zubabox

a solar internet hub connecting communities
from Computer Aid International

Computer Aid International

Zuba Box is an internet connectivity solution that is mobile, solar-powered and easy to set up. Perfect for locations lacking electricity or communication connections, Zuba Box contains everything required to establish a community resource centre or an IT classroom.

Zuba Box is designed to work anywhere in the world, requiring no wired internet or (mains) electricity supply. The thin-client computer network is powered by solar panels on the roof of the container. Internet connection is wireless.

The standard version is simple to set up: simply place the already prepared array of solar panels on the roof of the container, and connect 2 wire connectors, plug and play! The server has software pre-installed and wiring is provided to connect the 11 flat-screen monitors. Internet connectivity can be provided via a cellular USB, wifi or VSAT (not provided and will be different in each country).

Computer Hardware
for 11 concurrent users
- 1 refurbished Pentium 4 PC, 3.0Ghz+, with 3Gb of RAM and 80Gb+ hard disk
- 2 NComputing X550 desktop virtualisation cards
- 11 low-power monitors, keyboards & mice

Solar Hardware
- low-power lights for operating the cyber cafe in low-lighting conditions;
- a ventilation fan for the server;
- sockets for recharging up to 10 mobile phones while the system is running;
- additional capacity in case the cafe requires powering a VSAT modem or printer;
- an advanced inverter, limiting the rate of discharge of the batteries and the maximum power draw accepted by the system, in order to ensure longer battery-life.

We only use poly-crystalline solar panels and the latest Advanced Glass Mat (AGM) type cell batteries. They are maintenance free units, providing the lowest conversion loss. The systems are designed to operate throughout the day. Additionally they can accommodate a number of hours of usage during a rainy day (or at night time).

> *"Previously we were unable to reach the world outside Chikanta or Zambia, but since the internet came, we are able to connect to any part of the world... every chief in Zambia wants this"* **Chief Chikanta, Zambia**

In addition to the standard model we have an economy model for those who wish to construct the internal fit themselves locally and keep costs to a minimum.

Features/Model	Economy	Standard
Power Consumption (Max)	485W	485W
Solar Panels	3	6
Power Produced (Max Peak)	700W	1400W
Battery Cells	2	4
Consecutive Usage at Night or on a Rainy Day (Max)	6 Hours	12 Hours
Risk of Daylight Interruption in the Rainy Season	3 Days/Year	0 Days/Year
Insulated Internal Walls, Counter and User Benches	No	Installed
Insulated Ceiling & Light, Electrical & Network Wiring	No	Installed
Cost not including shipping	**£17,000**	**£22,000**

Please Note: *the costs and performance statistics indicated above are given as a guide and will vary according to the geographical location of the Zuba Box.*

Frequently Asked Questions

Q. What else is contained in the Zuba Box?

A. *The package includes*

- *low-power ceiling lighting*
- *a ventilation fan for the server*
- *sockets for recharging up to 10 mobile phones while the system is running*
- *additional capacity in case the unit is required to power a VSAT modem or printer*
- *an advanced inverter, limiting the rate of discharge from the batteries and the maximum power draw accepted by the system, in order to ensure longer battery-life*

Q. What is NComputing and what are the benefits?

A. *NComputing is a desktop virtualization thin-client based solution. A Pentium 4 PC, 3.0 Ghz+, with 3GB of RAM and 80Gb+ hard disk is used to serve up to 11 users. The computer is fitted with 2 NComputing X550 desktop virtualization cards plus 11 low-power monitors. The main benefit is the ability for up to 11 concurrent users to access computer applications and connectivity through one single computer/server. Computer Aid provides two professionally refurbished P4 computers, one as backup incase of any failures.*

Q. How long will the batteries last following a full charge?

A. *12 hours.*

Q. How much power is generated on a normal day?

A. *Peak energy production is 1400W per hour.*

Q. How much power is consumed in a normal day?

A. *The system uses a maximum of 485W per hour. The system is designed to work throughout a full day with daylight or overcast weather. Additionally the system can operate for a number of hours during a rainy day or at night time.*

Q. Do you provide a warranty for the new electrical and electronic appliances?

A. *No warranty is provided for the electrical components.*

Q. What is the warranty for the solar panels, inverter and batteries?

A. *The battery warranties naturally assume the cells have been used within their healthy limits. When opening up the cells for a warranty claim the manufacturers can easily tell if the cells have been excessively over discharged and abused, just the same as a car manufacturer could tell if the car had been run round in first gear all the time. Batteries will last 5 to 10 years if used as per instructions. Solar Panel has life expectancy of 25 years. Inverter and charge controller warranty: 2 years. Storage batteries warranty: 5 years (2 year replacement 3 year pro-rated). A free replacement will be provided by the manufacturer if the unit fails within the first 24 months. Shipping costs from the factory to the containers location would be additional. After the first 24 months of service, effective batteries will be adjusted for a period of up to 60 months, prorated from the date sold at prices in effect at the time of adjustment.*

Q. What connectivity solution is recommended?

A. *Depending on the area where the system is installed, different options might be available, such as Cellular wireless, Wifi/ Wimax or VSAT. VSAT is recommended only in places where no other option is available.*

Q. What is the total cost of ownership for a year?

A. *This depends entirely on the form of connectivity chosen and the cost of that connectivity in the local country. The power from the sun is free. Solar panels last for up to 25 years. As for batteries, their duration depends on usage; if the system is not used consistently at night time, they could last for five years before needing to be changed. It is possible to generate income form users fees for connectivity and phone charging or from the delivery of localized service to sustain the solar container.*

Q. Why can't the standard model be assembled locally to reduce on the capital costs?

A. *We have no local partner who can build or equip the standard model to our specification.*

Q. Why is it called Zuba Box?

A. *Zuba is the word for 'Sun' in Nyanja, a language that is spoken in Zimbabwe, Malawi and Souther Zambia - the area where our first Zuba Box's were deployed to harness power from the sun to provide internet connectivity.*

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