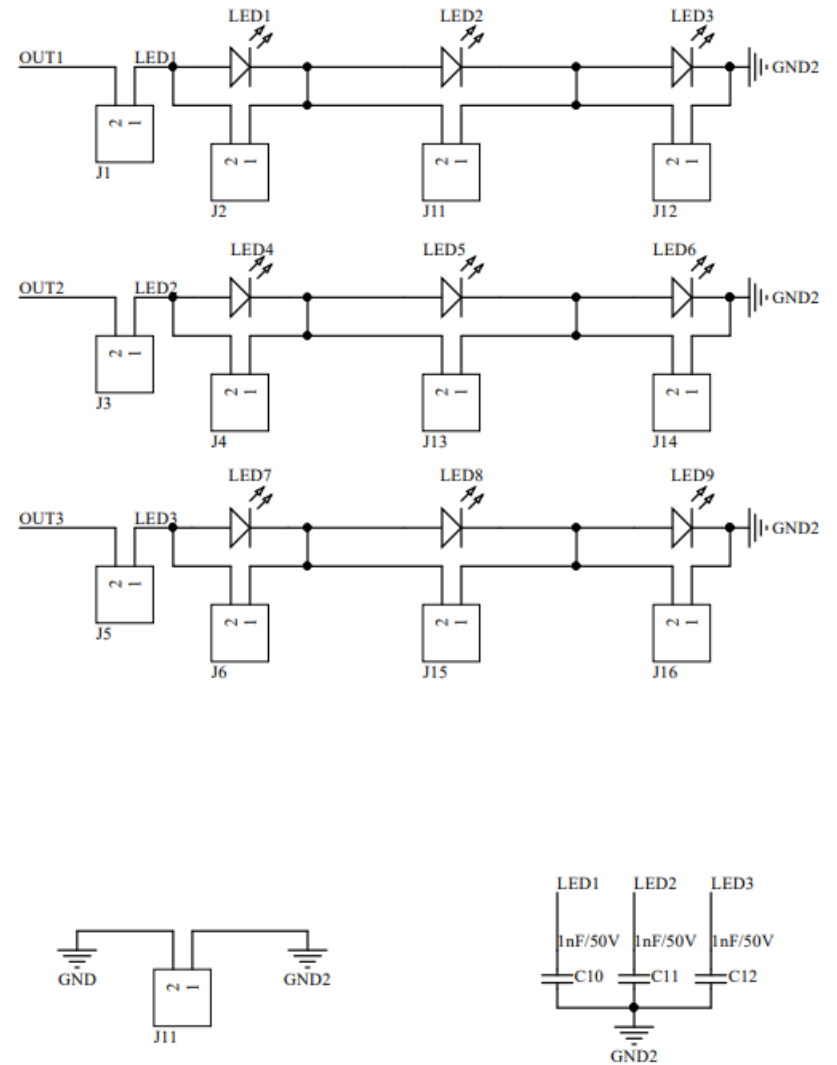
