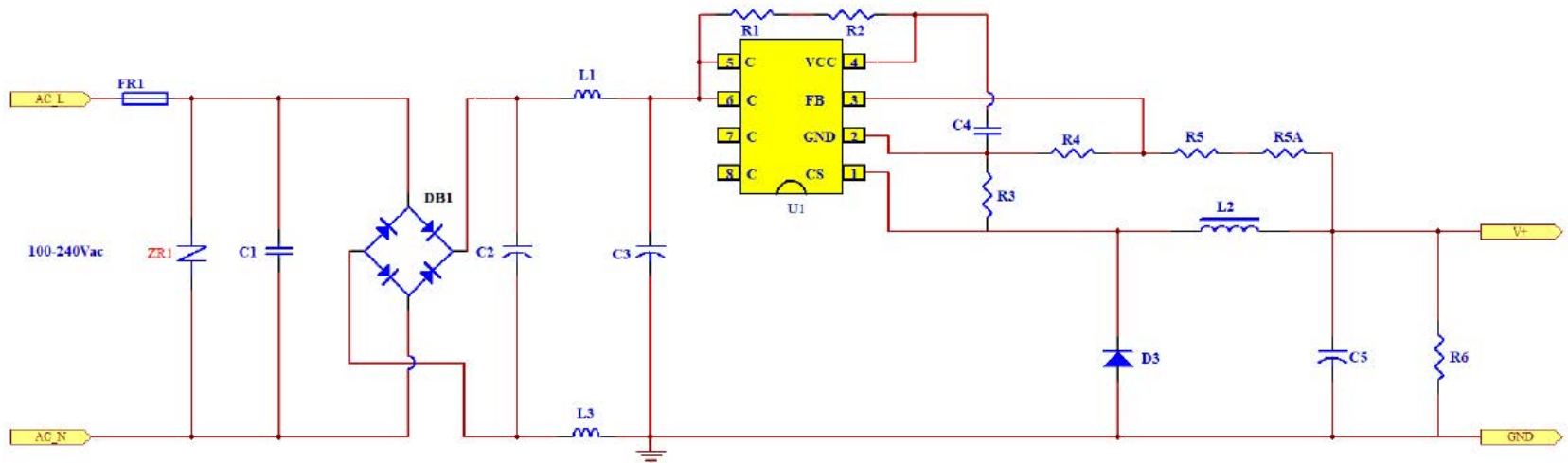


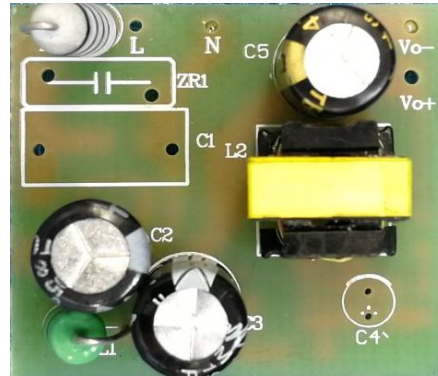
Description		Symbol	Min	Typ	Max	Units	Comment
Input							
Voltage		V_{IN}	90		265	V_{AC}	2 Wire
Frequency		f_{LINE}	47	50/60	63	Hz	
No-load Input Power (230V_{AC})					100	mW	
Output							
Const Voltage	Output Voltage	V_{OUT_CV}	11.40	12	12.60	V	Measured at the end of PCB
	Output Current	I_{OUT_CV}		300		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}		3.6		W	
Over Current Protection		I_{OUT_MAX}			500	mA	Auto-restart
Active Mode Efficiency		η	70			%	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		40	° C	Free convection, sea level

	Item	Spec	Remark
1	Standby Power	<100mW	Pass
2	Efficiency	$\geq 70\%$	Pass
3	Output Voltage	11.40-12.60V	Pass
4	Dynamic	11.00-13.00V	Pass
5	Over Current Protection & Recovery	$\leq 500\text{mA}$	Pass
6	Ripple & Noise	< 150mV	Pass
7	Surge Immunity	1.5KV	Pass
8	Electrical Fast Transient	4KV	Pass

