

EXPC-1519 Series Quick Installation Guide

Version 4.1, January 2021

Technical Support Contact Information
www.moxa.com/support

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P/N: 1802015190014



Overview

The EXPC-1519 Series Zone 2 panel computers feature advanced 3rd generation Intel® Core™ processors—i7-3555LE and Celeron 1047UE—with 4 GB of system memory expandable to 16 GB, delivering a reliable, high-performance platform of wide versatility for use in harsh oil and gas environments.

Package Checklist

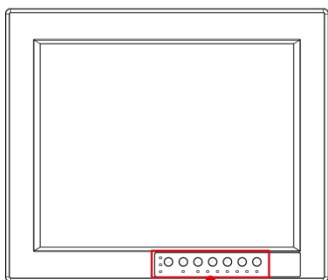
Before installing the EXPC-1519, verify that the package contains the following items for your model.

Model	Package Checklist
EXPC-1519-C1-S1-T EXPC-1519-C7-S1-T EXPC-1519-C1-S2-T EXPC-1519-C7-S2-T	<ul style="list-style-type: none">• 1 EXPC-1519 panel computer• 1 HDD/SSD installation kit• 2 cable gland connectors• 1 2-pin terminal block for DC power input• 1 3-pin terminal block for AC power input• Quick installation guide (printed)• Warranty card
EXPC-1519-C1-S3-T EXPC-1519-C7-S3-T	<ul style="list-style-type: none">• 1 EXPC-1519 panel computer• 1 HDD/SSD installation kit• 2 cable gland connectors• 1 2-pin terminal block for DC power input• 1 3-pin terminal block for AC power input• 1 USB female connector installation kit• 1 RJ45 female connector installation kit• Quick installation guide (printed)• Warranty card

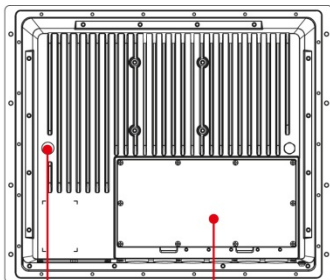
NOTE Please notify your sales representative if any of the above items are missing or damaged.

Hardware Overview

Front and Rear Views



Control button x 7
LED indicator x 10

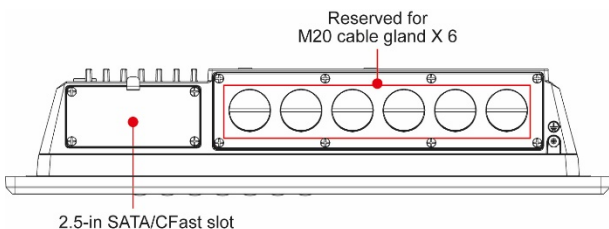


Optional Antenna port
(N type)

I/O panel
enclosure

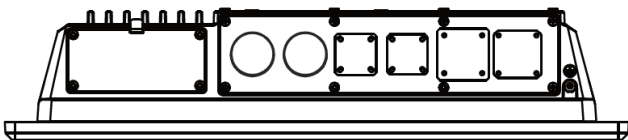
Bottom View

**Applies to: EXPC-1519-C1-S1-T, EXPC-1519-C7-S1-T,
EXPC-1519-C1-S2-T, EXPC-1519-C7-S2-T**



Bottom View

Applies to: EXPC-1519-C1-S3-T, EXPC-1519-C7-S3-T

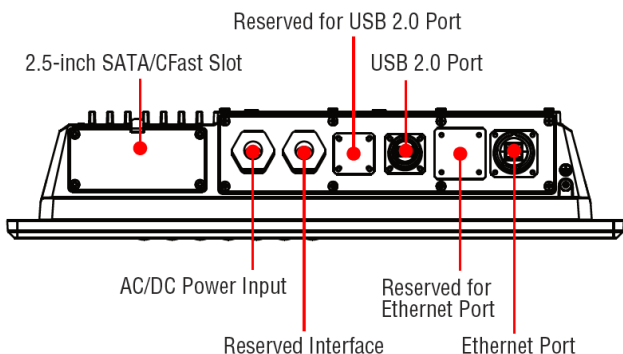


The figure below shows an S3 model with the connectors installed, which include an AC power connector, a DC power connector, an USB connector, and a RJ45 connector. You can install only the connectors required for your application.



ATTENTION







Moxa recommends that you use only ATEX/IECEX-certified connectors in accordance with the certification requirements for safe and reliable operations.




