



PRODUCT NAME

TP66P0x series /TMU310x series

TITLE

Suspend current measurement of USB mode

APPLICATION NOTE

■ Problem description:

When we measured the Tx1604 suspend current with different test code, found the suspend current distribute from 420uA to 630uA, sometime over design target (<500uA).

■ Root Cause:

After USB enable (bsf 10h,7), we found the 3.3V regulator need a time to output stable 3.3V, generally the V33 pad connect a 1uF to GND. If we ignore the regulator stable time and set suspend bit (bsf 13h,7) will result to the big suspend current. Besides, the USB transceiver functional block need SUSPEND bit's rising edge to enter power saving mode. Any low level or falling edge of D-pin may terminate the power saving mode.

■ Coding Suggestion:

```
      :  
bsf   10h,7      ; set USB enable  
      :  
      :          ; 3ms no activity  
bcf   13h,7      ; clear SUSPEND  
nop  
bsf   13h,7      ; set SUSPEND  
nop  
nop  
nop  
sleep
```

3.3V regulator stable time must greater than 500usec, as V33 pad with external 0.1uF cap.