

Cisco Connected Grid ISDN BRI U and BRI S/T GRWICs for the Cisco 2010 Connected Grid Router

The Cisco[®] Connected Grid portfolio of solutions is designed specifically for the harsh, rugged environments often found in the energy and utility industries. These solutions include the Cisco 2010 Connected Grid Router (CGR 2010), which has been designed to support the communications infrastructure needs of the energy delivery infrastructure across the generation, transmission, and distribution sectors. Designed for highly secure, reliable, and scalable infrastructure, the CGR 2010 is an ideal platform to support Smart Grid and other energy delivery infrastructure needs of customers. The CGR 2010 has been extensively tested to meet the challenging substation compliance standards including IEEE 1613 and IEC 61850-3. The CGR 2010 offers four module slots to utilize Grid Router WAN Interface Cards (GRWIC). These GRWICs support legacy WAN interfaces (e.g. ISDN, DSL, Serial) as well as newer WAN technologies such as 4G/LTE.

Product Overview

The Cisco ISDN BRI Grid Router WAN interface cards (GRWICs) are designed for use with the Cisco 2010 Connected Grid Router (CGR 2010). Applications include BRI U or BRI S/T WAN connectivity for energy infrastructure that utilizes ISDN for connectivity.

Features and Benefits

- One ISDN BRI port with U interface (built-in NT1)
 - Utilizes an RJ-49C connector
 - Remote and local configuration, monitoring, and troubleshooting with the Cisco IOS[®] Software command-line interface (CLI) and Simple Network Management Protocol (SNMP)
- One ISDN BRI port (S/T interface, requires external NT1)
 - Utilizes an RJ-45 connector

Table 1 shows the minimum Cisco IOS Software requirements for each platform.

Table 1. Minimum Cisco IOS Software Requirements

	Cisco CGR 2010
Minimum IOS Release	15.2(3)T
Minimum IOS Technology Package	IP Base

Table 2 shows the platform support and maximum number of Cisco ISDN BRI Modules supported in each platform.

Table 2. Number of Cisco ISDN BRI GRWICs per Platform

Type of Module	Cisco CGR 2010
GRWIC-ISDN-1B-U	4
GRWIC-ISDN-B-S/T	4

Hardware Specifications

Table 3 shows the hardware specifications for the Cisco ISDN BRI GRWICs.

Table 3. Hardware Specifications for the Cisco ISDN BRI Modules

Feature	Description
Form Factor	<ul style="list-style-type: none"> • Single-wide GRWIC, no slot restrictions
Dimensions (W x H x D)	<ul style="list-style-type: none"> • ISDN BRI U GRWIC: 3.25 x 2.0 x 8.5 in. • ISDN BRI S/T GRWIC: 3.25 x 2.0 x 8.5 in.
Weight	<ul style="list-style-type: none"> • ISDN BRI U GRWIC: 0.9 lb (0.4 kg) • ISDN BRI S/T GRWIC: 0.9 lb (0.4 kg)
LEDs	<ul style="list-style-type: none"> • ISDN BRI U GRWIC <ul style="list-style-type: none"> ◦ B1 and B2 for ISDN channel status ◦ NT1 for connection status • ISDN BRI S/T GRWIC <ul style="list-style-type: none"> ◦ Network module status indicator ◦ Status LEDs for each B Channel ◦ Status LED for NT1
Ports	<ul style="list-style-type: none"> • ISDN BRI U GRWIC <ul style="list-style-type: none"> ◦ Single RJ-49C port • ISDN BRI S/T GRWIC <ul style="list-style-type: none"> ◦ Single RJ-45 port

Regulatory Compliance, Safety, Emissions, and EMC/Immunity

Table 4 shows a partial listing of regulatory compliance and safety data.

Table 4. Common Specifications

Feature	Description
Environmental Specifications	
Operating Conditions	
Operating Temperature	32° F to 104° F (0 to +40° C) continuous operating temperature range
Shock and Vibration	30 G @11 ms
Altitude	10,000 ft (3,048 m); maximum operating temperature is de-rated with increasing altitude per IEEE1613a-2008
Relative Humidity	5 to 85 percent non-condensing
Non-Operating Conditions	
Temperature	32° F to 104° F (0° C to40° C)
Relative Humidity	5 to 85 percent non-condensing
Altitude	10,000 ft (3,048 m); maximum operating temperature is de-rated with increasing altitude per

Feature	Description
	IEEE1613a-2008
Non-Operating Free-Fall Drop	4 in. (100 mm) per ENG-339611
Operating Seismic Earthquake	IEC 61850-3 section 5.5
Non-Operating Shock and Vibration	40-50G (3.26 m/s minimum)
Immunity	<ul style="list-style-type: none"> • EN61000-6-2 • EN61000-4-2 (ESD) • EN61000-4-3 (RF) • EN61000-4-4 (EFT) • EN61000-4-5 (SURGE) • EN61000-4-6 (CRF) • EN61000-4-11 (VDI) • EN 55024, CISPR 24 • EN50082-1
Telecom Compliance	<ul style="list-style-type: none"> • US: TIA-968-A • CA: CS-03 • EU: TBR1, 2, 4, 12, 13 • RTTE Directive • Australia: AS/ASIF S016, S038 • Japan: JATE
Safety	<ul style="list-style-type: none"> • USA: UL 60950-1 • Canada: CAN/CSA C22.2 No. 60950-1 • Europe: EN 60950-1 • China: GB 60950-1 • Australia/New Zealand: AS/NZS 60950-1 • Rest of World: IEC 60950-1 • CSA certified to UL/CSA 60950-1, 2nd Ed. • CB report to IEC60950-1, 2nd Ed., covering all group differences and national deviations
Electromagnetic Compliance	<ul style="list-style-type: none"> • 47 CFR, Part 15 • ICES-003 Class A • EN55022 Class A • CISPR22 Class A • AS/NZS 3548 Class A • VCCI V-3 • CNS 13438 • EN 300-386

Table 5 lists the product part numbers.

Table 5. Product Part Numbers

Connected Grid Router WICs	
GRWIC-ISDN-1B-U	Cisco Connected Grid ISDN BRI U GRWIC
GRWIC-ISDN-1B-U=	Cisco Connected Grid ISDN BRI U GRWIC, spare
GRWIC-ISDN-B-S/T	Cisco Connected Grid ISDN BRI S/T GRWIC
GRWIC-ISDN-B-S/T=	Cisco Connected Grid ISDN BRI S/T GRWIC, spare

Ordering Information

These products can be ordered by a Cisco authorized partner. For more information about product availability, please contact your Cisco representative.

Cisco and Partner Services

Services from Cisco and our certified partners can help you transform your network and accelerate business innovation across the grid and enterprise. We have the depth and breadth of expertise to create a clear, replicable, and optimized branch footprint across technologies. Planning and design services align technology with business goals and can increase the accuracy, speed, and efficiency of deployment. Technical services help improve operational efficiency, save money, and mitigate risk. Optimization services are designed to continuously improve performance and help your team succeed with new technologies. For more information, visit <http://www.cisco.com/go/services>.

Country Support

Visit the following URL or contact your local Cisco representative for country-specific approval status (Cisco.com login required): <http://www.cisofax.com>

For more information on the Cisco CGR 2010 please visit: <http://www.cisco.com/go/cgr2000>

For more information on the ISDN GRWICs, please visit:
http://www.cisco.com/en/US/products/ps10977/products_relevant_interfaces_and_modules.html



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)