QUICK START GUIDE

VIA ARTiGO A3000

Compact and durable fanless system for M2M and Edge AI applications

1.01-26082024

Copyright

Trademarks

All trademarks are the property of their respective holders.

Disclaimer

No license is granted, implied or otherwise, under any patent or patent rights of VIA Technologies. VIA Technologies makes no warranties, implied or otherwise, in regard to this document and to the products described in this document. The information provided in this document is believed to be accurate and reliable as of the publication date of this document. However, VIA Technologies assumes no responsibility for the use or misuse of the information (including use or connection of extra device/equipment/add-on card) in this document and for any patent infringements that may arise from the use of this document. The information and product specifications within this document are subject to change at any time, without notice and without obligation to notify any person of such change.

VIA Technologies, Inc. reserves the right the make changes to the products described in this manual at any time without prior notice.

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.

Safety Precautions

- Always read the safety instructions carefully.
- Keep this User Manual for future reference.
- All cautions and warnings on the equipment should be noted.
- Keep this equipment away from humidity and direct sunlight.
- Put this equipment on a reliable flat surface before setting it up.
- Before connecting the equipment to a power source, check if the power source has a Japan-type socket and it can support the provided 100 ~ 240V AC-to-DC power adapter.
- 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 cord or plug 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 Manual.
  - The equipment has been dropped and damaged.
  - The equipment has an obvious sign of breakage.
- Do not operate the equipment in temperatures outside the 0 ~ 60°C range or store the equipment in temperatures outside the -10 ~ 60°C range. The equipment may get damaged.
- Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- Do not place anything over the power cord.
- Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating.

Ordering Information

Part Number	Description
ATG-A3000-1Q20A0	VIA ARTiGO A3000 system with 2.0GHz MediaTek Genio 350 Quad-Core SoC, 16GB eMMC, 2GB LPDDR4 SDRAM, HDMI, 2 USB 2.0, Micro USB OTG, DIO, COM, Ethernet, Wi-Fi 5, MicroSD card slot, MiniPCIe slot, SIM card slot, 12V DC-in

Optional Accessories

Wireless Module Options

Part Number	Description
EMIO-2575-00A0	Quectel EC25JFA 4G LTE mobile broadband miniPCIe module with two antennas and assembly (Japan only)

Packing List

- VIA ARTiGO A3000 system
- AC-to-DC adapter
- Power cord (Japan type)
- Wi-Fi Antenna

Table of Contents

List of Figures

1. Introduction

Accelerate and optimize your M2M and Edge-AIoT product development with the compact and durable VIA ARTiGO A3000 fanless system. Equipped with the low-power quad-core MediaTek Genio 350 SoC with rich I/O and connectivity features, the small footprint VIA ARTiGO A3000 system provides a flexible and reliable high-performance solution for many commercial, consumer, and industrial use cases, such as smart access control, interactive kiosks, vending machines and POS devices.

This user guide introduces the VIA ARTiGO A3000 system and provides instructions to quickly set it up for use.

1.1 Product Specifications

Processor

- 2.0GHz MediaTek Genio 350 Cortex-A53 Quad-Core SoC

System Memory

- 2GB LPDDR4 DRAM

Storage

- 16GB eMMC Flash Memory

Graphics

- ARM Mali-G52 3EE MC1 GPU
- 3D graphics accelerator capable of processing 1600M pixel/sec @ 800MHz
- OpenGL® ES 3.2, OpenCL ES 2.0 full profile, and Vulkan 1.1 hardware acceleration
- Supports H.265 and H.264 video encoding and decoding up to 1080p @ 60fps

AI Processor

- Cadence® Tensilica® Vision P6 NPU (supports up to 0.3 TOPS)

Wireless Connectivity

- MediaTek MT6631
  - Dual band (2.4GHz & 5GHz) single stream Wi-Fi 802.11 a/b/g/n/ac RF

