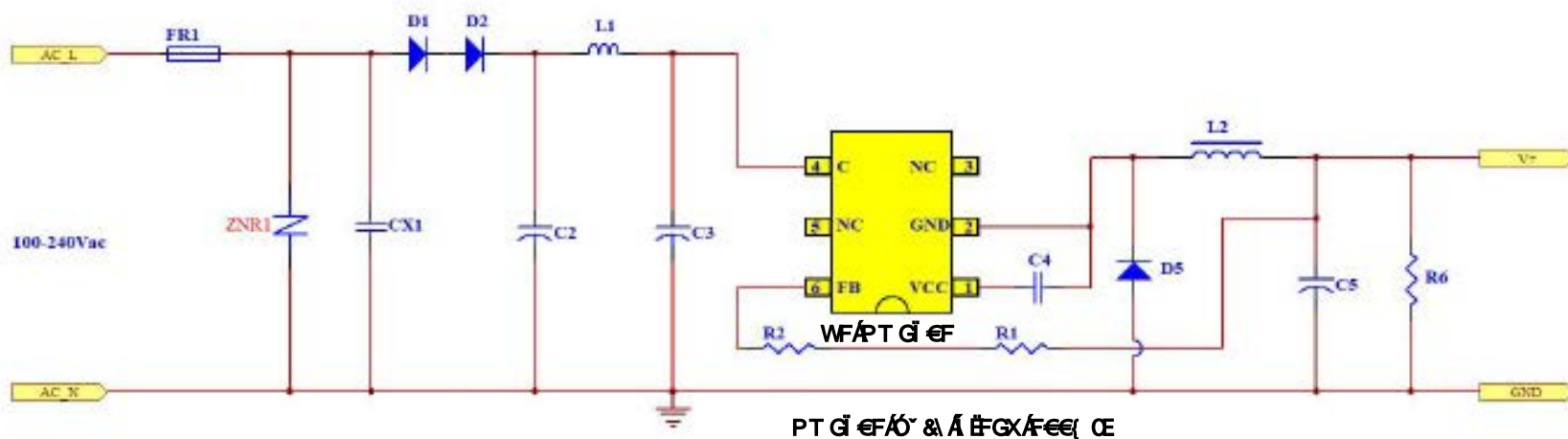


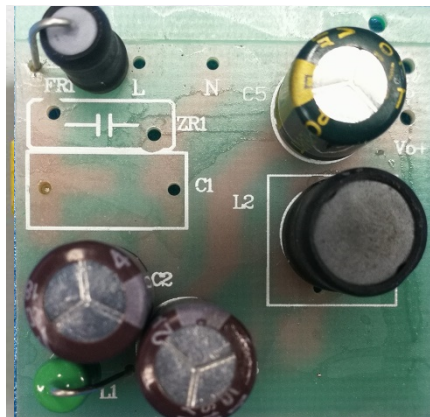
Description		Symbol	Min	Typ	Max	Units	Comment
Input							
Voltage		V_{IN}	90		265	V_{AC}	2 Wire
Frequency		f_{LINE}	47	50/60	63	Hz	
No-load Input Power (230V_{AC})					75	mW	
Output							
Const Voltage	Output Voltage	V_{OUT_CV}	4.6	5	5.4	V	Measured at the end of PCB
	Output Current	I_{OUT_CV}	100			mA	
Output Ripple Voltage		V_{RIPPLE}			150	mV_{P-P}	Measured at the End of PCB With Rated Load @T_A = 25 °C 20 MHz Bandwidth
Total Output Power							
Continuous Output Power		P_{OUT}		0.5		W	
Over Current Protection		I_{OUT_MAX}			150	mA	Auto-restart
Active Mode Efficiency		η	50			%	Measured at PCB terminal, V_{IN} = 115VAC (T_{AMB} = 25 °C).
Environmental							
Conducted EMI			Meets CISPR14/ EN55014B				
Safety			Meets IEC60335				
Ambient Temperature		T_{AMB}	0		85	° C	Free convection, sea level, Bare PCB

