# BCD display interface with Avalon-MM

## Information

This document will hold information in accordance to latest version

### Version control

|  |  |  |
| --- | --- | --- |
| Version | Date | Notes |
| 0.10 | 3 December 2017 | Initial design |
|  |  |  |

## Addressing SystemConsole

* Open Qsys and then open system console
* Load the design
* In the shell, enter the following

#Select the master service type and check for available service paths.

set service\_paths [get\_service\_paths master]

#Set the master service path. set master\_service\_path [lindex $service\_paths 0]

#Open the master service.

set claim\_path [claim\_service master $master\_service\_path mylib]

## Registers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Address | R/W | Default | Name - Description |
| 0 | 0x0 | R | 0x0 | Version Major |
| 1 | 0x4 | R | 0xa | Version Minor |
| 2 | 0x8 | R/W | 0x0 | CurrentNumber – Current number to display on BCD |
| 3 | 0xC | R | 0x0 | PrevNumber – Previous number that was displayed on BCD |
| 4 | 0x10 | R | 0x0 | ErrorCounter – Counter for internal errors in the unit |
| 5 | 0x14 | R/W | 0x0 | Debug – 0x0: Normal operation 0xFFFFFFFF: Debug mode |
| 6 | 0x18 |  | 0x0 | Unassigned |
| 7 | 0x1C |  | 0x0 | Unassigned |

Writing to registers goes as follows:

master\_write\_32 $claim\_path <*Address*> <*Value>*

*for instance:* master\_write\_32 $claim\_path 0x8 0xFFFFABC

## Notes

* Debug mode will display a constant display in the LED
* BCD refresh rate is 600 nsec
* Timing constrains file (\*.sdc) is attached to the project
* A stp file exits, left unattached to project