4.quarterwave

Internal Multiband Antenna

Smart QuarterSense

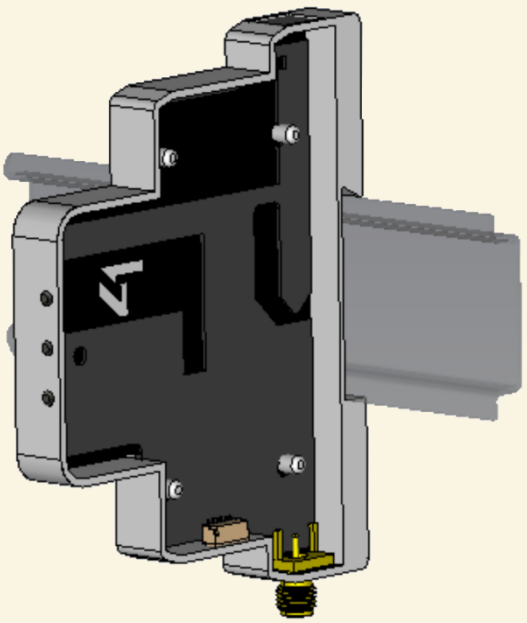
LTE / ISM 868/915 MHz / ISM 2.4GHz

DATASHEET

4.univ QuarterSense (QW26-LTE/ISM-1001)

Smart meter installations are not laboratory conditions. Communication units are typically mounted inside metallic distribution cabinets, in close proximity to high-current and high-voltage components. Reflections, absorption, and field distortions are inevitable.

Lower cellular bands are particularly sensitive in such environments. Many compact antennas suffer severe efficiency losses because the PCB unintentionally becomes part of the radiator and resonances shift unpredictably. By integrating antenna structure, mechanics, and electronics from the very beginning, these effects are not treated as afterthoughts — they are designed into the system. Current paths, grounding strategy, and radiator geometry are optimized as a unified whole. Instead of fighting the environment, the antenna architecture is engineered for it.



Disclaimer

All results and performance data shown in this datasheet are derived from simulation. Actual performance may vary depending on the final device integration and operating environment.

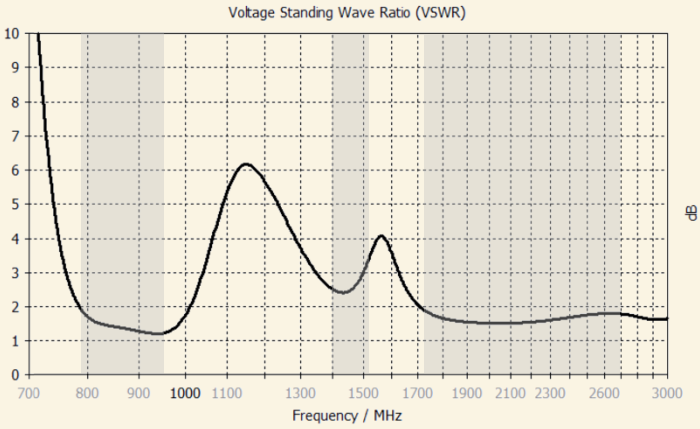
Features & Benefits

- Maximum Flexibility: Supports Wireless M-Bus, NB-IoT, LTE-M, Wi-Fi, LoRaWAN, and all relevant LTE bands up to 3 GHz – the communication path is defined by the application, not the hardware.
- High Efficiency Across the Spectrum: Wideband antenna architecture ensures strong performance, even in challenging Sub-1 GHz bands.
- Versatile Deployment Options: Functions as a standalone smart meter, a compact gateway, or even as a dedicated antenna platform; external antennas can be connected in demanding RF environments.

