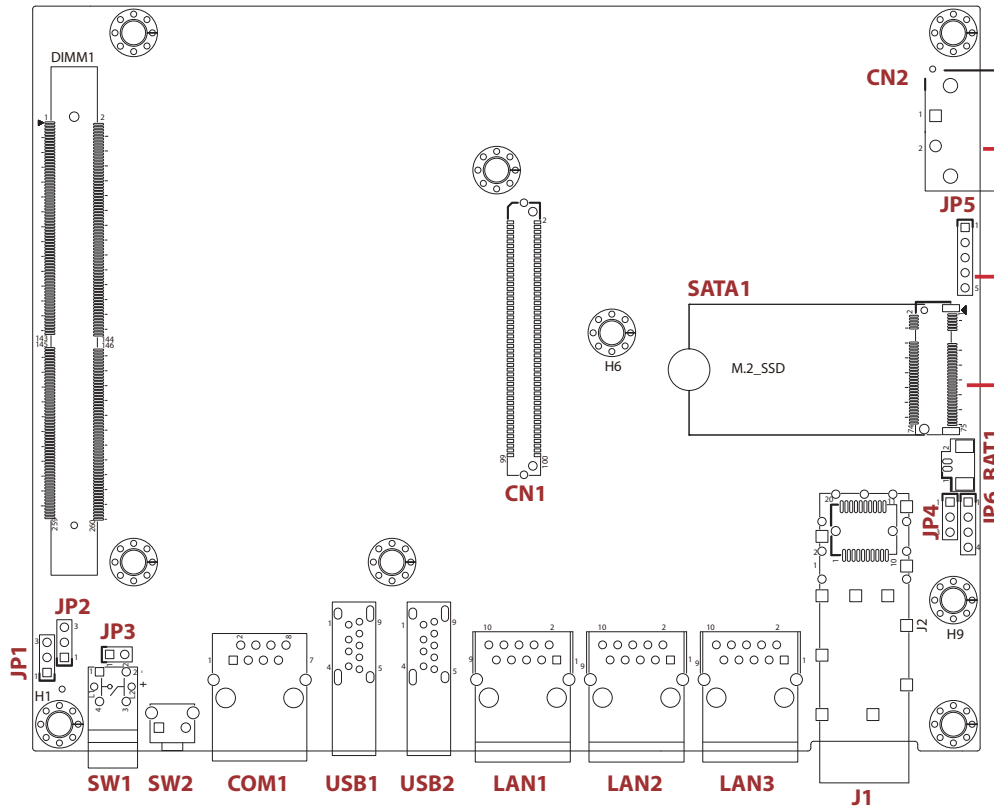


# ISA 142 Quick Reference Guide

## ISB141 Top Side Layout Placement



### CN2: Power Connector

Pin	Description
1	POWER_IN1
2	PGND

### JP5: MCU Programm Header

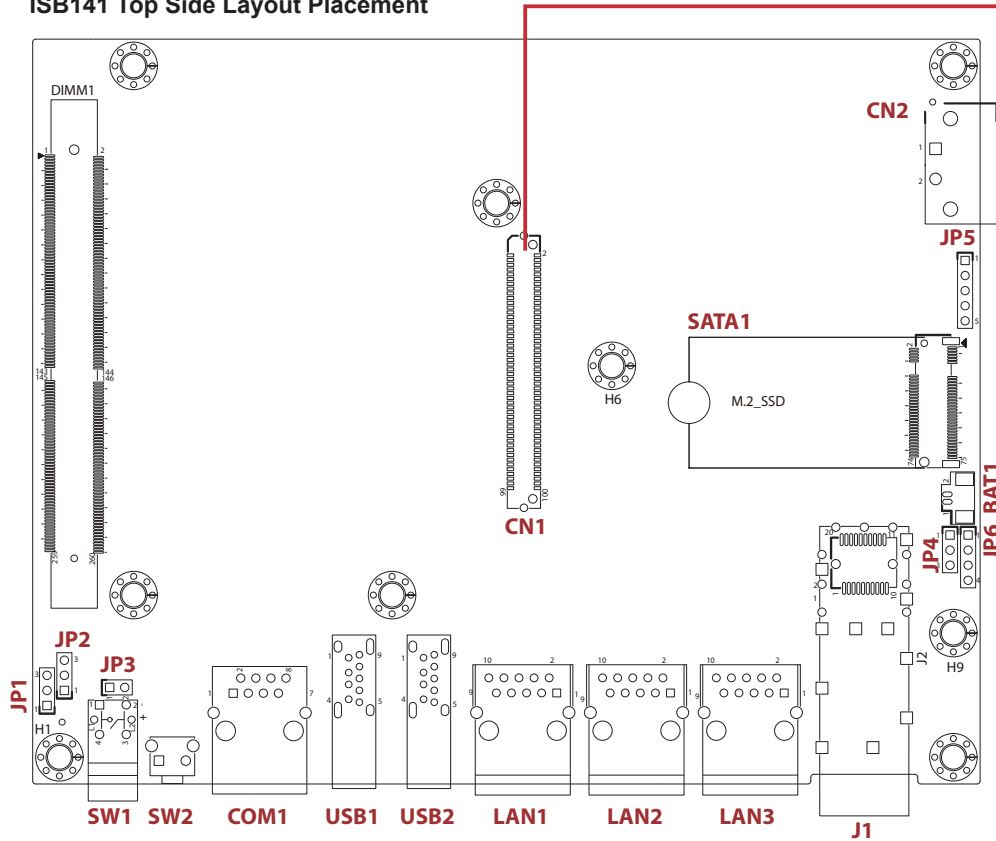
Pin	Description
1	P3V3_MCU
2	SWCLK
3	GND
4	SWDIO
5	MCU_RST_B

