

6.3 Electronic boards description

The architecture of the PCBs and their interconnection will be briefly described.

6.3.1 Main board (14B24 - HF compact Main board)

The main board accepts +24V input power and generates stable 5.0V and 3.3V for the microcontrollers (STM CM0+ for host and netX90 for ETH communication) and peripherals (RF front-end, FLASH/EEPROM memories and a temperature sensor). An isolated 5V supply (+5V_{ISO}-GND_{ISO}) is created to provide two electrically isolated input-output lines (bound to GND on 15C24 PCB).

The PCB hosts a battery holder for ML621 rechargeable batteries (3V / 5mAh) to retain the system date/clock with an RTC, if needed.

An internal USB connector is present for internal development and debug activities.

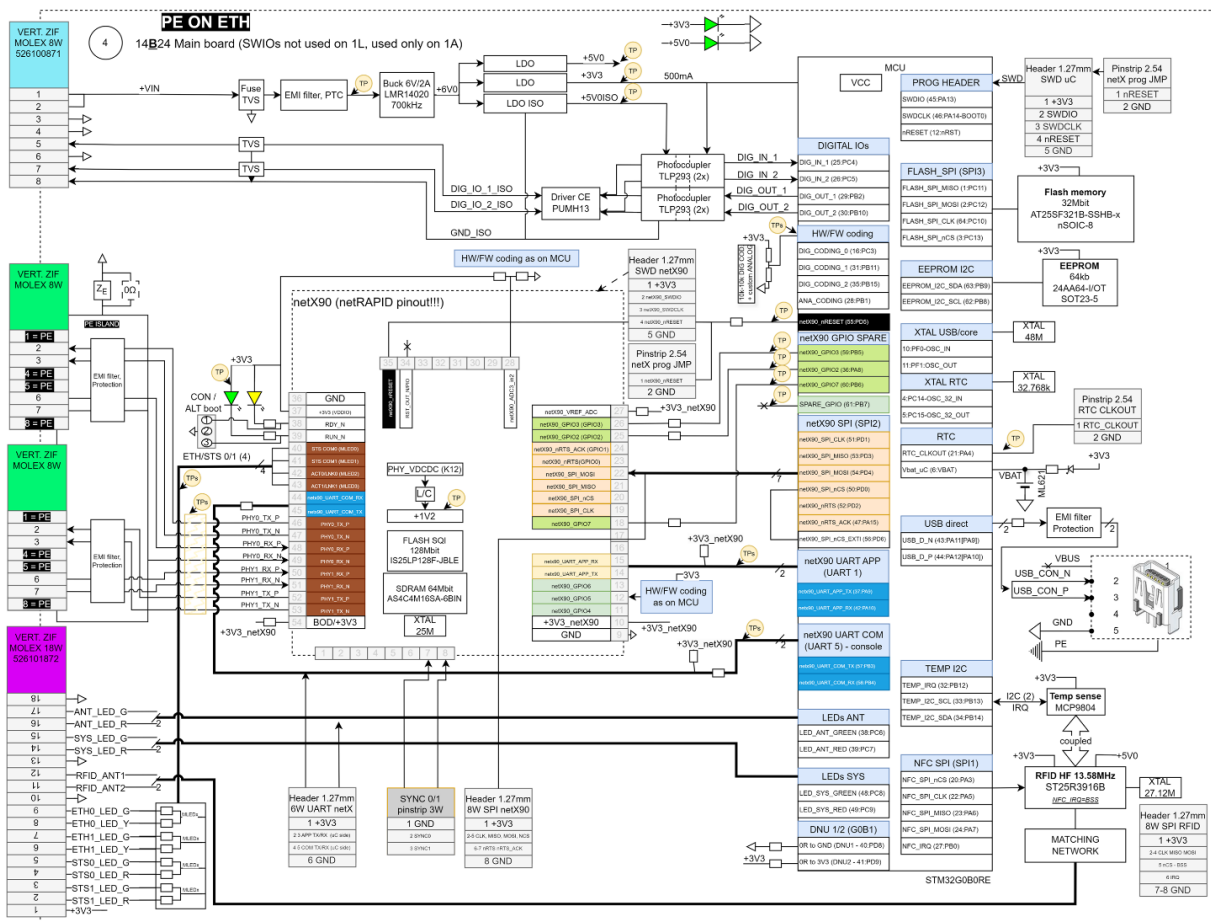


Figure 1: Architecture of the main PCB (14B24).

➤ 06.2.3 14B24 - Leuze RFID Systems - HF compact Main board.zip

6.3.2 Power connector: 15C24 HF Compact Power connection board (ProfiNet)

+24V and GND are provided to the board via M12 connectors, PE is connected to the ETH transformers in the main PCB. Such signals are brought to the 14B24 main PCB via 8W ZIF flex cables. The external connector is an M12-L, while internal connectors are 8W ZIF.

