

UP Core is a miniature board with the high performance and low power consumption features of the latest tablet technology: the Intel® Atom™ x5 Z8350 Processors (codename Cherry Trail) 64 bits up to 1.92GHz. The internal GPU is the new Intel Gen 8 HD 400 with 12 Execution Units up to 500MHz to deliver extremely high 3D graphic performance.

UP Core is equipped with 1GB/2GB/4GB DDR3L RAM and 16GB/32GB/64GB eMMC. With 100-pin docking connector, UP Core provides the freedom to makers to build up their carrier board. There are more interfaces available, such as 2x port USB2.0 + 1x UART on header, 1x USB 3.0 host, WiFi, Bluetooth 1x DSI/eDP port, 2x Camera (MIPI-CSI), 1x HDMI, RTC.

When it comes to security, UP Core has Intel security features needed for professional IoT applications such Intel AES New Instructions and Intel IdentityProtection Technology.

It's UP to you to choose which operation system is best for your application. The CPU is supported by Android 6 Marshmallow, Microsoft Windows 10 and we support and enable Linux, through our UP Community.

UP Core has a standard industrial PC operating temperature range of 32-140° F / 0-60°C, which makes it flexible for many applications.

UP core - Specifications



SOC
Intel® Atom™ x5-Z8350 (2M Cache, up to 1.84 GHz)

Graphics
Intel® HD 400 Graphics

Memory
2GB / 4GB onboard DDR3L-1600

Storage Capacity
16GB / 32GB / 64 GB eMMC

Video & Audio
1x HDMI
1x Full eDP
Audio via HDMI and I2S (from Docking)

Camera interface
1x MIPI-CSI 2 lane
1x MIPI-CSI 4 lane

Power
5V DC-in @ 4A 5.5/2.1mm jack

Operating humidity
10%~80%RH non-condensing

Operating Temperature
32-140°F / 0-60°C



USB
1x USB 3.0 Host
2x USB 2.0 pin header



WiFi / BT
WiFi 802.11 b/g/n @ 2.4 GHz
Bluetooth 4.0 (BLE)



Expansion
Docking Connector 100 pin



Compatible Operating system
Microsoft Windows 10 (full), Linux (ubilinux, Ubuntu, Yocto), Android Marshmallow



