



Semaphore T-BOX MS-CPU32 Processor Module For the T-BOX MS Modular System

The CPU32 Processor Module combines the T-BOX IP/Web technology platform with the processing power that is necessary for critical automation and SCADA applications, today and in the future. Employing a PowerPC microprocessor, the CPU32 provides nearly 100 times the performance of the CPU16 and is able to rapidly execute operations including millisecond time-stamping.

The CPU32 is intended for those applications in the broadcast/telecom, infrastructure management, oil & gas, transportation and water/wastewater industries that require the highest performance and latest programming capabilities.

Now available with the T-BOX MS Modular System, the CPU32 can also be used to upgrade existing installations to 32-bit technology.

High-Performance Processing

The 266 MHz, 505 MIPS, 32-bit PowerPC is designed to meet the performance requirements of any real-time SCADA application. A memory model that includes 16 Mbytes SDRAM, 1 Mbyte SRAM and 16 Mbytes Flash ensures there is plenty of capacity for alarms, events, live data, historical trends, and programming code.

Open Programming Environment

CPU32 processing capabilities are appropriate for complex, multitasking automation and SCADA requirements. For even the most intensive applications, Semaphore's TWinSoft programming tools, which include dynamic analytical tools and libraries, significantly reduce development time. The LD programmer will find the IEC 61131-3 ladder diagram editor to be familiar and intuitive. Our BASIC language environment is suitable to those who prefer structured text programming to ladder logic. Systems suppliers who use Microsoft tools, such as Excel, are fully supported through Microsoft Automation. The CPU32 uses Linux as the operating system and further supports open source programming for OEM applications.

Versatile Communications

The CPU32 includes four ports, on board, RS 232, RS 485 and two Ethernet ports, and supports up to 16 communications ports in the T-BOX MS rack. The CPU32 is compatible with the T-BOX IP / web technology platform, which includes an integral web server, "push" messaging via FTP, e-mail with attached files, and SMS text, and also supports traditional, "pull" communications using a broad variety of SCADA protocols.

Communications configuration is greatly simplified by Semaphore's TWinSoft menu tools. Semaphore additionally offers WebForms Studio and Report Studio software tools to expedite configuration of dynamic web pages, reports and trends.

Advanced Functionality

While the 16-bit platform allows communications redundancy, the CPU32 further supports redundancy of the processor modules and power supply modules (MS-PS230V and MS-PS-DCN).

Simple Upgrade Path

The CPU32 allows upgrading of existing T-BOX MS installations with the latest processing technology. The CPU16 processor can simply be unplugged and replaced with the CPU32. Since the CPU32 is fully compatible with Semaphore's TWinSoft programming environment, conversion is as simple as a few clicks. Users simply access the conversion utility via the TWinSoft Tools menu and select "Convert to MS-32."

T-BOX MS-CPU32 PROCESSOR MODULE SPECIFICATIONS

Processor	32-bit PowerPC
Word size	32-bit data bus
Clock speed	266 MHz
Processing performance	505 MIPS
Flash upgradeable BIOS	Yes
Flash memory	16 MB
SRAM	16 MB
SD/MMC card	Up to 2 GB
Realtime clock	Yes, with battery backup
Watchdog timer	Yes
Status Indication	Yes
Battery Life — module unpowered	10 years
Key switch	Yes (Stop-Run-Reset)
Integral communications	2 Ethernet (10/100), 1 RS232, and 1 RS485
Operating system	Linux
Programming	Via TWinSoft Suite (Automation, Web Editor, Report Editors) or Linux open programming
Version compatibility	TWinSoft version 10.00 or higher
Automation languages	Ladder logic (IEC61131-3), Basic, C
Microsoft Automation compatible	Yes
Alarm handling	Smart alarm management with embedded calendar
Datalogging	Smart logging: sampling tables (instantaneous, min, max, average), digital and analog chronologies, SoE
Datalogging resolution	1 mS
IT features	HTTP, FTP, SMTP (email), SNMP, IP forwarding, DynDNS, NTP
Protocols	Support for over 40 drivers, including Modbus (master/slave, RTU, TCP, ASCII), DNP 3.0, IEC60870-5, SNMP
Operating temperature	-20° C to 75° C
Storage temperature	-40° C to 80° C
Relative humidity	0-95% non-condensing

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