

TECHNICAL REFERENCE MANUAL

IOLITE® V26-1



4.3.3. IOLITE-R8r: Ruggedized Boxed Chassis

In addition to standard R8 chassis, IOLITE is also available in ruggedized version.

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

IOLITE-R8r includes an EtherCAT gateway and has a passive cooling system.

4.3.3.1. IOLITE-R8r: Ruggedized Boxed Chassis: Renders

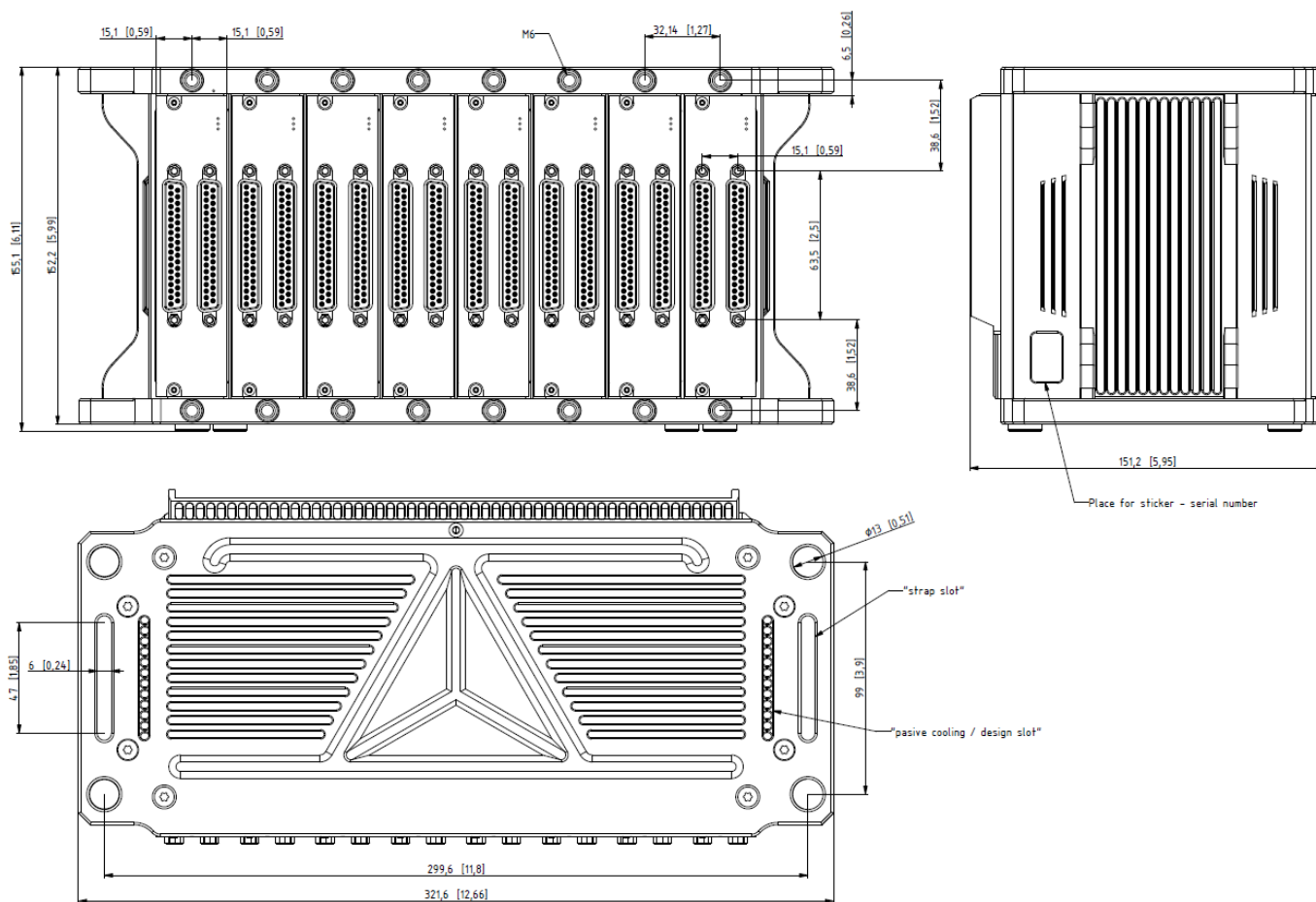


IOLITE-R8r Front panel



IOLITE-R8r Back panel

4.3.3.2. IOLITE-R8r: Ruggedized Boxed Chassis: Dimensions



Technical Drawings of IOLITE-R8r

4.3.3.3. IOLITE-R8r: Ruggedized Boxed Chassis: Connectors

The IOLITE-R8r chassis also enables dual EtherCAT bus. There are two 8-pin LEMO 1T connectors on the back panel of IOLITE-R8r used for data transfer and synchronisation on the primary bus (BUS 1) for buffered data. The OUT connector on BUS 1 also enables power supply for external Dewesoft EtherCAT devices.

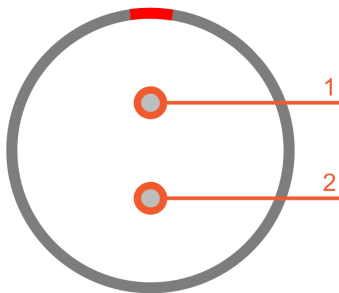
Secondary bus (BUS 2) for unbuffered data has two RJ45 connectors (IN and OUT) for data transfer and synchronization to 3rd party control master.

