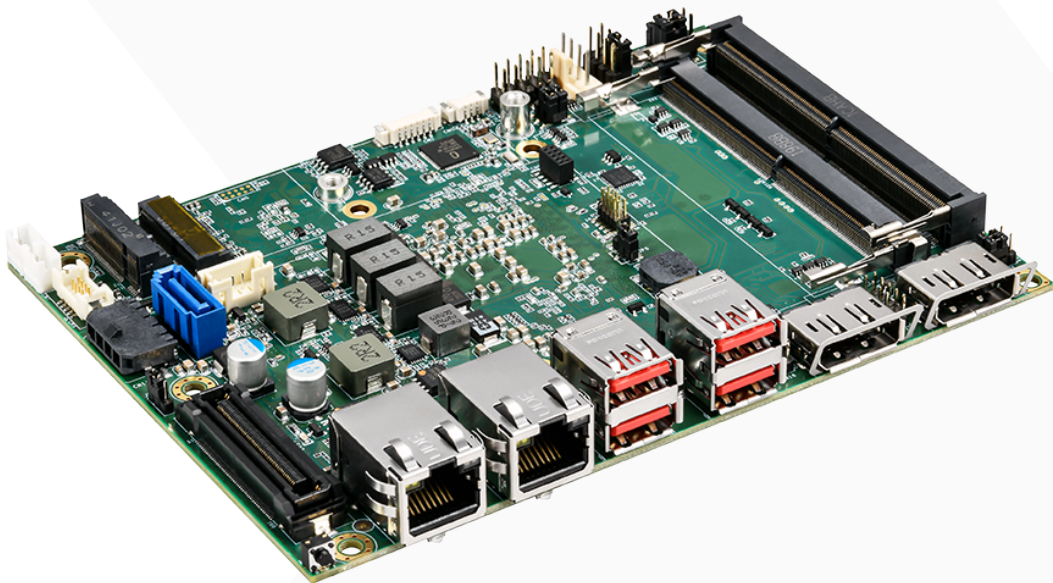


# 3.5"-SBC-RPL



## 3.5" Single Board Computer with 13th Gen Intel® Core™ U-Series Processors

- Time Coordinated Computing / Time Sensitive Networking for real-time control
- 8K UHD video output support
- Additional Rear I/O expansion via board-to-board connector
- Industrial-grade operating temperature range for extreme environmental conditions
- Wide power input voltage range for more application scenarios

## 3.5" Single Board Computer with 13th Gen Intel® Core™ U-Series Processors

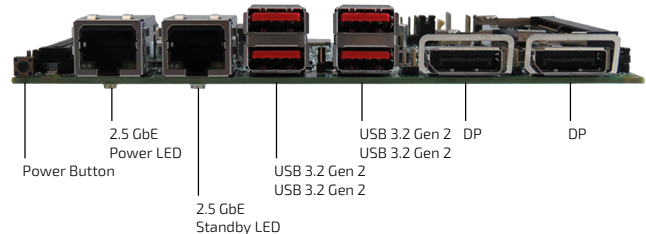
3.5"-SBC-RPL is a 3.5" single board computer powered by 13th Gen Intel® Core™ U-Series processors. Besides great performance improvement in graphics, it features 2.5 GbE with TSN (Time Sensitive Networking) capability and enhanced TPM 2.0 security / encryption support, ideal for a variety of IoT applications, such as

industrial automation, retail, smart city and healthcare.

