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Fujitsu ESPRIMO PCs

Pertti Vitikainen Fujitsu Finland Product Business Manager Product Business Unit

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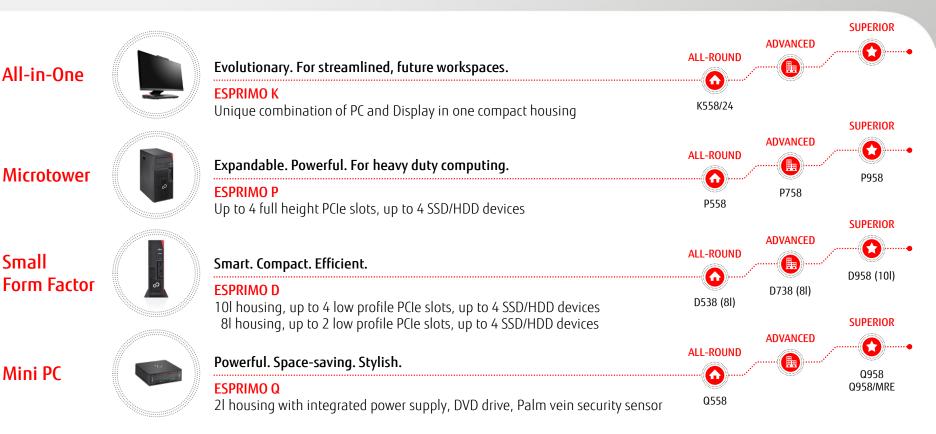
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Fujitsu ESPRIMO Desktop Portfolio

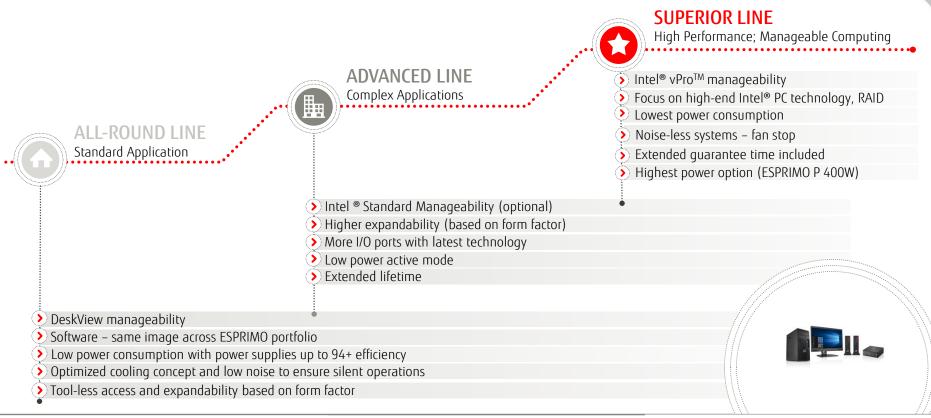




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The right feature-set for all purposes





SSD Mirroring to Save Valuable Data





Save your valuable data with SSD mirroring (RAID 1):

RAID 1 = data is stored simultaneously on two SSD mass storage devices

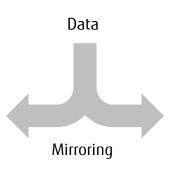
In case of SSD hardware defect, the data remain available on the 2nd, mirrored SSD – no data loss!

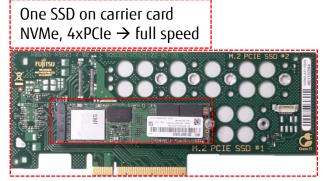
No compromise in speed – high-speed NVMe SSDs supported

Available pre-installed from factory for ESPRIMO D958, P958

```
One SSD onboard
NVMe, 4xPCIe \rightarrow full speed
```







What's New in ESPRIMO D - 8 I SFF





Key Highlights – ESPRIMO D 8l

- Latest Intel® Chipset technology
- Smaller system with 8I housing and still ultimate expandability (2 slots)
- Faster connection with USB 3.1 gen2
- Improved connectivity
- Support of new USB Type C
- SD card reader (option)
- VGA connector (option)
- Intel[®] Standard Manageability (ISM) as option
- High security with integrated options SmartCard reader, Cabinet lock with Master key option
- Best serviceability with tool-less functions
- Reduced environmental impact low power consumption, less material
- Switch on the system with keyboard



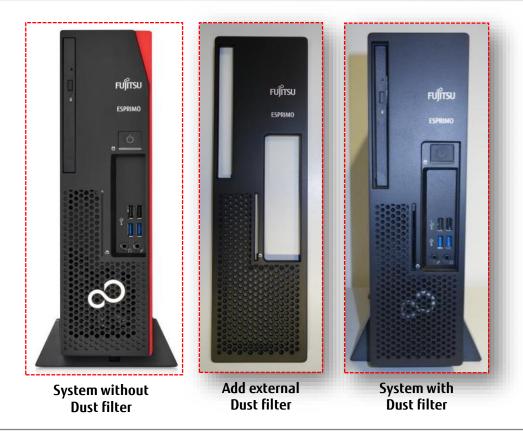
Customer Usability





Dust Filter for 8l System





System with Dust filter

- Tested based on Mil-Std-810G Standard for Sand and dust *1)
- Tested with specially adapted test based on IP6 conditions to test standard usage scenario
- Dust filter mesh opening >150µm

Advantage

Reduces dust intake in harsh or dusty environments



- Easy to clean from outside
- Usage scenario (in special environments):
 - Storage
 - Garage
 - Shop
- BIOS feature reminder to exchange the filter

*1) MIL-STD is not intended to demonstrate fitness for department of defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions.