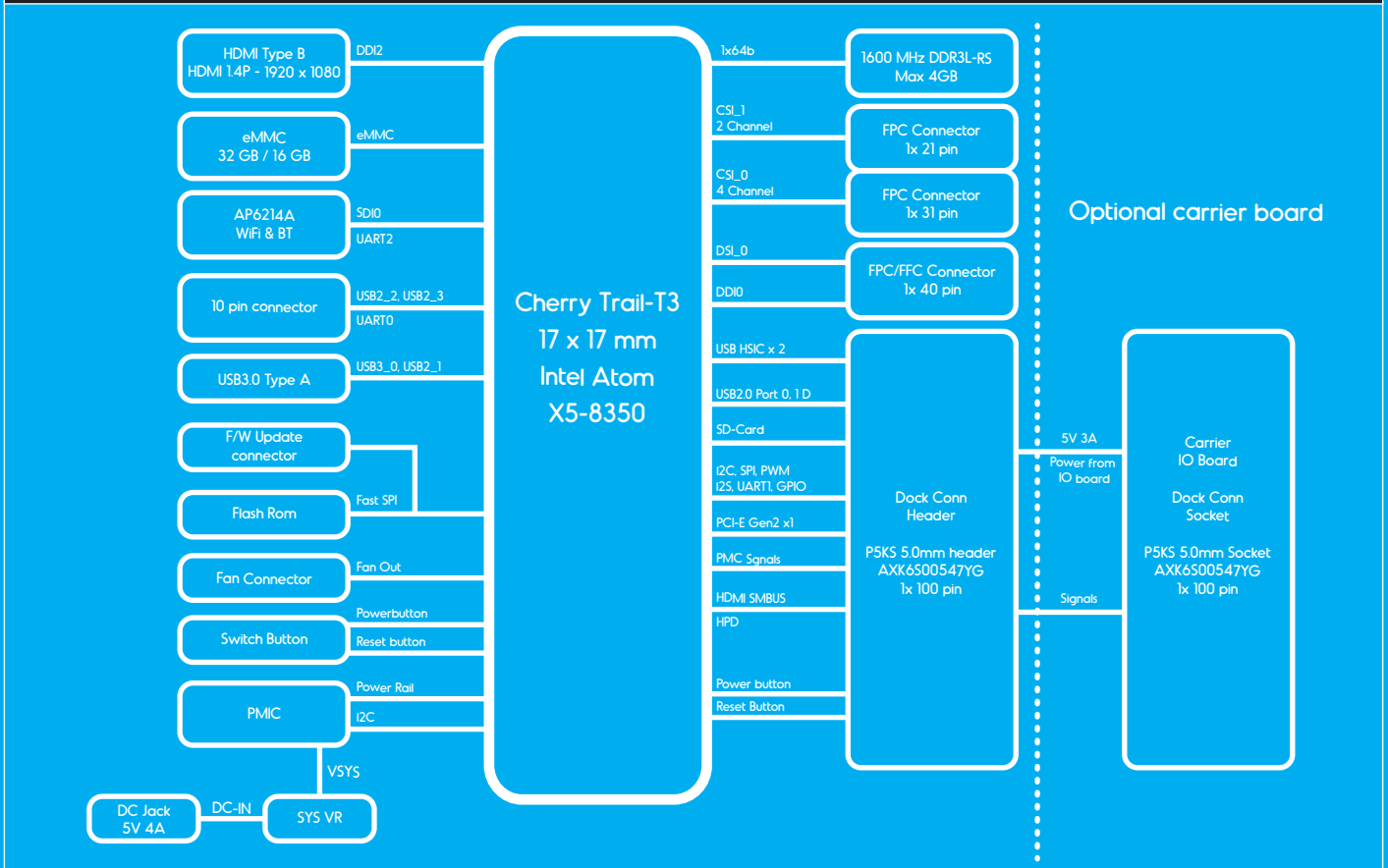
Dimensions
56.50 mm × 66 mm



Certificate
CE/FCC Class A, RoHS complaint, REACH



UP core - Block Diagram

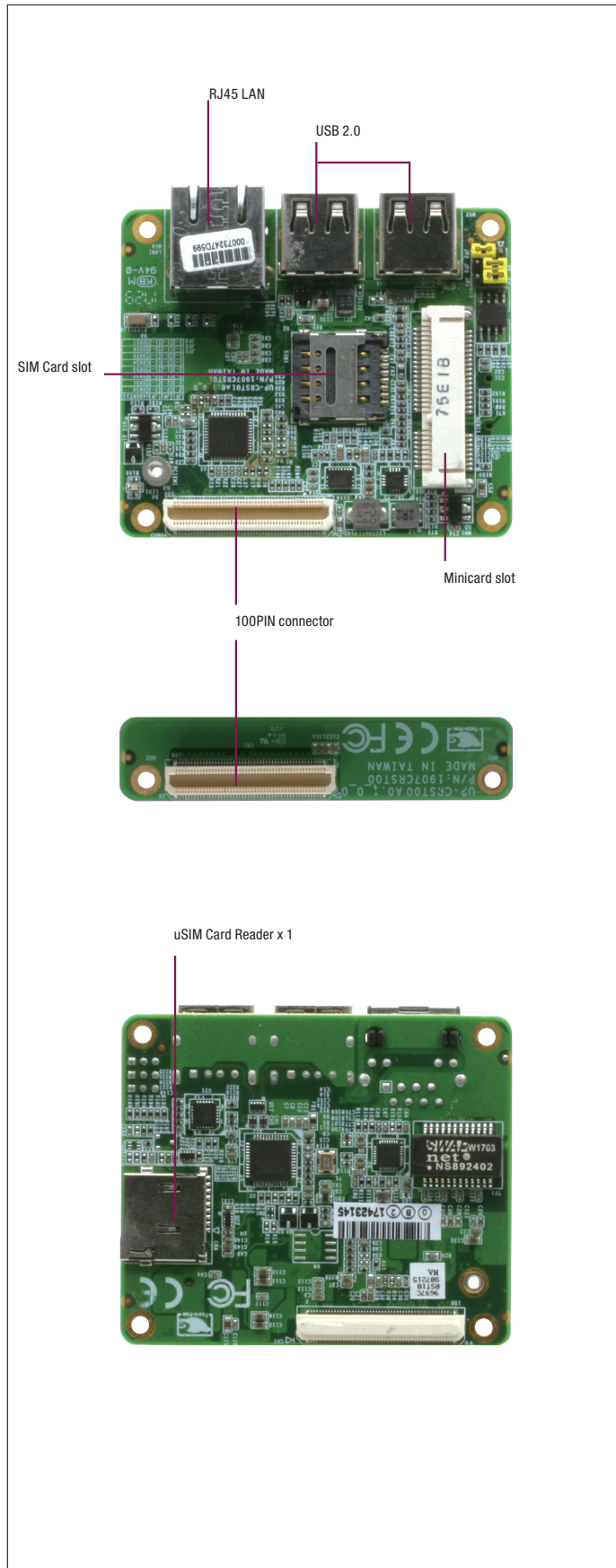


UP core - Pin out

1	5V	21	Ground	41	RESERVE	61	PCIE_RX0_DP	81	I2C1_SOC_SCL
2	5V	22	DDI2_DDC_CLK	42	CPLD DIN/ISH_GPIO7	62	Ground	82	SD3_WP
3	5V	23	GPIO7/HAT_SPI2_MOSI	43	Ground	63	PCIE_RX0_DN	83	Ground
4	5V	24	DDI2_DDC_DAT	44	ISH_GPIO9	64	USB2_P0_DP	84	SD3_CLK
5	5V	25	GPIO8/SPI_MISO	45	GPIO18/I2S2_CLK	65	Ground	85	CPLD DOUT/ISH_I2C1_DATA
