LogicTile *Express* for Cortex-R5
For the Versatile *Express* Family

ARM®

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.
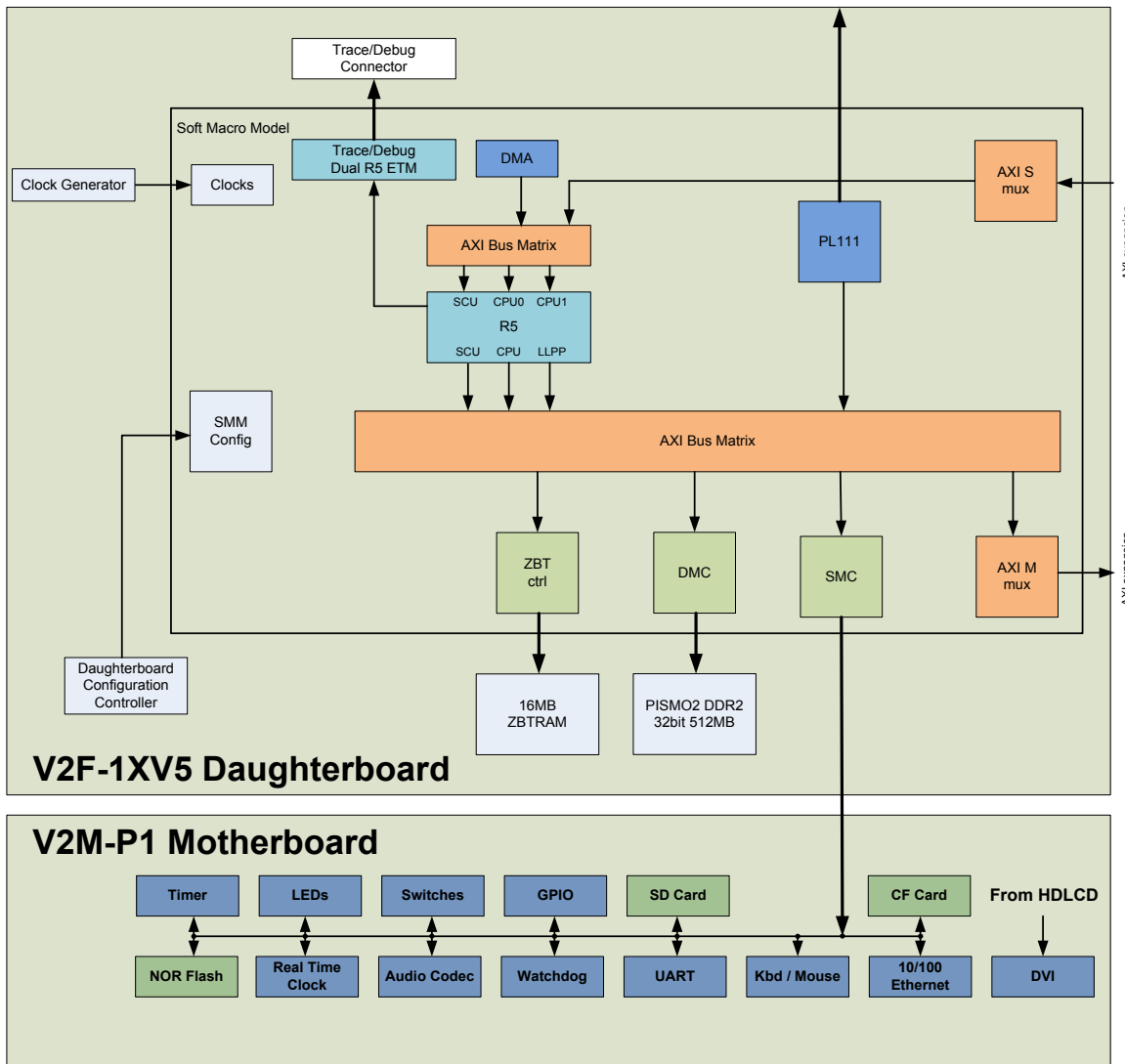
Features

- 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 daugherboard

- Peripheral set compatible with the Versatile family

- Debug
    - ARM JTAG: 20-way DIL box header
    - ARM 32-bit parallel trace: dual 38-pin Mictors

- 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 daugherboard communicates to the motherboard via the static memory interface for all peripheral and flash memory access.

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

PART NUMBER: V2S-CR5-1000A

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