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Antenna Technical Data Sheet, BRC3800

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1 Introduction

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1.1 Objective

This document describes the antenna used in BRC3800 device, detailed antenna placement and main antenna radiation properties are presented.

2 Antenna in BRC3800

BRC3800 includes integrated antenna inside to device mechanics, more specifically in to the BRC3800 main PCB (Printed Circuit Board). Antenna is copper trace on the PCB, linearly polarized. Antenna designed to operate Bluetooth operating band 2402-2483.5MHz and utilized by BLE (Bluetooth Low Energy) system at BRC3800 device.

2.1 BLE Antenna

Antenna radiator presented in Figure 2.1.

Physical dimension of antenna is (W x L) 20.00mm X 6.00mm

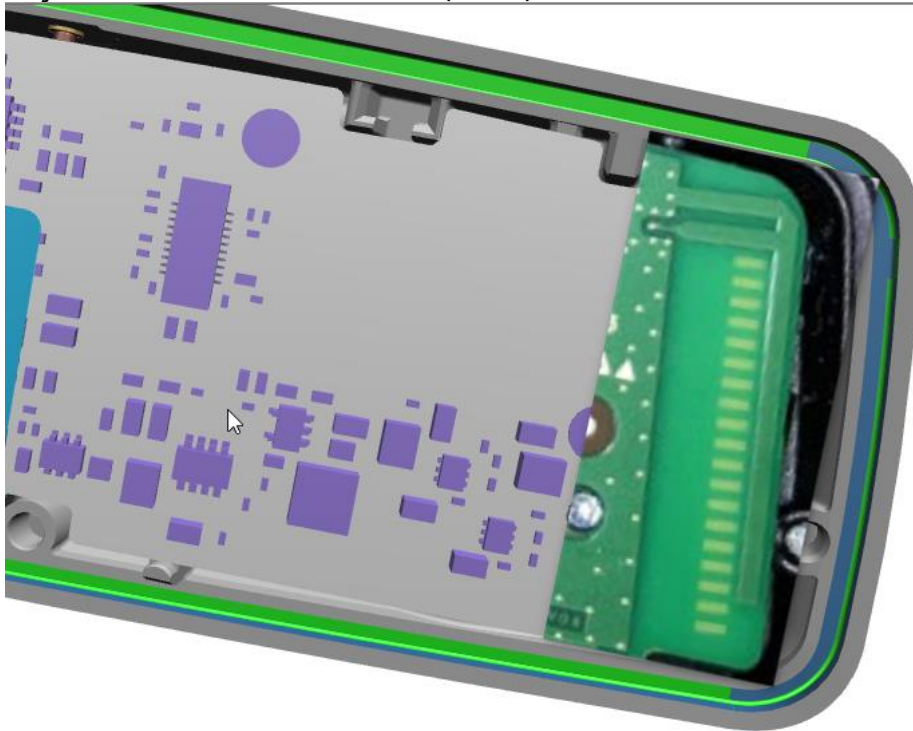


Figure 2.1 BLE-antenna

3 BRC3800 antenna peak and average gain data

Antenna peak and average gain are presented as function of frequency (figure 3.2 and figure 3.3). 1D radiation patterns from frequencies 2402MHz, 2440MHz and 2480MHz are presented in figure 3.4, figure 3.5 and figure 3.6.

