

Panel PC Fanless

Panel PC systems with low power consumption, without ventilation, with Atom, Celeron ULV Core 2 Duo ULV processors, touchscreen, from 6.5" to 19" LCD display with plastic, aluminium or stainless steel front panel.

Possibility to integrate NETcore® X fieldbus cards.

Panel PC Performance

Panel PC systems providing computing power and high graphics capabilities, thanks to Pentium M and Core 2 Duo processors. Available with touchscreen, LCD display from 8.4" to 19" with plastic, aluminium or stainless steel front panel.

Possibility to integrate NETcore® X fieldbus cards.

PANEL PC

Performance

OT1300

OT1300 is the embedded fanless panel PC based on Intel® with Celeron M and Pentium M microprocessors up to 2GHz. Available in a wide range of LCD displays, from 8.4" to 19", also touchscreen, with aluminium or stainless steel front panels. The expandability is provided by a PCI slot, where ASEM NETcore® X communication cards can be installed. The integration with the Premium HMI 4 software platform and CODESYS SoftPLC allows the creation of visualization and control applications.

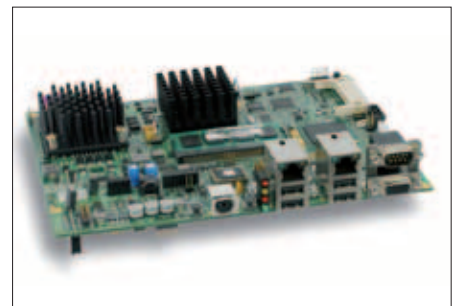


Photo 1: True-Flat stainless steel front

Photo 2: 1 PCI slot

Photo 3: Intel® Celeron M and Pentium M Microprocessors up to 2GHz

FEATURES PLUS

- ✓ 1 PCI/PC104PLUS SLOT FOR ADDITIONAL CARDS
- ✓ OPTIONAL TRUEFLAT FRONT PANEL IN STAINLESS STEEL
- ✓ 4 OPTIONAL PROGRAMMABLE FRONT KEYS
- ✓ DATA STORAGE ON SSD/CF/HDD

System characteristics									
Display	Size	8,4"	10,4"	12,1"	12,1"	15"	17"	19"	
	Type	Color LCD TFT	Color LCD TFT	Color LCD TFT	Color LCD TFT	Color LCD TFT	Color LCD TFT	Color LCD TFT	Color LCD TFT
	Resolution	800x600 (SVGA)	800 x 600 (SVGA)	800x600 (SVGA)	1024x768 (XGA)	1024x768 (XGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)
	Colors	16M	256K	16M	16M	16M	16M	16M	16M
	Pixel pitch	0,213x0,213mm	0,264 x 0,264mm	0,307 x 0,307mm	0,240x0,240mm	0,297 x 0,297mm	0,264 x 0,264mm	0,294 x 0,294mm	0,294 x 0,294mm
	Backlight	LED	2 CCFL	LED	LED	LED	2 CCFL	2 CCF	2 CCF
	Luminance	450cd/m ²	400cd/m ²	500cd/m ²	600cd/m ²	450cd/m ²	250cd/m ²	300cd/m ²	300cd/m ²
	Contrast	600:1	450:1	800:1	700:1	700:1	1000:1	1000:1	1000:1
	Viewing angle L:R:U:L	80°: 80°/80°: 60°	120° H, 100° V	80°: 80°/80°: 60°	80°: 80°/70°: 70°	80°: 80°/70°: 70°	80°: 80°/80°: 80°	80°: 80°/80°: 80°	80°: 80°/80°: 80°
	Lifetime (min.)	50.000h	50.000h	100.000h	50.000h	35.000h	50.000h	50.000h	50.000h
Touchscreen (note 2)	Technology	5 wires – analog - resistive							
	Light transmission	80% ±2%							
	Lifetime	35mln activations							
	Linearity deviation	< 1 %							
	Interface	Serial							
	Glass Film Glass	Optional for 12,1" , 15" and 17"							
Motherboard	Model	All-in-one, ASEM MB951/B							
	HW monitor	Voltages and temperatures monitor							
	Watch-dog	Time programmable							
CPU	Processor	Intel® Celeron M 373 1,5GHz			Intel® Pentium M 740 1,73GHz		Intel® Pentium M 760 2GHz		
	FSB	400MHz			533MHz		533MHz		
	Cache	1MB L2			2MB L2		2MB L2		
	Socket	Socket 478 uFC-BGA			Socket 478 uFC-BGA		Socket 478 uFC-BGA		
	Chipset	Intel® 915GME + ICH6M			Intel® 915GME + ICH6M		Intel® 915GME + ICH6M		
Graphic	Controller	GMA900 integrated in Intel® 915GME							
	Memory	Shared - 64MB±128MB system selectable							
System memory	Type	DDR2 PC5300							
	Size	512 MB, 1 GB, 2 GB							
	Socket	1 x SODIMM module							
Video interfaces	Type	1 x VGA (DB15F)							
Serial interfaces	Type	1 x RS232 (DB9M)							
	UART	16550 compatible (FIFO 16 byte)							
	Transfer rate	115Kbps max							
	Optoisolation	No							
Optional (note 1)	Type	1 x RS232 (DB9M)							
	UART	16550 compatible (FIFO 16 byte)							
	Transfer rate	115Kbps max							
	Optoisolation	No / Yes							
Parallel interfaces Optional	Type	1 x SPP, EPP, ECP bidirectional							
	Connection	DB25M							
PS/2 interfaces	Type	1 x PS/2 Keyboard / Mouse							
Ethernet interfaces	Type	2 x 10/100/1000Mbps (RJ45)							
	Controller	Intel 82574L							
USB interfaces	Type	4 x USB 2.0 (rear, TYPE-A, host port, protected), 1 x USB 2.0 (front, TYPE-A, host port, protected), 1 x USB 2.0 (internal pin strip, host port, protected)							
	Transfer rate	Up to 480Mbit/s (high speed)							
Compact Flash slots	Type	1 x Type I (internal access), 1 x Type II (external access)							
Mass storage interfaces	Serial	1 x SATA 1 1,5Gb/s							
	Parallel	1 x ATA/100 Master/Slave (dedicated for CF Slots)							
Expansion slots	Type	1 x PC/104 Plus or 1 x PCI half size							
Battery	Type	½AA Lithium (3.6V)							
	Removable	Yes							
	Lifetime	20 years							
Buttons, leds and keys	Reset button	Yes							
	LEDs	Front: Power / Rear: power, HDD, system fail, watch-dog							
	Function keys	4 programmable on front panel (optional), only for aluminum version excluded 19"							
Electrical characteristics									
Power supply	Type	AT, integrated on board, auto ranging							
	Input voltage	18÷36 VDC							
	Power consumption	60W @ OT1300 15", T/S, Pentium M 2GHz, 1GB RAM, CF							
Mechanical characteristics									
Case	Type	Panel mount							
	Material	Steel, nickel treatment							
Front panel (note 2)	Protection	IP65				IP66K			
	Construction	Aluminum alloy with polycarbonate foil				Stainless Steel True Flat with polyester foil			
	Color	PANTONE 429C				RAL 7035			
Measurements mm		Dimensions (W x H x D)		Stainless Steel (W x H x D)		Cutout (W x H)		Weight (Kg)	
	8,4"	250 x 210 x 103		-		230 x 190		3,1	
	10,4"	300 x 245 x 103		-		280 x 225		4,0	
	12,1"	335 x 270 x 103		335 x 270 x 103		315 x 250		4,6	
	15"	390 x 315 x 103		398 x 315 x 103		370 x 295		5,3	
	17"	455 x 355 x 103		455 x 355 x 103		435 x 335		6,7	
	19"	490 x 388 x 113		490 x 388 x 113		470 x 368		7,3	
Enviromental characteristics									
Temperature	Operation	0° ÷ +50°C without HDD, 0° ÷ +45°C with 17", 0° ÷ +45°C with HDD							
	Storage	-20° ÷ +60°C							
Humidity	Operation/Storage	80% (non-condensing)							
Warranty & Approvals									
CE	Emission	Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics Conforms to EN 61000-3-2 – Limits for harmonic current emissions Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker							
	Immunity	Conforms to EN 55024 Information technology equipment – Immunity characteristics							
	Safety	Conforms to EN 60950-1 – Information technology equipment – Safety							
UL	Marks								
	Safety	Conforms to UL-60950-1 – Information technology Equipment - Safety							
	Certificate N°	2090306-E315863							
Warranty	Management	By ASEM headquarters							
	Standard	12 months							
	Extended	18 / 24 / 36 months (optional)							
Notes									
1		RS-232/422/485 standard and optoisolated can be installed one alternative to the other							
2		With stainless steel front panel, touchscreen is mandatory and have no USB port on the front							

