

NEW SPREADSHEET FOR PI ATTENUATORS USING STANDARD VALUE 10% RESISTORS

1-50 dB												VSWR < 1.20						VE3SMA		October 2011	
R1=R3	R2	Rin	VSWR	Ret.Loss	Atten.	R1=R3	R2	Rin	VSWR	Ret.Loss	Atten.	R1=R3	R2	Rin	VSWR	Ret.Loss	Atten.				
(ohms)	(ohms)	(ohms)		(dB)	(dB)	(ohms)	(ohms)	(ohms)		(dB)	(dB)	(ohms)	(ohms)	(ohms)		(dB)	(dB)				
820	5.6	49.54	1.01	46.72	1.02	330	10	45.98	1.09	27.55	2.17	68	82	42.14	1.19	21.38	12.47				
1000	6.8	51.61	1.03	36.00	1.02	470	15	53.36	1.07	29.76	2.21	82	120	53.15	1.06	30.31	13.48				
680	4.7	47.68	1.05	32.49	1.04	270	8.2	42.46	1.18	21.78	2.28	68	100	44.51	1.12	24.71	13.53				
470	1.8	42.72	1.17	22.10	1.05	560	18	57.36	1.15	23.28	2.30	68	120	46.67	1.07	29.26	14.57				
560	3.3	45.23	1.11	26.00	1.05	330	12	47.45	1.05	31.65	2.35	82	150	56.44	1.13	24.37	14.80				
1200	8.2	53.69	1.07	28.98	1.07	390	15	51.49	1.03	36.68	2.41	68	150	49.27	1.01	42.61	15.92				
470	2.2	43.05	1.16	22.54	1.09	270	10	43.73	1.14	23.50	2.45	82	180	59.06	1.18	21.61	15.95				
560	3.9	45.73	1.09	27.02	1.10	470	18	55.70	1.11	25.36	2.46	68	180	51.30	1.03	37.86	17.09				
820	6.8	50.60	1.01	44.51	1.12	330	15	49.63	1.01	48.70	2.61	56	150	42.51	1.18	21.83	17.23				
680	5.6	48.46	1.03	36.10	1.12	270	12	45.13	1.11	25.82	2.63	56	180	44.05	1.14	23.98	18.43				
470	2.7	43.46	1.15	23.11	1.13	390	18	53.73	1.07	28.88	2.65	68	220	53.40	1.07	29.65	18.44				
1000	8.2	52.87	1.06	31.09	1.14	470	22	58.79	1.18	21.85	2.77	56	220	45.63	1.10	26.80	19.80				
560	4.7	46.41	1.08	28.58	1.18	330	18	51.78	1.04	35.13	2.86	68	270	55.39	1.11	25.82	19.88				
470	3.3	43.96	1.14	23.83	1.19	270	15	47.19	1.06	30.78	2.90	56	270	47.10	1.06	30.50	21.26				
1200	10	55.33	1.11	25.92	1.22	220	12	42.54	1.18	21.87	2.97	68	330	57.17	1.14	23.50	21.34				
680	6.8	49.49	1.01	45.82	1.23	390	22	56.68	1.13	24.07	2.97	68	390	58.50	1.17	22.12	22.59				
820	8.2	51.83	1.04	34.91	1.24	270	18	49.22	1.02	42.05	3.16	56	330	48.40	1.03	35.76	22.74				
470	3.9	44.45	1.12	24.62	1.25	330	22	54.60	1.09	27.14	3.19	56	390	49.36	1.01	43.84	24.01				
560	5.6	47.16	1.06	30.70	1.26	220	15	44.47	1.12	24.66	3.25	68	470	59.84	1.20	20.95	24.02				
390	2.2	41.56	1.20	20.71	1.26	270	22	51.86	1.04	34.77	3.49	47	330	41.49	1.20	20.63	24.15				
1000	10	54.48	1.09	27.36	1.29	220	18	46.36	1.08	28.46	3.51	47	390	42.21	1.18	21.47	25.43				
390	2.7	41.96	1.19	21.17	1.31	330	27	58.04	1.16	22.57	3.58	56	470	50.32	1.01	49.84	25.45				
470	4.7	45.10	1.11	25.77	1.32	180	15	41.62	1.20	20.77	3.65	56	560	51.12	1.02	39.12	26.83				
680	8.2	50.69	1.01	43.26	1.35	220	22	48.82	1.02	38.45	3.85	47	470	42.92	1.16	22.36	26.88				
560	6.8	48.17	1.04	34.58	1.36	270	27	55.07	1.10	26.32	3.89	47	560	43.50	1.15	23.16	28.27				
390	3.3	42.44	1.18	21.74	1.37	180	18	43.37	1.15	22.97	3.93	56	680	51.89	1.04	34.65	28.38				
