CMX Mechanical Parts

Base Function and Topological FPGA Heat Sinks

Rev. 21-Nov-2013

This notes describes the Heat Sinks for the Base Function and for the Topological Processor FPGAs. These two Heat Sinks are very similar. They are both about 100mm by 100mm in size and they differ only in the location of the 7 holes in each device.

- There are 2 drawings that show these Heat Sinks.

  m1_base_function_heat_sink.pdf

  m2_topological_heat_sink.pdf

  in the following directory on the web.

  http://www.pa.msu.edu/hep/atlas/l1calo/cmx/hardware/

  drawings/heat_sinks/

- Both of these heat sink designs are machined from extruded bar stock that comes in 254 mm lengths which I will provide. For now I have only a couple of pieces of this material which you may use to test its machinability and/or use to make a prototype of each heat sink design.

- The exact width of the extruded stock, the X dimension in the drawings, is specified as 100 mm but typically seems to be slightly over 100 mm.

- The Y dimension of both heat sinks (along the length of the fins) should be cut to 100 mm as shown in the drawings.

- For the CMX project we need:

  25 of the Base Function FPGA Heat Sink
   3 of the Topological FPGA Heat Sink

- There may be trouble machining the fins of this heat sink bar stock. Some of the required holes are very near the edge of the heat sink and will leave small stubs of fin material when these holes are cut. It is fine (actually preferred) if you can remove these small stubs.

- Please make just one of each type of these heat sinks to begin with and let me test and verify it before producing the rest of them.

- The only important dimensions in these heat sinks designs is the relative position of the 7 holes. If the whole pattern of 7 holes is shifted up down or sideways by 20 mills on a given piece - that will make no difference in its usability on the CMX electronics card.

- The account number for this work is: RC 101366

- Please let me know if you have any questions about machining these parts. I'm happy to come to the M-Shop and go through the drawings.

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Thank you for making these heat sinks, Dan