Audio

- Cadence® Tensilica® HiFi 4 DSP
- MediaTek MT6357/MT6390

HDMI

- Lontium LT8618SXB Digital Parallel Interface to HDMI 1.4 transmitter

USB

- Genesys GL852GT-MNG USB 2.0 MTT HUB

Ethernet

- Realtek RTL8152BNI-VB-CG USB2.0 to 10/100M Ethernet controller

Onboard Expansion I/O

- MiniPCIe slot
- SIM card slot

Front Panel I/O

- Micro USB 2.0 OTG port

- DIO port (supports 10 GPIO with 3.3V power)
- MicroSD card slot
- 2 Audio jacks: Line-out and Mic-in
- WiFi antenna connector
- Power LED
- Power button

Back Panel I/O

- HDMI port
- 2 USB 2.0 ports
- COM port for RS-232 (TX/RX)
- 10/100Mbps Ethernet port
- 2 Antenna holes for 4G/5G
- DC-in jack

Power Supply

- 12V DC-in

Operating System

- Android 12 / Yocto 3.1

Operating Temperature

- 0°C ~ 60°C

Storage Temperature

- -10°C ~ 60°C

Operating Humidity

- 0 ~ 90% (non-condensing)

Mechanical Construction

- Metal chassis housing

Mounting

- Wall/VESA mountable

Dimensions

- 154.4mm(W) x 27mm(H) x 106.5mm(D) (6.08" x 1.06" x 4.19")

Weight

- 1.3kg (2.8lbs)

Compliance

- CE, FCC, TELEC, UKCA

Note:
As the operating temperature provided in the specifications is a result of testing performed in a testing chamber, 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 strongly recommended to execute a solid testing program and take all variables into consideration while building the system. Please ensure that the system is stable at the required operating temperature in terms of application.

