

UP-WHL01

Quick Installation Guide



REVISION HISTORY

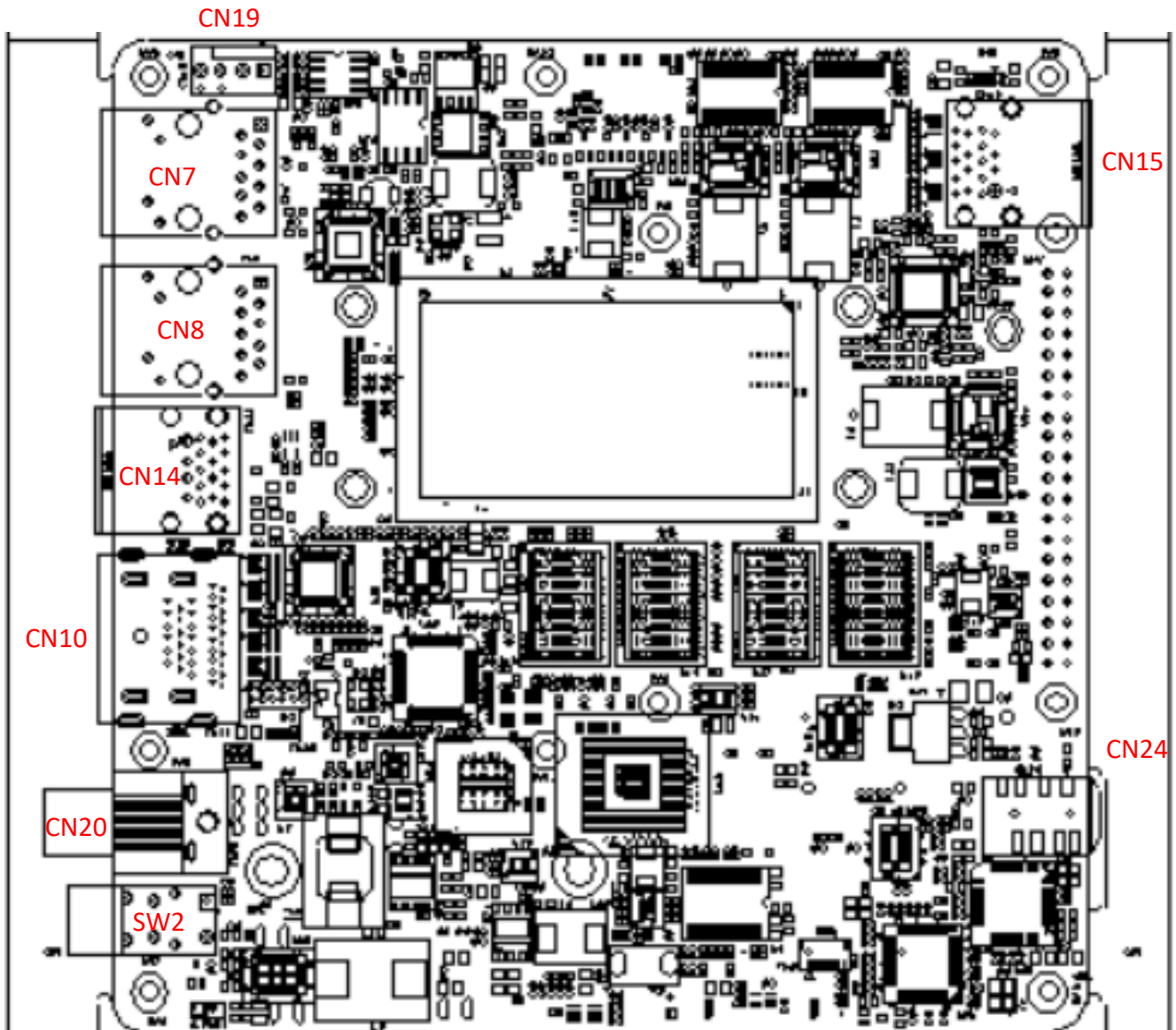
Revision	Date	Comments
A0.1	2019/01/08	Initial Version
A0.2	2019/06/08	Modify CN25 PIN OUT
A0.3	2019/07/08	Modify CN11 PIN NAME
A1.0	2019/11/30	ADD COM1/COM2

