Ethernet-Mux

Typical Applications

The **Ethernet-Mux** is intended for automated testing of embedded Linux devices with Ethernet connectivity.
It multiplexes a single RJ45 Ethernet port to one of two other RJ45 Ethernet ports. Multiplexing is done using an analogue switch – the device does not interfere with the communication.

Using the Ethernet-Mux it is possible to either automatically disconnect a DUT from a network or to automatically connect a DUT to another network device.
This is often used with DUTs that initially boot from network but need to be connected to other devices later on.

The Ethernet-Mux is controlled using LXA IOBus.

Typical Use Cases

- **Automated testing of embedded Linux devices**
  The Ethernet-Mux can automatically change to which other device the DUT is connected.
- **Development of embedded Linux devices**
  Using remote control developers do not need to disconnect and connect cables multiple times a day.
- **Remote control using Labgrid**
  The Ethernet-Mux is well integrated into the labgrid remote control library.

Ethernet-Mux

Interfaces

- **RJ45 (Ethernet)**
  Three ports, 1:2 multiplexer
- **IOBus interface**
  Connects the Ethernet-Mux to an LXA IOBus network.
  LXA IOBus is based on CAN and is used to control IOBus device using the LXA IOBus server.
  The device is powered via IOBus.
  (D-SUB 9)

Additional Features

- LEDs on both sides of the device:
  - Power on
  - LXA IOBus state (waiting, ready, locator)
    Switch position (A, B)
- Break-before-Make switching: The old connection is first disconnected before the new connection is made.
- Uses an analogue switch, that does not interfere with Ethernet communication.
- Can be reconfigured to be controlled via a digital input. (Contact sales for more information.)

System Requirements

- For the LXA IOBus server:
  - Host PC with Linux 4.x or newer
  - Python 3 interpreter
  - (Optional): systemd 239 or newer to configure the CAN-interface on boot.
- Host PC with socketcan compatible CAN-interface
  e.g. Candlelight-FD
- 12 V power supply
- IOBus cabling

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This datasheet is subject to change without notice.

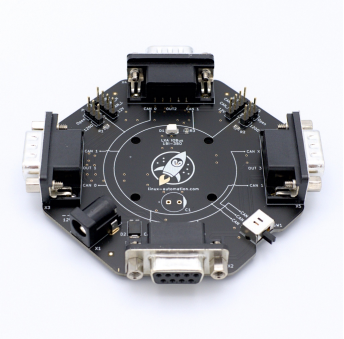
Technical Data

Ethernet: Supported Speed	10Base-T, 100Base-T, 1000Base-T
Analogue Switch	TS3L301DGGR
Bandwidth	Up to 900 MHz

Accessories

- LXA IOBus Power-Injector 1BI-1BO

- LXA IOBus Multi-Plug 1BI-3BO:



- CandlelightFD USB CAN Interface

Customization Services

In case the Ethernet-Mux does not fully fit your needs we provide customized hardware and software solutions based on our existing ecosystem.

Integration and Development Services

With our partner Pengutronix we provide comprehensive services: We can help with integration of the Ethernet-Mux into your embedded application.

Further Links

- **Product Page**

https://linux-automation.com/en/products/ethernet-mux.html

- **Manual**

https://linux-automation.com/ethmux-M01/

- **LXA IOBus Server Software**

https://github.com/linux-automation/lxa-iobus