

SPECTRA POWERTWIN PANEL-PC WITH SKYLAKE CPU

FEATURES

- 12" to 24" multi-functional All-in-One Panel PC
- Screen variations:
 - Projected Capacitive Touchscreen
 - 5-wire resistive Touchscreen
 - without Touchscreen
 - Sunlight readable
- Panel PC Modules with Intel® Core™ i7/i5/i3 Processors
- PCIe, PCI or mPCIe expansion possibilities
- Fanless
- Panel PC Module with automatic Display and resolution detection
- Easy replacement of Display or Module
- Panel & VESA mount
- Die-cast aluminium front frame
- Front panel with IP65 protection class



Modular



Expandable



Fanless



SELECTION GUIDE

STEP 1 – CHOOSE YOUR SERIES PENDING ON YOUR APPLICATION



PERFORMANT

The Performant PowerTwin Panel PCs fulfill the desire for more performance with an Intel® Core™ i7 CPU, industrial RAM and data center SSD with PowerGuard function.



ROBUST

The robust version is intended for rough industrial use. The industrial RAM and industrial SSD with extended temperature range allow the use in particularly demanding environments (-10°C to +70°C).



STANDARD

With the PowerTwin Panel PCs in the standard version, most requirements and operating conditions can be easily covered. They are the ideal devices for cost-conscious use in normal industrial environments (0°C to +50°C).



SUNLIGHT READABLE

PowerTwin Panel PCs with sunreadable display are used if the display of the Panel PC is particularly exposed to sunlight and the robustness requirements are particularly high. With a luminance of 1500 or 1600 cd/m², Wide-Temp RAM and SSD with PowerGuard, they are even suitable for outdoor use.

STEP 2 – CHOOSE THE PERFORMANCE OF THE PC MODULE



Skylake CPU

- Intel® Core™ i7-6600U CPU
- Intel® Core™ i5-6300U CPU
- Intel® Core™ i3-6100U CPU
- Optional PCI/PCIe expansion slots

STEP 3 – CHOOSE THE DISPLAY SPECIFICATIONS



Sunlight-readable:	yes	no
Size:	12" to 19"	12" to 24"
Touchscreen:	PCAP	resistive / PCAP / without Touch

RESULT – CUSTOM-FIT SPECTRA POWERTWIN PANEL PC



Following the same principle, the combination of a display module with a monitor module results in a monitor that is ready to switch on.

EXTENDED FUNCTIONALITIES

WIDE TEMP.

DRAM and SSD products with extended temperature range theoretically allow operating temperatures from -40°C to +85°C. However, depending on the properties of the individual components, the permitted temperature range of the overall system may be narrower.

POWERGUARD

The Power Loss Data Protection (PowerGuard) feature of an SSD provides protection in the event of an unexpected power failure. Additional tantalum capacitors integrated in the SSD provide the permanently stored charge in the event of an interruption of the power supply, so that the current flash write process can be completely terminated and no data is lost. In addition, firmware and the integrity of the mapping table are protected.

EXPANDABILITY

- > PCI or PCIe expansion slots
- > mPCIe expansion for additional 2 LAN, 2 COM, 4 COM or 2 USB



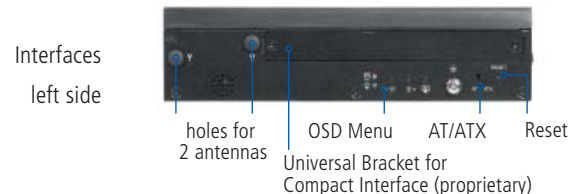
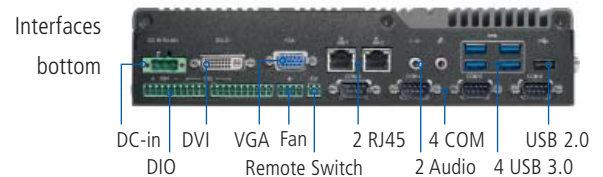
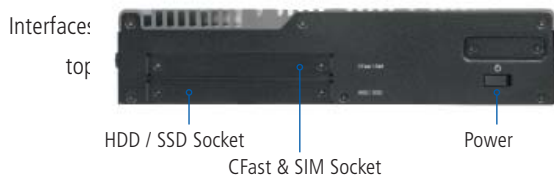
2 LAN at Universal Bracket