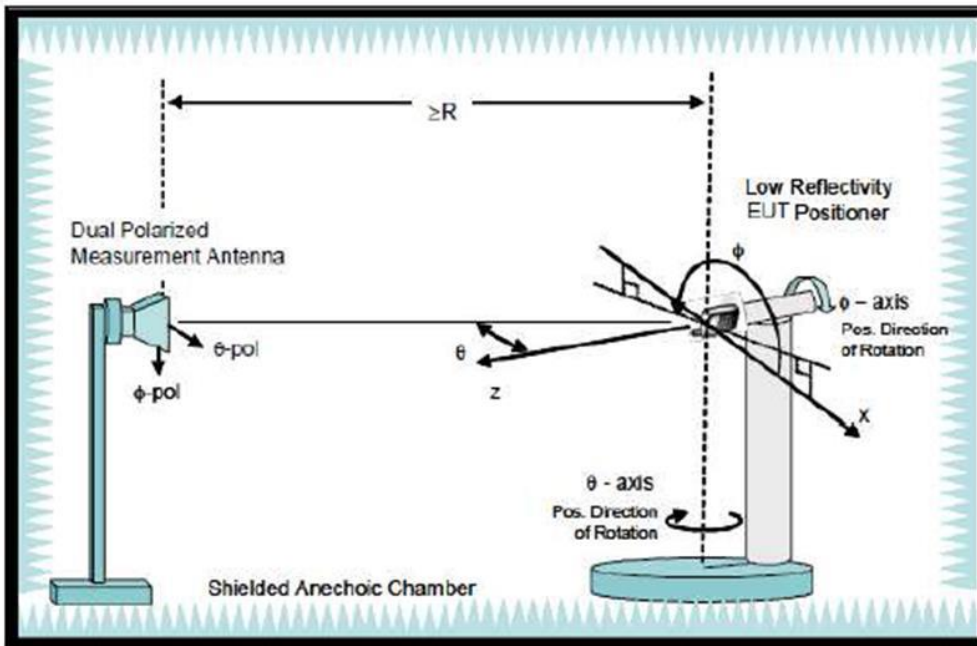


Figure 3.1 Antenna measurements system
Theta Θ axis 0 - 345, Phi Φ axis 0 – 180

3.1 BLE-antenna peak gain

