

SPECIFICATIONS

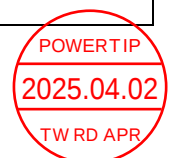
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Approved	Checked	Designer
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- ☒ Preliminary specification for design input
☐ Specification for sample approval



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1 SPECIFICATIONS

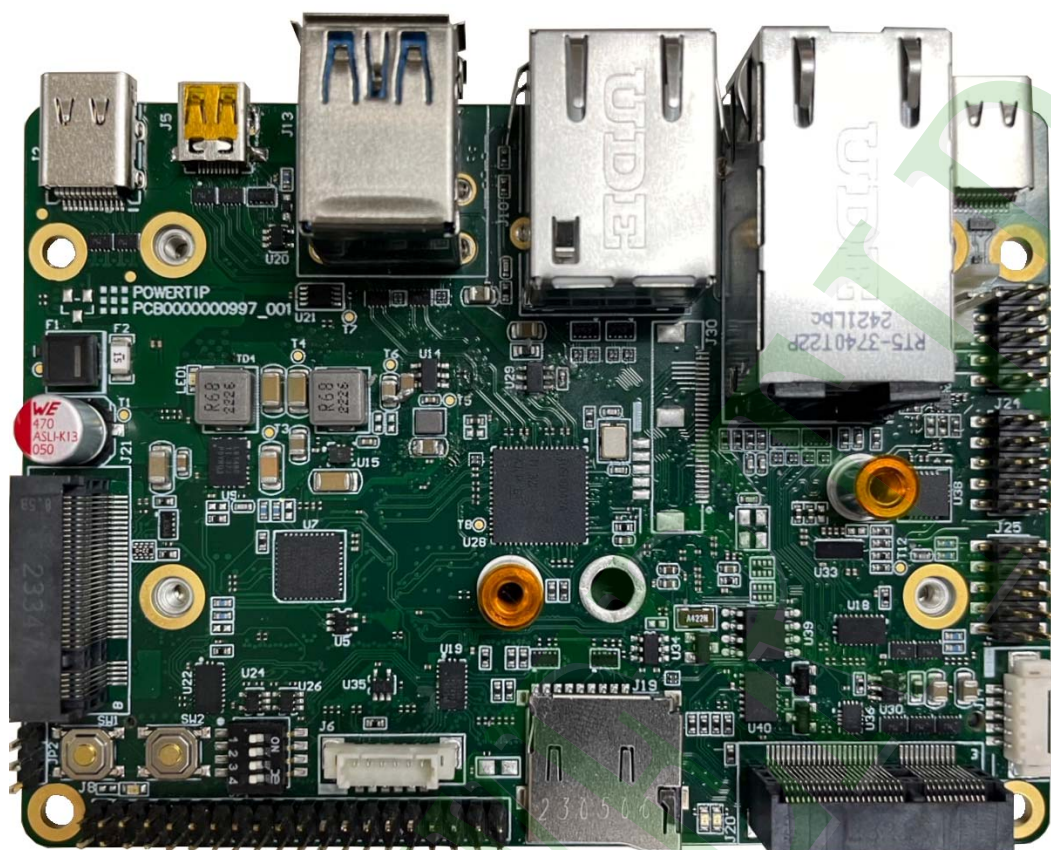
1.1 Features

Hardware		
CPU	RK3568B2	Quad-Core ARM Cortex-A55
GPU	ARM Mali-G52	1-Core-2EE OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1
NPU	RKNN	Acceleration engine with processing performance up to 1 TOPS Support INT8/INT16/FP16/BFP16 MAC hybrid operation
Memory	On Board RAM	2GB LPDDR4 SDRAM (Option: 4/8GB)
	On Board Flash	16GB eMMC flash, default boot device (Option: 32/64GB)
Display	LVDS	2 × LVDS single-channel outputs or 2 × MIPI DSI 4-lane outputs. Both interfaces support dual-channel output
	HDMI	1 × HDMI output, up to 4096x2304@60Hz
	eDP	1 × eDP output, up to 2560x1600@60Hz
Camera	MIPI CSI	1 × MIPI CSI 4-lane input
IO	USB	1 × USB 3.0 OTG (type-C: J2), support DP, PD function 2 × USB 3.0 Host (2 for type-A: J13) 3 × USB 2.0 Host (1 for type-C: J3; 1 for wafer connector: J14, 1 for pin header: J25)
	Ethernet	2 × 10/100/1000 Mbps
	Audio	1 × Headphone output 1 × Microphone input 1 × Speaker output
	Serial Port	3 × UART (1 for debug used, 1 for RS232, 1 for RS485)
	I ² C	1 × I ² C
	CAN	2 × CAN
	PWM	2 × PWM
	Other	GPIOs
Expansion	M.2	1 × E-Key (1 × USB 2.0, 1 × I ² S, 1 × UART, 1 × PCIe 2.0 x1, 1 × I ² C) 1 × B-Key (1 × USB 3.0, 1 × SIM interface, 1 × PCIe 2.0 x1)
	SD Socket	1 × Micro SD card socket
	SIM Socket	1 × Nano SIM card socket
Power	DC	9 ~ 24 V
	RTC Battery	1.1 ~ 5.25 V

