

TESTING THE NEW MARCONI RATE GENERATOR BOARD

Version 1.0
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26 May 1999

Testing the RGB is limited to ensuring that the correct frequency results from the rate demand bits set by CAMAC, that the rate pulses do not coincide with encoder pulses and that both pulses are of good shape and the proper width.

RATE GENERATOR BOARD TEST TABLE

16 Bit code to CAMAC Output Register Note: Sign bit (S) goes directly to Counter Board.				BCD	Multiplier M $\sum X_n 2^n _{n=-9 \text{ to } 5}$	$f_{\text{mult}} =$ $\frac{M \times 1\text{MHz}}{64}$	$f_{\text{dem}} =$ $\frac{f_{\text{mult}}}{N+1}$	Pulse Period milli-seconds													
S	2^5	2^4	2^3	2^2	2^1	2^0	2^{-1}	2^{-2}	2^{-3}	2^{-4}	2^{-5}	2^{-6}	2^{-7}	2^{-8}	2^{-9}			expected	actual		
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8000	0.0	0.0	0.0	none	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8001	0.001953125	30.517	3.815	262	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	8002	0.00390625	61.035	7.629	131	
1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8004	0.0078125	122.070	15.259	65.5	
1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	8008	0.015625	244.141	30.518	32.77	
1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	8010	0.03125	488.281	61.035	16.38	
1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	8020	0.0625	976.562	122.07	8.192	
1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8040	0.125	1953.12	244.14	4.096	
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8080	0.25	3906.25	488.28	2.048	
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8100	0.5	7812.5	976.56	1.024	
1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8200	1	15625	1953.1	0.512	
1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8400	2	31250	3906.2	0.256	
1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8800	4	62500	7812.5	0.128	
1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9000	8	125000	15625	0.064	
1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A000	16	250000	31250	0.032	
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C000	32	500000	62500	0.016	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	FFFF	63.998046875	1000000	125000	0.008	
0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	5555		666656	83332	0.012	
1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	AAAA		333313	41664	0.024	