QUICK START GUIDE

VIA SOM-7000 Evaluation Kit

1.02-23082024

Regulatory Compliance

FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

Notice 3

The product described in this document is designed for general use, VIA Technologies assumes no responsibility for the conflicts or damages arising from incompatibility of the product. Check compatibility issue with your local sales representatives before placing an order.

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

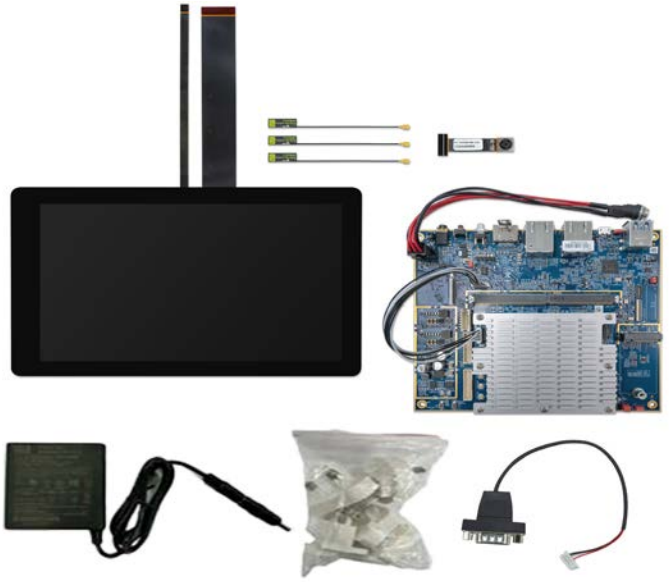
Safety Precautions

- Always read the safety instructions carefully.
- Keep this document for future reference.
- All cautions and warnings on the equipment should be noted.
- Keep this equipment away from humidity.
- Put this equipment on a reliable flat surface before setting it up.
- Check the voltage of the power source and adjust to 110/220V before connecting the equipment to the power inlet.
- Do not place the power cord where people will step on it.
- Always unplug the power cord before inserting any add-on card or module.
- If any of the following situations arise, get the equipment checked by authorized service personnel:
  - The power cable is damaged.
  - Liquid has entered into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment is faulty or you cannot get it work according to User's Manual.
  - The equipment has been dropped and damaged.
  - The equipment has an obvious sign of breakage.
- Do not leave this equipment in extreme temperatures or in a storage temperature above 60°C (140°F). . The equipment may be damaged.
- Do not leave this equipment in direct sunlight.
- Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- Do not place anything over the power cable.
- Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating.

Packing List

Items for STK-SOM700-00A0

- 1 x VIA SOM-7000 module
- 1 x VIA SOMDB7 carrier board
- 1 x 7" MIPI LCD and touch panel
- 3 x antennas
- 1 x 5MP CMOS sensor camera module
- 1 x Heatsink
- 1 x Audio cable
- 1 x Power cable
- 1 x Debug cable
- 1 x 12V AC power adapter



Ordering Information

Part Number	SoC Frequency	Description
10GPZ22M30020	MediaTek Genio 1200 Octa-Core SoC @ 2.2GHz/2.0GHz	VIA SOM-7000 module with 2.2/2.0GHz MediaTek Genio 1200 Octa-Core SoC, 16GB eMMC, 8GB LPDDR4X SDRAM, CSI, audio (headphone out and MIC-in), Wi-Fi 6, 3 antenna I-PEX connectors
STK-SOM700-00A0		VIA SOM-7000 Evaluation Kit with VIA SOM-7000 module, VIA SOMDB7 reference carrier board and accessory kit

Optional Accessories

Wireless Module Options

Part Number	Description
EMIO-2576-00A0	4G LTE mobile broadband M.2 module with two antennas and assembly

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1. Overview

This guide describes how to assemble the VIA SOM-7000 Evaluation Kit to test the VIA SOM-7000 module's functionality with the VIA SOMDB7 carrier board.

Notes:

1. The operating temperature 0°C ~ 60°C is a result of testing performed in a testing chamber, and a number of variables can influence this result. Please note that the working temperature may vary depending on the actual situation and environment. It is highly recommended to execute a solid testing program and take all variables into consideration when building the system. Please ensure that the system is stable under the required operating temperature in terms of the target application.

