

UNIWIN-ZM-A40I Core Technical Specifications

Document modification history

	Note	Date
1	Created	2021-03-10

1 Overview

UNIWIN-ZM-A40I is a core board developed based on the Allwinner A40i main chip. This core board is equipped with 1GB/2GB DDR3 + 8GB/16GB/32GB eMMC, and can support RGB dot screen, LVDS dot screen, MIPI dot screen, CVBS input and output, VGA output, YPBPR output, and HDMI high-definition output.

The main control IC adopts TSMC's 40nm HPC manufacturing process, based on the ARM Cortex-A7 architecture, with four cores and a maximum frequency of up to 1.5GHz.

Using Allwinner's new generation SmartColor technology helps to display excellent image quality at high resolutions, providing your entire device with a visually pleasing effect.

Main features:

- 4 cores, up to 1.5GHz clock speed
- Supports RGB/LVDS screen, Dual display of MIPI screen
- Support CVBS input / Output
- Support VGA, YPBPR Output
- 4 serial ports, 3 USB ports, 2 SPI ports, 10 ≤ GPIO ports & other expansion interface

2 Specifications

Hardware specifications:

CPU	Allwinner A40i, quad-core ARM Cortex A7 1.5 GHz
GPU	Mali400MP2
Memory	DDR3 1GB/2GB (label 1GB)
Built-in storage	EMMC 8GB/16G/32G optional (label 8GB)
Display interface	LVDS interface (single channel, 6-bit dual channel, 8-bit dual channel), supports a maximum resolution of 1920×1080. MIPI interface, maximum resolution 1920×1080 RGB888 interface, maximum resolution 1920×1080 Supports CVBS output Supports YPBPR and VGA output Supports HDMI 1.4 output 1080P
Video input	Supports 1 channel CVBS input
Network	100Mbps Ethernet interface (built-in network PHY) & 1GB Ethernet RGMII interface.
	WiFi & Bluetooth interfaces (SDIO & UART)
Image rotation	0°, 90°, 180°, 270°
	1 USB OTG port and 2 USB HOST ports.

Interface device	1-channel TTL DEBUG, 4-channel TTL for external expansion
	2-channel SPI interface
	$10 \leq$ GPIO ports
	2 channel I2C
	Supports stereo channels & microphone.

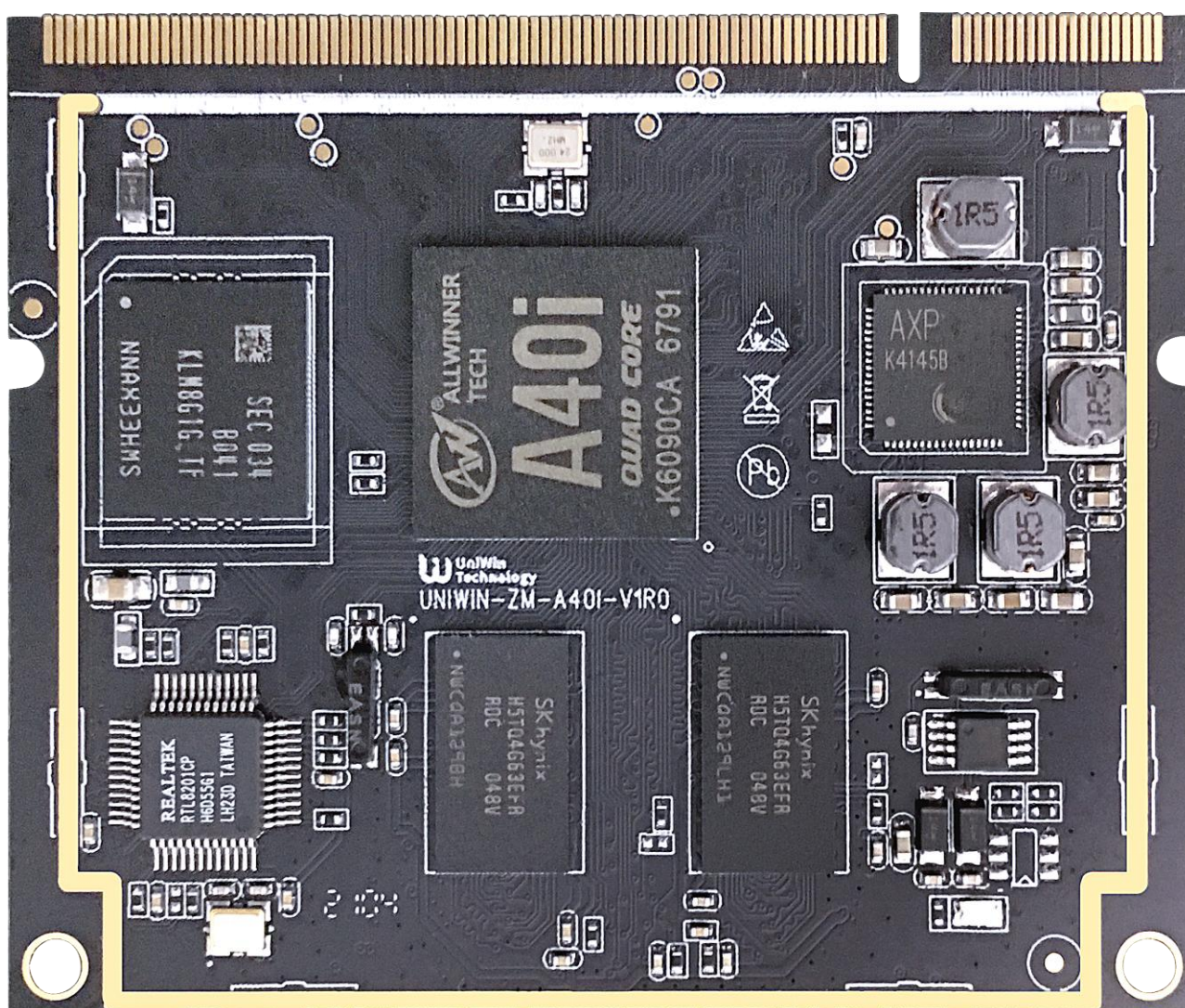
Software specifications :

