



# 3U VPX Development Platform

## Supporting VPX and SOSA Aligned Payload Integration

The DK3 is a flexible bench top platform providing the scalability to support rapid development, demonstration and evaluation of 3U VPX and SOSA aligned systems. It enables shortened design cycles for faster time to deployment in critical applications. The DK3 allows fast backplane replacement and fast conversion between air and conduction cooled slot inserts. The open frame design includes backplane, power supply, fan cooling and rear transition slots in support of a variety of test functions. The DK3 comes standard with an 8 slot, 1.2" pitch power and ground backplane to support your development efforts using Meritec slot to slot cabling systems. **The DK3 has a balanced 12V / 5V power supply for mixed power payloads and a 12V centric power supply is available on request.** Both support current and emerging VPX and SOSA aligned module power requirements. The DK3 is part of the LCR family of development solutions supporting VPX system development and the hardware convergence and interoperability initiatives of the US Department of Defense.

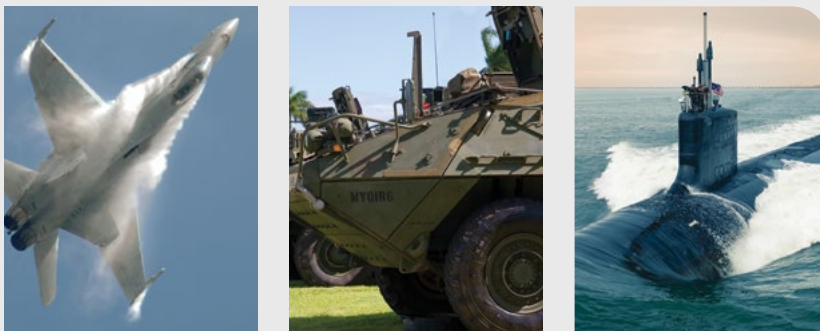


### Features

- Backplane options to support VPX and SOSA aligned slot profiles
- Standard power and ground backplanes
- VITA 66 and 67 apertures for optical and RF I/O
- Quick-conversion air or conduction cooled slot inserts
- PCIe Gen3 and 10GbE signal speed capability
- Open access design with a carrying handle
- Adjustable speed high cfm fans
- Rear transition module slots
- Integrated AC / DC power supply

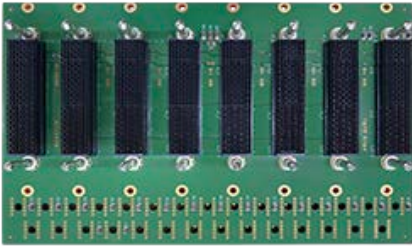
### Benefits

- Allows testing of air or conduction cooled modules
- Easily swap backplanes to support development progression
- Flexible reconfiguration supports multiple development stages
- Portability promotes collaborative engagement
- Enables single module or application level testing
- Easy test probe access speeds up development

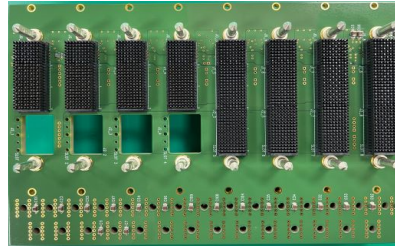


**The DK3 supports VPX development and integration activities for high speed C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) systems operating in mission critical defense applications.**

For added versatility in backplane profile configuration, the DK3 is available with two power and ground pass through backplane options. Test payloads which include RF or I/O signals will require a power and ground backplane with 4 x VITA 67.3 apertures. Backplanes can be configured with or without RF and optical connectors installed

