Brick Unit After Executing The Process Of Secure Boot

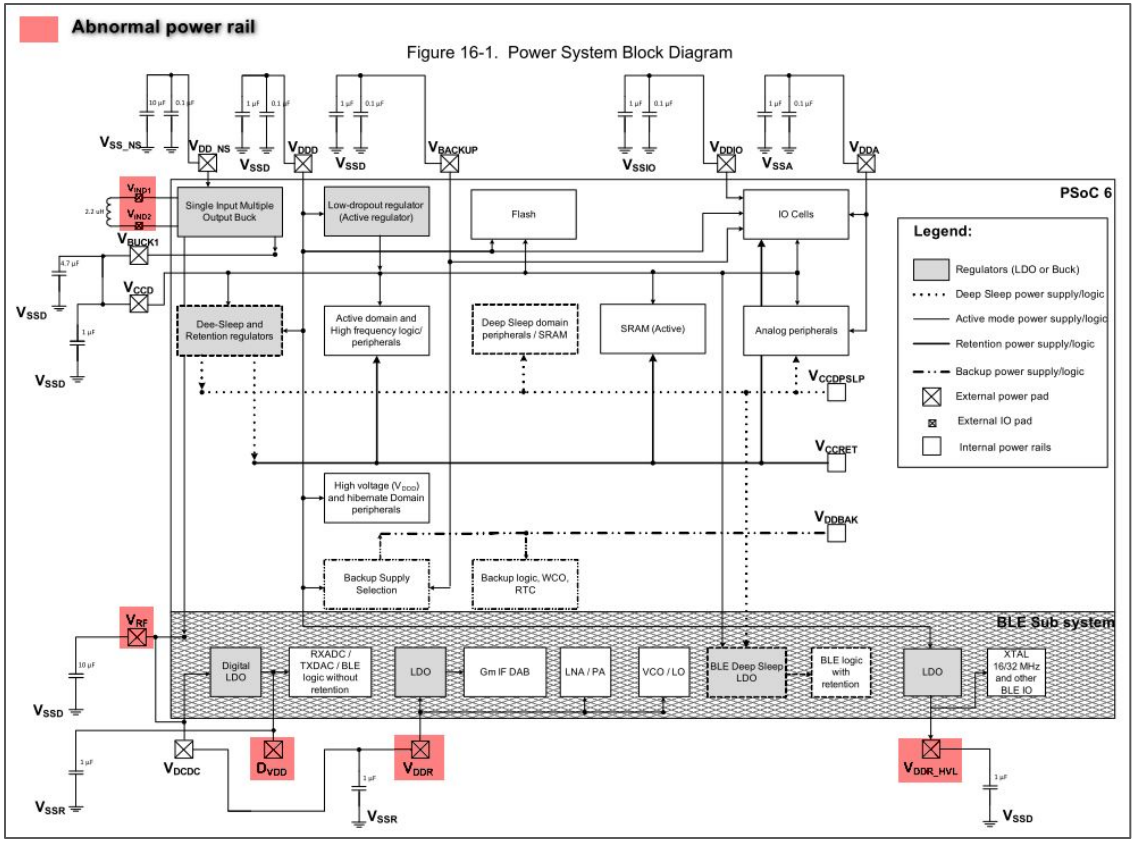
Observation - Abnormal Power Rail (1)

- Observe the power rail of MCU of the unit that succeeds to boot up intermittently.

	Intermittent boot up unit	
	Fail to boot up	Success to boot up
MCU_VREF	0.000	
MCU_VBUCK1	1.100	0.913
MCU_VCCD	1.103	0.913
MCU_VDDR_HVL	0.000	1.799
MCU_DVDD	0.000	1.021
MCU_3V3	3.304	3.305
MCU_VRF	0.007	1.307
MCU_VDDR	0.000	1.317
MCU_VIND2	0.061	0.700
MCU_VIND1	0.071	0.640
MCU_VDD_NS	1.801	1.801
MCU_VDDA	3.305	3.305
MCU_1V8	1.800	1.802
MCU_VBACKUP	3.304	3.305

