PD State diagram: inrush v100

Info (not part of baseline)

The text in 33.3.8.3 (Input inrush current) does not match with the behaviour in the state diagram. This baseline makes these two agree by modifying the state diagram.

33.3.3.6 Type 3 and Type 4 single-signature constants

Add the following constant to this section:

V_{On_PD}

PD turn on voltage (see Table 33–28)

33.3.3.7 Type 3 and Type 4 single-signature variables

If D2.0 comment #381 is accepted and results in removing the MDI_NOPOWER state, remove the variable 'power_received' from the variable list. Otherwise no action.

Add variable pd_current_limit as follows:

pd_current_limit

Controls limiting the input current to a value conforming to I_{Inrush_PD} and $I_{Inrush\_PD\text{-}2P}$, as defined in Table 33–28. Values:

FALSE: The PD is not required to control the input current
TRUE: The PD is required to control the input current

33.3.3.8 Type 3 and Type 4 single-signature timers

Add the following timer:

tinrushpd_timer

A timer used to determine when the PD controls the input current, or observe P_{Class_PD} power limits; see T_{Inrush_PD} in Table 33–28.

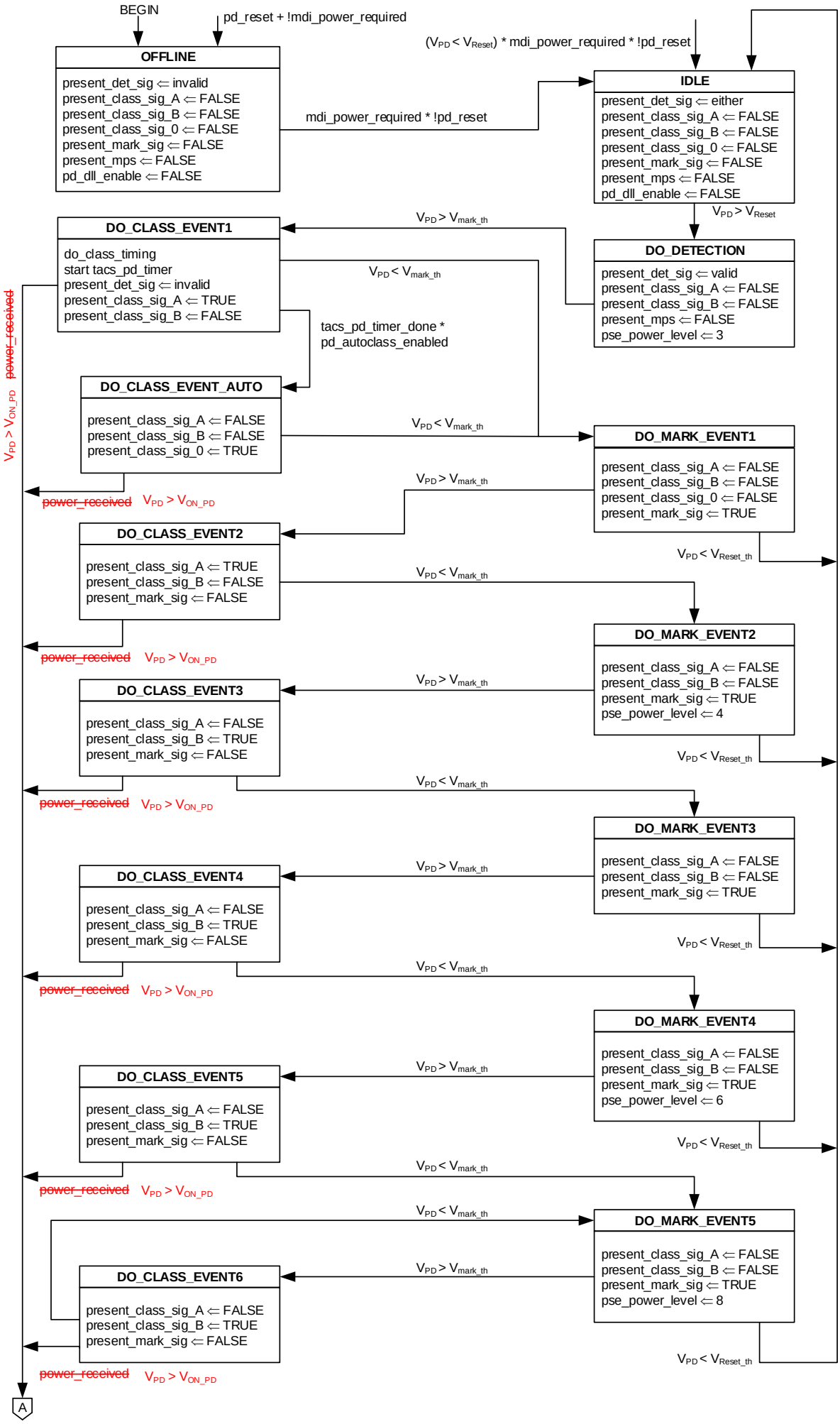
33.3.3.10 Type 3 and Type 4 single-signature PD Sstate diagrams