IMPORTANT The S3 model is not covered by the hazardous area ATEX Zone2 and IECEX Zone2 certifications.

Control Buttons and LEDs

The following table describes the control buttons on the front panel.

Button	Name	Description
	Power	Press to power on or wake up the computer. Press and hold for 4 seconds to power off.
	Brightness	Press to adjust the brightness level.
	Fn	Press to display the function menu.
	Touch	Touch to enable the touchscreen function. Touch again to disable.
	Info	Press to display system information.
	Brightness mode	Press to switch between display modes.

The LEDs on the front panel are described below:

LED	Color	Description
Power	Green	Power is on and the system is functioning normally
	Off	Power is off
Fiber 1/ Fiber 2	Green	Fiber port is connected
	Off	Fiber port is not connected
LAN 1/ LAN 2	Green	LAN port is connected
	Off	LAN port is not connected
Touch	Green	Panel touch mode is enabled
	Off	Panel touch mode is disabled
Info	Red	System error
	Off	System is functioning properly
 Display mode	Green	Displays the brightness mode
	Off	Not in the brightness mode range

Hardware Connection and Installation



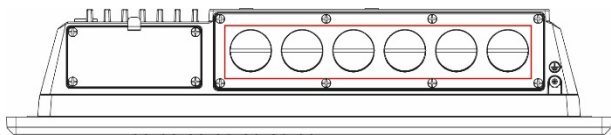
WARNING - EXPLOSION HAZARD

To comply with the ATEX/IECEX requirements, DO NOT open the cover or disassemble parts of the system except in the case of the covers on the rear panel, the IO panel enclosure, and the storage drive.

Connecting the I/O Ports

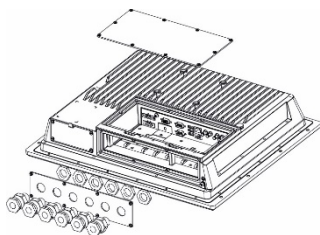
The procedure for connecting the I/O ports depends on your EXPC-1519 model. To meet the IEC/EN 60079-15 standard and to maintain the minimum requirements of an IP64 enclosure, be sure to use only IECEx and ATEX certified IP64 components and I/O fittings, and secure the connectors by tightening the cable connectors at the user end.

The assembly torque required for the M20 cap and nut is 20 kg/f in case you need to fasten the screws.

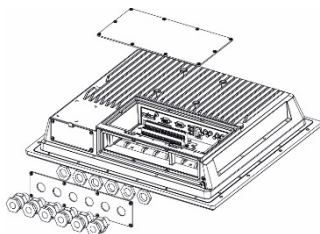


The assembly torque requirement for the screws on the rear panel cover, the IO panel enclosure cover, and the storage drive cover is 4.5 kg/f. You must follow these torque requirements when you fasten the screws to secure the covers, after connecting the I/O ports.

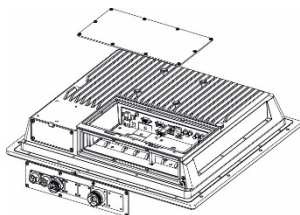
For the EXPC-1519-C1-S1-T and EXPC-1519-C7-S1-T models, remove the cover on the IO panel enclosure on the rear panel. Connect one end of the cables to the IO ports through the cable connectors on the bottom panel.



For the EXPC-1519-C1-S2-T and EXPC-1519-C7-S2-T models, remove the cover on the IO panel enclosure on the rear panel. Connect one end of the cables to the terminal blocks through the cable connectors on the bottom panel.

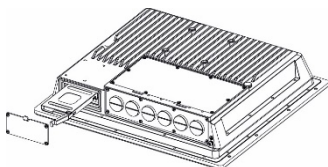


For the EXPC-1519-C1-S3-T and EXPC-1519-C7-S3-T models, remove the cover on the IO panel enclosure on the rear panel. Install AC or DC power source via the cable gland connector, USB connector, or RJ45 connector on the IO panel, and then connect and secure the cables to the connectors on the bottom panel.



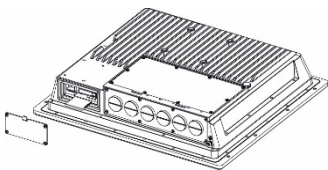
Installing the SATA Storage Drive

1. Use the screws provided to secure a 2.5-inch SATA storage drive in the storage drive bracket.
2. Loosen the screws to remove the slot cover on the bottom panel.
3. Install the bracket with the storage drive into the slot.
4. Replace the slot cover.