FT600 FT600-TE

The FT600 systems, provided with elegant aluminium front panels, use the Intel® Celeron M and Pentium M processors, and are available with 12.1", 15" and 17" LCD display, also touchscreen.

The expandability is provided by different PCI/PCIe slot configurations, where ASEM NETcore® X communication cards can be installed. The integration with the Premium HMI 4 software platform and CODESYS SoftPLC allows the creation of visualization and control applications.



12.1" 15" 17"	Alu	Res 5 GFG	CeM PM	512MB 1GB 2GB
PCI PCIe	24VDC 220VAC	WES XP Pro		



Photo 1: Version without the keyboard
Photo 2: 4 PCI/PCIe slots in the H4 version
Photo 3: Rear optical drives

FEATURES PLUS

- ✓ VERSION WITH EXPANDED KEYBOARD (FT600-TE)
- ✓ H3 AND H4 VERSIONS FOR PCI/PCIE EXPANSIONS
- ✓ OPTIONAL FRONT OR REAR DVD/FDD

System characteristics																																																																					
Display	Size Type Resolution Colors Pixel pitch Backlight Luminance Contrast Viewing angle (typ.) Lifetime (min.)	12.1" Color LCD TFT 800 x 600 (SVGA) 256K 0,307 x 0,307mm CCFL 2 lamps 400cd/m ² 500:1 120° H, 100° V 60000h	15" Color LCD TFT 1024 x 768 (XGA) 16M 0,297 x 0,297mm CCFL 4 lamps 450cd/m ² 400:1 160° H, 140° V 50000h																																																																		
			17" Color LCD TFT 1280 x 1024 (SXGA) 16M 0,264 x 0,264mm CCFL 2 lamps 300cd/m ² 1000:1 160° H, 160° V 50000h																																																																		
Touchscreen	Technology Light transmission Lifetime Linearity deviation Interface Glass Film Glass	5 wires – analog - resistive 80% ±2% 35min activations < 1 % Serial Optional																																																																			
Motherboard	Model HW monitor Watch-dog	All-in-one, ASEM MB921 Voltages and temperatures monitor Time programmable																																																																			
CPU	Processor FSB Cache Socket Chipset	Intel® Celeron M 370 1,5GHz 400MHz 1MB L2 Socket 478 uFC-BGA Intel® 915GME + ICH6M	Intel® Pentium M 740 1,73GHz 533MHz 2MB L2 Socket 478 uFC-BGA Intel® 915GME + ICH6M																																																																		
Graphic	Controller Memory	GMA900 integrated in Intel® 915GME Shared - 64MB÷128MB system selectable	Intel® Pentium M 760 2GHz 533MHz 2MB L2 Socket 478 uFC-BGA Intel® 915GME + ICH6M																																																																		
System memory	Type Size Socket	DDR2 PC5300 512 MB, 1 GB, 2 GB 2 x SODIMM module																																																																			
Video interfaces	Type	1 x VGA (DB15F)																																																																			
Serial interfaces	Type UART Transfer rate Optoisolation	2 x RS232 (DB9M) 16550 compatible (FIFO 16 byte) 115Kbps max No																																																																			
Optional (note 1)	Type UART Transfer rate Optoisolation	1 x RS-232/422/485 (DB15M) 16550 compatible (FIFO 16 byte) 115Kbps max No / Yes																																																																			
Parallel interfaces Optional	Type Connection	1 x SPP, EPP, ECP bidirectional DB25M																																																																			
PS/2 interfaces	Type	1 x PS/2 Keyboard, 1 x PS/2 Mouse																																																																			
Ethernet interfaces	Type Controller	2 x 10/100Mbps (RJ45) Intel 82551QM, Intel 82562EZ																																																																			
Alternative	Type Controller	1 x 10/100Mbps (RJ45), 1 x 10/100/1000Mbps (RJ45) Intel 82551QM, Intel 82573L																																																																			
USB interfaces	Type Transfer rate	4 x USB 2.0 (rear, TYPE-A, host port, protected), 2 x USB 2.0 (front, TYPE-A, host port, protected), 2 x USB 2.0 (internal, pin strip, host port, protected) Up to 480Mbit/s (high speed)																																																																			
Compact Flash slots	Type	1 x Type II (external access)																																																																			
Mass storage interfaces	Serial Parallel	2 x SATA 1 1.5Gb/s 1 x ATA/100 Master/Slave (dedicated for CF Slots)																																																																			
Optical device interfaces	Type	H1 -	H3 / H4 / H1-TE / H3-TE / H4-TE 1 x FDD, 1 x DVD-RW																																																																		
Expansion slots	Type <i>alternative</i>	H1 / H1-TE - 1 x PCI, 1 x PCI-e x1 half size on riser card	H4 H4-TE 4 x PCI half size 3 x PCI, 1 x PCI-e x1 half size on riser card																																																																		
