5.18 453-00039 On-board PCB Antenna Characteristics

The 453-00039 on-board PCB trace monopole antenna radiated performance depends on the host PCB layout.

The BL653 development board was used for BL653 development and the 453-00039 PCB antenna performance evaluation. To obtain similar performance, follow guidelines in section *PCB Layout on Host PCB for the 453-00039* 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)
BL653	2402	0.00	-3.49	0.13	-3.5	0.1
	2440	0.00	-3.89	-0.10	-3.9	-0.1
	2480	0.00	-4.53	-0.95	-4.5	-1.0

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).

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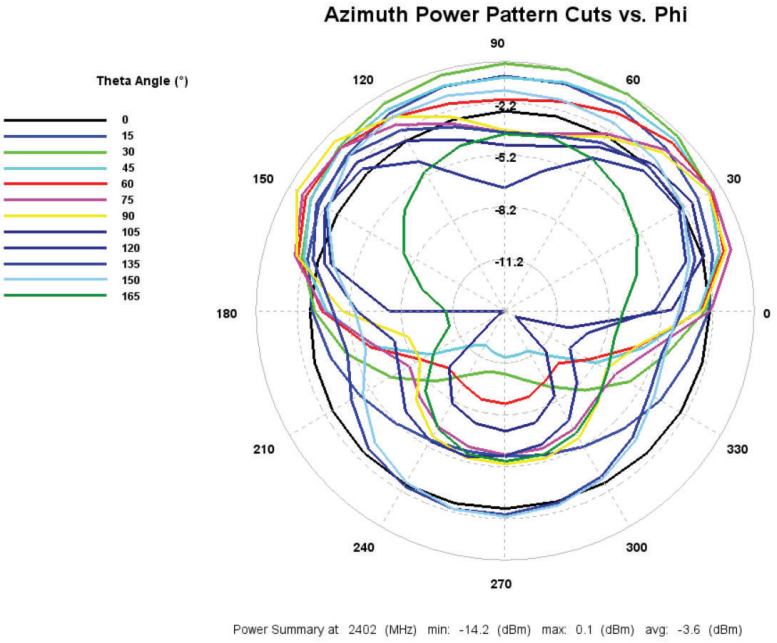
5.18.1 2402MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

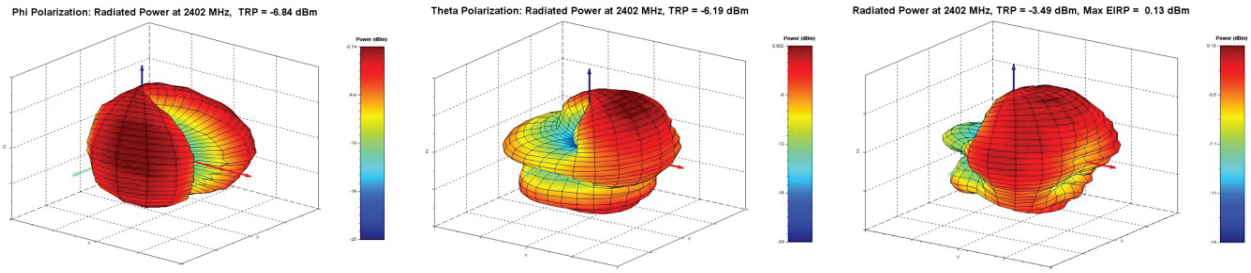


Figure 9: 2402MHz Horizontal, Vertical, and Total Patterns

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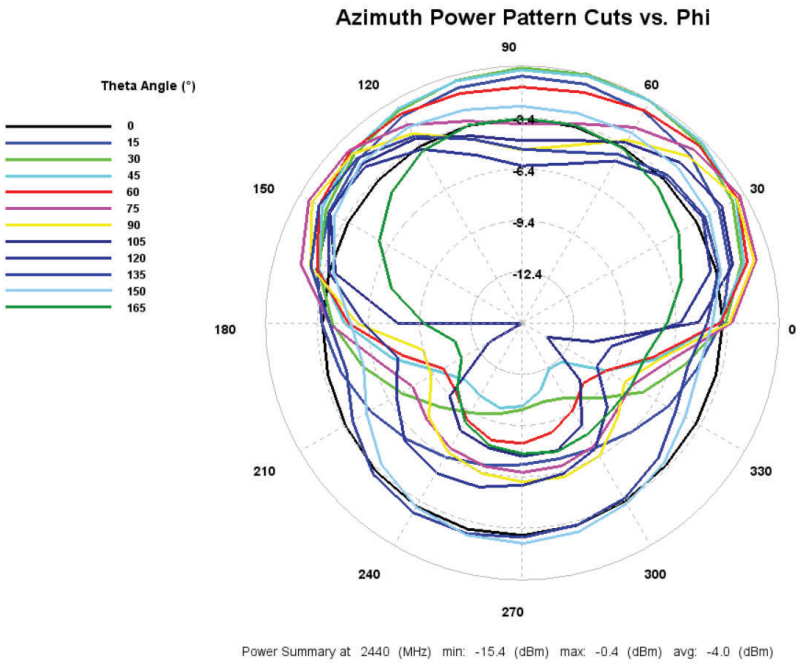
5.18.2 2440MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

