Rugged Computers - TRICOR

TRICOR Embedded Avionics Computer

with Intel® Core™ i7 Processor

General Description

The TRICOR series embedded rugged computer combines a built-in touch screen available at various diagonals (8.4/10.4/12/15 inches & more) with excellent optical specifications; embedded with wide range of ultra low power Intel Embedded Processors based Single Board Computers (PIP3x Family). The features are flexible and can be chosen according to the application performance requirements with Quad Core i7 CPU Family, Memory, Storage, Display size (denoting as "X" in the TRICOR Model number), with EMI Protection, and other additional I/Os. All this comes within a small footprint of a standalone monitor / portable laptop, and therefore saves space. The special feature of the TRICOR is that it comes without a fan or air vents.

I/O Expansion

The TRICOR series has built in I/O expansion over mPCIe & PCIe-104 bus, allowing for additions of I/Os to meet future requirements.

Integrated Gigabit Ethernet Switch

The unit has an add-on feature of an integrated Layer 2+ Gigabit Ethernet Switch, supporting up to eight Copper Ports which can be managed via Easy Web Interface.

Mounting Options

Generally the TRICOR will have wall mounting provisions given on rear side within the VESA* dimensions. Additional brackets may be designed according to the mounting requirements. (e.g. L-brackets for 19" Rack mounting etc.).

Rugged Construction

The TRICOR model is constructed from military grade, high strength, and light weight HE30 grade aluminum alloy housing. Its modular architecture allows the system to be easily configurable with many options. The fanless design helps in noiseless operation, increases reliability, and gives the system a longer MTBF.

Key Features

- CPU solution up to Quad Core i7
- Up to 16GB ECC DDR3 1600 Memory
- Universal selection of display (e.g. 10.4" TFT XGA Sun readable Touch Screen Display)
- Space for rugged 2.5" SSD
- Quad Gigabit Ethernet (optional)
- Fan-less design
- Rugged & light weight
- Desk/Wall/Rack mountable

TRICOR used in various Aircraft applications

TRICOR used in Maritime environments

TRICOR used in Vehicles

TRICOR used in Aircraft as communication module

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Technical Features

Processor	Intel® Quad Core™ i7 CPU @ 2.1Ghz (3.1Ghz) speed with 6MB cache memory or Intel® Dual Core™ i7 CPU @ 2.5Ghz (3.2Ghz) speed with 4MB cache memory or Intel® Dual Core™ i7 CPU @ 1.7Ghz (2.8Ghz) speed with 4MB cache memory
Chipset	Intel® QM77 Panther Point
Graphics	Intel HD Graphics 4000, multi display support
Memory	Intel® Quad Core™ i7 CPU up to 16GB ECCDDR3 Intel® Dual Core™ i7 CPU up to 12 GB ECCDDR3
Storage	128GB SATA SSD
Audio	Inbuilt High Definition Audio Codec
Keys	2 x brightness adjust & 1 x power On/Off button 1 x day/night mode ring illuminated Push Button Switch
Display	10.4" 1024 X 768 XGA Active Matrix LED Backlighted Display, 1000 CD/M2 Brightness, 600:1 Contrast Ratio, 178/178 Wide Viewing Angle
Touch Screen	EMI mesh 5W Resistive Touch Screen Surface Protection Treatment, Optical Bonding
Night Vision	NVG/NVIS MIL-STD-3009 Complaint
Integrated MAGBES Gbit Switch	8-Port 10/100/1000 Base-T ports, L2+ manageable, easy GUI / CLI
Interfaces on MIL-DTL-38999 III	2 x RS232 Serial ports, 4 x Gigabit Ethernet, 4 x USB2.0 ports 2 x PS/2, 1 X VGA/DVI for external Display & 8 x Gbe (Switch) ports
Expansion	2 x MPCIe & 1 x PCIe-104
Power Input	18-36V DC Input (28V Typ.), MIL-STD-704E Compliant (MIL-HDBK-704-E LCD 105)
Power Consumption	<60W
Software	Windows, Linux or any PC/AT compatible OS
Enclosure & Finish	HE30 (6082) AL. Alloy, RAL 7035 Light Grey Powder Coated
Dimensions	306mm (W) x 235.3mm (H) x 80mm (D)*
Weight	5Kg approx.
Environmental	
Operating Temperature	-20°C to +60°C, MIL-STD-810G, method 501.5 & 502.5 procedure-I & II
Storage Temperature	-40°C to +75°C, MIL-STD-810G, method 501.5 & 502.5 procedure-I & II
Functional Shock	20G peak Saw Tooth @ 11ms, MIL-STD-810G, method 516.6 procedure-I
Crash Safety	40G peak Saw Tooth @ 11ms MIL-STD-810G, method 516.6 procedure-V
Transit Drop	26drops @ 122cm height, MIL-STD-810G, method 516.6 procedure-IV
Vibration	MIL-STD-810G, method 514.6 procedure-I, Category-13 Propeller Aircraft Random over Random Vibration Exposure
Acceleration - Operational	Fore - 2G | Aft – 6G | Up - 9G | Dwn - 3G | Left - 4G | Right – 4G, 1min. @ Specified 'G' level. MIL-STD-810G, method 513.6 procedure II
Acceleration - Structural	Fore - 3G | Aft - 9G | Up - 13.5G | Dwn - 4.5G | Left - 6G | Right - 6G MIL-STD-810G, method 513.6 procedure I
Altitude	32808ft, MIL-STD-810G, method 500.5 procedure-I & Procedure-II
Rapid Decompression	8000ft to 347008ft In 12sec @ 10min duration MIL-STD-810G, method 500.5 procedure-III
Humidity	95% rh @ 10cycles, MIL-STD-810G, method 507.5 procedure-II
Fungus	MIL-STD-810G, method 508.6, procedure I
Salt Fog	4cycles of 2wet & 2dry, MIL-STD-810G, method 509.5, procedure I
Dust	LP5X Dust Ingress protection, IS-LEC60529-2001, table-7 & section-13.4, 13.5
Water	LPX4 Water Ingress protection, IS-LEC60529-2001, table-8 & section-14.2.4
EMI/RFI	MIL-STD-461E, CE102, RE102, CS101, CS114, CS115, CS116 and RS103

Optional Features

Add-On I/Os	Ethernet to Fiber converters, high speed Serial Ports, CAN Bus, Wi-Fi, Wimax, Avionics I/O, DAQ I/O & many more over Expansion Bus.
Uninterruptable Power Supply	Serial UPS with ½ hr to 3hrs backup.
Keyboard / Pointing Device	88 Keys backlighted rugged PS/2 Keyboard with hula pointer.

Specifications marked with * is an optional feature OR it differs from product to product & its configuration.
All information contained herein is subject to change without notice.

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