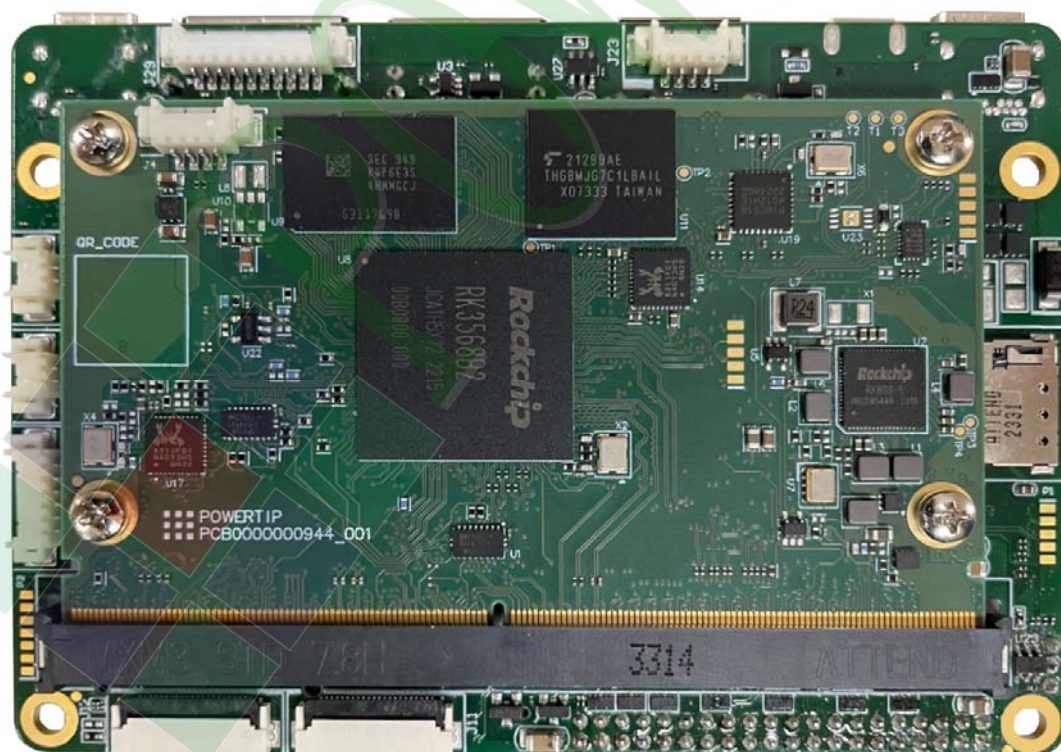
Software

OS	Default	Android12
	Optional	Yocto 4.0, Buildroot, Debian 11

Top View



Bottom View



1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	100.0 (W) x 72.0 (L) x 28.0 MAX (H)	mm

1.3 Absolute Maximum Ratings

Ta = 25°C

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply Voltage	VDD	-	-0.3	26.0	V
Battery Supply Voltage	VDD_RTC	-	-0.3	6.5	V
Operating Temperature	Commercial (RK3568B2)	T _{OP}	0	70	°C
	Industrial (RK3568J)		-40	85	
Storage Temperature	T _{ST}	-	-40	85	°C
Humidity	H _D	Ta=60°C	10	90	%RH

1.4 DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	V _{IN}	-	9	12	24	V
Battery Supply Voltage	V _{IN}	-	1.1	3.0	5.25	V
Power Supply Current - Idle	I _{idle}	V _{IN} = 12V	-	(TBD)	-	mA
Power Supply Current - Full CPU load	I _{full CPU}	V _{IN} = 12V	-	(TBD)	-	mA
IO High-Level Input Voltage	V _{IH}	VDDIO = 1.8, 3.3V	0.7xVDDIO	-	VDDIO+0.3	V
IO Low-Level Input Voltage	V _{IL}		-0.3	-	0.3xVDDIO	V
IO High-Level Output Voltage	V _{OH}		-	-	3.6	V
IO Low-Level Output Voltage	V _{OL}		-0.3	-	-	V

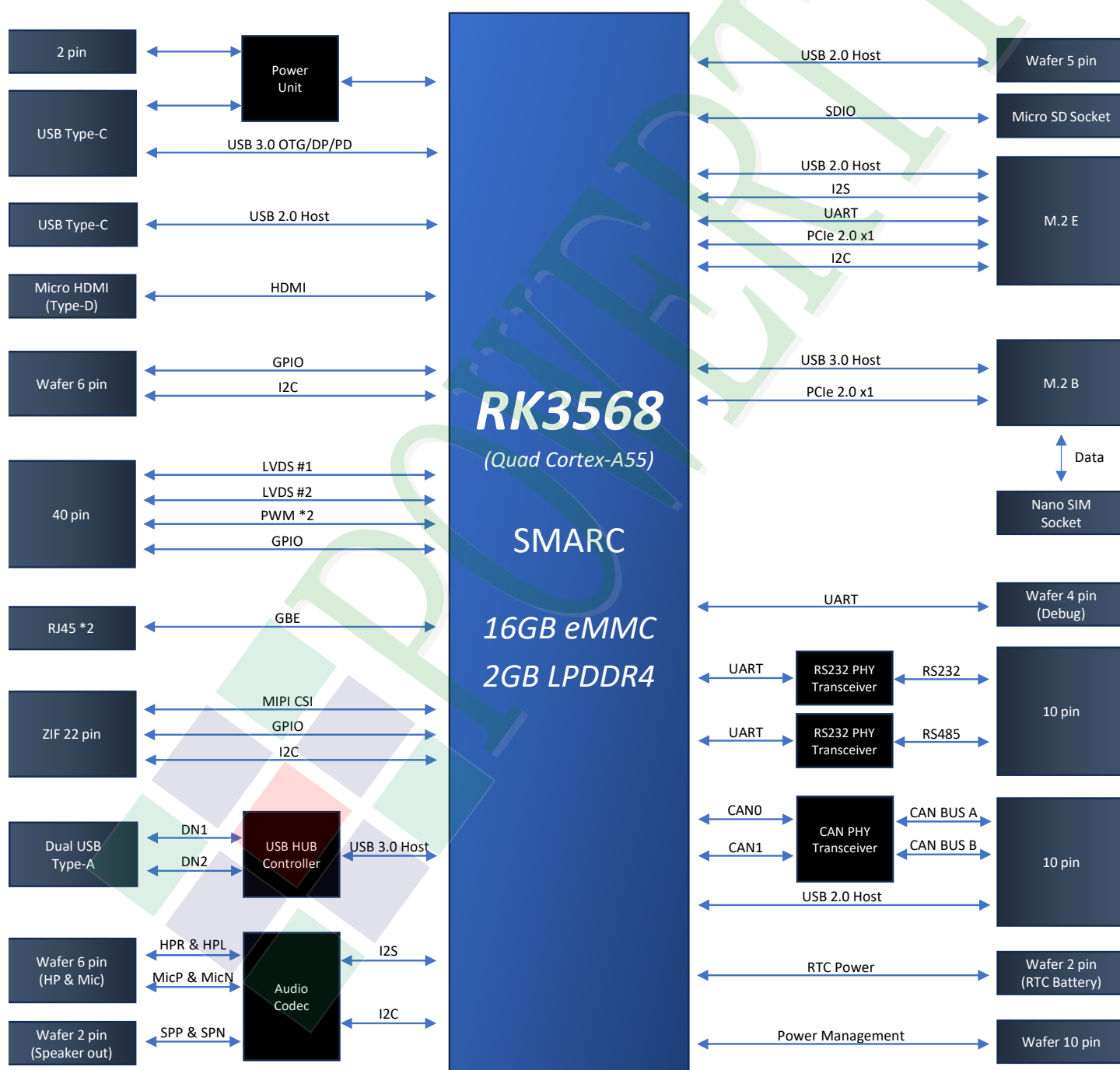
2 MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



