深圳大经技术有限公司
Shenzhen Dajtech Co.,Ltd

CES-4412S-CORE

Product Manual

ARM SOC Module

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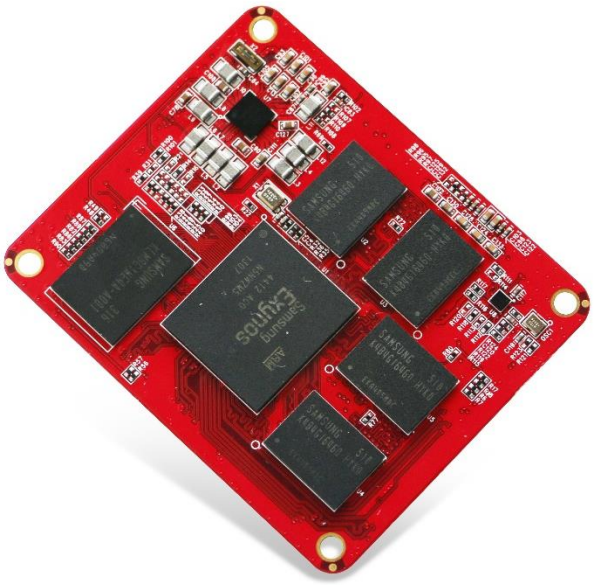

Introduction

CES-4412S-CORE, based on Samsung Cortex-A9 series Exynos4412 quad-core application processor, selection of SCP package, onboard integrated 2GB DDR3, 8GB eMMC, provides a dedicated Samsung power management chip which makes the system be more stable and reliable.

CES-4412S-CORE, with a small size 53.5 * 65mm, core board and expansion board is connected by the high reliability of Panasonic connector, four fixed holes, 400 function pins, to meet the application of different environment. Provide rich display interfaces of HDMI, VGA and LCD. With peripheral interfaces as USB, UART, I2C, I2S, SPI and extendable GPIO.

The CES-4412S-CORE is an excellent Android ARM motherboard system targeted at a variety of product applications including medical equipment, automotive electronic, POS machine, touch machine, industrial control equipment, self-service refueling equipment, handheld PDAs and others Industry products.

Features

- Onboard Samsung High Performance Quad Core Processor，Cortex-A9 Architecture Exynos4412, frequency 1.4～1.6GHz
- Onboard 2GB DDR3，8GB eMMC
- Selection of SCP package, hardware is reliable, stable, relatively simple process
- Latest 32nm process technology, greatly reducing the system power consumption, can be applied to a wider area
- Support 2D / 3D image acceleration
- Support MPEG-4/H.263/H.264 Format Codec，up to 1080p@30fps
- Support 10M/100M Ethernet
- Support USB2.0、USB OTG2.0、UART、SD CARD、GPIO、Camera
- Support Android4.4.4、Linux 3.0

Specification

Processor	
CPU	Samsung ARM Cortex™-A9 Exynos4412 Quad-Core processor, frequency 1.4-1.6GHz，封装：FCFBGA-786，0.65mm pitch
Cache	32KB（Instruction）/32KB（Data）Cache and 1MB L2 Cache
Storage	
Memory	2GB DDR3
Flash	8GB eMMC
PMIC	
Chipset	S5M8767A
B2B Connector	
Connector Type	4* Panasonic 0.5mm double row 2 * 50PIN connector
PIN Number	400PIN
B2B Fixing Hole	
Fixing Hole	4
Operating System	
Operating System	Optional Android 4.4.4、Embedded Linux 3.0
Environment	
Working Environment	Temperature：-10~60℃，Humidity：5%~95%RH@31℃ no condensation
Storage Environment	Temperature：-40~85℃，Humidity：5%~95%RH@39℃ no condensation
Size	
Size(mm)	53.5*65mm