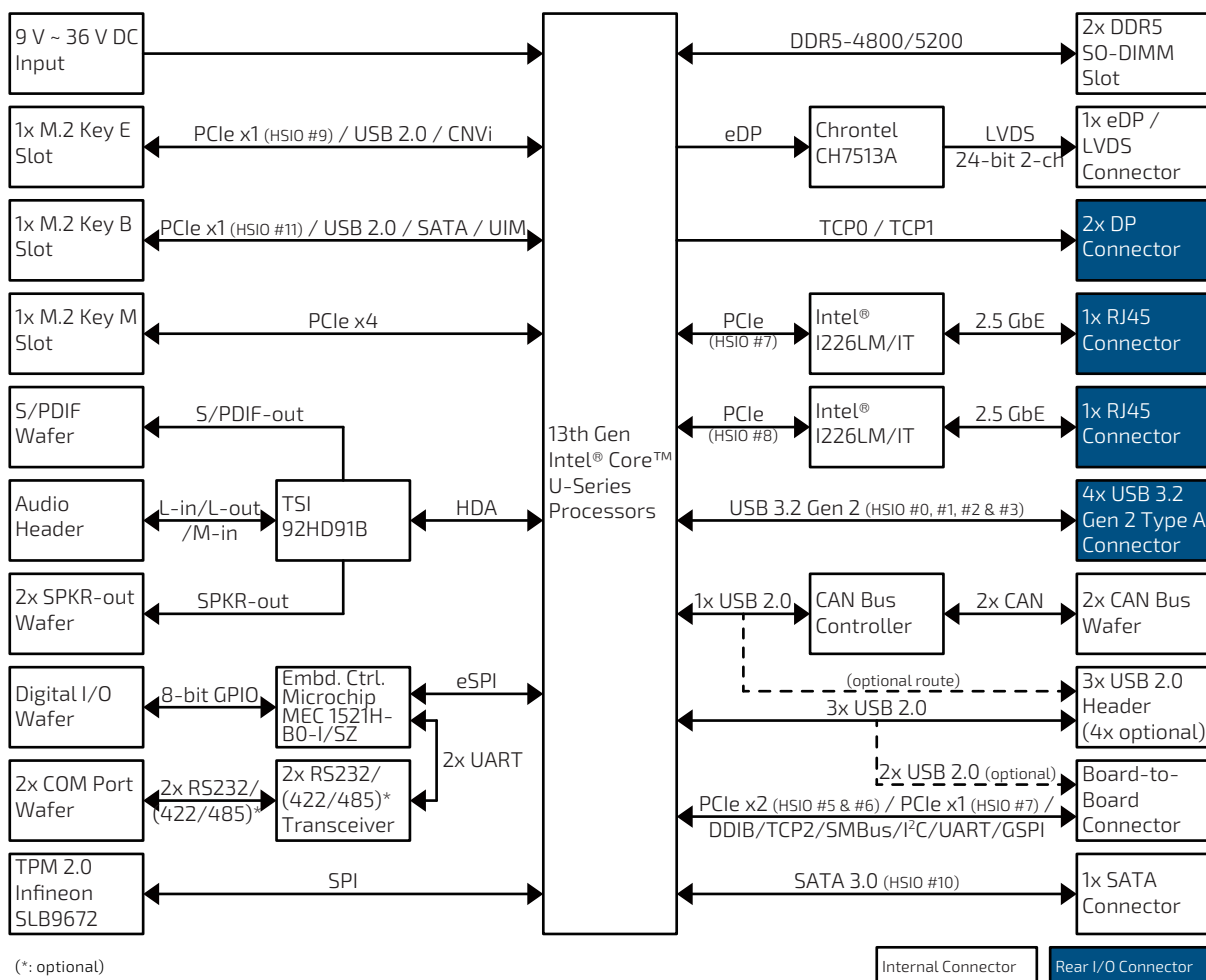
The board supports an extended board-to-board connector, providing additional I/O port expansion to fulfill possible application requirements.

- 13th Gen Intel® Core™ U-Series processors (TDP up to 28 W)
- 2x DDR5 SO-DIMM memory socket
- 2x DP, 1x eDP / LVDS for video output
- 2x 2.5 GbE LAN for Ethernet
- 4x USB 3.2 Gen 2, 3x USB 2.0 for USB device connection
- 2x RS232 or 2x RS232/422/485 for serial device connection
- 4x DI, 4x DO for device / signal control
- 2x CAN Bus for industrial networking
- 1x SATA 3.0 for storage device
- 1x M.2 Key B for SSD, WWAN or other expansion
- 1x M.2 Key E for WLAN, Bluetooth or other expansion
- 1x M.2 Key M for SSD
- 1x board-to-board connector for additional real I/Os

- TPM 2.0 support
- Wide power input voltage range support: DC 9 V ~ 36 V
- Extreme temperature model available: -40 °C ~ 85 °C



