

S4S-J6-FRA

User Manual

(Edition 1)

About this manual

This manual provides information about the hardware features of your industrial motherboard, organized through the following parts:

- 1. Specifications Summary
- 2. Block Diagram
- 3. Motherboard Layout
- 4. Pin Assignments
 - Jumper Settings
 - Connector & Header List

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1. Specifications Summary

i. Motherboard

Item	Specification	
Processor	(deigned with Intel® Elkhart Lake platform)	
Frocessor	- Intel® Celeron® Processor J6412 (TDP: 10W)	
Chipset	Intel® Elkhart Lake Intel Gen11 Graphics Engines	
(SoC integrated)		
Mamary	2x DDR4 3200 MT/s, SO-DIMM, Non-ECC Support	
Max.: 16GB		
	1 x HDMI	
Diamlay	1 x DP	
Display	1 x eDP	
	1 x 2*20 LVDS Dual Channel 24-bit (Primary)	
	1 x M-Key for M.2 2280 Key module (NVMe/PCIe, auto detect), support PCIex2 & SATA mode	
Expansion	1x PClex16	
	1 x half-size mPCle	
Ethornot	1 x Gigabit LAN (RJ45)	
Ethernet	- Speed 10/100/1000 Mbps	
Audio	Realtek ALC897 High Definition Audio, 1 x Line-out	
Storage	1 x SATA Gen 3.0, up to 6Gb/s	
	Serial Port: 1 x RS232 5V/12V/RI Select, switched by BIOS, support 1A current limit	
	1x M.2 M key	
	1x Mini-PCIe (half-size)	
	1x SATA Gen 3.0, Up to 6Gb/s	
	1x System Fan Header	
	1x CPU Fan Header(PWM)	
Internal connector	1 x Buzzer, required onboard design	
Internal connector	1 x Clear CMOS Header	
	2 x Amplifier Header	
	1 x eDP 2*15 pin Header	
	1 x 2*20pin LVDS Signal header	
	1 x 2 pin LCD panel monitor switch header	
	1 x 6 pin LVDS panel VCC power selection jumper	
	1 x 8 pin LVDS inverter connector	
Security	1 x SPI TPM Header	
BIOS	AMI UEFI 256Mbit (default UEFI mode)	
	Watchdog Timer Support	
BIOS Item	Hardware Monitor Support	
	Fan Speed Support	

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	Temperature Support	
	Voltage Support	
	Operating Temperature: 0~50°C	
Environment	Non-Operating Temperature: -40~85°C	
	Relative Humidity: 10%~85% (*For ASUS, the chamber supports 15%~95%)	
Dimension	Proprietary, 150 x 130 mm	
Certification	CE, FCC Class B	
OS Swamant	Windows® 10 (64-bit)	Ī
OS Support	Windows® 10 IoT Enterprise (64-bit)	

ii. I/O Board

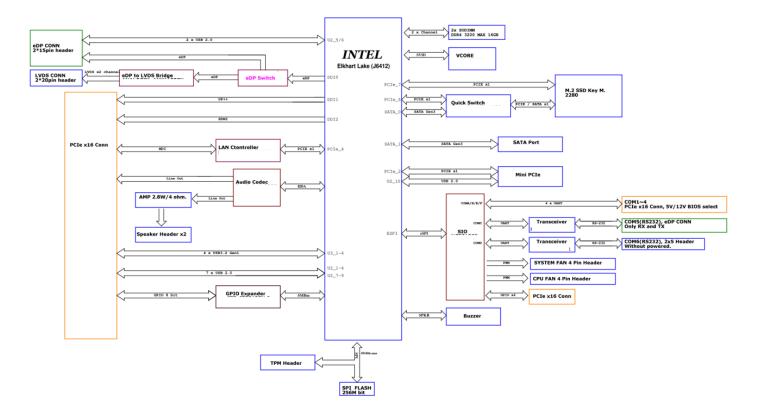
Item	Specification	
	3 x RS232 5/12/Ring switch by BIOS (COM1-2), support 1A current limit	
	1 x Audio Jack, (Line-out)	
	1 x RJ45	
	4 x USB3.2 Gen1	
	1 x Serial Port (RJ45), 5/12/Ring switch by BIOS (COM3), support 1A current limit	
	1 x RJ11	
	1 x HDMI	
Rear I/O	1 x DP	
	1x Phone Jack, line out	
	1x DC OUT, DV 12V out	
	1x 4-pin DC Jack	
	1x PWR/Storage statusLED (*up-side:RED, down-side:GREEN)	
	1x PWR Switch	
	1x Extended I/O (*support 1 x USB2.0)	
	1x Front USB2.0	
Power	12V DC-IN (Supported by additional cable)	
Expansion Slot	1 x PCle x16	
	Operating Temperature: 0~50°C	
Environment	Non-Operating Temperature: -40~85°C	
	Relative Humidity: 10%~85% (*For ASUS, the chamber supports 15%~95%)	
Dimension	Proprietary, 190 x 60mm	

