OFC-2 Module for KOTO

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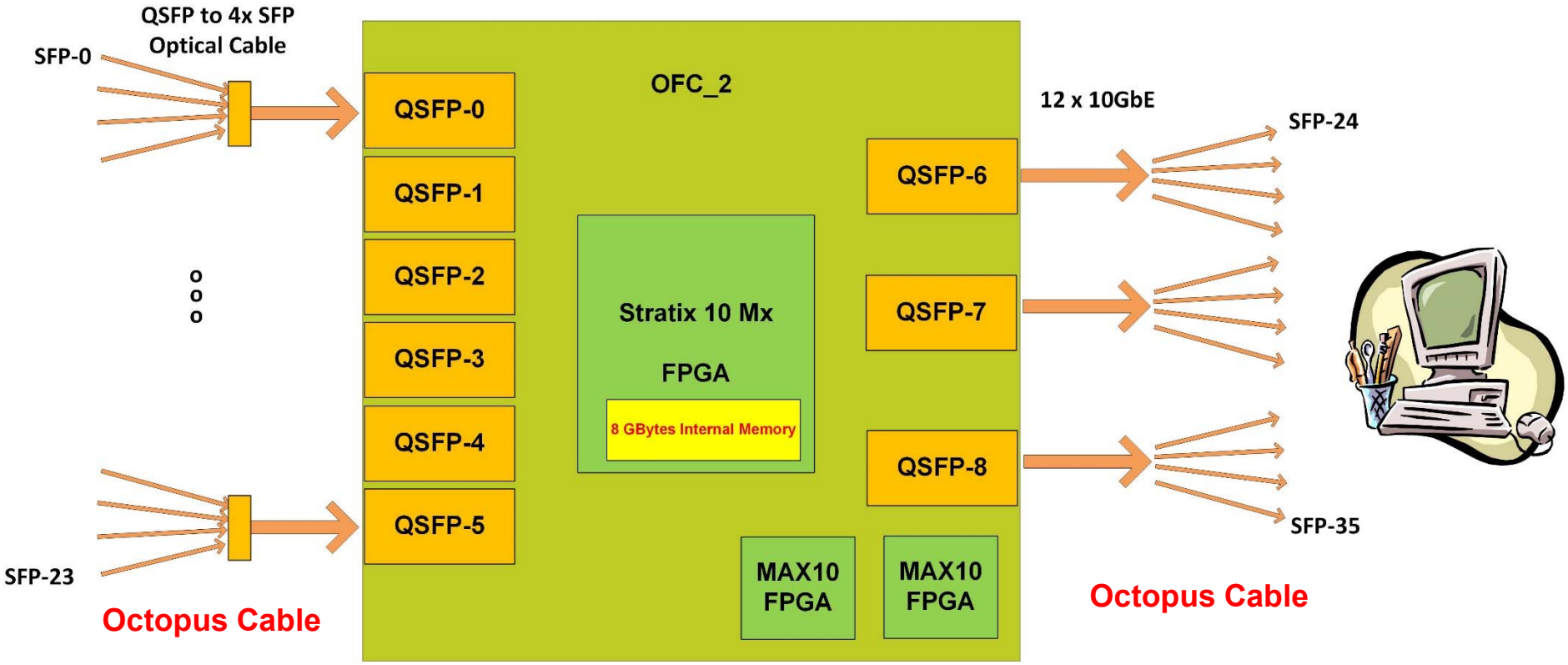
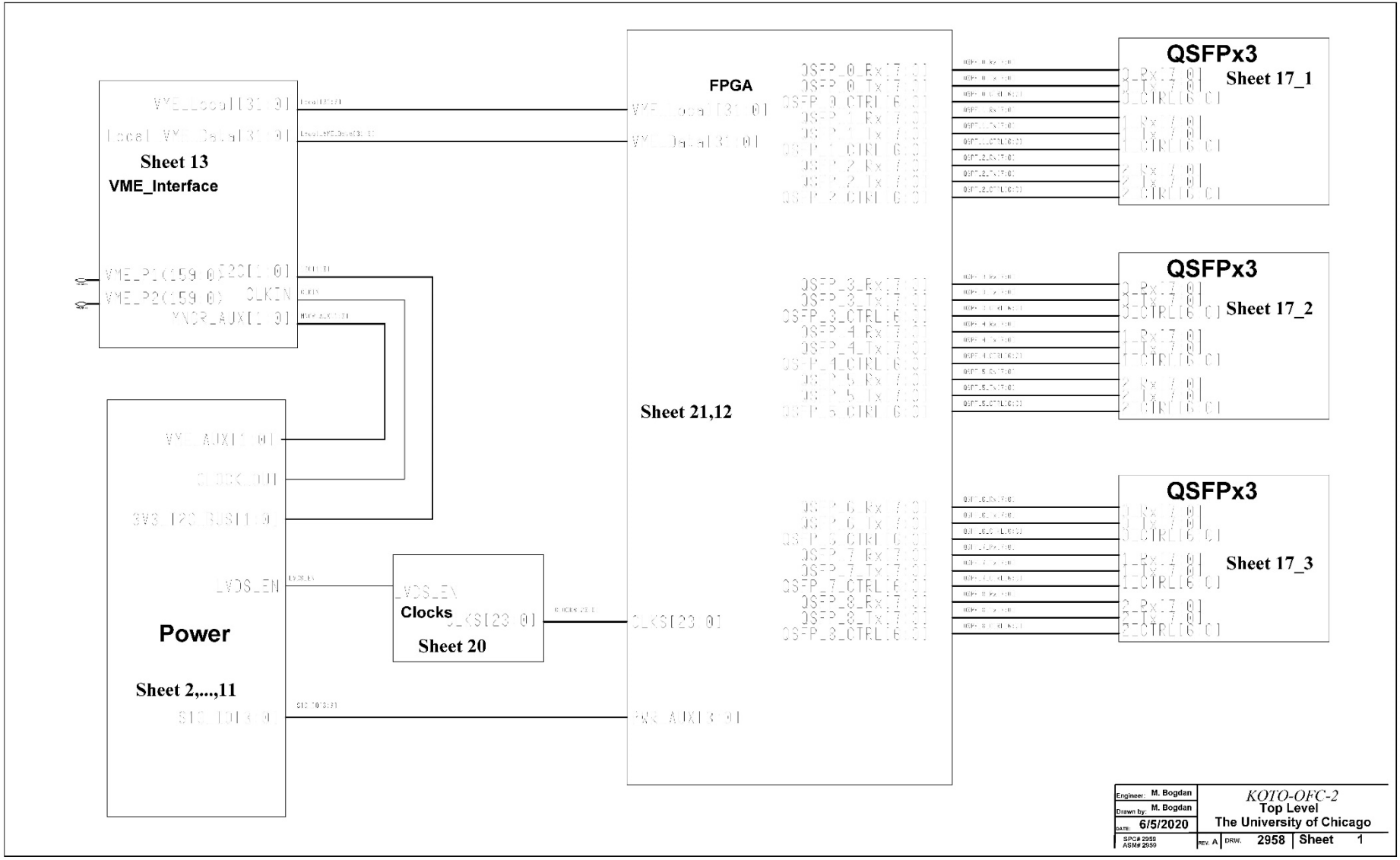
OFC-2 - Block Diagram



