The output of TPS2511 is error
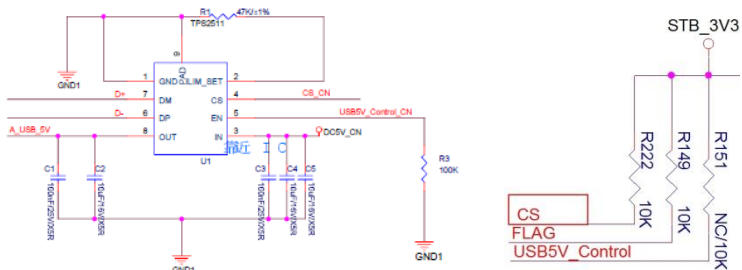
Schematics:

Notes: there is a 100nF Ccs capacitor connected with CS pin to GND.

Issues: In design, Ilim_set=1.08A by Rilim_set=47kohm. When output current is > about 600mA (which is more than half of max. output current), Voutput of defective TPS2511 is unstable and voltage on CS pin can't be pulling low (below both fig.1 and fig. 2). If manually put CS/ pin low, output unstable is disappeared. (below Fig. 3)

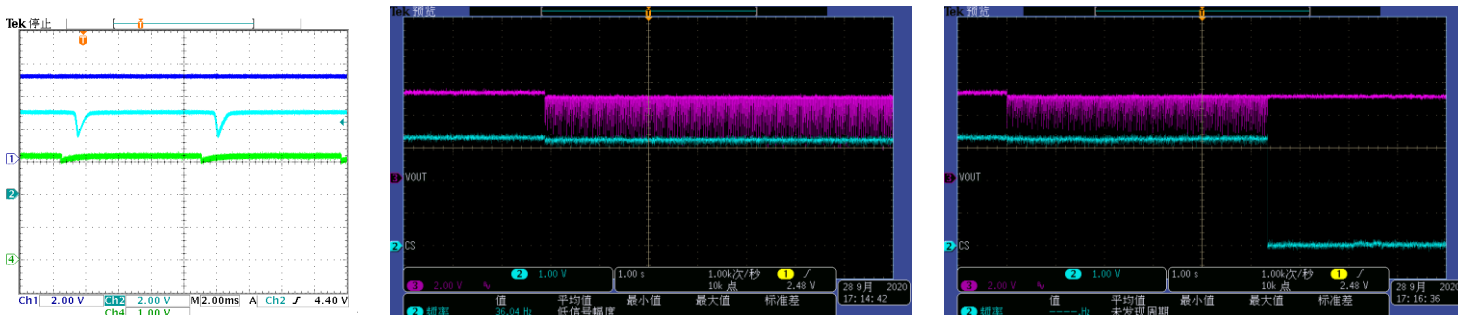Waveforms: show that Vout is abnormal and CS pin can't be pulled low.

Fig.1 CH1: VIN; CH2: VOUT; CH4:CS PIN, output is unstable; Fig. 2; CH2: CS PIN; CH3:VOUT (Iout is 0.7A). The CS can't be pull down. Output unstable. Fig. 3.CH2: CS PIN; CH3:VOUT(Iout is 0.7A). The CS can't be pull down at first. Then manually pull CS/ pin low. Output becomes stable.

Waveforms: Check current following into CS PIN of both defective TPS2511 and good TPS2511; they are big different. Question is which of below the CS pin sink current waveform is right, continuous or pulse sinks current?

