MST3568XB PLUS

Datasheet

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1 Introduction

The MST3568XB PLUS is a high performance industrial motherboard with rich expansion capabilities. It is equipped with a quad-core Rockchip processor that delivers exceptional computing power, 2D/3D graphics processing, and full HD video encoding/decoding. Moreover, a wide range of connectivity options allows for easy integration with various peripherals and devices, making it ideal for diverse industrial applications such as industrial control, automation, robotics, etc.

2 Features

- Equipped with Quad-core ARM Cortex-A55 Rockchip RK3568 processor, frequency up to 2.0GHz
- Supports up to 8GB LPDDR4 and 128GB eMMC
- Supports interfaces such as I2C, USB, RJ45, SIM, CAN, TF, GPIO, MIC, Wi-Fi, RS-232, RS-485, Bluetooth, Speaker, Headphone, and TTL
- Features rich multi-media interfaces such as HDMI, eDP, LVDS, and MIPI
- Supports Mini-PCIe 4G/5G
- Supports a wide input voltage range of DC 9-24V
- Adopts 1.25/2.0mm pitch wire-to-board connectors

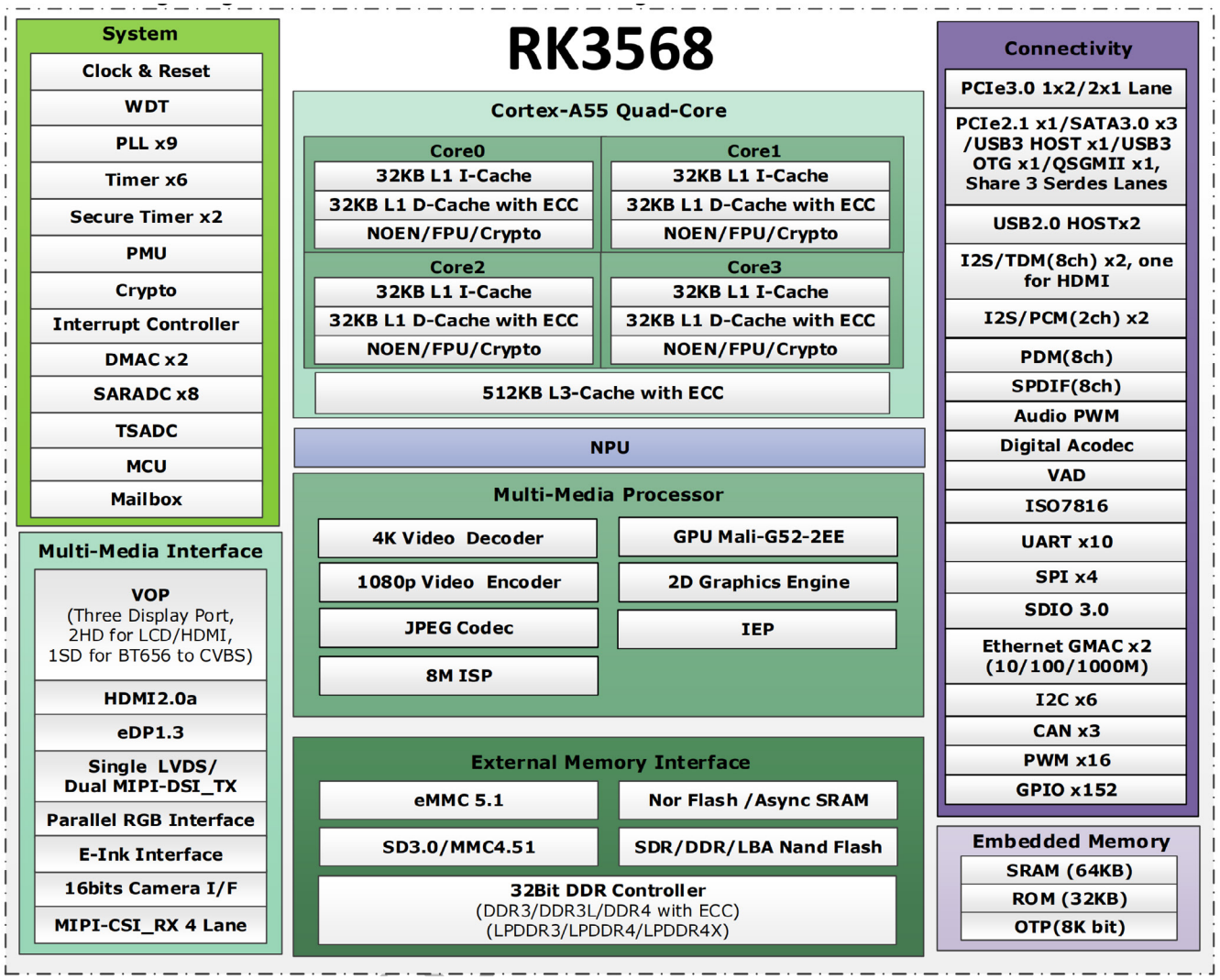
3 Applications

- Industrial Control
- Automation
- Drones
- Robotics
- Healthcare

4 Block Diagram

The following figure shows the block diagram of RK3568.

Figure 4-1 Block diagram of RK3568



5 General Specifications

Table 5-1 General Specifications

Parameter	Specification
Architecture	ARM
Processor	Quad-core ARM Cortex-A55 Rockchip RK3568; Frequency up to 2.0GHz
OS	Android 11/ Ubuntu 18.04/Ubuntu 20.04/Debian 11/Buildroot/ NeoKylin
RAM	LPDDR4, 2GB (Up to 8GB)
Storage	eMMC, 8GB (Up to 128GB)