6U VME Module with 9 QSFPs and one Stratix 10Mx FPGA

1SM21BHN3F53E3VG (48 Transceivers and 8 GBytes Memory per chip)

OFC-2 - Block Diagram



http://edg.uchicago.edu/~bogdan/KOTO_OFC_2/schematics.html

OFC-2 – Power Options

Largest power consumption is the VCC-CORE (0.9V):

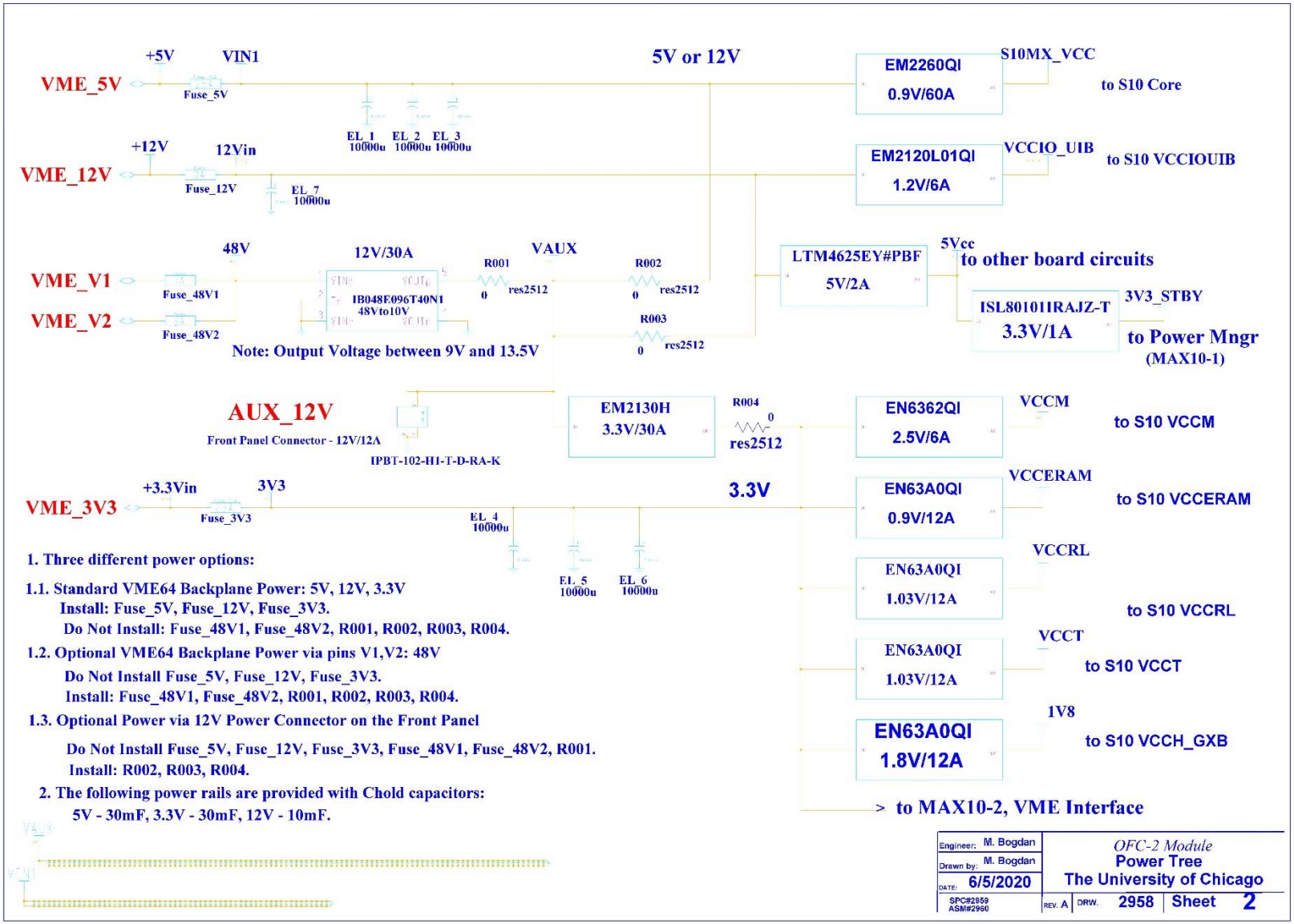
- Current Estimate ~ 30A

With more complex firmware designs, we'll need more power –> Module can provide up to 80A.

Developed 3 ways to power the OFC-2:

- Regular VME: 5V, 3.3V, 12V - Ivcc < 45A.
- User Defined VME: 48V/3A on +V1,+V2 – Ivcc > 45A.
- Front Panel Power 12V/10A – Ivcc > 45A.

