深圳市海天雄电子有限公司
Shenzhen Haitianxiong Electronic Co., Ltd.

CES-IMX6UL-CORE（PIN）

Product Manual

ARM SOC Module

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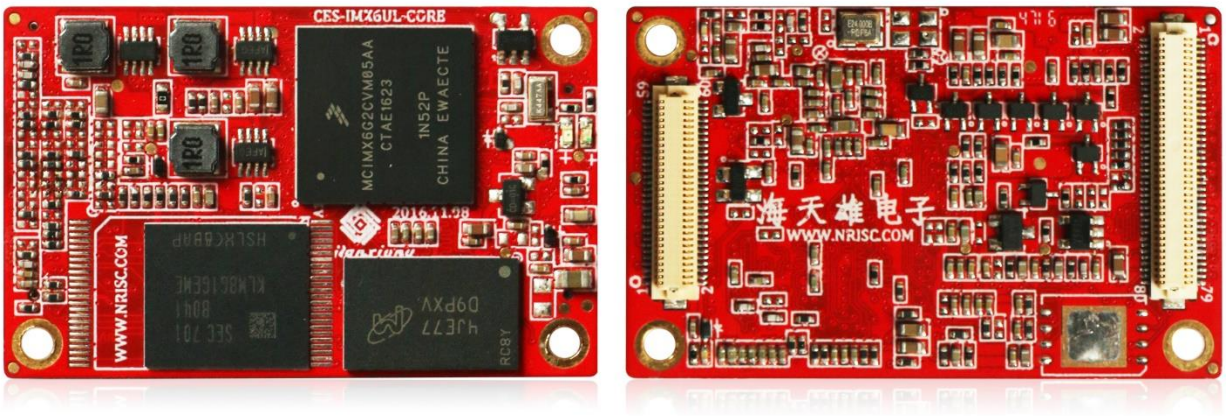

Introduction

CES-IMX6UL-CORE, adopt NXP ARM Cortex-A7 i.MX6UL processor, onboard 512MB DDR3 memory and 8GB high-speed eMMC4.5 storage, 32KB data cache, 32KB instruction cache, 128KB L2 cache. CES-IMX6UL-CORE provides rich functional interfaces, support LVDS and RGB 2* display control interface, 2* Ethernet interface, 3 *USB 2.0 HOST, 1* USB OTG, 3* UART serial port, 1* I2C1 interface, 1 *RS485 interface, 2 *CAN bus interface, 1 *CMOS CAMERA interface. CES-IMX6UL-CORE is suitable for different product applications, including automotive telematic, human-machine interface, IOT gateway, home energy management system, intelligent energy information concentrator, intelligent industrial control system, electronic POS equipment, portable medical equipment, printer and 2D scanner.

Feature

- Adopt NXP ARM Cortex-A7 i.MX6UL Processor
- 32KB data cache, 32KB instruction cache, 128KB L2 cache
- Onboard 512MB DDR3 and 8GB flash eMMC4.5
- Support LVDS and RGB Display Control Interfaces
- Support Linux4.1

Specification

Processor	
CPU	Use NXP ARM Cortex-A7 i.MX6UL processor
Cache	32KB/32KB Cache and 128KB L2 Cache
Storage	
DDR	512MB DDR3
FLASH	8GB eMMC, optional 16GB/32GB/64GB
B2B Connectors	
Connectors	Precision Hirose 0.5mm double row connector, 1* 2 * 30PIN connector and 1* 2 * 40PIN connector
Pin Numbers	140PIN
Pin Function	POWER、GPIO、ADC、RGB、I2C、UART、SPI、USB、CAN、PWM、RESET 等
B2B Fixed Hole	
Fixed Hole	3
Operation System	
System	Linux4.1
Environment	
Work Environment	Temperature: -10~60℃，Humidity: 5%~90%RH@31℃, no condensation
Storage Environment	Temperature: -40~85℃， Humidity: 5%-95%RH@39℃, no condensation
Size	
Size(mm)	42*58mm

