phyCORE-AM57xx-PD15.1-rc2 Release Notes

| Operating System | Linux |
|--------------------|------------|
| BSP Release Status | UNKNOWN |
| Release Date | |
| Repository | |
| Binaries | |
| Source Archive | |
| Release Notes | Click Here |



This is a Release Candidate BSP. Please use this BSP ONLY for evaluation purposes. PHYTEC does not recommend starting any development based on this BSP. As of 03 Nov 2015 TI has released a newer version 02.00.xx.xx.xx SDK and we are working to utilize this for the next release.

- Introduction
- Versioning
 - Software
 - o Compatible Hardware
- BSP Download
- Quickstart
- BSP Features
 - New In This Release
 - o Fixed In This Release
 - Known Issues
 - PHYTEC Known Issues
 - Texas Instruments Known Issues
- Technical Support

Introduction

This BSP provides a basis for development, deployment and execution of Linux based applications on the AM57xx System on Module (SOM) (PCM-057). For detailed information on the various software components included in the release and how to use them, please refer to the Quickstart.

Versioning

Software

| Component | Version |
|--------------|-----------|
| Android | 4.1.2 |
| Linux Kernel | 3.2 |
| Barebox | 2013.07.0 |

| Component | Version |
|-----------|---------|
|-----------|---------|

| Linux Kernel | 3.14.43 LTS (Based on TI Release 01.00.00.03) |
|-----------------------|--|
| Yocto | 1.6 (Daisy) (Based on TI Release 01.00.00.03) |
| OpenGL | N/A |
| Qt | 5.4 |
| barebox | N/A |
| U-Boot | 2014.07-gfb6ab76 (Based on TI Release 01.00.00.03) |
| Supported Yocto Image | arago-core-tisdk-image |

Compatible Hardware

| BSP Release Version | BSP Release Date | SOM PCB Version | CB PCB Version |
|---------------------------|------------------|-----------------|----------------|
| phyCORE-AM57xx-PD15.1-rc1 | 04 Nov 2015 | 1428.2 | 1435.2 |

BSP Download

Prebuilt images of phyCORE-AM57xx-PD15.1-rc1 can be downloaded from the link below:

Please contact PHYTEC Support for software access: PHYTEC Support Portal (You may need to create an account)

Quickstart

Quickstarts for phyCORE-AM57xx-PD15.1-rc1:

phyCORE-AM57x RDK Linux Quickstart PD15.1-rc1

BSP Features

| Interface | Detail | Implemented | Tested | Status | Notes |
|-----------|--------|-------------|--------|------------------|---|
| UART | uart3 | Yes | Yes | enabled | Connector X18 (default serial console) |
| | uart4 | Yes | No | [click for info] | |
| | uart5 | Yes | No | [click for info] | Connector X17 |
| | uart6 | Yes | No | [click for info] | |
| | uart7 | Yes | No | [click for info] | |
| | uart8 | Yes | No | [click for info] | |
| | uart9 | Yes | No | [click for info] | |
| | uart10 | Yes | No | [click for info] | |
| I2C | i2c1 | Yes | Yes | enabled | Available on expansion Connector X28 |
| | i2c2 | Yes | Yes | enabled | Connected to HDMI1_DDC |
| | i2c3 | Yes | No | [click for info] | |
| | i2c4 | Yes | Yes | enabled | Used for Audio Codec - available on expansion Connector X28 |
| | i2c5 | Yes | No | [click for info] | |