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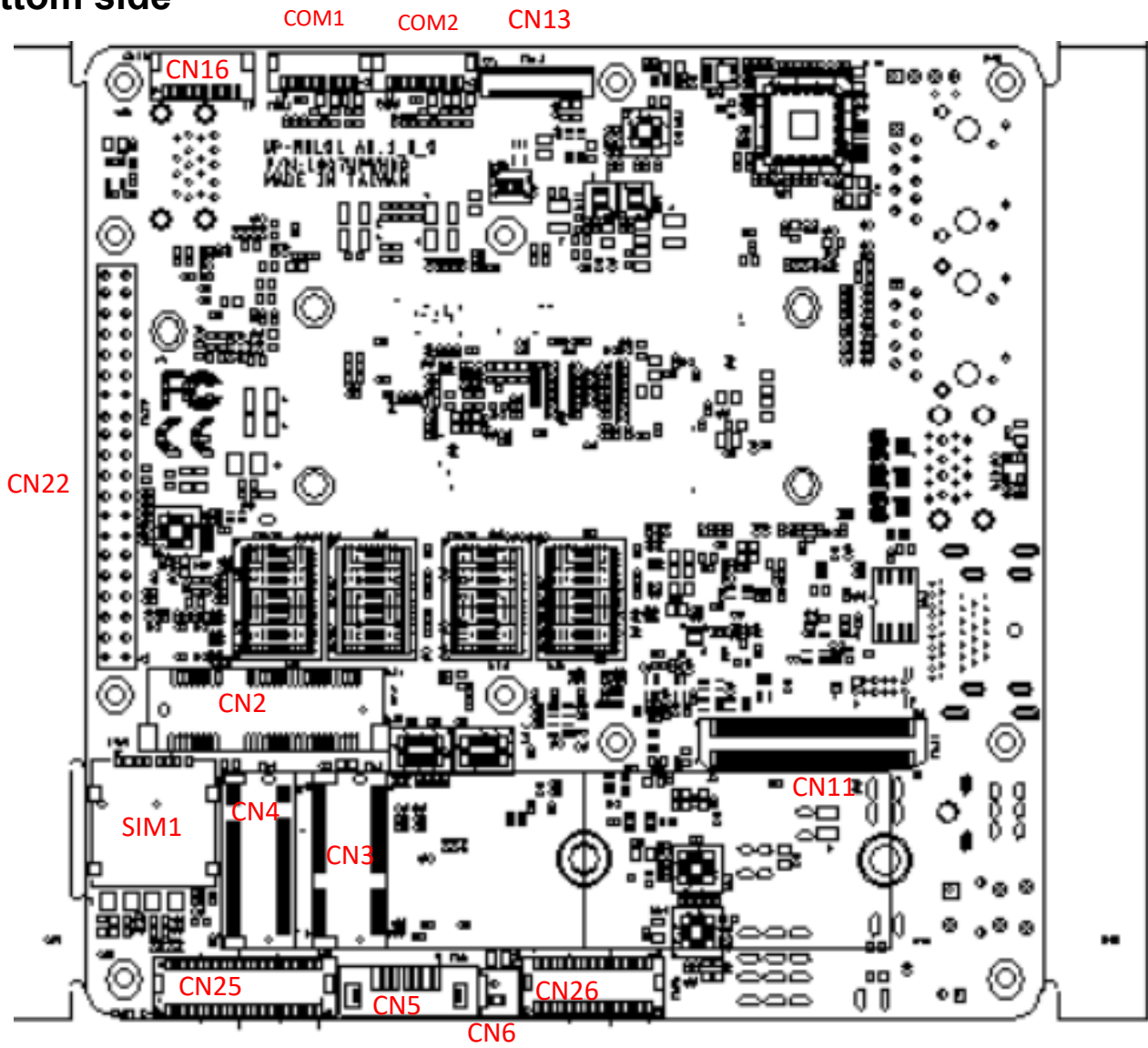
1. UP-WHL A0.1 Board Layout	-4-
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1. UP-WHL01 Board Layout

