The output from an FPGA pin was routed through a 100 ohm resistor to a header where the scope probe was attached. A state machine in the FPGA created this ideal waveform:

time in ns        40        20      10  10     20
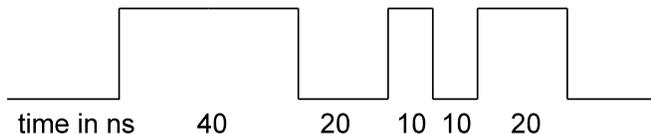
Various scopes and probes were used to display this waveform.



Tektronix TBS2104 100 Mhz scope with factory 10x probe. ~3" long ground lead
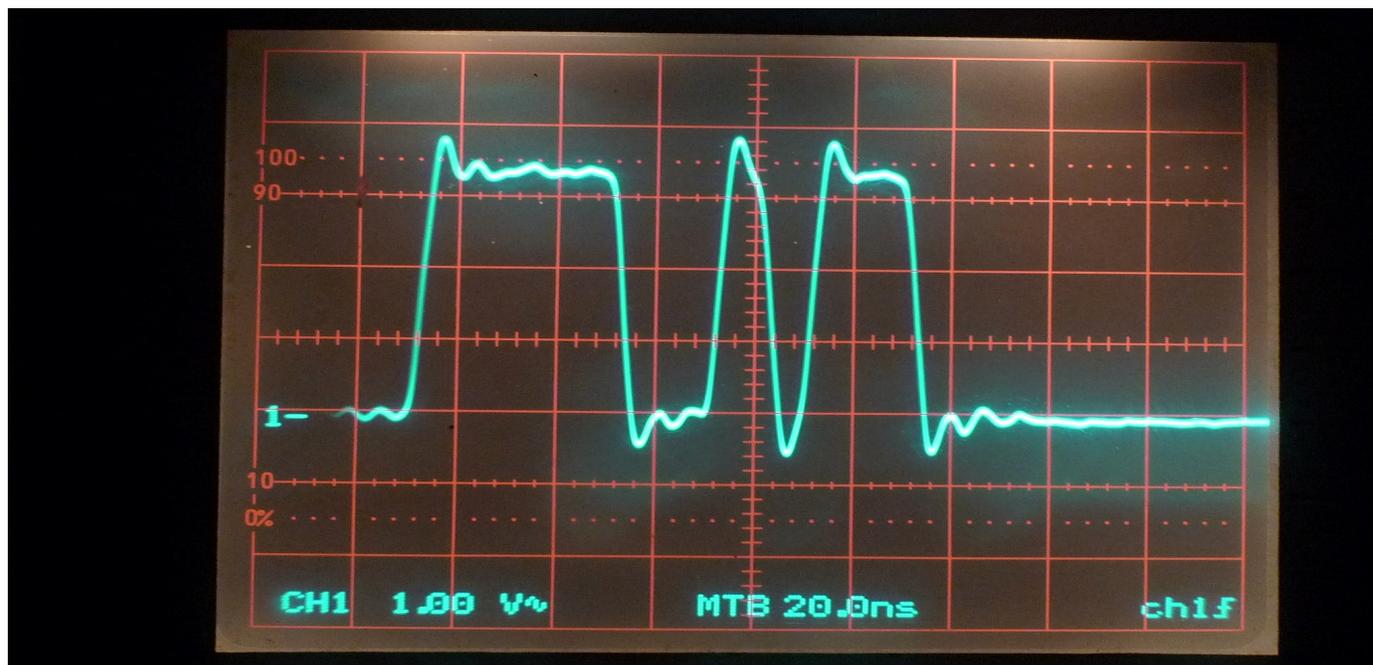


Fluke 200 Mhz CombiScope with factory 10x probe. ~3" long ground lead.