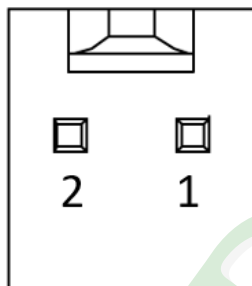
2.2 Interface Pins

Symbol	Description	Note
J1	Power Supply	
J2	USB 3.0 Type-C (OTG/DP/PD)	
J3	USB 2.0 Type-C Host	
J4	SMARC MXM 314 Pin	
J5	Micro-HDMI (Type D)	
J6	I2C & GPIO Interface (Pitch 1.25mm, 6 pins)	
J8	Display I/F – Dual LVDS (Pitch 2.0mm, 2x20pin) (Optional: Dual MIPI DSI)	
J9	Ethernet RJ45 (eth0)	
J10	Ethernet RJ45 (eth1)	
J11	MIPI CSI (Pitch 0.5mm 22pin connector bottom contact)	No function
J12	MIPI CSI (Pitch 0.5mm 22pin connector bottom contact)	
J13	Dual USB 3.0 Type-A Host	
J14	USB 2.0 Host Interface (Pitch 1.25mm, 5 pins)	
J17	Audio Headphone & Microphone Interface (Pitch 1.25mm, 6 pins)	
J18	Audio Speaker Out (Pitch 1.25mm, 2 pins)	
J19	Micro SD Card Socket	
J20	M.2 E Key	
J21	M.2 B Key	
J22	Nano SIM Card Socket	
J23	UART Debug (Pitch 1.25mm, 4pin)	
J24	RS232 & RS485 (Pitch 2.0mm, 2x5pin)	
J25	CAN Bus / USB 2.0 Host (Pitch 2.0mm, 2x5pin)	
J26	RTC Power Supply (Pitch 1.25mm, 2 pins)	
J27	PoE Power Supply (Pitch 2.0mm, 2x5pin)	No function
J29	Power Management (Pitch 1.25mm, 10pin)	
JP1	Boot Mode Switch	
JP2	Display Power Select (Pitch 2.0mm, 1x3pin)	
SW1	Reset System Button	
SW2	Power On/Off Button	

2.3 Interface Pin Description

J1 --- Power Supply

Pin No.	Symbol	Type	Description
1	V _{IN}	P	DC Power Supply of System
2	GND	P	Ground



J2 --- USB 3.0 Type-C (OTG/DP/PD)

Pin No.	Symbol	Type	Description
A1	GND	P	Ground
A2	SSTXP1	DS	SuperSpeed Transmit Differential Pair #1, Positive
A3	SSTXN1	DS	SuperSpeed Transmit Differential Pair #1, Negative
A4	VBUS	P	Bus Power Supply
A5	CC1	IO	Configuration Channel, Position 1
A6	DP1	DS	USB Differential Pair, Position 1, Positive
A7	DN1	DS	USB Differential Pair, Position 1, Negative
A8	SBU1	IO	Sideband Use, Position 1
A9	VBUS	P	Bus Power Supply
A10	SSRXN2	DS	SuperSpeed Receive Differential Pair #2, Negative
A11	SSRXP2	DS	SuperSpeed Receive Differential Pair #2, Positive
A12	GND	P	Ground
B1	GND	P	Ground
B2	SSTXP2	DS	SuperSpeed Transmit Differential Pair #2, Positive
B3	SSTXN2	DS	SuperSpeed Transmit Differential Pair #2, Negative
B4	VBUS	P	Bus Power Supply
B5	CC2	IO	Configuration Channel, Position 2
B6	DP2	DS	USB Differential Pair, Position 2, Positive
B7	DN2	DS	USB Differential Pair, Position 2, Negative

Pin No.	Symbol	Type	Description
B8	SBU2	IO	Sideband Use, Position 2
B9	VBUS	P	Bus Power Supply
B10	SSRXN1	DS	SuperSpeed Receive Differential Pair #1, Negative
B11	SSRXP1	DS	SuperSpeed Receive Differential Pair #1, Positive
B12	GND	P	Ground

