

3.1.5.3 5PP581.1505-00

3.1.5.3.1 General information

- 15" TFT XGA color display
- Analog resistive touch screen plus function and system keys
- Intel® Atom™ technology
- Compact installation depth
- Fanless operation
- Can be upgraded with interface board

3.1.5.3.2 Order data


Model number	Short description	Figure
System units		
5PP581.1505-00	Power Panel 581 15" XGA TFT display with touch screen (resistive); 32 function keys and 92 system keys; connections for 1x RS232, 3x USB 2.0, 1x Ethernet 10/100/1000; can be expanded with interface board; IP65 protection (front); order male 24 VDC connector for supply voltage separately (screw clamp: 0TB103.9; cage clamp: 0TB103.91)	
Required accessories		
CPU boards		
5PP5CP.US15-00	CPU board Intel Atom Z510 1.1 GHz - Single core - US15W chipset	
5PP5CP.US15-01	CPU board Intel Atom Z520 1.33 GHz - Single core - US15W chipset	
5PP5CP.US15-02	CPU board Intel Atom Z530 1.6 GHz - Single core - US15W chipset	
Main memory		
5MMDDR.0512-01	SO-DIMM DDR2 RAM 512 MB PC2-5300	
5MMDDR.1024-01	SO-DIMM DDR2 RAM 1024 MB PC2-5300	
5MMDDR.2048-01	SO-DIMM DDR2 RAM 2048 MB PC2-5300	
Terminal blocks		
0TB103.9	Connector 24 VDC - 3-pin female - Screw clamps 3.31 mm ²	
0TB103.91	Connector 24 VDC - 3-pin female - Cage clamps 3.31 mm ²	
Optional accessories		
Batteries		
0AC201.91	Lithium batteries 4 pcs., 3 V / 950 mAh button cell We hereby state that the lithium cells contained in this shipment qualify as "partly regulated". Handle with care. If the package is damaged, inspect the cells, repack intact cells and protect cells against short circuits. For emergency information, call RENATA SA at + 41 61 319 28 27	
4A0006.00-000	Lithium battery, 3 V / 950 mAh, button cell	
CompactFlash cards		
5CFCRD.016G-06	CompactFlash 16 GB B&R (SLC)	
5CFCRD.0512-06	CompactFlash 512 MB B&R (SLC)	
5CFCRD.1024-06	CompactFlash 1 GB B&R (SLC)	
5CFCRD.2048-06	CompactFlash 2 GB B&R (SLC)	
5CFCRD.4096-06	CompactFlash 4 GB B&R (SLC)	
5CFCRD.8192-06	CompactFlash 8 GB B&R (SLC)	
Interface boards		
5PP5IF.CETH-00	Ethernet interface card - 1 Ethernet 10/100/1000	
5PP5IF.CHDA-00	Audio interface card - 1 HDA	
5PP5IF.FCAN-00	CAN interface card - 1 CAN master	
5PP5IF.FETH-00	Ethernet interface card - 1 Ethernet 10/100/1000 - 512 kB SRAM	
5PP5IF.FPLM-00	POWERLINK interface card - 2 POWERLINK managing nodes - 512 kB SRAM	
5PP5IF.FX2X-00	X2X Link interface card - 1 X2X Link master - 512 kB SRAM	
5PP5IF.FXCM-00	CAN interface card - 1 CAN master - 1 X2X master - 512 kB SRAM - Can be installed in PP500, APC510, APC511 systems	
USB accessories		
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 46: 5PP581.1505-00 - Order data

