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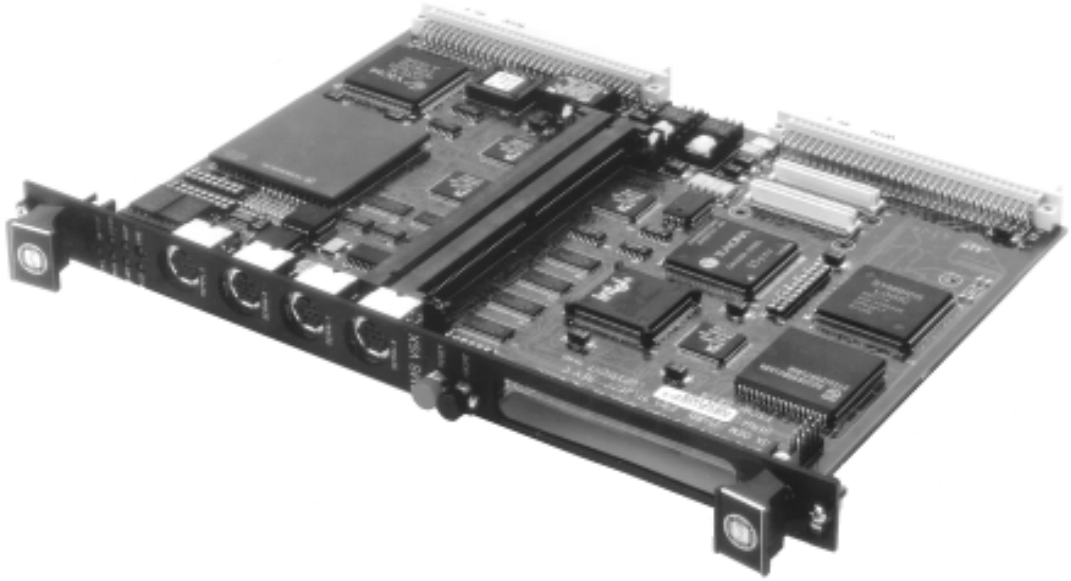
REDEFINING EMBEDDED REAL-TIME COMPUTER DESIGN



V5X Thunderbolt

Enhanced Direct Replacements for GMS OEM and OEM+ Products

User Configurable Direct Replacements for General Micro Systems OEM and OEM+ Products, Based on GMS V5X Technology



PROCESSORS/ VERSIONS:

V51-OEM: MCF5102 at 25 or 33 MHz (EC040 Equivalent)
V54-OEM: MC68040 at 25/33/40 MHz (EC, LC Optional)
V56-OEM: MC68060 at 50 or 66 MHz (EC, LC Optional)

COMPATIBILITY:

Full functional compatibility with OEM and OEM+ Product Families, including use of I/O Breakout Modules. Full software compatibility for kernels, operating systems and high level applications. Proprietary MiniSAM interface replaced with industry standard PCI Mezzanine Carrier (PMC).

MEMORY:

User configurable DRAM SIMMs, up to 128 MB in two SIMM sockets on Processor Module. Up to 2 MB FLASH which may be written in place, and may be write protected. Up to 512 KB EPROM in a 32 pin PLCC socket.

ENHANCED FEATURES:

- ❒ Interchangeable Processor Module allows the user to set up the V5X as a V51, V54 or V56 SBC, and to switch between configurations as required
- ❒ Supports the lower cost EC and LC versions of the 68K CPU's on the V54 (68040) and on the V56 (68060)
- ❒ Uses standard low-cost PC SIMM parity or non-parity DRAM memory instead of proprietary memory modules
- ❒ Provides one PMC slot for high-speed access to the 68K local bus, allowing simple configuration and the ability to upgrade to emerging PCI-based I/O technologies

SOFTWARE:

VxWorks, RTMX, OS-9 software for GMS OEM/OEM+ Products, when used with V5X-OEM specific BSP's

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V5X Thunderbolt - Enhanced Direct Replacements for General Micro Syestems OEM and OEM+ SBC's

Based on V5X Technology, General Micro Systems has designed enhanced direct replacements which are fully function compatible with the OEM and OEM+ Product Families.

Architecture

The V5X is comprised of two major assemblies: a **Processor Module**, which holds the CPU (one of three types), control and interface logic and SIMM DRAM, and an **I/O Baseboard**, which holds the EPROM, optional FLASH memory, RTC/NVRAM and all the devices necessary to duplicate the I/O capabilities of the OEM/OEM+ Products. This architectural approach allows the user to change / upgrade from a 68040 to a 68060 configuration by simply changing the Processor Module. Use of standard, low cost SIMM DRAM allows the user to move memory from one Processor Module to another, or to change the amount of memory as needed.