2. Evaluation Results

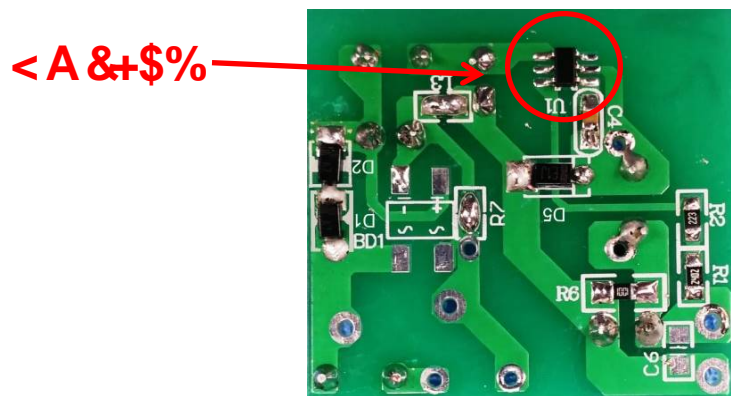
	Test Items	Spec	Remark
1	Standby Power	$\leq 75\text{mW}$	Pass
2	Efficiency	$\geq 50\%$	Pass
3	Output Voltage	4.60-5.40V	Pass
4	Dynamic	4.50-5.50V	Pass
5	Over Current Protection & Recovery	$\leq 150\text{mA}$	Pass
6	Ripple & Noise	$< 150\text{mV}$	Pass
7	Ambient Temp(Bare PCB)	$\leq 85^{\circ}\text{C}$	Pass
8	EMC		Pass



4. Circuit Board Photograph



Top side



Bottom side

5. Bill of Material

编号	材料名称	型号规格	单位	位置符号	用量
1	贴片电阻	24K/1206 1%	PCS	R1	1
2		22K/ 1206 1%	PCS	R2	1
3		1K/ 0805 5%	PCS	R6	1
4	贴片电容	1uF/10V/0805 X7R 10%	PCS	C4	1
5	集成贴片	PTG /SOT23-6L	PCS	WF	1
6	贴片二极管	A7(1N4007) SOD-123	PCS	D1,D2	2
7		ES1J(SF18) SOD-123	PCS	D5	1
8	保险丝电阻	线绕电阻 10R/1W	PCS	FR1	1
9	色环电感	1mH , 1W	PCS	L1	1
10	工字电感	1mH , DR8*10mm	PCS	L2	1
11	电解电容	2.2uF/400V ϕ 8*12mm	PCS	C2,C3	2
12		220uF/16V ϕ 8*12mm 高频低阻	PCS	C5	1
	总计				14
说明：					
雷击1.5KV以上需增加压敏电阻ZNR1,1.5KV可不选用。					

