Global Input AC to DC Converter

Uviri™

5W Wiggle™

Application	Device	Input Voltage	Power Output	Max Output	Mode
Charger/Adapter	Wiggle™	85-265 VAC 47-63 Hz	5W	5V at 1A	Switched Mode

Key Features:

- ***Ultra Efficient***

  76% peak efficiency (see graph below)
  74% average efficiency at 120 VAC
  42 mW standby power at 120 VAC
  Exceeds US ENERGY STAR 2.0 and CEC
  Exceeds Efficiency Level V
  Exceeds EISA 2007
  Exceeds EU Code of Conduct 4.0
  Exceeds EU Ecodesign (EuP Tier 1 and 2)
  Exceeds China CECP
  Exceeds China USB Charger Spec (YD/T 1591-2006)
  Four star EC Integrated Product Policy standby power rating at 230 VAC (see graph below)

- ***Ultra Compact***

  Main body fits within 1” x 1” x 1.74” (25.4mm x 25.4mm x 44.0mm)

- ***Ultra Environmentally Friendly***

  EU RoHS compliant
  No PVC used in cabling
  No plastic film labeling
  No Cadmium, Lead, Mercury, Hexavalent Chromium, or PBB
  No CFCs, HCFCs, HBFCs, or other ozone depleting chemicals
  Ultra compact form factor reduces PCB and plastic usage
  Output voltage is hardware adjustable to allow recycling and reuse

- ***Ultra Safe***

  ±5% Constant Voltage (CV) and ±10% Constant Current (CC) operation (see graph below)
  Load over-current and control open loop auto-restart
  Over-temperature auto-restart
  Line overload and catastrophic failure fuse
  Load reverse polarity fuse
  Battery discharge limited by zener diode when charger not connected to mains
  3 kV minimum input to output isolation
  ±15 kV minimum ESD protection
  2 kV common line surge and 1 kV differential line surge tolerance
  EMI compliant with EN55022 and CISPR-22 Class B standard (see graph below)
  0°C to 45°C operation
  $120mV_{p-p}$ ripple worst case
  Safety Agency Approval dependent on country of use
  Three year warranty from date of manufacture

Specification

Input

Parameter	Conditions / Notes	Min.	Typ.	Max.	Units
Input Voltage Range	global input range	85		265	VAC
Input Frequency	global input range	47		63	Hz
Input Current	120VAC at 60Hz, 25°C			105	mA
	100VAC at 60Hz, 25°C			125	mA
No Load Power Consumption	100 VAC at 60Hz, 25°C		40		mW
	120 VAC at 60Hz, 25°C		42		mW
	240 VAC at 60Hz, 25°C		88		mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Power			5.0		W
Output Voltage Regulation		4.75	5.0	5.25	VDC
Output Current Regulation		0.9	1.0	1.1	A
Output Minimum Current		0			A
Ripple Voltage	85-265 VAC at 60Hz, full load, 25°C			70	mV_{p-p}
	85-265 VAC at 60Hz, worst case, 25°C			120	mV_{p-p}
Peak Energy Efficiency	120 VAC at 60Hz, 25°C			76	%
Average Active Efficiency	120 VAC at 60Hz, 25°C		74		%
	240 VAC at 60Hz, 25°C		72		%
Startup Time	120 VAC at 60Hz, 4.75V threshold, 5Ω load, 25°C		12		ms

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage Temperature		-25		85	°C
Operating Ambient Temp.	free convection, sea level	0		45	°C
Storage Humidity	non-condensing	10		90	%
Operating Humidity	non-condensing	20		80	%
RoHS / REACH	compliant				

Safety

Parameter	Conditions	Min.	Typ.	Max.	Units
Safety	designed to meet IEC 950 / UL 1950 Class II, UL 60950 Class II, and UL 1310 Class II				
Conducted EMI	meets EN55022 / CISPR-22 Class B	> 2.9 dB margin			
Differential Line Surge	differential mode 2Ω, IEC 1000-4-5	1			kV
Common Mode Line Surge	common mode 12Ω, IEC 1000-4-5	2			kV
ESD	contact & air discharge, IEC 61000-4-2	±15			kV
Hi-Pot	input to output	3			kV
Interference	designed to meet FCC Title 47 part 15				

