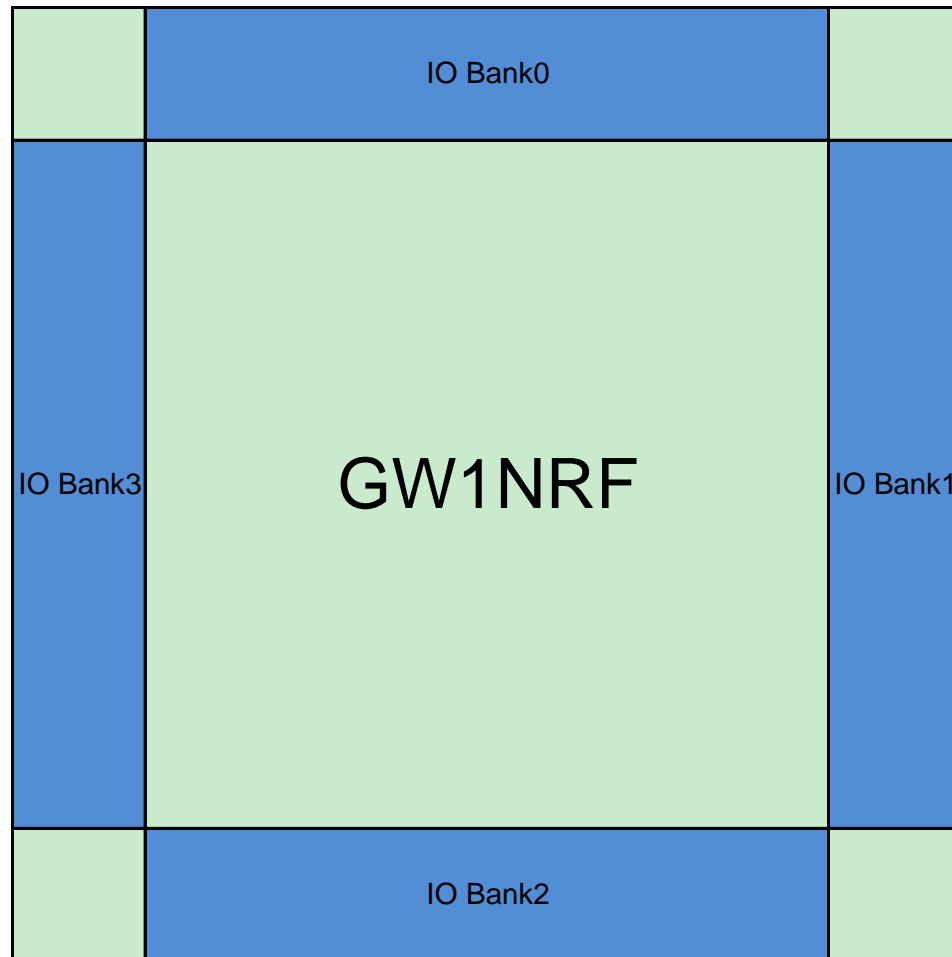


| 日期 | 版本 | 说明 |
|------------|-----|------------------------|
| 2019/10/24 | 1.0 | 初始版本，支持QN48封装和QN48E封装。 |
| 2019/12/5 | 1.1 | 完善管脚信息。 |

| 管脚名称 | 方向 | 说明 |
|--------------------------------------|----------|--|
| 用户I/O管脚 | | |
| IO [End][Row/Column Number][A/B] | I/O | [End]提供管脚在器件中的位置信息，包括L(left) R(right) B(bottom) T(top) |
| | | [Row/Column Number]提供管脚在器件中的具体行列位置信息，若[End]为T(top)或B(bottom)，则提供列信息，即管脚对应的CFU列数。若[End]为L(left)或R(right)，则提供行信息，即管脚对应的CFU行数 |
| | | [A/B]提供差分信号对信息 |
| 多功能管脚 | | |
| IO [End][Row/Column Number][A/B]/MMM | | 多功能管脚定义，/MMM表示在用户I/O功能的基础上有另外的一种或多种功能。当这些功能不使用的时 候，这些管脚可以用作用户I/O |
| RECONFIG_N | I, 内部弱上拉 | 低电平脉冲开始新的GowinCONFIG配置 |
| READY | I/O | 高电平表示当前可以对器件进行编程配置 |
| | | 低电平表示无法对器件进行编程配置 |
| DONE | I/O | 高电平表示成功完成编程配置 |
| | | 低电平表示未完成编程配置或编程配置失败 |
| FASTRD_N/D3 | I/O | MSPI模式下Flash访问速度选择端口FASTRD_N，低电平表示使用高速Flash访问模式，高电平表示使用普通Flash访问模式 |
| | | CPU模式下的数据端口D3 |
| MCLK/D4 | I/O | MSPI模式下时钟输出MCLK |
| | | CPU模式下的数据端口D4 |
| MCS_N/D5 | I/O | MSPI模式下的使能信号MCS_N，低电平有效 |
| | | CPU模式下的数据端口D5 |
| MO/D6 | I/O | MSPI模式下MOSI: Master数据输出/Slave数据输入 |
| | | CPU模式下的数据端口D6 |
| MI/D7 | I/O | MSPI模式下MISO: Master数据输入/Slave数据输出 |
| | | CPU模式下的数据端口D7 |
| SSPI_CS_N/D0 | I/O | SSPI模式下的使能信号SSPI_CS_N，低电平有效，内部弱上拉 |
| | | CPU模式下的数据端口D0 |
| SO/D1 | I/O | SSPI模式下MISO: Master数据输入/Slave数据输出 |
| | | CPU模式下的数据端口D1 |
| SI/D2 | I/O | SSPI模式下MOSI: Master数据输出/Slave数据输入 |
| | | CPU模式下的数据端口D2 |

