3U /6U Inteligent Test Module : ITM 6973 & ITM 6976

Dawn VME Products® Quality and Performance at its best

Another Performance Design from the Team

3U/6U Intelligent VPX Test Module, Monitor and Load Board

Designed specifically for OpenVPX and VPX-REDI Systems

Features

- **PIC Microprocessor for testing, data logging and control**
- **6-Microprocessor controlled high current active loads**
- **6-Channel voltmeter measures to +/-10mV accuracy**
- **6-Channel current meter with 200mA resolution**
- **4-Precision temperature sensors measure +/-1°C**
- **6-Channel noise meter measures P.S. pk-to-pk ripple**
- **7– Channel Ohm meter measures isolation resistance**
- **Programable load current for each fo the 6 VPX voltages**
- **Up to 167W Max per ITM module**
- **Up to 16 units can be used in parallel for increased load capability**
- **Programable Heater function allow unit to maintain a fixed temperature at Wedgelock surface while automatically adjusting VPX loads**
- **Modules automatically communicate over backplane to work in concert with each other sharing the load**
- **Real Time Clock provides absolute time stamp of events**
- **Wide range power supply operates off any voltage**
- **Front panel control switch, tri-control status LED's Mini-USB connection to PC, and external I²C bus connector**
- **Comprehensive User Manual details use and application of module**

Now available with SOSA compatible firmware!

ITM6973

ITM6976

Applications

- Compliance Testing of Open VPX Conduction Cooled Systems.
- Designed validation of systems based on Power and Thermal simulation of deployed board sets.
- Emulate board operation current profile based on multiple current image mapping of actual modules.
- Measure power supply hold up time of voltage rails under various Loads.
- Measure peak to peak noise on voltage rails.
- "On-Board " RuSH Technology enables wide range of Monitoring and Control.
- System Characterization of new products.
- Generate user specified or default power loads in watts on each voltage rail.
- Empirically test, measure and record thermal characteristics of conduction cooled enclosure.
- Time heat conduction and temperature rise through a conduction cooled enclosure.
- Measure power supply set points for over-current and over-temperature.
- System monitor and control over I²C bus.
- Thermostatically controlled heater keeps equipment operational in cold environments.
- Monitor and report Voltage, Current, and Temperature.
- Provide I²C alerts or alarms when monitored values pass through user set Thresholds.
- Final test, temperature cycling and burn-in

Technical Specifications

Mechanical

Compatibility: VITA 46, VITA 48.2, VITA 65 (Open VPX)

Size: 3U or 6U X 160mm

Dimensions: 3U= 3.937"H X 6.299D X .770"W
6U= 9.187" H x 6.299" D x 0.770" W

Weight: 3U= 1.5 Lbs. 6U=2.49 Lbs.

Electrical

Variable Current Loads: 3U & 6U

12V(VS1), 3.3V(VS2), 5V(VS3), +/-4% from 0.5A–15A

+3.3VAUX, +12VAUX, -12VAUX, +/-4% from 0.2A-2A

Current Accuracy:

3U & 6U12V(VS1), 3.3V(VS2), 5V(VS3), +/-4% from 0.5A–15A

+3.3VAUX, +12VAUX, -12VAUX, +/-4% from 0.2A-2A

Current Resolution: 200mA at 15A Max. on VS Channels
100mA at 2A Max. on AUX Channels

Temperature Measurement: 4 sensors @ board corners

Temperature Accuracy: +/- 1C

Voltage Monitoring: All 6 Voltages continuously

Voltage Accuracy: +/-10mV

Input Voltage: Unit will run if any VPX standard voltage is present (+12V, +5V, +3.3V.

Power Consumption: </= 200mA with current sinks off

Environmental

Storage Temperature: -55C to +125C

Operating Temperature: -40C to +85C

Humidity: <95% non-condensing

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Ordering Information

06-1016973-LVL1 = Standard 3U version with basic feature set and manual operation with all six VPX voltages (+12V_VS1, +3.3V_VS2, +5V_VS3, +3.3V_AUX, +12V_AUX, -12V_AUX).

06-1016973-LVL5 = 3U Version set up for SOSA voltages with basic feature set and manual operation with only two applicable voltages (+12V_VS1, +3.3V_AUX) active in code, and with other four voltages disabled.

06-1016976-LVL1 = Standard 6U version with basic feature set and manual operation with all six VPX voltages (+12V_VS1, +12V_VS2, +5V_VS3, +3.3V_AUX, +12V_AUX, -12V_AUX).

06-1016976-LVL5 = 6U Version set up for SOSA voltages with basic feature set and manual operation with only two applicable voltages (+12V_VS1, +3.3V_AUX) active in code, and with other four voltages disabled.

Need a custom software feature , just ask Dawn.

Product Overview

Dawn's new Model ITM-6973 and ITM–6976 Intelligent Test Modules represents a significant technological break-through in features and capability, in comparison to other products available to the market, effectively rendering them obsolete.

Dawn was founded some 35 years ago by engineers who wanted to bring the best performance, innovation and quality in test products to the market-place. Dawn invented and patented the *"Board Assembly for Validation and Character-ization of a Bus System"* AKA Slot Load Board in the late 80's. It soon became the standard for system design validation and characterization.

Dawn's ITM-6973 and ITM-6976 represents a quantum leap ahead in features and capability. It makes possible complex tests, measurements and reporting all in a 3U or 6U size module. The full featured version of the DITM contains a powerful PIC Micro-processor, 6 separate voltage independent micro-processor controlled active loads (one for each voltage rail), 6 separate current sensors (one for each volt-age rail), 6 separate precision voltage sensors (one for each voltage rail) 7 Ohm meters, 4 temperature sensors (located at 4 corners of module), 6 separate power supply noise detectors (one for each volt-age rail).

The DITM's may be used to test power supplies, power systems and chassis by providing an accurate, self-controlling and self-logging dynamic current load, voltage monitor and heat source to the system under test. Additionally, the DITM's can be used to design validate or characterize a systems power or ther-mal properties, and finally, the DITM's can be deployed in the system to provide a variety of functions such as: serve as a space heater ensuring operation at even the coldest temperatures, monitor and report system operational parame-ters such as voltage, temperature, and generate warnings, alerts, alarms, con-trol signals or messages when operational thresholds are exceeded.