J3 --- USB 2.0 Type-C Host

Pin No.	Symbol	Type	Description
A1	GND	P	Ground
A2	NC	-	No Connection
A3	NC	-	No Connection
A4	VBUS	P	Bus Power Supply
A5	CC1	IO	Configuration Channel, Position 1
A6	DP1	DS	USB Differential Pair, Position 1, Positive
A7	DN1	DS	USB Differential Pair, Position 1, Negative
A8	NC	-	No Connection
A9	VBUS	P	Bus Power Supply
A10	NC	-	No Connection
A11	NC	-	No Connection
A12	GND	P	Ground
B1	GND	P	Ground
B2	NC	-	No Connection
B3	NC	-	No Connection
B4	VBUS	P	Bus Power Supply
B5	CC2	IO	Configuration Channel, Position 2
B6	DP2	DS	USB Differential Pair, Position 2, Positive
B7	DN2	DS	USB Differential Pair, Position 2, Negative
B8	NC	-	No Connection
B9	VBUS	P	Bus Power Supply
B10	NC	-	No Connection
B11	NC	-	No Connection
B12	GND	P	Ground

J4 --- SMARC MXM 314 Pin

J5 --- Micro-HDMI (Type D)

Pin No.	Symbol	Type	Description
1	HPD	I	Hot Plug Detect
2	NC	-	No Connection
3	TMDS DATA2+	DS	Data2+ Signal
4	GND	P	Ground
5	TMDS DATA2-	DS	Data2- Signal
6	TMDS DATA1+	DS	Data1+ Signal
7	GND	P	Ground
8	TMDS DATA1-	DS	Data1- Signal
9	TMDS DATA0+	DS	Data0+ Signal
10	GND	P	Ground
11	TMDS DATA0-	DS	Data0- Signal
12	TMDS Clock+	DS	Clock+ Signal
13	GND	P	Ground
14	TMDS Clock-	DS	Clock- Signal
15	NC	-	No Connection
16	GND	P	Ground
17	SCL	IO	I2C Serial Clock for DDC
18	SDA	IO	I2C Serial Data for DDC
19	+5 V Power	P	+5.0V Output

J6 --- I2C & GPIO Interface (Pitch 1.25mm, 6 pins)

Pin No.	Symbol	Type	Description
1	GND	P	Ground
2	I2C_DAT	IO	I2C Port3 M1 Serial Data
3	I2C_CK	IO	I2C Port3 M1 Serial Clock
4	GPIO10	IO	GPIO0_B5
5	GPIO11	IO	GPIO0_B6
6	VDD3V3	P	+3.3V Output

J8 --- Display I/F – Dual LVDS (Pitch 2.0mm, 2x20pin) (Optional: Dual MIPI DSI)

Function	Symbol	Type	Description	Pin No.
Power	VLCD_POWER	P	Power Supply for Display Module. Use JP2 to Select Between the +3.3V and +5V Power Input.	1, 2, 3
	VBLPWR		Power Supply for Backlight. Between 12V and 24V.	37, 39
	GND		Ground	4, 5, 6, 13, 14, 19, 20, 29, 30
LVDS	LVDS0_0-	DS	LVDS0 Data Line 0 Differential Pair, Negative	7
	LVDS0_0+		LVDS0 Data Line 0 Differential Pair, Positive	8
	LVDS0_1-		LVDS0 Data Line 1 Differential Pair, Negative	9
	LVDS0_1+		LVDS0 Data Line 1 Differential Pair, Positive	10
	LVDS0_2-		LVDS0 Data Line 2 Differential Pair, Negative	11
	LVDS0_2+		LVDS0 Data Line 2 Differential Pair, Positive	12
	LVDS0_CK-		LVDS0 Clock Line Differential Pair, Negative	15
	LVDS0_CK+		LVDS0 Clock Line Differential Pair, Positive	16
	LVDS0_3-		LVDS0 Data Line 3 Differential Pair, Negative	17
	LVDS0_3+		LVDS0 Data Line 3 Differential Pair, Positive	18
	LVDS1_0-		LVDS1 Data Line 0 Differential Pair, Negative	23
	LVDS1_0+		LVDS1 Data Line 0 Differential Pair, Positive	24
	LVDS1_1-		LVDS1 Data Line 1 Differential Pair, Negative	25
	LVDS1_1+		LVDS1 Data Line 1 Differential Pair, Positive	26
	LVDS1_2-		LVDS1 Data Line 2 Differential Pair, Negative	27
	LVDS1_2+		LVDS1 Data Line 2 Differential Pair, Positive	28
	LVDS1_CK-		LVDS1 Clock Line Differential Pair, Negative	31
	LVDS1_CK+		LVDS1 Clock Line Differential Pair, Positive	32
	LVDS1_3-		LVDS1 Data Line 3 Differential Pair, Negative	33
	LVDS1_3+		LVDS1 Data Line 3 Differential Pair, Positive	34
Other	LCD0_BKLT_EN	O	GPIO0_B0, for LCD0 Backlight Enable	40
	LCD1_BKLT_EN	O	GPIO0_C6, for LCD1 Backlight Enable	22
	LCD0_BKLT_PWM	O	PWM4, LCD0 Backlight Control	38
	LCD1_BKLT_PWM	O	PWM0_M0, LCD1 Backlight Control	36
	NC	-	No Connection	21, 35

J9 --- Ethernet RJ45 (eth0)

Pin No.	Symbol	Type	Description
1	TX_D1+	DS	Transmit Differential Pair, Positive
2	TX_D1-	DS	Transmit Differential Pair, Negative
3	RX_D2+	DS	Receive Differential Pair, Positive
4	BI_D3+	DS	Bi-directional Differential Pair, Positive
5	BI_D3-	DS	Bi-directional Differential Pair, Negative
6	RX_D2-	DS	Receive Differential Pair, Negative
7	BI_D4+	DS	Bi-directional Differential Pair, Positive
8	BI_D4-	DS	Bi-directional Differential Pair, Negative

J10 --- Ethernet RJ45 (eth1)

Pin No.	Symbol	Type	Description
1	TX_D1+	DS	Transmit Differential Pair, Positive
2	TX_D1-	DS	Transmit Differential Pair, Negative
3	RX_D2+	DS	Receive Differential Pair, Positive
4	BI_D3+	DS	Bi-directional Differential Pair, Positive
5	BI_D3-	DS	Bi-directional Differential Pair, Negative
6	RX_D2-	DS	Receive Differential Pair, Negative
7	BI_D4+	DS	Bi-directional Differential Pair, Positive
8	BI_D4-	DS	Bi-directional Differential Pair, Negative

