

TECHNICAL REFERENCE MANUAL

IOLITE® V26-1



4.3.2. IOLITE-R8: Boxed Chassis

In addition to a 19-inch rack cabinet compatible chassis, IOLITE is also available in a standalone aluminum chassis compatible with Sirius data acquisition instruments.

The chassis provides 8 slots for IOLITE input and output slices to be installed.

IOLITE-R8 includes EtherCAT gateway and cooling system.

4.3.2.1. IOLITE-R8: Boxed Chassis: Renders

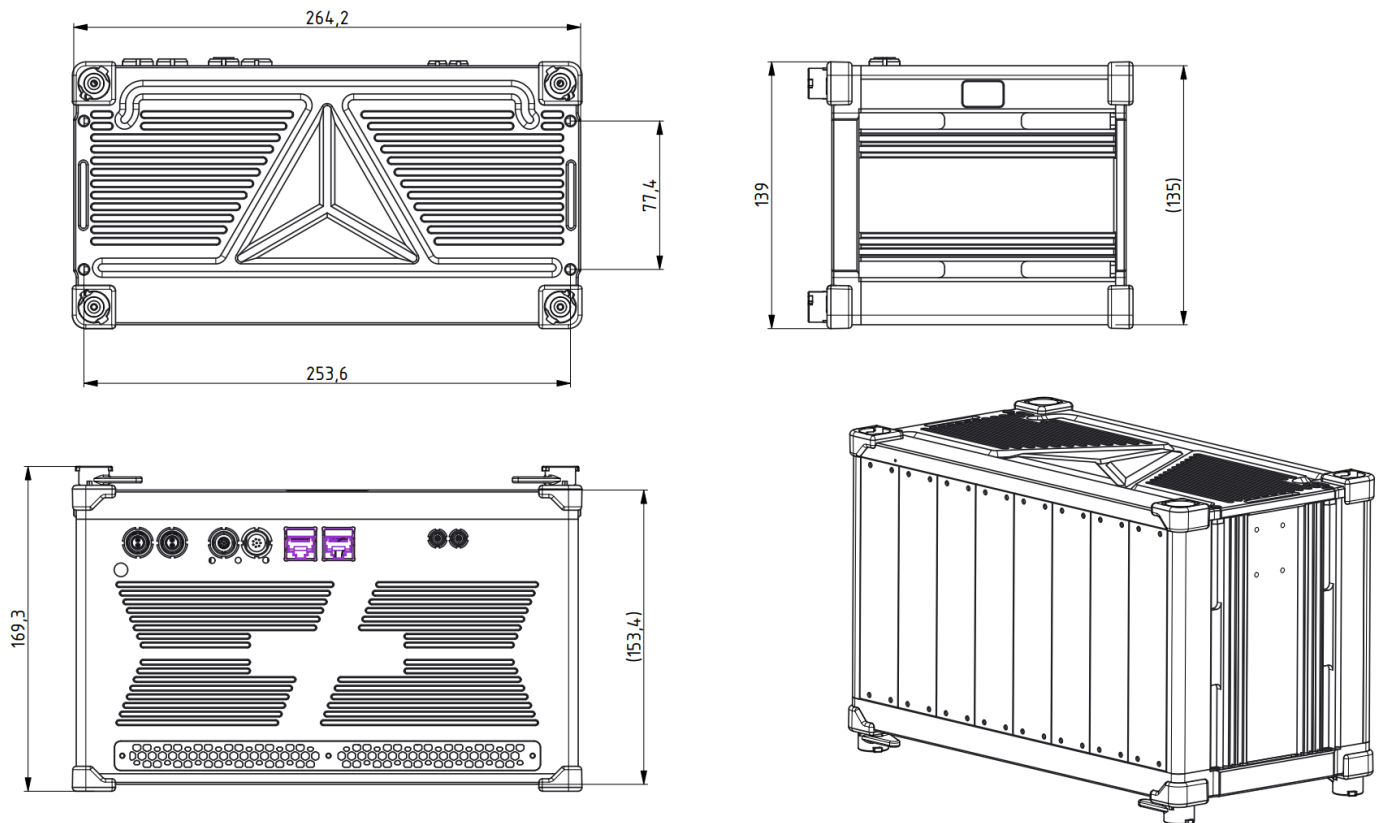


IOLITE-R8 Front panel



IOLITE-R8 Back panel

4.3.2.2. IOLITE-R8: Boxed Chassis: Dimensions



Technical Drawings of IOLITE-R8

4.3.2.3. IOLITE-R8: Boxed Chassis: Connectors

The IOLITE-R8 chassis also enables dual EtherCAT bus. There are two 8-pin LEMO 1B connectors on the back panel of IOLITE-R8 used for data transfer and synchronization on the primary bus (BUS 1) for buffered data. The OUT connector on BUS 1 also enables power supply for external Dewesoft EtherCAT devices.

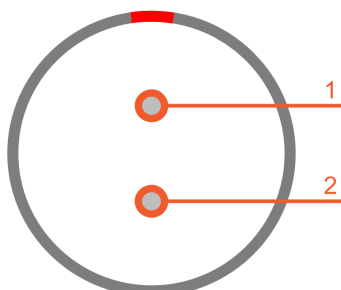
Secondary bus (BUS 2) for unbuffered data has two RJ45 connectors (IN and OUT) for data transfer and synchronization to 3rd party control master.

Two 2-pin LEMO 1B connectors are used for redundant power supply (PWR IN).