Operating system	Google Android 7.1, Ubuntu, Debian system
Language	Multiple languages
Video format	Video playback up to 1080P @60fps Multi-Format video playback, including Mpeg1, Mpeg2, Mpeg4 SP/ASP GMC, H.263 including sorenson spark, H.264 BP/MP/HP, VP8, WMV9/VC1, JPEG/MJPEG, etc
Audio format	MP3, WMA, MP2, OGG, AAC, M4A, MA4, FLAC, APE, 3GP, WAV audio playback, supports playlist function.
Image browsing	JPG, BMP, PNG, GIF etc., rotation/slideshow playback, maximum resolution 4096*4096
Document processing	EPUB, WORD, EXCEL, POWERPOINT, PDF, TXT
Input method	Android keyboard (standard), optional third-party input methods

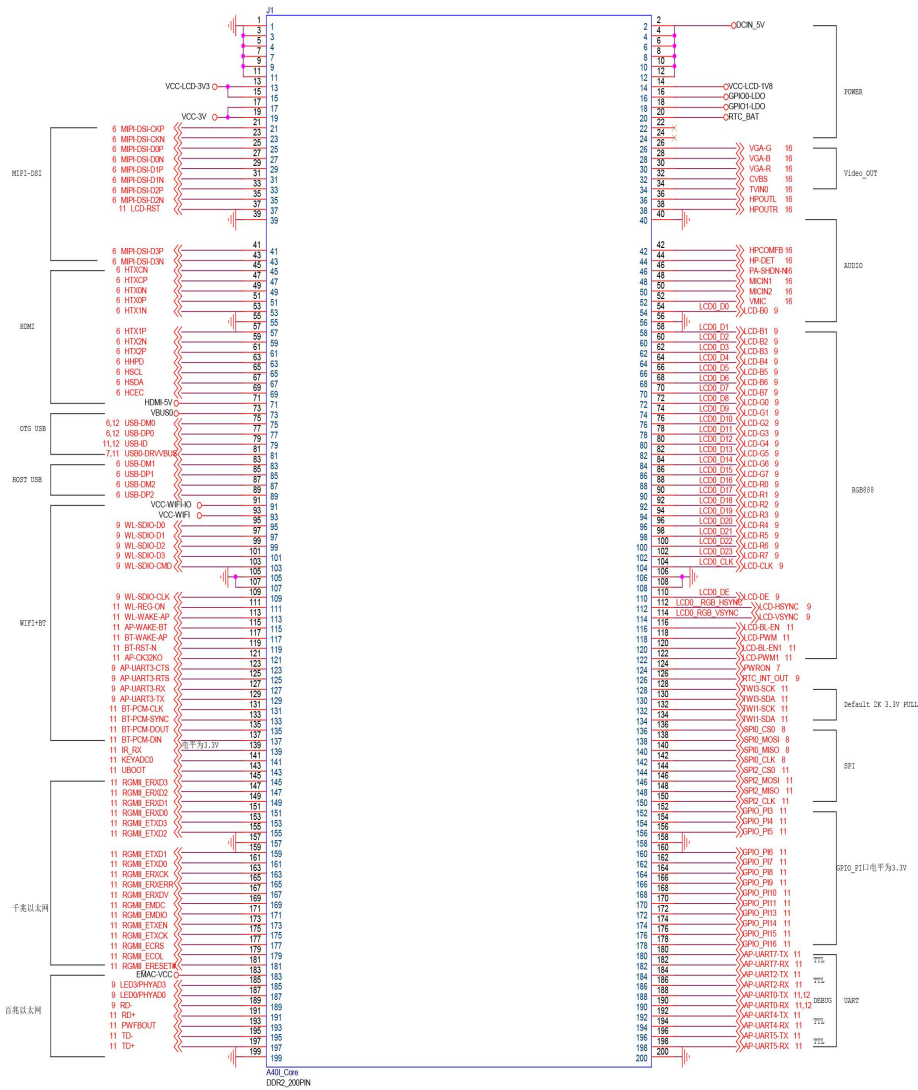
	(Chinese, Korean, Japanese, etc.)
Extensibility	Google Play store over 20,000 excellent Apps free download.
System management	File Manager
	Original Android system,open root permissions, customizable product development.
	Scheduled power on/off
	Supports OTA remote upgrades