Battery	Type Removable Lifetime	½AA Lithium (3.6V) Yes 20 years																																																																			
Buttons, leds and keys	Reset button LEDs	Yes Power, HDD activity, LAN, Alarm fans/temperature																																																																			
Electrical characteristics																																																																					
Power supply	Type Input voltage Power consumption	Auto ranging 110÷230VAC 140W 18÷36 VDC 140W (optional) 60W @ FT600 H1, 15", T/S, Pentium M 2GHz, 1GB RAM, CF																																																																			
Mechanical characteristics																																																																					
Case	Type Material	Panel mount Steel, nickel treatment																																																																			
Front panel	Protection Construction Color	IP65 Aluminum with polycarbonate foil Polycarbonate: Pantone 429C																																																																			
Keyboard module TE version	Type Layout Function keys	Membrane, alphanumeric US-International F1-F12, directions and control keys																																																																			
Measurements mm	H1 12.1" 15" 17"	<table border="1"> <thead> <tr> <th colspan="2">Dimensions (W x H x D)</th> <th colspan="2">Cutout (W x H)</th> <th colspan="2">Weight (Kg)</th> </tr> <tr> <th>FT600</th> <th>FT600-TE</th> <th>FT600</th> <th>FT600-TE</th> <th>FT600</th> <th>FT600-TE</th> </tr> </thead> <tbody> <tr> <td>355 x 270 x 81</td> <td>360 x 400 x 81</td> <td>335 x 250</td> <td>335 x 380</td> <td>6,0</td> <td>9,0</td> </tr> <tr> <td>425 x 305 x 81</td> <td>425 x 440 x 81</td> <td>405 x 285</td> <td>405 x 420</td> <td>7,9</td> <td>11,0</td> </tr> <tr> <td>455 x 355 x 81</td> <td>455 x 485 x 81</td> <td>435 x 335</td> <td>435 x 465</td> <td>8,9</td> <td>13,0</td> </tr> <tr> <td>355 x 270 x 137</td> <td>360 x 400 x 137</td> <td>335 x 250</td> <td>335 x 380</td> <td>7,6</td> <td>10,5</td> </tr> <tr> <td>425 x 305 x 137</td> <td>425 x 440 x 137</td> <td>405 x 285</td> <td>405 x 420</td> <td>9,5</td> <td>12,0</td> </tr> <tr> <td>455 x 355 x 137</td> <td>455 x 485 x 137</td> <td>435 x 335</td> <td>435 x 465</td> <td>10,5</td> <td>14,0</td> </tr> <tr> <td>355 x 270 x 175</td> <td>360 x 400 x 175</td> <td>335 x 250</td> <td>335 x 380</td> <td>8,8</td> <td>11,7</td> </tr> <tr> <td>425 x 305 x 175</td> <td>425 x 440 x 175</td> <td>405 x 285</td> <td>405 x 420</td> <td>10,7</td> <td>13,2</td> </tr> <tr> <td>455 x 355 x 175</td> <td>455 x 485 x 175</td> <td>435 x 335</td> <td>435 x 465</td> <td>11,5</td> <td>15,2</td> </tr> </tbody> </table>		Dimensions (W x H x D)		Cutout (W x H)		Weight (Kg)		FT600	FT600-TE	FT600	FT600-TE	FT600	FT600-TE	355 x 270 x 81	360 x 400 x 81	335 x 250	335 x 380	6,0	9,0	425 x 305 x 81	425 x 440 x 81	405 x 285	405 x 420	7,9	11,0	455 x 355 x 81	455 x 485 x 81	435 x 335	435 x 465	8,9	13,0	355 x 270 x 137	360 x 400 x 137	335 x 250	335 x 380	7,6	10,5	425 x 305 x 137	425 x 440 x 137	405 x 285	405 x 420	9,5	12,0	455 x 355 x 137	455 x 485 x 137	435 x 335	435 x 465	10,5	14,0	355 x 270 x 175	360 x 400 x 175	335 x 250	335 x 380	8,8	11,7	425 x 305 x 175	425 x 440 x 175	405 x 285	405 x 420	10,7	13,2	455 x 355 x 175	455 x 485 x 175	435 x 335	435 x 465	11,5	15,2
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Environmental characteristics																																																																					
Temperature	Operation Storage	0° ÷ +50°C without HDD, 0° ÷ +45°C with HDD -20° ÷ +60°C																																																																			
Humidity	Operation/Storage	80% (non-condensing)																																																																			
Warranty & Approvals																																																																					
CE	Emission Immunity Safety	Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics Conforms to EN 61000-3-2 – Limits for harmonic current emissions Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker Conforms to EN 55024 Information technology equipment – Immunity characteristics Conforms to EN 60950-1 – Information technology equipment – Safety																																																																			
Warranty	Management Standard Extended	By ASEM headquarters 12 months 18 / 24 / 36 months (optional)																																																																			
Notes																																																																					
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FT650 FT650-TE

