

SR-IMXM EVB

User Guide

Short-Range Products

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Full attention must be paid to driving at all times in order to reduce the risk of an accident. Using a mobile while driving (even with a handsfree kit) causes distraction and can lead to an accident.



Switch off the terminal or mobile before boarding an aircraft. The operation of wireless appliances in an aircraft is forbidden to prevent interference with communication systems. If there is an Airplane Mode, it should be enabled prior to boarding an aircraft. Please consult the airline staff for more restrictions on the use of wireless devices on an aircraft.



Wireless devices may cause interference on sensitive medical equipment, so please be aware of the restrictions on the use of wireless devices when in hospitals, clinics or other healthcare facilities.



The terminal or mobile contains a transceiver. When it is ON, it receives and transmits radio frequency signals. RF interference can occur if it is used close to TV sets, radios, computers or other electric equipment.



In locations with explosive or potentially explosive atmospheres, obey all posted signs and turn off wireless devices such as mobile phone or other terminals. Areas with explosive or potentially explosive atmospheres include fueling areas, below decks on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles such as grain, dust or metal powders.

About the Document

Revision History

Version	Date	Author	Description
-	2026-01-13	Amy Han	Creation of the document
1.0.0	2026-03-06	Arrow Huang	Preliminary

Contents

Safety Information..... 3

About the Document..... 4

Contents..... 5

Table Index..... 6

Figure Index 7

1 Introduction 8

 1.1. Applicable Modules 8

2 Product Overview 9

 2.1. Top and Bottom Views 9

 2.2. Component Placement 11

3 Kit Accessories & Assembly 18

 3.1. Accessories Assembly 18

 3.2. Accessories List 18

4 Application Interfaces 20

 4.1. Power Supply 20

 4.2. Module TE-A Interfaces 21

 4.3. USB Interfaces 23

 4.4. Video Output Interfaces 24

 4.4.1. HDMI Interfaces 24

 4.4.2. RGB Display Interface..... 25

 4.4.3. MIPI Interfaces 25

 4.5. Audio Interfaces 26

 4.6. SD Card Interface 27

 4.7. M.2 Interfaces 28

 4.8. Ethernet Interfaces..... 29

 4.9. SPI Interface 29

 4.10. Motor interface 30

 4.11. Status Indication LED 31

 4.12. Button and Switches 32

 4.13. Pin Header Interfaces 33

5 Operation Procedures 36

 5.1. Turn on the Module 36

 5.2. Turn off the Module 37

 5.3. Communication Via UART Interface 37

6 Appendix References 38

Table Index

Table 1: Components & Functions	12
Table 2: Accessories List.....	19
Table 3: Description of Power Supply	20
Table 4: Description of Module TE-A Interfaces.....	21
Table 5: Description of USB Interfaces	23
Table 6: Description of HDMI Interface	24
Table 7: Description of RGB Display Interface	25
Table 8: Description of MIPI Interfaces	25
Table 9: Description of Audio Interfaces.....	26
Table 10: Description of SD Card Interface	27
Table 11: Description of M.2 Interfaces	28
Table 12: Description of Ethernet Interfaces.....	29
Table 13: Description of SPI Interface.....	29
Table 14: Description of SPI Pins.....	30
Table 15: Description of Motor Interface	31
Table 16: Description of Status Indication LED.....	31
Table 17: Description of Button and Switches	32
Table 18: Description of Pin Header Interfaces	33
Table 19: Terms and Abbreviations	38

Figure Index

Figure 1: Top View.....	9
Figure 2: Bottom View.....	10
Figure 3: Top View for Component Placement.....	11
Figure 4: Bottom View for Component Placement.....	12
Figure 5: EVB and Accessories Assembly.....	18
Figure 6: EVB Kit Accessories.....	19
Figure 7: Block Diagram of EVB Power Supply.....	21
Figure 8: EVB Power Supply Interface and Switch.....	21
Figure 9: Connection Between the Module TE-A and EVB.....	22
Figure 10: Module TE-A Interfaces.....	22
Figure 11: Block Diagram of USB Interfaces.....	23
Figure 12: USB Interfaces.....	24
Figure 13: HDMI Interfaces.....	24
Figure 14: RGB Display Interface.....	25
Figure 15: MIPI Interfaces.....	26
Figure 16: Block Diagram of Loudspeaker Application.....	26
Figure 17: Audio Interfaces.....	27
Figure 18: SD Card Interface.....	27
Figure 19: Connection Between M.2 Interfaces and Modules.....	28
Figure 20: M.2 Interfaces.....	28
Figure 21: Ethernet Interfaces.....	29
Figure 22: SPI Interface.....	30
Figure 23: Motor Interface.....	31
Figure 24: Power Supply on/off Indicator.....	31
Figure 25: Button and Switches.....	32
Figure 26: Pin Header Interfaces.....	35
Figure 27: USB Ports.....	36
Figure 28: USB Serial Port.....	37

1 Introduction

This document describes the application details of SR-IMXM-EVB (evaluation board), which is an assistant tool for you to develop applications and test basic functionalities of SRG091X and SRG093X series modules.

1.1. Applicable Modules

For details about the applicable modules of this EVB, see *Quectel_List_of_EVB_Applicable_Modules*.

