

phyCORE®-STM32MP1 phyBOARD®-Sargas / SBC Kit

Get your phyCORE-STM32MP1 / SBC Kit powered up and connected in just a few simple steps.

1 | PREPARING THE HARDWARE

1. Have the included connection cables on hand: two USB-A to USB-B Micro cables, a standard Ethernet cable and the 24 V power adapter (+24 V / 1 A).
2. Insert the micro SD Card into the uSD Card connector (X14).
3. Set the DIP-Switch (S7) to SD Card (Figure 1).
4. Power up the phyCORE-STM32MP1 by connecting the power adapter (+24 V DC) to the power supply connector (X9).

Kit Contents

phyBOARD-Sargas + phyCORE-STM32MP1
PCM-068-025113I.A0

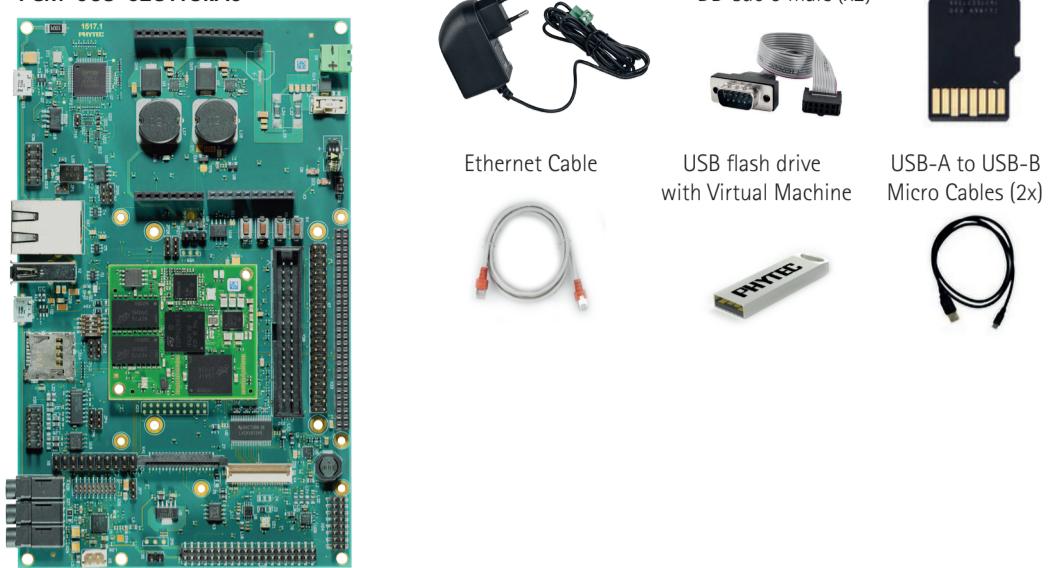
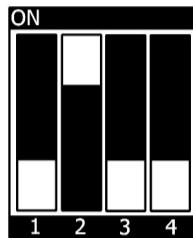
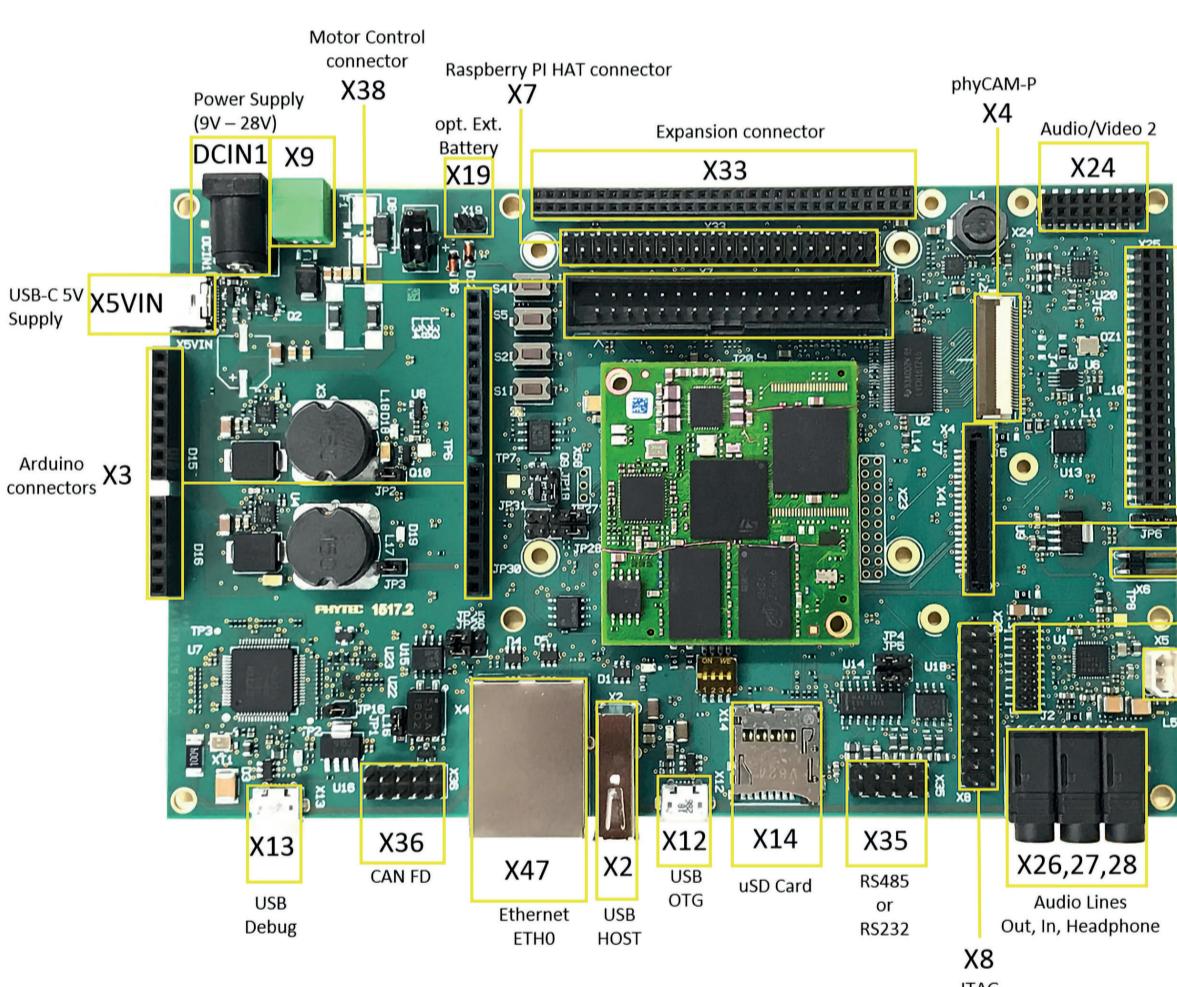


