



DEMO BOARD TEST REPORT

High Performance 24V2A Adapter with Current Mode PWM Controller KP201C built-in Peak Output Power Capability

FEATURES

- Peak Power Excursion with Turbo OLP
- OLP with Programmable Debounce Time
- Support CCM & DCM Operation
- Fixed 65KHz Switching Frequency, up to 130Khz in Turbo Mode
- High Precision 24V CV Regulation with Fast Dynamic Response
- High Efficiency Meet DoE Level VI and CoC V5 Tier2. Less than 75mW Standby Power
- Good EMI Performance
- Built-in Protections with Auto Recovery:
 - VDD Under Voltage Lockout (UVLO)
 - Precision Output OVP (CS OVP)
 - External Programmable OTP
 - Cycle-by-Cycle Current Limiting
 - Over Load Protection (OLP)

INTRODUCTION

KP201C is a high performance current mode PWM controller for offline flyback converter applications, especially for printer or motor driver power supply. The controller architecture is arranged to authorize a transient peak power excursion when the FB voltage is upon 3V. At this point, the switching frequency is increased from 65 kHz to 130 kHz, as well as the CS peak value until the peak current hits the limit.

The Demo Board of KP201C-D01 is typically designed for the application of 24V/2A with universal input (90-265Vac, 60/50Hz). Besides the multi-protection function, this demo also has very good efficiency, line & load regulation, low standby power loss and meets the EN55022B Conduction and Radiation requirement .

APPLICATIONS

- Printer Adapter
- Motor Driver Power Supply

DEMO BOARD SEPCIFICATION

Description	Symbol	Min	Type	Max	Unit	Note
Input Voltage	Vin	90		265	Vac	50/60Hz
Output Voltage	Vout		24		Vdc	
Output Current	Iout		2		A	
Total Output Power	Pout		48		W	
Ripple & Noise	Vripple		114		mVp-p	20MHz Bandwidth @115Vac,1.5m Cable End
System Average Efficiency	η		>90.73		%	Board End @230Vac
Standby Power Consumption	Pst		72		mW	@265Vac
Startup Time	Tst		2.8		s	Tested at 90Vac/60Hz
Conducted EMI Margin			6		dB	EN55022 Class B
Radiated EMI Margin			6		dB	EN55022 Class B
Surge Test		2			kV	Differential Mode @ 230Vac/50Hz
ESD(Contact)			± 8		kV	
ESD(Air)			± 15		kV	
Safety		Designed to meet UL60950				
Operating Ambient		0		40	°C	
Operating Humidity		5		95	%R.H.	

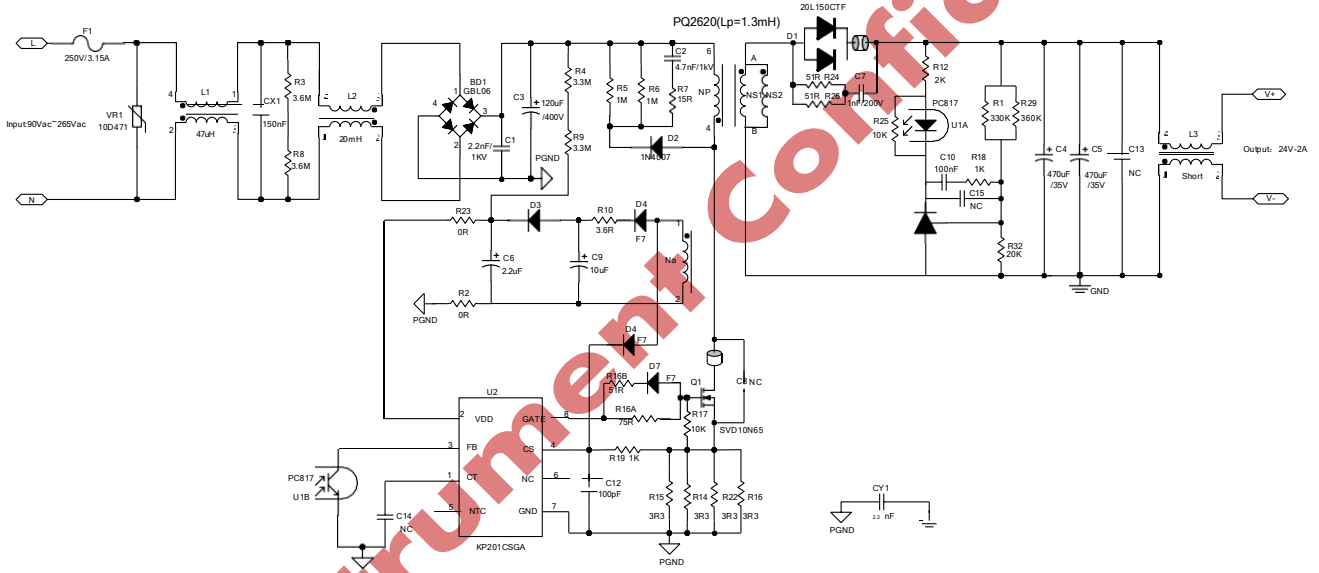
The table above shows the minimum acceptable performance of the design. Actual performance is listed in the results section.

Demo Board of KP201CSGA_D01_REV1.0

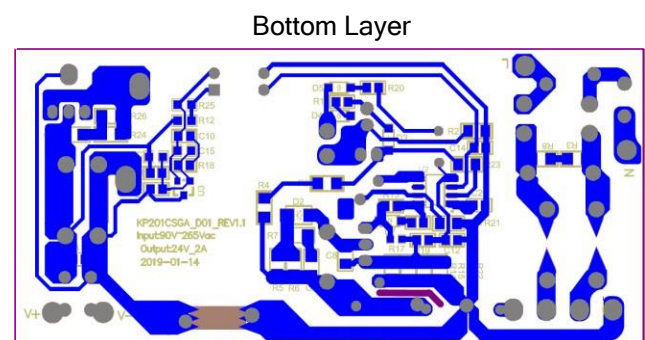
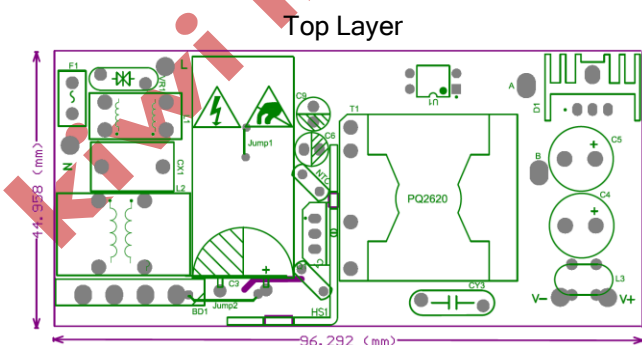


Board Size(in mm): L x W x H=96 x 45 x26

Schematic



Printed Circuit Board Layout





Circuit Description

The Demo Board of KP201C-D01 is configured in a single stage flyback topology, which combines a current mode PWM control regulator KP201CSG. KP201-D01 is typically designed for the application of 24V/2A adapter with universal input (90-265Vac, 50/60Hz). Additionally, the demo board can achieve high efficiency, low standby power loss and precise constant voltage control.

1. Input Rectification and EMI filtering

The circuit input stage is composed by the components of F1, VR1, L1, CX1, R3, R8, L2 and BD1. F1, VR1, L1 and L2 provide the inrush current limitation and Surge protection in the event of component failure, surge or short circuit event. L1, L2 and CX1 are used to guarantee conducted EMI to meet EN55022B Standard. R3 and R8 are used to discharge the X-Cap CX1. The bridge diode of BD1 rectifies the AC input to DC output, which is followed by a bulk capacitor C3.

2. Current Mode PWM Controller KP201C Operation

D4, R10, C9, D3, C6, R4 and R9 are used as VDD power supply for KP201C. KP201C uses opto-coupler U1, R12, R125, C10, R18 and TL431 to generate FB Pin voltage on primary side to regulate the output voltage within full load range. R14, R15, R16 and R22 are sensing resistors to set maximum output power. C2, D2, R5, R6, R7 compose snubber circuit to depress the drain-source voltage spike.

U2 is the current mode PWM controller KP201C, which is used for offline flyback converter applications. PWM switching frequency in KP201C is fixed to 65KHz and is trimmed to tight range under normal load condition. The FB voltage increases as the load get heavy. The switching frequency and CS peak value increases if the FB voltage is upon 3V. For the turbo duration, the switching frequency is increased from 65 kHz to 130 kHz, as well as the CS peak value until the peak current hits the limit.

As the load current increases, when the CS peak hits the threshold of OLP, the inner timer will be triggered. The inner timer is fixed to 120ms if CT is floating. The OLP timer can be adjusted by wiring a capacitor from CT to ground.

If over load occurs in turbo mode and the the CS peak value is limited, the fault is detected when FB is over 4.8V. If this fault is present for more than 21ms (typical), the protection will be triggered.

3. Output Voltage Regulation

R18, C10, C15 and U3 TL431 compose output voltage regulation network. R1, R29 and R32 are the output voltage resistor dividers for TL431's reference compare. C4 and C5 are the output capacitors used to supply output current and lower output voltage ripple.



