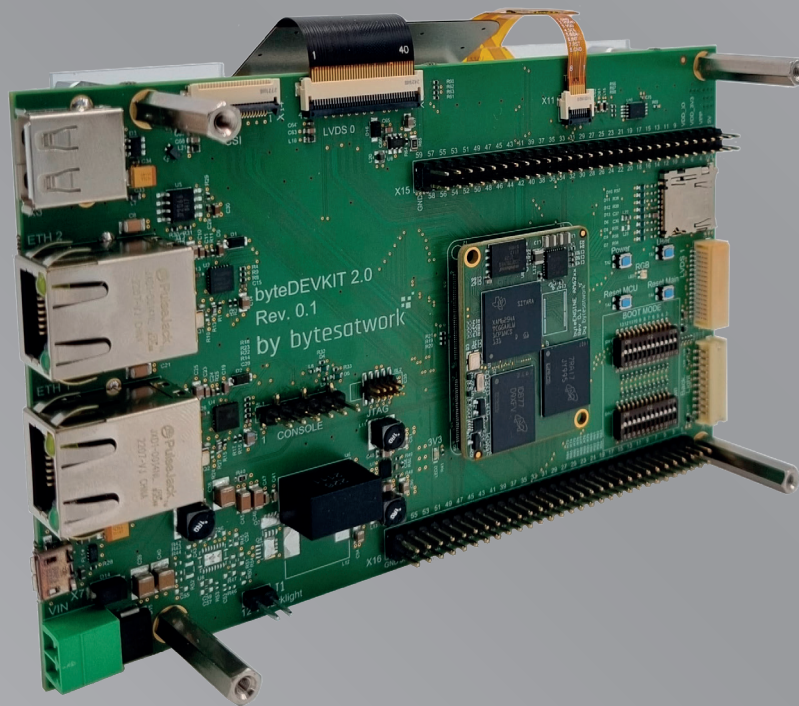


# DATA SHEET

## industrial development kit byteDEVKIT 2

15.08.2023



bytesatwork 

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## Symbols and typographic conventions

These symbols represent important details or aspects for working with bytesatwork-products.



### NOTICE

Follow instructions. Acting against the procedure described can lead to malfunction.



### LINK

Hyper- or Chapter-Link.

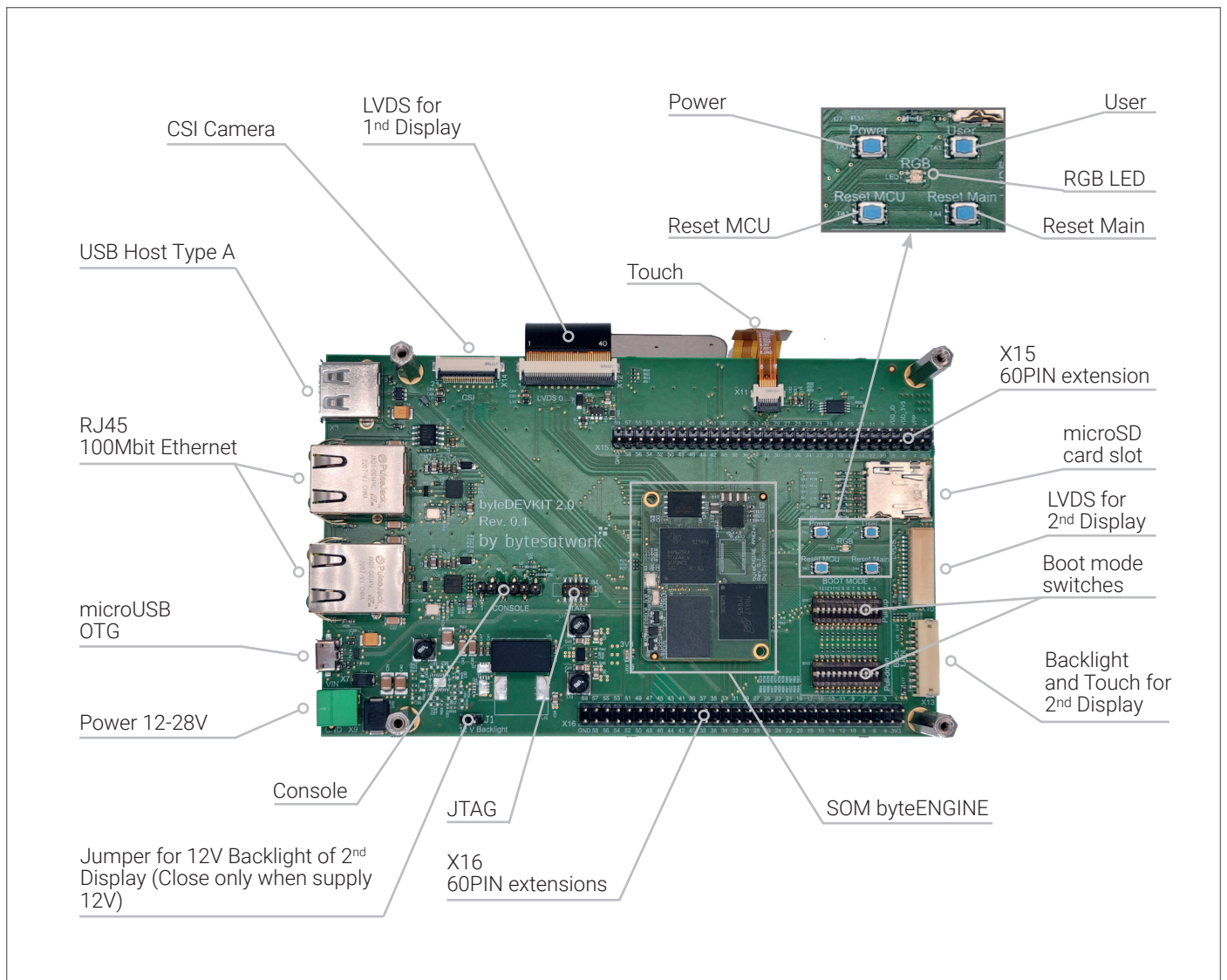
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## 2. Revisions history