Above the PWR IN connector is a GND socket for grounding the IOLITE-R8.

Synchronization with Dewesoft USB data acquisition devices or connection to clock master is on IOLITE-R8 enabled by connecting a synchronization cable to two SYNC inputs (4-pin LEMO 00).

4.3.2.3.1. IOLITE-R8: Boxed Chassis: Power in: Pinout



Power in connector: pin-out (2-pin LEMO male)

Pin	Name	Description
1	V +	Supply
2	V -	Ground

For the power supply an unregulated DC voltage between 9 and 48 Volts is required, which is connected to the LEMO 1B connector on the rear side of the chassis.

PWR IN connector (on the device): EXJ.1B.302.HLD

Mating connector (for the cable): FGJ.1B.302.CLLD42Z



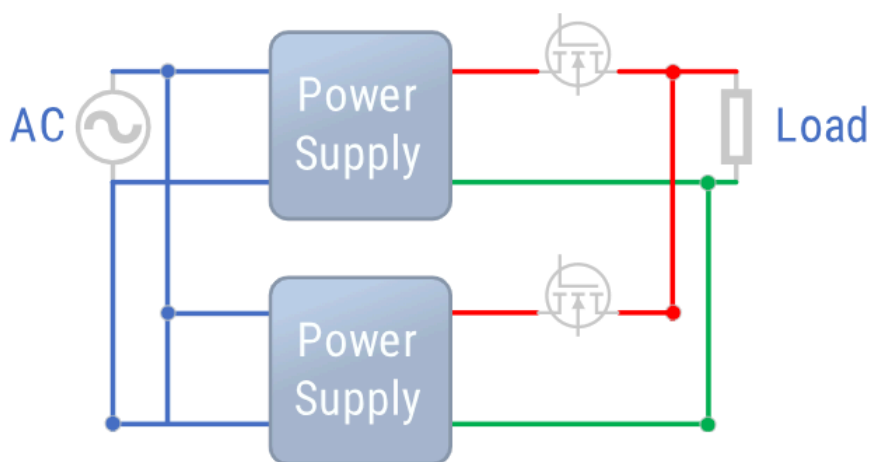
Important

Dual PWR IN works as redundant power input. This means that power input with higher voltage will be prioritized. If both supply voltages are present and in the similar voltage range (50 mVdc), the device will start draining power from both supplies.



Important

Dual PWR IN is not intended to be used as UPS battery power backup! PWR IN leakage current is around 2-5 mAdc depending on the applied supply voltage.



