Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

DAVe Embedded Systems

- Top class CPU module based on Texas Instruments DM814x processors family
- ULTRA Line - ARM Cortex-A8 architecture @ 1 GHz
- up to 2GB DDR3 @ 533Mhz x64 bits data bus
- DSP engine (available on DM8148)
- Dual video inputs
- PCIe lane
- HD Video Encoding/Decoding Capabilities (HDVCIP)
- NEON Multimedia Coprocessor and PowerVR® SGX Graphics Engine
- Rich interfaces set including PCIe, dual CAN, Ethernet, SATA and native 3.3V I/O
- Naon pin-out compatible
- Evaluation Board available with exhaustive Development Kit

DIDO
TEXAS INSTRUMENTS "DAVINCI" DM814X
CPU MODULE

TEXAS INSTRUMENTS

DIDO is a ready-to-use CPU module by DAVE Embedded Systems, based on Texas Instruments DM8148 high performance application processor.

DIDO is the first product of DAVE Embedded Systems' ULTRA Line, which includes best-in-class solutions and full featured SOMs. In particular, for DIDO this means a boost on performances, thanks to the 2GB DDR3 @ 533 MHz SDRAM memory, and great versatility thanks to the integrated PCI Express interface. DIDO offers great computational power, thanks to the rich set of coprocessors (NEON Media Technology, PowerVR SGX 530 3D accelerator, High Definition Video Coprocessing Engine, HD Video Processing Subsystem).

DIDO is designed to be easily included in customer's embedded systems, due to the extremely compact form factor (70mm x 65mm), the inexpensive stacking connectors and the back-compatibility with DAVE Embedded Systems' NAON CPU module.

DIDO has an extended connectivity thanks to PCIe, dual CAN, Ethernet, SATA and native 3.3V I/O, sophisticated displays with HD Video Encoding/Decoding Capabilities (HDVCIP) and rich user-interfaces.

DIDO enables designers to create rugged products suitable for harsh mechanical and thermal environments, allowing for the development of the most advanced and robust products. DIDO is designed and manufactured according to DAVE Embedded Systems' ULTRA Line specifications, in order to guarantee premium quality and technical value for customers who require top performances and flexibility.

DIDO is suitable for high-end applications such us deployment in security systems, video-surveillance cameras, Medical Imaging applications, Automotive HMI, broadcasting, automation control systems and extreme video computing.

Block diagram — TEXAS INSTRUMENTS AM387x/DM814x:

- VIN 3V3 → PSU (RTC, I²C-0)
- up to 3x SD/MMC
- JTAG/EMU PORT
- GPIOs
- BOOT CONFIG.
- Internal monitoring Power Rails (OPT)
- KEYPAD → KEYPAD CTRL (I²C-3)
- TOUCH 4 wires → TOUCH CTRL+ADC → EEPROM
- PCIe
- SATA
- I²S/McASP2
- USB HOST → PHY HUB → MOUNT OPTs, USB HOST OTG (OPT)
- EMAC1(RGMII)
- ETH 10/100 → PHY, EMAC0 (RMII)
- ADDR/DATA/CTRL Muxed - Demuxed
- HD Video Coprocessor HDVICPv2
- 2D / 3D Graphics Accelerators
- C674x DSP 750MHz (DM814x) @
- ARM Cortex-A8 core @ 1GHz
- NAND Controller
- Memory Controller
- CAN1, PHY, CAN0
- up to 3x SPI
- up to 2x I²C
- up to 2x UART (4w)
- up to 1x UART (8w)
- TV OUT
- HDMI + DDC(I²C-1)
- Parallel Video Input VIN0 up to 24bit RGB
- Parallel Video Input VIN1 up to 24bit RGB
- Parallel Video Output VOUT1 up to 30bit RGB
- Parallel Video Output VOUT0 up to 24bit RGB
- NAND Flash (SPI-0)
- Boot NOR Flash
- DDR3 @533MHz (64 bits)
- 140 x 2 0.6 mm pitch

CPU	Texas Instruments DM814x*ARMv7 architecture Cortex A8 @ 1 GHz
Multimedia	NEON Media Technology (Adv. SIMD coprocessor) PowerVR SGX 530 3D Graphics Accelerator Programmable HDVICP Engine HD Video Processing Subsystem (HDVPSS) Imaging Subsystem (ISS) Up to 750-MHz C674x Floating-Point VLIW DSPC
Supervisor	On board power supply supervision and power sequencer Watchdog and RTC

Memory

Cache	L1: 32Kbyte instruction, 32Kbyte data L2: Unified data/instruction, 512 KByte
SDRAM	Up to 2GB DDR3 @ 533MHz
NOR	Bootable SPI NOR 16, 32 MB
NAND	All sizes, on request
SRAM	128 KByte
EEPROM	Yes