iii. Bridge Board

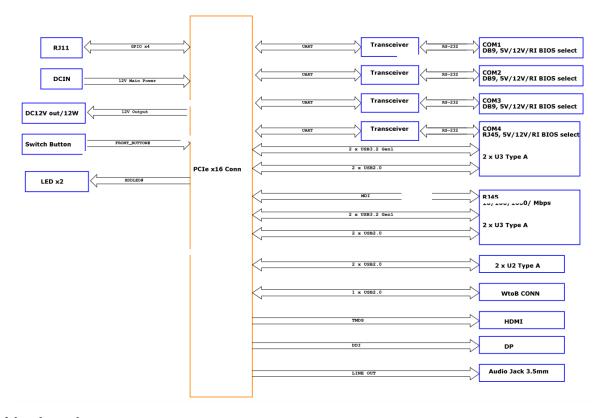
Dimension	Proprietary, 100 x 38.5mm
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2. Block Diagram

i. Motherboard



ii. I/O board

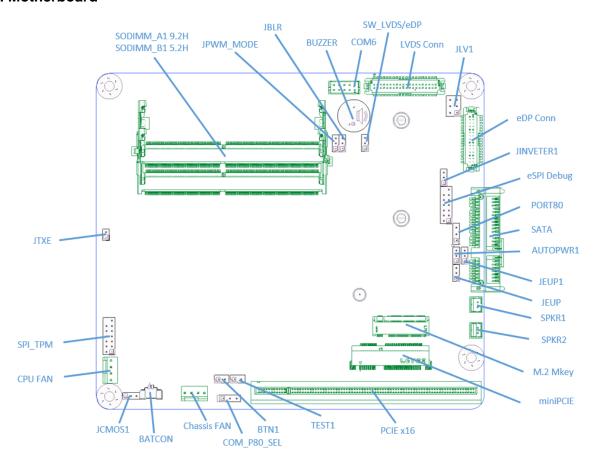


iii. Bridge board

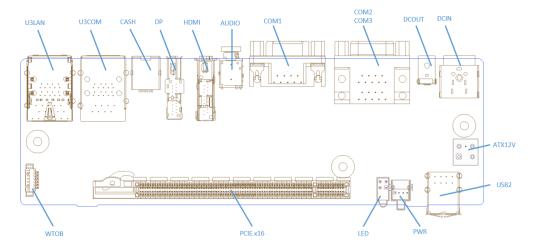
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3. Motherboard Layout

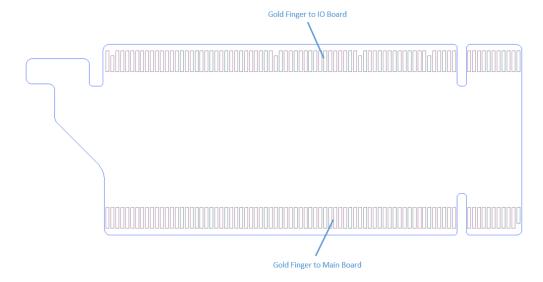
i. Motherboard



ii. I/O Board



iii. Bridge Board



4. Pin Assignments

4.1 Connector

4.2 Jumper Settings

i. Motherboard

Connector/Header

BATCON

Pin	Signal Pin Definition
1	+BAT
2	GND

LVDS

Pin	Signal Pin Definition	Pin	Signal Pin Definition
1	BKL_PWR	2	BKL_PWR
3	BKL_PWR	4	BKL_PWR
5	BKL_PWR	6	GND
7	+3V	8	GND
9	LCD_VCC	10	LCD_VCC
11	LVDS_DDC_SCL	12	LVDS_DDC_DAT
13	LCD_BL_PWM_CN	14	LCD_VDDEN
15	LCD_ENABKLT_CN	16	GND
17	LVDS_TX_TA0N	18	LVDS_TX_TA0P
19	LVDS_TX_TB0N	20	LVDS_TX_TB0P
21	LVDS_TX_TC0N	22	LVDS_TX_TC0P
23	LVDS_TX_TCLK0N	24	LVDS_TX_TCLK0P
25	LVDS_TX_TD0N	26	LVDS_TX_TD0P
27	GND	28	GND
29	LVDS_TX_TA1N	30	LVDS_TX_TA1P
31	LVDS_TX_TB1N	32	LVDS_TX_TB1P
33	LVDS_TX_TC1N	34	LVDS_TX_TC1P
35	LVDS_TX_TCLK1N	36	LVDS_TX_TCLK1P
37	LVDS_TX_TD1N	38	LVDS_TX_TD1P
39	GND	40	GND

eDP

Pin	Signal Pin Definition	Pin	Signal Pin Definition
1	BKL_PWR	2	BKL_PWR
3	GND	4	GND