Hardware Revision	Marking on PCB	Release Date	Note
0.1	byteDEVKIT 2 Rev.01	2022	First revision for sale

## 3. Overview



## 3.1 General Information

### Maximum flexibility and simplicity

- > The byteDEVKIT 2 enables you to work on your own projects while shortening time-to-market significantly. It is engineered for a huge variety of applications and the flexible structure allows easy implementations of even profound changes. Furthermore, it offers maximum flexibility and simplicity. The byteDEVKIT 2 is available with the complete AM62xx-Module family:
  - AM6231, AM6232, AM6234
  - AM6251, AM6252, AM6254

### Plenty of possibilities

- > The byteDEVKIT 2 includes the base board that features a strong array of interfaces for a variety of applications:
  - 2x 100Mbit Ethernet RJ45
  - 1x microSD Slot
  - 1x USB Host Type A
  - 1x USB OTG microUSB
  - 5-inch LVDS Touchscreen Display
  - extension connector for second Display
  - 2x 60 PIN Header: Extension-Header
    - X15: LCD, OSPI, MMC2, SPI0, MCAN, MCASP
    - X16: GMPC, I2C1, MCU\_I2CO, MCU\_SPI0, MCU\_UART0, MCU-MCAN0, MCU-MCAN1, WKUP, RESET
  - Boot mode switches
  - CSI Camera 4lanes

### Ready to start and use

- > The byteDEVKIT 2 package comes ready to run, which includes a powersupply, a serial console and a microSD card with pre installed embedded Linux. As a result, you benefit from rapid prototyping, maximum flexibility and a very short time-to-market.

### Low consumption & high performance

- > The ARM Cortex CPUs from Texas Instruments are on the cutting edge of their industry thanks to the combination of functional integration, high performance and extremely low power consumption.

### Two in one

- > The byteEngine AM62xx has up to four Cortex-A53 cores for exceptionally high system performance. The Cortex-M4 core enables real-time applications with low performance at the same time.

### Easy to adapt to your project

- > Thanks to the two 60PIN headers rapid prototyping is easy and efficient. The byteDEVKIT 2 offers on its 112 PINs a variety of interfaces such as I2C, SPI - CAN, UART, USART, PWM and GPIO.

### Quality which endures

- > Our Swiss standard pays off. We only install components to the byteDEVKIT 2 that will be still available in ten years. The byteDEVKIT 2 is engineered with the focus on robustness and longevity.

## 3.2 Technical Data byteDEVKIT 2

### byteDEVKIT 2

<b>Connectors</b>	2x 100MBit Ethernet RJ45
<b>Hardware Slot</b>	1x microSD slot
<b>Device Slot 1</b>	1x USB Host Type A
<b>Device Slot 2</b>	1x USB OTG microUSB
<b>Display</b>	5-inch LVDS Display with Touch; Extension connectors for 2nd Display
<b>Connectors 60 PIN</b>	X15: LCD, OSPI, MMC2, SPI0, MCAN, MCASP X16: GMPC, I2C1, MCU_I2CO, MCU_SPI0, MCU_UART0, MCU_MCAN0, MCU_MCAN1, WKUP, RESET

## 3.3 Technical Data of the SOM byteENGINE AM62xx



### NOTICE

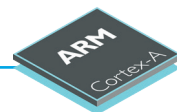
For detailed information regarding the AM62xx please refer to the document AM62xx-DataSheet“.



### LINK

[Datasheet byteENGINE AM62xx](#)

### byteENGINE AM62xx SPECIFICATION



<b>CPU</b>	Up to Quad 64-bit ARM Cortex A53 processors
<b>Co-CPU</b>	Cortex® M4F MCU 400 MHz
<b>Memory</b>	256 MB to 2048 MB
<b>Flash eMMC</b>	up to 32 GB
<b>QSPI-NOR</b>	8 MB
<b>Temperature</b>	Industrial: -40° to +85° degrees celsius, consumer: 0 to 95° C
<b>Power</b>	5.0 V, 4 W
<b>Dimensions</b>	40 x 30 x 4 mm

## 3.4 Decision guidance byteDEVKIT 2

The following five steps help identifying the suitable DEVKIT with the needed SOM for the specific customer application.

- > **Step 1:** Select the needed CPU for the SOM
  - > **Choose with 3D-Graphics Engine:**
    - Quad Core: AM6254
    - Dual Core: AM6253
    - Single Core: AM6251
  - > **Choose without 3D-Graphics Engine:**
    - Quad Core: AM6234
    - Dual Core: AM6232
    - Single Core: AM6231
  
- > **Step 2:** Select the needed flash memory type and capacity
  - > **Choose eMMC 8 / 16 / 32 / 64 GB**
  
- > **Step 3:** Select the needed RAM capacity:
  - > **Choose 512 / 1024 / 1536 / 2048 MB**
  
- > **Step 4:** Select the needed temperature range
  - > **Choose consumer or industrial**
  
- > **Step 5:** Select the needed Display
  - > **Choose with or without**



**LINK:**  
[„8. Ordering Info“](#)



## 3.5 Quickstart guide

The Quickstart guide simplifies the startup process with step-by-step instructions. Should you have questions you are always welcome to ask our expert technical support. See Chapter [„5. Connectors“](#) for connectors layout.