Tektronix TBS2104 100 Mhz scope with HP 10020A 10x 500 ohm resistive probe (50ohm in-line terminator at the scope end of the probe cable)



Fluke CombiScope 200 Mhz scope with HP 10020A 10x 500 ohm resistive probe (scope in 50 ohm input mode, and scale is 1V/div)

Tektronix 7834 400 Mhz scope, 1GHz vertical amp with 50 ohm input, and a HP 10020A 10x 500 ohm resistive probe (scale is 1V / div).
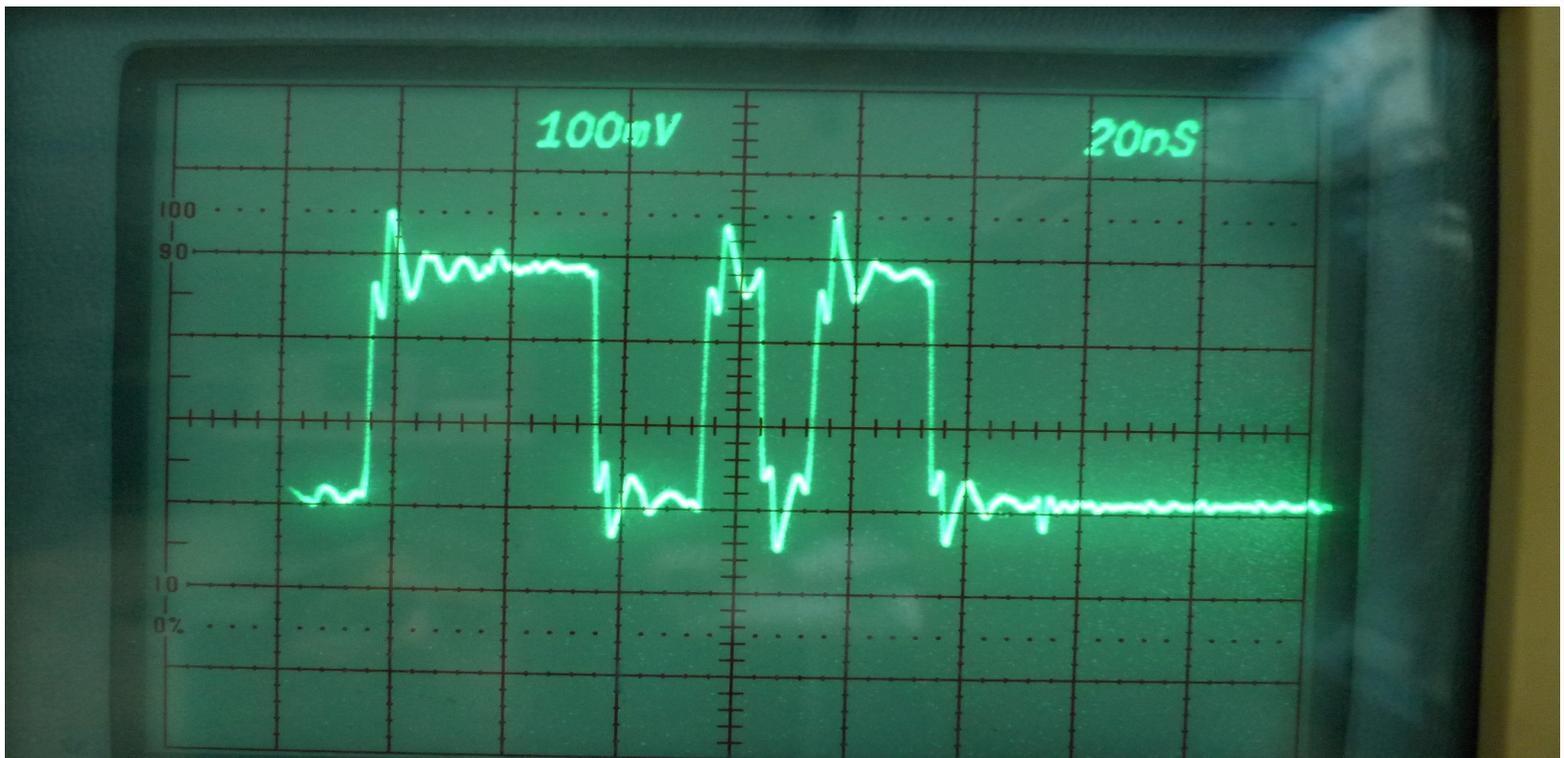