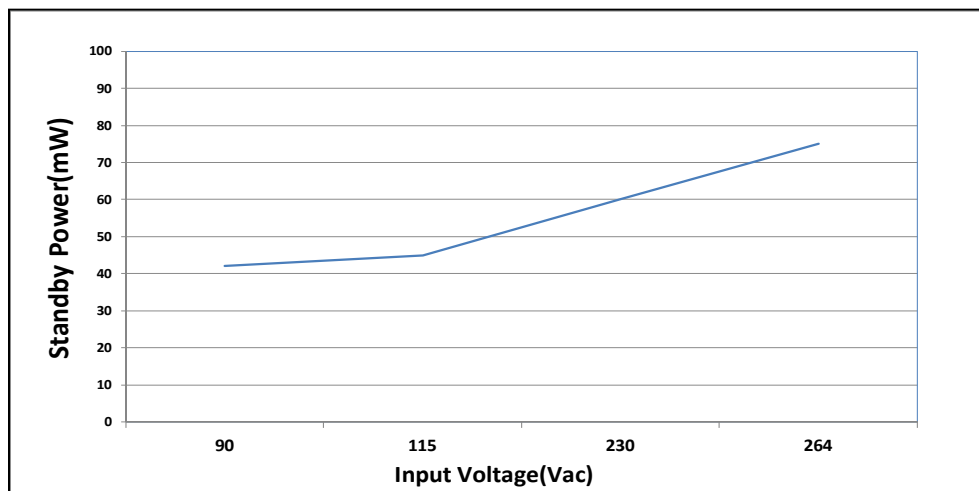
6. Ripple, Regulation and Efficiency

Item	Io(mA)	Vo(V)End of PCB	Pin(mW)	Eff(%)	Ripple(mV)	OCP(mA)
90V/60Hz	0	4.94	42		62.0	130
	10	4.90	109	44.95	72.0	
	20	4.89	189	51.75	70.0	
	50	4.93	430	57.33	66.4	
	100	4.94	836	59.09	60.8	
115V/60Hz	0	4.95	45		65.6	130
	10	4.90	112	43.75	74.4	
	20	4.90	192	51.04	73.6	
	50	4.94	430	57.44	67.2	
	100	4.94	826	59.81	60.0	
230V/50Hz	0	4.95	60		80.0	140
	10	4.90	134	36.57	96.0	
	20	4.89	212	46.13	100.0	
	50	4.92	454	54.19	96.0	
	100	4.95	860	57.56	88.0	
264V/50Hz	0	4.93	75		100.0	142
	10	4.89	143	34.20	106.0	
	20	4.88	227	43.00	101.0	
	50	4.92	474	51.90	100.0	
	100	4.95	880	56.25	92.0	

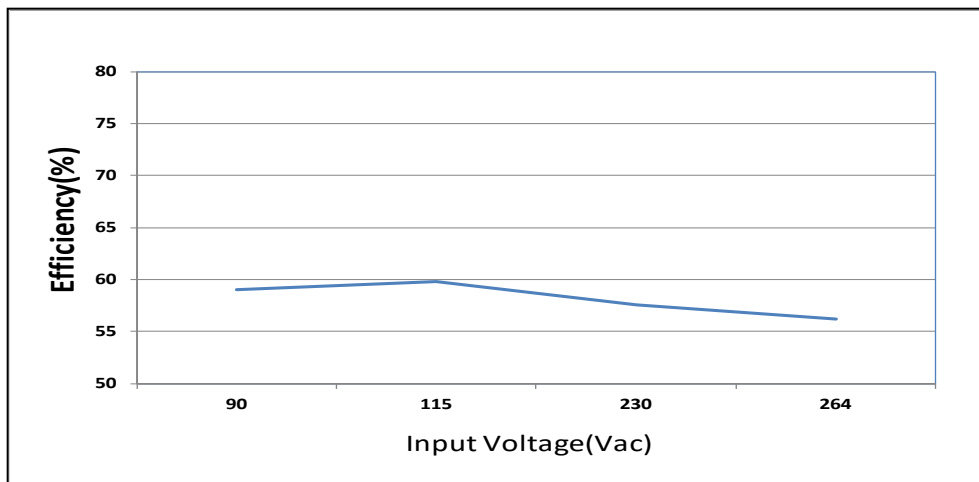
* Note: Vout is measured at end of PCB.