3.1.5.3.3 Technical data

Product ID	5PP581.1505-00	
Revision	C0	D0
General information		
Cooling	Fan-free	
LED status indicators	Power, CF, Link, Run	
B&R ID code	0xB60A	
Battery	Renata 950 mAh	
Type	4 years ¹⁾	
Service life	Yes, accessible from the outside	
Removable	Lithium ion	
Design	Yes	
Power button	Yes	
Reset button	Yes	
Buzzer	Yes	
Certification	Yes	
CE	Yes	
cULus	Yes	
GOST-R	Yes	
Controller		
Boot loader	BIOS	
Mode/Node switches	2, 16 positions each (back)	
Watchdog	MTCX	
Power failure logic	MTCX ²⁾	
Controller	10 ms	
Buffer time	Intel® Graphics Media Accelerator 500	
Graphics	Intel® Graphics Media Accelerator 500	
Controller	DDR2 SDRAM	
Memory	Max. 2 GB	
Type		
Memory size		
Interfaces		
COM1 ³⁾	RS232, modem-capable, not electrically isolated	
Type	9-pin male DSUB connector	
Design	16550-compatible, 16-byte FIFO	
UART	115 kbit/s	
Max. baud rate		
CompactFlash slot 1	Type I	
Type	SD card	
SD memory card slot	SD card	
Type		
USB	3	
Quantity	USB 2.0	
Type	Type A	
Design	Low speed (1.5 Mbit/s), full speed (12 Mbit/s), high speed (480 Mbit/s)	
Transfer rate	Max. 1 A per connection	
Current load		
Ethernet	1	
Quantity	Intel 82574	
Controller	Shielded RJ45 port	
Design	10/100/1000 Mbit/s	
Transfer rate		
Display		
Type	Color TFT	
Display size	15" (381 mm)	
Colors	16 million	
Resolution	XGA, 1024 x 768 pixels	
Contrast	700:1	
Viewing angles	Direction R = 80° / Direction L = 80°	
Horizontal	Direction U = 80° / Direction D = 60°	
Vertical	Direction U = 70° / Direction D = 70°	
Backlight	LED	
Type	Typ. 33 to 350 cd/m ²	
Brightness (dimnable)	50,000 h	
Half-brightness time ⁴⁾	Typ. 20 to 400 cd/m ²	
Touch screen ⁵⁾	AMT	
Type	Analog, resistive	
Technology	B&R, serial, 12-bit	
Controller	81% ±3%	
Transmittance		
Keys		
Function keys	32 with LED (yellow)	
System keys	Alphanumeric keys, numeric keys, cursor block	
Service life	>1,000,000 actuations at 1 ±0.3N to 3 ±0.3 N actuating force	

Table 47: 5PP581.1505-00, 5PP581.1505-00 - Technical data

Product ID	5PP581.1505-00
LED brightness Yellow	Typ. 38 mcd
Inserts	
Interface board	Yes
I/O board	No
Electrical characteristics	
Nominal voltage	24 VDC ±25%
Nominal current	1.4 A ⁶⁾
Starting current	Typ. 3 A, max. 50 A for <300 µs
Power consumption	34 W ⁷⁾
Electrical isolation	Yes
Operating conditions	
EN 60529 protection	Back: IP20 (only with an inserted CF card, IF board or optional IF cover) Front: IP65, dust and sprayed water protection
Environmental conditions	
Temperature	
Operation	0 to 55°C
Storage	-20 to 60°C
Transport	-20 to 60°C
Relative humidity	
Operation	See temperature humidity diagram
Storage	See temperature humidity diagram
Transport	See temperature humidity diagram
Vibration	
Operation (continuous)	2 to 9 Hz: 1.75 mm amplitude / 9 to 200 Hz: 0.5 g
Operation (occasional)	2 to 9 Hz: 3.5 mm amplitude / 9 to 200 Hz: 1 g
Storage	2 to 8 Hz: 7.5 mm amplitude / 8 to 200 Hz: 2 g / 200 to 500 Hz: 4 g
Transport	2 to 8 Hz: 7.5 mm amplitude / 8 to 200 Hz: 2 g / 200 to 500 Hz: 4 g
Shock	
Operation	15 g, 11 ms
Storage	30 g, 6 ms
Transport	30 g, 6 ms
Elevation	
Operation	Max. 3000 m (component-dependent) ⁸⁾
Mechanical characteristics	
Housing	
Material	Galvanized steel plate
Front ⁹⁾	
Frame	Naturally anodized aluminum
Panel overlay	
Material	Polyester
Light background	RAL 9006
Dark gray border around display	RAL 7024
Gasket	Flat gasket around display front
Dimensions	
Width	435 mm
Height	430 mm
Depth	62.7 mm
Weight	5800 g

Table 47: 5PP581.1505-00, 5PP581.1505-00 - Technical data

- 1) At 50°C, 8.5 µA of the supplied components and a self-discharge of 40%. If an interface board with SRAM has been installed, the service life is 2½ years.
- 2) Maintenance Controller Extended.
- 3) The COM1 interface is identified in BIOS as the COM A interface.
- 4) At an ambient temperature of 25°C. Reducing the brightness by 50% can result in an approximately 50% increase in the half-brightness time.
- 5) Touch screen drivers for approved operating systems are available in the Downloads section of the B&R website.
- 6) The specified value applies to a nominal voltage of 24 VDC.
- 7) The specified value applies to a system unit with a CPU board but without an interface board.
- 8) The maximum ambient temperature is typically derated by 1°C per 1000 meters (starting at 500 meters above sea level).
- 9) There may be visible deviations in the color and surface appearance depending on the process or batch.

