DEVICE SPECIFICATIONS

NI 6585/6585B

Low-Voltage Differential Adapter Module

This document lists specifications for the NI 6585/6585B adapter module. Pair these specifications with the specifications listed in your FlexRIO FPGA specifications document or your controller for FlexRIO specifications document.

Maximum and *minimum* specifications are warranted not to exceed these values within certain operating conditions and include the effects of temperature and uncertainty unless otherwise noted.

Characteristic specifications are unwarranted values that are representative of an average unit operating at room temperature

Typical specifications are unwarranted values that are representative of a majority (90%) of units within certain operating conditions and include the effects of temperature and uncertainty unless otherwise noted.

Note Using the NI 6585/6585B in a manner not described in this document may impair the protection that the NI 6585/6585B provides.

Caution To avoid permanent damage to the NI 6585/6585B, disconnect all signals connected to the NI 6585/6585B before powering down the module, and only connect signals after the module has been powered on by the FlexRIO FPGA module or the controller for FlexRIO.

Note These specifications are characteristic at 25 °C unless otherwise noted.

Specifications are subject to change without notice. For the most recent device specifications, visit *ni.com/manuals*.

Contents

NATIONAL INSTRUMENTS

FlexRIO Documentation

Table 1. FlexRIO Documentation Locations and Descriptions

Document	Location	Description
Getting started guide for your FlexRIO FPGA module or controller for FlexRIO	Available from the Start menu and at *ni.com/manuals*.	Contains installation instructions for your FlexRIO system.
Specifications document for your FlexRIO FPGA module or controller for FlexRIO	Available from the Start menu and at *ni.com/manuals*.	Contains specifications for your FlexRIO FPGA module or controller for FlexRIO.
Getting started guide for your adapter module	Available from the Start menu and at *ni.com/manuals*.	Contains signal information, examples, and CLIP details for your adapter module.
Specifications document for your adapter module	Available from the Start menu and at *ni.com/manuals*.	Contains specifications for your adapter module.
LabVIEW FPGA Module Help	Embedded in *LabVIEW Help* and at *ni.com/manuals*.	Contains information about the basic functionality of the LabVIEW FPGA Module.
Real-Time Module Help	Embedded in *LabVIEW Help* and at *ni.com/manuals*.	Contains information about real-time programming concepts, step-by-step instructions for using LabVIEW with the Real-Time Module, reference information about Real-Time Module VIs and functions, and information about LabVIEW features on real-time operating systems.

Table 1. FlexRIO Documentation Locations and Descriptions (Continued)

Document	Location	Description
FlexRIO Help	Available from the Start menu and at *ni.com/manuals*.	Contains information about the FPGA module front panel connectors and I/O, controller for FlexRIO front panel connectors and I/O, programming instructions, and adapter module component-level IP (CLIP).
FlexRIO Adapter Module Development Kit User Manual	Available from the Start menu at **Start»All Programs» National Instruments»NI FlexRIO»NI FlexRIO Adapter Module Development Kit»Documentation**.	Contains information about how to create custom adapter modules for use with FlexRIO FPGA modules.
LabVIEW Examples	Available in NI Example Finder. In LabVIEW, click **Help»Find Examples» Hardware Input and Output» FlexRIO**.	Contains examples of how to run FPGA VIs and Host VIs on your device.
IPNet	Located at *ni.com/ipnet*.	Contains LabVIEW FPGA functions and intellectual property to share.
FlexRIO product page	Located at *ni.com/flexrio*.	Contains product information and data sheets for FlexRIO devices.

Channel Specifications per Connector

Number of DDC connectors	2, DDCA and DDCB
Number of digital I/O channels	42 total (16 data, 5 PFI per DDC connector)
Direction control of data channels	Per channel
Power up state	Drivers disabled, 100 Ω differential impedance

Acquisition

Acquisition voltage levels	
Differential voltage threshold	±50 mV
Voltage range	0 V min, 2.4 V max
Input impedance	100 Ω differential nominal
Maximum data rate	200 MBit/s single rate (SDR); 300 MBit/s double data rate (DDR)

Generation

Table 2. Generation voltage levels (50 Ω LVDS load)

	Minimum	Maximum
Differential	247 mV	454 mV
Common Mode	1.125 V	1.375 V

Note Generation expects 100 Ω termination at the destination in addition to the 100 Ω input termination of the NI 6585/6585B.

Characteristic impedance	100 Ω differential nominal
Maximum data rate	
Single data rate (SDR)	200 MBit/s
Double data rate (DDR)	300 MBit/s

Figure 1. Clock Input (NI 6585 variant)

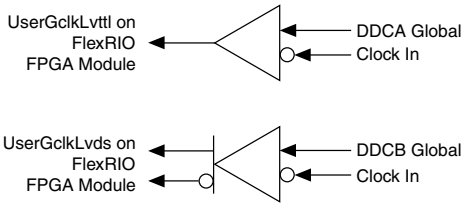
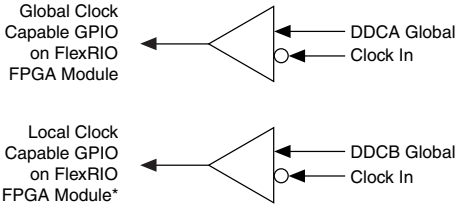
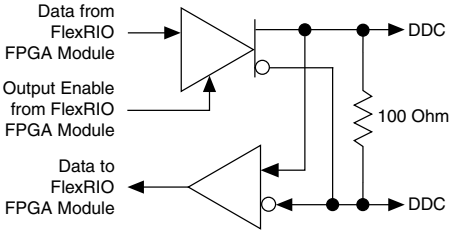


Figure 2. Clock Input (NI 6585B variant)



* DDCB Global Clock In can only clock DIO on the DDCB connector.

Figure 3. DIO <0..15> Data Channel, PFI <0..4>



Note Applies to each data and PFI channel. CLOCK OUT is the same as PFI 0.

Power

NI PXI-795*x*R/NI PXIe-796*x*R	
V_{ccoA}	315 mA, 1.1 W max
V_{ccoB}	315 mA, 1.1 W max
+3.3 V	36 mA, 0.12 W max
NI PXIe-797*x*R and NI-793*x*R (NI 6585B only)	
V_{cco}	630 mA, 2.2 W max

Physical

Dimensions	12.9 × 2.0 × 12.1 cm (5.1 × 0.8 × 4.7 in.)
Weight	284 g (10 oz)
Front Panel Connectors	Two 68-pin VHDCI connectors

Environment

Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)
Pollution Degree	2

Indoor use only.

Operating Environment

Ambient temperature range	0 °C to 55 °C (Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2. Meets MIL-PRF-28800F Class 3 low temperature limit and MIL-PRF-28800F Class 2 high temperature limit.)
Relative humidity range	10% to 90%, noncondensing (Tested in accordance with IEC 60068-2-56.)

Storage Environment

Ambient temperature range	-20 °C to 71 °C (Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2. Meets MIL-PRF-28800F Class 3 limits.)
Relative humidity range	5% to 95%, noncondensing (Tested in accordance with IEC 60068-2-56.)

Shock and Vibration

Operating shock	30 g peak, half-sine, 11 ms pulse (Tested in accordance with IEC 60068-2-27. Meets MIL-PRF-28800F Class 2 limits.)
Random vibration	
Operating	5 Hz to 500 Hz, 0.3 g_{rms}
Nonoperating	5 Hz to 500 Hz, 2.4 g_{rms} (Tested in accordance with IEC 60068-2-64. Nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

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 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 CE

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`.)

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