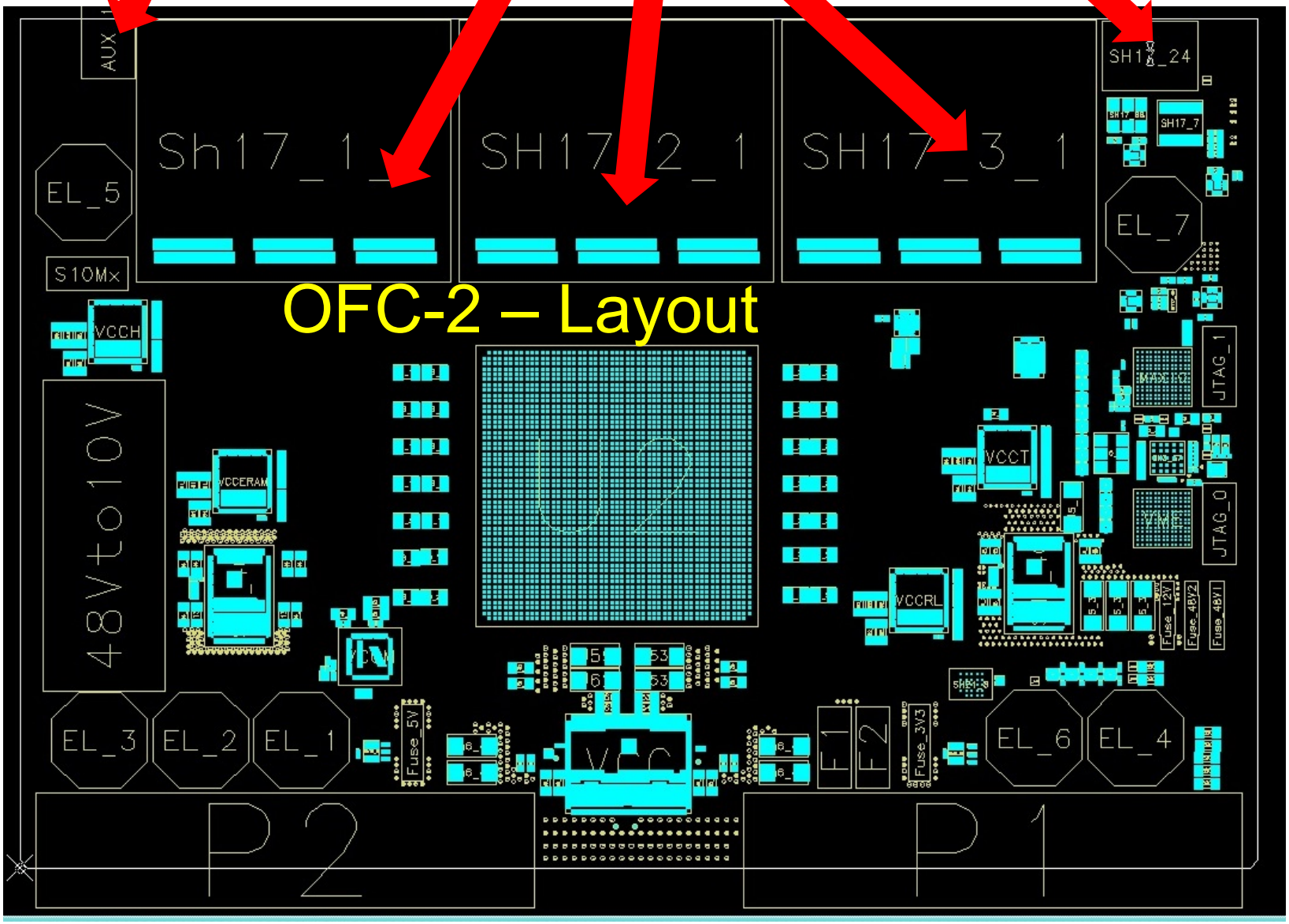
OFC-2 – Power Tree



12V Power

9 pieces QSFP+

RJ45



OFC-2 – Layout

OFC-2 Status

Schematic: 60%
Layout: 85%
PCB Stackup: 100%
PCB Routing: 0%
Firmware VME FPGA: 90%
Firmware Power Manager FPGA: 60%
Firmware Processor FPGA: 0%