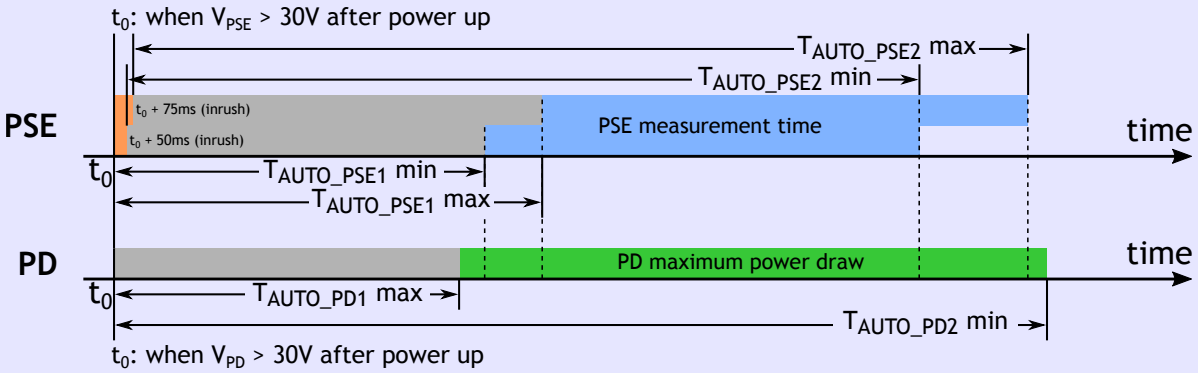
Autoclass reference time v111

Info (not part of baseline)

UPDATE (v110): To limit the specification changes, only the PD time reference is proposed to be changed. The Autoclass measurement period for the PSE (defined by T_{AUTO_PSE1} and T_{AUTO_PSE2}) and the Autoclass maximum power draw period for the PD (defined by T_{AUTO_PD1} and T_{AUTO_PD2}) is referenced from two different points in time. The reference time for the PSE is "the transition of POWER_UP to POWER_ON", where that for the PD is "measured when V_{PD} rises above $V_{Port\_PD\text{-}2P}$ min". Both reference times are dynamic, and not related to each other. This is unnecessarily complicated.

This baseline proposes to keep the PSE time reference at the transition from POWER_UP to POWER_ON, but change that of the PD to be when V_{PD} crosses V_{On_PD}, making it a fixed point in time, observable at the PI. Note that in case of a PD that relies on PSE inrush, the voltage will collapse back down, but this does not affect the time reference. It is the initial crossing of V_{On_PD} that counts.
In addition, the PD Autoclass state diagram does not correctly handle PDs that collapse the voltage back down during inrush. If the voltage goes below V_{On_PD}, the entry arc into IDLE_ACS becomes TRUE, causing the state diagram to reset. To prevent this, we condition the entry arc with pd_max_power ≠ inrush.

Autoclass timings can remain as-is.



145.3.3.3.5 State diagrams

Change Figure 145–26 as follows:

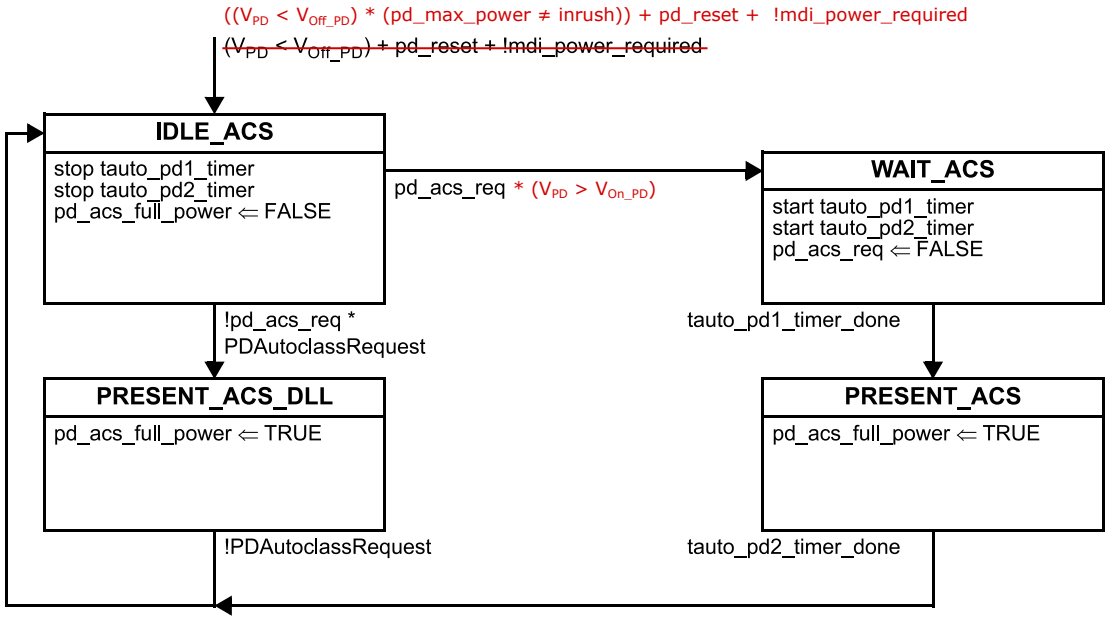


Figure 145–26—Single-signature PD Autoclass state diagram

145.3.6.2 Autoclass (optional)

. . .

After power up, a PD that implements Autoclass shall draw its highest required power, $P_{Autoclass\_PD}$, subject to the requirements on P_{Class_PD} in 145.3.8.2, throughout the period bounded by T_{AUTO_PD1} and T_{AUTO_PD2}, measured from when V_{PD} rises above ~~$V_{Port\_PD-2P\ min}$~~ V_{On_PD}.

. . .

In Table 145–28, change the 'Additional information' for Item 2 and 3 to read (merged):

Measured from when V_{PD} rises above V_{On_PD}.