PICO-ITX SBC with Rockchip RK3566 Processor, 2GB/4GB LPDDR4, 16GB/32GB eMMC, HDMI 2.0, MIPI DSI, LVDS, 1GbE RJ45, USB 3.0, USB 2.0, RS-232/485, 12V DC-IN, Support Android/Linux, RoHS

HYPER-RK3566

Quick Installation Guide

Version 1.0

January 4, 2023

Package List

HYPER-RK3566 package includes the following items:

- 1 x HYPER-RK3566 single board computer
- 1 x QIG

Specifications

- CPU:

  Rockchip RK3566 (quad-code Cortex-A55 up to 1.8GHz)
- Memory:

  2GB/4GB LPDDR4/4x, up to 8GB (option: 2GB SKU only supports Linux)
- SD Card:

  1 x microSD slot
- Flash Memory:

  16GB/32GB eMMC NAND flash (option: 16GB SKU only supports Linux)
- WLAN

  Board-to-board connector (support IWB-BCM43752 / IWB-RTL8822)
- Bluetooth

  Bluetooth v5.0 (support IWB-BCM43752 / IWB-RTL8822)
- Display Output:

  Android: Display alone or display same content on two screens

  1 x HDMI 2.0 Type A

  1 x LVDS (24-pin, p=1.25)

  1 x MIPI DSI (4 lanes, 40-pin, p=0.5)
- Ethernet:

  1 x 1GbE RJ45 by YT8521
- I/O Interface:

  1 x USB 3.0 Type A (host)

  1 x USB 2.0 Type A (OTG)

  2 x USB 2.0 host (1x4 pin with frame, p=1.25)

  2 x RS232+RS485 COM port (2x5 pin, p=2.0)
- Console Port:

  1 x Console port
- I^2C Touch:

  1 x I^2C touch (8-pin, p=0.5)

- Audio:

  1 x Speaker connector (2-pin, p=1.25)

1 x Microphone connector (2-pin, p=1.25)

- GPIO:
  1 x 8-bit GPIO (4 in / 4 out, 2x5 pin, p=2.0)
- Buttons
  1 x Reset button
  1 x Power button
- LED Indicators
  1 x Power LED
  1 x Reserved LED (programmable)
- Power Supply:
  +12V DC input power
- Power Consumption:
  12V@1.77A (Rockchip RK3566 processor with 4GB 1866MHz LPDDR4x memory, 32GB eMMC and Wi-Fi module)
- Watchdog Timer: Yes
- Operation Temperature: 0°C – 60°C with air flow
- Storage Temperature: -20°C – 70°C
- Operation Humidity: 10% – 95%, non-condensing
- Dimensions: 100 mm x 72 mm
- Safety/EMC: EMC Class A
- Supported OS: Android 12.0, Linux Debian 10 (kernel 4.19)

All the drivers and utility for the HYPER-RK3566 are available on IEI Resource Download Center. Type HYPER-RK3566 and press Enter to find all the relevant software, utilities, and documentation. To install software from the downloaded ISO file, mount the file as a virtual drive to view its content.

IEI Resource Download Center

https://download.ieiworld.com

Jumpers Setting and Connectors

LABEL	FUNCTION
RST1	Reset button
PWRON1	Power button
OTG_ID1	OTG/Host mode setting switch
J1	Maskrom recovery connector
DEBUG_CN1	Console port connector
INV1	Backlight inverter connector
BAT1	Battery connector
DIO1	GPIO connector
LVDS1	LVDS connector
MIC1	Microphone connector
LCD1	MIPI DSI connector
COM1	Serial port connector
SPK1	Speaker connector
TP1	Touch connector
USB2, USB3	USB 2.0 connectors
CN2	Wi-Fi/Bluetooth connector
DC_IN2	Power input terminal block
LAN1	External 1GbE RJ-45 connector
USB1	External USB 3.0 & USB 2.0 connectors
CN1	microSD slot
HDMI_CN1	External HDMI connector

