SigStream

Be an FPGA Hero

Filter Specifications

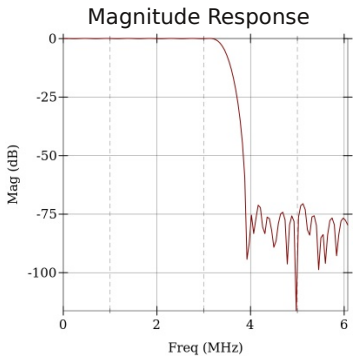
This filter core has the following specifications...

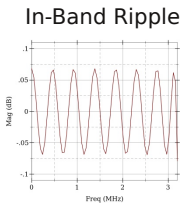
Filter Type	· Lowpass
Architecture	· Semi Parallel Transposed
Input Sample Rate	· 12.25 MHz
Output Sample Rate	· 12.25 MHz
Passband	· 0 to 3.2 MHz
Transition Bandwidth	· 700 KHz
Stopband Attenuation	· ≥ 70 dB
Inband Ripple‡	· ≈ 0.1 dB
Min Clock Rate	· 171.5 MHz
Max Clock Rate‡	· 250 MHz
Linear Phase	· Yes
DSP Per Column	· 40

Build Date : 19 Nov 2017
Reference ID : 19fc956d

What does it look like?

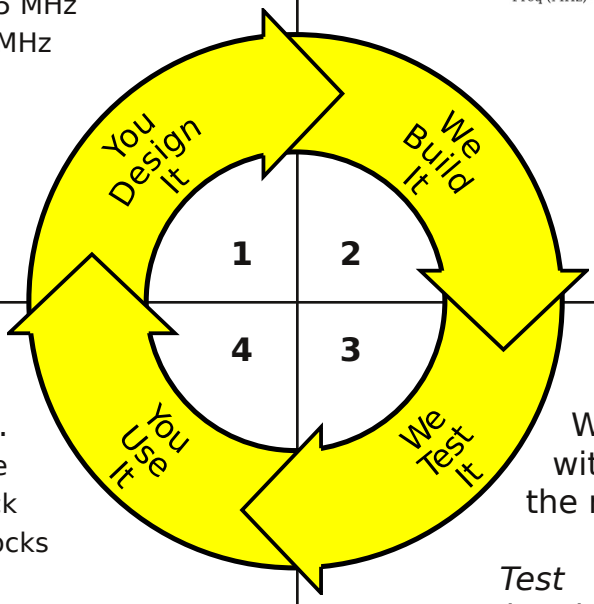
This filter has the following spectral response and resource usage....





Coeficients‡	· 55
DSP48E*‡	· 4
Block RAM*‡	· 0
Dist RAM*‡	· 19
LUT*‡	· 201

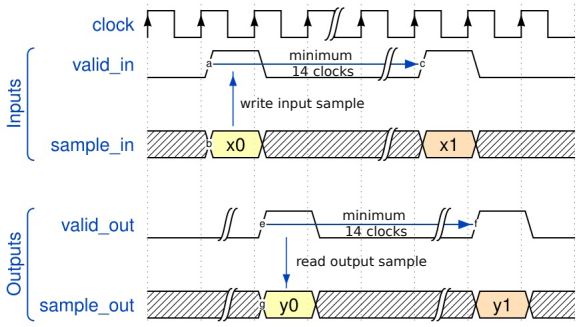
* Actual numbers will depend on your synthesis tools.



How do I use it?

Using this core is simple...

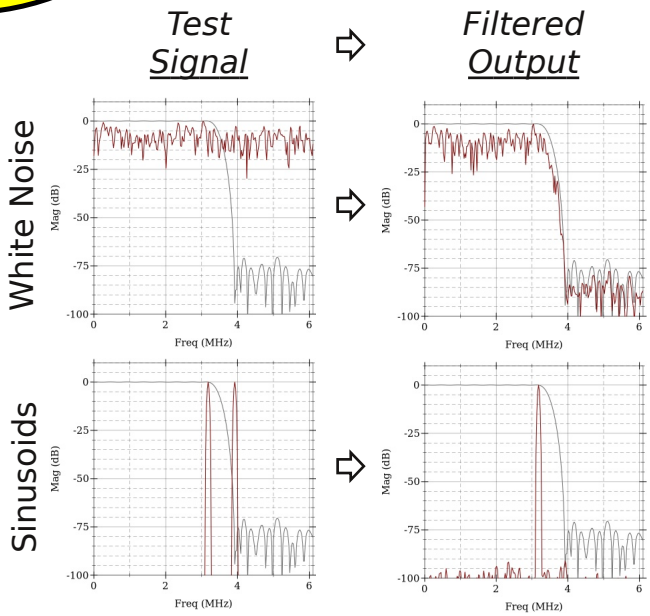
- for each new input sample set valid_in high for 1 clock
- allow a minimum of 14 clocks between input samples
- when valid_out is high, a new output sample is ready



For a more detailed example, see the reference design included with this core.

Does it work?

We simulated the core with real data and here are the results...



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‡ This is an estimate, not a specification.