

Vivint Zigbee Bridge
P1/T1 Antenna Gain and Efficiency Report

V. Pham 6/24/2022

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- The diversity antennas in two Vivint Zigbee Bridge P1/T1 samples were measured in a Satimo SG-24 Rapid Antenna Measurement System
- Radiated Peak Gain and Efficiency measurements were compared to the target specifications, pre-hardware simulations and PoC hardware
- The relational matrix of target, simulation and antenna measurements is summarized below and shows good correlation

Antenna Development Data Summary

Antenna	Peak Gain (dBi @ 2450 MHz)		PoC	PoC	PoC	P1/T1	P1/T1	P1/T1
	Target (dBi)	Simulation (dBi)	Measured UUT#1 (dBi)	Measured UUT#2 (dBi)	Averages (dBi)	Measured UUT#1 (dBi)	Measured UUT#2 (dBi)	Averages (dBi)
1	2.0 max.	2.4	1.3	2.2	1.8	2.8	3.1	2.9
2	2.0 max.	3.0	2.7	2.0	2.4	3.0	2.2	2.6

Antenna	Efficiency (% @ 2450 MHz)		PoC	PoC	PoC	P1/T1	P1/T1	P1/T1
	Target (%)	Simulation (%)	Measured UUT#1 (%)	Measured UUT#2 (%)	Averages (%)	Measured UUT#1 (%)	Measured UUT#2 (%)	Averages (%)
1	> 50	60.0	47.3	48.1	47.7	57.0	54.7	55.8
2	> 50	57.0	57.6	51.9	54.8	63.3	66.9	65.1

Antenna 1 Gain and Efficiency

Model 1# ANT 1#			Model 2# ANT 1#		
Frequency (MHz)	Gain (dB)	Efficiency	Frequency (MHz)	Gain (dB)	Efficiency
2300	1.45	56.78%	2300	1.56	53.12%
2310	1.81	59.46%	2310	1.89	55.46%
2320	2.11	60.68%	2320	1.89	56.90%
2330	2.22	59.83%	2330	1.90	56.60%
2340	1.83	57.88%	2340	1.73	55.27%
2350	1.61	55.99%	2350	1.70	53.42%
2360	1.40	54.70%	2360	1.56	51.89%
2370	1.69	54.32%	2370	1.64	50.87%
2380	1.95	56.10%	2380	2.04	52.17%
2390	1.90	56.08%	2390	2.21	52.56%
2400	2.08	53.81%	2400	2.47	50.94%
2402	2.13	53.95%	2402	2.52	51.18%
2410	2.34	54.01%	2410	2.57	51.48%
2420	2.66	55.66%	2420	2.58	52.87%
2430	2.87	57.65%	2430	2.68	54.81%
2440	2.82	57.85%	2440	2.88	55.20%
2450	2.76	56.97%	2450	3.06	54.70%
2460	2.56	53.97%	2460	2.82	51.89%
2470	2.45	50.87%	2470	2.55	49.10%
2480	2.57	51.11%	2480	2.46	49.26%
2490	3.01	53.27%	2490	2.96	51.47%
2500	3.20	55.63%	2500	3.27	53.95%
2510	3.40	55.29%	2510	3.45	53.73%
2520	3.53	55.36%	2520	3.56	54.14%
2530	3.70	54.44%	2530	3.64	53.46%
2540	3.61	52.77%	2540	3.49	52.23%
2550	3.35	51.44%	2550	3.26	51.15%
2560	3.30	50.31%	2560	3.16	49.91%
2570	3.22	49.01%	2570	3.02	48.44%
2580	3.24	48.57%	2580	3.02	48.01%
2590	3.44	50.96%	2590	3.23	50.50%
2600	3.81	52.38%	2600	3.67	52.14%

Antenna 2 Gain and Efficiency

Model 1# ANT 2#			Model 2# ANT 2#		
Frequency (MHz)	Gain (dB)	Efficiency	Frequency (MHz)	Gain (dB)	Efficiency
2300	4.06	57.33%	2300	3.93	62.25%
2310	3.96	61.22%	2310	3.80	65.92%
2320	4.22	64.91%	2320	4.06	69.21%
2330	4.48	66.21%	2330	4.17	70.48%
2340	4.37	63.97%	2340	3.99	68.29%
2350	4.11	61.48%	2350	3.68	65.63%
2360	3.77	60.79%	2360	3.26	64.65%
2370	3.59	61.29%	2370	3.04	65.14%
2380	3.65	62.93%	2380	3.04	66.88%
2390	3.67	62.76%	2390	3.00	66.72%
2400	3.68	61.59%	2400	2.97	65.53%
2402	3.67	61.75%	2402	2.95	65.74%
2410	3.30	61.65%	2410	2.32	65.57%
2420	3.07	62.56%	2420	2.05	66.52%
2430	2.97	64.04%	2430	2.15	67.96%
2440	3.07	64.29%	2440	2.32	68.03%
2450	2.96	63.26%	2450	2.18	66.91%
2460	2.51	61.56%	2460	1.70	64.99%
2470	2.11	59.57%	2470	1.29	62.81%
2480	1.96	59.54%	2480	1.25	62.67%
2490	2.22	60.02%	2490	1.57	63.28%
2500	2.36	60.41%	2500	1.85	63.85%
2510	2.43	59.14%	2510	2.00	62.50%
2520	2.27	58.45%	2520	1.82	61.36%
2530	2.20	57.89%	2530	1.79	60.44%
2540	2.21	57.32%	2540	1.85	59.80%
2550	2.12	54.90%	2550	1.74	57.47%
2560	1.89	52.05%	2560	1.56	54.46%
2570	1.67	50.00%	2570	1.42	52.42%
2580	1.65	49.27%	2580	1.47	51.91%
2590	2.04	50.07%	2590	2.00	53.29%
2600	2.71	51.04%	2600	2.58	54.13%