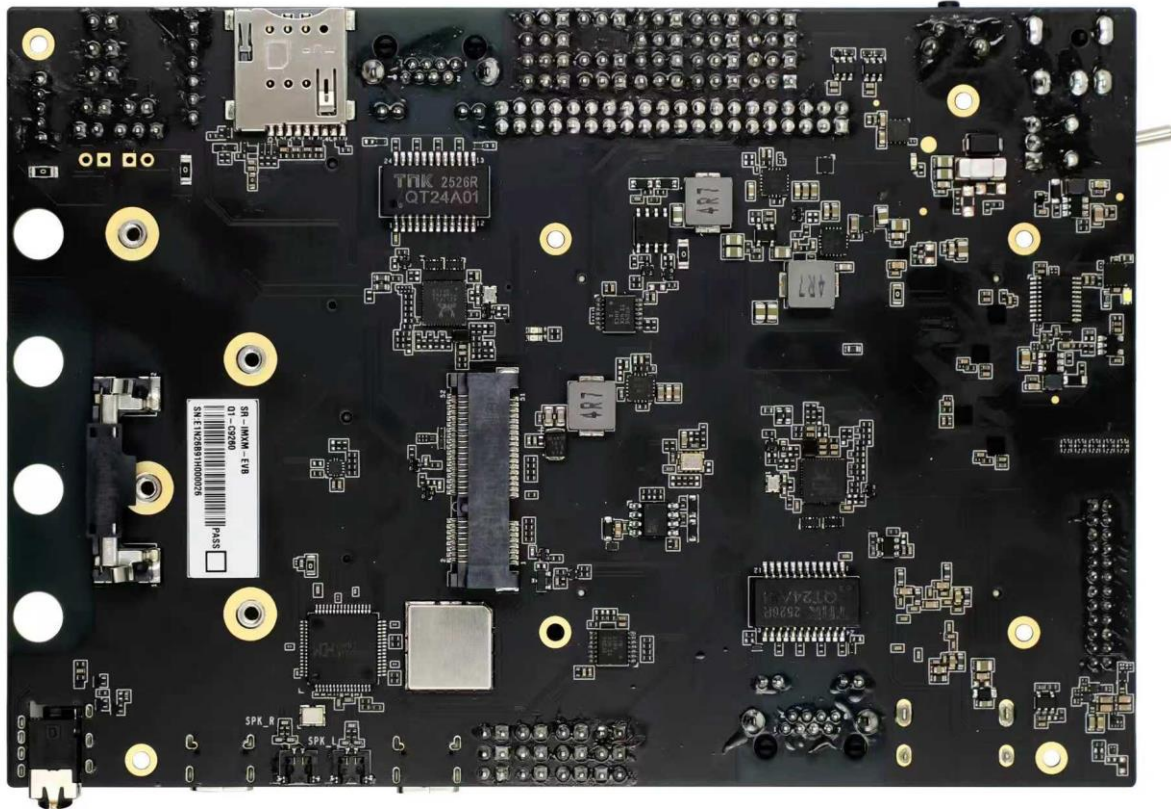


Figure 2: Bottom View

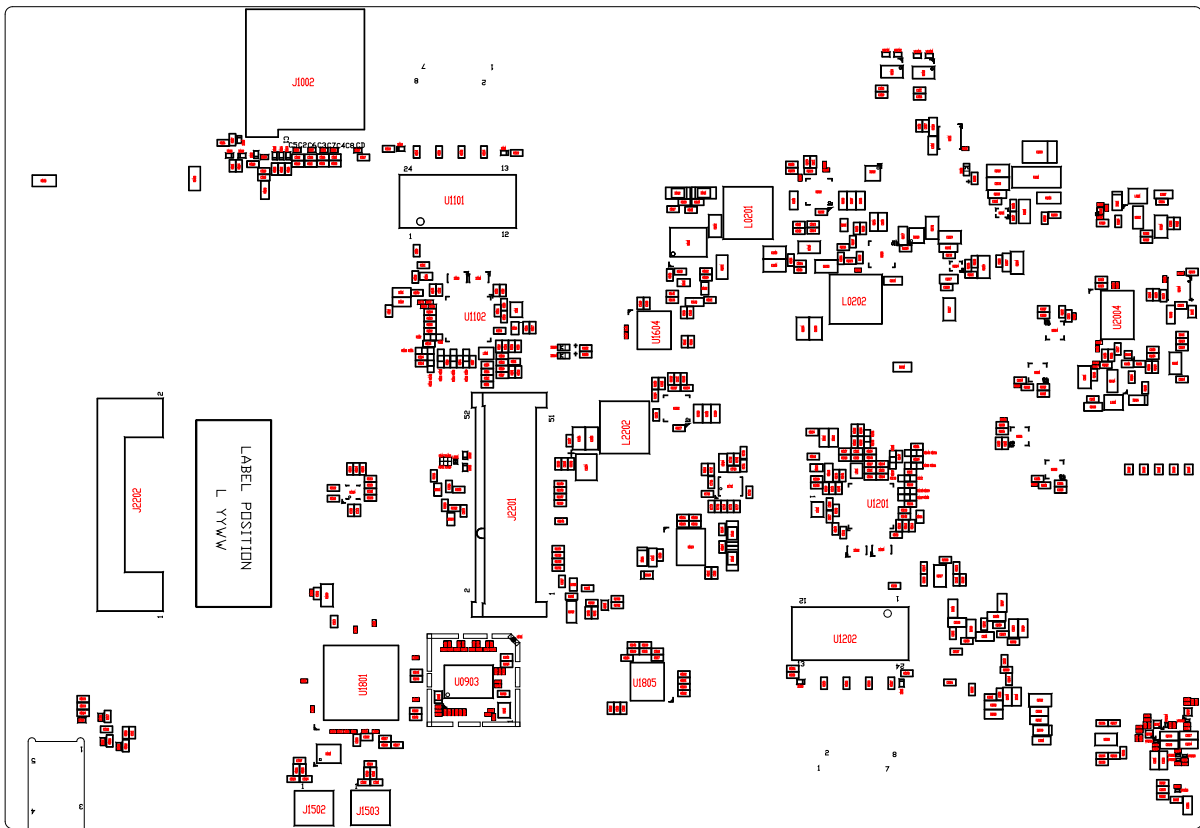


Figure 4: Bottom View for Component Placement

Table 1: Components & Functions

Component	RefDes.	Description	Comment
Module TE-A Interfaces	J0101, J0102	Module TE-A connectors	Used to connect module TE-A and EVB
Power Supply	J0201	DC power jack	DC power supply: 5 V/ 3 A
Power Switch	S0201	Power on/off control	When the switch is turned to "ON", the EVB power supply is connected; when the switch is turned to "OFF", the EVB power supply is disconnected
	S1101		<ul style="list-style-type: none"> When the switch is turned to "ON", the Ethernet power supply is connected; when the

