Product Brief

Radxa Display 10 FHD

10-inch FHD Touchscreen Module

Revision 1.2

2023-08-28

Radxa Computer

Contents

1 Revision Control Table

Version	Date	Changes from previous version
1.0	01/06/2023	First Version
1.1	22/08/2023	Update Information
1.2	28/08/2023	Add Gsensor Information

2 Overview

Figure 1: *Radxa Display 10 FHD*

Radxa Display 10 FHD’ s Display mode is a color active matrix thin film transistor (TFT) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device.This model is composed of a TFT LCD panel and a driving circuit.This TFT LCD has a 10.1(16:10) inch diagonally measured active display area with (1200 horizontal by 1920 vertical pixel) resolution.

3 Specification

- Panel Size: 10.1 inch
- Compatible with NTSC & PAL system
- Image Reversion: UP/DOWN and LEFT/RIGHT
- ROHS design

- Outline Dimension: 155(H) x 246.16(V) x 5.95(D) mm
- Display area: 135.36(H) x 216.58 (V) mm
- Number of Pixel: 1200RGB (H) x 1920 (V) pixels
- Pixel pitch: 0.0564 (H) x 0.1692(V)s mm
- Pixel arrangement: RGB Vertical stripe
- Display mode: Normally Black
- Color Filter Array: RGB vertical stripes
- Backlight: White LED
- Electrical Interface: MIPI
- Built-in Gravity Sensor for rotation

4 MIPI DSI Pin Description

PIN	Name	Description	PIN	Name	Description
1	NC	No connection	21	MIPI_3P	+MIPI differential data input
2	VDD	Power Voltage for digital circuit 3.3V	22	GND	Ground
3	VCCIO	Power Voltage for digital circuit 1.8V[1]	23	GND	Ground
4	INT1	INT 1	24	TP_RESET	External interrupt to the Host Reset
5	Reset	Global Reset Pin 1.8V[2]	25	TP_VCC	Power Voltage for digital circuit 3.3V
6	INT2	INT 2	26	TP_INT	External Low is active
7	GND	Ground	27	TP_SDA	I2C data input and output
8	MIPI_0N	-MIPI differential data input	28	TP_SCL	I2C clock input
9	MIPI_0P	+MIPI differential data input	29	GND	Ground
10	GND	Ground	30	GND	Ground
11	MIPI_1N	-MIPI differential data input	31	VDD	Power Voltage for digital circuit 3.3V
12	MIPI_1P	+MIPI differential data input	32	VDD	Power Voltage for digital circuit 3.3V
13	GND	Ground	33	GND	Ground
14	MIPI_CKN	-MIPI differential clock input	34	GND	Ground
15	MIPI_CKP	+MIPI differential clock input	35	LED-	Power for LED backlight (Cathode)
16	GND	Ground	36	LED-	Power for LED backlight (Cathode)
17	MIPI_2N	-MIPI differential data input	37	NC	No connection
18	MIPI_2P	+MIPI differential data input	38	NC	No connection
19	GND	Ground	39	LED+	Power for LED backlight (Anode)
20	MIPI_3N	-MIPI differential data input	40	LED+	Power for LED backlight (Anode)

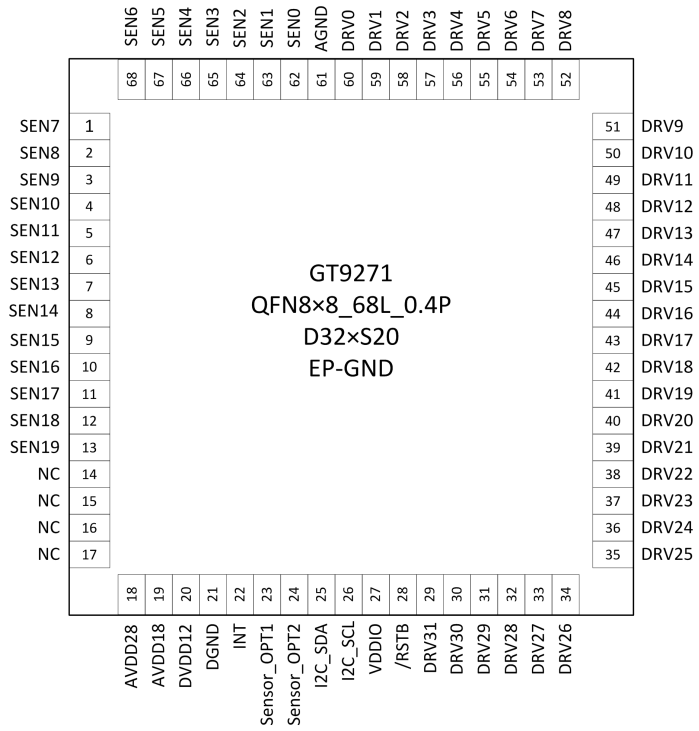
5 Touch Panel

The Radxa Display 10 FHD touch panel is powered by GT9271, a new-generation 10-point capacitive touch solution designed for 7” to 10.1” panels.