Pin Definition

J1				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	XURXD2/UART_AUDIO_RXD	AC20	XuRXD2/UART_AUDIO_RXD/GPA1_0	UART
2	XURXD3/UART_AUDIO_RXD	AC24	XuRXD3/UART_AUDIO_RXD/GPA1_4	UART
3	XUTXD2/UART_AUDIO_TXD	AD25	XuTXD2/UART_AUDIO_TXD/GPA1_1	UART
4	XUTXD3UART_AUDIO_TXD	AD26	XuTXD3UART_AUDIO_TXD/GPA1_5	UART
5	XUCTSN2/I2C_3_SDA	AE27	XuCTSn2/I2C_3_SDA/GPA1_2	UART
6	XURXD1	AF22	XuRXD1/GPA0_4	UART
7	XURTSN2/I2C_3_SCL	AB18	XuRTSn2/I2C_3_SCL/GPA1_3	UART
8	XUTXD1	AC18	XuTXD1/GPA0_5	UART
9	XURXD0	AD22	XuRXD0/GPA0_0	UART
10	XUCTSN1	AD19	XuCTSn1/I2C_2_SDA/GPA0_6	UART
11	XUTXD0	AE25	XuTXD0/GPA0_1	UART
12	XURTSN1	AG25	XuRTSn1/I2C_2_SCL/GPA0_7	UART
13	XUCTSN0	AF25	XuCTSn0/GPA0_2	UART
14	GND			Power Ground
15	XURTSN0	AF23	XuRTSn0/GPA0_3	UART
16	GND			Power Ground
17	I2C_SDA7	AC19	XpwmTOUT2/I2C_7_SDA/GPD0_2	I2C
18	XPWMTOUT0/LCD_FRM	AE24	XpwmTOUT0/LCD_FRM/GPD0_0	PWM
19	I2C_SCL7	AC17	XpwmTOUT3/I2C_7_SCL/GPD0_3	I2C
20	XPWMTOUT1/LCD_PWM	AD24	XpwmTOUT1/LCD_PWM/GPD0_1	PWM
21	I2C_SDA1	AF26	Xi2c1SDA/GPD1_2	I2C
22	I2C_SDA0	AF27	Xi2c0SDA/MIPI0_BYTE_CLK/GPD1_0	I2C
23	I2C_SCL1	AG26	Xi2c1SCL/GPD1_3	I2C
24	I2C_SCL0	AG27	Xi2c0SCL/MIPI0_ESC_CLK/GPD1_1	I2C
25	GND			Power Ground
26	XSPICLK1/IEM_SCLK	AE23	XspiCLK1/IEM_SCLK/GPB_4	SPI
27	I2C_SDA5	AH27	XspiMISO0/I2C_5_SDA/GPB_2	I2C
28	XSPICLK0/I2C_4_SDA	AD20	XspiCLK0/I2C_4_SDA/GPB_0	SPI
29	I2C_SCL5	AF21	XspiMOSI0/I2C_5_SCL/GPB_3	I2C
30	XSPICSN0/I2C_4_SCL	AE21	XspiCSn0/I2C_4_SCL/GPB_1	SPI

31	GND			Power Ground
32	XI2S1SCLK/PCM_1_SCLK/AC97BITCLK	AE20	Xi2s1SCLK/PCM_1_SCLK/AC97BITCLK/GPC0_0	I2S/PCM/AC97
33	XI2S1LRCK/PCM_1_FSYNC/AC97SYNC	AH26	Xi2s1LRCK/PCM_1_FSYNC/AC97SYNC/GPC0_2	I2S/PCM/AC97
34	XI2S1CDCLK/PCM_1_EXTCLK/AC97RESETN	AG23	Xi2s1CDCLK/PCM_1_EXTCLK/AC97RESETn/GPC0_1	I2S/PCM/AC97
35	XI2S1SDO/PCM_1_SOUT/AC97SDO	AH23	Xi2s1SDO/PCM_1_SOUT/AC97SDO/GPC0_4	I2S/PCM/AC97
36	XI2S1SDI/PCM_1_SIN/AC97SDI	AJ26	Xi2s1SDI/PCM_1_SIN/AC97SDI/GPC0_3	I2S/PCM/AC97/SPDIF
37	GND			Power Ground
38	XI2S2SCLK/PCM_2_SCLK/SPDIF_0_OUT	AH24	Xi2s2SCLK/PCM_2_SCLK/SPDIF_0_OUT/GPC1_0	I2S/PCM/SPDIF
39	I2C_SDA6	AJ25	Xi2s2SDI/PCM_2_SIN/I2C_6_SDA/SPI_2_MISO/GPC1_3	I2C
40	XI2S2CDCLK/PCM_2_EXTCLK/SPDIF_EXTCLK/SPI_2_CLK	AH25	Xi2s2CDCLK/PCM_2_EXTCLK/SPDIF_EXTCLK/SPI_2_CLK/GPC1_	I2S/PCM/SPDIF/SPI
41	I2C_SCL6	AG22	Xi2s2SDO/PCM_2_SOUT/I2C_6_SCL/SPI_2_MOSI/GPC1_4	I2C
42	XI2S2LRCK/PCM_2_FSYNC/SPI_2_NSS	AG24	Xi2s2LRCK/PCM_2_FSYNC/SPI_2_nSS/GPC1_2	I2S/PCM/SPI
43	GND			Power Ground
44	GND			Power Ground
45	XHDMITX1P	AJ21	XHDMITX1P	HDMI
46	XHDMITX2P	AJ22	XHDMITX2P	HDMI
47	XHDMITX1N	AK21	XHDMITX1N	HDMI
48	XHDMITX2N	AK22	XHDMITX2N	HDMI
49	XHDMITXCP	AJ19	XHDMITXCP	HDMI
50	XHDMITX0P	AJ20	XHDMITX0P	HDMI
51	XHDMITXCN	AK19	XHDMITXCN	HDMI
52	XHDMITX0N	AK20	XHDMITX0N	HDMI
53	GND			Power Ground
54	GND			Power Ground
55	XVVSYNC/LCD_VSYNC	AG18	XvVSYNC/GPF0_1	LCD
56	XVHSYNC/LCD_HSYNC	AG17	XvHSYNC/GPF0_0	LCD
57	XVVCLK/LCD_VCLK	AH16	XvVCLK/GPF0_3	LCD
58	XVVDEN/LCD_VDEN	AF17	XvVDEN/GPF0_2	LCD
59	XVVD1	AB14	XvVD1/GPF0_5	LCD
60	XVVD0	AG19	XvVD0/GPF0_4	LCD