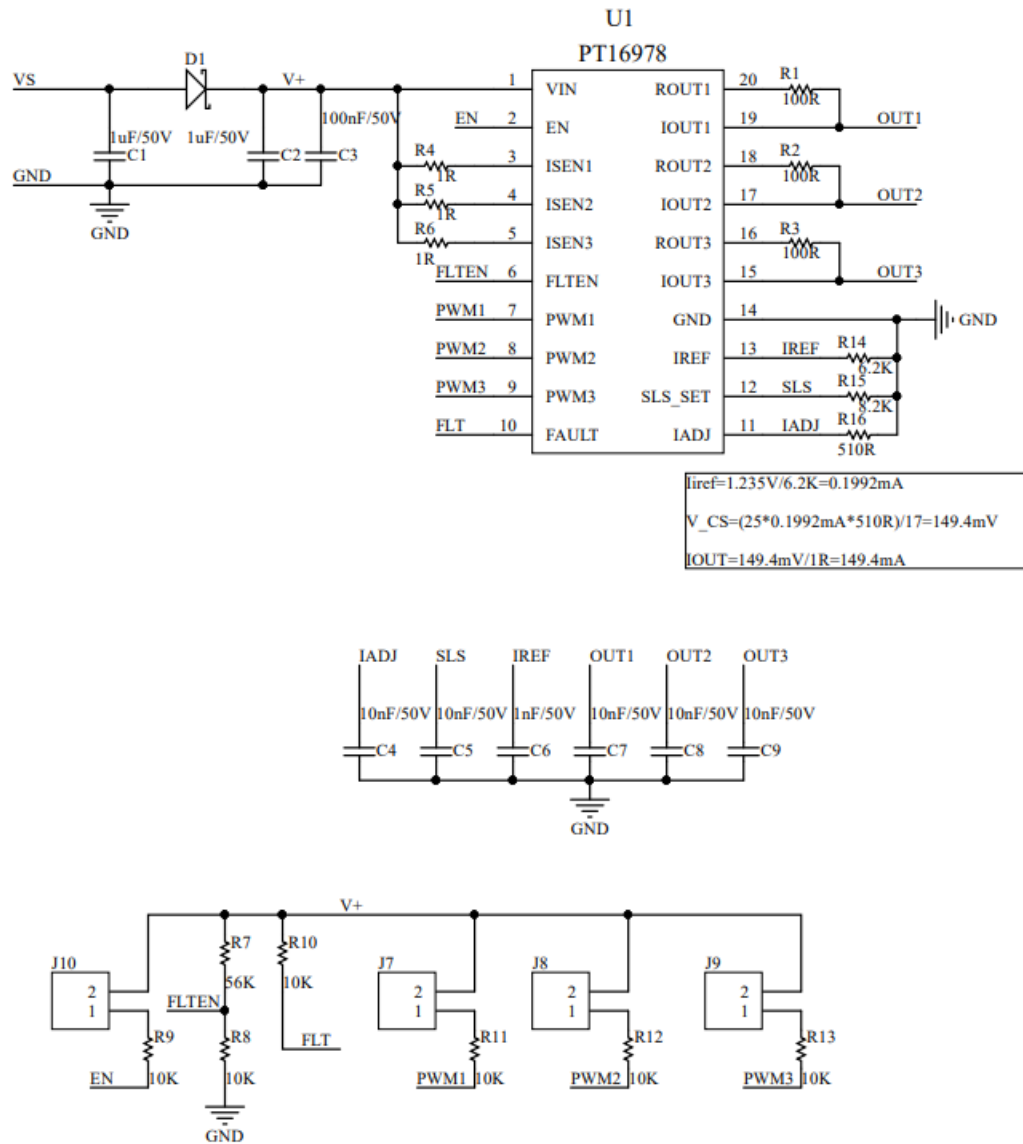


