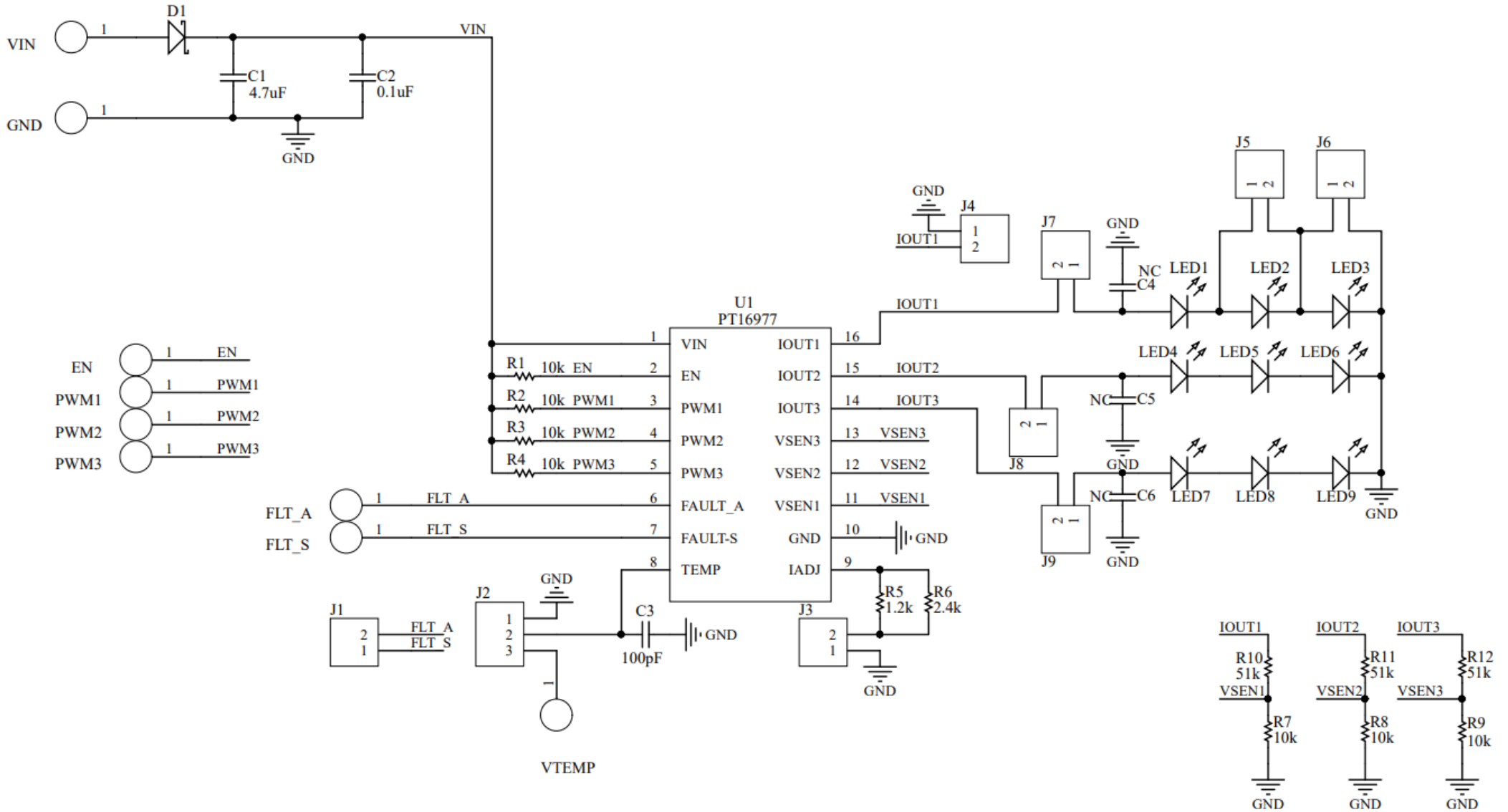




## PT16977 demo test report

Parameter	Specifications
Input Voltage	4.5~40V
Number of LED series connections	1/4/13pcs
LED Current	30/150mA per Channel