Dual PWR IN schematics

4.3.2.3.2. IOLITE-R8: Boxed Chassis: Sync: Pinout

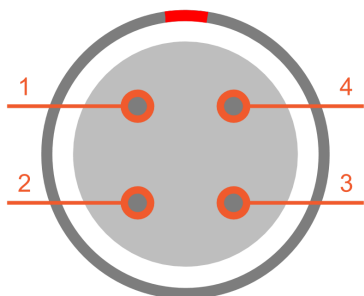
The sync connectors are required when you want to synchronize the data from IOLITE with Dewesoft USB devices for the same measurement. The signal that is transferred over sync cable makes sure that the measurement data of IOLITE and Dewesoft USB devices are perfectly synchronized to each other.

The other use of a sync connector is to connect directly to IOLITE a signal from the clock master.



Hint

There is no distinction between the IN and OUT – it does not matter which connector you use. When IRIG-synchronisation is used, the IRIG signal is on pins 1, 2.



Sync connector: pin-out (4-pin LEMO female)

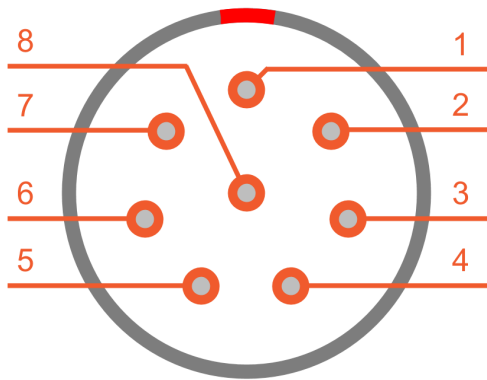
Pin	Name	Description
1	CLK	Clock
2	TRIG	Trigger
3	RES	PPS
4	GND	Ground

SYNC connector (on the device): EEG.00.304.CLL

Mating connector (for the cable): FGG.00.304.CLAD27Z

4.3.2.3.3. IOLITE-R8: Boxed Chassis: BUS 1: IN: Pinout

The IN connector of the primary EtherCAT bus (BUS 1) is a 8-pin LEMO 1B male connector.



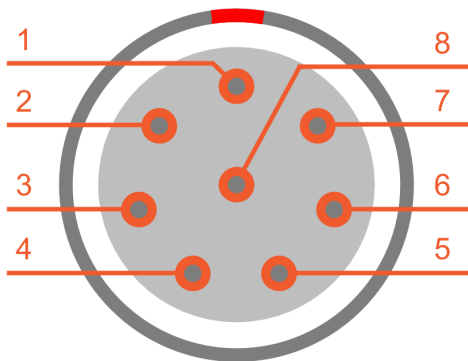
EtherCAT connector: pin-out (8-pin LEMO male)

BUS 1 IN connector (on the device): EEJ.1B.308.CLD
Mating connector (for the cable): FGJ.1T.308.CLL.1433

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	RX_N	Reception -
5	NC	Not connected
6	NC	Not connected
7	GND	Ground
8	GND	Ground

4.3.2.3.4. IOLITE-R8: Boxed Chassis: BUS 1: OUT: Pinout

The OUT connector of the primary EtherCAT bus (BUS 1) is a 8-pin LEMO 1B female connector.
OUT connector enables power supply for external Dewesoft EtherCAT devices.



EtherCAT connector: pin-out (8-pin LEMO female)

