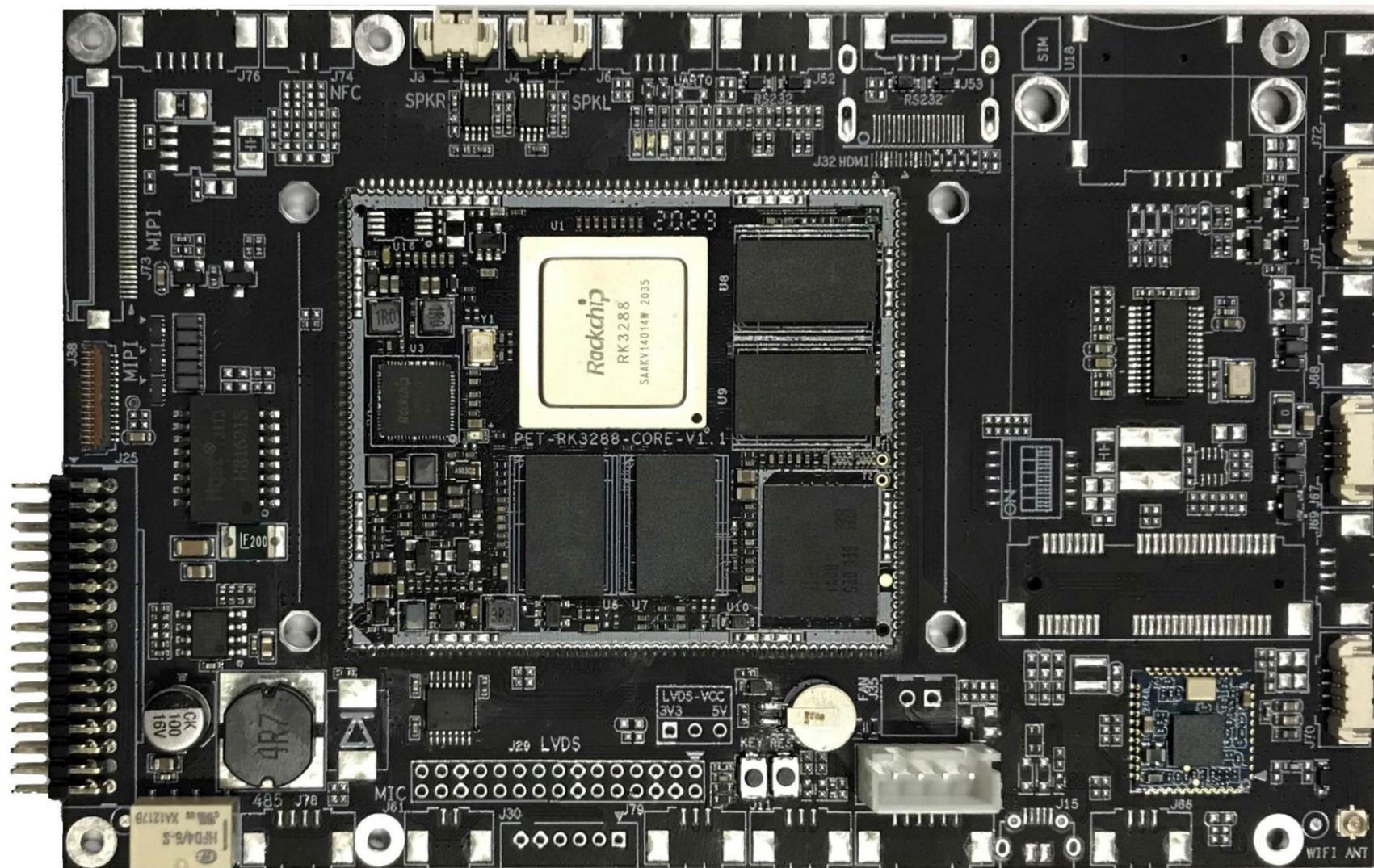
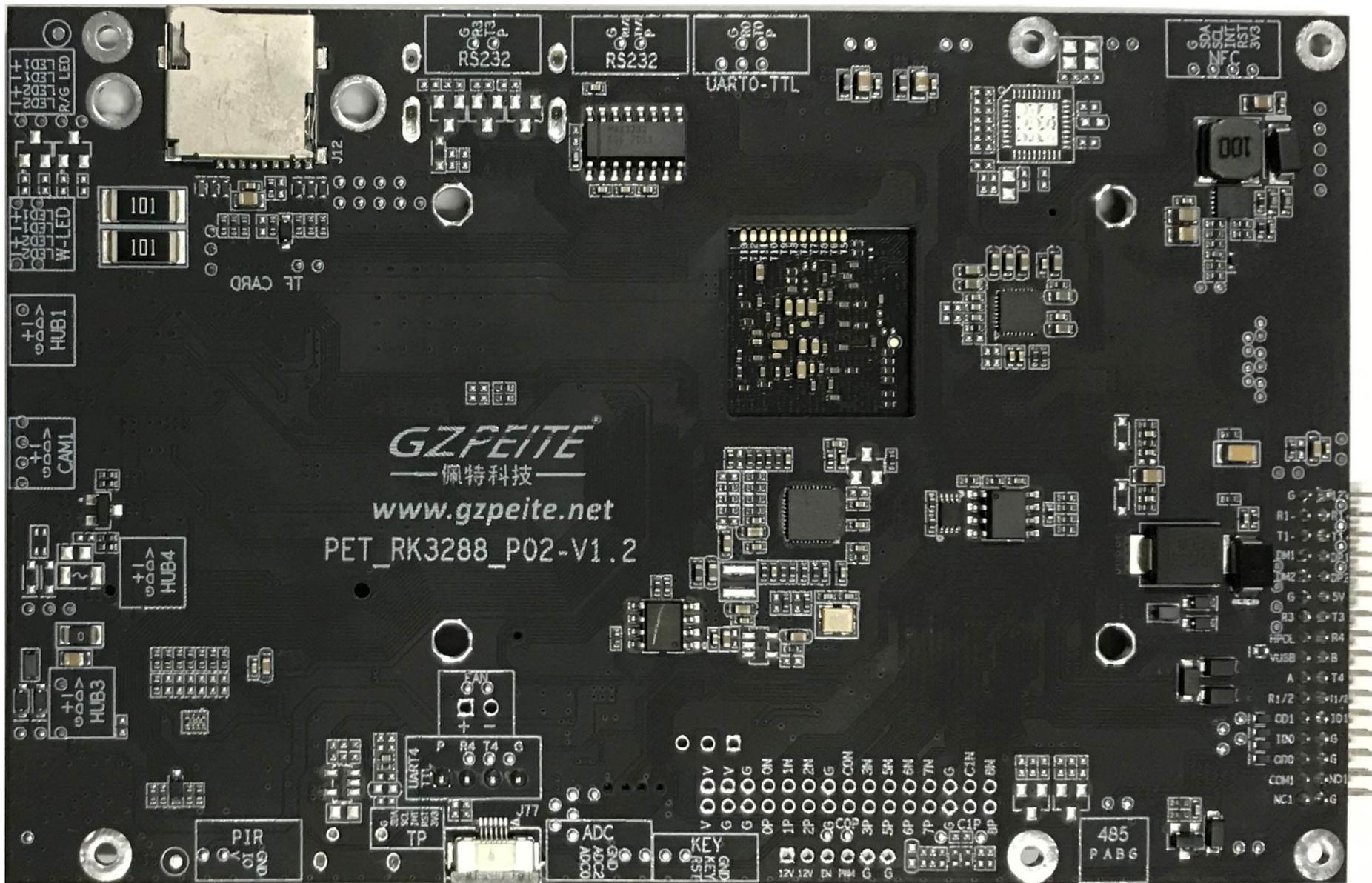


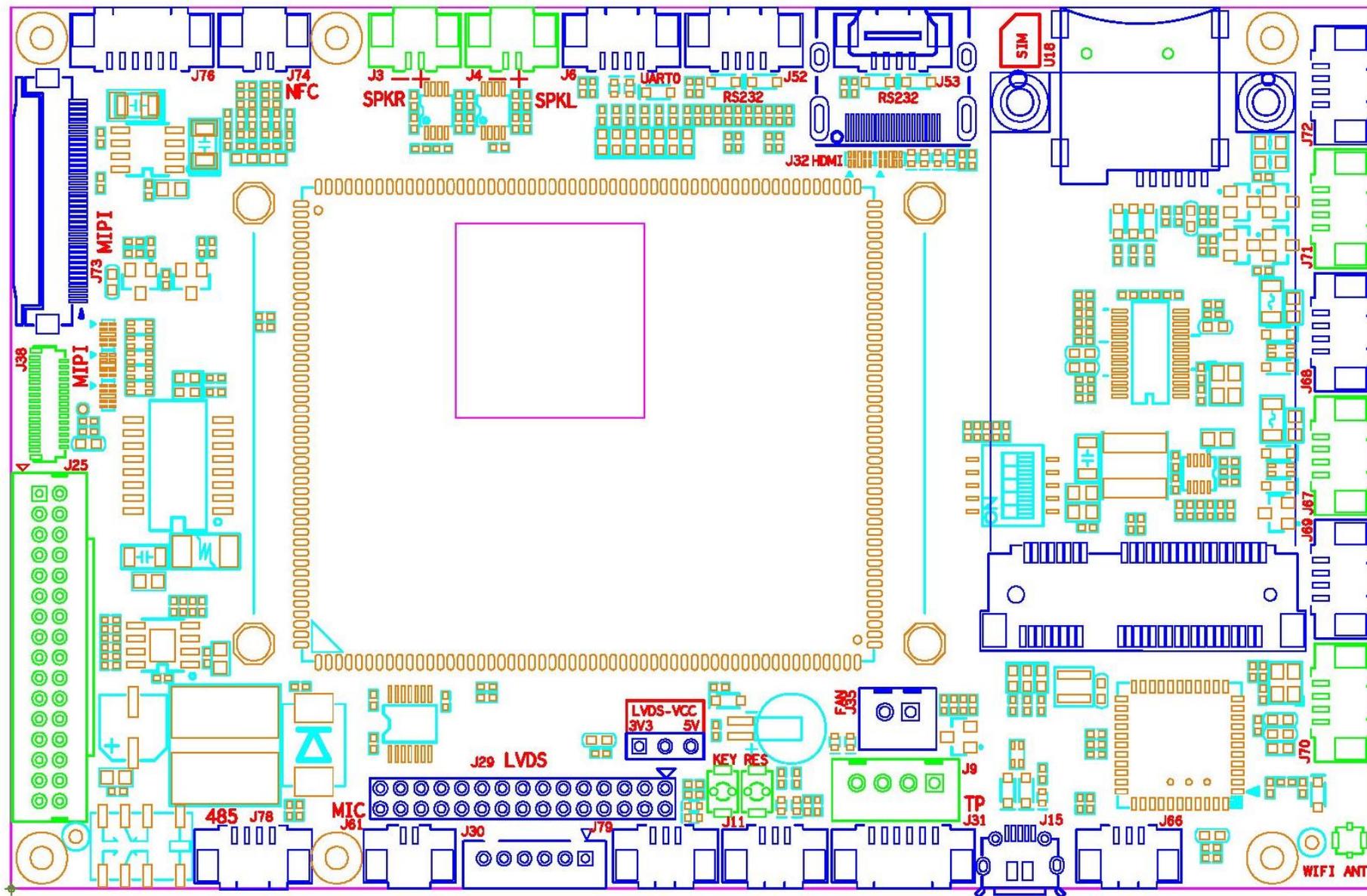


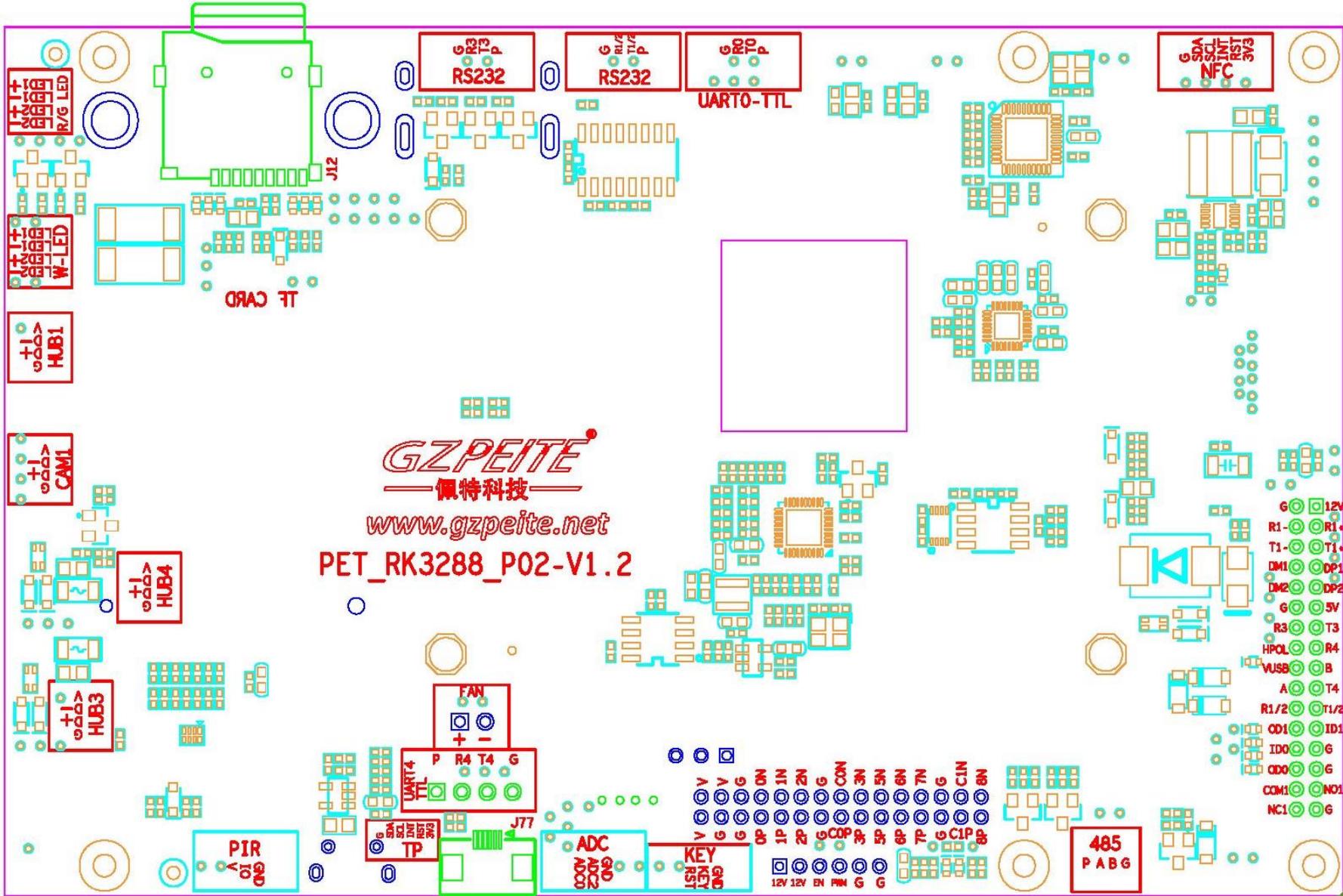
智能人脸识别系统 主板说明书

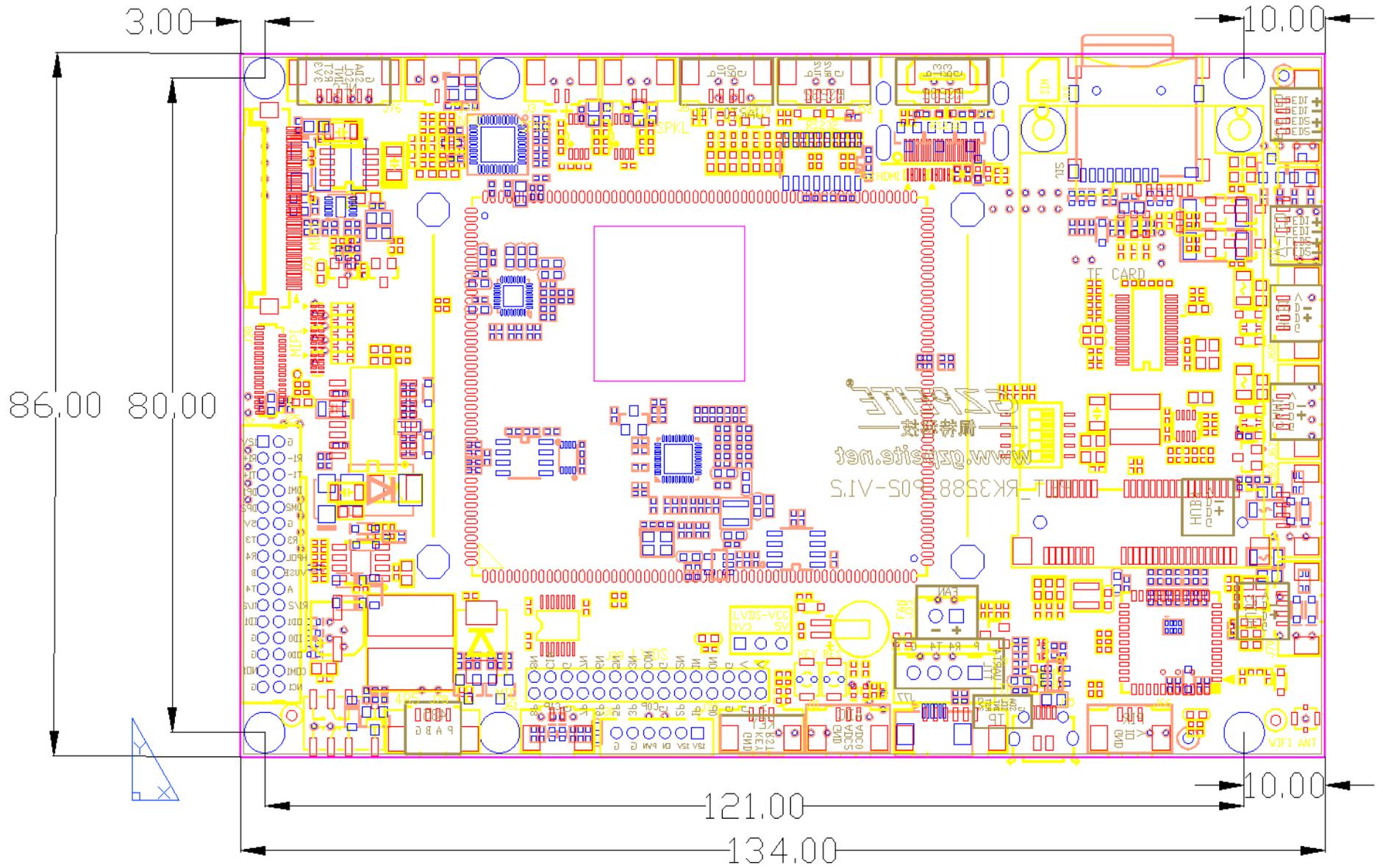
一、主板图片



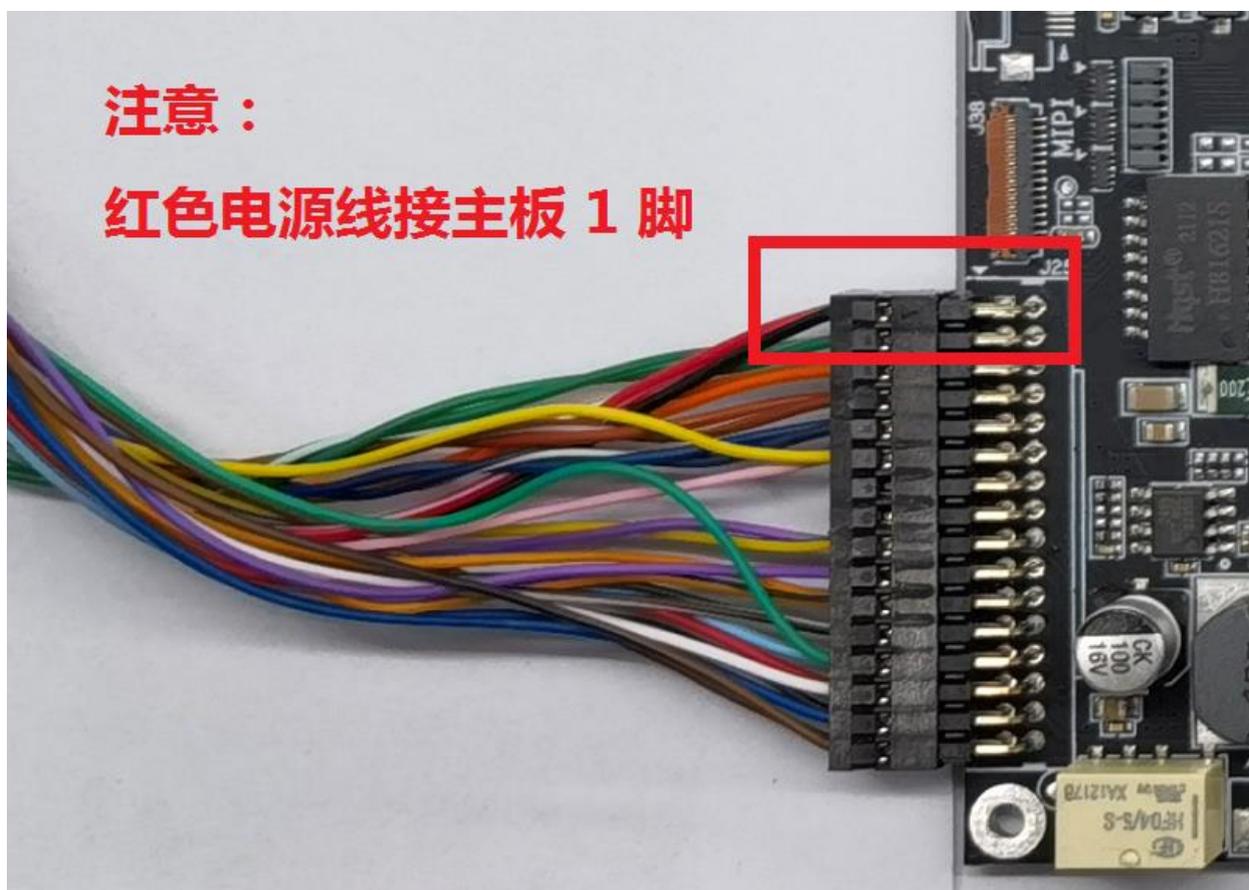








二、尾线连接图



| | |
|---|--------------------|
|  <p>A black USB OTG cable with a red Type-C connector. A white label on the left side of the cable reads "USB OTG".</p> | <p>USB 调试接口</p> |
|  <p>A black Ethernet cable with a standard RJ45 connector.</p> | <p>以太网 RJ45 接口</p> |
|  <p>A black USB HOST cable with a black Type-C connector.</p> | <p>USB HOST 接口</p> |
|  <p>A black DC power input cable with a black barrel jack connector. A white label on the left side of the cable reads "DC 12V".</p> | <p>电源输入接口</p> |

| | |
|---|---|
|  | <p>GPIO 输入输出接口</p> |
|  | <p>RS232 和 RS485 接口</p> |
|  | <p>内置继电器接口，可以外接门锁控制等</p> |
|  | <p>韦根输入接口，支持 26-bit、34-bit、36-bit、37-bit、50-bit 等协议，可以外接韦根读卡器</p> |

三、智能人脸识别系统主板功能

| 功能列表 | | | |