Professional performance & high-end manageability in the mini PC ESPRIMO Q Line





Fully fledged mini PC With optical drive and integrated power supply



8th Gen Intel[®] Core[™] Processors with up to 6 cores and 12 threads Latest Intel[®] technology to support your challenging business applications



Multi-bay concept

Supports flexible choice of bay devices including SmartCard reader and PalmSecure™ sensor (for Q958)



Lowest power consumption

Needs only 5–7 watts in idle-mode and less than 4–5 Watts in Low Power Active Mode



Integrated VESA mount For a tidier workspace



Connectivity

Latest generation USB technology Type C connector (for Q958)



Q558



Ultra-compact Business Mini PC

New ESPRIMO G558



FUJITSU

shaping tomorrow with you



shaping tomorrow with you Video ESPRIMO G558 Klikkaa tästä !



ESPRIMO G558 – Small yet Grand



Great things do come in small packages!

Ultra compact design; space saving on desk

Desktop performance in an **ultra-small design**; **96% smaller than traditional desktop PCs**; **0.86L** only; 20 ESPRIMO Gs can fit into one ESPRIMO P (microtower)

Wide range of mounting options and usage scenarios

VESA mounting at the back of a display; wall mount; attach/mount under the desk; horizontal/vertical usage

Powerful features

Latest 8th Gen Intel[®] processors; dual display support; DDR4 2666 MHz memory; M.2 support, SSD PCI Express[®] NVMe; advanced security features (embedded TPM, Kensington Lock support, optional EraseDisk); single wire USB Type-C power & display connection ESPRIMO G558 mounted to an 8th Generation professional display using new mounting plate

Modular design that helps you transform your workplace

Create your own **"All-in-One" PC setup**; supports up to two display; easy-to-service design for convenient hardware customization/upgrades

Made in Germany;

Designed, developed, tested as well as produced in our own factory in Augsburg to meet exacting Fujitsu standards & exceed industry requirements

Ultimate quality and reliability

Frees up desk space and helps realize clean, elegant desk (clean desk concept; reduced cable clutter; flexibility with screens/displays, keyboards)

> Ideal for modern offices and workplaces of tomorrow



Latest Intel[®] 8th Gen

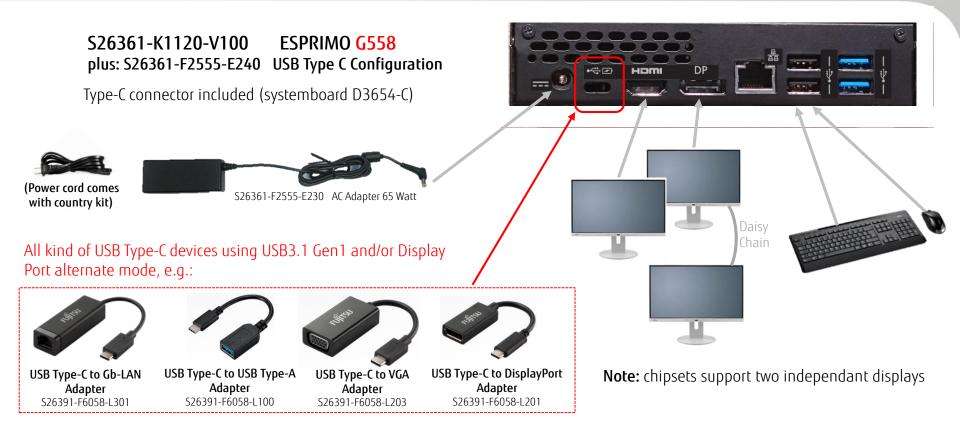
(intel)

inside

processors deliver superb enterprise-level performance

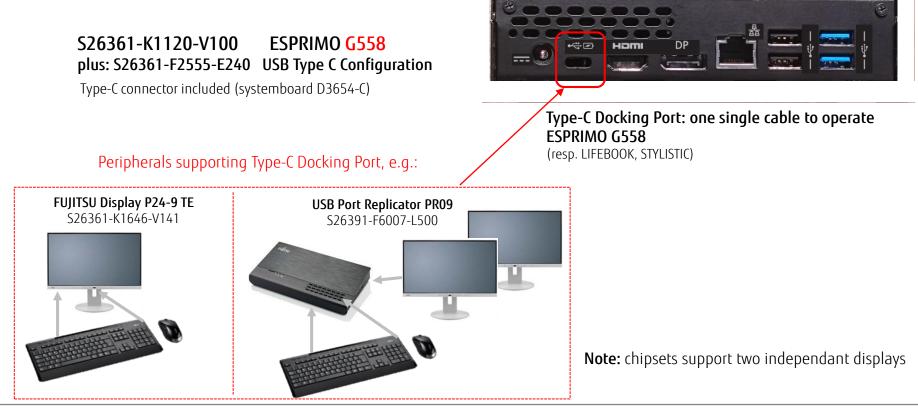
Connectivity (Type-C Option)





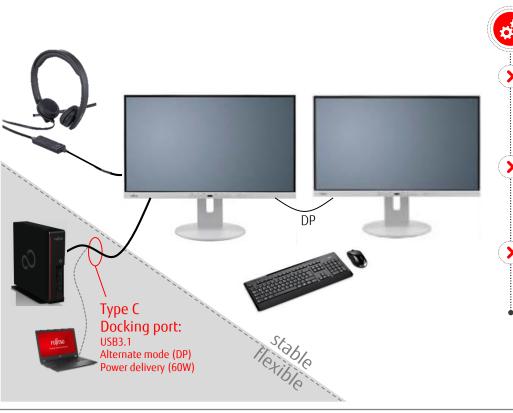
Connectivity (Type-C / Docking Port Scenario)





