

5.18 451-00001 On-board PCB Antenna Characteristics

The 451-00001 on-board PCB trace monopole antenna radiated performance depends on the host PCB layout.

The BL654 development board was used for BL654 development and the 451-00001 PCB antenna performance evaluation. To obtain similar performance, follow guidelines in section *PCB Layout on Host PCB for the 451-00001* to allow the on-board PCB antenna to radiate and reduce proximity effects due to nearby host PCB GND copper or metal covers.

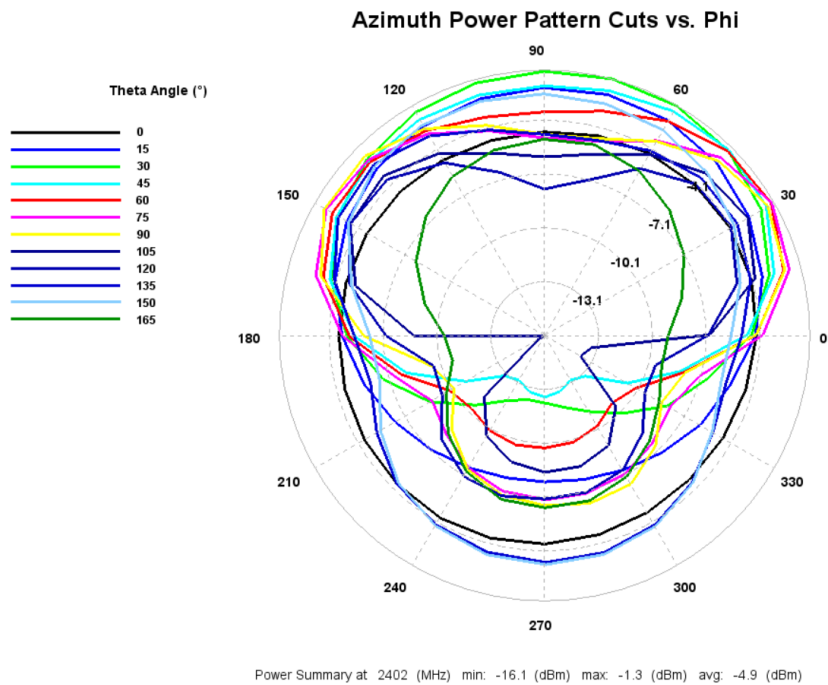
	f(MHz)	Antenna P (dBm)	TRP (dBm)	Max EIRP (dBm)	Efficiency (dB)	Gain (dBi)
BL654	2402	0.00	-4.75	-1.19	-4.8	-1.2
	2440	0.00	-3.55	0.18	-3.6	0.2
	2480	0.00	-2.82	0.71	-2.8	0.7

Notes: Antenna P = Antenna input power (set).
TRP = Total Radiated Power (measured).
EIRP = Equivalent Isotropic (ideal) Radiated Power (measured).
Efficiency = TRP - Antenna P (calculated).
Gain = Max. EIRP - Antenna P (calculated).

Figure 8: Radiated Performance Measurement Setup

5.18.1 2402MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

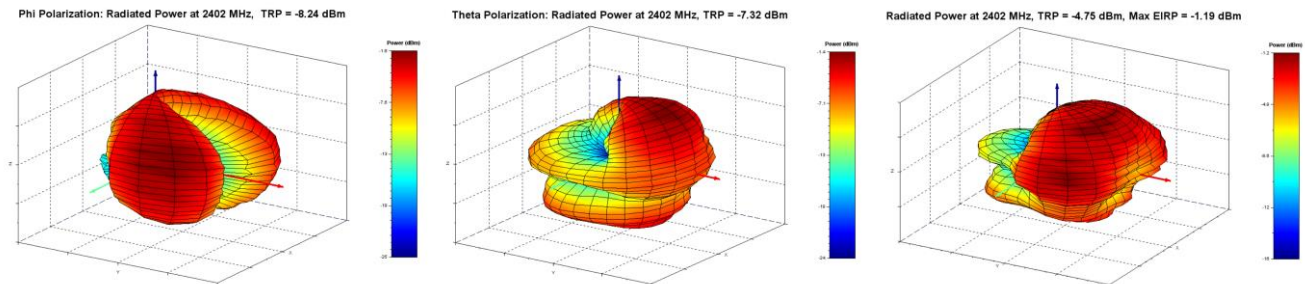
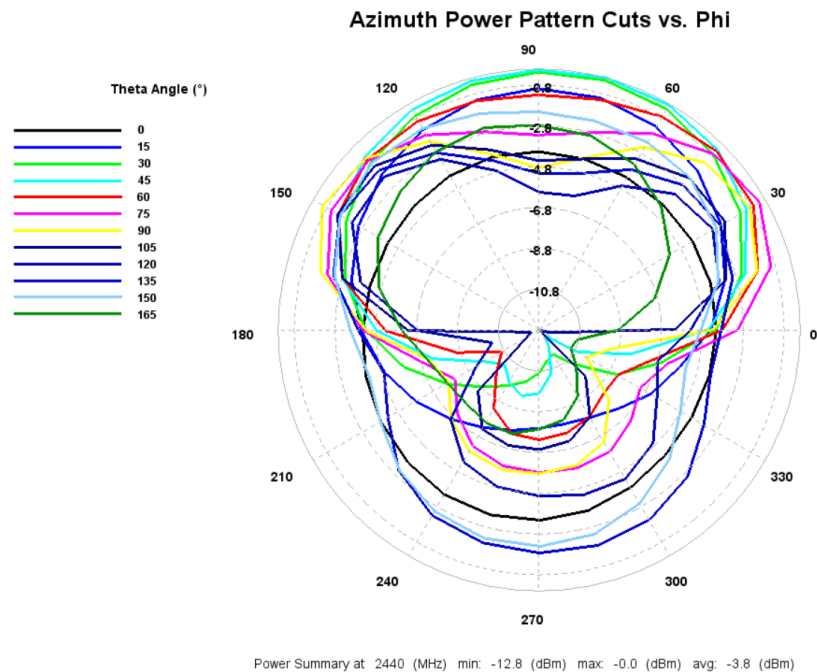


