

Yamaha CS-20m Control Voltage Troubleshooting Chart

Front Panel Control	PGM Board Pin Number	PGM Input Voltage Range (V)	YM617 Demultiplexer ID	DM Board Pin Number	DM Output Voltage Range	Where does the voltage go?
LFO - Speed	1	0, 4.4	IC1	1	0, 10.7	MOD - IC4 Pin 5 7 9 11
VCO 1 - Mod, Func	2	0, 3.7		2	0, 3.6	MOD - IC1 Pin 5 7 9 12, IC2 Pin 9 11
VCO 1 - Feet	3	0, 3.6		3	0, 3.5	
VCO 1 - Mod, Depth	4	0, 4.4		4	0, 10.7	MOD - IC17 Pin 2
VCO 1 - Wave	5	0, 2.9		5	0, 2.8	FA - IC3 Pin 9 11
VCO 1 - PW	6	0, 4.4		6	0, 4.2	MOD - IC23 Pin 5
VCO 2 - Mod, Func	7	0, 3.7		7	0, 3.6	MOD - IC2 Pin 5 7, IC3 Pin 5 7 9 11
VCO 2 - Feet	8	0, 3.6		8	0, 3.5	
VCO 2 - Mod, Depth	9	0, 4.4		9	0, 10.7	MOD - IC19 Pin 2
VCO 2 - Wave	10	0, 2.9		IC2	10	0, 2.8
VCO 2 - PW	11	0, 4.4	11		0, 4.2	MOD - IC24 Pin 5
Mixer - VCO 1	12	0, 4.4	12		0, 10.7	FA - IC10 Pin 2
Mixer - VCO 2	13	0, 4.4	13		0, 10.7	FA - IC11 Pin 2
Mixer - Noise	14	0, 4.4	14		0, 10.7	FA - IC12 Pin 2
VCF - Cut Off Freq	15	0, 4.4	15		0, 10.7	FA - IC17, Pin 4
VCF - Mod, Func	16	0, 3.5	16		0, 3.4	
VCF - Resonance	17	4.4, 0	17		10.7, 0	FA - IC17 Pin 7
VCF - Mod, Depth	18	0, 4.4	18		0, 10.7	MOD - IC21 Pin 2
VCF - EG Depth	19	0, 4.4	19		0, 10.7	FA - IC15 Pin 2
VCF - HP / BP / LP	20	0, 2.9	IC3	20	0, 2.8	FA - IC4 Pin 5 7
VCA - Sine Level	21	0, 4.4		21	0, 10.7	FA - IC18 Pin 2
VCA - Mod, Func	22	0, 3.3		22	0, 3.1	MOD - IC5 Pin 5 7 9 12
VCA - Depth	23	0, 4.4		23	0, 10.7	MOD - IC22 Pin 2
EG VCF - Polarity	24	0, 4.4		24	0, 4.2	FA - IC4 Pin 11
EG VCF - Attack	25	4.4, 0		25	10.7, 0	FA - IC24 Pin 9
EG VCF - Decay	26	4.4, 0		26	10.7, 0	FA - IC24 Pin 10
EG VCF - Sustain	27	0, 3.8		27	0, 9.2	FA - IC24 Pin 15
EG VCF - Release	28	4.4, 0		28	10.7, 0	
EG VCA - Attack	29	4.4, 0		29	10.7, 0	FA - IC22 Pin 9
EG VCA - Decay	30	4.4, 0	IC4	30	10.7, 0	FA - IC22 Pin 10
EG VCA - Sustain	31	0, 3.8		31	0, 9.2	FA - IC22 Pin 15
EG VCA - Release	32	4.4, 0	IC1	32	10.7, 0	

Revision 1 - Visit [goltsynth.com](http://goltsynth.com) for updates.