7. Standby power and Efficiency

Standby power

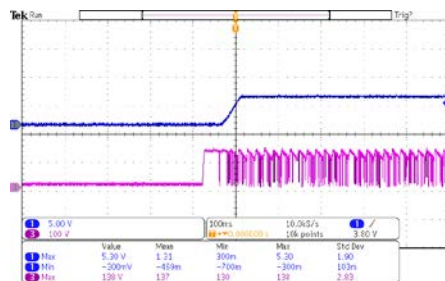


Efficiency



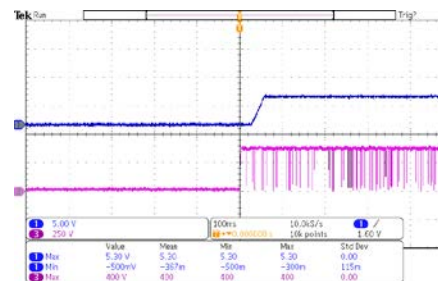
8. Vce Waveform

Vin=90Vac/50Hz, start up at full Load



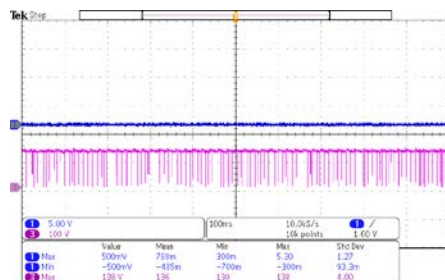
Vce Max=138V

Vin=264Vac/50Hz, start up at full Load



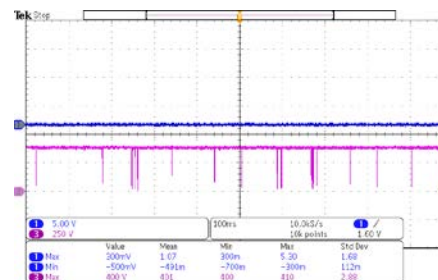
Vce Max=400V

Vin=90Vac/50Hz, output short



Vce Max=138V

Vin=264Vac/50Hz, output short

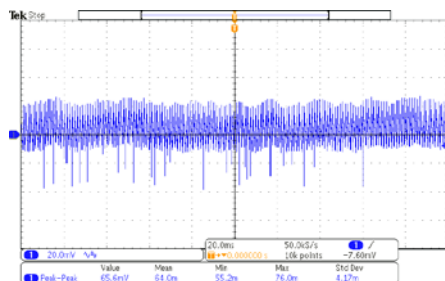


Vce Max=400V

*** Note: Vce < 800*90%V=720V**

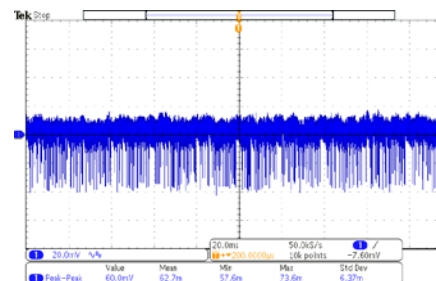
9. Ripple and Noise

Vin=115Vac/50Hz, No Load



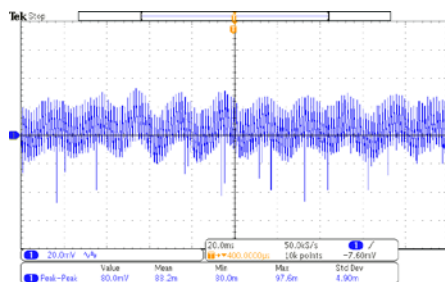
Vripple=65.6mV

Vin=115Vac/50Hz, Full Load



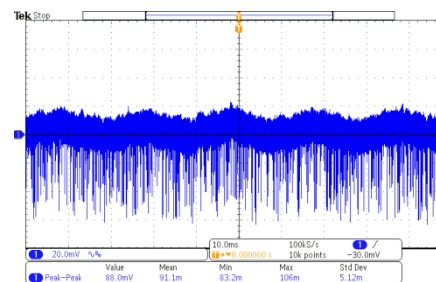
Vripple=60mV