- > **Step 1:** Connect the USB-RS232 cable to SL1 (black wire is marking PIN 1)
- > **Step 2:** Optional - connect the network cable
- > **Step 3:** Put a valid micro SD-Card into the SD-Card slot of the SOC
- > **Step 4:** Connect the console cable to your computer serial or USB port if you're using the adapter. Start the Terminal Software and configure your serial port with the following port settings:

### Port Settings

<b>Bits per second</b>	115200
<b>Data bits</b>	8
<b>Parity</b>	N
<b>Stop bits</b>	1

- > **Step 5:** Connect the power supply to X9
- > **Step 6:** After connected to power supply – the console shows the boot log
- > **Step 7:** Login to the system with:

### Login Data

<b>USER</b>	root
<b>Password</b>	rootme



## 3.6 Yocto Project Quick Build

This short document steps you through the process for an image build using the Yocto Project.



**LINK:**  
[bytesatwork on github](#)

- > **Step 1:** Create the folder „yocto“ and change into directory using the following commands:

```
mkdir yocto
cd yocto
```

- > **Step 2:** Download all necessary repositories using repo:

```
repo init -u https://github.com/bytesatwork/bsp-platform-ti.git -b kirkstone
repo sync
```

- > **Step 3:** When these commands are completed successfully, the following command will setup a Yocto Project environment for byteDEVKIT:

```
MACHINE=bytedevkit-am62xx DISTRO=poky-bytesatwork EULA=1 . setup-environment build
```

- > **Step 4:** The final command builds a development image:  
(this will last several hours, depending on the build machine)

```
bitbake bytesatwork-minimal-image
```

- > **Step 5:** Create and write the SD-Card Image (replace sdX with SD-Card drive)

```
cd tmp/deploy/images/bytedevkit-am62xx
xzcat bytesatwork-minimal-image-bytedevkit-am62xx.wic.xz | dd of =/dev/sdX bs=1M
conv=fsync
```

# 4. Pinout functions



LINK:  
[bytesDEVKIT 2 Schematic V1.0](#)

## 4.1 X10 LVDS1 Connector for optional second display

PIN functions X10:      PIN 1 - 30      AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X10	1	GND							
X10	2	GND							
X10	3	OLDIO_A5N							
X10	4	OLDIO_A4N							
X10	5	OLDIO_A5P							
X10	6	OLDIO_A4P							
X10	7	GND							
X10	8	GND							
X10	9	OLDIO_A6N							
X10	10	NC							
X10	11	OLDIO_A6P							
X10	12	NC							
X10	13	GND							
X10	14	NC							
X10	15	OLDIO_CLK1P							
X10	16	GND							
X10	17	OLDIO_CLK1N							
X10	18	NC							
X10	19	GND							
X10	20	SEL6/8							
X10	21	OLDIO_A7P							
X10	22	GND							
X10	23	OLDIO_A7N							
X10	24	Reserve							
X10	25	GND							
X10	26	GND							
X10	27	GND							
X10	28	3V3							
X10	29	3V3							
X10	30	3V3							

## 4.2 X11 Touch connector

**PIN functions X11:**      **PIN 1 - 8**      **AF 1 - 7**

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X11	1	GND							
X11	2	VDDIO							
X11	3	VDD							
X11	4	I2C1_SCL	UART1_RXD	TIMER_I00	SPI2_CS1	EHRPWM0_SYNCI			GPIO1_28
X11	5	I2C1_SDA	UART1_TXD	TIMER_I01	SPI2_CLK	EHRPWM0_SYNCO			GPIO1_29
X11	6	TOUCH_INT							
X11	7	TOUCH_RESET							
X11	8	GND							

## 4.3 X12 5-inch Display connector

PIN functions X12:

PIN 1 - 40

AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X12	1	LEDA							
X12	2	LEDA							
X12	3	YU(NC)							
X12	4	XL(NC)							
X12	5	YD(NC)							
X12	6	XR(NC)							
X12	7	U/D/HDIR							
X12	8	L/R/VDIR							
X12	9	LED-							
X12	10	LED-							
X12	11	GND							
X12	12	NC							
X12	13	NC							
X12	14	NC							
X12	15	NC							
X12	16	GND							
X12	17	NC							
X12	18	NC							
X12	19	GND							
X12	20	OLDIO_A3P							
X12	21	OLDIO_A3N							
X12	22	GND							
X12	23	OLDIO_CLK0P							
X12	24	OLDIO_CLK0N							
X12	25	GND							
X12	26	OLDIO_A2N							
X12	27	OLDIO_A2P							
X12	28	GND							
X12	29	OLDIO_A1N							
X12	30	OLDIO_A1P							
X12	31	GND							
X12	32	OLDIO_A0N							
X12	33	OLDIO_A0P							
X12	34	GND							
X12	35	DISPLAY1_ENABLE							
X12	36	DISPLAY1_RESET							
X12	37	NC							
X12	38	3V3							
X12	39	3V3							
X12	40	NC							

## 4.4 X13 Backlight connector for optional second display

**PIN functions X13:**      **PIN 1 - 10**

**AF 1 - 7**

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X13	1	VIN_12V							
X13	2	VIN_12V							
X13	3	VIN_12V							
X13	4	VIN_12V							
X13	5	GND							
X13	6	GND							
X13	7	GND							
X13	8	GND							
X13	9	DISPLAY2_ENABLE							
X13	10	DISPLAY2_PWM							