			switch is turned to "OFF", the Ethernet power supply is disconnected
			<ul style="list-style-type: none"> ● Ethernet separate power supply
4-bit DIP switch	S1301	Switch GPIO multiplexing, RGB666, Raspberry Pi, PCM, M.2 or Mini PCIe.	<ul style="list-style-type: none"> ● 1 = OFF (by default): PCM connects to the M.2. ● 1 = ON: PCM connects to the Mini PCIe. ● 2 = ON: Select RGB666 ● 2 & 3 = ON: Select Raspberry Pi. ● 4: Reserved.
Status Indication LED	D0210	Power supply on/off indicator	<ul style="list-style-type: none"> ● 5 V power input ● Red light
MIPI CSI Interface	J0301	MIPI CSI connector	<ul style="list-style-type: none"> ● Mating female connector model: OK-24F034-04 ● Unidirectional high-speed differential transmission camera serial interface, responsible for high-speed upload of image data
MIPI LCM Interface	J0601	MIPI LCM connector	<ul style="list-style-type: none"> ● Mating female connector model: OK-118RF040/2-35 ● Responsible for high-speed upload of image data
HDMI Interface	J0501	HDMI connector	Supports up to 1280 × 800 @ 60 fps output resolution
	J1806	USB Type-C connector	Used as USB0 interface for debugging
USB Interfaces	J0401	USB Type-C connector	<ul style="list-style-type: none"> ● Used as USB1 interface ● Supports USB 2.0 ● Supports USB OTG, master and slave modes

			<ul style="list-style-type: none"> Used for data transmission, software debugging, firmware upgrade (can only be implemented through USB 2.0)
M.2 Interfaces	J1401	M.2 connector for Bluetooth modules	<ul style="list-style-type: none"> Used to connect Bluetooth modules Supports Wi-Fi HaLow
	J1301	M.2 connector for Wi-Fi/Bluetooth modules	Used to connect Wi-Fi/Bluetooth modules
SD Card Interface	J1001	SD card connector	<ul style="list-style-type: none"> Supports SD 3.0 Supports 1.8/3.3 V SD card Supports SD card hot-plug function
Ethernet Interfaces	J1101	RJ45 connector	Supports 10/100/1000 Mbps data rate
	J1201		
SPI Interface	J1306	SPI connector	
Audio Interfaces	U1502	Microphone	1 single-ended microphone input
	J1501	Headset connector	<ul style="list-style-type: none"> Supports 4-pole headset, with detection pin Supports hot-plug function Supports MIC input
PWRKEY	S1701	<ul style="list-style-type: none"> Power key (push button) Turn on/off the module 	Active low
RGB Display Interface	J2019	RGB LCM connector	Supports up to 1280 × 800 @ 60 fps output resolution
Motor Interface	J2106	Motor connector	
Pin Header Interfaces	J2210	MOTOR_PWR_EN & TYPEC_VBUS_EN connector	Function multiplexing
	J1407	Bluetooth module	

	UART_RTS & RS485_XE
J1409	Bluetooth module HOST_WAKE_BT_ 1V8 & MINIPCI_WAKEUP _IN
J1322	Wi-Fi/Bluetooth module HOST_WAKE_BT_ 1V8 & MINIPCI_RST
J0410	Bluetooth module BT_EN & RESERVED
J1404	Bluetooth module UART_TX & RS485_UART_TXD
J1408	Bluetooth module HOST_WAKE_BT & MINIPCI_WL_DIS ABLE
J1321	Wi-Fi/Bluetooth module HOST_WAKE_BT & PCIE_3V3_PWR_E N
J1406	Bluetooth module UART_CTS & Bluetooth module PCM_CLK
J1405	Bluetooth module UART_RX & RS485_UART_RXD
J1903	MFI_I2C5_SCL & PCIE30_CLKREQ
J1902	MFI_I2C5_SDA & PCIE30_WAKE
J0302	ADP5585 Camera Flash LED & FPC IAS_GPIO0 Flash LED

J1202 & J1203	Select the I/O voltage for RGMII
J1320	Wi-Fi/Bluetooth module SD_RST & Bluetooth module BT_RST
J1319	Wi-Fi/Bluetooth module DEVICE_WAKE_HOST & Bluetooth module DEVICE_WAKE_HOST
J1103 & J1102	Select the I/O voltage for RGMII
J1601	CAN low & CAN high
J1904	Raspberry Pi 3.3 V power supply control
J1905	Raspberry Pi 5 V power supply control
J1701	GND & RTC battery input
J1309	Wi-Fi/Bluetooth module BT_UART_TXD
J1311	Wi-Fi/Bluetooth module BT_UART_RTS
J1310	Wi-Fi/Bluetooth module BT_UART_CTS
J1307	Wi-Fi/Bluetooth module BT_UART_RXD
J1314	Wi-Fi/Bluetooth module BT_PCM_OUT
J1315	Wi-Fi/Bluetooth module BT_PCM_IN
J1313	Wi-Fi/Bluetooth module BT_PCM_SYNC

J1312	Wi-Fi/Bluetooth module BT_PCM_CLK
J1308	Wi-Fi/Bluetooth module BT_EN
J1318	Wi-Fi/Bluetooth module HOST_WAKE_BT_3V3
J1316	Wi-Fi/Bluetooth module BT_WAKE_HOST_3V3 & Bluetooth module BT_WAKE_HOST
J1317	Wi-Fi/Bluetooth module HOST_WAKE_BT_1V8
J1811	EVB 5 V power supply control
J1807	EVB 3.3 V power supply control
J1810	PWRKEY for connecting SRG09XX modules
J1901	The Raspberry Pi uses a 40-pin header

