

Display Control

Build It Your Way

IPmiX Solutions?

An IPmiX™ solution is a library of IP cores integrated and optimized for Xilinx Field Programmable Gate Array (FPGA) components.

An IPmiX solution enables fast and easy development of your custom system, including a mix of different peripherals on a single FPGA.

An IPmiX solution is a very competitive technology for Industrial markets.

What an IPmiX Solution Can Do for You

Flexible System Customization

- Same HW platform over different models with uniform testing, and one part in stock
- New features can be added in the field using remote upgrade

Faster Time to Market, Lower-Cost

- Up to 10X improvement over ASIC
- Faster development cycle and reduced cost over ASSP solutions

Avoid Obsolescence

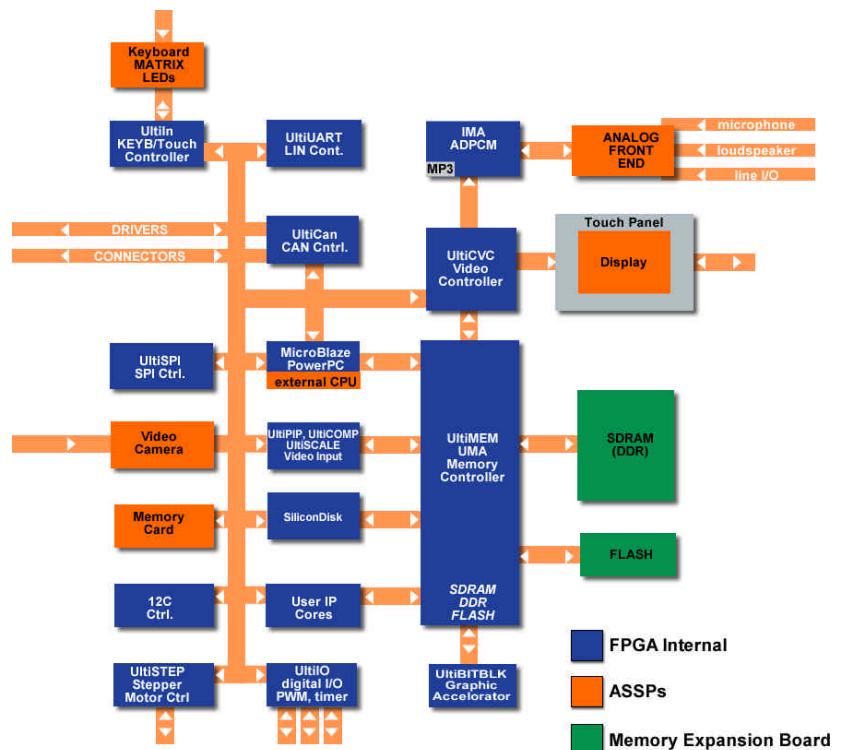
- Xilinx - FPGA market leader
- Easy re-targeting to new/other FPGA families
- Huge savings on SW development
- Write once, use many times - virtually non obsolete HW/SW code

Field-Remote Car Monitoring and Easy Low Cost Maintenance

- Repair remotely from a customer support center and overcome lack of technicians
- Updates and upgrades can take place remotely
- GSM/GPRS SW and FPGA - HW upgrade

Automotive Digital Dashboard

Lowest cost infotainment system in volume production priced as low as \$13¹



Infotainment FPGA size

IP core	Description	LC
MicroBlaze	Xilinx 32-bit RISC CPU	1050
logiCVC	Compact Video Controller	1230
logiMEM	Multiport SDRAM/DDRAM Controller	420
logiBITBLK	2D Graphic accelerator	1330
GPIO	Xilinx logiCORE General IO	12-160
INT Controller	Xilinx logiCORE OPB-INT Controller	40-400
Sub Total		4082³
IP core	Description	LC
ultiWIN	Versatile Video Input	2000
logiCAN	CAN 2.0B Network Controller	860
ultiSPI	SPI Controller	220
ultiSTEP	Stepper Motor Controller	600
ultiI/O	I/O Controller PWM, Encoder, Cnt./Timer ²	590
ultiIIN	Matrix Keyboard Controller ²	820
ultiUART	UART optimized for Lin Network	450
I2C	Xilinx logiCORE OPB-I2C Controller	400
TOTAL		10022³

¹ System consists of XC3S200, FLASH 512Kx16 and SDRAM 4Mx16 in 100K+volume

² Non-productized, available through design services and system integration

³ Given LC consumptions are the worst-case estimates, based on full IP cores configuration.

Target systems can be efficiently optimized to consume much less silicon property.

Spartan3 XC3S200 = 4320LC, XC3S1000 = 17,280LC, Spartan IIE XC2S200 = 5292LC, XC2S600 = 15,552LC

IPmiX

You can purchase an off-the-shelf IPmiX, or mix and match the IP Cores below and we'll put them together for you.

All IP cores supplied with user documentation, application notes, testbenches, reference designs, evaluation boards and test drive licenses (try before you buy).

UltiCVC Compact Video Controller

- 128x64 to 1024x768 display resolution for monochrome and color displays
- Electroluminescent, Plasma, LCD and CRT displays supported
- Gray and color shades using XCOLOR™ for STN displays, up to 8 gray levels or 256 colors
- Up to 64K colors for TFT displays
- Programmable display data bus
- Tested with more than 50 popular displays

UltiWIN Versatile Video Input: Scaling, Cropping, De-Interlacing, YUV-RGB converter, Picture positioning

UltiBITBLK Bit Block - 2D Graphic Accelerator

UltiMEM SDR/DDR SDRAM Multi-Port Controller

UltiCAN CAN 2.0B Network Controller

UltiUART Universal Asynchronous Receiver/Transmitter, optimized for Lin Network

UltiSTEP Stepper Motor Controller

UltiIN Matrix Keyboard/LED Controller

UltiI/O Versatile Digital IO (Counter, Timer, PWM, Position Encoder)

Xilinx is the leading supplier of complete programmable logic solutions, including advanced integrated circuits, software design tools, predefined system functions delivered as cores, and unparalleled field engineering support. Ultimodule is a Xilinx XPerts Partner. The Ultimodule development system is built on a fundamental modular approach to create an exciting embedded solutions portfolio that designers can use to dramatically shorten the time to complete a design.

Quality

Mature product-over 10 years in production delivered in over 1 million FPGA devices. Each IPmiX solution is designed with meaningful 100 percent timing coverage. IPmiX solutions are recognized and used by leading companies.

How much would a final FPGA-based solution cost in comparison to a discrete solution?

System in FPGA	Price (USD) 100K Units
FPGA: Xilinx XC3S400-4FT256I	\$7.00
SDRAM	\$4.00
Hardware Components	\$1.25
Glue Logic	\$1.75
Total:	\$14.00

Discrete Components	Price (USD) 100K
Display Controller	\$12.00
SDRAM	\$4.00
Microcontroller w/ CAN	\$4.00
Hardware Components	\$1.25
Glue Logic	\$1.75
Total:	\$22.00

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