61	XVVD3	AE14	XvVD3/GPF0_7	LCD
62	XVVD2	AD18	XvVD2/GPF0_6	LCD
63	XVVD5	AB15	XvVD5/GPF1_1	LCD
64	XVVD4	AF19	XvVD4/GPF1_0	LCD
65	XVVD7	AB13	XvVD7/GPF1_3	LCD
66	XVVD6	AD14	XvVD6/GPF1_2	LCD
67	XVVD9	AG20	XvVD9/GPF1_5	LCD
68	XVVD8	AD16	XvVD8/GPF1_4	LCD
69	XVVD11	AG16	XvVD11/GPF1_7	LCD
70	XVVD10	AE19	XvVD10/GPF1_6	LCD
71	XVVD13	AC15	XvVD13/GPF2_1	LCD
72	XVVD12	AF15	XvVD12/GPF2_0	LCD
73	XVVD15	AF16	XvVD15/GPF2_3	LCD
74	XVVD14	AF18	XvVD14/GPF2_2	LCD
75	XVVD17	AF13	XvVD17/GPF2_5	LCD
76	XVVD16	AC13	XvVD16/GPF2_4	LCD
77	XVVD19	AE18	XvVD19/GPF2_7	LCD
78	XVVD18	AD15	XvVD18/GPF2_6	LCD
79	XVVD21	AE16	XvVD21/GPF3_1	LCD
80	XVVD20	AE17	XvVD20/GPF3_0	LCD
81	XVVD23	AF14	XvVD23/GPF3_3	LCD
82	XVVD22	AG12	XvVD22/GPF3_2	LCD
83	XVSYS_OE	AC14	XvSYS_OE/GPF3_5	LCD
84	XVVSYNC_LDI	AC16	XvVSYNC_LDI/GPF3_4	LCD
85	GND			Power Ground
86	GND			Power Ground
87	XMIPIMDP1	AJ16	XMIPIMDP1	MIPI DSI
88	XMIPIMDP0	AJ17	XMIPIMDP0	MIPI DSI
89	XMIPIMDN1	AK16	XMIPIMDN1	MIPI DSI
90	XMIPIMDN0	AK17	XMIPIMDN0	MIPI DSI
91	XMIPIMDP2	AJ14	XMIPIMDP2	MIPI DSI
92	XMIPIMDPCLK	AJ15	XMIPIMDPCLK	MIPI DSI
93	XMIPIMDN2	AK14	XMIPIMDN2	MIPI DSI
94	XMIPIMDNCLK	AK15	XMIPIMDNCLK	MIPI DSI
95	GND			Power Ground
96	XMIPIMDP3	AJ13	XMIPIMDP3	MIPI DSI
97	GND			Power Ground
98	XMIPIMDN3	AK13	XMIPIMDN3	MIPI DSI
99	GND			Power Ground
100	GND			Power Ground

J2				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	XEINT10/KP_COL2/ALV_DBG6	H6	XEINT10/KP_COL2/ALV_DBG6/GPX1_2	XEINT/KEY/GPIO
2	XEINT9/KP_COL1/ALV_DBG5	B5	XEINT9/KP_COL1/ALV_DBG5/GPX1_1	XEINT/KEY/GPIO
3	XEINT12/KP_COL4/ALV_DBG8	H7	XEINT12/KP_COL4/ALV_DBG8/GPX1_4	XEINT/KEY/GPIO
4	XEINT11/KP_COL3/ALV_DBG7	D7	XEINT11/KP_COL3/ALV_DBG7/GPX1_3	XEINT/KEY/GPIO
5	XEINT14/KP_COL6/ALV_DBG10	D1	XEINT14/KP_COL6/ALV_DBG10/GPX1_6	XEINT/KEY/GPIO
6	XEINT13/KP_COL5/ALV_DBG9	E2	XEINT13/KP_COL5/ALV_DBG9/GPX1_5	XEINT/KEY/GPIO
7	XEINT17/KP_ROW1/ALV_DBG13	F9	XEINT17/KP_ROW1/ALV_DBG13/GPX2_1	XEINT/KEY/GPIO
8	XEINT16/KP_ROW0/ALV_DBG12	F8	XEINT16/KP_ROW0/ALV_DBG12/GPX2_0	XEINT/KEY/GPIO
9	XEINT20/KP_ROW4/ALV_DBG16	C4	XEINT20/KP_ROW4/ALV_DBG16/GPX2_4	XEINT/KEY/GPIO
10	XEINT18/KP_ROW2/ALV_DBG14	G5	XEINT18/KP_ROW2/ALV_DBG14/GPX2_2	XEINT/KEY/GPIO
11	XEINT22/KP_ROW6/ALV_DBG18	E9	XEINT22/KP_ROW6/ALV_DBG18/GPX2_6	XEINT/KEY/GPIO
12	XEINT21/KP_ROW5/ALV_DBG17	E6	XEINT21/KP_ROW5/ALV_DBG17/GPX2_5	XEINT/KEY/GPIO
13	XEINT24/KP_ROW8/ALV_DBG20	C3	XEINT24/KP_ROW8/ALV_DBG20/GPX3_0	XEINT/KEY/GPIO
14	XEINT23/KP_ROW7/ALV_DBG19	E7	XEINT23/KP_ROW7/ALV_DBG19/GPX2_7	XEINT/KEY/GPIO
15	XEINT26/KP_ROW10/ALV_DBG22	G9	XEINT26/KP_ROW10/ALV_DBG22/GPX3_2	XEINT/KEY/GPIO
16	XEINT25/KP_ROW9/ALV_DBG21	B4	XEINT25/KP_ROW9/ALV_DBG21/GPX3_1	XEINT/KEY/GPIO
17	XEINT28/KP_ROW12/ALV_DBG24	H9	XEINT28/KP_ROW12/ALV_DBG24/GPX3_4	XEINT/KEY/GPIO
18	XEINT27/KP_ROW11/ALV_DBG23	B6	XEINT27/KP_ROW11/ALV_DBG23/GPX3_3	XEINT/KEY/GPIO
19	XEINT30/HDMI_CEC/ALV_DBG26	G6	XEINT30/HDMI_CEC/ALV_DBG26/GPX3_6	XEINT/HDMI/GPIO
20	XEINT29/KP_ROW13/ALV_DBG25	C7	XEINT29/KP_ROW13/ALV_DBG25/GPX3_5	XEINT/KEY/GPIO