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

Above the PWR IN connector is a GND socket for grounding the IOLITE-R8r.

Synchronization with Dewesoft USB data acquisition devices or connection to clock master is on IOLITE-R8r enabled by connecting a synchronization cable to two SYNC inputs (4-pin LEMO 00).

4.3.3.3.1. IOLITE-R8r: Ruggedized 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): ECJ.1B.302.CLA
Mating connector (for the cable): FGJ.1B.302.CLLD42Z



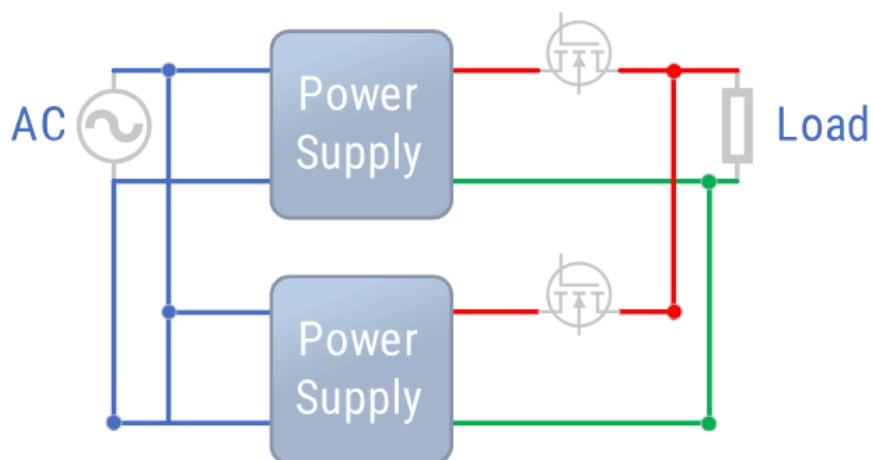
Important

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

4.3.3.3.2. IOLITE-R8r: Ruggedized Boxed Chassis: Sync: Pinout

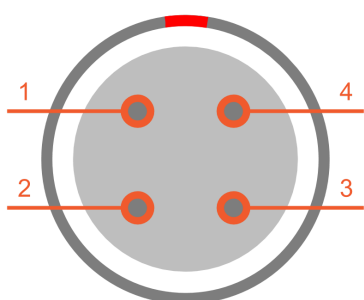
The sync connectors are required when you want to synchronize the data from IOLITE with Dewesoft USB devices for the same measurement. The signal that is transferred over sync cable makes sure that the measurement data of IOLITE and Dewesoft USB devices are perfectly synchronized to each other.