| 管脚名称 | 方向 | 说明 |
|---------------------|----------|--|
| TMS | I, 内部弱上拉 | JTAG模式串行模式输入 |
| TCK | I | JTAG模式串行时钟输入, 需要在PCB上连接4.7K下拉电阻 |
| TDI | I, 内部弱上拉 | JTAG模式串行数据输入 |
| TDO | O | JTAG模式串行数据输出 |
| JTAGSEL_N | I, 内部弱上拉 | JTAG模式选择信号, 低电平有效 |
| SCLK | I | SSPI, SERIAL, CPU模式下的时钟输入 |
| DIN | I, 内部弱上拉 | SERIAL模式下的数据输入 |
| DOUT | O | SERIAL模式下的数据输出 |
| CLKHOLD_N | I, 内部弱上拉 | 高电平表示SSPI模式和CPU模式操作有效 低电平表示SSPI模式和CPU模式操作无效 |
| WE_N | I | CPU模式下选择D[7: 0]的数据输入输出方向 |
| GCLKT_[x] | I | 全局时钟输入管脚, T(True), [x]: 全局时钟序号 |
| GCLKC_[x] | I | 全局时钟输入管脚, C(Comp), [x]: 全局时钟序号 |
| LPLL_T_fb/RPLL_T_fb | I | 左边/右边PLL反馈输入管脚, T(True) |
| LPLL_C_fb/RPLL_C_fb | I | 左边/右边PLL反馈输入管脚, C(Comp) |
| LPLL_T_in/RPLL_T_in | I | 左边/右边PLL时钟输入管脚, T(True) |
| LPLL_C_in/RPLL_C_in | I | 左边/右边PLL时钟输入管脚, C(Comp) |
| MODE2 | I, 内部弱上拉 | GowinCONFIG配置模式选择信号端口 |
| MODE1 | I, 内部弱上拉 | GowinCONFIG配置模式选择信号端口 |
| MODE0 | I, 内部弱上拉 | GowinCONFIG配置模式选择信号端口 |
| 其他管脚 | | |
| NC | NA | 预留未使用 |
| VSS | NA | Ground管脚 |
| VCC | NA | 核电压供电管脚 |
| VCCO# | NA | I/O BANK#的I/O电压供电管脚 |
| VCCX | NA | 辅助电压供电管脚 |



注!

- 1.每个Bank还提供一个独立的参考电压 (VREF) ;
- 2.用户可以选择使用IOB内置的VREF源 (等于 $0.5 \cdot V_{CC0}$) ;
- 3.也可选择外部的VREF输入 (使用Bank中任意一个IO管脚作为外部VREF输入)