| Ethernet | cpsw_emac0 (RGMII0 on SoM) | Yes | Yes | enabled | RGMII0 - KSZ9031RNX SoM PHY Connector X7 |
|----------------------|-------------------------------------|-----|---------------------|------------------|---|
| | cpsw_emac1 (RGMII1 on CarrierBoard) | Yes | see Known Issues | enabled | RGMII1 - KSZ9031RNX Connector X8 |
| Display and Touch | Analog Touch Control 1 | Yes | see Known Issues | disabled | Capacitive: ETM-FT5x06 (on LCD-018), I2C4 |
| | Analog Touch Control2 | No | see Known Issues | disabled | Resistive: STMPE811 (on CB), I2C4 |
| | PWM Backlight | Yes | Yes | disabled | ehrpwm0 (EHRPMW1A on CB) |
| | 24-bit LCD Interface | Yes | see Known Issues | disabled | LVDS Connector X25 requires LCD-018 |
| | НОМІ | Yes | see Known Issues | disabled | hdmi1_ddc Connector X24 (encoder TPD12S on carrier board) |
| McASP | mcasp1 | Yes | see Known Issues | disabled | disabled |
| | mcasp2 | Yes | No | [click for info] | |
| | mcasp5 | Yes | No | [click for info] | |
| | mcasp6 | Yes | No | [click for info] | |
| | mcasp7 | Yes | No | [click for info] | |
| | mcasp8 | Yes | No | [click for info] | |
| eMMC/SD/SDIO | mmc1 | Yes | Yes | enabled | Connector X2 |
| | mmc2 | Yes | Yes | enabled | eMMC on SOM |
| | mmc3 | Yes | No | [click for info] | Connector X26 (WiFi/BT connector) |
| USB | usb1 | Yes | Yes | enabled | USB 3.0 Standard-A Connector X30 (Host only) |
| | usb2 | Yes | see Known Issues | enabled | USB 2.0 Mini-AB Connector X9 (device default); signals may also be routed to X19 (Standard-A) |
| CAN | can1 | Yes | Yes | enabled | DB9 Connector X6 |
| | can2 | Yes | Yes | enabled | Pin Header Connector X5 |
| MCSPI | spi1 | Yes | No | [click for info] | |
| | spi2 | Yes | No | [click for info] | |
| | spi3 | Yes | No | [click for info] | |
| | spi4 | Yes | No | [click for info] | |
| QSPI | qspi1 | Yes | No | disabled | NOR Serial Flash on SOM |
| SATA | sata1 | Yes | Yes | enabled | Connector X11 (SATA) and X12 (power connector) |
| PCIe | pcie1 | Yes | see Known Issues | enabled | Connector X27 (PI6C557 4x PCIe Connector) |
| IPU | ipu1 | Yes | Yes | enabled | |
| | ipu2 | Yes | Yes | enabled | |
| DSP | dsp1 | Yes | Yes | enabled | |
| | dsp2 | Yes | Yes | enabled | |
| GPIO | User Buttons and LEDs | Yes | Yes | enabled | |
| Memory | EEPROM | Yes | Yes | enabled | M24C32 on I2C1 |
| - | NAND (8/16 bit) | Yes | No | disabled | No NAND populated |
| | QSPI NOR Flash | No | No | disabled | N25Q128A connected to QSPI1 |
| | | | | | |

| | eMMC | Yes | Yes | enabled | mmc2 on SOM |
|--------------------------|---------------------------------|-----|---------------------|-------------------|---|
| RTC | Internal AM57xx | Yes | Yes | enabled | Internal to processor |
| | PMIC TPS659037 | Yes | Yes | enabled | TPS659037 I2C1 |
| | External RTC | Yes | Yes | enabled | RV-4162-C7 on I2C1 |
| Audio | Stereo Codec on CarrierBoard | Yes | see Known Issues | disabled | TLV320AIC3007 codec; connected to McASP1 and I2C4 |
| Communication | TiWi-BLE WiFi | No | No | disabled | Connector X26 |
| | TiWi-BLE Bluetooth | No | No | disabled | Connector X26 |
| Parallel Camera | VIN3 on i2c3 | No | No | Not Configured | X23 (phyCAM-P connector) |
| Hardware Acceleration | Graphics (PowerVR SGX544) | Yes | see Known Issues | enabled | |

[1] Interface requires additional configuration, such as pinmuxing. It may be possible to change the software configuration to utilize this interface even if it is not being set in the board's default configuration. Please see Tl's AM57xx technical reference manual for more information on the various modes each pin can be muxed to.

