ECUcore-AM62x

Datasheet

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All data, information and technical specifications contained in this document has been subjected to a thorough examination. The information in the document is current at the time of publication as long as nothing else is explicitly stated. However, no liability is given for the correctness, completeness and topicality of the contents.

Revision History

Version	Date	Changes
01	22.05.2024	Created
02	11.07.2024	Chapter 3.8, 3.9, 3.10, 3.11
03	16.11.2024	Part number updated Table 4 pin assignment changed and updated,**Fehler! Verweisquelle konnte nicht gefunden werden.** design error corrected Chapter 3.10 Wi-Fi module enable/disable information added Chapter 3.12 EEPROM write protection information added and EEPROM size error corrected Chapter 3.13 I2C pull-up resistor information added Chapter 3.1.2 Pin change Link_1000 and Link_10_100 Chapter 3.1.2 CAN pull-up resistors information added
04	11.04.2025	Document structure adjusted

List of Abbreviations

ADC	Analog digital converter
AI	Analog Input
AO	Analog Output
BSP	Board Support Package
CAN	Controller Area Network (according to ISO 11898-1:2003 and ISO 11898-2:2003)
CPU	Central Processing Unit
DSM	Deep Sleep Mode
EEPROM	Electrically Erasable Programmable Read-Only Memory
eMMC	embedded Multimedia card
EN	European Norm
ETH	Ethernet
FB	Function Block
GiB	Giga Byte (1024 x 1MB)
Gb	Giga bit
GbE	Gigabit Ethernet
GND	Ground Reference potential
GPIO	General Purpose Input Output
HW	Hardware
IEC	International Electro technical Commission
I/O	Input/Output
I^2C	Inter-integrated circuit
I^2S	Integrated Interchip Sound
kiB	Kilo Byte (1024 byte)
MAC	Media Access Controller (e.g. Ethernet controller)
MiB	Mega Byte (1024 x 1kB)
MDI	Media Dependent Interface
nc	not connected
OS	Operating System
PCB	Printed Circuit Board
PDO	Process Data Object
PMIC	Power Management Integrated Circuit
PLC	Programmable Logical Controller
PWM	Pulse Width Modulation
RAM	Random-Access Memory
RGMII	Reduced Gigabit Media-Independent Interface
ROM	Read-Only Memory
RTC	Real Time Clock
RX	Receive
SAI	Synchronous Audio Interface
SD	Secure Digital
SDC	System Diagnostics Controller
sec	Seconds
SGMII	Serial Gigabit Media-Independent Interface
SIO	Serial Input Output
SIL	Safety integrity level
SoM	System On Module
SPI	Serial Peripheral Interface
SW	Software
tbd	to be defined
TX	Transmit
UART	Universal Asynchronous Receiver Transmitter
w/o	without

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Reference documents

/1/ TI: AM62x Reference Manual (https://www.ti.com/product/de-de/AM623#tech-docs)
/2/ TI: AM62x Data Sheet (https://www.ti.com/product/de-de/AM623#tech-docs)
/3/ TI: SysConfig 1.20.0+3587 – PINMUX Tool (https://www.ti.com/tool/SYSCONFIG)
/4/ TI: TPS65219 Data Sheet (https://www.ti.com/product/de-de/TPS65219)
/5/ TI: TPS65219 Reference Manual (https://www.ti.com/product/de-de/TPS65219#tech-docs)
/6/ TE Connectivity: DIMM Socket (https://www.te.com/en/product-2013310-1.html)
/7/ TI: High-Speed Interface Layout (https://www.ti.com/product/de-de/AM623#tech-docs)
/8/ SYS TEC: User Manual sysWORXX AM62x series. L-2934e

1 Introduction

The ECUcore-AM62x is a System on Module (SOM) based on Ti Sitara™ AM62x. The low-cost AM62x Sitara™ MPU family of application processors are built for Linux® application development. With scalable Arm® Cortex®-A53 performance and embedded features, such as: dual-display support and 3D graphics acceleration, along with an extensive set of peripherals that make the AM62x device well-suited for a broad range of industrial and automotive applications while offering intelligent features and optimized power architecture as well. (Source)

Some of these applications include:

Industrial HMI
EV charging stations
Touchless building access
Driver monitoring systems

