

# TOSHIBA

## FS20000S model 200/100



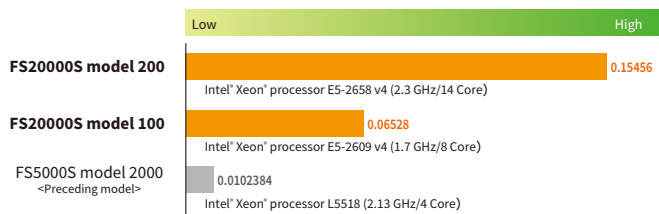
### Onsite Industrial Server Realizing High Performance and High Capacity

#### Points of Improved Performance and Function

##### Equipped with Intel® Xeon® Processor E5-2600 v4 for Servers

Can be equipped with up to two Xeon® processors E5-2658 v4 (2.3GHz/14 Cores) or E5-2609 v4 (1.7GHz/8 Cores) as CPU.

##### CPU performance comparison



Weighted maximum performance (in APP value) Unit: Effective tera

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

##### Equipped with High-Speed, High-Performance Memory

Up to 256 GB of DDR4 SDRAM high-speed memory can be installed for each CPU, providing high system performance.

##### High-capacity storage

Can be equipped with up to eight 2.5" HDDs using a highly reliable SAS interface or 2.5" SSDs using a SATA interface with superior reading performance.

##### Remote Monitoring and Control Function

The system is equipped with a BMC (Baseboard Management Controller) device conforming to IPMI (Intelligent Platform Management Interface) Ver. 2.0 standards. This makes it possible, using a browser from another computer on the network, to check hardware information (CPU temperature, temperature in the chassis, fan rotation speed, and internal voltage), shut down the OS and perform power ON/OFF control.

In addition, the iKVM function allows you to operate the keyboard/mouse and display the local RGB output screen so that you can change the BIOS settings and check logs on the OS. Furthermore, the VM function<sup>1</sup> makes it possible to reset OS to the factory settings or update software. Those operations can be performed from other computers on network.

\*1 To use the iKVM and the VM functions, it is necessary for you to set up the JRE (Java Runtime Environment).

#### Reliable Technology Supporting Stable Operation

##### Technology and Quality for Supporting 24-Hour Continuous Operation

High-quality, long-life parts are used, based on assumption of 24-hour continuous operation. The hardware is designed with derating taken into account. Thorough quality control is ensured by testing individual units at the component level, and then conducting, for all shipped products, function testing in the user shipment configuration and temperature tests to determine that product specifications will be fully satisfied (in the temperature range of 5 to 40 °C).

##### Uses Memory with ECC/Mirroring Functions

The system has memory with an ECC function for detecting and correcting single-bit errors. It also supports memory mirroring<sup>2</sup> to protect data from issues such as multi-bit errors that cannot be corrected with the ECC function, thereby supporting stable system operation.

\*2 To use this function, memory with the same capacity must be installed in a pair in the designated memory banks. For detailed methods of use please refer to the instruction manual and hardware specifications for this unit.

#### Good Maintainability and Protective Structure

The system enables preventive maintenance replacement of parts with a limited service life (The Storage Devices, cooling fans, battery, and power supply units in a redundant configuration) while the system is operating.

