



## Pulse Embedded (SMT) Antennas for GPS/ Glonass/Beidou applications

Rev F.01 (SEP 2016)

App.	Type	Pulse Part number	RF Performance								ME requirement			Note	Availability	
			Operating Frequency (MHz)	RL Min. (dB)	RHCP Gain (dBic)		Linear Gain (dBi)		Efficiency %/(dB)		Antenna DIM. (LxWxH,mm)	GC-area (L x W,mm)	Evaluation Board Size (L x W,mm)			
					Peak	Band edges	Peak	Band edges	Peak	Band edges						
GPS Only	Ceramic chip	<a href="#">W3000</a>	1575.42 +/-10	-15	-3.9	-4.1	0.3	0	50/-3	45/-3.5	7 x 1.6 x 1.6	6 x 20	30 x 20	3 Matching components	Stock	
		<a href="#">W3009</a>		-12	-3.5	-3.9	0.1	-0.2	50/-3	45/-3.5		6 x 11	40 x 11			
		<a href="#">W3011</a>		-11	0.2	-0.6	3	2.3	83/-0.8	70/-1.5	10 x 3.2 x 4.0	10.80 x 6.25	80 x 37	On Ground shunt 3.3pF	Stock	
		<a href="#">W3099</a>		-12	0.85	0.5	3.4	3	85/-0.7	80/-1	3.2 x 1.6 x 1.1	4.00 x 4.25	80 x 37	w/o matching	Stock	
	Patch	<a href="#">W3099</a>		-14	3.5	-	-	-	-	-	-	25 x 25 x 4	-	70 x 70	AR: 3, V01; A	Stock
		<a href="#">W3213</a>		-13	-1.5	-	-	-	-	-	-	13 x 13 x 4	-	30 x 30	AR: 3, V02; C	Stock
	Helical	<a href="#">W3110</a>		-16	-2.1	-2.4	1.3	0.7	47/-3.3	43/-3.7	5.0 x 2.5 x 5.5	7.50 x 5.50	100 x 40	Vertical SMD, @ Corner	Stock	
GPS, Glonass, & Beidou	Ceramic chip	<a href="#">W3000</a>	1559-1591 1575.42 +/-10 and 1598-1610	-18	-0.2	-1	2.4	1.5	70/-1.55	65/-1.9	7 x 1.6 x 1.6	6 x 10	80 x 37	3 Matching components, Horiz. Mount + @Corner	Stock	
		<a href="#">W3010</a>		-12	1	0	3	2.2	75/-1.25	70/-1.5	10 x 3.2 x 2	10.80 x 6.25	80 x 37	@ Position1 shunt 3.3pF	Stock	
		<a href="#">W3011A</a>		-12	1.5	0.4	3	1.8	70/-1.55	50/-3.0				@ Position2 shunt 2.2pF		
		<a href="#">W3062A</a>		-16	1	-0.4	3.7	2.5	88/-0.6	70/-1.5	3.2 x 1.6 x 1.1	4.00 x 6.25	80 x 37	Shunt 1.8pF	Stock	
		<a href="#">W3064C</a>		-10	0	-0.5	2.5	2.0	80/-1	60/-2.1	7 x 1.6 x 1.6	7.80 x 5.25	80 x 37	Shunt 2.2pF	Stock	
	Patch	<a href="#">W3216</a>		-7	-2	-	-	-	60	50	13 x 13 x 5	-	50 x 50	Shunt 1.5pF V02; C	Stock	
WiFi and GPS Combo	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 +GPS	Stock	
			1575.42±10	-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 +GPS	Stock	
			1575.42 ± 10	-15			-1	-2.0	70	60						
		<a href="#">W3095</a>	2400-2483.5	-10	-	-	2.7	1.5	85	80	10 x 3.2 x 1.5	17.80 x 6.45	80 x 50	Dual feed and Dual WiFi + GPS/Glonass/Beidou	Stock	
			4950-5850	-6	-	-	3.7	1.0	73	53						
			1559-1610.5	-8			1.7	0.7	75	62						

**NOTE:** 1. Recommended minimum GND dimensions of PIFA type and Monopole 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.