3 Kit Accessories & Assembly

3.1. Accessories Assembly

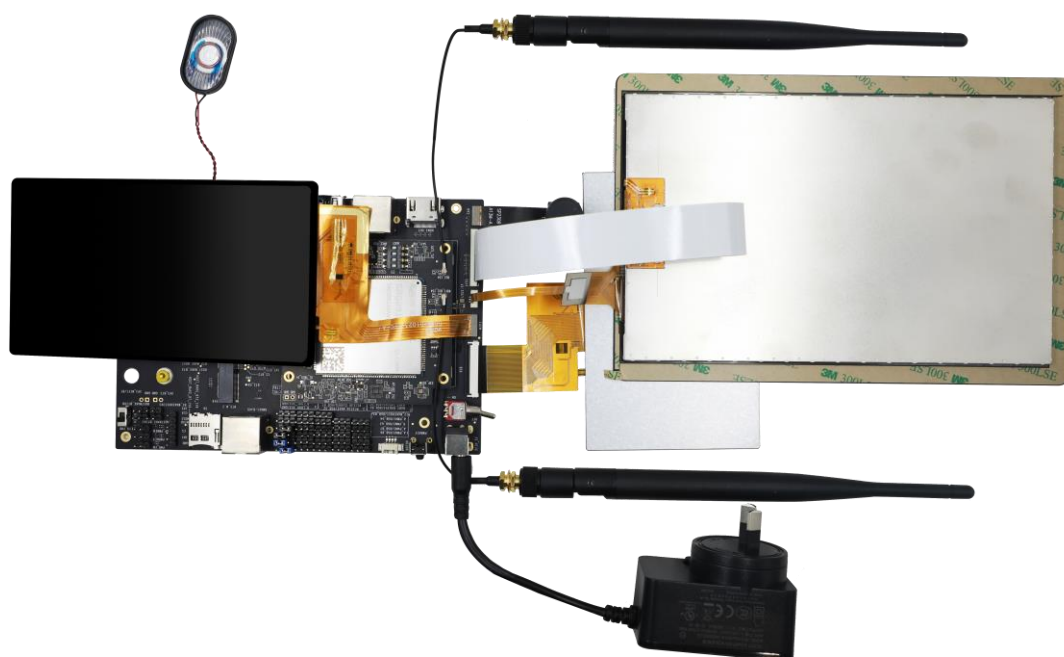


Figure 5: EVB and Accessories Assembly

3.2. Accessories List

All accessories of the EVB kit are listed as below. Please contact the supplier if there is something missing.

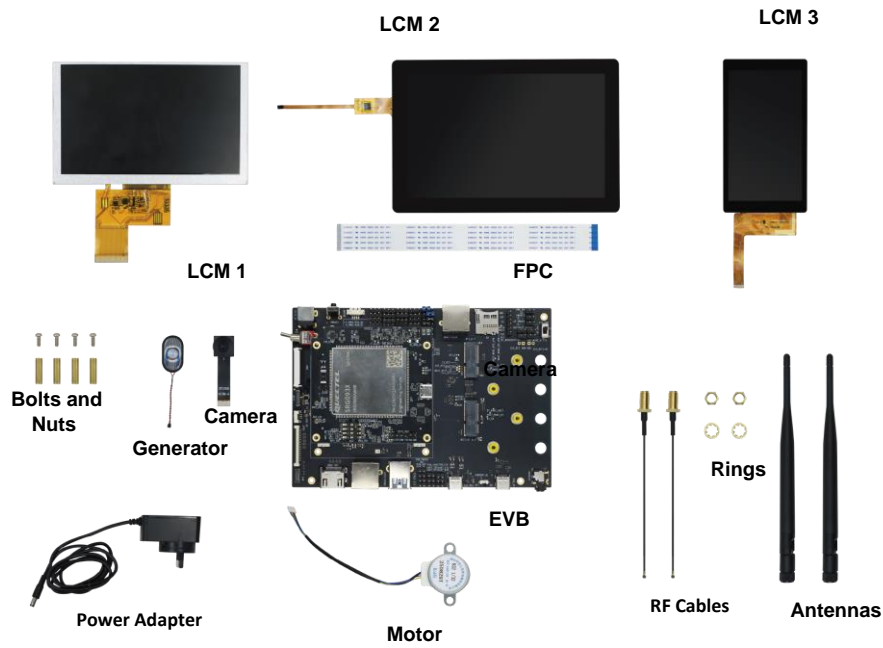


Figure 6: EVB Kit Accessories

Table 2: Accessories List

Item	Description	Quantity (pcs)
EVB	SR-IMXM EVB	1
Antennas	Wi-Fi/Bluetooth antennas	2
Cables	RF cables	2
Power Adapter	5V/ 3 A	1
LCM	Visual interaction of devices	3
Camera	8 MP camera	1
FPC	LCD related FPC	1
Bolts and Nuts	Used for assembling the EVB	4
Motor	Four-phase permanent-magnet stepper motor, rotation angle controlled by electrical pulses	1
Generator	Convert electrical signals into sound waves	1
Rings	Used for assembling the EVB	4

4 Application Interfaces

This chapter describes the hardware interfaces of the EVB, as listed below:

- Power supply
- Module TE-A interfaces
- USB interfaces
- Video output interfaces
- Audio interfaces
- SD card interface
- M.2 interfaces
- Ethernet interfaces
- SPI interface
- Motor interface
- Status indication LED
- Button and switches
- Pin header interfaces

4.1. Power Supply

The EVB can be powered by an external 5 V DC power adapter. Insert the power adapter into J0201, and switch S0201 to “ON”, then reduce the voltage through DC-DC and LDO to supply power for EVB peripherals and modules.