## 4.5 X14 Camera

**PIN functions X14:**      **PIN 1 - 24**

**AF 1 - 7**

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X14	1	GND							
X14	2	CSI0_RXN0							
X14	3	CSI0_RXP0							
X14	4	GND							
X14	5	CSI0_RXCLKN							
X14	6	CSI0_RXCLKP							
X14	7	GND							
X14	8	CSI0_RXN1							
X14	9	CSI0_RXP1							
X14	10	GND							
X14	11	CSI0_RXN2							
X14	12	CSI0_RXP2							
X14	13	GND							
X14	14	CSI0_RXN3							
X14	15	CSI0_RXP3							
X14	16	GND							
X14	17	CAMERA_nPWDN							
X14	18	NC							
X14	19	GND							
X14	20	I2C1_SCL	UART1_RXD	TIMER_IO0	SPI2_CS1	EHRPWM0_SYNCI			GPIO1_28
X14	21	I2C1_SDA	UART1_TXD	TIMER_IO1	SPI2_CLK	EHRPWM0_SYNCO			GPIO1_29
X14	22	NC							
X14	23	CAMERA_RESET							
X14	24	3V3							

## 4.6 X15 - 60PIN Connector

PIN functions X15:

PIN 1 - 40

AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X15	1	5V							
X15	2	3V3							
X15	3	VPP							
X15	4	VOUT0_DATA0	GPMC0_A0	PR0_PRU1_GPO0	PR0_PRU1_GPI0	UART2_RXD	PR0_PRU0_GPO8	PR0_PRU0_GPI8	GPI00_45
X15	5	VDD_3V3							
X15	6	VOUT0_DATA1	GPMC0_A1	PR0_PRU1_GPO1	PR0_PRU1_GPI1	UART2_TXD	PR0_PRU0_GPO9	PR0_PRU0_GPI9	GPI00_46
X15	7	VDD_IO							
X15	8	VOUT0_DATA2	GPMC0_A2	PR0_PRU1_GPO2	PR0_PRU1_GPI2	UART3_RXD	PR0_PRU0_GPO10	PR0_PRU0_GPI10	GPI00_47
X15	9	OSPI0_CLK							GPI00_0
X15	10	VOUT0_DATA3	GPMC0_A3	PR0_PRU1_GPO3	PR0_PRU1_GPI3	UART3_TXD	PR0_PRU0_GPO11	PR0_PRU0_GPI11	GPI00_48
X15	11	OSPI0_I00							
X15	12	VOUT0_DATA4	GPMC0_A4	PR0_PRU1_GPO4	PR0_PRU1_GPI4	UART4_RXD	PR0_PRU0_GPO12	PR0_PRU0_GPI12	GPI00_49
X15	13	OSPI0_I01							
X15	14	VOUT0_DATA5	GPMC0_A5	PR0_PRU1_GPO5	PR0_PRU1_GPI5	UART4_TXD	PR0_PRU0_GPO13	PR0_PRU0_GPI13	GPI00_50
X15	15	OSPI0_I02							
X15	16	VOUT0_DATA6	GPMC0_A6	PR0_PRU1_GPO6	PR0_PRU1_GPI6	UART5_RXD	PR0_PRU0_GPO14	PR0_PRU0_GPI14	GPI00_51
X15	17	OSPI0_I03							
X15	18	VOUT0_DATA7	GPMC0_A7	PR0_PRU1_GPO7	PR0_PRU1_GPI7	UART5_TXD	PR0_PRU0_GPO15	PR0_PRU0_GPI15	GPI00_52
X15	19	OSPI0_I04							
X15	20	VOUT0_DATA8	GPMC0_A8	PR0_PRU1_GPO16	PR0_PRU1_GPI16	UART6_RXD	PR0_PRU0_GPO17	PR0_PRU0_GPI17	GPI00_53
X15	21	OSPI0_I05							
X15	22	VOUT0_DATA9	GPMC0_A9	PR0_PRU1_GPO8	PR0_PRU1_GPI8	UART6_TXD	PR0_PRU0_GPO16	PR0_PRU0_GPI16	GPI00_54
X15	23	OSPI0_I06							
X15	24	VOUT0_DATA10	GPMC0_A10	PR0_PRU1_GPO9	PR0_PRU1_GPI9	UART6_RTSn	PR0_PRU0_GPO0	PR0_PRU0_GPI0	GPI00_55
X15	25	OSPI0_I07							
X15	26	VOUT0_DATA11	GPMC0_A11	PR0_PRU1_GPO10	PR0_PRU1_GPI10	UART6_CTSn	PR0_PRU0_GPO1	PR0_PRU0_GPI1	GPI00_56
X15	27	OSPI0_CS1							
X15	28	VOUT0_DATA12	GPMC0_A12	PR0_PRU1_GPO11	PR0_PRU1_GPI11	UART5_RTSn	PR0_PRU0_GPO2	PR0_PRU0_GPI2	GPI00_57
X15	29	OSPI0_CS2							
X15	30	VOUT0_DATA13	GPMC0_A13	PR0_PRU1_GPO12	PR0_PRU1_GPI12	UART5_CTSn	PR0_PRU0_GPO3	PR0_PRU0_GPI3	GPI00_58
X15	31	OSPI0_DQS					UART5_CTSn		GPI00_2
X15	32	VOUT0_DATA14	GPMC0_A14	PR0_PRU1_GPO13	PR0_PRU1_GPI13	UART4_RTSn	PR0_PRU0_GPO4	PR0_PRU0_GPI4	GPI00_59
X15	33	OSPI0_LBCLKO					UART5_RTSn		GPI00_1
X15	34	VOUT0_DATA15	GPMC0_A15	PR0_PRU1_GPO14	PR0_PRU1_GPI14	UART4_CTSn	PR0_PRU0_GPO5	PR0_PRU0_GPI5	GPI00_60
X15	35	MMC2_CLK	MCASP1_ACLKR	MCASP1_AXR5	UART6_RXD				GPI00_69
X15	36	VOUT0_PCLK	GPMC0_A19	PR0_PRU1_GPO19	PR0_PRU1_GPI19	UART2_CTSn	PR0_PRU0_GPO19	PR0_PRU0_GPI19	GPI00_64
X15	37	MMC2_CMD	MCASP1_AFSR	MCASP1_AXR4	UART6_TXD				GPI00_70
X15	38	VOUT0_DE	GPMC0_A19	PR0_PRU1_GPO19	PR0_PRU1_GPI19	UART2_CTSn	PR0_PRU0_GPO19	PR0_PRU0_GPI19	GPI00_64
X15	39	MMC2_DATA0							
X15	40	VOUT0_VSYNC	GPMC0_A18	PR0_PRU1_GPO18	PR0_PRU1_GPI18	UART2_RTSn	PR0_PRU0_GPO18	PR0_PRU0_GPI18	GPI00_63