| 注！ QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。 | | | | | | | |
|---|-----|------|---------|----------------|------|------|-------|
| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
| IOB10A | I/O | 2 | | True_of_IOB10B | NONE | | |
| IOB10B | I/O | 2 | | Comp_of_IOB10A | NONE | | |
| IOB11A | I/O | 2 | | True_of_IOB11B | NONE | | |
| IOB11B | I/O | 2 | | Comp_of_IOB11A | NONE | | |
| IOB12A | I/O | 2 | | True_of_IOB12B | TRUE | | |
| IOB12B | I/O | 2 | | Comp_of_IOB12A | TRUE | | |
| IOB13A | I/O | 2 | | True_of_IOB13B | NONE | | |
| IOB13B | I/O | 2 | | Comp_of_IOB13A | NONE | | |
| IOB14A | I/O | 2 | | True_of_IOB14B | TRUE | | |
| IOB14B | I/O | 2 | | Comp_of_IOB14A | TRUE | | |
| IOB15A | I/O | 2 | | True_of_IOB15B | NONE | | |
| IOB15B | I/O | 2 | | Comp_of_IOB15A | NONE | | |
| IOB16A | I/O | 2 | | True_of_IOB16B | TRUE | | |
| IOB16B | I/O | 2 | | Comp_of_IOB16A | TRUE | | |
| IOB17A | I/O | 2 | | True_of_IOB17B | NONE | | |
| IOB17B | I/O | 2 | | Comp_of_IOB17A | NONE | | |
| IOB18A | I/O | 2 | | True_of_IOB18B | TRUE | | |
| IOB18B | I/O | 2 | | Comp_of_IOB18A | TRUE | | |
| IOB19A/GCLKT_5 | I/O | 2 | GCLKT_5 | True_of_IOB19B | NONE | 17 | 17 |
| IOB19B/GCLKC_5 | I/O | 2 | GCLKC_5 | Comp_of_IOB19A | NONE | 18 | 18 |
| IOB20A/GCLKT_4 | I/O | 2 | GCLKT_4 | True_of_IOB20B | TRUE | 19 | 19 |
| IOB20B/GCLKC_4 | I/O | 2 | GCLKC_4 | Comp_of_IOB20A | TRUE | 20 | 20 |
| IOB21A | I/O | 2 | | True_of_IOB21B | NONE | | |
| IOB21B | I/O | 2 | | Comp_of_IOB21A | NONE | | |
| IOB22A | I/O | 2 | | True_of_IOB22B | TRUE | | |
| IOB22B | I/O | 2 | | Comp_of_IOB22A | TRUE | | |
| IOB23A | I/O | 2 | | True_of_IOB23B | NONE | | |
| IOB23B | I/O | 2 | | Comp_of_IOB23A | NONE | | |
| IOB24A | I/O | 2 | | True_of_IOB24B | TRUE | | |
| IOB24B | I/O | 2 | | Comp_of_IOB24A | TRUE | | |
| IOB25A | I/O | 2 | | True_of_IOB25B | NONE | | |
| IOB25B | I/O | 2 | | Comp_of_IOB25A | NONE | | |

注！
QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|--------|-----|------|------|----------------|------|------|-------|
| IOB26A | I/O | 2 | | True_of_IQB26B | TRUE | 21 | 21 |
| IQB26B | I/O | 2 | | Comp_of_IQB26A | TRUE | 22 | 22 |
| IQB27A | I/O | 2 | | True_of_IQB27B | NONE | | |
| IQB27B | I/O | 2 | | Comp_of_IQB27A | NONE | | |
| IQB28A | I/O | 2 | | True_of_IQB28B | NONE | | |
| IQB28B | I/O | 2 | | Comp_of_IQB28A | NONE | | |
| IQB29A | I/O | 2 | | True_of_IQB29B | NONE | | |
| IQB29B | I/O | 2 | | Comp_of_IQB29A | NONE | | |
| IQB2A | I/O | 2 | | True_of_IQB2B | TRUE | | |
| IQB2B | I/O | 2 | | Comp_of_IQB2A | TRUE | | |
| IQB30A | I/O | 2 | | True_of_IQB30B | TRUE | | |
| IQB30B | I/O | 2 | | Comp_of_IQB30A | TRUE | | |
| IQB31A | I/O | 2 | | True_of_IQB31B | NONE | | |
| IQB31B | I/O | 2 | | Comp_of_IQB31A | NONE | | |
| IQB32A | I/O | 2 | | True_of_IQB32B | TRUE | 23 | 23 |
| IQB32B | I/O | 2 | | Comp_of_IQB32A | TRUE | 24 | 24 |
| IQB33A | I/O | 2 | | True_of_IQB33B | NONE | | |
| IQB33B | I/O | 2 | | Comp_of_IQB33A | NONE | | |
| IQB34A | I/O | 2 | | True_of_IQB34B | TRUE | | |
| IQB34B | I/O | 2 | | Comp_of_IQB34A | TRUE | | |
| IQB35A | I/O | 2 | | True_of_IQB35B | NONE | | |
| IQB35B | I/O | 2 | | Comp_of_IQB35A | NONE | | |
| IQB36A | I/O | 2 | | True_of_IQB36B | TRUE | | |
| IQB36B | I/O | 2 | | Comp_of_IQB36A | TRUE | | |
| IQB37A | I/O | 2 | | True_of_IQB37B | NONE | | |
| IQB37B | I/O | 2 | | Comp_of_IQB37A | NONE | | |
| IQB3A | I/O | 2 | | True_of_IQB3B | NONE | | |
| IQB3B | I/O | 2 | | Comp_of_IQB3A | NONE | | |
| IQB4A | I/O | 2 | | True_of_IQB4B | TRUE | | |
| IQB4B | I/O | 2 | | Comp_of_IQB4A | TRUE | | |
| IQB5A | I/O | 2 | | True_of_IQB5B | NONE | | |