Table 3: Description of Power Supply

RefDes.	Description
J0201	DC power jack
S0201	Power on/off control

The following figures show the simplified power supply block diagram, power supply interface and switch of the EVB.

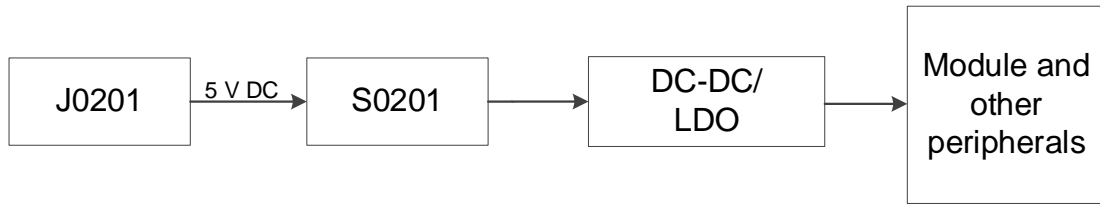


Figure 7: Block Diagram of EVB Power Supply



Figure 8: EVB Power Supply Interface and Switch

4.2. Module TE-A Interfaces

Module TE-A interfaces are designed to accommodate the TE-A of SRG091X and SRG093X series modules. The TE-A is connected to the EVB via BTB connectors J0101 and J0102. You can test the functionalities of SRG091X and SRG093X series modules easily.

Table 4: Description of Module TE-A Interfaces

RefDes.	Description
J0101, J0102	Module TE-A connectors

The following figure shows the connection between the module TE-A and the EVB. Take SRG093X TE-A as an example.

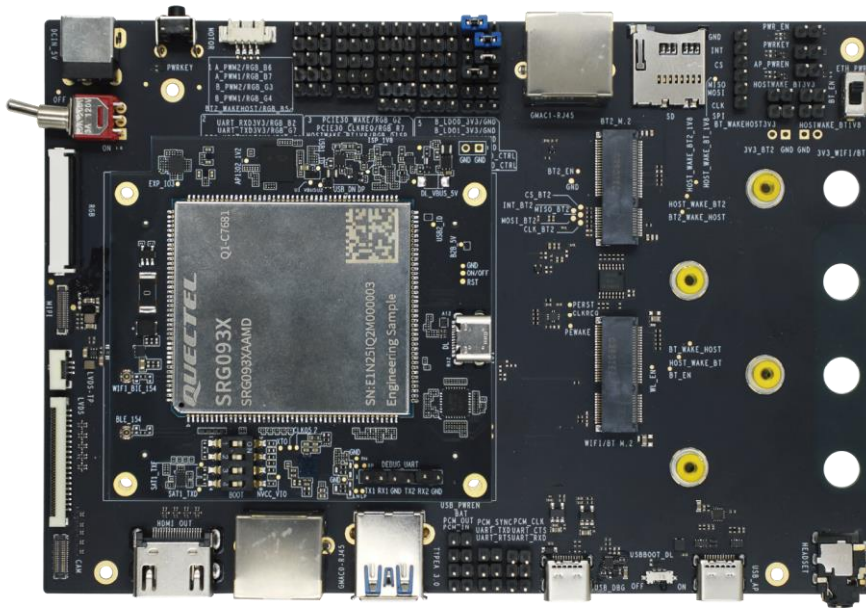


Figure 9: Connection Between the Module TE-A and EVB



Figure 10: Module TE-A Interfaces

4.3. USB Interfaces

The EVB provides two USB Type-C interfaces.

Table 5: Description of USB Interfaces

RefDes.	Description	Comment
J0401	USB Type-C connector	<ul style="list-style-type: none"> ● Used as USB1 interface ● Supports USB 2.0 ● Supports USB OTG, master and slave modes ● Used for data transmission, software debugging, firmware upgrade (can only be implemented through USB 2.0)
J1806	USB Type-C connector	Used as USB0 interface for debugging

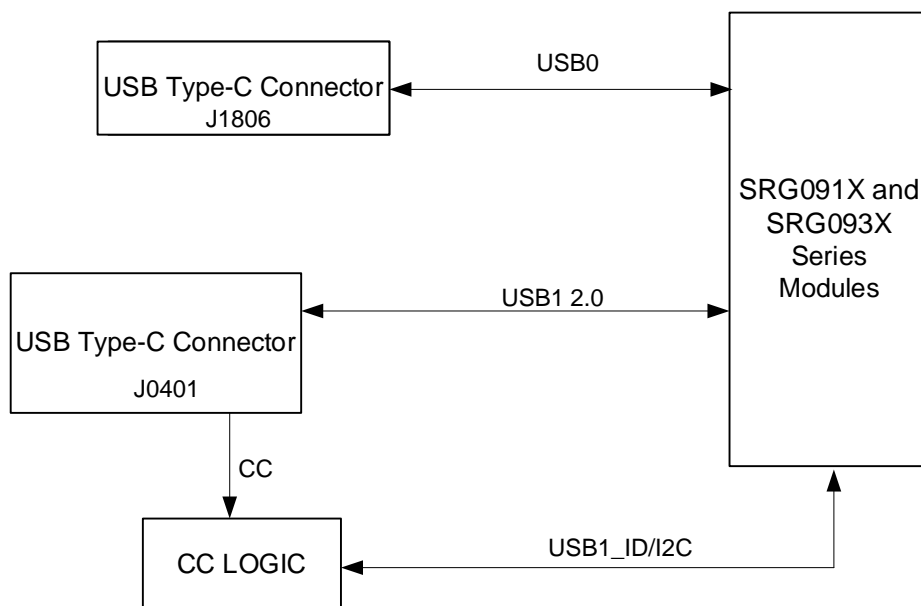


Figure 11: Block Diagram of USB Interfaces



Figure 12: USB Interfaces

4.4. Video Output Interfaces

4.4.1. HDMI Interfaces

The HDMI interface on the EVB is converted from the IMX93's 4-lane LVDS via the IT6263.