**PIN functions X15:      PIN 41 - 60      AF 1 - 7**

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X15	41	MMC2_DATA1							
X15	42	VOUT0_HSYNC	GPMC0_A16	PR0_PRU1_GPO15	PR0_PRU1_GPI15	UART3_RTSn	PR0_PRU0_GPO6	PR0_PRU0_GPI6	GPIO0_61
X15	43	MMC2_DATA2							
X15	44	MCAN0_RX	UART5_TXD	TIMER_IO3	SYNC3_OUT	UART1_RIn	EQEP2_S	PR0_UART0_TXD	GPIO1_25
X15	45	MMC2_DATA3							
X15	46	MCAN0_TX	UART5_RXD	TIMER_IO2	SYNC2_OUT	UART1_DTRn	EQEP2_I	PR0_UART0_RXD	GPIO1_24
X15	47	MMC2_WP							
X15	48	EMU0							
X15	49	MMC2_CD							
X15	50	EMU1							
X15	51	SPI0_CS1	CP_GEMAC_CPTS0_TS_COMP	EHRPWM0_B	ECAP0_IN_APWM_OUT				GPIO1_16
X15	52	MCASPO_AXR0							
X15	53	SPI0_CS0		EHRPWM0_A				PR0_ECAP0_SYNC_IN	GPIO1_15
X15	54	MCASPO_ACLKX							
X15	55	SPI0_D0	CP_GEMAC_CPTS0_HW1TSPUSH	EHRPWM1_B					GPIO1_18
X15	56	MCASPO_ACLKR							
X15	57	SPI0_D1	CP_GEMAC_CPTS0_HW2TSPUSH	EHRPWM_TZn_IN0					GPIO1_19
X15	58	VSELECT							
X15	59	SPI0_CLK	CP_GEMAC_CPTS0_TS_SYNC	EHRPWM1_A					GPIO1_17
X15	60	GND							

## 4.7 X16 - 60PIN Connector

PIN functions X16:

PIN 1 - 20

AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X16	1	GPMC0_CLK		MCASP1_AXR3	GPMC0_FCLK_MUX	PR0_PRU0_GPO8	PR0_PRU0_GPI8	TRC_DATA6	GPI00_31
X16	2	3V3							
X16	3	GPMC0_AD0	PR0_PRU1_GPO8	PR0_PRU1_GPI8	MCASP2_AXR4	PR0_PRU0_GPO0	PR0_PRU0_GPI0	TRC_CLK	GPI00_15
X16	4	I2C1_SCL	UART1_RXD	TIMER_IO0	SPI2_CS1	EHRPWM0_SYNCI			GPI01_28
X16	5	GPMC0_AD1	PR0_PRU1_GPO9	PR0_PRU1_GPI9	MCASP2_AXR5	PR0_PRU0_GPO1	PR0_PRU0_GPI1	TRC_CTL	GPI00_16
X16	6	I2C1_SDA	UART1_TXD	TIMER_IO1	SPI2_CLK	EHRPWM0_SYNCO			GPI01_29
X16	7	GPMC0_AD2	PR0_PRU1_GPO10	PR0_PRU1_GPI10	MCASP2_AXR6	PR0_PRU0_GPO2	PR0_PRU0_GPI2	TRC_DATA0	GPI00_17
X16	8	MCU_I2C0_SCL							MCU_GPIO0_17
X16	9	GPMC0_AD3	PR0_PRU1_GPO11	PR0_PRU1_GPI11	MCASP2_AXR7	PR0_PRU0_GPO3	PR0_PRU0_GPI3	TRC_DATA1	GPI00_18
X16	10	MCU_I2C0_SDA							MCU_GPIO0_18
X16	11	GPMC0_AD4	PR0_PRU1_GPO12	PR0_PRU1_GPI12	MCASP2_AXR8	PR0_PRU0_GPO4	PR0_PRU0_GPI4	TRC_DATA2	GPI00_19
X16	12	MCU_SPI0_CS1	MCU_OBSCLK0	MCU_SYSCLKOUT0	MCU_EXT_REFCLK0	MCU_TIMER_IO1			MCU_GPIO0_1
X16	13	GPMC0_AD5	PR0_PRU1_GPO13	PR0_PRU1_GPI13	MCASP2_AXR9	PR0_PRU0_GPO5	PR0_PRU0_GPI5	TRC_DATA3	GPI00_20
X16	14	MCU_SPI0_CS0				WKUP_TIMER_IO1			MCU_GPIO0_0
X16	15	GPMC0_AD6	PR0_PRU1_GPO14	PR0_PRU1_GPI14	MCASP2_AXR10	PR0_PRU0_GPO6	PR0_PRU0_GPI6	TRC_DATA4	GPI00_21
X16	16	MCU_SPI0_D1							MCU_GPIO0_4
X16	17	GPMC0_AD7	PR0_PRU1_GPO15	PR0_PRU1_GPI15	MCASP2_AXR11	PR0_PRU0_GPO7	PR0_PRU0_GPI7	TRC_DATA5	GPI00_22
X16	18	MCU_SPI0_D0							MCU_GPIO0_3
X16	19	GPMC0_AD8	VOUT0_DATA16	UART2_RXD	MCASP2_AXR0	PR0_PRU1_GPO0	PR0_PRU1_GPI0		GPI00_23
X16	20	MCU_SPI0_CLK							MCU_GPIO0_2