# 1 Schematic

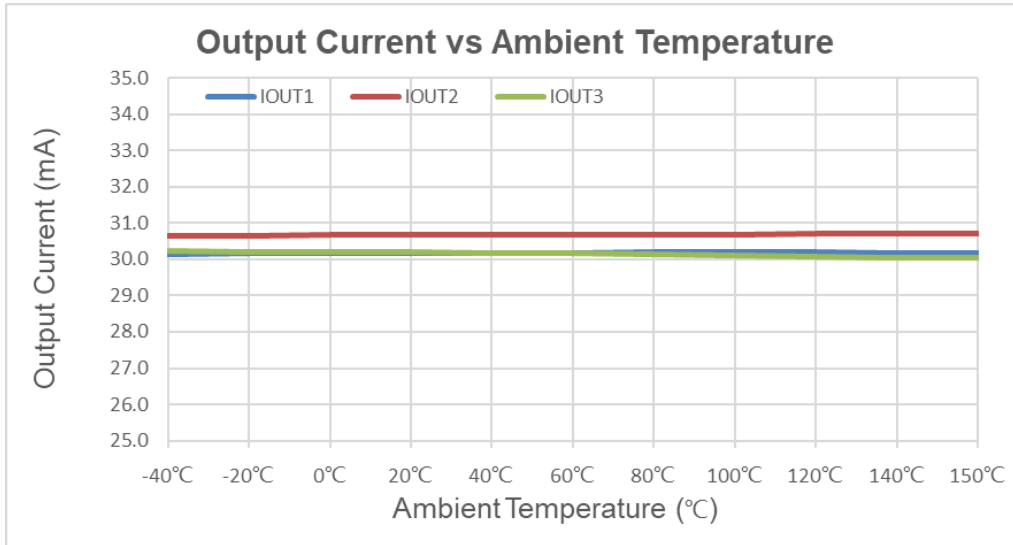


## 2 BOM

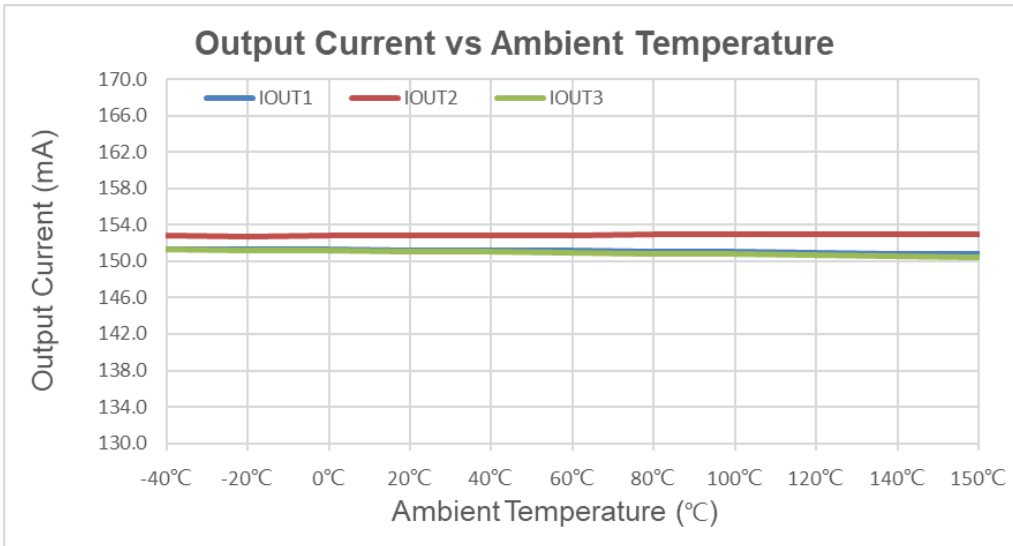
Designator	Qty	Value	Description	Package
C1	1	4.7uF	CAP, CERM, 4.7 $\mu$ F, 50 V, +/- 10%, X7R	1206
C2	1	100nF	CAP, CERM, 100nF, 50 V, +/- 10%, X7R	0805
C3	1	100pF	CAP, CERM, 100pF, 50 V, +/- 10%, X7R	0805
R1, R2, R3, R4, R7, R8, R9	7	10k	RES, 10k, 1%, 0.125 W	0805
R5	1	1.2k	RES, 1.2k, 1%, 0.125 W	0805
R6	1	2.4k	RES, 2.4k, 1%, 0.125 W	0805
R10, R11, R12	3	51k	RES, 51k, 1%, 0.125 W	0805
D1	1	SS56	Diode, Schottky, 60 V, 5A, AEC-Q101	SMB
U1	1	PT16977	Three-Channel Linear LED Driver	HTSSOP16
R5	1	3.97k	RES, 3.97k, 1%, 0.125 W ( $I_{OUT}=30mA$ setting)	0805
R6			NC ( $I_{OUT}=30mA$ setting)	