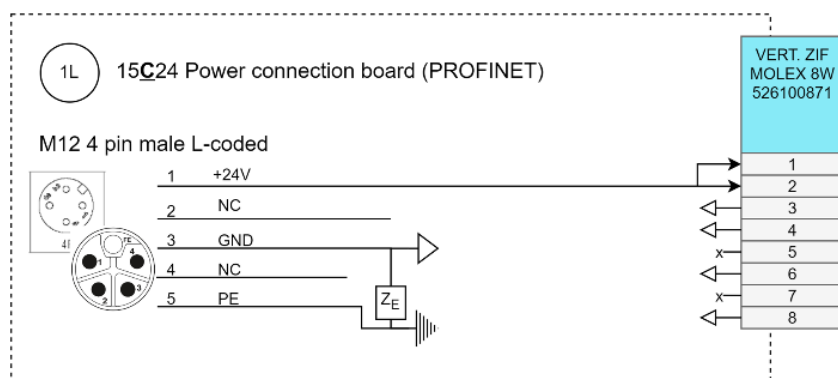


Figure 2: Architecture of the power connection PCB 15C24 for ProfiNet.

The attachment includes the schematic, bill of materials, a 3D render, 3D top and bottom prints, the assembly file, a drawing of all PCB layers, the assembly and the gerber documentation (layers, drill, PCB stackup).

➤ 06.2.4 15C24 - Leuze RFID Systems - HF Compact Power connection board (PROFINET).zip

6.3.3 Power connector: 16A24 - HF Compact Power connection board (other ETH)

+24V and GND are provided to the board via M12 connectors, PE is connected to the ETH transformer in the main PCB. TCP version also includes SWIO1/2 IO lines (potentially isolated on 14B24 PCB, but its reference GND_ISO is bound to GND on these PCBs). Signals are brought to the 14B24 main PCB via 8W ZIF flex cables. The external connector is an M12-A, while internal connectors are 8W ZIF.

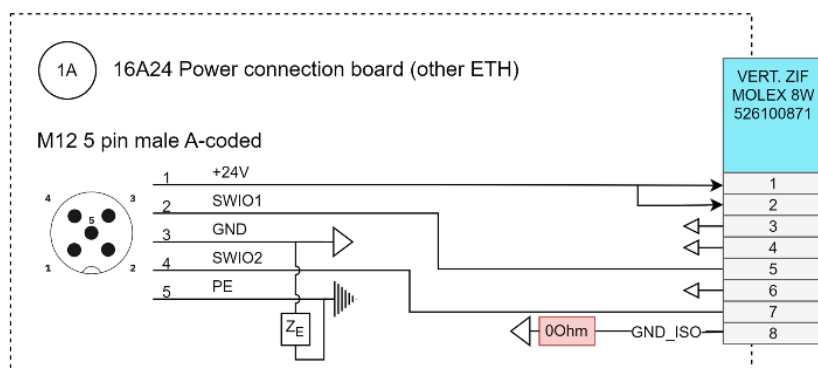


Figure 3: Architecture of the power connection PCB 16A24 for TCP.

The attachment includes the schematic, bill of materials, a 3D render, 3D top and bottom prints, the assembly file, a drawing of all PCB layers, the assembly and the gerber documentation (layers, drill, PCB stackup).

➤ 06.2.5 16A24 - Leuze RFID Systems - HF Compact Power connection board (other ETH).zip

6.3.4 Network connectors (17B24 - HF Compact ETH connection board)

The ETH connection board just routes the ETH port signals to the 14B24 main PCB by means of one (TCP version) or two (ProfiNet version) 8W ZIF flex cables. External connectors are M12-D, while internal connectors are 8W ZIF.

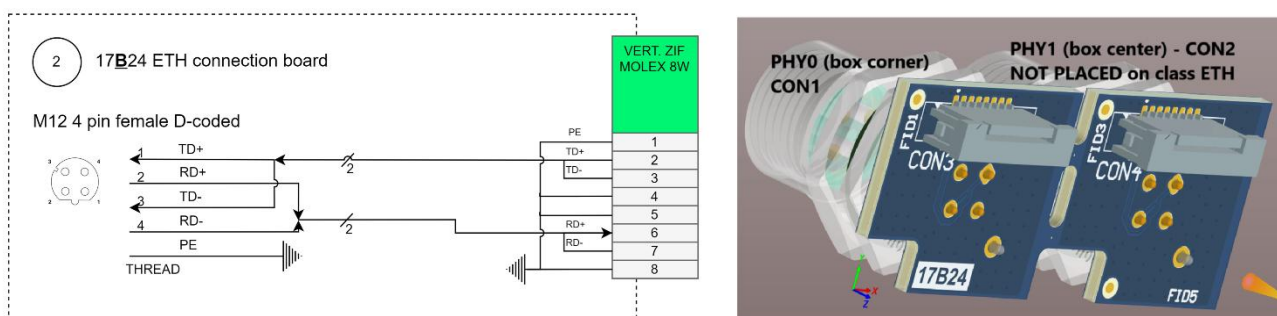


Figure 4: Architecture and 3D of the ETH connection PCB (17B24).

➤ 06.2.6 17B24 - Leuze RFID Systems - HF Compact ETH connection board.zip

6.3.5 Internal connectors

The connectors between Main board and Power / Network connectors PCBs are the same – 8W flex ZIF connectors (Würth 686708050001).

Please refer to the Label description documentation for what concerns the connection between the Label (12A24 / 12A24) and the main board (14B24).