



# REN 19-14 STD



## RUGGED TO THE CORE

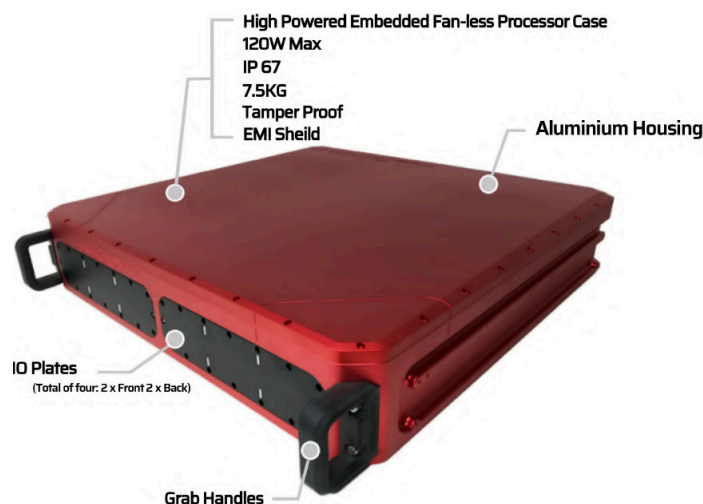


### The Evolution of REN™

**REN 19-14 STD** is part of the 3rd generation of Unitronix's REN™ product range. It is to take VersaLogic Corporation Embedded Server Units (ESU) range of processor cards. "Grizzly" being the most suitable, as it is a very high-end processing engine with big data connectivity and I/O options including one full-size and one half-size PCIe sockets to host 3rd party cards.

### What is a REN™ 19?

It's a project box with serious TRL and currently the fastest and cheapest route to a deployed system available in the world!



- Effectively a large heatsink for up to 3 high powered Versallogic ESU/EPU for processing in extremely rugged and harsh environments where traditional air-cooled equipment just won't do the job.
- Is an item of utility for engineers who would normally build these systems themselves, but due to a lack of project time and low quantity requirements, an off-the-shelf solution is a more viable option.
- Is well engineered. It is Gen 3 of a design that is tested underwater to a depth of 2 metres for 2 days.
- Is flexible in its design. Any of the VersaLogic ESU or EPU range can be used. Inside the case there is room for multiple ESUs or EPUs, and potentially room for customer's own specific equipment.
- Allows customers to get going immediately developing the application. No stress or worry about connectors and connections because there are none.
- Allows customers to develop with the lid OFF and the IO plates OUT. Once you have the software going, you then figure out what actual signals you need to connect out of the box and how they will be arranged on the IO plate.



## REN™ 19-14 STD - Data Sheet

### What sort of applications would run on REN™ 19?

REN™ 19 is not a traditional industrial embedded processing computer. It is for applications that need a high powered processing engine or cluster of engines, and will need to run those processors at a high ambient (external) temperature (60°-70°C) whilst completely sealing itself from the environment it is in.

### Types of applications are:

The next generation of Industrial, Energy, Robotics and Public Sector applications utilising AI, Data Analytics, IoT.

### Get developing quickly.

As soon as you receive your REN™ 19 you can remove the lid, remove the blank I/O plate's and plug-in the development cable kit to be up-and-running developing the application. In parallel, customers can design their own I/O plate configuration and test whilst not interfering with application development.

### Very flexible power supply.

As standard the VersaLogic ESU (Grizzly) has a wide ranging on-board PSU and can accept 10 to 30 Volts DC.

Should a customer wish for more flexibility with the power supply, the REN 19 lid comes pre-drilled to take VICOR DC/DC power bricks and filters in the following configurations:

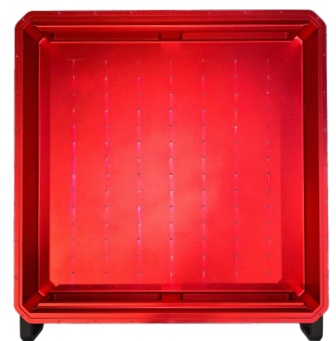
Up to 6 x VICOR DC/DC V28B series + 6 x VICOR V28C Series Filters or the VICOR Brick and filter sets can be transposed with 2.5 inch SSDs.

