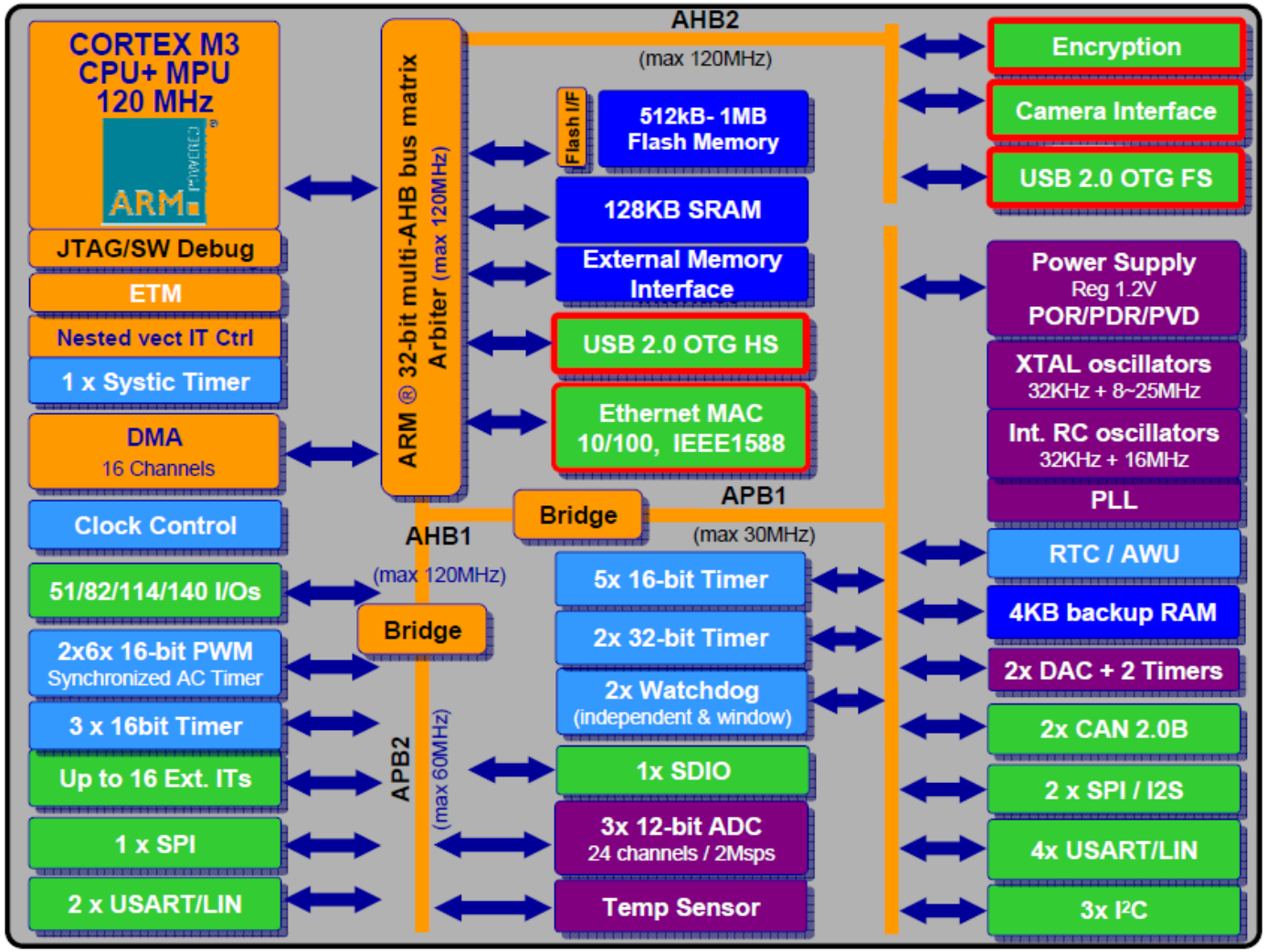
SILICA Xynergy Board

Explore the Synergies:
STM32 meets Spartan-6

Block Diagram / Features STM32F217



Outstanding Performance and Power

- **Cortex-M3 core's maximum processing performance with 0-wait state execution from Flash up to 120MHz**
- **150 DMips at 120MHz**
- **Adaptive Real Time (ART memory accelerator™)**
  - **128-bits wide Flash with Prefetch**
  - **Intelligent Branch management**
- **32-bit 7 layers AHB bus matrix interconnects**

- **188µA/MHz, 22.5mA at 120MHz**
  - **ST's 90nm process, 1.2V core**
  - **ST ART Accelerator™ reducing accesses to Flash**
- **Advanced low-power modes and features**
  - **Backup SRAM and RTC**
  - **<1µA with RTC on**
  - **<1uA with 4-Kbyte backed up SRAM**
  - **<2uA with both on**
- **VDD min down to 1.65V**