1.   With defective TPS2511; results: current following into CS pin is 25mA for only 500ns;
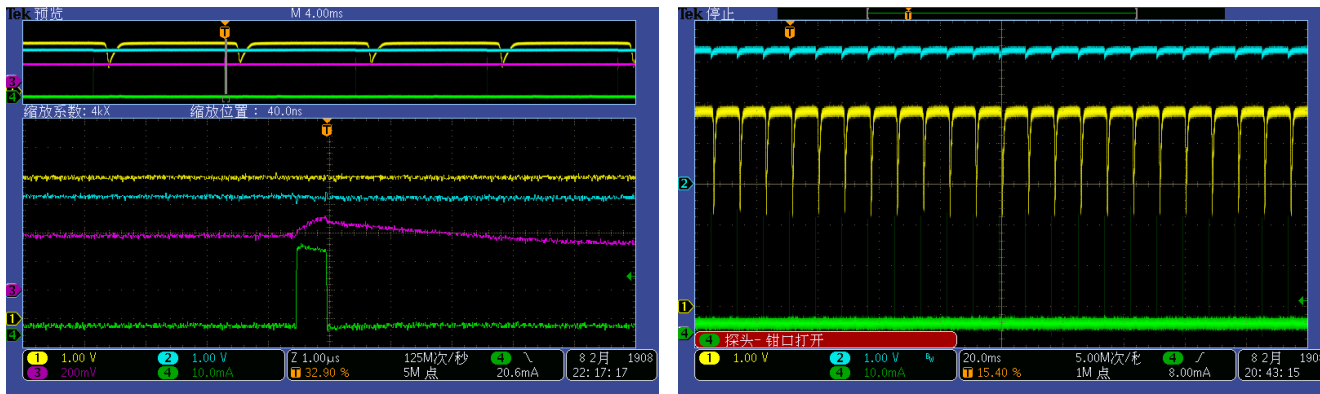

Fig. 3, CH1: VOUT, CH2: CS PIN (voltage on CS pin), CH3: Vilim_set Pin; CH4: current following CS pin, Iout=0.7A   Fig. 4: CH1: VOUT, CH2: Vcspin (voltage on CS pin), CH4: current following CS pin ; Iout=0.7A

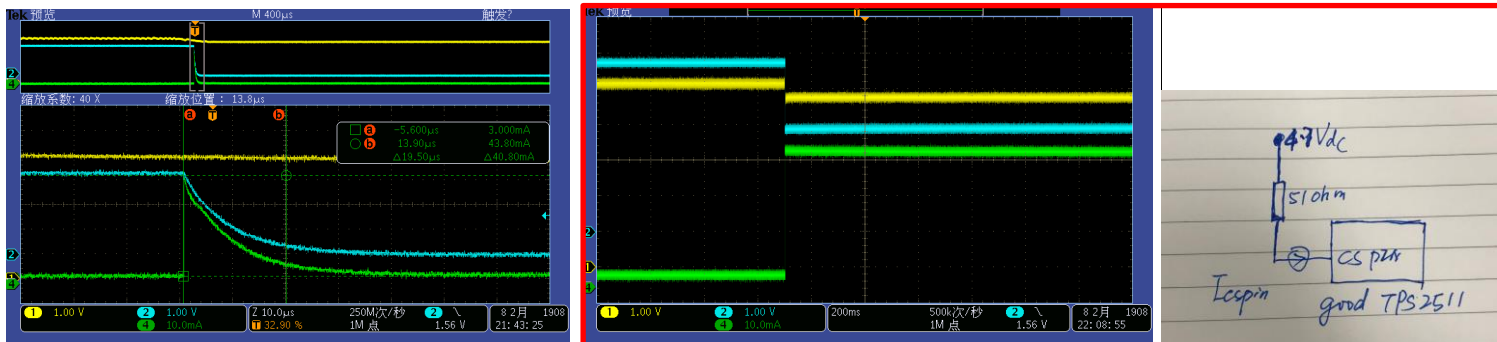1.   Good TPS2511; results: 35mA current following into CS pin can be continuous.

Fig.5 CH1: Vout; ch2: CS PIN; ch4: Icspin(current following into CS pin) , Icspin with 40mA peak and last for 20us as Ccs(100nF).   Fig. 6. CH1: VOUT, CH2: CS PIN, ch4: Icspin with 1A load and Cs pin with 51ohm resistor pulling up to 4.7Vdc. it shows that Icspin can be continuous.35mA