

# LogicTile Express for Cortex-R5

For the Versatile Express Family

# ARM<sup>®</sup>

The Versatile™ Express family development boards provide an excellent environment for prototyping the next generation system-on-chip designs. Through a range of plug-in options, hardware and software applications can be developed and debugged.

The Soft Macro Model (SMM) for the ARM® Cortex™-R5 processor is an encrypted FPGA image for use on the LTE 3MG. It offers:

- Early access to the Cortex-R5 processor
- Benchmarking capability
- Early device driver and software development
- User IP provided via second FPGA board
- ARM JTAG and Trace connectors for debug support



LogicTile Express 3MG with ARM Cortex-R5 SMM

The implementation uses standard ARM CoreLink™ System IP components to implement a basic SoC design to mimic the test chip developments of our CoreTile Express products.

A simple click through EULA is available to access the latest processor technology from ARM.

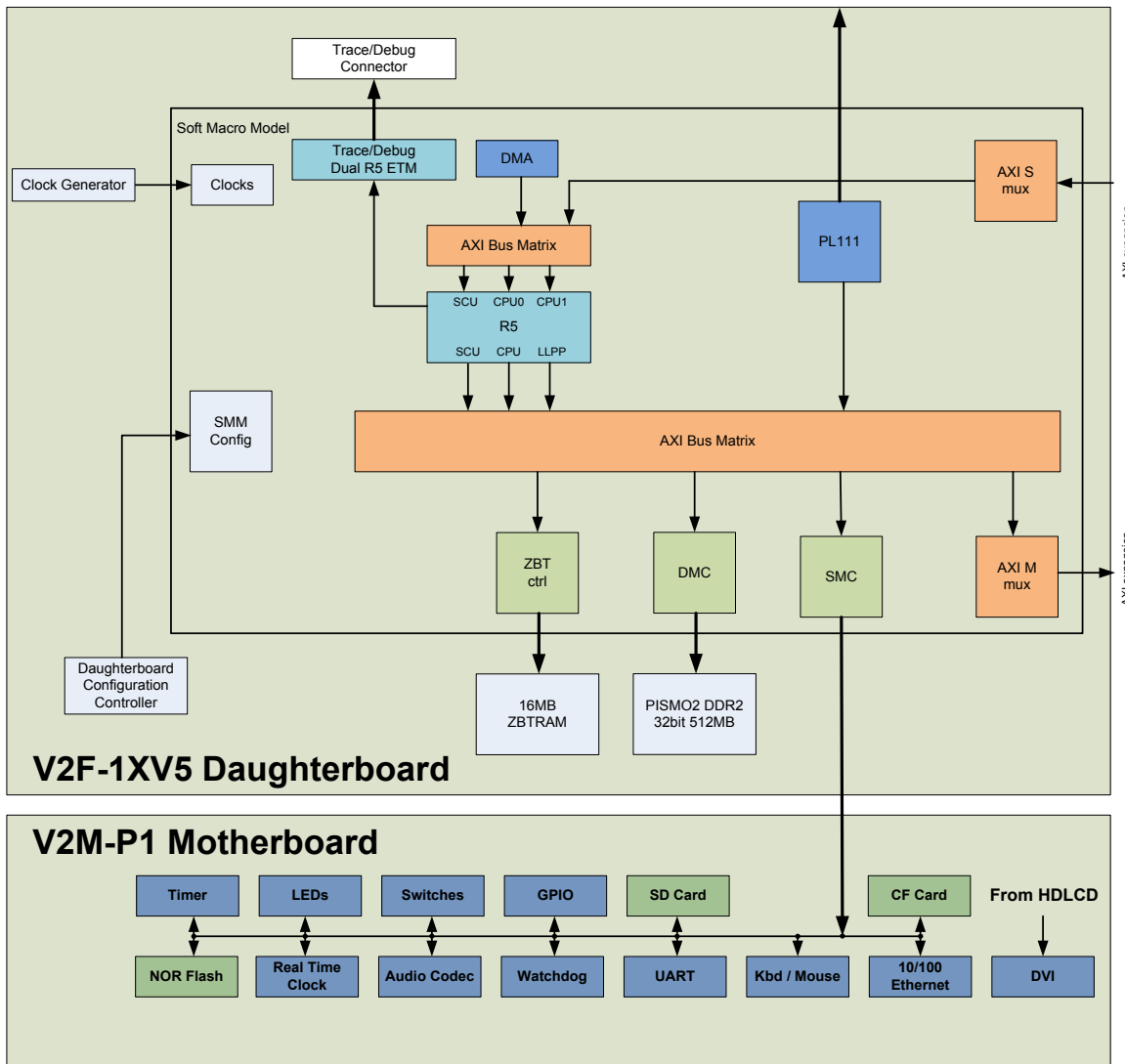
## Features

- Processor Subsystem
  - Dual-core ARM Cortex-R5 with FPU r1p2
  - L1 Cache 64KB Instruction and Data
  - TCM 64kB
  - 50MHz operation speed
  - Debug support: CoreSight™ support ETM
- AMBA® AXI™ Subsystem
  - Internal AMBA AXI: 50MHz
  - External AMBA AXI: Master port 25MHz
  - External AMBA AXI: Slave port 35MHz
  - PL341 DDR2 Memory Interface
    - PISMO2 512MB 32-bit @ 110MHz
  - PL354 Static Memory Bus Interface
    - 32-bit 40MHz to motherboard
    - Boot from NOR Flash on motherboard
  - HDCLD video controller
- Expansion support
  - AMBA AXI: Master and slave links to expansion FPGA daughterboard
- Peripheral set compatible with the Versatile family
- Debug
  - ARM JTAG: 20-way DIL box header
  - ARM 32-bit parallel trace: dual 38-pin Micotors
- Simplified configuration via motherboard
  - System appears as a USB flash drive on a PC
  - Fast programming and configuration
  - Configuration text files for system settings
  - Remote power control via RS232

## Deliverables

- LTE 3MG with encryption key
- Encrypted SMM image for LTE 3MG
- 512MB DDR2 PISMO2 module
- Versatile Express SMM support CD/DVD
- Example AMBA AXI design
  - Additional LTE 3MG required
- SelfTest software

# LogicTile Express for Cortex-R5 Architecture



LogicTile Express for Cortex-R5 architecture diagram

When connected to a Versatile Express motherboard the configuration system enables programming and updating of the SMM Express R5x2. Configuration and operation parameters of the daughterboard are defined in a configuration file stored on the motherboard.

The exported AMBA AXI interfaces have dedicated routing for an optimal prototyping solution.

**PART NUMBER: V2S-CR5-I000A**

The daughterboard communicates to the motherboard via the static memory interface for all peripheral and flash memory access.

[www.arm.com/ve](http://www.arm.com/ve)

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