### Front:
- 2 x USB 2.0 type A port (top - OTG)
- 1 x USB 3.0 type A port (center)
- IR receiver (not used to staff IR connector, just reserved 3 pin connectors VCC, CIR_RX, GND)
- Headphone (with mic) jack
- 1 x 90 degree angle small "Status" LED
- 2 x push button = "RESET", "POWER"

### Rear:
- 4 x Digital Video Type-A port
- Gigabit Ethernet port
- 72 V 3.5mm CH/1.35mm ID barrel type DC power jack

### GPIO Pins usage:
- PC0 - 16 Used by eMMC module (SDC2)
- PC6 - 9 Used by Ethernet RGMII
- PC12 - 18 Used by UART-2
- PC18 - 22 Used by UART-3
- PF0 - 5 Used by TF Card (SDC0)
- PF6 - 9 Used by WiFi/BLI(SDC1-SDIO,UART1,PCM2)
- PG0 - 14 Used by PC0 - 16
- PH0 - 4 Used by PC6 - 9
- PH5 - 7 Used by PC12 - 18
- PH8 - 10 Used by PC18 - 22
- PL0 - 10 Used by PF0 - 5
- PM0 - 4 [Open to use]

### Right Side:
- eMMC module connector (top)
- microSD card slot (bottom)

### Connectors on board:
- 2 pin RTC battery port
- miniPCIe connector (full length)
- 2 x 2 dual in line pins Pi-2 bus
- 5 x 2 dual in line pins port Euler 'e' bus
- WiFi/BLI port

### GPIO Pins function:
- PC0 - 16: Used by eMMC module (SDC2)
- PC6 - 9: Used by Ethernet RGMII
- PC12 - 18: Used by UART-2
- PC18 - 22: Used by UART-3
- PF0 - 5: Used by TF Card (SDC0)
- PF6 - 9: Used by WiFi/BLI(SDC1-SDIO,UART1,PCM2)
- PG0 - 14: Used by PC0 - 16
- PH0 - 4: Used by PC6 - 9
- PH5 - 7: Used by PC12 - 18
- PH8 - 10: Used by PC18 - 22
- PL0 - 10: Used by PM0 - 4

### Front Panel:
- 2 x USB 2.0 type A port (top - OTG)
- 1 x USB 3.0 type A port (center)
- IR receiver (not used to staff IR connector, just reserved 3 pin connectors VCC, CIR_RX, GND)
- Headphone (with mic) jack
- 1 x 90 degree angle small "Status" LED
- 2 x push button = "RESET", "POWER"

### Rear Panel:
- 4 x Digital Video Type-A port
- Gigabit Ethernet port
- 72 V 3.5mm CH/1.35mm ID barrel type DC power jack

### GPIO Pins usage:
- PC0 - 16 Used by eMMC module (SDC2)
- PC6 - 9 Used by Ethernet RGMII
- PC12 - 18 Used by UART-2
- PC18 - 22 Used by UART-3
- PF0 - 5 Used by TF Card (SDC0)
- PF6 - 9 Used by WiFi/BLI(SDC1-SDIO,UART1,PCM2)
- PG0 - 14 Used by PC0 - 16
- PH0 - 4 Used by PC6 - 9
- PH5 - 7 Used by PC12 - 18
- PH8 - 10 Used by PC18 - 22
- PL0 - 10 Used by PM0 - 4

### Connectors on board:
- 2 pin RTC battery port
- miniPCIe connector (full length)
- 2 x 2 dual in line pins Pi-2 bus
- 5 x 2 dual in line pins port Euler 'e' bus
- WiFi/BLI port

### GPIO Pins function:
- PC0 - 16: Used by eMMC module (SDC2)
- PC6 - 9: Used by Ethernet RGMII
- PC12 - 18: Used by UART-2
- PC18 - 22: Used by UART-3
- PF0 - 5: Used by TF Card (SDC0)
- PF6 - 9: Used by WiFi/BLI(SDC1-SDIO,UART1,PCM2)
- PG0 - 14: Used by PC0 - 16
- PH0 - 4: Used by PC6 - 9
- PH5 - 7: Used by PC12 - 18
- PH8 - 10: Used by PC18 - 22
- PL0 - 10: Used by PM0 - 4

### Front Panel:
- 2 x USB 2.0 type A port (top - OTG)
- 1 x USB 3.0 type A port (center)
- IR receiver (not used to staff IR connector, just reserved 3 pin connectors VCC, CIR_RX, GND)
- Headphone (with mic) jack
- 1 x 90 degree angle small "Status" LED
- 2 x push button = "RESET", "POWER"

### Rear Panel:
- 4 x Digital Video Type-A port
- Gigabit Ethernet port
- 72 V 3.5mm CH/1.35mm ID barrel type DC power jack
If use eMMC is not V5.0/V5.1, then NC this resistor.

**NOTE:** Use SPI IC voltage of 1.8V ADD RN5 0Ω, NC RN6.

Use SPI IC voltage of 3.3V ADD RN6 0Ω, NC RN5.
Euler e Connector

**Video**

20 = 37.5ohm
**Configuration Setting**

- **MII/MMI Setting**:
  - Setting only for RTL8201FN
  - Setting only for RTL8211E

- **PHY_VDD33**:
  - External clock source from OSC or Chipset.
  - Use external clock:
    - RTL8201FN/RTL8211CN/8211D/8211E: Use 4.7K or 22R for RSET/CLK125
  - External clock and Crystal

- **PHY AVDD33**:
  - Connect ENSWREG to PHY AVDD33 to enable Switching regulator or connect ENSWREG to GND to disable Switching regulator.

- **PHY Reset**:
  - For wake on LAN function, please mount GR55 GC54 and remove GR56

**Others**

- **RGMII/MMII**:
  - Only for RTL8201FN

- **Others**:
  - Place filter network close to RX_CLK. Reserved for EMI
  - Close to PHY Reserve for EMI

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**Notes**:

- PME Function
  - RTL8211D/8211E: Pull High for PME
  - RTL8201FN/8211CN Pin33 is NC

- TXD0/AN0, TXD1/AN1, RXD0_N, RXD1_N, RXD2/AN0, RXD3/AN1:
  - Connected to RXD0/SELRGV

- RX_CLK_N: Connected to RX_CLK

- LED2_RXDLY:
  - RTL8201FN Pin39 is LED2_RXDLY (GR114 NC)
  - RTL8211CN Pin32 is LED2_RXDLY (GR114 NC)
  - RTL8211E Pin32 is LED2_RXDLY (GR114 NC)

- REF_CLK Input:
  - RTL8201EN: Pull High for LDO Enable
  - RTL8201FN: Pull Low for LDO Disable

- Other resistors are NC

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**EMAC/GMAC**

- Design Name:
  - Pine H64
  - A3

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**EMAC/GMAC**

- Place filter network close to RX_CLK. Reserved for EMI

- Close to PHY Reserve for EMI

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**External clock and Crystal**

- External clock and crystal

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**RTL8211CN/8211D/8211E/8201FN/8201EN**

- Configuration Setting
- Configuration Setting
- Configuration Setting
- Configuration Setting
- Configuration Setting