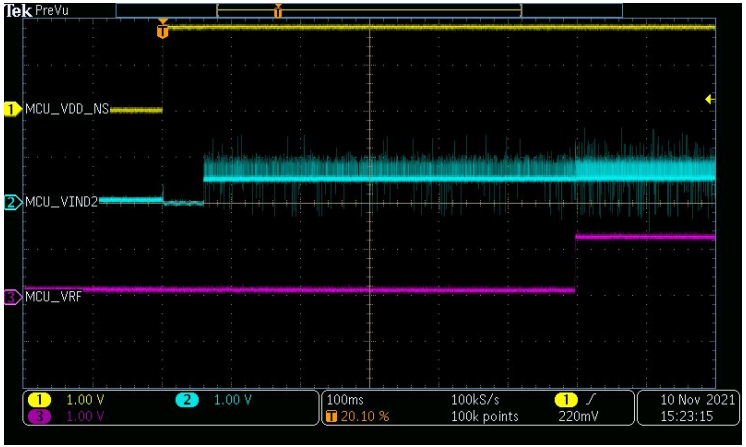
Observation - Abnormal Power Rail (2)

- When the unit fails to boot up, the power rails of BLE module are all not enabled.



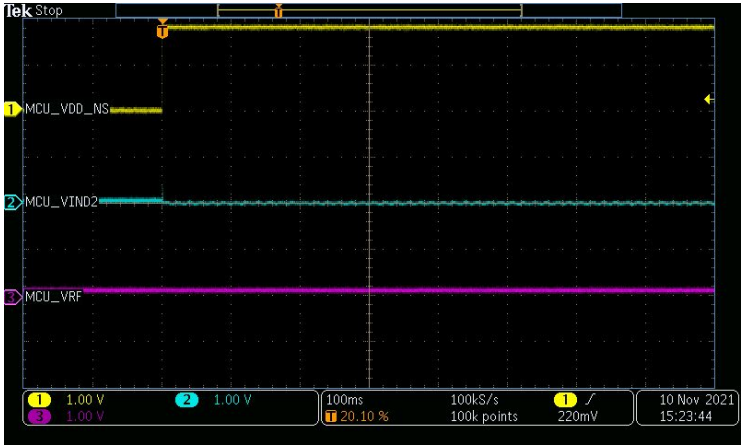
Observation The Behavior Of MCU_VRF And MCU_VIND2 (SIMO)

Succeed to boot up



- MCU_VIND2 of SIMO is on in 600ms after MCU_VDD_NS (1V8) is on. Then MCU_VRF is on.

Fail to boot up



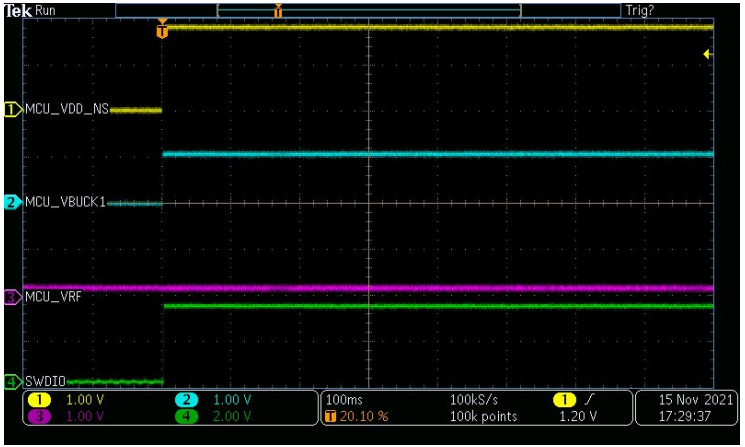
- MCU_VIND2 of SIMO is not on. It seems SIMO is not enabled.
- MCU_VRF is not on.

6. Enable the SIMO buck regulator and V_{BUCK1} output by setting the BUCK_EN bit[30] and BUCK_OUT1_EN bit[31] of the PWR_BUCK_CTL register.