| 注！ QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。 | | | | | | | |
|---|-----|------|------------|----------------|------|------|-------|
| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
| IOB5B | I/O | 2 | | Comp_of_IOB5A | NONE | | |
| IOB6A | I/O | 2 | | True_of_IOB6B | TRUE | | |
| IOB6B | I/O | 2 | | Comp_of_IOB6A | TRUE | | |
| IOB7A | I/O | 2 | | True_of_IOB7B | NONE | | |
| IOB7B | I/O | 2 | | Comp_of_IOB7A | NONE | | |
| IOB8A | I/O | 2 | | True_of_IOB8B | TRUE | | |
| IOB8B | I/O | 2 | | Comp_of_IOB8A | TRUE | | |
| IOB9A | I/O | 2 | | True_of_IOB9B | NONE | | |
| IOB9B | I/O | 2 | | Comp_of_IOB9A | NONE | | |
| IOL10A/TMS | I/O | 3 | TMS | True_of_IOL10B | NONE | 7 | 7 |
| IOL10B/TCK | I/O | 3 | TCK | Comp_of_IOL10A | NONE | 5 | 5 |
| IOL10C/SCLK | I/O | 3 | SCLK | True_of_IOL10D | NONE | | |
| IOL10D/TDI | I/O | 3 | TDI | Comp_of_IOL10C | NONE | 6 | 6 |
| IOL10E/TDO | I/O | 3 | TDO | True_of_IOL10F | NONE | p25 | 8 |
| IOL10F/RECONFIG_N | I/O | 3 | RECONFIG_N | Comp_of_IOL10E | NONE | | |
| IOL10G/DONE | I/O | 3 | DONE | True_of_IOL10H | NONE | | |
| IOL10H/READY | I/O | 3 | READY | Comp_of_IOL10G | NONE | | |
| IOL10I | I/O | 3 | | True_of_IOL10J | NONE | | |
| IOL10J | I/O | 3 | | Comp_of_IOL10I | NONE | | |
| IOL11A/GCLKT_6 | I/O | 3 | GCLKT_6 | True_of_IOL11B | TRUE | 8 | |
| IOL11B/GCLKC_6 | I/O | 3 | GCLKC_6 | Comp_of_IOL11A | TRUE | | |
| IOL12A | I/O | 3 | | True_of_IOL12B | NONE | | |
| IOL12B | I/O | 3 | | Comp_of_IOL12A | NONE | | |
| IOL13A | I/O | 3 | | True_of_IOL13B | TRUE | | |
| IOL13B | I/O | 3 | | Comp_of_IOL13A | TRUE | | |
| IOL14A | I/O | 3 | | True_of_IOL14B | NONE | | |
| IOL14B | I/O | 3 | | Comp_of_IOL14A | NONE | | |
| IOL15A | I/O | 3 | | True_of_IOL15B | TRUE | | |
| IOL15B | I/O | 3 | | Comp_of_IOL15A | TRUE | | |
| IOL16A | I/O | 3 | | True_of_IOL16B | NONE | | |
| IOL16B | I/O | 3 | | Comp_of_IOL16A | NONE | | |

| 注！ QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。 | | | | | | | |
|---|-----|------|---------------------|----------------|------|------|-------|
| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
| IOL17A | I/O | 3 | | True_of_IOL17B | TRUE | | |
| IOL17B | I/O | 3 | | Comp_of_IOL17A | TRUE | | |
| IOL18A | I/O | 3 | | True_of_IOL18B | NONE | | |
| IOL18B | I/O | 3 | | Comp_of_IOL18A | NONE | | |
| IOL2A | I/O | 3 | | True_of_IOL2B | TRUE | | |
| IOL2B | I/O | 3 | | Comp_of_IOL2A | TRUE | | |
| IOL3A/JTAGSEL_N/LPLL_T_in | I/O | 3 | JTAGSEL_N/LPLL_T_in | True_of_IOL3B | NONE | 3 | 3 |
| IOL3B/LPLL_C_in | I/O | 3 | LPLL_C_in | Comp_of_IOL3A | NONE | | |
| IOL4A/LPLL_T_fb | I/O | 3 | LPLL_T_fb | True_of_IOL4B | TRUE | | |
| IOL4B/LPLL_C_fb | I/O | 3 | LPLL_C_fb | Comp_of_IOL4A | TRUE | | |
| IOL5A | I/O | 3 | | True_of_IOL5B | NONE | | |
| IOL5B | I/O | 3 | | Comp_of_IOL5A | NONE | | |
| IOL6A | I/O | 3 | | True_of_IOL6B | TRUE | | |
| IOL6B | I/O | 3 | | Comp_of_IOL6A | TRUE | | |
| IOL7A | I/O | 3 | | True_of_IOL7B | NONE | | |
| IOL7B | I/O | 3 | | Comp_of_IOL7A | NONE | | |
| IOL8A | I/O | 3 | | True_of_IOL8B | TRUE | | |
| IOL8B | I/O | 3 | | Comp_of_IOL8A | TRUE | | |
| IOL9A/GCLKT_7 | I/O | 3 | GCLKT_7 | True_of_IOL9B | NONE | | |
| IOL9B/GCLKC_7 | I/O | 3 | GCLKC_7 | Comp_of_IOL9A | NONE | | |
| IOR10A/MI/D7 | I/O | 1 | MI/D7 | True_of_IOR10B | NONE | | |
| IOR10B/MO/D6 | I/O | 1 | MO/D6 | Comp_of_IOR10A | NONE | | |
| IOR10C/MCS_N/D5 | I/O | 1 | MCS_N/D5 | True_of_IOR10D | NONE | | |
| IOR10D/MCLK/D4 | I/O | 1 | MCLK/D4 | Comp_of_IOR10C | NONE | | |
| IOR10E/FASTRD_N/D3 | I/O | 1 | FASTRD_N/D3 | True_of_IOR10F | NONE | | |
| IOR10F/SI/D2 | I/O | 1 | SI/D2 | Comp_of_IOR10E | NONE | | |
| IOR10G/SO/D1 | I/O | 1 | SO/D1 | True_of_IOR10H | NONE | | |
| IOR10H/SSPI_CS_N/D0 | I/O | 1 | SSPI_CS_N/D0 | Comp_of_IOR10G | NONE | | |
| IOR10I/DIN/CLKHOLD_N | I/O | 1 | DIN/CLKHOLD_N | True_of_IOR10J | NONE | | |
| IOR10J/DOUT/WE_N | I/O | 1 | DOUT/WE_N | Comp_of_IOR10I | NONE | | |
| IOR11A/GCLKT_3 | I/O | 1 | GCLKT_3 | True_of_IOR11B | TRUE | 32 | 32 |

