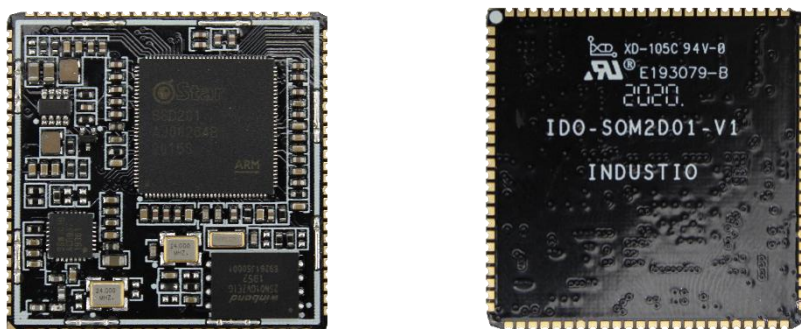# IDO-SOM2D01 Module Datasheet

1．Module Overview

IDO-SOM2D01 is an ultra-small SOM (System On Module) module based on SigmaStar SSD201 SoC (ARM Cortex A7 Core). The module integrates WiFi, NAND and power management circuits on a 2.95cm x 2.95cm PCB. It can be applied to smart display, building intercom indoor unit, medical electronics, voice recognition home appliance and IoT smart gateway, etc. It has carried out strict power integrity and signal integrity simulation design, and has passed various electromagnetic compatibility, temperature shock, high temperature and high humidity aging, long-term storage pressure and other tests. It is stable and reliable, and can be supplied in batches.

Key Features:

◆ Default configuration 64MB DDR2，128MB Nand Flash（up to 2GB)

◆ Ultra small size（29.5mm*29.5mm）. Single-sided layout, fully shielded on the back, optional shielding cover on the front

◆ The back of the PCB is completely flat and has no traces, and the board can be routed at will without interference

◆ Supports Linux system, super fast boot within 1s

◆ Integrates 1 way 10/100M PHY

◆ Strict signal integrity and power integrity design and test

◆ 96Pin with 1.1mm pitch，extends all pin resources of SSD201

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The detailed specifications of the module are as follows:

Items	Specifications
CPU	SigmaStar SSD201 ARM® Cortex-A7 dual-core processor, up to 1.2GHz
Video processor	Supports max. resolution FHD (1920x1080)/60fps decoding, H.265/HEVC Decoder, I/P/B slices， all intra-prediction modes, all inter-prediction modes, supports max. resolution HD (1920x1080)/60 fps decoding
Power supply	Input voltage 3.3V
RAM	SSD201 embedded DDR2 memory, 64MB; supports auto-refresh and self-refresh mode，
Storage	Supports 1/2/4-bit SPI-NOR/SPI-NAND Flash， default 128MB（Up to 2GB)
System	Linux
Ethernet	Supports two Ethernet ports， supports 10/100Mbps half/full duplex， one built-in 10/100M Ethernet PHY, supports one RMII to connect external
Antennas	Type: FPC Antenna Gain: 3dBi This device is intended only for host manufacturers under the conditions: The transmitter mdule may not be co-located with any other transmitter or antenna; The module shall be only used with the intemal antennas that has been originally tested and certified with this module. The antenna must be either permanently attached or employ a 'unique' antenna coupler. As long as the conditions above are met, further transmitter test will not be requtred. However, the host manufacturer is still responsible for testing their end-production for any additional compliance requirements required with this module installed(for example, digital device emissions, PC peripheral requirements, etc)

	PHY
WIFI	Equipped with Singmaster wifi chip（SSW101B），with high performance, and 500 meters transmission distance in open space
Display	Supports mipi/RGB interface： MIPI TX DSI 4-lan with max，1.5Gbps and output up to FHD 60fps； Supports FHD graphic layer with Index 4/8,ARGB1555/ARGB4444/ARGB8888,RGB565,and YUV422 format.
Audio	1 x Mono AMIC 1 x Dual channel DMIC 1 x LINEOUTR/L，supports 8K/16K/32K/48KHz Sampling Rate；
USB	1 x USB 2.0 HOST
Infrared	1 x Infrared receiving interface（PM_IRIN）
Peripherals	4 x UART（PM_UART is used as Debug Serial by default） 1 x SDIO2.0 （Data bus 1/4 bit mode, compatible with SD Specification 2.0) 2 x I2C、1 x I2S、1 x SPI、4 x PWM、several GPIOs
Dimensions	29.5mm x 29.5mm
Interface Type	Stamp hole（96 PIN， 1.1mm pin pitch）
PCB	1.2mm thickness, 4-layer board, high Tg material, immersion gold process
Weight	8g