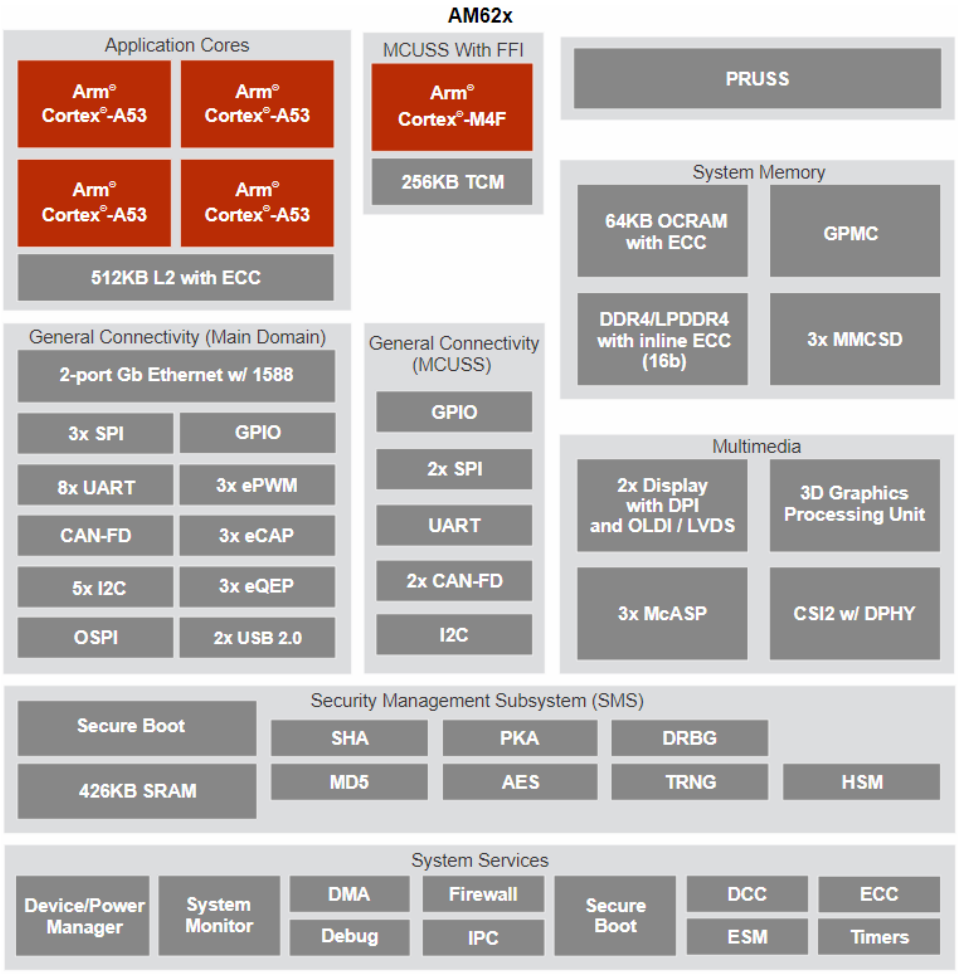

Figure 1: Functional Block Diagram AM62x

2 Product Description

2.1 Ordering Information

Part number	Product name	Feature[1]	Notes
23351012	sysWORXX – ECUcore-AM62x	• TI Sitara™ AM623 with Dual-Core Cortex™-A53 @ 1.4 GHz w/o 3D Graphics Processing Unit (GPU) • 1 GiB DDR4 RAM • 8 GiB eMMC • 2x 1Gbps ETH • WiFi 802.11 a/b/g/n/ac • Bluetooth 5.2	WEB-LINK
23351013	sysWORXX – ECUcore-AM62x	• TI Sitara™ AM623 with Dual-Core Cortex™-A53 @ 1.4 GHz w/o 3D Graphics Processing Unit (GPU) • 1 GiB DDR4 RAM • 8 GiB eMMC • 2x 1Gbps ETH	WEB-LINK

Table 1: Ordering information

Figure 2: sysWORXX ECUcore-AM62x

[1] Please note, there are other hardware configurations on request.

2.2 Features

Table 2: Features

CPU core	
Processor	Ti Sitara AM62x (Source) Up to Quad 64-bit Arm Cortex-A53 microprocessor subsystem at up to 1.4 GHz Quad-core Cortex-A53 cluster with 512KB L2 shared cache with SECDED ECC Each A53 Core has 32KB L1 DCache with SECDED ECC and 32KB L1 ICache with Parity protection Single-core Arm® Cortex®-M4F MCU at up to 400 MHz 256KB SRAM with SECDED ECC Dedicated Device/Power Manager
CPU Clock	1,4GHz each Core
Main memory	DDR4-1600MT 1GiB (up to 2GiB)
Boot memory	eMMC / µSD-Card
Mass storage	
SD-Card	interface for SDHC/SDXC/MMC/eMMC
eMMC	8 GiB (optional 16/32/64 Gib)
Connectivity	
Ethernet	2x GbE Ethernet
WiFi	802.11 a/b/g/n/ac
Bluetooth	5.2
USB	1x USB2.0 Host (up to 480Mbit/s) 1x USB2.0 Device (up to 480Mbit/s)
UART	Up to 4x UART
CAN	Up to 2x CAN-FD
I2C	1x I2C controllers