OTG_ID1: OTG/Host Mode Setting Switch	
PIN NO.	**DESCRIPTION**
Short A - B	Host Mode
Short B - C	OTG Mode (default)

J1: Maskrom Recovery Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	eMMC_D0/FLASH_D0	2	GND

DEBUG_CN1: Console Port Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	GND	3	UART2DBG_TX_C
2	UART2DBG_RX_C	4	GND

INV1: Backlight Inverter Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	BKL_POWER	4	BKL_PWM
2	GND	5	GND
3	LVDS_ENABKL		

BAT1: RTC Battery Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	VBATT	2	GND

DIO1 : GPIO Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	GND	2	VIO_3V3
3	GPIO_4	4	GPIO_8
5	GPIO_3	6	GPIO_7
7	GPIO_2	8	GPIO_6
9	GPIO_1	10	GPIO_5

LVDS1: LVDS Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	GND	2	GND
3	A0P_L	4	A0M_L
5	A1P_L	6	A1M_L
7	A2P_L	8	A2M_L
9	CLK1P_L	10	CLK1M_L
11	A3P_L	12	A3M_L
13	GND	14	GND
15	NC	16	RST
17	+3V3	18	+3V3
19	+3V3	20	+3V3
21	NC	22	NC
23	NC	24	NC

LCD1: MIPI DSI Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VLED+	21	TX_D3N
2	VLED+	22	GND
3	VGH	23	TX_D2P
4	NC	24	TX_D2N
5	NC	25	GND
6	VGL	26	TX_CLKP
7	NC	27	TX_CLKN
8	NC	28	GND
9	LED-	29	TX_D1P
10	LED-	30	TX_D1N
11	GND	31	GND
12	AVDD	32	TX_D0P
13	SELB	33	TX_D0N
14	DIMO	34	GND
15	NC	35	STBYB
16	GND	36	Reset
17	NC	37	NC
18	NC	38	VDD
19	GND	39	VDD
20	TX_D3P	40	VCOM

COM1: Serial Port Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	RS232_RXD1	2	RS485_DATA1-
3	RS232_TXD1	4	RS485_DATA1+
5	RS232_RXD2	6	RS485_DATA2-
7	RS232_TXD2	8	RS485_DATA2+
9	GND	10	GND

MIC1: Microphone Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	MIC1_INP	2	GND

SPK1: Speaker Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	SPKP_OUT	2	SPKN_OUT

TP1: Touch Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	GND	5	SCL
2	RST	6	VDD
3	INT	7	NC
4	SDA	8	GND

USB2, USB3: USB 2.0 Connectors			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VCC	3	USB_DATA-
2	USB_DATA+	4	GND

CN2: Wi-Fi/Bluetooth Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	GND	2	GND
3	UART_RTSn	4	SDMMC_D0
5	UART_TX	6	SDMMC_D1
7	UART_RX	8	SDMMC_D2
9	UART_CTSn	10	SDMMC_D3
11	GND	12	SDMMC_CMD
13	I2S_LRCK	14	WIFI2T2R_CLK
15	I2S_SDO	16	GND
17	I2S_SDI	18	WIFI_REG_ON
19	I2S_SCLK	20	WIFI_WAKE_HOST
21	GND	22	BT_WAKE_HOST
23	32KOUT_WIFI	24	HOST_WAKE_BT
25	GND	26	BT_REG_ON_
27	GND	28	WLAN_PEN
29	NC	30	GND
31	VCC	32	SDIO_INT
33	VCC	34	SDIO_RESET
35	VCC	36	GND
37	VCC	38	GND
39	NC	40	GND