| 注！ QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。 | | | | | | | |
|---|-----|------|-----------|----------------|------|------|-------|
| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
| IOR11B/GCLKC_3 | I/O | 1 | GCLKC_3 | Comp_of_IOR11A | TRUE | 31 | 31 |
| IOR12A | I/O | 1 | | True_of_IOR12B | NONE | | |
| IOR12B | I/O | 1 | | Comp_of_IOR12A | NONE | | |
| IOR13A | I/O | 1 | | True_of_IOR13B | TRUE | | |
| IOR13B | I/O | 1 | | Comp_of_IOR13A | TRUE | | |
| IOR14A | I/O | 1 | | True_of_IOR14B | NONE | | |
| IOR14B | I/O | 1 | | Comp_of_IOR14A | NONE | | |
| IOR15A | I/O | 1 | | True_of_IOR15B | TRUE | | |
| IOR15B | I/O | 1 | | Comp_of_IOR15A | TRUE | | |
| IOR16A | I/O | 1 | | True_of_IOR16B | NONE | | |
| IOR16B | I/O | 1 | | Comp_of_IOR16A | NONE | | |
| IOR17A | I/O | 1 | | True_of_IOR17B | TRUE | | |
| IOR17B | I/O | 1 | | Comp_of_IOR17A | TRUE | | |
| IOR18A | I/O | 1 | | True_of_IOR18B | NONE | | |
| IOR18B | I/O | 1 | | Comp_of_IOR18A | NONE | | |
| IOR2A | I/O | 1 | | True_of_IOR2B | TRUE | | |
| IOR2B | I/O | 1 | | Comp_of_IOR2A | TRUE | | |
| IOR3A/RPLL_T_in | I/O | 1 | RPLL_T_in | True_of_IOR3B | NONE | 35 | 35 |
| IOR3B/RPLL_C_in | I/O | 1 | RPLL_C_in | Comp_of_IOR3A | NONE | | |
| IOR4A/RPLL_T_fb | I/O | 1 | RPLL_T_fb | True_of_IOR4B | TRUE | | |
| IOR4B/RPLL_C_fb | I/O | 1 | RPLL_C_fb | Comp_of_IOR4A | TRUE | | |
| IOR5A | I/O | 1 | | True_of_IOR5B | NONE | | |
| IOR5B | I/O | 1 | | Comp_of_IOR5A | NONE | | |
| IOR6A | I/O | 1 | | True_of_IOR6B | TRUE | | |
| IOR6B | I/O | 1 | | Comp_of_IOR6A | TRUE | | |
| IOR7A | I/O | 1 | | True_of_IOR7B | NONE | | |
| IOR7B | I/O | 1 | | Comp_of_IOR7A | NONE | | |
| IOR8A | I/O | 1 | | True_of_IOR8B | TRUE | | |
| IOR8B | I/O | 1 | | Comp_of_IOR8A | TRUE | | |
| IOR9A/GCLKT_2 | I/O | 1 | GCLKT_2 | True_of_IOR9B | NONE | 33 | 33 |
| IOR9B/GCLKC_2 | I/O | 1 | GCLKC_2 | Comp_of_IOR9A | NONE | | |