- > Power Ignition Funktion for mobile use
- > PoE+ function for power over Ethernet
- > RFID equipment for Spectra PowerTwin with 12", 15" XGA & 17" Displays



RFID equipment right or left of Display or under

INTERFACES & CONSTRUCTION OF PC UNIT



Difference with expansion slots

18 mm higher & 260 g heavier

Schnittstellen unten



SPECTRA POWERTWIN 12.1" TO 17"

TECHNICAL DATA

Model	Spectra PowerTwin PH12	Spectra PowerTwin P15	Spectra PowerTwin PW15	Spectra PowerTwin PWH15	Spectra PowerTwin P17
Display size / Aspect ratio	12.1" / 4:3	15" / 4:3	15.6" / 16:9	15.6" / 16:9	17" / 5:4
Resolution	1.024 x 768	1.024 x 768	1.366 x 768	1.920 x 1.080	1.280 x 1.024

WITH STANDARD DISPLAY

Brightness (cd/m ²)	500	350	400	–	350
Contrast ratio	700:1	800:1	500:1	–	800:1
Viewing angles (h/v)	160°/160°	160°/150°	170°/160°	–	160°/140°
MTBF Backlight (h)	30.000	50.000	50.000	–	50.000
Touchscreen	P-CAP / resistive		P-CAP / resistive / without		P-CAP / resistive / without

WITH SUNLIGHT READABLE DISPLAY

Brightness (cd/m ²)	1500	1600	–	1500	1500
Contrast ratio	700:1	800:1	–	700:1	800:1
Viewing angles (h/v)	160°/160°	160°/150°	–	160°/140°	160°/140°
MTBF Backlight (h)	30.000	50.000	–		50.000
Touchscreen	P-CAP, 7H Hard glas, UV-resistant		–	P-CAP, 7H Hard glas, UV-resistant	

PC TECHNICAL DATA

Processor	Intel® Core™ i5-6300U o. Core™ i3-6100U o. Core™ i7-6600U
Memory	2 x DDR4 max. 32 GB,
Drives / Flash cards	2 x 2.5" SATA, 1 x removable drive (Raid 0/1), 1 x CFAST Socket, 1 x SIM Socket (with front access)
I/O Interfaces	4 x USB 3.0, 1 x USB 2.0, 6 x RS-232/422/485, 1 x VGA, 1 x DVI-D, Line-out, Mic-in, Remote Power ON Switch, Connector for external fan, Opt. Power Ignition Control
Ethernet	1 x Intel® I219LM Gigabit-LAN, 1 x Intel® I210AT Gigabit-LAN (or 2 x PoE)
Digital I/Os	Fintek F81866 Controller, 8 input / 8 output, isolated
Expansion slots	2 x mPCIe (Full-Size) or 2 x mSATA (Raid 0/1), 1 x Compact Interface (proprietary) Additionally for PC with expansion: 1 x PCI or 1 x PCIe (max. 210 mm)
Miscellaneous	Watchdog, Wireless: holes for 4 antennas, Speakers: 2 x 2 W, OSD Menu: LCD on/off & Brightness
Power	9 to 48 V DC, 3-pin Terminal Block

MECHANICAL DATA

Chassis	Display: Sheet steel housing, Aluminium front, grey, Front IP65 / PC Module: Aluminium, grey				
Mounting	Panel, Wall, Stand (VESA100)				
Cut-out dimensions (WxH)	331 x 251 mm	394 x 298,5	406 x 240 mm	436 x 336 mm	
Dimensions (WxHxD) PC w/out expansion	345 x 265,3 x 82 mm	408 x 312,4 x 84,5 mm	420 x 254 x 91,5 mm	450 x 350 x 88,5 mm	
Weight PC w/out expansion	6,1 kg	7,3 kg	7 kg	8,5 kg	