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-synchronization is used, the IRIG signal is on pins 1, 2.



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

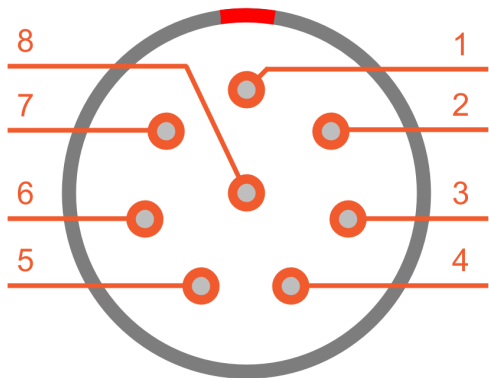
Pin	Name	Description
1	CLK	Clock
2	TRIG	Trigger
3	RES	PPS
4	GND	Ground

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

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

4.3.3.3. IOLITE-R8r: Ruggedized Boxed Chassis: BUS 1: IN: Pinout

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



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

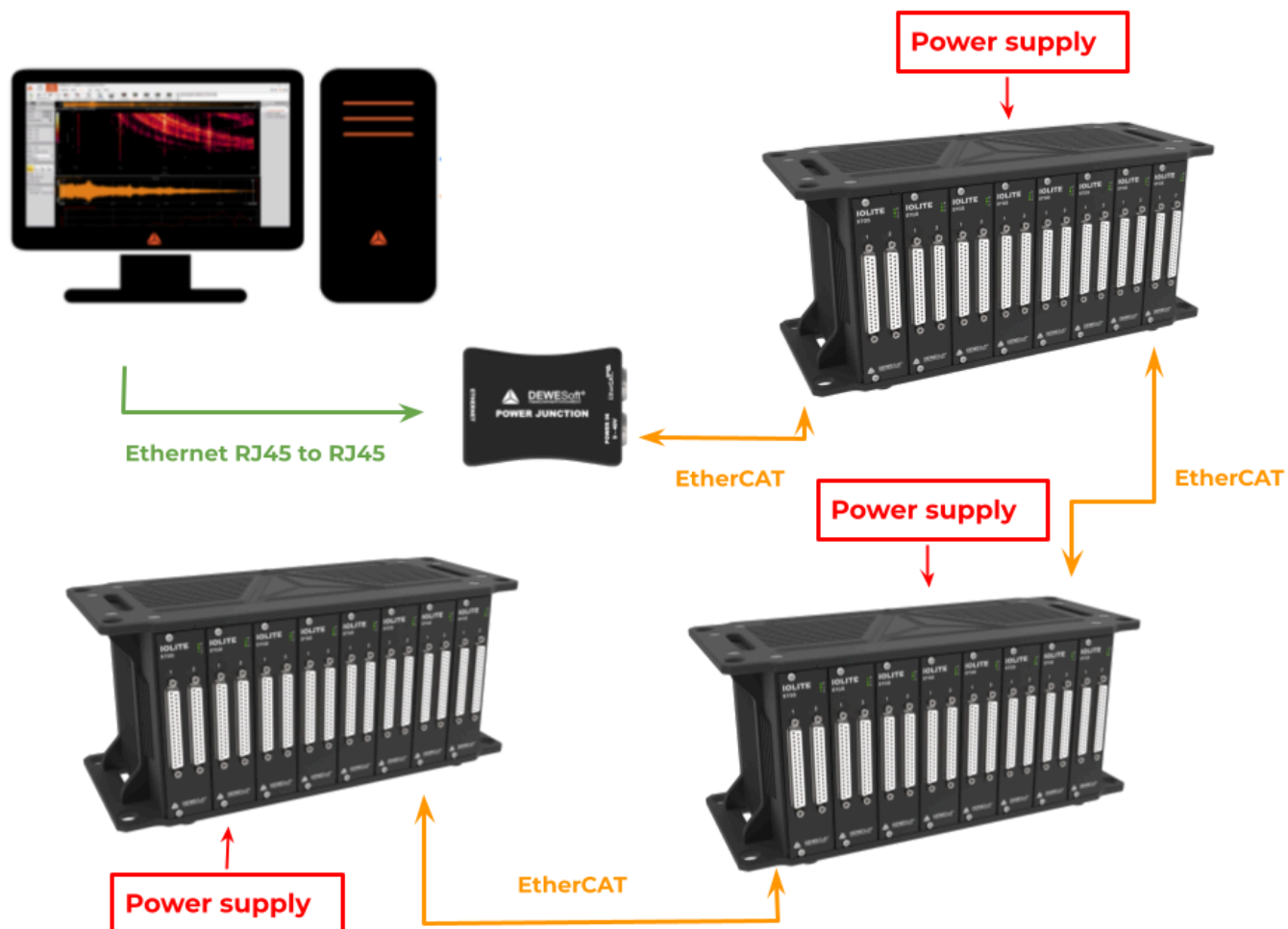
Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	RX_N	Reception -
5	NC	Do not connect
6	NC	Do not connect
7	GND	Ground
8	GND	Ground