3.1.5.3.4 Dimensions

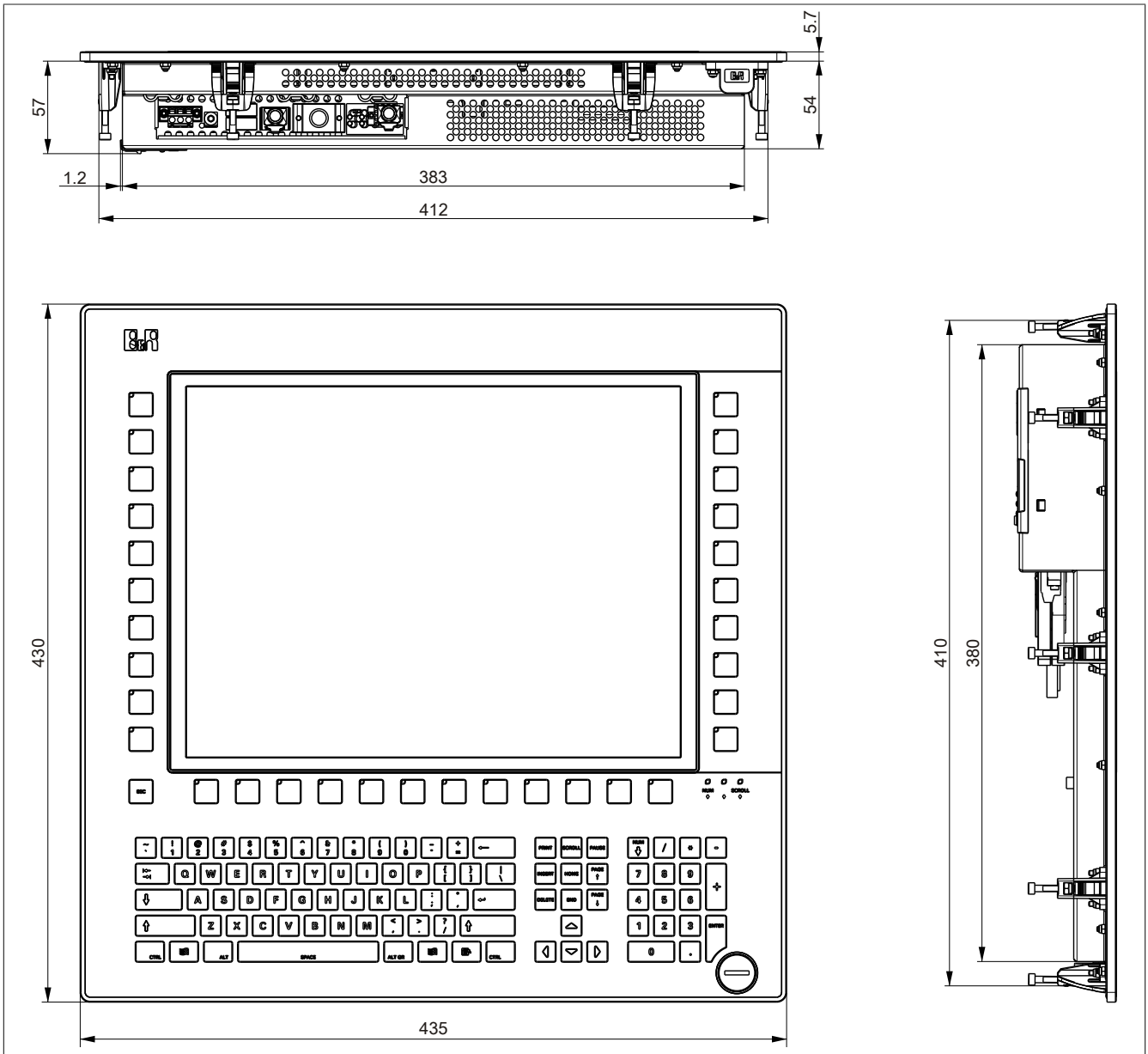


Figure 47: 5PP581.1505-00 - Dimensions

3.1.5.3.5 Cutout installation

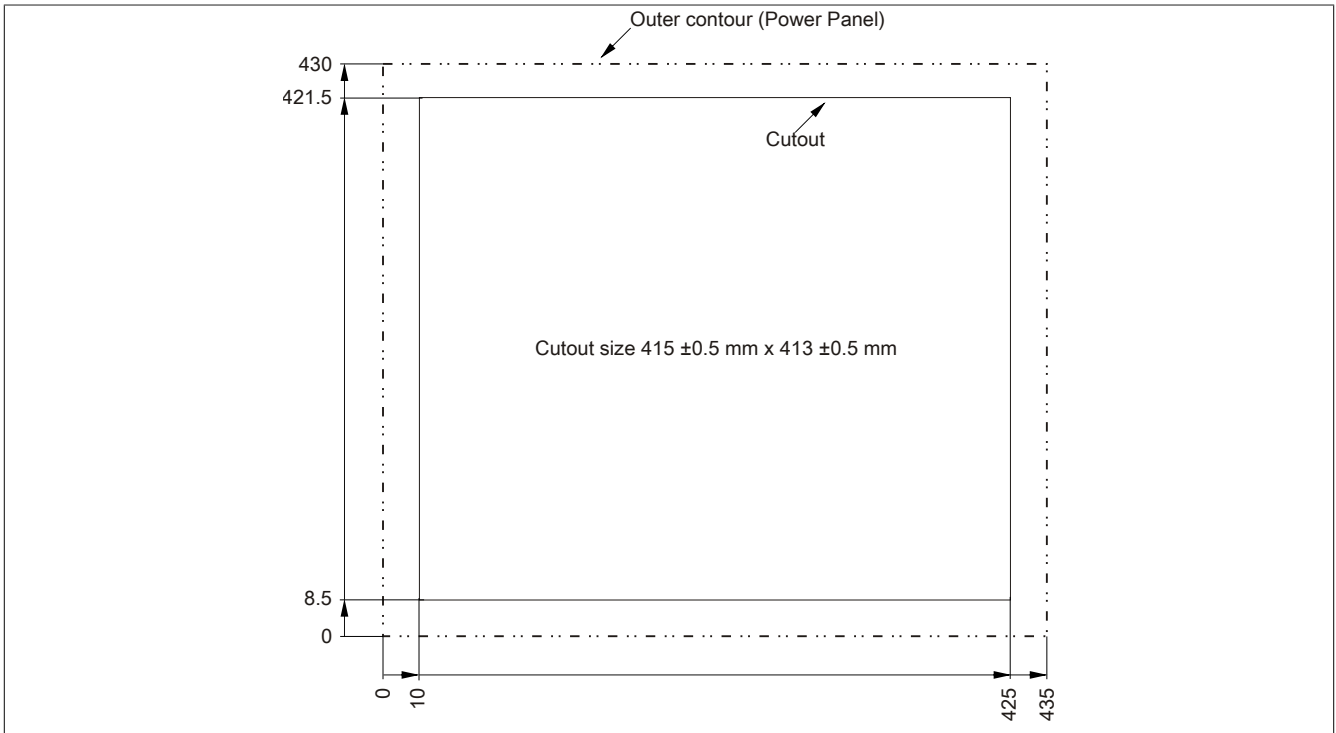


Figure 48: 5PP581.1505-00 - Cutout installation

3.1.5.3.6 Temperature humidity diagram

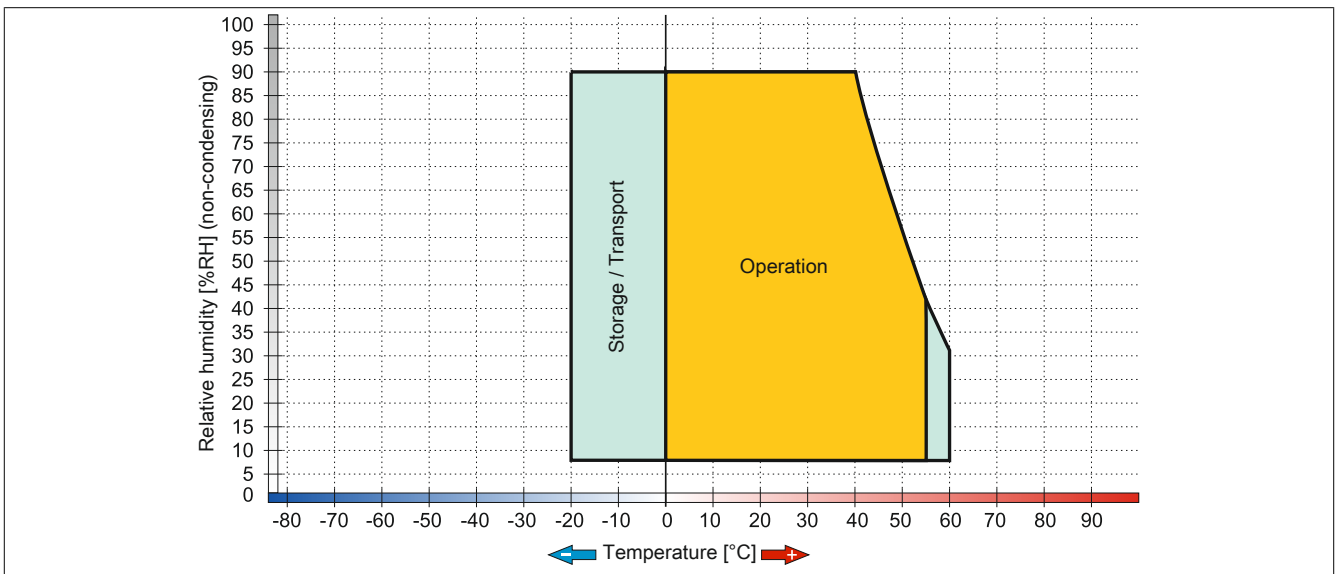


Figure 49: 5PP581.1505-00 - Temperature humidity diagram

3.2 US15W CPU boards

3.2.1 General information

These CPU boards are based on the Intel® US15W chipset and contain one DDR2 memory slot for a maximum of 2 GB. In addition, the Intel® GMA 500 with 128 MB memory is also integrated.

- Intel® Atom™ technology
- Intel® US15W chipset
- 1x DDR2 memory slot
- Intel® GMA 500
- Insyde BIOS

3.2.2 Order data

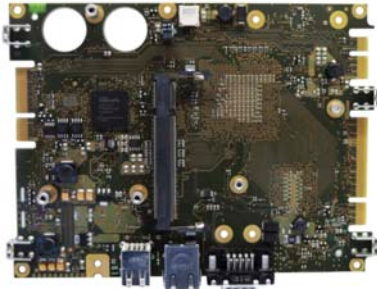