**Demo Board Test Report of High Performance 24V2A Adapter
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Bill of Material

No.	Designator	Value	Description	Package	Manufacturer	Part Number
1	BD1	GBL06	4.0A GLASS PASSIVATED BRIDGE RECTIFIER	GBL	Taiwan Semi	GBL06
2	C1	2.2nF/1kV	Ceramic Cap, 1kV X7R	1206	Murata	
3	C2	4.7nF/1kV	Ceramic Cap, 1kV X7R	1206	Murata	
4	C3	120uF/400V	Electrolytic Cap, 450V,18*33.5	Radial Type	Aishi	EHF2GM121M350T
5	C4	470uF/35V	Electrolytic Cap, 35V,10*16	Radial Type 10*16	NXA	
6	C5	470uF/35V	Electrolytic Cap, 35V,10*16	Radial Type 10*16	NXA	
7	C6	2.2uF	Electrolytic Cap, 16V,10*16	TH	jianghai	
8	C7	1nF/200V	Ceramic Cap, 1kV X7R	1206	Murata	
9	C8	NC	Ceramic Cap, 1kV X7R	1206	Murata	
10	C9	10uF	Electrolytic Cap, 16V,10*16	TH	jianghai	
11	C10	100n	Ceramic Cap, 25V X7R	0805	TDK	
12	C11	NC	Ceramic Cap, 50V NPO	5MM	Murata	
13	C12	100pF	Ceramic Cap, 50V NPO	0805	Murata	
14	C13	NC	Ceramic Cap, 50V X7R,0805	0805	Murata	
15	C14	NC	Ceramic Cap, 50V NPO	0805	Murata	
16	C15	NC	Ceramic Cap, 25V X7R	0805	TDK	
17	C20	100pF	Ceramic Cap, 50V NPO	0805	Murata	
18	CX1	150n	MKP62,275Vac~X2, P=10mm, T=8mm	TH	Fala	C42P2224K4F C000
19	CY3	2.2nF	CDY1 Y5U Cap,400VAC,P=10mm,T=5.0mm	TH	STE	Q11E1D222MN 0B0S0
20	D1	150V/10A	MOS Schottky Rectifier(VF=0.68V@IF=5A)	ITO-220AB	ANY	10L150CTF
21	D2	1KV/1A	1.0 AMP SILICON RECTIFIERS	SMA	Any	1N4007
22	D3	A7	Fast Recovery Rectifiers	SOD123	YEA SHIN	
23	D4	F7	Fast Recovery Rectifiers	SOD123	YEA SHIN	
24	D5	F7	Fast Recovery Rectifiers	SOD123	YEA SHIN	
25	D7	F7	Fast Recovery Rectifiers	SOD123	YEA SHIN	
26	F1	250V/2A	Fuse 250V/1A	TH	Any	
27	L1	47uH	WE-744841247	XS	Wurth Elektronik	744841247
28	L2	22mH	NiZn, T16*8*7, Magnet Wire:0.5mm	XS	Any	T16*8*7
29	L3	NC	COMMON CHOKE			
30	Q1	SVF10N65F	N Mosfet, 650V/10A, Rdson=1ohm	TO-220F	Silan	SVF10N65F
31	R1	330K	Film Resistor, 5%	0805	Yageo	
32	R2	0R	Film Resistor, 1%	1206	Yageo	
33	R3	3.3M	Film Resistor, 5%	1206	Yageo	

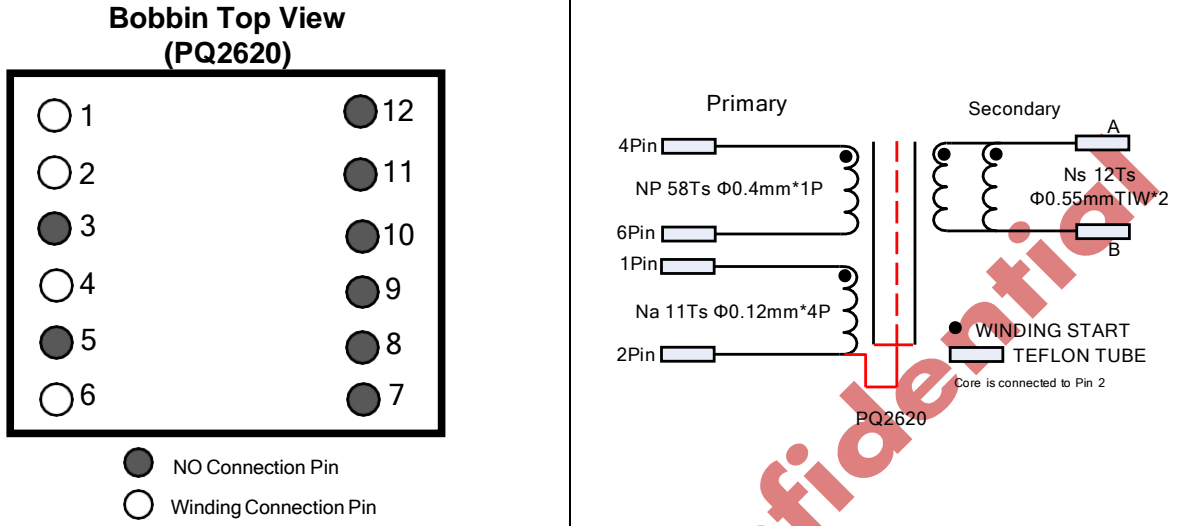


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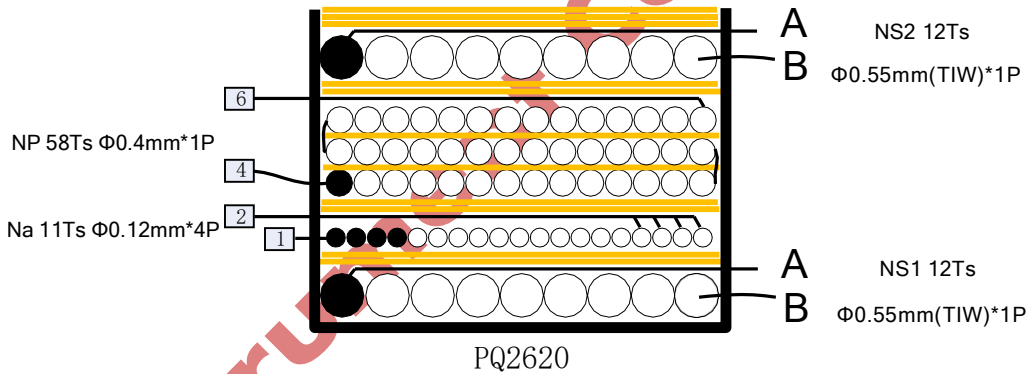
34	R4	3.3M	Film Resistor, 5%	1206	Yageo	
35	R5	1M	Film Resistor, 5%	1206	Yageo	
36	R6	1M	Film Resistor, 5%	1206	Yageo	
37	R7	15R	Film Resistor, 5%	1206	Yageo	
38	R8	3.3M	Film Resistor, 5%	1206	Yageo	
39	R9	3.3M	Film Resistor, 5%	1206	Yageo	
40	R10	3.6R	Film Resistor, 5%	0805	Yageo	
41	R11	51R	Film Resistor, 5%	0805	Yageo	
42	R12	2K	Film Resistor, 5%	0805	Yageo	
43	R13	75R	Film Resistor, 5%	0805	Yageo	
44	R14	3.3R	Film Resistor, 1%	1206	Yageo	
45	R15	3.3R	Film Resistor, 1%	1206	Yageo	
46	R16	3.3R	Film Resistor, 1%	1206	Yageo	
47	R17	10K	Film Resistor, 5%	0805	Yageo	
48	R18	1K	Film Resistor, 5%	0805	Yageo	
49	R19	1K	Film Resistor, 5%	0805	Yageo	
50	R20	110K	Film Resistor, 5%	0805	Yageo	
51	R21	0	Film Resistor, 1%	0805	Yageo	
52	R22	3.3R	Film Resistor, 1%	1206	Yageo	
53	R23	0R	Film Resistor, 1%	1206	Yageo	
54	R24	51R	Film Resistor, 1%	1206	Yageo	
55	R25	10K	Film Resistor, 5%	0805	Yageo	
56	R26	51R	Film Resistor, 1%	1206	Yageo	
57	R29	360K	Film Resistor, 5%	0805	Yageo	
58	R32	20K	Film Resistor, 5%	0805	Yageo	
59	T1	1.3mH	Bobbin, PQ26/20, Vertical, 12 pins , PC40, Transformer	PQ2620, Vertical, 12 Pins	TDG	
60	T2	-	T type ring core 3.5*3*1.5mm	3.5*3*1.5mm	Any	
61	T3	-	T type ring core 3.5*3*1.5mm	3.5*3*1.5mm	Any	
62	U1	None	4 Pin DIP Photo-Transistor Photocoupler	DIP4	Everlight	EL817
63	U2	KP201CSGA	High-Performance Offline Current Mode PWM Controller	SOP8	Kiwi Instruments	KP201CSGA
64	U3	None	Plastic-Encapsulate Adjustable Reference Source	SOT-23	Hottech	TL431
65	VR1	10D471	ZnO VARISTOR,P=5.0mm,T=3.5mm	10D	STE	

Transformer Manufacture Guide

1. Electrical Diagram



2. Winding Diagram



3. Winding Order

Number	Winding	Layer	Start	End	Wire Size(mm)	Turns	Note
1	NS1	Secondary	A	B	0.55(TIW)*1P	12Ts	Close Wound
2	Na	Auxiliary	1	2	0.12*4P	11Ts	Close Wound
3	NP	Primary	4	6	0.4*1P	58Ts	Close Wound
4	NS2	Secondary	A	B	0.55(TIW)*1P	12Ts	Close Wound



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4. Electrical Specification

Items	Test Condition	Test Pin	Specification
Primary Inductance	Measured at 40kHz, 1.0 VRMS	Pins 4 - 6; other windings open	1.3mH±5%
Leakage Inductance	Measured at 40kHz, 1.0 VRMS	Pins 4 - 6; all other windings shorted	7uH
HI-POT HV Test	3000Vac/50Hz, One minute	Primary to Secondary	3000Vac, 5mA
	1500Vac/50Hz, One minute	Primary to Core	1500Vac, 5mA
	1500Vac/50Hz, One minute	Secondary to Core	1500Vac, 5mA
Insulation Resistance	500Vdc	All windings to core	100M Ω Min
	500Vdc	Between windings	100M Ω Min
DC Resistance	-	Pins 4 - 6	2R Max

5. BOM

Items	Spec
Core	PQ2620, PC40 or equivalent
Bobbin	PQ2620, 6+6Pin
Wire	Φ 0.4mm, 2UEW, Class B; Φ 0.12mm, 2UEW, Class B; Φ 0.55mm TIW;
Tape	9.5mm(W)×0.06mm(TH)



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Test Result

1. Input characteristics

1.1 Maximum rated input AC current

Standard: 2Amax. @ 90Vac input & full load

Result: Pass

VIN(AC)	90Vac	lin_max limit(A)	Result
Iout	1.17A	2A	PASS

1.2 Inrush current (cold start)

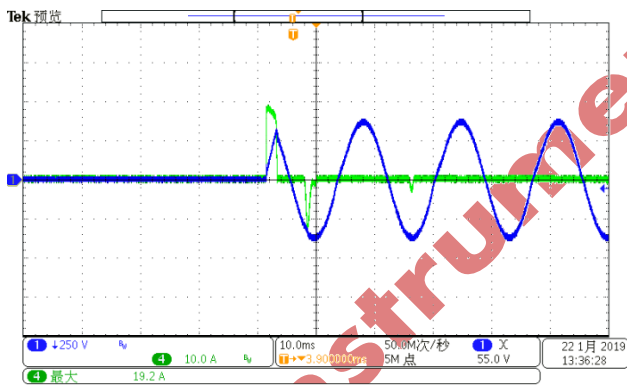
Standard: 30Amax. @ 265Vac input

Result: Pass

VIN(AC)	Iinrush	lin_max limit(A)	Result
265Vac	19.2A	30A	PASS

Inrush Current waveform

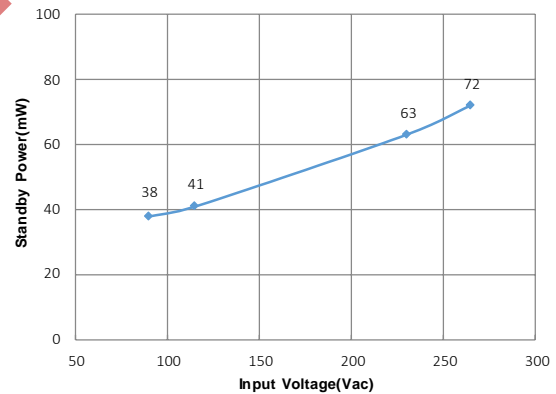
Test Condition: 24V/2A @ 265Vac, Phase=90° startup



(CH1-Vinac, CH4-Iin)

Comments: Startup Normally

Standby Power



1.3 No load input power dissipation

Standard: while input 90Vac~265Vac and the output is no load, the input power loss must be less than 75mW.