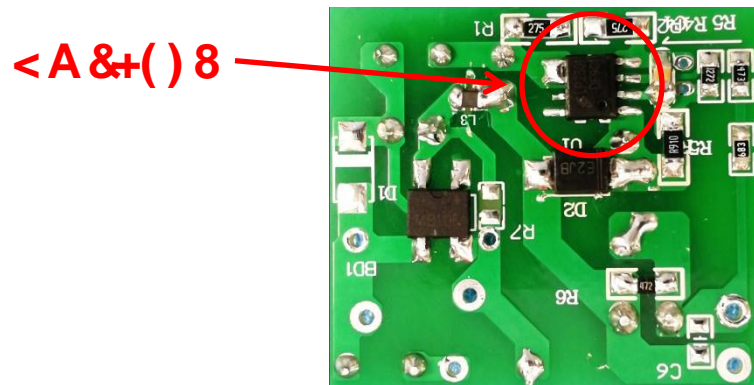


HM2745D Buck

4. Circuit Board Photograph



Top side



Bottom side

编号	材料名称	型号规格	单位	位置符号	用量
1	贴片电阻	2.7M/ 1206 5%	PCS	R1,R2	2
2		47K/ 0805 1%	PCS	R5	1
3		68K/ 0805 1%	PCS	R5A	1
4		12.7K/ 0805 1%	PCS	R4	1
5		0.91R/ 1206 1%	PCS	R3	1
6		4.7K/ 1206 5%	PCS	R6	1
7	贴片电容	1uF/16V/0805 X7R 10%	PCS	C4`	1
8	集成贴片IC	HM2745D/SOP8	PCS	U1	1
9	贴片桥堆	MB10S	PCS	BD1	1
10	贴片二极管	ES2J(SF28) SOD-123	PCS	D2	1
11	保险丝电阻	线绕电阻 10R/1W	PCS	FR1	1
12	色环电感	1mH , 1W	PCS	L1	1
13	贴片电感	10uH/0805	PCS	L3	1
14	电感	300uH/EE10	PCS	L2	1
15	电解电容	4.7uF/400V ϕ 8*12mm	PCS	C2,C3	2
16		470uF/25V ϕ 8*12mm 高频低阻	PCS	C5	1
	总计				18
说明：					
雷击1.5KV以上需增加压敏电阻ZR1，1.5KV雷击可不选用。					