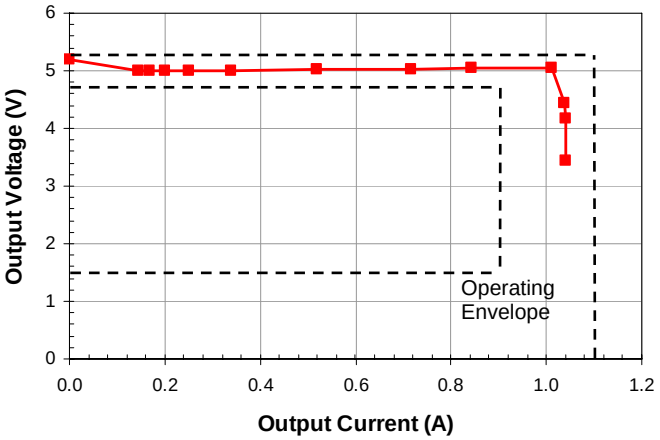

Figure 1. Typical Load Regulation at end of a 1.83m cable, 24AWG, 120VAC, 60Hz, 25°C

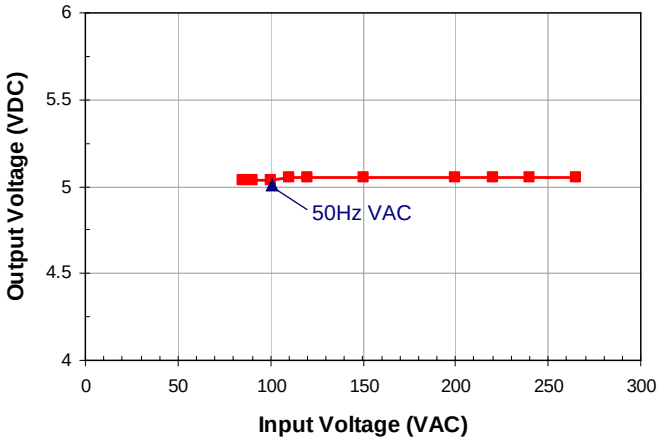

Figure 2. Typical Line Regulation at end of a 1.83m cable, 24AWG, 5Ω load, 60Hz VAC, 25°C

