

## Pulse Embedded (SMT) Antennas for WiFi/BT/Zigbee applications

Rev H.02 (JAN 2018)

App.	Type	Pulse Part Number	RF Performance						ME requirement			Note
			Operating Frequency (MHz)	RL Min. (dB)	Peak Gain (dBi)		Efficiency (%)		Antenna DIM. (LxWxH,mm)	GC-area (L x W,mm)	Evaluation Board Size (L x W,mm)	
					Peak	Band edges	Peak	Band edges				
Single WiFi, BT, Zigbee	Ceramic chip	<a href="#">W3000</a>	2400-2483.5	-18	2.5	2.1	65	55	7 x 1.6 x 1.6	6.00 x 11.00	40 x 11	3 Matching components Horiz. mount
		<a href="#">W3001</a>		-12	2.2	1.5	53	45		6.00 x 20.00	30 x 20	
		<a href="#">W3008</a>		-6	1.5	0.5	75	60	10 x 3.2 x 4.0	10.80 x 6.25	80 x 37	On Ground solution
		<a href="#">W3008C</a>		-8	1.7	0.7	70	55	3.2 x 1.6 x 1.1	4.00 x 4.25	80 x 37	
		<a href="#">W3043</a>		-11	2.2	1.9	75	70	3.2 x 1.6 x 1.1	4.00 x 6.25	80 x 37	
		<a href="#">W3092</a>		-12	4	-	70	-	3.2 x 1.6 x 1.1	5.60 x 20	37 x 20	Small PCB size
		<a href="#">W3108</a>		-6	2	0	60	43	2 x 1.2 x 0.55	8 x 2.5	110 x 55	small antenna size
	Helical	<a href="#">W3108</a>	-8	1.5	-	50	-	5.0 x 2.5 x 5.5	7.50 x 5.50	100 x 40	Vertical SMD @ Corner	
	Direct PCB	<a href="#">W3716</a>	-14	4.9	4	79	71	21.5 x 9.5 x 1.6	25 x 3.2	100 x 40	@ edge near corner Two suggested antenna locations	
	Stamp Metal	<a href="#">W3317</a>	2400-2500	-13	4.3	3.6	81	75	22.2 x 2 x 6.25	5.8 x 6.24	100 x 100	
<a href="#">W3613</a>		-13		4.1	3.7	70	59	10 x 10 x 3.20 (14.2 x 13.3 x 3.2)	No need	80 x 50	Corner, on ground solution	
<a href="#">W3713</a>		4900-6000	-10	4.6	2.6	88	43	9 x 2.4 x 0.2 (10.5 x 3.2 x 2.4)	16.50 x 2.90	76.20 x 76.20	Corner W3714 is a mirrored design of W3713	
<a href="#">W3714</a>			-10	4.6	2.6	88	43					
Dual WiFi	Ceramic chip	<a href="#">W3006</a>	2400-2483.5	-8	3.2	2.7	70	65	10 x 3.2 x 1.5	11.60 x 6.00	80 x 37	
			5150-5850	-10	4.2	3.0	80	70				
		<a href="#">W3078</a>	2400-2483.5	-10	1.7	1.0	65	55	3.2 x 1.6 x 1.1	11.15 x 6.40	80 x 37	@ Corner
			4950-5850	-6	4.3	3.7	80	55				
		<a href="#">W3079</a>	2400-2483.5	-13	2.5	1.3	72	60	3.2 x 1.6 x 1.1	11 x 6	80 x 37	Center
		4950-5850	-8	5.7	3.3	78	55					
	Direct PCB	<a href="#">W3712</a>	2400-2500	-10	5.2	4.4	73	66	19.8 x 18 x 1.6	15 x 3.5	179 x 119	@ edge near corner Two suggested antenna locations
		4900-5950	-10	7.5	5.8	88	74					
Stamp Metal	<a href="#">W3715</a>	2400-2500	-13	3.5	5.5	88	75	11 x 4.5 x 16	No need	180 x 120	Center, SMT capable No requirement of GC-area on the bottom layer	
		4900-6000	-11	5.2	2.7	95	65					
Combo GPS + WiFi or ISM 868/915 + WiFi	Ceramic chip	<a href="#">W3056</a>	2400-2483.5	-8	3.2	2.5	80	70	10 x 3.2 x 1.5	10.80 x 6.25 (Notch)	100 x 40	Single feed and 2.4GHz WiFi
			1575.42 + 1.023	-10	2.5	1.5	75	65				
		<a href="#">W3064C</a>	2400-2483.5	-11	-0.7	-1.7	80	70	10 x 3.2 x 1.5	10.80 x 6.40 (Divided)	96 x 45	Dual feed and 2.4GHz WiFi
			1575.42 + 1.023	-15	-1	-2.0	70	60				
		<a href="#">W3095</a>	2400-2483.5	-11	2.5	1.5	85	80	10 x 3.2 x 1.5	17.80 x 6.45	70 x 35	Dual feed and Dual WiFi + GPS/Glonass/Beidou
			4950-5850	-6	3.5	1.0	70	50				
			1575-1610	-10	1.5	0.8	75	60				
	Composite	<a href="#">W3320</a>	863-928	-8	1.5	0.8	67	55	10 x 3.2 x 2	12 x 9.5	120 x 50	Center, Dual feed
			2400-2500	-6	3.4	1.4	61	45		4.6 x 3.95		
		<a href="#">W3330</a>	824-928	-6	0.9	0.2	67	52	25.1 x 5 x 3	40 x 8.65	128.64 x 40	Top center, Dual feed
	2400-2483.5	-8	2.5	1.8	66	60						

\* NOTE: 1. Recommended minimum GND dimensions of PIFA type and Monopole's are roughly 40x20mm and 30x20mm (or 40x11mm), respectively. Need to construct matching values to optimize antenna performance on surrounding mechanics and materials. 2. Pulse offers very unique GPS+WiFi combo antennas on single ceramic chip (10x3.2x1.5mm). There are three different types of combo antennas. W3056 (2.4G Wifi +GPS, single feed), W3064C (2.4G WiFi+GPS, dual feed), and W3095 (2.4G and 5G Wifi +GPS/Glonass/Beidou, dual feed). 3. "Stock" Stocked parts are typically available from Pulse distribution partners immediately.