21	GND			Power Ground
22	XEINT31/HDMI_HPD/ ALV_DBG27	B3	XEINT31/HDMI_HPD/ALV_DBG27/GPX3 _7	XEINT/HDMI/GPIO
23	XUHOSTOVERCUR	AE1	XuhostOVERCUR/ETC6_7	USB HSIC
24	XUHOSTPWREN	AE4	XuhostPWREN/ETC6_6	USB HSIC
25	XHSICSTROBE1	D8	XhsicSTROBE1	USB HSIC
26	XHSICSTROBE0	A6	XhsicSTROBE0	USB HSIC
27	XHSICDATA1	E8	XhsicDATA1	USB HSIC
28	XHSICDATA0	A7	XhsicDATA0	USB HSIC
29	GND			Power Ground
30	GND			Power Ground
31	XUOTGVBUS	B8	XuotgVBUS	USB OTG 2.0
32	XUOTGDRVBUS	AD3	XuotgDRVVBUS/ETC6_5	USB OTG 2.0
33	GND			Power Ground
34	XUOTGDM	A8	XuotgDM	USB OTG 2.0
35	XUOTGID	D9	XuotgID	USB OTG 2.0
36	XUOTGDP	A9	XuotgDP	USB OTG 2.0
37	GND			Power Ground
38	GND			Power Ground
39	UH_DP2			USB HOST PORT2
40	UH_DP3			USB HOST PORT3
41	UH_DM2			USB HOST PORT2
42	UH_DM3			USB HOST PORT3
43	GND			Power Ground
44	UH_DP1			USB HOST PORT1
45	VSYS			DC power supply 5V(input)
46	UH_DM1			USB HOST PORT1
47	VSYS			DC power supply 5V(input)
48	GND			Power Ground
49	VSYS			DC power supply 5V(input)
50	VSYS			DC power supply 5V(input)
51	VSYS			DC power supply 5V(input)
52	VSYS			DC power supply 5V(input)
53	VSYS			DC power supply 5V(input)
54	VSYS			DC power supply 5V(input)
55	GND			Power Ground
56	GND			Power Ground
57	GND			Power Ground
58	GND			Power Ground
59	VDD12_5M			PMU Power BUCK6(Output)1.2V 1.5A

60	VDD12_5M			PMU Power BUCK6(Output)1.2V 1.5A
61	VDD12_5M			PMU Power BUCK6(Output)1.2V 1.5A
62	VDD12_5M			PMU Power BUCK6(Output)1.2V 1.5A
63	VDD12_5M			PMU Power BUCK6(Output)1.2V 1.5A
64	VDD12_5M			PMU Power BUCK6(Output)
65	GND			Power Ground
66	GND			Power Ground
67	CHG_DOK			PMU F9 JIGONB
68	ACOKB_CHARGER			PMU D6 ACOKB
69	GPS_32K			PMU C8 CP32K
70	PWRON			PMU E7 PWRON
71	GND			Power Ground
72	V_BKCOIN			PMU C7 BKCOIN (RTC Power, input)
73	VDD18_A31			PMU VLDO26(Output)
74	VDD18_A31			PMU VLDO26(Output)
75	VDDIOPERI_18			PMU VLDO13(Output)
76	VDDIOPERI_18			PMU VLDO13(Output)
77	GND			Power Ground
78	GND			Power Ground
79	VDD18_CAM			PMU VLDO25(Output)
80	VDD18_CAM			PMU VLDO25(Output)
81	GND			Power Ground
82	GND			Power Ground
83	VDD33_LCD			PMU VLDO9(Output)
84	VDD33_LCD			PMU VLDO9(Output)
85	GND			Power Ground
86	GND			Power Ground
87	VDD_TF			PMU VLDO23(Output)
88	VDD_TF			PMU VLDO23(Output)
89	VDD33_A31			PMU VLDO24(Output)
90	VDD33_A31			PMU VLDO24(Output)
91	GND			Power Ground
92	GND			Power Ground
93	VDD15_CAM			PMU VLDO21(Output)
94	VDD15_CAM			PMU VLDO21(Output)
95	VDD28_CAM			PMU VLDO20(Output)
96	VDD28_CAM			PMU VLDO20(Output)
97	GND			Power Ground