[1]The 3 PIN and 5 PIN should be the same as 1.8v or 3.3v
[2]The 3 PIN and 5 PIN should be the same as 1.8v or 3.3v

The GT9271 provides a standard I2C communication interface, facilitating communication with the main CPU through the SCL and SDA lines. Within the system, GT9271 consistently operates as a slave device, with all communication actions being initiated by the primary CPU. To ensure the stability of communication, it is advisable to configure the communication speed at 400Kbps or lower. GT9271 offers two sets of I2C slave addresses, namely **0xBA/0xBB** and **0x28/0x29**, which can be chosen as needed.

5.1 Touch Pin Description



PIN	Name	Description	Note
1 ~ 13	SENS7 ~ SENS19	Touch Analog Signal Input	During the use of the HotKnot feature, it also serves as a driver signal output.
14 ~ 17	NC	No Connection	-
18	AVDD28	Analogue Power Positive	Connect a 2.2uF filter capacitor.
19	AVDD18	-	Connect a 2.2uF filter capacitor.
20	DVDD12	-	Connect a 2.2uF filter capacitor.
21	DGND	Digital Signal Ground	-
22	INT	Interruption Signal	-
23	Sensor_OPT1	Module identification Port	-
24	Sensor_OPT2	Module identification Port	External pull-down required
25	I2C_SDA	I2C Data Signals	-
26	I2C_SCL	I2C Clock Signal	-
27	VDDIO	GPIO level control	Connect to 2.2uF Filter Capacitor, Overhang: 1.8V, Connect to AVDD: AVDD
28	/RSTB	System reset pin	Requires external 10K pull-up, pull-down reset

PIN	Name	Description	Note
29 ~ 60	DRV31~DRV0	Drive signal output	-
61	AGND	Digital Signal Ground	-
62 ~ 68	SENS0 ~ SENS6	Touch Analog Signal Input	During the use of the HotKnot feature, it also serves as a driver signal output.

6 Gravity Sensor

The Radxa Display 10 FHD incorporates an SC7A20 chip, which serves as a high-precision 12-bit digital three-axis accelerometer. This chip demonstrates remarkable performance in measurement capabilities, not only enhancing measurement accuracy but also embedding additional functionalities. Furthermore, its attributes of low power consumption and compact size confer distinct advantages in practical applications.

Employing the I2C communication protocol, the SC7A20 establishes connections with other devices, facilitating efficient data transmission through an interrupt mechanism. This mechanism streamlines data acquisition and processing. Regarding hardware connectivity, the SC7A20 utilizes the 4th and 6th pins of the MIPI DSI 40-Pin interface to implement interrupt functionality, ensuring the effective propagation of sensor interrupt signals and delivering instantaneous event response capabilities to the system.

The I2C addresses of the SC7A20 are 0x18 and 0x19, and it utilizes the 27th and 28th pins of the MIPI DSI 40-Pin interface to transmit signals.

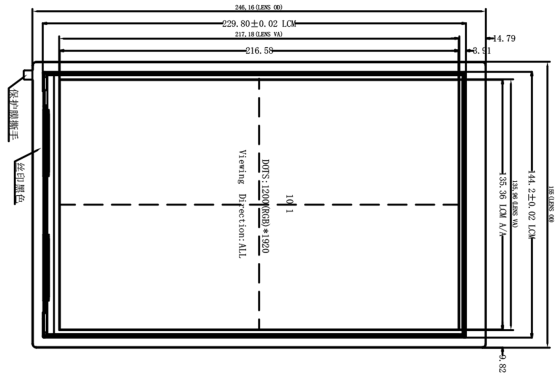
7 Electrical Characteristic

7.1 Absolute Maximum Ratings

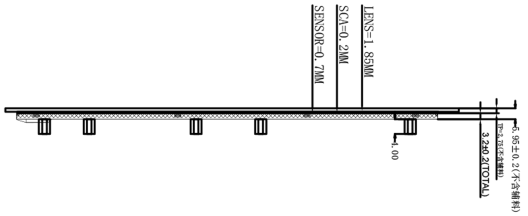
Item	Symbol	Values	Values	Unit
		Min.	Max.	
Power Voltage	VDD	3.0	3.6	V
Operation Temperature	TOP	-20	60	℃
Storage Temperature	TST	-25	70	℃

8 Mechanical Specification

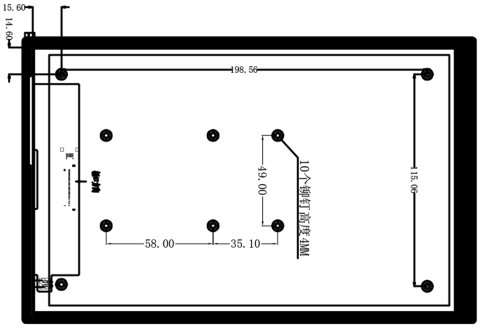
Front



Side



Back



9 Availability

Radxa guarantees availability of the Radxa Display 10 FHD until at least September 2033.

10 Support

For support please see the hardware documentation section of the Radxa Website website and post questions to the Radxa forum.