

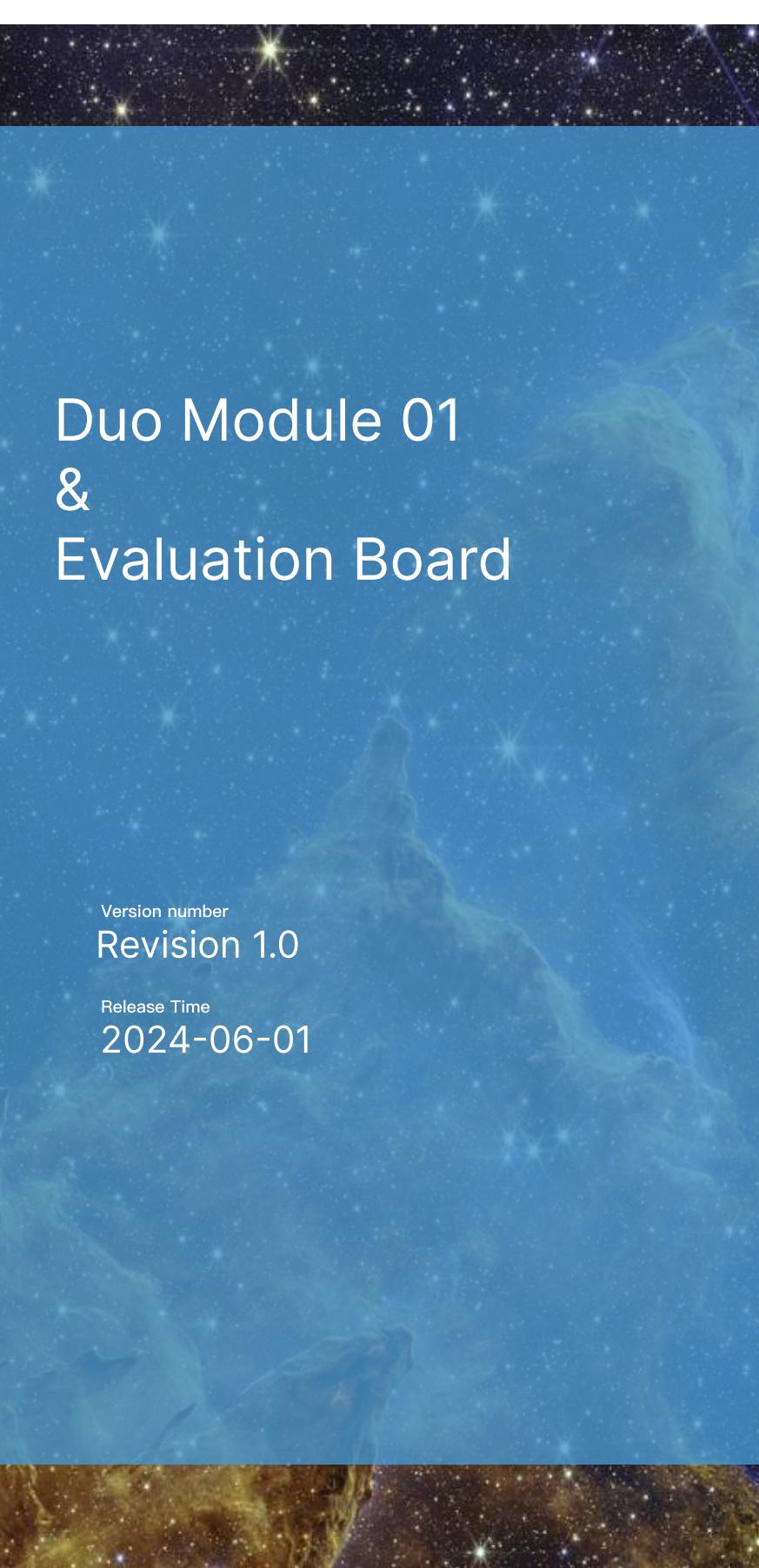
Duo Module 01 & Evaluation Board

Version number

Revision 1.0

Release Time

2024-06-01



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1 Revisions

Table 1: *Revision Control Table*

Version	Date	Changes from previous version
0.1	2024/6/1	First Draft

2 Introduction

The Duo Module 01 is a compact module with integrated SG2000, WI-FI6/BTDM5.4, and eMMC. It supports SMD mounting. Also it can greatly save product development time. It is the first choice for making products.