PT16978 demo test report

Parameter	Specifications
Input Voltage	4.5~40V
Number of LED series connections	1/3/13pcs
LED Current	5/50/150mA per Channel

1 Schematic

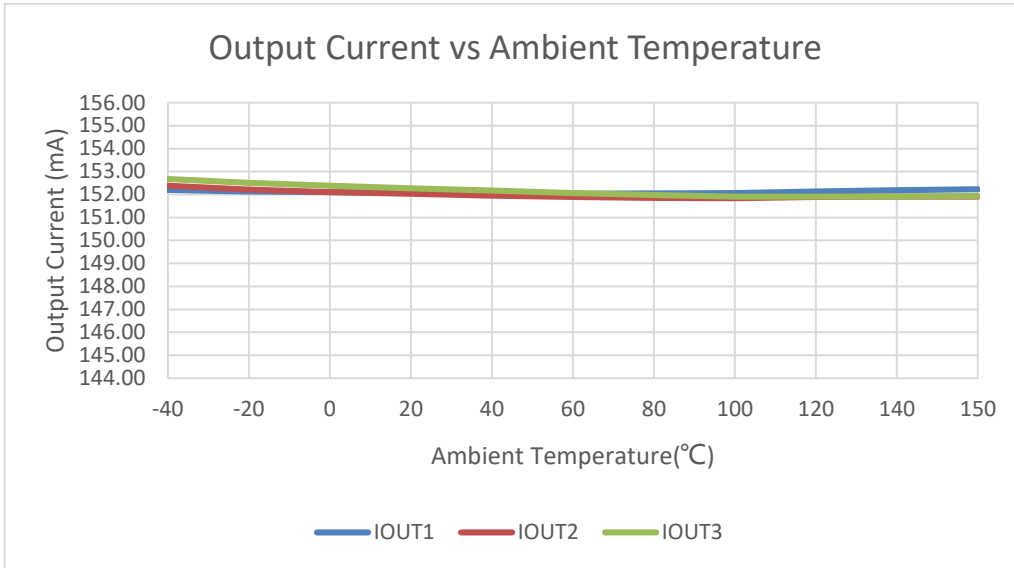


2 BOM

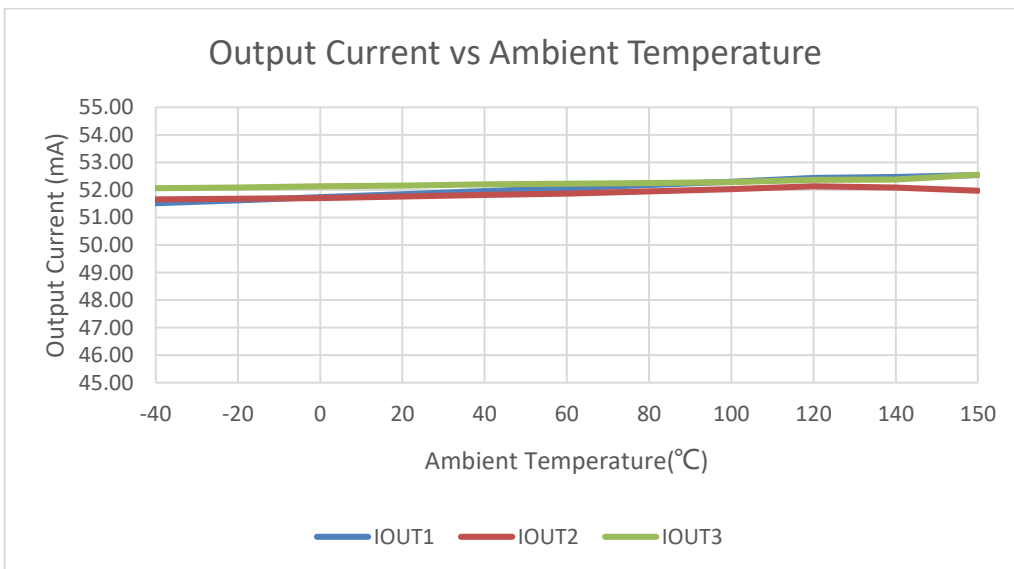
Designator	Qty	Value	Description	Package
C1, C2	2	1uF	CAP, CERM, 1μF, 50 V, +/- 10%, X7R	1206
C3	1	100nF	CAP, CERM, 100nF, 50 V, +/- 10%, X7R	0805
C4, C5, C7, C8, C9	5	10nF	CAP, CERM, 10nF, 50 V, +/- 10%, X7R	0805
C6, C10, C11, C12	4	1nF	CAP, CERM, 1nF, 50 V, +/- 10%, X7R	0805
R1, R2, R3	3	100Ω	RES, 100Ω, 5%, 1 W	2512
R4, R5, R6	3	1Ω	RES, 1Ω, 1%, 0.125 W	0805
R7	1	56k	RES, 56kΩ, 5%, 0.125 W	0805
R8, R9, R10, R11, R12, R13	6	10k	RES, 10kΩ, 5%, 0.125 W	0805
R14	1	6.2k	RES, 6.2kΩ, 1%, 0.125 W	0805
R15	1	8.2k	RES, 8.2kΩ, 1%, 0.125 W	0805
R16	1	510Ω	RES, 510Ω, 1%, 0.125 W	0805
D1	1	SS56	Diode, Schottky, 60 V, 5A, AEC-Q101	SMB
U1	1	PT16978	Three-Channel Linear LED Driver	HTSSOP20