ESPRIMO G558, Ultra-small Business Mini PC Innovation: Type-C Docking port

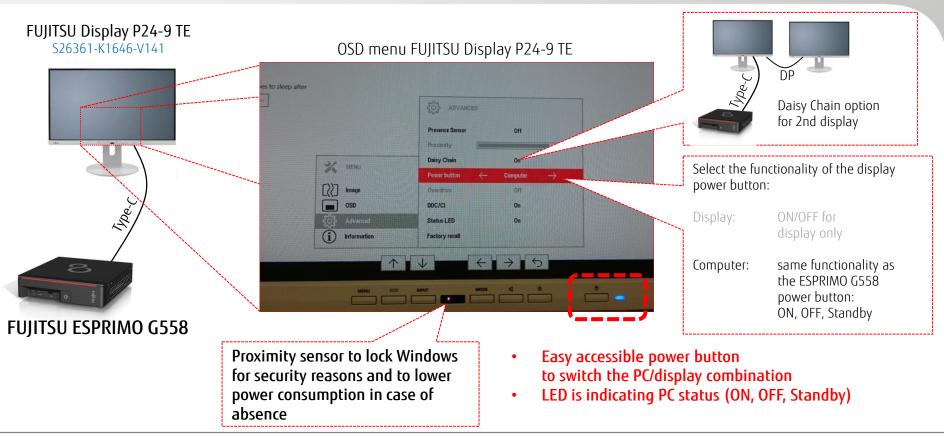




- **New workplace scenario with G558** Display is the Hub for all cables; ESPRIMO G558 is connected with a single cable
- ESPRIMO G supports new workplace scenarios with a single Type-C connection – **Type-C Docking port** for Future Workplace, Clean Desk & AiO-like usage
- Designed for the office of tomorrow/ modern workplace environment

All-in-One (AiO) like Operation with Display P24-9 TE





CELSIUS Workstations

Fujitsu CELSIUS Workstation for Digital Content Creation

Pertti Vitikainen Product Business Manager Fujitsu, Product Business Unit





What is a Workstation

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Choose Your Hardware Wisely





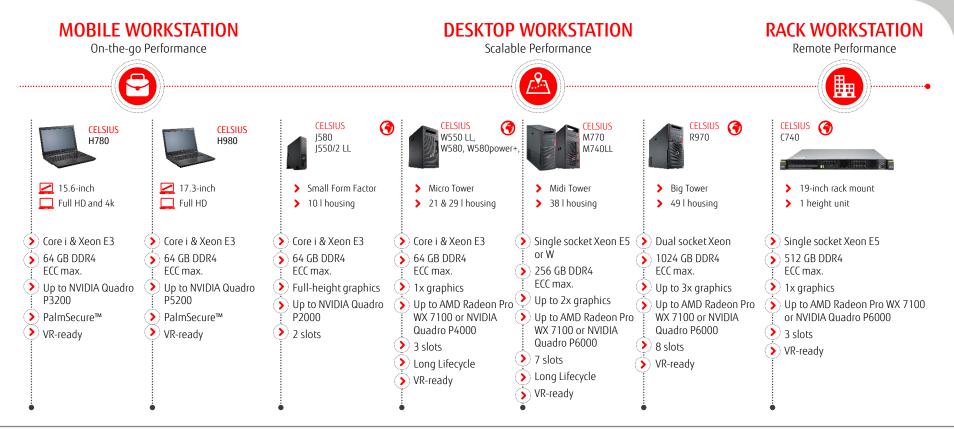
Workstations Are Used In Every Vertical Field



Key application fields		Typical industries	Key applications	FUJITSU ISV CERTIFICATIONS
CAD	Computer Aided Design	 All manufacturers (i.e. automotive, aerospace, etc.) 	 Autodesk (AutoCAD, Inventor) Dassault Systèmes (CATIA, SOLIDWORKs) PTC (Creo) 	
CAE & SIM	Computer Aided Engineering & Simulation	All industries	 ANSYS (Fluent, CFX) Autodesk (Revit) MSC Software (Nastran) Siemens PLM (NX, Teamcenter) 	AUTODESK
AEC	Architecture, Engineering & Construction	 Plants Shipbuilding Tunnels and bridges Urban planning 	Autodesk (Revit)Bentley (Microstation)Nemetschek (Allplan)	S BASSAWLT
M&E	Media & Enter- tainment	 Broadcasting Film and animation studios Agencies Marketing 	 Adobe (Premiere Pro) Autodesk (Maya, 3ds Max) Avid (Media Composer) 	Siemens PLM Software
GIS, 0&G	Geographic Information System, Oil & Gas	 Defense and government Science and research Cartography Transportation 	 ESRI (ArcGIS) Intergraph (Geomedia) Halliburton (Landmark) Schlumberger (Petrel) 	
HEALTHCARE		 Medical OEMs Chemistry and Pharmacology Hospitals Biotechnology 	 Dassault Systèmes (Simulia) Mostly in-house developed software 	

CELSIUS Workstation Portfolio





FUJITSU Workstation CELSIUS H780 "Mobile Workstation Meets Security"





Latest Technology	 Intel[®] Xeon[®] E processors Up to 64 GB DDR4 2400 MHz memory (ECC optional) 2x M.2 SSDs (PCIe NVMe & SATA) NVIDIA[®] Quadro[®] graphics cards up to P3200 (1792 CUDA[®] cores)
Stop searching for an adapter	Thunderbolt™ 3, HDMI and VGA
Worry-free docking experience	Dedicated mechanical port replicator or Thunderbolt 3 port replicator
Maximum security	PalmSecure™, SmartCard and TPM 2.0

FUJITSU Workstation CELSIUS H980 "Bringing VR to the Streets"



Do your post-productions in the field, create astounding designs and visualize them in VR

PalmSecure



True desktop replacement	 17.3" Full HD anti-glare display Up to 64 GB DDR4 memory (dual channel) Dual M.2 SSDs PCIe NVMe technology High-End NVIDIA[®] Quadro[®] Pascal graphics cards up to 2560 CUDA cores
Stop searching for an adapter	Thunderbolt™ 3 port replicator 2x Thunderbolt™ 3 (incl. power delivery), 1x VGA and 1x full-size DisplayPort
We are (VR) ready	Enjoy a fully immersive, real-time mobile VR experience with the NVIDIA® Quadro® P3200, P4200 and P5200 graphics cards
Easy serviceability	Service door at the bottom
Maximum security	PalmSecure™, SmartCard and TPM 2.0