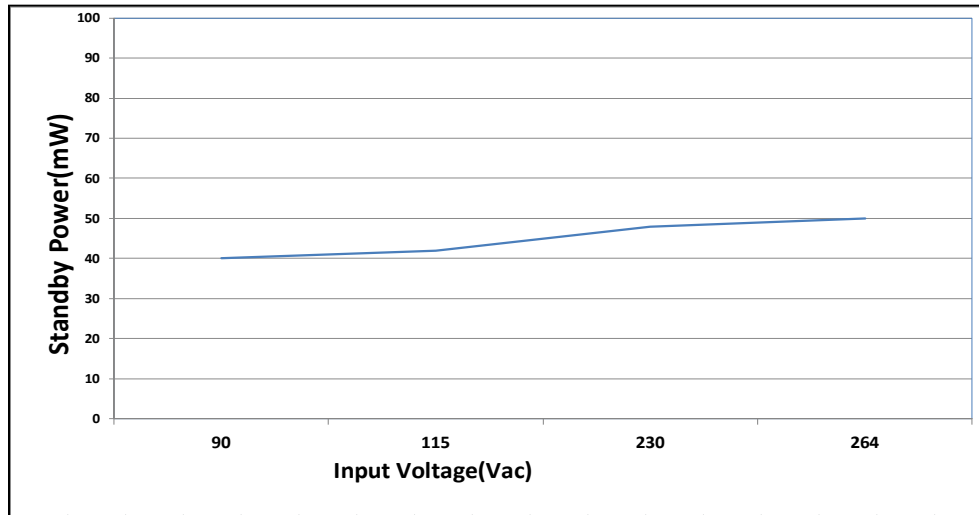
6. Ripple, Regulation and Efficiency

Item	Io(mA)	Vo(V)End of PCB	Pin(mW)	Eff(%)	Ripple(mV)	OCP(mA)
90V/60Hz	0	12.00	40		44.0	420
	30	11.85	459	77.45	48.0	
	100	11.67	1470	79.39	50.0	
	200	11.57	2950	78.44	58.0	
	300	11.55	4460	77.69	80.0	
115V/60Hz	0	12.01	45		42.0	420
	30	11.85	466	76.29	48.0	
	100	11.68	1480	78.92	46.0	
	200	11.59	2950	78.58	54.0	
	300	11.56	4420	78.46	74.0	
230V/50Hz	0	12.01	60		48.0	450
	30	11.85	496	71.67	50.0	
	100	11.70	1560	75.00	44.0	
	200	11.59	3030	76.50	60.0	
	300	11.55	4520	76.66	84.0	
264V/50Hz	0	12.00	63		50.0	460
	30	11.85	500	71.10	54.0	
	100	11.71	1580	74.11	50.0	
	200	11.59	3070	75.50	58.0	
	300	11.53	4560	75.86	80.0	

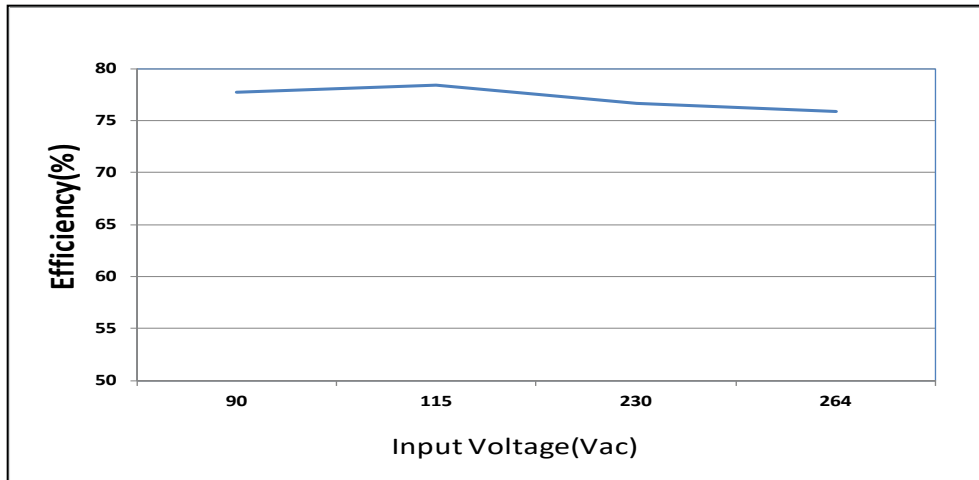
*** Note: Vout is measured at end of PCB.**