|----------|----------------------------|-----------------------------|--|
| 处理器 | RK3288 Cortex A17 四核 1.8G | 部分功能及接口默认未焊接，详细可参考后面章节的详细说明 | |
| 内存 | DDR3 2GB | | |
| 存储 | EMMC 8G / 16G / 32G，标配 8GB | | |
| LVDS 显示 | 支持双通道和单通道 LVDS 显示屏 | | |
| MIPI 显示 | 支持 4 通道 MIPI 显示屏 | | |
| HDMI 显示 | | | |
| 摄像头接口 | 支持 USB 双目摄像头 | | |
| 触摸屏接口 | 支持多点电容屏 | | |
| USB 调试接口 | | | |
| TF 卡 | | | |
| 音频接口 | 音频输入输出、喇叭、麦克风 | | |
| 按键接口 | ADC 按键、GPIO 按键 | | |
| 串口 | TTL、RS232、调试串口 | | |
| 以太网接口 | 百兆以太网 | | |
| WIFI/BT | WIFI/BT 模组 | | |
| 板载 RTC | 标配，板载独立 RTC 芯片及电池 | | |
| 硬件看门狗 | 标配，板载硬件看门狗芯片 | | |
| GPIO | 多路 | | |
| NFC 读卡 | PN7150 NFC 模组 | | |
| 4G 数据通讯 | 可选 4G 模组，支持全网通，支持 GPS/BD | | |
| 补光灯接口 | | | |
| 指示灯接口 | | | |
| 结构参数 | | | |
| 尺寸 | 134 x 86 单位 mm | | |
| PCB 工艺 | 核心板八层板，沉金工艺，底板四层 | | |

四、智能人脸识别系统主板详细参数

| 板载接口说明 | | | | |
|--------|----------------|---------------|-----|--|
| 丝印 | 接口 | 接口形式 | 说明 | 备注 |
| J3/J4 | 喇叭座 | 1.25 2Pin | 标配 | |
| J9 | 串口/dev/ttyS4 | XH2.54 4Pin | 标配 | 默认为 TTL 串口，调试串口 |
| J12 | TF 卡座 | | 标配 | |
| SW1 | 功能键/烧写键 | | 标配 | |
