TOSHIBA

CP30 *model 300*

Embodying the performance and robustness required for edge computing in a compact body

Robustness, environmental resistance, 24/7 operation, and long-term availability and maintenance are essential for industrial computers. In addition to these characteristics, the CP30 model 300 embedded industrial computer provides high computing performance, connectivity, and extensibility required for edge computing—all in a more compact body than its predecessor. The CP30 model 300 supports stable operation of social infrastructure systems in various fields, including monitoring and control of broadcasting, communication, water supply and sewage, transportation, and electric power systems.
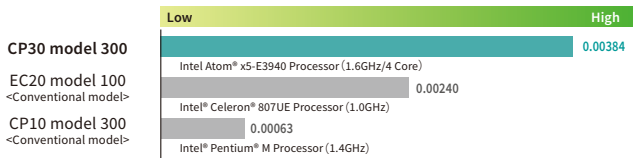
Major performance and functional enhancements

Intel Atom® processor (1.6 GHz) with low power consumption

Incorporating the Intel Atom® x5-E3940 processor (1.6 GHz) suitable for fanless computers, the CP30 model 300 delivers a stable quad-core operation with low power consumption.

CPU performance comparison

	Low — High	
CP30 model 300	Intel Atom® x5-E3940 Processor (1.6GHz/4 Core)	0.00384
EC20 model 100 <Conventional model>	Intel® Celeron® 807UE Processor (1.0GHz)	0.00240
CP10 model 300 <Conventional model>	Intel® Pentium® M Processor (1.4GHz)	0.00063

Adjusted Peak Performance (APP) in Weighted TeraFLOPS (WT)

* The above figure shows the Adjusted Peak Performance (APP) values released by Intel. The CPU performance depends on customers' systems.

Gigabit (2 Ports) Ethernet Interface is a Standard Feature

Gigabit-compatible 2 Ports Ethernet interface (with auto negotiation for 10BASE-T, 100BASE-TX, 1000BASE-T) is a standard feature (Compatible with the Wake On LAN function).

Enhanced environmental resistance

The use of a low-power-consumption platform specifically designed for embedded industrial computers helps reduce the amount of heat generated. In addition, the chassis designed with a custom heat sink provides an increase in the cooling efficiency from natural convection, making it possible for the CP30 model 300 (with 4 GB main memory and no OS shutdown battery) to support an ambient operating temperature range of 0°C to 50°C. The use of an SSD as secondary storage also provides enhanced environmental resistance since, unlike HDDs, SSDs have no mechanical moving parts such as a spindle.

Power supply options for various installation environments

Power supply options

The CP30 model 300 is available in models with a DC power supply (rated supply voltage: 24 VDC) or an AC power supply (rated supply voltage: 100–240 VAC).

OS shutdown battery (optional)

In the event of an interruption of the main power supply, the CP30 model 300 is automatically switched to the backup battery to shut down the operating system (OS) properly. Depending on the system requirement, the CP30 model 300 can be configured to either enter the standby state after OS shutdown or reboot automatically when the main power supply recovers during OS shutdown.

DC power supply model

AC power supply model

DC power supply model with an OS shutdown battery

AC power supply model with an OS shutdown battery

Installation

Installation styles

The CP30 model 300 can be installed either vertically or horizontally according to the place of installation. In addition, an optional stand allows the main unit to be fixed inside a customer's system.

* See the product catalog for the external dimensions of each model, which is available for download on the website for Toshiba's industrial computers.

Vertical installation

Horizontal installation

Chassis fixing stand (optional)

Outstanding maintainability

Enhanced maintainability due to the front-access structure

The front-access design allows easy replacement of an SSD unit, a CMOS battery, and an optional OS shutdown battery.