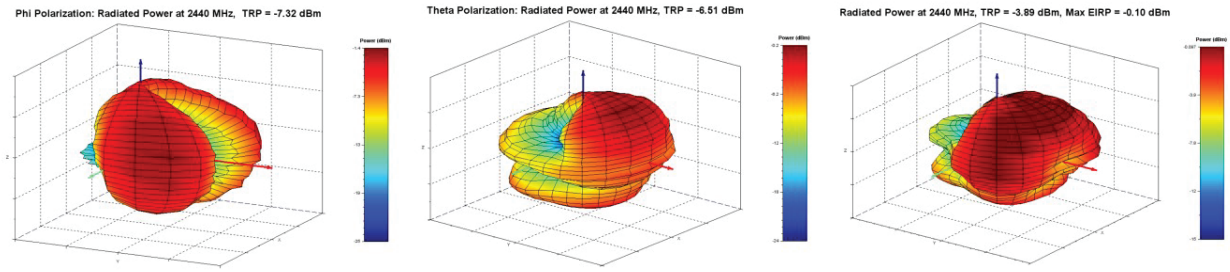


Figure 10: 2440MHz Horizontal, Vertical, and Total Patterns

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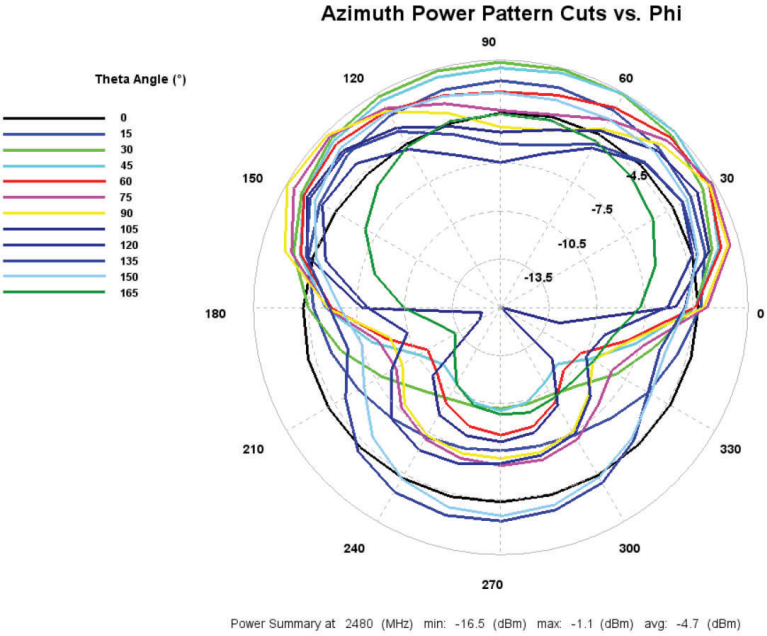
5.18.3 2480MHz Radiated Performance

EIRP Azimuth Cut



3D Plots:

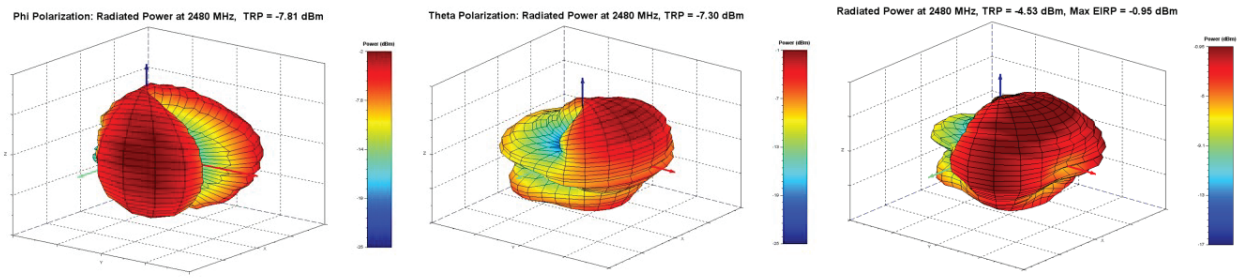


Figure 11: 2480MHz Horizontal, Vertical, and Total Patterns

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13 Additional Information

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