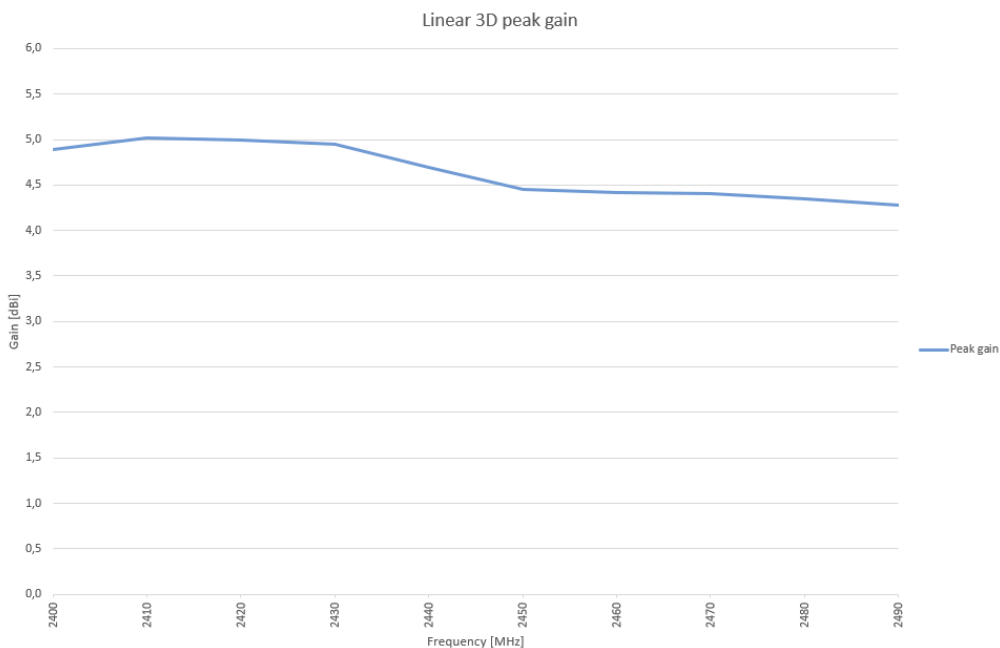


Figure 3.2 Antenna 3D peak gain

3.2 BLE-antenna average gain

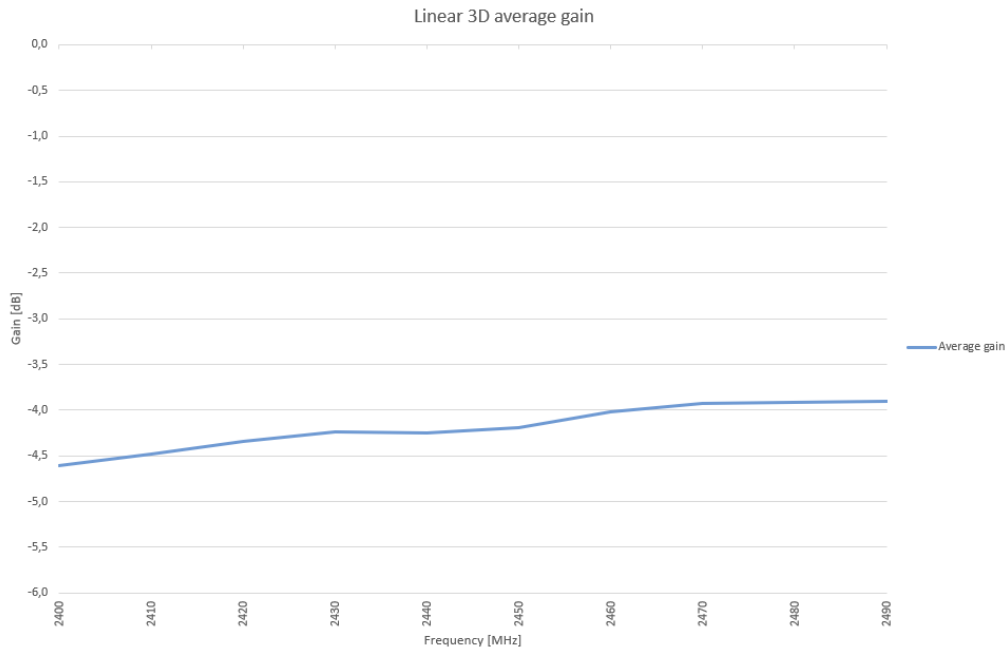


