

BSP-Yocto-TISDK-AM57xx-PD17.1.1 Release Notes

Operating System	Linux
BSP Release Status	RELEASED
Release Date	11 Sep 2017
Repository	PHYTEC Public Repos
Binaries	BSP-Yocto-TISDK-AM57xx-PD17.1.1
Source Archive	
Release Notes	Click Here

- [Introduction](#)
- [Versioning](#)
 - [Software](#)
 - [Linux Device Tree Summary](#)
 - [Hardware](#)
 - [Official Supported Hardware Versions](#)
- [Quickstart](#)
- [BSP Features](#)
- [New In This Release](#)
- [Fixed In This Release](#)
- [Known Issues](#)
 - [Texas Instruments Known Issues \(Kernel\)](#)
 - [Texas Instruments Known Issues \(U-Boot\)](#)
- [Technical Support](#)

Introduction

This BSP provides a basis for development, deployment and execution of Linux based applications on the phyCORE-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 [69501260](#).

Versioning

Software

Linux Kernel	4.4.32 (Based on TI SDK 03.02)
U-boot	2016.05 (Based on TI SDK 03.02)
Yocto	2.1 (Krogoth) (Based on TI SDK 03.02)
Qt	5.6.2
OpenCL	1.1.11
OpenCV	3.1

Linux Device Tree Summary

Hardware Target	Device Tree File Descriptions	Filename
phyCORE-AM572x RDK	Default dts Build Target	am572x-phycore-rdk.dts
	SOM (<i>superset</i>) - enables all SOM features	am572x-phycore-som.dtsi
	SOM Variant - excludes features not supported by the BOM population options for PCM-057-41300111I	am572x-pcm-057-41300111i.dtsi
	Carrier Board	am572x-pcm-948.dtsi
	LCD-018 display - 7" display with capacitive touch	am57xx-phytec-lcd-018.dtsi
	WiLink8 WiFi Module	am57xx-phytec-wlan-wilink8.dtsi
	VM-009 Camera Module	am57xx-phytec-vm-0xx.dtsi

Hardware

Yocto Machine Config	Kit Part Number	SOM Part Number	Modules	U-Boot Defconfig	Kernel Device Tree File
am572x-phycore-rdk	KPCM-057-SYS	PCM-057-41300111I	LCD-018-070-KAP PCM-949 PCM-957 VM-009-M12	am572x_phycore_rdk_defconfig am572x_phycore_rdk_256M16_x4_defconfig am572x_phycore_rdk_512M16_x4_defconfig	am572x-phycore-rdk.dts

Official Supported Hardware Versions

Hardware Description	Part Number	PCB Version
phyCORE-AM572x SOM	PCM-057-41300111I.A1	1428.3
	PCM-057-41300111I.A2	1428.3
	PCM-057-41201111I.A1	1428.3
	PCM-057-40201111I.A0	1428.3
	PCM-057-50201111I.A0	1428.3
	PCM-057-50500111I.A0	1428.3
phyCORE-AM572x Carrier Board	PCM-948.A3	1435.2
	PCM-948.A4	1435.2

BSP Download

Prebuilt images of BSP-Yocto-TISDK-AM57xx-PD17.1.1 can be downloaded from the link below:

[BSP-Yocto-TISDK-AM57xx-PD17.1.1 Release](#)

Quickstart

Quickstarts for BSP-Yocto-TISDK-AM57xx-PD17.1.1:

Content by label

There is no content with the specified labels

BSP Features

Interface	Detail	Implemented	Tested	Status in Device tree	Notes
UART	uart3	Yes	Yes	Yes	Connector X18 (default serial console)
	uart4	Yes	No	SupportedInterfacesFootnote_1	
	uart5	Yes	Yes	SupportedInterfacesFootnote_1es	Connector X17
	uart6	Yes	No	SupportedInterfacesFootnote_1	
	uart7	Yes	No	SupportedInterfacesFootnote_1	
	uart8	Yes	No	SupportedInterfacesFootnote_1	
	uart9	Yes	No	SupportedInterfacesFootnote_1	
	uart10	Yes	No	SupportedInterfacesFootnote_1	
I2C	i2c1	Yes	Yes	Yes	Available on expansion Connector X28
	i2c2	Yes	Yes	Yes	Connected to HDMI1_DDC
	i2c3	Yes	No	SupportedInterfacesFootnote_1	
	i2c4	Yes	Yes	Yes	Used for Audio Codec - available on expansion Connector X28
	i2c5	Yes	No	SupportedInterfacesFootnote_1	
Ethernet	cpsw_emac0 (RGMII0 on SoM)	Yes	Yes	Yes	RGMII0 - KSZ9031RNX SoM PHY Connector X7
	cpsw_emac1 (RGMII1 on CarrierBoard)	Yes	Yes	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 (EHRPWM1A 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	SupportedInterfacesFootnote_1	
	mcasp5	Yes	No	SupportedInterfacesFootnote_1	
	mcasp6	Yes	No	SupportedInterfacesFootnote_1	
	mcasp7	Yes	No	SupportedInterfacesFootnote_1	
	mcasp8	Yes	No	SupportedInterfacesFootnote_1	
eMMC/SD /SDIO	mmc1	Yes	Yes	Yes	Connector X2
	mmc2	Yes	Yes	Yes	eMMC on SOM
	mmc3	Yes	Yes	SupportedInterfacesFootnote_1es	Connector X26 (WiFi/BT connector)
USB	usb1	Yes	Yes	Yes	USB 3.0 Standard-A Connector X30 (Host only)
	usb2	Yes	Yes	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	Yes	SupportedInterfacesFootnote_1es	Connector X28 (Expansion connector) enabled using spidev on X_SPI1_nCS0
	spi2	Yes	No	SupportedInterfacesFootnote_1	
	spi3	Yes	No	SupportedInterfacesFootnote_1	
	spi4	Yes	No	SupportedInterfacesFootnote_1	
QSPI	qspi1	Yes	see Known Issues	Yes	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	Yes	Yes	
	dsp2	Yes	Yes	Yes	
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	Yes	see Known Issues	Yes	N25Q128A connected to QSPI1_CS2
	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	Yes	Yes	Yes	VM-009 at Connector 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.

New In This Release

- **General**

- **Support for additional SOM Variants:**

- PCM-057-41300111I
- PCM-057-41201111I
- PCM-057-40201111I
- PCM-057-50201111I
- PCM-057-50500111I

- **Nomenclature:** *am572x* has replaced *am57xx* where what is being addressed is specific to am572x and not necessarily compatible with the general AM57xx family. e.g. am57xx-phycore-rdk.dts is now am572x-phycore-rdk.dts

- **Yocto**

- **MACHINE:** Additional machine configurations for different silicon options

- *am5726-phycore-rdk*: intended for PCM-057-xxxx1xxxx SOM variants (AM5726 silicon)—excludes all 2D/3D support
- *am5728-phycore-rdk*: intended for PCM-057-xxxx0xxxx SOM variants (AM5726 silicon)—full-featured
- *am572x-phycore-rdk*: default kit SOM (currently PCM-057-41300111I)

- **Images:** New image target added to reduce filesystem bloat

- *phytec-tisdk-image*: excludes the majority of the TISDK demos and benchmarks without removing additional support (assuming it is supported by the MACHINE)
- **Kernel**
 - **Devicetree**: Rearranged device tree files to enable all SOM features by default, most carrier board features, and exclude what is not supported in SOM-specific variants. See
- **U-Boot**
 - **DDR**: Support for 4 GiB (4x MT41K512M16HA-125) configurations
 - Additional CONFIG_PCM_057_512M16_x4_DDR to build for 4 GiB configurations
 - **Build**: New defconfig options that include the corresponding CONFIG_PCM_057_###M16_x4_DDR option for building support for either 2GiB or 4GiB configurations
 - *am572x_phycore_rdk_256M16_x4_defconfig*: PCM-057-4xxxxxxx SOM variants (2GiB)
 - *am572x_phycore_rdk_512M16_x4_defconfig*: PCM-057-5xxxxxxx SOM variants (4GiB)
 - *am572x_phycore_rdk_defconfig*: default kit SOM (currently PCM-057-41300111)
 - **Devicetree**: Additional devicetree support in preparation for future FIT integration

Fixed In This Release

- **Kernel**
 - systemd[1]: Time has been changed

Known Issues

- **Yocto**
 - Package ccs6 fetch fails due to TI export approval requirement. Workaround is to download the package manually as noted in the [BSP-Yocto-TISDK-AM57xx-PD17.1.1 Quickstart](#).
 - -dirty is no longer appended when u-boot or kernel sources are built with uncommitted changes due to the addition of additional version information.
- **Kernel**
 - **Display**: TI's Matrix-GUI demo only displays to either HDMI or LCD, not both. The workaround is to enable one or the other. LCD-018 is currently the default.
 - **QSPI**: Possible read failures on flash devices with HOLD function (Erratum i916). A software workaround has been implemented to limit QSPI to DIO-SPI mode. The hardware workaround is to disable internal pull-ups and add 10k pull-ups on X_QSPI1_D2 & X_QSPI1_D3.

Texas Instruments Known Issues (Kernel)

Texas Instruments Known Issues (U-Boot)

Technical Support

For further support please visit [PHYTEC's Support Portal](#)