Top side



Bottom side



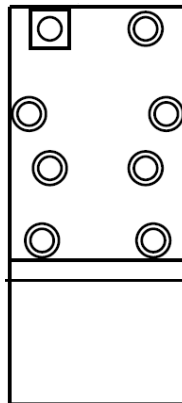
2. Connector References

Connector Index

Reference Designation	Functional Description	Connector Type
SW2	PWR button	(TF)Push Button Switch.8P.DIP.180D.w/ Red & Blue LED.Highlyelec.PB6156RSL-14-101
CN1	RTC	(TF)WAFER BOX.2P.180D(M).DIP.1.25mm.PINREX.712-71-02TW01
CN2	MINI CARD	(TF)MiniCard SLOT.52P.90D.(F).SMD.FOXCONN.AS0B226-S68Q-7H
CN3	M.2_2230_E-KEY	(TF)M.2 Key-E Slot.H=4.0mm conn.75P.90D(F).BLACK.SMD.FOXCONN.AS0BC21-S40BE-7H
CN4	M.2 SLOT_M key	TF)M.2 Key-M Slot.75P.90D(F).Standard type.BLACK.SMD.H=8.5mm conn.FOXCONN.2E0BC21-S85BM-7H
CN5	SATA CONN	(TF)SATA CONNECTOR.7P.180D(M).SMT.TechBest.007-01-00757
CN6	SATA POWER	(TF)WAFER BOX.2P.180D(M).DIP.2.0mm.w/LOCK.PINREX.721-81-02TW00
CN7	LAN1	(TF)RJ45.14P.90D(F)W/TF(10/100/1000Base)& LED(L-G/O,R-Y).DIP.SPEEDTECH.RK7L8A-KWH1-F30-0R
CN8	LAN2	(TF)RJ45.14P.90D(F)W/TF(10/100/1000Base)& LED(L-G/O,R-Y).DIP.SPEEDTECH.RK7L8A-KWH1-F30-0R
CN10	HDMI/DP	(TF)HDMI/DP combo Port conn..39P.90D(F).DIP.FOXCONN.3VD11203-HHJ0-4H
CN11	DOCKING I	(TF)Board-Board Connector.100P.180D(M).Pitch=0.5mm.H=5.3mm.SMD.Panasonic.AXK6S0064 7YG
CN13	eDP	(TF)FPC/FFC Conn.41P.90D(F).SMD.0.6mm.Hirose.FH35C-41S-0.3SHW(50)
CN14	USB Type A Connector 1	(TF)USB CONNECTOR DUAL PORT.8P.TechBest.KS-002D-ANB(2.0)-L
CN15	USB Type A Connector 1	(TF)USB CONNECTOR DUAL PORT.8P.TechBest.KS-002D-ANB(2.0)-L
CN16	USB 2.0 1x10P Wafer	(TF)Wafer Box.10P.90D.1.0mm.CATCH.1204-700-10RM
CN19	FAN	(TF)WAFER.3P.180D(M).DIP.2.54mm.PINREX.742-81-03TW00
CN20	DC JACK	(TF)DC Power Jack.3P.90D(F).DIP.COXOC.416AEDCD020105B
CN22	HAT 40	(TF)PIN HEADER.20*2P.180D(M).DIP.2.54mm.JVE.21N22564-40S20B-01G-5.5/3.3
CN24	AUDIO JACK	(TF)Audio Jack.8P.90D(F).SMD.Astron.E35S16AA-8S-R
CN25	ADUINO	(TF)WAFER BOX.40P.180D(M).SMD.1mm.W/Cap.ASTRON.28-3602-40-R
CN26	DOCKING II	(TF)BOX Header.15*2P.180D(M).SMD.1.0mm.CATCH.1204-710-30SMP
COM1	RS232	(TF)Wafer Box.10P.180D(M).SMD.1.0mm.w/ CAP.CATCH.1204-700-10SMR
COM2	RS232	(TF)Wafer Box.10P.180D(M).SMD.1.0mm.w/ CAP.CATCH.1204-700-10SMR

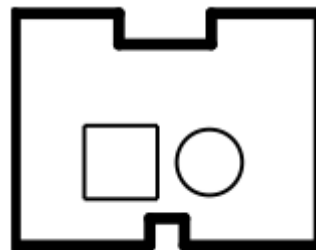
3. Connector Pin Assignments

SW2: PWR button



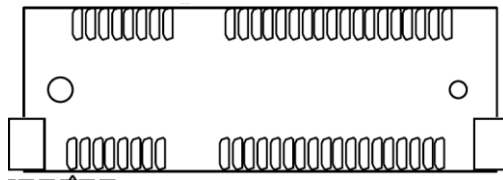
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	PWR_SW#_CTL_R	2	PWR_SW#_CTL_R	3	GND
4	GND	5	GND	6	GND
L1	SW1_LED_P	L2	SW1_LED_N		

CN1: RTC



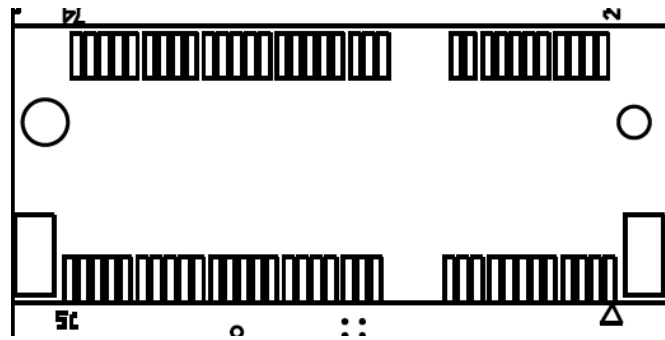
Pin	Signal Description	Pin	Signal Description
1	RTC_VCC	2	GND