A version will be available with an AC power brick layout, for now it is DC only. Adding power bricks or SSDs is the customer's choice and they can do this themselves or Unitronix can supply with these items wired up.

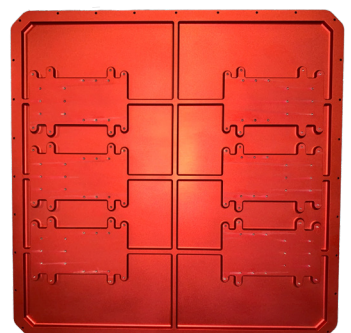
**Note:** There are isolation plates available for the power bricks and disk holding plates for the SSDs.



### Internal Mounting Grid



### Internal Lid Configurations



# Mining



## REN™ 19-14 STD - Data Sheet

### Eagle VL-EPU-5120

#### Embedded Processing Unit

A high-performance embedded computer with an Intel® Xeon-E processor and error-correcting memory. Includes high-speed on-board NVMe SSD storage, TPM 2.0 security, and up to 32 GB ECC RAM.

#### High-Performance 6-core Xeon-E processor

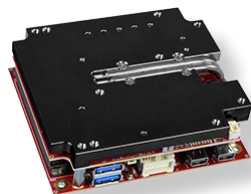
9th Generation Coffee Lake Processor

#### High Speed On-board Storage

128 Gb NVMe fast read/write SSD storage

#### Error-Correcting Memory

Up to 32 GB of ECC RAM



### Blackbird VL-EPU-4562

#### Embedded Processing Unit

Intel Core “Skylake” Processor

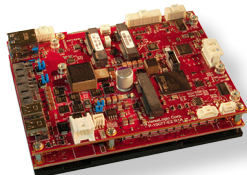
Quad- and dual-core, up to 2.6 GHz clock rate.

On-board Power Management

Accepts 8 to 30 volts DC, provides OVP, reverse polarity protection, RF noise filtering, and transient voltage suppression.

On-board and Expansions I/O Options

2.5x mini PCIe sockets, 2x USB 3.0, 4 USB 2.0, 8 AI, 4 AO, 24 DIO, 3 counter/timers and 4 serial COM ports (232/422/485).



### Owl VL-EPU-4012

#### Embedded Processing Unit

A compact 95 x 95 x 29 mm embedded computer featuring error-correcting memory, and a power-saving dual- or quad-core “Apollo Lake” processor. It includes TPM 2.0 security, latching I/O connectors, high performance video, and full -40° to +85°C operating range.

#### Error-Correcting Memory

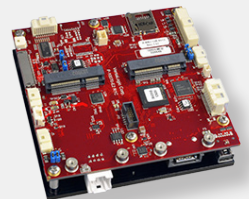
Up to 8 GB soldered-on ECC RAM

#### TPM 2.0 Security Chip

Hardware-based security

**COMe Compact size (95 x 95mm), low power (8W typ.)**

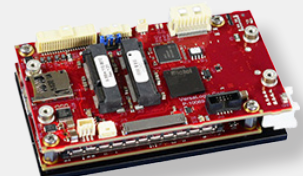
Ideal for SWaP applications



### Harrier VL-EPU-4011

#### Embedded Processing Unit

A near-credit-card sized embedded computer featuring Intel’s Apollo Lake Atom processor and error correcting memory. Includes TPM 2.0 security chip, on-board power regulation, USB and Ethernet, and Mini PCIe expansion sockets. Soldered-on ECC RAM enhances the extreme ruggedness and reliability.