Result: Pass

VIN(AC)	90	115	230	265	green mode limit(A)	Result
Pin	38	41	63	72	75mW	PASS



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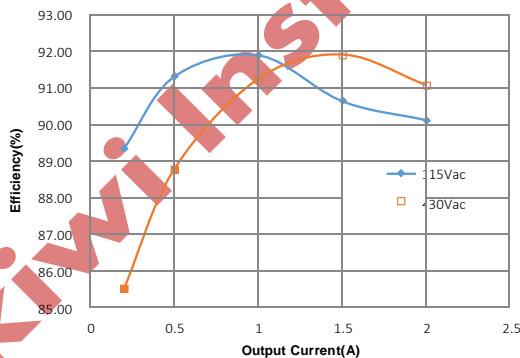
1.4 Average efficiency

Standard: The average efficiency tested on board end meets CoC V5 tier 2 with enough margin @115Vac and 230Vac, CoC V5 requirement for 24V2A system is 88.97%.

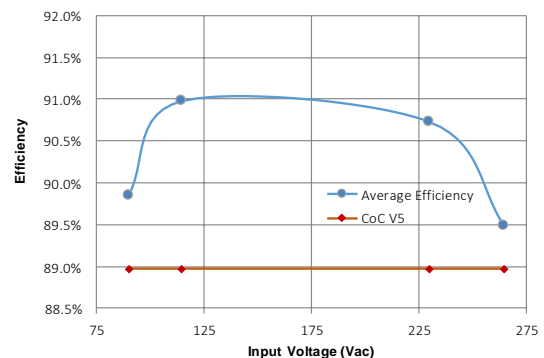
Result: Pass

Vin(Vac)	Fline(Hz)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Eff(%)	Eff_AVG(%)	CoC V5(%)
90	60	5.46	24.34	0.2	4.868	89.16	/	78.97
		13.37	24.34	0.5	12.17	91.02		
		26.97	24.34	1	24.34	90.25	89.85	88.97
		40.83	24.33	1.5	36.495	89.38		
		54.84	24.33	2	48.66	88.73		
115		5.45	24.34	0.2	4.868	89.32	/	78.97
		13.33	24.34	0.5	12.17	91.30		
		26.49	24.34	1	24.34	91.88	90.98	88.97
		40.27	24.33	1.5	36.495	90.63		
		54	24.33	2	48.66	90.11		
230	50	5.69	24.32	0.2	4.864	85.48	/	78.97
		13.7	24.32	0.5	12.16	88.76		
		26.66	24.32	1	24.32	91.22	90.73	88.97
		39.7	24.32	1.5	36.48	91.89		
		53.42	24.32	2	48.64	91.05		
265		5.81	24.32	0.2	4.864	83.72	/	78.97
		14.02	24.32	0.5	12.16	86.73		
		27.15	24.32	1	24.32	89.58	89.48	88.97
		40.23	24.32	1.5	36.48	90.68		
		53.5	24.32	2	48.64	90.92		

Efficiency & Load



Avg Efficiency & Input Voltage



2. Output characteristics

2.1 Output line regulation and load regulation

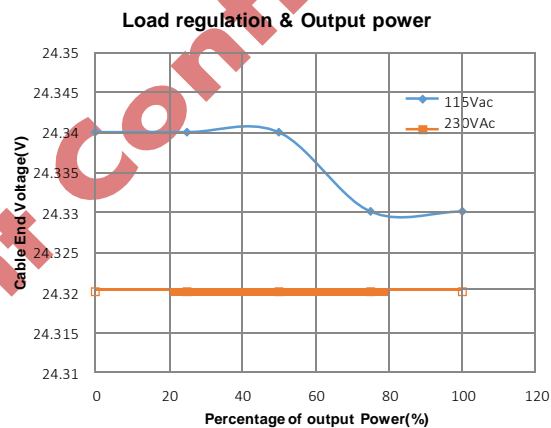
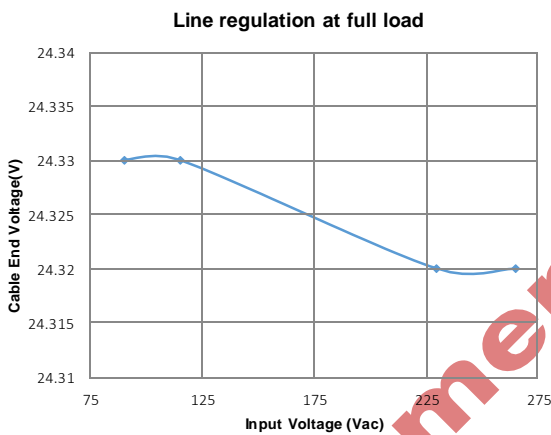


**Demo Board Test Report of High Performance 24V2A Adapter
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Standard: under the input voltage 90Vac~265Vac, Line regulation <6%, Load regulation <6%. The output voltage was tested at 1.5m AWG20 cable end.

Result: Pass

Input Voltage	Output Voltage(V)					Load Regulation
	0% Load	25% Load	50% Load	75% Load	Full Load	
90Vac/60Hz	24.34	24.34	24.34	24.33	24.33	0.04%
115Vac/60Hz	24.34	24.34	24.34	24.33	24.33	0.04%
230Vac/50Hz	24.32	24.32	24.32	24.32	24.32	0.00%
264Vac/50Hz	24.32	24.32	24.32	24.32	24.32	0.00%
Line Regulation	0.08%	0.08%	0.08%	0.04%	0.04%	



2.2 Ripple & noise

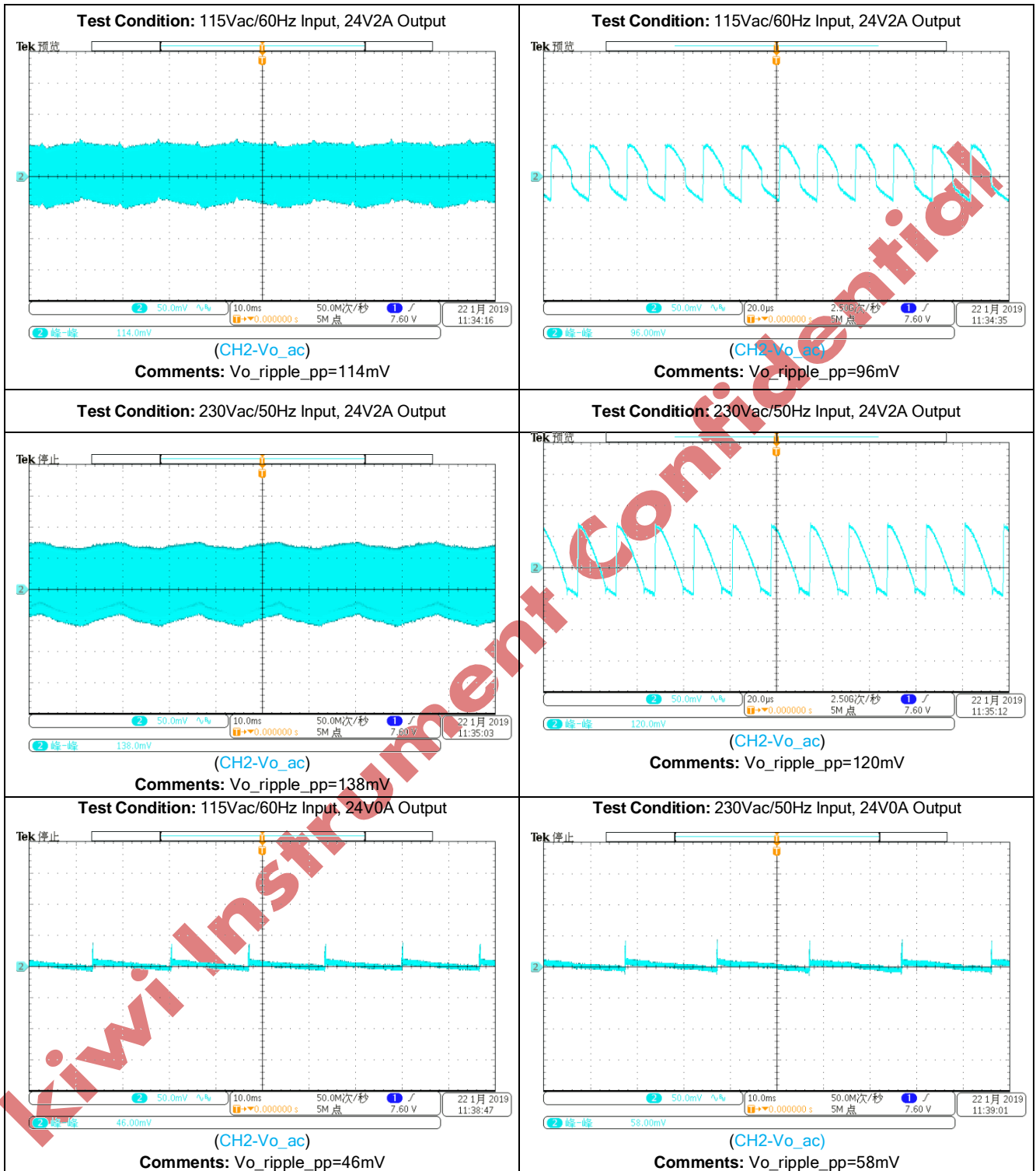
Standard: under the input voltage 115Vac and 230Vac, Vripple_max<150mVpp

Result: Pass

Note: Ripple & noise were measured at AWG 20 cable end with a 0.1uF/50V ceramic cap connected in parallel with a 10uF/50V electrolytic cap. Bandwidth was limited to 20Mhz.