### 3 Performance Data

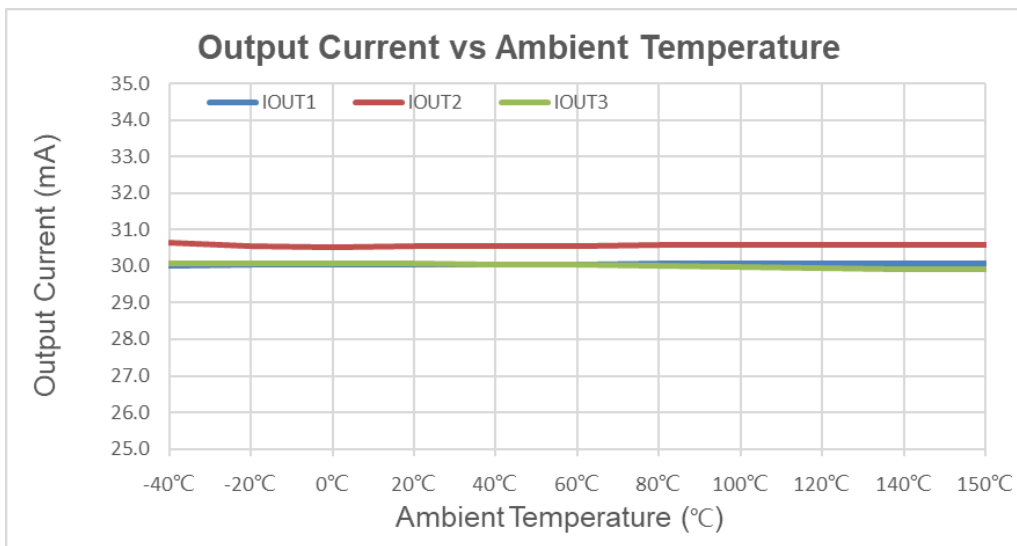
#### 3.1 VIN=4.5V, IO<sub>UT</sub>=30mA, 1 LED



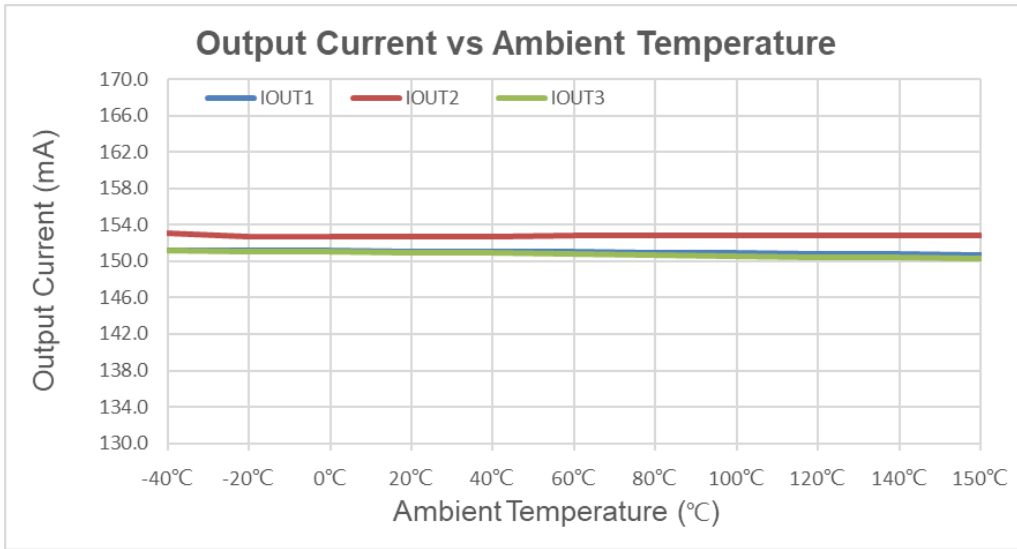
#### 3.2 VIN=4.5V, IO<sub>UT</sub>=150mA, 1 LED