98	GND			Power Ground
99	VDDIOPERI_28			PMU VLDO18(Output)
100	VDDIOPERI_28			PMU VLDO18(Output)

J3				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	XCIVSYNC	AH11	XciVSYNC/GPJ0_1	CAMERA
2	XCIPCLK	AD12	XciPCLK/GPJ0_0	CAMERA
3	XCIDATA0	AF11	XciDATA0/GPJ0_3	CAMERA
4	XCIHREF	AE12	XciHREF/GPJ0_2	CAMERA
5	XCIDATA2	AE13	XciDATA2/GPJ0_5	CAMERA
6	XCIDATA1	AG11	XciDATA1/GPJ0_4	CAMERA
7	XCIDATA4	AC11	XciDATA4/GPJ0_7	CAMERA
8	XCIDATA3	AD13	XciDATA3/GPJ0_6	CAMERA
9	XCIDATA6	AC12	XciDATA6/GPJ1_1	CAMERA
10	XCIDATA5	AF12	XciDATA5/GPJ1_0	CAMERA
11	XCICLKENB	AG10	XciCLKenb/GPJ1_3	CAMERA
12	XCIDATA7	AE11	XciDATA7/GPJ1_2	CAMERA
13	GND			Power Ground
14	XCIFIELD	AD11	XciFIELD/GPJ1_4	CAMERA
15	GND			Power Ground
16	GND			Power Ground
17	XMIPISDP1	AJ11	XMIPISDP1	MIPI CSI
18	XMIPISDP0	AJ12	XMIPISDP0	MIPI CSI
19	XMIPISDN1	AK11	XMIPISDN1	MIPI CSI
20	XMIPISDN0	AK12	XMIPISDN0	MIPI CSI
21	XMIPISDP2	AJ9	XMIPISDP2	MIPI CSI
22	XMIPISDPCLK	AJ10	XMIPISDPCLK	MIPI CSI
23	XMIPISDN2	AK9	XMIPISDN2	MIPI CSI
24	XMIPISDNCLK	AK10	XMIPISDNCLK	MIPI CSI
25	GND			Power Ground
26	XMIPISDP3	AJ8	XMIPISDP3	MIPI CSI
27	GND			Power Ground
28	XMIPISDN3	AK8	XMIPISDN3	MIPI CSI
29	GND			Power Ground
30	GND			Power Ground

31	XADCAIN1	AE10	XADCAIN1	ADC
32	XADCAIN0	AF10	XADCAIN0	ADC
33	XADCAIN3	AB11	XADCAIN3	ADC
34	XADCAIN2	AD10	XADCAIN2	ADC
35	GND			Power Ground
36	GND			Power Ground
37	CAMB_D1	AE9	XispRGB1/CAM_B_DATA1/TS_VAL/T_Data1/GPM0_2	CAMERA
38	CAMB_D0	AC9	XispRGB0/CAM_B_DATA0/TS_SYNC/T_Data0/GPM0_1	CAMERA
39	CAMB_D3	AG9	XispRGB3/CAM_B_DATA3/TS_ERROR/T_Data3/GPM0_4	CAMERA
40	CAMB_D2	AD9	XispRGB2/CAM_B_DATA2/TS_DATA/T_Data2/GPM0_3	CAMERA
41	CAMB_D5	AG8	XispRGB5/CAM_B_DATA5/XhsiCADATA/T_Data5/GPM0_6	CAMERA
42	CAMB_D4	AF8	XispRGB4/CAM_B_DATA4/XhsiCAWAKE/T_Data4/GPM0_5	CAMERA
43	CAMB_D7	AE8	XispRGB7/CAM_B_DATA7/XhsiACREADY/T_Data7/GPM1_0	CAMERA
44	CAMB_D6	AH9	XispRGB6/CAM_B_DATA6/XhsiCAFLAG/T_Data6/GPM0_7	CAMERA
45	GPM1_2	AD8	XispRGB9/XhsiACDATA/T_Data8/GPM1_2	GPIO
46	CAMB_FIELD	AG7	XispRGB8/CAM_B_FIELD/XhsiACWAKE/T_Ctl/GPM1_1	CAMERA
47	GPM1_4	AH8	XispRGB11/XhsiCAREADY/T_Data10/GPM1_4	GPIO
48	GPM1_3	AG4	XispRGB10/XhsiACFLAG/T_Data9/GPM1_3	GPIO
49	GPM1_6	AG6	XispRGB13/T_Data12/GPM1_6	GPIO
50	GPM1_5	AF4	XispRGB12/T_Data11/GPM1_5	GPIO
51	CAMB_HREF	AF5	XispHSYNC/CAM_B_HREF/T_Data14/GPM2_1	CAMERA
52	CAMB_VSYNC	AD7	XispVSYNC/CAM_B_VSYNC/T_Data13/GPM2_0	CAMERA
53	CAMB_PCLK	AF9	XispPCLK/CAM_B_PCLK/TS_CLK/T_Clk/GPM0_0	CAMERA
54	CAMB_CLKOUT	AE5	XispMCLK/CAM_B_CLKOUT/T_Data15/GPM2_2	CAMERA
55	GPM3_0	AH2	XispGP2/MPWM3_OUT_ISP/GPM3_0	GPIO
56	GPM2_3	AG3	XispGP0/MPWM1_OUT_ISP/GPM2_3	GPIO
57	GPM3_2	AD6	XispGP4/MPWM5_OUT_ISP/CAM_SPI1_MISO/GPM3_2	GPIO

