

SPECIFICATIONS

RTM-3662

High-Speed Serial Rear Transition Module for ATCA

Contents

Definitions.....	1
Conditions.....	1
High-Speed Serial Interface.....	2
Power.....	2
Maximum Power Requirements.....	2
Maximum Working Voltage.....	2
Physical.....	3
Environment.....	3
Operating Environment.....	3
Compliance and Certifications.....	4
Safety.....	4
Electromagnetic Compatibility.....	4
CE Compliance.....	4
Online Product Certification.....	5
Environmental Management.....	5

Definitions

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

Characteristics describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- *Typical* specifications describe the expected performance met by a majority of the models.
- *Nominal* specifications describe parameters and attributes that may be useful in operation.

Specifications are *Typical* unless otherwise noted.

Conditions

Specifications are valid at 23 °C unless otherwise noted.

High-Speed Serial Interface

QSFP Ports

Form factor	QSFP
Number of ports (three per FPGA)	12
Serial lanes per port	4
Maximum data rate (recommended)	10.4167 Gb/s
Error performance	1×10^{-12}



Note The QSFP serial ports support only optical cables; copper cables are not supported. NI recommends using an LR4 optical transceiver from Finisar. The specified error performance applies only to configurations using the recommended transceiver.

SFP Ports

Form factor	SFP
Number of ports (four per FPGA)	16
Serial lanes per port	1
Maximum data rate (recommended)	10.4167 GT/s
Error performance	1×10^{-12}

Power

Maximum Power Requirements



Note Power requirements are dependent on the adapter modules installed and contents of the FPGA application.

Power supply	12 V
Current	10 A

Maximum Working Voltage



Note Maximum working voltage refers to the signal voltage plus the common-mode voltage.

Channel-to-earth	0 V to 3.3 V, Measurement Category I
Channel-to-channel	0 V to 3.3 V, Measurement Category I



Caution Do not use this device for connecting to signals in Measurement Categories II, III, or IV.



Note Measurement Categories CAT I and CAT O are equivalent. These test and measurement circuits are not intended for direct connection to the MAINS building installations of Measurement Categories CAT II, CAT III, or CAT IV.

Physical

Dimensions (not including connectors)	10.16 cm × 35.18 cm × 6.35 cm (4.00 in. × 13.85 in. × 2.50 in.)
Weight	1.25 kg (2.80 lbs)



Caution Clean the hardware with a soft, nonmetallic brush. Make sure that the hardware is completely dry and free from contaminants before returning it to service.

Environment

Ambient temperature range	0 °C to 40 °C (tested in accordance with IEC 60068-2-1 and IEC 60068-2-2)
Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)
Pollution Degree	2

Indoor use only.

Operating Environment

Operating temperature range	
Used with a Single-Module ATCA Chassis	0 °C to 25 °C
Used with a 14-Slot ATCA Chassis	dependent on final system installation
Relative humidity range	10% to 90%, noncondensing (tested in accordance with IEC 60068-2-56)



Note Operating temperatures are only valid when the RTM-3662 module is used with the specified chassis.

Compliance and Certifications

Safety

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA C22.2 No. 61010-1



Note For UL and other safety certifications, refer to the product label or the [Online Product Certification](#) section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- EN 55022 (CISPR 22): Class A emissions
- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions



Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia, and New Zealand (per CISPR 11), Class A equipment is intended for use only in heavy-industrial locations.



Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.



Note For EMC declarations, certifications, and additional information, refer to the [Online Product Certification](#) section.

CE Compliance

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)



EU Customers At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit ni.com/environment/weee.

电子信息产品污染控制管理办法（中国 RoHS）



中国客户 National Instruments 符合中国电子信息产品中限制使用某些有害物质指令 (RoHS)。关于 National Instruments 中国 RoHS 合规性信息，请登录 ni.com/environment/rohs_china。(For information about China RoHS compliance, go to ni.com/environment/rohs_china.)

Information is subject to change without notice. Refer to the *NI Trademarks and Logo Guidelines* at ni.com/trademarks for information on NI trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering NI products/technology, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your media, or the *National Instruments Patent Notice* at ni.com/patents. You can find information about end-user license agreements (EULAs) and third-party legal notices in the `readme` file for your NI product. Refer to the *Export Compliance Information* at ni.com/legal/export-compliance for the NI global trade compliance policy and how to obtain relevant HTS codes, ECCNs, and other import/export data. NI MAKES NO EXPRESS OR IMPLIED WARRANTIES AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND SHALL NOT BE LIABLE FOR ANY ERRORS. U.S. Government Customers: The data contained in this manual was developed at private expense and is subject to the applicable limited rights and restricted data rights as set forth in FAR 52.227-14, DFAR 252.227-7014, and DFAR 252.227-7015.

© 2017 National Instruments. All rights reserved.

376800A-01 Feb17