## Block Diagram



<b>SYSTEM</b>	<b>PROCESSOR</b>	Intel® Core™ i7-1365UE / i7-1365URE (10C, 12M, 1.7 / 4.9 GHz, FCBGA1744, 12 W ← 15 W → 28 W TDP) Intel® Core™ i5-1345UE / i5-1345URE (10C, 12M, 1.4 / 4.6 GHz, FCBGA1744, 12 W ← 15 W → 28 W TDP) Intel® Core™ i3-1315UE / i3-1315URE (6C, 10M, 1.2 / 4.5 GHz, FCBGA1744, 12 W ← 15 W → 28 W TDP) Intel® U300E (5C, 8M, 1.1 / 4.3 GHz, FCBGA1744, 12 W ← 15 W → 28 W TDP) 2x DDR5 5200 SO-DIMM up to 96 GByte
	<b>MEMORY</b>	
<b>VIDEO</b>	<b>GRAPHICS</b>	Intel® Iris® X <sup>e</sup> Graphics
	<b>DISPLAY INTERFACE</b>	1x eDP (4096 x 2304 @ 120 Hz) / LVDS (24-bit, 2-ch, 1920 x 1200 @ 60 Hz)
	<b>MULTIPLE DISPLAY</b>	2x DP (7680 x 4320 @ 60 Hz, on rear) Quadruple Display (more display I/Os supported via board-to-board connector)
<b>AUDIO</b>	<b>AUDIO CODEC</b>	TSI 92HD91B
	<b>AUDIO INTERFACE</b>	1x Speaker-out (Stereo, 3 W, by header) 1x Line-in (by header) 1x Line-out (by header) 1x Mic-in (by header) 1x S/PDIF Out (by header)
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	2x 2.5 GbE LAN (RJ45 on rear, Intel® I226-LM/IT, TSN support*)
<b>PERIPHERAL CONNECTION</b>	<b>USB</b>	4x USB 3.2 Gen 2 (Type A on rear)
	<b>SERIAL PORT</b>	3x USB 2.0 (by header, +1 in case of no CAN Bus, -2 in case of 2x USB 2.0 in B2B)
	<b>OTHER I/Os</b>	2x RS232 (def.) / RS232/422/485 (opt.) (by header, Tx/Rx only for RS232 signal) 4x DI (by header) 4x DO (by header) 2x CAN Bus (by header)
<b>STORAGE &amp; EXPANSION</b>	<b>SATA</b>	1x SATA 3.0
	<b>M.2</b>	1x M.2 Key B (Type 2242/3042/3052/2280, w/ PCIe x1 / USB 2.0 / SATA / UIM) 1x M.2 Key E (Type 2230, w/ PCIe x1 / USB 2.0 / CNVi) 1x M.2 Key M (Type 2280, w/ PCIe x4)
	<b>SIM CARD HOLDER</b>	1x SIM Card Holder (by header)
	<b>BOARD-TO-BOARD CONNECTOR</b>	1x DDI 1x TCP 1x PCIe x2 1x PCIe x1 1x SM Bus 1x I <sup>2</sup> C 1x UART 1x GSPi 2x USB 2.0 (optional, trade off w/ USB 2.0 header)
<b>POWER</b>	<b>INPUT VOLTAGE</b>	DC 9 V ~ 36 V
	<b>CONNECTOR</b>	1x4-pin pitch 3.0 mm Wafer
<b>FIRMWARE</b>	<b>BIOS</b>	AMI uEFI BIOS w/ 256 Mb SPI Flash
	<b>WATCHDOG</b>	Programmable WDT to generate system reset event
	<b>H/W MONITOR</b>	Voltages, Temperatures
	<b>REAL TIME CLOCK</b>	Processor integrated RTC
	<b>SECURITY</b>	TPM 2.0 Support (Infineon SLB 9672)
<b>SYSTEM CONTROL &amp; MONITORING</b>	<b>FP HEADER</b>	1x Header for Reset Button, HDD LED & External Speaker
	<b>BUTTON, SWITCH &amp; INDICATOR</b>	1x Header for Power Button, Power LED & SM Bus 1x Standby LED (Yellow, on rear) 1x Power LED (Green, on rear) 1x Power Button (on rear)
<b>COOLING</b>	<b>FAN</b>	1x Wafer for Smart Fan
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	Windows 11, Windows 10, Linux
<b>MECHANICAL</b>	<b>DIMENSION (L x W)</b>	ECX (146 mm x 105 mm / 5.75" x 4.13")
<b>ENVIRONMENTAL</b>	<b>OPERATING TEMPERATURE</b>	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard)
	<b>STORAGE TEMPERATURE</b>	-40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)
	<b>HUMIDITY</b>	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard)
		-55 °C ~ 85 °C / -67 °F ~ 185 °F (Extreme)
		0 % ~ 95 %
<b>COMPLIANCE</b>	<b>EMC &amp; SAFETY</b>	CE Class B, FCC Class B, ICES Class B, UKCA, UR (UL Recognized)