SPI	Up to 2x SPI interfaces
Display	4 Pair LVDS (1x CLK 3x DATA)
Analog Inputs	4 channels (12Bit, optional 16Bit)
Misc. peripherals	Up to 2 FlexTimer/PWM Up to 41x GPIOs 1x A/B Encoder

Power Supply	
Main Power Supply of Module (3V3)	3.3 V±5 %
Rise Time	Max. 1 V/ms
Voltage ripple	33 mV @0…20 MHz
Power Consumption (full load)	Max. 10W

Temperature range	
Operating	-40 °C/+85 °C[2] (Function and load-dependent)
Storage	-55 °C/+125 °C

Humidity	
Operating	10 % …90 %
Storage	<95 %

[2] Sufficient cooling must be ensured for the entire operating temperature range.

2.3 Block Diagram

The AM62x signals / interfaces can be configured in the SysConfig – Tool from Ti.

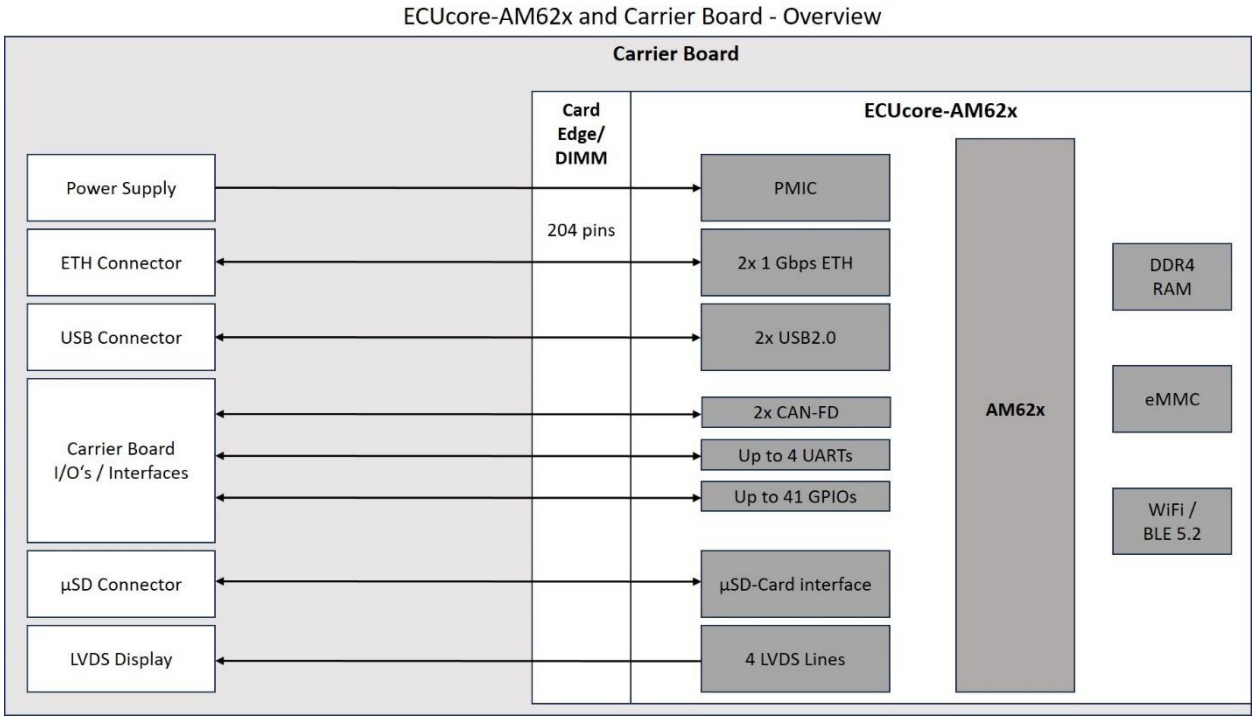

Figure 3: Block Diagram sysWORXX ECUcore-AM62x

3 Design-in Considerations

The following chapter **Fehler! Verweisquelle konnte nicht gefunden werden.** describes design recommendations for developing a carrier board for the ECUcore-AM62x.

3.1 Module (SOM) connector and pin assignment

This chapter describes the module pin and connector configuration. The connector on the module side is called card-edge, the connector on the Carrier board is called DIMM socket. Connector distance between each pin is 0.6 mm.

3.1.1 Connector type for the Carrier board

The Carrier board shall use a 9mm heights 204pin socket:

Manufacture	Board-to-board stack height	Part number of Manufacture
TE Connectivity	9 mm	2013310-1 (LINK)

Table 3: Carrier board plug-in connector

3.1.2 Pin assignment

The pin name corresponds to the GPIO pin name of the **AM62x in the ALW - Package** called by TI, unless there is only an alternative function available. In this case the pin name corresponds to the alternative function only. For description of primary and alternative function see the TI data sheets and the SysConfig - Tool.