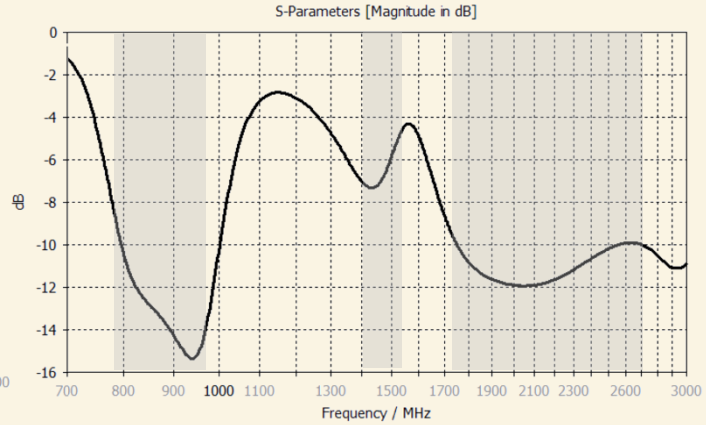
TECHNICAL SPECIFICATION

Electrical* LTE		
Operating Frequency	LB: 792MHz-960MHz	HB:1400MHz-3GHz
Suported E-UTRAN Bands	20,5,8,18,19,26,27,1,2,3,4,7,9,10,11,12,33-37,38,39,40,41	
Peak Gain	2.2 dBi	4.3 dBi
Rad. Efficency	70% - 82%	65% - 70%
VSWR	< 2 :1	< 2 :1
Polarization	Linear	
Radiation Pattern	Omnidirectional	
Impedance	50 Ohm	
Electrical* ISM 868MHz & 915MHz		
Operating Frequency	863-870MHz	902-928MHz
Suported Bands	ISM Band 868MHz	ISM Band 915MHz
Peak Gain	2.2 dBi	2 dBi
Rad. Efficency	80%	82%
VSWR	< 2 :1	
Polarization	Linear	
Radiation Pattern	Omnidirectional	
Impedance	50 Ohm	
Electrical* WiFi/BLE ISM Band 2.4GHz		
Operating Frequency	2.4 – 2.484 GHz	
Suported Bands	ISM Band 2.4GHz	
Peak Gain	4.3 dBi	
Rad. Efficency	70 %	
VSWR	< 2 :1	
Polarization	Linear	
Radiation Pattern	Omnidirectional	
Impedance	50 Ohm	