SPECTRA POWERTWIN 19" TO 24"

TECHNICAL DATA

Model	Spectra PowerTwin P19	Spectra PowerTwin PW21	Spectra PowerTwin PW24
Display size / Aspect ratio	19" / 5:4	21.5" / 16:9	24" / 16:9
Resolution	1.280 x 1.024	1.920 x 1.080	1.920 x 1.080

WITH STANDARD DISPLAY

Brightness (cd/m ²)	350	300	300
Contrast ratio	1000:1	5000:1	5000:1
Viewing angles (h/v)	170°/160°	178°/178°	178°/178°
MTBF Backlight (h)	50.000	50.000	50.000
Touchscreen	P-CAP / resistive / without		

WITH SUNLIGHT READABLE DISPLAY

Brightness (cd/m ²)	1600	1000	1500
Contrast ratio	1000:1	5000:1	5000:1
Viewing angles (h/v)	170°/160°	178°/178°	178°/178°
MTBF Backlight (h)	50.000	–	50.000
Touchscreen	P-CAP, 7H Hard glas, UV-resistant		

PC TECHNICAL DATA

Processor	Intel® Core™ i5-6300U o. Core™ i3-6100U o. Core™ i7-6600U
Memory	2 x DDR4 max. 32 GB,
Drives / Flash cards	2 x 2.5" SATA, 1 x removable drive (Raid 0/1), 1 x CFast Socket, 1 x SIM Socket (with front access)
I/O Interfaces	4 x USB 3.0, 1 x USB 2.0, 6 x RS-232/422/485, 1 x VGA, 1 x DVI-D, Line-out, Mic-in, Remote Power ON Switch, Connector for external fan, Opt. Power Ignition Control
Ethernet	1 x Intel® I219LM Gigabit-LAN, 1 x Intel® I210AT Gigabit-LAN (or 2 x PoE)
Digital I/Os	Fintek F81866 Controller, 8 input / 8 output, isolated
Expansion slots	2 x mPCIe (Full-Size) or 2 x mSATA (Raid 0/1), 1 x Compact Interface (proprietary) Additionally for PC with expansion: 1 x PCI or 1 x PCIe (max. 210 mm)
Miscellaneous	Watchdog, Wireless: holes for 4 antennas, Speakers: 2 x 2 W, OSD Menu: LCD on/off & Brightness
Power	9 to 48 V DC, 3-pin Terminal Block

MECHANICAL DATA

Chassis	Display: Sheet steel housing, Aluminium front, grey, Front IP65 / PC Module: Aluminium, grey	Aluminium, grey, Front IP65	
Mounting	Panel, Wall, Stand (VESA100)		
Cut-out dimensions (WxH)	496 x 375 mm	536 x 316,5 mm	591 x 359 mm
Dimensions (WxHxD) PC w/out expansion	510 x 389,3 x 88,5 mm	550 x 330,5 x 88,5 mm	605 x 373 x 88,5 mm
Weight PC w/out expansion	9,8 kg	8,5 kg	9,5 kg

READY-TO-RUN SYSTEMS

CONFIGURATION & ORDERING INFORMATION

Display size & resolution	Capacitive Touch Display	Resistive Touch Display
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PERFORMANT

Intel® Core™ i7-6600U, 8 GB SO-DIMM DDR4, 240 GB 2.5" SATA-6G SSD, Windows® 10 IoT Enterprise, 120 W Power adapter, Operating temp.: 0°C to 50°C

15"	XGA	159768	Spectra PowerTwin P15C-i7SL-P10	159761	Spectra PowerTwin P15R-i7SL-P10
15.6"	WXGA	159770	Spectra PowerTwin PW15C-i7SL-P10	159762	Spectra PowerTwin PW15R-i7SL-P10
17"	SXGA	159771	Spectra PowerTwin P17C-i7SL-P10	159763	Spectra PowerTwin P17R-i7SL-P10
19"	SXGA	159772	Spectra PowerTwin P19C-i7SL-P10	159765	Spectra PowerTwin P19R-i7SL-P10
21.5"	Full HD	159773	Spectra PowerTwin PW21C-i7SL-P10	159766	Spectra PowerTwin PW21R-i7SL-P10
24"	Full HD	159774	Spectra PowerTwin PW24C-i7SL-P10	159767	Spectra PowerTwin PW24R-i7SL-P10

