



# Rugged PC/104 Enclosure System

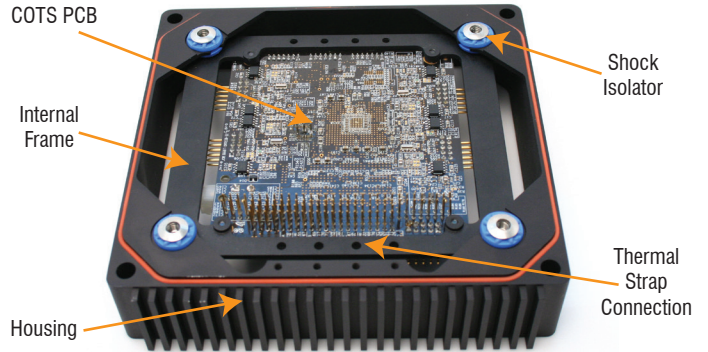
## Description

VPI Embedded's Rugged PC/104 Enclosure System provides an enclosure rated at an IP65 standard that houses PC/104-compatible devices. The Enclosure System is modular and can accommodate 1U, 2U, and 3U sized modules in between end caps.

The Rugged PC/104 Enclosure System (RES) is a robust packaging system that addresses the limitations of Commercial Off-The-Shelf (COTS) components when used in harsh environments such as those encountered in aerospace and military contexts.

PC/104 compatible processors and a wide selection of supporting components are produced in large volumes at very low cost. The compact form factor is attractive. General limitations of the COTS parts lie in shock, vibration, and humidity susceptibility. These limitations are addressed by the RES including:

- Water-tight
- Shock and vibration isolators
- Conduction cooling provision



### 2U Module

#### External Housing

- 6061-T6 Aluminum
- O-ring sealed

#### Internal Frame

- Provides structural support
- Acts as heat spreader and conduction path

#### COTS PCB

- Typical COTS PC/104 footprint board

#### Shock Isolators

- Internal shock isolators provide additional protection against shock and vibration

#### Thermal Strap

- Copper foil thermal strap provides conduction cooling link between board and external housing

## Features

### Withstands Transportational Vibration and Shock

- Internal and external suspension systems
- Isolator geometry and material can be tailored for a specific application

### Flexibility and Modularity

- Compliant with PC/104 form factor
- Additional segments can be easily added
- System can be mission specific with highly tailored solutions

### Enclosure Sealed to IP65 Standard

- Protection against rain and splashing water
- Protection against particle and dust ingress
- Protection against low pressure hosedown from any direction
- All segments are joined with an o-ring and labyrinth seal
- Submersion possible (with use of hermetic connectors)

### Thermal Properties

- Conduction cooling for modules
- Optional internal circulation fans can be added to for high heat density applications
- Optional external fan/shroud system accelerates convection to ambient air





## Specifications

### Weight:

- Front End Cap: 0.5 lbs
- Rear End Cap: 0.498 lbs
- 1U Module: 0.461 lbs
- 2U Module: 0.625 lbs
- 3U Module: 0.889 lbs
- Internal Frame: 0.092 lbs
- Internal Bumper (4 required): 0.005 lbs
- External Bumper (4 required): 0.05 lbs

### Dimensions:

- Front End Cap: 8.0" x 5.7" x 0.7"
- Rear End Cap: 8.0" x 5.7" x 0.7"
- 1U Module: 6.0" x 5.7" x 0.762"\*
- 2U Module: 6.0" x 5.7" x 1.524"\*
- 3U Module: 6.0" x 5.7" x 2.286"\*

*\*External thickness when stacked in system*



## Part Numbers

The Rugged PC/104 Enclosure System entails the following part numbers:

- V011272 - 1U Standard Assembly
- V011274 - 2U Standard Assembly
- V012342 - 3U Standard Assembly
- V021794 - Front Endcap
- V016275 - Threaded Back Endcap
- V016250 - 1U Bolt Assembly
- V016251 - 2U Bolt Assembly
- V016252 - 3U Bolt Assembly
- V016253 - 4U Bolt Assembly
- V016254 - 5U Bolt Assembly
- V016255 - 6U Bolt Assembly
- V016256 - 7U Bolt Assembly
- V016257 - 8U Bolt Assembly
- V016258 - 9U Bolt Assembly
- V016259 - 10U Bolt Assembly
- V016260 - 11U Bolt Assembly
- V016261 - 12U Bolt Assembly
- V016262 - 13U Bolt Assembly
- V016263 - 14U Bolt Assembly
- V016264 - 15U Bolt Assembly
- V043355 - Power Endcap
- V043354 - Signal Endcap
- V016618 - Heat Strap

## Modularity



- Building blocks snap together
- Modules of different thickness accommodate PC/104 components
- End cap modules contain mounting provisions
- Modules share a common mate feature
- Modules can be snapped together in any order
- Units dovetail together for precise fit and optimum protection
- Interface between each module uses an o-ring seal

## Contact Information

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