### SATA1: M.2 Key B SATA

Pin.	Signal	Pin.	Signal
1	NC	2	P3V3
3	GND	4	P3V3
5	GND	6	NC
7	NC	8	NC
9	NC	10	M2_SATA_LED#
11	NC	20	NC
21	NC	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	NC
39	GND	40	NC
41	M2_RX_DP	42	NC
43	M2_RX_DN	44	NC
45	GND	46	NC
47	M2_TX_DN	48	NC
49	M2_TX_DP	50	NC
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	NC
67	NC	68	NC
69	NC	70	P3V3
71	GND	72	P3V3
73	GND	74	P3V3
75	NC		

# ISA 142 Quick Reference Guide

ISB141 Top Side Layout Placement



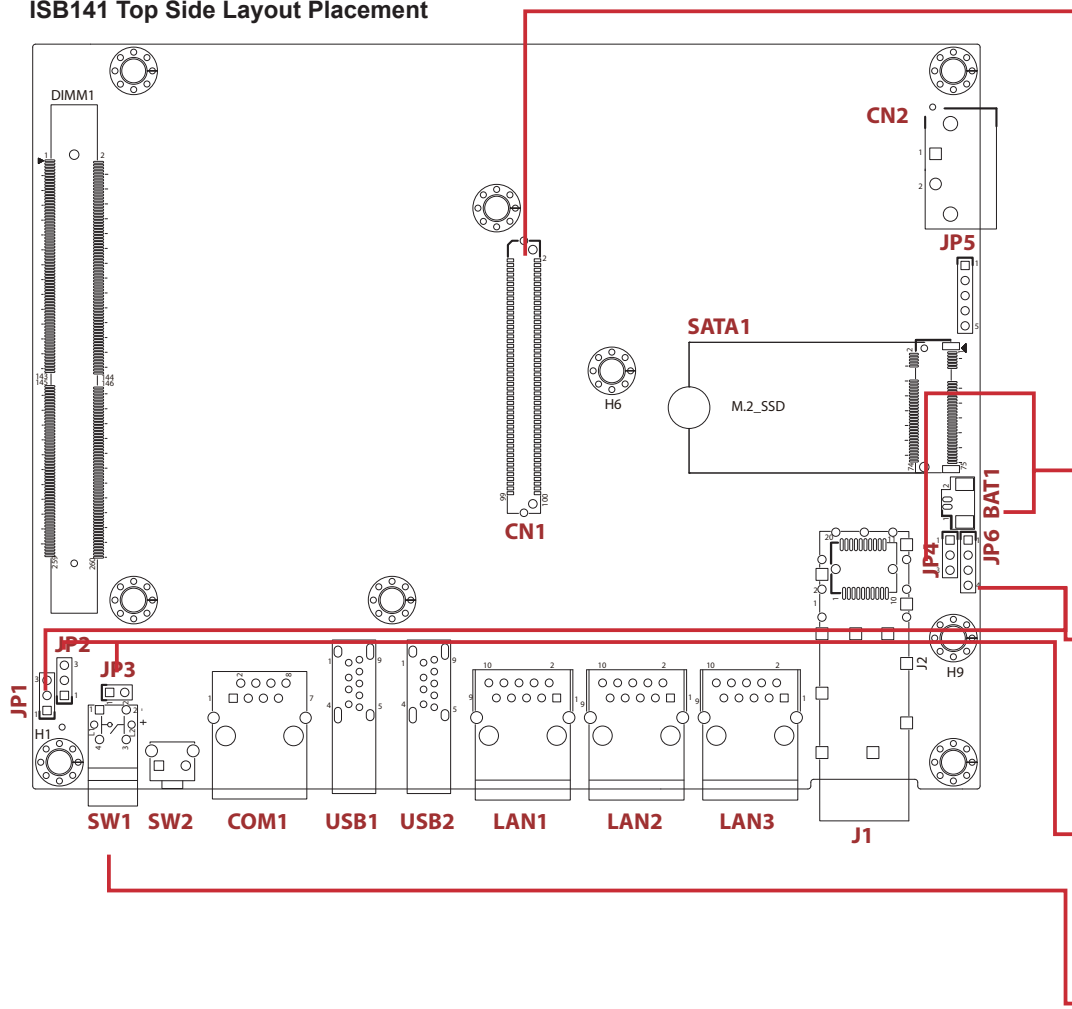
CN1: Board to Board Connector

Pin.	Signal	Pin.	Signal
1	VIN	2	VIN
3	VIN	4	VIN
5	VIN	6	VIN
7	PGND	8	PGND
9	PGND	10	PGND
11	PGND	12	PGND
13	P3V3	14	P3V3
15	P3V3	16	P3V3
17	P3V3	18	P3V3
19	GND	20	GND
21	P1V8	22	GND
23	P3V3_5G_EN	24	P3V3_AUX
25	P3V3_5G_PG	26	P3V3_AUX
27	MCU_5G_SERRIA_PLAS2#_0	28	P3V3_AUX
29	MCU_5G_SERRIA_PLAS2#_1	30	MCU_5G_DIS_1
31	MCU_5G_W_DISABLE#_0	32	MCU_5G_GPS_DISABLE#_0
33	MCU_5G_W_DISABLE#_1	34	MCU_5G_GPS_DISABLE#_1
35	MCU_5G_POWER_OFF#_0	36	BUF_PLT_RST_R_N
37	MCU_5G_POWER_OFF#_1	38	DC_IN2_STATUS
39	WIFI0_W_DISABLE1#	40	WIFI_PCIE_RST1#
41	WIFI1_W_DISABLE1#	42	WIFI_PCIE_RST0#
43	MCU_5G_DIS_0	44	MCU_5G_MODULE_RST1#
45	MODULE_WIFI_LED_0	46	MCU_5G_MODULE_RST0#
47	MODULE_WIFI_LED_1	48	WIFI_CLKREQ_N_1
49	MODULE_5G_LED_0	50	WIFI_CLKREQ_N_0
51	MODULE_5G_LED_1	52	5G_CLKREQ_N_1
53	GND	54	5G_CLKREQ_N_0
55	PCIE_CLK3_DN	56	SLOT_SMB_MCU_CLK