Observation The Behavior Of MCU_VRF And MCU_VBUCK1

Succeed to boot up

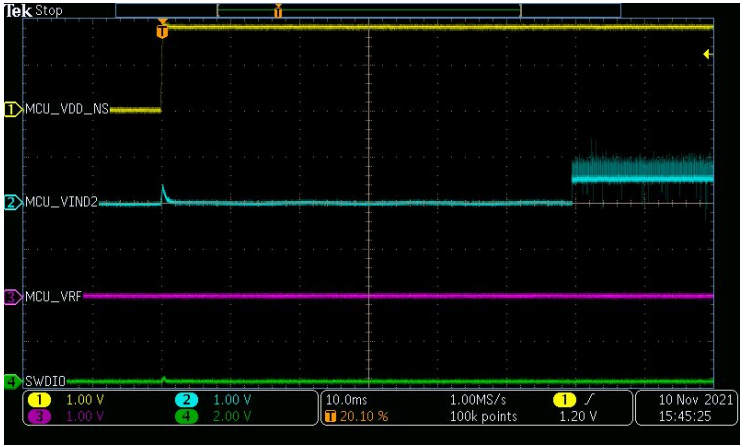
Fail to boot up



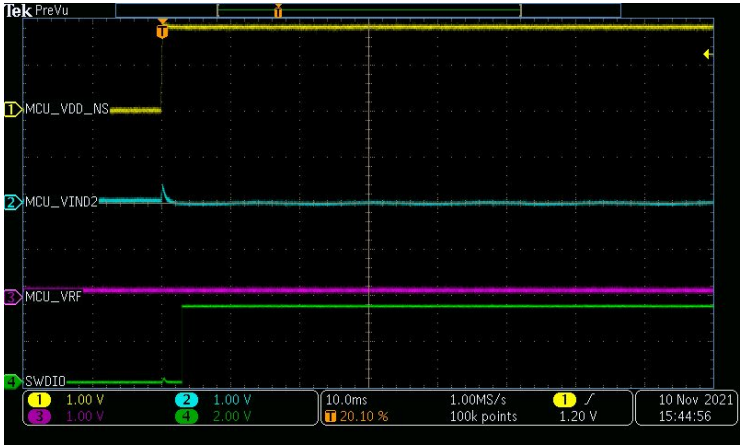
- MCU_VBUCK1 is on, but it's not configured as the desired voltage.
- MCU_VRF is not on.
- Driving high timing of **SWDIO** is different.

Observation The Behavior Of SWDIO (1)

Succeed to boot up



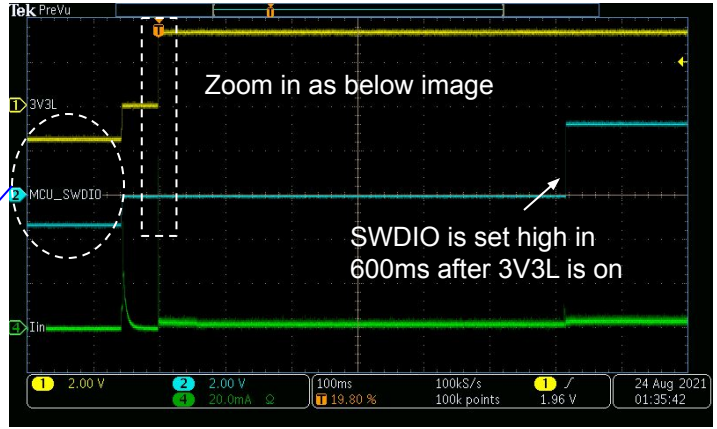
Fail to boot up



- When the unit failed to boot up, the timing of **SWDIO** is different from the normal unit.

Observation The Behavior Of SWDIO (2)

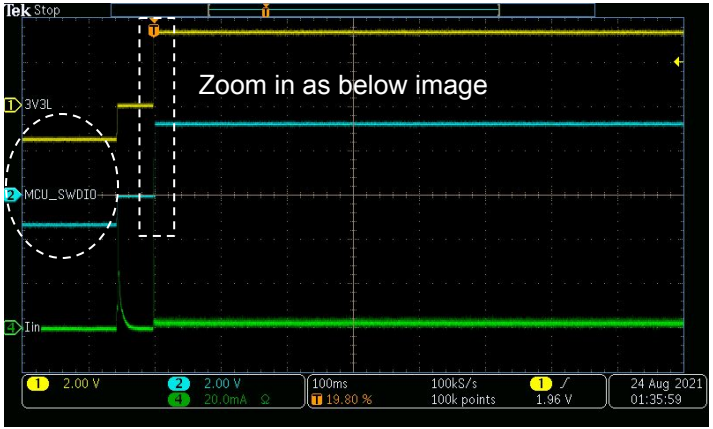
Succeed to boot up



Please ignore the abnormal GND level due to probing the error GND point.

Zoom in

Fail to boot up



Zoom in