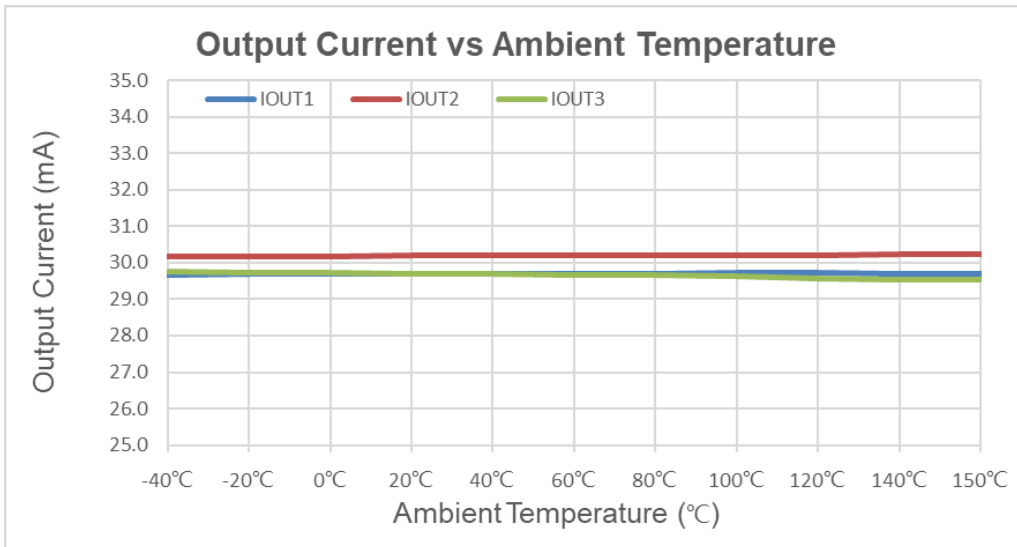
#### 3.3 VIN=14V, IO<sub>UT</sub>=30mA, 4 LED