3 Performance Data

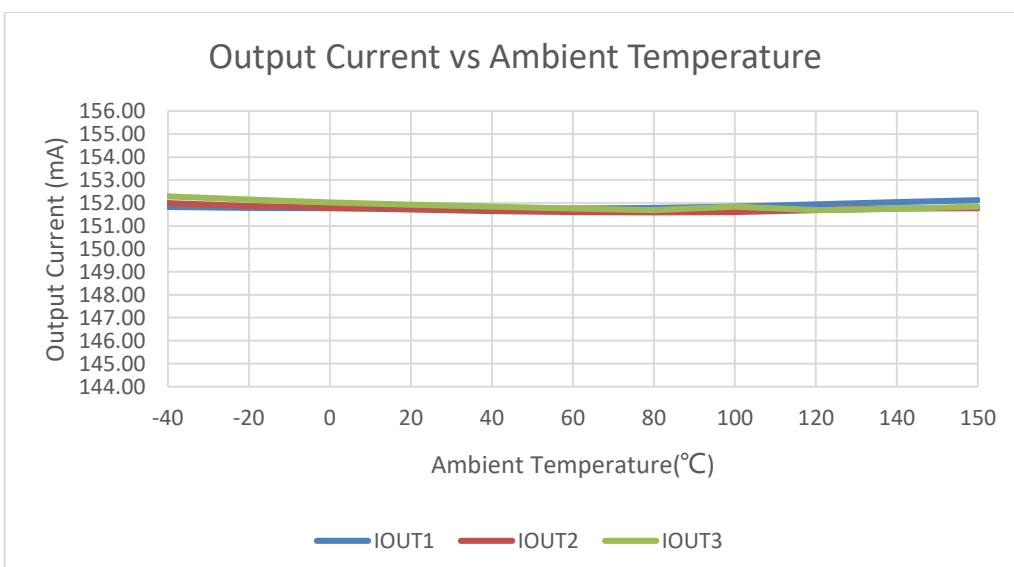
3.1 VIN=4.5V, IOU=150mA, 1 LED



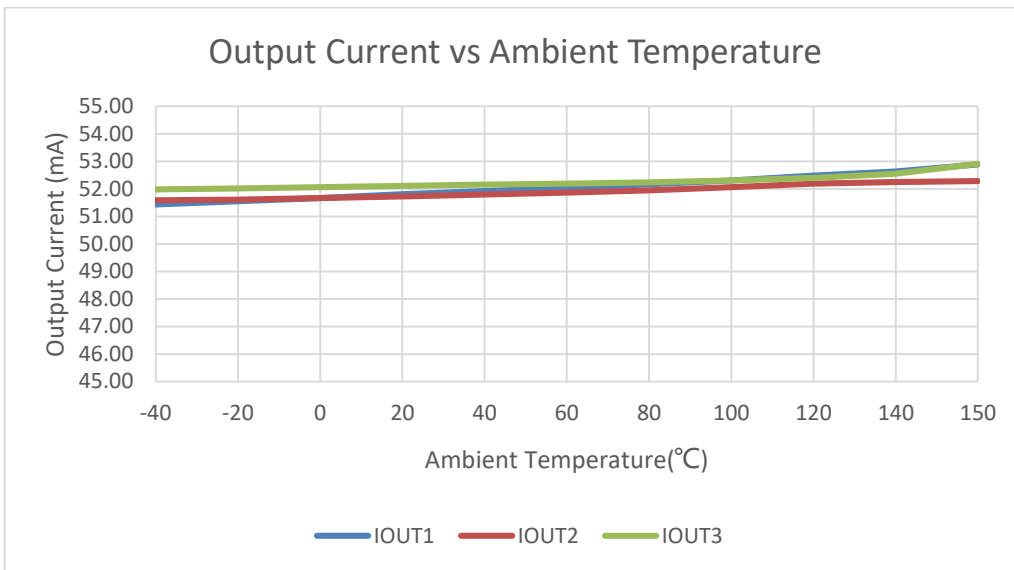
3.2 VIN=4.5V, IOU=50mA, 1 LED



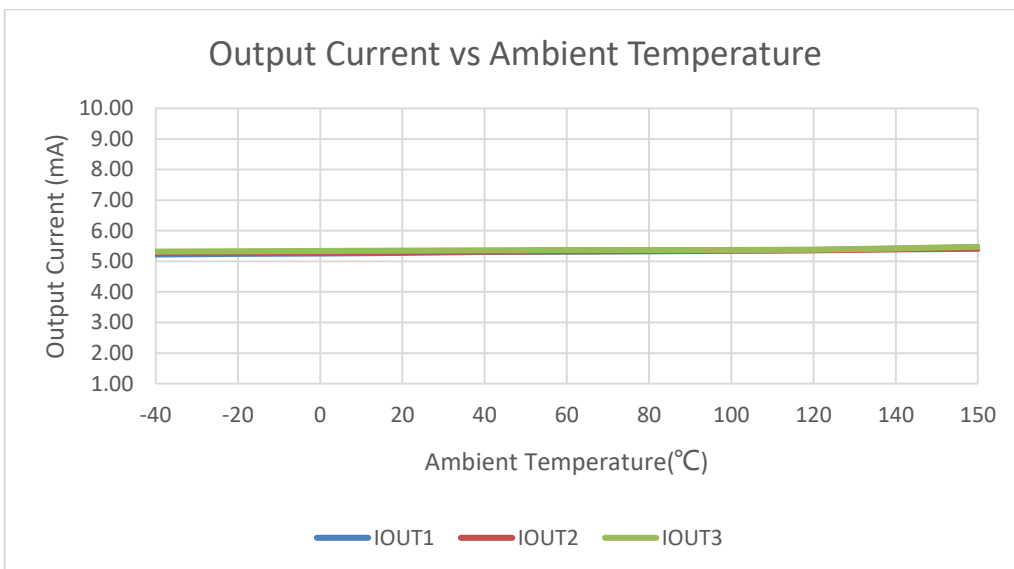
3.3 VIN=12V, IOU=150mA, 3 LED



