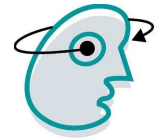
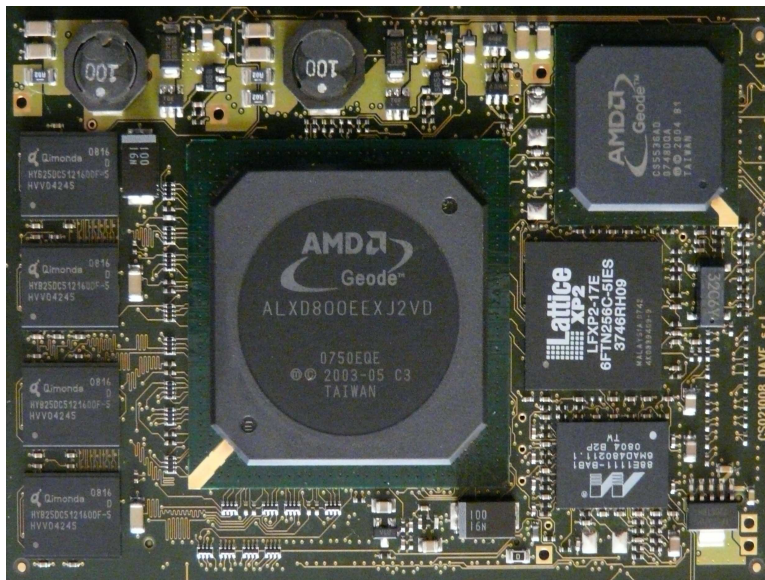


"NEPTUNE"®

AMD Geode LX CPU Module



- CPU module based on AMD Geode LX family.
- x86 compatibility
- **Open Firmware** as independent boot firmware
- Windows CE 6.0 ready
- Ready for Linux 2.6 + native component drivers
- Evaluation Board available with exhaustive Development Kit environment
- Extremely compact form factor, inexpensive connector
- 0.13 micron process, very low power consumption
- EMI pre-compliance



NEPTUNE is a ready-to-use CPU module based on AMD Geode LX x86 compatible microprocessor family.

NEPTUNE is suitable for single board computing or mobile computing applications, based on a general purpose firmware and bootloader as **Open Firmware**, which can launch complex operating systems as Linux and Windows.

Leveraging on the x86 compatibility, **NEPTUNE** allows quick deployment of solutions based on software developed for the well-known x86 platform.

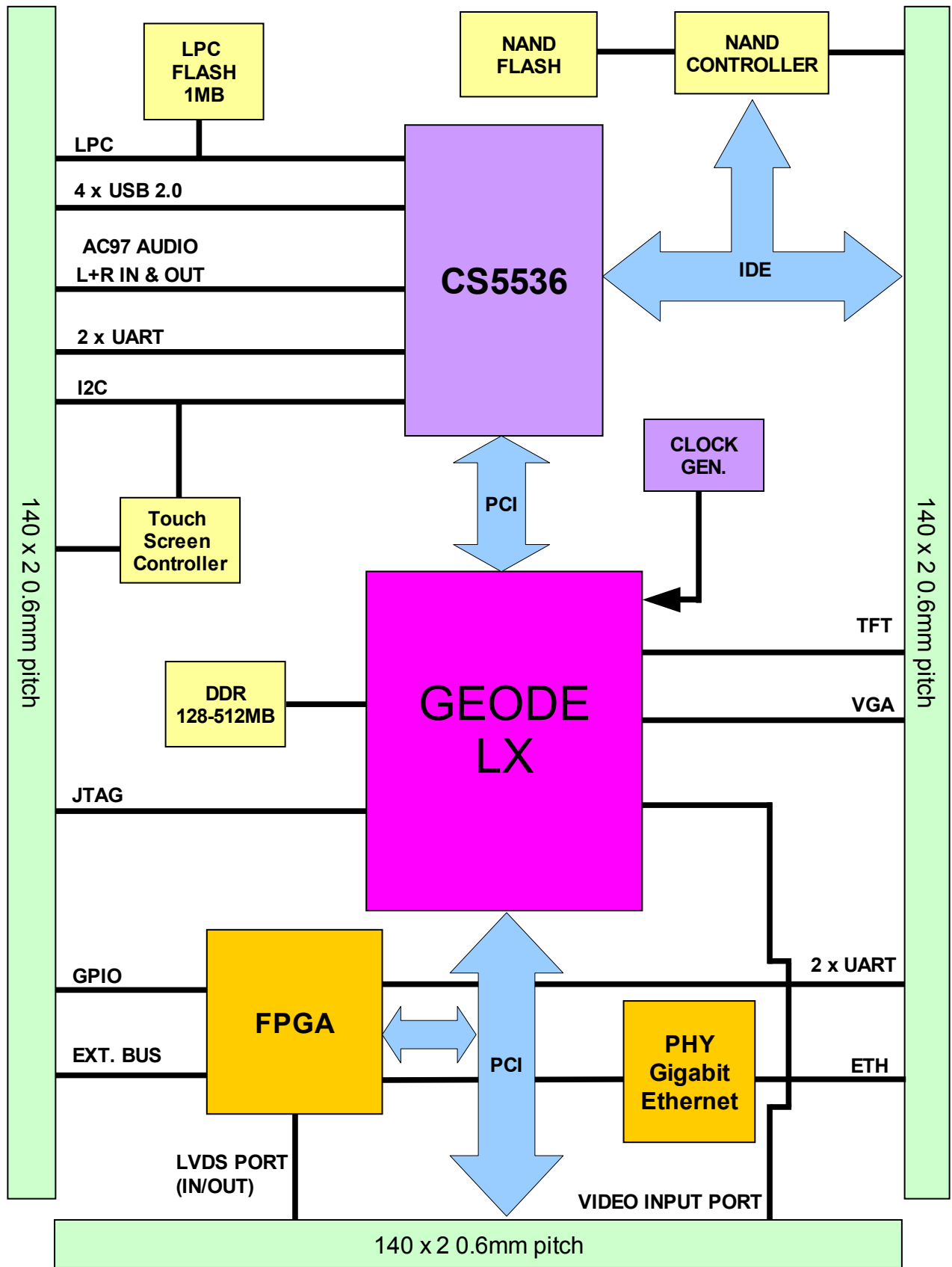
Main features:

- **OpenFirmware**
- Low Power Consumption
- High-resolution CRT and TFT outputs (simultaneous operation)
- Gigabit LAN
- JTAG interfaces
- Compact Flash
- PCI bus
- RTC with back-up battery
- Touch Screen controller
- 4 USB ports
- 4 RS232 ports
- FPGA on board



Technical Specifications

<u>CPU</u>	AMD Geode x86/x87-compatible CPU core 0.13 micron process LX 900@1.5W processor - 600MHz LX 800@0.9W processor - 500MHz LX 700@0.8W processor – 433MHz
<u>Multimedia</u>	VESA 1.1 and 2.0 compliant, 8 or 16-bit Video Input Port (VIP) Intel MMX and AMD 3DNow instruction sets Audio Codec 97 (AC97) Controller High performance 2D graphics controller Video Output Port (VOP) supporting SD and HD 480p, 480i, 720p, and 1080i
<u>Supervisor</u>	AMD Geode™ CS5536 companion device RTC and CMOS RAM
<u>Memory</u>	
Cache	64K I/64K D L1 cache and 128K L2 cache
DDR	256 or 512 MByte, 64-bit Memory Interface
LPC Flash	1 MB
NAND	up to 1 GByte
<u>Interfaces)</u>	
LAN	Gigabit Ethernet including PHY
UART	4 (Including one Infrared Communication Port)
USB	4 2.0 Host ports or 3 2.0 Host ports and 1 2.0 device port
External Bus I/O Controller	PCI specification v2.2 compliant, 32-Bit, 33/66 MHz operation General Purpose I/O and Multi-Function General Purpose Timers SMB Controller
Debug	JTAG IEEE 1149.1 Test Access Port
PC Card	Compact Flash
Hard Disk Support	100 MB/s ATA-6 IDE Controller
<u>LCD controller</u>	
Resolution	up to 1920x1440x32bpp in CRT mode and 1600x1200x32bpp in TFT mode
Type	CRT, TFT
Touch Screen	
<u>Mechanical</u>	
Connectors	3 x 140 pin 0.6 mm pitch
Physical	97 mm x 67 mm
Temperature	Commercial Temperature Range Industrial temperature range available for the LX 800@0.9W processor
<u>PSU</u>	
3.3V	Through connector, full regulation on-board. 3.3V I/O and 1.20V/1.25V/1.40V (nominal) Core operation
Consumption	n.d.
<u>Software</u>	
Firmware	Open Firmware
Multitasking OS	Linux 2.6.xx
Windows	WindowsCE 6.0
<u>Agency approvals</u>	
Pre-compliance	EN 55022, EN 55024



Open Firmware Features

Open Firmware is DAVE's choice as boot firmware for Neptune. It is a standard defining the interfaces of a computer firmware system, formerly endorsed by the IEEE (1275-1994). Open Firmware may be accessed through its Forth language shell interface and the Open Firmware Forth code is compiled into FCode (a bytecode) and not into the machine language of any particular computer architecture.

Take a look at the following features, which distinguish Open Firmware from a traditional BIOS:

- ✓ Complete TCP/IP Stack with high level protocols support (FTP, HTTP, ..): developer can debug systems downloading the kernel from network avoiding flash reprogramming
- ✓ Availability of source code
- ✓ Integrated forth code debugger
- ✓ Operating system functions (Open Firmware can launch specific applications)
- ✓ Serial command shell like a traditional embedded bootloader
- ✓ Reduced footprint
- ✓ Multiplatform
- ✓ File system support (FAT, EXT2)
- ✓ Support for high-level devices: ide disks, usb pendrives, compact flashes, keyboards, VGA, usb-ethernet adapters
- ✓ Flash LPC reprogramming from the Open Firmware shell
- ✓ Full BIOS emulation
- ✓ Support for complex PC operating systems (Windows XP/XP Embedded, Windows Vista, Linux)

Neptune Order Codes

Please contact our Sales Department (sales@dave.eu) for available models and prices.