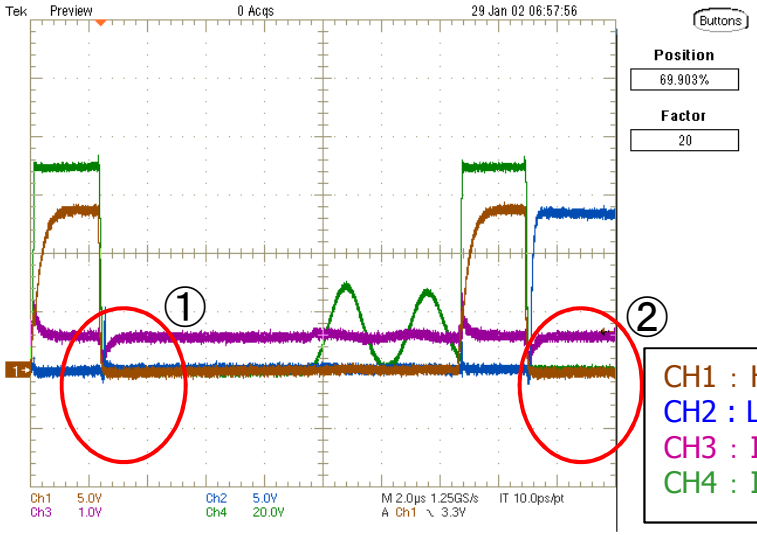
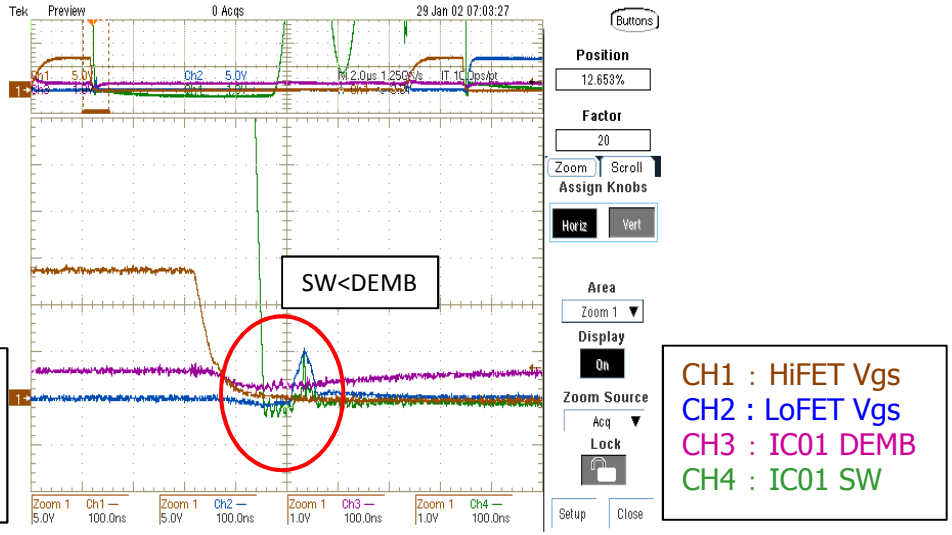
＜Question1＞