Improved Reliability / Reduced Risk of Obsolescence

GMS has consolidated all logic into high density / high reliability surface mount devices, reducing device pin count and board power consumption. In addition, all CPLD code is VHDL -based, thereby eliminating dependence on a single manufacturer's programmable logic devices. Only discontinuation of the CPU's themselves would preclude continued, long-term production of the V5X-based replacements.

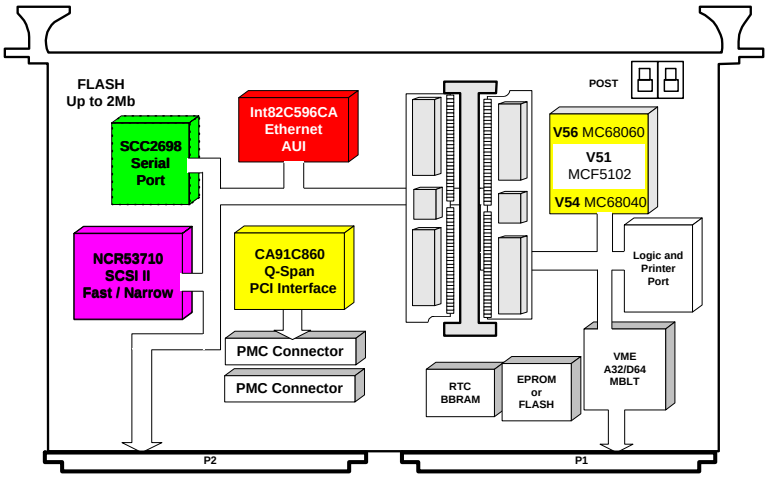
Additional Enhancements

GMS has added several design enhancements and options which the user may take advantage of to reduce cost or to more closely tailor the board configuration to the requirements of the specific application. The V5X-OEM design:

- ❒ Allows the user to interchange Processor Modules and attached SIMM DRAM;
- ❒ Provides industry standard PMC Module slot, for fast, flexible configuration with the latest high-throughput devices (replaces GMS MiniSAM expansion slot);
- ❒ Supports LC and EC versions of the 68040 and 68060 processors, providing a lower cost alternative to the RC versions of the '040 and '060 CPUs;
- ❒ Supports the MCF5102 ColdFIRE, a low-cost RISC-equivalent of the MC68EC040 which is fully binary code compatible with existing 68EC040 software;
- ❒ Provides optional / additional capacity for EPROM and FLASH memory.

Software Support

Full software compatibility for kernels, operating systems and high-level applications which access devices via the Board Support Package, and which are used in conjunction with V5X-OEM specific BSP's. Fully supported under / compatible with existing versions of VxWorks (Wind River Systems), OS-9 (Microware) and RTMX.



V5X Architecture

SPECIFICATIONS AND FEATURES:

V51-OEM, V54-OEM and V56-OEM:

- ❒ **V51-OEM:** MCF5102 at 25 or 33 MHz (EC040 Equivalent)
- ❒ **V54-OEM:** MC68040, EC040, LC040 at 25/33/40 MHz
- ❒ **V56-OEM:** MC68060, EC060, LC060 at 50 or 66 MHz

Common Features and Options

- ❒ Memory
  - DRAM: Standard PC-type 60 or 70 ns Parity / Non-Parity SIMMs, up to 128 MB in two SIMM sockets (on Processor Module)
  - EPROM: (1) 32 pin PLCC ROM socket, bytewide access
  - FLASH: 0, 512, 1 or 2 MB Optional, Read / Write in place, with shunt selectable write protection
- ❒ Input / Output
  - VME64 via VIC64 chipset. Full System Controller functionality, complete Master/Slave capability. Supports up to A32/D64 and MBLT transfers
  - AUI Ethernet, Intel 82596CA LAN Controller with DMA (via P2)
  - SCSI 2 Fast/Narrow, NCR 53C710 with DMA (via P2)
  - (8) Serial Ports, SCC2698 with (3) 16b counter / timers: Four ports accessible via P2, four ports via the front panel
- ❒ P2 pinout identical to OEM and OEM+ Products, fully compatible with existing GMS J2 Breakout Modules
- ❒ V5X-OEM version available with MVME167 compatible P2, (including Centronics compatible bidirectional PI/O)
- ❒ RTC w/ 8 KB BBRAM, SGS-Thompson M48T18 SnapHat with removable battery. Compatible with older MK48T08)

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