CM5_HighSpeed
File: CM5_HighSpeed.kicad_sch

UP2-AH-1-TH
J5
- 1 +5v
- 2
- 3
- 4
GND
SH

- USB2_P
- USB2_N

Connectors
_ _ _ _ _ _
HDMI 0
HDMI 1
CSI/DSI 0
CSI/DSI 1

- PCIE_TX_P
- PCIE_TX_N
- PCIE_RX_P
- PCIE_RX_N
- PCIE_CLK_P
- PCIE_CLK_N
- PCIE_nRST
- PCIE_nCLKREQ
- PCIE_PWR_EN
- PCIE_nWAKE

+5v — +5v
+3.3v — +3.3v

SDA0 SCL0 ID_SD ID_SC CAM_GPIO0 CAM_GPIO1 USBOTG_ID GPIO_VREF

PCIe-M2

Connectors
_ _ _ _ _ _
M2 MKey

+5v — +5v

- PCIE_PWR_EN
- UART_TX
- USER_BUTTON
- PWR_DSBLE_P
- W_DIS_P
- UART_RX
- DTR
- RI
- EEDATA

File: PCIe-M2.kicad_sch

+5v
C9 100n   C18 100n
GND

SDA0 SCL0 CAM_GPIO0 CAM_GPIO1 USBOTG GPIO_VREF

+5v — +5v
+3.3v — +3.3v

CC1 — CC1
CC2 — CC2

Connectors
_ _ _ _ _ _
Ethernet
SDCARD
40way RPI
Jumpers
Fan
Battery

CM5_GPIO (Ethernet
File: CM5_GPIO.kicad_sch

ECLK EEDATA GPIO_RX UART_RX W_DIS_P USB_DCARD UART_TX USER_LED PWR_DSBLE_P RI DTR USB_BUTTON

H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole
H5 MountingHole
H6 MountingHole
H7 MountingHole
H8 MountingHole

Mostafa Bkair
E-SMART SOLUTIONS
Sheet: /
File: CM5IO.kicad_sch
Title: Compute Module 5 IO
Size: A4 | Date: | Rev: 1
KiCad E.D.A. 9.0.0 | Id: 1/4

Module1B
ComputeModule5-CM5
2x 10164227-1001A1RLF
Amphenol

USB 3 Pairs P/N swapped to help routing
Stacked USB connectors

Pin	Signal		Signal	Pin
102	PCIe_nCLKREQ		USB_OTG_ID	101
104	PCIE_nWAKE		USB2_N	103
106	PCIE_PWR_EN		USB2_P	105
108	GND		GND	107
110	PCIe_CLK_P		PCIe_nRST	109
112	PCIe_CLK_N		VBUS_EN	111
114	GND		GND	113
116	PCIe_RX_P		MIPI0_D0_N	115
118	PCIe_RX_N		MIPI0_D0_P	117
120	GND		GND	119
122	PCIe_TX_P		MIPI0_D1_N	121
124	PCIe_TX_N		MIPI0_D1_P	123
126	GND		GND	125
128	USB3-0-RX_N		MIPI0_C_N	127
130	USB3-0-RX_P		MIPI0_C_P	129
132	GND		GND	131
134	USB3-0-D_P		MIPI0_D2_N	133
136	USB3-0-D_N		MIPI0_D2_P	135
138	GND		GND	137
140	USB3-0-TX_N		MIPI0_D3_N	139
142	USB3-0-TX_P		MIPI0_D3_P	141
144	GND		HDMI1_HOTPLUG	143
146	HDMI1_TX2_P		HDMI1_SDA	145
148	HDMI1_TX2_N		HDMI1_SCL	147
150	GND		HDMI1_CEC	149
152	HDMI1_TX1_P		HDMI0_CEC	151
154	HDMI1_TX1_N		HDMI0_HOTPLUG	153
156	GND		GND	155
158	HDMI1_TX0_P		USB3-1-RX_N	157
160	HDMI1_TX0_N		USB3-1-RX_P	159
162	GND		GND	161
164	HDMI1_CLK_P		USB3-1-D_P	163
166	HDMI1_CLK_N		USB3-1-D_N	165
168	GND		GND	167
170	HDMI0_TX2_P		USB3-1-TX_N	169
172	HDMI0_TX2_N		USB3-1-TX_P	171
174	GND		GND	173
176	HDMI0_TX1_P		MIPI1_D0_N	175
178	HDMI0_TX1_N		MIPI1_D0_P	177
180	GND		GND	179
182	HDMI0_TX0_P		MIPI1_D1_N	181
184	HDMI0_TX0_N		MIPI1_D1_P	183
186	GND		GND	185
188	HDMI0_CLK_P		MIPI1_C_N	187
190	HDMI0_CLK_N		MIPI1_C_P	189
192	GND		GND	191
194	MIPI1_D3_N		MIPI1_D2_N	193
196	MIPI1_D3_P		MIPI1_D2_P	195
198	GND		GND	197
200	HDMI0_SCL		HDMI0_SDA	199