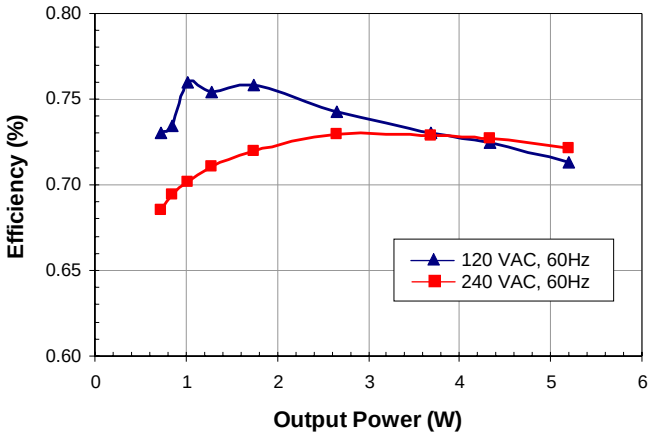

Figure 3. Typical Efficiency vs. Output Power

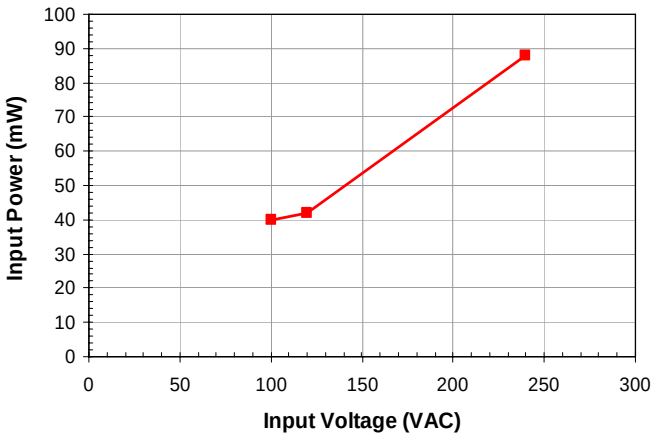

Figure 4. Typical No Load Input Power, 60Hz

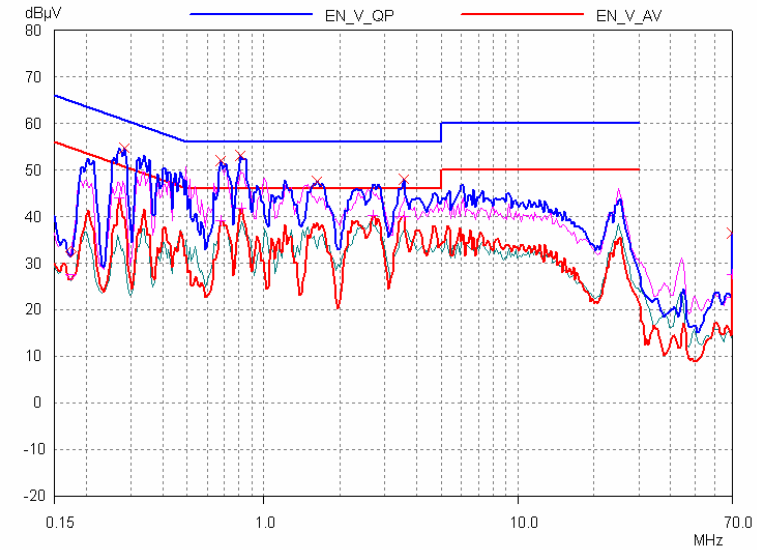

Figure 5. Typical Conductive EMI at Neutral.
Vin = 115 VAC input : QP : Pink
Avg : Green
Vin = 230 VAC input: QP : Blue
Avg : Red

Freq. (MHz)	QP (dB)	Limit (dB)	Margin (dB)
0.28303	54.76	60.73	5.97
0.67763	52.01	56.00	3.99
0.80690	53.06	56.00	2.94
1.62236	47.65	56.00	8.35
3.53133	47.93	56.00	8.07
70.00000	36.49		

Freq. (MHz)	Avg (dB)	Limit (dB)	Margin (dB)
0.26987	44.12	51.12	7.00
0.67763	39.12	46.00	6.88
0.81981	41.90	46.00	4.10
2.69616	40.25	46.00	5.75
3.53133	40.08	46.00	5.92
70.00000	27.54		

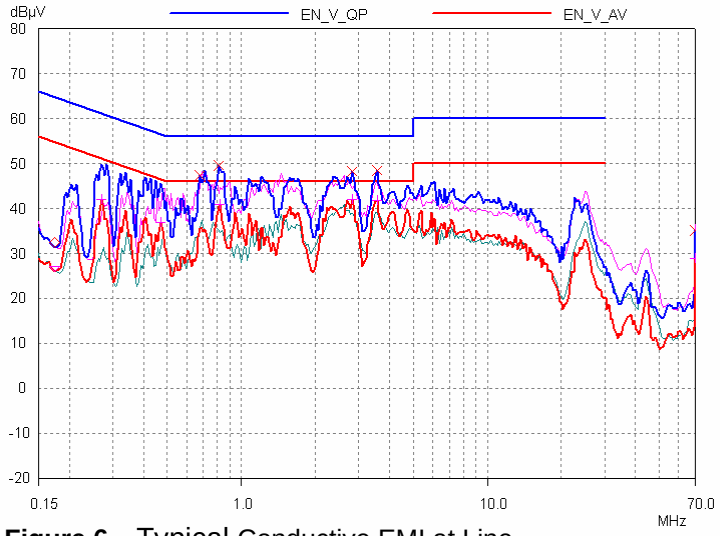

Figure 6. Typical Conductive EMI at Line.
Vin = 115Vac input : QP : Pink
Avg : Green
Vin = 230Vac input: QP : Blue
Avg : Red

Freq. (MHz)	QP (dB)	Limit (dB)	Margin (dB)
0.67763	47.33	56.00	8.67
0.80690	49.61	56.00	6.16
2.82766	48.28	56.00	7.72
3.53133	48.39	56.00	7.61
70.00000	36.19		

Freq. (MHz)	Avg (dB)	Limit (dB)	Margin (dB)
0.26987	44.97	51.12	9.15
0.47036	36.99	46.51	9.52
0.81981	40.95	46.00	5.05
2.82766	41.91	46.00	4.09
3.53133	41.69	46.00	4.31
70.00000	28.83		

Ordering Information

UWG 5W 50V 183 xxxxxx

- **U*viri* ™ Wiggle™ Family**
- **Maximum Output Wattage**
  2W, 3W, 4W, or 5W
- **Customer Specified Nominal Output Voltage (0.1V increments)**
- **Approximate Cable Length in cm**
  (Use 000 for PCB mounted USB connector)
- **Connector Type (Customer Specified)**

Document Revision History

August, 2009	Original Document Release	U-AB101A	TDD

For the latest updates, visit our website: www.uviri.com

This product includes patented technology and may include patent pending technology.