2. Please note that the lifespan of the onboard eMMC memory chip may vary depending on the amount of access. More frequent and larger data access on the eMMC memory will shorten its lifespan. It is highly recommended to use a replaceable external storage (e.g., MicroSD card) for large data access.

2. Evaluation Kit Assembly

2.1 Connecting the LCD Touch Panel

Connect the LCD touch panel to the VIA SOM-5000 Evaluation Kit as described below:

Step 1

Attach the 8-pin FPC cable of the touch panel to the touchscreen panel connector labeled 'JTOUCH1' on the VIA SOMDB7 carrier board, as shown in the diagram below.

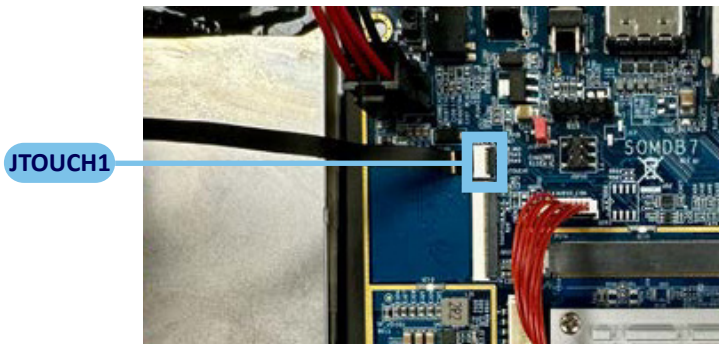

Figure 01: Connecting the 8-pin FPC cable of the Touch panel to 'JTOUCH1'

Step 2

Attach the 34-pin FPC cable of the MIPI LCD display to the MIPI DSI connector labeled 'JDSI1' on the VIA SOMDB7 carrier board.

Figure 02: Connecting the 34-pin FPC cable of the LCD display to 'JDSI1'

Notes:
1. 'JDSI1' and 'JTOUCH1' are bottom contact type connectors.
2. It is highly recommended to add a layer of insulation to prevent the LCD metal shield from shorting the bottom PCBA pin.

2.2 Connecting the Antennas

Connect the antennas to the VIA SOM-7000 Evaluation Kit as described below:

Step 1

Connect an antenna to the antenna connector labeled 'WCON1 BT' on the VIA SOM-7000 module.

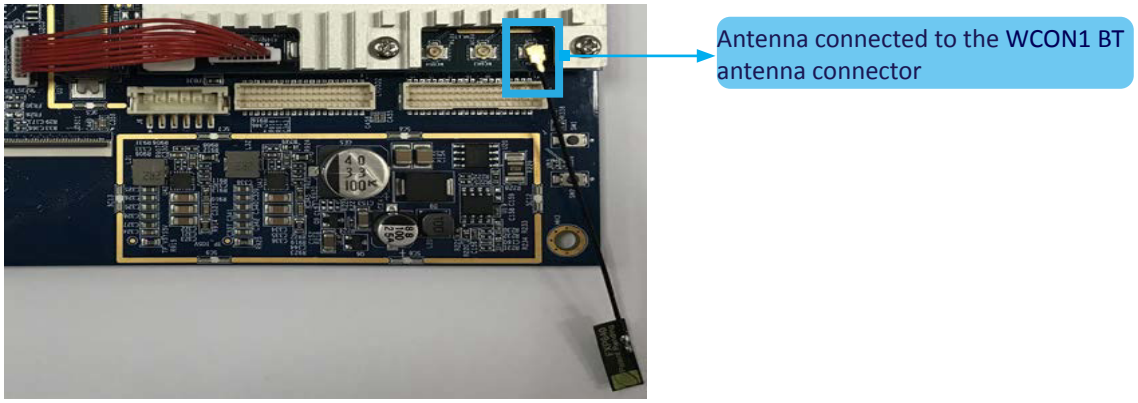

Figure 03: Connecting an antenna to the 'WCON1 BT' antenna connector

Step 2

Connect the other two antennas to the antenna connectors labeled 'WCON3 WF0' and 'WCON4 WF1' on the VIA SOM-7000 module.