FT650 is a panel PC, with elegant front aluminium frame, based on the ASEM 1021 motherboard that supports Intel® Celeron Dual Core, Pentium Dual Core and Core® 2 Duo processors with 45 nanometer technology. Available with 12.1", 15", 17" and 19" LCD display, also touchscreen, the FT650 systems ensure high computing power and graphics capabilities. The expandability is provided by different PCI/PCIe slot configurations, where ASEM NETcore® X communication cards can be installed. The integration with the Premium HMI 4 software platform and CODESYS SoftPLC allows the creation of visualization and control applications.

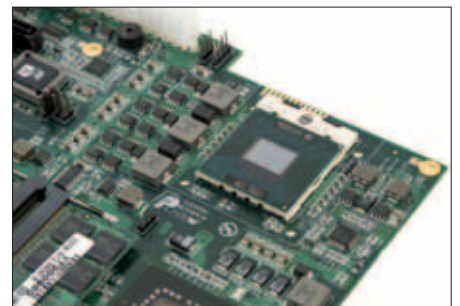


Photo 1: Version without the keyboard

Photo 2: 4 PCI/PCIe slots in the H4 version

Photo 3: Intel® Core 2 Duo microprocessors and 965GME chipset

FEATURES PLUS

- ✓ INTEL® CORE 2 DUO UP TO 2.5GHZ
- ✓ INTEL® 965GME CHIPSET AND INTEL® GMA X3100 GRAPHIC ACCELERATOR
- ✓ VERSION WITH EXPANDED KEYBOARD (FT650-TE)
- ✓ RAID CONTROLLER INTEGRATED - RAID 0,1 - H2 VERSION
- ✓ H3 AND H4 VERSIONS FOR PCI/PCIE EXPANSIONS
- ✓ OPTIONAL FRONT OR REAR DVD/FDD
- ✓ OPTIONAL TRUEFLAT FRONT PANEL IN STAINLESS STEEL
- ✓ FT650 ALSO WITH 19" FRONT PANEL