##### Examples of Replacement



Front-end Replacement of Storage Devices



Cooling Fans replacement



Front-end Replacement of Battery



Rear-end Replacement of Power Supply Units

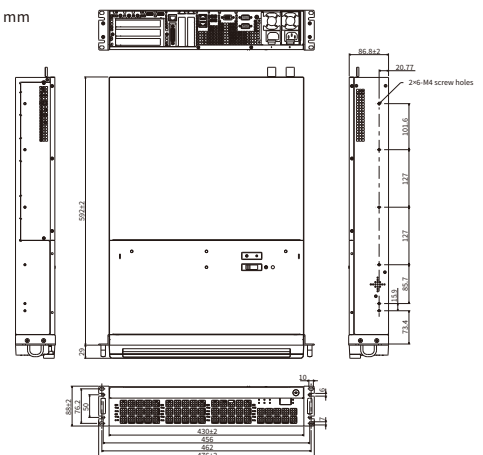
##### Operation Error Prevention



AC Power Cable Clamp

##### Dimensions

Unit: mm



## Specifications

Product Name		FS20000S model 200				FS20000S model 100	
Processor	Main Processor	Intel® Xeon® Processor E5-2658 v4 2.3 GHz				Intel® Xeon® Processor E5-2609 v4 1.7 GHz	
	Number of CPU sockets	1CPU		2CPU		1CPU	2CPU
	Hyper-Threading setting	Disabled		Enabled		-	
	No. of Cores/No. of Threads	14/14	14/28	28/28	28/56	8/8	16/16
	Level 2 Cache Memory Capacity	256 KB/Core (built into main processor)					
	Level 3 Shared Cache Memory Capacity	35 MB (built into main processor)			20 MB (built into main processor)		
	No. of Processors	Up to 2 processors mountable					
Chipset	Intel® C612 Chipset						
Main Memory <sup>1</sup>	Capacity	With 1 CPU: Min. 4 GB (4 GB × 1), Max. 256 GB (64 GB <sup>20</sup> × 4) With 2 CPUs: Min. 8 GB (4 GB × 2), Max. 512 GB (64 GB <sup>20</sup> × 8)					
	Memory Check Method	ECC					
	Memory Mirror <sup>2</sup>	Compatible					
	Memory Interleave <sup>2</sup>	Compatible					
	Type	DDR4 SDRAM					
Auxiliary Storage	Operating Speed <sup>3</sup>	DDR4-2133/PC4-17000			DDR4-1866/PC4-14900		
	Built-in HDD/SSD <sup>4</sup>	Options (Refer to Optional Hardware Specifications)					
	Built-in DVD-ROM <sup>5</sup>						
Built-in DVD Super Multi-Drive <sup>5</sup>							
RAID Compatible	RAID 1/5/6/10/50						
Interface	COM Interface	RS-232C (9-pin D-SUB) × 2ch (rear)					
	USB Interface <sup>6</sup>	USB3.0 (TYPE A) × 2 ports (rear), USB2.0 (TYPE A) × 4 ports (front/rear 2 ports each)					
	Sound Interface <sup>7</sup>	LINE IN/LINE OUT/MIC IN (3.5φ mini jack) (rear)					
	LAN Interface	10BASE-T/100BASE-TX/1000BASE-T (Auto Negotiation) (RJ45) × 3ch (rear) Wake On LAN (compatible for main unit port only) Out of 3 channels, the settings of one channel can be switched from either "normal use" or "shared with remote monitoring ch."					
	Graphic Interface	RGB×1ch BMC (Baseboard Management Controller) Chip with built-in graphics function					
	DI/DO Interface	Digital input/output (half pitch 20-pin) DI 4 points, DO 4 points, remote ON/OFF 1 point, remote initialize 1 point					
Expansion Interface	PCI Express slot <sup>8</sup>	Total of 4 slots					
	PCI Express (x16)	1 slot (half size) PCI Express 3.0					
	PCI Express (x8)	1 slot (half size) PCI Express 3.0					
	PCI Express (x8)	1 slot (low profile size) PCI Express 3.0					
	PCI Express (x4)	1 slot (low profile size) PCI Express 3.0 exclusive to RAID controller board					
	PCI slot <sup>9</sup>	1 slot (full size) PCI 2.2					
Input Device	Keyboard	Options (refer to Optional Hardware Specifications)					
	Mouse	Options (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 (DI/DO 4 points each; remote power ON/OFF 1 point, remote initialize 1 point), Watchdog timer monitoring (at system startup/during system operation), HDD SSD monitoring, 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, LED display function to indicate initialization state during unit startup, RAS status lamp function to display hardware operating status (cooling fan, battery voltage, internal temperature, RAID disk, power supply unit)						
Remote Monitoring Control (IPMI) Function	Verification of hardware monitor information (CPU temperature, internal temperature, fan speed, internal voltage), OS shutdown, power ON/OFF control, iKVM <sup>10</sup> function for keyboard/mouse control, display unit RGB output screen, VM function <sup>10</sup> makes it possible to reset OS to the factory settings or update software.						
Power Supply (Wide Range Power Supply) <sup>11</sup>	Single Power Supply Configuration	Rated voltage 100 VAC/240 VAC, allowable voltage 85 to 264 VAC, allowable frequency 50 Hz/60 Hz±3 Hz (Single power supply configuration: power supply unit × 1, Redundant power supply configuration: power supply unit × 2)					
	Redundant Power Supply Configuration						
Electric Power Consumption	Max. 1,185W/1,247VA						
Dimensions and Weight	430 (W) × 86.8 (H) × 592 (D) mm (without projections) Weight: about 20 kg						
Items included in shipment package	Power cable (corresponding to the number of power supply units mounted), power cable pull-out prevention guard (corresponding to the number of power supply units mounted), rack mounting brackets (2 in each set), product recovery media (with OS pre-installed models), instruction manual PDF (included on CD media) <sup>12</sup> * Items other than those listed above may be included depending on the configuration of the system ordered.						
Software (OS) <sup>13</sup>	Windows Server® 2016 Standard (Japanese version/English version) (64 bit) <sup>14</sup> Windows Server® 2012 R2 Standard Update (Japanese version/English version) (64 bit) <sup>15</sup> Windows Server® 2008 R2 Standard SP1 (Japanese version/English version) <sup>14,15</sup> Red Hat® Enterprise Linux® 6.7 Server compliant (64 bit) Red Hat® Enterprise Linux® 7.5 Server compliant (64 bit)						