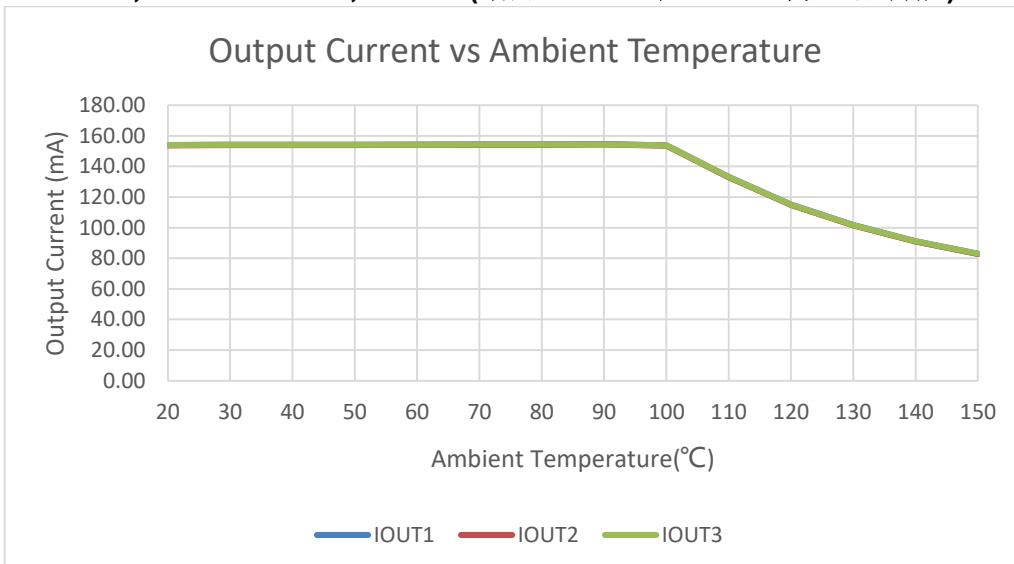
3.4 VIN=12V, IOU=50mA, 3 LED



3.5 VIN=12V, IOU=5mA, 3 LED



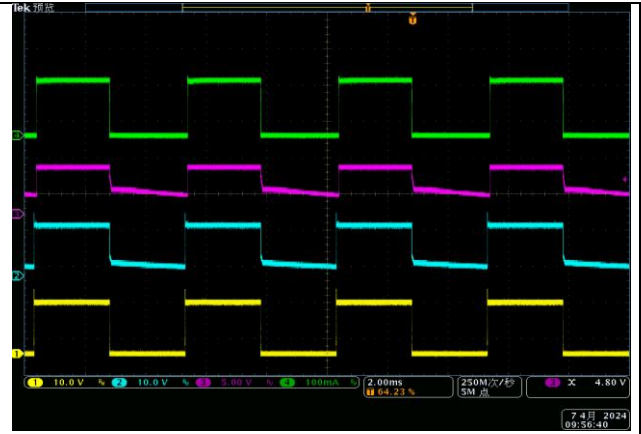
3.6 VIN=12V, IOU=150mA, 3 LED (增加 NTC 电阻, 过温降电流功能)



4 Typical Characteristics



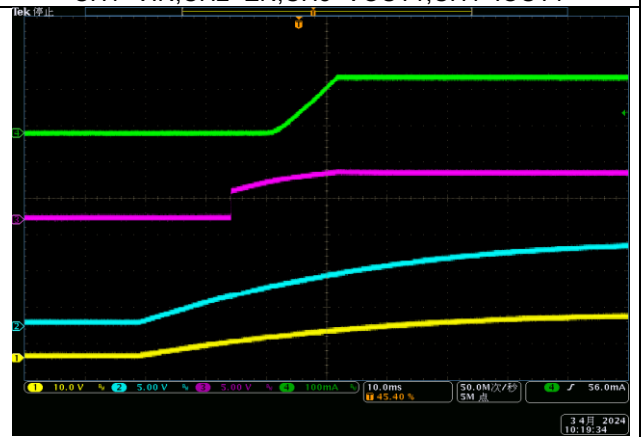
