

M-505-K325T

M-Series Module

OVERVIEW



Pico Computing's modules are the foundational building blocks that comprise a truly scalable HPC system based on the PCI Express bus standard. The business card-sized M-505-K325T is a powerful computing element composed of FPGA logic (with loading system), a local memory sub-system, and a fully-switched PCIe x8 communication structure. The module is designed for maximum memory and logic bandwidth.

Up to six M-505-K325T modules can be snapped onto a Pico Computing EX-500 backplane, filling a single PCIe slot with a groundbreaking level of parallel processing density for compute-intensive applications.

The M-505-K325T ships standard with the Xilinx Kintex-7 K325T FPGA, or optionally with the Xilinx K410T FPGA. The module features a x8 PCI Express Gen 2 connection to the host and high-performance/high-density SODIMM with independent memory controller, local to the FPGA.

Applications

Choose the M-505-K325T to dramatically accelerate radio astronomy, design simulations/emulations, SDR applications, beam forming, digital signal processing, and other algorithms.



SPECIFICATION SUMMARY

- *Kintex-7 XC7K325T or K410T FPGAs*
- *x8 PCI Express Gen 2 Interface*
- *Up to Six M-505 Modules per EX-500 Backplane*
- *8 GB DDR3 SODIMM*
- *128 MB NOR Flash (for stand-alone embedded applications)*
- *34 LVDS*
- *8 GTX Transceivers*

Specifications

FORM FACTOR

- M-Series Module
- 1.75 x 3.88 (inches)
- 44.49 x 98.57 (mm)
- Double-slot width with heatsink
- Requires EX-Series Backplane

INTERFACE TO HOST

- x8 PCIe Gen 2

FPGA

- Xilinx Kintex-7 K325T
- Xilinx Kintex-7-K410T

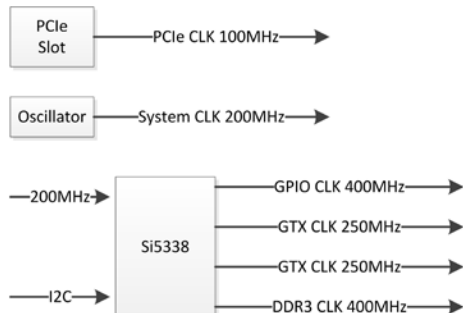
DDR3 COMPONENT MEMORY

- 8 GB, 64-bit @ 667 MHz
- 10.6 GB/s memory bandwidth

Ordering & Deliverables

ORDERING

For more information, to request a quote or place an order, please contact Pico Computing.



CLOCK

- 200 MHz system clock
- 100 MHz PCIe reference clock
- 400 MHz GPIO clock
- 2-250 MHz GTX clocks
- 400 MHz DDR3 clock

ELECTRICAL

- Card power derived from 12.0V via EX-Series Backplane
- FPGA power dissipation dependent upon user application

ENVIRONMENTAL

- Storage Temperature: -20°C – 100°C
- Operating Temperature: 0 – 85°C for commercial grade -40°C – 100°C for industrial grade

DEBUGGING TOOL

- System Monitor Utility Program provides ability to read FPGA die temperature, FPGA core voltage, and core current
- Accessible JTAG header, JTAG cable included for iMPACT and Chipscope

DELIVERABLES

- M-505K325T FPGA Module
- Interface to host
- Interface to memory
- API (C++)
- Host side drivers
- Samples/examples

QUALITY

- Manufactured to IPC610-Class 2 standard
- Designed and supplied to ISO9001:2000 certification
- RoHS compliant

CONFIGURATION FLASH

- 128 MB NOR

COOLING

- Delivered with custom heatsink
- Forced air cooling required

RUGGEDIZATION

- BGA underfill and conformal coating upon request

STATUS LEDs

- Kintex-7 INIT - Orange
- Kintex-7 DONE - Green

EXPANSION HEADER

- 34 Differential Pairs
- 8 GTX Transceivers

CONTACT

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