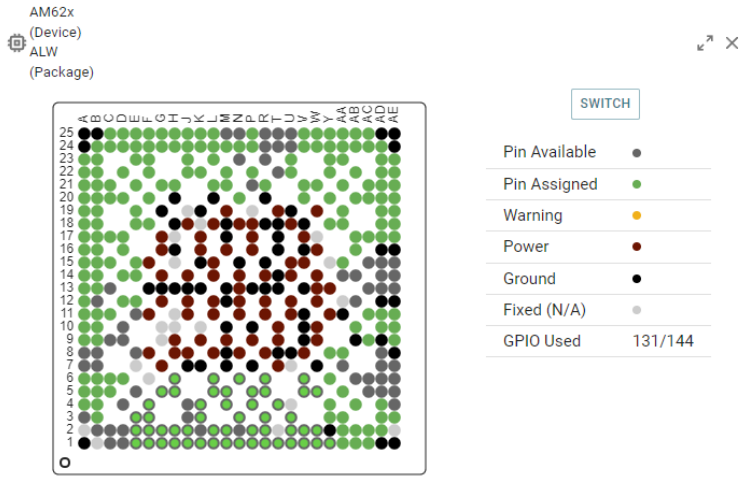

Figure 4: SysConfig - Tool - ALW Package Footprint

The module has one primary power supply domain (3V3) and several domains that are on-board generated (VDD3V3, VDD_CORE, VDD_DDR4, ...). For every pin, the corresponding voltage domain is specified in the SysConfig-Tool.

For every pin, the recommendations of the manufacture must be noted. The information in the data sheet of AM62x and the SysConfig-Tool must be observed.

Table 4: Pin assignment SoM-Connector

PIN	Function	Comment	Domain	PULL
1	NC	not connected	NC	-
2	GPIO0_1			
3	SD-Card Supply	SD-Card 3V3	VDDSHV_SDIO	
4	GPIO0_31			
5	NC	not connected	NC	-
6	GPIO0_32			
7	RESERVED	do not connect	RESERVED	
8	GPIO0_14			
9	RESERVED	do not connect	RESERVED	
10	GPIO0_43			
11	NC	not connected	NC	-
12	GPIO0_33			
13	RESERVED	do not connect	RESERVED	
14	GPIO0_34			
15	RESERVED	do not connect	RESERVED	
16	GPIO0_35			
17	GPIO0_13			
18	GPIO0_2			
19	GPIO0_36			
20	GPIO0_37			
21	GPIO0_38			
22	GPIO0_39			
23	MCU_GPIO0_02			-
24	GPIO0_0			
25	GPIO0_49			
26	GPIO0_40			
27	MCU_GPIO0_03			-
28	GPIO0_51			-
29	GPIO0_52			-
30	GPIO0_41			
31	GPIO0_57			
32	GPIO0_42			
33	GPIO0_58			
34	GPIO0_50			
35	NC	not connected	NC	-
36	GPIO0_45			
37	NC	not connected	NC	-
38	GPIO0_59			
39	NC	not connected	NC	-
40	GPIO0_60			
41	NC	not connected	NC	-
42	GPIO0_54			

43	NC	not connected	NC	-
44	GPIO0_56			
45	NC	not connected	NC	-
46	GPIO0_55			
47	GND	Ground Power PIN	GND	-
48	GPIO0_53			
49	ETH1_A_P			
50	GPIO0_61			
51	ETH1_A_N			
52	GPIO0_17			10k Pull-Down
53	GND	Ground Power PIN	GND	-
54				
55	ETH1_B_P			
56	SoC_BM1	HIGH = SD-Card boot LOW = eMMC boot	3V3	50k Pull-Down
57	ETH1_B_N			
58	GPIO0_19			10k Pull-Down
59	GND	Ground Power PIN	GND	-
60	GPIO0_20			10k Pull-Down
61	ETH1_C_P			
62				
63	ETH1_C_N			
64	GPIO0_26			10k Pull-Down
65	GND	Ground Power PIN	GND	-
66	GPIO0_3			
67	ETH1_D_P			
68	GPIO0_4			
69	ETH1_D_N			
70	GPIO0_5			
71	GND	Ground Power PIN	GND	-
72	GPIO0_6			
73	GPIO0_47			
74	EQEP1_A			
75	GPIO0_48			
76	GPIO1_12			
77	ETH1_LED_ACT			
78	GND	Ground Power PIN	GND	
79	ETH1_LED_LINK_10_100			
80	NC	not connected	NC	-
81	ETH1_LED_LINK_1000			
82	NC	not connected	NC	-