System characteristics									
Display	Size Type Resolution Colors Pixel pitch Backlight Luminance Contrast Viewing angle L:R/U:L Lifetime (min.)	12,1" Color LCD TFT 800 x 600 (SVGA) 16M 0,307 x 0,307mm LED 500cd/m ² 800:1 80°: 80°/80°: 60° 100.000h	12,1" XGA Color LCD TFT 1024 x 768 (XGA) 16.2M 0,240x0,240mm LED 600cd/m ² 700:1 80°: 80°/70°: 70° 50.000h	15" Color LCD TFT 1024 x 768 (XGA) 16M 0,297 x 0,297mm LED 450cd/m ² 700:1 80°: 80°/70°: 70° 35.000h	17" Color LCD TFT 1280 x 1024 (SXGA) 16M 0,264 x 0,264mm CCFL 2 lamps 300cd/m ² 1000:1 160° H, 160° V 50.000h	19" Color LCD TFT 1280 x 1024 (SXGA) 16M 0,294 x 0,294mm CCFL 2 lamps 300cd/m ² 1000:1 160° H, 160° V -			
Touchscreen	Technology Light transmission Lifetime Linearity deviation Interface Glass Film Glass	5 wires – analog - resistive 80% ±2% 35min activations < 1 % Serial Optional							
Motherboard	Model HW monitor Watch-dog	All-in-one, ASEM MB1021/GA Voltages and temperatures monitor Time programmable							
CPU	Processor FSB Cache Socket Chipset	Intel® Pentium dual core T4400 2,2GHz 800MHz 1MB L2 Socket P Intel® 965GME + ICH8EM		Intel® Core 2 Duo T6400 2GHz 800MHz 2MB L2 Socket P Intel® 965GME + ICH8EM					
Raid	Controller Raid mode	Integrated in version H2, optional for H3-H4 0,1							
Graphic	Controller Memory	GMA X3100 integrated in Intel® 965GME Shared – up to 256MB system selectable							
System memory	Type Size Socket	DDR2 PC5300 1 GB, 2 GB, 4GB 2 x SODIMM module							
Video interfaces	Type	1 x VGA (DB15F - max resolution 2048x1536QXGA 60Hz) , 1 x DVI-D (single link – max resolution 1600x1200 UXGA)							
Serial interfaces	Type UART Transfer rate Optoisolation	2 x RS232 (DB9M) 16550 compatible (FIFO 16 byte) 115Kbps max No							
Optional (note 1)	Type UART Transfer rate Optoisolation	1 x RS-232/422/485 (DB15M) 16550 compatible (FIFO 16 byte) 115Kbps max No / Yes							
Parallel interfaces Optional	Type Connection	1 x SP, EPP, ECP bidirectional DB25M							
PS/2 interfaces	Type	1 x PS/2 Keyboard, 1 x PS/2 Mouse							
Ethernet interfaces	Type Controller	2 x 10/100/1000Mbps (RJ45) Intel 82566MM, Intel 82574L							
USB interfaces	Type Transfer rate	4 x USB 2.0 (rear, TYPE-A, host port, protected), 2 x USB 2.0 (front, TYPE-A, host port, protected), 2 x USB 2.0 (internal pin strip, host port, protected) Up to 480Mbit/s (high speed)							
Compact Flash slots	Type	1 x Type II (external access)							
Mass storage interfaces	Serial Parallel	3 x SATA 2 3Gb/s 1 x ATA/100 Master/Slave (dedicated for CF Slot)							
Optical device interfaces	Type	H1 / H2 -		H3 / H4 / H1-TE / H2-TE / H3-TE / H4-TE 1 x FDD, 1 x DVD-RW					
Expansion slots	Type <i>alternative</i>	H1 / H1-TE / H2 / H2-TE -		H3 / H3-TE 2 x PCI half size 1 x PCI, 1 x PCI-e x4 half size on riser card					
Battery	Type Removable Lifetime	½AA Lithium (3.6V) Yes 20 years							
Buttons, leds and keys	Reset button LEDs	Yes Power, HDD activity, LAN, Alarm fans/temperature							
Electrical characteristics									
Power supply	Type Input voltage Power consumption	Auto ranging 110-230VAC 140W 18÷36 VDC 140W (<i>optional</i>) 65W @ FT650 H1, 15", T/S, Core 2 Duo 2,4GHz, 1GB RAM, CF							
Mechanical characteristics									
Case	Type Material	Panel mount Steel, nickel treatment							
Front panel (note 2)	Protection Construction Color	IP65 Aluminum with polycarbonate foil PANTONE 429C		IP66K Stainless Steel True Flat with polyester foil RAL 7035					
Keyboard module TE version	Type Layout Function keys	Membrane, alphanumeric US-International F1-F12, directions and control keys							
Measurements mm	H1(H2)	Dimensions (W x H x D)				Cutout (W x H)		Weight (Kg)	
		12,1"	FT650 355 x 270 x 81 (99)	FT650-TE 360 x 400 x 81 (99)	Stainless Steel -	FT650 335 x 250	FT650-TE 335 x 380	FT650 6,0	FT650-TE 9,0
	15"	425 x 305 x 81 (99)	425 x 440 x 81 (99)	-	405 x 285	405 x 420	7,9	11,0	
	17"	455 x 355 x 81 (99)	455 x 485 x 81 (99)	455 x 355 x 81	435 x 335	435 x 465	8,9	13,0	
	19"	490 x 388 x 91 (109)	-	490 x 388 x 91	470 x 368	-	9,9	-	
	H3	12,1"	355 x 270 x 137	360 x 400 x 137	-	335 x 250	335 x 380	7,6	10,5
		15"	425 x 305 x 137	425 x 440 x 137	-	405 x 285	405 x 420	9,5	12,0
		17"	455 x 355 x 137	455 x 485 x 137	455 x 355 x 137	435 x 335	435 x 465	10,5	14,0
		19"	490 x 388 x 147	-	490 x 388 x 147	470 x 368	-	11,5	-
	H4	12,1"	355 x 270 x 175	360 x 400 x 175	-	335 x 250	335 x 380	8,8	11,7
		15"	425 x 305 x 175	425 x 440 x 175	-	405 x 285	405 x 420	10,7	13,2
		17"	455 x 355 x 175	455 x 485 x 175	455 x 355 x 175	435 x 335	435 x 465	11,5	15,2
19"		490 x 388 x 185	-	490 x 388 x 185	470 x 368	-	12,5	-	
Environmental characteristics									
Temperature	Operation Storage	0° ± +50°C without HDD, 0° ± +45°C with HDD -20° ± +60°C							
Humidity	Operation/Storage	80% (non-condensing)							
Warranty & Approvals									
CE	Emission Immunity Safety	Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics Conforms to EN 61000-3-2 – Limits for harmonic current emissions Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker Conforms to EN 55024 Information technology equipment – Immunity characteristics Conforms to EN 60950-1 – Information technology equipment – Safety							
UL	Marks Safety Certificate N°	 Conforms to UL-60950-1 – Information technology Equipment - Safety 20120524-E315863							
Warranty	Management Standard Extended	By ASEM headquarters 12 months 18 / 24 / 36 months (optional)							
Notes									
1	RS-232/422/485 standard and optoisolated and parallel port can be installed one alternative to the others								
2	With stainless steel front panel, touchscreen is mandatory and have no USB port on the front								

WS600 WS600-TE

The WS600 systems use Intel® Celeron M and Pentium M processors and are provided with different mechanical solutions: plastic front panel with or without expanded keyboard, side modules for buttons, lights or aiming systems, with 12.1", 15" and 17" LCD display, also touchscreen. The expandability is provided by different PCI/PCle slot configurations, where ASEM NETcore® X communication cards can be installed.

The integration with the Premium HMI 4 software platform and CODESYS SoftPLC allows the creation of visualization and control applications.