7. Standby power and Efficiency

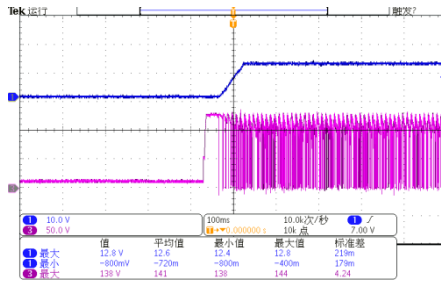
Standby power



Efficiency

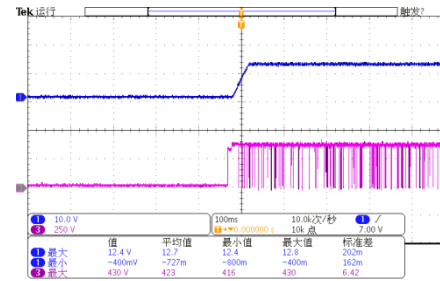


Vin=90Vac/50Hz, start up at full Load



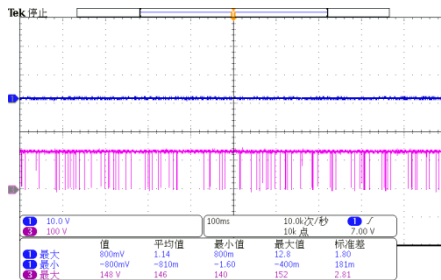
Vce Max=136V

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



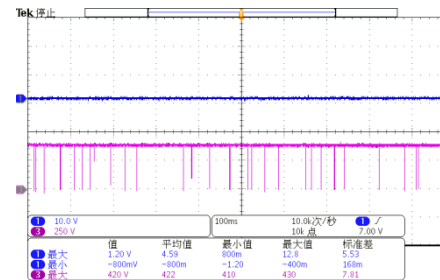
Vce Max=430V

Vin=90Vac/50Hz, output short



Vce Max=148V

Vin=264Vac/50Hz, output short

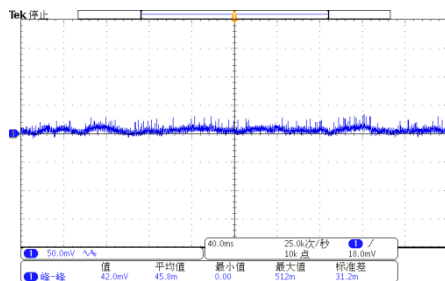


Vce Max=420V

*** Note: Vce < 800V**

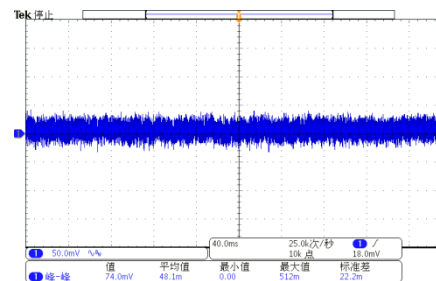
9. Ripple and Noise

Vin=115Vac/50Hz, No Load



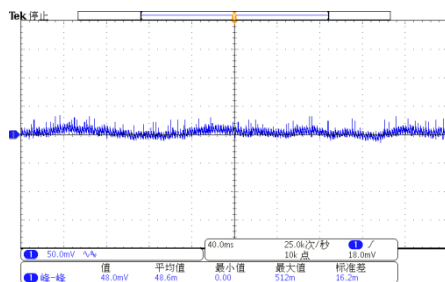
Vripple=42mV

Vin=115Vac/50Hz, Full Load



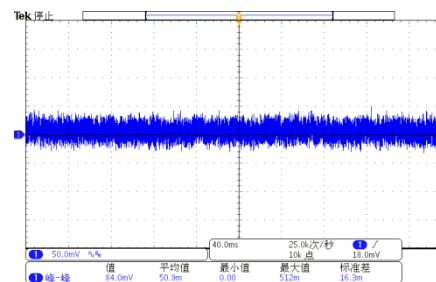
Vripple=74mV

Vin=230Vac/50Hz, No load