Figure 1: Boot Switch (S7) SD Card Setting

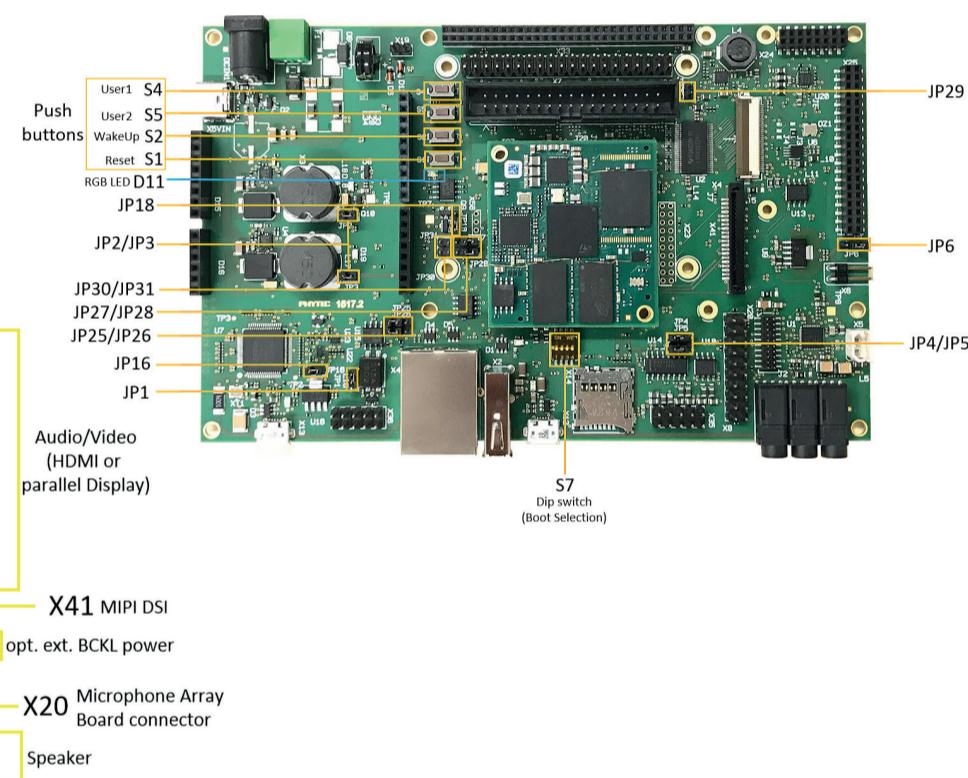


phyBOARD®-Sargas
with phyCORE®-STM32MP1

CONNECTORS



LEDs | JUMPERS / SWITCHES



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Quick Start Guide

2 | PREPARING AND STARTING THE VIRTUAL MACHINE

To follow this QuickStart and the BSP Manual you need our compressed **phyCORE-STM32MP1** virtual machine hard disc image (SO-557v1.zip). The hard disk image includes all software installations and configurations necessary for a successful start-up of the **phyCORE-STM32MP1**. The virtual machine hard disk image (SO-557v1.vmdk) is suitable for most virtualization software and can be mounted to an appropriate virtual machine (tested with VMware Player and VirtualBox).

1. Insert the USB Memory Stick to your HOST computer with the following minimal requirements:
 - x64 2,4GHz CPU with 2 cores / 4 threads, 8GB RAM
 - At least 100GB hard drive space
 - Running Windows (64 bits) or Linux (64 bits)
2. Unpack the compressed file with an appropriate tool to your local hard drive to get the included .vmdk file.
3. Follow the instructions of your virtualization software to create a new virtual machine. Pay attention to the following settings required to obtain a correctly working virtual machine:
 - Choose **Linux-Ubuntu 64-bit version** as operating system
 - Use the unpacked file **SO-557v1.vmdk** as existing hard disk
4. Start the virtual machine with our hard disk image. You will see the modified Ubuntu desktop (A). For further use of the virtual machine the pre-created login data is:
username: phyvm – password: phytec

+ Before running the virtual machine, make sure the virtualization is activated in the BIOS (it should be activated by default for any retail PC).

Now you are ready to connect your PC with the **phyCORE-STM32MP1**.

3 | GETTING CONNECTED

SERIAL CONNECTION

1. Plug one micro-AB USB cable into the USB Debug connector (X13) and your host PC.
2. Connect the detected USB device „FTDI dual RS232 HS...“ to your Virtual Machine and add a USB device Filter for it, so that the device will be connected automatically to the VM next time.
3. Click the **Microcom_ttyUSBO icon (B)** on the Ubuntu desktop.
4. Click the **reset button S1** on the board (or power cycle the board). A serial console has been started within your Virtual Machine. The RGB LED (D11) will begin blinking BLUE as the board begins booting into Linux. The console output can be viewed in your terminal window. The login prompt will be shown at the end of the booting process. You should see a boot message and the automatic login-prompt on this console (C).

Log in is done automatically as root (no password is needed). Congratulations!

+ If you do not see any output in the Microcom window, check the serial connection between the target and your host. By default Microcom uses /dev/ttyUSBO. If you want to use another port you can click on the Microcom Icon at your desktop with your right mouse button and select Properties. If the Microcom window does not open, one reason could be a lock-file which was created when Microcom was not correctly terminated. Delete this file by opening a terminal and type: **sudo rm /var/lock/LCK..***

5. As an example, user push buttons and RGB LED can be tested with specific commands (D). Refer for more detail to the **phyCORE-STM32MP1** BSP manual:
<https://www.phytec.de/cdocuments/?doc=MwDzCw>

4 | PREPARING THE phyCORE-STM32MP1 TO USB DFU MODE

Once you have build a BSP image following our BSP manual, you will need to program the board using USB DFU link.

1. Change the BOOT mode to UART/USB boot mode:
 - Power off the **phyCORE-STM32MP1**
 - Switch OFF the board
 - Set the DIP-Switch (S7) to UART/USB (**Figure 2**)
 - Power up the **phyCORE-STM32MP1**. The RED LED on the SOM should start blinking RED
2. Plug the second micro-AB USB into the USB OTG connector (X12) and your host PC (that contains the BSP image). The RED led should stop blinking.
3. Connect the detected USB device „STMicroelectronics DFU in HS mode...“ to your Virtual Machine and add a USB device Filter for it without filtering the „Product“USB field (leave it empty).

