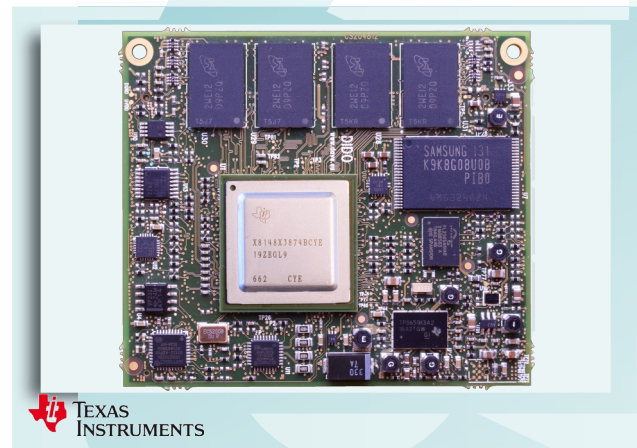


- Top class CPU module based on Texas Instruments DM814x processors family
- ULTRA Line - ARM Cortex-A8 architecture @ 1 GHz
- up to 2GB DDR3 @ 533MHz x64 bits data bus
- DSP engine (available on DM8148)
- Dual video inputs
- PCIe lane
- HD Video Encoding/Decoding Capabilities (HDVICP)
- NEON Multimedia 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 is a ready-to-use CPU module by DAVE Embedded Systems, based on Texas Instruments DM8148 high performance application processor.

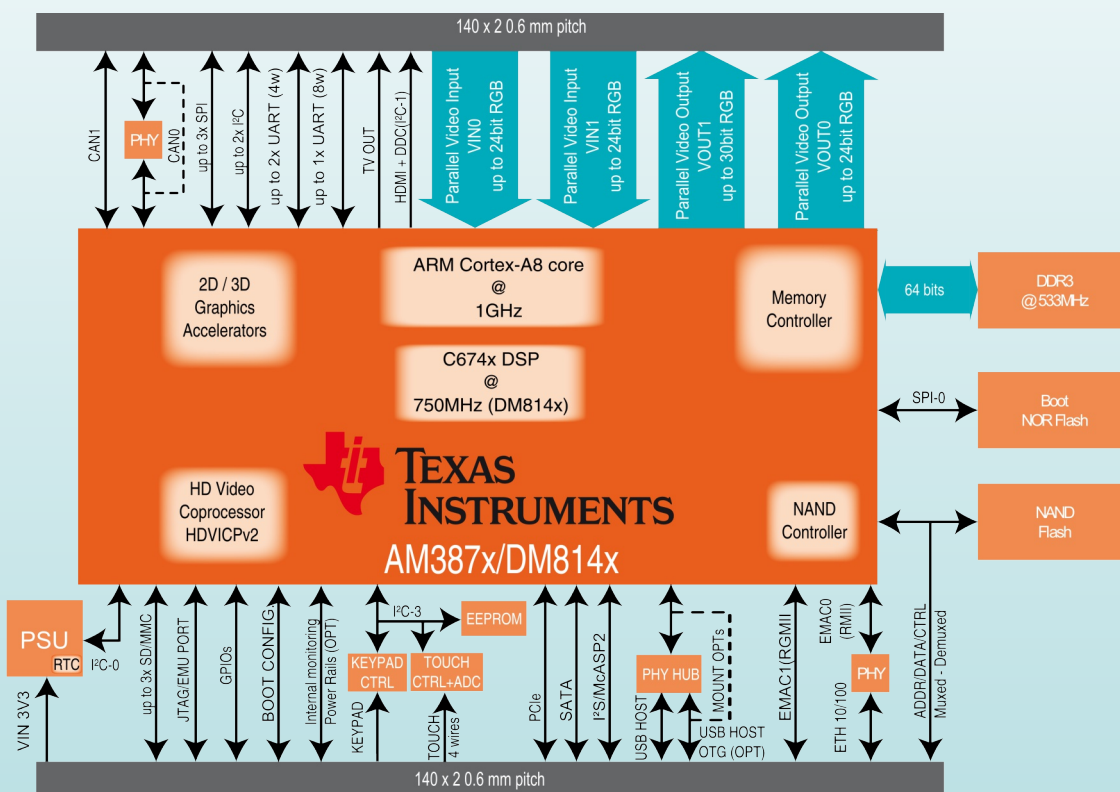
DIDO is the first product of DAVE Embedded Systems' ULTRA Line, which includes best-in-class solutions and full featured SOMs. In particular, for DIDO this means a boost on performances, thanks to the 2GB DDR3 @ 533 MHz SDRAM memory, and great versatility thanks to the integrated PCI Express interface. 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 (HDVICP) 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 as deployment in security systems, video-surveillance cameras, Medical Imaging applications, Automotive HMI, broadcasting, automation control systems and extreme video computing.



