

Efficiency & Power Factor & Ripple & Energy Star Test Report

MODEL : HP1-S2850GD-F14C

Sample No: S-023-044
Customer: PG-850SM
Test Date: 26-May-23
Test Item: Efficiency, Power Factor, Ripple, Energy Star
Test Equipment: Chroma6560, 6630, 63123A, 63102A, 6314A, Fluke45, Tektronix-DPO3034

Typical Efficiency (50% Load) : 91.40%
Average Efficiency : 89.92%
80 Plus Compliant : Yes
80 Plus Level : GD
Test Result : PASS



Specification :

Output Rail :	+5V	+3.3V	+12V1	-12V	+5Vsb
Maximum load	20.0 A	20.0 A	70.8 A	0.3 A	3.0 A
Minimum load	0.0 A	0.0 A	0.3 A	0.0 A	0.0 A
Ripple Max	40 mV	40 mV	40 mV	60 mV	40 mV
Regulation	± 3.0 %	± 3.0 %	± 3.0 %	± 3 %	± 3 %
Combined Load	100.0 W	850.0 W	3.6 W	15.0 W	
Total Power	850.0 W				

Test Loading :

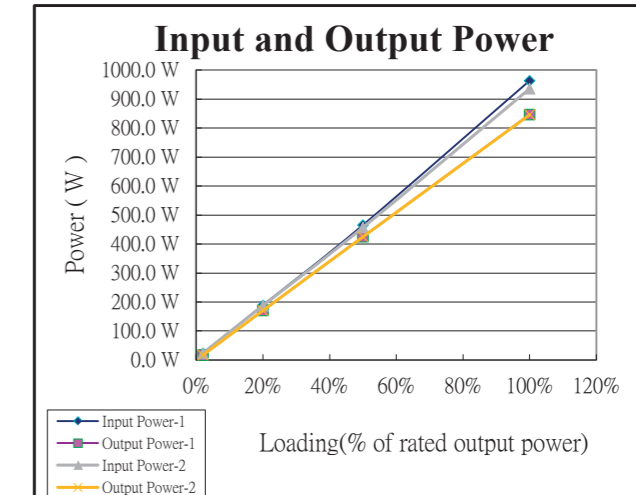
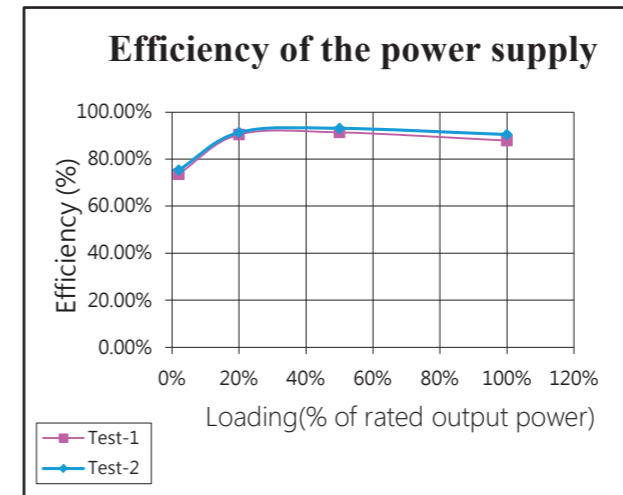
Loading	+5V	+3.3V	+12V1	-12V	+5Vsb	Pout
2%	0.21A	0.21A	1.24A	0.01A	0.05A	17.0 W
20%	2.11A	2.11A	12.43A	0.05A	0.53A	170.0 W
50%	5.29A	5.29A	31.08A	0.13A	1.32A	425.0 W
100%	10.57A	10.57A	62.16A	0.26A	2.63A	850.0 W