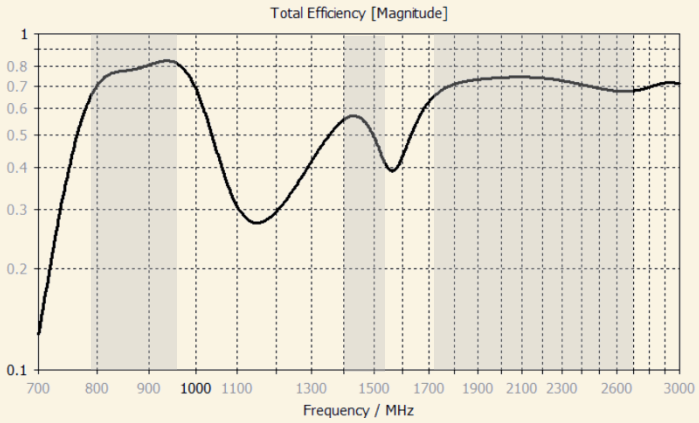
VSWR



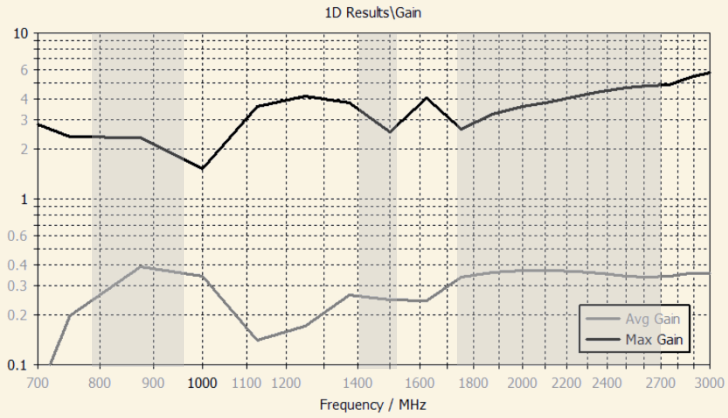
Return Loss



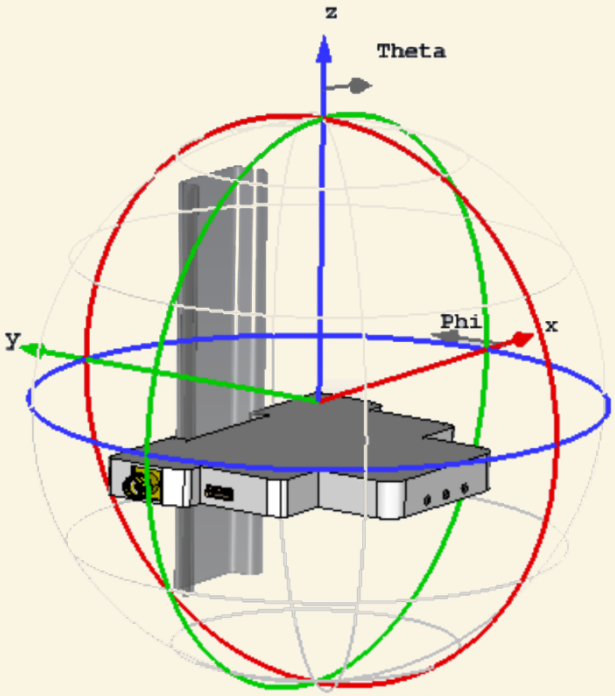
Efficiency

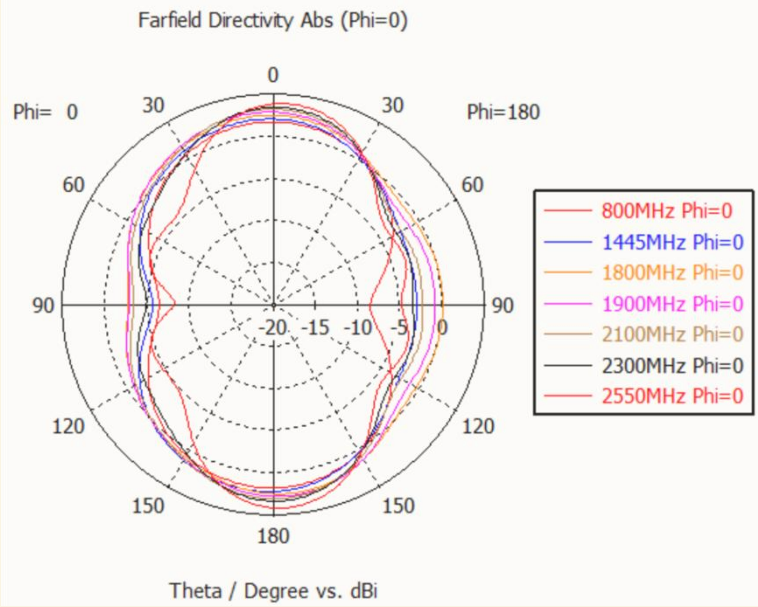


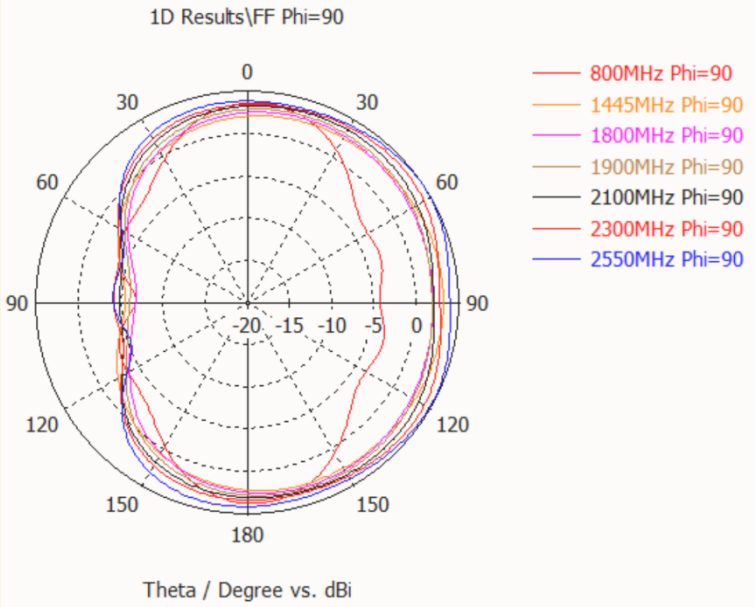
Gain [dB]