3 main interfaces

3.1 Interface diagram (forward DDR2 interface)



3.2 Pin Definition



3.3 Pin description

Instructions	Pin definition	Pin No:		Pin definition	Instructions
Grounding	GND	1	2	DCIN_5V	System power
	GND	3	4	DCIN_5V	
	GND	5	6	DCIN_5V	
	GND	7	8	DCIN_5V	
	GND	9	10	DCIN_5V	
	GND	11	12	DCIN_5V	
Screen 3V3 power supply output 400mA	VCC-LCD-3V3	13	14	VCC-LCD-1V8	Screen 1V8 power supply output 300mA
	VCC-LCD-3V3	15	16	GPIO0-LDO	3.3VS output 200mA
3V3 External power supply 400mA	VCC-3V	17	18	GPIO1-LDO	3.3VS output 200mA
	VCC-3V	19	20	RTC_BAT	RTC battery input
MIPI、DSI output	MIPI-DSI-CKP	21	22	NC	Nil
	MIPI-DSI-CKN	23	24	NC	
	MIPI-DSI-DOP	25	26	VGA-G	VGA signal
	MIPI-DSI-DON	27	28	VGA-B	
	MIPI-DSI-D1P	29	30	VGA-R	
	MIPI-DSI-D1N	31	32	CVBS	CVBS OUT
	MIPI-DSI-D2P	33	34	TVIN0	CVBS IN
	MIPI-DSI-D2N	35	36	HPOUTL	Headphone left output
Screen reset 3.3V level	LCD-RST	37	38	HPOUTR	Headphone right output
Ground	GND	39	40	GND	Ground
MIPI、DSI output	MIPI-DSI-D3P	41	42	HPCOMFB	Headphone Ground
	MIPI-DSI-D3N	43	44	HP-DET	Headphone detection
HDMI signal output	HTXCN	45	46	PA-SHDN-N	Amplifier Enable
	HTXCP	47	48	MICIN1	MIC interface
	HTX0N	49	50	MICIN2	
	HTX0P	51	52	VMIC	MIC power output
	HTX1N	53	54	LCD-B0	RGB888 signal output
Ground	GND	55	56	GND	Ground
HDMI signal output	HTX1P	57	58	LCD-B1	
	HTX2N	59	60	LCD-B2	
	HTX2P	61	62	LCD-B3	
HDMI HPD detection	HHPD	63	64	LCD-B4	
HDMI DDC Channel	HSCL	65	66	LCD-B5	
	HSDA	67	68	LCD-B6	
HDMI CEC	HCEC	69	70	LCD-B7	
HDMI 5V output	HDMI-5V	71	72	LCD-G0	
	VBUS0	73	74	LCD-G1	