Expansion	Suppports Mini-PCIe 4G/5G, RS232, RS485, TTL, CAN, USB Hub Expansion Board (Optional)
Audio IO	Amplifier x 2 (8Ω, 5W); MIC x 1
Power Input	DC 12V (Optional: 9-36V)

Table 5-2 I/O Port General Specifications

I/O Port	Specification
Ethernet	1000M RJ-45 x 2 (One optional)
USB	USB3.0 Type-A x 2; USB2.0 x 4
CAN	CAN x 2
MIPI CSI	MIPI CSI x 2; Supports 2MP GC2093 and 5MP GC5032
WIFI	802.11 b/g/n x 1 (Optional: 802.11 ac/ax)
BT	BT4.2 x 1 (Selectable versions: BT5.2/BT5.0) (Optional)

Table 5-2 I/O Port General Specifications (Continued)

Serial Port	RS-232 x 1; RS-485 x 1 (Optional: TTL)
Type-C	Download and debug
Headphone	Supports 3.5mm dual-channel headphone (Optional)
RTC	Supported
GPIO	8-way GPIO x1; 3-way GPIO x 1 (Optional)
TF Card	Supports 1 self-ejecting TF card (Optional)
SIM Card	Mini PCIe 4G/5G x 1; Mini PCIe 5G x 1
LVDS	Maximum resolution:1200 x 1920; Supports dual-screen independent display (Optional)
MIPI	Maximum resolution:1200 x 1920; Supports dual-screen independent display (Optional)
eDP	Maximum resolution:1200 x 1920; Supports dual-screen independent display (Optional)
HDMI OUT	Supports 4K 3840 x 2160; Supports dual-screen independent display
HDMI IN	Supports USB2.0 MJPEG 1080P@60fps/USB 3.0 MJPEG 1080P@60fsp/YUV 1080P@60fps (Optional)

6 Absolute Maximum Ratings

Table 6-1 Absolute Maximum Ratings

Parameter Name	Value	Remark
Input Voltage	DC 12V	Optional: DC 9-36V
Power Consumption	5W (Max.)	N/A
Operating Temperature	0℃ to 70℃	Optional: -20℃ to 70℃/-40℃ to 70℃
Storage Temperature	-20℃ to 70℃	Optional: -40℃ to 85℃
Transport Temperature	-20℃ to 70℃	Optional: -40℃ to 85℃
Relative Humidity	＜ 75%RH	N/A