Fujitsu PalmSecure™



!Pertt1@T0lv00OLeVan5A@MAa1ImanyMpAr1MatKa55A!#

Built-in Palm vein sensor

The use of biometric technology increases massively the security for many different applications and further simplifies the necessary procedures plus reduces costs

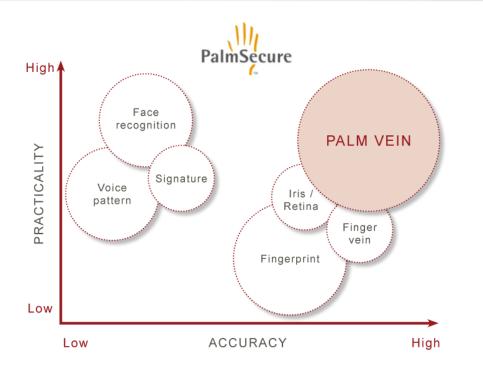
- Fast, reliable, hygienic and easy-to-use biometric authentication product
- Utilizes vein pattern information that resides in a palm and creates a unique biometric signature for accurately verifying a person's identity

The safest, the most accurate and the most practical !



Fujitsu PalmSecure The Industry's Most Secure Authentication Method





http://www.fujitsu.com/global/solutions/business-technology/security/palmsecure/

Authentication Method	FAR (%) =	IF FRR (%) =
Face recognition	~ 1.3	~ 2.6
Voice pattern	~ 0.01	~ 0.3
Fingerprint	~ 0.001	~ 0.1
Finger vein	~ 0.0001	~ 0.01
lris/retina	~ 0.0001	~ 0.01
Fujitsu PalmVein	< 0.00001	~ 0.01



CELSIUS H780 and H980 – Port Replicator Offering



CONNECTIVITY	Mechanical Port Replicator	Thunderbolt 3 Port Replicator
Compatibility	CELSIUS H780	CELSIUS H780, H980
Design		Connectivity via a cable
Audio Interfaces	1x line-in, 1x line-out	1x line-in, 1x line-out
USB ports	2x USB Type-C 3.1 (gen1), 4x USB Type-A 3.1 (gen1)	1x Thunderbolt™ 3 2x USB 3.0, 2x USB 2.0
Display support	2x DP, 1x VGA, 1x DVI-D	2x DP, 1x VGA, 1x DVI-D
Kensington Lock	yes	n/a
LAN/Ethernet	1 (RJ45 1000Base-TX, 100Base-T, 10Base-T) System LAN controller	1 (RJ45, Broadcom BCM57762, 1000Base-TX, 100Base-T, 10Base-T)
eSATA		n/a
Dimensions (W x D x H)	405 x 94 x 28	380 x 47 x 22
Weight		
AC Adapter	3-pin 19V/330W	2-pin 19V/65W
Charging	yes	no
Benefit		



FUJITSU Workstation CELSIUS J580 "Maximum Warp in a SFF"



Optimized for video editing, CAD, Architecture, Engineering and Construction, Finance and Healthcare

	The smallest member of the CELSIUS family	52% smaller form factor than the CELSIUS W580
	Innovative full height 10 liter design	 Full-height graphics cards up to the NVIDIA[®] Quadro[®] P2000 PCI slot support
	Small but yet performant	 Up to Intel[®] Xeon[®] processor Intel[®] Xeon[®] E-2100(G) (up to 6 cores, 4.70 GHz) Memory: up to 64 GB DDR4 2,666 MHz Storage: up to 14 TB
	Whisper quiet design	Low noise emissions lead to a silent workplace and enhanced productivity
	NOTICE ! Full hight graphics, ev	Up to 8 monitors with the NVIDIA® Mosaic™ en Quadro P2000

FUJITSU CELSIUS M770 & M770power "Bring Your Ideas To Life"



Optimized for high-end CAD, CAE and media & entertainment applications

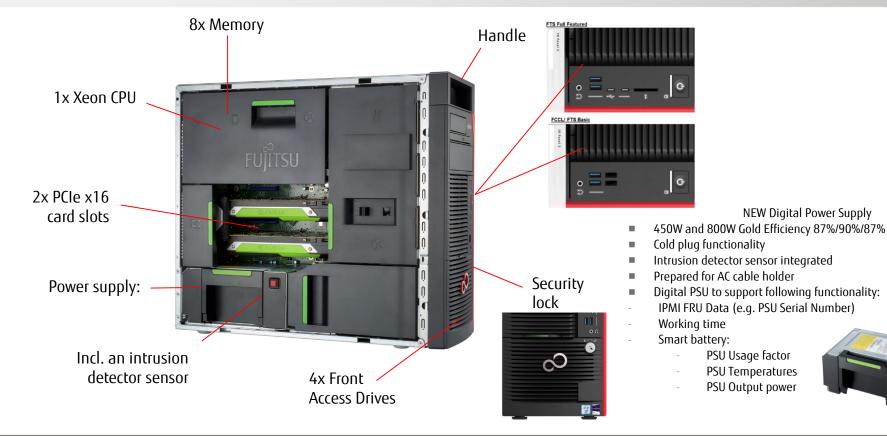


VR EADY	

	New, Innovative Design	New chassis and new component layout for improved usability, expandability and serviceability
	Latest Technology	1 st generation Intel [®] Xeon [®] Processor W family up to 10 cores or 4.5 GHz NVIDIA [®] Quadro [®] Pascal up to P6000 (VR- ready) and AMD Radeon Pro up to WX 5100
	Excellent serviceability	Integrated handles and easy access to service replaceable parts like storage, power supply, PCI cards or memory as well as to the systemboard
	Whisper Quiet @ 20 dB(A)	Thanks to Air Duct: the intelligent 3- channel thermal management concept
	Rack mountable (4U)	For datacenter use incl. secure PCoIP access

