

Voltage Variable Equalizer, 75Ω

VAEQ-1220-75+

Typical Performance Data @ V+=5V

Frequency (MHz)	Insertion Loss (dB) Vcontrol		Input Return Loss (dB) Vcontrol		Output Return Loss (dB) Vcontrol		Deviation from Linear Loss (dB) Vcontrol		Insertion Phase (deg) Vcontrol	
	0V	2.5V	0V	2.5V	0V	2.5V	0V	2.5V	0V	2.5V
	10	20.09	19.72	20.26	20.33	32.73	29.77	-	-	60.06
30	15.68	15.45	23.04	23.06	22.83	24.96	-	-	28.74	27.79
50	14.97	14.76	24.08	24.10	21.91	24.23	-0.93	-0.84	18.62	17.84
70	14.66	14.47	24.48	24.49	21.61	23.80	-0.80	-0.72	13.96	13.23
90	14.43	14.25	24.57	24.58	21.36	23.30	-0.75	-0.68	11.23	10.52
110	14.22	14.05	24.46	24.46	21.14	22.75	-0.71	-0.65	9.35	8.61
130	14.00	13.84	24.29	24.28	20.92	22.19	-0.67	-0.62	7.85	7.09
150	13.78	13.63	24.08	24.06	20.66	21.64	-0.62	-0.58	6.52	5.74
170	13.54	13.41	23.76	23.73	20.32	21.03	-0.57	-0.53	5.24	4.46
200	13.18	13.06	23.10	23.06	19.65	20.03	-0.47	-0.44	3.31	2.51
220	12.93	12.82	22.64	22.59	19.18	19.37	-0.40	-0.38	1.95	1.16
240	12.68	12.58	22.23	22.17	18.72	18.75	-0.32	-0.31	0.52	-0.28
260	12.42	12.33	21.87	21.81	18.24	18.15	-0.24	-0.24	-0.98	-1.77
300	11.90	11.83	20.92	20.87	17.22	16.97	-0.08	-0.09	-4.28	-5.04
320	11.64	11.58	20.35	20.30	16.71	16.41	0.00	-0.01	-6.07	-6.81
340	11.39	11.34	19.83	19.78	16.25	15.89	0.08	0.06	-7.95	-8.68
360	11.14	11.09	19.38	19.33	15.81	15.40	0.15	0.13	-9.90	-10.60
380	10.89	10.85	18.96	18.91	15.37	14.94	0.22	0.19	-11.92	-12.60
400	10.64	10.61	18.50	18.45	14.91	14.46	0.29	0.26	-14.06	-14.72
420	10.40	10.38	17.98	17.94	14.44	13.99	0.35	0.32	-16.29	-16.92
450	10.06	10.04	17.22	17.19	13.78	13.33	0.43	0.39	-19.72	-20.32
500	9.50	9.49	16.21	16.18	12.80	12.35	0.54	0.50	-25.76	-26.27
550	8.99	8.99	15.06	15.04	11.90	11.48	0.61	0.57	-32.19	-32.63
600	8.52	8.53	14.09	14.07	11.03	10.65	0.64	0.59	-38.84	-39.21
650	8.08	8.09	13.11	13.10	10.16	9.82	0.64	0.60	-45.83	-46.11
700	7.70	7.72	12.15	12.14	9.46	9.16	0.57	0.53	-52.82	-53.01
750	7.32	7.33	11.34	11.33	8.76	8.52	0.51	0.48	-60.19	-60.32
770	7.20	7.22	10.92	10.92	8.50	8.28	0.45	0.42	-63.09	-63.21
800	7.01	7.03	10.39	10.38	8.11	7.92	0.37	0.35	-67.27	-67.31
820	6.87	6.88	10.11	10.10	7.86	7.68	0.34	0.32	-70.19	-70.22
840	6.73	6.74	9.84	9.84	7.62	7.45	0.30	0.29	-73.33	-73.37
860	6.63	6.65	9.53	9.53	7.40	7.25	0.22	0.21	-76.43	-76.41
880	6.53	6.54	9.19	9.18	7.18	7.05	0.14	0.14	-79.22	-79.23
900	6.40	6.41	8.87	8.86	6.95	6.84	0.10	0.10	-81.98	-81.95
920	6.25	6.26	8.59	8.57	6.73	6.63	0.07	0.07	-85.01	-84.98
950	6.10	6.11	8.24	8.23	6.45	6.36	-0.05	-0.04	-89.89	-89.85
970	5.99	6.00	7.99	7.98	6.31	6.24	-0.12	-0.11	-92.84	-92.76
990	5.85	5.85	7.71	7.70	6.17	6.10	-0.15	-0.14	-95.82	-95.75
1000	5.78	5.78	7.57	7.56	6.09	6.03	-0.17	-0.15	-97.44	-97.36
1020	5.67	5.68	7.32	7.31	5.93	5.87	-0.24	-0.22	-100.68	-100.58
1040	5.58	5.58	7.13	7.11	5.77	5.72	-0.33	-0.30	-103.86	-103.78
1060	5.46	5.47	6.98	6.97	5.64	5.61	-0.39	-0.36	-107.01	-106.90
1100	5.23	5.24	6.69	6.68	5.48	5.46	-0.51	-0.48	-114.11	-114.00
1120	5.15	5.16	6.50	6.48	5.42	5.40	-0.61	-0.57	-117.25	-117.17
1140	5.01	5.02	6.35	6.34	5.34	5.33	-0.64	-0.61	-120.52	-120.41
1150	4.94	4.94	6.30	6.30	5.31	5.30	-0.66	-0.62	-122.37	-122.27
1180	4.83	4.84	6.20	6.19	5.29	5.29	-0.82	-0.78	-128.57	-128.46
1200	4.85	4.85	6.12	6.12	5.30	5.30	-1.01	-0.97	-132.09	-132.01
1220	4.73	4.74	6.02	6.01	5.28	5.29	-1.07	-1.02	-135.30	-135.22
1250	4.53	4.54	5.90	5.90	5.33	5.34	-	-	-141.55	-141.44
1300	4.60	4.62	5.94	5.94	5.58	5.60	-	-	-151.43	-151.30
1400	4.71	4.74	6.16	6.16	6.26	6.31	-	-	-172.24	-172.04