Input Voltage	Ripple & noise	
	No Load(mV)	Full Load(mV)
90Vac/60Hz	44	154
115Vac/60Hz	46	114
230Vac/50Hz	58	138
264Vac/50Hz	58	130

Waveforms (115Vac & 230Vac):



2.3 Load Transient Test

Standard: under the input voltage 90Vac~265Vac, the output Voltage transient response should be within $\pm 10\%$ normal voltage.



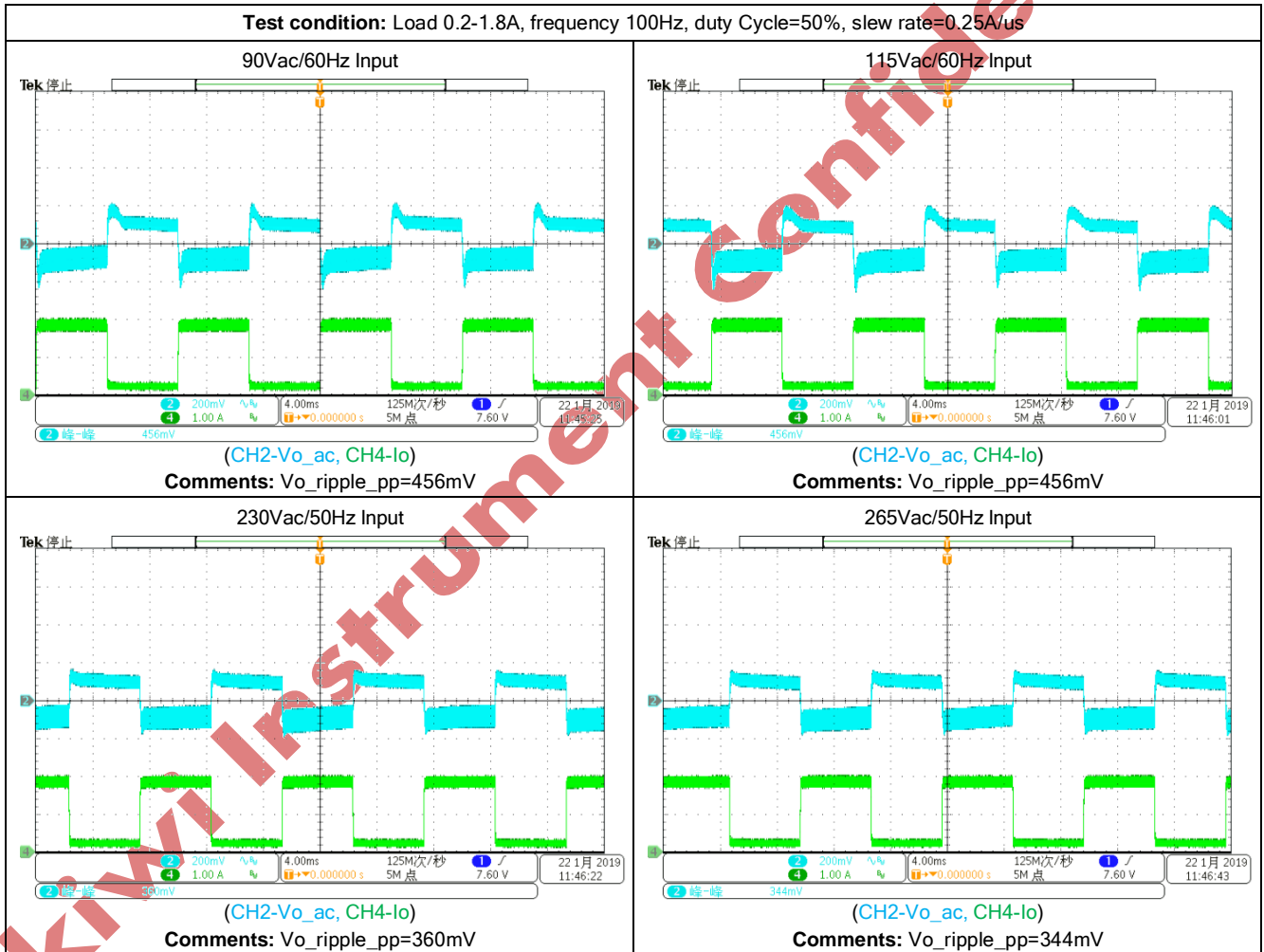
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Result: Pass

Note: 1.10% load shift to 90% load with 0.25A/us changing ramp and 100Hz changing frequency.

Input Voltage	Output Voltage(~ac)	Remark
90Vac/60Hz	456mV	Pass
115Vac/60Hz	456mV	Pass
230Vac/50Hz	360mV	Pass
264Vac/50Hz	344mV	Pass

Waveforms:

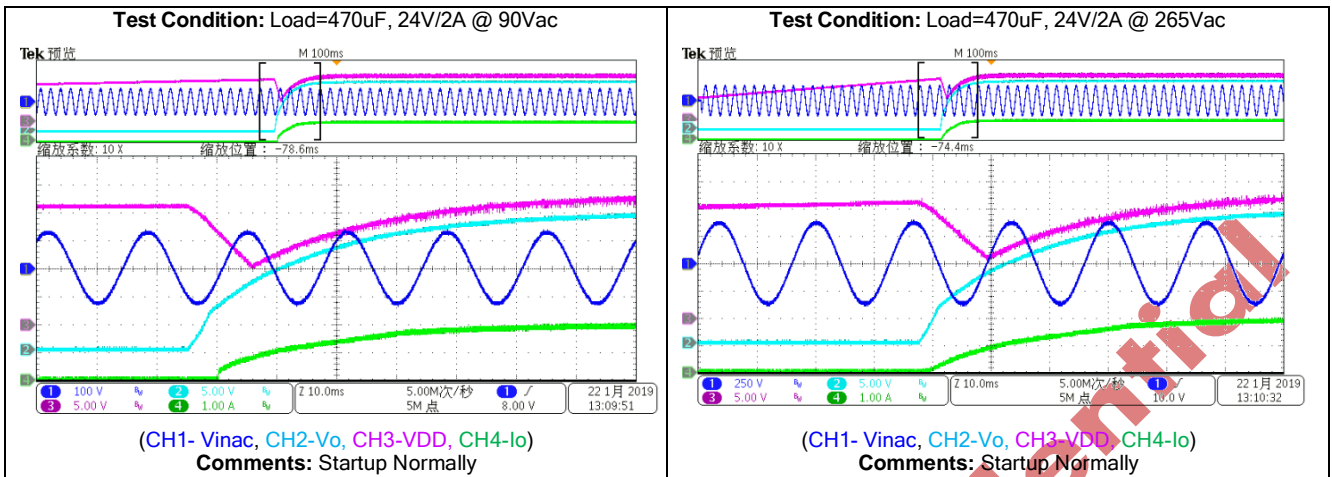


2.4 Capacitive Load Startup Test

Standard: while capacitance load is 470uF, the power supply can turn on normally and the output is in the rated range.

Result: Pass

Waveforms:



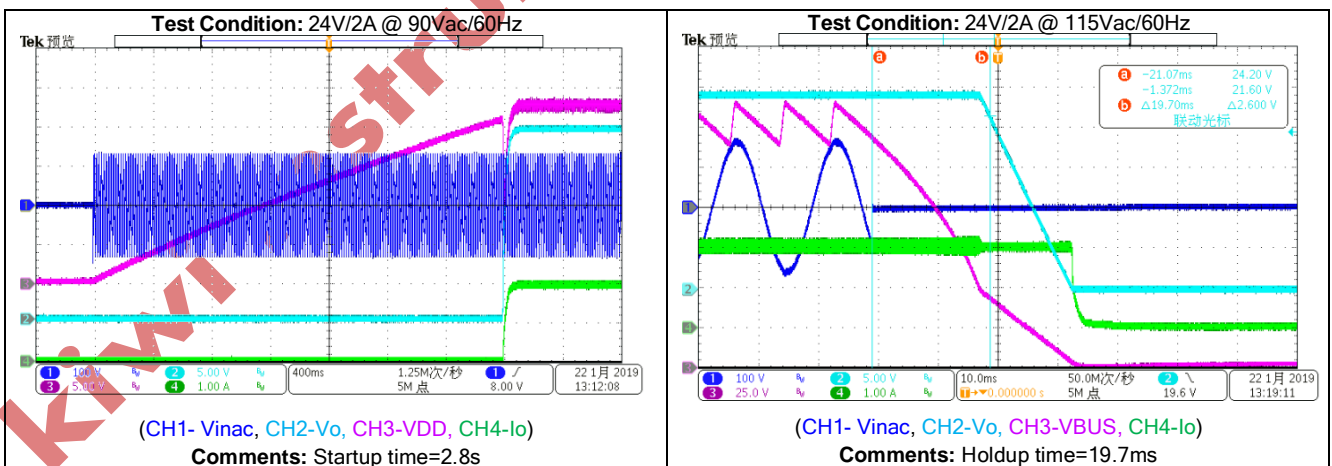
2.5 Startup Time and Holdup Time

Standard: 1.the startup time should be less than 3s @90Vac. 2. The holdup time should be larger than 10ms @115Vac;

Result: Pass

Item	Input Voltage	Test Data	Remark	Note
Startup Time	90Vac	2.8s	Pass	Full Load
Holdup Time	115Vac	19.7ms	Pass	Cut off the Vac while Vbus voltage reached the lowest voltage

Waveforms:



2.6 Output Voltage Rise Time and Fall Time

Standard: Under full load test, the output voltage rise time should be less than 50ms and the fall time should be less than 20ms.