Tektronix 7104 1Ghz scope, 1Ghz vertical amp with 50 ohm input, and a HP 10020A 10x 500 ohm resistive probe (scale is 1V/div).
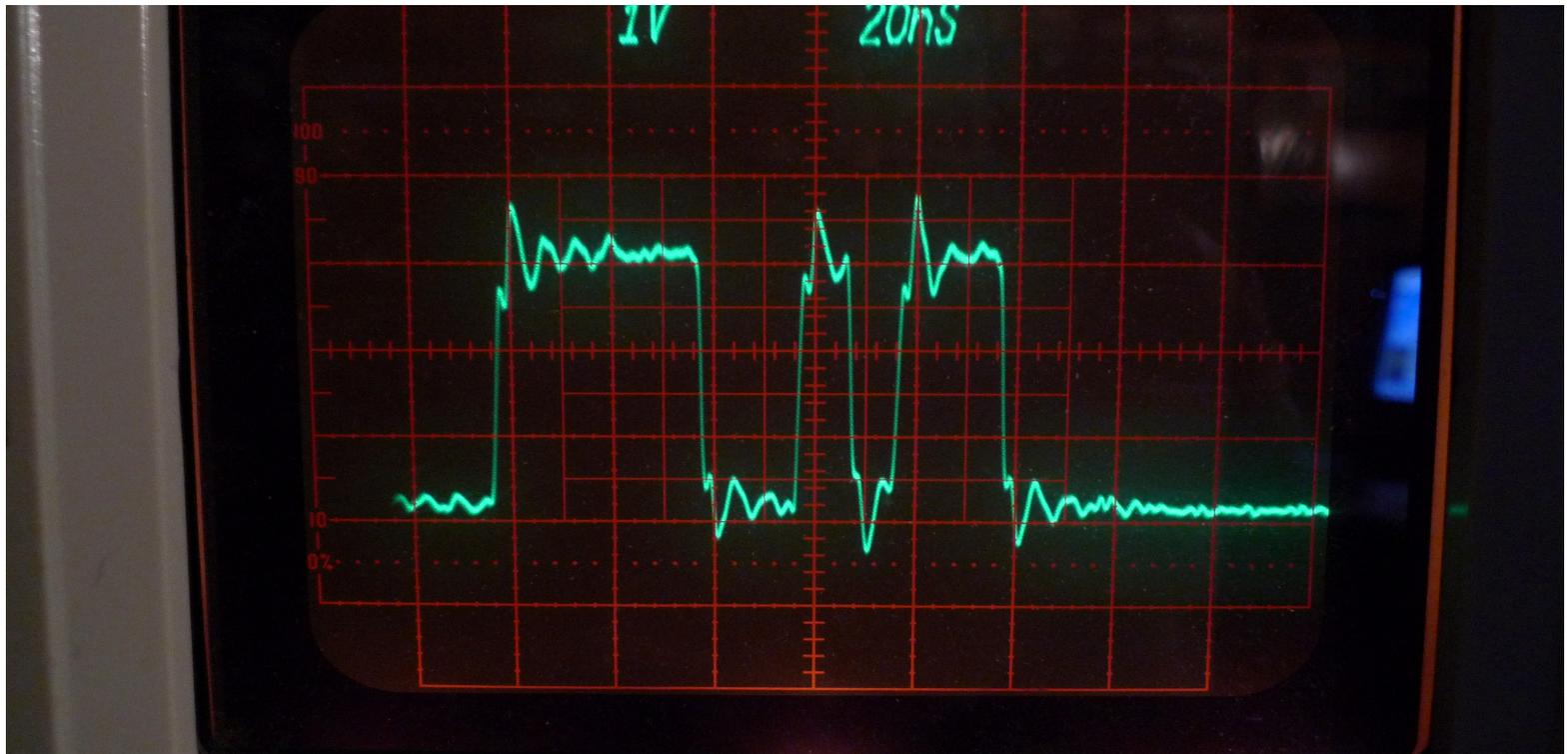
Tektronix 7834 400Mhz scope, 1Ghz vertical amp, Tek P6156 3.5Ghz 500 ohm resistive probe