Peripherals and integration

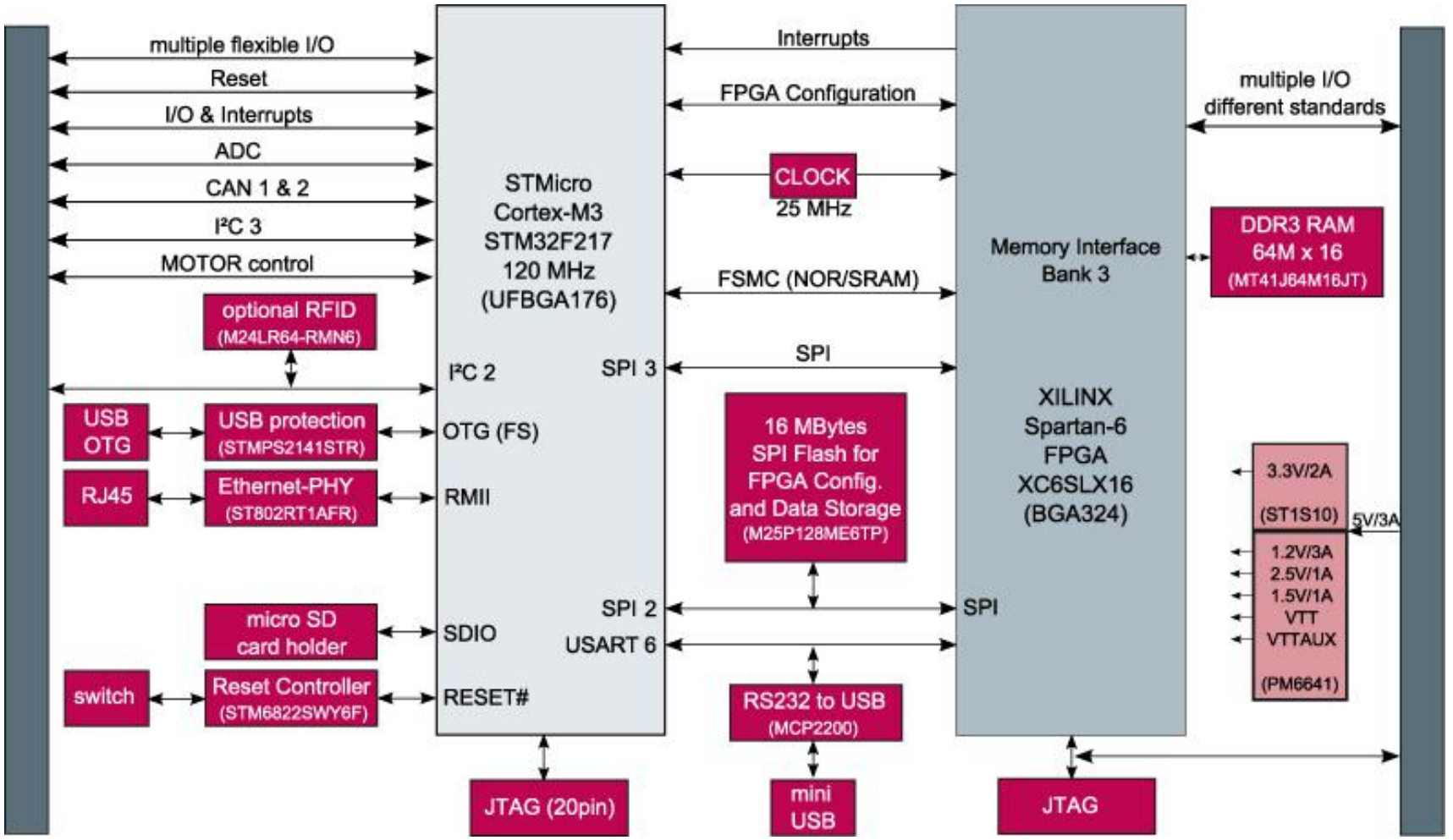
- High Speed USB OTG
- Audio PLL, I²S and USB synchronization
- Camera interface, 8- to 14-bit parallel, up to 48Mbyte/s at 48MHz
- Flexible static memory interface up to 60MHz
- Crypto/hash processor: 3DES, AES256/SHA-1, MD5, HMAC
- 3 SPIs running at up to 30Mbit/s,
- 6 USARTs running at up to 7.5Mbit/s
- 3x 12-bit ADC, 2 MSPS, up to 6MSPS in interleaved mode
- True random-number generator
- Fast GPIO (60 MHz toggling)

- 1-MByte Flash
- 128-Kbyte SRAM
- 4-Kbytes back up SRAM: used as EEPROM to save application state, calibration data,
- 528 bytes of OTP memory to store critical user data such as Ethernet MAC addresses or cryptographic keys.

Features Spartan-6 XC6SLX16

- 14.579 Logic Cells (6 Bit LUT, 2 Flip-Flops)
- 576Kb Block RAM organized in 32 18Kb Blocks
- 2 Clock Management Tiles (CMTs), each containing 2 DCMs and 1 PLL
- Maximum 232 Single-Ended or 116 Differential User I/Os
- 32 DSP48A1 Slices: Multiply Accumulate (MAC) and many more arithmetic functions
- 2 DDR2 / DDR3 SDRAM Memory Controller Block

Block Diagram



Board Features

Target Applications

- Implementation of Industrial Ethernet IP in FPGA
- Motorcontrol with FPGA acceleration of closed loop algorithms
- General purpose Industrial Applications using Ethernet / USB / CAN / SPI / I²C
- Access to DDR3 Memory
- General Purpose Pre- and Coprocessing with FPGA , i.e. Digital Filtering , Advanced Crypto, Video etc.
- Custom Interfaces
- Evaluation of mixed Microcontroller / FPGA Designs

Development Tools, SW and RTOSs for STM32F2x7

- Development Tools available from Keil, IAR, Hitex, Lauterbach, Atollic, Raisonance (GNU)
- Free Standard- , USB-, Graphics- and Motorcontrol Libraries available from STMicroelectronics
- Free and advanced TCP/IP Stacks available from CMX, Free RTOS, Interniche, Keil, Micrium, NexGen and lwIP as open source
- RTOSs available from CMX, FreeRTOS, IAR, Keil, Micrium, Segger
- In-Circuit Debugger available from ST, Keil, IAR, Hitex, Lauterbach

Development Tools for XILINX XC6SLX16

- Design with Spartan-6 XC6SLX16 is fully supported by ***free*** XILINX ISE Webpack
  which is available for download on www.xilinx.com
- XILINX Platformcable USB II for use with ***Xynergy*** is available from SILICA