

## RODDemo motherboard registers

Last update 21 février 2001

| VME Address                                 |     |         | R/W | Register             | Bits  | Comments                                                                      | Boot | Reset |
|---------------------------------------------|-----|---------|-----|----------------------|-------|-------------------------------------------------------------------------------|------|-------|
| Relative(1)                                 |     | Full(2) |     |                      |       |                                                                               |      |       |
| Ded                                         | Hex |         |     |                      |       |                                                                               |      |       |
| <b>Base address</b>                         |     |         |     |                      |       |                                                                               |      |       |
| 0                                           | 0   | 0       | R/W |                      |       | any r/w possible to verify presence of the module                             |      |       |
|                                             |     |         |     |                      |       |                                                                               |      |       |
| <b>Local registers (VME interface FPGA)</b> |     |         |     |                      |       |                                                                               |      |       |
| 0                                           | 0   | 200000  | R   | <b>Status</b>        | 6     | trigger status (1=disabled, 0=enabled)                                        |      |       |
|                                             |     |         |     |                      | 5:4   | TTCrx mode (value = 1)                                                        |      |       |
|                                             |     |         |     |                      | 5:4   | VME mode (value = 3 )                                                         |      |       |
|                                             |     |         |     |                      | 5:4   | FP mode (value = 2)                                                           |      |       |
|                                             |     |         |     |                      | 3:0   | PU ready (1=ready, 0=not ready)                                               |      |       |
| 1                                           | 1   | 200004  | W   | <b>Reset</b>         | -     | send general reset                                                            |      |       |
|                                             |     |         |     |                      |       |                                                                               |      |       |
| <b>Miscellaneous Controller registers</b>   |     |         |     |                      |       |                                                                               |      |       |
| 0                                           | 0   | 100000  | R   | <b>Status</b>        | 29:26 | PU busy [4:1]                                                                 |      |       |
|                                             |     |         |     |                      | 25    | busy out                                                                      |      |       |
|                                             |     |         |     |                      | 24    | 1= busy enabled                                                               |      |       |
|                                             |     |         |     |                      | 22:16 | IRQ status [1:7] (1=OFF, 0=ON)                                                |      |       |
|                                             |     |         |     |                      | 12:1  | internal IRQ status [1:12] (1=ON, 0=OFF)                                      |      |       |
|                                             |     |         |     |                      | 0     | 1= irq enabled                                                                |      |       |
| 1                                           | 1   | 100004  | R/W | <b>Reset IRQ</b>     | 11:0  | Reset IRQ previously set (1=reset)                                            |      |       |
| 2                                           | 2   | 100008  | R/W | <b>Configure</b>     | 8     | busy vme (1=ON(reset), 0=OFF)                                                 | -    | 1     |
|                                             |     |         |     |                      | 7:3   | Number to be subtracted from the GeoAddr to generate BUSY in the P3 backplane | 0    | 0     |
|                                             |     |         |     |                      | 2     | 1= input from Glink, 0= input from Slink                                      | 1    | --    |
|                                             |     |         |     |                      | 1     | Enable IRQ signal (1=enable, 0=disable)                                       | 0    | --    |
|                                             |     |         |     |                      | 0     | Enable BUSY signal (1=enable, 0=disable)                                      | 0    | --    |
| 4                                           | 4   | 100010  | R   | <b>FEB status</b>    | 7:4   | FEB2 link status (flag 3:0 )                                                  |      |       |
|                                             |     |         |     |                      | 3:0   | FEB1 link status (flag 3:0 )                                                  |      |       |
| 5                                           | 5   | 100014  | W   | <b>reset transit</b> | 1:0   | 1: reset Feb2, 0: reset Feb1                                                  |      |       |
| 16                                          | 1+x | 100040  | R/W | <b>IRQ handler</b>   | 31    | reserved                                                                      |      |       |
| ++                                          |     | +X      |     |                      | 30:28 | VME IRQ number, (hex of bits [27:21])                                         |      |       |
|                                             |     |         |     |                      | 27:21 | VME IRQ number [1:7] (1=set, 0=not set)                                       |      |       |
|                                             |     |         |     |                      | 20    | Enable IRQ signal (1=enable, 0=disable)                                       |      |       |
|                                             |     |         |     |                      | 19:16 | Internal - external IRQ mapping                                               |      |       |
|                                             |     |         |     |                      |       | 0000 = irq1-pu1                                                               |      |       |
|                                             |     |         |     |                      |       | 0001 = irq2-pu1                                                               |      |       |
|                                             |     |         |     |                      |       | 0010 = irq1-pu2                                                               |      |       |
|                                             |     |         |     |                      |       | 0011 = irq2-pu2                                                               |      |       |
|                                             |     |         |     |                      |       | 0100 = irq1-pu3                                                               |      |       |
|                                             |     |         |     |                      |       | 0101 = irq2-pu3                                                               |      |       |
|                                             |     |         |     |                      |       | 0110 = irq1-pu4                                                               |      |       |
|                                             |     |         |     |                      |       | 0111 = irq2-pu4                                                               |      |       |
|                                             |     |         |     |                      |       | 1000 = irq-oc                                                                 |      |       |
|                                             |     |         |     |                      |       | 1001 = irq-ttc                                                                |      |       |
|                                             |     |         |     |                      |       | 1010 = irq-feblink                                                            |      |       |
|                                             |     |         |     |                      |       | 1011 = reserved                                                               |      |       |
|                                             |     |         |     |                      | 7:0   | IRQ identifier                                                                |      |       |
|                                             |     |         |     |                      |       |                                                                               |      |       |
| <b>TTC Controller registers</b>             |     |         |     |                      |       |                                                                               |      |       |