2．IDO-SOM2D01 Module Block Diagram
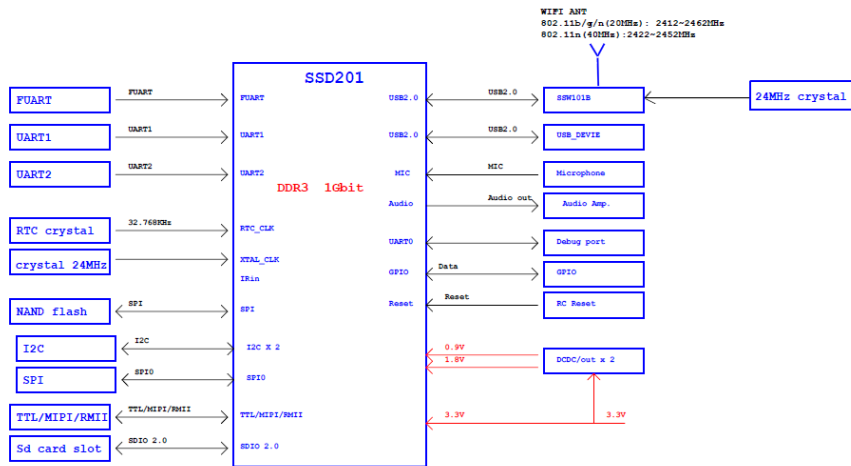
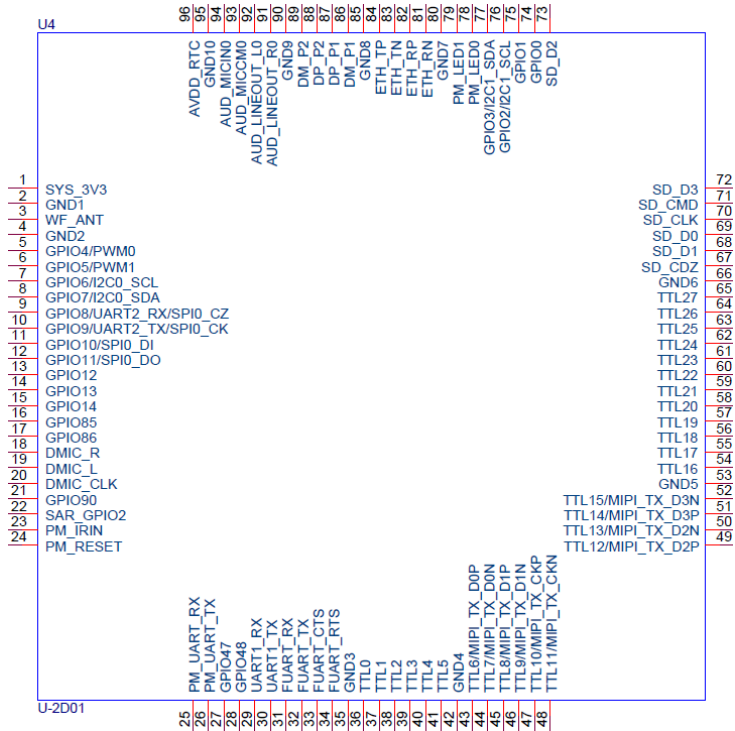## 3．IDO-SOM2D01 Pin Definition

Figure 3. IDO-SOM2D01 module pin definition

Note: For detailed pin definitions and function multiplexing, please refer to the document "IDO-SOM2D01 Pinout.pdf".

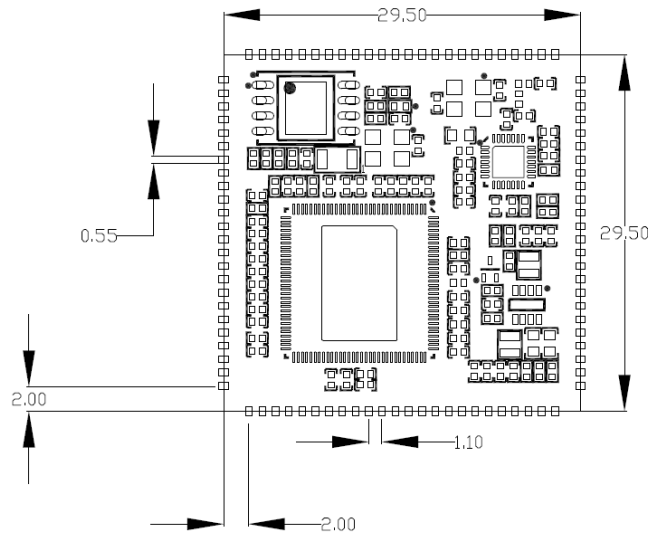## 4．Module Dimensions

Unit: mm
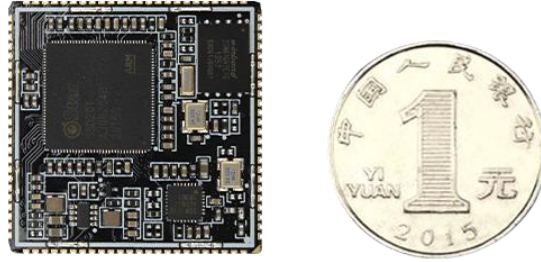

Figure 4. IDO-SOM2D01 dimensions

Figure 5. Comparison between IDO-SOM2D01 module and one yuan coin

5．Module electrical parameters

Power pin	Min	Max	Current	Power supply ripple requirements
SYS_3V3	3.2V	3.4V		<30mVrms

6．Product ordering

Order Part Number	DDR3L	ROM	Main frequency	Temperature

7．Label and complice information

Host product manufacturers to provide a physical or e-label stating "Contains FCC ID: 2AFOS-IDO-SOM2D01" with their finished product.

FCC Caution:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation..

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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception,which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different

from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

FCC ID: 2AFOS-IDO-SOM2D01

This device is intended only for OEM integrators under the following conditions:

1): The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2): This device and its antenna(s) must not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2P.

3): For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.