57	PCIE_CLK3_DP	58	SLOT_SMB_MCU_DATA
59	GND	60	GND
61	PCIE_CLK2_DP	62	USB2_P2_DP
63	PCIE_CLK2_DN	64	USB2_P2_DN
65	GND	66	USB2_P3_DP
67	PCIE_CLK1_DP	68	USB2_P3_DN
69	PCIE_CLK1_DN	70	USB2_P4_DP



# ISA 142 Quick Reference Guide

## ISB141 Top Side Layout Placement



### CN1: Board to Board connector

Pin.	Signal	Pin.	Signal
71	GND	72	USB2_P4_DN
73	PCIE_CLK0_DP	74	USB2_P5_DP
75	PCIE_CLK0_DN	76	USB2_P5_DN
77	GND	78	GND
79	MINIW_TX_DP1	80	MINIW_RX_DP1
81	MINIW_TX_DN1	82	MINIW_RX_DN1
83	GND	84	GND
85	MINIW_TX_DP0	86	MINIW_RX_DP0
87	MINIW_TX_DN0	88	MINIW_RX_DN0
89	GND	90	GND
91	USB3_5G_TX_DP1	92	USB3_5G_RX_DP1
93	USB3_5G_TX_DN1	94	USB3_5G_RX_DN1
95	GND	96	GND
97	USB3_5G_TX_DP0	98	USB3_5G_RX_DP0
99	USB3_5G_TX_DN0	100	USB3_5G_RX_DN0

### BAT1: Battery Connector

Pin	Description
1	GND
2	BAT_C

### JP4: Clear CMOS

Pin	Description
1	RTC_RST_N
2	GND
3	NC

### JP6: MCU UART Header

Pin	Description
1	P3V3_MCU
2	MCU_UART2_TX
3	MCU_UART2_RX
4	GND

### JP1: SOC UART Header

Pin	Description
1	PSE_UART2_RXD_R
2	GND
3	PSE_UART2_TXD_R

### JP2: Clear RTC Registers

Pin	Description
1	SRTC_RST_N
2	GND
3	NC

### JP3: Power Button Header (for debug)

Pin	Description
1	FP_PWRBTN_N_R
2	GND

### SW1: Power Button

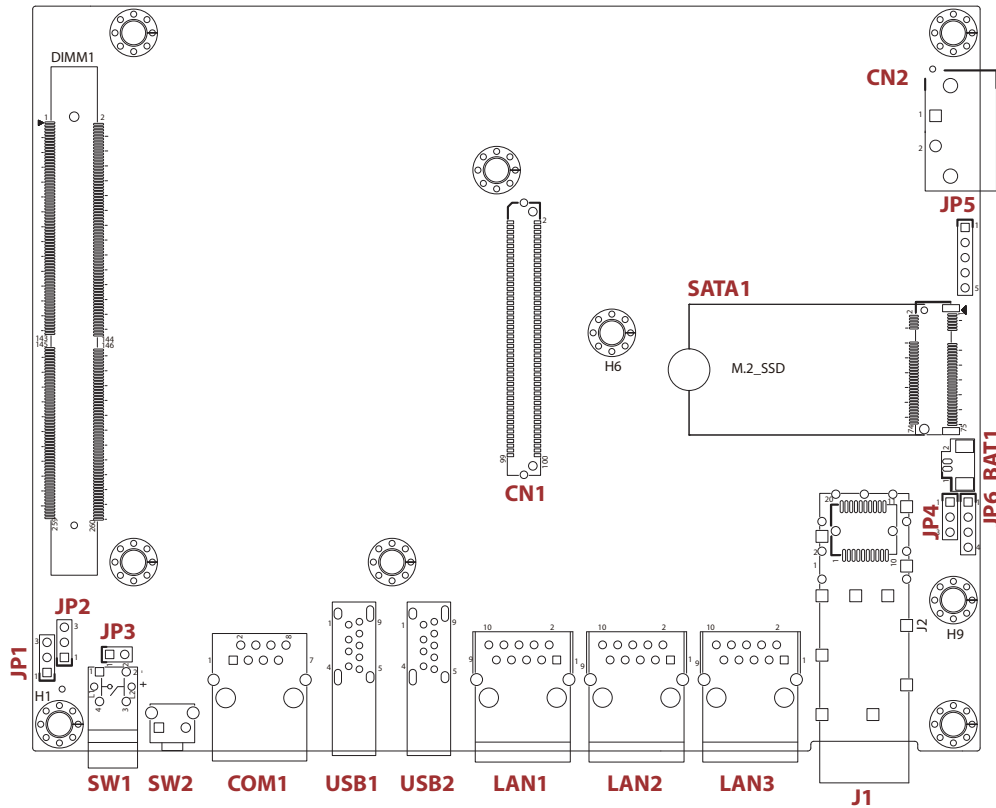
Pin	Description	Pin	Description
1	GND	2	FP_PWRBTN_N
3	FP_PWRBTN_N	4	GND
L1	LED (Blue)	L2	LED (RED)