New In This Release

N/A

Fixed In This Release

N/A

Known Issues

PHYTEC Known Issues

Kernel

- Graphics: omapdrm-pvr fails to load or results in kernel panic: When attempting to use either the HDMI or LCD interfaces with the
 Weston init scripts and other PowerVR examples, the system hangs on a kernel panic. As a result, HDMI, LCD, and DSS are currently
 disabled in software until the error is resolved.
- Audio: aplay results in a mcasp transmit buffer underflow error and MMU/DSP failures. As a result tlv320aic3007 codec and related interfaces are currently disabled in the software until the error is resolved.
- Power: VBUS_DET implementation prevents complete poweroff. USB2 uses the PMIC VBUS_DET circuit, and when VBUS is provided
 by the processor (USB2 in host mode), the USB2_VBUS signal connected to the PMIC generates a WAKE event.As a result, the PMIC
 powers the system back up as soon as the shutdown finishes.
- USB: USB2 OTG fails to transition from host to device mode: USB2 is configured for 'otg' mode by default. When the system turns on, it
 will properly be detected as a device when plugged into a host machine. Plug and un-plug events are detected. If a device is plugged in
 to the USB2 port, triggering host mode behavior from the system, it will remain in host mode until the next warm reset or cold boot.
- Ethernet: SOMs populated with AM572x silicon revision 2.0, ethernet auto-negotiates but fails to acquire an IP from DHCP or communicate when provided a static IP. There are no issues with silicon revision 1.0 or 1.1.
- Yocto
 - Package ltp-ddt fails to build with arago-core-tisdk-image. Current workaround: Remove ltp-ddt from sources/meta-arago/meta-arago-distro/recipes-core/packagegroups/packagegroup-arago-test.bb
- U-boot
 - o Processor fan is not enabled in u-boot.

Texas Instruments Known Issues

| Record ID | Details | Workaround |
|---------------|---|---|
| SDOCM00112698 | Ducati decoded output frames are padded, and padding needs to be removed prior to waylandsink in GST pipeline | 1. Use GST pipeline with kmssink, or 2. Use videocrop along with VPE for cropping and display, as shown in example above. |
| SDOCM00112703 | LCD size isn't automatically detected to configure VPE to scale video and display on waylandsink | 1. Use GST pipeline with kmssink, or 2. Use VPE static width, height for scaling, as shown in example above |
| SDOCM00115969 | ti-vpe and ti-vip kernel modules are not automatically loaded at boot time | ti-vpe and ti-vip can be manually inserted in order: "modprobe ti-vpe"; "modprobe ti-vip"; |

PHYTEC

| SDOCM00115970 | When HDMI is connected, booting with Weston/matrix GUI results in Kernel segfault. The crash happens when starting the Matrix GUI. | Disable Matrix GUI before the booting: go to directory /etc/rc5.d and rename S97matrix-gui-2.0 to K97matrix-gui-2.0 |
|---------------|--|--|
| SDOCM00115971 | GStreamer Plugin for Ducati Encoders doesn't work | IVAHD encoding can be done using videnc2test as in Matrix GUI |
| SDOCM00115972 | SGX H/W recovery error (sometimes requires reboot) when surface is deleted and re-created in Waylandsink. For. e.g: At the end of playing clips using GSreamer with waylandsink. | Use GST pipeline with kmssink. |
| SDOCM00115973 | Clicking/touching Qt5 demos outside of the demo app sends the demo to background, and no way to return to Matrix screen from touchscreen | Avoid clicking the background. If demo window goes into background, user can log into EVM to stop Matrix GUI via "/etc/init.d/matrix-gui-2.0 stop" to bring the demo back to foreground. Matrix GUI can be restarted via "/etc/init.d/matrix-gui-2.0 start". |

Technical Support

For further support please visit PHYTEC's Support Portal