Vin=230Vac/50Hz, No load



Vripple=80mV

Vin=230Vac/50Hz, Full load

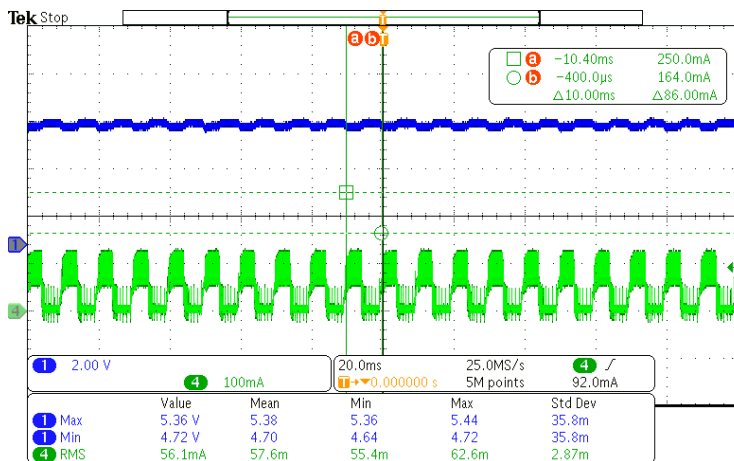


Vripple=88mV

*** Note: $V_{RIPPLE} < 150mV$**

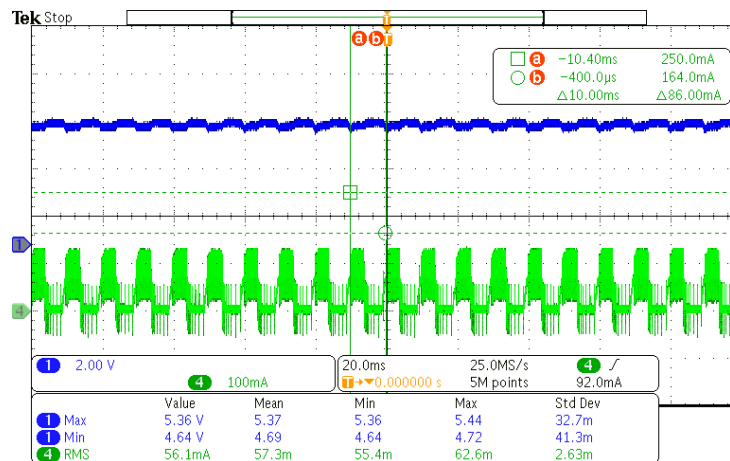
10. Dynamic Load

Vin=90Vac/60Hz, Io from 10% to 90%
Slew rate:255mA/uS, F=100Hz



Vout=4.72-5.36V

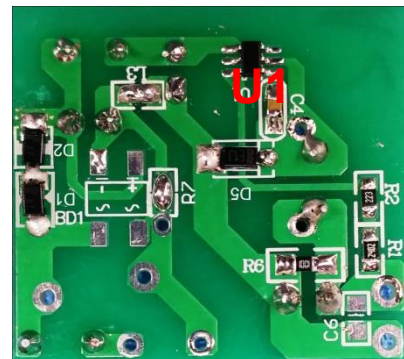
Vin=264Vac/50Hz, Io from 10% to 90%
Slew rate:255mA/uS, F=100Hz



Vout=4.64-5.36V

• Note: 4.50V < Vout < 5.50V, Vout is measured at end of PCB.

11. Component Thermal



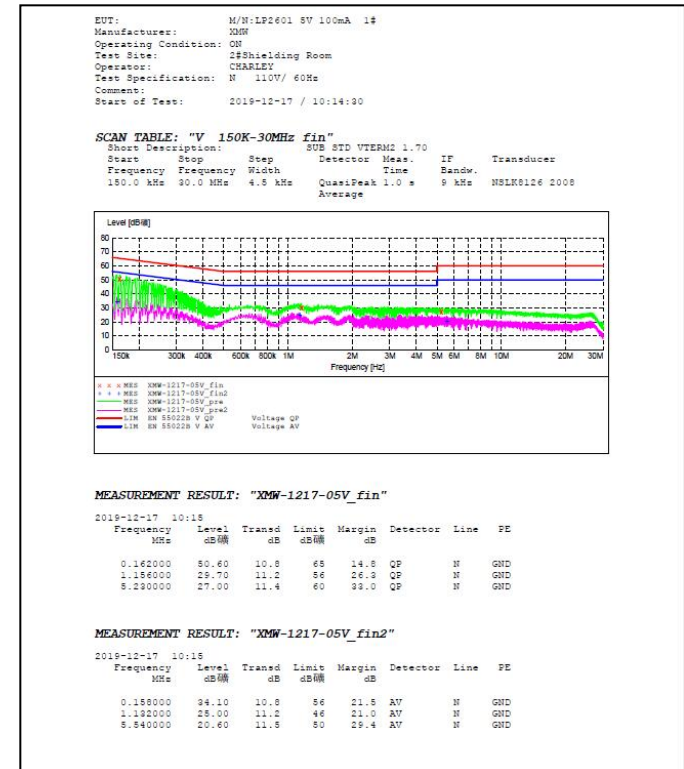
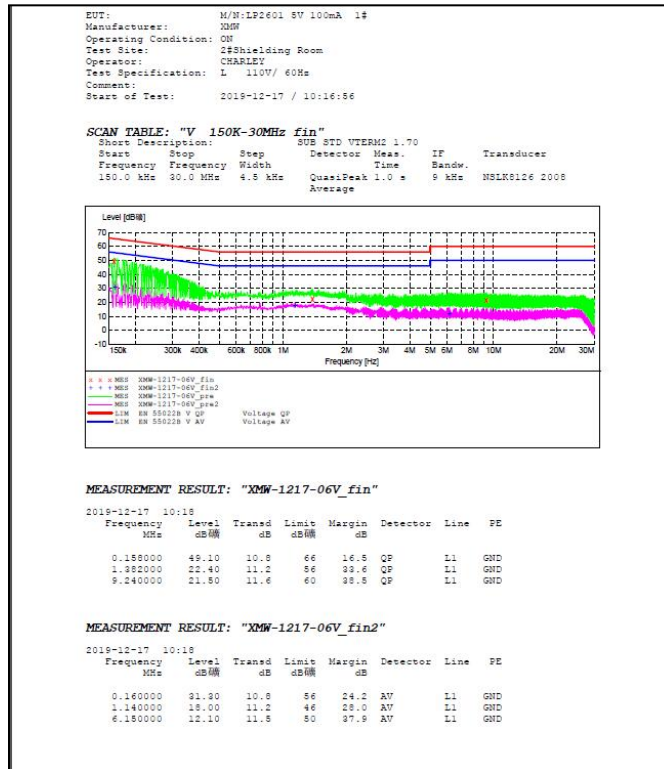
Item	Thermal (°C)					
	90Vac/Full Load		230Vac/Full Load		265Vac/Full Load	
	T	ΔT	T	ΔT	T	ΔT
U1-PT G €F	110	25	104	19	105	25
L2-DR8*10	96	11	93	8	98	13
Ambient Temp	85					