Front-access maintenance

Replacement of an SSD unit

Replacement of a CMOS battery

Replacement of an OS shutdown battery

Specifications

Product Name		CP30 model 300	
		DC Power Model	AC Power Model
Processor	Main Processor	Intel Atom® x5-E3940 Processor (1.6GHz)	
	No. of Cores/No. of Threads	4/4	
	Cache Memory	2 MB (built into main processor)	
Main Memory*1	Capacity	Min. 4GB (4GB×1), Max. 8GB (8GB×1)	
	Memory	ECC	
	Type	DDR3L-SDRAM	
	Operating Speed	DDR3L-1600	
Auxiliary Storage	Built-in SSD*2	Option	
Interface	COM Interface	RS-232C (9-pinD-SUB)×2 (front)	
	Graphic Interface*3	DisplayPort ×1 (on-board graphics)	
	LAN Interface	10BASE-T/100BASE-TX/1000BASE-T (Auto Negotiation) (RJ45)×2 (front) Wake On LAN (compatible for main unit port only)	
	USB Interface*4	USB3.0 (TYPE A) × 2 ports (front), USB2.0 (TYPE A) × 2 ports (front)	
	DI/DO Interface*5	Option	
Expansion Interface	PCI Express*6	Low profile (× 4 connectors, × 1 lane) 1 slot PCI Express 2.0	
Input Device	Keyboard	Option	
	Mouse	Option	
RAS Function		CPU temperature rise detection, Internal temperature detection, Internal voltage detection, CMOS battery monitoring, OS shutdown battery monitoring, Memory error detection, Digital input/output*7 (DI/DO 4 points each, remote ON/OFF or remote initialize 1 point), Watchdog timer monitoring (at system startup, during system operation), Software power off (shutdown), Remote initialize, Remote power on/off, Error information saved on RAS memory, Operating time monitor function, Temperature information trend function, Simulation function	
Power Supply (Wide Range Power Supply)*8		Rated voltage DC24V, allowable voltage DC20.4V-DC26.4V, Rated current 2A	Rated voltage 100VAC-240 VAC, allowable voltage 85 VAC - 264 VAC, allowable frequency 50 Hz/60Hz±3Hz
Electric Power Consumption*9		Max. 50W	Max. 115W/134.4VA
Dimensions and Weight*10 (excluding rubber feet and protrusions)		Vertical installation 114 (W) ×164 (H) ×174 (D) mm Weight: about 2.5 kg Horizontal installation 164 (W) ×114 (H) ×174 (D) mm Weight: about 2.5 kg	Vertical installation 114 (W) ×172 (H) ×221 (D) mm Weight: about 3.0 kg Horizontal installation 172 (W) ×114 (H) ×221 (D) mm Weight: about 3.0 kg
	with OS shutdown battery	Vertical installation 114 (W) ×222 (H) ×174 (D) mm Weight: about 3.5 kg Horizontal installation 222 (W) ×114 (H) ×174 (D) mm Weight: about 3.5 kg	Vertical installation 114 (W) ×222 (H) ×221 (D) mm Weight: about 4.0 kg Horizontal installation 222 (W) ×114 (H) ×221 (D) mm Weight: about 4.0 kg
Items included in shipment package		DC power connector (DC Power Model only), Power cord (AC power supply model), Rubber foot (4pieces), Product recovery media (with OS pre-installed models), Instruction manual PDF (included on optical media) * Items other than those listed above may be included depending on the configuration on of the system ordered.	
Software (OS)*11*12		Windows® 10 IoT Enterprise 2019 LTSB (Japanese or English selectable) (64bit)*13 Windows® 10 IoT Enterprise 2016 LTSB (Japanese or English selectable) (64bit)*13	

Optional Hardware Specifications

Built-in SSD*2		128 GB/512 GB 1 unit mountable
Keyboard		USB109 keys (Japanese OS), 104 keys (English OS)
Mouse		USB(Optical)
OS shutdown battery*5	Battery type	Nickel-metal hydride battery
	Nominal voltage/nominalcapacity	8.4 V DC/2500 mAh
	Charging time*14	About 12 hours
	Operating time	About 10 min.
DI/DO Interface*5		(DI/DO board) Digital input/output (half-pitch 20-pin) DI 4 points, DO4 points, remote input 1point
RAS Terminal Board		DI 4 points, DO 4 points, remote input 1 point
RAS Cable		Half-pitch 20-pin male at both ends, 1m/2m max
RAS Terminal Board Mounting Panel		Simplified type
Stand		1 set
Instruction Manual (Bound Booklet)		CP30 model 300 unit instruction manual, RAS support software instruction manual

*1 Correct operation is not guaranteed except on genuine memory designed for Toshiba's industrial computers.