83	NC	not connected	NC	-
84	GND	Ground Power PIN	GND	
85	GND	Ground Power PIN	GND	
86	EMU0	JTAG	VDD_3V3	4k7 Pull-Up
87	EMU1	JTAG	VDD_3V3	4k7 Pull-Up
88	TCK	JTAG	VDD_3V3	10k Pull-Up
89	TDI	JTAG	VDD_3V3	10k Pull-Up
90	GND	Ground Power PIN	GND	
91	GND	Ground Power PIN	GND	
92	TDO	JTAG	VDD_3V3	-
93	TMS	JTAG	VDD_3V3	10k Pull-Up
94	/TRST	JTAG	VDD_3V3	4k7 Pull-Down
95	NC	not connected	NC	-
96	GND	Ground Power PIN	GND	
97	GND	Ground Power PIN	GND	
98	USB0_DP	PIN: AD11		
99	NC	not connected	NC	-
100	USB0_DM	PIN: AE11		
101	NC	not connected	NC	-
102	USB0_VBUS	PIN: AC11	5-30V	
103	GND	Ground Power PIN	GND	-
104	NC	not connected	NC	-
105	ETH0_A_P			
106	USB1_DP	PIN: AE9		
107	ETH0_A_N			
108	USB1_DM	PIN: AD10		
109	GND	Ground Power PIN	GND	-
110	USB1_VBUS	PIN: AB10	5-30V	
111	ETH0_B_P			
112	NC	not connected	NC	-
113	ETH0_B_N			
114	NC	not connected	NC	-
115	GND	Ground Power PIN	GND	-
116	GND	Ground Power PIN	GND	
117	ETH0_C_P			
118	MMC1_/CD			
119	ETH0_C_N			
120	MCAN0_TX GPIO1_24			10k Pull-Up
121	GND	Ground Power PIN	GND	-
122	MMC1_CMD			
123	ETH0_D_P			
124	MMC1_DAT2			
125	ETH0_D_N			

126	MMC1_DAT1			
127	GND	Ground Power PIN	GND	-
128	MMC1_CLK			
129	ETH0_LED_ACT			
130	MMC1_DAT3			
131	ETH0_LED_LINK_1000			
132	MMC1_DAT0			
133	ETH0_LED_LINK_10_100			
134	VDD_3V3	Enable BaseBoard Peripherals	VDD_3V3	
135	NC	not connected	NC	-
136	NC	not connected	NC	-
137	3V3	Supply Voltage 3V3	3V3	-
138	3V3	Supply Voltage 3V3	3V3	
139	3V3	Supply Voltage 3V3	3V3	-
140	3V3	Supply Voltage 3V3	3V3	
141	3V3	Supply Voltage 3V3	3V3	-
142	3V3	Supply Voltage 3V3	3V3	
143	3V3	Supply Voltage 3V3	3V3	-
144	3V3	Supply Voltage 3V3	3V3	
145	3V3	Supply Voltage 3V3	3V3	-
146	3V3	Supply Voltage 3V3	3V3	
147	GPIO1_19			
148	NC	not connected	NC	-
149	GPIO1_18			
150	RESERVED	do not connect	RESERVED	
151	GPIO0_7			
152	RESERVED	do not connect	RESERVED	
153	GPIO1_17			
154	RESERVED	do not connect	RESERVED	
155	MCU_MCAN0_TX MCU_GPIO0_13			10k Pull-Up
156	RESERVED	do not connect	RESERVED	
157	MCU_MCAN0_RX MCU_GPIO0_14			
158	RESERVED	do not connect	RESERVED	
159	UART0_RX-SERVICE	INPUT		
160	NC	not connected	NC	-
161	UART0_TX-SERVICE	OUTPUT		
162	SoC_PMIC_/RST			10k Pull-Up
163	GPIO0_46			
164	NC	not connected	NC	-
165	NC	not connected	NC	-
166	NC	not connected	NC	-
167	NC	not connected	NC	-

168	GPIO0_11			
169	I2C3_BOARD_SCL			
170	BASEBOARD_/RST (Output)	SoM --> Carrier Board	3V3	10k Pull-Down
171	I2C3_BOARD_SDA			
172	GPIO0_12			
173	GPIO0_63			
174	SPI1_SCLK			
175	GPIO0_64			
176	GPIO0_62			
177	SPI1_D0_MOSI			
178	RESERVED	do not connect	RESERVED	
179	SPI1_D1_MISO			
180	GND	Ground Power PIN	GND	
181	PWM1-ECAP1			
182	OLDI0_CLK0_P			
183	MCAN0_RX GPIO1_25			
184	OLDI0_CLK0_N			
185	PWM2			
186	GND	Ground Power PIN	GND	
187	NC	not connected	NC	-
188	OLDI0_A0_P			
189	GPIO1_50			
190	OLDI0_A0_N			
191	GPIO1_51			
192	GND	Ground Power PIN	GND	
193	GND	Ground Power PIN	GND	-
194	OLDI0_A1_P			
195	ADC_1	Analog INPUT 0-3V3		RC-Filter 1k/100nF
196	OLDI0_A1_N			
197	ADC_2	Analog INPUT 0-3V3		RC-Filter 1k/100nF
198	GND	Ground Power PIN	GND	
199	ADC_0	Analog INPUT 0-3V3		RC-Filter 1k/100nF
200	OLDI0_A2_P			
201	ADC_3	Analog INPUT 0-3V3		RC-Filter 1k/100nF
202	OLDI0_A2_N			
203	GND	Ground Power PIN	GND	-
204	GND	Ground Power PIN	GND	

