

Using MCOTS: Creating the Perfect Module for Any Requirement

Challenge

- Custom backplane requirements for SWaP-constrained mission computer
- Requirement to add custom functionality to modules
- Support for Foreign Military Sales required with Trust Architecture

Solution

- VPX3-133 3U OpenVPX SBC
- NXP QorIQ T2080 processor at 1.5 GHz
- TrustedCOTS technology with TCOTS FPGA Development Kit

Results

- Successful modification of VPX3-133 pinout to customer pinout requirements
- Customer able to add their 'special sauce' onto the card
- Met customers time to market requirements

Challenge

Curtiss-Wright recently engaged with a customer that required custom backplane requirements for a new mission computer based on 3U VPX hardware. Their goal with this new system was to further reduce size, weight, and power (SWaP) in their next-gen mission computers, as well as be able to bid into Foreign Military Sales (FMS). This requires

Trusted Boot™ and other Trust Architecture features not supported on their legacy systems. Not only that, our customer wanted to be able to add their own functionality to the system, and needed a specific backplane PCI Express® (PCIe) configuration that differed from those available on our standard product.



VPX3-133

Solution

Our customer selected our standard product VPX3-133 NXP® QorIQ™ T2080 processor SBC as their starting point. The VPX3-133 is a rugged, high performance, highly integrated 3U SBC that meets the challenge of high density computing by packing the greatest functionality into the smallest standard form factor, while using the lowest power possible and retaining as much flexibility as possible. For applications that demand the highest levels of hardware and software protection the VPX3-133 provides anti-tamper and information assurance capabilities through Curtiss-Wright's TrustedCOTS™ and NPX Trusted Boot technologies and capabilities.

Since the VPX3-133 didn't have the same pinout as our customer's previous SBCs, Curtiss-Wright carefully analyzed the system requirements and modified the VPX3-133 in order to meet these requirements. Our customer required a special configuration for PCIe and the VPX3-133, with its flexible PCIe configuration on the P1 connector, was an ideal solution.

To enable bids into FMS, our customer needed to provide IP protection which they did by using NXP's Trusted Boot functionality available on the VPX3-133. They also needed to add their own "special sauce" onto the card, and did this easily using our TrustedCOTS VPX3-133 FPGA Development Kit (available only from Curtiss-Wright).

Results

Our customer received state-of-the-art VPX3-133 SWaP-optimized modules modified to meet all their custom requirements. In addition, Curtiss-Wright takes schedule very seriously, and ensured the delivery of these modules met our customer's time to market requirements. The support, relationship, and attention to detail we provided went over and above any of the competition. Our customer continues to have no issues with their hardware. Curtiss-Wright partners very closely with this company and continues to work with this customer to bid this mission computer into fast jet platforms.