Photo 1: Version without the keyboard

Photo 2: 4 PCI/PCle slots in the H4 version

Photo 3: Trackball/touchpad side modules

FEATURES PLUS

- ✓ VERSION WITH EXPANDED KEYBOARD (WS600-TE)
- ✓ SIDE MODULES WITH BUTTONS PREDISPOSITIO, TRACKBALL, TOUCHPAD OR NEUTRAL
- ✓ H3 AND H4 VERSIONS FOR PCI/PCIE EXPANSIONS
- ✓ OPTIONAL FRONT OR REAR DVD/FDD
- ✓ FRAMELESS VERSION AVAILABLE (WS600-FL)

System characteristics					
Display	Size	12, 15"	15"	17"	
	Type	Color LCD TFT	Color LCD TFT	Color LCD TFT	
Touchscreen	Resolution	800 x 600 (SVGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	
	Colors	256K	16M	16M	
	Pixel pitch	0,307 x 0,307mm	0,297 x 0,297mm	0,264 x 0,264mm	
	Backlight	CCFL 2 lamps	CCFL 4 lamps	CCFL 2 lamps	
	Luminance	400cd/m ²	450cd/m ²	300cd/m ²	
	Contrast	500:1	400:1	1000:1	
	Viewing angle (typ.)	120° H, 100° V	160° H, 140° V	160° H, 160° V	
	Lifetime (min.)	60000h	50000h	50000h	
	Motherboard	Technology	5 wires – analog - resistive		
		Light transmission	80% ±2%		
Lifetime		35mln activations			
Linearity deviation		< 1 %			
CPU	Processor	Intel® Celeron M 370 1,5GHz	Intel® Pentium M 740 1,73GHz	Intel® Pentium M 760 2GHz	
	FSB	400MHz	533MHz	533MHz	
Graphic	Cache	1MB L2	2MB L2	2MB L2	
	Socket	Socket 478 uFC-BGA	Socket 478 uFC-BGA	Socket 478 uFC-BGA	
System memory	Chipset	Intel® 915GME + ICH6M	Intel® 915GME + ICH6M	Intel® 915GME + ICH6M	
	Controller	GMA900 integrated in Intel® 915GME			
Video interfaces	Memory	Shared - 64MB÷128MB system selectable			
	Type	DDR2 PC5300			
Serial interfaces	Size	512 MB, 1 GB, 2 GB			
	Socket	2 x SODIMM module			
Optional (note 1)	Type	1 x VGA (DB15F)			
	UART	2 x RS232 (DB9M)			
Parallel interfaces	Transfer rate	1650 compatible (FIFO 16 byte)			
	Optoisolation	115Kbps max			
PS/2 interfaces	Type	1 x SPP, EPP, ECP bidirectional			
	Connection	DB25M			
Ethernet interfaces	Type	1 x PS/2 Keyboard, 1 x PS/2 Mouse			
	Controller	2 x 10/100Mbps (RJ45)			
Alternative	Type	Intel 82551QM, Intel 82562EZ			
	Controller	1 x 10/100Mbps (RJ45), 1 x 10/100/1000Mbps (RJ45)			
USB interfaces	Type	Intel 82551QM, Intel 82573L			
	Transfer rate	4 x USB 2.0 (rear, TYPE-A, host port, protected), 2 x USB 2.0 (front, TYPE-A, host port, protected), 2 x USB 2.0 (internal, pin strip, host port, protected)			
Mass storage interfaces	Type	Up to 480Mbit/s (high speed)			
	Serial	1 x Type II (external access)			
Optical device interfaces	Parallel	2 x SATA 1 1,5Gb/s			
	Type	1 x ATA/100 Master/Slave (dedicated for CF Slots)			
Expansion slots	Type	H3 / H4 / H1-TE / H3-TE / H4-TE			
	alternative	1 x FDD, 1 x DVD-RW			
Battery	Type	H1 / H1-TE	H3 / H3-TE	H4 / H4-TE	
	Removable	-	2 x PCI half size	4 x PCI half size	
Buttons, leds and keys	Lifetime	1 x PCI, 1 x PCI-e x1 half size on riser card		3 x PCI, 1 x PCI-e x1 half size on riser card	
	LEDs	20 years			
Electrical characteristics					
Power supply	Type	Auto ranging			
	Input voltage	110÷230VAC 140W			
Mechanical characteristics	Power consumption	18÷36 VDC 140W (optional)			
	Power consumption	60W @ WS600 15", T/S, Pentium M 2GHz, 1GB RAM, CF			
Case	Type	Panel mount			
	Material	Steel, nickel treatment			
Front panel	Protection	IP65			
	Construction	Plastic with polycarbonate foil			
Keyboard module	Color	Plastic: RAL 7040 (light grey) / Polycarbonate: Pantone 428C			
	Frameless	Optional only for H1, H3, H4			
Side modules	Type	Membrane, alphanumeric			
	Layout	US-International			
Optional	Function keys	F1-F12, directions and control keys			
	Emergency	H1 / H3 / H4		H1-TE / H3-TE / H4-TE	
Measurements	mm	Yes		Yes	
	mm	No		Yes	
Dimensions (W x H x D)	WS600	No		Yes	
	WS600-TE	Yes		Yes	
Cutout (W x H)	WS600	360 x 275 x 59	360 x 450 x 59	335 x 250	
	WS600-TE	360 x 275 x 115	360 x 450 x 115	335 x 425	
Weight (Kg)	WS600	430 x 315 x 59	430 x 490 x 59	405 x 286	
	WS600-TE	430 x 380 x 59	430 x 555 x 59	405 x 465	
H1	WS600	430 x 315 x 115	430 x 490 x 115	405 x 530	
	WS600-TE	430 x 380 x 115	430 x 555 x 115	405 x 530	
H3	WS600	360 x 275 x 152	360 x 450 x 150	335 x 250	
	WS600-TE	360 x 275 x 152	360 x 450 x 150	335 x 425	
H4	WS600	430 x 315 x 152	430 x 490 x 150	405 x 286	
	WS600-TE	430 x 380 x 152	430 x 555 x 150	405 x 465	
Environmental characteristics	Operation	0° ÷ +50°C without HDD, 0° ÷ +45°C with HDD			
	Storage	-20° ÷ +60°C			
Humidity	Operation/Storage	80% (non-condensing)			
	Warranty & Approvals				
CE	Emission	Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics			
	Immunity	Conforms to EN 61000-3-2 – Limits for harmonic current emissions			
Warranty	Safety	Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker			
	Management	Conforms to EN 55024 Information technology equipment – Immunity characteristics			
Standard	Extended	Conforms to EN 60950-1 – Information technology equipment – Safety			
	Notes	By ASEM headquarters			
1	Standard	12 months			
	Extended	18 / 24 / 36 months (optional)			