Vripple=48mV

Vin=230Vac/50Hz, Full load

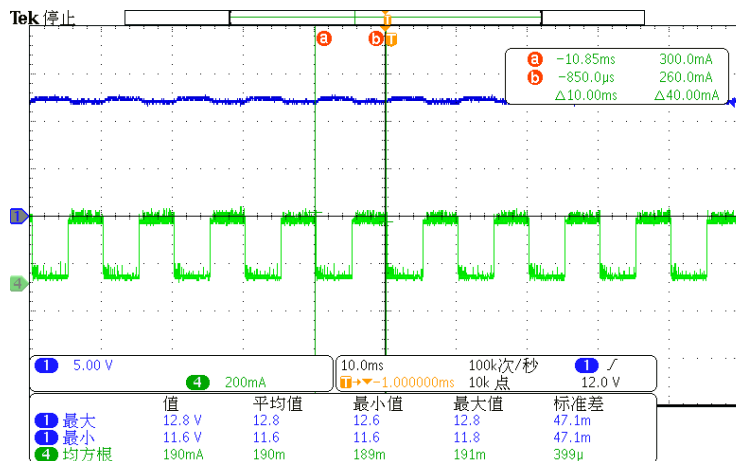


Vripple=84mV

*** Note: $V_{RIPPLE} < 100mV$**

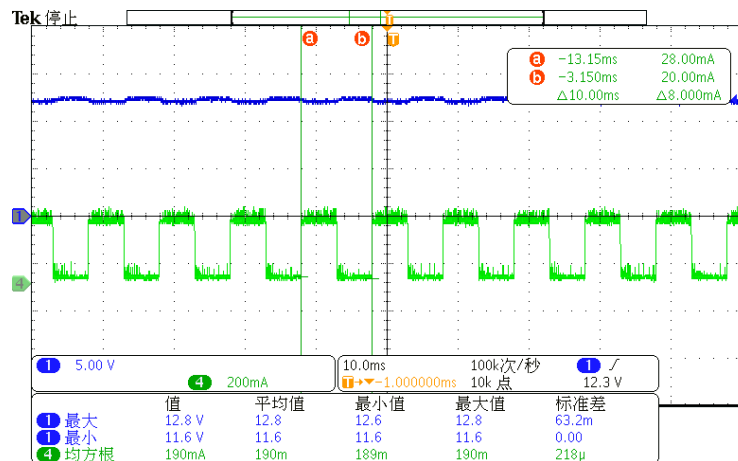
10. Dynamic Load

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



Vout=11.60-12.80V

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

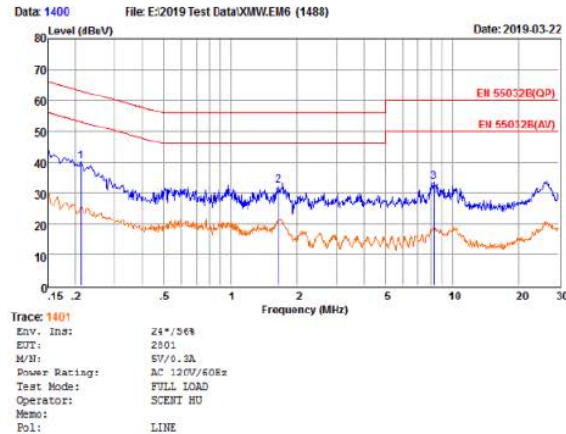


Vout=11.60-12.80V

• Note: 11.00V < Vout < 13.00V, Vout is measured at end of PCB.

11.1 Conducted Emission

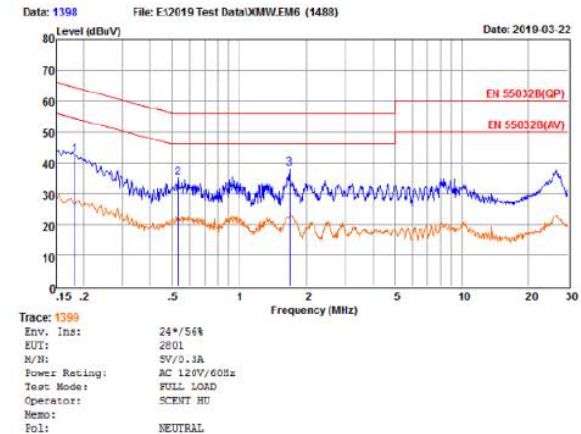
Vin=120Vac/60Hz, L Channel



Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.21	20.50	9.63	0.03	10.00	40.16	63.18	-23.02 Peak
2	1.64	12.83	9.64	0.05	10.00	32.52	56.00	-23.48 Peak
3	6.24	13.78	9.68	0.07	10.00	33.53	60.00	-26.47 Peak