| SW4 | 复位键 | | 标配 | |
| J67 | USB 双目摄像头接口 | 1.25 4Pin | 标配 | |
| J70 | USB 双目摄像头接口 | 1.25 4Pin | 标配 | |
| A2 | WIFI 天线接口 | MM9329-2700 | 标配 | |
| J71 | 白色补光灯条接口 | 1.25 4Pin | 标配 | 12V 电压输出 |
| J77 | I2C 触摸屏接口 | FPC 0.5 6Pin | 标配 | |
| J38 | MIPI 显示屏接口 | FPC 0.3 31Pin | 标配 | 兼容大部分 31P 8 寸 MIPI 显示屏引脚定义 |
| J25 | 尾线接口 | PH2.0 32P | 标配 | 接尾线输出 |
| J61 | 麦克风座 | 1.25 2Pin | 非标配 | |
| J6 | 串口/dev/ttyS0 | 1.25 4Pin | 非标配 | 默认为 TTL 串口，与蓝牙功能不可同时使用 |
| J52 | 串口/dev/ttyS1 | 1.25 4Pin | 非标配 | 默认为 RS232，可修改电阻配置为 TTL 串口 |
| J53 | 串口/dev/ttyS3 | 1.25 4Pin | 非标配 | 默认为 RS232，可修改电阻配置为 TTL 串口 与 J32 位置重复，不能同时使用 |
| J78 | 串口/dev/ttyS2 | 1.25 4Pin | 非标配 | RS485 接口，5V 电压 |
| J11 | ADC 输入接口 | 1.25 3Pin | 非标配 | 支持两路 ADC 输入，电平最高 1.8V |
| J79 | ADC 按键接口 | 1.25 3Pin | 非标配 | 可扩展多个按键 |
| J15 | OTG 调试座 | Micro USB | 非标配 | |
| J68 | USB HOST 接口 | 1.25 4Pin | 非标配 | |
| J69 | USB HOST 接口 | 1.25 4Pin | 非标配 | |
| J24 | PCIE 4G 模组接口 | PCI-E | 非标配 | |
| U18 | SIM 卡接口 | Micro Sim 卡座 | 非标配 | |
| J72 | 红色绿色灯条接口 | 1.25 4Pin | 非标配 | 5V 电压输出 |
