

Kadex
Reed Sensor Long V6.01 (DEV915077): **internal pcb**
antenna for 915
MHz

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figure 1: antenna section

antenna type: printed ILA antenna

implementation: microstrip on FR4

dimensions: approx. 50.7mm x 11.5mm

RF characteristics:



figure 2: DUT mounted on antenna rotating stand, battery powered

Parameter	902MHz	915MHz	928MHz
Directivity	3.3dBi	3.5dBi	3.9dBi
Peak gain	0.9dBi	1.9dBi	1.7dBi
Efficiency	58.2%	68.0%	59.8%
Impedance (with matching)	50Ω	50Ω	50Ω

peak gain vs frequency:

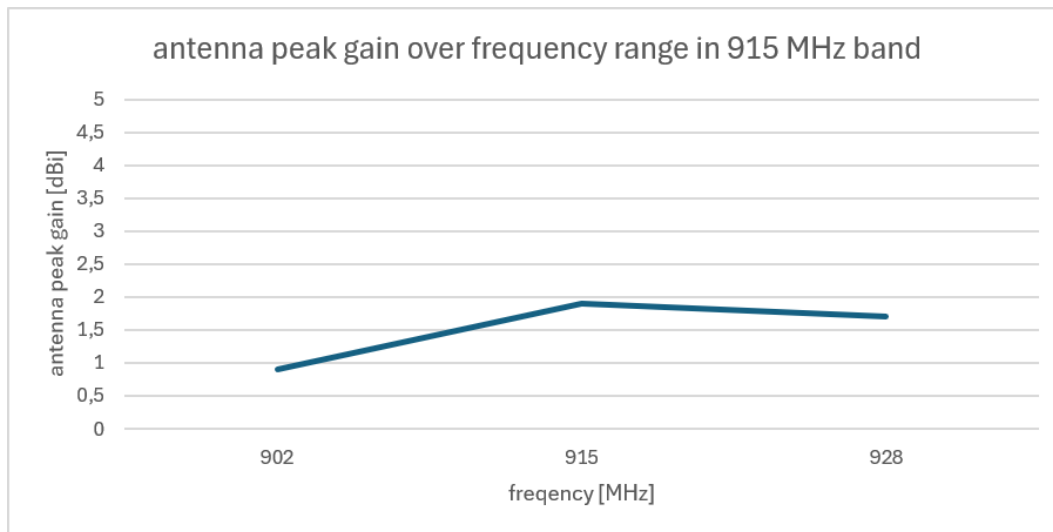


figure 3: antenna peak gain vs. frequency

Matching:

DUT antenna matching was performed on a wooden board



figure 4: test setup return loss, DUT on a wooden board

Antenna patterns:

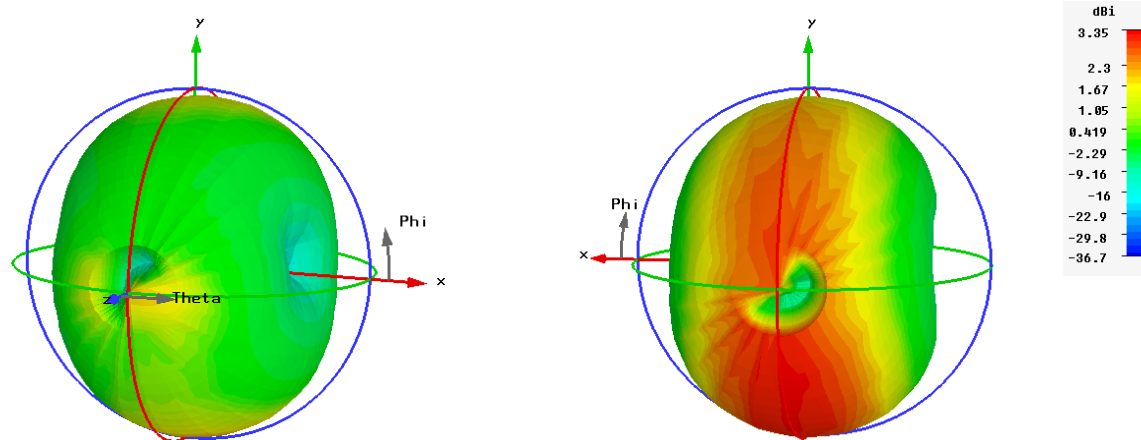


figure 5: 3D pattern at 902MHz

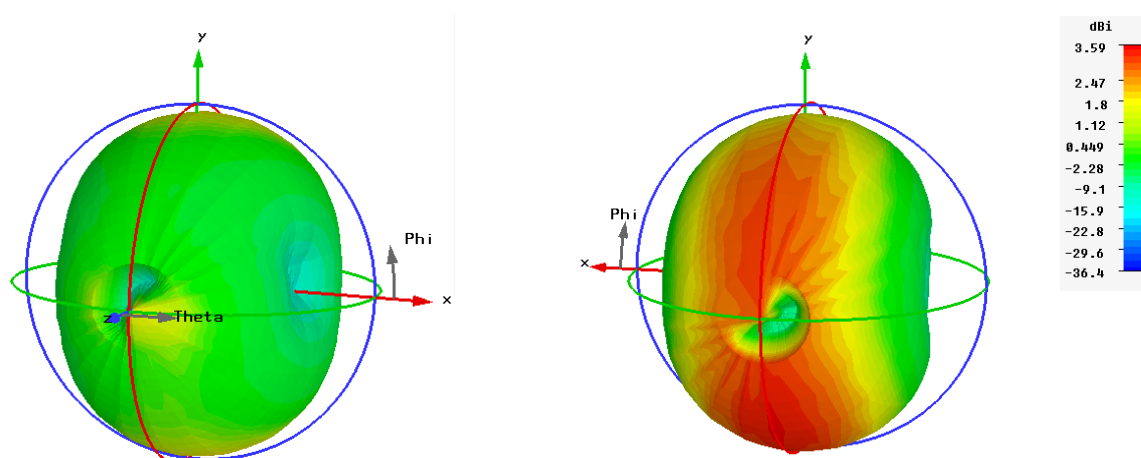


figure 6: 3D pattern at 915MHz

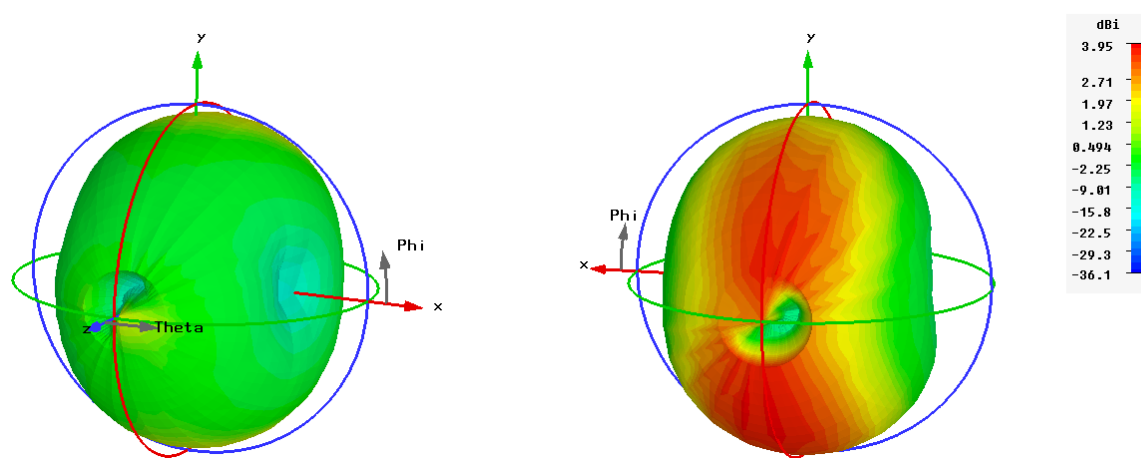


figure 7: 3D pattern at 928MHz

Test setup and equipment:

- DUT in TX CW mode (test mode)
- Rohde & Schwarz ZVCE Vector Network Analyzer
- Anritsu MS2830A Spectrum Analyzer / Signal Analyzer
- Schwarzbeck USLP 9143 UHF-SHF logarithmic periodic broadband antenna
- Self-build antenna rotating and anechoic chamber for radiated measurements