phyFLEX-i.MX 95 FPSC

Get your phyFLEX-i.MX 95 FPSC Rapid Development Kit powered up and connected in just a few simple steps.

1 | Preparing the Hardware

1. Ensure you have all connection cables at hand. You will need a USB-A to USB-C cable (one-to-one) and a standard Ethernet cable. PHYTEC offers an accesory kit which contains all necessary cables.

2. Power up the **phyFLEX-i.MX 95 FPSC**. Connect the 2-pin PHOENIX connector (included) to a 12 V - 24 V (±10%) DC power supply. Note the polarity of the connector (see **12 V - 24 Kit Version Picture**)! If you are using the included power supply with your kit, it is already wired with the 2-pin connector. Turn on your power supply and plug the 2-pin PHOENIX connector into the green jack on your kit (**X8**).

3. The power LED (**D30**) will light up.

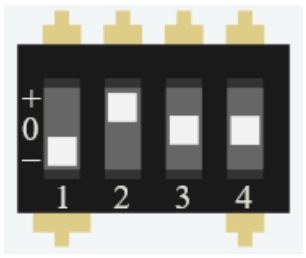
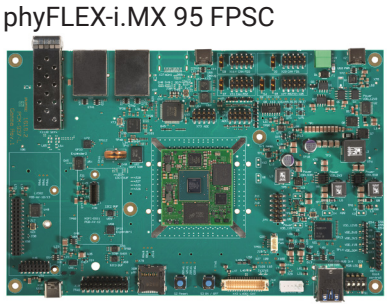


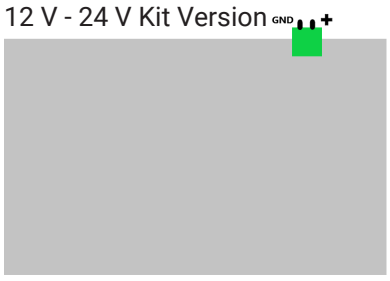
Figure 1: Boot Mode DIP Switch (S1)
SD Card Setting