*** Note: All Components temperature < 120°C .**

12.1 Conducted Emission

Vin=110Vac/60Hz, L Channel

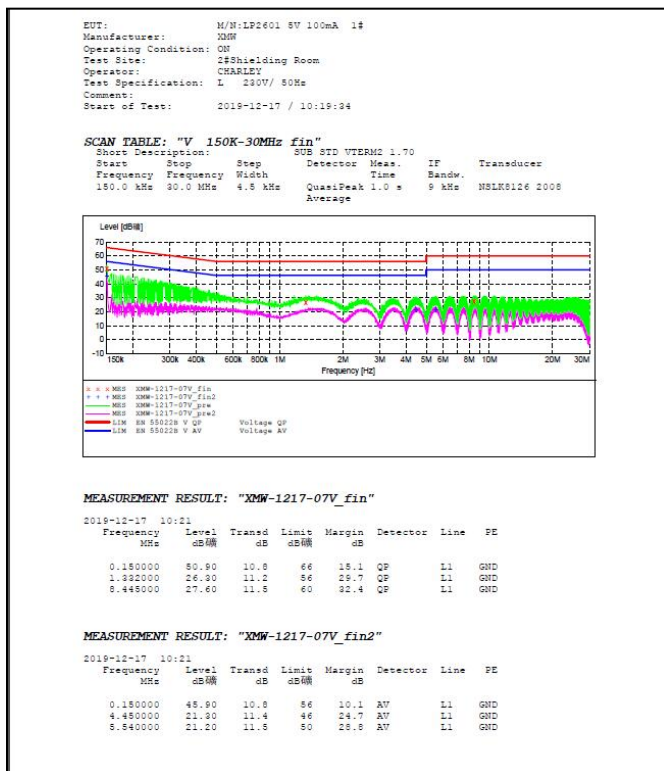
Vin=110Vac/60Hz, N Channel



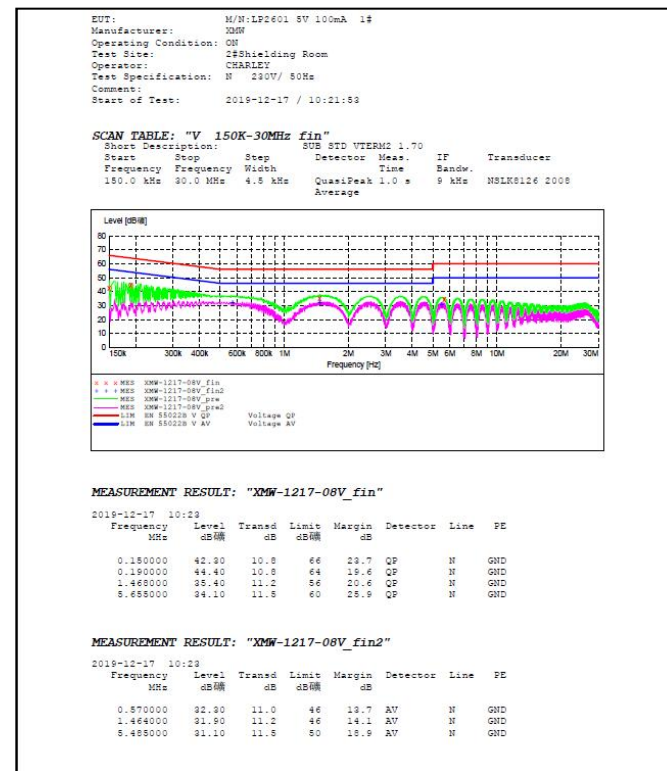
*** Note: Full Resistive Load. Vout(-) is floating.**