PIN functions X16:

PIN 21 - 40

AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X16	21	GPMC0_AD9	VOUT0_DATA17	UART2_TXD	MCASP2_AXR1	PR0_PRU1_GPO1	PR0_PRU1_GPI1		GPIO0_24
X16	22	MCU_UART0_RXD							MCU_GPIO0_5
X16	23	GPMC0_AD10	VOUT0_DATA18	UART3_RXD	MCASP2_AXR2	PR0_PRU1_GPO2	PR0_PRU1_GPI2		GPIO0_25
X16	24	MCU_UART0_TXD							MCU_GPIO0_6
X16	25	GPMC0_AD11	VOUT0_DATA19	UART3_TXD	MCASP2_AXR3	PR0_PRU1_GPO3	PR0_PRU1_GPI3	TRC_DATA23	GPIO0_26
X16	26	MCU_UART0_CTSN	MCU_TIMER_IO0		MCU_SPI1_D0				MCU_GPIO0_7
X16	27	GPMC0_AD12	VOUT0_DATA20	UART4_RXD	MCASP2_AFSX	PR0_PRU0_GPO0	PR0_PRU0_GPI0	TRC_DATA22	GPIO0_27
X16	28	MCU_UART0_RTSN	MCU_TIMER_IO1		MCU_SPI1_D1				MCU_GPIO0_8
X16	29	GPMC0_AD13	VOUT0_DATA21	UART4_TXD	MCASP2_ACLKX	PR0_PRU0_GPO1	PR0_PRU0_GPI1	TRC_DATA21	GPIO0_28
X16	30	MCU_MCAN0RX							
X16	31	GPMC0_AD14	VOUT0_DATA22	UART5_RXD	MCASP2_AFSR	PR0_PRU0_GPO2	PR0_PRU0_GPI2	TRC_DATA20	GPIO0_29
X16	32	MCU_MCAN0TX							
X16	33	GPMC0_AD15	VOUT0_DATA23	UART5_TXD	MCASP2_ACLKR	PR0_PRU0_GPO3	PR0_PRU0_GPI3	TRC_DATA19	GPIO0_30
X16	34	MCU_MCAN1_RX	MCU_TIMER_IO3	MCU_SPI0_CS2	MCU_SPI1_CS2	MCU_SPI1_CLK			MCU_GPIO0_16
X16	35	GPMC0_CSN0			MCASP2_AXR14	PR0_PRU0_GPO17	PR0_PRU0_GPI17	TRC_DATA15	GPIO0_88
X16	36	MCU_MCAN1_TX	MCU_TIMER_IO2		MCU_SPI1_CS1	MCU_EXT_REFCLK0			MCU_GPIO0_15
X16	37	GPMC0_CSN1	PR0_PRU1_GPO16	PR0_PRU1_GPI16	MCASP2_AXR15	PR0_PRU0_GPO18	PR0_PRU0_GPI18	TRC_DATA16	GPIO0_42
X16	38	WKUP_I2C0_SCL							MCU_GPIO0_19
X16	39	GPMC0_CSN2	I2C2_SCL	MCASP1_AXR4	UART4_RXD	PR0_PRU0_GPO19	PR0_PRU0_GPI19	TRC_DATA17	GPIO0_43
X16	40	WKUP_I2C0_SDA							MCU_GPIO0_20

PIN functions X16:

PIN 41 - 60

AF 1 - 7

Con	Pin	Signal name	Alternative Modes						
			1	2	3	4	5	6	7
X16	41	GPMC0_CSN3	I2C2_SDA	GPMC0_A20	UART4_TXD	MCASP1_AXR5		TRC_DATA18	GPIO0_44
X16	42	WKUP_UART0_RXD		MCU_SPI0_CS2					MCU_GPIO0_9
X16	43	GPMC0_ADV_ALE							
X16	44	WKUP_UART0_TXD		MCU_SPI1_CS2					MCU_GPIO0_10
X16	45	GPMC0_BE0N_CLE		MCASP1_ACLKX		PR0_PRU0_GPO12	PR0_PRU0_GPI12	TRC_DATA10	GPIO0_35
X16	46	WKUP_UART0_RTSN	WKUP_TIMER_I01		MCU_SPI1_CLK				MCU_GPIO0_12
X16	47	GPMC0_BE1N			MCASP2_AXR12	PR0_PRU0_GPO13	PR0_PRU0_GPI13	TRC_DATA11	GPIO0_36
X16	48	WKUP_UART0_CTSN	WKUP_TIMER_I00		MCU_SPI1_CS0				MCU_GPIO0_11
X16	49	GPMC0_DIR	PR0_ECAP0_IN_APWM_OUT		MCASP2_AXR13	PR0_PRU0_GPO16	PR0_PRU0_GPI16	TRC_DATA14	GPIO0_40
X16	50	Nmcpu_safety_error							
X16	51	GPMC0_WAIT0		MCASP1_AFSX		PR0_PRU0_GPO14	PR0_PRU0_GPI14	TRC_DATA12	GPIO0_37
X16	52	PORZ_OUT							
X16	53	GPMC0_WAIT1	VOUT0_EXTPLCKIN	GPMC0_A21	UART6_RXD				GPIO0_38
X16	54	WKUP_CLKOUT0							MCU_GPIO0_23
X16	55	GPMC0_WPN	AUDIO_EXT_REFCLK1	GPMC0_A22	UART6_TXD	PR0_PRU0_GPO15	PR0_PRU0_GPI15	TRC_DATA13	GPIO0_39
X16	56	MCU_RESETSTATZ							MCU_GPIO0_21
X16	57	GPMC0_OEN_REN		MCASP1_AXR1		PR0_PRU0_GPO10	PR0_PRU0_GPI10	TRC_DATA8	GPIO0_33
X16	58	EXT_REFCLK1	SYNC1_OUT	SPI2_CS3	SYSCLKOUT0	TIMER_IO4	CLKOUT0	CP_GEMAC_CPTS0_RFT_CLK	GPIO1_30
X16	59	GPMC0_WEN		MCASP1_AXR0		PR0_PRU0_GPO11	PR0_PRU0_GPI11	TRC_DATA9	GPIO0_34
X16	60	GND							