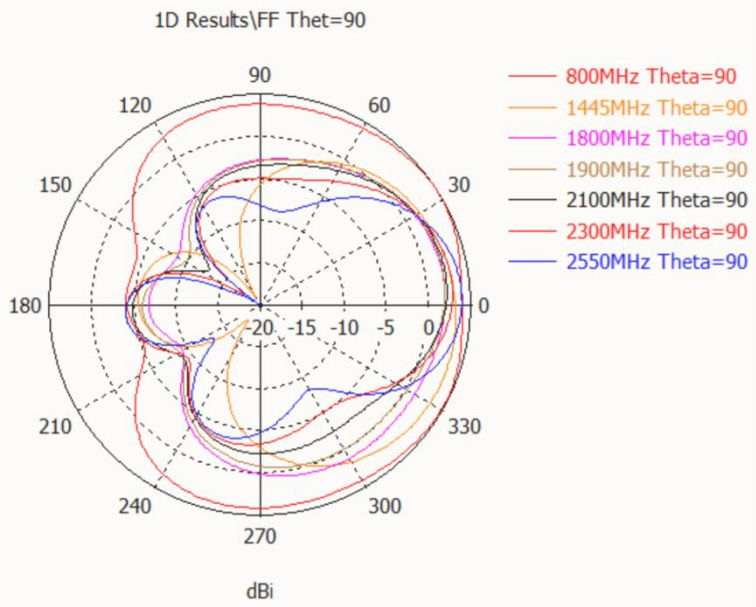


ANTENNA PATTERN LTE Bands

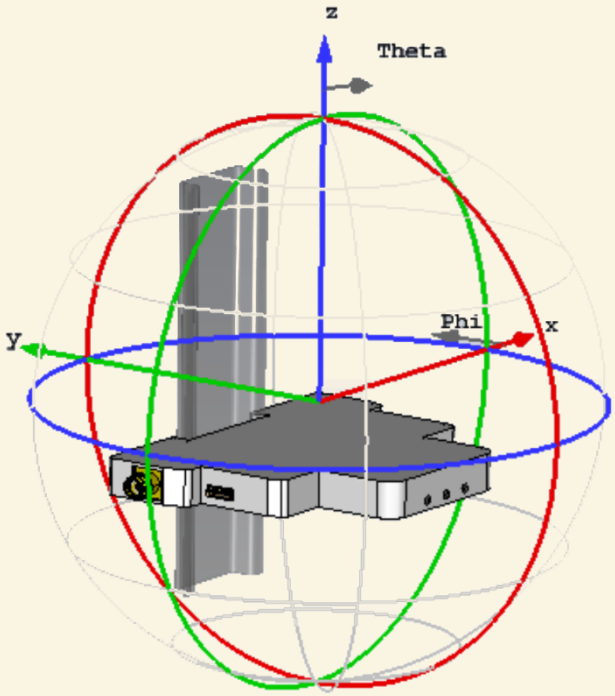


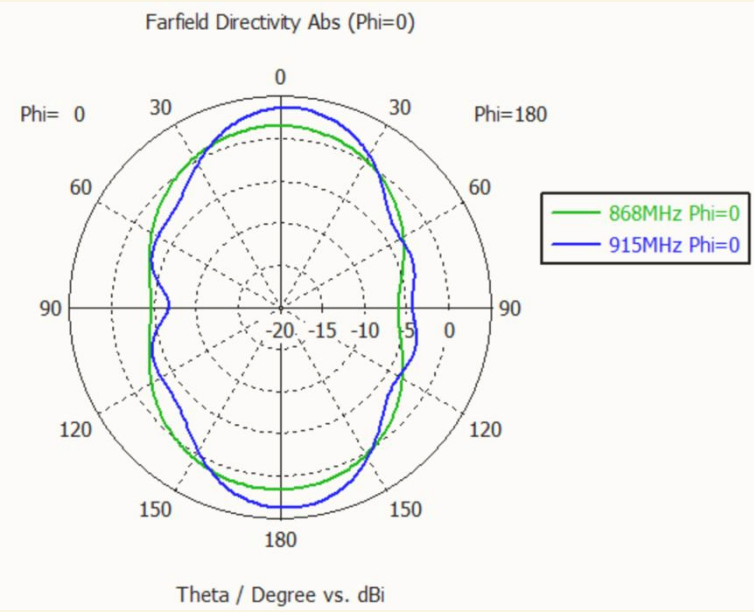