WS650 WS650-TE

WS650 is a fanless panel PC, with a front plastic frame, provided with different mechanical solutions, and based on the new ASEM 1021 motherboard, that also supports Intel® Celeron Dual Core, Pentium Dual Core and Core® 2 Duo processors with 45 nanometer technology. Available with 12.1", 15" and 17" LCD display, also touchscreen, the WS650 systems ensure high computing power and graphics capabilities. The expandability is provided by different PCI/PCIe slot configurations, where ASEM NETcore® X communication cards can be installed. The integration with the Premium HMI 4 software platform and CODESYS SoftPLC allows the creation of visualization and control applications.



Photo 1: Version without the keyboard

Photo 2: 4 PCI/PCIe slots in the H4 version

Photo 3: Intel® Core 2 Duo Microprocessors and 965GME chipset

FEATURES PLUS

- ✓ INTEL® CORE 2 DUO MICROPROCESSORS UP TO 2.4GHZ
- ✓ INTEL® 965GME CHIPSET AND INTEL® GMA X3100 GRAPHIC ACCELERATOR
- ✓ VERSION WITH EXPANDED KEYBOARD (WS650-TE)
- ✓ SIDE MODULES WITH BUTTONS PREDISPOSITIO, TRACKBALL, TOUCHPAD OR NEUTRAL
- ✓ H3 VERSION FOR PCI/PCIE EXPANSIONS
- ✓ OPTIONAL FRONT OR REAR DVD/FDD
- ✓ FRAMELESS VERSION AVAILABLE (WS650-FL)

System characteristics

Display	Size Type Resolution Colors Pixel pitch Backlight Luminance Contrast Viewing angle L:R/U:L Lifetime (min.)	12,1" Color LCD TFT 800 x 600 (SVGA) 16M 0,307 x 0,307mm LED 500cd/m ² 800:1 80°: 80°/80°: 60° 100.000h	15" Color LCD TFT 1024 x 768 (XGA) 16M 0,297 x 0,297mm LED 450cd/m ² 700:1 80°: 80°/70°: 70° 35.000h	17" Color LCD TFT 1280 x 1024 (SXGA) 16M 0,264 x 0,264mm CCFL 2 lamps 300cd/m ² 1000:1 160° H, 160° V 50.000h
Touchscreen	Technology Light transmission Lifetime Linearity deviation Interface Glass Film Glass	5 wires – analog - resistive 80% ±2% 35min activations < 1 % Serial Optional		
Motherboard	Model HW monitor Watch-dog	All-in-one, ASEM MB1021/GA Voltages and temperatures monitor Time programmable		
CPU	Processor FSB Cache Socket Chipset	Intel® Pentium dual core T4400 2,2GHz 800MHz 1MB L2 Socket P Intel® 965GME + ICH8EM	Intel® Core 2 Duo T6400 2GHz 800MHz 1MB L2 Socket P Intel® 965GME + ICH8EM	Intel® Core 2 Duo T9300 2,5GHz 800MHz 6MB L2 Socket P Intel® 965GME + ICH8EM
Raid	Controller Raid mode	Integrated in version H2, optional for H3 - H4 0,1		
Graphic	Controller Memory	GMA X3100 integrated in Intel® 965GME Shared – up to 256MB system selectable		
System memory	Type Size Socket	DDR2 PC5300 1 GB, 2 GB, 4GB 2 x SODIMM module		
Video interfaces	Type	1 x VGA (DB15F - max resolution 2048x1536QXGA 60Hz) , 1 x DVI-D (single link – max resolution 1600x1200 UXGA)		
Serial interfaces	Type UART Transfer rate Optoisolation	2 x RS232 (DB9M) 16550 compatible (FIFO 16 byte) 115Kbps max No		
Optional (note 1)	Type UART Transfer rate Optoisolation	1 x RS-232/422/485 (DB15M) 16550 compatible (FIFO 16 byte) 115Kbps max No / Yes		
Parallel interfaces Optional	Type Connection	1 x SP, EPP, ECP bidirectional DB25M		
PS/2 interfaces	Type	1 x PS/2 Keyboard, 1 x PS/2 Mouse		
Ethernet interfaces	Type Controller	2 x 10/100/1000Mbps (RJ45) Intel 82566MM, Intel 82574L		
USB interfaces	Type Transfer rate	4 x USB 2.0 (rear, TYPE-A, host port, protected), 2 x USB 2.0 (front, TYPE-A, host port, protected), 2 x USB 2.0 (internal pin strip, host port, protected) Up to 480Mbit/s (high speed)		
Compact Flash slots	Type	1 x Type II (external access)		
Mass storage interfaces	Serial Parallel	3 x SATA 2 3Gb/s 1 x ATA/100 Master/Slave (dedicated for CF Slot)		
Optical device interfaces	Type	H1 / H2 - H3 / H3-TE 2 x PCI half size 1 x PCI, 1 x PCI-e x4 half size on riser card	H3 / H4 / H1-TE / H2-TE / H3-TE / H4-TE 1 x FDD, 1 x DVD-RW	
Expansion slots	Type <i>alternative</i>	H1 / H1-TE / H2 / H2-TE - H3 / H3-TE 2 x PCI half size 1 x PCI, 1 x PCI-e x4 half size on riser card	H4 / H4-TE 3 x PCI, 1 x PCI-e x4 half size on riser card 2 x PCI, 1 x PCI-e x4, 1 x PCI-e x1 half size on riser card	
Battery	Type Removable Lifetime	½AA Lithium (3.6V) Yes 20 years		
Buttons, leds and keys	Reset button LEDs	Yes Power, HDD activity, LAN, Alarm fans/temperature		