## 5. Connectors

### Power

<b>X9.1</b>	8-30 V
<b>X9.2</b>	Ground (GND)

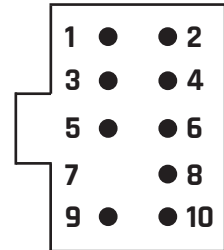
### SL1: Console

<b>SL1.1</b>	GND
<b>SL1.4</b>	UART0-RXD_
<b>SL1.5</b>	UART0-TXD_

**Do not connect other pins**

### SL2: JTAG/SWD (ARM 10 PIN connector)

<b>1</b>	VTref
<b>2</b>	SWDIO/TMS
<b>3</b>	GND
<b>4</b>	SWCLK/TCK
<b>5</b>	GND
<b>6</b>	SWO/TDO
<b>7</b>	---
<b>8</b>	TDI
<b>9</b>	NC - TRSTN
<b>10</b>	nRESET



### LEDs

<b>LED1</b>	Red: Connected to RGMII2.TD3
	Green: Connected to RGMII2.RD2
	Blue: Connected to RGMII2.RD3

### Buttons

<b>User Button</b>	Connected to MMC1.WP
<b>Power Button</b>	Connected to PMIC.EN
<b>RESET_MCU</b>	Connected to MCU_RESETZ
<b>Reset Button</b>	Connected to RESET_REQZ

## 6. Boot modes byteENGINE AM62xx

> Bootmode Pins are GPMC0\_AD[0..15]

**Table 4-2. 2x2BOOTMODE Pin Mapping**

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reserved		Backup Boot Mode Config	Backup Boot Mode			Primary Boot Mode Config			Primary Boot Mode			PLL Config			



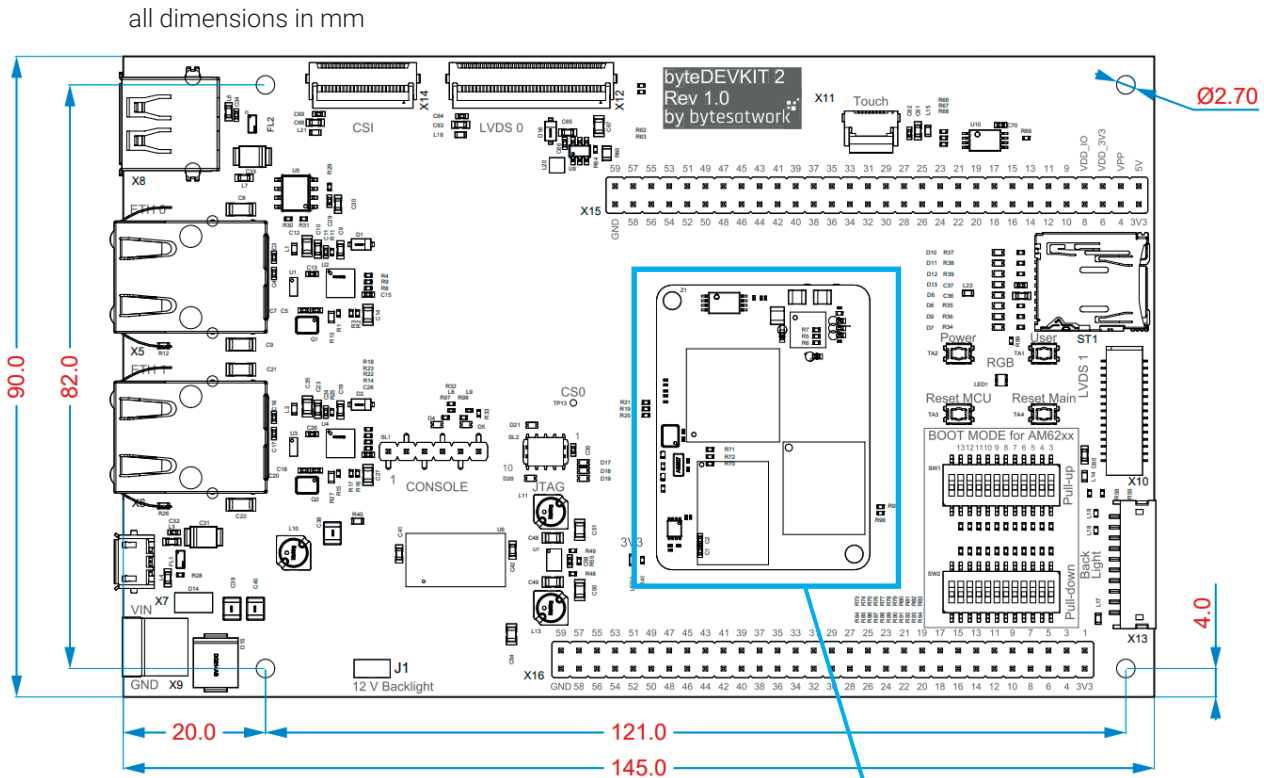
See chapter 5.3.1 of the Technical Reference Manual for more Details:  
[Technical Reference Manual](#)