Figure 9: 2402MHz Horizontal, Vertical, and Total Patterns

5.18.2 2440MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

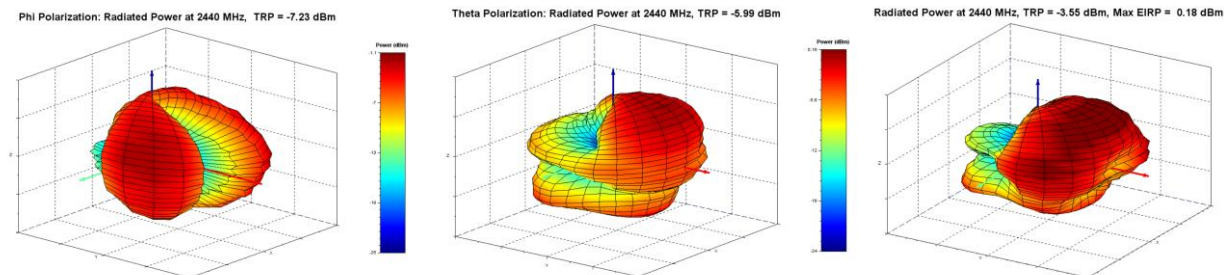
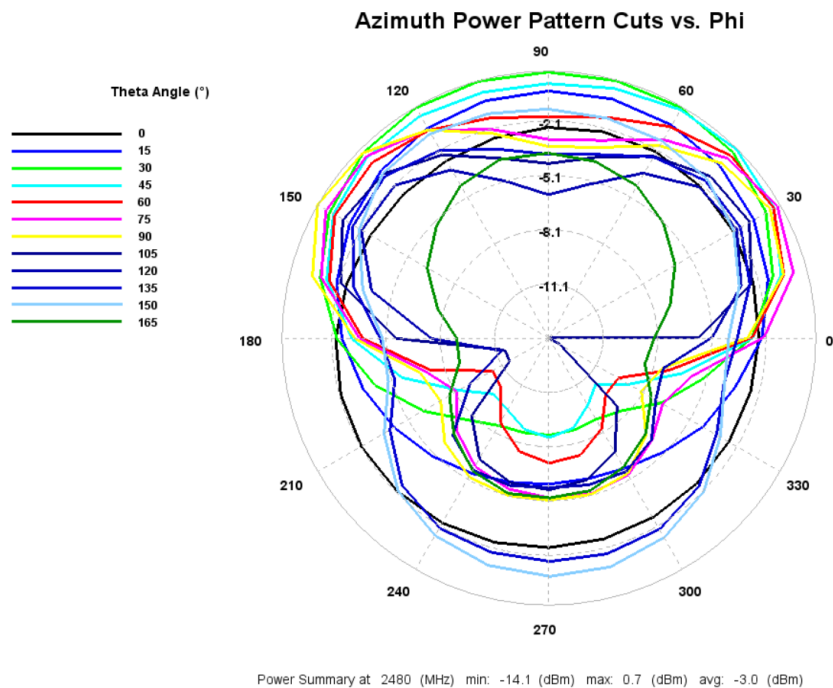


Figure 10: 2440MHz Horizontal, Vertical, and Total Patterns

5.18.3 2480MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

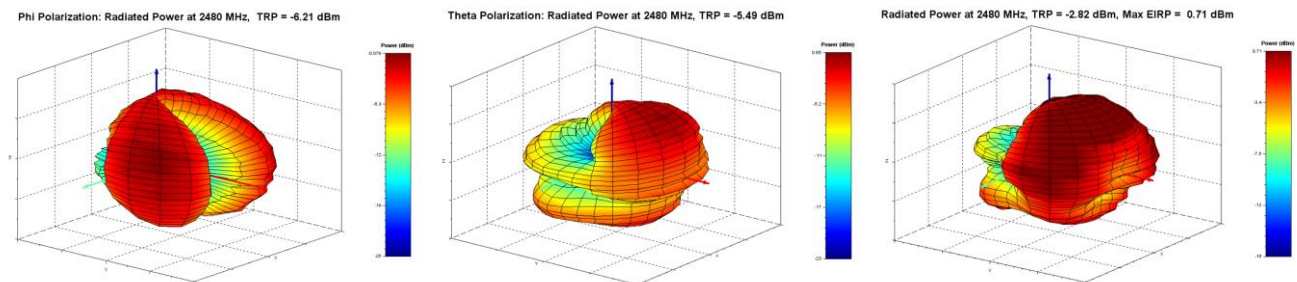


Figure 11: 2480MHz Horizontal, Vertical, and Total Patterns