58	GPM3_1	AF3	XispGP3/MPWM4_OUT_ISP/GPM3_1	GPIO
59	GND			Power Ground
60	GPM3_4	AG5	XispGP6/nRTS_UART_ISP/GPM3_4	GPIO
61	XISPI2C1SCL	AE6	XispI2C1SCL/CAM_GPIO12/CAM_SPI1_CLK/GPM4_2	I2C
62	ISP_SCL	AF6	XispI2C0SCL/CAM_GPIO10/GPM4_0	I2C
63	XISPI2C1SDA	AF7	XispI2C1SDA/CAM_GPIO13/CAM_SPI1_nSS/GPM4_3	I2C
64	ISP_SDA	AE7	XispI2C0SDA/CAM_GPIO11/GPM4_1	I2C
65	GND			Power Ground
66	GND			Power Ground
67	XMIPI2LSDPCLK	AJ5	XMIPI2LSDPCLK	MIPI CSI
68	XMIPI2LSDP0	AJ6	XMIPI2LSDP0	MIPI CSI
69	XMIPI2LSDNCLK	AK5	XMIPI2LSDNCLK	MIPI CSI
70	XMIPI2LSDN0	AK6	XMIPI2LSDN0	MIPI CSI
71	GND			Power Ground
72	XMIPI2LSDP1	AJ4	XMIPI2LSDP1	MIPI CSI
73	GND			Power Ground
74	XMIPI2LSDN1	AK4	XMIPI2LSDN1	MIPI CSI
75	GND			Power Ground
76	GND			Power Ground
77	XISPSPIMISO	AH3	XISPSPIMISO	SPI
78	XISPSPICLK	AH1	XISPSPICLK	SPI
79	XISPSPIMOSI	AF1	XISPSPIMOSI	SPI
80	XISPSPICSN	AG2	XISPSPICSN	SPI
81	GND			Power Ground
82	GND			Power Ground
83	XJTMS	AE2	XjTMS/ETC0_1	JTAG
84	XJTRSTN	AD5	XjTRSTn/ETC0_0	JTAG
85	XJTDI	AD1	XjTDI/ETC0_3	JTAG
86	XJTCK	AE3	XjTCK/ETC0_2	JTAG
87	GND			Power Ground
88	XJTDO	AD2	XjTDO/ETC0_4	JTAG
89	GPL0_2	AC3	XGNSS_IMAG/GPL0_2	GPIO
90	GPL0_1	AC2	XGNSS_ISIGN/GPL0_1	GPIO
91	GPL0_4	AC5	XGNSS_QMAG/GPL0_4	GPIO
92	GPL0_3	AB1	XGNSS_QSIGN/GPL0_3	GPIO
93	GPL1_0	AC4	XGNSS_SCL/GPL1_0	GPIO
94	GPL0_6	AB2	XGNSS_RF_RSTN/GPL0_6	GPIO
95	GPL2_0	AA4	XGNSS_GPIO_0/GPL2_0	GPIO

96	GPL1_1	AA1	XGNSS_SDA/GPL1_1	GPIO
97	GPL2_2	AB4	XGNSS_GPIO_2/GPL2_2	GPIO
98	GPL2_1	AB5	XGNSS_GPIO_1/GPL2_1	GPIO
99	GPL2_4	AA6	XGNSS_GPIO_4/GPL2_4	GPIO
100	GPL2_3	AB3	XGNSS_GPIO_3/GPL2_3	GPIO