\* L1: LED Blue means system in S0 mode  
L2: LED Red means system in S5 mode



# ISA 142 Quick Reference Guide

## ISB141 Top Side Layout Placement



### SW2: Reset Button

	Pin	Description	Pin	Description
	1	GND	2	FP_RST_BTN_N_L
	3	CHASSIS GND	4	CHASSIS GND

### COM1: Console Port

	Pin	Description	Pin	Description
	1	COM_UART_RTS_N	2	COM_UART_DTR_N
	3	COM_UART_TXD	4	GND
	5	COM_UART_DCD_N	6	COM_UART_RXD
	7	COM_UART_DSR_N	8	COM_UART_CTS_N

### USB1: USB 3.0 Port

	Pin	Description	Pin	Description
	1	P5V_USB3	2	USB2N0_C
	3	USB2P0_C	4	GND
	5	USB3RN0_C	6	USB3RP0_C
	7	GND	8	USB3TN0_C
9	USB3TP0_C			

### USB2: USB 3.0 Port

	Pin	Description	Pin	Description
	1	P5V_USB3	2	USB2N1_C
	3	USB2P1_C	4	GND
	5	USB3RN1_C	6	USB3RP1_C
	7	GND	8	USB3TN1_C
9	USB3TP1_C			

### LAN1: LAN Port

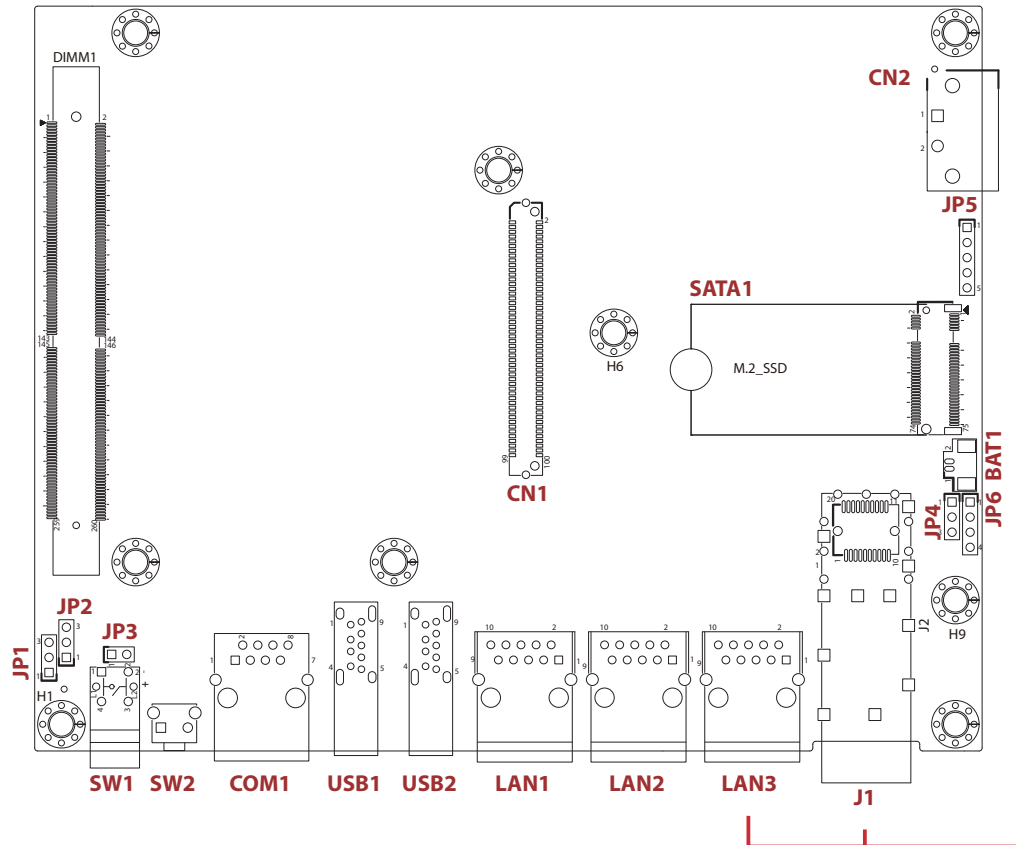
	Pin	Description	Pin	Description
	1	MDI_P_00A	2	MDI_N_00A
	3	MDI_P_01A	4	MDI_N_01A
	5	CT	6	CT
	7	MDI_P_02A	8	MDI_N_02A
9	MDI_P_03A	10	MDI_N_03A	

### LAN2: LAN Port

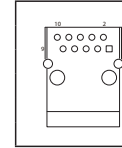
	Pin	Description	Pin	Description
	1	MDI_P_00B	2	MDI_N_00B
	3	MDI_P_01B	4	MDI_N_01B
	5	CT	6	CT
	7	MDI_P_02B	8	MDI_N_02B
9	MDI_P_03B	10	MDI_N_03B	

