

# OpenVPX Reference Design Kit

## Decreases Time to Market and Reduce Design Risk of OpenVPX™ Compliant Systems

- Accelerates board and subsystem development through stable, robust references
- Defines efficient migration of OpenVPX-based solutions from lab to deployed environment
- Created by the founding company of the OpenVPX™ Industry Working Group
- Air- and conduction-cooled versions available

The OpenVPX™ Reference Design Kit from Mercury Computer Systems provides an engineering blueprint for developing OpenVP compliant 6U and 3U payload and switch modules. The OpenVPX™ V1.0 System Specification is the first system VPX specification dedicated to interoperability of multi-vendor system and subsystem building blocks. The specification was created with a top-down, systems-level view of interoperability. It addresses the issues required to define, implement, deploy, and support OpenVPX-based systems that incorporate a broad range of interoperable commercial items from multiple suppliers.

The kit leverages industry-standard CAD and ME tools for mechanical models, which can be imported directly into your development environment. All required details, including critical locating and dimensioning of connector interfaces, characterization of mechanicals, commercial methodologies for thermal management, and common interfaces for XMC/PMC connections, are provided. (See Table 1.)

### Low Risk, Robust and Repeatable

Because the OpenVPX Reference Design Kit mitigates uncertainty with respect to design viability and implementation, it provides a predictable and stable migration from the laboratory to deployment in terms of cost, time, quality, and repeatability. Users gain an excellent understanding of board behavior, which helps them perform characterization in advance. Board development time may be reduced by as much as 3-5 months. The likelihood of downstream mechanical re-spin cycles is also significantly reduced.

### Licensing and Fee Structure

The OpenVPX Reference Design Kit is licensed per program and subsystem. Several packages are available. These packages vary with respect to the number of consulting hours included, and the duration of future available updates. (See Table 2.) A la carte options are available for diagnostic packages, interoperability reports, and thermal solutions.

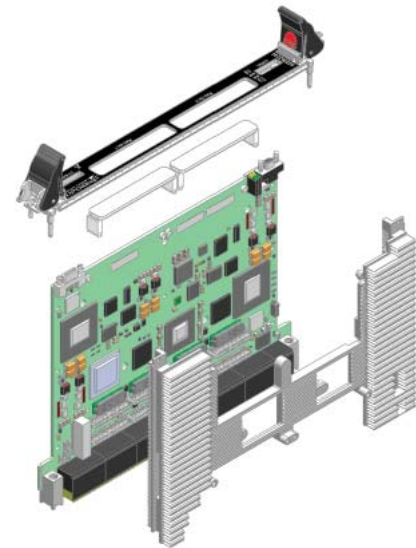


Figure 1. 6U Air Cooled Assembly

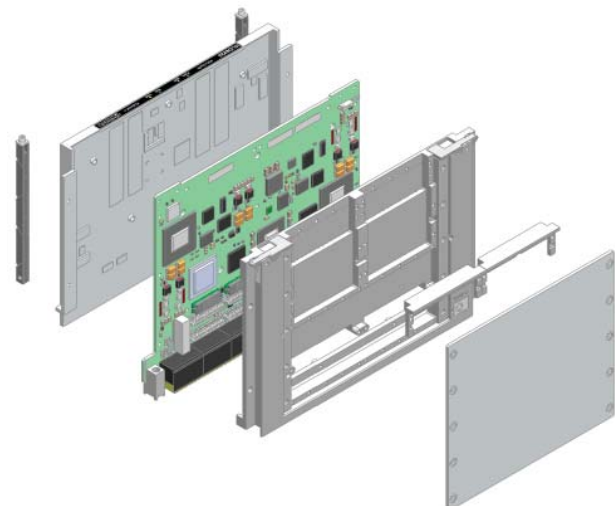


Figure 2. 6U Conduction Cooled Assembly

Table 1. Contents of OpenVPX Reference Design Kits

6U OpenVPX	3U OpenVPX
Complete 3D CAD model package for a representative 1" pitch 6U OpenVPX module per VITA 48.2 Type I	Complete 3D CAD model package for a representative 1" pitch 3U VPX module per VITA 48.1 Type II
Multiprocessor, double-sided, high-power 6U design with two XMC/PMC sites	Multiprocessor, double-sided, high-power 3U design with one XMC/PMC site
SolidWorks™ 2009 "Pack-N-Go" (.zip) file and identical STEP AP214 (.step) file	
Complete Adobe Acrobat® (.pdf) drawing package for all parts and assemblies	
Mechanical Family Tree from top assembly to individual mechanical part files	
Bill of Materials with Mercury recommended suppliers	
Representative commercial thermal analysis presentation: <ul style="list-style-type: none"> <li>• Example Flotherm® model included</li> <li>• Commercially available thermal interface materials</li> </ul>	
Weight analysis matrix	
VITA-based mechanical tolerance analysis	
Design methodology presentation (explanations, design break points, critical interfaces, and key design considerations): <ul style="list-style-type: none"> <li>• 2LM VITA design</li> <li>• Safety ground considerations</li> <li>• Ejection mechanism (chassis side)</li> <li>• Commercial thermal wedgelock selection and torque</li> </ul>	
Printed wiring commercial drawing that contains: <ul style="list-style-type: none"> <li>• Recommended breakaways and hole tolerances</li> <li>• Layer stack-up with IPC commercial materials</li> </ul>	
List of pertinent commercial design standards with links, where applicable	
List of applicable mechanical requirements as defined by VITA	
Standard commercial and industrial design environments <ul style="list-style-type: none"> <li>• Humidity, temperature, random vibration profile, sinusoidal vibration profile, and altitude</li> </ul>	

Table 2. OpenVPX Reference Design Kit Packages

<p><b>Gold Package</b></p> <ul style="list-style-type: none"> <li>• Microsoft® SharePoint® access for 2-years of automatic updates</li> <li>• 20-hours of technical support</li> <li>• Complete design kit</li> </ul>
<p><b>Silver Package</b></p> <ul style="list-style-type: none"> <li>• SharePoint access for 1-year of automatic updates</li> <li>• 10-hours of technical support</li> <li>• Complete design kit</li> </ul>
<p><b>Bronze Package</b></p> <ul style="list-style-type: none"> <li>• SharePoint access for initial technical delivery</li> <li>• Complete design kit</li> </ul>
<p><b>Additional Options</b></p> <ul style="list-style-type: none"> <li>• Board diagnostic framework</li> <li>• Integrated HP wedgelock design</li> <li>• Managed-air thermal solution</li> <li>• Interoperability certification report</li> </ul>

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**Corporate Headquarters**

201 Riverneck Road  
 Chelmsford, MA 01824-2820 USA  
 +1 (978) 967-1401 • +1 (866) 627-6951  
 Fax +1 (978) 256-3599  
 www.mc.com

**Europe**

**Mercury Computer Systems, Ltd.**

Unit 1 - Easter Park, Benyon Road • Silchester, Reading • RG7 2PQ UNITED KINGDOM  
 + 44 0 1189 702050 • Fax + 44 0 1189 702321

**Asia**

**Nihon Mercury Computer Systems K.K.**

No. 2 Gotanda Fujikoshi Bldg. 4F • 5-23-1 Higashi Gotanda • Shinagawa-ku, Tokyo 141-0022 JAPAN  
 +81 3 3473 0140 • Fax +81 3 3473 0141

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