

2.4. Power Consumption

Parameter	Min	Typ	Max	Unit
Peak Current, Transmitter +8 dBm, VCC 3V + DCDC		16.4		mA
Peak Current, Transmitter 0 dBm, VCC 3V + DCDC		6.4		mA
Peak Current, Receiver 1 Mbps, VCC 3V + DCDC		6.26		mA
System OFF, no RAM retention		0.4		µA
System ON, no RAM retention, wake on RTC		1.5		µA
Additional RAM retention current per 4 KB block		30		nA

2.5. Clock Sources

Parameter	Min	Typ	Max	Unit
Internal High Frequency Clock for RF Stability: 32 MHz Crystal Frequency Tolerance ⁽¹⁾			+/- 40	ppm
Internal Low Frequency Clock for BLE Synchronization: 32.768 kHz Crystal Frequency Tolerance ⁽¹⁾			+/- 40	ppm
Internal Low Frequency Clock for BLE Synchronization: RC Oscillator ⁽²⁾			+/- 250	ppm
RF Frequency Tolerance for BLE Operation			+/- 40	ppm

(1) including initial tolerance, drift, aging, and frequency pulling

(2) Frequency tolerance after calibration

2.6. Radio Specifications

Parameter	Min	Typ	Max	Unit
Frequency Range	2402		2480	Mhz
Maximum Output Power		8		dBm
Rx Sensitivity Level, BLE1 Mbps		-95		dBm
Rx Sensitivity Level, BLE Long Range 125 kbps		-103		dBm
Antenna Gain		0.6		dBi
EIRP	-19.4		8.6	dBm
Data Rate	125		2000	kbps

2.7. Range Measurement

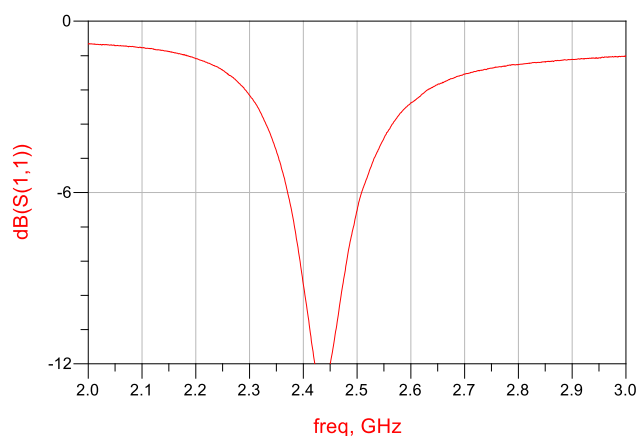
Range measurement between ISP1807-LR test board (configured as Central) and ISP1807-LR test board (configured as Peripheral).

Parameter	Min	Typ	Max	Unit
Range Open field @1m height (0 dBm, 1 Mbps)		150		m
Range Open field @1m height (0 dBm, 125 Kbps)		175		m
Range Open field @1m height (8 dBm, 1 Mbps)		230		m
Range Open field @1m height (8 dBm, 125 Kbps)		450		m

2.8. Antenna Performance

Typical Antenna Return Loss

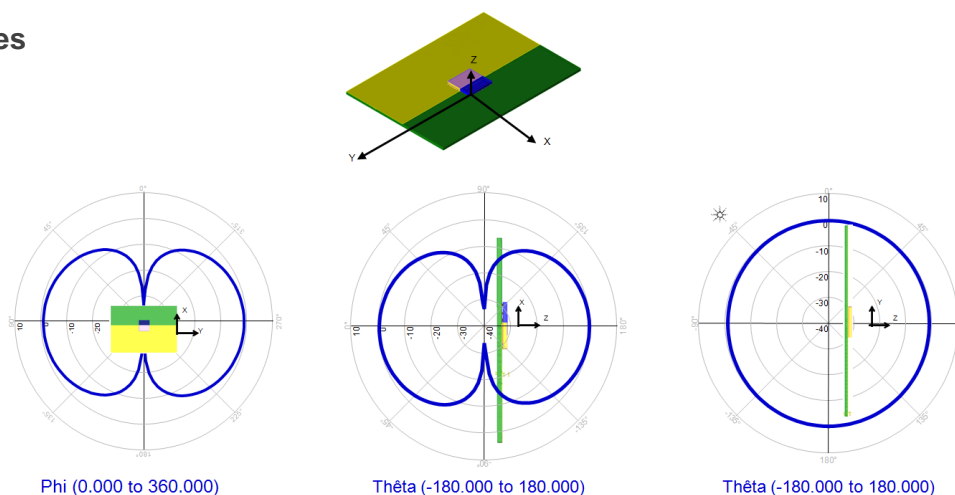
Module mounted on a
USB dongle ground plane



Radiation Pattern in 3 planes

Module mounted on a USB
dongle ground plane

Gain measurement
in dBi @ 2.45 GHz.



Ground Plane Effect Simulation

