



Data Sheet

Graphic Cards for FUJITSU Desktop ESPRIMO


FUJITSU Desktop ESPRIMO are used for common office applications. To fulfill the demands of demanding applications, ESPRIMO Desktops can be ordered with either graphics on board or a graphics card plugged into an expansion slot.

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General

Fujitsu offers for its ESPRIMO Desktops different suppliers for graphic cards, which are selected carefully. Parameters like quality, availability and experiences play an important role.

The ESPRIMO Desktops feature on board graphics within their chipsets and/or processors. However, a range of optional graphic cards are available.

		NVIDIA GeForce GTX 1650 (available with FH bracket only)					
Description	Full height PCI Express Gen3 - graphics controller card						
Field of application	DX12.0 gaming support with high range performance. Smooth playing up to 2560x1440 resolution possible. Prepared for upcoming 8k displays with up to 7680x4320 resolution. All application with lowest noise during high graphic load.						
Mainboard interface	PCI Express x16 mechanical and electrical						
TV Interfaces	HDMI 2.0b, HDCP 2.2 support						
Connectors on graphic-board	2* DP 1.4 ready, 1* HDMI 2.0b						
Shipped adapters	-						
Possible monitor combinations	2*DP, 1*HDMI => three monitor interfaces (can be used simultaneously) DVI-D possible via DP / DVI adapter cable (optional) VGA possible via DP / VGA adapter (optional)						
Electrical power consumption	5W - 75Wmax (depending on graphic load)						
Technical specification	Local Frame Buffer: 4GB GDDR6, mounted on graphics board Graphics processor: GPU base = 1410 MHz, GPU boost = 1590 MHz Core Frequency Memory Frequency: 6000 MHz, 128bit memory interface DX12.0 support, OpenGL 4.5 DP 1.4, HDMI 2.0b HDCP 2.2 support (High Bandwidth Digital Content Protection) at all digital connectors Occupies 1 PCI Express slot						
Operating systems	Windows 10 Home / 10 Pro						
Dimensions (W x D in mm)	198mm x 112mm, one slot full height bracket						
Cooling solution	with fan						
Approvals	CE, VCCI (Released for Fujitsu systems only)						
Driver certification	Windows 10 Home, Windows 10 Pro						
Mainboard onboard graphic	DISABLED when using graphics card in main graphic slot Note: system BIOS settings can be changed to run graphics card and onboard graphics in parallel All resolutions dependent on display type 4:3 or 16:9 (additional resolutions possible depending on monitor EDID data) Color depth [bit/pixel]: up to 36bit						
Resolutions / Display types	Resolutions				Display type:		
		DP	HDMI	DVI	VGA	4:3 or 5:4	16:9 or 16:10
		x	x	x	x	x	
		x	x	x	x		x
		x	x	x1)	x	x	
		x	x	x	x		x
		x	x	x1)			x
		x	x				x
		x	x				x
		x	x				x
		x					x