Pin Definition

J1				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	CAN1_TX /UART3_CTS	H15	UART3_CTS_B	CAN/UART
2	UART3_TXD	H17	UART3_TX_DATA	UART
3	CAN1_RX /UART3_RTS	G14	UART3_RTS_B	CAN/UART
4	UART3_RXD	H16	UART3_RX_DATA	UART
5	UART5_TXD	F17	UART5_TX_DATA	UART
6	UART4_TXD	G17	UART4_TX_DATA	UART
7	UART5_RXD	G13	UART5_RX_DATA	UART
8	UART4_RXD	G16	UART4_RX_DATA	UART
9	GND			Power Ground
10	GND			Power Ground
11	ENET2_TX_CLK/ECSPI4_MISO	D17	ENET2_RX_DATA1	LAN/SPI
12	ENET1_TX_CLK/	F14	ENET2_TX_DATA1	LAN
13	ENET2_RXER/ECSPI4_SS0	D16	ENET2_RX_EN	LAN/SPI
14	ENET1_RXER	D15	ENET1_RX_ER	LAN
15	ENET2_RXD0	C17	ENET2_RX_DATA0	LAN
16	ENET1_RXD0	F16	ENET1_RX_DATA0	LAN
17	ENET2_RXD1	C16	ENET2_RX_DATA1	LAN
18	ENET1_RXD1	E17	ENET1_RX_DATA1	LAN
19	ENET2_CRS_DV	B17	ENET2_RX_EN	LAN
20	ENET1_CRS_DV	E16	ENET1_RX_EN	LAN
21	ENET2_TXEN/ ECSPI4_MOSI	B15	ENET2_TX_EN	LAN/SPI
22	ENET1_TXEN	F15	ENET1_TX_EN	LAN
23	ENET2_TXD1/ ECSPI4_SCLK	A16	ENET2_TX_DATA1	LAN/SPI
24	ENET1_TXD1	E14	ENET1_TX_DATA1	LAN
25	ENET2_TXD0	A15	ENET2_TX_DATA0	LAN
26	ENET1_TXD0	E15	ENET1_TX_DATA0	LAN
27	LCD_DATA23	B16	LCD_DATA23	LCD
28	GND			Power Ground
29	LCD_DATA21	B14	LCD_DATA21	LCD
30	LCD_DATA22	A14	LCD_DATA22	LCD

31	LCD_DATA19	D14	LCD_DATA19	LCD
32	LCD_DATA20	C14	LCD_DATA20	LCD
33	LCD_DATA17	B13	LCD_DATA17	LCD
34	LCD_DATA18	A13	LCD_DATA18	LCD
35	LCD_DATA15	D13	LCD_DATA15	LCD
36	LCD_DATA16	C13	LCD_DATA16	LCD
37	LCD_DATA13	B12	LCD_DATA13	LCD
38	LCD_DATA14	A12	LCD_DATA14	LCD
39	LCD_DATA11	D12	LCD_DATA11	LCD
40	LCD_DATA12	C12	LCD_DATA12	LCD
41	LCD_DATA9	A11	LCD_DATA9	LCD
42	LCD_DATA10	E12	LCD_DATA10	LCD
43	LCD_DATA7	D11	LCD_DATA7	LCD
44	LCD_DATA8	B11	LCD_DATA8	LCD
45	LCD_DATA5	B10	LCD_DATA5	LCD
46	LCD_DATA6	A10	LCD_DATA6	LCD
47	LCD_DATA3	D10	LCD_DATA3	LCD
48	LCD_DATA4	C10	LCD_DATA4	LCD
49	LCD_DATA1	A9	LCD_DATA1	LCD
50	LCD_DATA2	E10	LCD_DATA2	LCD
51	LCD_RST	E9	LCD_RESET	LCD
52	LCD_DATA0	B9	LCD_DATA0	LCD
53	LCD_PCLK	A8	LCD_CLK	LCD
54	LCD_HSYNC	D9	LCD_HSYNC	LCD
55	LCD_DE	B8	LCD_ENABLE	LCD
56	LCD_VSYNC	C9	LCD_VSYNC	LCD
57	GND			Power Ground
58	GND			Power Ground
59	SD1_DATA1	B2	SD1_DATA1	SD/MMC
60	SD1_DATA0	B3	SD1_DATA0	SD/MMC
61	SD1_DATA3	A2	SD1_DATA3	SD/MMC
62	SD1_DATA2	B1	SD1_DATA2	SD/MMC
63	SD1_CLK	C1	SD1_CLK	SD/MMC
64	SD1_CMD	C2	SD1_CMD	SD/MMC
65	GND			Power Ground
66	GND			Power Ground
67	CSI_MCLK/I2C1_SDA	F5	CSI_MCLK	CAMERA/I2C
68	CSI_PIXCLK/I2C1_SCL	E5	CSI_PIXCLK	CAMERA/I2C
69	CSI_DATA6/GPIO4_27	D2	CSI_DATA06	CAMERA/GPIO