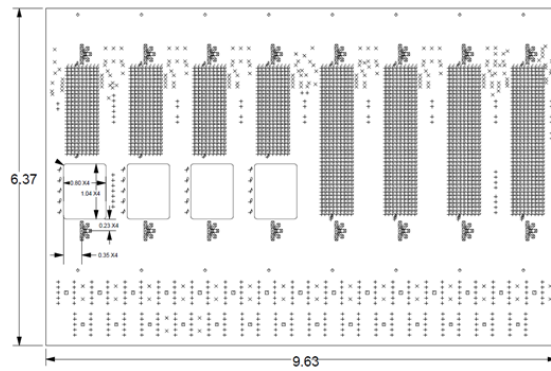
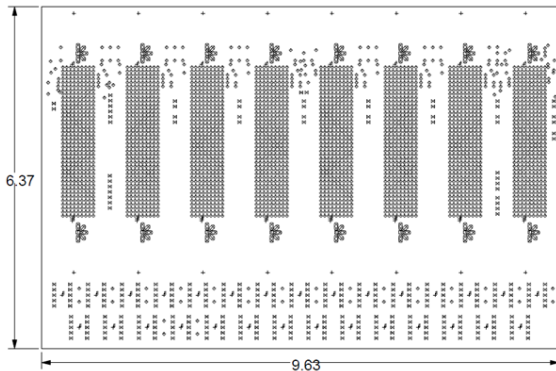


Power and ground only. Suitable for board payloads not requiring optical or RF connectivity



Slots 1 – 4, VITA 67.3 apertures for full and half width VITA 66 & 67 optical and RF connectivity

Power and ground or pass through backplanes are also referred to as uncommitted backplanes. Uncommitted VPX and SOSA backplanes rely on a slot to slot cabling system to establish the data, control and expansion planes necessary for integration testing. The backplane in the DK3 includes slot to slot connectivity for power, and ground plus VPX-standard system signals such as system reset and reference clocks.



### BACKPLANE PROFILE CONFIGURATION

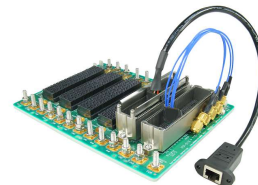
The Meritec cabling system is essential when defining the VPX or SOSA backplane profile necessary to support the data flows for the application at hand. They enable complete payload integration testing on pass through backplanes to ensure proper operation before moving on to the deployment backplane fabrication. Cabling is used to establish slot to slot high-speed signal paths across the data, control and expansion planes as well as slot to external I/O connectivity.



Cable wafer connectors



Slot to slot connectivity

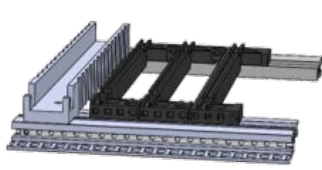


Slot to custom external I/O

As a supplier of Meritec VPX cabling solutions, LCR's integration team will work with your backplane profile to assist in the cable selection and installation process. Single ended and differential pair signaling support PCIe Gen3 and 10GbE signal speeds. Contact your local LCR Sales Manager for more information.

## AIR AND CONDUCTION COOLED CONVERSION

The DK3 supports air cooled VITA 48.1 or conduction cooled VITA 48.2 VPX or SOSA aligned plug in cards. Quick conversion air or conduction cooled card guides allow slot by slot configuration for mixed payloads. Slot conversion can be completed in minutes to support both card types as needed.



Mixed air and conduction guides



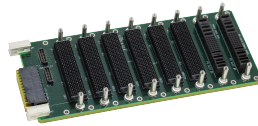
Individual conduction cooled guides

## FROM DEVELOPMENT TO DEPLOYMENT

Streamlining your project every step of the way. LCR can support successful project realization from initial concept and custom backplane profile design, all the way through to manufacture, integration and test of the final deployed chassis.



DK3 VPX Development Chassis



Deployment backplane design and manufacture



Final deployment system design, integration and manufacture

## Related Products



DEPLOYMENT CHASSIS



CUSTOM 3U VPX BACKPLANES



VPX TEST FIXTURES



LCR provides a full line of VPX products and services - everything you need from development to deployment including; COTS rugged application ready chassis solutions as well as custom designs, custom 3U VPX backplanes supporting the latest slot profiles plus development tools including load boards and test fixtures.