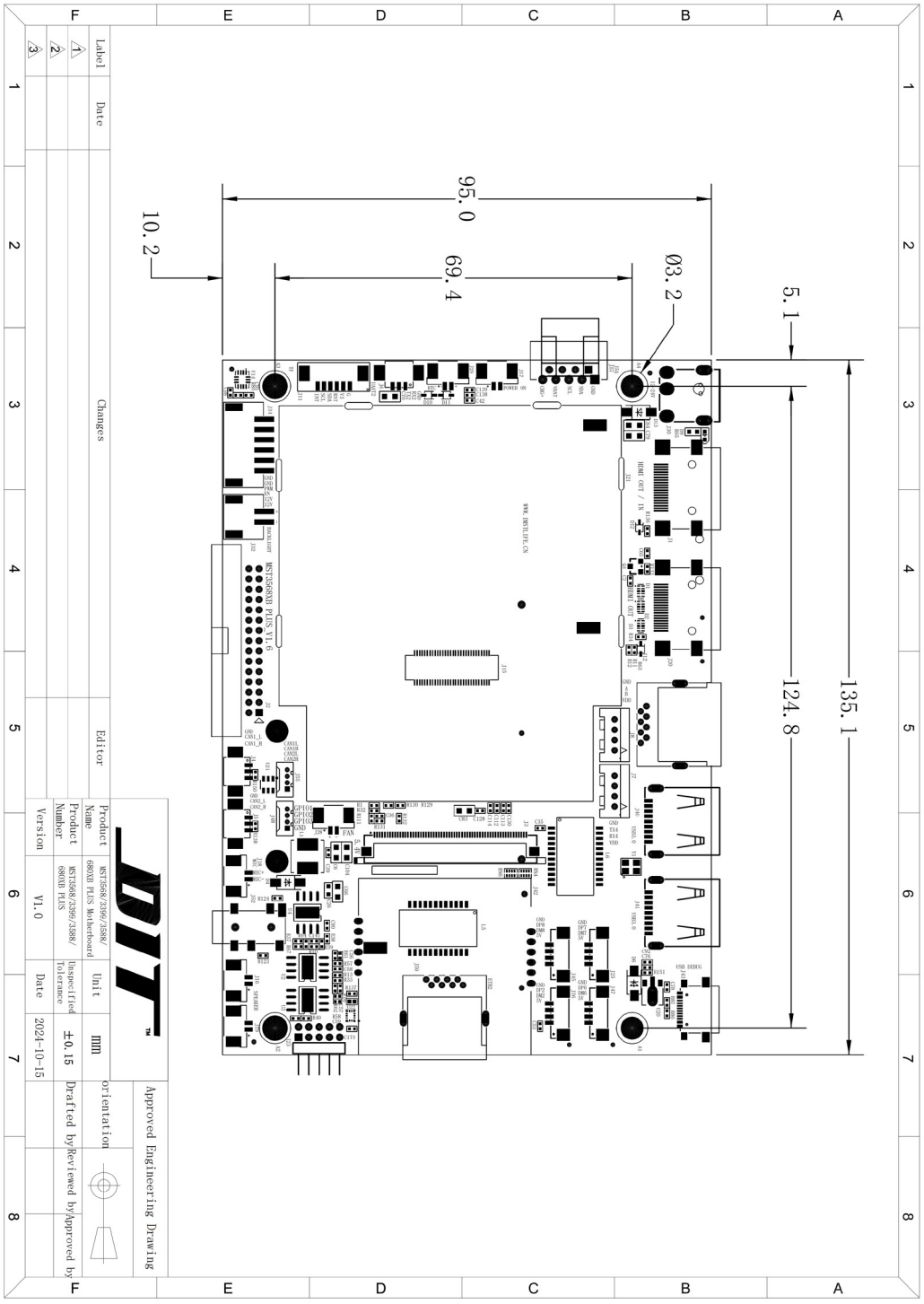
7 Accessories

Table 7-1 Accessories

Name	Type	Remark
Power Adapter	Included in the Package	N/A
Wi-Fi/4G Antenna	Optional	N/A
USB Debugging Cable	Optional	N/A
Speaker/USB Camera	Optional	N/A