70	CSI_DATA7/GPIO4_28	D1	CSI_DATA07	CAMERA/GPIO
71	CSI_DATA4 /GPIO4_25	D4	CSI_DATA04	CAMERA/GPIO
72	CSI_DATA5/GPIO4_26	D3	CSI_DATA05	CAMERA/GPIO
73	CSI_DATA2 /GPIO4_23	E2	CSI_DATA02	CAMERA/GPIO
74	CSI_DATA3 /GPIO4_24	E1	CSI_DATA03	CAMERA/GPIO
75	CSI_DATA0 /GPIO4_21	E4	CSI_DATA00	CAMERA/GPIO
76	CSI_DATA1 /GPIO4_22	E3	CSI_DATA01	CAMERA/GPIO
77	CSI_HSYNC /I2C2_SCL	F3	CSI_HSYNC	CAMERA/I2C
78	CSI_VSYNC /I2C2_SDA	F2	CSI_VSYNC	CAMERA/I2C
79	GND			Power Ground
80	NVCC_CSI			DC Power（input）

J2				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	GND			Power Ground
2	DCDC_5V			DC 5V Power（input）
3	GND			Power Ground
4	DCDC_5V			DC 5V Power（input）
5	GND			Power Ground
6	VDD_COIN_3V			RTC Power（input）
7	PMIC_ON_REQ	T9	SNVS_PMIC_ON_REQ	PMIC Control pin (output)
8	PMIC_STBY_REQ	U9	CCM_PMIC_STBY_REQ	PMIC Control pin (output)
9	BOOT_MODE1/ SHIFT_SHCP	U10	BOOT_MODE1	BOOT MODE/GPIO
10	NC			NC
11	BOOT_MODE0/ SHIFT_SDI	T10	BOOT_MODE0	BOOT MODE/GPIO
12	ONOFF	R8	ONOFF	ONOFF
13	USB_OTG2_VBUS	U12	USB_OTG2_VBUS	USB
14	POR_B	P8	POR_B	POR_B
15	USB_OTG2_DP	U13	USB_OTG2_DP	USB