Kit Contents

phyFLEX-i.MX 95 FPSC



12 V - 24 V Kit Version GND +



Power Adapter +24 V



USB Flash Drive with Virtual Machine



RS-232 and CAN Adapter



Ethernet Cable

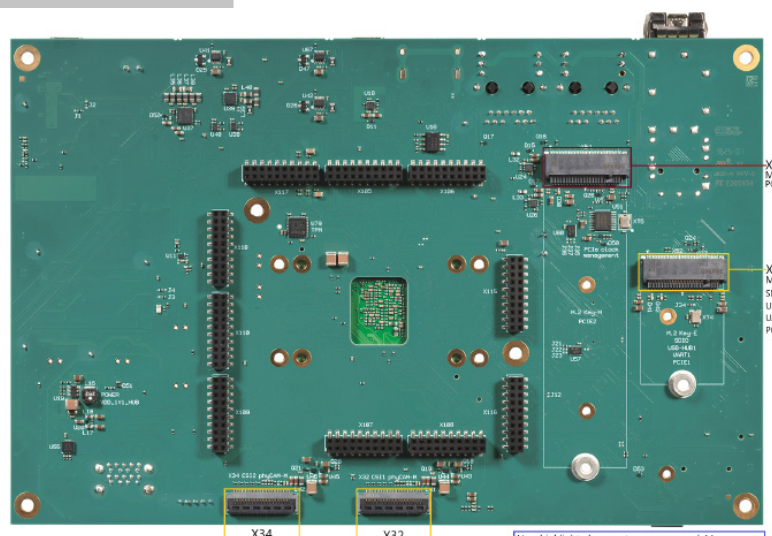


2-pin PHOENIX



USB-A to USB-C





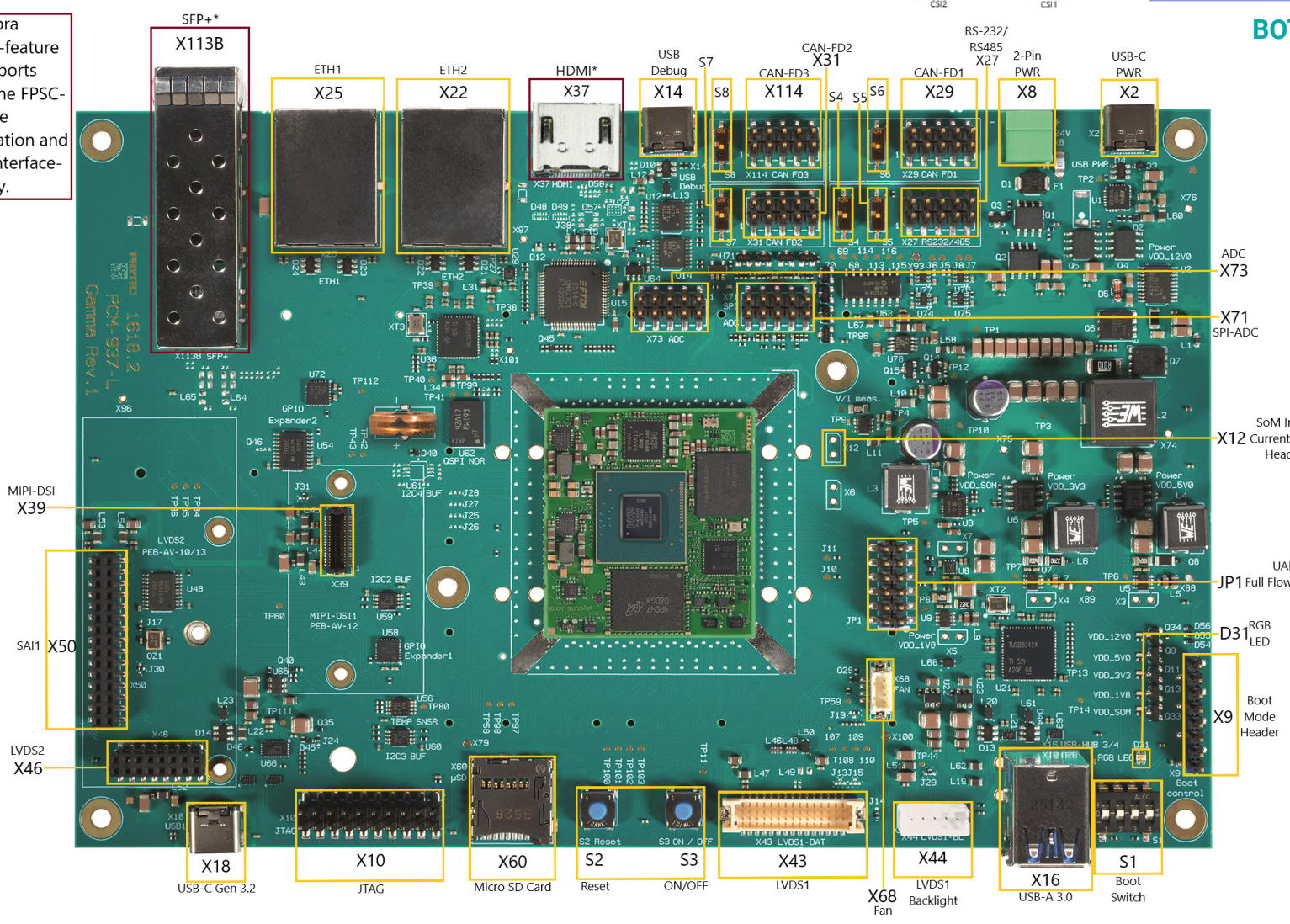
BOTTOM

*Note this picture shows a Libra Development Board in its full-feature configuration. The board supports multiple modules that fulfill the FPSC-G Standard. Depending on the populated SoM, the configuration and therefore the population of interface-specific components may vary.