8 Physical Dimensions

Figure 8-1 Physical Dimensions



9 Interface Description

Figure 9-1 Interface Description (Top)

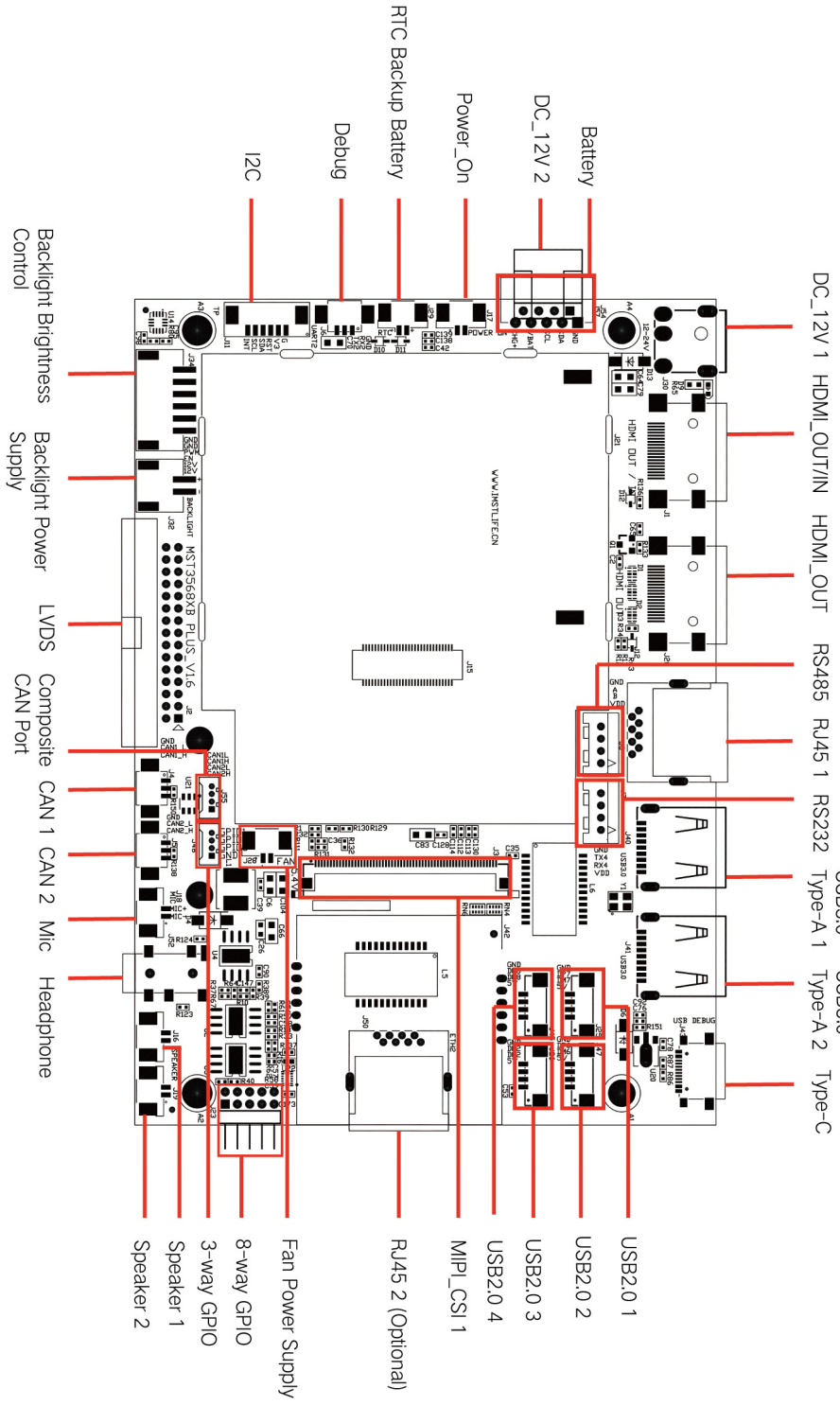
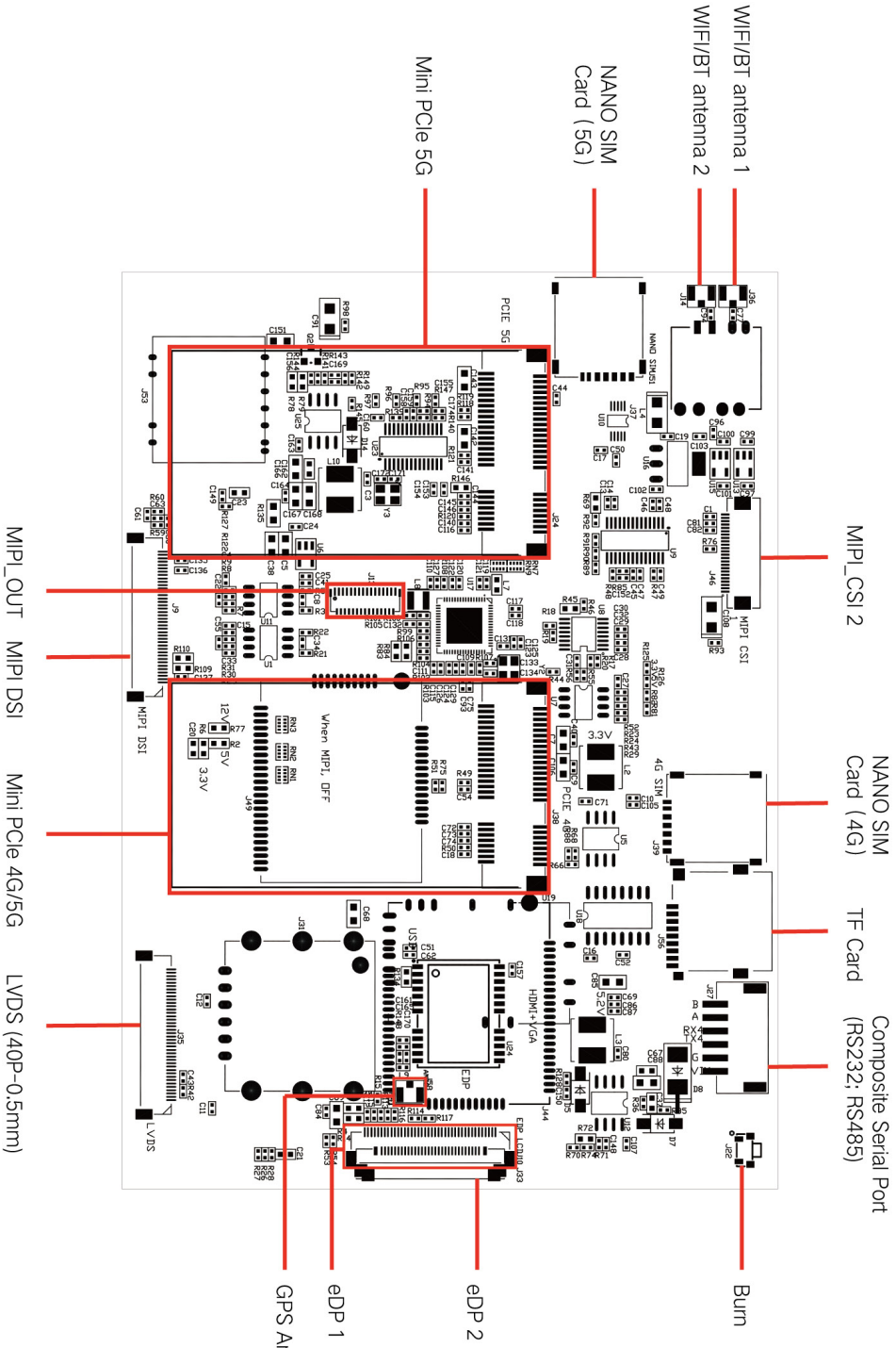


Figure 9-2 Interface Description (Bottom)



10 Revision History

Table 10-1 Revision History

Version	Date	Details
V1.0	December 20, 2024	Initial release

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