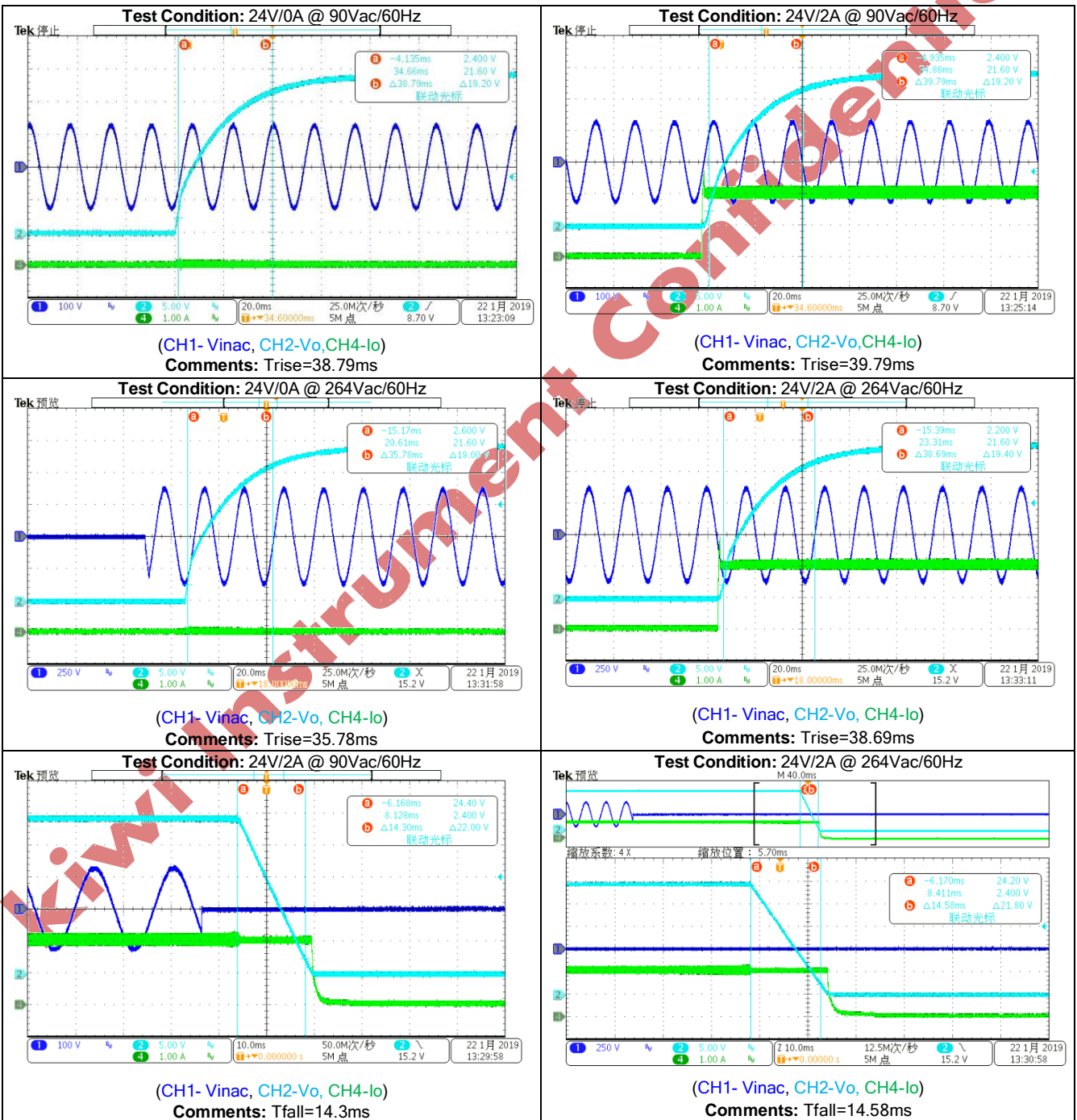


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Result: Pass

Input Voltage	Load	Item	Test Result(ms)	Note
90Vac/60Hz	Full Load	Trise	39ms	No overshoot
		Tfall	14ms	No undershoot
	No Load	Trise	38ms	No overshoot
		Tfall	14ms	No undershoot
264Vac/50Hz	Full Load	Trise	38ms	No overshoot
		Tfall	14ms	No undershoot
	No Load	Trise	35ms	No overshoot

Waveforms:



3. Protection Test

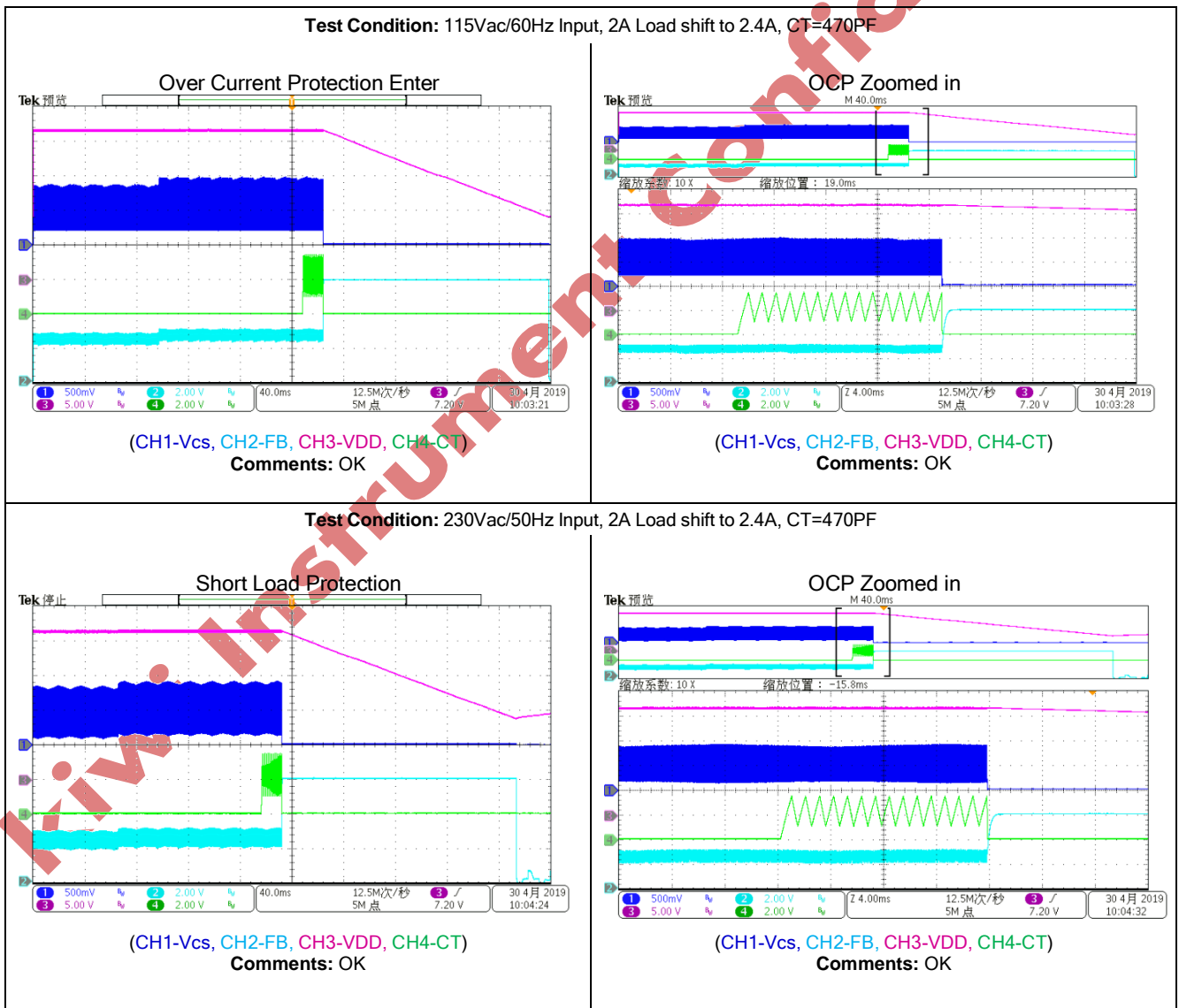
3.1 Over current protection

Standard: OCP point limited is between 110%~130% full load current.

Result: Pass

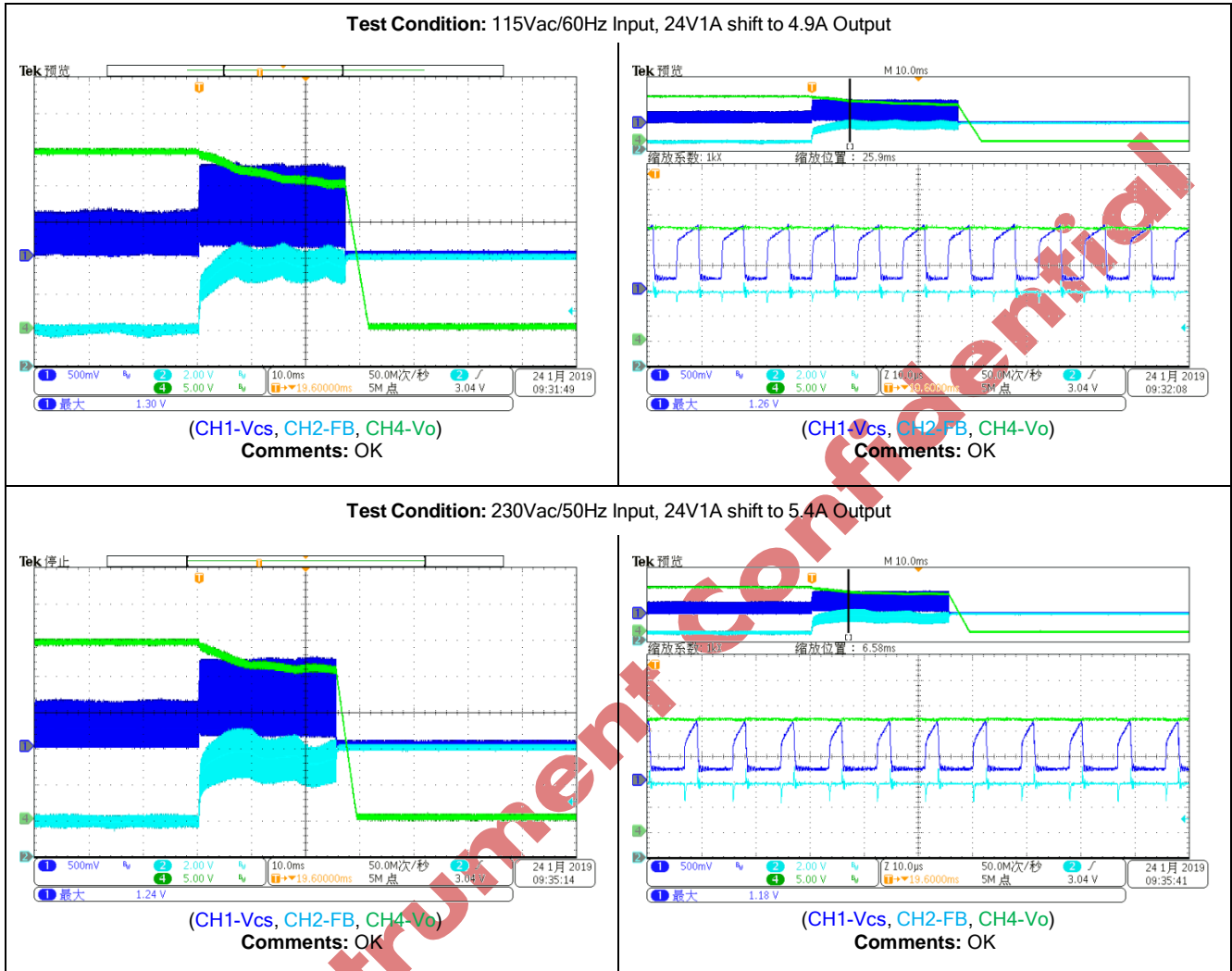
Input Voltage(Vac)	90	115	180	230	265	Remark
OCP Current(A)	2.3	2.32	2.31	2.22	2.23	Pass
Turbo OLP Current(A)	4.51	4.95	5.35	5.45	5.6	

Waveforms:



3.2 Turbo OLP Protection

Waveforms:



3.3 Short circuit protection

Standard: the power supply must shut-down in the event of a short circuit and automatically return to normal operating condition once the fault condition has been removed. And the peak input power should be less than 5W.