CN2: MINI CARD



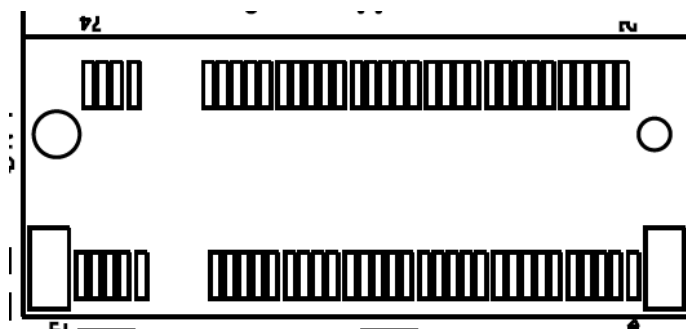
Pin	Signal Description	Pin	Signal Description
1	WAKE_MINI_N	2	VCC3_MINIPCIE
3	NC	4	GND
5	NC	6	V1.5S
7	NC	8	P_UIM_PWR
9	GND	10	P_UIM_DAT
11	PCIE_REFCLK5_P2_N	12	P_UIM_CLK
13	PCIE_REFCLK5_P2_P	14	P_UIM_RST
15	GND	16	P_UIM_VPP
17	NC	18	GND
19	NC	20	3G_EN
21	GND	22	3G_RST
23	PERN0_MSATA_R+	24	VCC3_MINIPCIE
25	PERP0_MSATA_R-	26	GND
27	GND	28	V1.5S
29	GND	30	NC
31	PETN0_MSATA_T-	32	NC
33	PETP0_MSATA_T+	34	GND
35	GND	36	USB2_DN_R
37	GND	38	USB2_DP_R
39	VCC3_MINIPCIE	40	GND
41	VCC3_MINIPCIE	42	NC
43	MSATA_PCIE_SEL_C	44	NC
45	NC	46	NC
47	NC	48	V1.5S
49	NC	50	GND
51	NC	52	VCC3_MINIPCIE

CN3: M.2_2230_E-KEY



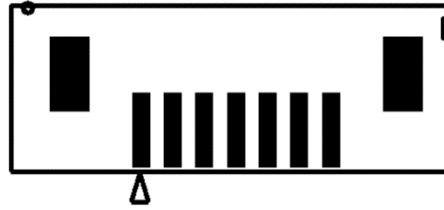
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	GND	2	+3.3VAUX_WIFI	3	BT_DP
4	+3.3VAUX_WIFI	5	BT_DM	6	NC
7	GND	8	NC	9	CNV_WR_LANE1_DN
10	CNV_RF_RST#	11	CNV_WR_LANE1_DP	12	NC
13	GND	14	CNV_PCMOUT_CLKREQ_R	15	CNV_WR_LANE0_DN
16	NC	17	CNV_WR_LANE0_DP	18	GND
19	GND	20	NC	21	CNV_WR_CLK_DN
22	CNV_RGI_RSP_R	23	CNV_WR_CLK_DP	24	■
25	■	26	■	27	■
28	■	29	■	30	■
31	■	32	GPP_F6_CNV_RGI_DT_UART0_TXD	33	GND
34	CNV_RGI_RSP_R	35	PCIE_C_TXP10	36	CNV_BRI_DT
37	PCIE_C_TXN10	38	NC	39	GND
40	NC	41	PCIE_P10_RX_DP	42	NC
43	PCIE_P10_RX_DN	44	NC	45	GND
46	NC	47	PCIE_REFCLK5_P1_P	48	NC
49	PCIE_REFCLK5_P1_N	50	SUS_CLK_CPU	51	GND
52	WIFI_RST#	53	PCIE_M2_CLKREQ#	54	BT_EN
55	WAKE_M2_N	56	WIFI_EN	57	GND
58	NC	59	CNV_WT_LANE1_DN	60	NC
61	CNV_WT_LANE1_DP	62	NC	63	GND
64	CLKIN_XTAL_LCP_R	65	CNV_WT_LANE0_DN	66	NC
67	CNV_WT_LANE0_DP	68	NC	69	GND
70	NC	71	CNV_WT_CLK_DN	72	3.3VAUX_WIFI
73	CNV_WT_CLK_DP	74	3.3VAUX_WIFI	75	GND
76	GND	77	GND	78	

CN4: M.2 SLOT_M key



Pin	Signal Description	Pin	Signal Description
1	GND	39	GND
2	+3.3V	40	SOC_I2C1_SCL
3	GND	41	PCIE_TXN0
4	+3.3V	42	SOC_I2C1_SDA
5	NC	43	PCIE_TXP0
6	FULL_CARD_PWR_OFF#	44	NC
7	NC	45	GND
8	NC	46	NC
9	NC	47	PCIE_RXN0
10	NC	48	NC
11	NC	49	PCIE_RXP0
20	NC	50	PLT_RST#
21	GND	51	GND
22	NC	52	PCIE_CLKREQ#
23	NC	53	PCIE_CLK_N
24	NC	54	WAKE_M2
25	NC	55	PCIE_CLK_P
26	NC	56	NC
27	GND	57	GND
28	NC	58	NC
29	PCIE_P15_SATA_P1B_RXN	67	NC
30	NC	68	NC
31	PCIE_P15_SATA_P1B_RXP	69	NC
32	NC	70	+3.3V
33	GND	71	GND
34	NC	72	+3.3V
35	PCIE_P15_SATA_P1B_TXN	73	GND
36	NC	74	+3.3V
37	PCIE_P15_SATA_P1B_TXP	75	GND
38	VPU_EN		