50 Mhz clock output from an FPGA I/O pin.  100 ohm series resistor.
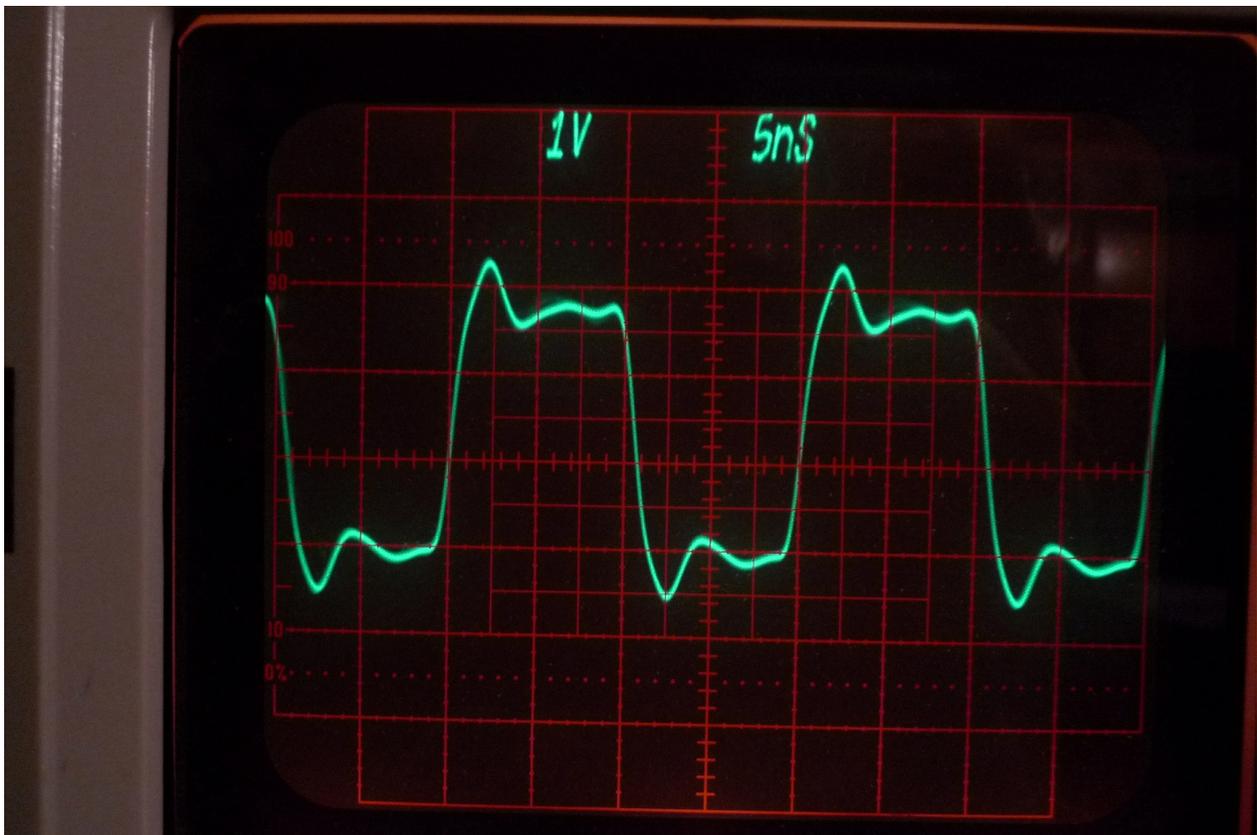


Tektronix 7834 400Mhz scope, 1Ghz vertical amp, Tek P6156 3.5Ghz 500 ohm resistive probe