|                                    |    |       |     |            |      |                                                 |   |   |
|------------------------------------|----|-------|-----|------------|------|-------------------------------------------------|---|---|
| 0                                  | 0  | 80000 | R   | Status     |      |                                                 |   |   |
| 1                                  | 1  | 80004 | W   | Reset      | 0    | clear status register                           |   |   |
| 2                                  | 2  | 80008 | W   | EventID_wr | 23:0 | stored internally, it is send at next BCID_wr   |   |   |
| 3                                  | 3  | 8000C | W   | BCID_wr    | 11:0 | sends both BCID and EventID                     |   |   |
| 4                                  | 4  | 80010 | W   | TTYPE_wr   | 7:0  | sends TTYPE                                     |   |   |
| 5                                  | 5  | 80014 | R/W | Enable     | 2    | Disable trigger (1=disable, 0=disable)          | 1 | 1 |
|                                    |    |       |     |            | 1:0  | 1=TTCRx mode, 2= FP mode,3= VME mode            | 3 | 3 |
|                                    |    |       |     |            |      |                                                 |   |   |
| <b>Output Controller registers</b> |    |       |     |            |      |                                                 |   |   |
| 0                                  | 0  | 40000 | R   | Status     |      |                                                 |   |   |
| 1                                  | 1  | 40004 | W   | Reset      |      |                                                 |   |   |
| 2                                  | 2  | 40008 | R/W | Configure  |      | — see output controller document for details —  |   | 0 |
| 4                                  | 4  | 40010 | W   | FmtVersion |      |                                                 |   | 0 |
| 8                                  | 8  | 40020 | W   | SrcID      |      |                                                 |   | 0 |
| 16                                 | 10 | 40040 | W   | DetEvType  |      |                                                 |   | 0 |
| 18                                 | 12 | 40048 | W   | DetFmtVer  |      |                                                 |   | 0 |
|                                    |    |       |     |            |      |                                                 |   |   |
| <b>RAM Memory</b>                  |    |       |     |            |      |                                                 |   |   |
| 0                                  | 0  | 48000 | R   | ReadRAM    | 31:0 | data                                            |   |   |
|                                    |    |       |     |            |      |                                                 |   |   |
| <b>Data Distributor</b>            |    |       |     |            |      |                                                 |   |   |
| 0                                  | 0  | 20000 | W   | Data2PU    |      | VME data : [32:16] to PU 2&4, [15::0] to PU 1&3 |   |   |
|                                    |    |       |     |            |      |                                                 |   |   |
| <b>Processing Unit</b>             |    |       |     |            |      |                                                 |   |   |
| 0                                  | 0  | 10080 |     | Base Ad.   |      | PU top board                                    |   |   |
|                                    |    | 10100 |     | Base Ad.   |      |                                                 |   |   |
|                                    |    | 10200 |     | Base Ad.   |      |                                                 |   |   |
|                                    |    | 10400 |     | Base Ad.   |      | PU bottom board                                 |   |   |
|                                    |    |       |     |            |      |                                                 |   |   |

**Note:**

- (1) Relative address corresponds to the 5 bits address space available for each device
- (2) Full address is the one to be added in the board base address