J4				
PIN NO.	Signal Name	CPU Ball Number	CPU Ball Name	Remark
1	GND			Power Ground
2	GPL2_5	AA5	XGNSS_GPIO_5/GPL2_5	GPIO
3	XI2S0CDCLK/PCM_0_EXTCLK	AA3	Xi2s0CDCLK/PCM_0_EXTCLK/GPZ1	I2S/PCM
4	XI2S0SCLK/PCM_0_SCLK	AA2	Xi2s0SCLK/PCM_0_SCLK/GPZ0	I2S/PCM
5	XI2S0SDI/PCM_0_SIN	Y4	Xi2s0SDI/PCM_0_SIN/GPZ3	I2S/PCM
6	XI2S0LRCK/PCM_0_FSYNC	Y2	Xi2s0LRCK/PCM_0_FSYNC/GPZ2	I2S/PCM
7	XI2S0SDO_1/ST_TICK	W4	Xi2s0SDO_1/ST_TICK/GPZ5	I2S/PCM
8	XI2S0SDO_0/PCM_0_SOUT	Y3	Xi2s0SDO_0/PCM_0_SOUT/GPZ4	I2S/PCM
9	GND			Power Ground
10	XI2S0SDO_2/ST_INT	Y1	Xi2s0SDO_2/ST_INT/GPZ6	I2S
11	GND			Power Ground
12	GND			Power Ground
13	XM0CSN1/NF_CSN3	R4	Xm0CSn1/NF_CSn3/MP00_1	EBI (XM0)
14	XM0CSN0/NF_CSN2	Y5	Xm0CSn0/NF_CSn2/MP00_0	EBI (XM0)
15	XM0CSN3/NF_CSN1/OND_CSN1	W5	Xm0CSn3/NF_CSn1/OND_CSn1/MP00_3	EBI (XM0)
16	XM0CSN2/NF_CSN0/OND_CSN0	Y7	Xm0CSn2/NF_CSn0/OND_CSn0/MP00_2	EBI (XM0)
17	XM0WEN	Y6	Xm0WEn/MP00_5	EBI (XM0)
18	XM0OEN	W7	Xm0OEn/MP00_4	EBI (XM0)
19	XM0BEN1	V6	Xm0BEn1/MP01_1	EBI (XM0)
20	XM0BEN0	H4	Xm0BEn0/MP01_0	EBI (XM0)
21	XM0DATA_RDN	R3	Xm0DATA_RDn/MP01_3	EBI (XM0)
22	XM0WAITN	V7	Xm0WAITn/MP01_2	EBI (XM0)

23	XM0FALE/NF_ALE/OND_SMCLK	P3	Xm0FALE/OND_SMCLK/MP02_1	EBI (XM0)
24	XM0FCLE/NF_CLE/OND_ADDRVALID	T5	Xm0FCLE/OND_ADDRVALID/MP02_0	EBI (XM0)
25	XM0FRNB1/NF_RNB1/OND_INT1	V5	Xm0FRnB1/OND_INT1/MP02_3	EBI (XM0)
26	XM0FRNB0/NF_RNB0/OND_INT0	W6	Xm0FRnB0/OND_INT0/MP02_2	EBI (XM0)
27	XM0FRNB3/NF_RNB3	U8	Xm0FRnB3/MP02_5	EBI (XM0)
28	XM0FRNB2/NF_RNB2/OND_RPN	U7	Xm0FRnB2/OND_RPn/MP02_4	EBI (XM0)
29	XM0DATA1	L3	Xm0DATA1/MP05_1	EBI (XM0)
30	XM0DATA0	K3	Xm0DATA0/MP05_0	EBI (XM0)
31	XM0DATA3	U3	Xm0DATA3/MP05_3	EBI (XM0)
32	XM0DATA2	U2	Xm0DATA2/MP05_2	EBI (XM0)
33	XM0DATA5	V2	Xm0DATA5/MP05_5	EBI (XM0)
34	XM0DATA4	T1	Xm0DATA4/MP05_4	EBI (XM0)
35	XM0DATA7	W1	Xm0DATA7/MP05_7	EBI (XM0)
36	XM0DATA6	W2	Xm0DATA6/MP05_6	EBI (XM0)
37	XM0DATA9	N3	Xm0DATA9/MP06_1	EBI (XM0)
38	XM0DATA8	M3	Xm0DATA8/MP06_0	EBI (XM0)
39	XM0DATA11	U1	Xm0DATA11/MP06_3	EBI (XM0)
40	XM0DATA10	T2	Xm0DATA10/MP06_2	EBI (XM0)
41	XM0DATA13	V1	Xm0DATA13/MP06_5	EBI (XM0)
42	XM0DATA12	V3	Xm0DATA12/MP06_4	EBI (XM0)
43	XM0DATA15	W3	Xm0DATA15/MP06_7	EBI (XM0)
44	XM0DATA14	J3	Xm0DATA14/MP06_6	EBI (XM0)
45	XM0ADDR1	T3	Xm0ADDR1/MP03_1	EBI (XM0)
46	XM0ADDR0	T6	Xm0ADDR0/MP03_0	EBI (XM0)
47	XM0ADDR3	U4	Xm0ADDR3/MP03_3	EBI (XM0)
48	XM0ADDR2	U6	Xm0ADDR2/MP03_2	EBI (XM0)
49	XM0ADDR5	P4	Xm0ADDR5/MP03_5	EBI (XM0)
50	XM0ADDR4	T8	Xm0ADDR4/MP03_4	EBI (XM0)
51	XM0ADDR7	T4	Xm0ADDR7/MP03_7	EBI (XM0)
52	XM0ADDR6	T7	Xm0ADDR6/MP03_6	EBI (XM0)
53	XM0ADDR9_XHSICADATA	P5	Xm0ADDR9/XhsiCADATA/MP04_1	EBI (XM0)
54	XM0ADDR8_XHSICAWAKE	U5	Xm0ADDR8/XhsiCAWAKE/MP04_0	EBI (XM0)