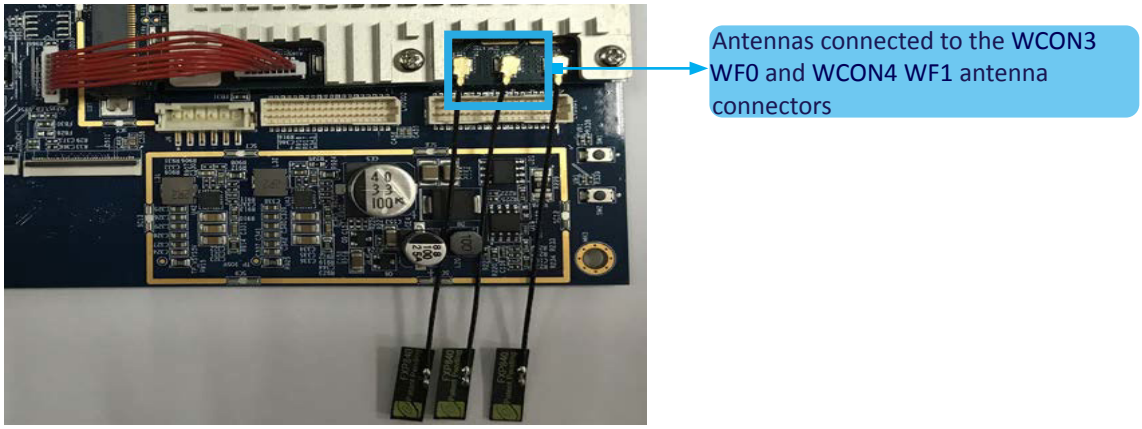

Figure 04: Connecting to the 'WCON3 WF0' and 'WCON4 WF1' antenna connectors

Note:
Using an MHF-I mating/unmating jig is recommended for connecting the antennas to the I-PEX connectors on the VIA SOM-7000 module. Refer to Appendix B of the VIA SOM-7000 User Manual for more information.

2.3 Connecting the Camera Module

Connect the 5MP CMOS camera module to the VIA SOM-5000 Evaluation Kit as described below:

Step 1

Locate the 2-lane MIPI CSI connector labeled 'CSI2' on the VIA SOMDB7 carrier board, and gently lift its lock.

Figure 05: Lift the lock of the MIPI CSI connector 'CSI2'

Step 2

Insert the camera module's 26-pin FPC cable into the 'CSI2' connector with the pins facing down, and gently push down the connector's lock.

Note:
The 2-lane MIPI CSI connector is of the bottom contact type.

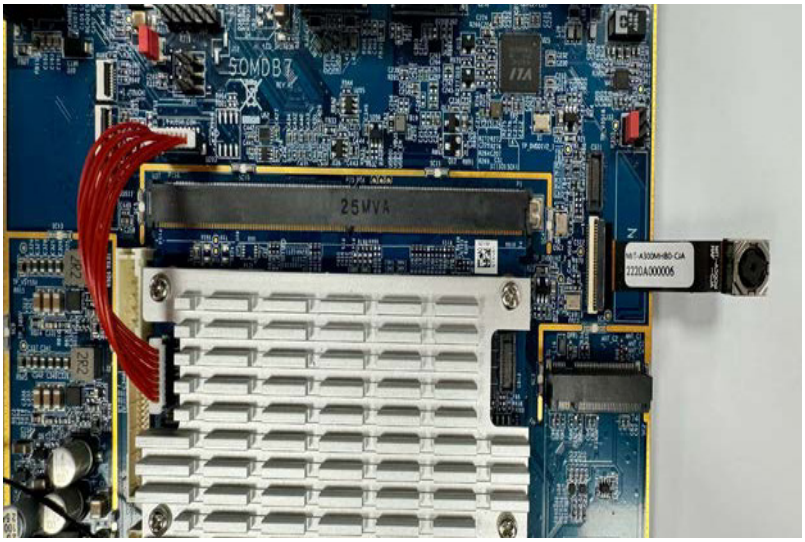

Figure 06: Insert camera module's FPC cable and push down the 'CSI2' connector's lock

2.4 Connecting the Debug Cable

Connect the debug cable between the VIA SOM-5000 Evaluation Kit and a developer PC as described below:

Step 1

Connect the white connector of the debug cable to the debug console connector labeled 'J14' on the VIA SOMDB7 carrier board.

Step 2

Connect the opposite end of the debug cable to the developer PC's RS232 D-sub serial port.