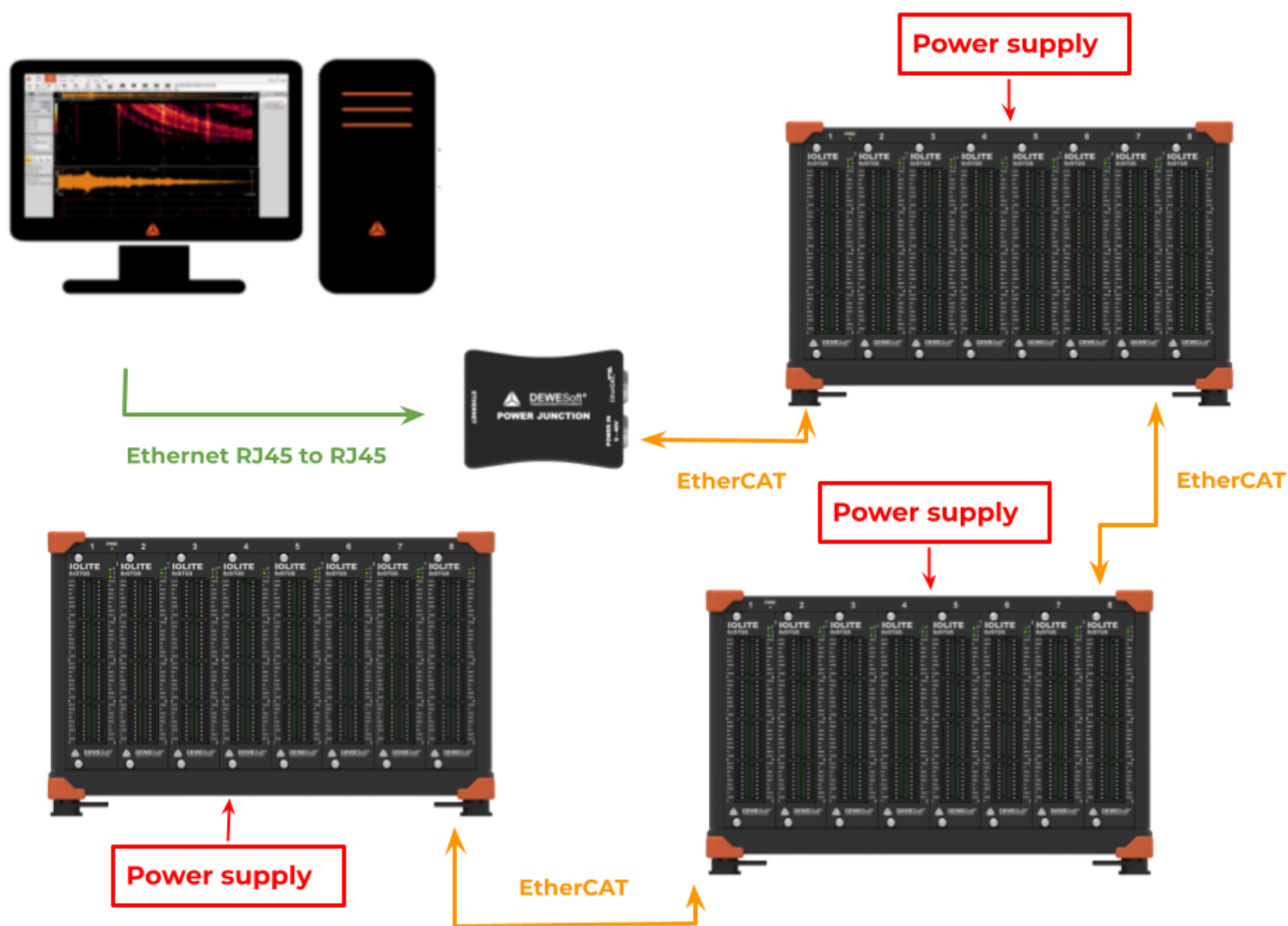
BUS 1 OUT connector (on the device): EEG.1B.308.CLN
Mating connector (for the cable): FGG.1T.308.CLA.1433

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	RX_N	Reception -
5	VCC	Power OUT
6	VCC	Power OUT
7	GND	Ground
8	GND	Ground

Important



Pins 5 and 6 of the ECAT IN 8-pin LEMO connector are not connected. You can not power multiple R8r systems with the ECAT line and should always provide a separate power supply and connect it to the Power in connector of each of the systems. However, you can power other devices with ECAT OUT!



Connection of IOLITE-R8 system with Ethercat line

4.3.2.3.5. IOLITE-R8: Boxed Chassis: BUS 2: RJ45: Pinout

IOLITE-R8 includes two RJ45 connectors on Secondary bus (BUS 2) for unbuffered data.