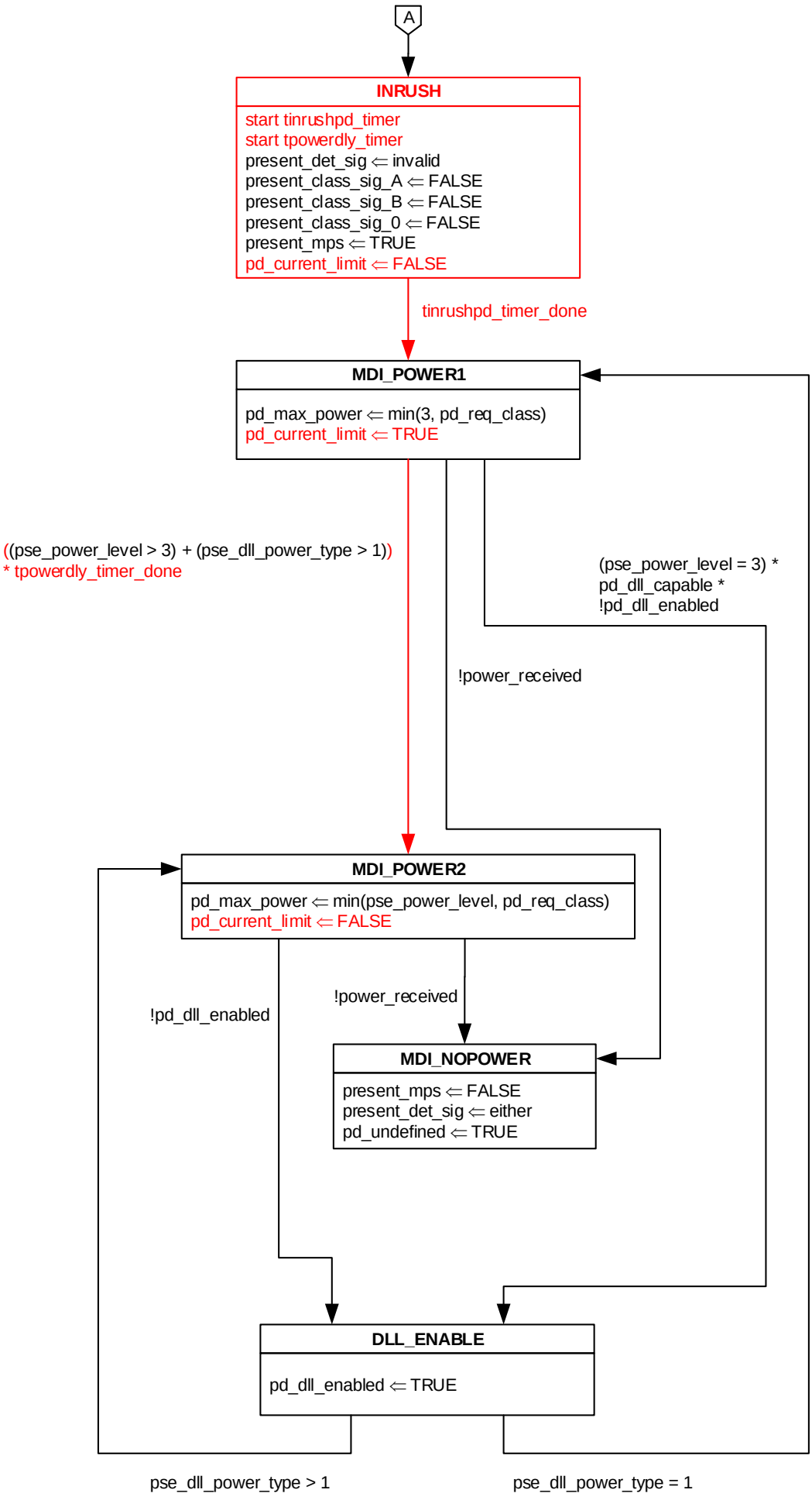
Info (not part of baseline)

The following modifications are made:

- 'power_received' is replaced by '$V_{PD} > V_{On\_PD}$' since this matches with the text "The total PD inrush time duration is defined as beginning with the application of input voltage at the PI when V_{PD} crosses the PD power supply turn on voltage, V_{On_PD} as defined in Table 33–28,. . . "
- A new state 'INRUSH' is introduced to match with the fact that from the beginning of inrush until $T_{Inrush\text{-}2P}$ min there is no requirement on inrush current limiting for the PD.
- A PD version of $T_{Inrush\text{-}2P}$ min is introduced as T_{Inrush_PD}
- In MDI_POWER1 (which is entered 50msafter '$V_{PD} > V_{On\_PD}$', pd_current_limit is set to True to match with the text: "PDs shall draw less than I_{Inrush_PD} and $I_{Inrush\_PD\text{-}2P}$ from $T_{Inrush\text{-}2P}$ min until $T_{delay\text{-}2P}$ min."
- In MDI_POWER1 also pd_max_power is set for the case that the PD is assigned to Class 1 or 2 and needs to honor those power limitations. The PD needs to meet BOTH the inrush current requirement and the power requirement when applicable.
- In MDI_POWER2 pd_current_limit is set back to False since now the PD is operating within the bounds of pd_max_power.

Modify Figure 33–32 as follows:





Note: the exits from DLL_ENABLE do not work as intended.

33.3.8 PD power

Add the following new item to Table 33–28:

Item	insert after item 7
Parameter	Inrush to PD current control delay
Symbol	T_{Inrush_PD}
Unit	ms
Min	(empty)
Max	50.0
PD Type	3, 4
Additional information	See 33.3.8.3