6	5V	26	HDMI_D	46	GPIO25/PWM0	66	USB2_P0_DN	86	SD3_SD0
7	5V	27	GPIO9/SPI_CLK	47	GPIO14/I2S2_FRM	67	PCIE_REFCLK0_DP	87	ISH_I2C1_CLK
8	5V	28	HDMI_R	48	GPIO13/PWM1	68	Ground	88	SD3_SD1
9	Ground	29	GPIO22/SPI_CS0N	49	GPIO27/I2S2_DATAIN	69	PCIE_REFCLK0_DN	89	Ground
10	Ground	30	DDI2_TYPE_C_HPDP	50	Ground	70	USB_OTG_R_ID	90	SD3_SD2
11	PMU_RSTBTN_N	31	GPIO23/SPI_CS1N	51	GPIO28/I2S2_DATAOUT	71	Ground	91	RESERVE
12	UART1_RTS	32	ISH_GPIO0	52	USB_HSIC_1_DATA	72	Ground	92	SD3_SD3
13	PMU_PWRBTN_N	33	Ground	53	Ground	73	I2C0_SOC_SDA	93	RESERVE
14	UART1_CTS	34	CPLD CLEAR/ISH_GPIO1	54	USB_HSIC_1_STROBE	74	SD3_CD	94	Ground
15	PMU_SLP_S0IX_N	35	RESERVE	55	PCIE_TX0_DP	75	I2C0_SOC_SCL	95	RESERVE
16	GPIO16/UART1_TX	36	ISH_GPIO2	56	Ground	76	SD3_CMD	96	CPLD_OE/GPIO_SW78
17	PCIE_CLKREQ0	37	RESERVE	57	PCIE_TX0_DN	77	Ground	97	RESERVE
18	GPIO17/UART1_RX	38	ISH_GPIO3	58	USB_HSIC_2_DATA	78	SD3_1P8_EN	98	CPLD_RST/GPIO_SUS8
19	PMC_SUSCLK0	39	RESERVE	59	Ground	79	I2C1_SOC_SDA	99	RESERVE
20	Ground	40	ISH_GPIO4	60	USB_HSIC_2_STROBE	80	SD3_PWREN	100	CPLD_STROBE/GPIO_SUS9

