

Interfaces

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Craftsmen Design Consulting and Intellectual Property

DDC has worked extensively with the following interfaces:

Processor Interfaces:

- **TI DSPs:** DDC has extensive knowledge and capabilities with TI processors in general, but particularly with the 62x, 64x, 54x, etc. We have extensive experience and circuits for EMIF buses, DMA, XBUS, host ports, interrupt controllers, etc.
- **PowerPC:** DDC has extensive knowledge and capabilities with PowerPC processors, both embedded (in Xilinx FPGAs and ASIC), and external processors (e.g. MPC850). We have a suite of peripherals, and extensive knowledge of PLB, and OPB buses. We have developed complete bus interfaces, DMA engines, interrupt controllers, and various peripheral controllers for these buses.
- **Arm 7x, 9x, 11x:** DDC has extensive knowledge and capabilities with ARM processors, both embedded (in Altera FPGAs and ASIC), and as external processors. We have a suite of peripherals, and extensive knowledge of AHB and APB (i.e. AMBA) buses. We have developed complete bus interfaces, DMA engines, interrupt controllers, and various peripheral controllers for these buses.
- **Microblaze:** DDC has extensive knowledge of Xilinx embedded microprocessors and the EDK used to develop and implement them. As well, we have extensive peripherals and software to accommodate them.
- **Nios, Nios II:** DDC has done numerous Nios and Nios II designs. We have extensive experience and circuits for the Avalon bus. As well, we have extensive peripherals and software to accommodate them.
- **Other processors we have dealt with in the past, and have extensive knowledge, circuits, and software:**
 - 8051
 - Z80
 - PIC
 - Intel 80960, 80486, etc.
 - Motorola DSP56300 and others
 - Motorola 68xxx
 - Motorola PowerQuicc
 - Several different custom processors (e.g. Ribel)
 - Motorola Coldfire
 - GT64120 Galileo
 - Various MIPs processors

Backplane interfaces

- **PCI:** We have extensive experience and circuits with most flavors of PCI (32/33, 64/66, etc.) PCI configurations and implementations. Extensive simulation/validation suites. Various host side interfaces and control circuits.
- **VME:** We have extensive experience and circuits with most flavors of VME, including having our own master/slave VME core.
- **Multibus :** We have extensive experience and circuits for Multibus I and II.
- **ISA:** We have extensive experience and circuits for ISA bus.

Peripheral interfaces

- **I2C:** We have extensive experience and circuits for I2C bus. We also have a complete master or slave core.
- **Ethernet:** We have extensive experience with 10/100/1000 Ethernet (802.3), and wireless (802.11x).
- **CAN:** We have extensive experience and circuits for CAN.
- **HOTlink:** We have extensive experience and circuits for HOTlink and HOTlink II.
- **LVDS:** We have extensive experience and circuits for LVDS in various configurations and circumstances.
- **LDT (Lightening Data Transfer):** We have extensive experience and circuits for LDT.
- **Rocketink:** We have extensive experience and circuits for RocketLink.
- **UART:** Extensive experience and circuits with UARTs. We have a 16550 IP core, with IrDA, PS/2, autobaud, etc.
- **SDRAM Interfaces:** Various SDRAM controllers and interfaces, highly optimized, support for various standard buses (e.g. TI EMIF bus, Power PC, ARM, etc.), support DMA, and have various host-side interface protocols
- **D/A and A/D:** Extensive experience and circuits for many different types of A/D and D/A interfaces. Video, audio, communications, servo control, gyro control, sensors, etc.
- **1553 interfacing:** Extensive experience and circuits for 1553 communications. We have our own fully functional core as well.
- **CompactFlash:** We have extensive experience and circuits for CompactFlash, including our own core, drivers, etc.
- **SmartMedia:** We have extensive experience and circuits for SmartMedia, including our own core, drivers, etc.

Video related...

- **HD-SDI:** Extensive experience and circuits with High Definition Serial Data Interface.
- **DVI:** Extensive experience and circuits with Digital Visual Interface (digital flat panel display interface)
- **VGA:** Extensive experience and circuits with VGA and various other resolutions
- **CCIR656:** Extensive experience and circuits with CCIR656 and various other related standards
- **RS-170:** Extensive experience and circuits for RS-170 video interfacing, including our own decoders and encoders
- **NTSC/PAL:** Extensive experience and circuits for NTSC/PAL decoding and encoding. We have our own NTSC/PAL decoder.
- **FLIR / CCD:** We have extensive experience and circuits in interfacing to various CMOS sensors, CCDs, IR sensors, etc. and all of the related interface issues (e.g. Bayer conversion, other color space conversions, filtering, etc.)