## **SIEMENS**

## **Data sheet**

## 6ES7647-8BB22-0AA3

SIMATIC IPC227E (Nanobox PC); 1x display port; 2x 10/100/1000 Mbit/s Ethernet RJ45; 1 x USB3.0, 3 x USB2.0; CFast slot; 24 V DC industrial power supply Celeron N2930 (4C/4T) 4 GB RAM; Box: Basis with COM 1/2 without operating system without mass storage, with CFast slot without SIMATIC software Vertical mounting

Installation type/mounting	
Mounting	DIN rail, wall mounting, portrait mounting
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V DC
Mains buffering	
Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Celeron N2807 / N2930, Intel Atom E3845
Chipset	SoC
Graphic	
Graphics controller	Integrated
Drives	
Hard disk	2.5" SATA ≥ 320 GB
SSD	Yes; 256 Eco / 240 / 480 GB
Memory	
Type of memory	DDR3L SO-DIMM
Main memory	2/4/8 GB
Capacity of main memory, max.	8 Gbyte
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
• free slots	1x PCIe (x1) (optional)
<ul> <li>Number of PCI slots</li> </ul>	1; Optional
<ul> <li>Number of compact flash slots</li> </ul>	1; CFast
Interfaces	
Number of industrial Ethernet interfaces	2; 2x Ethernet (RJ45)
USB port	1x USB 3.0 / 3x USB 2.0
Connection for keyboard/mouse	USB / USB
serial interface	Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS
Video interfaces	
Graphics interface	1x DisplayPort
Industrial Ethernet	
Industrial Ethernet interface	2x Ethernet (RJ45)
— 100 Mbps	Yes
— 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
Temperature monitoring	Yes
Watchdog	Yes
Status LEDs	1x power, 3x user
• Fan	No .
Monitoring function via network	Optional
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
Interference immunity against high-frequency electromagnetic field	ds

Interference immunity against high frequency radiation	10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6
Interference immunity to cable herne interference	60% AIVI acc. to IEC 61000-4-6
Interference immunity to cable-borne interference  • Interference immunity on supply cables	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge
• Interference infinitinity on supply cables	symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric
<ul> <li>Interference immunity on signal cables &gt;30m</li> </ul>	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
<ul> <li>Interference immunity on signal cables &lt; 30m</li> </ul>	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4;
	burst; length > 3 m
Interference immunity against voltage surge	
<ul> <li>asymmetric interference</li> </ul>	±2 kV acc. to IEC 61000-4-5, surge asymmetric
symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields	
Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
Interference emission via line/AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP degree of protection	IP40
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
• UL 508	Yes
CULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
Dust protection	Protection against foreign bodies > 1 mm
Use in hazardous areas	
ATEX Zone 2	Yes; Optional
IECEx Zone 2	Yes; Optional
cULus Class I Zone 2, Division 2	Yes; Optional
Marine approval	
Germanischer Lloyd (GL)	Yes
<ul> <li>American Bureau of Shipping (ABS)</li> </ul>	Yes
<ul> <li>Bureau Veritas (BV)</li> </ul>	Yes
<ul> <li>Det Norske Veritas (DNV)</li> </ul>	Yes
<ul> <li>Korean Register of Shipping (KRS)</li> </ul>	Yes
<ul> <li>Lloyds Register of Shipping (LRS)</li> </ul>	Yes
<ul> <li>Nippon Kaiji Kyokai (Class NK)</li> </ul>	Yes
<ul> <li>Chinese Classification Society (CCS)</li> </ul>	V.
/	Yes
Ambient conditions	Yes
Ambient conditions	Yes
	Yes  0 °C; -20 °C as option
Ambient conditions  Ambient temperature during operation	
Ambient conditions  Ambient temperature during operation  • min.	0 °C; -20 °C as option
Ambient conditions  Ambient temperature during operation  • min.  • max.	0 °C; -20 °C as option
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.	0 °C; -20 °C as option 60 °C -20 °C
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.	0 °C; -20 °C as option 60 °C
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 %
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)
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Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-2-6  Shock testing	0 °C; -20 °C as option 60 °C  -20 °C  -20 °C  60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-2-6  Shock testing  • Shock load during operation	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-2-6  Shock testing	0 °C; -20 °C as option 60 °C  -20 °C  -20 °C  60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-2-6  Shock testing  • Shock load during operation  Operating systems	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)  Tested according to IEC 60068-2-27: 150 m/s², 11 ms  Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P,
Ambient conditions  Ambient temperature during operation  • min.  • max.  Ambient temperature during storage/transportation  • min.  • max.  Relative humidity  • Relative humidity  Vibrations  • Vibration resistance during operation acc. to IEC 60068-2-6  Shock testing  • Shock load during operation  Operating systems  pre-installed operating system	0 °C; -20 °C as option 60 °C  -20 °C 60 °C  Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)  tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)  Tested according to IEC 60068-2-27: 150 m/s², 11 ms  Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit

<ul><li> Windows 7</li><li> Windows 10</li><li> Windows 10 Enterprise</li></ul>	Yes; Ultimate 32 bit or 64 bit Yes; Windows 10 IoT Enterprise 2016 LTSB, 64bit, MUI Yes; Windows 10 IoT Enterprise 2019 LTSC, 64 bit, MUI
Software	
SIMATIC Software	Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle
Dimensions	
Width	191 mm
Height	100 mm
Depth	60 mm

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