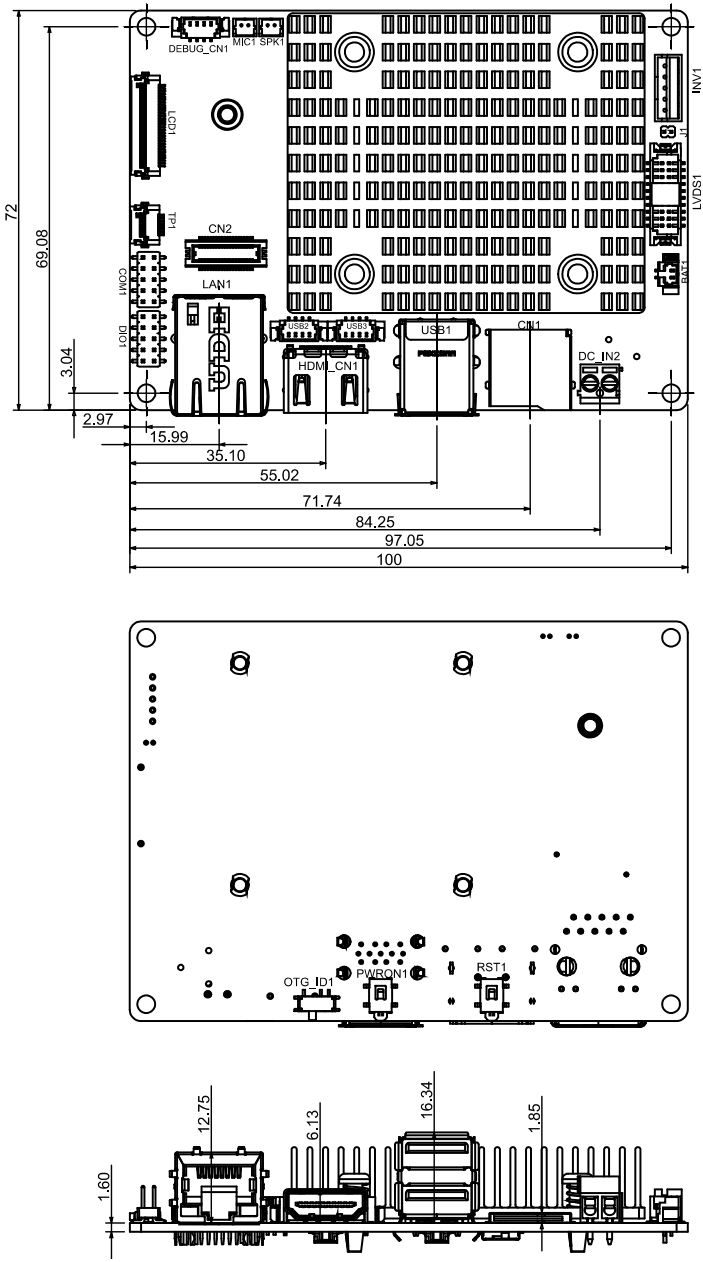
DC_IN2: Power Input Terminal Block			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	DCIN_12V	2	GND

LAN1: External 1GbE RJ-45 Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	MDI0P	5	MDI2P
2	MDI0N	6	MDI2N
3	MDI1P	7	MDI3P
4	MDI1N	8	MDI3N

HDMI_CN1: External HDMI Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	HDMI2_DATA2	2	GND
3	HDMI2_DATA2#	4	HDMI2_DATA1
5	GND	6	HDMI2_DATA1#
7	HDMI2_DATA0	8	GND
9	HDMI2_DATA0#	10	HDMI2_CLK
11	GND	12	HDMI2_CLK#
13	N/C	14	N/C
15	HDMI2_SCL	16	HDM2I_SDA
17	GND	18	+5V
19	HDMI2_HPD		

USB1: External USB 3.0 & USB 2.0 Type-A Connectors			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VCC	8	USB3_TX-
2	USB_DATA-	9	USB3_TX+
3	USB_DATA+	10	VCC
4	GND	11	USB_DATA-
5	USB3_RX-	12	USB_ DATA+
6	USB3_RX+	13	GND
7	GND		

Board Layout: Jumper and Connector Locations



(Unit: mm)