IP Cores and Platforms

Cores are available in synthesizable VHDL or Verilog (ASIC cores) or optimized for devices from most programmable logic vendors (FPGA cores). AMBA, OCP, and other bus interface options are available for many cores; selected evaluation models and reference design boards are also available. See the web site for details and datasheets.

Processors and Controllers

8051-Compatible microprocessors
- C8051 legacy microcontroller
- R8051XC high-speed (8x), configurable, Intel and Infineon peripherals, JTAG debugging
- R8051XC-A preconfigured R8051 version
- R8051XC-B preconfigured R80515 version

CZ80CPU 8-bit Z80 compatible

C68000 16-bit processor

DSPs (Digital Signal Processors)
- 16-bit – C32025, C32025TX
- 24-bit – C56000

Bus and Network Interfaces

CAN – bus controller, dual CAN controller

Ethernet MAC – 10/100, 10/100 Lite, 10/100/1000

FireWire – 1394a link layer controller

I2C serial bus – master/slave, slave, high-speed

LIN bus controller

Parallel ports – ECP slave, EPP slave

PCI – target: 32-bit 33/66 MHz, 64/66, 32/33 multi
- master: 32/33, 64/66
- host bridge: 32-bit, 33/66 MHz

PCI Express endpoint controller

SPI Serial Protocol Interface – master/slave, slave

USB – Full-Speed (1.1), High-Speed (2.0),
- On-The-Go (OTG) for single and multiple devices

Multimedia Functions

H.264 encoder, multi-channel encoder, limited decoder

JPEG encoder, decoder, codec
- Lossless (LJPEG) encoder, decoder

JPEG 2000 encoder, decoder

MPEG-4 encoder, multi-channel

I2S inter-IC sound bus

SPDIF digital audio interface

CSC color space converter

Image Conversion – block-to-raster, raster-to-block, combination

DCT (Discrete Cosine Transform) – forward, inverse, forward/inverse

DWT (Discrete Wavelet Transform) – forward/inverse, line-based forward, block-based forward

Encryption Functions

AES – 128-bit encoder, encoder/decoder, programmable

DES and Triple DES – encoder/decoder

MD5 message digest algorithm processor

SHA-1, SHA-256 secure hash algorithm processors

Peripherals

Device controllers:
- ATA/IDE interface
- NAND flash memory controller
- Smart Card Reader interface
- TV display
- VGA dislay

DMA controller, 32-bit with AMBA

GPIO8 general purpose I/O unit

Communications

UARTs
- H16450S synchronous interface,
- H16550S with FIFOs and synchronous interface,
- H16750S with FIFOs, IrDA, and synch. interface,

SDLC global serial channel controller

Basic Functions

Standard parts and devices cores

Simulation models – logic devices, memories

Replacement Series

cores specially designed for replacing obsolete and unavailable parts

Bit-slice processors: 4-bit – C2901
- 16-bit – C29101, C29116A, C49402, C59016

16-bit processors – C80186TX, C80187, C387L

Microprogram controllers – C2910A, C3910, C49410

DMA controllers – C8237, C82380 32-bit

C2909 sequencer

C8254 programmable timer/counter

UARTs – H16450, H16550 with FIFOs,
- H16750 with FIFOs and IrDA , H8250

Z80 processor support
- CZ80CTC programmable counter/timer
- CZ80PIO programmable parallel I/O controller
- CZ80SIO serial I/O controller

Pre-integrated IP (PiP) Platforms

ARM 7 system with native TDMI bus

ARM 7/9 systems with AMBA bus