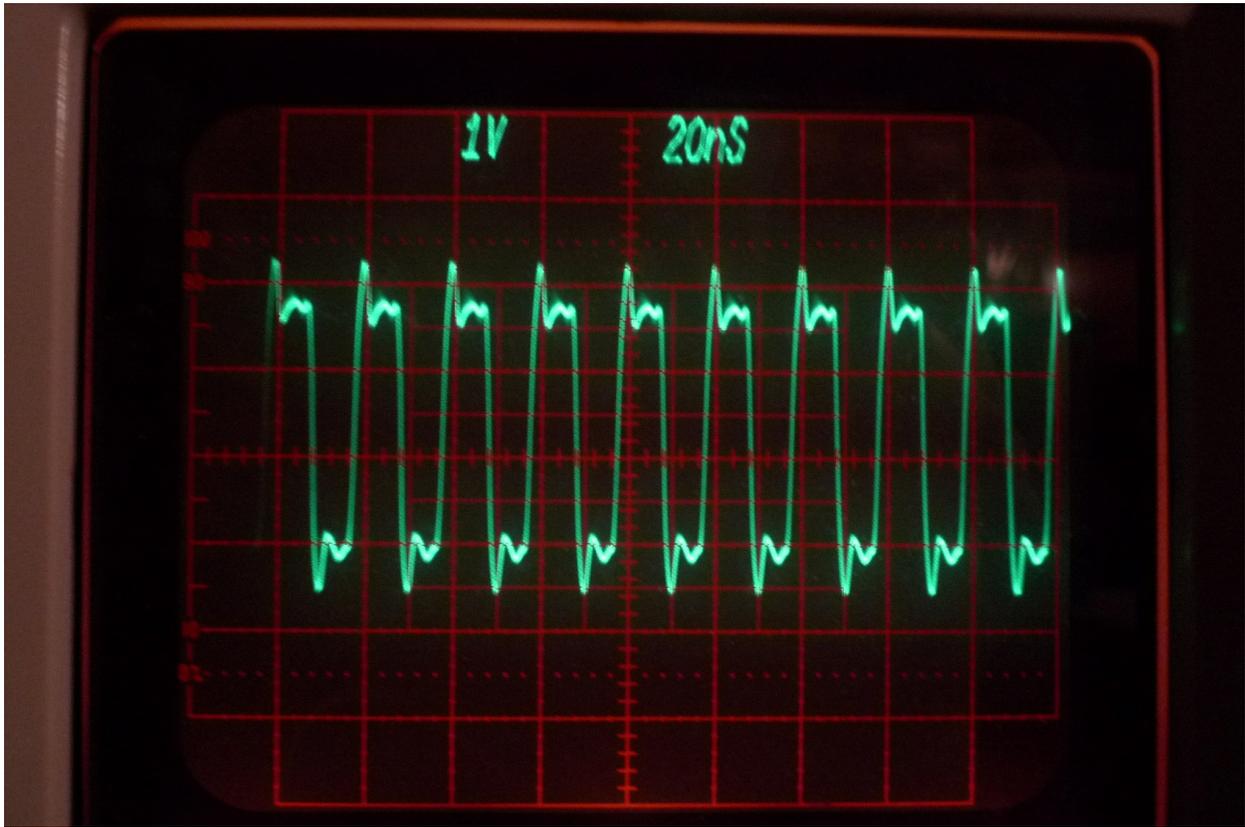
Tektronix 7834 400Mhz scope, 1Ghz vertical amp, Tek P6156 3.5Ghz 500 ohm resistive probe
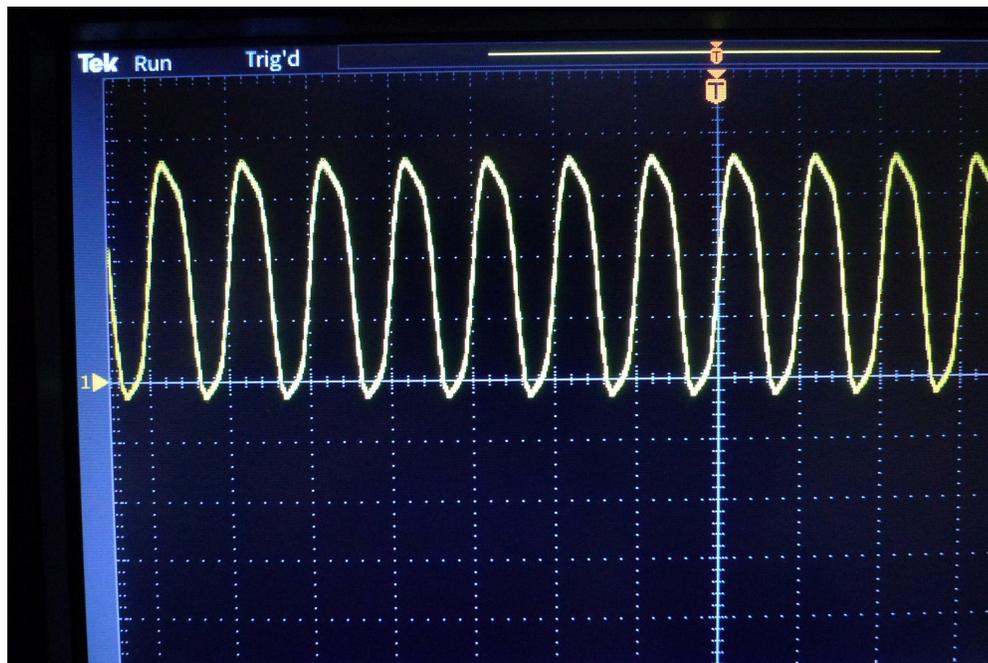