Part number:
Coming soon

High Speed Carrier Board for UP Core Series



Features

- LAN PORT x 1
- 2 Channel PCIe Switch x 1
- USB 2.0 x 2
- Minicard x 1, uSIM Card Reader x 1
- SD Card Slot x 1



Specifications

System	
IC	2 channel PCIe Switch x 1 Realtek RTL8111G-CG x 1 HSIC to USB to 3 USB ports (1 x minicard, 2 x connector) x 1 EEPROM on I2C0 4Kb with Jumper for A0-A2 address x 1
I/O Placements	
External Ports	RJ45 Ethernet port x 1 USB 2.0 x 2 SD Card (Pluggable at back side) x 1
Internal Connector	Power LED x 1 Minicard x 1 uSIM Card Reader x 1 100PIN board-board connector(M) x 1 100PIN board-board connector(F) x 1
Others	
Form Factor	56.5 mm x 66 mm
Certification	CE/FCC Class A
Operating Temperature	0°C ~ 60°C
Operating Humidity	10%~80%RH, non-condensing

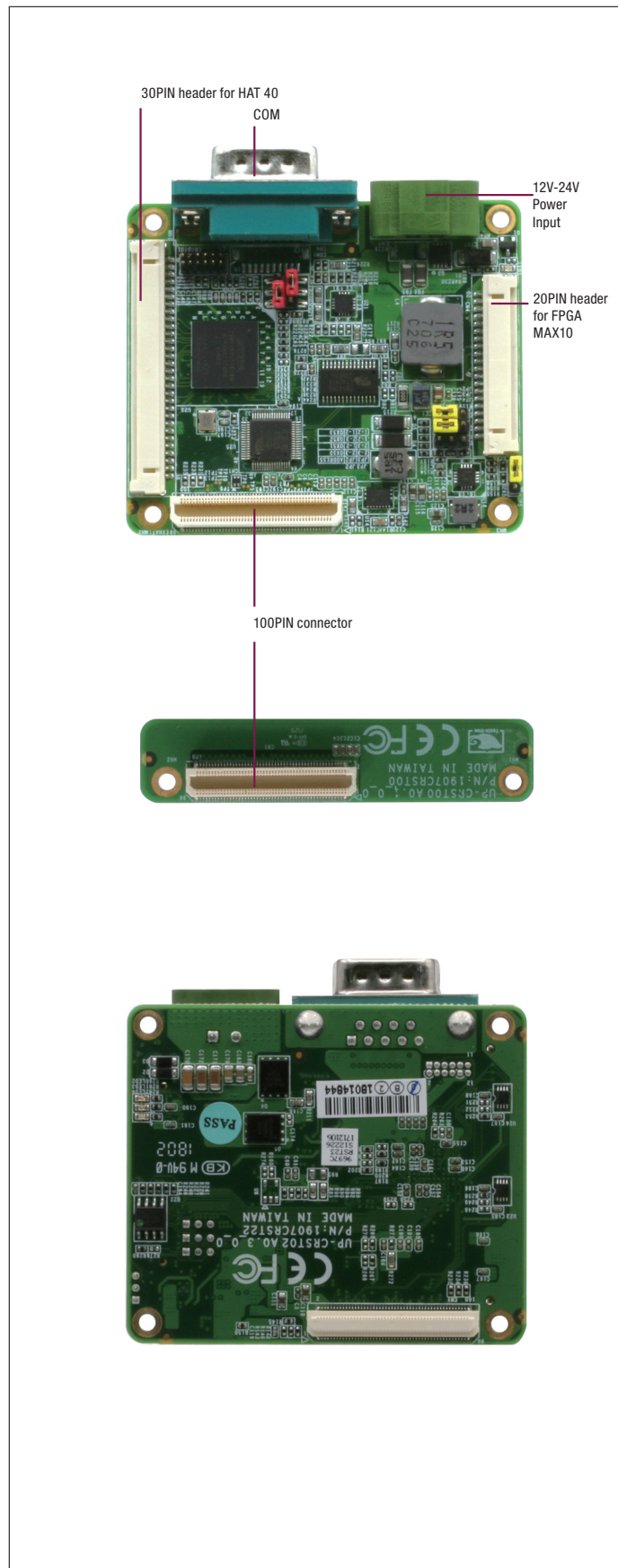
Packing List

- High Speed Carrier Board x 1
- CRST00 Spacer x 1

Ordering Information

Part Number	Description
UPC-CRSTH-A20-0001	High Speed Carrier Board for UP Core Series

Low Speed Carrier Board for UP Core Series



Features

- RS-232/422/485 x 1
- 12-24V Power Input x 1
- MAX10 FPGA for 40pin Setting x 1



Specifications

System	
IC	MAX10 FPGA for 40pin setting x 1 2-CH FULL-SPEED USB UART x 1 RS-232/485/422 transceiver x 1 EEPROM on I2CO 4Kb with Jumper for A0-A2 address x 1
I/O Placements	
External Ports	RS-232/422/485 Connector (DB9) x 1 12-24V Power input (+-10%) x 1
Internal Connector	Jumper for RS-232/422/485 x 1 Power LED x 1 100PIN board-board connector(M) x 1 100PIN board-board connector(F) x 1 30 pin wafer box header for HAT 40 IO pins x 1 20 pin wafer box header for FPGA MAX10 reserved pins x 1
Others	
Form Factor	56.5 mm x 66 mm
Certification	CE/FCC Class A
Operating Temperature	0°C ~ 60°C
Operating Humidity	10%~80%RH, non-condensing

Packing List

- Low Speed Carrier Board x 1
- CRST00 Spacer x 1

Ordering Information

Part Number	Description
UPC-CRSTL-A20-0001	UPC-CRST02 low speed carrier board

Tiny Gateway System with UP Core

Front View



Rear View



Features

- Intel® Atom™ Processor
- Onboard DDR3L Memory, eMMC Storage
- Onboard WiFi, Bluetooth
- HDMI x 1
- USB 3.0 x 1
- COM x 1
- Gigabit LAN x 1