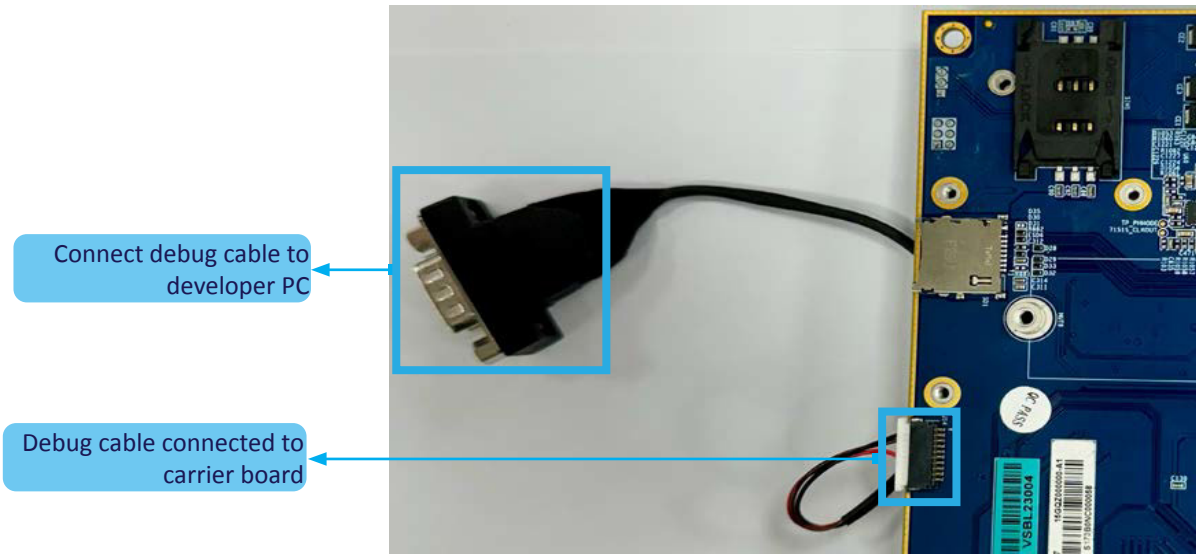

Figure 07: Connecting the debug cable between the VIA SOMDB7 carrier board and a developer PC

2.5 Connecting the Power Adapter

Connect the 12V AC power adapter to the VIA SOM-5000 Evaluation Kit as described below:

Step 1

Connect the power adapter to the power cable as shown below.

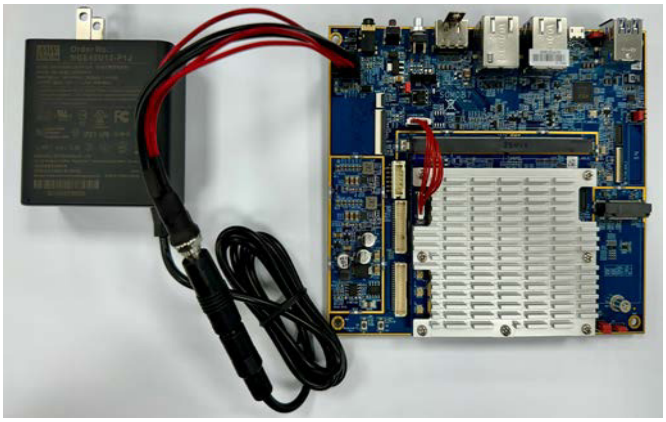

Figure 08: Connecting the power adapter

Step 2

Connect the power adapter to a compatible power source.

Taiwan Headquarters

1F, 531 Zhong-zheng Road,
Xindian Dist., New Taipei City 231
Taiwan

Tel: 886-2-2218-5452
Fax: 886-2-2218-9860
Email: embedded@via.com.tw

USA

940 Mission Court
Fremont, CA 94539,
USA

Tel: 1-510-687-4688
Fax: 1-510-687-4654
Email: embedded@viatech.com

Japan

3-15-7 Ebisu MT Bldg. 6F,
Higashi, Shibuya-ku
Tokyo 150-0011
Japan

Tel: 81-3-5466-1637
Fax: 81-3-5466-1638
Email: embedded@viatech.co.jp

China

Tsinghua Science Park Bldg. 7
No. 1 Zongguancun East Road,
Haidian Dist., Beijing, 100084
China

Tel: 86-10-59852288
Fax: 86-10-59852299
Email: embedded@viatech.com.cn

Europe

Email: embedded@via-tech.eu