

## 4.2 Antenna efficiency and 3D radiation patterns

The antenna efficiency measurements are carried out in a Satimo SG-23 6 GHz Stargate Antenna Test Chamber. The antenna efficiency,  $\epsilon_T$ , is the ratio of the power delivered at the 50 $\Omega$  antenna interface,  $P_t$ , relative to the power radiated from the antenna,  $P_{radiated}$ .

$$\epsilon_T = \frac{P_{radiated}}{P_t}$$

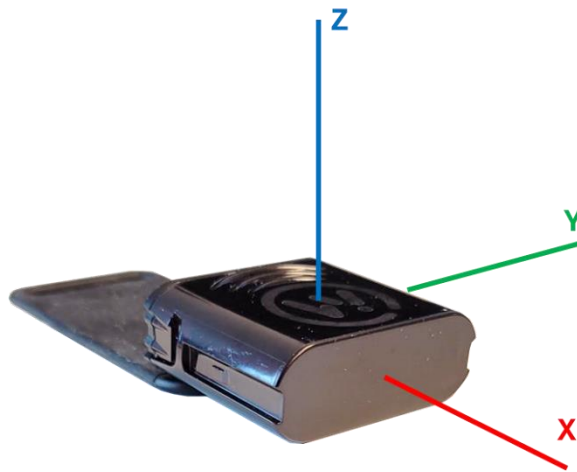


Figure 4-3 Measurement plane definitions.

## 4.2.1 915MHz antenna

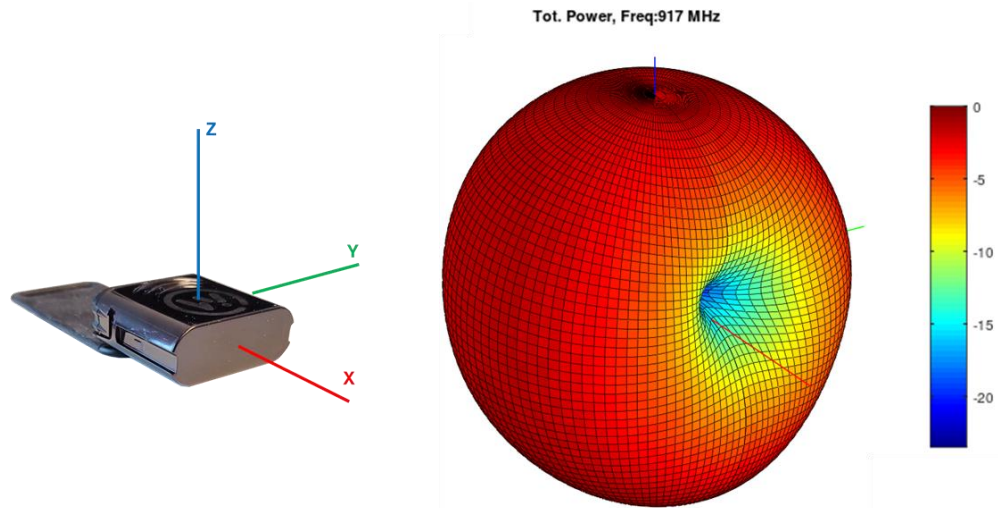


Figure 4-4 3D- radiation pattern @917MHz. Wittra CXAMELEON-1.0-US 915MHz antenna.

Table 1 Antenna efficiency and peak antenna gain for Wittra CXAMELEON-1.0-US 915MHz antenna.

Frequency [MHz]	Efficiency [dB]	Peak Gain [dBi]
2405	-3,1	0,2
2415	-3,3	-0,2
2425	-3,3	-0,3
2435	-2,9	0,2
2445	-3,0	0,0
2455	-2,9	0,5
2465	-2,7	1,0
2475	-2,7	1,6
2480	-2,3	2,1

## 4.2.2 2400MHz antenna

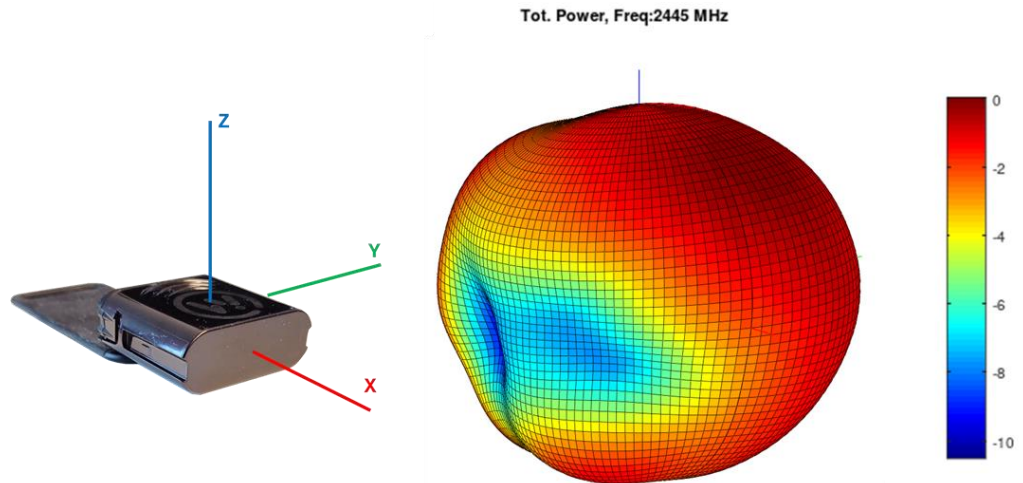


Figure 4-5 3D- radiation pattern @2445MHz. Wittra CXAMELEON-1.0-US 2400MHz antenna.

Table 2 Antenna efficiency and peak antenna gain for Wittra CXAMELEON-1.0-US 2400MHz antenna.

Frequency [MHz]	Efficiency [dB]	Peak Gain [dBi]
902	-5,1	-2,3
907	-4,4	-1,1
912	-3,9	-0,7
917	-3,3	0,0
922	-2,8	0,5
927	-2,4	0,9
930	-2,0	1,1