PWM Dimming, $f_{PWM}=200\text{Hz}$
CH1=VIN,CH2=PWM,CH3=VOUT1,CH4=IOUT1



Supply Dimming, $f_{PWM}=200\text{Hz}$, $D=50\%$
CH1=VIN,CH2=EN,CH3=VOUT1,CH4=IOUT1



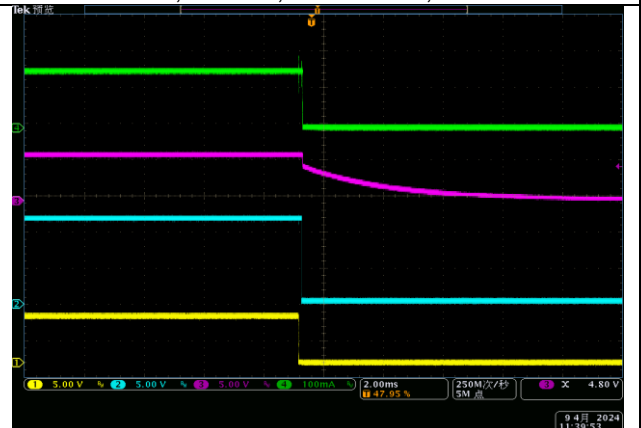
Fast Power-Up Waveform
CH1=VIN,CH2=EN,CH3=VOUT1,CH4=IOUT1



