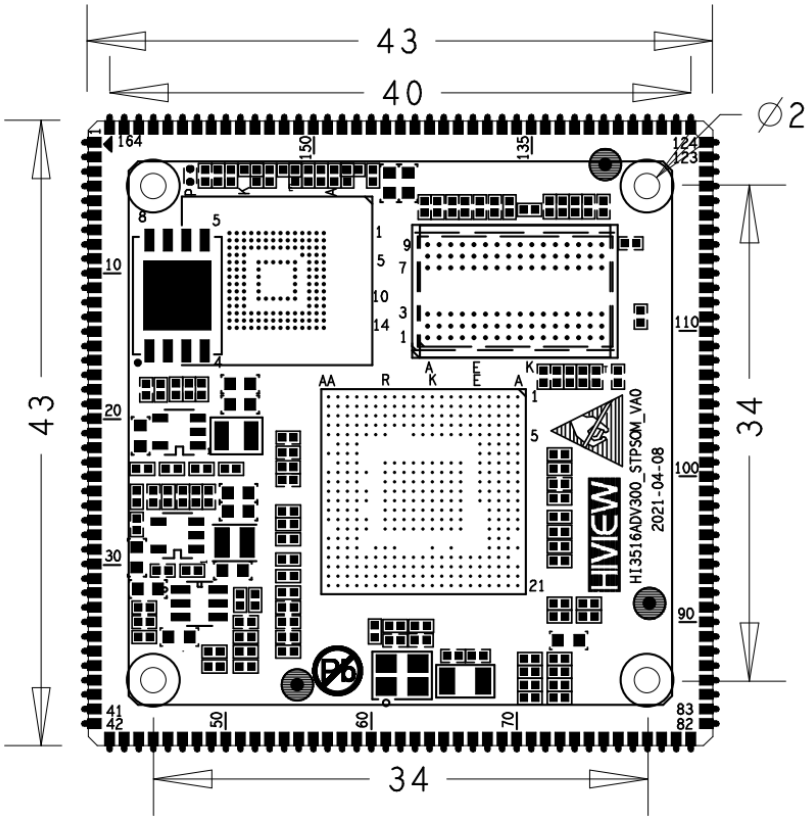
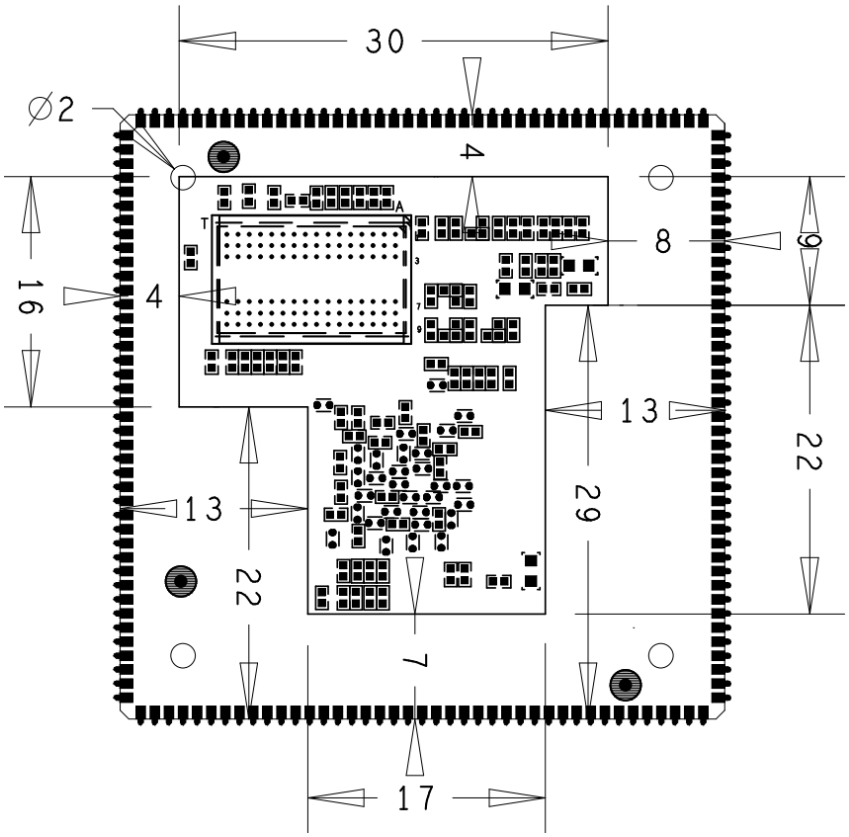
深圳海视通科技有限公司