CN5: SATA CONN



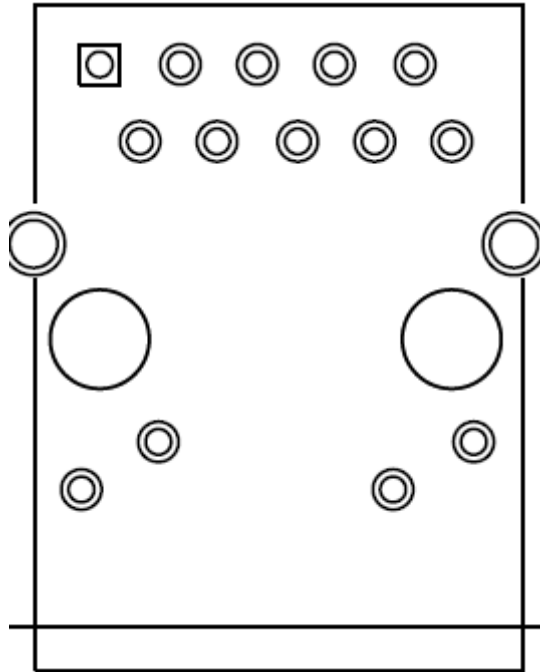
Pin	Signal Description	Pin	Signal Description
1	GND	2	SATA_TXP0_C
3	SATA_TXN0_C	4	GND
5	SATA_RXN0_C	6	SATA_RXP0_C
7	GND		

CN6: SATA POWER



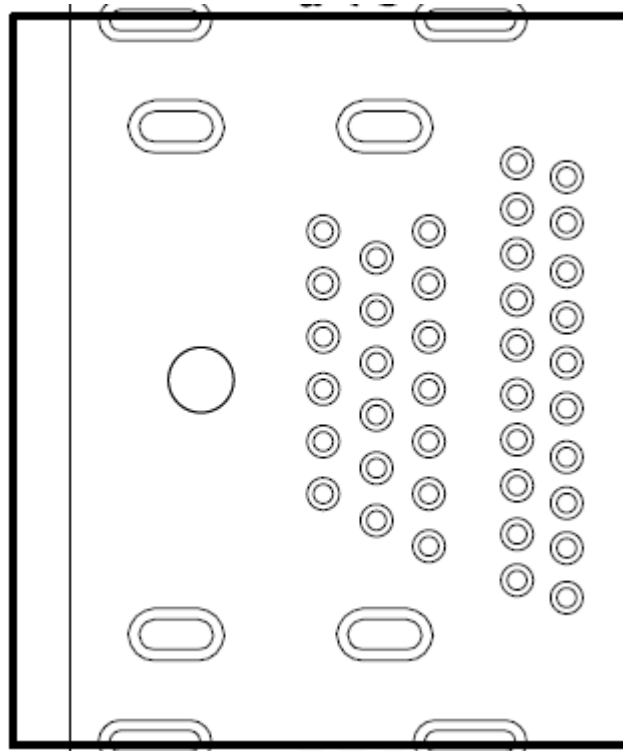
Pin	Signal Description	Pin	Signal Description
1	+V5S	2	GND

CN7/CN8: LAN1/LAN2



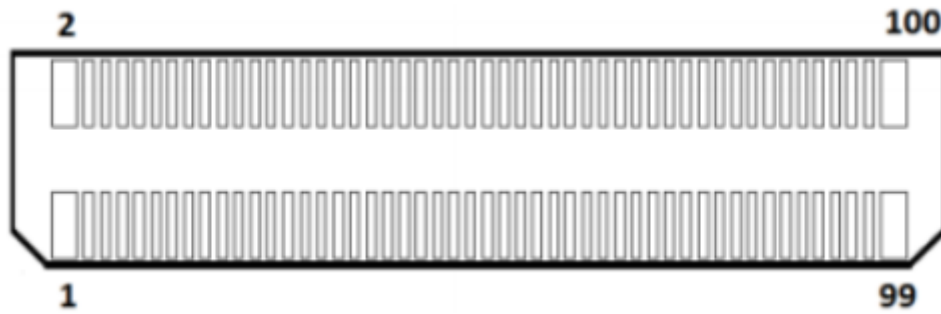
Pin	Signal Description
1	LAN1_TMDI0+
2	LAN1_TMDI0-
3	LAN1_TMDI1+
4	LAN1_TMDI2+
5	LAN1_TMDI2-
6	LAN1_TMDI1-
7	LAN1_TMDI3+
8	LAN1_TMDI3-

CN10: HDMI/DP



Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
P1	DDIO_TXP_DP_0	P2	GND	P3	DDIO_TXN_DP_0
P4	DDIO_TXP_DP_1	P5	GND	P6	DDIO_TXN_DP_1
P7	DDIO_TXP_DP_2	P8	GND	P9	DDIO_TXN_DP_2
P10	PORT0_CLK+	P11	GND	P12	PORT0_CLK-
P13	CONFIG1	P14	CONFIG2	P15	DP_AUX_P
P16	GND	P17	DP_AUX_N	P18	DDIO_TYPE_C_HPDP
P19	GND	P20	3.3V	P21	DDI1_TXP_HDMI_0
P22	GND	P23	DDI1_TXN_HDMI_0	P24	DDI1_TXP_HDMI_1
P25	GND	P26	DDI1_TXN_HDMI_1	P27	DDI1_TXP_HDMI_2
P28	GND	P29	DDI1_TXN_HDMI_2	P30	DDI1_CLK+_HDMI
P31	GND	P32	DDI1_CLK-_HDMI	P33	HDMI1_CEC_D
P34	NC	P35	DDC_CLK	P36	DDC_DATA
P37	GND	P38	5V		DDI1_TYPE_C_HPDP