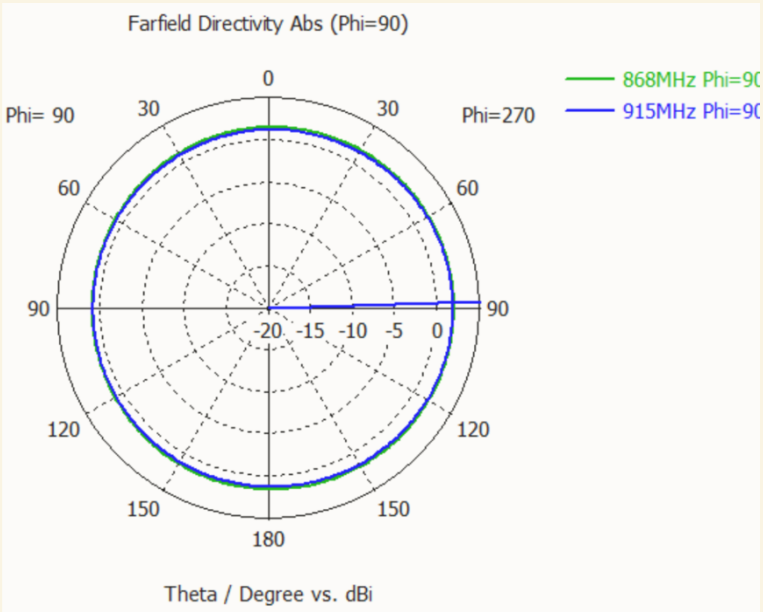


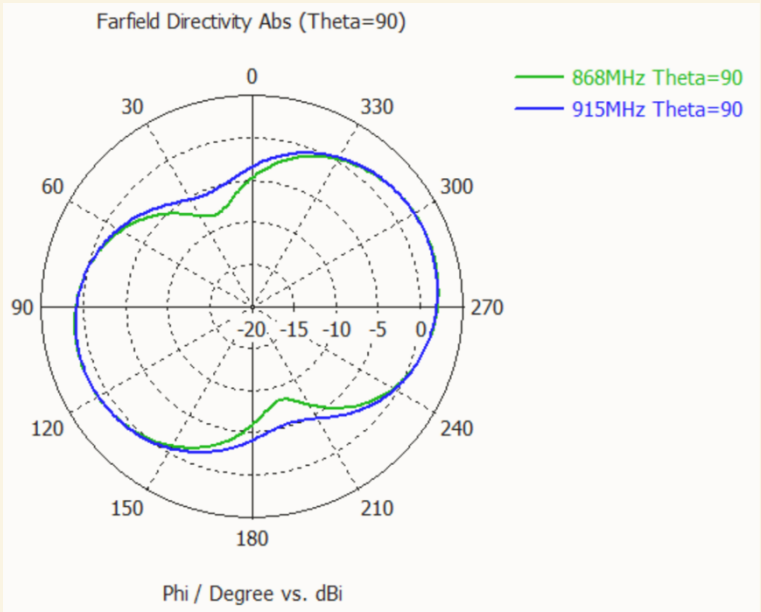


ANTENNA PATTERN ISM 868MHz & 915MHz









ANTENNA PATTERN ISM 2.4GHz Bands

Setup