# ISA 142 Quick Reference Guide

## ISB141 Top Side Layout Placement

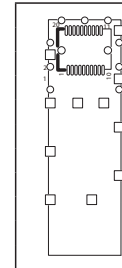


### LAN3: LAN Port



Pin	Description	Pin	Description
1	MDI_P_00C	2	MDI_N_00C
3	MDI_P_01C	4	MDI_N_01C
5	CT	6	CT
7	MDI_P_02C	8	MDI_N_02C
9	MDI_P_03C	10	MDI_N_03C

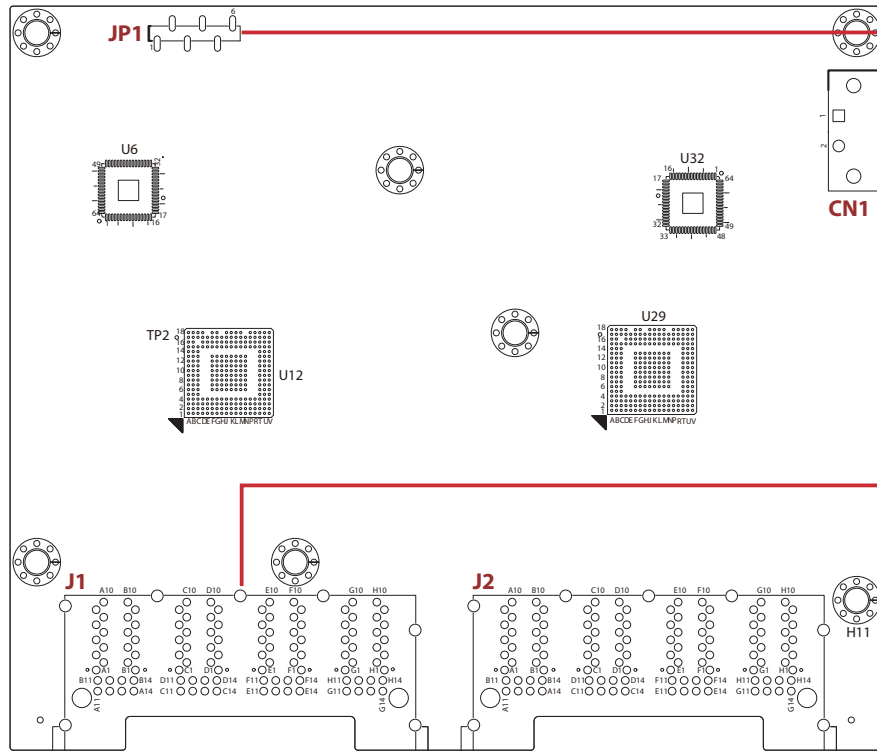
### J1: SFP Port (Combo Port with LAN3)



Pin	Description	Pin	Description
1	GND	2	SFP_TXFAULT
3	TX_DISABLE0_1	4	SFP_SDA
5	SFP_SCL	6	SFP_MOD-ABS
7	SFP_RS0	8	SFP_RX_LOS
9	SFP_RS1	10	GND
11	GND	12	SFP_RX_N
13	SFP_RX_P	14	GND
15	P3V3_SFP+_RX0	16	P3V3_SFP+_TX0
17	GND	18	SFP_TX_P
19	SFP_TX_N	20	GND

# ISA 142 Quick Reference Guide

## NSK142 Top Side Layout Placement



### JP1: CPLD Programm Header

Pin	Description	Pin	Description
1	P3V3_CPLD	2	GND
3	JTAG_PLD_TCK	4	JTAG_PLD_TDO
5	JTAG_PLD_TDI	6	JTAG_PLD_TMS

