

Rev B Trigger Board Frequency Selection

Key

Current LASS trigger timing is 5Hz.
AUV uses 3Hz

Desirable to be able to change the freq mid-deployment

I'm designing around the ability to change the frequency from 1Hz to 10Hz in 1Hz increments. But 2-2 is probably too slow and 7-10Hz may be too fast? TBD during May deployment.

The MC14536 is a divide by n counter, where the frequency is set by external components, either RC or a clock.

Based on the possible division integers (2^n), finding a clock which gives 1-10 Hz is impossible. I plan to use an RC circuit to set the frequency. Actually, it will be multiple frequencies.

I used Excel to perform multiple calculations of freq vs. divide-by-n values. See separate Excel print out.

Trigger Freq (Hz)	(fosc) Clock Freq (Hz)	n	R(Ω)	C
1	1024	10	4246	0.2 μF ↓
2	1024	11	4246	
3	683	11	6366	
4	1024	12	4246	
5	408	11	10656	
6	683	12	6366	
7	585	12	7432	
8	1024	13	4246	
9	910	13	4778	
10	408	12	10656	

$$f_{osc} = \frac{1}{2.3 RC}$$

An analog switch (octal) can be used to switch out the R value for the oscillator frequency.