Table 6: Description of HDMI Interface

RefDes.	Description
J0501	HDMI connector



Figure 13: HDMI Interfaces

4.4.2. RGB Display Interface

The EVB provides an RGB LCM connector (J2019) for board-to-board/board-to-FPC connection between the PCB and flexible printed circuit, enabling signal and power transmission between the main controller and LCM via an FPC connector.

Table 7: Description of RGB Display Interface

RefDes.	Description
J2019	RGB LCM connector



Figure 14: RGB Display Interface

4.4.3. MIPI Interfaces

The EVB provides two MIPI interfaces: MIPI CSI and MIPI LCM. The MIPI interfaces feature high speed, low power consumption and strong anti-interference capability, which can meet the requirements of CSI and LCM for high-definition image data transmission. The MIPI interfaces usually adopt differential signal transmission.

Table 8: Description of MIPI Interfaces

RefDes.	Description
J0301	MIPI CSI connector
J0601	MIPI LCM connector



Figure 17: Audio Interfaces

4.6. SD Card Interface

The EVB provides one SD card interface (J1001), which complies with SD 3.0 specifications. The interface supports 1.8/3.3 V SD card and SD card hot-plug function.

Table 10: Description of SD Card Interface

RefDes.	Description
J1001	SD card connector



Figure 18: SD Card Interface

4.7. M.2 Interfaces

The EVB provides two M.2 interfaces.

Table 11: Description of M.2 Interfaces

RefDes.	Description
J1401	M.2 connector for Bluetooth module
J1301	M.2 connector for Wi-Fi/Bluetooth module

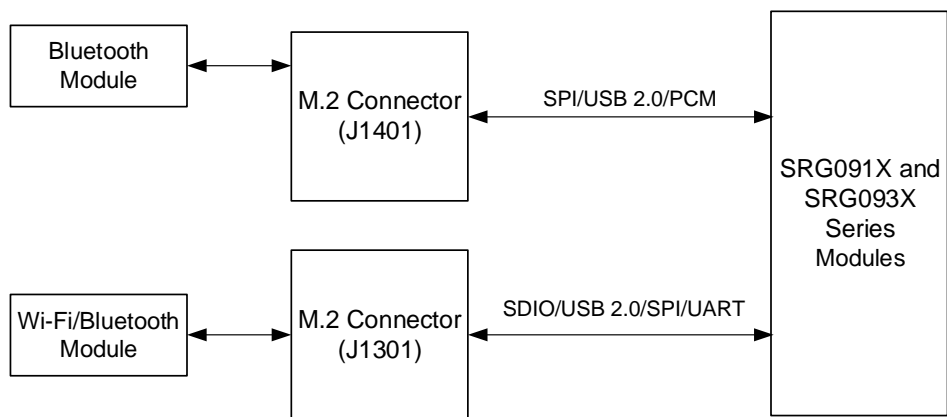


Figure 19: Connection Between M.2 Interfaces and Modules

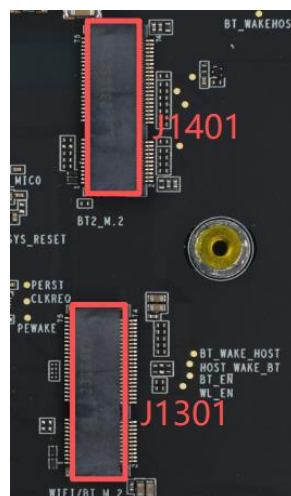


Figure 20: M.2 Interfaces

4.8. Ethernet Interfaces

The EVB provides two RJ45 Ethernet interfaces that support dual Gigabit Ethernet connectivity and are equipped with isolation transformers and indicator LEDs. The module is externally connected to an Ethernet PHY, which supports 10/100/1000 Mbps data rate.

Table 12: Description of Ethernet Interfaces

RefDes.	Description
J1201	RJ45 connector
J1101	



Figure 21: Ethernet Interfaces

4.9. SPI Interface

The EVB is equipped with an SPI interface (J1306).

Table 13: Description of SPI Interface

RefDes.	Description
J1306	SPI connector

Table 14: Description of SPI Pins

Pin Name	Description	Comment
GND	Ground	Provides circuit reference potential
INT	Interrupt	The peripheral actively sends interrupt requests to the main controller (e.g., data ready, status change)
SPI_CS	SPI chip select	<ul style="list-style-type: none"> ● The main controller selects the SPI peripheral for communication via this pin ● Active low
SPI_MISO	SPI master-in slave-out	The slave transmits data to the master
SPI_MOSI	SPI master-out slave-in	The master transmits data to the slave
SPI_CLK	SPI clock	Provided by the master to synchronize the data transmission rhythm



Figure 22: SPI Interface

4.10. Motor interface

The EVB provides a wire-to-board connector for DC motors, used to connect external motors to the drive circuit. This connector is a 1.25 mm pitch IDC wire-to-board type and shall be mated with harnesses of the same specification (e.g., terminal wires of JST 51021 series) to ensure reliable mechanical and electrical connection.

Table 15: Description of Motor Interface

RefDes.	Description
J2106	Motor connector



Figure 23: Motor Interface

4.11. Status Indication LED

The EVB provides one power supply on/off indicator (D0210). When the indicator lights up with red light, it means that the 5 V power supply is connected.

Table 16: Description of Status Indication LED

RefDes.	Description
D0210	Power supply on/off indicator



Figure 24: Power Supply on/off Indicator

4.12. Button and Switches

The EVB provides a PWRKEY push button (S1701) for turning on/off SRG091X and SRG093X series modules. When powering up the VBAT in the turn-off state, a brief grounding (GND) will cause the internal power management state machine to switch to "ON".

The EVB power switch (S0201) directly controls ON/OFF of power: When the switch is turned to "ON", the EVB power supply is connected; when the switch is turned to "OFF", the EVB power supply is disconnected.