phyFLEX-i.MX 95 FPSC

Rapid Development Kit

CONNECTORS - FRONT



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L-xxxe.Ax

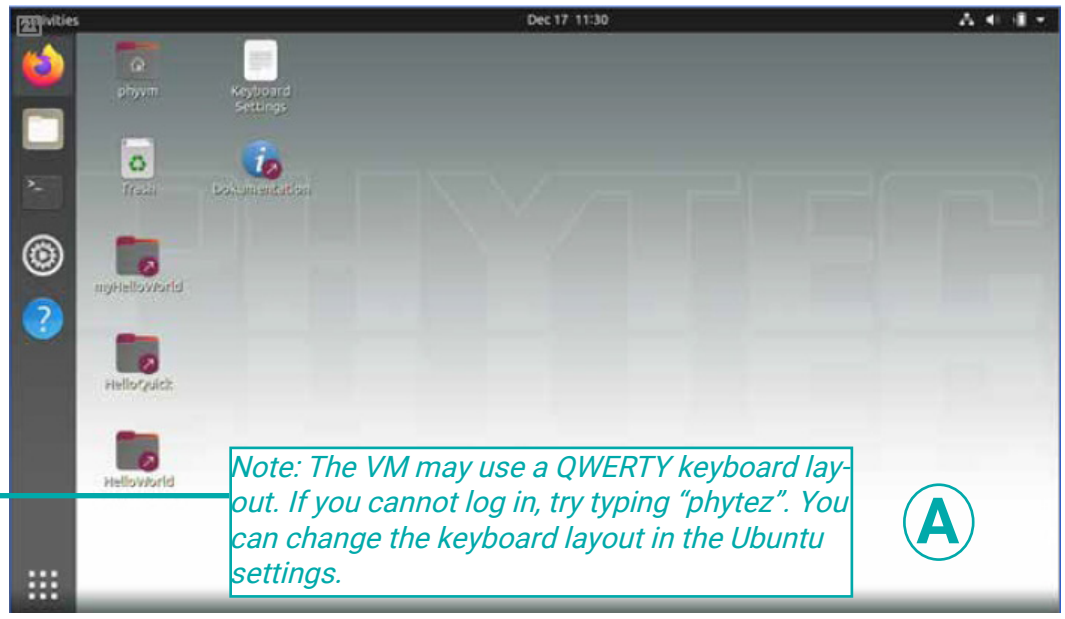
Quick Start Guide

2 | PREPARING AND STARTING THE VIRTUAL MACHINE

Developers working with native Linux and have experience with Yocto development may skip the VM setup and proceed directly to Section 3 to establish a direct connection to the PHYTEC board from their Linux host system.

A virtual machine provides a pre-configured development environment with all necessary tools and configurations (including Toolchain, Eclipse, and Qt Creator) to start developing with your PHYTEC board. To get started, you will need virtualization software line Virtual-Box or VMware Player.

1. Obtain the virtual machine image (OVA and checksum files) from the provided USB stick or download section of your specific product at PHYTEC's website.
2. Import the .ova file into your virtualization software.
3. Launch the virtual machine. You will be presented with a modified Ubuntu desktop.
   Username: phyvm
   Password: phytec



Note: The VM may use a QWERTY keyboard layout. If you cannot log in, try typing "phytez". You can change the keyboard layout in the Ubuntu settings.

A

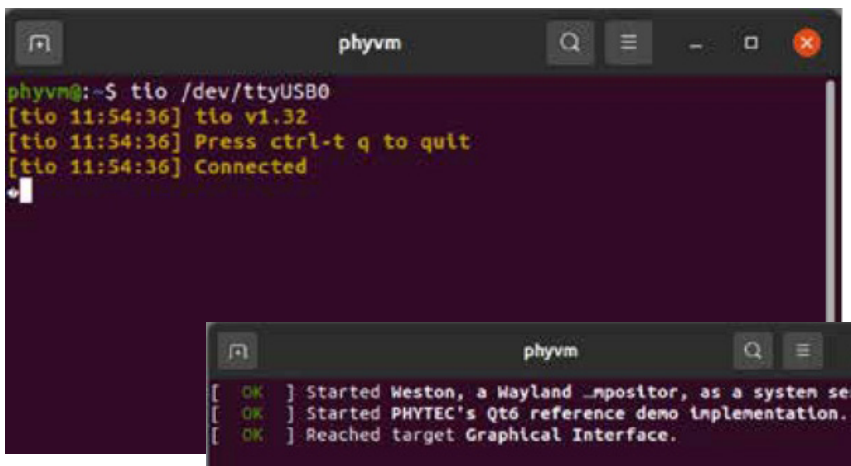
Performance Configuration of the Virual Machine

The virtual machine is configured to use 2 CPU cores and 2 GB of RAM by default. You can adjust these settings in your virtualization tool's configuration to improve performance, which is particularly important when running Yocto builds.

