Receiver Comparisions

Pulse Width µs													
		Rudder						Sail Sheet					
		Right Left-right			Right Up/down			Left Up/down			Left Left-right		
		Aileron **Channel 1**			Elevator **Channel 2**			Throttle **Channel 3**			Rudder **Channel 4**		
PWM range us		min	max	us	min	max	us	min	max	us	min	max	us
2.4Ghz GWS R-4S	Man's spec	1250	1750	500	1250	1750	500	1100	1900	800	1250	1750	500
	Test	1278	1734	**456**	1320	1765	**445**	1103	1916	**813**	1305	1765	**460**
2.4Ghz Spektrum Low rate + AR500		1145	1692	**547**	1187	1759	**572**	1093	1855	**762**	1201	1754	**553**
Spektrum Dx5e Low rate + OrangeRX		1150	1722	**572**	1200	1794	**594**	1100	1891	**791**	1220	1788	**568**
35hz Futaba Skysport4		1111	1944	**833**	1037	1902	**865**	1215	1870	**655**	1182	2064	**882**
27hz Helger Stix-CS		945	1830	**885**				990	1900	**910**			

Above values not used below as they are old Tx/Rx, Low rate setting or a "Park Flyer"

2.4Ghz Eurgle 3CH		1145	1864	**720**				1091	1844	**753**			
Spektrum Dx5e High Rate + Orange		1060	1812	**752**	1104	1893	**789**	1100	1891	**791**	1139	1887	**748**
2.4Ghz Spek. Dx5e Hi Rate + AR500		1051	1790	**739**	1092	1855	**763**	1093	1856	**763**	1115	1849	**734**
2.4Ghz Spektrum Dx7 + AR500		1042	2008	**966**	1101	1872	**771**	920	2060	**1140**	1102	1874	**772**
2.4Ghz Futuba r617fs		1115	1923	**808**				1112	1925	**813**			
2.4Ghz Turnigy TGY9X		1068	1903	**835**	1063	1907	**844**	1067	1904	**837**	1052	1905	**853**
2.4Ghz HobbyKing HK6DF		1185	1970	**785**	1125	1890	**765**	1170	2020	**850**	1140	1865	**725**
2.4Ghx Multiplex Light		1042	2140	**1098**	1042	2140	**1098**	1042	2068	**1026**	1063	2139	**1076**
	Max	1185	2140	**1098**	1125	2140	**1098**	1170	2068	**1140**	1140	2139	**1075**
	Min	1042	1790	**720**	1042	1855	**765**	1042	1845	**755**	1063	1849	**725**
	Difference us	143	350	**378**	83	285	**333**	145	225	**385**	77	290	**350**
Pulse Low = 1.04/1.19ms = 0.15ms								High = 1.79/2.14ms = 0.36ms					
Min value = 920 Max = 2140 Range = 1220								Range Min = 0.72ms Max = 1.14ms					

Sheet Travel mm

Calculated 346 mm/ms	Rudder				Sail Sheet			
	Right Left-right		Right Up/down		Left Up/down		Left Left-right	
	Aileron		Elevator		Throttle		Rudder	
	Channel 1		Channel 2		Channel 3		Channel 4	
		mm		mm		mm		mm
35hz Futaba Skysport4		288		299		227		305
2.4Ghz Eurgle 3CH		249				261		
2.4Ghz Spectrum High rate + AR500		158		264		264		254
2.4Ghz Spectrum Low rate + AR500		189		198		264		191
Spectrum Dx5e High Rate + Orange		260		273		274		259
Spectrum Dx5e Low rate + OrangeRX		198		206		274		197
2.4Ghz GWS R-4S		158		154		281		159
2.4Ghz Futuba r617fs		280				281		
2.4Ghz Turnigy TGY9X		289		292		290		295
2.4Ghz HobbyKing HK6DF		272		265		294		251
27hz Helger Stix-CS		306				315		
2.4Ghz Multiplex Light		380		380		355		372
2.4Ghz Spektrum Dx7 + AR500		334		266		394		267
Max mm		380		380		394		372
Min mm		158		264		227		159
Difference mm		222		116		167		213

Sheet travel is calculated using 346mm/ms. It avoids variations due the amount/position of sheet wound on the 25mm drum

Tests using Arm type servos

Servo Rotation in degrees

Receiver PWM pulse range ms		1.4	1.0	0.9	0.8	0.7	
SailServo	**4806**	155	111	100	89	78	
SailServo	**0918**	140	100	90	80	70	
SailServo	**0002**	133	95	86	76	67	
SailServo	**5520**	132	94	85	75	66	
SailServo	**5509**	132	94	85	75	66	
Futuba	**3003**	127	91	82	73	64	

SailServo range of arm type servos cover from tiny to large. Tested with GWS MT-1 Pro Servo Tester
Futuba 3003 is comparable with 4806

Rotation in degrees

	Rudder						Sail Sheet					
Tested with Futuba 3003	Right Left-right			Right Up/down			Left Up/down			Left Left-right		
	Aileron			Elevator			Throttle			Rudder		
	Channel 1			Channel 2			Channel 3			Channel 4		
PWM range us	deg	us/de	us	deg		us	deg		us	deg		us
2.4Ghz GWS R-4S	42	10.9	456	42	10.6	445	73	11.1	813	43	10.7	460
35hz Futaba Skysport4	77	10.8	835	78	11.0	860	60	11.1	665	80	11.1	885
2.4Ghz Spectrum High rate + AR500	68	10.8	735	68	11.3	765	72	10.6	760	70	10.5	735
Spectrum Dx5e High Rate + Orange	72	10.4	750	72	10.9	785	73	10.8	790	70	10.7	750
2.4Ghz HobbyKing HK6DF	71	11.1	785	72	10.6	765	76	11.2	850	66	11.0	725
27hz Helger Stix-CS	82	10.8	885				82	11.1	910			

Plotting PWM pulse range ms against servo rotation degrees Best fit us/deg = 550/50 = 11.0

Readings accuracy degrees = +/- 1 Pulse = +/- 2