PRODUCT DATASHEET

SCP/DCP-201

CompactPCI Carrier Card

- 3U Form Factor (VITA 30.1, and PICMG 2.0, Rev. 3.0)
- Accommodates generic 32-bit PMC's for use in a Compact PCI backplane
- Air-cooled and conduction cooled
- Integrated with CompactCore single board computers; the SCP/DCP-119 and SCP/DCP-122
- Integrated with PCI Mezzanine Cards (PMC-601, PMC-700, PMC-702)
- PMC-601 (MIL-STD 1553)
- PMC-700 and 702 (Graphics Controllers)
- Supports 32-bit at 33 or 66MHz PCI interface
- Supports 3.3 V or 5 V PCI Signalling
- Standards Based:
  - Complies with PICMG 2.0 Rev 3.0, Compact PCI specification
  - Complies with PICMG 2.3 Pn4 to J2 user I/O mapping

CompactCore

The CompactCore Family

CompactCore is our family of small form-factor embedded computing solutions with products offered in 3U cPCI and Processor PMC (PrPMC) form-factors.

The CompactCore family is comprised of 3U cPCI single board computers (SBCs) (SCP/DCP-119 & 122), a PMC carrier card (SCP/DCP-201), and the PMC-106 Processor PMC. CompactCore products are offered in commercial, rugged air-cooled and conduction-cooled versions. These small-form factor products allow systems developers to take advantage of COTS solutions for a new range of space and weight constrained applications that cannot accommodate the 6U standard. While small in size, the CompactCore products offer processing power to handle large applications.

The SCP/DCP-201 Carrier Card

The latest addition to CompactCore is the SCP/DCP-201 Carrier Card. Based on industry standards, the 201 is fully integrated with our 3U cPCI single board computers, the SCP/DCP-119 and the SCP/DCP-122, to further enhance their already extensive onboard I/O and functional capabilities. The 201 accepts PMC's that have been integrated to operate with these SBCs, including the PMC-601 (MIL-STD 1553), and two Graphics Controllers, the PMC-702 and the PMC-700.

Together, this family of products offers unprecedented flexibility and complementary functionality in a cPCI environment.

Conduction Cooled and Convection Cooled

The SCP/DCP-201 is available in 3 versions:

1. SCP-201-000 Air cooled non-rugged
2. SCP-201-100 Air cooled rugged
3. DCP-201-200 Conduction cooled rugged

The basic air cooled product is designed for laboratory use with relatively benign environmental conditions of temperature, shock, vibration, and humidity. The air cooled 201 also comes in a rugged format. This format incorporates the use of a side stiffener bar along each side of the card to resist shock and vibration.

Fully Rugged and Conduction Cooled

As a fully rugged conduction cooled product, the 201 is fitted with an enhanced heat dissipation frame that will allow PMC modules to operate in extreme environments pertaining to temperature, shock and vibration, and humidity. This version of the 201 is designed and manufactured according to our L200 environmental standards and is suitable as the production product for rugged military or aerospace platforms.

Full ruggedization is accomplished through a specially designed enhanced thermal frame we developed. This enhanced thermal frame serves to conduct heat away from hot spots to enable the onboard PMC to function at it's highest capability with regards to temperature. It also serves to resist the high levels of shock and vibration typically found in combat aircraft or space based vehicles. With this enhanced thermal frame, even hot running PMC modules can operate at their full potential under appropriate thermal management. A specially designed conformal coat also protects the L200 carrier card and it's onboard PMC while operating in humid or high erosion conditions, such as salt/fog.

For full ruggedization levels, please refer to Table 2.

Host Support

As the foundation of the CompactCore family, the SCP/DCP-119 and SCP/DCP-122 cPCI SBCs serve as the system controller and peripheral controller in this configuration. As a result, the 201 Carrier Card is fully integrated with this current host and will also be integrated with future CompactCore base cards.

PMC Support

To enhance system functionality and flexibility, the 201 has been integrated with some of our PCI Mezzanine Cards (PMC's). These include:

1. The PMC-601 (MIL-STD 1553); and
2. Two graphics controllers; the PMC-702 and PMC-700

Integration involves appropriate routing of the 201 to support the differential signal pairs of the PMC-702 and PMC-700 as well as incorporating driver and OS software. Supporting documentation assists users in mounting these PMC's to the 201.

Electrical Design and Power Requirements

The SCP/DCP-201 Carrier Card supports electrical interfacing between a PMC module and a cPCI backplane. The PCI signal routing also supports 66MHz operation. A PCI bridge is not included on the 201 nor are there any other active components included on the board. As a result no increase in power and no significant changes to the thermal profile of the onboard PMC will result.

Table 1: SCP/DCP-201 Specifications

Compact PCI Carrier Card	3U Form Factor. Conforms to VITA 30.1 standards for conduction cooled cPCI cards.
Electrical Design	Supports 3.3V OR 5V Signalling
Operating Temperature	-40°C to +85°C (Level 200)
Storage Temperature	-62°C to +125°C
Physical Dimensions	100 mm x 160 mm (complies with IEEE1101.1-PCI Eurocard form factor)
Weight (without PMC module)	SCP - 160 grams DCP - 275 grams
RUGGEDIZATION LEVELS (Refer to Ruggedization Guidelines data sheet for more details)	
SCP card (air-cooled)	Available in non-rugged and rugged formats
DCP card (conduction-cooled)	Available in fully ruggedized format

Table 2: Product Ruggedization Guidelines

Spec	SVME/SCP L0	SVME/SCP L100	DMV/DCP L100	DMV/DCP L200
Temperature				
Operating (including hot & cold starts)	0°C to 50°C inlet 8 cfm air flow(1)	-40°C to 71°C inlet 8 cfm air flow(1)	-40°C to 71°C card edge temp	-40°C to 85°C card edge temp
Storage(2)	-55°C to 125°C	-55°C to 125°C	-55°C to 125°C	-55°C to 125°C
Humidity				
Operating(3)	0 to 95% non-condensing	0 to 95% non-condensing	0 to 95% non-condensing	0 to 95% non-condens-ing
Storage	0 to 95% non-condensing	0 to 100% condensing	0 to 100% condensing	0 to 100% condensing
Altitude (4)	15,000 feet	unlimited	unlimited	unlimited
Vibration				
Sine (5), (6)	2 g peak 15 Hz to 2 kHz	10 g peak 15 Hz to 2 kHz	10 g peak 15 Hz to 2 kHz	10 g peak 15 Hz to 2 kHz
Random (7)	0.01 g^2/Hz 15-2 kHz (4.5 grms)	0.04 g^2/Hz 15-2 kHz (8.9 grms)	0.1 g^2/Hz 15-2 kHz (14.1 grms)	0.1 g^2/Hz 15-2 kHz (14.1 grms)
Shock (8)	20 g peak	40 g peak	40 g peak	40 g peak
Conformal Coat	no	yes	yes	yes

Table 1 Notes

(1) At sea level, (2) Per MIL-STD-810F. (3) ± 4% relative humidity, per MIL-STD-810F. (4) Cards are not directly affected by altitude. Air cooled cards must have adequate cooling. (5) All levels based on a sweep duration of ten minutes per axis, each of three mutually perpendicular axes. (6) Qualification testing is displacement limited below 44 Hz. (7) 60 minutes per axis each of three mutually perpendicular axes. (8) Three hits per direction per axis, ½ sine + terminal peak sawtooth, 11 ms (total 36 hits).

Contact Information

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