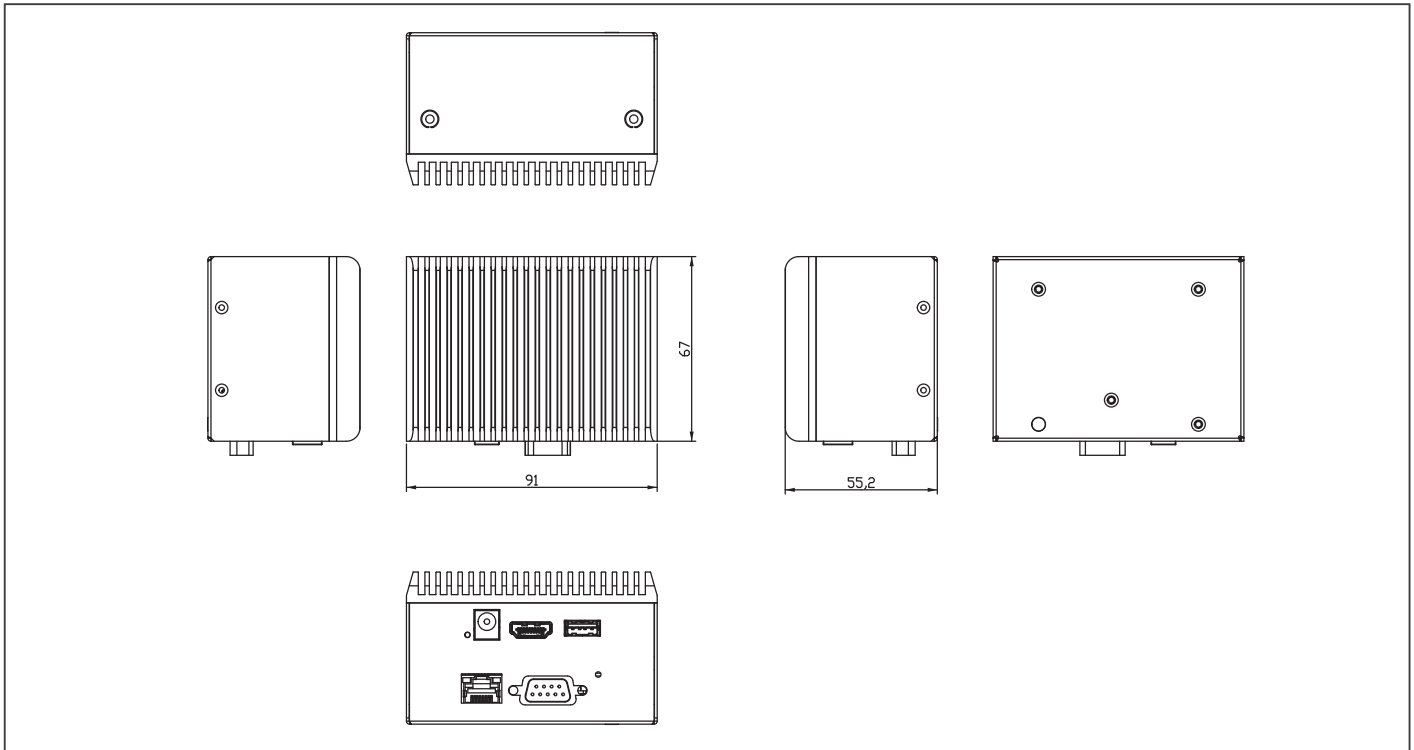


Specifications

System	
CPU/Chipset	Intel® Atom™ x5-Z8350 Processor
Memory	1GB/ 2GB/ 4GB onboard DDR3L-1600
Graphics	Intel® HD 400 Graphics
Storage	16GB/32GB/64GB eMMC
Ethernet	Realtek 8111G x 1
WiFi/BT	WiFi802.11 b/g/n @2.4 GHz, Bluetooth 4.0
Audio	HDMI x 1
USB	USB 3.0 Host x 1
I/O Placements	
Power	5V DC x 1
USB	USB3.0 x 1
Display Port	HDMI x 1
Ethernet	RJ-45 x 1
COM	DB9 x 1
Environment	
Power	5V/4A DC Only
Form Factor	3.58" x 2.63" x 2.17" (91mm x 67mm x 55.2mm)
Gross Weight	0.77 lb (0.35 kg)
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)
Operating Humidity	10% ~ 80% relative humidity, non-condensing
Certification	CE, FCC Class A
OS Support	Windows® 10, Linux (UbiLinux, Ubuntu, Yocto), Android 6.0

Dimension

Unit: mm



Ordering Information

Product SKU	Description
UPC-GWS01-A20-0216	UPC-GWS01, w/2G memory, 16G eMMC board w/o VESA plate
UPC-GWS01-A20-0232	UPC-GWS01, w/2G memory, 32G eMMC board w/o VESA plate
UPC-GWS01-A20-0432	UPC-GWS01, w/4G memory, 32G eMMC board w/o VESA plate
UPC-GWS01-A20-0464	UPC-GWS01 w/4G memory, 64G eMMC board w/o VESA plate

Packing List

- UPC-GWS01
- Antenna x 1

Optional Accessories

- 1255300203
5V/4A Power Adapter