\*1 Operation will not be guaranteed if you combine other than the genuine memory modules for Toshiba industrial computers.

\*2 Memory of the same capacity must be installed in the specified memory banks to use the memory mirror or memory interleave (compatible with dual channel or quad channel systems) function. See the unit instruction manual and hardware specifications for detailed usage methods.

\*3 The memory operating speed differs depending on the type of CPU installed.

\*4 The "S·M·A·R·T (Self Monitoring Analysis and Reporting Technology) data monitoring software (XSMART)" 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 RAID disk model.

## Optional Hardware Specifications

Expansion Main Memory	DDR4 SDRAM 4 GB/16 GB/64 GB <sup>16</sup> selectable	
Built-in HDD	Capacity: 300 GB/900 GB Up to 8 units mountable (Hot swap compatible)	
Built-in SSD <sup>14</sup>	Capacity: 400 GB Up to 8 units mountable (Hot swap compatible)	
Built-in DVD-ROM <sup>5</sup>	Read drive DVD-ROM, CD-ROM, DVD-R, DVD+R, DVD-RW, DVD+RW, DVD-RAM, CD-R, CD-RW	
Built-in DVD super multi-drive <sup>5</sup>	Write/Read drive 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)	
RAS Terminal Board (UMP70)	DI 4 points, DO 4 points, remote input 2 points	
RAS Cable	Half pitch 20-pin male at both ends. Cable length 1 m or 2 m	
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)	FS20000S model 200/100 unit instruction manual, RAS support software instruction manual, RAID controller instruction manual	
Rubber foot	4 feet per set (for use on desktop)	

## 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) <sup>17</sup>	With HDD configuration: 2.0 m/s <sup>2</sup> (JIS C60068-2-6:9 to 150Hz 1 cycle)
		With SSD configuration: 4.9 m/s <sup>2</sup> (JIS C60068-2-6:9 to 150Hz 1 cycle)
	(While Packed)	19.6 m/s <sup>2</sup> or less
	Shock (Operating/While Packed)	19.6 m/s <sup>2</sup> or less / 245 m/s <sup>2</sup> or less
	Dust	0.3 mg/m <sup>3</sup> 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	

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

\*6 USB interface does not always guarantee the operation of all the USB devices.

\*7 Use connecting 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

\*8 PCI Express slot (half size) board size (167.65 mm (L) × 111.15 mm (H) or less) mountable.

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

\*9 PCI slot (full size) board size (312 mm (L) × 106.68 mm (H) or less) mountable.

\*10 To use the iKVM and the VM functions, it is necessary for you to set up the JRE (Java Runtime Environment).

\*11 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.

\*12 The instruction manual (bound booklet) is optional.

\*13 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. Pre-installed Windows is licensed.

\*14 Client Access License (CAL) includes five licenses of Windows Server CAL. It does not include CAL for other specific functions.

\*15 The maximum memory capacity supported by Windows Server® 2008 R2 Standard is 32 GB.

\*16 Since this is made to order, contact your Toshiba sales representative for delivery turnaround time.

\*17 Except while optical drive is in operation.