PERFORMANT & EXPANDABLE

Intel® Core™ i7-6600U, 8 GB SO-DIMM DDR4, 240 GB 2.5" SATA-6G SSD, 1 PCIe(x4) Expansion slot, Windows® 10 IoT Enterprise, 120 W Power adapter, Operating temp.: 0°C to 50°C

15"	XGA	159784	Spectra PowerTwin P15C-i7SL-PE10	159776	Spectra PowerTwin P15R-i7SL-PE10
15.6"	WXGA	159786	Spectra PowerTwin PW15C-i7SL-PE10	159778	Spectra PowerTwin PW15R-i7SL-PE10
17"	SXGA	159788	Spectra PowerTwin P17C-i7SL-PE10	159780	Spectra PowerTwin P17R-i7SL-PE10
19"	SXGA	159789	Spectra PowerTwin P19C-i7SL-PE10	159781	Spectra PowerTwin P19R-i7SL-PE10
21.5"	Full HD	159790	Spectra PowerTwin PW21C-i7SL-PE10	159782	Spectra PowerTwin PW21R-i7SL-PE10
24"	Full HD	159791	Spectra PowerTwin PW24C-i7SL-PE10	159783	Spectra PowerTwin PW24R-i7SL-PE10

ROBUST

Intel® Core™ i5-6300U, 8 GB SO-DIMM DDR4 Wide Temp., 128 GB 2.5" SATA-6G SSD Wide Temp. with Powerguard, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: -10°C to 70°C

12.1"	XGA	158053	Spectra PowerTwin PH12C-i5SL-R10	150504	Spectra PowerTwin PH12R-i5SL-R10
15"	XGA	150455	Spectra PowerTwin P15C-i5SL-R10	150438	Spectra PowerTwin P15R-i5SL-R10
15.6"	WXGA	158054	Spectra PowerTwin PW15C-i5SL-R10	153912	Spectra PowerTwin PW15R-i5SL-R10
17"	SXGA	150456	Spectra PowerTwin P17C-i5SL-R10	150450	Spectra PowerTwin P17R-i5SL-R10
19"	SXGA	150457	Spectra PowerTwin P19C-i5SL-R10	150451	Spectra PowerTwin P19R-i5SL-R10
21.5"	Full HD	150638	Spectra PowerTwin PW21C-i5SL-R10	150637	Spectra PowerTwin PW21R-i5SL-R10
24"	Full HD	157760	Spectra PowerTwin PW24C-i5SL-R10	157759	Spectra PowerTwin PW24R-i5SL-R10

Intel® Core™ i3-6100U, 8 GB SO-DIMM DDR4 Wide Temp., 128 GB 2.5" SATA-6G SSD Wide Temp. with Powerguard, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: -10°C to 70°C

12.1"	XGA	158081	Spectra PowerTwin PH12C-i3SL-R10	156043	Spectra PowerTwin PH12R-i3SL-R10
15"	XGA	156050	Spectra PowerTwin P15C-i3SL-R10	156044	Spectra PowerTwin P15R-i3SL-R10
15.6"	WXGA	158083	Spectra PowerTwin PW15C-i3SL-R10	156045	Spectra PowerTwin PW15R-i3SL-R10
17"	SXGA	156055	Spectra PowerTwin P17C-i3SL-R10	156046	Spectra PowerTwin P17R-i3SL-R10
19"	SXGA	156056	Spectra PowerTwin P19C-i3SL-R10	156048	Spectra PowerTwin P19R-i3SL-R10
21.5"	Full HD	156057	Spectra PowerTwin PW21C-i3SL-R10	156049	Spectra PowerTwin PW21R-i3SL-R10
24"	Full HD	158088	Spectra PowerTwin PW24C-i3SL-R10	158090	Spectra PowerTwin PW24R-i3SL-R10