High Speed Serial

PCIE_nCLKREQ
PCIE_nWAKE
PCIE_PWR_EN
PCIE_CLK_P
PCIE_CLK_N
PCIE_RX_P
PCIE_RX_N
PCIE_TX_P
PCIE_TX_N
USB3-0-RX_N
USB3-0-RX_P
USB3-0-D_P
USB3-0-D_N
USB3-0-TX_N
USB3-0-TX_P
HDMI1_D2_P
HDMI1_D2_N

USBOTG_ID
USB2_N
USB2_P
PCIE_nRST
VBUS_EN

USB3-1-RX_N
USB3-1-RX_P
USB3-1-D_P
USB3-1-D_N
USB3-1-TX_N
USB3-1-TX_P

GND

J12
USB3_A

Pin	Signal
A1	VBUS
A3	D+
A2	D-
A6	SSRX+
A5	SSRX-
A9	SSTX+
A8	SSTX-
A4	GND
A7	DRAIN
B1	VBUS
B3	D+
B2	D-
B6	SSRX+
B5	SSRX-
B9	SSTX+
B8	SSTX-
B4	GND
B7	DRAIN
10	SHIELD

VBUS
USB3-0-D_P
USB3-0-D_N
USB3-0-RX_N
USB3-0-RX_P
USB3-0-TX_N
USB3-0-TX_P

VBUS
USB3-1-D_P
USB3-1-D_N
USB3-1-RX_N
USB3-1-RX_P
USB3-1-TX_N
USB3-1-TX_P

GND

Current Limit switch

U6
AP22653W6

Pin	Signal	Pin	Signal
1	IN	6	OUT
2	GND	5	ILIM
3	EN	4	nFault

+5v
VBUS_EN
C2 10u
GND
GND

15K 1% R12
VBUS
C3 100uF
C7 10u
C8 10u
GND GND GND GND

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Sheet: /CM5_HighSpeed/
File: CM5_HighSpeed.kicad_sch
Title: Compute Module 5 IO
Size: A4   Date:
KiCad E.D.A. 9.0.0
Rev: 1
Id: 2/4

Module1A
ComputeModule5-CM5

Pin	Signal		Signal	Pin
2	GND		GND	1
4	Ethernet_Pair1_P	TRD1_P	Ethernet_Pair3_P	TRD3_P 3
6	Ethernet_Pair1_N	TRD1_N	Ethernet_Pair3_N	TRD3_N 5
8	GND		GND	7
10	Ethernet_Pair0_N	TRD0_N	Ethernet_Pair2_N	TRD2_N 9
12	Ethernet_Pair0_P	TRD0_P	Ethernet_Pair2_P	TRD2_P 11
14	GND		GND	13
16	FAN_TACHO	TACHO	Ethernet_nLED3(3.3v)	ETH_LEDY 15
18	Ethernet_SYNC_OUT(3.3v)	SYNC_OUT	Ethernet_nLED2(3.3v)	ETH_LEDG 17
20	EEPROM_nWP	EEPROM_nWP	FAN_PWM	PWM 19
22	GND		LED_nACT	21

