


```

chengfaqi[g1+g5]=chengfaqi[g1+g5]+cor_buf[0]*cor_bu
f[g1+g5]
end
out=chengfaqi[g5+1'b1]
number=g5+1'b1
out_flag<=1'b1
end
end

```

Simulation waveforms are shown in Fig.3, Fig.4 and Fig.5:

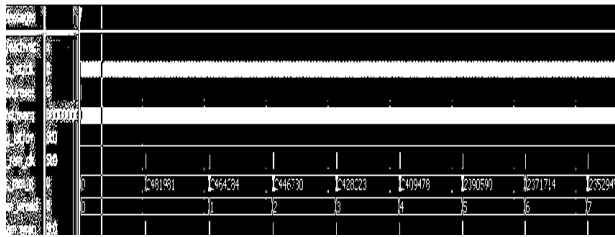


Fig. 3 Simulation Waveform-1

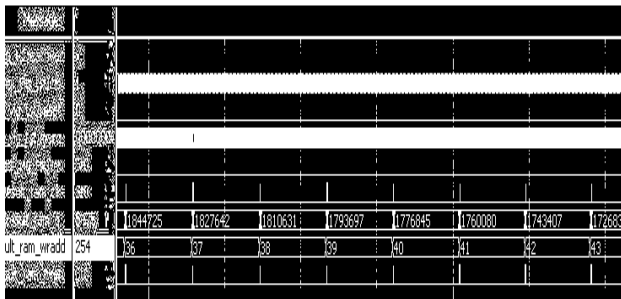


Fig. 4 Simulation waveform-2

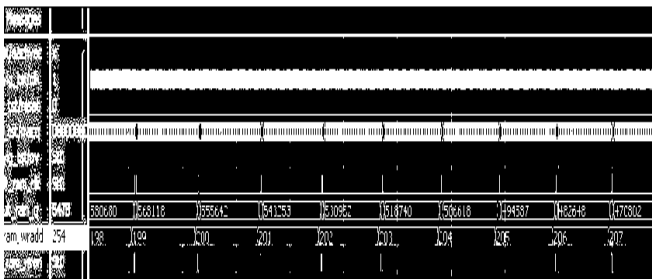


Fig. 5 Simulation waveform-3

256 channels with Matlab verify the accuracy of digital correlator, the following was relatively Fig.3-Fig.5, simulation results of the test results:

$$y256=xcorr(x256)$$

2481981 2464284 2446730 2428223 2409478 390590
1844725 1827642 1810631 1793697 1776845 1760080
1072983 1067503 1062236 1057181 1052337 1047703

IV . Conclusion

PCS, a photon spectroscopic technology, is an effective way for the measurement of sub-micron and micron particle size. Compared to other countries, relative researches of our nation were late. This technology requires high-channel-count digital correlator, and in this paper, 256 channels were achieved with the FPGA technology. In another aspect, the realization of 256 channels also greatly improved the cogency of the relevant experimental results. Delay through width register and easily adjustable by re-programmed features of FPGA. At the same time, FPGA is also one of the best choices to improve the integration and reliability of systems. It is an integrated circuit chip, with features of large-scale, low-power, re-programmed and supporting in-system programming. A great deal of flexibility nature was provided for the system development, and the variety of digital signal processing, stability and real-time were achieved.

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