J12 --- MIPI CSI (Pitch 0.5mm 22pin connector bottom contact)

Function	Symbol	Type	Description	Pin No.
Power	VDD3V3	P	+3.3V Output	22
	GND		Ground	1, 4, 7, 10, 13, 16, 19
MIPI CSI	CSI1_RX0-	DS	MIPI CSI1 Data 0, Negative	2
	CSI1_RX0+		MIPI CSI1 Data 0, Positive	3
	CSI1_RX1-		MIPI CSI1 Data 1, Negative	5
	CSI1_RX1+		MIPI CSI1 Data 1, Positive	6
	CSI1_CK-		MIPI CSI1 Clock, Negative	8
	CSI1_CK+		MIPI CSI1 Clock, Positive	9

Function	Symbol	Type	Description	Pin No.
MIPI CSI	CSI1_RX2-	DS	MIPI CSI1 Data 2, Negative	11
	CSI1_RX2+		MIPI CSI1 Data 2, Positive	12
	CSI1_RX3-		MIPI CSI1 Data 3, Negative	14
	CSI1_RX3+		MIPI CSI1 Data 3, Positive	15
	CSI1_GPIO	IO	GPIO1_B3, for Camera 1 Power Enable or Reset	17
		IO	GPIO1_B1, for Camera 1 Power Enable or Reset	18
I2C signal	I2C_CAM1_CK	IO	I2C Port5 M0 Serial Clock	20
	I2C_CAM1_DAT	IO	I2C Port5 M0 Serial Data	21

J13 --- Dual USB 3.0 Type-A Host

Pin No.	Symbol	Type	Description
1	VBUS	P	+5.0V Output
2	D-	DS	USB Differential Pair, Negative
3	D+	DS	USB Differential Pair, Positive
4	GND	P	Ground
5	SSRX-	DS	SuperSpeed Receive Differential Pair, Negative
6	SSRX+	DS	SuperSpeed Receive Differential Pair, Positive
7	GND	P	Ground
8	SSTX-	DS	SuperSpeed Transmit Differential Pair, Negative
9	SSTX+	DS	SuperSpeed Transmit Differential Pair, Positive

J14 --- USB 2.0 Host Interface (Pitch 1.25mm, 5 pins)

Pin No.	Symbol	Type	Description
1	VBUS	P	+5.0V Output
2	D-	DS	USB Differential Pair, Negative
3	D+	DS	USB Differential Pair, Positive
4	GND	P	Ground
5	GND	P	Ground

J17 --- Audio Headphone and Mic. Interface (Pitch 1.25mm, 6 pins)

Pin No.	Symbol	Type	Description
1	VDD1V8	P	+1.8V Output
2	HP_LEFT	DS	True-ground Headphone Output Left
3	HP_RIGHT	DS	True-ground Headphone Output Right
4	MIC_P	DS	Differential Mic. Input (pos) / Single-ended Mic. Input (left)
5	MIC_N	DS	Differential Mic. Input (neg) / Single-ended Mic. Input (left)
6	GND	P	Ground

J18 --- Audio Speaker Out (Pitch 1.25mm, 2 pins)

Pin No.	Symbol	Type	Description
1	SP_P	IO	Differential Speaker Output (pos)
2	SP_N	IO	Differential Speaker Output (neg)

J19 --- Micro SD Card Socket

Pin No.	Symbol	Type	Description
1	DAT2	IO	SDIO Data Line 2
2	DAT3	IO	SDIO Data Line 3
3	CMD	IO	SDIO Command Line
4	VDD	P	+3.3V Output
5	CLK	O	SDIO Clock
6	VSS	P	Ground
7	DAT0	IO	SDIO Data Line 0
8	DAT1	IO	SDIO data Line 1

J20 --- M.2 E Key

Function	Symbol	Type	Description	Pin No.
Power	3.3V	P	+3.3V Output	2, 4, 72, 74
	GND		Ground	1, 7, 18, 33, 39, 45, 51, 57, 63, 69, 75
USB	USB_D+	DS	USB Differential Pair, Positive	3
	USB_D-		USB Differential Pair, Negative	5

Function	Symbol	Type	Description	Pin No.
LED	LED_1	IO	LED1 Indicators, Active Low	6
	LED_2		LED2 Indicators, Active Low	16
I2S	I2S_SCK	IO	I2S Port 1 Digital Audio Clock	8
	I2S_WS	IO	I2S Port 1 Left & Right Synchronization Clock	10
	I2S_SD_IN	I	I2S Port 1 Digital Audio Input	12
	I2S_SD_OUT	O	I2S Port 1 Digital Audio Clock	14
UART	UART_WAKE	I	Wake Up Interrupt to Host (PCIE30X2_WAKEn_M1)	20
	UART_RXD	I	UART4 Receiver Signal	22
	UART_TXD	O	UART4 Transmitter Signal	32
	UART_CTS	I	UART4 Clear to Send Signal	34
	UART_RTS	O	UART4 Request to Send	36
PCIe	PETp0	DS	PCIe Transmit Differential Pair, Positive (PCIE30_TX0P)	35
	PETn0		PCIe Transmit Differential Pair, Negative (PCIE30_TX0N)	37
	PERp0		PCIe Receive Differential Pair, Positive (PCIE30_RX0P)	41
	PERn0		PCIe Receive Differential Pair, Negative (PCIE30_RX0N)	43
	REFCLKp0		PCIe Reference Clock Differential Pair, Positive	47
	REFCLKn0		PCIe Reference Clock Differential Pair, Negative	49
	PERST0	O	PCIe Reset Output (PCIE30X2_PERSTn_M1)	52
	CLKREQ0	I	PCIe Clock Request (PCIE30X2_CLKREQn_M1)	53
	PEWAKE0	I	Wake Up Interrupt to Host (PCIE30X2_WAKEn_M1)	55
I2C	I2C_DAT	IO	I2C Port2 M1 Serial Data	58
	I2C_CLK	IO	I2C Port2 M1 Serial Clock	60
	ALERT#	IO	GPIO3_C4, for I2C Bus Alert Signal	62
Other	Key E	-	Mechanical Notch E	24-31
	W_DISABLE1#	IO	Expander I/O, for Wireless disable 1	56
	W_DISABLE2#	IO	Expander I/O, for Wireless disable 2	54
	NC	-	No Connection	9, 11, 13, 15, 17, 19, 21, 23, 38, 40, 42, 44, 46, 48, 50, 59, 61, 64, 65, 66, 67, 68, 70, 71, 73