Test-1 AC Input:115V/60HZ

Loading	Output Voltage Measure Value					Pin (W)	Power Factor	Eff.	Pout (W)
	+5V	+3.3V	+12V1	-12V	+5Vsb				
No Load	5.036V	3.318V	12.051V	11.356V	5.099V			-	-
2%	5.035V	3.317V	12.041V	11.928V	5.096V	23.2 W	0.8091	73.62%	17.1 W
20%	5.028V	3.313V	12.057V	11.936V	5.071V	188.8 W	0.9911	90.47%	170.8 W
50%	5.017V	3.304V	12.006V	11.474V	5.032V	465.3 W	0.9962	91.40%	425.3 W
100%	4.997V	3.289V	11.951V	11.783V	4.962V	963.2 W	0.9974	87.90%	846.6 W
MAX.	0.72%	0.55%	0.47%	-0.54%	1.97%				
MIN.	-0.06%	-0.33%	-0.41%	-5.37%	-0.77%				
Ripple	6 mV	6 mV	20 mV	30 mV	14 mV	No load		Comments :	
Ripple	7 mV	9 mV	17 mV	24 mV	14 mV	2% load		Comments :	
Ripple	9 mV	10 mV	10 mV	36 mV	10 mV	20% load		Comments :	
Ripple	11 mV	14 mV	18 mV	45 mV	14 mV	50% load		Comments :	
Ripple	17 mV	18 mV	23 mV	51 mV	23 mV	100% load		Comments :	

Test-2 AC Input:230V/50HZ

Loading	Output Voltage Measure Value					Pin (W)	Power Factor	Eff.	Pout (W)
	+5V	+3.3V	+12V1	-12V	+5Vsb				
No Load	5.036V	3.318V	12.051V	11.356V	5.099V			-	-
2%	5.035V	3.317V	12.041V	11.928V	5.096V	22.6 W	0.5013	75.37%	17.1 W
20%	5.028V	3.313V	12.057V	11.936V	5.071V	187.0 W	0.9431	91.36%	170.8 W
50%	5.017V	3.304V	12.006V	11.474V	5.032V	456.8 W	0.9838	93.10%	425.3 W
100%	4.997V	3.289V	11.951V	11.783V	4.962V	935.7 W	0.9964	90.48%	846.6 W
MAX.	0.72%	0.55%	0.47%	-0.54%	1.97%				
MIN.	-0.06%	-0.33%	-0.41%	-5.37%	-0.77%				
Ripple	6 mV	6 mV	20 mV	30 mV	14 mV	No load		Comments :	
Ripple	7 mV	9 mV	17 mV	24 mV	14 mV	2% load		Comments :	
Ripple	9 mV	10 mV	10 mV	36 mV	10 mV	20% load		Comments :	
Ripple	11 mV	14 mV	18 mV	45 mV	14 mV	50% load		Comments :	
Ripple	17 mV	18 mV	23 mV	51 mV	23 mV	100% load		Comments :	



Energy Star

Test Condition : Test the power supply with normal line and the main outputs off (PS_ON# High state) condition .

Pass/Fail Criteria : The power supply efficiency shall not less than specified limit.

Test Result : PASS

Test-1

Vin (V)	+5Vs (PS_on# at high state)					Decide
	Current	Voltage	Pin (W)	Efficiency	Require.	
230V/50Hz	0.000A	5.098V	0.123V	-	< 0.5W	PASS
	0.045A	5.097V	0.348V	65.9%	≥50%	
	0.090A	5.096V	0.614V	74.7%	≥55%	
	0.550A	5.083V	3.370V	82.9%	≥75%	
	1.000A	5.071V	6.049V	83.8%	≥75%	
	1.500A	5.056V	9.023V	84.1%	≥75%	
	3.000A	5.014V	18.083V	83.2%	≥75%	

T5&T6 TEST

Test Condition : Test the power supply with AC Input 115V/60HZ and 100% load

T5	18.2ms	100% LOAD
T6	1.5ms	100% LOAD

Output Protection Test

Test Condition : Test the power supply with AC Input 115V/60HZ

Test Item	Test SPEC			Test Value	Test Result
	SPEC	MIN.	MAX.		
OPP	850 W	1105 W	1445 W	1193 W	PASS
+12V OCP	70.8 A	92.1 A	120.4 A	104.6 A	PASS
+5V OCP	20.0 A	24.0 A	32.0 A	27.7 A	PASS
+3.3V OCP	20.0 A	24.0 A	32.0 A	27.3 A	PASS