1.2 System Layout

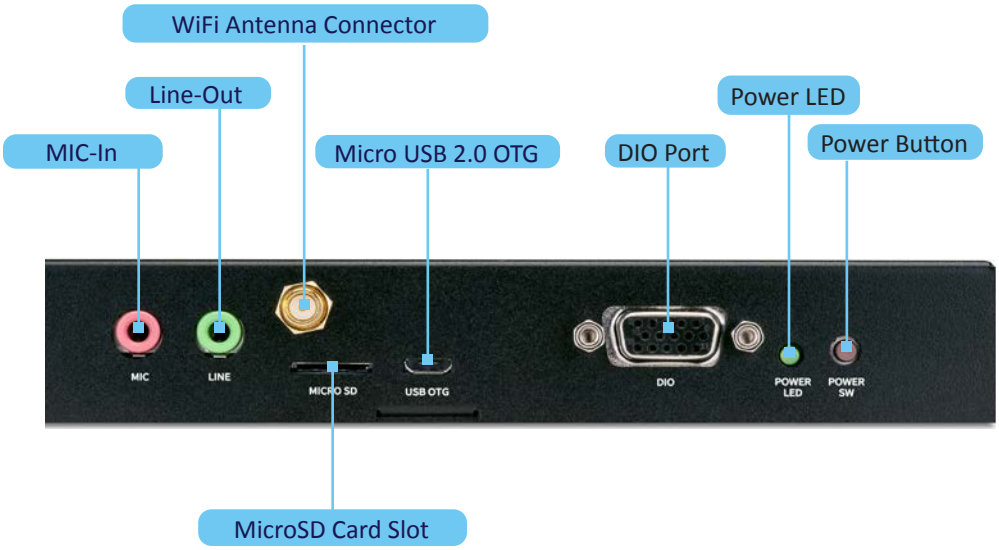

Figure 01: VIA ARTiGO A3000 system front panel I/O

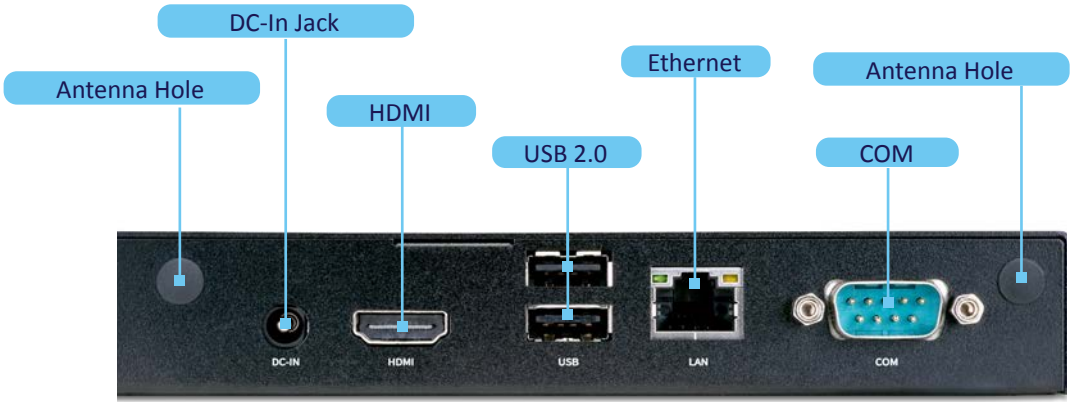

Figure 02: VIA ARTiGO A3000 system back panel I/O

1.3 System Dimensions

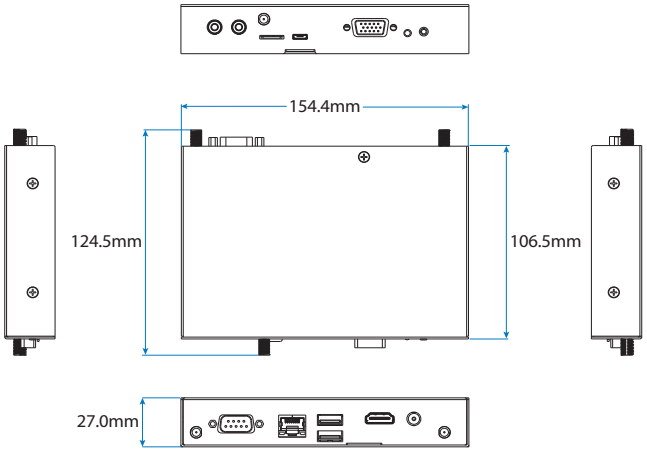

Figure 03: VIA ARTiGO A3000 system dimensions

2. Hardware Installation

2.1 System Installation

Check the following and install the VIA ARTiGO A3000 system on the target surface:

- The target surface is flat, reliable and away from direct sunlight.
- A power source with a Japan-type socket is available nearby and it supports the provided 100 ~ 240V AC-to-DC power adapter.
- The environmental temperature is within the 0 ~ 60°C range.

2.2 Wi-Fi Antenna Installation

The VIA ARTiGO A3000 system's standard package includes a Wi-Fi antenna.

Figure 04: Wi-Fi antenna

To install the Wi-Fi antenna on the VIA ARTiGO A3000 system, follow the steps below:

Step 1

Locate the Wi-Fi antenna connector on the VIA ARTiGO A3000 system's front panel.

Step 2

Gently screw the antenna on the Wi-Fi antenna connector and fold it upwards for the best reception.

Figure 05: Installing the Wi-Fi antenna

Figure 06: Installed Wi-Fi antenna

2.3 Connecting System to Power Source

The VIA ARTiGO A3000 system requires a 12V DC input power supply. A 100 ~ 240V AC-to-DC power adapter and Japan-type power cord with ground fuse is provided in the VIA ARTiGO A3000 system's standard package. To connect the VIA ARTiGO A3000 system to the power source, follow the steps below.

Step 1

Connect the power cord to the power adapter.

Figure 07: Connect the power cord and adapter

Step 2

Locate the DC-In Jack on the VIA ARTiGO A3000 system's back panel and plug in the power adapter.

Step 3

Connect the power cord to the power source and its fuse to ground.

Figure 08: Power connections

Step 4

Switch ON the power source and press the Power button on the VIA ARTiGO A3000 system's front panel.

Figure 09: The Power Button

3. Technical Support and Assistance

- For technical support and additional assistance, contact your local sales representative/board distributor or visit webpage https://www.viatech.com/en/support/technical-support/ for technical support.
- For OEM clients and system integrators developing a product for long-term production, other code and resources may also be made available. Visit webpage https://www.viatech.com/en/about/contact to submit a request.

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