1200	12	57.14	1.14	23.52	1.38	220	27	51.79	1.04	35.08	4.26	47	680	44.06	1.13	23.99	29.83				
820	10	53.41	1.07	29.65	1.39	180	22	45.63	1.10	26.81	4.28	56	820	52.52	1.05	32.17	29.90				
470	5.6	45.84	1.09	27.25	1.40	270	33	58.81	1.18	21.83	4.34	47	820	44.52	1.12	24.74	31.36				
390	3.9	42.91	1.17	22.35	1.42	180	27	48.36	1.03	35.57	4.70	56	1000	53.10	1.06	30.43	31.53				
1000	12	56.26	1.13	24.59	1.45	220	33	55.23	1.10	26.07	4.73	47	1000	44.94	1.11	25.46	33.00				
560	8.2	49.34	1.01	43.49	1.49	150	22	42.60	1.17	21.95	4.73	56	1200	53.55	1.07	29.29	33.04				
390	4.7	43.55	1.15	23.22	1.50	150	27	45.10	1.11	25.77	5.17	47	1200	45.26	1.10	26.07	34.51				
680	10	52.23	1.04	33.23	1.50	220	39	58.53	1.17	22.09	5.18	56	1500	54.02	1.08	28.26	34.91				
470	6.8	46.81	1.07	29.65	1.51	180	33	51.50	1.03	36.64	5.19	47	1500	45.59	1.10	26.73	36.38				
820	12	55.15	1.10	26.20	1.56	180	39	54.48	1.09	27.35	5.64	56	1800	54.33	1.09	27.63	36.44				
390	5.6	44.25	1.13	24.30	1.58	150	33	47.96	1.04	33.62	5.67	47	1800	45.82	1.09	27.20	37.92				
1200	15	59.86	1.20	20.94	1.62	150	39	50.66	1.01	43.64	6.14	56	2200	54.63	1.09	27.09	38.14				
470	8.2	47.95	1.04	33.57	1.63	180	47	58.26	1.17	22.35	6.21	47	2200	46.03	1.09	27.67	39.62				
560	10	50.83	1.02	41.71	1.64	120	33	43.52	1.15	23.19	6.36	56	2700	54.87	1.10	26.66	39.88				
680	12	53.93	1.08	28.45	1.67	150	47	54.05	1.08	28.19	6.72	47	2700	46.20	1.08	28.07	41.37				
330	4.7	42.00	1.19	21.21	1.68	120	39	45.89	1.09	27.35	6.85	56	3300	55.07	1.10	26.32	41.59				
390	6.8	45.19	1.11	25.94	1.69	150	56	57.60	1.15	23.02	7.34	56	3900	55.21	1.10	26.10	43.02				
1000	15	58.93	1.18	21.73	1.69	120	47	48.82	1.02	38.43	7.46	47	3300	46.34	1.08	28.42	43.08				
330	5.6	42.68	1.17	22.05	1.77	100	39	41.97	1.19	21.18	7.52	47	3900	46.44	1.08	28.67	44.52				
470	10	49.39	1.01	44.27	1.79	120	56	51.85	1.04	34.82	8.10	56	4700	55.34	1.11	25.89	44.62				
820	15	57.75	1.16	22.86	1.80	100	47	44.55	1.12	24.78	8.16	47	4700	46.54	1.07	28.90	46.12				
560	12	52.48	1.05	32.34	1.81	100	56	47.18	1.06	30.76	8.82	56	5600	55.45	1.11	25.74	46.13				
390	8.2	46.29	1.08	28.27	1.82	120	68	55.51	1.11	25.64	8.89	47	5600	46.61	1.07	29.10	47.63				
330	6.8	43.59	1.15	23.28	1.88	100	68	50.33	1.01	49.63	9.63	56	6800	55.54	1.11	25.59	47.80				
680	15	56.46	1.13	24.34	1.91	82	56	42.23	1.18	21.49	9.72	47	6800	46.68	1.07	29.28	49.30				
470	12	50.99	1.02	40.19	1.96	120	82	59.32	1.19	21.39	9.72	56	8200	55.62	1.11	25.48	49.42				
390	10	47.68	1.05	32.48	1.98	100	82	53.56	1.07	29.27	10.49										
330	8.2	44.64	1.12	24.94	2.01	82	68	44.86	1.11	25.33	10.56										
560	15	54.93	1.10	26.56	2.06	82	82	47.53	1.05	31.92	11.44										
390	12	49.21	1.02	42.00	2.15	100	100	57.14	1.14	23.52	11.48										
680	18	58.97	1.18	21.69	2.15	82	100	50.44	1.01	47.15	12.47										