TOSHIBA

FR2100T *model 700*
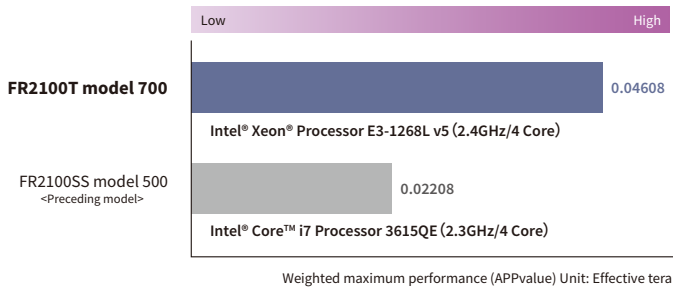
2U Rack Mount Solution

Intel® Xeon® processor E3-1268L v5 (2.4 GHz) and incorporates reliable memory with ECC (max. 16 GB), RAS to monitor inside the hardware and a mirroring disk for hot swapping (optional), combine to support 24-hour continuous, stable operation, which is demanded of industrial computers.
This is backed up by product supply and maintenance over a long period of time.

Now more functional

High performance CPU
Intel® Xeon® processor (2.4 GHz)

High-performance CPU Intel® Xeon® processor for work stations with built-in E3-1268L v5 (2.4 GHz/4 core) for high-speed processing.

CPU performance comparison

	Low ··················· High
FR2100T model 700	0.04608
	Intel® Xeon® Processor E3-1268L v5 (2.4GHz/4 Core)
FR2100SS model 500 <Preceding model>	0.02208
	Intel® Core™ i7 Processor 3615QE (2.3GHz/4 Core)

Weighted maximum performance (APPvalue) Unit: Effective tera

*The above is a comparison of the weighted maximum performance (in APP value) released by Intel, and there may be difference from the above depending on your system.

Gigabit (3 Ports) Ethernet Interface as a Standard Feature

Gigabit-compatible 3 Ports Ethernet interface (with auto negotiation for 10BASE-T, 100BASE-TX, 1000BASE-T) is a standard feature (Compatible with the Wake On LAN function).

Graphic Function with built-in CPU Chipset Provided

The graphic function with a built-in CPU chipset (compatible with full HD display) is provided. It permits multi display of the expansion desktop function, clone display function, etc.

Expansion DesktopFunction	Clone DisplayFunction	Collage DisplayFunction
Monitors are used for wide display	Monitors are used to show the same display on each screen	Two monitors are used to display a single image

Good Maintainability and Protection Structure

High Maintainability by Front Access

The Storage Devices, cooling fan, and battery can be easily replaced from the front.

Example of Replacement

Front-end Replacement of Storage Devices

Front-end Replacement of Battery | Front-end Replacement of Cooling Fans

Operation Error Prevention

AC Power Cable Clamp

Security

Key lock*1

Security lock slot*2

Front switch cover   USB connector cover
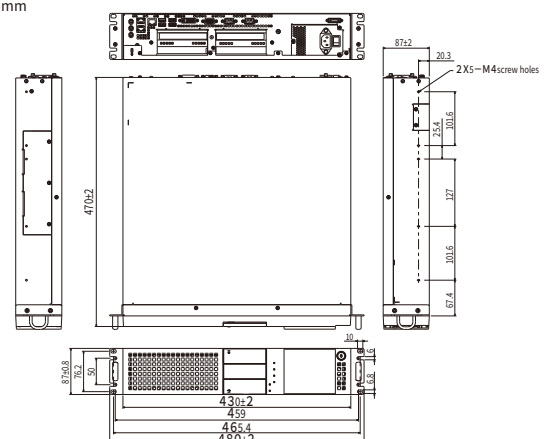
*1 By fastening the power button mini-door and USB mini-door with the parts inside the front panel, illegal access can be prevented with this security key lock.

*2 This can be used for preventing theft and access to the internal parts of the product.

