

**PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3, 16GB
eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB 3.0,
USB 2.0, COM and RoHS**

HYPER-RK39

Quick Installation Guide

Version 1.0

Sep 14, 2018

Package List

HYPER-RK39 package includes the following items:

- 1 x HYPER-RK39 single board computer
- 1x Heatsink set
- 1x Power cable
- 1 x QIG



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Specifications

- Form Factor: Pico-ITX
- SoC:
Rockchip RK3399 on-board SoC
(dual-core Cortex-A72 + quad-core Cortex-A53, 64-bit)
- Memory:
2 GB 1866 MHz LPDDR3L on-board memory
- Storage:
1 x microSD card slot
16 GB eMMC NAND flash
- Wireless LAN: 802.11a/b/g/n/ac
- Bluetooth: Bluetooth v4.1
- Ethernet: Realtek RTL8211E GbE transceiver
- WWAN: Optional by PCIe Mini LTE module
- Display Output:
1 x HDMI output port
1 x eDP port
- Digital I/O: 8-bit digital I/O (4 in and 4 out)
- Supported OS: Android 7.1 or Linux Ubuntu 16.04
- Watchdog Timer:
Software programmable supports 1~255 sec. system reset
- I/O Interface:
1 x RS-232/422/485 by DB-9
1 x RJ-45 GbE port
1 x USB 3.1 Type-A
1 x USB 3.1 Type-C (for OS update)
1 x USB 2.0 Type-A
1 x Speaker connector by 2-pin header
1 x Earphone (Line-in/line-out) connector by 10-pin wafer
1 x Camera connector (MIPI CSI)
1 x I2C

- Power supply:
12 V DC input power (2-pin wafer)
- Power Consumption:
+12 V @ 3.0 A (Rockchip RK3399 SoC with 2 GB 1866 MHz LPDDR3 memory)
- Operating Temperature: -10°C ~ 50°C with air flow
- Storage Temperature: -20°C ~ 60°C
- Operation Humidity: 10% ~ 95%, non-condensing
- Safety: CE, FCC
- Dimensions: 100mm x 72mm
- Weight(GW/ NW):600g/ 250g

Ordering Information

- **HYPER-RK39-R10-TW:**
PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi TW reg, ROHS
- **HYPER-RK39-R10-US:**
PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi US reg, ROHS
- **HYPER-RK39-R10-EU:**
PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi EU reg, ROHS
- **HYPER-RK39-R10-CN:**
PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi CN reg, ROHS
- **HYPER-RK39-R10:**

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, RoHS

- **HYPER-RK39-R10-U-TW:**

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi TW reg, ROHS

- **HYPER- RK39-R10-U-US:**

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi US reg, ROHS

- **HYPER- RK39-R10-U-EU:**

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi EU reg, ROHS

- **HYPER- RK39-R10-U-CN:**

PICO-ITX SBC with Rockchip 3399 Processor, 2GB LPDDR3 , 16GB eMMC Flash, HDMI, eDP, GbE LAN, PCIe mini, USB3.0, USB2.0, COM, Wi-Fi CN reg, ROHS

Jumpers setting and connectors

LABEL	FUNCTION
ANT1, ANT2	Antenna connectors
BAT_CN1	Battery connector
CN7	Camera connector
DB1	Debug port
CN3	Earphone connector
CN9	eDP connector
CN11, CN16	General purpose I/O connectors
SD1	microSD slot
CN6	PCIe Mini slot
CN17	Power button connector
CN18	Power key connector
RST1	Reset button
SPK_L1	Speaker connector
SW1, SW3	Programming switch (for internal engineering use only)
HDMI2	HDMI connector
CN4	LAN connector
COM1	RS-232/422/485 connector
USB1	USB 2.0 & USB 3.1 combo connector
USB_C1	USB 3.1 Type-C connector

BAT_CN1: Battery Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBAT+	2	GND

CN7: Camera Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CAM LED-	16	NC
2	CAM LED+	17	NC
3	2.8V	18	RESET
4	GND	19	NC
5	GND	20	NC
6	GND	21	NC
7	MIPI_D1_P	22	I2C SDA
8	MIPI_D1_N	23	I2C SCL
9	GND	24	Power down
10	MIPI_CLK_P	25	MCLK
11	MIPI_CLK_N	26	1.5V
12	GND	27	1.8V
13	MIPI_D0_P	28	GND
14	MIPI_D0_N	29	2.8V
15	GND	30	GND

DB1: Debug Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	RX
3	TX	4	GND

CN3: Earphone Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	6	HP R
2	CPVREF	7	GND
3	DET	8	GND
4	MIC	9	HP L
5	Pull-down	10	NC

CN9: eDP Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	16	GND
2	GND	17	HPD
3	TX1N	18	GND
4	TX1P	19	GND
5	GND	20	GND
6	TX0N	21	GND
7	TX0P	22	LCD EN
8	GND	23	PWM
9	AUXP	24	I2C SDA
10	AUXN	25	I2C SCL
11	GND	26	12V
12	3V3	27	12V
13	3V3	28	12V
14	GND	29	12V
15	GND	30	GND

CN11: General Purpose Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GPIO	2	NC
3	GPIO	4	NC
5	GPIO	6	NC
7	+5V	8	NC
9	GND	10	NC

CN16: General Purpose Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	2	GPIO
3	GND	4	GPIO
5	I2C SDA	6	GPIO
7	I2C SCL	8	GPIO
9	NC	10	GPIO