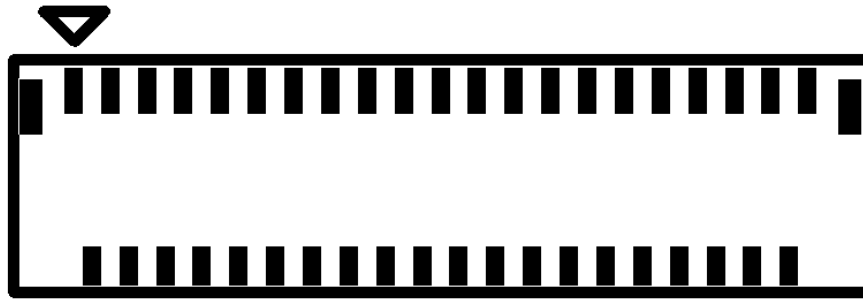
CN11: DOCKING I



Pin	Signal Description	Pin	Signal Description
1	+12V	51	PCIE_REFCLK2_N
2	+12V	52	PCIE_P3_TXN
3	+12V	53	GND
4	+12V	54	GND
5	+12V	55	PCIE_TXP2
6	+12V	56	PCIE_P3_RXP_SWITCH
7	+12V	57	PCIE_TXN2
8	+12V	58	PCIE_P3_RXN_SWITCH
9	NC	59	GND
10	PM_SLP_S3#_3P3	60	GND
11	GND	61	PCIE_RXP2
12	GND	62	SATA_P1_USB3_P5_RXN
13	NC	63	PCIE_RXN2
14	NC	64	SATA_P1_USB3_P5_RXP
15	NC	65	GND
16	NC	66	GND
17	GND	67	NC
18	GND	68	SATA_P1_USB3_P5_TXN
19	NC	69	NC
20	NC	70	SATA_P1_USB3_P5_TXP
21	NC	71	GND
22	NC	72	GND
23	GND	73	NC
24	GND	74	SATA_RXN0
25	NC	75	NC
26	NC	76	SATA_RXP0
27	NC	77	GND
28	NC	78	GND
29	GND	79	USB2_DP3
30	GND	80	SATA_TXP0

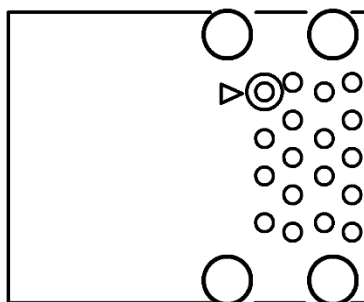
31	PCIE_REFCLK0_P	81	USB2_DN3
32	PCIE_REFCLK1_P	82	SATA_TXN0
33	PCIE_REFCLK0_N	83	GND
34	PCIE_REFCLK1_N	84	GND
35	GND	85	NC
36	GND	86	NC
37	PCIE_RXP0	87	NC
38	PCIE_RXP1	88	NC
39	PCIE_RXN0	89	GND
40	PCIE_RXN1	90	GND
41	GND	91	NC
42	GND	92	SATA_LED_N
43	PCIE_TXP0	93	PLTRST_PNLBKLEN
44	PCIE_TXP1	94	NC
45	PCIE_TXN0	95	PCIE_WAKE0_N
46	PCIE_TXN1	96	PCIE_CLKREQ0#
47	GND	97	PCIE_WAKE1_N
48	GND	98	PCIE_CLKREQ1#
49	PCIE_REFCLK2_P	99	PCIE_WAKE2_N
50	PCIE_P3_TXP	100	PCIE_CLKREQ2#

CN13: EDP



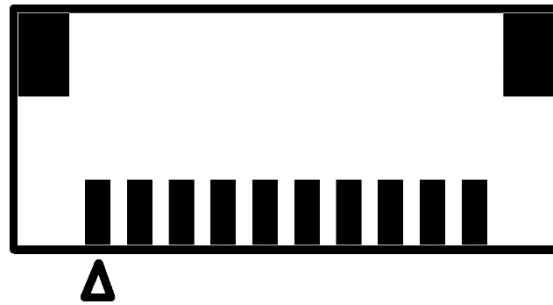
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	NC	2	NC	3	GND
4	NC	5	NC	6	GND
7	NC	8	NC	9	GND
10	NC	11	NC	12	GND
13	NC	14	NC	15	GND
16	data positive 0	17	data negative 0	18	GND
19	data positive 1	20	data negative 1	21	GND
22	data positive 2	23	data negative 2	24	GND
25	data positive 3	26	data negative 3	27	GND
28	AUX positive	29	AUX negative	30	GND
31	Hot Plug Detect	32	Back Light Control	33	VDD Enable
34	Back Light Enable	35	I2C_CLK	36	I2C_DAT
37	3.3V	38	3.3V	39	3.3V
40	3.3V	41	3.3V		