16	USB_OTG1_VBUS	T12	USB_OTG1_VBUS	USB
17	USB_OTG2_DN	T13	USB_OTG2_DN	USB
18	USB_OTG1_DP	U15	USB_OTG1_DP	USB
19	GND			Power Ground
20	USB_OTG1_DN	T15	USB_OTG1_DN	USB
21	CLK1_N	P16	CCM_CLK1_N	LVDS
22	GND			Power Ground
23	CLK1_P	P17	CCM_CLK1_P	LVDS
24	NUSB_OTG_CHD	U16	USB_OTG1_CHD_B	USB
25	GND			Power Ground
26	GND			Power Ground
27	TEMPSENSOR_ALERT/SNVS_TAMPER8	N9	GPIO5_IO08/SNVS_TAMPER8	GPIO
28	ENET2_nRST/SNVS_TAMPER9	R6	GPIO5_IO09/SNVS_TAMPER9	GPIO
29	ENET2_nINT/SNVS_TAMPER6	N11	GPIO5_IO06/SNVS_TAMPER6	INT/GPIO
30	ENET1_nRST/SNVS_TAMPER7	N10	GPIO5_IO07/SNVS_TAMPER7	GPIO
31	AUD_INT/SNVS_TAMPER4	P9	GPIO5_IO04/SNVS_TAMPER4	INT/GPIO
32	ENET1_nINT/SNVS_TAMPER5	N8	GPIO5_IO05/SNVS_TAMPER5	INT/GPIO
33	SPK_CTL/SNVS_TAMPER2	P11	GPIO5_IO02/SNVS_TAMPER2	GPIO
34	SNVS_TAMPER3	P10	GPIO5_IO03/SNVS_TAMPER3	GPIO
35	PWM_Buzzer/SNVS_TAMPER0	R10	GPIO5_IO00/SNVS_TAMPER0	GPIO
36	TOUCH_INT/SNVS_TAMPER1	R9	GPIO5_IO01/SNVS_TAMPER1	INT/GPIO
37	SAI2_TXD/JTAG_NTRST	N14	JTAG_TRST_B	AUDIO/JTAG
38	JTAG_MOD	P15	JTAG_MOD	JTAG
39	SAI2_MCLK/JTAG_TMS	P14	JTAG_TMS	AUDIO/JTAG
40	SAI2_RXD /JTAG_TCK	M14	JTAG_TCK	AUDIO/JTAG
41	SAI2_SYNC /JTAG_TDO	N15	JTAG_TDO	AUDIO/JTAG
42	SAI2_BCLK /JTAG_TDI	N16	JTAG_TDI	AUDIO/JTAG

43	BLT_PWM/GPIO_8	N17	GPIO1_IO08	PWM/GPIO
44	JSETUART1/GPIO_9	M15	GPIO1_IO09	GPIO
45	ENET_MDIO/GPIO_6	K17	GPIO1_IO06	LAN/GPIO
46	ENET_MDC/GPIO_7	L16	GPIO1_IO07	LAN/GPIO
47	ADC1_IN4/GPIO_4	M16	GPIO1_IO04	ADC/GPIO
48	GPIO_5	M17	GPIO1_IO05	GPIO
49	ADC1_IN2/GPIO_2	L14	GPIO1_IO02	ADC/GPIO
50	ADC1_IN3/GPIO_3	L17	GPIO1_IO03	ADC/GPIO
51	USB_OTG1_ID /GPIO_0	K13	GPIO1_IO00	USB/GPIO
52	ADC1_IN1/GPIO_1	L15	GPIO1_IO01	ADC/GPIO
53	UART2_TXD	J17	UART2_TX_DATA	UART
54	UART1_TXD	K14	UART1_TX_DATA	UART
55	UART2_RXD	J16	UART2_RX_DATA	UART
56	UART1_RXD	K16	UART2_RX_DATA	UART
57	CAN2_TX /UART2_CTS	J15	UART2_CTS_B	CAN/UART
58	RS485_R/D /UART1_CTS	K15	UART1_CTS_B	RS485/UART
59	CAN2_RX /UART2_RTS	H14	UART2_RTS_B	CAN/UART
60	SD1_CD /UART1_RTS	J14	UART1_RTS_B	SD/UART

Service Support

Technical Support Mailbox：

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Technical Support Service Hours：

Monday to Friday：9：00～12：00，13：30～18：00

Statement

The information in this manual is for reference only and is subject to change without notice.

For more product information, visit www.nrisc.cn

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