3.2 Power Supply Design considerations

This section provides design recommendations for the power supply of ECUcore-AM62x. For information about module power supply values and power consumption see **Fehler! Verweisquelle konnte nicht gefunden werden.**.

The ECUcore-AM62x is powered by a single power rail (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). The power supply input is 3V3.

The signal levels of the module interface depend on the configured interface type. The carrier board designer must note this fact if he connects the peripherals to the module. Otherwise, it may be overloaded or destructed. See sec. 3.1 for more information of signal levels.

The following power management device (PMIC) is used: TPS6521903. The module supply should fulfill the requirements of the TPS6521903 and the AM62x.

Table 5: Connection between AM62x and PMIC

AM62x		PMIC	
Function	**Ball**	**Function**	**Pin**
I2C0_SCL	B16	SCL	10
I2C0_SDA	A16	SDA	9
/EXTINT	D16	/INT	11
MCU_PORZ	D2	/RSTOUT	18
RESETSTATZ	F22	MODE/RESET	28
PMIC_LPM_EN0	B7	PMIC_STBY	31
MMC1_SDWP	C17	VSEL_SD	12

Communication between AM62x and TPS6521903 PMIC is possible via I2C0 interface with a PMIC address of 00110000.
GPO2 pin of the PMIC is connected to the enable pin of a load switch which controls and enables the VDD_3V3 power supply domain for multiple instances in the rest of the ECUcore-AM62x. A HIGH level (default Pull-up) on the enable pin enables the VDD_3V3. The GPO2-level may not be changed.

3.3 Power-on RESET

After power supply is applied to the module and all internal power rails reach the required output value the PMIC releases the AM62x from Reset.

3.4 Manual RESET

A reset occurs if the manual reset (/MR) is switched to GND. The signal input must be driven by an open-drain output or can be connected with a RESET button. The signal input has an internal pull-up resistor.

3.5 System Booting

The Module supports to boot from the on-board eMMC memory or a µSD-Card on a carrier board. The boot device is selected by the SoC_BM1 pin on the DIMM socket (3.1.2 Pin assignment).

3.6 General interface design consideration

For design-in of standard interfaces like Gigabit Ethernet or USB2.0 the rules of high-speed design should be noted. Important parameters are the signal line impedance, the signal line length, the layer stacking of the printed circuit board and the rules for design the signal traces on the board.

The following table shows the trace length used on the module. These lengths are taken into account in design of the overall length (Carrier Board and Module). The total trace lengths are described in /7/.

Table 6: High-speed interface trace lengths on ECUcore

Interface	Signals	Trace length	AC coupled on Module
USB0	USB0_DP USB0_DM	26 mm	-
USB1	USB1_DP USB1_DM	25 mm	-
ETH0	ETH0_A_P ETH0_A_N	4.9 mm	-
	ETH0_B_P ETH0_B_N	4.8 mm	-
	ETH0_C_P ETH0_C_N	4.7 mm	-
	ETH0_D_P ETH0_D_N	4.8 mm	-
ETH1	ETH1_A_P ETH1_A_N	6.2 mm	-
	ETH1_B_P ETH1_B_N	6.0 mm	-
	ETH1_C_P ETH1_C_N	5.1 mm	-
	ETH1_D_P ETH1_D_N	5.0 mm	-

3.7 ETHERNET Interface considerations

The module provides two giga bit Ethernet ports with integrated PHYs (LAN8830). The interface signals can be used to connect to LAN connector with internal or external isolation magnetics on the Carrier Board.

- Termination resistors required by the module PHY are present on the Module.

- The magnetic center tab must be terminated with a 100 nF/±10 % capacitance to ground. There is no center tab reference signal on the Module connector.

- The module PHY provides three LED output pins for each PHY. Each LED output pin can directly drive an LED with a series resistor of typically 200Ω to 470Ω at 3.3V.

3.8 eMMC

The ECUcore-AM62x module has access to an on board embedded multi-media card. The device can be selected as boot media (see chapter 3.5). The eMMC can be reset by software with a Low-level signal from MCASP0_AXR0 (E18) from the AM62x.