Hi3516DV300_STPSOM DATASHEET

✯ 产品展示/PRODUCT DISPLAY



正面图　TOP VIEW



反面图 BOTTOM VIEW

✯ 硬件参数/HARDWARE INDEX

Size	L*W*H=43mmx43mmx3.0mm
CPU	HI3516DV300,Dual-core, ARM Cortex-A7@900MHZ
NPU	1.0 TOPS NPU
Memory	DDR3 ,1G(512M,2G can be selected)
Flash	EMMC 8G（4G,16G can be selected），SPI NOR/NAND can be selected
Operating voltage	DC 3.3V,Maximum power 1W（no any external device）
Operating system	Linux4.9.37
Operating temperature	-25℃～75℃
Life cycle	5 years

✯ 常用接口/COMMON INTERFACE

UART interface	5 UART,UART0 is for Debug
USB interface	1 USB2.0 Host/Device interface
GPIO interface	80 GPIO
PWM interface	2 PWM
MIPI CSI interface	2 MIPI CSI， Maximum resolution support 2688x1536@30fps
VI interface	1 BT601,BT656,BT1120 interface

MIPI DSI interface	1 MIPI DSI maximum resolution support 1920x1080@60fps
HDMI interface	1 HDMI 1.4 output， maximum resolution support 1920x1080@60fps
Audio in interface	1 MIC differential input or single-end dual-channel input
Audio out interface	1 single-end dual-channel output
SDIO interface	2 SDIO 3.0
I2C interface	6 I2C
SPI interface	3 SPI
ADC interface	2-channel LSADC
Ethernet	1 EMAC PHY,support RMII mode,10/100Mbit/s full-duplex or half-duplex
IR interface	1 IR interface
System update	Support USB or Micro SD update， Ethernet update

✯ 核心板接口定义说明/SOM BOARD INTERFACE DEFINITION DESCRIPTION

No	Single name	Voltage	I/O state	Default function	Other multiplex function
1	GND	0V			
2	MIPI_RX0_D1N	1.8V	I	MIPI_RX0_D1N	
3	MIPI_RX0_D1P	1.8V	I	MIPI_RX0_D1P	
4	GND	0V		GND	
5	MIPI_RX0_CK1N/VI_DATA8	1.8V	I	MIPI_RX0_CK1N	
6	MIPI_RX0_CK1P/VI_DATA9	1.8V	I	MIPI_RX0_CK1P	
7	GND	0V		GDN	
8	MIPI_RX0_D3N/VI_DATA10	1.8V	I	MIPI_RX0_D3N	
9	MIPI_RX0_D3P/VI_DATA11	1.8V	I	MIPI_RX0_D3P	
10	GND	0V		GND	
11	MIPI_RX0_D0N	1.8V	I	MIPI_RX0_D0N	
12	MIPI_RX0_D0P	1.8V	I	MIPI_RX0_D0P	
13	GND	0V		GDN	
14	MIPI_RX0_D2P/VI_DATA14	1.8V	I	MIPI_RX0_D2P	
15	MIPI_RX0_D2N/VI_DATA15	1.8V	I	MIPI_RX0_D2N	
16	GND	0V		GND	
17	MIPI_RX0_CK0P/VI_DATA12	1.8V	I	MIPI_RX0_CK0P	
18	MIPI_RX0_CK0N/VI_DATA13	1.8V	I	MIPI_RX0_CK0N	
19	GND	0V			
20	SPI0_CSN/I2C1_SCL	1.8V	I/O	I2C1_SCL	GPIO4_5/SPI_3LINE_CSN/SENSOR_HS
21	SPI0_SDO/I2C0_SDA	1.8V	I/O	I2C0_SDA	GPIO4_3/SPI_3LINE_SDATA
22	SPI0_SDI/I2C1_SDA	1.8V	I/O	I2C1_SDA	GPIO4_4/SENSOR_VS
23	SPI0_SCLK/I2C0_SCL	1.8V	I/O	I2C0_SCL	GPIO4_2/SPI_3LINE_SCLK