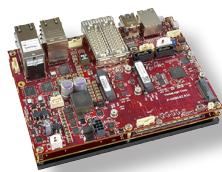


## REN™ 19-14 STD - Data Sheet

### Grizzly VL-ESU-5070

#### Embedded Server Unit

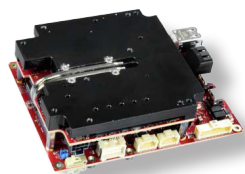
A rugged embedded server featuring Intel 8, 12 or 16-core processors, -40°C to +85°C operation, two 10 Gigabit Ethernet SFP+ ports, up to 128 GB of ECC memory, and low power draw. It is also ideal for network appliance and IoT applications. Two Mini PCIe sockets and an M.2 site provide for expansion and on-board storage.



### Swift VL-EPU-5121

#### Embedded Processing Unit

A rugged high-performance embedded computer with Intel's 6-core Xeon-E processor, up to 32 GB of error-correcting RAM, fast NVMe storage (128 GB), two M.2 and one Mini PCIe expansion slots. Engineered for harsh environments operating from -40° to +85°C.



**VersaLogic's EPUs** are fully assembled and tested embedded computers. Each product is a two-board set with a CPU, I/O board, and integrated heat plate. The resulting product has a footprint that is about 1/2 the size of equivalent single board designs, and is very mechanically rugged. These EPU products are based on industry standard form factors with regard to size and mounting-hole locations.

### Why doesn't REN™ have fins to help with cooling?

The design for REN™ series boxes is based on the assumption of no secondary cooling. The case uses thermal mass to absorb and regulate the CPU temperature for applications that would be following a pulsed processing profile. ie one where the CPU would be heavily used but not continuously. For customers where weight is an issue or they have other requirements we can fin and pocket the case side wall.

### Cables

Unitronix can supply a set of test cables to go with REN in the VersaLogic configurations. These items will be ordered separately, as some customers may only want one or two sets before building their own cable harness. As each customer will be using REN for their own specific application, it is down to the customer to define their own external cable harness.

### Security

The processing board has trusted platform module (TPM 2.0) installed, Secure Key, Execute Disable Bit, Secure Boot. REN Mini can also be supplied with tamper proof screws and even screws where there is a customer unique pattern/tool for removal. In addition the use of non standard PC connectors (customer's choice) means that there is a high degree of physical security added to the system.

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## REN™ 19-14 STD - Data Sheet

Unitronix are an innovative engineering-capable distributor and manufacturer of rugged, embedded computing solutions for military, aerospace and high-end industrial applications.

Established in 1984, we have supplied and supported Australian civil and defence programmes with reliable equipment needed to survive in some of the harshest environments.

In addition we design, develop and manufacture our own innovative Rugged Embedded Nodes - REN. These fully sealed project boxes have a high TRL and are aimed at new commercial industries such as: IoT, AI, Smart Grids, Data Analytics & Enterprise at the EDGE.

REN™ products are designed in Australia by Unitronix.  
 REN™ boxes are made in Australia by Unitronix.  
 REN™ Systems are built and tested in Australia by Unitronix.  
 For UK customers in the future we will look at designing and manufacturing new designs in UK

**Product Statement:**  
 UNITRONIX provides an item of engineering utility of a generalised nature, COTs (commercial off-the-shelf). It is the customers responsibility to decide if this product is suitable and safe to use in the application they will be using the equipment. Customers are entirely responsible for the testing and subsequent performance of this equipment in their application. All sales are subject to Unitronix's general terms and conditions found on our about page:  
<https://unitronix.com.au/about/>

REN SERIES
REN MINi
REN MAXi
REN 19-14 STD
REN 19-17 STD
REN 19 EW
REN 19-14 VPX
REN 19-17 VPX
REN Ai
REN VPX 4 Slot
REN VPX 6 Slot
REN VPX FlatPAK Assembly

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