3.9 SD-Card

The ECUcore-AM62x module has an interface to an SD card socket on a carrier board. The ECUcore-AM62x module has a SD-Card interface available according to Table 7. The UHS-I bus interface is not supported.

Table 7: SD-Card interface and pinout of ECUcore-AM62x

AM62x	
Function	**Function**
MMC1_DAT0	SDIO1_D0
MMC1_DAT1	SDIO1_D1
MMC1_DAT2	SDIO1_D2
MMC1_DAT3	SDIO1_D3
MMC1_CMD	SDIO1_CMD
MMC1_CLK	SDIO1_CLK
MMC1_/CD	SDIO1_/CD

The device can be selected as boot media (see chapter 3.5).

3.10 WiFi / Bluetooth

The ECUcore-AM62x can be equipped with the WiFi-Module (Enzurio, Manuf.-No.: 453-00046C). The connection between the AM62x and the WiFi-module is shown in Table 8. The data lines and command line are tied to VDD_3V3 with a 10k pull-up resistor.

Table 8: Connection between AM62x and WiFi-Module

AM62x	WiFi Modul	
Function	**Function**	**Pin**
MMC2_CLK	SDIO_CLK	15
MMC2_DAT0	SDIO_DATA0	9
MMC2_DAT1	SDIO_ DATA1	10
MMC2_DAT2	SDIO_ DATA2	13
MMC2_DAT3	SDIO_ DATA3	11
MMC2_CMD	SDIO_ CMD	12
MMC2_SDCD	WL_REG_ON	33
MMC2_SDWP	BT_REG_ON	32
MCU_UART0_RXD	BT_UART_TXD	43
MCU_UART0_TXD	BT_UART_RXD	45
MCU_UART0_/RTS	BT_UART_CTSN	44
MCU_UART0_/CTS	BT_UART_RTSN	46
WKUP_CLKOUT0	SUSCLK	34

The WLAN and Bluetooth modules can be enabled or disabled according to the voltage levels on pins WL_REG_ON (WLAN enable; pin 33) and BT_REG_ON (Bluetooth enable; pin 32) of the 453-00046R. Both can be disabled with a Low-level signal and enabled with a High-level signal. Note that internal 100k pull-ups on the module enable WLAN and Bluetooth by default.

3.11 OLDI (Open LVDS Display interface)

The ECUcore-AM62x module provides an Open LVDS Display Interface (OLDI0-Signals) with three data pairs and one clock line pair which makes it possible to connect a display on an external carrier board.

3.12 EEPROM

The ECUcore-AM62x module has an onboard 16kBit EEPROM (Manuf.-No.: AT24C16D) which can be accessed via I2C0 (address 1010001). The EEPROM write protection pin (WP; Pin 7) is connected to GPMC0_AD13 (T24; GPIO0_28) of the AM62x. The EEPROM is in write protection mode by default through a pull-up resistor. By setting the GPIO0_28 to a logic LOW level the write protection can be undone.

If the operating system is preinstalled on the ECUcore-AM62x, device-specific manufacturing data is stored in the component. In this case, the user is not permitted to make any changes to the data.

3.13 I2C Interfaces

Several I2C interfaces are available on the ECUcore-AM62x module. The I2C0 interface is only used internally on the ECUcore-AM62x module and is not routed to the SoM connector and therefore cannot be used on an external carrier board. For further information, refer to section 4.7 I2C Interface in relation to the development board.

The I2C3 interface can be used on an external carrier board. Note that the I2C3 interface is not equipped with pull-up resistors on the ECUcore-AM62x module. Therefore, additional pull-up resistors must be considered when designing a carrier board for the ECUcore-AM62x.

3.14 Thermal Design considerations

The thermal management requirements of the System on Module are based on the required operating conditions. If performance requirements are low, an additional heat sink or active ventilation can be dispensed with. If the performance requirements are high and the ambient conditions are very hot, then the end user must take care of cooling.

TI provides a thermal simulation model and a power estimation tool:

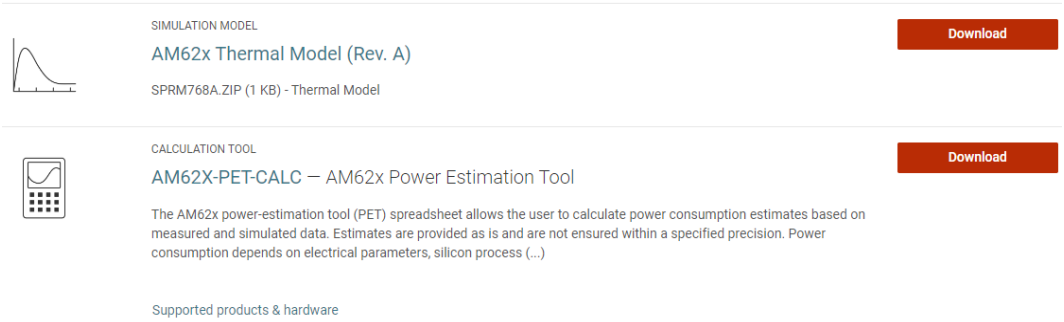

Figure 5: Thermal Model / Power Estimation Tool (Source)