J21 --- M.2 B Key

Function	Symbol	Type	Description	Pin No.
Power	VDD1V8	P	+1.8V Output	25,67
	VDD3V3		+3.3V Output	2, 4, 6, 70, 72, 74
	GND		Ground	3, 5, 11, 27, 33, 39, 45, 51, 57, 71, 73
USB 3.0	USB_D+	DS	USB Differential Pair, Positive	7
	USB_D-		USB Differential Pair, Negative	9
	SSRX-		SuperSpeed Receive Differential Pair, Negative	29
	SSRX+		SuperSpeed Receive Differential Pair, Positive	31
	SSTX-		SuperSpeed Transmit Differential Pair, Negative	35
	SSTX+		SuperSpeed Transmit Differential Pair, Positive	37
Module Config	CONFIG_0	I	Defines Module Type	21
	CONFIG_1			69
	CONFIG_2			75
	CONFIG_3			1
SIM Card	UIM_RESET	O	Reset Signal.	30
	UIM_CLK	O	Clock Signal for Serial Data	32
	UIM_DATA	IO	I/O for Serial Data	34
	UIM_PWR	P	VDC Power Supply Input	36
	SIM_DETECT	I	Card Detect Switch	66
PCIe	PERn0	DS	PCIe Receive Differential Pair, Negative (PCIE30_RX1_N)	41
	PERp0		PCIe Receive Differential Pair, Positive (PCIE30_RX1_P)	43
	PETn0		PCIe Transmit Differential Pair, Negative (PCIE30_TX1_N)	47
	PETp0		PCIe Transmit Differential Pair, Positive (PCIE30_TX1_P)	49
	REFCLKN		PCIe Reference Clock Differential Pair, Negative	53
	REFCLKP		PCIe Reference Clock Differential Pair, Positive	55
	PERST0	O	PCIe Reset Output (PCIE30X1_PERSTn_M1)	50
	CLKREQ0	I	PCIe Clock Request (PCIE30X1_CLKREQn_M1)	52
	PEWAKE0	I	Wake Up Interrupt to Host (PCIE30X2_WAKEn_M1)	54
Other	Key B	-	Mechanical Notch B	12-19
	GPIO	IO	GPIO3_C2	23
			Expander I/O	8, 26, 38

Function	Symbol	Type	Description	Pin No.
Other	NC	-	No Connection	10, 20, 22, 24, 28, 40, 42, 44, 46, 48, 56, 58, 59, 60, 61, 62, 63, 64, 65, 68

J22 --- Nano SIM Card Socket

Pin No.	Symbol	Type	Description
C1	VCC	P	Power Supply
C2	RST	O	Reset Signal
C3	CLK	O	Clock Signal
C5	GND	P	Ground
C6	VPP	P	Programming Power Supply
C7	I/O	IO	Data Signal

J23 --- UART Debug (Pitch 1.25mm, 4pin)

Pin No.	Symbol	Type	Description
1	VDD3V3	P	+3.3V Output
2	SER3_TX	O	UART2_M0 Transmit Signal (3.3V Level)
3	SER3_RX	I	UART2_M0 Receive Signal (3.3V Level)
4	GND	P	Ground

J24 --- RS232 & RS485 (Pitch 2.0mm, 2x5pin)

Function	Symbol	Type	Description	Pin No.
Power	VDD3V3	P	+3.3V Output	1
	GND		Ground	3, 5, 6
RS485	RS485_0_A	IO	RS485 A (UART8_M0)	2
	RS485_0_B	IO	RS485 B (UART8_M0)	4
RS232	RS232_TX	O	RS232 Transmit Signal (UART3_TX_M0, RS232 Level)	7
	RS232_RTS	O	RS232 Request to Send Signal (UART3_RTS_M0, RS232 Level)	8
	RS232_RX	I	RS232 Receive Signal (UART3_RX_M0, RS232 Level)	9
	RS232_CTS	I	RS232 Clear to send handshake line (UART3_CTS_M0, RS232 Level)	10

J25 --- CAN Bus / USB 2.0 Host (Pitch 2.0mm, 2x5pin)

<u>Function</u>	<u>Symbol</u>	<u>Type</u>	<u>Description</u>	<u>Pin No.</u>
Power	VDD3V3	P	+3.3V output	1
	VDD5V		+5V output	9
	GND		Ground	3, 6
CAN Bus signal	CAN_BUSH0	IO	High-level CAN bus 0 I/O line	2
	CAN_BUSL0	IO	Low-level CAN bus 0 I/O line	4
	CAN_BUSH1	IO	High-level CAN bus 1 I/O line	8
	CAN_BUSL1	IO	Low-level CAN bus 1 I/O line	10
USB signal	D+	DS	USB differential pair, positive	5
	D-	DS	USB differential pair, negative	7

J26 --- RTC Power Supply (Pitch 1.25mm, 2 pins)

<u>Pin No.</u>	<u>Symbol</u>	<u>Type</u>	<u>Description</u>
1	GND	P	Ground
2	VDD_RTC	P	+3.3V input