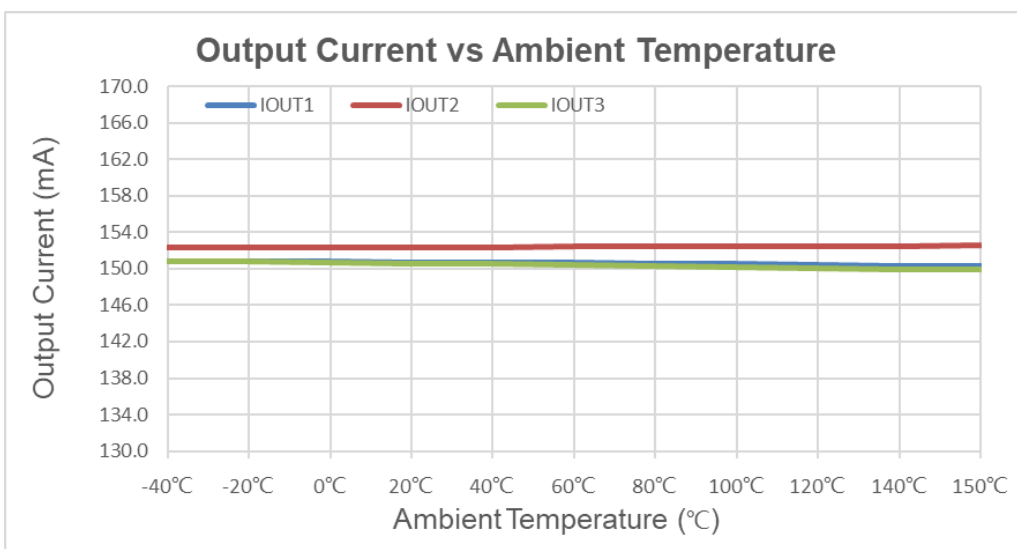
**3.4 VIN=14V, IOU=150mA, 4 LED**



**3.5 VIN=40V, IOU=30mA, 13 LED**



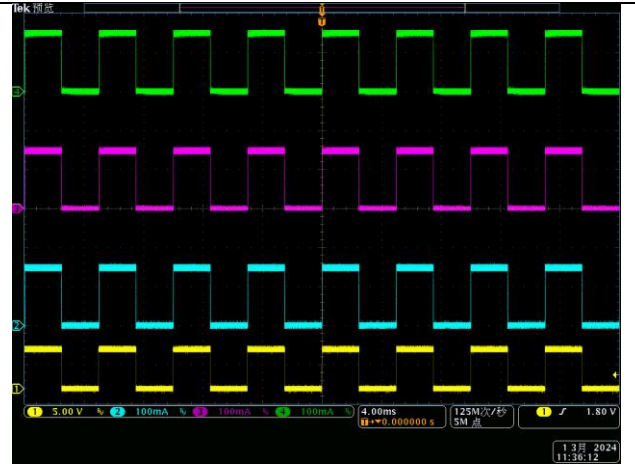
**3.6 VIN=40V, IOU=150mA, 13 LED**



## 4 Typical Characteristics



PWM Dimming,  $f_{PWM}=200\text{Hz}$ ,  $D=10\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



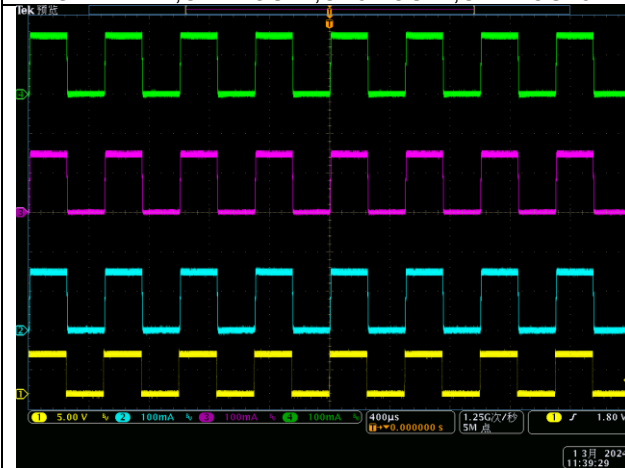
PWM Dimming,  $f_{PWM}=200\text{Hz}$ ,  $D=50\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



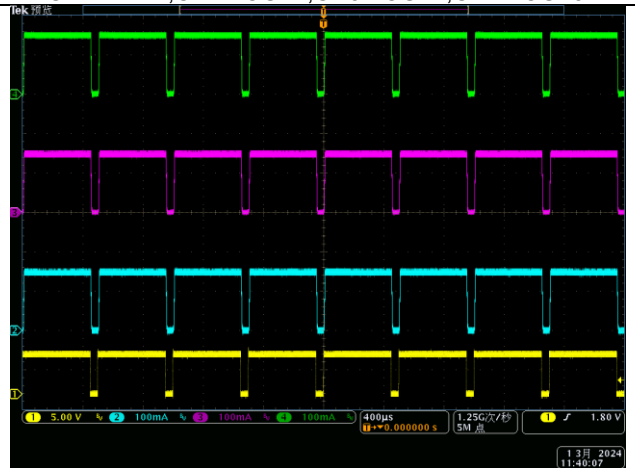
PWM Dimming,  $f_{PWM}=200\text{Hz}$ ,  $D=90\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



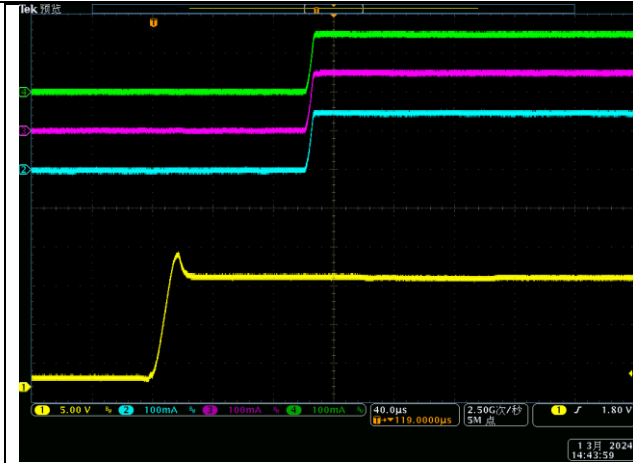
PWM Dimming,  $f_{PWM}=2\text{kHz}$ ,  $D=10\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



