**APPENDIX B**

**SOCKIT DEVELOPMENT KITS & TOOLS DETAIL**

|  |  |
| --- | --- |
| Description | The SoCKit Development Kit presents a robust hardware design platform built around the Altera System-on-Chip (SoC) FPGA, which combines the latest dual-core Cortex-A9 embedded cores with industry-leading programmable logic for ultimate design flexibility. Users can now leverage the power of tremendous re-configurability paired with a high-performance, low-power processor system. Altera’s SoC integrates an ARM-based hard processor system (HPS) consisting of processor, peripherals and memory interfaces tied seamlessly with the FPGA fabric using a high-bandwidth interconnect backbone. The SoCKit development board includes hardware such as high-speed DDR3 memory, video and audio capabilities, Ethernet networking, and much more. In addition, an on-board HSMC connector with high-speed transceivers allows for an even greater array of hardware setups. By leveraging all of these capabilities, the SoCKit is the perfect solution for showcasing, evaluating, and prototyping the true potential of the Altera SoC. |
| Features | FPGA Device • Cyclone V SoC 5CSXFC6D6F31 Device • Dual-core ARM Cortex-A9 (HPS) • 110K Programmable Logic Elements • 5,140 Kbits embedded memory • 6 Fractional PLLs • 2 Hard Memory Controllers • 3.125G Transceivers  Configuration and Debug • Quad Serial Configuration device – EPCQ256 on FPGA • On-Board USB Blaster II (micro USB type B connector)  Memory Device • 1GB (2x256MBx16) DDR3 SDRAM on FPGA • 1GB (2x256MBx16) DDR3 SDRAM on HPS • 128MB QSPI Flash on HPS • Micro SD Card Socket on HPS  Communication • USB 2.0 OTG (ULPI interface with micro USB type AB connector) • USB to UART (micro USB type B connector) • 10/100/1000 Ethernet  Connectors • One HSMC (8-channel Transceivers, Configurable I/O standards 1.5/1.8/2.5/3.3V) • One LTC connector (One Serial Peripheral Interface (SPI) Master ,one I2C and one GPIO interface )  Display • 24-bit VGA DAC • 128x64 dots LCD Module with Backlight  Audio • 24-bit CODEC, Line-in, line-out, and microphone-in jacks  Switches, Buttons and LEDs • 8 User Keys (FPGA x4 ; HPS x 4) • 8 User Switches (FPGA x4 ; HPS x 4) • 8 User LEDs (FPGA x4 ; HPS x 4) • 2 HPS Reset Buttons (HPS\_RSET\_n and HPS\_WARM\_RST\_n)  Sensors • G-Sensor on HPS • Temperature Sensor on FPGA  Power • 12V DC input |
| Kit Includes | • The SoCKit development board • USB Cable for FPGA programming and control • Ethernet Cable • 12V DC power adapter |