CN6: PCIe Mini Card Slot			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	2	3.8V
3	NC	4	GND
5	NC	6	NC
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	RESET
23	NC	24	NC
25	NC	26	GND
27	GND	28	NC
29	GND	30	NC
31	NC	32	NC
33	NC	34	GND
35	GND	36	USB D-
37	GND	38	USB D+
39	3.8V	40	GND
41	3.8V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3.8V

CN47: Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DC +12 V	2	GND

CN17: Power Button Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	Power ON

CN18: Power Key Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	EN

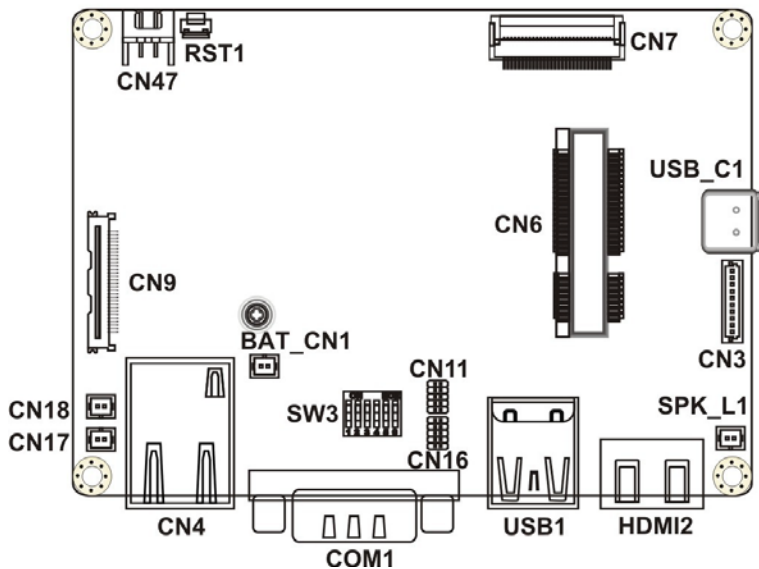
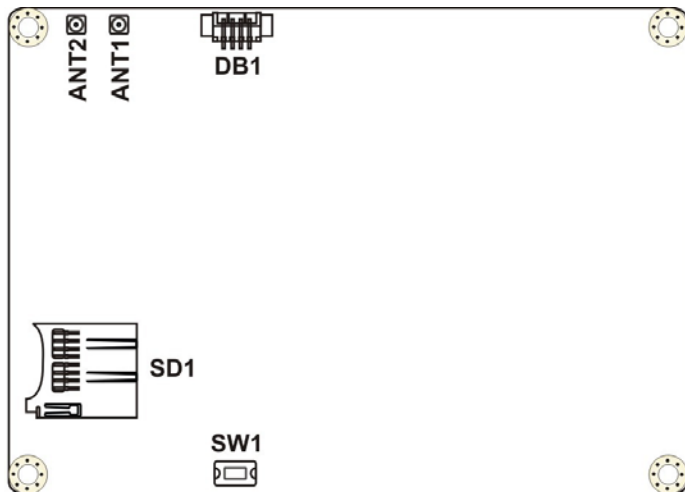
SPK_L1: Speaker Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Speaker+	2	Speaker-

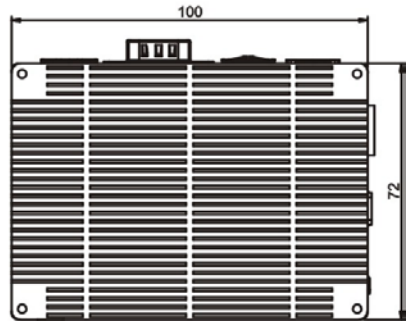
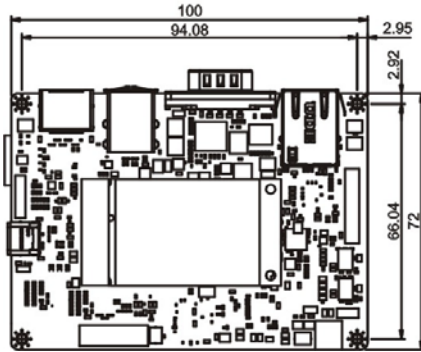
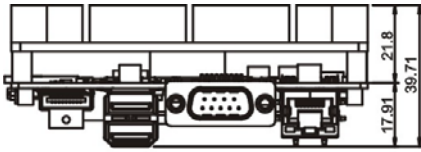
HDMI2: HDMI Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	HDMI_DATA2	2	GND
3	HDMI_DATA2#	4	HDMI_DATA1
5	GND	6	HDMI_DATA1#
7	HDMI_DATA0	8	GND
9	HDMI_DATA0#	10	HDMI_CLK
11	GND	12	HDMI_CLK#
13	N/C	14	N/C
15	HDMI_SCL	16	HDMI_SDA
17	GND	18	+5V
19	HDMI_HPD		

CN4: LAN Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LAN_MDIO+	7	LAN_MDI2+
2	LAN_MDIO-	8	LAN_MDI2-
3	LAN_MDI1+	9	LAN_MDI3+
4	LAN_MDI1-	10	LAN_MDI3-

COM1: Internal RS-232/422/485 Serial Port Connectors			
Mode	RS232	RS422	RS485
PIN NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION
1		TX-	D-
2	RX	TX+	D+
3	TX	RX+	
4		RX-	
5	GND		
6			
7			
8			
9			

Board Layout: Jumper and Connector Locations





(Unit: mm)