注!
QN48封装和QN48E封装中, IOL10B和GPIO8共用5管脚, IOL10A和GPIO11共用7管脚。

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|--------|-----|------|------|----------------|------|------|-------|
| IOT12A | I/O | 0 | | True_of_IOT12B | NONE | | |
| IOT12B | I/O | 0 | | Comp_of_IOT12A | NONE | | |
| IOT13A | I/O | 0 | | True_of_IOT13B | NONE | | |
| IOT13B | I/O | 0 | | Comp_of_IOT13A | NONE | | |
| IOT14A | I/O | 0 | | True_of_IOT14B | NONE | | |
| IOT14B | I/O | 0 | | Comp_of_IOT14A | NONE | | |
| IOT15A | I/O | 0 | | True_of_IOT15B | NONE | | |
| IOT15B | I/O | 0 | | Comp_of_IOT15A | NONE | | |
| IOT16A | I/O | 0 | | True_of_IOT16B | NONE | 45 | 45 |
| IOT16B | I/O | 0 | | Comp_of_IOT16A | NONE | 44 | 44 |
| IOT17A | I/O | 0 | | True_of_IOT17B | NONE | | |
| IOT17B | I/O | 0 | | Comp_of_IOT17A | NONE | | |
| IOT18A | I/O | 0 | | True_of_IOT18B | NONE | | |
| IOT18B | I/O | 0 | | Comp_of_IOT18A | NONE | | |
| IOT20A | I/O | 0 | | True_of_IOT20B | NONE | | |
| IOT20B | I/O | 0 | | Comp_of_IOT20A | NONE | | |
| IOT21A | I/O | 0 | | True_of_IOT21B | NONE | | |
| IOT21B | I/O | 0 | | Comp_of_IOT21A | NONE | | |
| IOT22A | I/O | 0 | | True_of_IOT22B | NONE | | |
| IOT22B | I/O | 0 | | Comp_of_IOT22A | NONE | | |
| IOT23A | I/O | 0 | | True_of_IOT23B | NONE | | |
| IOT23B | I/O | 0 | | Comp_of_IOT23A | NONE | | |
| IOT24A | I/O | 0 | | True_of_IOT24B | NONE | 43 | 43 |
| IOT24B | I/O | 0 | | Comp_of_IOT24A | NONE | 42 | 42 |
| IOT25A | I/O | 0 | | True_of_IOT25B | NONE | | |
| IOT25B | I/O | 0 | | Comp_of_IOT25A | NONE | | |
| IOT26A | I/O | 0 | | True_of_IOT26B | NONE | | |
| IOT26B | I/O | 0 | | Comp_of_IOT26A | NONE | | |
| IOT27A | I/O | 0 | | True_of_IOT27B | NONE | | |
| IOT27B | I/O | 0 | | Comp_of_IOT27A | NONE | | |
| IOT2A | I/O | 0 | | True_of_IOT2B | NONE | | |

注！
QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|-------------|-----|------|-------|----------------|------|------|-------|
| IOT2B/MODE0 | I/O | 0 | MODE0 | Comp_of_IOT2A | NONE | | |
| IOT30A | I/O | 0 | | True_of_IOT30B | NONE | 41 | 41 |
| IOT30B | I/O | 0 | | Comp_of_IOT30A | NONE | 40 | 40 |
| IOT31A | I/O | 0 | | True_of_IOT31B | NONE | p20 | p20 |
| IOT31B | I/O | 0 | | Comp_of_IOT31A | NONE | | |
| IOT32A | I/O | 0 | | True_of_IOT32B | NONE | | |
| IOT32B | I/O | 0 | | Comp_of_IOT32A | NONE | | |
| IOT33A | I/O | 0 | | True_of_IOT33B | NONE | p19 | p19 |
| IOT33B | I/O | 0 | | Comp_of_IOT33A | NONE | | |
| IOT34A | I/O | 0 | | True_of_IOT34B | NONE | 39 | 39 |
| IOT34B | I/O | 0 | | Comp_of_IOT34A | NONE | | |
| IOT35A | I/O | 0 | | True_of_IOT35B | NONE | p18 | p18 |
| IOT35B | I/O | 0 | | Comp_of_IOT35A | NONE | | |
| IOT36A | I/O | 0 | | True_of_IOT36B | NONE | | |
| IOT36B | I/O | 0 | | Comp_of_IOT36A | NONE | | |
| IOT37A | I/O | 0 | | True_of_IOT37B | NONE | p17 | p17 |
| IOT37B | I/O | 0 | | Comp_of_IOT37A | NONE | | |
| IOT3A/MODE2 | I/O | 0 | MODE2 | True_of_IOT3B | NONE | | |
| IOT3B/MODE1 | I/O | 0 | MODE1 | Comp_of_IOT3A | NONE | | |
| IOT4A | I/O | 0 | | True_of_IOT4B | NONE | | |
| IOT4B | I/O | 0 | | Comp_of_IOT4A | NONE | | |
| IOT5A | I/O | 0 | | True_of_IOT5B | NONE | | |
| IOT5B | I/O | 0 | | Comp_of_IOT5A | NONE | | |
| IOT6A | I/O | 0 | | True_of_IOT6B | NONE | | |
| IOT6B | I/O | 0 | | Comp_of_IOT6A | NONE | | |
| IOT7A | I/O | 0 | | True_of_IOT7B | NONE | p22 | p22 |
| IOT7B | I/O | 0 | | Comp_of_IOT7A | NONE | | |
| IOT8A | I/O | 0 | | True_of_IOT8B | NONE | | |
| IOT8B | I/O | 0 | | Comp_of_IOT8A | NONE | | |
| IOT9A | I/O | 0 | | True_of_IOT9B | NONE | 47 | 47 |
| IOT9B | I/O | 0 | | Comp_of_IOT9A | NONE | 46 | 46 |