Each RJ45 connector has two LEDs:

- **GREEN** LED indicates that IOLITE is connected to another device.
- **YELLOW** LED is active only when the data transfer is active.

Connector used on the device is a standard ethernet connector (RJ45).

Standard ethernet cable with standard connector can be used to connect IOLITE-GATE with a PC.



EtherCAT connector: pin-out (RJ-45 female)

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	-	-
5	-	-
6	RX_N	Reception -
7	-	-
8	-	-

4.3.2.4. IOLITE-R8: Boxed Chassis: Connection of IOLITE-R8 standalone device to PC

First connect the power supply cable (PS-120-L1B2f) to the PWR IN LEMO 1B 2-pin connector. To increase system reliability connect redundant power supply to other PWR IN connectors.



Important

To improve the redundancy of the system, it is recommended that the device is powered with two power supplies connected to different electrical fuses!

Then connect LIT8f-RJ45-1M cable (LEMO side) to the IN connector of BUS 1 on the IOLITE-R8 back panel. Finally, connect the other side of the LIT8f-RJ45-1M cable (RJ45 side) to the LAN port of the PC.



Connection of IOLITE-R8 standalone device to PC

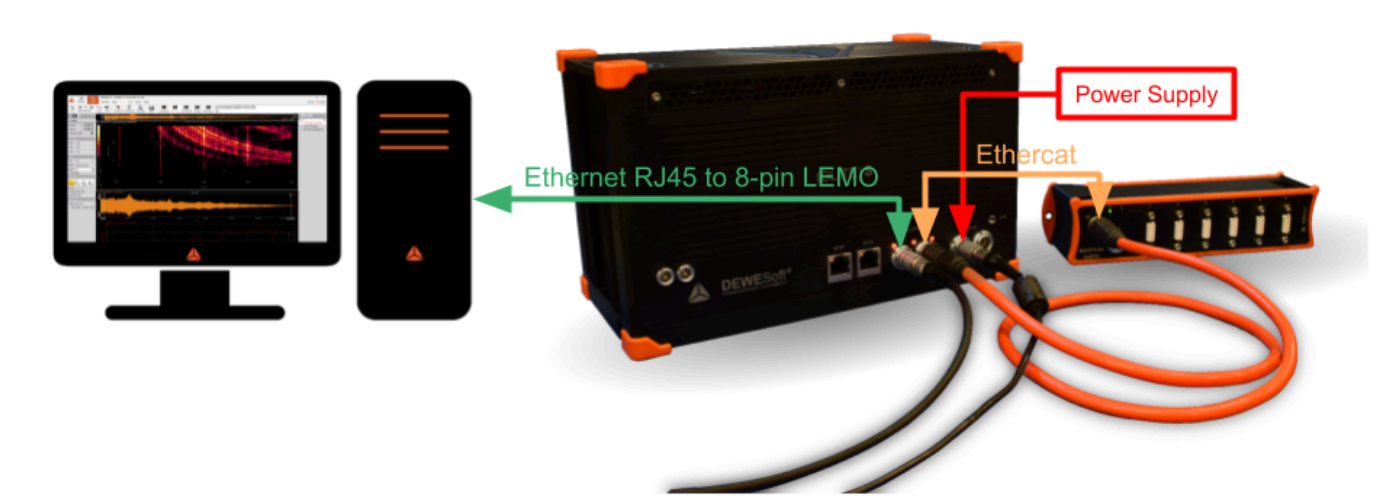
List of required cables:

Function	Dewesoft order code
Power supply	PS-120-L1B2f (default)
EtherCAT	LIT8f-RJ45-1M (default), LIT8f-RJ45-3M, LIT8f-RJ45-5M

4.3.2.5. IOLITE-R8: Boxed Chassis: Connection of IOLITE-R8 and KRYPTON® device

The connection of the IOLITE device to the PC is the same as in [4.3.2.4.](#)

Use EtherCAT to EtherCAT expansion cable (e.g. LIT8m-LIT8f-1M) and connect it to OUT connector on BUS 1 of IOLITE-R8 on one side and the IN connector of the KRYPTON device on the other side.