24	GND	0V		GND	
25	VI_DATA4/VO_DATA4/SPI2_SCLK	1.8V	I	VI_DATA4	GPIO3_4/UART2_RTSN
26	VI_DATA2/VO_DATA2/I2C6_SCL	1.8V	I	VI_DATA2	GPIO3_2
27	VI_DATA5/VO_DATA5/SPI2_SDO	1.8V	I	VI_DATA5	GPIO3_5/UART2_CTSN
28	VI_DATA3/VO_DATA3/I2C6_SDA	1.8V	I	VI_DATA3	GPIO3_3
29	GND	0V		GND	
30	VI_DATA7/VO_DATA7/SPI2_CSN	1.8V	I	VI_DATA7	GPIO3_7/UART2_TXD
31	VI_DATA6/VO_DATA6/SPI2_SDI	1.8V	I	VI_DATA6	GPIO3_6/UART2_RXD
32	VI_DATA1/VO_DATA1/I2C5_SDA	1.8V	I	VI_DATA1	GPIO3_1
33	VI_VS/SENSOR_VS/SENSOR1_CLK	1.8V	O	SENSOR1_CLK	GPIO4_6/FLASH_TRIGE
34	GND	0V		GND	
35	VI_DATA0/VO_DATA0/I2C5_SCL	1.8V	I	VI_DATA0	GPIO3_0
36	GND	0V		GND	
37	VI_HS/SENSOR_HS/SENSOR1_RSTN	1.8V	O	SENSOR1_RSTN	GPIO4_7/SHUTTER_TRIGE
38	GND	0V		GND	
39	VI_CLK/VO_CLK	1.8V	I	VI_CLK	
40	GND	0V		GND	
41	SENSOR0_RSTN/BOOT_SEL1	1.8V	O	SENSOR0_RSTN	GPIO4_1
42	SENSOR0_CLK	1.8V	O	SENSOR0_CLK	GPIO4_0
43	GND	0V		GND	
44	LSADC_CH1	3.3V	I	LSADC_CH1	GPIO10_4
45	I2C2_SCL	3.3V	I/O	I2C2_SCL	GPIO5_7
46	I2C2_SDA	3.3V	I/O	I2C2_SDA	GPIO5_6
47	UART1_RTSN	3.3V	I/O	UART1_RTSN	GPIO5_0/UART4_RXD
48	UART1_CTSN	3.3V	I/O	UART1_CTSN	GPIO5_1/UART4_TXD
49	AC_MICBIAS	3.3V	O	AC_MICBIAS	
50	GND	0V		GND	
51	AC_INL	3.3V	I	AC_INL	
52	GND	0V		GND	
53	AC_INR	3.3V	I	AC_INR	
54	GND	0V		GND	
55	AC_OUTL	3.3V	O	AC_OUTL	
56	GND	0V		GND	
57	AC_OUTR	3.3V	O	AC_OUTR	
58	GND	0V		GND	