Electrical characteristics

Power supply	Type Input voltage Power consumption	Auto ranging 110÷230VAC 140W 18÷36 VDC 140W (optional) 65W @ WS650 H1, 15", T/S, Core 2 Duo T8300, 1GB RAM, CF
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Mechanical characteristics

Case	Type Material	Panel mount Steel, nickel treatment
Front panel	Protection Construction Color Frameless	IP65 Plastic with polycarbonate foil RAL 7040 (light grey) / Polycarbonate: Pantone 428C Optional only for H1, H3, H4
Keyboard module TE version	Type Layout Function keys	Membrane, alphanumeric US-International F1-F12, directions and control keys
Side modules Optional	4 rows x 2 columns Emergency Touch pad Track ball empty	H1 / H2 / H3 / H4 Yes Yes No No No
Measurements	mm	H1-TE / H2-TE / H3-TE / H4-TE Yes Yes Yes Yes Yes
		Dimensions (W x H x D) Cutout (W x H) Weight (Kg)
	H1 (H2)	WS650 360 x 275 x 59 (77) 430 x 315 x 59 (77) 430 x 380 x 59 (77)
	H3	WS650-TE 360 x 450 x 59 (77) 430 x 490 x 59 (77) 430 x 555 x 59 (77)
	H4	WS650 335 x 250 405 x 286 405 x 351
		WS650-TE 335 x 425 405 x 465 405 x 530
		WS650 6,0 7,9 8,9
		WS650-TE 6,0 7,9 8,9
		WS650 7,6 9,5 10,5
		WS650-TE 7,6 9,5 10,5
		WS650 9,2 11,1 11,7
		WS650-TE 9,2 11,1 11,7

Environmental characteristics

Temperature	Operation Storage	0° ÷ +50°C without HDD, 0° ÷ +45°C with HDD -20° ÷ +60°C
Humidity	Operation/Storage	80% (non-condensing)

Warranty & Approvals

CE	Emission Immunity Safety	Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics Conforms to EN 61000-3-2 – Limits for harmonic current emissions Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker Conforms to EN 55024 Information technology equipment – Immunity characteristics Conforms to EN 60950-1 – Information technology equipment – Safety
UL	Marks Safety Certificate N°	 Conforms to UL-60950-1 – Information technology Equipment - Safety 20120324-E315863
Warranty	Management Standard Extended	By ASEM headquarters 12 months 18 / 24 / 36 months (optional)

Notes

1 RS-232/422/485 standard and optoisolated and parallel port can be installed one alternative to the others

PANEL PC

Stainless Steel true flat front panel

Through a special manufacturing process, it's possible to manufacture completely flat front panels with touch-screen and IP66K protection.

A thin polyester film is glued on the touch-screen and on the steel front, protecting the sensor also during the cleaning. In particular, Panel PCs with STAINLESS STEEL TRUE FLAT front meet the standards required by the pharmaceutical and food industry and, therefore, do not have USB ports on the front.



Photo 1: Panel detail

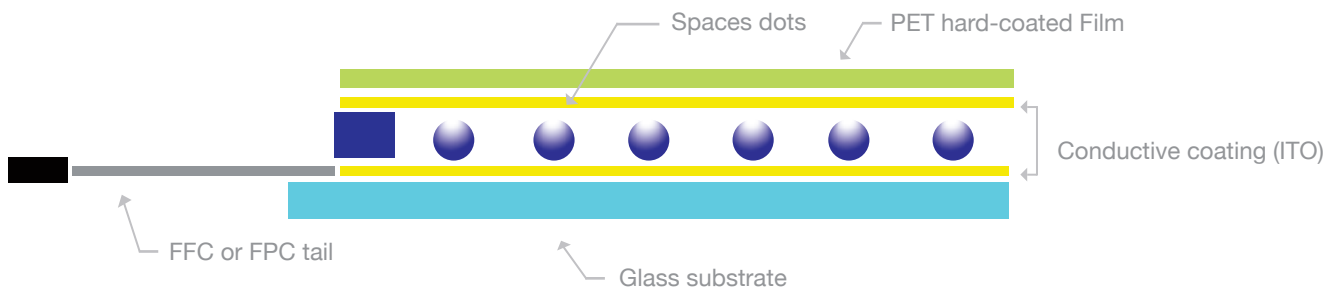
Photo 2: Power-on LED aesthetically integrated

Touchscreen Glass-Film -Glass technology

The option Glass-Film-Glass (GFG) for 12", 15" and 17" touchscreen is available for most of the IPCs and monitors of the catalogue.
In GFG touchscreen, there is an additional thin glass on the touch surface that provides greater resistance to scratches and products cleaning.



Standard technology



GFG technology

