

0x41200000 PLL1	31..8 N/A	7 2nd Harm out: f / 2f	6 PID_EN enables the PI loop	5..3 SEL B FOR BOTH PLLs. See on the right	2..0 SEL A
0x41200008 PLL1	31..16 N/A	15..8 W_A outwave = W_A*cos + W_B*sin 2's complement	7..0 W_B		
0x41210000 PLL1	31..0 Kp*2^16 2's complement				
0x41210008 PLL1	31..0 Ki * 2^16 2's complement				
0x41220000 PLL1	31..0 f0 * 2^32/31.25e6 2's complement				
0x41220008 PLL1	31..0 BW * 2^32/31.25e6 2's complement				
0x41230000 PLL1	31..27 N/A		26..3 Alpha*2^24 unsigned	2..0 Order-1 unsigned	

SEL A, SEL B select the output signals for output 1, 2, resp.

Each output (1,2) can be connected to any of the below combinations:

"000" = PLL1 (runs on IN1)

"001" = PLL2 (runs on IN2)

"010" = PLL1 (on IN1) +PLL2 (on IN2)

"011" = PLL1 + IN2

"1xx" = unused (zero at output)

For the weights W_A, W_B:

W_A = A sin(phi) , W_B = A sin(phi)

Then the output wave is A sin(wt+phi)

Demodulation filter configuration.

Order between 1 and 8 ("000" and "111").

Alpha = exp(-1/TC/122.1kHz) = exp(-2pi fn/122.1kHz).

TC = 1/(2pi fn) are the filter bandwidth as used in ZI instrum.

Note, both Order and Alpha are positive, so no 2's complement

0x41300000 PLL2	31..8 N/A	7 2nd Harm out: f / 2f	6 PID_EN enables the PI loop	5..3 N/A	2..0 N/A
0x41300008 PLL2	31..16 N/A	15..8 W_A outwave = W_A*cos + W_B*sin 2's complement	7..0 W_B		
0x41310000 PLL2	31..0 Kp*2^16 2's complement				
0x41310008 PLL2	31..0 Ki * 2^16 2's complement				
0x41320000 PLL2	31..0 f0 * 2^32/31.25e6 2's complement				
0x41320008 PLL2	31..0 BW * 2^32/31.25e6 2's complement				
0x41330000 PLL2	31..27 N/A		26..3 Alpha*2^24 unsigned	2..0 Order-1 unsigned	