USBOTG	USB-DM0	75	76	LCD-G2	RGB888 Signal output
	USB-DP0	77	78	LCD-G3	
	USB-ID	79	80	LCD-G4	
	USB-DRVVBUS	81	82	LCD-G5	
USB HOST	USB-DM1	83	84	LCD-G6	
	USB-DP1	85	86	LCD-G7	
	USB-DM2	87	88	LCD-R0	
	USB-DP2	89	90	LCD-R1	
Wi-Fi P-supply 3.3 400mA	VCC--WIFI-IO	91	92	LCD-R2	
	VCC--WIFI	93	94	LCD-R3	
SDIO Signal	WL-SDIO-D0	95	96	LCD-R4	
	WL-SDIO-D1	97	98	LCD-R5	
	WL-SDIO-D2	99	100	LCD-R6	
	WL-SDIO-D3	101	102	LCD-R7	
	WL-SDIO-CMD	103	104	LCD-CLK	
Ground	GND	105	106	GND	Ground
	GND	107	108	GND	
SDIO Signal	WL-SDIO-CLK	109	110	LCD-DE	RGB888 DE output
SDIO WIFI control signal	WL-REG-ON	111	112	LCD-HSYNC	RGB888line Synchronize
	WL-WAKE-AP	113	114	LCD-VSYNC	RGB888Fieldsynchronize
BT Control signal	AP-WAKE-BT	115	116	LCD-BL-EN	Screen backlight 0
	BT-WAKE-AP	117	118	LCD-PWM	Backlight PWM adjust 0
	BT-RST-N	119	120	LCD-BL-EN1	Screen backlight 1
	AP-CK32KO	121	122	LCD-PWM1	Backlight PWM adjust 1
BT UART communication	AP-UART3-CTS	123	124	PWRON	Power On/Off
	AP-UART3-RTS	125	126	RTC_INT_OUT	RTC interrupt output
	AP-UART3-RX	127	128	TWI3-SCK	I2C
	AP-UART3-TX	129	130	TWI3-SDA	
BT PCM interface	BT-PCM-CLK	131	132	TWI1-SCK	
	BT-PCM-SYNC	133	134	TWI1-SDA	
	BT-PCM-DOUT	135	136	SPI0_CS0	SPI
	BT-PCM-DIN	137	138	SPI0_MOSI	
Infrared IR input	IR_RX	139	140	SPI0_MISO	
AD input detection pin	KEYADC0	141	142	SPI0_CLK	
Force upgrade detection	UBOOT	143	144	SPI2_CS0	
RGMII Signal interface	RGMII_ERXD3	145	146	SPI2_MOSI	
	RGMII_ERXD2	147	148	SPI2_MISO	
	RGMII_ERXD1	149	150	SPI2_CLK	
	RGMII_ERXD0	151	152	GPIO_PI3	GPIO
	RGMII_ETXD3	153	154	GPIO_PI4	
	RGMII_ETXD2	155	156	GPIO_PI5	
Ground	GND	157	158	GND	Ground

RGMII Signal interface	RGMII_ETXD1	159	160	GPIO_PI6	GPIO
	RGMII_ETXD0	161	162	GPIO_PI7	
	RGMII_ERXCK	163	164	GPIO_PI8	
	RGMII_ERXERR	165	166	GPIO_PI9	
	RGMII_ERXDV	167	168	GPIO_PI10	
	RGMII_EMDC	169	170	GPIO_PI11	
	RGMII_EMDIO	171	172	GPIO_PI13	
	RGMII_ETXEN	173	174	GPIO_PI14	
	RGMII_ETXCK	175	176	GPIO_PI15	
	RGMII_ECRS	177	178	GPIO_PI16	
	RGMII_ECOL	179	180	AP-UART7-TX	
	RGMII_ERESSET#	181	182	AP-UART7-RX	
EMAC P-supply 3.3V 500mA	EMAC-VCC	183	184	AP-UART2-TX	TTL UART
Network port indicator control	LED3/PHYAD3	185	186	AP-UART2-RX	
Network port indicator control	LED0/PHYAD0	187	188	AP-UART0-TX	
EMAC signal, external transformer	RD-	189	190	AP-UART0-RX	
	RD+	191	192	AP-UART4-TX	
Transformer shaft voltage output	PWFBOUT	193	194	AP-UART4-RX	
EMAC Signal, external transformer	TD-	195	196	AP-UART5-TX	
	TD+	197	198	AP-UART5-RX	
Ground	GND	199	200	GND	Ground

4 Sizes

4.1 Board Size

PCB: Length 67.7mm, Width 55.4mm, Height 5.5mm, For more details structural diagrams Please consult our sales representatives.