J29 --- Power Management (Pitch 1.25mm, 10pin)

<u>Pin No.</u>	<u>Symbol</u>	<u>Type</u>	<u>Description</u>
1	VDD5V	P	+5V Output
2	VBK3V3	P	+3.3V Output
3	VDD3V3	P	+3.3V Output
4	VDD1V8	P	+1.8V Output
5	RESET	I	Reset System
6	Power on	I	PMIC Power On
7	NC	-	No Connection
8	NC	-	No Connection
9	NC	-	No Connection
10	GND	P	Ground

JP1 --- Boot Mode Switch

JP1[1]	JP1[2]	JP1[3]	JP1[4]	BOOT MODE[0:3]	Boot Type
ON	-	-	-	0---	Loader mode & Recovery mode
OFF	-	-	-	1---	Internal boot (eMMC)

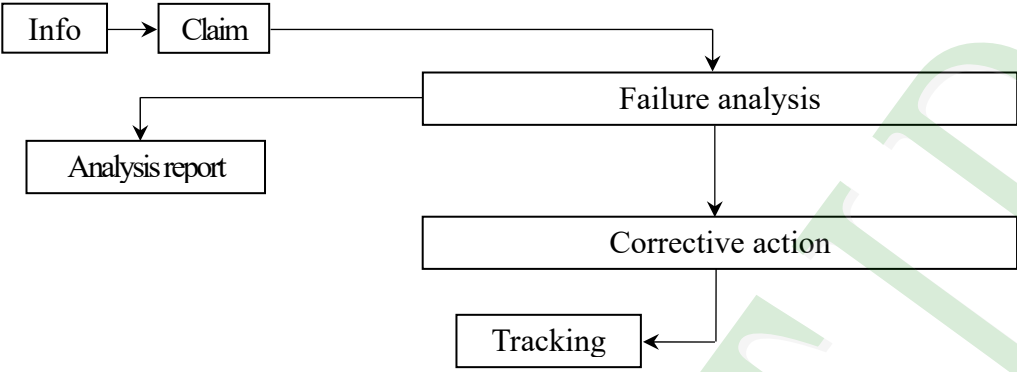
JP2 --- Display Power Select (Pitch 2.0mm, pin1x3)

Connected Pin No.	Description
1-2	VLCD_POWER is +5V
2-3	VLCD_POWER is +3.3V



SW1 --- Reset System Button

SW2 --- Power On/Off Button

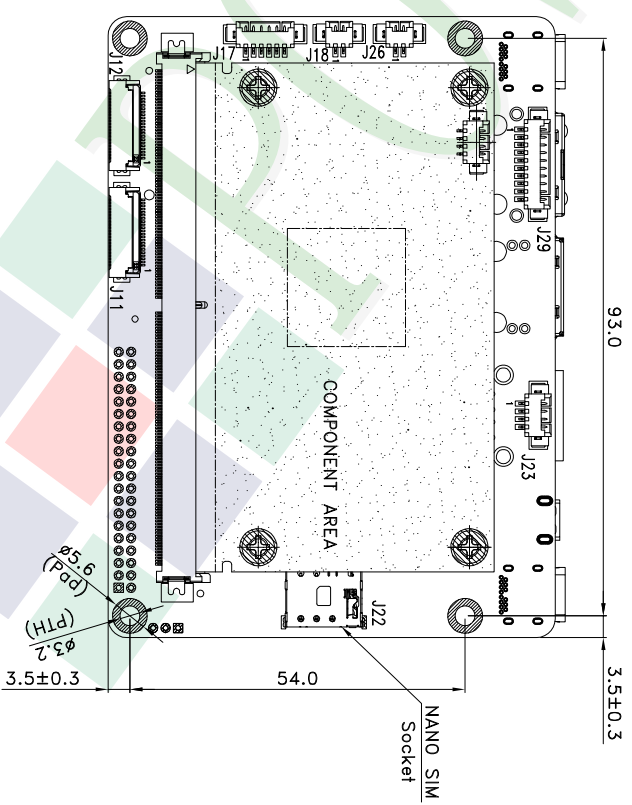
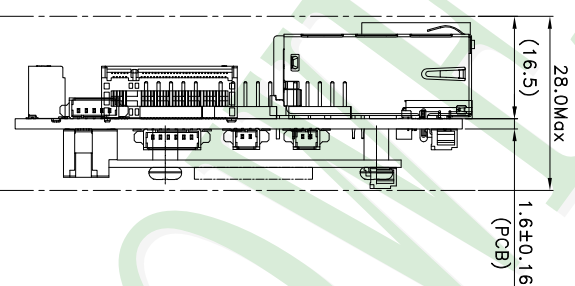
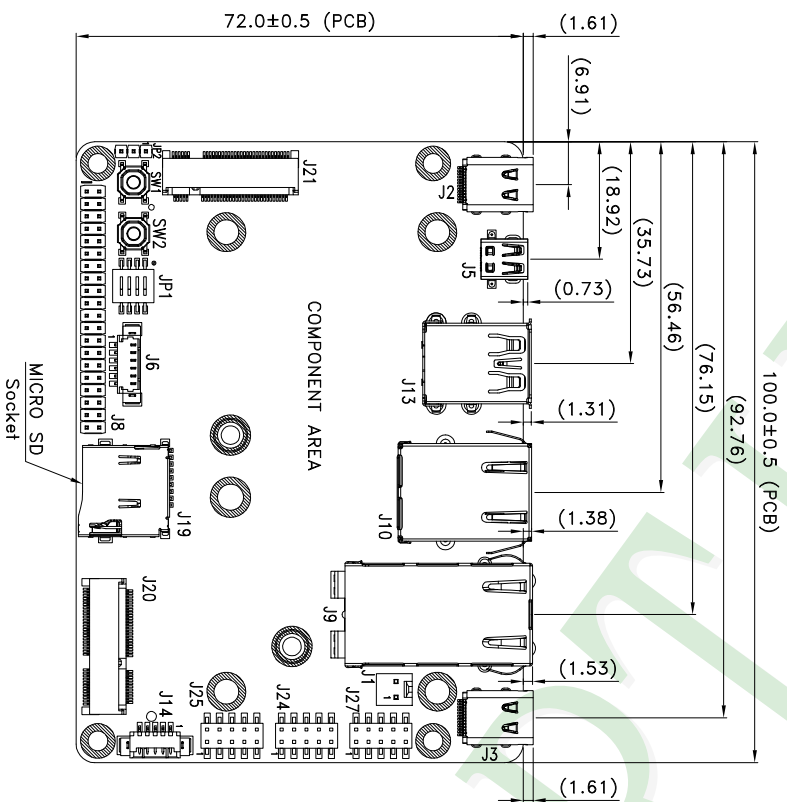
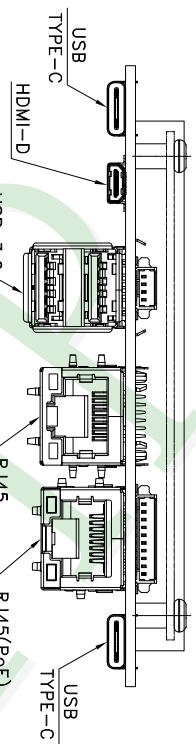
Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service	 <pre> graph TD Info[Info] --> Claim[Claim] Claim --> Failure[Failure analysis] Claim --> Report[Analysis report] Failure --> Action[Corrective action] Action --> Tracking[Tracking] </pre>							
Q.A Activity	1. ISO 9001 Maintenance Activities 2. Process improvement proposal 3. Equipment calibration 4. Education And Training Activities 5. Standardization Management							