Interfaces (full-spec models) *

PCIe	PCIe lane
LAN	Ethernet 10/100 Mbps (PHY on board) Additional RGMII Interface available
UART	up to 2x UART ports 4 wires up to 1x UART ports 8 wires
CAN	2x CAN controller (version 2 part A, B)
USB	1x 2.0 OTG port (PHY on board) 2x 2.0 Host port (PHY on board)
External Bus	GPMC 16-bit bus
Storage	1x SATA 3.0 Gbps channel
SDIO	2x SD/MMC card
Audio	McASP interface
Video Output	16-/24-/30-bit HD Display Port 1x TFT/RGB 1x HDMI 1 x TV out
Video Input	up to 1x 24-bit video in port up to 1x 30-bit video in port
Debug	JTAG IEEE 1149.1 Test Access Port
Other	up to 2x I2C channels up to 3x SPI channels GPIOs with interrupt capabilities 8x8 keypad

Mechanical

Connectors	2x 140 pin 0.6mm pitch
Size	70mm x 65mm
Temperature	Commercial (0°C / +70°C) temperature range Industrial (-40°C / +85°C) temperature range

PSU

Input	3.3V, on-board voltage regulation

Software

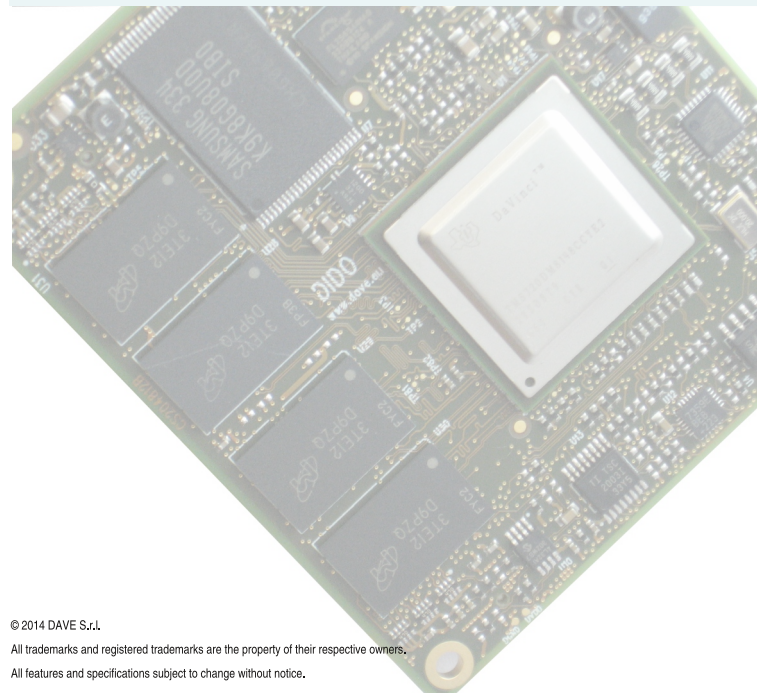| Bootloader	U-Boot
Multitasking	Linux 2.6.37

Evaluation Kit

The DIDO evaluation kit is available in a developement kit that includes a SOM, a carrier board and all accessories required for immediate start-up.

*: interface availability depends on pin multiplexing.
Please contact your local FAE.
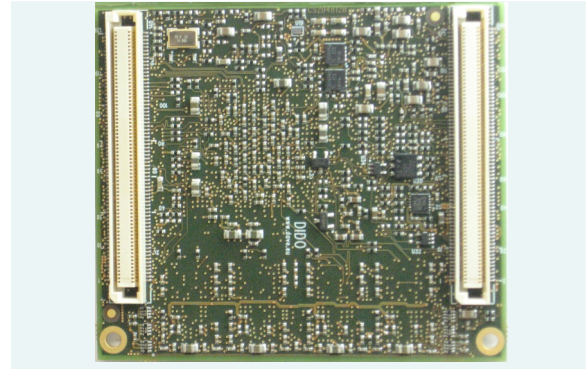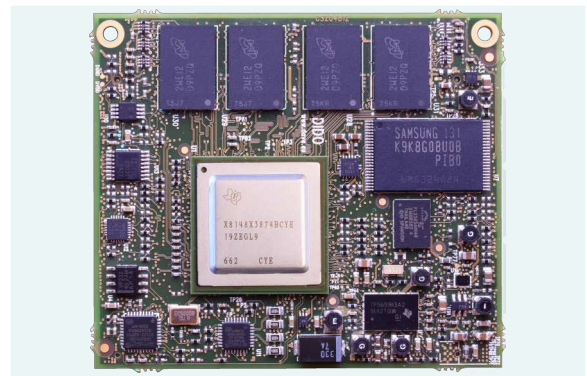
Product code configurator *

Family	Processor	NOR flash	DDR RAM	NAND flash	Temp. range
DO	A = AM3871 800M no SGX	0: No NOR	7: 128MB	0: No NAND	I: -40 / +85°C
	B = AM3874 800M SGX	4: 16MB	8: 256MB	7: 128MB	Industrial temp.
	D = DM8148 700M HDVIP	5: 32MB	9: 512MB	8: 256MB	C: 0 / 70°C
	F = DM8148 1G DSP 600M	6: 64MB	1: 1GB	9: 512MB	Commercial temp.
	G = DM8147 700M HDVIP		2: 2GB	1: 1GB	
	H = DM8148 1G DSP 750M			2: 2GB	
	L = DM8147 1G DSP 600M				
	M = DM8147 1G DSP 750M				

DBR0614R2

DAVE
Embedded Systems