55	XM0ADDR11_XHSIACREADY	R5	Xm0ADDR11/XhsiACREADY/MP04_3	EBI (XM0)
56	XM0ADDR10_XHSICAFLAG	R7	Xm0ADDR10/XhsiCAFLAG/MP04_2	EBI (XM0)
57	XM0ADDR13_XHSIACDATA	R8	Xm0ADDR13/XhsiACDATA/MP04_5	EBI (XM0)
58	XM0ADDR12_XHSIACWAKE	P6	Xm0ADDR12/XhsiACWAKE/MP04_4	EBI (XM0)
59	XM0ADDR15_XHSICAREADY	R6	Xm0ADDR15/XhsiCAREADY/MP04_7	EBI (XM0)
60	XM0ADDR14_XHSIACFLAG	P7	Xm0ADDR14/XhsiACFLAG/MP04_6	EBI (XM0)
61	GND			Power Ground
62	GND			Power Ground
63	XMMC1CMD	J2	Xmmc1CMD/GPK1_1	SD/MMC
64	XMMC1CLK	R2	Xmmc1CLK/GPK1_0	SD/MMC
65	GND			Power Ground
66	XMMC1CDN/GNSS_GPIO9/SD_4_NRESET_OUT	P1	Xmmc1CDn/GNSS_GPIO9/SD_4_nRESET_OUT/GPK1_2	SD/MMC
67	XMMC2CMD	J4	Xmmc2CMD/GPK2_1	SD/MMC
68	XMMC2CLK	N4	Xmmc2CLK/GPK2_0	SD/MMC
69	XMMC2DATA0	J5	Xmmc2DATA0/GPK2_3	SD/MMC
70	XMMC2CDN/GNSS_GPIO10	M4	Xmmc2CDn/GNSS_GPIO10/GPK2_2	SD/MMC
71	XMMC2DATA2	K4	Xmmc2DATA2/GPK2_5	SD/MMC
72	XMMC2DATA1	K5	Xmmc2DATA1/GPK2_4	SD/MMC
73	GND			Power Ground
74	XMMC2DATA3	N5	Xmmc2DATA3/GPK2_6	SD/MMC
75	XMMC3CMD	N6	Xmmc3CMD/GPK3_1	SD/MMC
76	XMMC3CLK	L6	Xmmc3CLK/GPK3_0	SD/MMC
77	XMMC3DATA0/SD_2_DATA4	M6	Xmmc3DATA0/SD_2_DATA4/GPK3_3	SD/MMC
78	XMMC3CDN/GNSS_GPIO11	L5	Xmmc3CDn/GNSS_GPIO11/GPK3_2	SD/MMC
79	XMMC3DATA2/SD_2_DATA6	N7	Xmmc3DATA2/SD_2_DATA6/GPK3_5	SD/MMC
80	XMMC3DATA1/SD_2_DATA5	M7	Xmmc3DATA1/SD_2_DATA5/GPK3_4	SD/MMC
81	GND			Power Ground
82	XMMC3DATA3/SD_2_DATA7	M5	Xmmc3DATA3/SD_2_DATA7/GPK3_6	SD/MMC

83	XOM3	G3	XOM3	SYSTEM OPTION
84	XOM2	G1	XOM2	SYSTEM OPTION
85	XNRESET	F7	XnRESET/ETC6_0	XNRESET
86	XOM5	G2	XOM5	SYSTEM OPTION
87	XNRSTOUT	A4	XnRSTOUT/ETC6_2	XNRSTOUT
88	XCLKOUT	G4	XCLKOUT/ETC6_1	XCLKOUT
89	XPWRRGTON	F1	XPWRRGTON	XPWRRGTON
90	XNWRESET	F2	XnWRESET/ETC6_3	XNWRESET
91	GND			Power Ground
92	GND			Power Ground
93	XEINT1/AUD_TMS/GNSS_TMS/ALV_TMS	E5	XEINT1/AUD_TMS/GNSS_TMS/ALV_TMS/GPX0_1	XEINT/GPIO
94	XEINT0/AUD_TCK/GNSS_TCK/ALV_TCK	F4	XEINT0/AUD_TCK/GNSS_TCK/ALV_TCK/GPX0_0	XEINT/GPIO
95	XEINT4/AUD_TRSTN/GNSS_TRSTN/ALV_DBG0	E1	XEINT4/AUD_TRSTn/GNSS_TRSTn/ALV_DBG0/GPX0_4	XEINT/GPIO
96	XEINT3/AUD_TDO/GNSS_TDO/ALV_TDO	D4	XEINT3/AUD_TDO/GNSS_TDO/ALV_TDO/GPX0_3	XEINT/GPIO
97	XEINT6/ALV_DBG2	D3	XEINT6/ALV_DBG2/GPX0_6	XEINT/GPIO
98	XEINT5/ALV_DBG1	E3	XEINT5/ALV_DBG1/GPX0_5	XEINT/GPIO
99	XEINT8/KP_COL0/ALV_DBG4	A3	XEINT8/KP_COL0/ALV_DBG4/GPX1_0	XEINT/KEY/GPIO
100	XEINT7/ALV_DBG3	D5	XEINT7/ALV_DBG3/GPX0_7	XEINT/GPIO

Service Support

Technical Support Mailbox：

TEL：0755-86325375 86325376

E-mail：ces_support@ces-tech.com

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

Shenzhen Dajtech Co.,Ltd

ADD：6th Floor,Skyworth Digital Building, Songbai Road, Shiyan Street,Baoan District, Shenzhen, China.

TEL：+86-755-86325375 86325376

E-mail：ces_market@ces-tech.com