



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

Rev H.04 (April 2019)

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="#">W3008G</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="#">W3043</a>		-15	3.8	3.5	90	85	3.2 x 1.6 x 1.1	11 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="#">W3004</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>	5150-5950	-10	3.2	-	71	-	3.2x1.6x1.1	5.25 x 4.25	80 x 37		
	Direct PCB	<a href="#">W3108</a>	2400-2483.5	-8	1.5	-	50	-	5.0 x 2.5 x 5.5	7.50 x 5.50	100 x 40	Vertical SMD @ Corner @ edge near corner Two suggested antenna locations	
	Stamp Metal	<a href="#">W3716</a>	2400-2500	-14	4.9	4	79	71	21.5 x 9.5 x 1.6	25 x 3.2	100 x 40		
		<a href="#">W3317</a>		-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>		4900-6000	-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>			-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		
Ceramic Patch (Pin)	<a href="#">W3229</a>	2400-2500	-7	6.5	4	90	80	25 x 25 x 4	-	70 x 70	RHCP;AR<3dB		
	<a href="#">W3230</a>		-4	6	1.5	90	50	18 x 18 x 4	-	70 x 70	RHCP;AR<3dB		
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		
		<a href="#">W3078</a>	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	
		<a href="#">W3079</a>	4950-5850	-6	4.3	3.7	80	55					
	Direct PCB	<a href="#">W3712</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	
		<a href="#">W3712</a>	4950-5850	-8	5.7	3.3	78	55					
	Stamp Metal	<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	
		<a href="#">W3712</a>	4900-5950	-10	7.5	5.8	88	74					
		<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	
		<a href="#">W3715</a>	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	
		<a href="#">W3056</a>	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	
		<a href="#">W3064C</a>	1575.42 ± 1.023	-15	-1	-2.0	70	60					
		Ceramic chip	<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
			<a href="#">W3095</a>	4950-5850	-6	3.5	1.0	70	50				
			<a href="#">W3095</a>	1575-1610	-10	1.5	0.8	75	60				
			<a href="#">W3095</a>	863-928	-8	1.5	0.8	67	55				
	Composite	<a href="#">W3320</a>	2400-2500	-6	3.4	1.4	61	45	10 x 3.2 x 2	12 x 9.5	120 x 50	Center, Dual feed	
		<a href="#">W3320</a>	824-928	-6	0.9	0.2	67	52		4.6 x 3.95			
Composite	<a href="#">W3330</a>	2400-2483.5	-8	2.5	1.8	66	60	25.1 x 5 x 3	40 x 8.65	128.64 x 40	Top center, Dual feed		

\* 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.