GPIO26, GPIO19, GPIO13, GPIO6, GPIO5, ID_SD, GPIO11, GPIO9, GPIO10, GPIO22, GPIO27, GPIO17, GPIO4, GPIO3, GPIO2

PWR_DSBLE_P, W_DIS_P, DTRD, RID, EEDATA, USER_BUTTON, USER_LED

GPIO21, GPIO20, GPIO16, GPIO12, ID_SC, GPIO7, GPIO8, GPIO25, GPIO24, GPIO23, GPIO18, GPIO15, GPIO14, SD_CLK

EECLK, UART_TX, UART_RX, SD_CLK

SD_CMD, SD_DAT5, SD_DAT4, SD_DAT7, SD_DAT6
NB SD signals are only available on modules without eMMC

SD_DAT3, SD_DAT0, SD_DAT1, SD_DAT2

VBAT, GPIO_VREF, SCL0, SDA0, +3.3v, +1.8v, PWR_BUT, CC1, CC2, CAM_GPIO1

GPIO_VREF(1.8v/3.3v_Input)
+3.3v_(Output) 600mA Max
+1.8v_(Output) 600mA Max

SD_VDD_Override, SD_PWR_ON, +5v(Input), WiFi_nDisable, BT_nDisable, nRPIBOOT, LED_nPWR, CAM_GPIO0, PMIC_ENABLE

SD_PWR_ON, +5v

GPIO
Amphenol
2x 10164227-1001A1RLF

Activity LED
D2
LED Green
TestPoint TP3
R1 1k

Not Fitted header
J3
Conn_01x03
WL_nDis, BT_nDis, nRPIBOOT, nPWR_LED

PWR LED
D1
LED Red
TP5 TestPoint
R10 1k
nPWR_LED
U5
74LVC1G07SE-7
GND

40Way GPIO Header
THD-20-R J8
+3.3v ... +5v
GPIO2, GPIO3, GPIO4, GPIO17, GPIO27, GPIO22, GPIO10, GPIO9, GPIO11, ID_SD, GPIO5, GPIO6, GPIO13, GPIO19, GPIO26
GPIO14, GPIO15, GPIO18, GPIO23, GPIO24, GPIO25, GPIO8, GPIO7, ID_SC, GPIO12, GPIO16, GPIO20, GPIO21
GND

GPIO Voltage select
R5 0R
+3.3v
+1.8v
GPIO_VREF
R4 nf

J6
Conn_02x03_Counter_Clockwise
GND

U2
TLV320ADC6120IRTER
IN1P, IN1M, IN2P_GPI1, IN2M_GPO1
MICBIAS_GPI2, VREF
C12 1uF, C13 1uF
GND

AVDD 16, IOVDD 9, GPIO1 11, FSYNC 8 GPIO19, BCLK 7 GPIO18, SDOUT 6 GPIO20, SDA 12 GPIO2, SCL 13 GPIO3, AREG 17, DREG 14, THERMAL_PAD 21, VSS 5, VSS_1 10, VSS_2 15, VSS_3 20

+3.3v
C27 10uF, C26 100n, GND
C24 1uF, C25 100n, GND
DREG C28 10uF, C29 100n, GND
AREG C30 10uF, C31 100n, GND

J2
Conn_02x07_Odd_Even
Force RPIBOOT = Jumper Pins 1-2
GND, nRPIBOOT, EEPROM_nWP, SYNC_OUT, PMIC_ENABLE, PWR_BUT, USBOTG
GND

PWR_BUT
SW1
Right angle Tact button
GND

VBAT
BT1
Battery_Cell
GND

FAN connector
+5v, PWM, TACHO
J14
JST_SHBM04B-SRSS-TB
GND

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E-SMART SOLUTIONS
Sheet: /CM5_GPIO (Ethernet, GPIO, SDCARD)/
File: CM5_GPIO.kicad_sch
Title: Compute Module 5 IO Board
Size: A4   Date: Rev: 1
KiCad E.D.A. 9.0.0   Id: 3/4