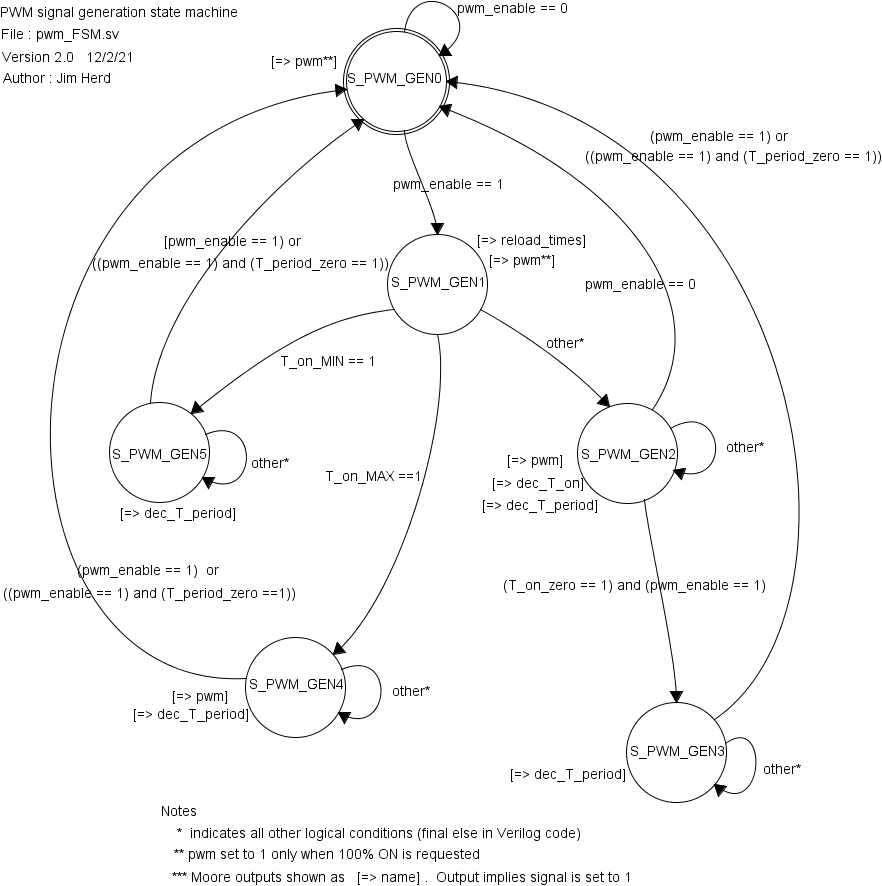
|  |  |  |  |
| --- | --- | --- | --- |
| FSM name : | pwm\_FSM.sv | Date: | Feb 2021 |
| Section : | 1 of 1 | Author | Jim Herd |
| Notes : |  | | |



State Objects

|  |  |
| --- | --- |
| **States** | Notes |
| S\_PWM\_GEM0 | Power-on state |
| S\_PWM\_GEM1 | Select mode :: 0%, 100% or other ON time |
| S\_PWM\_GEM2 | Generate ON time in normal mode |
| S\_PWM\_GEM3 | Generate OFF time in normal mode |
| S\_PWM\_GEM4 | Special case : continuous ON for 100% case.  Necessary to stop small glitches in PWM signal. |
| S\_PWM\_GEM5 | Special case : continuous OFF for 0% case.  Necessary to stop small glitches in PWM signal. |

Input objects

|  |  |  |
| --- | --- | --- |
| **Inputs** | Type | Notes |
| pwm\_enable | binary | From PWM configuration bit 0 |
| T\_on\_zero | binary | 1 when ON period is complete |
| T\_period\_zero | binary | 1 when period is complete |
| T\_on\_MIN | binary | Indicates ON time > 100nS |
| T\_on\_MAX | binary | Indicates ON time is > (period – 100nS) |

Output objects

|  |  |  |
| --- | --- | --- |
| **Outputs** | Type | Notes |
| reload\_times | binary |  |
| dec\_T\_on | binary |  |
| dec\_T\_period | binary |  |
| pwm | binary | PWM output signal.  Note the special case where pwm signal is switched on in states S\_PWM\_GEN0 and S\_PWM\_GEN0 when the request is for a 100% ON signal. |

Notes

* Smallest PWM signal is 100ns.
* Largest PWM signal is the period minus 100nS
* Within these limits, the PWM signal has a resolution of 20nS