Model number	Short description	Figure
	CPU boards	
5PP5CP.US15-00	CPU board Intel Atom Z510 1.1 GHz - Single core - US15W chipset	
5PP5CP.US15-01	CPU board Intel Atom Z520 1.33 GHz - Single core - US15W chipset	
5PP5CP.US15-02	CPU board Intel Atom Z530 1.6 GHz - Single core - US15W chipset	
	Required accessories	
	Main memory	
5MMDDR.0512-01	SO-DIMM DDR2 RAM 512 MB PC2-5300	
5MMDDR.1024-01	SO-DIMM DDR2 RAM 1024 MB PC2-5300	
5MMDDR.2048-01	SO-DIMM DDR2 RAM 2048 MB PC2-5300	

Table 48: 5PP5CP.US15-00, 5PP5CP.US15-01, 5PP5CP.US15-02 - Order data

3.2.3 Technical data

Product ID	5PP5CP.US15-00	5PP5CP.US15-01	5PP5CP.US15-02
General information			
Certification			
CE		Yes	
cULus		Yes	
GOST-R		Yes	
GL		Yes ¹⁾	
Controller			
Boot loader	BIOS Insyde		
Processor			
Type	Intel® Atom™ Z510PT	Intel® Atom™ Z520PT	Intel® Atom™ Z530P
Clock frequency	1100 MHz	1330 MHz	1600 MHz
Number of cores		1	
Architecture		45 nm	
L1 cache		32 kB	
L2 cache		512 kB	
External bus	400 MHz	533 MHz	533 MHz
Intel® 64 Architecture		No	
Intel® Hyper-Threading Technology		Yes	
Intel® Virtualization Technology (VT-x)	No	Yes	Yes
Enhanced Intel SpeedStep® Technology		Yes	
Expanded command set		SSE2, SSE3, SSSE3	
Chipset	Intel® US15WPT	Intel® US15WPT	Intel® US15WP
Real-time clock			
Precision	At 25°C: typ. 12 ppm (1 seconds) per day ²⁾		
Battery-backed	Yes		
Memory slot			
Number of memory channels	1		
Type	DDR2		
Memory size	Max. 2 GB		

Table 49: 5PP5CP.US15-00, 5PP5CP.US15-01, 5PP5CP.US15-02 - Technical data