1) Needs DP to DUAL Link DVI adapter

		NVIDIA GeForce RTX 3070 8GB (available with FH bracket only)					
Description	Full height PCI Express Gen4 - graphics controller card						
Field of application	DX12.2 gaming support with highest possible performance. Smooth playing up to 3840x2160 resolution possible. Support for 8k displays with up to 7680x4320 resolution. All application with lowest noise during high graphic load.						
Mainboard interface	PCI Express x16 mechanical and electrical						
TV Interfaces	HDMI 2.1, HDCP 2.3 support						
Connectors on graphic-board	3* DP 1.4a, 1* HDMI 2.1						
Shipped adapters	-						
Possible monitor combinations	3*DP, 1*HDMI => four monitor interfaces (four can be used simultaneously) DVI-D possible via DP / DVI adapter cable (optional) VGA possible via DP / VGA adapter (optional)						
Electrical power consumption	10W - 250Wmax (depending on graphic load)						
Technical specification	Local Frame Buffer: 8GB GDDR6, mounted on graphics board Graphics processor: GPU base = 1500 MHz, GPU boost = 1725 MHz Core Frequency Memory Bandwidth: 448 GB/s, 256bit memory interface DX12.2 support, OpenGL 4.6 DP 1.4a, HDMI 2.1 HDCP 2.3 support (High Bandwidth Digital Content Protection) at all digital connectors Occupies 1 PCI Express slot electrical (mechanical 2 slots)						
Operating systems	Windows 10 Home / 10 Pro / Windows 11						
Dimensions (W x D in mm)	267mm x 112mm, two slot full height bracket						
Cooling solution	With 1 fan						
Approvals	CE, VCCI (Released for Fujitsu systems only)						
Driver certification	Windows 10 Home, Windows 10 Pro, Windows 11						
Mainboard onboard graphic	DISABLED when using graphics card in main graphic slot						
	All resolutions dependent on display type 4:3 or 16:9 (additional resolutions possible depending on monitor EDID data) Color depth [bit/pixel]: up to 36bit						
Resolutions / Display types	Resolutions				Display type:		
	DP	HDMI	DVI 1)	VGA 2)	4:3 or 5:4	16:9 or 16:10	
	x	x	x	x	x		
	x	x	x	x		x	
	x	x	x	x	x		
	x	x	x	x		x	
	x	x	x			x	
	x	x				x	
	x	x				x	
	x	x				x	

- 1) Needs DP to DUAL Link DVI adapter
- 2) Needs DP to VGA
- 3) 8k @60fps or 4k @120fps requires High-Speed HDMI 2.1 cable

		NVIDIA Quadro P400 2GB (available w/ LP or FH bracket)						
Description	Low Profile PCI Express 3.0 x16 - graphics controller card							
Field of application	2 GB of GPU memory makes it easy to manage complex 2D and 3D models. Support for three 5K displays (5120x2880 @ 60Hz) or one 8K plus one 5K displays with HDR color gives you a wide visual workspace to view your work in extremely high resolution.							
Mainboard interface	PCI Express x16							
TV Interfaces	-							
Connectors on graphic-board	3*miniDP							
Shipped adapters	-							
Possible monitor combinations	miniDP, miniDP, miniDP => three monitor support Up to 3*DP possible via miniDP to DP adapter cable (optional) Up to 3*DVI-D possible via Display Port / DVI-D adapter cable (optional) Up to 3*HDMI possible via Display Port /HDMI adapter (FTS accessories) Up to 3*VGA possible via Display Port /VGA adapter (FTS accessories) Any combination of all interfaces possible							
Electrical power consumption	5W - 30 Wmax (depending on graphics load)							
Technical specification	Local Frame Buffer: 2GB GDDR5, mounted on graphics board Graphics processor: 1227 MHz Core Frequency Memory Frequency: 2000 MHz, 128bit memory interface Peak Memory bandwidth: Up to 32 GB/s DX12.1 support, OpenGL 4.5 DP 1.3 (DP 1.4 ready) HDCP 2.2 support (High Bandwidth Digital Content Protection) at all digital connectors							
Operating systems	Windows 10 Home / 10 Pro							
Dimensions (W x D in mm)	154mm * 69mm (without bracket dimensions)							
Cooling solution	Active							
Approvals	CE, FCC, ICES, RCM, BSMI, KC, UL, VCCI							
Driver certification	Windows 10 Home, Windows 10 Pro							
Mainboard onboard graphic	DISABLED when using graphics card in main graphic slot							
	All resolutions dependent on display type 4:3 or 16:9 (additional resolutions possible depending on monitor EDID data) Color depth [bit/pixel]: 8/16/32							
Resolutions / Display types	Resolutions				Display type:			
	DP	HDMI	DVI	VGA	4:3 or 5:4	16:9 or 16:10		
	x	x	x	x	x			
	x	x	x	x		x		
	x	x	x	x	x			
	x	x	x	x		x		
	x	x	x			x		
	x	x				x		
	x						x	



