phyCORE-AM57xx-PD15.1-rc4 Release Notes

Operating System	Linux
BSP Release Status	UNKNOWN
Release Date	
Repository	
Binaries	phycore-AM57xx-PD15.1-rc4 BSP Release
Source Archive	
Release Notes	Click Here

This is a Release Candidate BSP. Please use this BSP ONLY for evaluation purposes. As of 11 May 2016, TI has released a newer version 02.00.00.02 SDK and we are working to utilize this for our first official release.

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Introduction

This BSP provides a basis for development, deployment and execution of Linux based applications on the AM57x System on Module (SOM). For detailed information on the various software components included in the release and how to use them, please refer to the 45645860.

Versioning

Software

Component	Version
Linux Kernel	4.1.13 (2015 LTS) (Based on TI SDK 02.00.00.01)
Yocto	1.8 (Fido) (Based on TI SDK 02.00.00.01)
OpenCL	1.1
Qt	5.5
barebox	N/A

u-boot	2015.07 (Based on TI SDK 02.00.00.01)

Linux Device Tree Summary

Default dts target	**am57xx-phycore-rdk.dts**
Default dtsi include description	**Default dtsi include list**
SOM	am57xx-phycore-som.dtsi
Carrier Board	am57xx-pcm-948.dtsi
LCD-018 display (7" display w/ cap. touch)	am57xx-phytec-lcd-018.dtsi
WiLink8	am57xx-phytec-wlan-wilink8.dtsi

Compatible Hardware

SOM PCB Version	CB PCB Version
1428.3	1435.2

BSP Download

Prebuilt images of phyCORE-AM57xx-PD15.1-rc4 can be downloaded from the link below:

phycore-AM57xx-PD15.1-rc4 BSP Release

Quickstart

Quickstarts for phyCORE-AM57xx-PD15.1-rc4:

Content by label

There is no content with the specified labels

BSP Features

Interface	Detail	Implemented	Tested	Enabled in DTS	Notes
UART	uart3	Yes	Yes	Yes	Connector X18 (default serial console)
	uart4	Yes	No	[click for info]	
	uart5	Yes	Yes	Yes	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	Yes	Available on expansion Connector X28
	i2c2	Yes	Yes	Yes	Connected to HDMI1_DDC
	i2c3	Yes	No	[click for info]	

	i2c4	Yes	Yes	Yes	Used for Audio Codec - available on expansion Connector X28
	i2c5	Yes	No	[click for info]	
Ethernet	cpsw_emac0 (RGMII0 on SoM)	Yes	Yes	Yes	RGMII0 - KSZ9031RNX SoM PHY Connector X7
	cpsw_emac1 (RGMII1 on CarrierBoard)	Yes	see Known Issues	Yes	RGMII1 - KSZ9031RNX Connector X8
Display and Touch	Analog Touch Control 1	Yes	Yes	Yes	Capacitive: ETM-FT5x06 (on LCD-018), I2C4
	Analog Touch Control2	No	No	No	Resistive: STMPE811 (on CB), I2C4
	PWM Backlight	Yes	Yes	Yes	ehrpwm0 (EHRPMW1A on CB)
	24-bit LCD Interface	Yes	see Known Issues	Yes	LVDS Connector X25 requires LCD-018
	HDMI	Yes	see Known Issues	No	hdmi1_ddc Connector X24 (encoder TPD12S on carrier board)
McASP	mcasp1	Yes	Yes	Yes	
	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	Yes	Connector X2
	mmc2	Yes	Yes	Yes	eMMC on SOM
	mmc3	Yes	Yes	Yes	Connector X26 (WiFi/BT connector)
USB	usb1	Yes	Yes	Yes	USB 3.0 Standard-A Connector X30 (Host only)
	usb2	Yes	see Known Issues	Yes	USB 2.0 Mini-AB Connector X9 (device default); signals may also be routed to X19 (Standard-A)
CAN	can1	Yes	Yes	Yes	DB9 Connector X6
	can2	Yes	Yes	Yes	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	No	NOR Serial Flash on SOM
SATA	sata1	Yes	Yes	Yes	Connector X11 (SATA) and X12 (power connector)
PCIe	pcie1	Yes	Yes	Yes	Connector X27 (PI6C557 4x PCIe Connector)
IPU	ipu1	Yes	Yes	Yes	
	ipu2	Yes	Yes	Yes	
DSP	dsp1	Yes	see Known Issues	No	
	dsp2	Yes	see Known Issues	No	
GPIO	User Buttons and LEDs	Yes	Yes	Yes	
Memory	EEPROM	Yes	Yes	Yes	M24C32 on I2C1
	NAND (8/16 bit)	Yes	No	No	No NAND populated
	QSPI NOR Flash	No	No	No	N25Q128A connected to QSPI1
	eMMC	Yes	Yes	Yes	mmc2 on SOM
RTC	Internal AM57xx	Yes	Yes	Yes	Internal to processor
	PMIC TPS659037	Yes	Yes	Yes	TPS659037 I2C1
	External RTC	Yes	Yes	Yes	RV-4162-C7 on I2C1

Audio	Stereo Codec on CarrierBoard	Yes	Yes	Yes	TLV320AIC3007 codec; connected to McASP1 and I2C4
Communication	TiWi-BLE WiFi	No	No	No	Connector X26
	TiWi-BLE Bluetooth	No	No	No	Connector X26
	WiLink8 WiFi	Yes	Yes	Yes	Connector X26
Parallel Camera	VIN3 on i2c3	No	No	Not Configured	X23 (phyCAM-P connector)
Hardware Acceleration	Graphics (PowerVR SGX544)	Yes	see Known Issues	Yes	

[1] 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.

Fixed In This Release

- **Kernel**
  - **Version:** Migrated from 4.1.6 to 4.1.13.
  - **Display:** VOUT2 now properly uses the dpll2 instead of dpll1, allowing both HDMI and VOUT2 to coexist. Please note that HDMI is still disabled by default so the Matrix demo behaves properly.

New In This Release

- **Kernel**
  - PCIe is now supported and enabled by default.

Known Issues

PHYTEC Known Issues

- **Kernel**
  - **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.
  - **Display:** When HDMI and LCD-018 are both enabled in the DTS, the LCD-018 display does not output data properly. The workaround is to enable one or the other, and LCD-018 is currently the default.
  - **DSP**: Both DSP cores are disabled to allow audio to work properly. The DSP cores can be enabled for calculations if McASP audio is not required. Future SDK releases from TI will improve DSP acceleration.
  - **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. Workaround implemented in build to remove ltp-ddt.
  - Package ccs6 fetch fails due to new TI export approval requirement. Workaround is to download the package manually.
- **U-boot**
  - Processor fan is not enabled in u-boot.

Texas Instruments Known Issues

Technical Support

For further support please visit PHYTEC's Support Portal