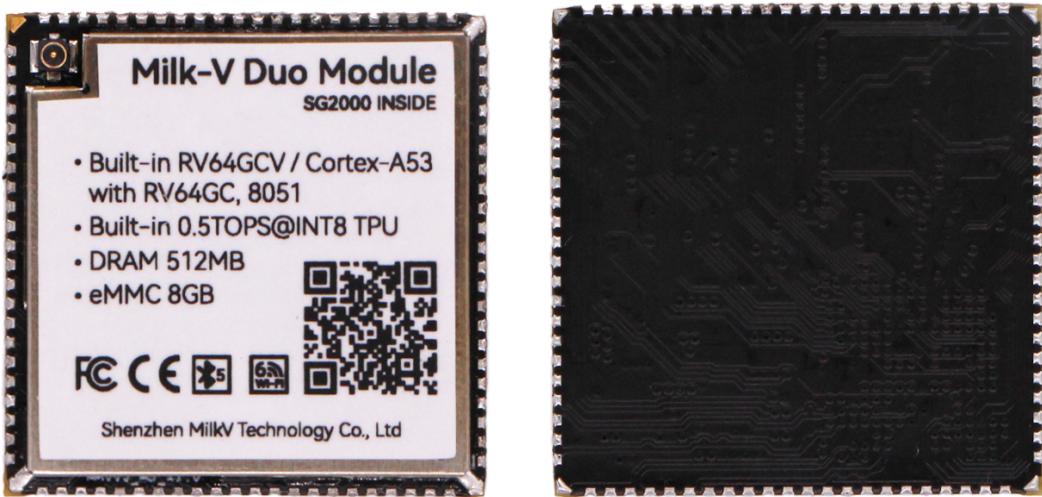


Figure 1: *Duo Module 01 Top and Bottom View*

Note:

The image above shows a Duo Module 01 specific model. This model has certain features like eMMC. Depending on the purchased SKU there might be variations to the populated components.

3 Specification

Table 2: Duo Module 01 Specification

Duo Module 01 Specification	
Soc	SOPHON SG2000
CPU	1x RV64GCV C906@1GHz / Cortex-A53@1GHz(Selection by pin level) + 1x RV64GC C906@700MHz + 1x 8051 Core
Memory	SIP DRAM 512M
TPU	0.5TOPS@INT8 TPU
Multimedia	ISP 5M@30fps2L MIPI DSI 5M@30fps4L or 2L+2L MIPI CSI 5M@30fpsH.265/H.264 Decoding and Encoding
Audio	16bit Audio Codec2x I2S/PCM1x DMIC
Storage	Optional onboard 8GB eMMC1x SPI NOR1x SPI NAND1x SDIO 3.0
Netwoek	1x 10M/100M MAC PHY
USB	1x USB2.0 OTG
Wireless	Optional onboard WIFI6/BTDM5.4
Security Module	Secure boot/AES/SHA/Efuse
Resource	Up to 4x I2CUp to 4x SPIUp to 4x UARTUp to 12x PWMUp to 3x ADCUp to 1x SDIOUp to 1x I2SUp to 1x JTAG
Temperature Range	0°C~60°C
Package Type	Stamp-hole
Package Dimensions	25mm x 25mm
Total Pins	88
Compliance Certification	CE / FCC / UKCA

3.1 Block Diagram

Figure below is a block diagram of the major functional areas of Duo Module 01.