4 Electrical Specification an Environmental Conditions

Table 9: Technical data

Electrical Specification	
Power Supply	
Main Power Supply of Module (3V3)	3.3 V±5 %
Rise Time	Max. 1 V/ms
Voltage ripple	33 mV @0…20 MHz
Power Consumption (full load)	Max. 10W
I2C3	
Power Supply	3.3V
Maximum Pull-up current at V_{OL}=0.4V	3mA
Bit rate	100kBit/s, 400kBit/s

Environmental conditions	
Temperature range	
Operating	-40 °C/+85 °C[3] (Function and load-dependent)
Storage	-55 °C/+125 °C
Humidity	
Operating	10 % …90 %
Storage	<95 %

[3] Sufficient cooling must be ensured for the entire operating temperature range.

5 Mechanical Specification

Mechanical dimension	
Board size	67,6 mm ± 0,2 mm 38,6 mm ± 0,2 mm
Board thickness	1 mm ± 0,1 mm

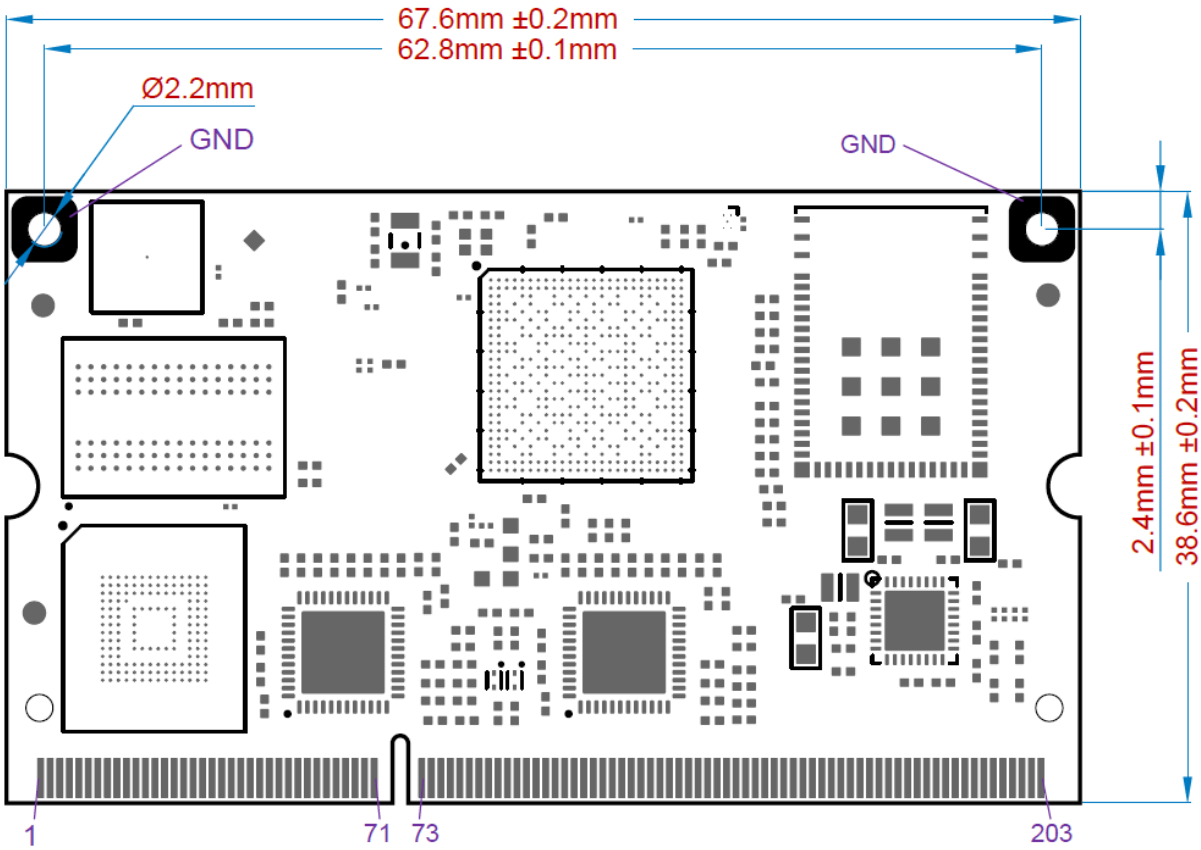

Figure 6: Board outline and size (TOP View)

6 Release and Comments

Released by	Date,Signature
Comments regarding the release:	