4. Reliability Test

4.1 Reliability Test Condition

(Ver.B01)

NO.	TEST ITEM	TEST CONDITION											
1	High Temperature Operation Test	Keep in 70 ± 2 °C 168 hrs											
2	Low Temperature Operation Test	Keep in 0 ± 2 °C 168 hrs											
1	High Temperature Storage Test	Keep in 85 ± 2 °C 168 hrs											
2	Low Temperature Storage Test	Keep in -40 ± 2 °C 168 hrs											
3	High Temperature / High Humidity Storage Test	Keep in 60 °C / 90% R.H duration for 240 hrs (Excluding the polarizer)											
4	Temperature Cycling Storage Test	-40 °C → +25 °C → 85 °C → +25 °C ←(30 mins) (5 mins) (30 mins) (5 mins)→ 20 Cycle											
5	ESD Test	Air Discharge: Apply 2 KV with 5 times Discharge for each polarity +/-	Contact Discharge: Apply 250 V with 5 times discharge for each polarity +/-										
		1. Temperature ambience: 15°C~35°C 2. Humidity relative: 30%~60% 3. Energy Storage Capacitance (Cs+Cd): 150pF±10% 4. Discharge Resistance (Rd): 330Ω±10% 5. Discharge, mode of operation: Single Discharge (time between successive discharges at least 1 sec) (Tolerance if the output voltage indication: ±5%)											
6	Vibration Test (Packaged)	1. Sine wave 10~55 Hz frequency (1 min/sweep) 2. The amplitude of vibration: 1.5 mm 3. Each direction (X, Y, Z) duration for 2 hrs											
7	Drop Test (Packaged)	<table><tr><th>Packing Weight (Kg)</th><th>Drop Height (cm)</th></tr><tr><td>0 ~ 45.4</td><td>122</td></tr><tr><td>45.4 ~ 90.8</td><td>76</td></tr><tr><td>90.8 ~ 454</td><td>61</td></tr><tr><td>Over 454</td><td>46</td></tr></table>		Packing Weight (Kg)	Drop Height (cm)	0 ~ 45.4	122	45.4 ~ 90.8	76	90.8 ~ 454	61	Over 454	46
		Packing Weight (Kg)	Drop Height (cm)										
		0 ~ 45.4	122										
		45.4 ~ 90.8	76										
		90.8 ~ 454	61										
Over 454	46												
Drop Direction :※1 corner / 3 edges / 6 sides each 1 time													



- NOTES:
1. The tolerance unless otherwise classified $\pm 0.2\text{mm}$
 2. J18:J26:MoHex 532610271 or Compatible
 3. J23:MoHex 532610471 or Compatible
 4. J14:MoHex 532610571 or Compatible
 5. J17:MoHex 532610671 or Compatible
 6. J6:CVilux C14406M1VRO-NH or Compatible
 7. J1:CVilux C13102P1V00-NH or Compatible
 8. J8:Pin Header Pitch2.0 2x20=40pin
 9. J24:J25:J27:Pin Header Pitch2.0 2x5=10pin
 10. J20:M.2 E key
 11. J21:M.2 B key
 12. J29:MoHex 532611071 or Compatible
 13. J11, J12:OMRON XF2M-2215-1A or Compatible
 14. JP2:Pin Header Pitch2.0 1x3=3pin

007				PART NO.:																
006				P05D00108-01-AN03																
005				DRAWING NAME :																
004				LMD-P05D00108-01-AN03	Design		Jason										久正光		電 股 份 有 限 公 司	
003				TITLE:	Check		Bright				(3)		Surface		Tolerance (mm)		Precision Level			
002					Approve		Marcs		Page		1/1		Quantity		1 ~ 4		-			
001	NEW DRAWING	Jason	2025/04/01	LCD MODULE DRAWING					Scale		FIT		Thickness		4 ~ 16		-			
REV	REV BY	REVISER	DATE						Page		1/1		Quantity		16 ~ 63		-			
									Page		1/1		Quantity		63 ~ 250		-			
									Page		1/1		Quantity		250 ~ 1000		-			