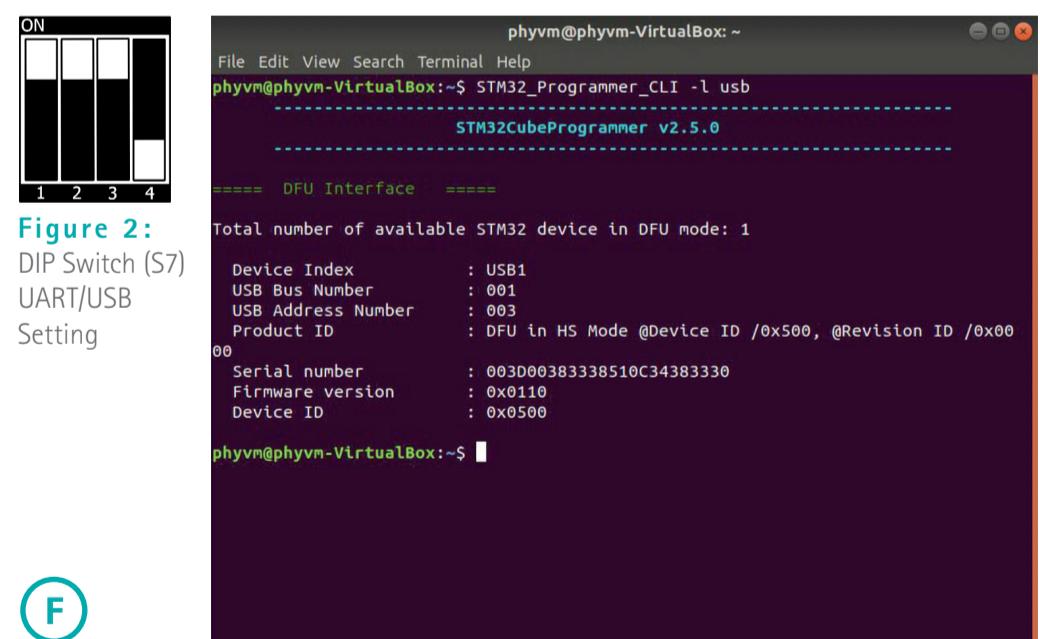
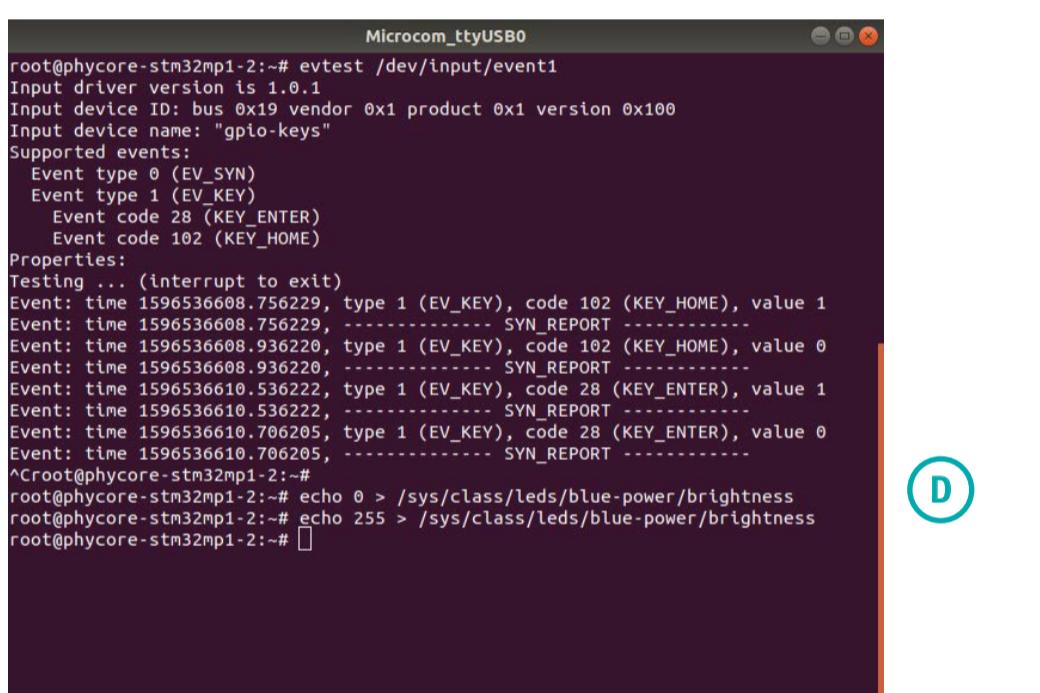
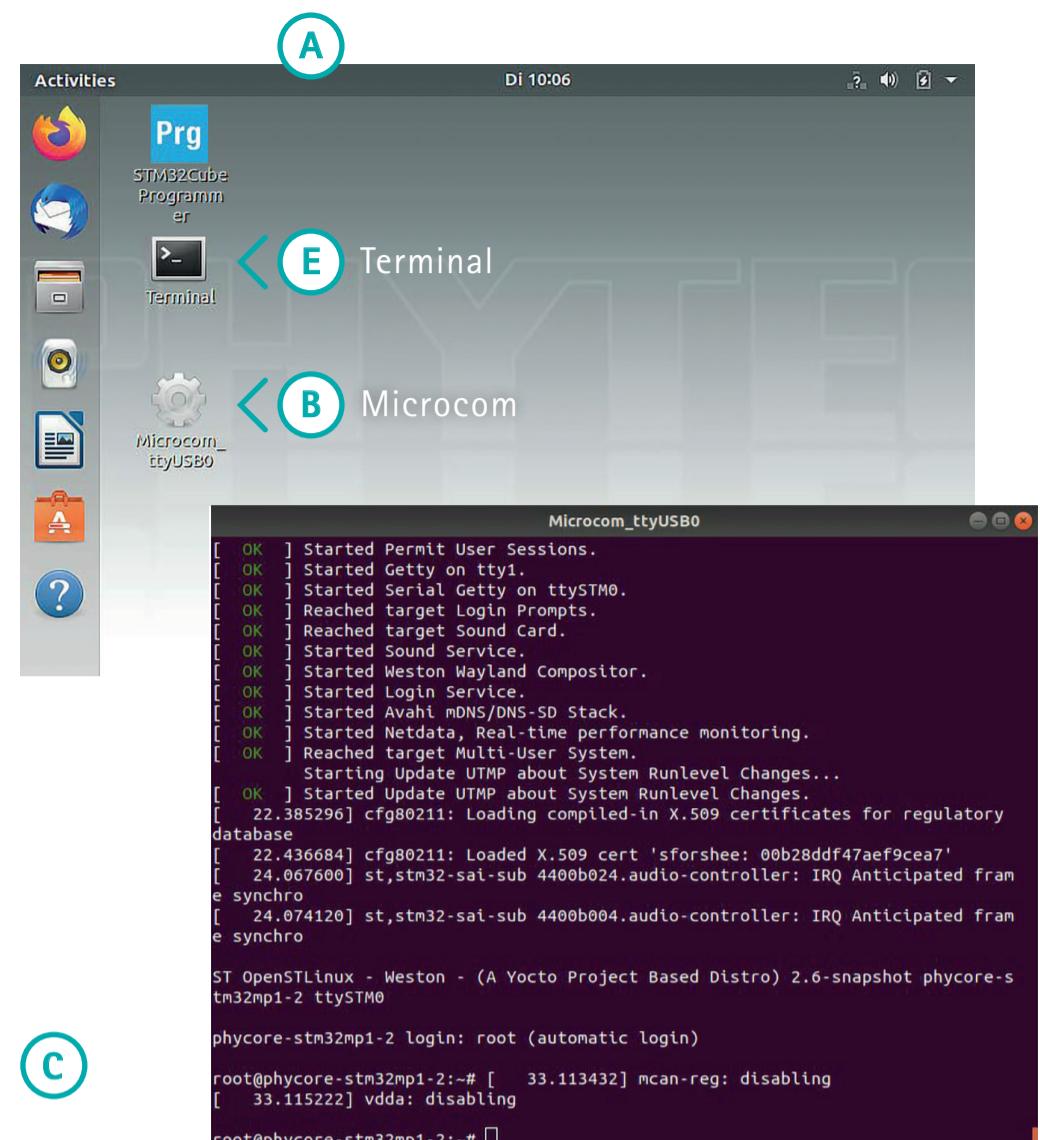
+ If a USB device Filter (with „Product“ field empty) for the DFU link is not added to the VM, the **phyCORE-STM32MP1** programming will fail.

4. Check the DFU connection:
 - Click the Terminal (E) on the Ubuntu desktop and enter the following command:
\$ STM32_Programmer_CLI -l usb
 - The command should return a description of the available STM32 device in DFU mode (F)
 - Refer to the BSP manual to know how to download the BSP to the target with STM32CubeProgrammer (with command line)

YOUR POSSIBLE NEXT STEPS

Find more and the latest documentations, downloads and FAQs on our Web product pages:
German: <https://www.phytec.de/produkt/system-on-modules/phycore-stm32mp1-download>
English: <https://www.phytec.eu/product-eu/system-on-modules/phycore-stm32mp1-download>
French: <https://www.phytec.fr/produit/modules-soms/phycore-stm32mp1/#documentation>

Please feel free to contact our support team if you have any questions about getting the board up and running: <https://www.phytec.eu/support/support-overview/>
<https://www.phytec.fr/support/support/>



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