*2 The "S.M.A.R.T. (Self Monitoring Analysis and Reporting Technology) data monitoring software " that can be used to predict SSD life is not pre-installed. Customers can install and use the program as required.

*3 The DisplayPort of the CP30 model 300 supports Display audio systems. To output audio from a display connected to DisplayPort, use a cable and a display compatible with the DisplayPort audio. DisplayPort does not support Multi-Stream Transport (MST). Multiple displays cannot be daisy-chained.

*4 USB interface does not always guarantee the operation of all the USB peripherals.

*5 No expansion at customer site because of pre-shipment options.

*6 PCI Express slot board size (167.65 mm (L) × 68.90 mm (H) or less) mountable.

*7 To use the digital input/output function, optional hardware is required (DI/DO interface, RAS terminal block and RAS cable).

*8 AC Power Model has a power supply with a built-in PFC (power factor correction) circuit. If you are using a UPS (uninterrupted power supply), select a sine wave output type.

*9 The maximum power consumption of the main unit of the DC power supply model is approximately 15 W (without an OS shutdown battery) and 20 W (during charging of an OS shutdown battery) when it is not connected to any expansion boards or other peripherals and is not running any applications after boot-up. The maximum power consumption of the main unit of the AC power supply model is approximately 16 W (without an OS shutdown battery) and 22 W (during charging of an OS shutdown battery) under the same conditions.

*10 Add 8 mm as the height of rubber feet according to the orientation of installation.

*11 Of the Operating Systems listed here, your specified OS will be installed. OS supply period is subject to change depending on the OS distribution period of the OS supplier.

*12 If Windows is in use, the following functions are outside the scope of your support. Windows Bitlocker, Windows XP mode, power-saving modes (suspend, hibernation), Windows fast startup, Windows Hello.

*13 Please note that Windows® 10 IoT Enterprise 2019 LTSC or Windows® 10 IoT Enterprise 2016 LTSB is the only pre-installation option we support. We do not support any other versions, servicing models or editions. For language selection, select either Japanese or English at the initial setup.

*14 When power supply is on, the OS shutdown battery is charged, regardless of whether the main unit is running. Before using a new battery for the first time or an existing battery after more than one month of disuse, press the Forced Charge button in the battery compartment and charge it for more than six hours in soft-off mode. More than six hours of charging is necessary to provide for automatic OS shutdown in the event of an interruption of the external power supply.

Installation Environment Conditions

			without OS shutdown battery	with OS shutdown battery
Installation Environment	Temperature (Operating/ While Stored)	Memory capacity: 4GB	0 to 50°C / -10 to 60°C	0 to 40°C / -10 to 50°C
		Memory capacity: 8GB	0 to 45°C / -10 to 60°C	
	Humidity (Operating/While Stored)		20 to 80% RH (no condensation)/10 to 90% RH (no condensation)	
	Vibration	(Operating)	4.9 m/s² or less (JIS C60068-2-6:9 to 150Hz 1 cycle)	
		(While Packed)	19.6 m/s² or less	
	Shock (Operating/While Packed)		19.6 m/s² or less / 245 m/s² or less	
	Dust		0.3 mg/m³ or less (JEITA IT-1004B Class B compliant)	
	Corrosive gas / chemicals		Not to be detected (JEITA IT-1004B Class A compliant)	
Allowable Instantaneous Power Failure Time	DC Power Model		-	1 ms or less at the rated input voltage
	AC Power Model		20 ms or less at the rated input voltage	