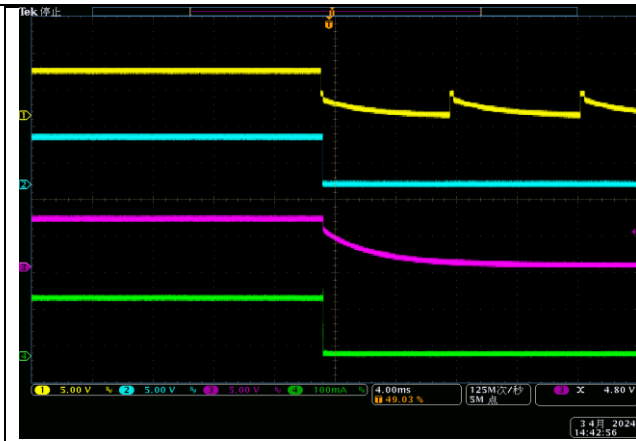
Normal Power-Up
CH1=VIN,CH2=EN,CH3=VOUT1,CH4=IOUT1



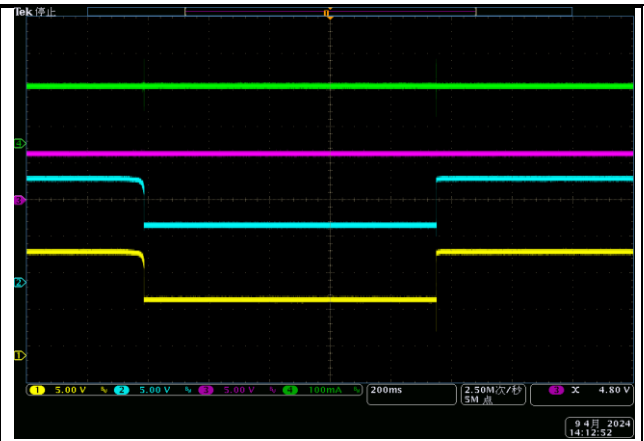
Open load Protection
CH1=VOUT2,CH2=FAULT,CH3=IOUT2,CH4=IOUT1



LED Short to GND Protection
CH1=VOUT2,CH2=FAULT,CH3=VOUT1,CH4=IOUT1



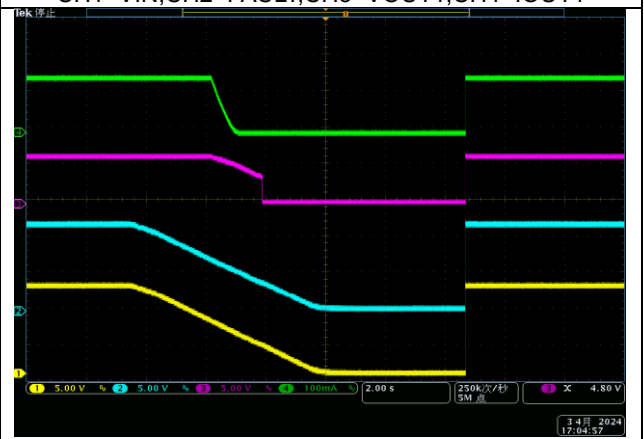
Single-LED Short Protection
 CH1=VOUT2, CH2=FAULT, CH3=VOUT1, CH4=IOUT1