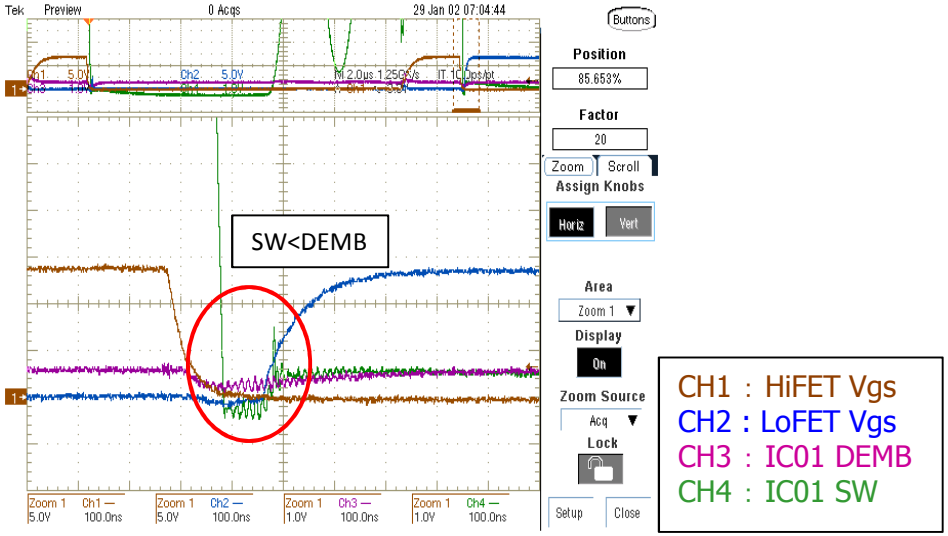
■Overall view■



■①Enlarged view■



■②Enlarged view■

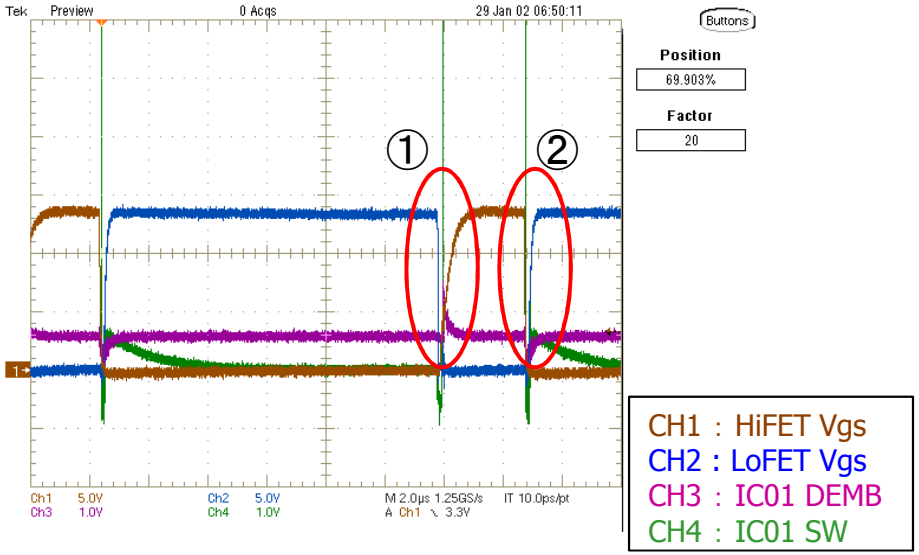


Condition:Vin=70V, Vout=13.5V, Iout=1.1A
Between ① and ②, the condtion SW < DEMB is the same, there is no difference about dead time action, however there is some difference as followings;
In case of ① : Low side FET off(diode emulation mode?)
In case of ② : Low side FET on

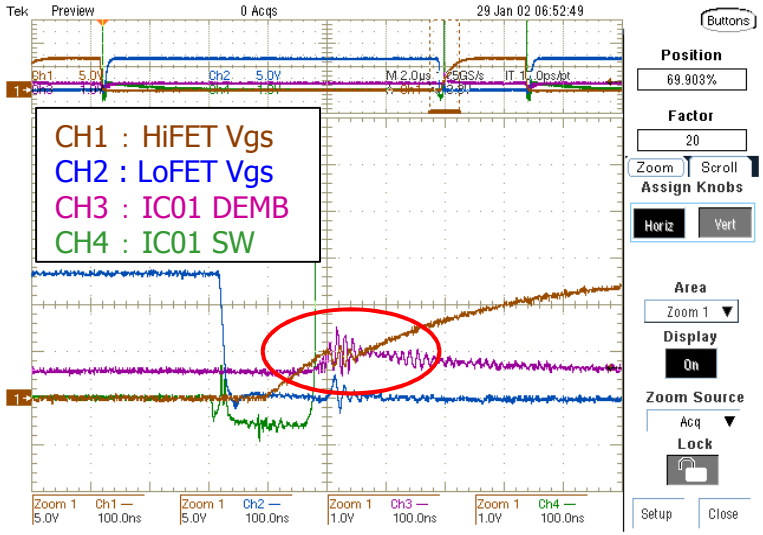
It seems that SW < DEMB is the same, could give us the advice why the condition ② didn't goes into diode emulation mode?