Figure 3.3 Antenna 3D average gain

3.3 Antenna 1D Radiation Diagrams

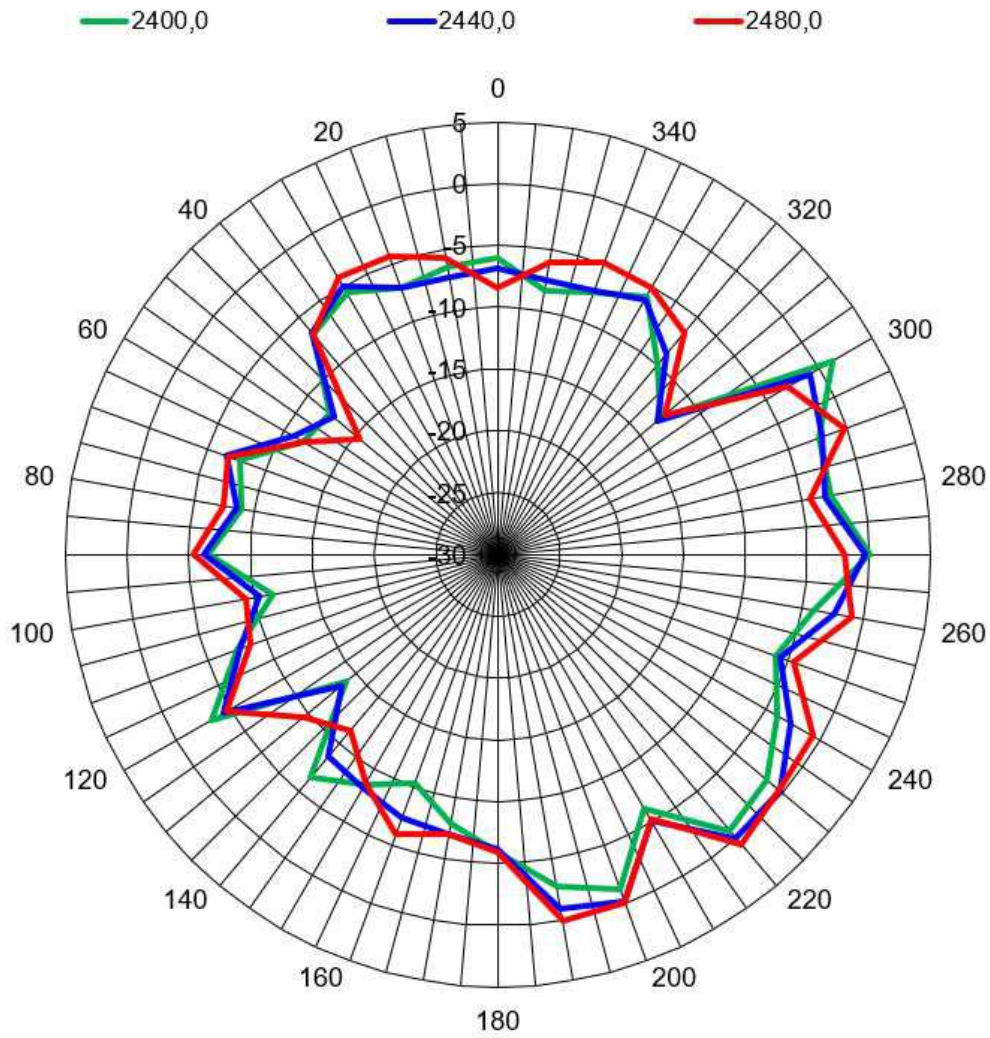


Figure 3.4 Radiation pattern, XZ-cut