Primary Boot Mode	B9	B8	B7	B6	B5	B4	B3
MMCSD	1	0	0	1	0	0	0
QSPI	0	1	0	0	0	1	0
UART	0	0	0	0	1	1	1
Ethernet RMI	0	0	0	0	1	0	1
eMMC	0	0	0	1	0	0	1
USN	0	0	0	1	0	1	0

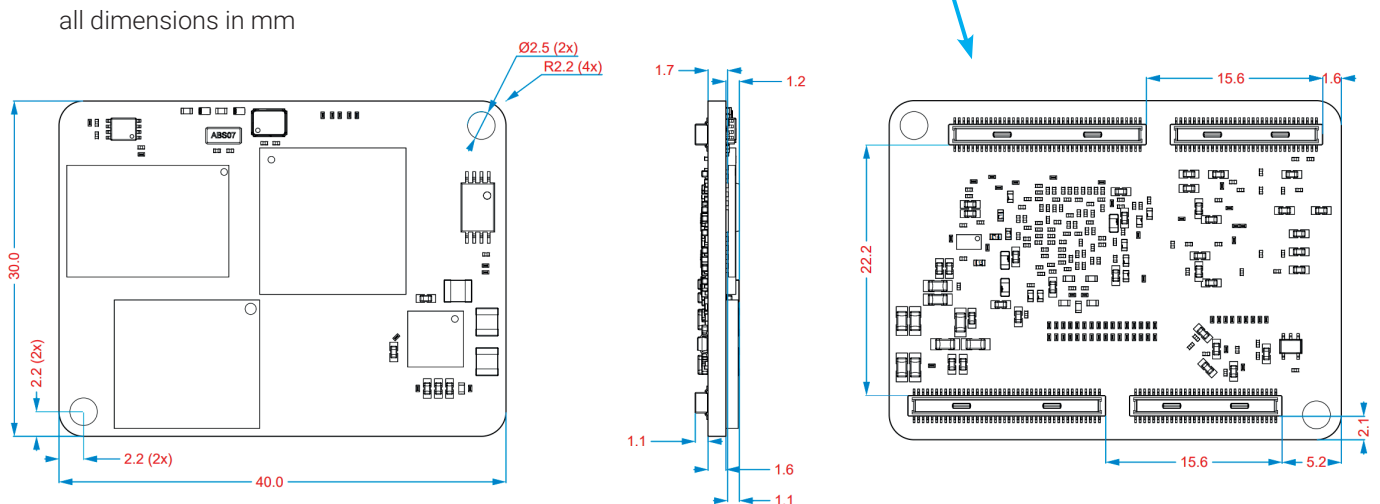
Backup Boot Mode	B13	B12	B11	B10
MMCSD	1	1	0	1
UART	0	0	1	1
USB DFU	0	0	0	1

# 7. Mechanical dimensions byteDEVKIT 2

The following illustration shows all important dimensions for mounting and installation of the byteDEVKIT 2.



## 7.1 Mechanical dimensions AM62xx





## 8. Ordering Info

To order please use the following code:

### **byteENGINE-AM62[TYPE]-[SPEED]-[RAM]-[FLASH]-[temp range]-[revision]-[display]**

<b>[SOM]:</b>	SOM type	bE: byteENGINE
<b>AM62xx[TYPE]:</b>	CPU type	AM6231, AM6232, AM6234, AM6251, AM6252, AM6254
<b>[SPEED MHz]:</b>	Clock speed	1.4 GHz
<b>R[xxx MB]:</b>	RAM size	512, 768, 1024, 1536, 2048 MB
<b>[E/GB]:</b>	eMMC flash size	8, 16, 32, 64 GB
<b>[C, I]:</b>	Temperature range	[C] Customer 0° to +95° Celsius, [I] Industrial -40° to +85° Celsius
<b>[display]</b>	Display	with display without display

## 9. References byteDEVKIT 2



### NOTICE

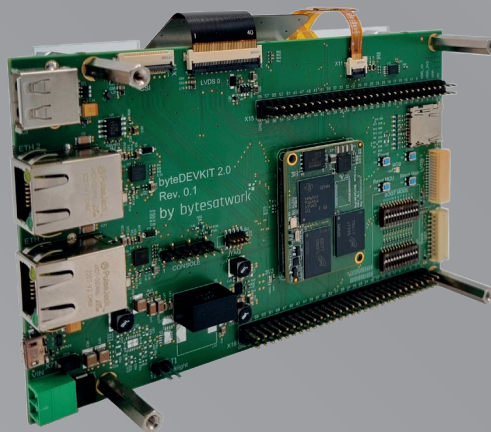
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### LINKS:

- > bytewiki:  
<https://github.com/bytesatwork/bytewiki>
- > Readthedocs.link  
<https://bytewiki.readthedocs.io/>
- > bytesatwork on github:  
<https://github.com/bytesatwork>
- > byteDEVKIT 2 Schematic:  
[https://download.bytesatwork.io/documentation/byteENGINE/ressources/byt-eDEVKIT/Schematic-byteDEVKIT-2\\_V1.0.pdf](https://download.bytesatwork.io/documentation/byteENGINE/ressources/byt-eDEVKIT/Schematic-byteDEVKIT-2_V1.0.pdf)
- > byteDEVKIT 2 Connector Pinout:  
[https://download.bytesatwork.io/documentation/byteENGINE/ressources/byt-eDEVKIT/Connector-pinout-byteDEVKIT-2\\_V1.0.pdf](https://download.bytesatwork.io/documentation/byteENGINE/ressources/byt-eDEVKIT/Connector-pinout-byteDEVKIT-2_V1.0.pdf)

## 10. Contact information



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- > Product Information:  
[www.bytesatwork.io](http://www.bytesatwork.io)
- > Help:  
[www.bytesatwork.io/support](http://www.bytesatwork.io/support)

bytesatwork 