		NVIDIA T400 2GB (available w/ LP or FH bracket)					
Description	Low Profile PCI Express 3.0 x16 - graphics controller card						
Field of application	2 GB of GPU memory makes it easy to manage complex 2D and 3D models. Support for three 5K displays (5120x2880 @ 60Hz) or one 8K plus one 5K displays with HDR color gives you a wide visual workspace to view your work in extremely high resolution. It is possible to combine up to 4 NVIDIA T400 cards in one system to create big mosaic configurations for e.g. a display wall.						
Mainboard interface	PCI Express x16						
TV Interfaces	-						
Connectors on graphic-board	3*miniDP						
Shipped adapters	-						
Possible monitor combinations	miniDP, miniDP, miniDP => three monitor support Up to 3*DP possible via miniDP to DP adapter cable (optional) Up to 2*DVI-D possible via Display Port / DVI-D adapter cable (optional) Up to 2*HDMI possible via Display Port /HDMI adapter (Fujitsu accessories) Up to 2*VGA possible via Display Port /VGA adapter (Fujitsu accessories) Any combination of all interfaces possible						
Electrical power consumption	5W - 30 Wmax (depending on graphics load)						
Technical specification	Local Frame Buffer: 2GB GDDR6, mounted on graphics board Graphics processor: GPU base = 420 MHz, GPU boost = 2100 MHz Core Frequency Memory Frequency: 2500 MHz, 64bit memory interface Peak Memory bandwidth: Up to 80 GB/s DX12.1 support, OpenGL 4.6 DP 1.2 certified (DP 1.3 and DP 1.4 ready) HDCP 2.2 support (High Bandwidth Digital Content Protection) at all digital connectors						
Operating systems	Windows 10 Home / 10 Pro / Windows 11						
Dimensions (W x D in mm)	154mm * 69mm (without bracket dimensions)						
Cooling solution	With 1 fan						
Approvals	CE, FCC, ICES, RCM, BSMI, KC, UL, VCCI						
Driver certification	Windows 10 Home, Windows 10 Pro, Windows 11						
Mainboard onboard graphic	DISABLED when using graphics card in main graphic slot						
	All resolutions dependent on display type 4:3 or 16:9 (additional resolutions possible depending on monitor EDID data) Color depth [bit/pixel]: 8/16/32						
Resolutions / Display types	Resolutions				Display type:		
	DP	HDMI	DVI	VGA	4:3 or 5:4	16:9 or 16:10	
	x	x	x	x	x		
	x	x	x	x		x	
	x	x	x	x	x		
	x	x	x	x		x	
	x	x	x			x	
	x	x				x	
	x					x	
	x					x	
	x					x	

	AMD Radeon Pro WX3200 (available w/ LP or FH bracket)
See AMD link	https://www.amd.com/system/files/documents/radeon_wx_3200_datasheet.pdf

Benchmarks

The data reflects laboratory performance only. The customer configuration may perform differently, depending on the software, components and peripherals used.

The benchmark results are derived from 3DMark Firestrike Scores and reflect the graphic score performance results.

Graphics controller	3DMARK (Firestrike graphic perf.)
NVIDIA GeForce RTX 3070 *	32.500
NVIDIA GeForce RTX 2080 Ti * (only as reference)	32.000
NVIDIA GeForce RTX 2060 * (only as reference)	20.000
NVIDIA GeForce GTX 1650 *	10.000
AMD Radeon Pro WX3200 *	5.300
NVIDIA T400 *	4.000
NVIDIA Quadro P400 *	2.100
Intel® processor graphics	3DMARK (DX11)
Intel® Core™ i7-10700 processor ** (only as reference)	2.100
Intel® Core™ i5-10500 processor ** (only as reference)	2.000
Intel® Core™ i3-10100 processor ** (only as reference)	1.850

* Test system for graphics cards:

FUJITSU Celsius M770	D3498
Processor	Xeon W2125
System Memory	2 x 8 GB DDR4
Storage	SSD 256 GB
Driver Nvidia graphics:	442.19
Turbo boost:	off
Hyperthreading	off

** Test system for Intel processor graphics

FUJITSU Desktop ESPRIMO P9910	D3812-A13
Processor	see table above
System Memory	2 x 4 GB DDR4-3200MHz
Storage	SSD 256 GB
3DMark 2011	Performance Score (Prof)
OS	Windows® 10 Pro – 20H2
System BIOS Version	latest
Driver	latest

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