12.2 Conducted Emission

Vin=230Vac/50Hz, L Channel



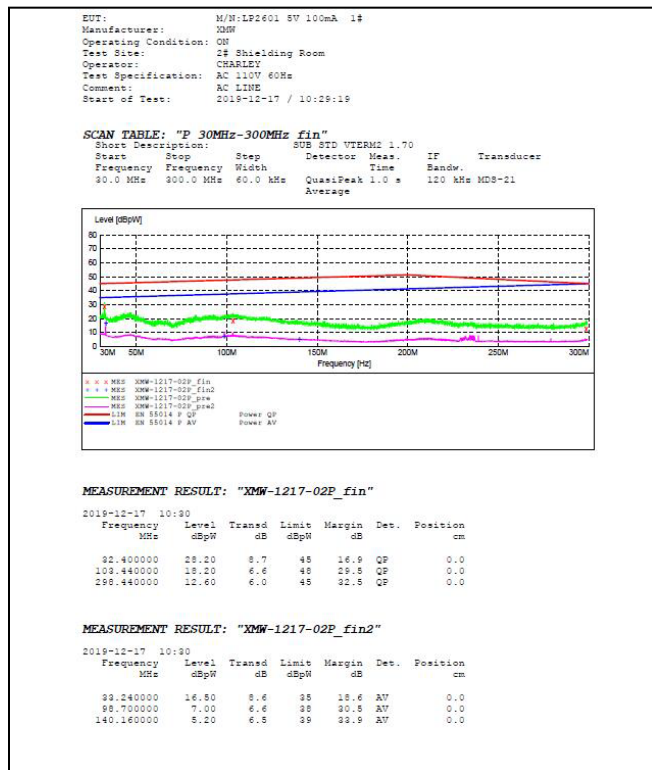
Vin=230Vac/50Hz, N Channel



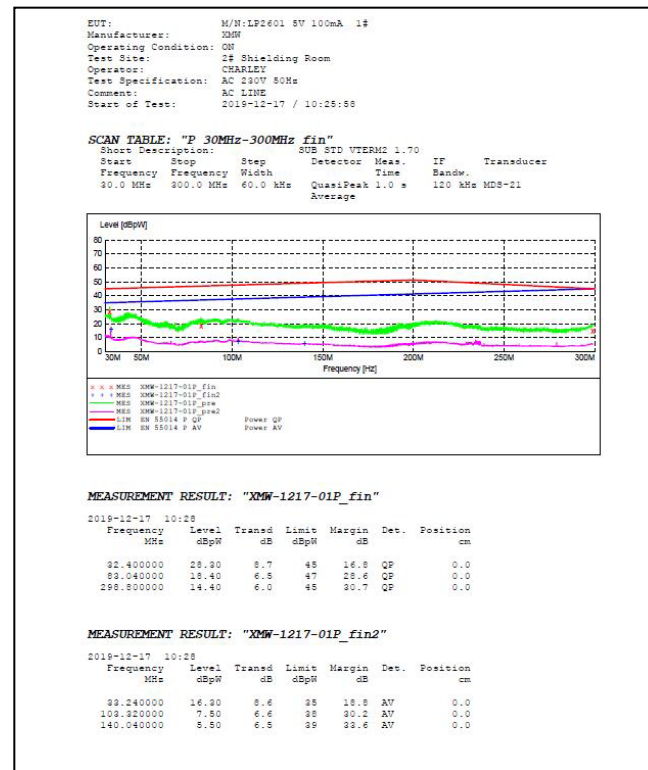
*** Note: Full Resistive Load. Vout(-) is floating.**

13. Disturbance Power

Vin=110Vac/60Hz



Vin=230Vac/50Hz



*** Test Conditions: Vin=230Vac/Full Resistive Load , Vout(-) is floating.**