Result: Pass

Test Data:

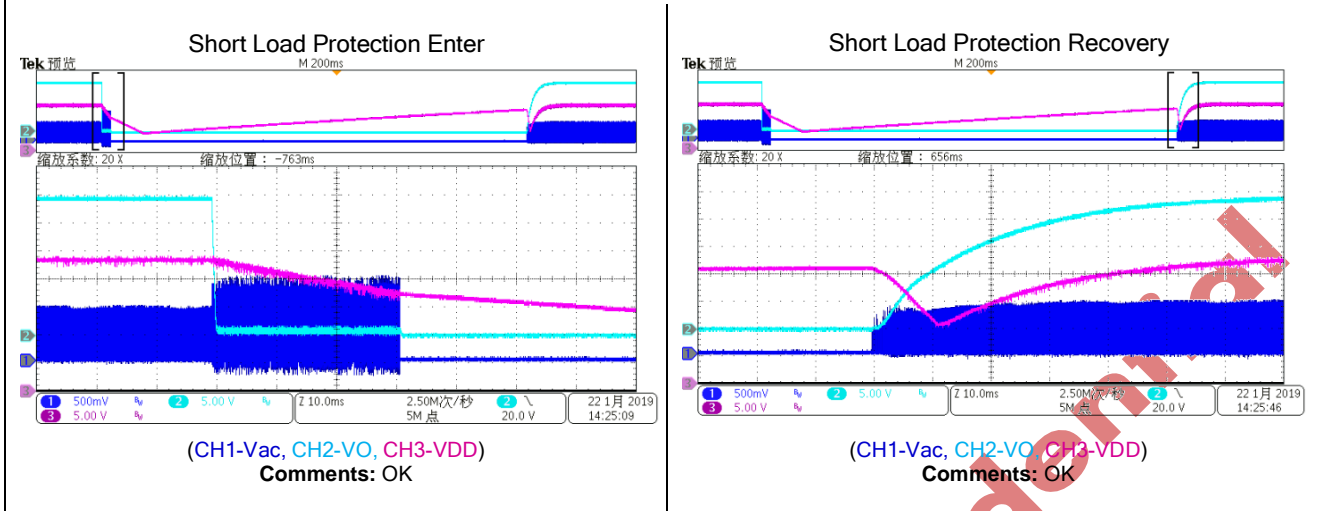
Input Voltage(Vac)	90	115	150	230	265	result
Pin(W)	0.39	0.46	0.56	0.89	1.14	PASS

Waveforms:

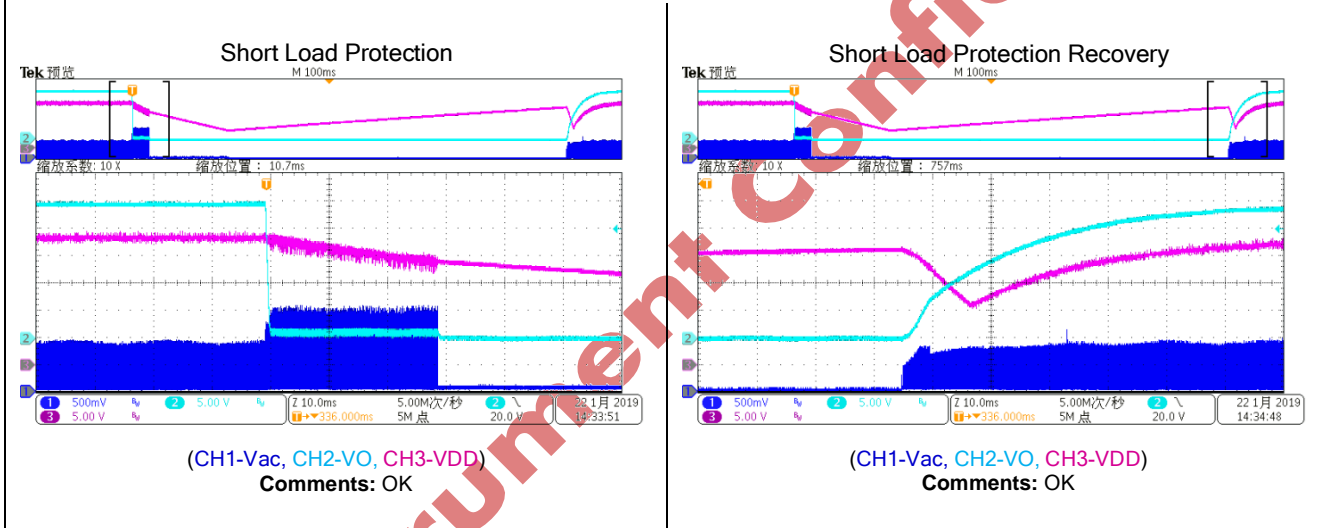


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Test Condition: 115Vac/60Hz Input, Output short



Test Condition: 230Vac/50Hz Input, Output short



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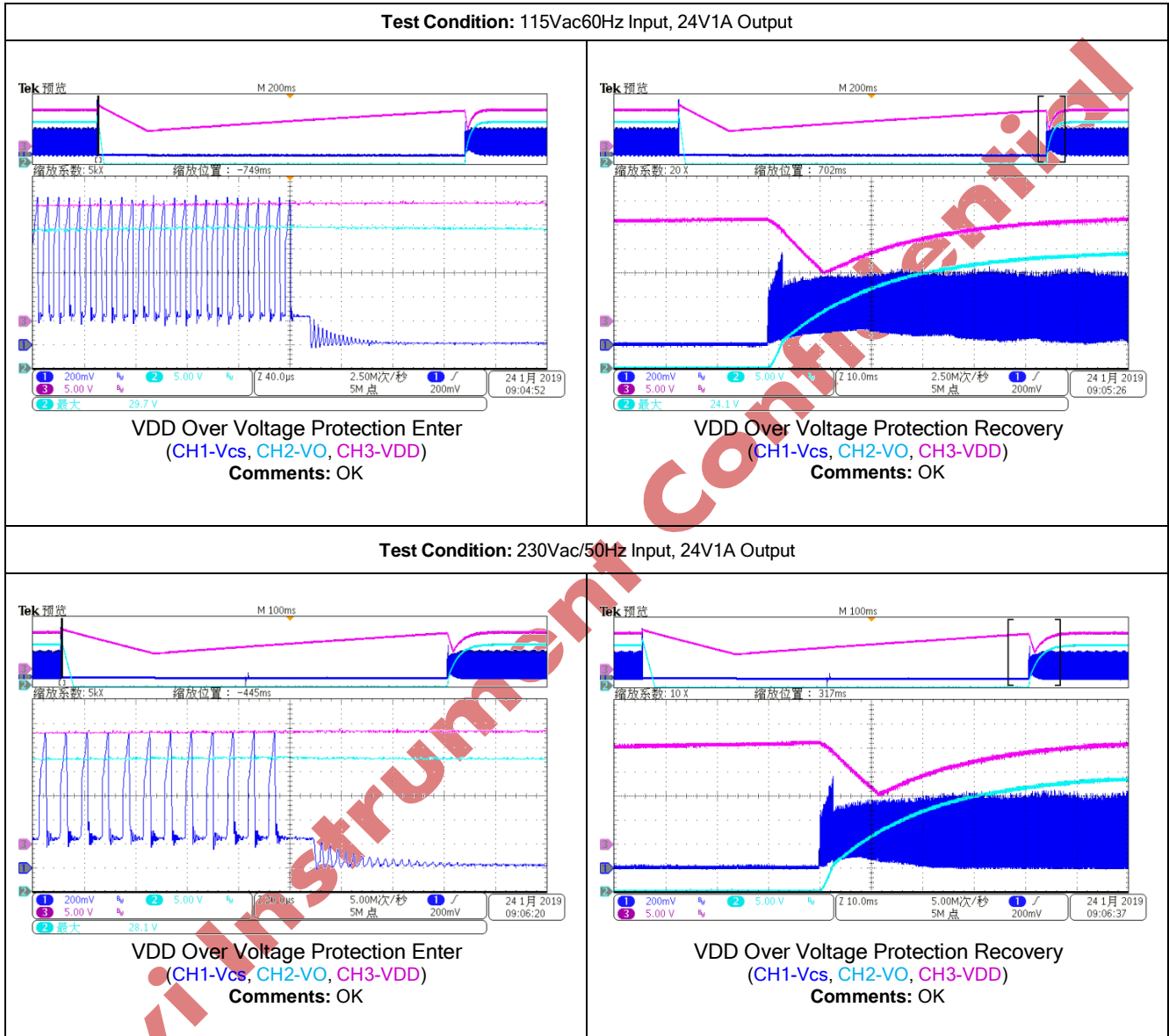
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3.4 Over Voltage Protection

Standard: OVP point limit: <150%.