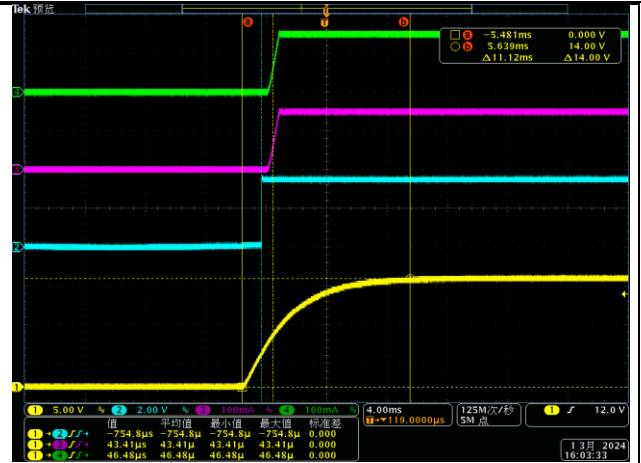
PWM Dimming,  $f_{PWM}=2\text{kHz}$ ,  $D=50\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



PWM Dimming,  $f_{PWM}=2\text{kHz}$ ,  $D=90\%$   
CH1=PWM,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



Fast Power-Up Waveform  
CH1=VIN,CH2=IOUT1,CH3=IOUT2,CH4=IOUT3



Normal Power-Up  
CH1=VIN,CH2=FAULT\_A,CH3=IOUT1,CH4=IOUT2



Open load Protection (FAULT\_A and FAULT\_S floating)  
CH1=VIN/EN,CH2=FAULT\_A,CH3=IOUT1,CH4=IOUT2



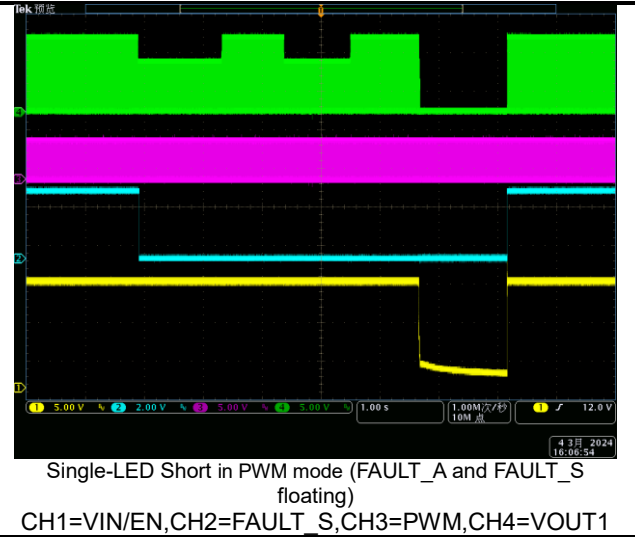
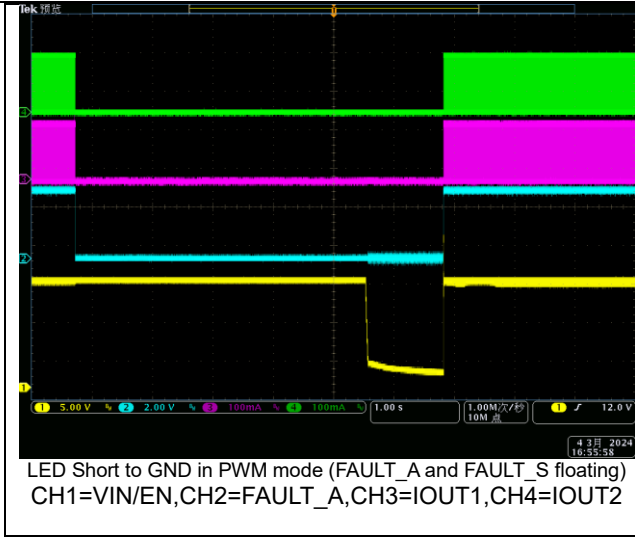
LED Short to GND Protection (FAULT\_A and FAULT\_S floating)  
CH1=VIN/EN,CH2=FAULT\_A,CH3=IOUT1,CH4=IOUT2



Single-LED Short Protection (FAULT\_A and FAULT\_S floating)  
CH1=VIN/EN,CH2=FAULT\_S,CH3=IOUT1,CH4=IOUT2



Open load in PWM mode (FAULT\_A and FAULT\_S floating)  
CH1=VIN/EN,CH2=FAULT\_A,CH3=IOUT1,CH4=IOUT2



## 5 Conducted Emission