Tektornix TBS2105 100 Mhz scope, Tek supplied probe, 10x. ~4" long ground lead.  20ns/div
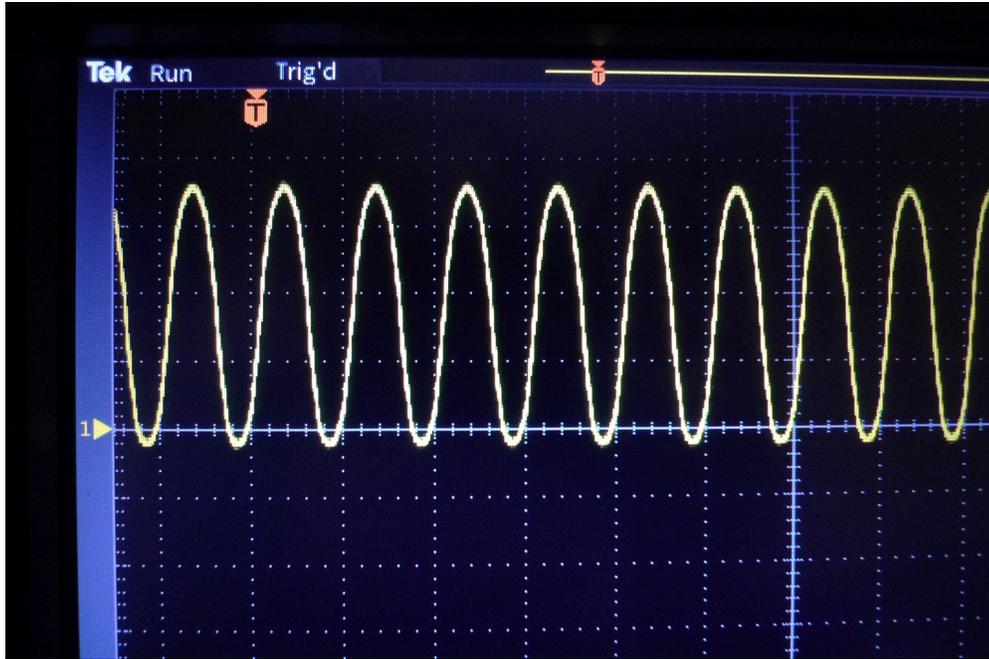
Tektornix TBS2105 100 Mhz scope, Tek supplied probe, 10x, ~4" long ground lead. 20ns/div.
Probe cable shifted, i.e. the way it laid on the table between circuit and scope.



Fluke 200 Mhz CombiScope  with factory 10x probe.  ~3" long ground lead