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Vin=120Vac/60Hz, N Channel

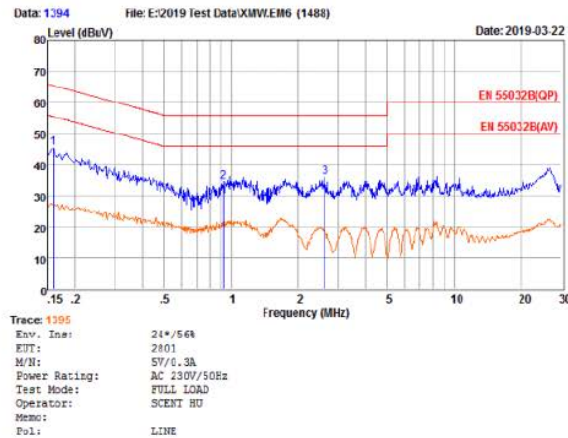


Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.18	22.93	9.63	0.02	10.00	42.58	64.42	-21.84 Peak
2	0.53	15.52	9.62	0.04	10.00	35.18	56.00	-20.82 Peak
3	1.68	18.24	9.63	0.05	10.00	37.92	56.00	-18.08 Peak

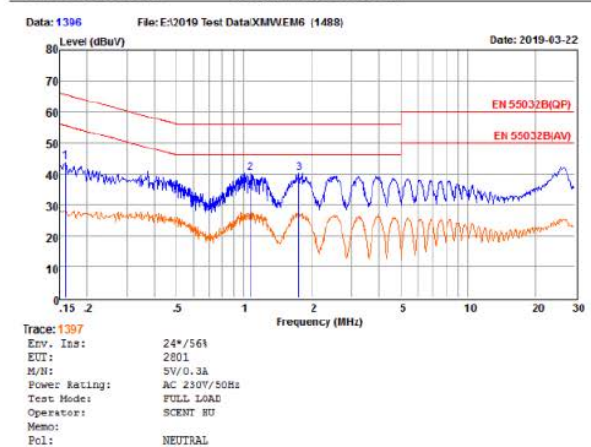
Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

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

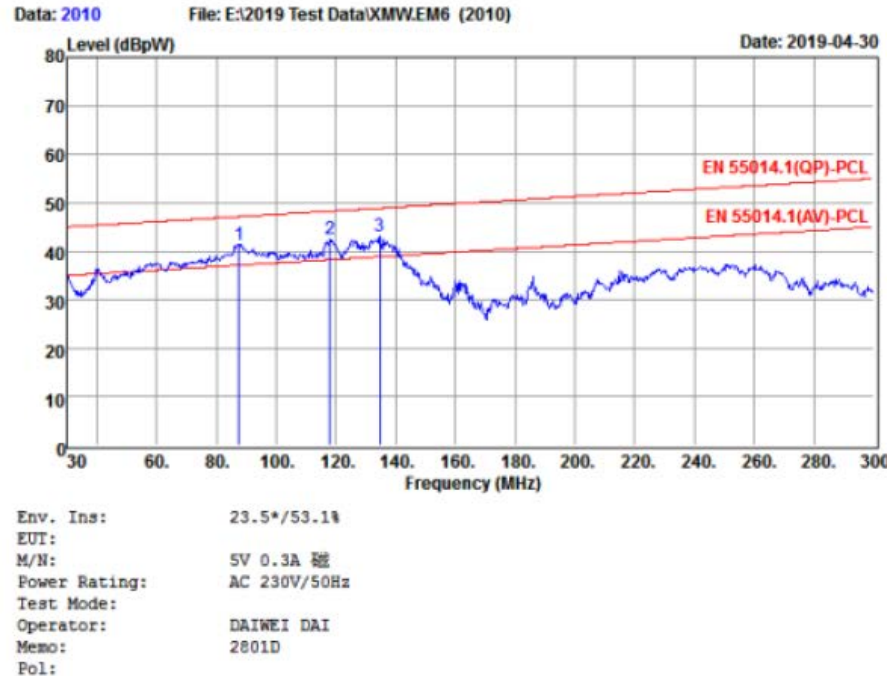
Vin=230Vac/50Hz, L Channel



Vin=230Vac/50Hz, N Channel



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



	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	87.51	15.88	1.16	24.43	10.00	41.47	47.14	-5.67	Peak
2	118.02	16.36	1.54	24.68	10.00	42.58	48.27	-5.69	Peak
3	134.76	15.99	2.21	24.79	10.00	42.99	48.89	-5.90	Peak

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

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