EVB also provides an Ethernet separate power supply switch (S1101): When the switch is turned to "ON", the Ethernet power supply is connected; when the switch is turned to "OFF", the Ethernet power supply is disconnected.

Table 17: Description of Button and Switches

RefDes.	Description
S0201	Power on/off control
S1101	
S1701	<ul style="list-style-type: none"> ● Power key (push button) ● Turn on/off the module
S1301	<p>Switch GPIO multiplexing, RGB666, Raspberry Pi, PCM, M.2 or Mini PCIe:</p> <ul style="list-style-type: none"> ● When DIP switch 1 is OFF, the PCM connects to the M.2; when it is ON, the PCM connects to the Mini PCIe (OFF by default). ● When using an RGB666 screen, DIP switch 2 is ON (OFF by default). ● When using a Raspberry Pi, DIP switches 2 and 3 are ON (OFF by default). ● DIP switch 4 is reserved.

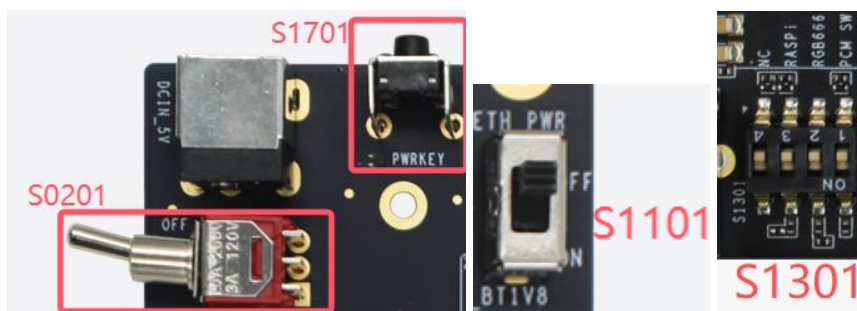


Figure 25: Button and Switches

4.13. Pin Header Interfaces

The EVB provides a through-hole pin header interface for convenient function multiplexing, as shown in the table below.

Table 18: Description of Pin Header Interfaces

RefDes.	Description	Remark
J2210	GPIO_24	MOTOR_PWR_EN & TYPEC_VBUS_EN connector
J1407	GPIO_27	Bluetooth module UART_RTS & RS485_XE
J1409	GPIO_13	Bluetooth module HOST_WAKE_BT_1V8 & MINIPCIE_WAKEUP_IN
J1322	GPIO_3	Wi-Fi/Bluetooth module HOST_WAKE_BT_1V8 & MINIPCIE_RST
J0410	GPIO_18	Bluetooth module BT_EN & RESERVED
J1404	GPIO_14	Bluetooth module UART_TX & RS485_UART_TXD
J1408	GPIO_12	Bluetooth module HOST_WAKE_BT & MINIPCIE_WL_DISABLE
J1321	GPIO_2	Wi-Fi/Bluetooth module HOST_WAKE_BT & PCIE_3V3_PWR_EN
J1406	GPIO_16	Bluetooth module UART_CTS & Bluetooth module PCM_CLK
J1405	GPIO_15	Bluetooth module UART_RX & RS485_UART_RXD
J1903	GPIO_1	MFI_I2C5_SCL & PCIE30_CLKREQ
J1902	GPIO_0	MFI_I2C5_SDA & PCIE30_WAKE
J0302	FLASH	ADP5585 Camera Flash LED & FPC IAS_GPIO0 Flash LED
J1202 & J1203	ENET2_CFG	Select the I/O voltage for RGMII
J1320	M2_RST	Wi-Fi/Bluetooth module SD_RST & Bluetooth module BT_RST
J1319	WLAN_WAKE_HOST	Wi-Fi/Bluetooth module DEVICE_WAKE_HOST & Bluetooth module DEVICE_WAKE_HOST
J1103 & J1102	ENET1_CFG	Select the I/O voltage for RGMII
J1601	CAN	CAN low & CAN high

J1904	RASPi 3V3_PWR_EN	Raspberry Pi 3.3 V power supply control
J1905	RASPi 5V_PWR_EN	Raspberry Pi 5 V power supply control
J1701	RTC_BAT	GND & RTC battery input
J1309	BT_UART_TXD	Wi-Fi/Bluetooth module BT_UART_TXD
J1311	BT_UART_RTS	Wi-Fi/Bluetooth module BT_UART_RTS
J1310	BT_UART_CTS	Wi-Fi/Bluetooth module BT_UART_CTS
J1307	BT_UART_RXD	Wi-Fi/Bluetooth module BT_UART_RXD
J1314	BT_PCM_OUT	Wi-Fi/Bluetooth module BT_PCM_OUT
J1315	BT_PCM_IN	Wi-Fi/Bluetooth module BT_PCM_IN
J1313	BT_PCM_SYNC	Wi-Fi/Bluetooth module BT_PCM_SYNC
J1312	BT_PCM_CLK	Wi-Fi/Bluetooth module BT_PCM_CLK
J1308	BT_EN	Wi-Fi/Bluetooth module BT_EN
J1318	HOST_WAKE_BT_3V3	Wi-Fi/Bluetooth module HOST_WAKE_BT_3V3
J1316	BT_WAKE_HOST	Wi-Fi/Bluetooth module BT_WAKE_HOST_3V3 & Bluetooth module BT_WAKE_HOST
J1317	HOST_WAKE_BT_1V8	Wi-Fi/Bluetooth module HOST_WAKE_BT_1V8
J1811	5V PWR_EN	EVB 5 V power supply control
J1807	3V PWR_EN	EVB 3.3 V power supply control
J1810	PWRKEY	PWRKEY for connecting SRG09XX modules
J1901	RASPi 40Pin	The Raspberry Pi uses a 40-pin header