Dimensions

Unit: mm

87±2
20.3
2×5—M4screw holes
25.4
103.6
101.6
127
101.6
67.4
470±2
87±0.8
76.2
50
10
11.6
6.8
430±2
459
465.4
480±2

Specifications

Product Name	FR2100T model 700	
	Single Disk Model	**Mirroring Disk Model**
Processor — Main Processor	Intel® Xeon® E3-1268L v5 (2.4GHz)	
Processor — No. of Cores/No. of Threads[*1]	4/8	
Processor — Level 2 Cache Memory	256 KB/Core (built into main processor)	
Processor — Level 3 Shared Cache Memory	8 MB (built into main processor)	
Chipset	Intel® C236 Chipset	
Main Memory[*2] — Capacity	Min. 4GB (4GB×1), Max. 16GB (8GB×2)	
Main Memory[*2] — Memory	DDR4-SDRAM (DDR4-2133/PC4-17000) with ECC function, DIMM 2 sockets	
Auxiliary Storage — Built-in HDD	Options (Refer to Optional Hardware Specifications)	
Auxiliary Storage — Built-in SSD[*14]		
Auxiliary Storage — Built-in DVD-ROM[*3]		
Auxiliary Storage — Built-in DVD Super Multi-Drive[*3*4]		
RAID Compatible	—	RAID1
Interface — COM Interface	RS-232C (9-pinD-SUB)×2 (rear)	
Interface — Graphic Interface	RGB×1, DVI-D×1 (rear) CPU・Chipset built in Graphic Function	
Interface — LAN Interface	10BASE-T/100BASE-TX/1000BASE-T (Auto Negotiation) (RJ45)×3 (rear) Wake On LAN (compatible for main unit port only)	
Interface — Sound Interface[*5]	LINE IN/LINE OUT/MIC IN (3.5φ mini jack) (rear)	
Interface — USB Interface[*6]	USB×2 (rear), (TYPE A USB 3.0), USB×4 (front/rear 2 ports each) (TYPE A USB 2.0)	
Interface — DI/DO Interface	Option (Refer to Optional Hardware Specifications)	
Expansion Interface	Options (Refer to Optional Hardware Specifications)	
Input Device — Keyboard	Option (Refer to Optional Hardware Specifications)	
Input Device — Mouse	Option (Refer to Optional Hardware Specifications)	
RAS Function	Fan stop detection, CPU temperature rise detection, Internal temperature detection, Internal voltage detection, 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), hard disk monitor (Mirroring Disk only) 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 100VAC-240 VAC, allowable voltage 85 VAC - 264 VAC, allowable frequency 50Hz/60Hz±3Hz	
Electric Power Consumption	Max. 278W/290VA	
Dimensions and Weight	Rack mount (horizontal mounting) 430 (W) ×87 (H) ×470 (D) mm (without projections) (No vertical mounting) Weight: about 13 kg	
Items included in shipment package	Instruction manual, AC power cable (1), AC power cable clamp (1), Rubber foot (4pieces), rack mounting brackets (2 in each set), Security key (1 set), Product recovery media (with OS pre-installed models) * Items other than those listed above may be included depending on the configuration of the system ordered.	
Software (OS)[*9*10]	Windows® 10 IoT Enterprise 2019 LTSC (Japanese or English selectable) (64bit)[*11] Windows® 10 IoT Enterprise 2016 LTSB (Japanese or English selectable) (64bit)[*11] Windows® 7 Professional (Japanese version/English version) (32bit/64bit)[*12] Windows Server® 2016 Standard(Japanese version/English version) (64bit)[*13] Red Hat® Enterprise Linux® 7.5 Server compliant (64bit)	

Optional Hardware Specifications

Expansion Main Memory	DDR4-SDRAM (DDR4-2133/PC4-17000) 4GB/8GB selectable
Built-in HDD	Single disk model capacity: 2TB HDD 2 units mountable
	Mirroring disk model capacity:2TB/500GB (Customized options) (Hot swap compatible mirroring disk)
Built-in SSD[*14]	Single disk model capacity : 128 GB/512 GB 2 units mountable
	Mirroring disk model capacity: 160 GB/400 GB 2 units mountable (hot swap compatible)
Built-in DVD-ROM[*3]	Read Media DVD-ROM,CD-ROM,DVD-R,DVD+R,DVD-RW,DVD+RW,DVD-RAM,CD-R,CD-RW
Built-in DVD super multi-drive[*3*4]	Write/Read Media DVD-ROM,CD-ROM,DVD-R,DVD+R,DVD-RW,DVD+RW,DVD-RAM,CD-R,CD-RW
Keyboard	USB109 keys (Japanese OS), 104 keys (English OS)
Mouse	USB (Optical)
DI/DO Interface[*3]	(DI/DO board) Digital input/output (half-pitch 20-pin) DI 4 points, DO4 points, remote input 1point
Expansion Interface	Specify Main Unit Type A or B in your order.