### CN1: Power Connector

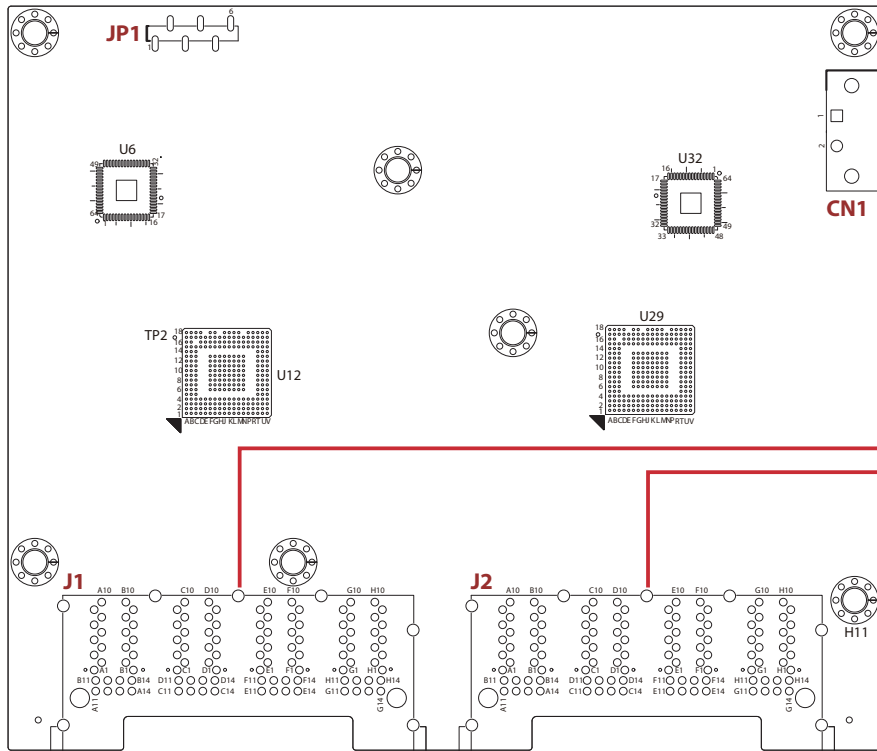
Pin	Description
1	POWER_IN2
2	PGND

### J1: LAN Port

Pin	Description	Pin	Description
A1	P1_MDIN_0	A2	P1_MDIP_0
A3	P1_MDIN_1	A4	P1_MDIP_1
A5	P1_MDIN_2	A6	P1_MDIP_2
A7	P1_MDIN_3	A8	P1_MDIP_3
A9	NC	A10	GND
A11	EE_CLK_C0_LED_0	A12	R0_LED_0
A13	P1_LINK1G#	A14	P1_LINK100#
B1	P2_MDIN_0	B2	P2_MDIP_0
B3	P2_MDIN_1	B4	P2_MDIP_1
B5	P2_MDIN_2	B6	P2_MDIP_2
B7	P2_MDIN_3	B8	P2_MDIP_3
B9	NC	B10	GND
B11	C2_LED_0	B12	R0_LED_0
B13	P2_LINK1G#	B14	P2_LINK100#
C1	P3_MDIN_0	C2	P3_MDIP_0
C3	P3_MDIN_1	C4	P3_MDIP_1
C5	P3_MDIN_2	C6	P3_MDIP_2
C7	P3_MDIN_3	C8	P3_MDIP_3
C9	NC	C10	GND
C11	EE_CLK_C0_LED_0	C12	R1_LED_0
C13	P3_LINK1G#	C14	P3_LINK100#
D1	P4_MDIN_0	D2	P4_MDIP_0
D3	P4_MDIN_1	D4	P4_MDIP_1
D5	P4_MDIN_2	D6	P4_MDIP_2
D7	P4_MDIN_3	D8	P4_MDIP_3
D9	NC	D10	GND
D11	C2_LED_0	D12	R1_LED_0
D13	P4_LINK1G#	D14	P4_LINK100#

# ISA 142 Quick Reference Guide

## NSK142 Top Side Layout Placement



### J1: LAN Port

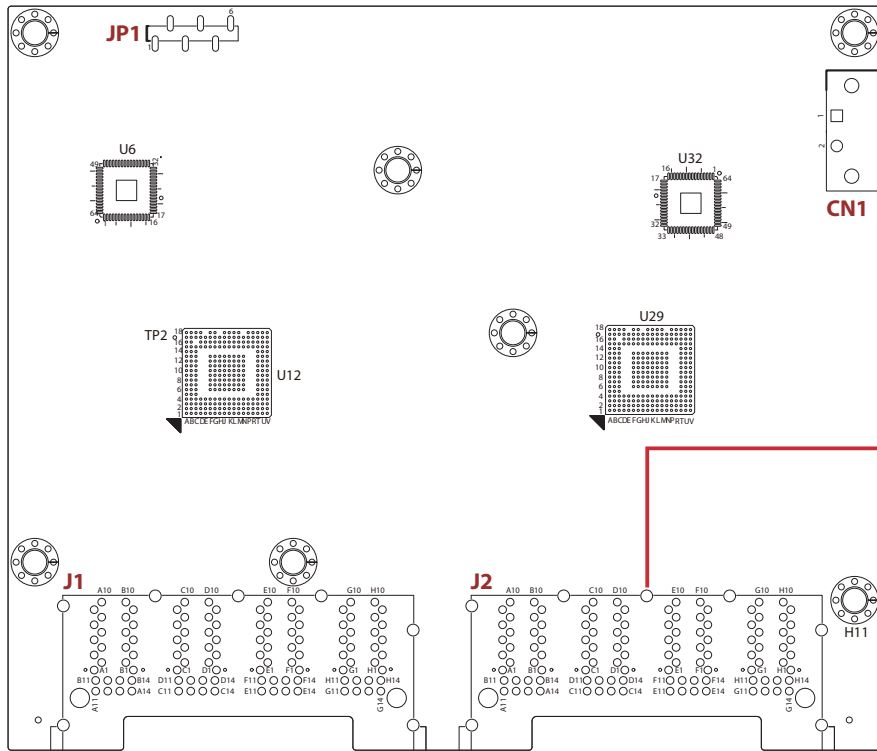
Pin	Description	Pin	Description
E1	P5_MDIN_0	E2	P5_MDIP_0
E3	P5_MDIN_1	E4	P5_MDIP_1
E5	P5_MDIN_2	E6	P5_MDIP_2
E7	P5_MDIN_3	E8	P5_MDIP_3
E9	NC	E10	GND
E11	EE_CLK_C0_LED_0	E12	R2_LED_0
E13	P5_LINK1G#	E14	P5_LINK100#
F1	P6_MDIN_0	F2	P6_MDIP_0
F3	P6_MDIN_1	F4	P6_MDIP_1
F5	P6_MDIN_2	F6	P6_MDIP_2
F7	P6_MDIN_3	F8	P6_MDIP_3
F9	NC	F10	GND
F11	C2_LED_0	F12	R2_LED_0
F13	P6_LINK1G#	F14	P6_LINK100#
G1	P7_MDIN_0	G2	P7_MDIP_0
G3	P7_MDIN_1	G4	P7_MDIP_1
G5	P7_MDIN_2	G6	P7_MDIP_2
G7	P7_MDIN_3	G8	P7_MDIP_3
G9	NC	G10	GND
G11	EE_CLK_C0_LED_0	G12	R3_LED_0
G13	P7_LINK1G#	G14	P7_LINK100#
H1	P8_MDIN_0	H2	P8_MDIP_0
H3	P8_MDIN_1	H4	P8_MDIP_1
H5	P8_MDIN_2	H6	P8_MDIP_2
H7	P8_MDIN_3	H8	P8_MDIP_3
H9	NC	H10	GND
H11	C2_LED_0	H12	R3_LED_0
H13	P8_LINK1G#	H14	P8_LINK100#