注！
 QN48封装和QN48E封装中，IOL10B和GPIO8共用5管脚，IOL10A和GPIO11共用7管脚。

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|-------------|--------|------|------|--------|------|------|-------|
| VCC | Power | N/A | | | | 11 | 11 |
| VCC | Power | N/A | | | | 37 | 37 |
| VCCO0/VCCO3 | Power | N/A | | | | 1 | 1 |
| VCCO1/VCCO2 | Power | N/A | | | | 25 | 25 |
| VCCX | Power | N/A | | | | 36 | 36 |
| VSS | Ground | N/A | | | | 2 | |
| VSS | Ground | N/A | | | | 26 | 26 |
| GPIO10 | | | BLE | | | | 2 |
| GPIO9 | | | BLE | | | 4 | 4 |
| GPIO8 | | | BLE | | | 5 | 5 |
| GPIO11 | | | BLE | | | 7 | 7 |
| XOUT | | | BLE | | | 9 | 9 |
| XIN | | | BLE | | | 10 | 10 |
| ANT | | | BLE | | | 12 | 12 |
| VBAT2 | | | BLE | | | 13 | 13 |
| ENABLE | | | BLE | | | 14 | 14 |
| LF_XIN | | | BLE | | | 15 | 15 |
| LF_XOUT | | | BLE | | | 16 | 16 |
| MCUVCC | | | BLE | | | 27 | 27 |
| VCCGPIO | | | BLE | | | 28 | 28 |
| VBAT1 | | | BLE | | | 29 | 29 |
| SW_DCDC | | | BLE | | | 30 | 30 |
| GPIO5 | | | BLE | | | 34 | 34 |
| GPIO6 | | | BLE | | | 38 | 38 |
| GPIO7 | | | BLE | | | 48 | 48 |

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|-----------------------------|-----|------|-----------|----------------|------|------|-------|
| BANK3 True LVDS Pair | | | | | | | |
| IOL11A/GCLKT_6 | I/O | 3 | GCLKT_6 | True_of_IOL11B | TRUE | 8 | |
| IOL11B/GCLKC_6 | I/O | 3 | GCLKC_6 | Comp_of_IOL11A | TRUE | | |
| IOL13A | I/O | 3 | | True_of_IOL13B | TRUE | | |
| IOL13B | I/O | 3 | | Comp_of_IOL13A | TRUE | | |
| IOL15A | I/O | 3 | | True_of_IOL15B | TRUE | | |
| IOL15B | I/O | 3 | | Comp_of_IOL15A | TRUE | | |
| IOL17A | I/O | 3 | | True_of_IOL17B | TRUE | | |
| IOL17B | I/O | 3 | | Comp_of_IOL17A | TRUE | | |
| IOL2A | I/O | 3 | | True_of_IOL2B | TRUE | | |
| IOL2B | I/O | 3 | | Comp_of_IOL2A | TRUE | | |
| IOL4A/LPLL_T_fb | I/O | 3 | LPLL_T_fb | True_of_IOL4B | TRUE | | |
| IOL4B/LPLL_C_fb | I/O | 3 | LPLL_C_fb | Comp_of_IOL4A | TRUE | | |
| IOL6A | I/O | 3 | | True_of_IOL6B | TRUE | | |
| IOL6B | I/O | 3 | | Comp_of_IOL6A | TRUE | | |
| IOL8A | I/O | 3 | | True_of_IOL8B | TRUE | | |
| IOL8B | I/O | 3 | | Comp_of_IOL8A | TRUE | | |
| BANK2 True LVDS Pair | | | | | | | |
| IOB12A | I/O | 2 | | True_of_IOB12B | TRUE | | |
| IOB12B | I/O | 2 | | Comp_of_IOB12A | TRUE | | |
| IOB14A | I/O | 2 | | True_of_IOB14B | TRUE | | |
| IOB14B | I/O | 2 | | Comp_of_IOB14A | TRUE | | |
| IOB16A | I/O | 2 | | True_of_IOB16B | TRUE | | |
| IOB16B | I/O | 2 | | Comp_of_IOB16A | TRUE | | |
| IOB18A | I/O | 2 | | True_of_IOB18B | TRUE | | |
| IOB18B | I/O | 2 | | Comp_of_IOB18A | TRUE | | |
| IOB20A/GCLKT_4 | I/O | 2 | GCLKT_4 | True_of_IOB20B | TRUE | 19 | 19 |
| IOB20B/GCLKC_4 | I/O | 2 | GCLKC_4 | Comp_of_IOB20A | TRUE | 20 | 20 |
| IOB22A | I/O | 2 | | True_of_IOB22B | TRUE | | |
| IOB22B | I/O | 2 | | Comp_of_IOB22A | TRUE | | |
| IOB24A | I/O | 2 | | True_of_IOB24B | TRUE | | |
| IOB24B | I/O | 2 | | Comp_of_IOB24A | TRUE | | |