59	UART0_RXD	3.3V	I	UART0_RXD	GPIO5_4
60	UART0_TXD	3.3V	O	UART0_TXD	GPIO5_5
61	UART1_RXD	3.3V	I	UART1_RXD	GPIO5_2
62	UART1_TXD	3.3V	O	UART1_TXD	GPIO5_3
63	GND	0V		GND	
64	DDRIO_PWM0	3.3V	O	PWM0	GPIO6_6
65	PWM_OUT0_LCD	3.3V	O	PWM1	GPIO6_7
66	LSADC_CH0	3.3V	I	LSADC_CH0	GPIO10_3
67	PWR_RSTN	1.8V	I/O	PWR_RSTN	
68	PWR_BUTTON	1.8V	I/O	PWR_BUTTON	
69	AVDD_BAT_RTC	3.3V	I	AVDD_BAT_RTC	
70	PWR_EN	1.8V	I/O	PWR_EN	GPIO11_3
71	DVDD3318_PC	1.8V	I	DVDD3318_PC	
72	PWR_STARTUP	1.8V	I/O	PWR_STARTUP	
73	PWR_WAKEUP	1.8V	I/O	PWR_WAKEUP	GPIO11_0
74	PWR_SEQ0	1.8V	I/O	PWR_SEQ0	GPIO11_1
75	PWR_SEQ1	1.8V	I/O	PWR_SEQ1	GPIO11_2
76	GND	0V		GND	
77	SDIO1_CDATA3	1.8V	I/O	SDIO1_CDATA3	GPIO6_5/EPHY_RSTN
78	SDIO1_CCMD	1.8V	I/O	SDIO1_CCMD	GPIO6_1/EPHY_CLK
79	SDIO1_CCLK_OUT	1.8V	I/O	SDIO1_CCLK_OUT	GPIO6_0/RMII_RX_DV
80	SDIO1_CDATA1	1.8V	I/O	SDIO1_CDATA1	GPIO6_3/MDIO
81	SDIO1_CDATA0	1.8V	I/O	SDIO1_CDATA0	GPIO6_2/MDCK
82	SDIO1_CDATA2	1.8V	I/O	SDIO1_CDATA2	GPIO6_4/RMII_TX_EN
83	JTAG_TRSTN/SPI1_SCLK	3.3V	I/O	GPIO8_0	RMII_TXD1/I2S_MCLK/GPIO8_0
84	JTAG_TCK/SPI1_SDO	3.3V	I/O	GPIO8_1	RMII_RXD1/I2S_BCLK_TX/GPIO8_1
85	JTAG_TDI/SPI1_CSN1	3.3V	I/O	GPIO8_4	LCD_DATA23/I2S_SD_RX/GPIO8_4
86	JTAG_TMS/SPI1_CSN0	3.3V	I/O	GPIO8_2	RMII_TXD0/I2S_WS_TX/GPIO8_2
87	JTAG_TDO/SPI1_SDI	3.3V	I/O	GPIO8_3	RMII_RXD0/I2S_SD_TX/GPIO8_3
88	GND	0V		GND	
89	LCD_CLK	3.3V	I/O	GPIO0_6	GPIO0_6/VOU656_CLK/VO1120_CLK
90	GND	0V		GND	
91	LCD_DATA7	3.3V	I/O	EPHY_CLK	GPIO7_7/VOU656_DATA0/VOU1120_DATA0
92	LCD_DATA5	3.3V	I/O	MDIO	GPIO8_5/VOU_DATA2/VOU1120_DATA2
93	LCD_DATA4/BOOT_SEL0	3.3V	I/O	MDCK/BOOT_SEL0	GPIO8_6/VOU_DATA3/VOU1120_DATA3

94	LCD_DATA3/SFC_DEVICE_MODE	3.3V	I/O	EPHY_RSTN/SFC_DEVICE_MODE	GPIO7_6/VOU656_DATA4/VOU1120_DATA4
95	LCD_DATA2	3.3V	I/O	RMII_TX_EN	GPIO7_0/VOU656_DATA5/VOU1120_DATA5
96	LCD_DATA1	3.3V	I/O	RMII_TXD1	TEST_CLK/VOU656_DATA6/VOU1120_DATA6/GPIO8_7
97	LCD_DATA0	3.3V	I/O	RMII_TXD0	GPIO7_1/VOU656_DATA7/VOU1120_DATA7
98	LCD_HSYNC	3.3V	I/O	RMII_CLK	GPIO7_2
99	LCD_VSYNC	3.3V	I/O	RMII_RXD1	GPIO7_4
100	LCD_DE	3.3V	I/O	RMII_RXD0	GPIO7_5
101	GND	0V		GND	
102	LCD_DATA6	3.3V	I/O	RMII_RX_DV	GPIO7_3/VOU656_DATA1/VOU1120_DATA1
103	GND	0V		GND	
104	LCD_DATA22	3.3V	I/O	GPIO0_5	
105	GND	0V		GND	
106	DSI_D3N/LCD_DATA17/LCD1_CLK	1.8V	I/O	DSI_D3N	GPIO9_1/FLASH_TRIG
107	DSI_D3P/LCD_DATA16/LCD1_DATA5	1.8V	I/O	DSI_D3P	GPIO9_0/SHUTTER_TRIG
108	GND	0V		GND	
109	DSI_D2N/LCD_DATA14/LCD1_DATA3	1.8V	I/O	DSI_D2N	GPIO9_2/VOU1120_DATA9
110	DSI_D2P/LCD_DATA15/LCD1_DATA4	1.8V	I/O	DSI_D2P	GPIO9_3/VOU1120_DATA8
111	GND	0V		GND	
112	DSI_CKP/LCD_DATA12/LCD1_DATA1	1.8V	I/O	DSI_CKP	GPIO9_4/VOU1120_DATAT11
113	DSI_CKN/LCD_DATA13/LCD1_DATA2	1.8V	I/O	DSI_CKN	GPIO9_5/VOU1120_DATA10
114	GND	0V		GND	
115	DSI_D0P/LCD_DATA8/LCD1_DE	1.8V	I/O	DSI_D0P	GPIO10_0/VOU1120_DATA15
116	DSI_D0N/LCD_DATA9/LCD1_VSYNC	1.8V	I/O	DSI_D0N	GPIO10_1/VOU_DATA14
117	GND	0V		GND	
118	DSI_D1N/LCD_DATA10/LCD1_HSYNC	1.8V	I/O	DSI_D1N	GPIO9_6/VOU1120_DATA13
119	DSI_D1P/LCD_DATA11/LCD1_DATA0	1.8V	I/O	DSI_D1P	GPIO9_7/VOU1120_DATA12
120	GND	0V		GND	
121	I2C3_SCL	3.3V	I/O	I2C3_SCL	GPIO0_2/LCD_DATA19
122	I2C3_SDA	3.3V	I/O	I2C3_SDA	GPIO0_1/LCD_DATA20
123	TP_INT	3.3V	I/O	GPIO0_4	LCD_DATA21