### J2: LAN Port

Pin	Description	Pin	Description
A1	P9_MDIN_0	A2	P9_MDIP_0
A3	P9_MDIN_1	A4	P9_MDIP_1
A5	P9_MDIN_2	A6	P9_MDIP_2
A7	P9_MDIN_3	A8	P9_MDIP_3
A9	NC	A10	GND
A11	EE_CLK_C0_LED_1	A12	R0_LED_1
A13	P9_LINK1G#	A14	P9_LINK100#
B1	P10_MDIN_0	B2	P10_MDIP_0
B3	P10_MDIN_1	B4	P10_MDIP_1
B5	P10_MDIN_2	B6	P10_MDIP_2
B7	P10_MDIN_3	B8	P10_MDIP_3
B9	NC	B10	GND
B11	C2_LED_1	B12	R0_LED_1
B13	P10_LINK1G#	B14	P10_LINK100#

# ISA 142 Quick Reference Guide

## NSK142 Top Side Layout Placement



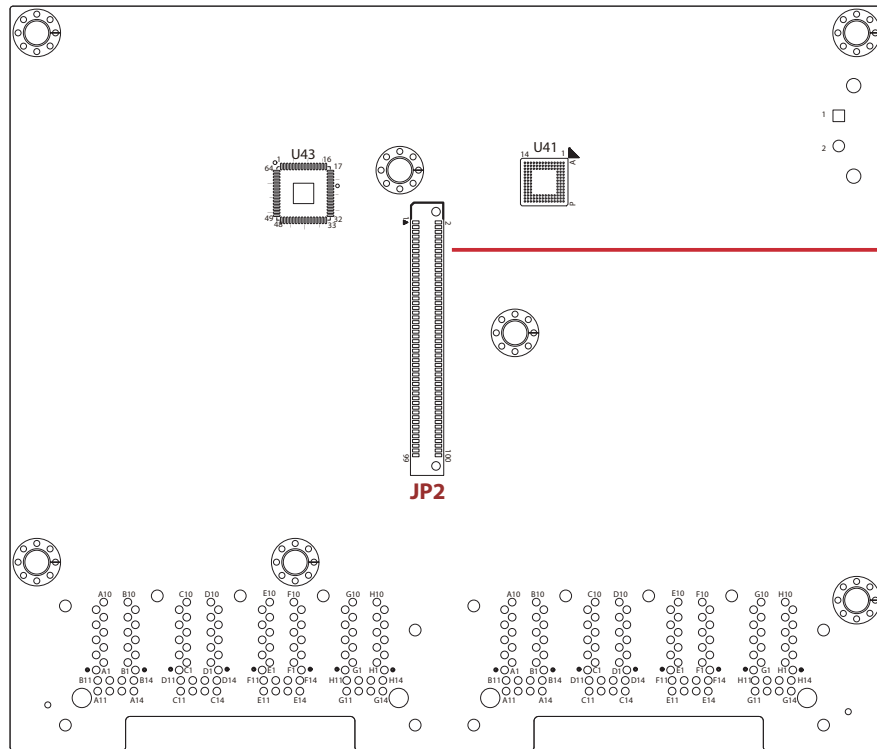
## J2: LAN Port

Pin	Description	Pin	Description
C1	P11_MDIN_0	C2	P11_MDIP_0
C3	P11_MDIN_1	C4	P11_MDIP_1
C5	P11_MDIN_2	C6	P11_MDIP_2
C7	P11_MDIN_3	C8	P11_MDIP_3
C9	NC	C10	GND
C11	EE_CLK_C0_LED_1	C12	R1_LED_1
C13	P11_LINK1G#	C14	P11_LINK100#
D1	P12_MDIN_0	D2	P12_MDIP_0
D3	P12_MDIN_1	D4	P12_MDIP_1
D5	P12_MDIN_2	D6	P12_MDIP_2
D7	P12_MDIN_3	D8	P12_MDIP_3
D9	NC	D10	GND
D11	C2_LED_1	D12	R1_LED_1
D13	P12_LINK1G#	D14	P12_LINK100#
E1	P13_MDIN_0	E2	P13_MDIP_0
E3	P13_MDIN_1	E4	P13_MDIP_1
E5	P13_MDIN_2	E6	P13_MDIP_2
E7	P13_MDIN_3	E8	P13_MDIP_3
E9	NC	E10	GND
E11	EE_CLK_C0_LED_1	E12	R2_LED_1
E13	P13_LINK1G#	E14	P13_LINK100#
F1	P14_MDIN_0	F2	P14_MDIP_0
F3	P14_MDIN_1	F4	P14_MDIP_1
F5	P14_MDIN_2	F6	P14_MDIP_2
F7	P14_MDIN_3	F8	P14_MDIP_3
F9	NC	F10	GND
F11	C2_LED_1	F12	R2_LED_1
F13	P14_LINK1G#	F14	P14_LINK100#
G1	P15_MDIN_0	G2	P15_MDIP_0
G3	P15_MDIN_1	G4	P15_MDIP_1
G5	P15_MDIN_2	G6	P15_MDIP_2
G7	P15_MDIN_3	G8	P15_MDIP_3
G9	NC	G10	GND
G11	EE_CLK_C0_LED_1	G12	R3_LED_1
G13	P15_LINK1G#	G14	P15_LINK100#
H1	P16_MDIN_0	H2	P16_MDIP_0
H3	P16_MDIN_1	H4	P16_MDIP_1
H5	P16_MDIN_2	H6	P16_MDIP_2
H7	P16_MDIN_3	H8	P16_MDIP_3
H9	NC	H10	GND
H11	C2_LED_1	H12	R3_LED_1
H13	P16_LINK1G#	H14	P16_LINK100#