CELSIUS M770 New Housing Concept





CELSIUS M770 – Whisper Quiet Tri-Channel Thermal Management Concept





SMART USABILITY

- New housing design
 - 2% smaller than the previous generation
 - Clean and cable-free internal structure
 - I/O interfaces at the front 2 options
 - Rack mountable (with rails) => reduction from previously 5U to 4U

Easy serviceability:

- Modular structure
- Green touchpoints
- Easy change of storage, cold-plugtechnology, as well as power supply and systemboard
- Smart Power Supply (see sep. slide)
- Security:
 - Optional security lock
 - Intrusion integrated in the power supply

FUJITSU CELSIUS R970 "Unleash The Monster Inside"



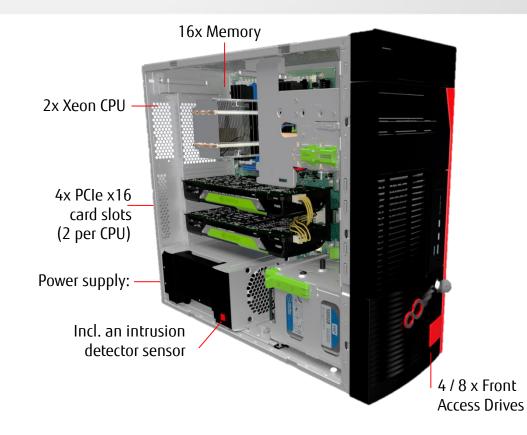
Optimized for extremely demanding (high-end design, simulation, engineering, analysis) and memory intensive multi-threaded applications. Ideal for Personal Supercomputing.



	Latest Technology	1 st generation Intel [®] Xeon [®] Processor Scalable Family up to 28 cores or 4.1 GHz NVIDIA [®] Quadro [®] Pascal up to P6000 (VR- ready) and AMD Radeon Pro up to WX 5100
Fujirsu	IT Made in Germany	Designed to work in a 24/7 operating environment. Design, BIOS, motherboard, testing and production in Germany
	Whisper Quiet @ 23 dB(A)	Thanks to Air Duct: the intelligent tri- channel thermal management concept
	Ultimate performance	Highest benchmark scores with SPECwpc in 5 out 6 test suites
	Rack mountable (5U)	For datacenter use incl. secure PCoIP access. Windows [®] Server 2016 support

CELSIUS R970





NEW Digital Power Supply

- 1000W and 1300W Gold Efficiency 87%/90%/87%
- Cold plug functionality
- Intrusion detector sensor integrated
- Prepared for AC cable holder
- Digital PSU to support following functionality:
- IPMI FRU Data (e.g. PSU Serial Number)
- Working time
- Smart battery:
 - PSU Usage factor
 - PSU Temperatures
 - PSU Output power



CELSIUS M770/R970 New Technology – Virtual RAID on CPU **(VROC)**



XEON Scalable Processor (CELSIUS R970) or XEON W-21xx (CELSIUS M770) x16 PCle x4 PCle SSD PCle x4 M.2 NVMe or SSD PCle x4 U.2 2.5" NVMe



Virtual RAID on CPU (VROC)

- Based on VMD (Intel Volume Management Device) Technology
 - CPU-hosted management and aggregation of NVMe SSDs
- Full-featured hardware-based RAID
- Enables bootable RAID for PCIe NVMe SSDs

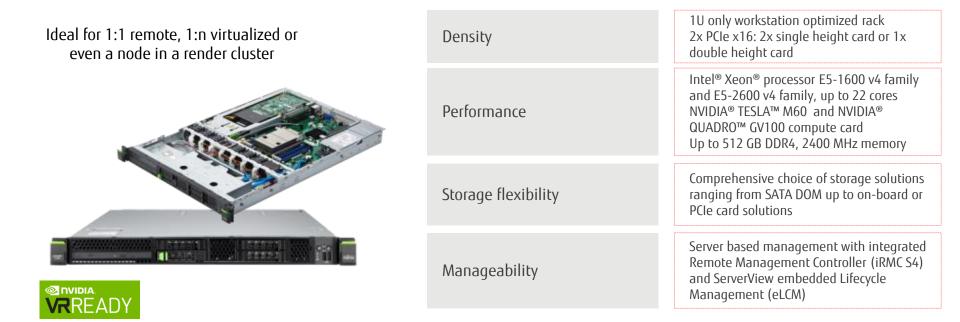
Only with PCIe NVMe highEnd card !

VROC options and requirements

- 1. Intel VROC HW key Standard M.2 or U.2 (launch 2/2018)
 - Intel VROC HW key Standard M.2 RAID level 0, 1, 10
 - Intel VROC HW key Standard U.2 RAID level 0,1,10,5
 - 2x PCIe SSD NVMe on Highend Card or 2. U.2 PCIe SSDs

FUJITSU Workstation CELSIUS C740 "1U Performance From Virtually Anywhere"