Result: Pass

Waveforms:





4. Reliability requirements

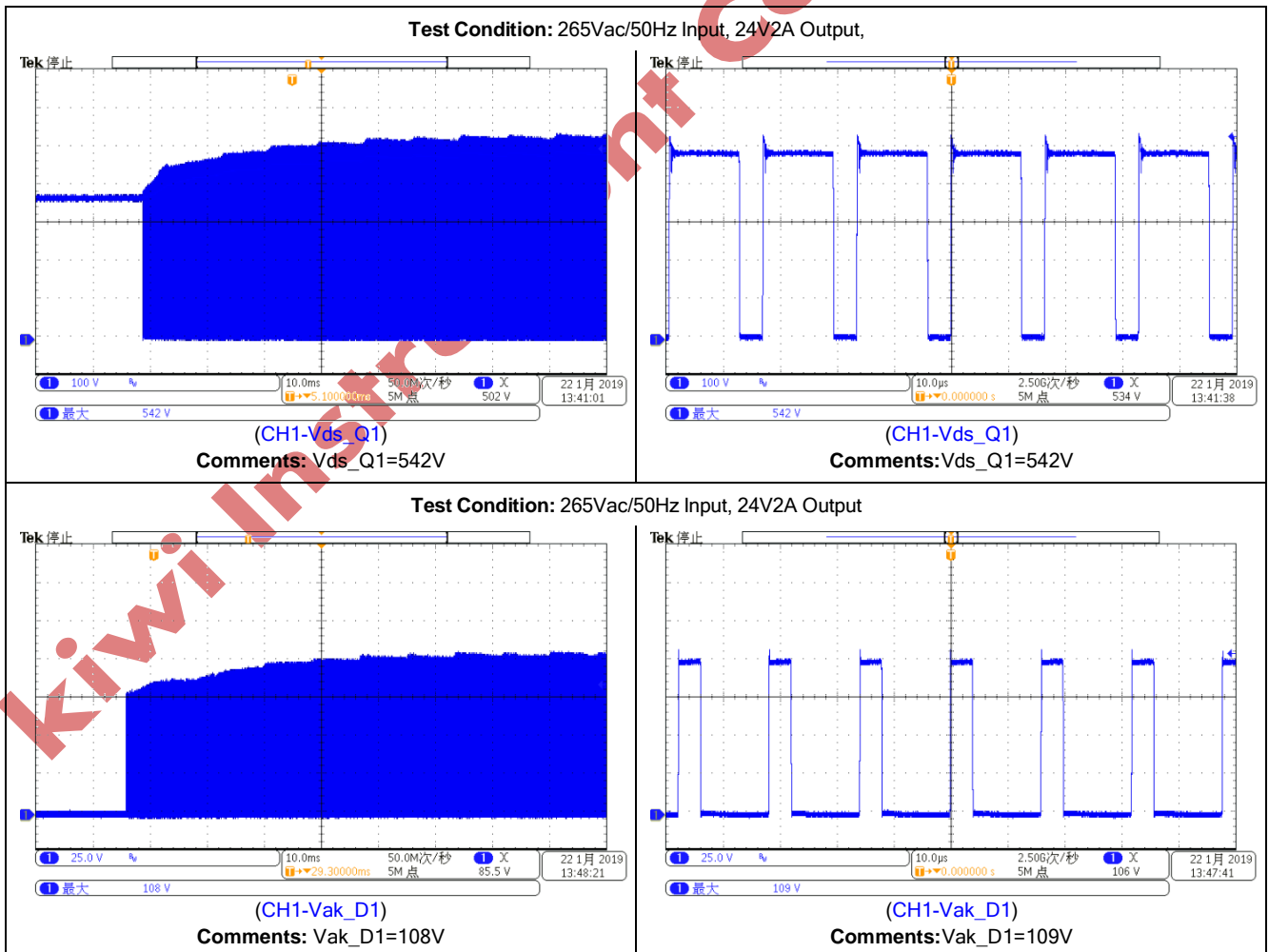
4.1 Device Maximum Rating Test

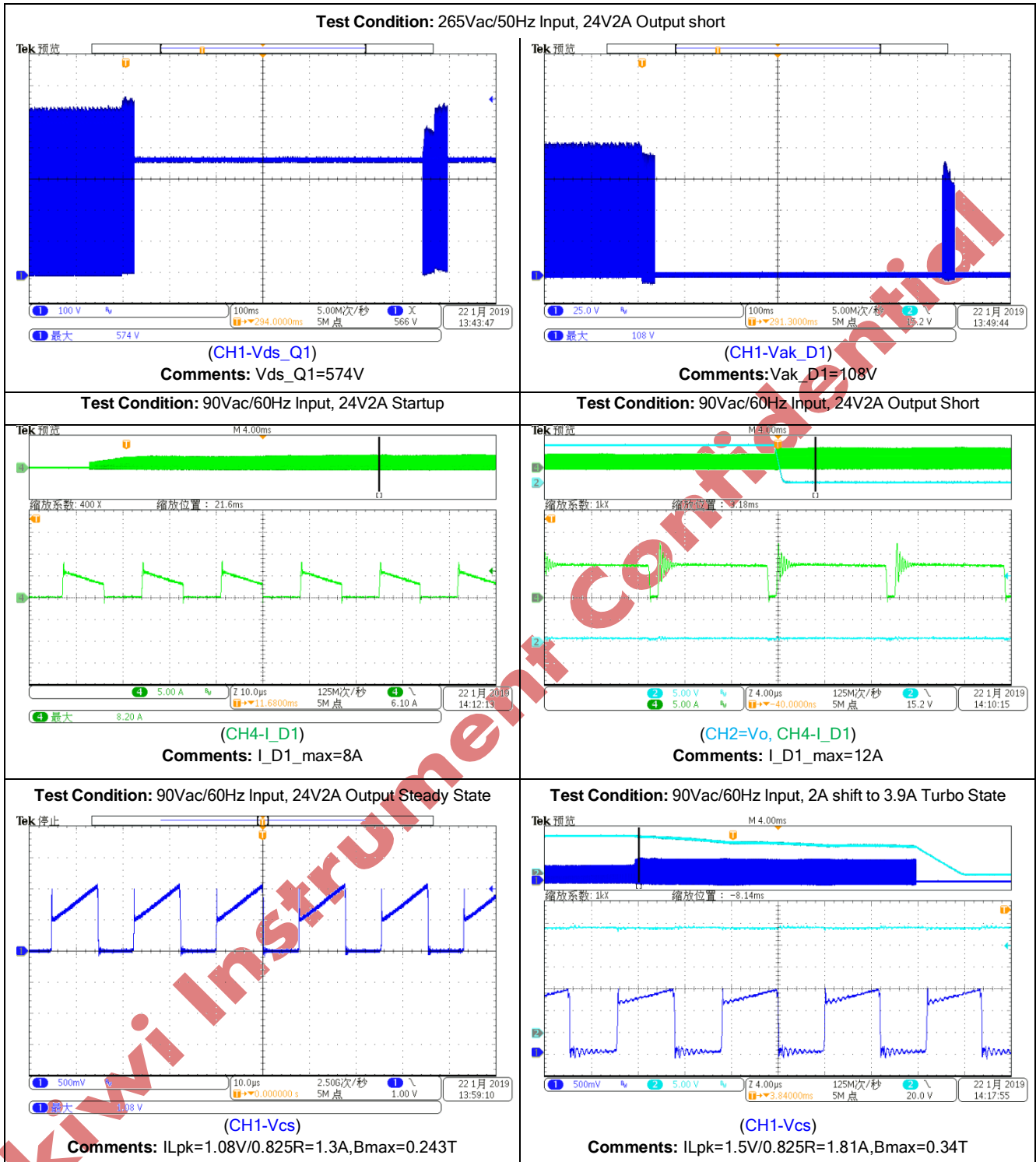
Standard: MOSFET and Diode<95% Vrrm; Bmax<0.3T.

Result: Pass

Input Voltage	Component	Test Condition	Test Result	Note
264Vac/50Hz	Q1 SVF10N65F	Startup	542V	Pass
		Steady State	542V	Pass
		Output Short	574V	Pass
	D1 20L150CTF	Startup	108V	Pass
		Steady State	109V	Pass
		Output Short	108V	Pass
	12A		Pass	
	Transformer Core	Startup	0.243T	Pass
		Turbo State	0.34T	Last for 25ms

Waveforms:





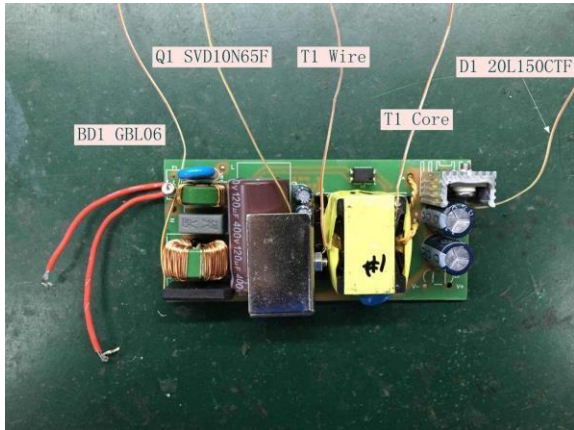
4.2 Thermal Test

Standard: MOS, IC and Diode: Ta=40°C, ΔT<75°C. Transformer: Ta=40°C, ΔT<70°C.

Result: Pass

Test Condition: 90Vac/60Hz, 265Vac/50Hz; 24V2A output; Burn-in 1Hour @ confined container (19cm*17cm*10cm cardboard box) and steady environment with no airflow, Ta is the temperature inside the cardboard box.