Transient Undervoltage
 CH1=VIN, CH2=FAULT, CH3=VOUT1, CH4=IOUT1

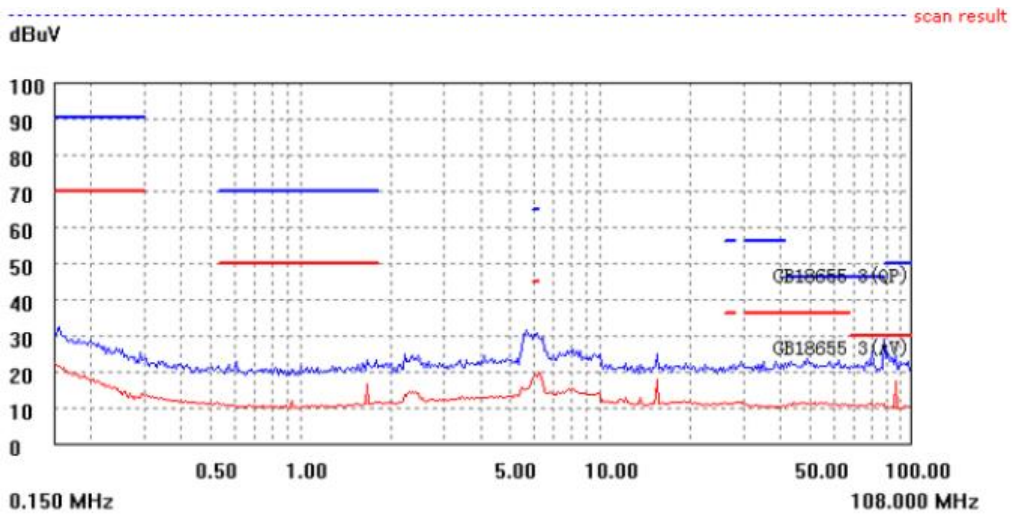


Transient Overvoltage
 CH1=VIN, CH2=FAULT, CH3=VOUT1, CH4=IOUT1

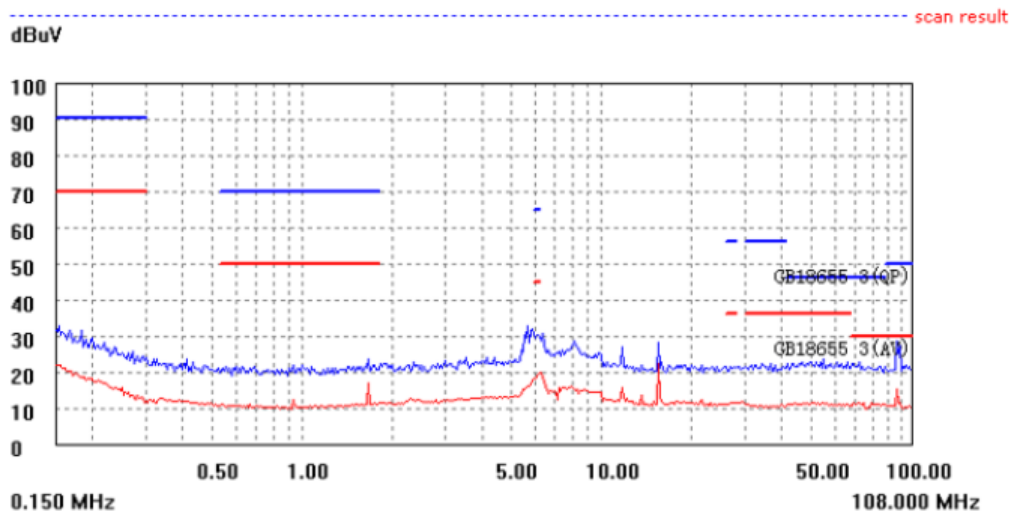


Slow Decrease and Quick Increase of Supply Voltage
 CH1=VIN, CH2=FAULT, CH3=VOUT1, CH4=IOUT1

5 Conducted Emission



Conducted Emission Based on GB18655 Class 3 Limits_VIN



Conducted Emission Based on GB18655 Class 3 Limits_GND