CN14/CN15: USB Type A Connector



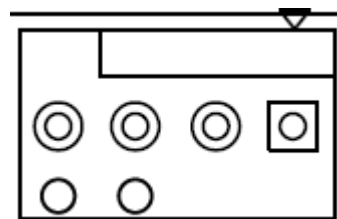
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	5V	2	USB2_D1-	3	USB2_D1+
4	GND	5	USB3_RX1-	6	USB3_RX1+
7	GND	8	USB3_TX1-	9	USB3_TX1+
10	5V	11	USB2_D2-	12	USB2_D2+
13	GND	14	USB3_RX2-	15	USB3_RX2+
16	GND	17	USB3_TX2-	18	USB3_TX2+

CN16: USB 2.0 1x10P Wafer



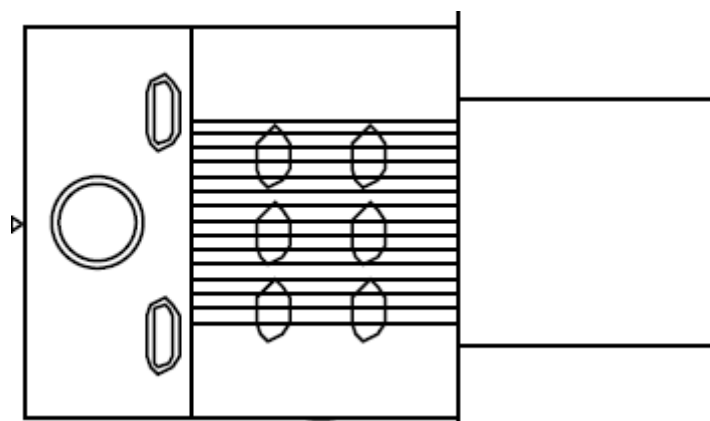
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	5V	2	USB2_D1-	3	USB2_D1+
4	GND	5	NC	6	NC
7	NC	8	NC	9	UART_RX
10	UART_TX				

CN19: FAN



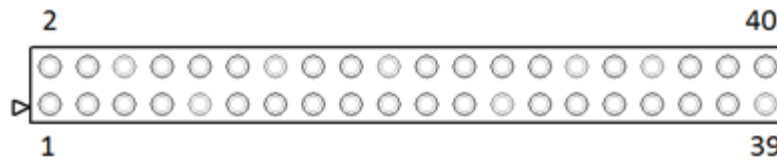
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	GND	2	VCC_FAN_CPU_CON	3	FAN_TAC_CPU_CON
4	FAN_CTL_CPU_CON				

CN20: DC JACK (DC:24-50V)



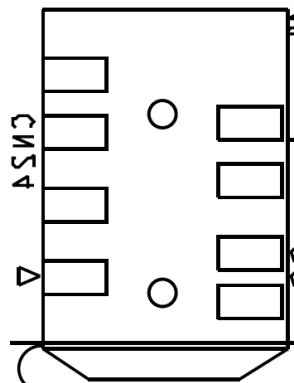
Pin	Signal Description	Pin	Signal Description
1	DC_IN	2	GND
3	GND		

CN22: HAT 40



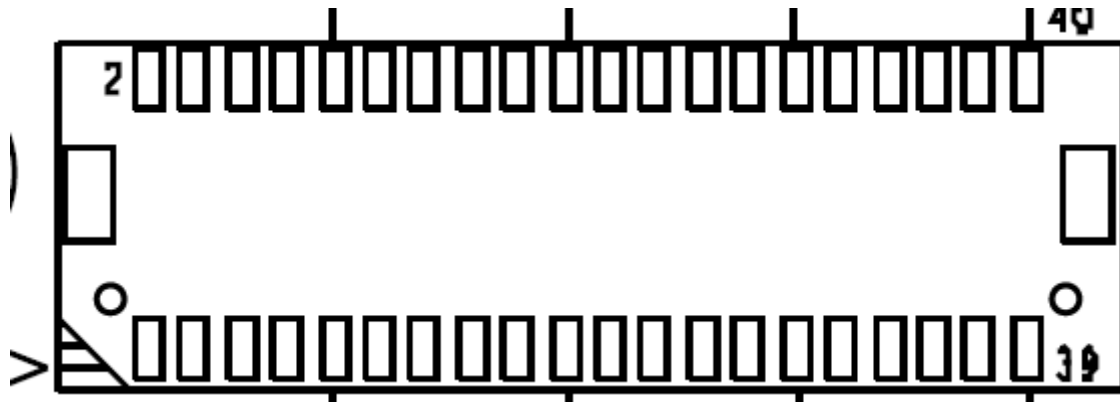
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	3.3V	2	5V	3	I2C1_DAT
4	5V	5	I2C1_CLK	6	GND
7	ANALOG_DATA1	8	UART_TX	9	GND
10	UART_RX	11	ANALOG_DATA2	12	I2S_BCLK
13	ANALOG_DATA3	14	GND	15	ANALOG_DATA4
16	SPI1_CS1	17	3.3V	18	SPI1_RX
19	SPI0_TX	20	GND	21	SPI0_RX
22	SPI1_TX	23	SPI0_CLK	24	SPI0_CS0
25	GND	26	SPI0_CS1	27	I2C0_DAT
28	I2C0_CLK	29	GPIO	30	GND
31	SPI1_CLK	32	PWM0	33	PWM1
34	GND	35	I2S_WS_SYNC	36	UART_CTS
37	SPI1_CS0	38	I2S_SDI	39	GND
40	I2S_SDO				