Expansion Interface		
Main Unit Type A	PCI-Express (x16)[*15]	1 slot (full size) PCI Express 3.0
	PCI-Express (x4)[*15]	1 slot (half size) PCI Express 3.0
	PCI slot[*16]	2 slots (full size ×1, half size ×1) PCI 2.2
Main Unit Type B	PCI-Express (x16)[*15]	1 slot (full size) PCI Express 3.0
	PCI slot[*16]	3 slots (full size ×1, half size ×2) PCI 2.2

RAS Terminal Board	DI 4 points, DO 4 points, remote input 1 point
RAS Cable	Half-pitch 20-pin male at both ends, 2m max
RAS Terminal Board Mounting Panel	Simplified type
Slide Rail	2-step slide rail (2 steps in 1 set)
Slide Rail Support Bracket	Bracket (1 set) to secure the slide rail to the rack
Instruction Manual(Bound Booklet)	FR2100T model 700 unit instruction manual, RAS support software instruction manual, RAID controller instruction manual

Installation Environment Conditions

Installation Environment		
	Temperature (Operating/While Stored)	5 to 40°C / -10 to 50°C
	Humidity (Operating/While Stored)	20 to 80% RH (no condensation)/10 to 90% RH (no condensation)
	Vibration (Operating)[*17]	With HDD configuration: 2.0 m/s²(JIS C60068-2-6:9 to 150Hz 1 cycle) With SSD configuration: 4.9 m/s²(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	0.3mg/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		20 ms or less at the rated input voltage

[*1] The hyper-threading function is disabled in the factory setting. To enable this function, the BIOS setting must first be changed.
[*2] If a main memory of 4GB or more is installed with a 32-bit OS already installed in your system, the available memory capacity will be about 2.1GB (default) in order to reserve the memory address area for PCI device, etc.
As the product supports dual channels, communication speed between the memory and CPU improves when 2 memory modules are mounted. Operation will not be guaranteed if you combine other than the genuine memory modules for Toshiba industrial computers.
[*3] No expansion at customer site because of pre-shipment options.
[*4] Writing software is not included. Use the standard writing functions supported by each OS.
[*5] Use correcting units that meet the specifications below.

Terminal	Maximum Voltage	Remarks
LINE IN	1Vrms	Input impedance 10kΩ
LINE OUT	1Vrms	Load impedance 10kΩ to 600kΩ
MIC IN	0.1Vrms	Input impedance 10kΩ

[*6] USB interface does not always guarantee the operation of all the USB peripherals.
[*7] To use the digital input/output function, optional hardware is required (DI/DO interface, RAS terminal block and RAS cable).
[*8] This 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] 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.
[*10] 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.
[*11] 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.
[*12] This product carries only a USB controller compatible with the USB 3.0 standard (not a USB controller compatible with the USB1.0 and USB2.0 standards). Since a USB3.0 driver is not incorporated in Windows® 7 installation media, the USB-connected keyboard and mouse cannot be operated while installing Windows® 7. If using Windows® 7 on this product, please consider obtaining a Windows® 7 pre-installed model.
[*13] Client Access License (CAL) includes five licenses of Windows Server CAL. It does not include CAL for other specific functions.
[*14] 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. SSD and HDD cannot be mixed in the Mirroring disk model.
[*15] PCI Express slot (half size) board size (167.65 mm (L) × 111.15 mm (H) or less) mountable. PCI Express slot (full size) board size (312 mm (L) × 111.15 mm (H) or less) mountable.
[*16] PCI slot (half size) board size (174.63 mm (L) × 106.68 mm (H) or less) mountable. PCI slot (full size) board size (312 mm (L) × 106.68 mm (H) or less) mountable. Installable PCI boards are 5V key boards and 5V/3.3V shared key boards(Boards of 3.3V keys only cannot be installed).
[*17] Except while optical drive is in operation.