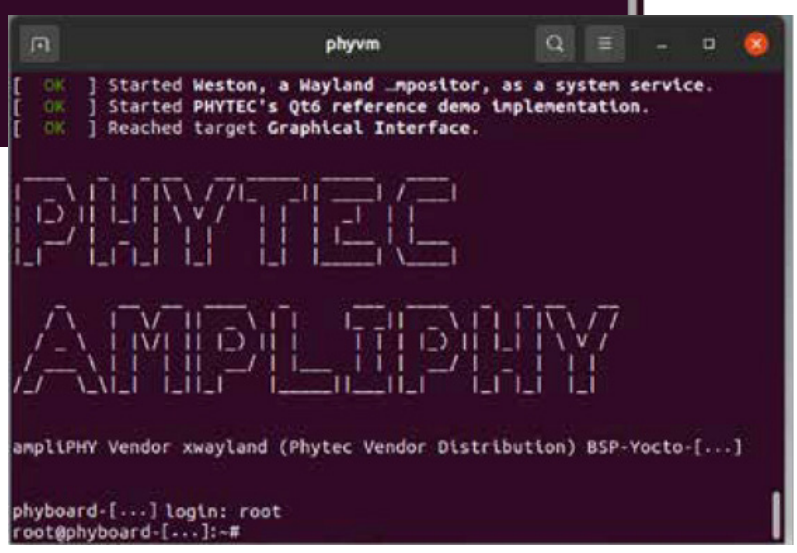
3 | GETTING CONNECTED

SERIAL CONNECTION

1. Insert the provided SD card into the PHYTEC board.
2. Connect the USB-A to USB-C cable to your PC and to the USB Debug Port (**X14**) on the PHYTEC board. When using the virtual machine, ensure the USB device is properly passed through the virtual machine.
3. Open a terminal (within the virtual machine or your Linux host system) and enter the command **"tio /dev/ttyUSB0"**. You should see the message "Connected". **(B)**
4. Power cycle the board. Within a few seconds, you will see the boot message and login prompt on the console. **(C)**
5. Use **"root"** as the login name on the serial console and press enter. You are now successfully connected to the board and ready to go. **(C)**
6. You can now enter **"ip a"** to view the configuraiton of the target's Ethernet interface. This will be helpful for the next optional step. **(D)**



B



C

ETHERNET CONNECTION

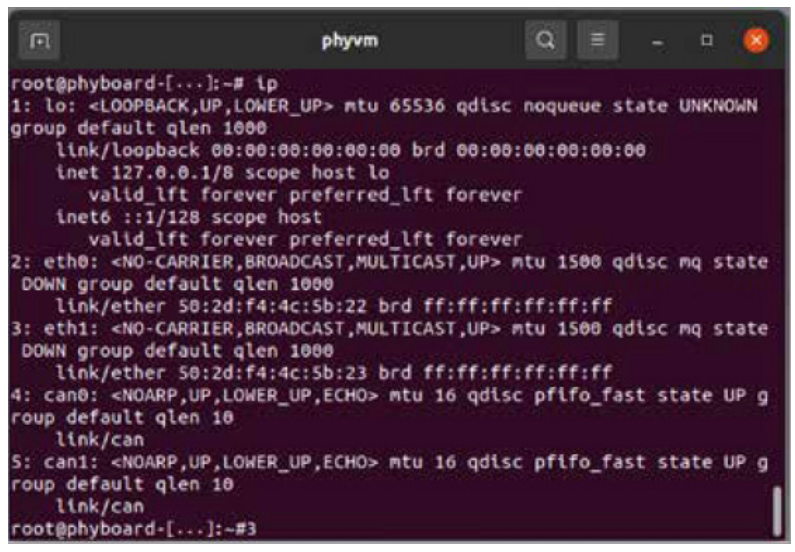
Setting up an Ethernet connection is optional but recomended for faster development. While the UART connection works well for basic tasks, an SSH connection over Ethernet provides better performance, especially useful for file transfers and development tasks. For the setup, you will need a network adapter for internet access, as this allows you to simultaneously work with the board and access online resources.

The PHYTEC board comes with a pre-configured static IP address (192.168.3.10) for peer-to-peer connection, but the board can also obtain an additional IP address via DHCP. You can view the DHCP-assigned IP address through the UART connection using the **"ip a"** command. **(D)**

PEER-TO-PEER CONNECTION

1. Connect an Ethernet cable between your PC and the board's ETH2 port. **(X22)**
2. Navigate to the Network Configuration on your host system (e.g. Windows). Choose the ethernet connection to the PHYTEC board and configure it with these IPv4 settings:
   IP Address: 192.168.3.10
   Subnet Mask: 255.255.255.0
   Gateway: 192.168.3.10
3. Open a terminal (from your host system or within the VM) and connect to the board with the command **"ssh root@192.168.3.11"**. You should now see an authentication question. Type **"yes"** and press Enter.

You are now connected to your PHYTEC board. Congratulations!



D

4 | YOUR POSSIBLE NEXT STEPS

Visit the product page of your specific product for the latest documentation, downloads, and FAQs:

https://www.phytec.eu/en/produkte/single-board-computer/

The download sections contain several essential guides.
We recommend starting witht the Development Environment Guide, as this covers:

- Comprehensive instructions for working with PHYTEC's pre-configured virtual machine
- Setting up a native Linux development environment if you don't work with the VM
- Cross-compiling your first applications using Eclipse and first steps on GUI development with the pre-installed Qt Creator

ADDITIONAL DOCUMENTATION AVAILABLE IN THE DOWNLOAD SECTION

- **Hardware Manual:** A detailed description of the System on Module and accompanying carrier board.
- **Yocto Guide:** Reference for working with the PHYTEC BSP; including detailed information about Yocto Project fundamentals, BSP customization procedures, and practical workflows with tools like Poky and Bitbake.
- **BSP Manuals:** Focuses specifically on the phyFLEX's BSP implementation, covering essential topics like build processes, boot procedures, software updates, device tree configurations, and peripheral access methods.

Please feel free to contact our support team if you have any questions about getting the board up and running.

https://www.phytec.de/support/help-desk/