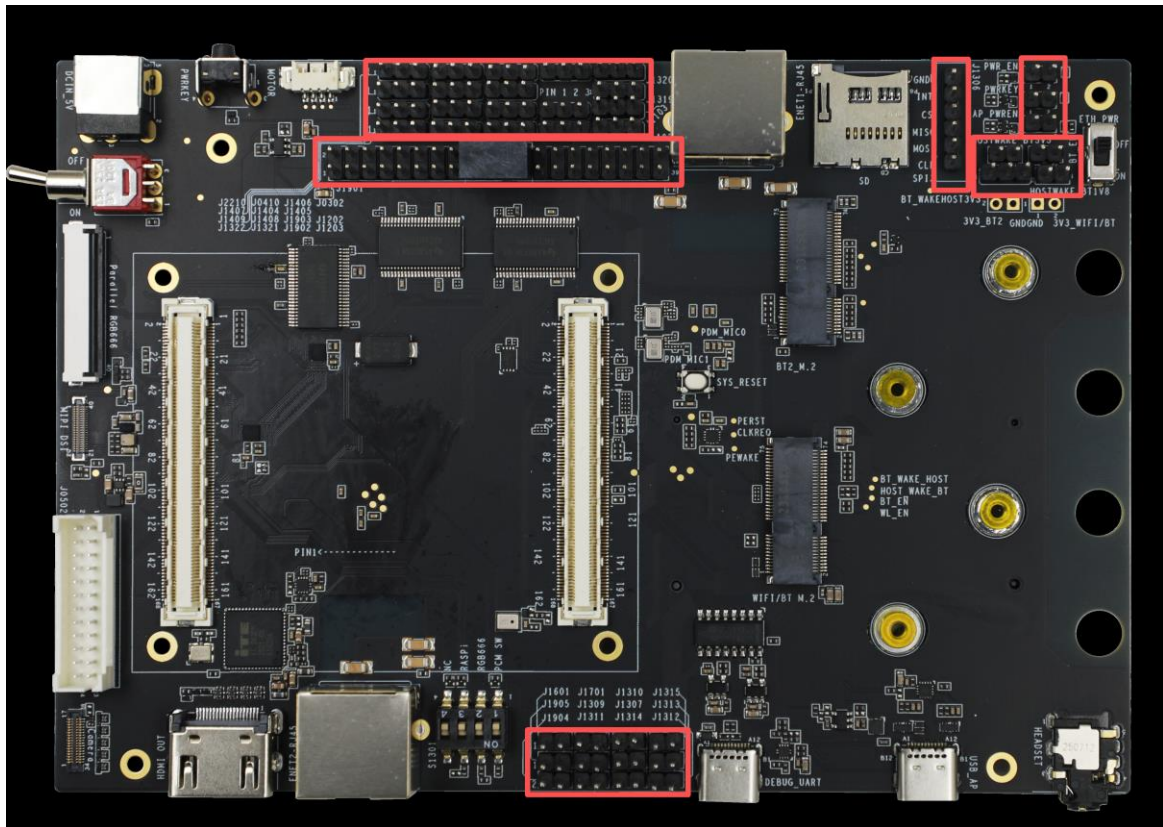


Figure 26: Pin Header Interfaces

5 Operation Procedures

5.1. Turn on the Module

1. Connect the module TE-A to the EVB via BTB connectors J0101 and J0102.
2. Connect the EVB and a PC with a USB Type-A to Type-C cable.
3. Connect the EVB to a 5 V DC power adapter through the power jack (J0201), then switch S0201 to "ON".
4. When VBAT is powered up, a brief grounding (GND) in the turn-off state will switch the internal power management state machine to "ON". D0210 (power on/off indicator light) will light up.
5. Run the driver disk on the PC to install the USB driver provided by Quectel. The USB port numbers can be viewed in Device Manager of the PC when the USB driver is installed, as shown in the following figure, which indicates that the module is turned on.

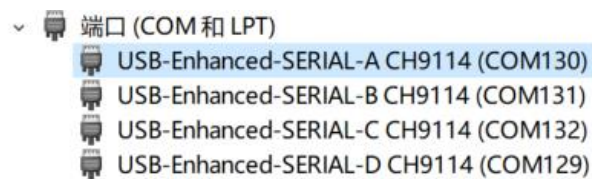


Figure 27: USB Ports

NOTE

Contact Quectel Technical Support to obtain the USB driver.

5.2. Turn off the Module

The module can be turned off by driving the PWRKEY low for more than 8 s.

5.3. Communication Via UART Interface

1. Turn on the module according to the procedures in **Chapter 5.1**.
2. Connect USB0 interface (J1806) to PC with USB-TO-RS232 converter cable, and install the USB-Enhanced-SERIAL-A CH9114 (COM130) driver from the Driver Disk. Serial port number can be viewed through the PC Device Manager, such as below:

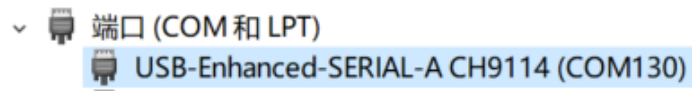


Figure 28: USB Serial Port

6 Appendix References

Table 19: Terms and Abbreviations

Abbreviation	Description
BTB	Board to Board
CSI	Camera Serial Interface
DC	Direct Current
DIP	Dual In-line Package
EVB	Evaluation Board
FPC	Flexible Printed Circuit
GND	Ground
I/O	Input/Output
LCD	Liquid Crystal Display
LCM	LCD Module
LDO	Low-dropout Regulator
LED	Light Emitting Diode
LVDS	Low-Voltage Differential Signaling
MFI	Made for iPhone/iPod/iPad
MIC	Microphone
MIPI	Mobile Industry Processor Interface
OTG	On-The-Go
PCIe	Peripheral Component Interconnect Express
PCM	Pulse Code Modulation

PHY	Physical
RGB	Red Green Blue
SD	Secure Digital
SPI	Serial Peripheral Interface
UART	Universal Asynchronous Receiver/Transmitter
USB	Universal Serial Bus