Component	90Vac		265Vac	
	Ta=38.3°C		Ta=36.4°C	
	T(°C)	Trise(°C)	T(°C)	Trise(°C)
Q1 SVD10N65F	86.3	48	79.3	42.9
D1 20L150CTF	88	49.7	88.2	51.8
T1 Core	63.6	25.3	64.5	28.1
T1 Wire	71	32.7	70.6	34.2
BD1 GBL06	82.4	44.1	51.5	15.1



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**Demo Board Test Report of High Performance 24V2A Adapter
with Current Mode PWM Controller KP201C built-in Peak Output Power Capability**

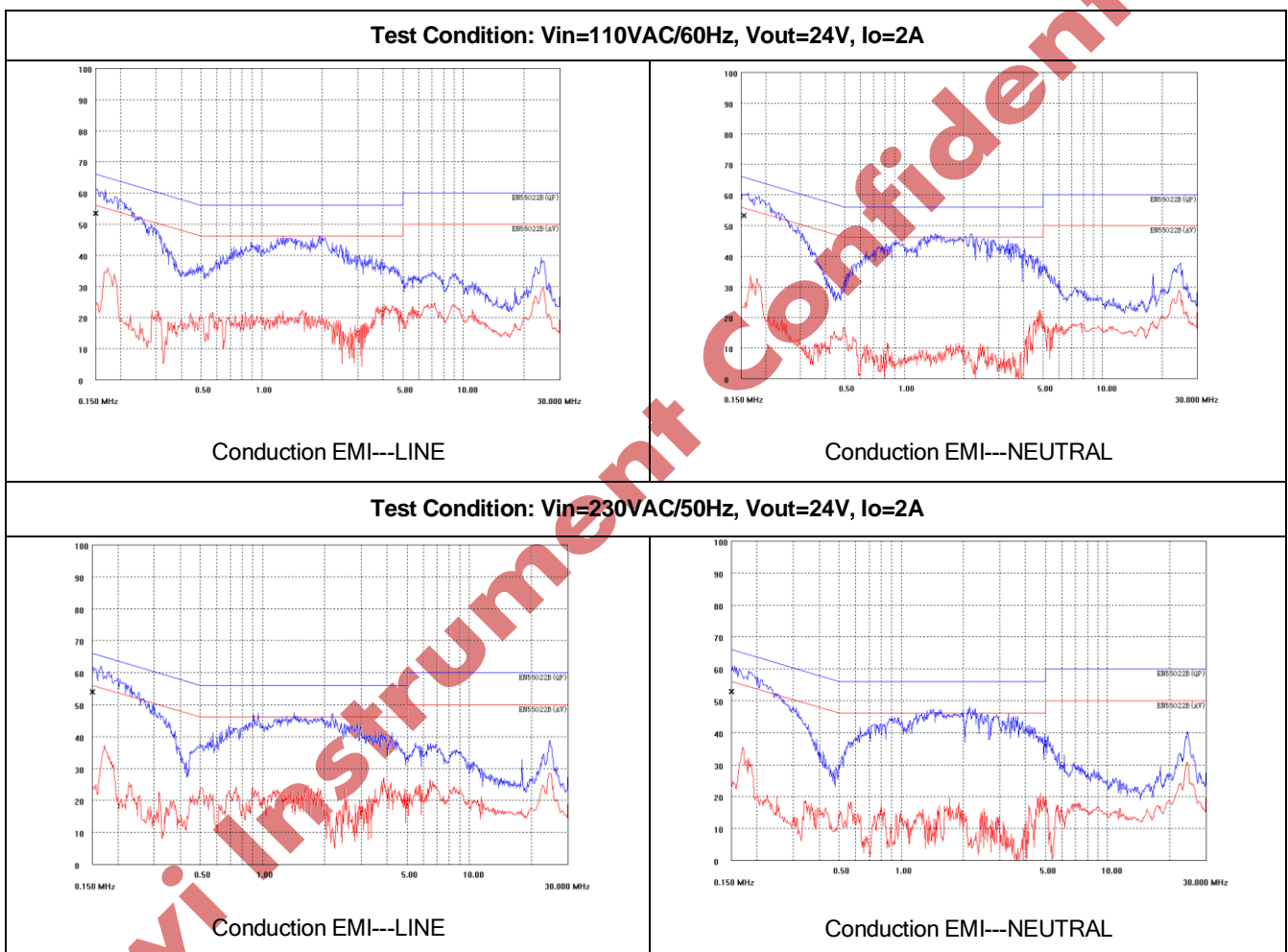
5. EMC/EMS Test Result

Standard:

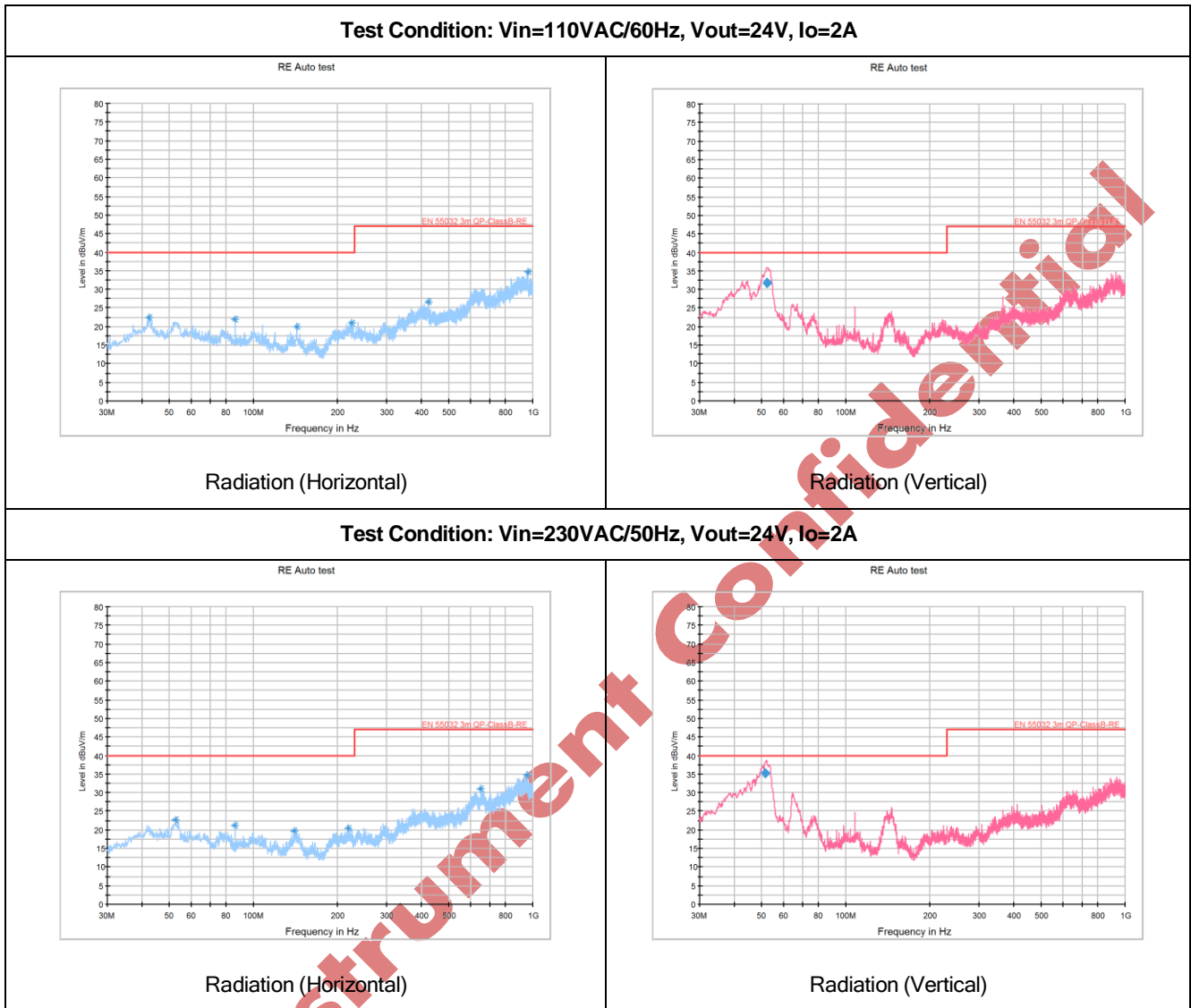
standard	EN55022B/55032B
content	CE & RE
requirement	6dB margin

5.1 Conducted Emissions

Result: Pass



5.2 Radiated Emissions



5.3 Surge Test

Line to Line 2kV surge testing was completed according to IEC61000-4-5. Input voltage was set at 230VAC/50Hz. Output was loaded at full load and operation was verified following each surge event. Each injection phase below is tested with 5 times and hold for 60 seconds before next one.

Input Voltage (VAC)	Surge Level (V)	Injection Location	Injection Phase (°)	Test Result (Pass/Fail)
230Vac/50Hz	+2000	L to N	0	Pass
	+2000	L to N	90	Pass
	+2000	L to N	180	Pass



**Demo Board Test Report of High Performance 24V2A Adapter
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	+2000	L to N	270	Pass
	-2000	L to N	0	Pass
	-2000	L to N	90	Pass
	-2000	L to N	180	Pass
	-2000	L to N	270	Pass

5.4 ESD Test

Input 220Vac/50Hz, Output 24V-2A. Discharge 10 times on each output terminals of cable end at each test voltage according to IEC61000-4-2

Air Discharge		Contact Discharge	
Test Voltage(kV)	Air Discharge	Test Voltage(kV)	Contact Discharge
14	Pass	4	Pass
-14	Pass	-4	Pass
15	Pass	6	Pass
-15	Pass	-6	Pass
16	Pass	8	Pass
-16	Pass	-8	Pass

5.5 EFT Test

Input 220Vac/50Hz, Output 24V-2A. According to IEC61000-4-4, set EFT pulse as 15ms operation time with every 300ms cycle, Trise=50ns, Thold=50ns, Operation frequency Fsw=5kHz.

Input Voltage (VAC)	EFT Peak Voltage (V)	Injection Location	Frequency(kHz)	Test Result (Pass/Fail)
230Vac/50Hz	+1000	L to N	5	
	+1000	L to N	5	
	-1000	N to L	5	
	-1000	N to L	5	



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5.6 Voltage Dip Test

Input 220Vac/50Hz, Output 24V-2A. Set voltage dips test according to IEC61000-4-11:2017 as below.

CLASS	Test Level and duration for voltage dips(50 Hz/60 Hz)				
CALSS 3	0% during 1/2 cycle	0% during 1 cycle	40% during 10/12 cycle	70% during 25/30 cycle	80% during 250/300 cycle
25/30 means 25 cycles for 50Hz Test, 30 cycles for 60Hz Test.					

Test Result is classified as below:

A: Normal performance within limits specified by the manufacturer, requestor or purchaser;

B: Temporary loss of function or degradation of performance, which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operation intervention;

C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention;

D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

Test Result: A (A/B/C/D)

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Test Setup Guide

1. Connect the "V+" and "V-" terminal to the positive and negative end of the load.
2. Set the AC Power Source between 90VAC and 265VAC.
3. Connect the AC Power Source terminal to the "L" and "N" terminals on the Demo Board
4. Turn on the AC Power Source to make system startup; and Turn off the AC Power Source to make system shutdown.

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**Demo Board Test Report of High Performance 24V2A Adapter
with Current Mode PWM Controller KP201C built-in Peak Output Power Capability**

Revision History

DATE	REV	DESCRIPTION
2019-04-15	1.0	First Release

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