Installing a CFast Card

Remove the slot cover on the bottom panel and push a CFast card into the slot, and then replace the slot cover.



Grounding the EXPC-1519 Series

Proper grounding and wire routing help limit the effects of noise from electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting the power source.

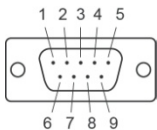
Pin Assignments

Power Ports

Model	Power connector pin assignment	
EXPC-1519-C1-S1-T EXPC-1519-C7-S1-T EXPC-1519-C1-S2-T EXPC-1519-C7-S2-T EXPC-1519-C1-S3-T EXPC-1519-C7-S3-T	DC Power (DC 24 V)	AC Power (AC 110-240 V)

Serial Ports

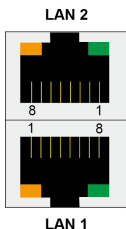
The EXPC-1519 Series provides two software-selectable RS-232/422/485 serial ports with DB9 connectors.



Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	-
2	RxD	TxDB(+)	TxDB(+)	-
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	-	-	-
7	RTS	-	-	-
8	CTS	-	-	-

Ethernet Ports

The following table shows the pin assignments for the Fast Ethernet 100/1000 Mbps RJ45 ports.

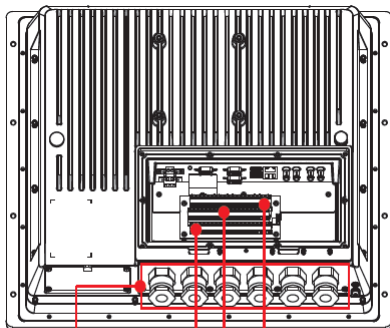


Pin	100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	-	TRD(2)+
5	-	TRD(2)-
6	ERx-	TRD(1)-
7	-	TRD(3)+
8	-	TRD(3)-

Refer to the following table for LAN LED indicator descriptions.

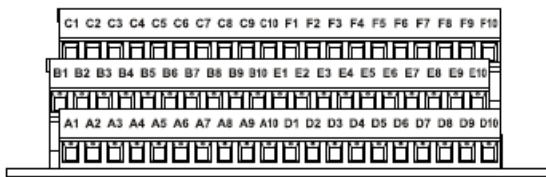
LAN (on connectors)	Green	100 Mbps Ethernet mode
	Yellow	1000 Mbps (Gigabit) Ethernet mode
	Off	No activity / 10 Mbps Ethernet mode

EXPC-1519-C1-S2-T / EXPC-1519-C7-S2-T Terminal Block



Optional M20 Cable Glands
Serial Port x 2
Ethernet Port x 2
USB 2.0 x 4

For the EXPC-1519-C1-S2-T and EXPC-1519-C7-S2-T SKU, all data input and output goes through the terminal block. For details, refer to the pin assignment table below:



Function	Pin Definition									
USB1/ USB2	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
	GND	VCC	USB1- DATA-	USB1- DATA+	USB2- DATA-	USB2- DATA+	N/A	N/A	N/A	N/A

Function	Pin Definition									
USB3/ USB4	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
	GND	VCC	USB3- DATA-	USB3- DATA+	USB4- DATA-	USB4- DATA+	-	-	-	-
LAN1	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
	N/A	N/A	LAN1_ MDINO	LAN1_ MDIPO	LAN1_ MDIN1	LAN1_ MDIP1	LAN1_ MDIN2	LAN1_ MDIP2	LAN1_ MDIN3	LAN1_ MDIP3
LAN2	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
	N/A	N/A	LAN2_ MDINO	LAN2_ MDIPO	LAN2_ MDIN1	LAN2_ MDIP1	LAN2_ MDIN2	LAN2_ MDIP2	LAN2_ MDIN3	LAN2_ MDIP3
Serial port 1	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
RS-232	GND	N/A	P1_DTR	N/A	P1_TXD	P1_CTS	P1_RXD	P1_RTS	P1_DCD	P1_DSR