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

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

### Interfaces (full-spec models) \*

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

### Mechanical

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

### PSU

|              |                                   |
|--------------|-----------------------------------|
| <b>Input</b> | 3.3V, on-board voltage regulation |
|--------------|-----------------------------------|

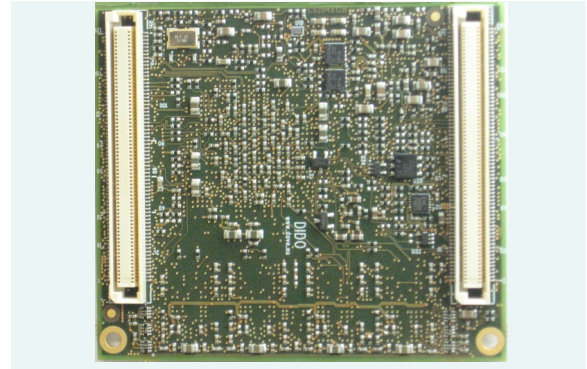
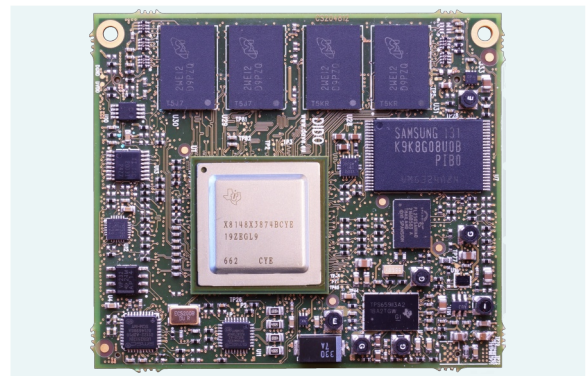
### Software

|                     |              |
|---------------------|--------------|
| <b>Bootloader</b>   | U-Boot       |
| <b>Multitasking</b> | Linux 2.6.37 |

### Evaluation Kit

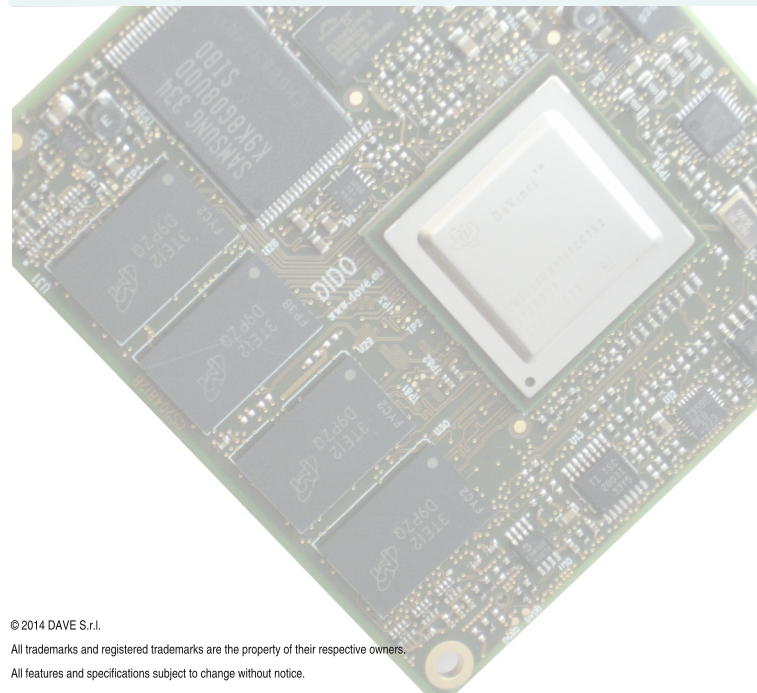
The DIDO evaluation kit is available in a development kit that includes a SOM, a carrier board and all accessories required for immediate start-up.

\*: 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<br>M = DM8147 1G DSP 750M |           |          |            |                  |



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