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|--------|-----|------|------|----------------|------|------|-------|
| IOB26A | I/O | 2 | | True_of_IOB26B | TRUE | 21 | 21 |
| IOB26B | I/O | 2 | | Comp_of_IOB26A | TRUE | 22 | 22 |
| IOB2A | I/O | 2 | | True_of_IOB2B | TRUE | | |
| IOB2B | I/O | 2 | | Comp_of_IOB2A | TRUE | | |
| IOB30A | I/O | 2 | | True_of_IOB30B | TRUE | | |
| IOB30B | I/O | 2 | | Comp_of_IOB30A | TRUE | | |
| IOB32A | I/O | 2 | | True_of_IOB32B | TRUE | 23 | 23 |
| IOB32B | I/O | 2 | | Comp_of_IOB32A | TRUE | 24 | 24 |
| IOB34A | I/O | 2 | | True_of_IOB34B | TRUE | | |
| IOB34B | I/O | 2 | | Comp_of_IOB34A | TRUE | | |
| IOB36A | I/O | 2 | | True_of_IOB36B | TRUE | | |
| IOB36B | I/O | 2 | | Comp_of_IOB36A | TRUE | | |
| IOB4A | I/O | 2 | | True_of_IOB4B | TRUE | | |
| IOB4B | I/O | 2 | | Comp_of_IOB4A | TRUE | | |
| IOB6A | I/O | 2 | | True_of_IOB6B | TRUE | | |
| IOB6B | I/O | 2 | | Comp_of_IOB6A | TRUE | | |
| IOB8A | I/O | 2 | | True_of_IOB8B | TRUE | | |
| IOB8B | I/O | 2 | | Comp_of_IOB8A | TRUE | | |

BANK1 True LVDS Pair

| | | | | | | | |
|-----------------|-----|---|-----------|----------------|------|----|----|
| IOR11A/GCLKT_3 | I/O | 1 | GCLKT_3 | True_of_IOR11B | TRUE | 32 | 32 |
| IOR11B/GCLKC_3 | I/O | 1 | GCLKC_3 | Comp_of_IOR11A | TRUE | 31 | 31 |
| IOR13A | I/O | 1 | | True_of_IOR13B | TRUE | | |
| IOR13B | I/O | 1 | | Comp_of_IOR13A | TRUE | | |
| IOR15A | I/O | 1 | | True_of_IOR15B | TRUE | | |
| IOR15B | I/O | 1 | | Comp_of_IOR15A | TRUE | | |
| IOR17A | I/O | 1 | | True_of_IOR17B | TRUE | | |
| IOR17B | I/O | 1 | | Comp_of_IOR17A | TRUE | | |
| IOR2A | I/O | 1 | | True_of_IOR2B | TRUE | | |
| IOR2B | I/O | 1 | | Comp_of_IOR2A | TRUE | | |
| IOR4A/RPLL_T_fb | I/O | 1 | RPLL_T_fb | True_of_IOR4B | TRUE | | |
| IOR4B/RPLL_C_fb | I/O | 1 | RPLL_C_fb | Comp_of_IOR4A | TRUE | | |
| IOR6A | I/O | 1 | | True_of_IOR6B | TRUE | | |

| 管脚名 | 功能 | BANK | 配置功能 | 差分Pair | LVDS | QN48 | QN48E |
|-------|-----|------|------|---------------|------|------|-------|
| IOR6B | I/O | 1 | | Comp_of_IOR6A | TRUE | | |
| IOR8A | I/O | 1 | | True_of_IOR8B | TRUE | | |
| IOR8B | I/O | 1 | | Comp_of_IOR8A | TRUE | | |

| GW1NRF-4B QN48封装电源供电要求 | | | | |
|-------------------------|---------------------------------|---------|--------|--------|
| 名称 | 描述 | | 最小值 | 最大值 |
| VCC | 核电压 | LV版本核电压 | 1.14V | 1.26V |
| | | UV版本核电压 | 1.71V | 3.465V |
| VCCO0/VCCO3 | I/O Bank电源电压，VCCO0和VCCO3内部连接在一起 | | 1.14V | 3.465V |
| VCCO1/VCCO2 | I/O Bank电源电压，VCCO1和VCCO2内部连接在一起 | | 1.14V | 3.465V |
| VCCX | 辅助电压 | | 2.375V | 3.465V |
| GW1NRF-4B QN48E封装电源供电要求 | | | | |
| 名称 | 描述 | | 最小值 | 最大值 |
| VCC | 核电压 | | 1.14V | 1.26V |
| VCCO0/VCCO3 | I/O Bank电源电压，VCCO0和VCCO3内部连接在一起 | | 1.14V | 3.465V |
| VCCO1/VCCO2 | I/O Bank电源电压，VCCO1和VCCO2内部连接在一起 | | 1.14V | 3.465V |
| VCCX | 辅助电压 | | 2.375V | 3.465V |