

# SMART DISPLAY MODULE SPECIFICATION

1.75 Inch AI Smart Display with Touch	
<b>Model:</b>	SmartRing
<b>Version:</b>	V1.1
<b>Date:</b>	2025-04-20

## Customer Confirmation

Approved by	Notes

## REVISION HISTORY

Revision	Date	Contents of Revision Change	Remark
V1.0	20250420	Preliminary release	

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## 1. Product Overview



- ✧ **Main Control Chip:** ESP32-S3-N16R8 (dual-core MCU, integrated with Wi-Fi and Bluetooth BLE5.0, 240MHz main frequency, 520KB SRAM, 8MB PSRAM, 448KB ROM, 16MB Flash).
- ✧ **Display Screen:** 466×466 resolution, capacitive touch.
- ✧ **Module Functions:** Includes LCD display, backlight control, touchscreen control, I2S digital microphone, I2S digital-to-analog conversion, TF card interface, and wireless power supply circuit.
- ✧ **Development Environment:** Supports secondary development via Arduino IDE, ESP IDE, MicroPython, PlatformIO, etc., and UI development with LVGL.
- ✧ **Manufacturing Process:** CNC-machined casing, delicate and exquisite.
- ✧ **Supports burning Xiaozhi firmware (source code is temporarily not provided).**

## 2. Product Functions

- Computer secondary screen function (AIDA64): Built-in 5 styles.
- Audio spectrum pickup function.
- MP3 music playback function: Allows users to add MP3 files and decode 320K high-quality MP3.
- Digital photo frame function: Supports user-added photos.
- MJPEG playback function: Enables users to add MJPEG files.
- Balance ball game: Equipped with a gyroscope, controlled via gyroscope sensor.
- Themed clock display function: Defaults to international time zone, adjustable to China time zone.
- Wireless power supply function (supports Qi protocol): Achieves true wireless operation when used with a wireless power bank.
- Real - time weather function: obtain weather information after connecting to the Internet via WIFI.
- Subsequent product function upgrades.
- Please transfer to the document for instructions for use:
  - TAIJI VIEWE Pi
  - VIEWE xiaozhi

## 2. Product information

### 2.1 Brie Information

- 1) Outline Dimension:  $\phi$  55 Round
- 2) Thickness: 9mm
- 3) Interaction Method: Touch
- 4) Shell Color: Burgundy/Silver/Customized
- 5) Power: DC 5V, 1A

#### System

- 1) OS: RTOS
- 2) CPU: ESP32-S3 240Mhz
- 3) RAM: 8MB
- 4) Flash: 16MB
- 5) Interface: UART/USB
- 6) Support 2.4GHz Wi-Fi、BLE 5、BLE Mesh

For more information on ESP32-S3-R8, please refer to the following link:[datasheet\\_en.pdf](#)(English)  
or [datasheet\\_cn.pdf](#)(Chinese)

#### PCM

- 1) Model: PCM5100APWR
- 2) For more information: [datasheet](#)

#### MIC

- 1) Model: MSM261D4030H1CPM
- 2) For more information: [datasheet](#)

#### IMU

- 1) Model: QMI8658C
- 2) For more information: [datasheet](#)

#### Other

- 1) Operation Temperature: -20~60°C
- 2) Storage Temperature: -30~70°C

## 2.2 Display Information

Item	Specification	Unit	Remark
Display type	AMOLED	-	-
Screen Size	1.75	Inch	Diagonal
Resolution	466*466	Dots	-
Module Power Consumption	-	Watt	
Active Area	Φ 43.76	mm	-
Pixel pitch (W*H)	82.2	mm	-
Module Size (W*H*D)	45.93(W)*46.35(H)*0.8(D)	mm	
Driver IC	CO5300	-	
Interface Mode	MIPI/QSPI	-	
Display mode	Normal Black	-	
Luminance	700	cd/m <sup>2</sup>	Typ.
Viewing Direction	ALL	O'clock	-
Display Color	16.7M	Colors	24bits
PPI	273	-	
TP IC	CST9217	-	
TP Outline(assembly)	48.16(H) × 48.16(V) × 1.1(T)	mm	
TP Viewing Area	Φ 44.16	mm	

## 2.3 PIN Information

ESP Pin NO.	FUNCTION
GPIO0	BOOT
GPIO1	SDMMC_D1
GPIO2	SDMMC_D0
GPIO3	SDMMC_SCK
GPIO4	SDMMC_CMD
GPIO5	SDMMC_D3
GPIO6	SDMMC_D2
GPIO7	LCD_QSPI_CS
GPIO8	LCD_QSPI_D1
GPIO9	LCD_QSPI_D3
GPIO10	LCD_TE
GPIO11	LCD_RST
GPIO12	LCD_QSPI_D0
GPIO13	LCD_QSPI_SCL
GPIO14	LCD_QSPI_D2
GPIO15	XSMT
GPIO16	I2S_DAC_LRCK/WS
GPIO17	I2S_DAC_DIN
GPIO18	I2S_DAC_BCK
GPIO19	USB_N
GPIO20	USB_P
GPIO21	IMU_INT1
GPIO38	IMU_INT2
GPIO39	RGB_DIN
GPIO40	LCD_VCIEN
GPIO41	TP_SDA
GPIO42	TP_INT
GPIO43	UART0_RX
GPIO44	UART0_TX
GPIO45	TP_SCL
GPIO46	TP_RST



## 2.4 Voltage & Current

Item	Conditions	Min	Typ	Max	Unit
Power Voltage	DC	4.0	5.0	5.5	V
Operation	VCC= +5V, Maximum backlight current	-	200	-	mA
Recommended power supply:5V 1A DC					

## 2.5 Reliability Test

Item	Conditions	Min	Typ	Max	Unit
Working Temperature	60%RH at 5V voltage	-20	25	60	C
Storage Temperature	---	-30	25	70	C
Working Humidity	25°C	10%	60%	90%	RH
ESD	---	Contact: ±4KV Air: ±8KV			KV

### 3. MECHANICAL DRAWING

In production, follow-up updates

VIEWE TECHNOLOGY CO., LTD

## 4. Detailed Information

GitHub: <https://github.com/VIEWESMART/VIEWE-SMARTRING>

Technical support: [smartrd1@viewedisplay.com](mailto:smartrd1@viewedisplay.com)

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