124	TP_RST	3.3V	I/O	GPIO0_3	IR_IN/LCD_DATA18
125	UPDATE_MODE	3.3V	I/O	GPIO0_0	
126	SDIO0_CARD_DETECT	1.8V	I/O	SDIO0_CARD_DETECT	GPIO1_1
127	DVDD3318_SDIO_VOUT	1.8V	POWER OUT	DVDD3318_SDIO_VOUT	
128	SDIO0_CDATA0	1.8V	I/O	SDIO0_CDATA0	GPIO1_4
129	GND	0V		GND	
130	SDIO0_CDATA1	1.8V	I/O	SDIO0_CDATA1	GPIO1_5/JTAG_TMS
131	GND	0V		GND	
132	SDIO0_CCMD	1.8V	I/O	SDIO0_CCMD	GPIO1_3
133	SDIO0_CDATA3	1.8V	I/O	SDIO0_CDATA3	GPIO1_7/JTAG_TDI
134	SDIO0_CARD_POWER_EN	1.8V	I/O	SDIO0_CARD_POWER_EN	GPIO1_0/JTAG_TCK
135	SDIO0_CDATA2	1.8V	I/O	SDIO0_CDATA2	GPIO1_6/JTAG_TDO
136	USB_OVRCUR	3.3V	I/O	USB_OVRCUR	GPIO2_0
137	GND	0V		GND	
138	USB_PWREN	3.3V	I/O	USB_PWREN	GPIO2_2
139	SDIO0_CCLK_OUT	1.8V	I/O	SDIO0_CCLK_OUT	GPIO1_2/JTAG_TRSTN
140	5V0_USB	5.0V	POWER IN,I/O	USB_VBUS	GPIO2_1
141	GND	0V		GND	
142	USB_DM	3.3V	I/O	USB_DM	
143	USB_DP	3.3V	I/O	USB_DP	
144	GND	0V		GND	
145	HDMI_SDA	3.3V	I/O	HDMI_SDA	GPIO2_6/UART3_RTSN/I2C4_SDA/FLASH_TRIG
146	HDMI_SCL	3.3V	I/O	HDMI_SCL	GPIO2_7/UART3_CTSN/I2C4_SCL/SHUTTER_TRIG
147	HDMI_CEC	3.3V	I/O	HDMI_CEC	GPIO2_5/UART3_TXD
148	HDMI_HOTPLUG	3.3V	I/O	HDMI_HOTPLUG	GPIO2_4/UART3_RXD/
149	GND	0V		GND	
150	HDMI_TXCN	3.3V	I/O	HDMI_TXCN	
151	HDMI_TXCP	3.3V	I/O	HDMI_TXCP	
152	GND	0V		GND	
153	HDMI_TX0N	3.3V	I/O	HDMI_TX0N	
154	HDMI_TX0P	3.3V	I/O	HDMI_TX0P	
155	GND	0V		GND	
156	HDMI_TX1N	3.3V	I/O	HDMI_TX1N	
157	HDMI_TX1P	3.3V	I/O	HDMI_TX1P	
158	GND	0V		GND	
159	HDMI_TX2N	3.3V	I/O	HDMI_TX2N	
160	HDMI_TX2P	3.3V	I/O	HDMI_TX2P	

161	GND	0V		GND	
162	GND	0V		GND	
163	3V3	3.3V	POWER IN		
164	3V3	3.3V	POWERIN		