Graphics

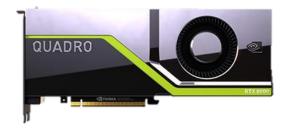


New generation NYIDIA TURING

17 A. A. A. A. A.

NVIDIA Lineup



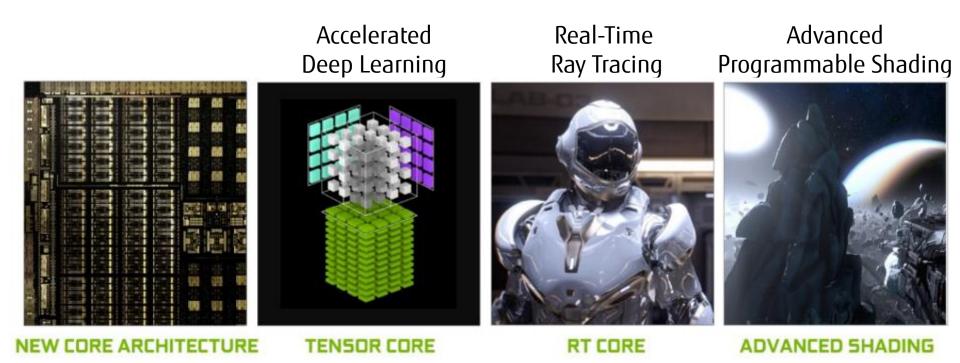








TURING reinvents Graphics with an entirely new architecture



NVIDIA RTX

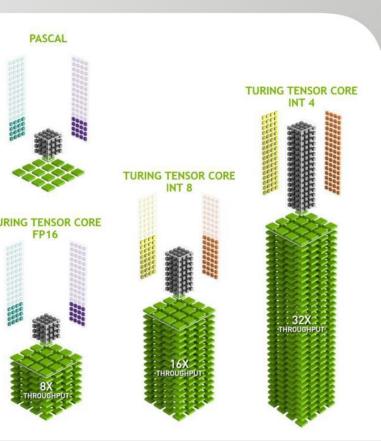






NVIDIA QUADRO RTX: TURING TENSOR CORES

- Next Generation of Hardware Accelerated Deep Learning
- First introduced in Volta GPUs (e.g. QUADRO GV100)
- Hardware acceleration of deep learning enabled tools, frameworks and applications
- Turing Tensor Cores support additional precision modes and new DL math instructions
- Improved inferencing performance of trained neural networks
- Applications access Turing Tensor Cores through CUDA or NVIDIA DL SDKs

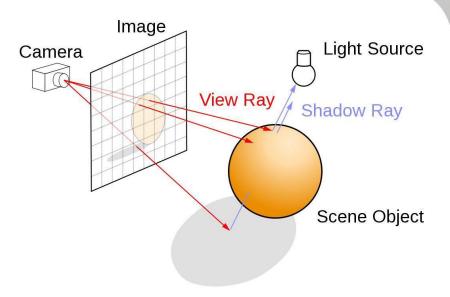




NVIDIA QUADRO RTX: RAY TRACING

What is Ray Tracing?

- rendering technique for creating an image by tracing the path of light from a view port, as pixels in an image plane
- Simulates the behavior of light in a scene in a physically and visually realistic way
- Produces an accurate model of the real world
- Computationally intensive, huge number of rays and reflections of rays
- \rightarrow powerful GPU required to minimize the rendering waiting time ("coffe cup break")

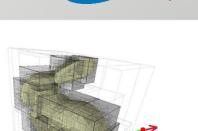




NVIDIA QUADRO RTX: TURING RT CORES

Hardware Accelerated Tracing of Rays Through the Scene

- Hardware Accelerated rendering reduced the rendering time
- Real-Time ray tracing in the application viewport
- Multiple RT Cores per GPU scales with GPUs
- Applications access RT Cores through OptiX, DXR and Vulkan APIs







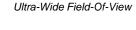
NVIDIA QUADRO RTX: TURING VIRTUAL REALITY

Turing GPU features enhanced VR

- Ray Tracing and variable rate shading enhance visual quality
- Multi-View Rendering provides wider field of view, support for next-gen HMDs
- RT Cores provide for accurate acoustic simulations
- VirtualLink[™] makes VR set up easier with single cable connection

Visual Quality

Acoustic Simulation









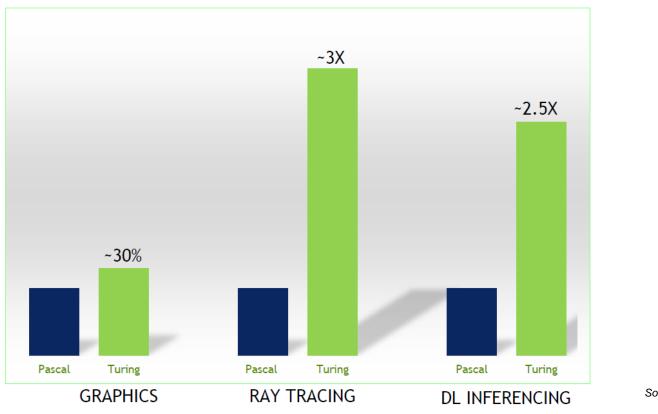
Easy Setup





NVIDIA QUADRO RTX: PERFORMANCE PROJECTION





Source: NVIDIA *actual performance TBD

#1 Channel Tool = Workstation Finder

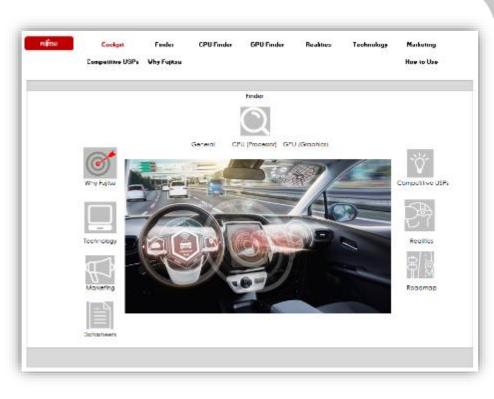


Versions:

Status quo: Version 5.0 from December

News:

- New design & updated information
- Work in progress: workflow for workstation SKUs / pre-set
- Planned: Alignment to PCA / VFY recommendation
- Ladattavissa Partner Portalista



NVIDIA – find the right graphic for software



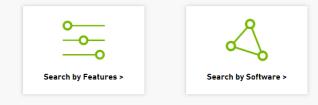
🧆 NVIDIA.

QUADRO SELECTOR TOOL

Here you can find the right graphics for your SW (and a lot of other interesting things)

FIND THE RIGHT NVIDIA PROFESSIONAL GRAPHICS SOLUTION

Welcome to the Configurator for NVIDIA Quadro® Graphics Cards. This tool will help you find the best Quadro for all your professional needs.



