



KAL - Large IP Cores:

Analog IP Cores:

- Analog IP cores (ADC, DAC, PLL,) are available – Please contact us.
- We are expert in custom analog IP

CPU Cores:

- 8 bit - 8051
- 8 bit- HC68HC11
- 8 bit - PIC Processor
- 8 bit – Z80
- 16 bit – D6800
- DSP – MSP430
- 32 bit - ARM 9xx/11xx

Memory Controllers:

- SD/SDIO 2.0/3.0 Controller
- SDRAM Controller
- DDR/DDR2/DDR3 SDRAM Controller
- NAND Flash Controller
- Flash/EEPROM/SRAM Controller
- PCMCIA/CompactFlash Host Adapter
- PCMCIA/CompactFlash Slave Controller

Clock Synchronization:

- IEEE 1588 Slave
- IEEE 1588 Master
- IEEE 1588 Master/Slave
- IEEE 1588 PTP Stack

We are pleased to introduce you with one of our customers that successfully use DCD's 8051 IP core: Yitran

"We have been working with DCD for quite a few years now and we are very happy to continue our cooperation with them. DCD have impressed us, time and again, with the quality of their IP core products and their excellent support."

Mr Shimon Solodkin
Software Group Manager, Yitran

THE COMPANIES

Digital Core Design is a leading Intellectual Property (IP) Core provider and System-on-Chip (SoC) design house. The company was founded in 1999 and since the early beginning is considered as an expert in IP Cores architecture improvements.

The innovativeness of DCD's IP solutions has been confirmed by over 300 licenses sold to over 200 customers worldwide, such as: INTEL, SIEMENS, TOYOTA, OSRAM, GENERAL ELECTRIC, RAFAEL, SAGEM, GOODRICH and of course YITRAN.

Yitran Communications Ltd. is a fabless semiconductor company that designs, develops and markets highly robust, low cost PLC integrated circuits. Yitran is a leading provider of cutting edge communication technology for command and control applications including Energy Management, Automatic/Remote Meter Reading, Home/Building Automation, Switching and Lighting, HVAC Control, Street Light control and more.

CHALLENGES

- Proprietary FLASH programmer processing
 - HAD2 kit profound modification

- IEEE 1588 L2/L3 Solution

Peripherals:

- Floating Point Unit
- I2C Master/Slave
- SPI Master/Slave
- CAN bus
- LIN bus
- Programmable Peripheral Interface
- UART, UART with FIFO
- PWM
- Timer 8254
- Programmable Timer
- Interrupt Controller
- Ethernet Controller 10/100/1000 BaseT
- DMA Controller
- USB 1.0/2.0 Host/Slave
- On Chip Bus Analyzer

PCI Bus Controllers and Peripherals:

- PCI Express
- PCI-X Host Bridge Master/Target
- PCI Host Bridge Master/Target
- PCI-PCI Bridge
- PCI-ISA Bridge
- PCI Bus Arbiter

Encryption:

- AES 128bit/256bit
- ECC

AHB/APB Peripherals:

- AHB Bus Master/Slave
- APB Bus Master/Slave
- AHB/AXI DMA Controller

- DoCDTM debug software adjustment & alteration

IP SOLUTIONS

- DP80390
 - MDU32
 - UART1
 - DSPI
 - DI2CM
 - Timer2CC
 - Proprietary FLASH

BENEFITS

- High quality IP, ultimate DP80390 efficiency
 - Enhanced IT700 chip
 - Effective cooperation throughout new FLASH programmer verification
 - Received excellent support from an experienced engineering team
 - First pass silicon success
 - Scalable solution for cost -sensitive designs achieved

OVERVIEW

Yitran Communication Ltd. provides low cost, in-novative technology for superior performance and robustness. This is due to its DCSK (Differential Code Shift Keying) modulation technique, which provides extremely high communication reliability and Adaptive back-off algorithm. Thanks do these features, Yitran's engineering team started to develop of one of its best known products, the IT700.

This IC is a highly integrated System-on-a-Chip (SoC) Powerline Communication (PLC) that incor-porates extremely robust Physical Layer (PHY), high-performance Data Link Layer (DLL) and Net-work (Y-Net) protocol.

But the core part wouldn't be so effective without unique implementations invented in Digital Core Design's laboratories. They've been based

- AXI Bus Master/Slave

MIPS CPU Interface:

- MIPS - SysAD Bus Slave
- MIPS - SysAD Bus to PCI Host bridge
- MIPS - EC interface to SDRAM Controller
- MIPS - EC Interface to PCI Host Bridge
- MIPS - EC Interface Bus Slave

PowerPC CPU Interface:

- Power PC Bus Master
- PowerPC to PCI Host bridge
- PowerPC Bus Arbiter
- PowerPC Bus Slave

ARC CPU Interface:

- ARC - Peripheral Controller for ARCTangent
- ARC – ARCTangent to PCI host Bridge

[Contact us for data sheet](#)

on comprehensive combination of several complex solutions based on DP80390, MDU32, UART1, DSPI, DI2CM, Timer2CC and proprietary FLASH.

What differs them from other competitors? In one word – everything. As an example, only DP80390's efficiency significantly surpasses other solutions:

it offers 8MB linear code and data space, when other IP vendors can offer only 64kB of linear memory. Digital Core Design masterminded ultimate highly integrated peripheral I2C, SPI, counters, UART and advanced arithmetic coprocessor. Basic difficulty was to compile proprietary FLASH circuit. DCD's R&D department motto is: "impossible is nothing", that's why all difficulties were successfully fight down. But the final solution wouldn't be possible without HAD2 kit profound modification and DoCDTM debug software adjustment & alteration. The DoCDTM provides some serviceable features like a real-time and non-intrusive debug capability, enabling a pre-silicon validation and post-silicon, on chip software debugging. It also allows hardware breakpoints, trace, variables watch and multi C sources debugging. What's important the DoCDTM Debug Software can work as a hardware debugger, as well

as a software simulator - some tasks can be validated at software simulation level and after this step, you can continue real-time debugging, by uploading code into silicon.

These unique features, combined with profound and efficient cooperation between both engineering teams, enabled unique, time to market solution.

"We rely on DCD to give our customers the best service possible and they provide it with admirable consistency."

Mr Shimon Solodkin
Software Group Manager, Yitran

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Thanks yu for your attenstion.

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