Function	Pin Definition									
RS-422	GND	N/A	P1_ RxDA(-)	N/A	P1_ RxDB(+)	N/A	P1_ TxDB(+)	N/A	P1_ TxDA(-)	N/A
RS-485 (4-wire)	GND	N/A	P1_ RxDA(-)	N/A	P1_ RxDB(+)	N/A	P1_ TxDB(+)	N/A	P1_ TxDA(-)	N/A
RS-485 (2-wire)	GND	N/A	P1_ DataA(-)	N/A	P1_ DataB(+)	N/A	N/A	N/A	N/A	N/A
Serial port 2	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
RS-232	GND	N/A	P2_DTR	N/A	P2_TXD	P2_CTS	P2_RXD	P2_RTS	P2_DCD	P2_DSR
RS-422	GND	N/A	P2_ RxDA(-)	N/A	P2_ RxDB(+)	N/A	P2_ TxDB(+)	N/A	P2_ TxDA(-)	N/A
RS-485 (4-wire)	GND	N/A	P2_ RxDA(-)	N/A	P2_ RxDB(+)	N/A	P2_ TxDB(+)	N/A	P2_ TxDA(-)	N/A
RS-485 (2-wire)	GND	N/A	P2_ DataA(-)	N/A	P2_ DataB(+)	N/A	N/A	N/A	N/A	N/A

Powering On the EXPC-1519

To turn on the EXPC-1519, connect the EXPC-1519 to an AC or DC power source and press the **Power** button on the front panel. It takes about 30 seconds for the system to boot up. Once the system is ready, the **Power** LED turns on.

To power off the EXPC-1519 Series, we recommend using the power off procedure for the OS you are using. If the system does not power off properly, you can press the **Power** button for about 4 seconds to force the power to turn off.

Real-Time Clock

The EXPC-1519's real-time clock (RTC) is powered by a lithium battery. We strongly recommend that you do NOT replace the lithium battery without help from a qualified Moxa support engineer. If you need to change the battery, contact the Moxa RMA service team at http://www.moxa.com/rma/about_rma.aspx.



ATTENTION

There is a risk of explosion if the clock's lithium battery is replaced with an incompatible battery. The Li-Ion button battery with the model number BR2032-BA is manufactured by Rayovac Corporation.

Specifications

Environmental Limits	
Operating Temperature	Wide Temp. Models: -40 to 70°C
Power Requirements	
Power Consumption	24 VDC, Max. 6 A or 100 to 240 VAC, 47-63 Hz, Max. 1 A
Standards and Certifications	
Hazardous Location	EN 60079-0:2012+A11:2013 / IEC 60079-0 Ed.6 EN 60079-11:2012 / IEC 60079-11 Ed. 6 EN 60079-15:2010 / IEC 60079-15 Ed.4

Conditions for Safe Use

- Device is intended for installation in an area of not more than pollution degree 2 in accordance with EN 60664-1.
- The device needs to be shielded from direct exposure to UV light sources in final installation.
- Transient protection shall be provided to limit the peak rated voltage to maximum 140% of peak rated voltage.
- Connectors J32, J33, J27, DIO header, AUDIO header, JP7, Debug port pin header, SPI flash header, SCALAR_SPI header on main board are not to be used in hazardous locations.
- The blanking elements, if replaced, shall be rated to maintain the minimum IP64 enclosure in accordance with EN 60079-15.

Guidelines for Installation and Maintenance

- Do not replace coin cells or fuses on your own.
- Do not tamper with or remove the joint between the front and rear panels.
- The size of the input cable and the external earthing/grounding wire used in the binding screw should be 18 AWG (0.823 mm²).
- Tight torque for AC/DC input connectors should be 5.098 kgf-cm
- To prevent oxidization of the grounding mechanism, we recommend the use of antirust material.
- Use only ATEX certified cable connectors and cable glands for cabling. Refer to the *Hardware Connection and Installation* section for details on installing cable connectors.
- All I/O fittings must be IECEx/ATEX certified IP64 in accordance with IEC/EN 60079-15 standard.
- The diameter of the cable outer should be between 9.6 to 14.0 mm in accordance with the IP64 housing requirement.



WARNING - EXPLOSION HAZARD

Do not disconnect this equipment unless the power source has been removed or turned off, or the installation location is known to be non-hazardous.



WARNING - EXPLOSION HAZARD

Substitution of any of the components of this equipment may impair its suitability for Class I, Division 2 protection.

ATEX Zone 2 Certification Information



DEMKO

16 ATEX 1547X

Ex ic nA IIC T4 Gc

Ambient Temp. Range:

$-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$ or $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +70^{\circ}\text{C}$

Rated Cable Temp $\geq 89^{\circ}\text{C}$

IECEX UL 16.0074X

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