Connection of IOLITE-R8 and KRYPTON® device

List of required cables:

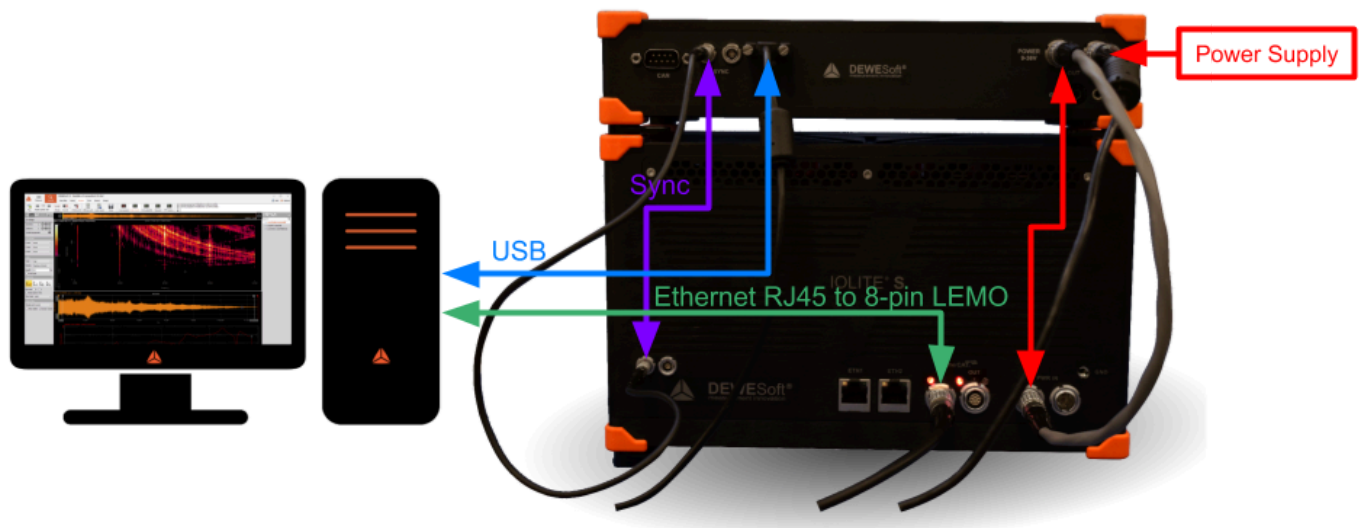
Function	Dewesoft order code
Power supply	PS-120-L1B2f (default)
EtherCAT	IOLITE to PC: LIT8f-RJ45-1M (default), LIT8f-RJ45-3M, LIT8f-RJ45-5M IOLITE to KRYPTON: LIT8m-LIT8f-02M, LIT8m-LIT8f-0.4M, LIT8m-LIT8f-1M, LIT8m-LIT8f-2.5M

4.3.2.6. IOLITE-R8: Boxed Chassis: Connection of IOLITE-R8 and Sirius® device

Connect power supply cable to Sirius (PS-120W-L1B2f). Then connect the USB cable (CABLE-USBAmmini-USBBS-1.8m) to the USB port on the back panel of the Sirius device. Finally connect the other side of the USB cable to the USB port on the PC.

Use power supply daisy chain cable (e.g. L1B2m-L1B2f-0.4m) to enable power supply for IOLITE-R8. Then connect L1T8f-RJ45-1M cable (LEMO side) to the IN connector of BUS 1 on the IOLITE-R8 back panel. Finally connect the other side of the L1T8f-RJ45-1M cable (RJ45 side) to the LAN port of the PC.

In order to have synchronized data between IOLITE and Sirius, connect SYNC cable (e.g. L00B4m-L00B4m-0.2m) to the SYNC connector on IOLITE-GATE and the other side of cable to the SYNC connector on Sirius.