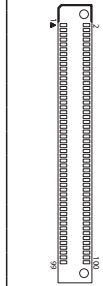


# ISA 142 Quick Reference Guide

## NSK142 Bottom Side Layout Placement



## JP2: Board to Board Connector

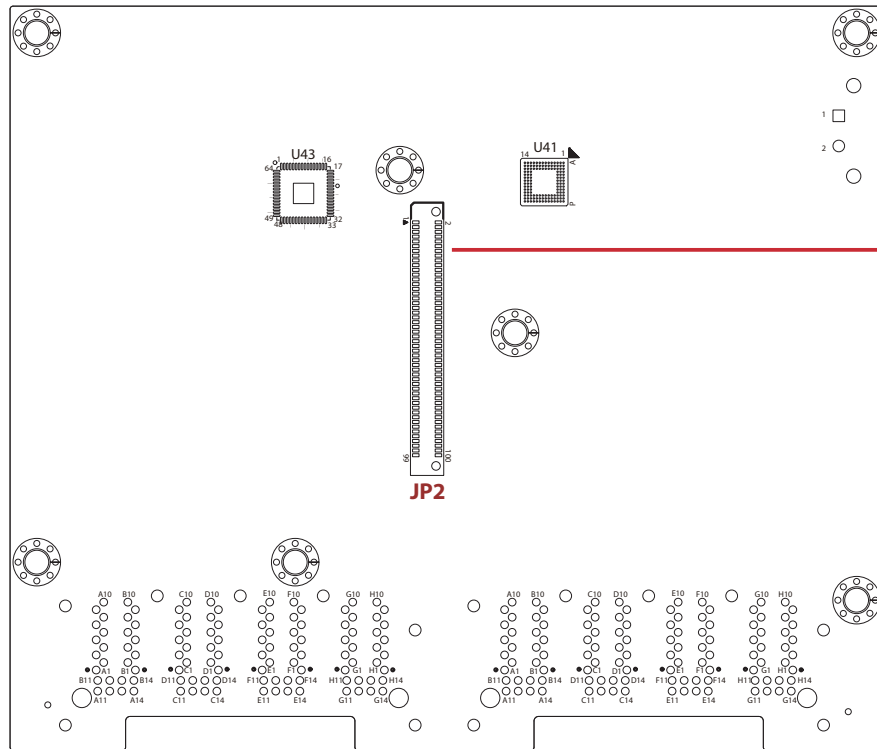


Pin	Description	Pin	Description
1	VIN	2	VIN
3	VIN	4	VIN
5	VIN	6	VIN
7	PGND	8	PGND
9	PGND	10	PGND
11	PGND	12	PGND
13	P3V3	14	P3V3
15	P3V3	16	P3V3
17	P3V3	18	P3V3
19	GND	20	GND
21	NC	22	GND
23	NC	24	P3V3_AUX
25	NC	26	P3V3_AUX
27	NC	28	P3V3_AUX
31	NC	32	NC
33	NC	34	NC
35	NC	36	BUF_PLT_RST_R_N
37	NC	38	DC_IN2_STATUS
39	NC	40	NC
41	NC	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	NC
51	NC	52	NC
53	GND	54	NC
55	NC	56	SLOT_I2C_MCU_CLK
57	NC	58	SLOT_I2C_MCU_DATA
59	GND	60	GND
61	PCIE_CLK2_DP	62	NC
63	PCIE_CLK2_DN	64	NC
65	GND	66	NC
67	PCIE_CLK1_DP	68	NC
69	PCIE_CLK1_DN	70	NC



# ISA 142 Quick Reference Guide

## NSK142 Bottom Side Layout Placement



## JP2: Board to Board Connector

Pin	Description	Pin	Description
71	GND	72	NC
73	PCIE_CLK0_DP	74	NC
75	PCIE_CLK0_DN	76	NC
77	GND	78	GND
79	NC	80	NC
81	NC	82	NC
83	GND	84	GND
85	PCIE_TX_DP2	86	PCIE_RX_DP2
87	PCIE_TX_DN2	88	PCIE_RX_DN2
89	GND	90	GND
91	PCIE_TX_DP1	92	PCIE_RX_DP1
93	PCIE_TX_DN1	94	PCIE_RX_DN1
95	GND	96	GND
97	PCIE_TX_DP0	98	PCIE_RX_DP0
99	PCIE_TX_DN0	100	PCIE_RX_DN0