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Find the *General Micro Systems C158 Mariner II* at our website: *Click HERE*

C158 "Mariner" II-C

CompactPCI System Master
Pentium III SBC with Dual PMC



Click here to view full-size photo
Click here to view Breakout photo.

Key Features
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Key Features:

- Low Cost Embedded Pentium® III Processors from 366MHz to 1GHz
- 128 or 256KB of On Die L2 Cache, Clocked at CPU Speed
- 66/100 MHz Front Side Bus (FSB)
- Up to 1GB of Low Cost Memory
- 10/100Base-Tx Ethernet
- Two PMC Slots for User I/O
- Optional AGP Graphics on PMC Module
- Only One CPCI Slot!
- Up to 144MB of Disk-On-Chip
- Optional (mounted on-board) High Capacity 2.5" HDD or Flash
- System Hardware Monitor
- Optional, Triple PMC Expansion Module
- Front or Rear Panel I/O
- Dual Ultra DMA-33 IDE, USB Ports, Comm Ports, Floppy, Mouse, Keyboard, Printer Port, RTC, Flash Bios, and Power-On-Self-Test(POST)
- Support for Windows NT®4.0/2000, VxWorks®, Solaris®x86, and Linux® Operating Systems
- Utilizes 100% Intel Embedded Chip Sets

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General Description:

The C158 "Mariner II-C" is the second generation of CompactPCI® Pentium® III processor modules from General Micro Systems. The "Mariner II-C" is designed with the very first Embedded Celeron, or the powerful Coppermine-256 processors from Intel®. These processors provide users with the fastest Pentium processors available, and are supported by the Intel Embedded group for long lifecycle.

The C158 processor is upgradeable to accommodate the low-cost, high-performance, Celeron® Processor, with 128KB of On-Die-Cache, which is clocked at CPU speed. The Celeron processor's clock speed starts as low as 366 MHz for ultra-low cost, low power consumption, and is currently available at up to 1 GHz for more demanding applications.

The C158 can also be configured for the Pentium III Flip-Chip Copper- mine-256 processor in a Pin Grid Array (PGA) package with 256KB of On-Die-Cache, which is also clocked at processor clock speed. The Clock speed on these processors starts as low as 500MHz, and reaches speeds as high as 1GHz. The processor is equipped with a high-performance ultra reliable heat sink/ fan assembly, or an optional passive heat sink for applications demanding fan-less operations.

The Memory on the “Mariner II-C” is provided via two SO-DIMM modules, which support up to 1 GB of low cost, “off-the-shelf“ memory, with 66MHz or 100MHz Front Side Bus (FSB). Special attention has been paid to the sockets for these memory modules, as well as the CPU, for rugged applications where high shock and vibrations are present.

The "Mariner II-C" Single Board Computer is highly user-configurable for user I/O. The standard on-board I/O functions include one 10/100Base-Tx Ethernet port via the Intel 82559ER integrated MAC/PHY controller, dual IDE DMA-33, dual Serial ports, Floppy, dual USB ports, and Mouse/Keyboard Ports. Up to 144MB of Disk-On-Chip Flash Disk, which can be configured as a bootable drive for Disk-less Systems, is also optional. In addition, a Real Time Clock /Calendar is provided, and is battery backed with a field replaceable battery. For custom I/O functions, the Mariner II provides the user with two PMC expansion modules in a single slot configuration. One of these modules can be used as a standard 32bit 33MHz PMC module, or as a 32bit 66MHz AGP graphics module, which is available from GMS. This AGP video module provides 8MB of high-speed memory for unmatched video performance without taking any PCI I/O bandwidth as standard PCI Video devices do.

To further enhance the single slot system capability of the Mariner II, in addition to the PMC AGP Video module, an optional 2.5 inch Ultra Thin / Rugged Hard Drive can be provided on board. This hard drive has a capacity of 20GB or larger, and is field replaceable. For applications demanding no rotating media, provisions have been made for a Flash IDE Drive with capacities of up to 1 GB. The Boot device may be selected in the BIOS from the HDD/Flash drive or the on-board Disk-On-Chip, as well as USB device.

The "Mariner II-C" Processor is provided in a single slot 6U CompactPCI form factor, using J1, J2, and J3 connectors for power and I/O. The Keyboard/ Mouse and Com1 are routed to the front panel and to the rear panel, along with Com2 and IDE ports. An optional 80mm rear panel transition I/O module is available for easy interconnects to the IDE hard drive and rear panel I/O, using standard cabling for Com ports and printer ports.