## SPECIFICATIONS

### Physical

Dimensions including feet and handle: 17.5" (H) x 12.25" (W) x 17.25" (D)  
444.5mm x 311mm x 438mm

Weight: Approximately 39lbs

### Power Supplies

Integrated AC-to-DC 1000W power supply

Two available power supply options:

- 1) 12V/5V - 1058W; 12V/450W, 5V/375W, 3.3V/82.5W, -12V/150W
- 2) 12V - 1083W; 12V/600W, 5V/250W, 3.3V/82.5W, -12V/150W

**Outputs;**  
MAIN: +12V, +5V, +3.3V

\*AUX: +3.3V, +12V, -12V

\*Note: AUX voltages use main voltage rails

### Thermal

Push-pull cooling in front, pull cooling over RTMs  
5 upper and 2 lower fans  
Automatic fan speed control

Conduction cooled guides feature air passthrough cut-outs  
Removeable side plates to direct airflow

### Environmental

The DK3 is intended for lab use in benign environments

### Standards Compliance

The DK3 is intended for use with VITA 48.1 and 48.2 air or conduction cooled 3U VPX and SOSA aligned plug in cards

### Controls and I/O

Rear switch for AC ON/OFF

Status indicators: AC, +12V, +5V, +3.3V, -12V

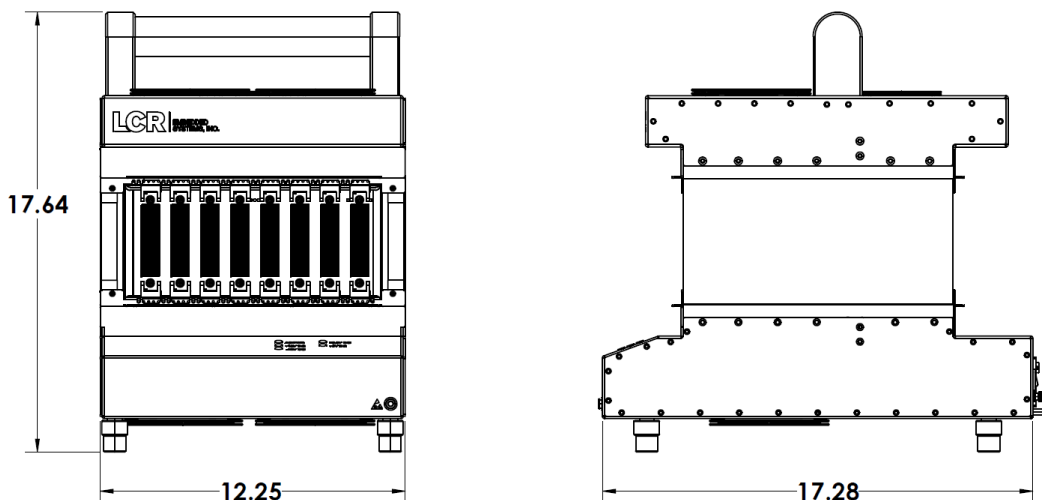
### Backplane Options

8 slot power and ground backplane, 1.2" pitch  
8 slot power and ground backplane, slots 1 - 4 with VITA 67.3 apertures, 1.2" pitch

### Slot Profiles

Pass through

## Chassis Dimensions



ORDER NUMBER	DESCRIPTION
7JM-100-0086-1	DK3 development chassis, 8 x 1.2" pitch air-cooled slots, power and ground pass-thru backplane, 12V centric PSU - consult LCR sales for availability
7JM-100-0086-8	DK3 development chassis, 8 x 1.2" pitch air-cooled slots, power and ground pass-thru backplane, balanced 12V/5V PSU
7JM-100-0086-x	Custom configuration DK3 development chassis with additional backplane options
7JM-SPK-0011-1	Conduction guide accessory kit, top and bottom guides including mounting h/w

**LCR Embedded Systems**

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