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



Important

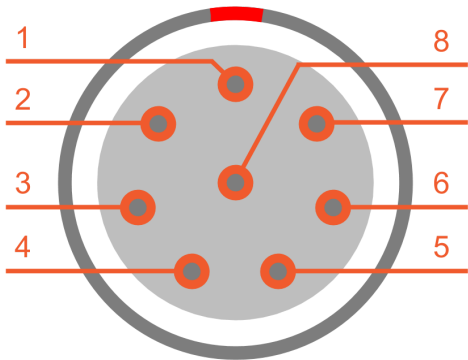
Pins 5 and 6 of the ECAT IN 8-pin LEMO connector are not connected. You can not power multiple R8r systems with the ECAT line and should always provide a separate power supply and connect it to the Power in connector of each of the systems. However, you can power other devices with ECAT OUT!



Connection of IOLITE-R8r system with Ethercat line

4.3.3.3.4. IOLITE-R8r: Ruggedized Boxed Chassis: BUS 1: OUT: Pinout

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



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

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

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

4.3.3.3.5. IOLITE-R8r: Ruggedized Boxed Chassis: BUS 2: RJ45: Pinout

IOLITE-R8r 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	-	-

4.3.3.4. IOLITE-R8r: Ruggedized Boxed Chassis: Connection of IOLITE-R8r 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-R8r 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-R8r 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

4.3.3.5. IOLITE-R8r: Ruggedized Boxed Chassis: Connection of IOLITE-R8r 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-R8r on one side and the IN connector of the KRYPTON device on the other side.



Connection of IOLITE-R8r and KRYPTON® device

List of required cables:

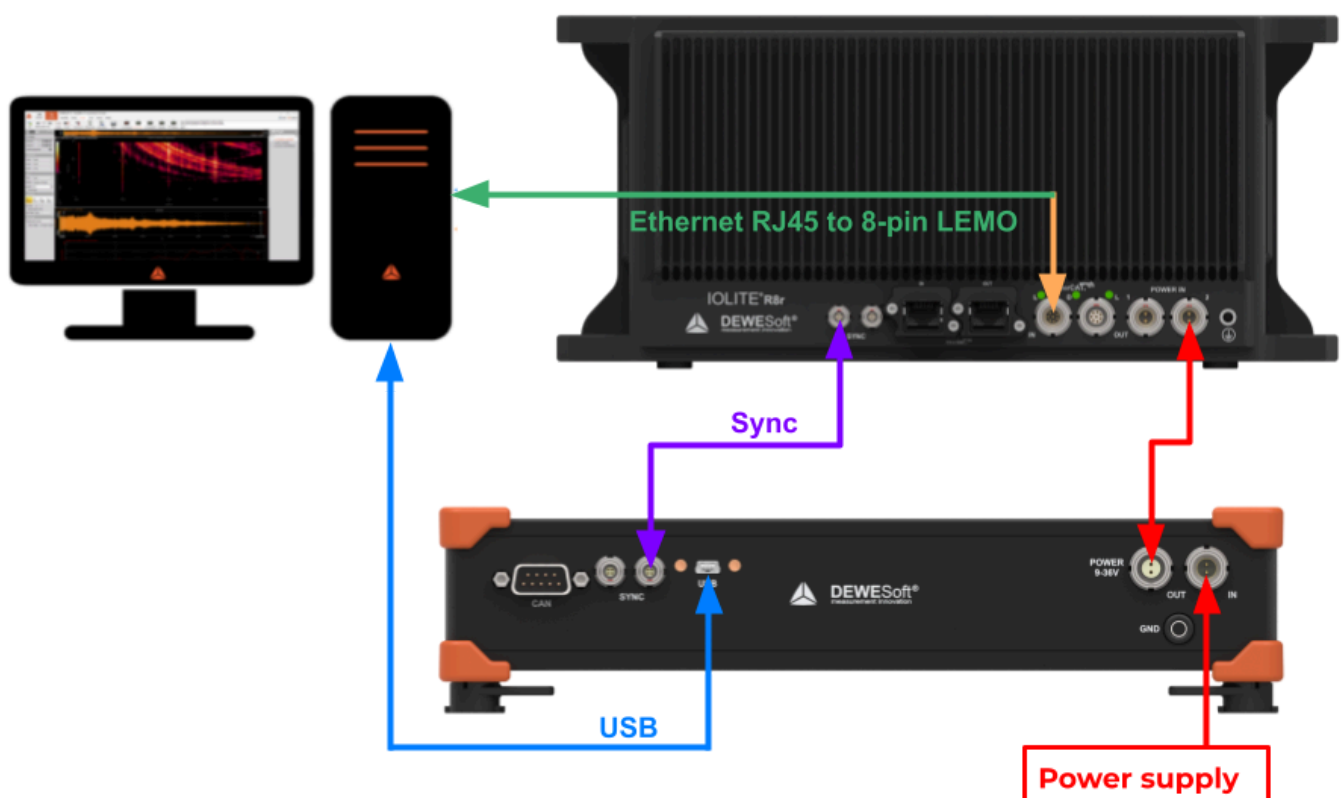
Function	Dewesoft order code
Power supply	PS-120-L1B2f (default)
EtherCAT	IOLITE to PC: LIT8f-RJ45-1M (default), LIT8f-RJ45-3M, LIT8f-RJ45-5M IOLITE to KRYPTON: LIT8m-LIT8f-02M, LIT8m-LIT8f-0.4M, LIT8m-LIT8f-1M, LIT8m-LIT8f-2.5M

4.3.3.6. IOLITE-R8r: Ruggedized Boxed Chassis: Connection of IOLITE-R8r and Sirius® device

Connect power supply cable to Sirius (PS-120W-L1B2f). Then connect the USB cable (CABLE-USBAmi-mini-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-R8r. Then connect L1T8f-RJ45-1M cable (LEMO side) to the IN connector of BUS 1 on the IOLITE-R8r 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-R8r and Sirius® device

List of required cables:

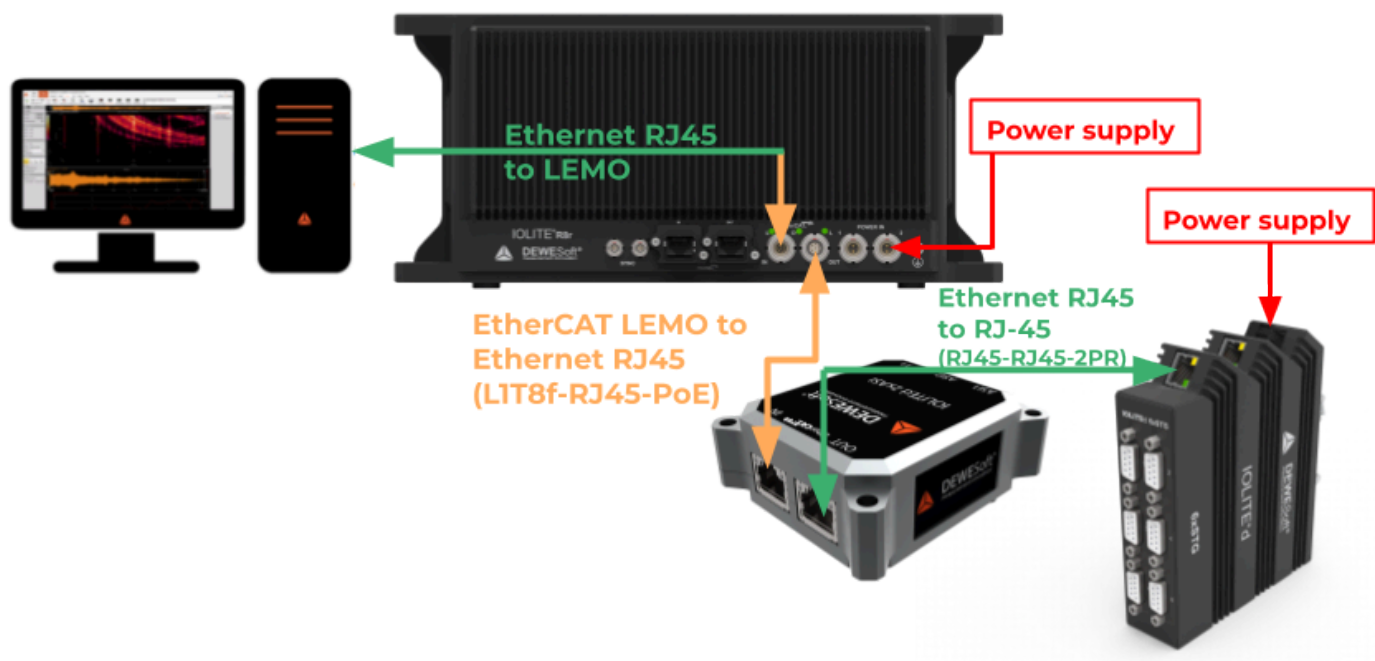
Function	Dewesoft order code
Power supply	Sirius: PS-120-L1B2f (default) Sirius to IOLITE: L1B2m-L1B2f-0.2m, L1B2m-L1B2f-0.4m, L1B2M-L1B2F-3m
EtherCAT	IOLITE to PC: L1T8f-RJ45-1M (default), L1T8f-RJ45-3M, L1T8f-RJ45-5M
USB	CABLE-USBAmini-USBBS-1.8m (default), CABLE-USBAmini-USBBS-1m
Synchronization	L00B4m-L00B4m-0.2m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

4.3.3.7. IOLITE-R8r: Ruggedized Boxed Chassis: Connection of IOLITE multi and single channel device

Connect power supply cable to IOLITE-R8r (PS-120W-L1B2f). Then connect L1T8f-RJ45-1M cable (LEMO side) to IN connector of BUS 1 on IOLITE-R8r 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.



Connection of IOLITE-R8r and two different IOLITE devices

Function	Dewesoft order code
Power supply	IOLITE-R8r: PS-120-L1B2f (default) IOLITE-multichannel:
EtherNET	IOLITE-R8r to IOLITE single channel: RJ-45 - RJ-45 IOLITE single channel to IOLITE multi channel: RJ-45 - RJ-45