.

Sincerely,

Pentti Pärnänen

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