|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input/Output Description Signal name | I/O | bitwidth | Source/Destination | Description |
| Reset | | | | |
| i\_rx\_rstn | I, level | 1 | Reset unit | Active low asynchronous signal to reset flip-flops of all submodules of bs\_ul\_rx |
| i\_rx\_fsm\_rstn | I, level | 1 | Reset unit | Active low asynchronous signal to reset flip-flops of all submodules (except bs\_ul\_cfg) of bs\_ul\_rx |
| Clock | | | | |
| i\_core\_clk | I, clk | 1 | Clock unit | Core clock of nr\_lte\_bs, 245.76 MHz clock when system bandwidth = 100MHz with 4T4R. |
| Interface with UL\_CTRL | | | | |
| i\_rdm\_slot\_start | I, pulse | 1 | ul\_ctrl | A pulse to indicate the start of a slot |
| i\_rdm\_slot\_end | I, pulse | 1 | ul\_ctrl | A pulse to indicate the end of a slot |
| i\_rdm\_sym\_start | I, pulse | 1 | ul\_ctrl | A pulse to indicate the start of a symbol |
| i\_rdm\_sym\_end | I, pulse | 1 | ul\_ctrl | A pulse to indicate the end of a symbol |
| i\_rdm\_sym\_idx | I, pulse | 4 | ul\_ctrl | Symbol index |
| Interface with UL\_CFG | | | | |
| i\_user\_num | I, level | 4 | ul\_cfg | Total user number in this slot (Max. 8 users) |
| i\_users\_cb\_num | I, level | 24 | ul\_cfg | CB number of ervery user (Max. 8 users) |
| i\_users\_e0\_sz | I, level | 24 | ul\_cfg | E0 size of every user (Max. 8 users) |
| i\_users\_e1\_sz | I, level | 24 | ul\_cfg | E1 size of every user (Max. 8 users) |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| i\_users\_e0\_num | I, level | | 24 | | ul\_cfg | | CB number of E0 size of every user (Max. 8 users) |
| i\_users\_qm | I, level | | 24 | | ul\_cfg | | Users modulation scheme (Max. 8 users) |
| i\_users\_ncb | I, level | | 24 | | ul\_cfg | | Ncb size of every user (Max. 8 users) |
| i\_users\_rdm\_scaling | I, level | | 24 | | ul\_cfg | | Scaling factor for input data of every user (Max. 8 users) |
| Interface with Demux | | | | | | | |
| i\_demux\_strb | | I, level | | 1 | | Input data strobe to de-rate matching | |
| i\_demux\_rx | | I, level | | 6x16 | | Input data to de-rate matching | |
| i\_demux\_user\_idx | | I, level | | 4 | | User index for the input data (Max. 8 users) | |
| i\_demux\_sym\_idx | | I, level | | 4 | | User index for the input data (Max. 8 users) | |
| Interface with HARQ | | | | | | | |
| o\_rdm\_cb\_idx | | O, level | | 7 | | Output CB index | |
| o\_rdm\_user\_idx | | O, level | | 7 | | Output user index | |
| o\_rdm\_rx\_strb | | O, level | | 1 | | Output data strobe to HARQ | |
| o\_rdm\_rx | | O, level | | 6x16 | | Output data to HARQ | |
| o\_fetch\_start | O, level | | 1 | | RDM | | Trigger HARQ to fetch data to local Ncb buffer |
| o\_fetch\_cb\_idx | O, level | | 7 | | RDM | | CB index for the fetching data in HARQ |
| o\_fetch\_user\_idx | O, level | | 7 | | RDM | | User index for the fetching data in HARQ |