Product Brief

Community PC Platform

Intel-powered Community PC Customized Power Supply Unit

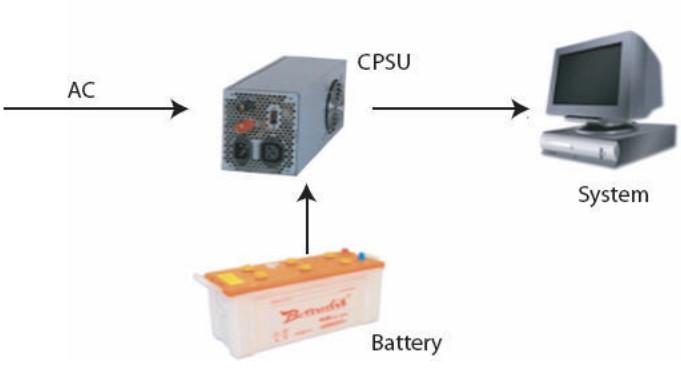
Introduction

The Intel-powered Community PC has been designed with a Customized Power Supply Unit (CPSU) to cater to the specific needs of the Indian rural communities. It has been built with the aim of providing:

- A compact unit
- An accurate battery meter on the front panel
- A complete integrated circuit that meets the requirements of the power supply as well as a UPS.

The CPSU eliminates the need to invest in an extra UPS.

Power Supply



CPSU unit diagram

Technical Specifications

The technical specifications of the CPSU are listed in the table below:

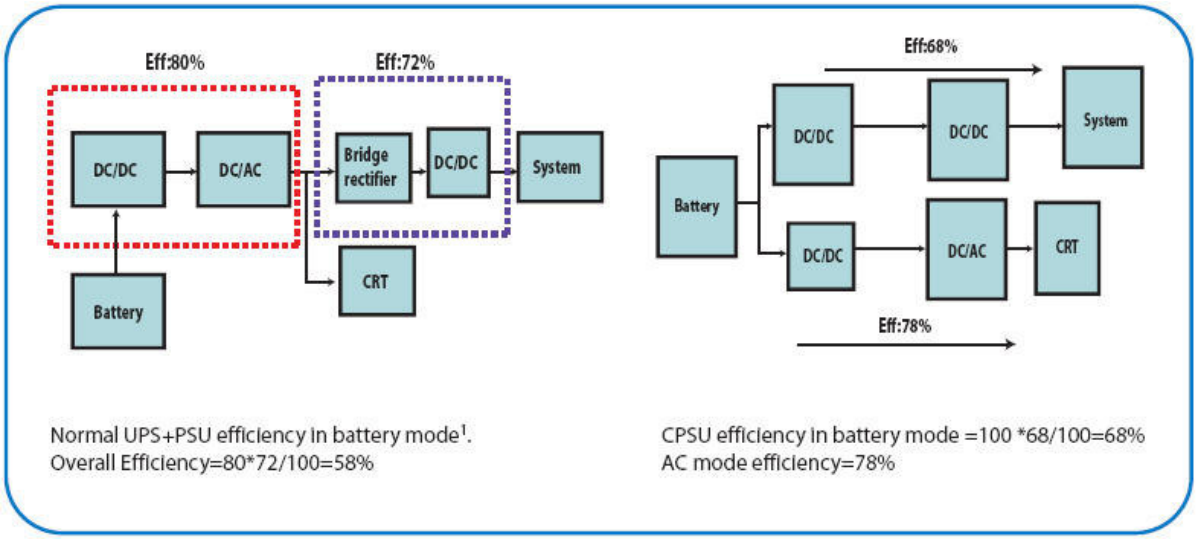
Parameter	Value
Rating	170 VA for UPS only Max DC Output Power: 120 W Max AC Output Power: 100 W Peak AC Output Power: 180 W
Input DC Supply	12V
AC Mains Supply	180-300 VAC rms
Input Frequency	47 Hz ~ 63 Hz
Output Voltage	230 Vrms +/- 10%
Temperature: Operating Ambient Non Operating Ambient	 -5°C to 45°C -40°C to 70°C
Efficiency	68%
Maximum Discharge Voltage	10.5V
Maximum Discharge Current	30A
Battery Remaining Capacity Indicators	LED indicators present on the front panel of the Community PC

The CPSU Advantage

The CPSU is less prone to malfunctions and failures as a result of the superior engineering and integration efforts invested in its design. The CPSU has been customized for operation with the unique motherboard used in the Intel-powered Community PC and may not be used as a power source for other motherboards. The advantages of the CPSU over the normal PSU + UPS solutions in the market are enumerated in the table below:

Parameter	CPSU Unit	Equivalent market available combination[1]	Advantage
Charging Current	6.6 A	3~5 A	Less charging time required for batteries
Efficiency in Battery mode	68%	58%	In battery mode, the efficiency is high due to the integrated design
Operating Temperature Range	-5 to 45oC	0 to 40oC	Good performance even in adverse weather situations
Battery Monitoring	Visual and audio indicators available	Only audio indicators present	Better monitoring of the battery. Helps in increasing battery life
Power Management	For PSU, input and output power is 120W	Input Power is 200W, Output Power is 120W	Effective utilization
No Load Power Consumption	Less than 2W	Ranges between 3 to 6W	Longer battery backup time
Backup Time	4 to 8 hrs depending on load. Highest backup time recorded is 8hrs and lowest is 3.5 hrs	3 to 6 hrs only	CPSU provides long working hours even in cases of power failure
Size	Integrated UPS+PSU	Separate UPS & PSU units	Compact size requires less space

The CPSU Efficiency Advantage is illustrated below:



Normal UPS+PSU efficiency in battery mode[1].
Overall Efficiency=80*72/100=58%

CPSU efficiency in battery mode =100 *68/100=68%
AC mode efficiency=78%

Performance under Stress Conditions

The performance of the CPSU unit during stress tests, wherein extra load was added to the Intel-powered Community PC system, is tabulated below:

Extra Load	Wattage of the Device	Battery Backup Time
Monitor 15 inch	70	4 ~ 5 Hrs
Printer	35	6 ~ 7 Hrs
External Modem	21	7 ~ 8 Hrs

Effect of Trickle Current

When voltage drops below normal, the Intel-powered Community PC automatically shifts from the AC mode to the battery mode. The battery, however, continues to be charged with the trickle time.

Caution

The CPSU should be used for CRT/TST monitors only.