\* TSN support only for models with Core™ URE Series processors

ARTICLE	ORDERING CODE*		DESCRIPTION
	EMEA / AMERICA	APAC	
3.5"-SBC-RPL-0-i7-1365URE-XT	43020-XT-2006		Intel® Core™ i7-1365URE, Operating temperature: -40 °C ~ 85 °C
3.5"-SBC-RPL-1-i5-1345URE-XT	43020-XT-2004		Intel® Core™ i5-1345URE, Operating temperature: -40 °C ~ 85 °C
3.5"-SBC-RPL-2-i3-1315UE	43020-ST-2001		Intel® Core™ i3-1315UE, Operating temperature: 0 °C ~ 60 °C
3.5"-SBC-RPL-3-U300E	43020-ST-2000		Intel® U300E, Operating temperature: 0 °C ~ 60 °C
3.5"-SBC-RPL-4-i5-1345UE	43020-ST-2003		Intel® Core™ i5-1345UE, Operating temperature: 0 °C ~ 60 °C
3.5"-SBC-RPL-5-i3-1315URE-XT	43020-XT-2002		Intel® Core™ i3-1315URE, Operating temperature: -40 °C ~ 85 °C
3.5"-SBC-RPL-6-i7-1365UE	43020-ST-2005		Intel® Core™ i7-1365UE, Operating temperature: 0 °C ~ 60 °C

\* For ordering code for APAC, contact your local account manager.

## Accessories

NO.	ARTICLE	ORDERING CODE		DESCRIPTION
		EMEA / AMERICA	APAC	
1	DC IN CABLE*	TBD	0C5020000001920L	1x4P 3.0 pitch to EHDP-2P 5.08 pitch + JST 110 1x2P, L = 230 mm
2	SATA CABLE	1064-2431	0C5020000004240L	1x7P connector with lock, pitch = 1.27 mm, L = 460 mm
3	SATA POWER CABLE	1064-2430	0C5020000004230L	1x4P 2.0 mm pitch to SATA 1x15P 1.27 mm pitch, L = 460 mm
4	COM PORT CABLE	1064-2427	0C5020000005130L	1x10P 1.25 mm pitch to DB9 connector, L = 350 mm
5	DIO CABLE	1065-3137	0C5020000003360L	D-SUB-9P (Female) to MX51021-10P 1x10P 1.25 mm pitch, L = 200 mm
6	USB CABLE (2 PORT)	1069-7893	0C5020003000010L	2x5P 2.0 mm pitch to 2x USB 2.0 Type A female w/ bracket, L = 27 cm
7	AUDIO CABLE	1070-1245	0C5020000005840L	2x5P 1.25 mm pitch to 3x 3.5 mm ear phone jack, L = 400 mm
8	ADAPTER	1074-9217	0I09025PU151A02L	Input: AC 100 V ~ 240 V, output: DC 24 V @ 6.25 A Max. 150 W
9	SCREW COPPER PILLAR KIT	TBD	0ZHK355BCC0000002	2x 39.6 mm pillar, 6x 19 mm pillar, 5x 5 mm screw
10	COOLER	1067-5535	0H05XX000002270L	Al heatsink w/ pad, 4-wire PWM controlled fan, Max. 15 W TDP
11	HEATSINK	TBD	0ZHK355RPL0000001	Al +Cu heatsink w/ pad, 4x M3x6L screw
12	I/O CARD (3.5"-eIO-GPA-0)	1069-6159	B35EGPA0-001001T	2x DP, 2x 2.5 GbE, 1x UART, 1x I <sup>2</sup> C, 1x SMBus, 1x GSPI, 1x DC In, 0 ~ 60 °C
13	I/O CARD (3.5"-eIO-GPA-1)	1069-6922	B35EGPA0-011001T	2x DP, 2x 2.5 GbE, 1x UART, 1x I <sup>2</sup> C, 1x SMBus, 1x GSPI, 0 ~ 60 °C
14	I/O CARD (3.5"-eIO-GPA-2-XT)	1073-9682	B35EGPAI-021000T	2x DP, 2x 2.5 GbE, 1x UART, 1x I <sup>2</sup> C, 1x SMBus, 1x GSPI, 1x DC In, -40~85°C

(\*: standard supplied accessories for single-piece box packing)

## Starter Kits

ARTICLE	ORDERING CODE		DESCRIPTION
	EMEA / AMERICA	APAC	
STARTER KIT FOR 3.5"-SBC-RPL (ACTIVE)	TBD	0ZHK355RPL0000003	Including above accessories table No. 1 ~ 8 & 10
STARTER KIT FOR 3.5"-SBC-RPL (PASSIVE)	TBD	0ZHK355RPL0000002	Including above accessories table No. 1 ~ 8, 9 & 11

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