Frequency (MHz)	Input IP3 (dBm) Vcontrol	
	0V	2.5V
	10	43.10
30	50.16	52.30
50	47.40	48.28
80	51.21	55.57
100	60.34	53.63
150	55.68	54.01
200	57.62	54.88
300	58.28	55.49
400	58.50	56.06
450	50.58	49.73
500	60.53	57.72
550	48.79	48.49
600	57.13	56.17
700	55.44	54.88
800	58.24	57.12
900	57.49	55.26
950	50.51	49.85
1000	55.94	53.49
1100	58.18	55.65
1150	50.19	48.90
1200	54.10	53.63
1220	49.70	48.51
1300	53.06	50.98
1400	54.02	50.37

Notes

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- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Voltage Variable Equalizer, 75Ω

VAEQ-1220-75+

Typical Performance Data @ V+=5V

Frequency (MHz)	Insertion Loss (dB)		Input Return Loss (dB)		Output Return Loss (dB)		Deviation from Linear Loss (dB)		Insertion Phase (deg)	
	Vcontrol		Vcontrol		Vcontrol		Vcontrol		Vcontrol	
	5.2V	7V	5.2V	7V	5.2V	7V	5.2V	7V	5.2V	7V
10	4.80	2.10	11.94	20.73	13.41	18.61	-	-	3.73	4.91
30	4.51	1.74	12.32	25.48	14.20	24.11	-	-	-1.09	-1.00
50	4.45	1.68	12.45	26.93	14.38	25.98	-0.04	0.00	-4.15	-4.48
70	4.42	1.65	12.51	27.12	14.45	26.35	-0.02	0.00	-6.83	-7.48
90	4.41	1.64	12.53	26.51	14.46	25.78	0.00	0.00	-9.36	-10.32
110	4.41	1.64	12.56	25.58	14.49	24.82	0.00	0.00	-11.81	-13.04
130	4.41	1.65	12.62	24.62	14.56	23.87	0.00	0.00	-14.19	-15.72
150	4.40	1.66	12.67	23.74	14.64	23.01	0.00	0.00	-16.54	-18.35
170	4.40	1.67	12.68	22.84	14.65	22.15	0.00	0.00	-18.88	-20.95
200	4.41	1.69	12.66	21.42	14.55	20.73	0.00	0.00	-22.37	-24.83
220	4.41	1.70	12.67	20.56	14.47	19.81	0.00	0.00	-24.69	-27.40
240	4.41	1.72	12.71	19.87	14.41	19.01	0.00	0.00	-26.97	-29.96
260	4.41	1.74	12.75	19.32	14.37	18.32	0.00	0.00	-29.25	-32.50
300	4.41	1.77	12.69	18.13	14.23	17.09	0.00	0.00	-33.85	-37.59
320	4.41	1.80	12.64	17.48	14.13	16.51	-0.01	0.00	-36.15	-40.13
340	4.42	1.82	12.65	16.93	14.04	15.98	-0.01	0.00	-38.43	-42.66
360	4.42	1.85	12.68	16.51	13.97	15.52	-0.01	0.00	-40.67	-45.16
380	4.41	1.87	12.70	16.13	13.88	15.09	-0.01	0.00	-42.95	-47.66
400	4.41	1.90	12.67	15.73	13.76	14.66	-0.01	0.00	-45.25	-50.18
420	4.42	1.93	12.62	15.27	13.62	14.21	-0.01	0.00	-47.55	-52.72
450	4.43	1.99	12.64	14.68	13.44	13.60	-0.02	0.00	-50.93	-56.46
500	4.42	2.08	12.73	14.04	13.23	12.84	-0.02	0.00	-56.61	-62.63
550	4.42	2.19	12.66	13.28	12.95	12.15	-0.02	0.00	-62.31	-68.79