| J29 | LVDS 显示屏接口 | PH 2.0 30Pin | 非标配 | 支持双通道和单通道 LVDS 显示屏 |
| J50 | LVDS 电源跳线 | XH2.54 3Pin | 非标配 | 3.3V/5V 可选 |
| J30 | LVDS 显示屏背光座 | PH2.0 6Pin | 非标配 | |
| J31 | I2C 触摸屏接口 | 1.25 6Pin | 非标配 | 与 J77 功能复用 |
| J73 | MIPI 显示屏接口 | FPC 0.5 40Pin | 非标配 | 兼容大部分 40P 10.1 寸 MIPI 显示屏引脚定义 |
| J76 | NFC 读卡器 I2C 接口 | 1.25 6Pin | 非标配 | |
| J74 | NFC 读卡天线接口 | 1.25 2Pin | 非标配 | |
| J32 | HDMI 输出接口 | HDMI-A | 非标配 | 与 J53 位置重复，不能同时使用 |
| J35 | 风扇接口 | XH 2.54 2Pin | 非标配 | |
| J66 | GPIO 按键接口 | 1.25 3Pin | 非标配 | 支持一个 GPIO 按键输入 |

主板尾线接口及尾线信号定义说明

| | | 接扩展线 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|---------------------|--|----------|--------|-----------|--|--|----|----|----|----|-----|---|---|-------|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|----|-----|--------|----|----|--------|--|----|----|--|--|----|----|--|-------|----|----|-----------|--|----|----|-------|--------|----|----|--------|---------|----|----|----------|--------|----|----|---------|--------|----|----|----------|-----|----|----|------|--------|----|----|-----|
