

Our goal of this project is to implement the sample rate convertor in two methods. That is the direct form implementation and the direct form implementation. And we are proving that the transposed form has more advantage in timing and area compared to direct form implementation. The table below shows the comparison for each of the parameters.

Libraries or data sets are needed for the physical design of an application specific integrated circuit. The libraries have the physical layout, abstract view, timing models, simulation or functional models, and transistor level circuit description. Success of the fabricated ASIC design depends on accuracy of the libraries. Standard cell libraries, input output pads, memories and custom libraries are mainly used. Custom libraries which are also known as intellectual property (IP) libraries has PLL, ADC, DAC, voltage regulators.

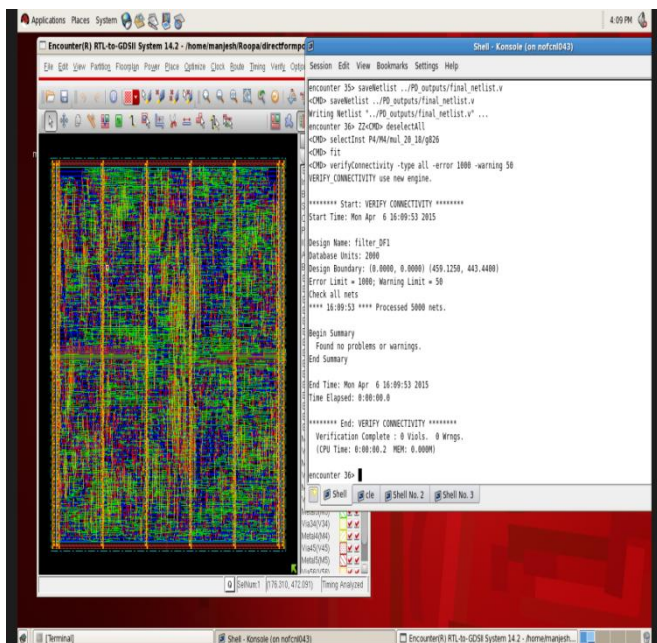


Figure 7: The routing for the design

6. Conclusion

Since we know that this era have many components working at varying frequencies we need to have sample rate converter to get them together. Polyphase structure is designed in both direct form and transposed form. Its architecture was implemented and realized in Hardware description language (Verilog) using Cadence tools.

The simulation outputs of HDL design was verified. This design is then synthesized to obtain gate level schematic and its area, timing and power report was generated. Later the design is taken to the backend and successfully routed. The applications are, Digital audio player, Digital audio recorder, Digital mixing desk, Digital audio interface for computers, Digital audio routers and distribution systems, Broadcast studio equipment, DVD/CD recorders, Surround sound decoders, Car audio system

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