CN24: AUDIO JACK



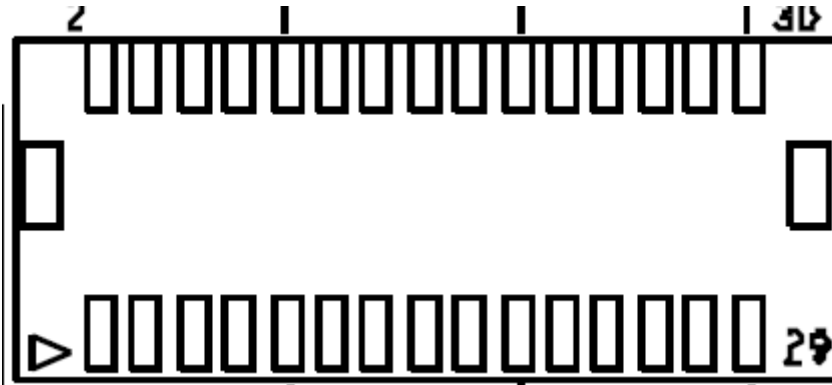
Pin	Signal Description	Pin	Signal Description
1	MIC_LR_CN	2	AGND
3	LOUT_R	4	NC
5	NC	6	NC
7	NC	8	LOUT_L

CN25: ADUINO



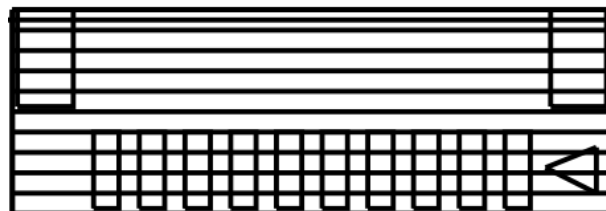
Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	+3V_MCU	2	+3V_MCU	3	GND
4	GND	5	STM32_PB1	6	STM32_VBAT
7	STM32_PB7	8	STM32_PC8	9	STM32_PB6
10	STM32_PB9	11	STM32_PB5	12	STM32_PC15
13	STM32_PB4	14	MCU_NRST_R	15	STM32_PB3
16	MCU_WKUP_R	17	USB_RENUMn	18	STM32_PA1
19	SWDCLK_R	20	STM32_PA2	21	SWDIO_R
22	STM32_PA3	23	SENSOR_HUB_DP	24	STM32_PA4
25	SENSOR_HUB_DN	26	STM32_PA5	27	STM32_PA10
28	STM32_PA6	29	STM32_PA9	30	STM32_PA7
31	STM32_PA8	32	HDMI1_CEC_D	33	STM32_PB15
34	STM32_PB2	35	STM32_PB14	36	HOST_I2C_SCL
37	STM32_PB13	38	HOST_I2C_SDA	39	MCU_INT_R
40	+V5S				

CN26: DOCKING II



Pin	Signal Description	Pin	Signal Description	Pin	Signal Description
1	SLP_S3#	2	V1.8S	3	STACK_GPIO1
4	V1.8S	5	STACK_GPIO2	6	LPC_AD0
7	STACK_GPIO3	8	LPC_AD1	9	STACK_GPIO4
10	LPC_AD2	11	STACK_GPIO5	12	LPC_AD3
13	STACK_GPIO6	14	LPC_FRAME_R	15	BUF_PLT_RST#
16	LPC_R_CLKOUT1	17	STACK_GPIO7	18	SMB_CLK_A
19	I2C_SCL4_1V8	20	SMB_DATA_A	21	I2C_SDA4_1V8
22	INT_SERIRQ_3P3	23	GND	24	+V3.3S
25	GND	26	+V3.3S	27	GND
28	+V5S	29	GND	30	+V5S

COM1/COM2: RS232/RS422/RS485



Pin	Signal Description
1	DCDA / RS422TX- / RS485-
2	RXA / RS422TX+ / RS485+
3	TXA / RS422RX+
4	DTRA / RS422RX-
5	GND
6	DSRA
7	RTSA
8	CTSA
9	RIA