| 1 | 12V 电源输入 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 百兆以太网 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | USB HOST 接口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | USB 调试接口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 5V 电源输出 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | RS232 接口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 调试串口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 耳机音频输出 | 可外接有源音箱 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 485 输出信号 B | <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="4">尾线信号定义</th> </tr> <tr> <th>定义</th> <th>管脚</th> <th>管脚</th> <th>定义</th> </tr> </thead> <tbody> <tr> <td>12V</td> <td>1</td> <td>2</td> <td>GND-2</td> </tr> <tr> <td>RX+</td> <td>3</td> <td>4</td> <td>RX-</td> </tr> <tr> <td>TX+</td> <td>5</td> <td>6</td> <td>TX-</td> </tr> <tr> <td>DP1</td> <td>7</td> <td>8</td> <td>DM1</td> </tr> <tr> <td>DP2</td> <td>9</td> <td>10</td> <td>DM2</td> </tr> <tr> <td>5V-USB</td> <td>11</td> <td>12</td> <td>GND-12</td> </tr> <tr> <td></td> <td>13</td> <td>14</td> <td></td> </tr> <tr> <td></td> <td>15</td> <td>16</td> <td></td> </tr> <tr> <td>485-B</td> <td>17</td> <td>18</td> <td>VCC50_USB</td> </tr> <tr> <td></td> <td>19</td> <td>20</td> <td>485-A</td> </tr> <tr> <td>232TXD</td> <td>21</td> <td>22</td> <td>232RXD</td> </tr> <tr> <td>WGIN-D1</td> <td>23</td> <td>24</td> <td>WGOUT-D1</td> </tr> <tr> <td>GND-25</td> <td>25</td> <td>26</td> <td>WGIN-D0</td> </tr> <tr> <td>GND-27</td> <td>27</td> <td>28</td> <td>WGOUT-D0</td> </tr> <tr> <td>NO1</td> <td>29</td> <td>30</td> <td>COM1</td> </tr> <tr> <td>GND-31</td> <td>31</td> <td>32</td> <td>NC1</td> </tr> </tbody> </table> | | 尾线信号定义 | | | | 定义 | 管脚 | 管脚 | 定义 | 12V | 1 | 2 | GND-2 | RX+ | 3 | 4 | RX- | TX+ | 5 | 6 | TX- | DP1 | 7 | 8 | DM1 | DP2 | 9 | 10 | DM2 | 5V-USB | 11 | 12 | GND-12 | | 13 | 14 | | | 15 | 16 | | 485-B | 17 | 18 | VCC50_USB | | 19 | 20 | 485-A | 232TXD | 21 | 22 | 232RXD | WGIN-D1 | 23 | 24 | WGOUT-D1 | GND-25 | 25 | 26 | WGIN-D0 | GND-27 | 27 | 28 | WGOUT-D0 | NO1 | 29 | 30 | COM1 | GND-31 | 31 | 32 | NC1 |
| 尾线信号定义 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 定义 | 管脚 | | | 管脚 | 定义 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12V | 1 | | | 2 | GND-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RX+ | 3 | | | 4 | RX- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TX+ | 5 | | | 6 | TX- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DP1 | 7 | | | 8 | DM1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DP2 | 9 | | | 10 | DM2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5V-USB | 11 | | | 12 | GND-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13 | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 485-B | 17 | | | 18 | VCC50_USB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 19 | | | 20 | 485-A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 232TXD | 21 | | | 22 | 232RXD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WGIN-D1 | 23 | | | 24 | WGOUT-D1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GND-25 | 25 | | | 26 | WGIN-D0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GND-27 | 27 | 28 | WGOUT-D0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO1 | 29 | 30 | COM1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GND-31 | 31 | 32 | NC1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | USB 调试接口 VBUS 电源 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 调试串口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 485 输出信号 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | RS232 接口 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | 韦根输入信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | GPIO 信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 韦根输入信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | GPIO 信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 继电器输出信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 继电器输出信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 继电器输出信号 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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