©2019 - EN / FR / DE / ES / IT / RU

http://www.quadro-selector.com/en

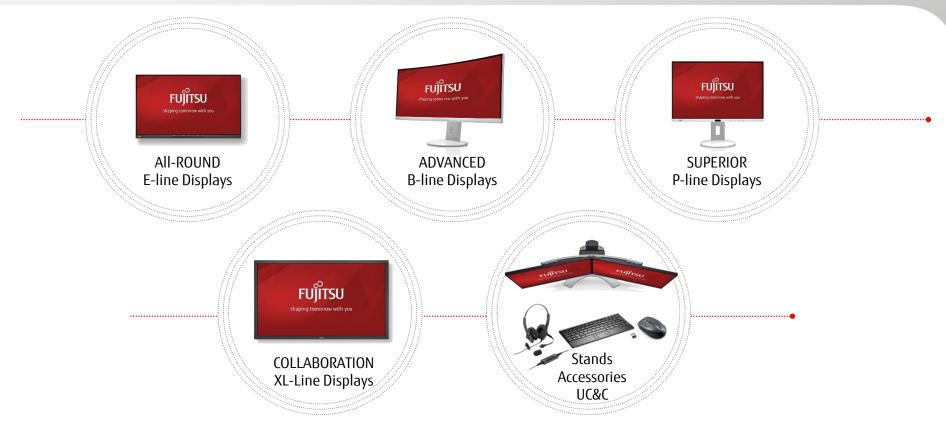
FUJITSU Displays

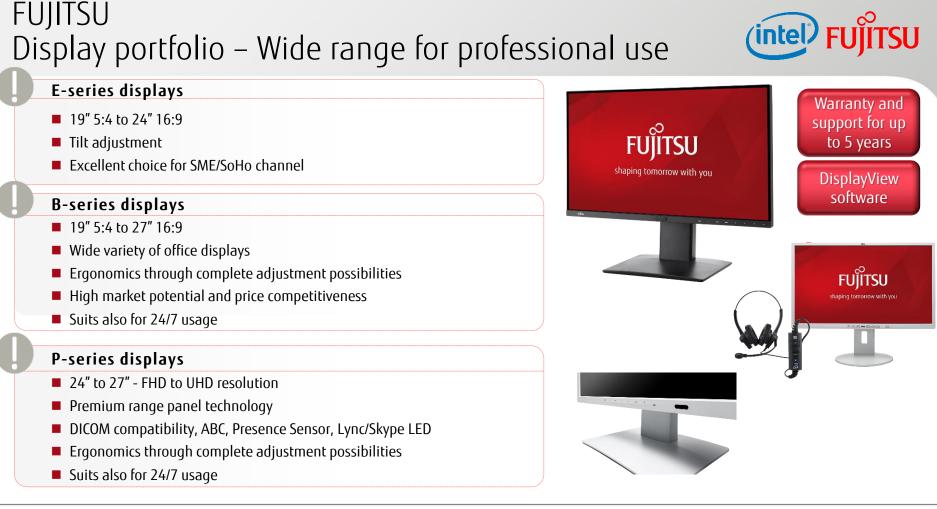
Displays Clean Desk Stands

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FUJITSU Displays Portfolio and Future Workplace Scenarios







Ultrawide Curved Display

FUJITSU Display B34-9 UE



FUJITSU Display B34-9 UE - Benefits



- 34 inch = 34% more viewable area and pixel than 27 inch QHD
- 21:9 format with 1900R curvature provides uniform focal view

Why curved?

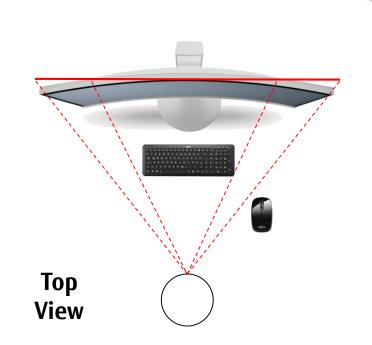
- Homogenous viewing distance from edge to edge
- Reduces focus adoption efforts for human eyes to a minimum
- Optimum ergonomics for people who wear glasses

How does the 100Hz refresh rate help?

Better readability while scrolling or moving frames

Advantages over multi-monitoring scenarios?

- Larger canvas with no gaps and breaks in experience
- Space saving with up to 50% less space requirement as compared to two 27 inch monitors



(intel)

FUITSU

Uniform focal view and increased comfort

FUJITSU Display P24-9 TE - Features and Benefits

Features & Benefits

- 23.8 inch (60.5 cm) 16:9 widescreen display
 - Provides consistent clarity and a superior viewing experience
- USB Type C docking functionality and dual monitor support
 - Enables one cable connectivity with mobile PC ideal for shared desk scenarios
- Ultra-thin bezel design on 3 sides
 - Provides a uniform focal view and more viewing area for better ergonomics and increased comfort
- 5-in-1* stand base with integrated cable guide
 - Allows users to tilt, swivel, adjust height and rotate monitor display as per their comfort and working style

*The 5-in-one stand has the following features and functions: (1) height adjust, (2) tilt, (3) swivel, (4) pivot, (5) cable guide



Different views of P24-9 TE

DisplayView[™] V 2.0 Software – A Powerful Tool



B/P-Line | Start Screen Comfort for the ergonomic Workplace



💾 Display	′View™	FUJITS
∰ Brightness/Contrast	Connected displays	
Mode Mode	Connected displays	
Rotation		
Desktop Partitioning		
Presence Sensor	P24W-6 LED P24W-6 LED	
🌣 Profiles	🕸 Brightness/Contrast	
i Information		
	Brightness	100 🔔 🗌 Auto brightness ?
	Contrast 🛛 🚽	50
	Black level 💿 🚽	50
	Sharpness	50
		100 C
	Apply settings to all connected monitors ?	Undo
(i) (l)		

DisplayView[™] V 2.0 Software – A Powerful Tool





B/P-Line | Start Screen

Comfort for the ergonomic Workplace

Display\		. ×
Brightness/Contrast Mode Contrast Mode Desktop Partitioning Presence Sensor Profiles Information	Connected displays B34-9 UE Bightness/Contrast Brightness Contrast Contrast Black level Sharpness Sharpness Sharpness	
0	Apply settings to all connected monitors	

What's good for?