600	4.42	2.32	12.83	12.86	12.61	11.52	-0.02	0.00	-67.93	-74.76
650	4.41	2.43	12.72	12.36	12.22	10.91	0.00	0.00	-73.71	-80.74
700	4.40	2.58	12.78	12.02	11.95	10.55	0.01	0.00	-79.31	-86.37
750	4.38	2.70	12.66	11.77	11.55	10.18	0.03	0.00	-85.20	-92.12
770	4.38	2.77	12.53	11.58	11.38	10.05	0.02	0.00	-87.49	-94.30
800	4.37	2.84	12.46	11.45	11.08	9.85	0.04	0.00	-90.83	-97.36
820	4.35	2.87	12.45	11.46	10.87	9.72	0.06	0.00	-93.20	-99.51
840	4.34	2.90	12.37	11.45	10.66	9.60	0.07	0.00	-95.71	-101.79
860	4.35	2.97	12.19	11.37	10.46	9.49	0.05	0.00	-98.15	-103.98
880	4.36	3.02	11.97	11.26	10.23	9.39	0.05	0.00	-100.38	-105.92
900	4.34	3.04	11.78	11.18	9.98	9.26	0.06	0.00	-102.62	-107.82
920	4.32	3.04	11.64	11.16	9.71	9.12	0.09	0.00	-105.05	-109.94
950	4.35	3.10	11.42	11.20	9.34	8.94	0.06	0.00	-108.88	-113.31
970	4.37	3.14	11.20	11.16	9.15	8.86	0.04	0.00	-111.15	-115.26
990	4.35	3.14	10.89	11.05	8.91	8.76	0.05	0.00	-113.50	-117.27
1000	4.35	3.14	10.74	11.00	8.78	8.69	0.06	0.00	-114.71	-118.35
1020	4.38	3.17	10.49	10.91	8.51	8.52	0.03	0.00	-117.18	-120.53
1040	4.41	3.22	10.29	10.90	8.22	8.34	0.00	0.00	-119.47	-122.55
1060	4.43	3.24	10.12	10.93	7.95	8.15	-0.02	0.00	-121.70	-124.53
1100	4.47	3.30	9.66	10.86	7.49	7.82	-0.06	0.00	-126.52	-128.84
1120	4.50	3.35	9.33	10.67	7.26	7.65	-0.10	0.00	-128.46	-130.54
1140	4.48	3.35	9.06	10.49	7.01	7.44	-0.07	0.00	-130.37	-132.12
1150	4.46	3.33	8.95	10.42	6.90	7.34	-0.06	0.00	-131.47	-133.03
1180	4.46	3.34	8.60	10.15	6.64	7.10	-0.06	0.00	-135.20	-136.17
1200	4.52	3.39	8.32	9.87	6.50	6.99	-0.11	0.00	-137.12	-137.71
1220	4.43	3.30	8.00	9.49	6.36	6.86	-0.02	0.00	-138.75	-138.82
1250	4.22	3.04	7.57	8.89	6.25	6.77	-	-	-142.62	-141.87
1300	4.20	2.89	7.17	8.37	6.39	6.98	-	-	-149.14	-147.72
1400	4.19	2.63	6.70	7.98	6.91	7.42	-	-	-163.98	-161.71

Frequency (MHz)	Input IP3 (dBm)	
	Vcontrol	
	5V	7V
10	38.24	41.46
30	44.50	48.58
50	48.97	47.63
80	49.59	50.52
100	51.66	51.67
150	53.40	58.60
200	52.99	55.18
300	53.80	54.06
400	53.53	53.09
450	50.97	48.66
500	54.41	51.91
550	49.35	48.31
600	54.25	51.00
700	53.65	51.32
800	54.11	53.17
900	54.10	56.38
950	49.23	51.89
1000	53.04	55.90
1100	56.51	54.28
1150	48.45	53.41
1200	53.79	51.76
1220	48.81	50.74
1300	50.84	50.02
1400	50.81	49.59

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