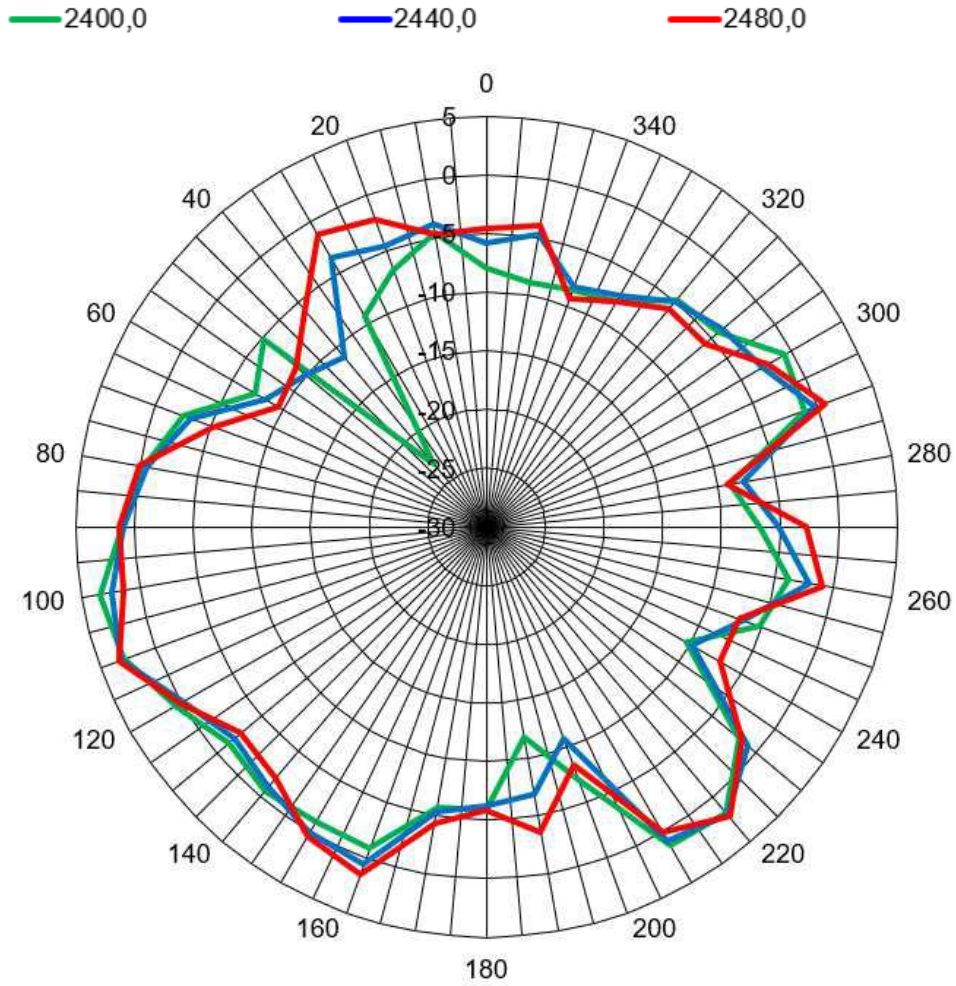


Figure 3.5 Radiation pattern, YZ-cut

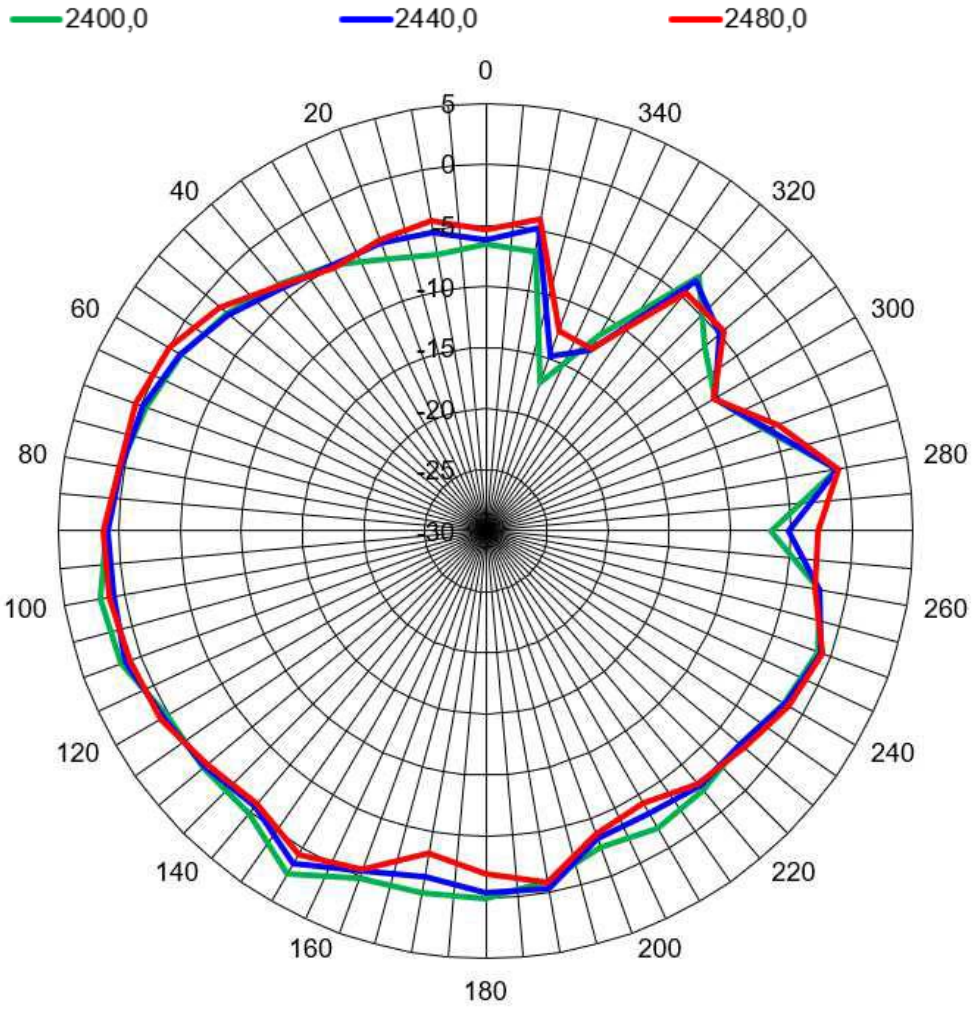


Figure 3.6 Radiation pattern, XY-cut