



## VMOD-SVEC

### VME64x Mezzanine Carrier for FMC Modules



## FEATURES

### Board

- VME64x interface
- Two Low-Pin Count FMC slots
- No dedicated clock signals from Carrier to FMC (as only available on HPC pins and use LPC)
- FMC connectivity: all 34 differential pairs connected, 1 GTP transceiver with clock, 2 clock pairs, JTAG Xilinx FPGAs

### Application FPGA

- Spartan-6 XC6SLX150T-FGG900
- Direct connection to all resources such as VME64x, memories and FMC connectors

### System FPGA

- Spartan-6 XC6SLX9-2FTG256C
- Provides VME bootloader, early oscillator/PLL config
- Configuration Flash memory for both Main FPGA and Application FPGA configuration
- FPGA configuration from SPI flash or via VME Clocking resources
- 1 x 10-280 MHz I2C Programmable XO Oscillator, starts up at 100 MHz (Silicon Labs Si570, freely usable)
- 1 x 25 MHz TCXO controlled by a DAC with SPI interface (AD5662, used by White Rabbit PTP core)
- 1 x 20 MHz VCXO controlled by a DAC with SPI interface (AD5662, used by White Rabbit PTP core)
- 2 x low-jitter frequency synthesizer/ fan<sub>out</sub> (TI CDCM61004, fixed configuration, F<sub>out</sub>=125 MHz, used by White Rabbit PTP core)

### Additional Features

- On-board memories
- Reset push button
- 2 x 256 MB (2 GBit) DDR3 (16-bit bus, MT41J128M16HA-15E)
- 1 x 128 MB SPI flash for FPGA firmware storage
- 64 kBit EEPROM (24AA64T-I/MC) connected for storing application parameters
- 1 x I<sup>2</sup>C configuration EEPROM (24LC64)

### Miscellaneous

- On-board thermometer IC (DS18B20U+)
- Unique 64-bit identifier (DS18B20U+)

### Front panel

- 1 x SFP port (White Rabbit compatible)
- 4 x LEMO/SMC programmable I/Os capable of driving 3.3V @ 50 ohm
- 8 x programmable LED