<Question2>

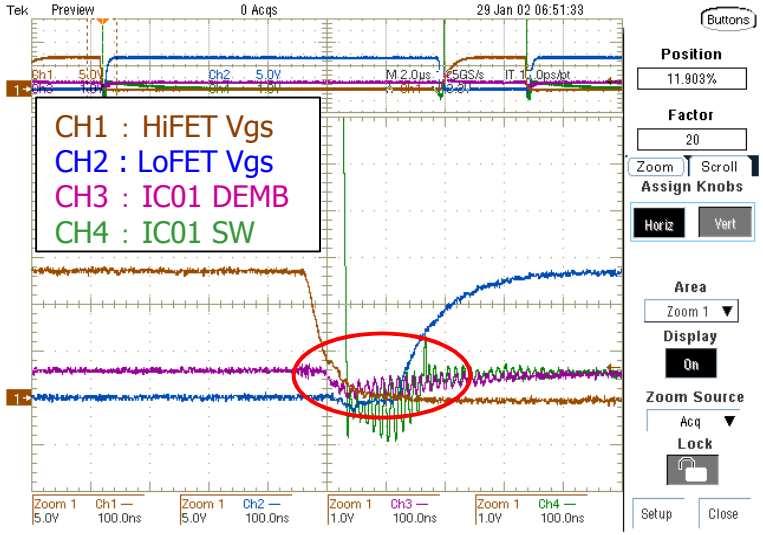
■Overall view■



■①Enlarged view(High side→H, Low side→L)■



■②Enlarged view(High side→L, Low side→H)■

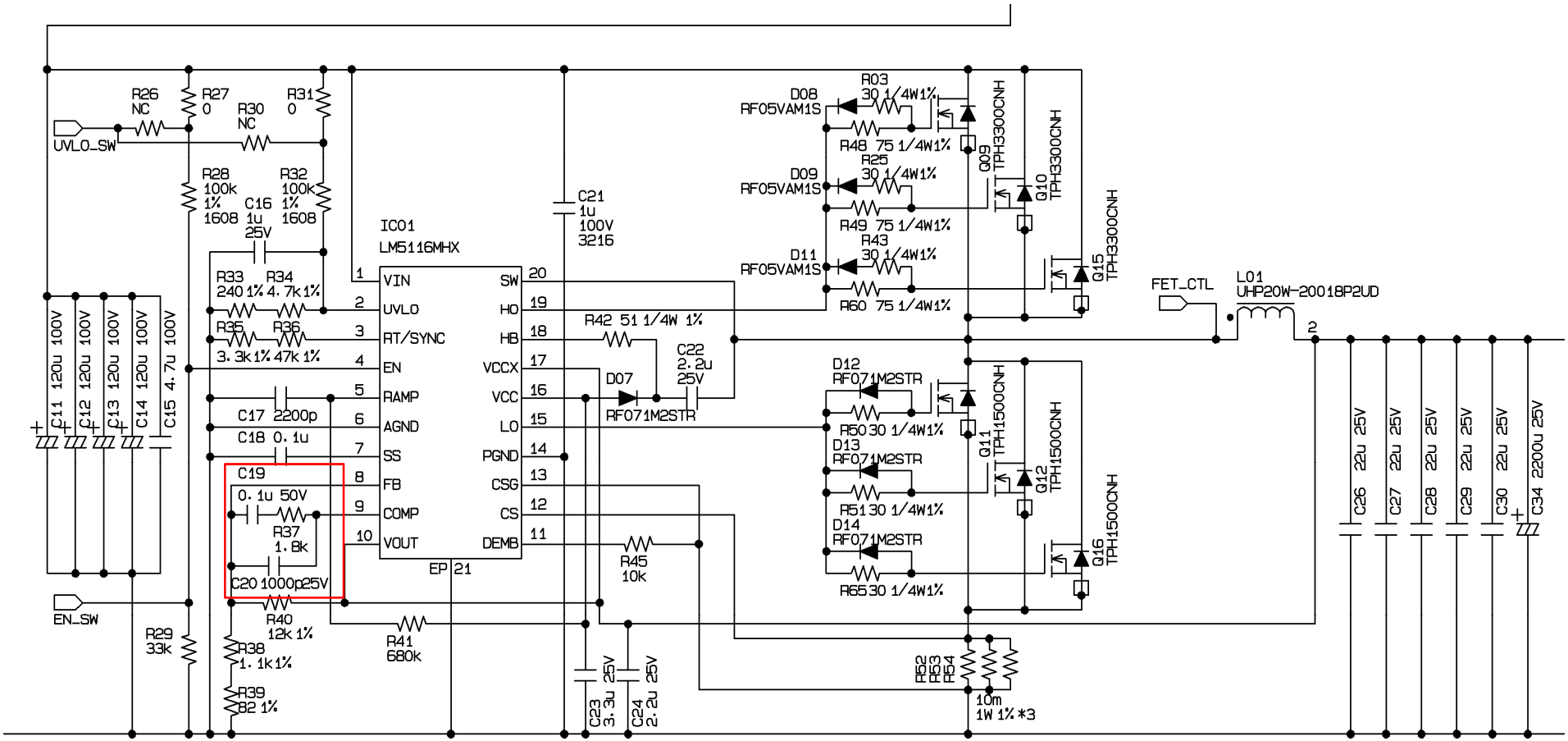


-In case of ① : Voltage DEMB increases
-In case of ② : Voltage DEMB decreases

DEMB voltage fluctuates (1XXmV)by High side FET ON/OFF or Low side FET.

So, this operation is no matter, right?
(under normal device operation?)

<Circuit>



Vin=70V, Vout=13.5V, Iout=0A~5A

Our customer uses following constants;

C19=4700pF、C20=56pF、R37=39kΩ、C34=2200uF