All adjustment for brightness, contrast, black level and sharpness can be done by mouse click. It is possible to apply settings to all connected displays. Individual and relative adjustments are possible too. The P-Line 'auto brightness' function can be activated by this page.

DisplayView[™] - Pivot





B/P-Line | Rotation Functions (Pivot)

Comfort for the ergonomic Workplace

Display\	/iew™			= × FUĴĨTSU
 Brightness/Contrast Mode Rotation Desktop Partitioning Presence Sensor Profiles Information 	Connected displays B34-9 UE Rotation Autom. Rotation 7			
•	0*	90°	180°	270*

How does it work?

P-Line:

 Automatic 'pivot' sensor can be activated. Without adjustments content will follow monitor orientation

B-Line:

The content need to be adjusted into the planned direction by mouse click before moving the display

DisplayView[™] - Desktop Partitioning





B/P-Line | Desktop Partitioning Menu

Comfort for the ergonomic Workplace

Display V	′iew™ <mark>FUjĩītsu</mark>
Brightness/Contrast Mode	Connected displays
Rotation Desktop Partitioning	
Presence Sensor	B34-9 UE
Profiles	Desktop Partitioning
I Information	
1	Use Desktop Partitioning with HotKey (Left control)

Many APPs and tidy screen?

The partitioning manger is easy opportunity to split your desktop into pre-defined partitions (windows). Select your preferred design, pick an APP and move to the favorite position. The APP automatically will be adjusted into the selected window.

If there no favorite pattern available - you easy can create own design.

DisplayView[™] - Sensor Support





B/P-Line | Presence Sensor

Comfort for the ergonomic Workplace

 Brightness/Contrast Mode 	Presence Sensor		
Rotation	 Activate presence detection 		
Desktop Partitioning	Presence sensor status:		Active monitor:
Presence Sensor	Sensor not recognised		
🗘 Profiles			
i Information	Safety:		
	Lock PC when absent	1	0 Seconds after dimming the monitor
	Power saving:		
	Power saving when absent	11	0 Minutes after dimming
	Read/presentation mode:		
	Leave PC active when present		
			Undo Save

What's good for?

The sensor need to be activated at the monitors OSD (On-Screen-Display). The software opens advanced functions in case of absent user:

- Lock PC: security feature, activate PC password inquiry
- Power saving:

PC will be send into S3 status. Wake-up only possible by PC's power key

DisplayView[™] - Profiles





B/P-Line | Individual pre-sets

Comfort for the ergonomic Workplace

Display	′iew™		FUĴÎTSU
Brightness/Contrast Mode Rotation Desktop Partitioning Presence Sensor Profiles Information	Connected displays Image: B34-9 UE B34-9 UE B34-9 UE Profiles Save current settings of the currently selected monitor as a profile: Enter the profile name Load or delete profile/settings for currently selected monitor Select profile - Factory settings	Save Load Delete	
1			

What's good for?

It's possible to create and use one or more individual profiles. Factory setting can 'reset' your choices.

DisplayView[™] - Information





B/P-Line | Overview Comfort for the ergonomic Workplace

Display V	∕iew™	- × FUjîtsu
Brightness/Contrast Mode Rotation Desktop Partitioning Presence Sensor Profiles Information	Connected displays EXAMPLE State St	Gamma value: 2,2 Red colour level: Rx 0.664 - Ry 0.329 Green colour level: Rx 0.366 - Gy 0.612 Blue colour level: Rx 0.306 - Gy 0.612
() (Monitor size: 800 x 340 mm	White point (standard): Wx 0.313 - Wy 0.331

What's good for?

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It's provides the full overview about all settings.

Ultra Productivity

FUJITSU Dual Monitor Stand

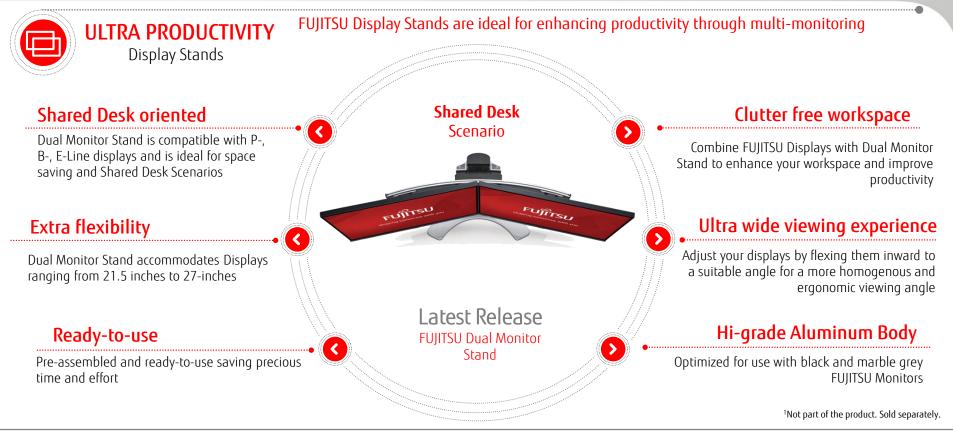






Stands - FUJITSU Dual Monitor Stand







Future Workspace

Innovative Workplace Solutions

Workplaces are driving innovation!

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Fujitsu, Product Business Unit

Risto työskentelee tänään fiksusti



FUJITSU

shaping tomorrow with you