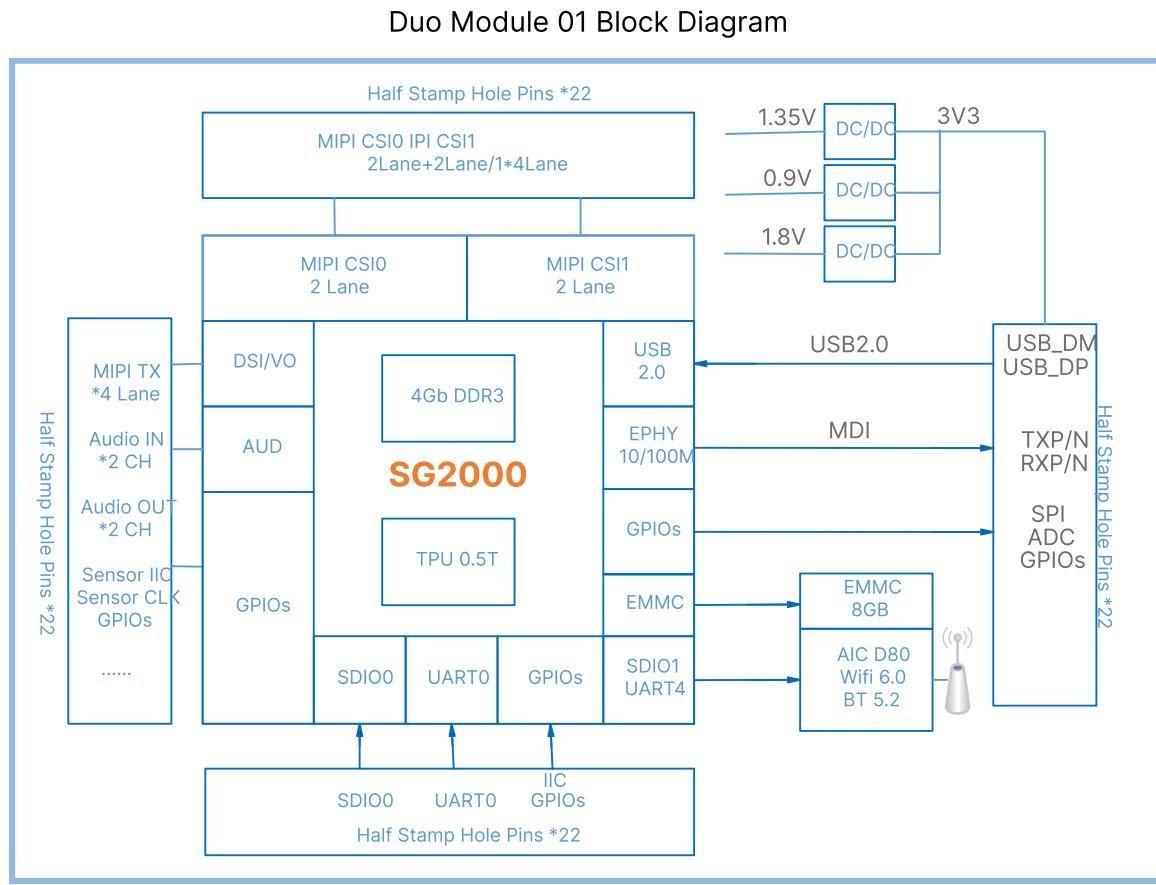


Figure 2: Duo Module 01 Block Diagram

4 Evaluation Board

To enhance your development experience with the Duo Module 01, Milk-V provides the Duo-Module 01 Evaluation Board, which is designed to facilitate your development evaluation and provide you with reference designs.

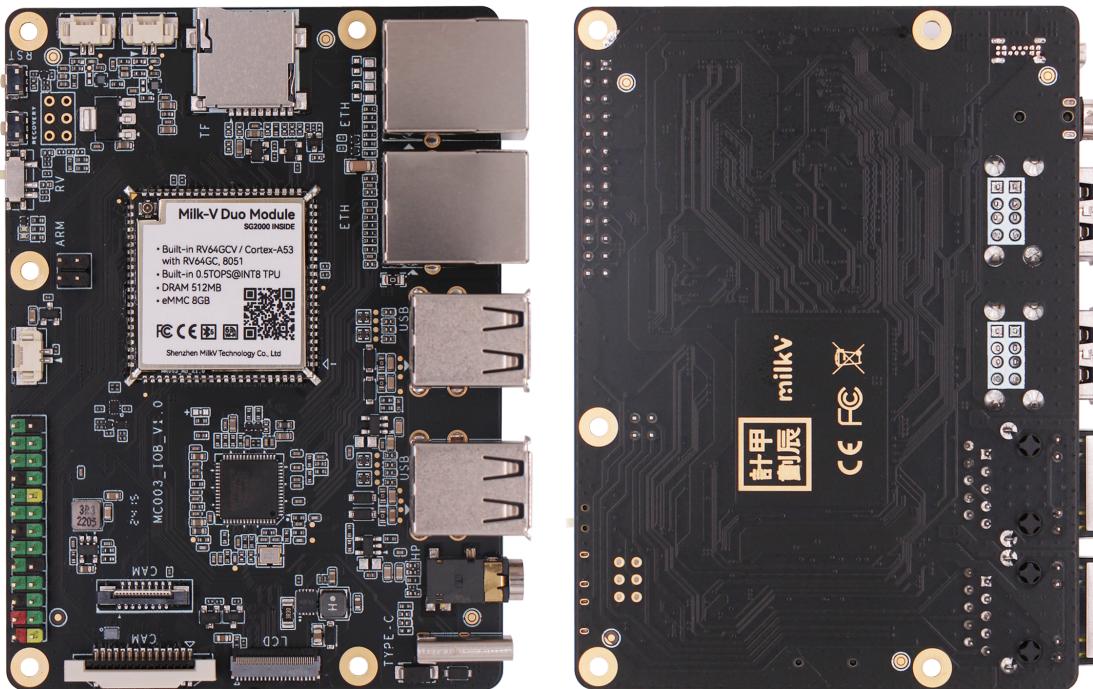


Figure 3: DuoModule 01 Evaluation Board Overview

DuoModule 01 Evaluation Board	Specification
SOM	Duo Module 01
SoC	SOPHON SG2000
CPU	1x RV64GCV C906@1GHz / Cortex-A53@1GHz(Selection by pin level) + 1x RV64GC C906@700MHz + 1x 8051 Core
Memory	SIP DRAM 512M
TPU	0.5TOPS@INT8 TPU
Audio	1x 3.5mm jack for audio input/output
Camera	2x MIPI CSI 2-lane
Display	1x MIPI DSI 4-lane

DuoModule 01

Evaluation Board Specification

USB	4x USB 2.0 HOST Port
Storage	8GB eMMC onboard1x TF Card Slot
Ethernet	2x 10M/100M RJ45 Ports
PowerSupply	1x Type-C for power inSupport 5V via GPIO Header
GPIO	Up to 17 GPIOs available
Others	1x ARM/RISC-V boot switch1x Reset key1x Recovery key

5 Availability

Milk-V guarantees availability of the Meles until at least September 2028.

6 Support

For support please see the Milk-V Documentation website and post questions to the Milk-V Community.