To guarantee safe and reliable operation of the “Mariner II-C”, the System Health Monitor (SHM) is provided. This SHM reports the processor temperature, the voltages used on board, as well as the fan speed to the operating system. Further, full Power-On Self Test (POST) diagnostics are provided on board with dual binary LED displays which show the status of over 50 tests which are performed on the board each time power is applied to the board. To allow the on-board BIOS to be field upgraded, a 256KB of FLASH is provided with a unique programming sequence for additional security. For VxWorks applications and custom configurations, a 256-byte serial Flash ROM is provided which stores VxWorks boot parameters along with board specific data. This Flash is not accessible without a GMS provided code.

All major operating systems such as Windows®NT 4.0/2000, VxWorks®, Solaris® x86, and Linux® are supported on the C158.

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Specifications:

Physical Specifications	
Form Factor	1-slot, 6U form factors CPCI Card Assembly
Long Axis	233.35mm
Short Axis	160mm

Front Panel Dimensions	261.9mm x 40.3mm
Edge-to-trace Distance at card guide edges	2.54mm

Electrical Specifications

Power Requirements

Board Input Voltage Requirements	3.3 Volts +0.15/-0.05 Max Ripple/Noise 50 mV
	5.0 Volts +0.25/-0.125 Max Ripple/Noise 50 mV
	+12 Volts +0.60/-0.36 Max Ripple/Noise 50 mV
	-12 Volts +0.60/-0.36 Max Ripple/Noise 50 mV

Power Dissipation - Voltage C158, **850MHz PIII**, 256MB Memory, AGP Video	Current - Amps		Power - Watts	
	Busy	Nominal	Busy	Nominal
3.3Vdc	3.7A	3.2A	12.2W	10.2W
5.0Vdc	3.5A	3.5A	17.5W	17.5W
+/-12Vdc	0.1A	0.1A	1.2W	1.2W

Power Dissipation - Voltage C158, 4**33MHz Celeron**, 256MB Memory, AGP Video	Current - Amps		Power - Watts	
	Busy	Nominal	Busy	Nominal
3.3Vdc	3.2A	2.7A	10.5W	8.9W
5.0Vdc	3.0A	2.8A	15.0W	14.0W
+/-12Vdc	0.1A	0.1A	1.2W	1.2W

Environmental Specifications

When measuring the operating environment air temperature for the C158 board, measure the air temperature as close to the air intake port on the enclosure as possible. For cooling purposes, air should flow vertically along the long axis of the C158 single board computer on both sides of the

printed circuit board.

Operating		
Description	Minimum Value	Maximum Value
Temperature Range	0°C	55°C
Humidity Range (relative non-condensing at 104°F (40°C)	5%	90%
Altitude Range	0 feet	10,000 feet
Shock	6g, 11msec, 1/2 sine wave	
Vibration	$0.01G^2$/Hz 50-500-Hz Random Vibrations	

Mean Time Between Failures (MTBF)
227,979.5302 Hours (Per Mil-HDBK-217E-2)

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Ordering Information:

C158 Mariner II - System Master CPCI Single Slot, Single Celeron/Coppermine-128/256 Embedded Computer			
GMS Sales Part Number	Description	GMS Mfg. Part Number	Availability
	The C158 utilizes the Low Cost, High Performance, Up to 1GHz, Celeron Processor, with 66/100 MHz FSB or the Pentium III Processor, Up to 1GHz with 100MHz FSB and 256/512KB of On-Die L2 Cache. Up to 1GB of Low Cost SODIMM and Highly User-Configurable Custom I/O via Two PMC Slots. Standard Functions Include: One 10/100Base-Tx Ethernet Port, Dual IDE DMA 33, Dual Serial Ports, Floppy, Dual USB Ports, Real-Time Clock/Calendar, Mouse/Keyboard Ports and 512B of Serial ROM for VxWorks Boot Parameters. Optional Features Include: Passive Cooling, Disk-On-Chip, PMC Video with AGP Interface and On Board 2.5" IDE HDD/Flash Drives. All modules are shipped with AMI Flash Bios, with Power On Self-Test (POST) LED's, CPCI System Master with J1, J2 and J3 connectors, Active Cooling (Fan/Heat-Sink) and Mouse/Keyboard/Com Port Cable Assembly. Specify Options.		
C158	Specify CPU Type / Speed and Memory **C158 System Master SBC with:** Full-up less CPU and RAM	95-371-0	Call
	C158 Options		

C158BO	Breakout Module - 80MM rear panel I/O with accommodation for One 2.5"/1.8" IDE HDD, Headers for 2nd IDE, Floppy, and Printer Ports, Com2, Mouse, Keyboard and USB Ports.	95-350-0	Call
C158-PASS-	Passive Cooling Heat Sink	65-205-0	Call

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