Connection of IOLITE-R8 and Sirius® device

List of required cables:

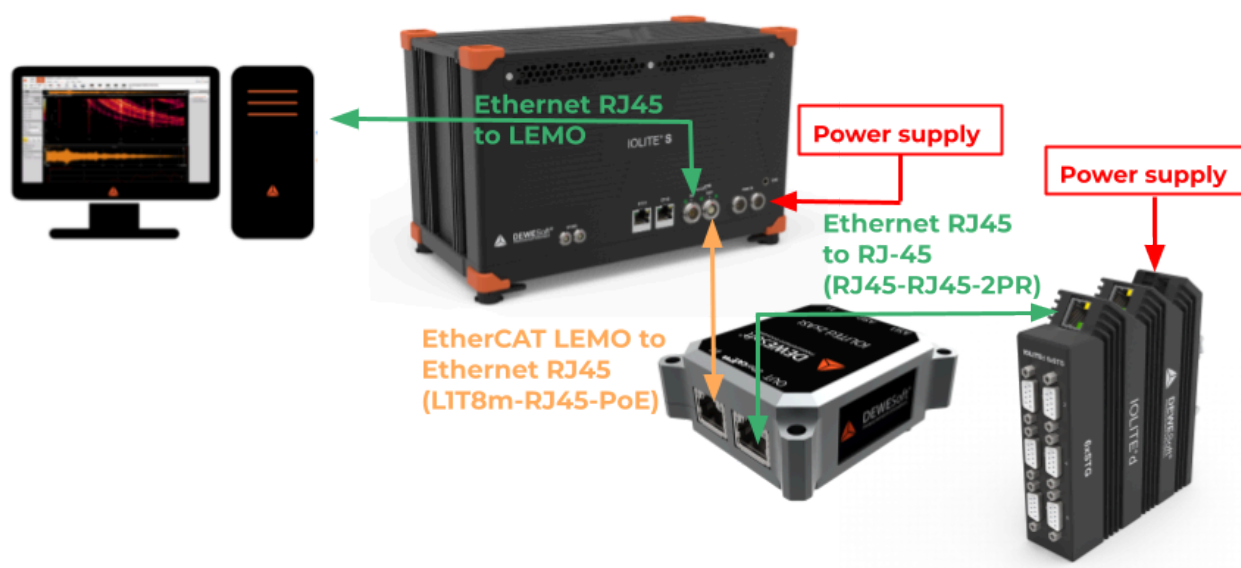
Function	Dewesoft order code
Power supply	Sirius: PS-120-L1B2f (default) Sirius to IOLITE: L1B2m-L1B2f-0.2m, L1B2m-L1B2f-0.4m, L1B2M-L1B2F-3m
EtherCAT	IOLITE to PC: L1T8f-RJ45-1M (default), L1T8f-RJ45-3M, L1T8f-RJ45-5M
USB	CABLE-USBAmini-USBBS-1.8m (default), CABLE-USBAmini-USBBS-1m
Synchronization	L00B4m-L00B4m-0.2m (default), L00B4m-L00B4m-0.5m, L00B4m-L00B4m-3m

4.3.2.7. IOLITE-R8: Boxed Chassis: Connection of IOLITE multi and single channel device

Connect power supply cable to IOLITE-R8 (PS-120W-L1B2f). Then connect L1T8f-RJ45-1M cable (LEMO side) to IN connector of BUS 1 on IOLITE-R8 back panel.

Use the L1T8m-RJ-45 cable to connect the IOLITE - single channel device. An additional power cable is not needed, as the device can power over Ethernet cable.

Use a RJ-45 - RJ-45 cable to connect the IOLITE - multichannel device. An additional Power supply is needed for the device with the cable.



Function	Dewesoft order code
Power supply	IOLITE-R8: PS-120-L1B2f (default)
EtherNET	IOLITE-R8 to IOLITE single channel: RJ-45 - RJ-45 IOLITE single channel to IOLITE multi channel: RJ-45 - RJ-45