5	LCD_VCC	6	LCD_VCC
7	LCD_BL_PWM	8	EDP_VDDEN
9	LCD_ENABKLT	10	GND
11	SW_OUT_EDP_TX1_DN	12	SW_OUT_EDP_TX1_DP
13	SW_OUT_EDP_TX0_DN	14	SW_OUT_EDP_TX0_DP
15	GND	16	GND
17	SW_OUT_EDP_AUX_N	18	SW_OUT_EDP_AUX_P
19	GND	20	GND
21	EDP_D0_N	22	EDP_D0_P
23	EDP_D1_N	24	EDP_D1_P
25	LS_COMC_TXD	26	LS_COMC_RXD
27	+5V_USB2_EDP	28	EDP_HPD
29	+5V_USB2_EDP	30	GND

SPI TPM

Pin	Signal Pin Definition
1	+VCC_SPI_TPM
2	S_SPI_TPM_IRQ#
3	S_PLTRST#
4	S_SPI_TPM_CS2#
5	NC
6	T_SPI_BIOS_WP#
7	+3VSB_SPI
8	GND
9	F_SPI_CS0#
10	T_SPI_CLK
11	T_SPI_MISO
12	T_SPI_MOSI
13	T_SPI_HOLD#
14	NC

COM6

Pin	Signal Pin Definition
1	COMD_DCD#
2	COMD_RXD
3	COMD_TXD
4	COMD_DTR#
5	GND

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6	COMD_DSR#
7	COMD_RTS#
8	COMD_CTS#
9	COMD_RI#
10	NC

BTN1

Pin	Signal Pin Definition
1	PWRBTN#_PANEL
2	GND

TEST1

Pin	Signal Pin Definition
1	+5V_FPANEL
2	GND

CPU_FAN

Pin	Signal Pin Definition
1	GND
2	+12V
3	O_CPUFANIN
4	O_CPUFAN_PWM

CHA_FAN

Pin	Signal Pin Definition
1	GND
2	+12V
3	O_CHAFANIN
4	O_CHAFAN_PWM

SPKR1

Pin	Signal Pin Definition
1	ROUTN
2	ROUTP

SPKR2

Pin	Signal Pin Definition
1	LOUTN

2	LOUTP	

PORT80

Pin	Signal Pin Definition
1	GND
2	O_COMC_TXD
3	+3V

Jumper

JXTE

Function	Jumper Pin
ME_UNLOCK	1-2
ME_LOCK	None (Default)

COM_P80_SEL

Function	Jumper Pin
COM_FUNCTION	1-2 (Default)
P80_FUNCTION	2-3

AUTOPWR1

Function	Jumper Pin
ATX	1-2 (Default)
AT	2-3

JEUP

Function	Jumper Pin
Enable ERP	1-2 (Default)
Disable ERP	2-3

JEUP1

Function	Jumper Pin
EUP	1-2
Non-EUP	2-3 (Default)

JCMOS1

Function	Jumper Pin
Normal	1-2 (Default)
Clear	2-3

SW_LVDS/eDP(Selection of LVDS or eDP panel)

Function	Jumper Pin
LVDS	1-2 (Default)
eDP	2-3

JINVETER1(Voltage Provided to Panel Backlight)

Function	Jumper Pin
5V	1-2
12V	2-3 (Default)

JLV1(Voltage provided to panel)

Function	Jumper Pin
3.3V	1-2 (Default)
5V	3-4
12V	5-6

JBLR(Panel Backlight PWM Polarity)

Function	Jumper Pin
Reverse	1-2
Forward	2-3 (Default)

JPWM_MODE(Backlight adjustment mode)

Function	Jumper Pin
Reverse	1-2
Forward	2-3 (Default)

ii. I/O board

Connector/Header

ATX-12V

Pin	Signal Pin Definition
1	GND
2	GND
3	DC_PWR
4	DC_PWR

DCIN

Pin	Signal Pin Definition
1	DC_PWR
2	DC_PWR
3	GND
4	GND

DC OUT

Pin	Signal Pin Definition
1	+12V_DCOUT
2	GND

PWR

Pin	Signal Pin Definition
1	PWRBTN#_PANEL
2	GND
3	PWRBTN#_PANEL
4	GND

CASH

Pin	Signal Pin Definition
1	GND
2	DRAWER1
3	DRAW_SWITCH
4	DRAWER_VOLT
5	DRAWER2
6	GND

WTOB

Pin	Signal Pin Definition
1	+5V_USB2
2	+5V_USB2
3	USB2_PN9_CN
4	USB2_PP9_CN
5	GND
6	GND

Jumper

None

iii. Bridge board

Connector/Header

None

Jumper

None