ROBUST & EXPANDABLE

Intel® Core™ i5-6300U, 8 GB SO-DIMM DDR4 Wide Temp., 128 GB 2.5" SATA-6G SSD Wide Temp. with Powerguard, 1 PCIe(x4) Expansion slot, Windows® 10 IoT Enterprise, 120 W Power adapter, Operating temp.: -10°C to 70°C

15"	XGA	150458	Spectra PowerTwin P15C-i5SL-RE10	150452	Spectra PowerTwin P15R-i5SL-RE10
15.6"	WXGA	158086	Spectra PowerTwin PW15C-i5SL-RE10	153916	Spectra PowerTwin PW15R-i5SL-RE10
17"	SXGA	150460	Spectra PowerTwin P17C-i5SL-RE10	150453	Spectra PowerTwin P17R-i5SL-RE10
19"	SXGA	150461	Spectra PowerTwin P19C-i5SL-RE10	150454	Spectra PowerTwin P19R-i5SL-RE10
21.5"	Full HD	150662	Spectra PowerTwin PW21C-i5SL-RE10	150665	Spectra PowerTwin PW21R-i5SL-RE10
24"	Full HD	157833	Spectra PowerTwin PW24C-i5SL-RE10	157832	Spectra PowerTwin PW24R-i5SL-RE10

READY-TO-RUN SYSTEMS

CONFIGURATION & ORDERING INFORMATION

Display size & resolution	Capacitive Touch Display	Resistive Touch Display
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STANDARD

Intel® Core™ i5-6300U, 8 GB SO-DIMM DDR4, 128 GB 2.5" SATA-6G SSD, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: 0°C to 50°C

12.1"	XGA	159747	Spectra PowerTwin PH12C-i5SL-S10	159737	Spectra PowerTwin PH12R-i5SL-S10
15"	XGA	159748	Spectra PowerTwin P15C-i5SL-S10	159738	Spectra PowerTwin P15R-i5SL-S10
15.6"	WXGA	159749	Spectra PowerTwin PW15C-i5SL-S10	159739	Spectra PowerTwin PW15R-i5SL-S10
17"	SXGA	159750	Spectra PowerTwin P17C-i5SL-S10	159740	Spectra PowerTwin P17R-i5SL-S10
19"	SXGA	159751	Spectra PowerTwin P19C-i5SL-S10	159741	Spectra PowerTwin P19R-i5SL-S10
21.5"	Full HD	159752	Spectra PowerTwin PW21C-i5SL-S10	159742	Spectra PowerTwin PW21R-i5SL-S10
24"	Full HD	159753	Spectra PowerTwin PW24C-i5SL-S10	159743	Spectra PowerTwin PW24R-i5SL-S10

Intel® Core™ i3-6100U, 8 GB SO-DIMM DDR4, 128 GB 2.5" SATA-6G SSD, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: 0°C to 50°C

12.1"	XGA	159728	Spectra PowerTwin PH12C-i3SL-S10	159717	Spectra PowerTwin PH12R-i3SL-S10
15"	XGA	159729	Spectra PowerTwin P15C-i3SL-S10	159718	Spectra PowerTwin P15R-i3SL-S10
15.6"	WXGA	159730	Spectra PowerTwin PW15C-i3SL-S10	159719	Spectra PowerTwin PW15R-i3SL-S10
17"	SXGA	159731	Spectra PowerTwin P17C-i3SL-S10	159720	Spectra PowerTwin P17R-i3SL-S10
19"	SXGA	159732	Spectra PowerTwin P19C-i3SL-S10	159721	Spectra PowerTwin P19R-i3SL-S10
21.5"	Full HD	159733	Spectra PowerTwin PW21C-i3SL-S10	159722	Spectra PowerTwin PW21R-i3SL-S10
24"	Full HD	159734	Spectra PowerTwin PW24C-i3SL-S10	159723	Spectra PowerTwin PW24R-i3SL-S10

SUNLIGHT READABLE

Intel® Core™ i5-6300U, 8 GB SO-DIMM DDR4 Wide Temp., 128 GB 2.5" SATA-6G SSD Wide Temp. with Powerguard, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: -10°C to 70°C

12.1"	XGA	159806	Spectra PowerTwin PH12C-i5SL-SR10	-	
15"	XGA	159808	Spectra PowerTwin P15C-i5SL-SR10	-	
17"	SXGA	159809	Spectra PowerTwin P17C-i5SL-SR10	-	
19"	SXGA	159810	Spectra PowerTwin P19C-i5SL-SR10	-	

Intel® Core™ i3-6100U, 8 GB SO-DIMM DDR4 Wide Temp., 128 GB 2.5" SATA-6G SSD Wide Temp. with Powerguard, Windows® 10 IoT Enterprise, 60 W Power adapter, Operating temp.: -10°C to 70°C

12.1"	XGA	159799	Spectra PowerTwin PH12C-i3SL-SR10	-	
15"	XGA	159801	Spectra PowerTwin P15C-i3SL-SR10	-	
17"	SXGA	159803	Spectra PowerTwin P17C-i3SL-SR10	-	
19"	SXGA	159804	Spectra PowerTwin P19C-i3SL-SR10	-	

ACCESSORIES

ORDERING INFORMATION

Article n°	Model	Description
N° 162431	PT-i5-MEC-LAN-Set	2 x LAN Port, incl. Universal Braket
N° 159962	PT-i5-MEC-USB	2 x USB 3.0 Port, incl. Universal Braket
N° 152068	PT-i5-MEC-COM-M212	2 x RS-232 Port, incl. Universal Braket
N° 152069	PT-i5-MEC-COM-M334	4 x RS-232/422/485 Port, incl. Universal Braket
N° 158058	PT-i5-CFM-IGN100-R10 V1.5	Power Ignition Module-Kit
N° 150442	PT-i5-CFM-PoE100-R10	Module-Kit, PoE+, 25,5 W for PC Unit without Expansion slot
N° 150443	PT-i5-CFM-PoE101-R10	Module-Kit, PoE+, 25,5 W for PC Unit with Expansion slot
N° 150445	RSC-P	Riser card, 1 x PCI for PC Unit with Expansion slot
N° 151139	RSC-E4	Riser card, 1 x PCIe (x4) for PC Unit with Expansion slot
N° 156631	PowerTwin RFID Mounting Kit (left/right)	Black, Mounting bar, Snap-in holder, screws
N° 156899	PowerTwin RFID Mounting Kit (under)	Black, Mounting bar, Snap-in holder, screws
Upon request	RFID Module	

SPECTRA POWERTWIN-SERIES | NOMENCLATURE

Spectra PowerTwin	M	H	12	C	-			SR		
Spectra PowerTwin	P		24		-	AL	-	R	10	
Spectra PowerTwin	P	W	15	R	-	i7SL	-	P	E	10

Series

M: Monitor
P: Panel-PC

Resolution

W: Widescreen
H: High Resolution

Display size

08: 8.4"
10: 10.4"
12: 12.1"
15: 15" o. 15.6"
17: 17"
19: 19"
21: 21.5"
24: 24"

Touchscreen

R: Resistive
C: P-CAP
: without Touch

Processor (Generation)

BT: Bay Trail Atom™ E3845
BTJ19: Bay Trail Celeron® J1900 upon request
AL: Apollo Lake Atom® x7-E3950
ALN42: Apollo Lake Pentium® N4200 upon request
i7SL: Skylake Core™ i7-6600U
i5SL: Skylake Core™ i5-6300U
i3SL: Skylake Core™ i3-6100U
i3WL: Whiskey Lake Core™ i3-8145UE
i5WL: Whiskey Lake Core™ i5-8365UE

Version

P: Performant
R: Robust
S: Standard
L: Legacy
SR: Sunlight readable

Expansion

E: 1 PCIe Slot (or PCI upon request)
or 2 universal brackets

Operating System

7: Win7
10: Win10IoT