


# TripSaver® II Gateway Controller: User Guide

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Qualified Persons


 **WARNING**

Only qualified persons who are knowledgeable in the installation, operation, and maintenance of overhead and underground electric distribution equipment, along with all associated hazards, may install, operate, and maintain the equipment covered by this publication. A qualified person is someone who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of special precautionary techniques, personal protective equipment, insulated and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended **ONLY** for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this  
Instruction Sheet


 **NOTICE**

Thoroughly and carefully read this instruction sheet and all materials included in the product’s instruction handbook before installing or operating your TripSaver II Gateway Controller. Familiarize yourself with the Safety Information on page 3. The latest version of this publication is available online in PDF format at [sandc.com/en/support/product-literature/](http://sandc.com/en/support/product-literature/).


Retain this  
Instruction Sheet

This instruction sheet is a permanent part of your TripSaver II Gateway Controller. Designate a location where you can easily retrieve and refer to this publication.

Proper Application

 **WARNING**

The equipment in this publication must be selected for a specific application. The application must be within the ratings furnished for the selected equipment.

 **CAUTION**

DO NOT disassemble the gateway controller. Opening the gateway controller will void the manufacturer’s warranty and could cause minor injury.

Warranty

The warranty and/or obligations described in S&C’s Price Sheet 150, “Standard Conditions of Sale–Immediate Purchasers in the United States,” (or Price Sheet 153, “Standard Conditions of Sale–Immediate Purchasers Outside the United States”), plus any special warranty provisions, as set forth in the applicable product-line specification bulletin, are exclusive. The remedies provided in the former for breach of these warranties shall constitute the immediate purchaser’s or end user’s exclusive remedy and a fulfillment of the seller’s entire liability. In no event shall the seller’s liability to the immediate purchaser or end user exceed the price of the specific product that gives rise to the immediate purchaser’s or end user’s claim. All other warranties, whether express or implied or arising by operation of law, course of dealing, usage of trade or otherwise, are excluded. The only warranties are those stated in Price Sheet 150 (or Price Sheet 153), and THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY EXPRESS WARRANTY OR OTHER OBLIGATION PROVIDED IN PRICE SHEET 150 (OR PRICE SHEET 153) IS GRANTED ONLY TO THE IMMEDIATE PURCHASER AND END USER, AS DEFINED THEREIN. OTHER THAN AN END USER, NO REMOTE PURCHASER MAY RELY ON ANY AFFIRMATION OF FACT OR PROMISE THAT RELATES TO THE GOODS DESCRIBED HEREIN, ANY DESCRIPTION THAT RELATES TO THE GOODS, OR ANY REMEDIAL PROMISE INCLUDED IN PRICE SHEET 150 (or PRICE SHEET 153).

## Warranty Qualifications

Warranty of the TripSaver® II Gateway Controller is contingent on the installation, configuration, and use of the software in accordance with S&C's applicable instruction sheets. This warranty does not apply to major components not of S&C manufacture, such as communication devices, and antennas. However, S&C will assign to the immediate purchaser or end user all manufacturers' warranties that apply to such major components.

## Safety Information

### Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels and tags attached to your TripSaver II Gateway Controller. Familiarize yourself with these types of messages and the importance of these various signal words:

#### **DANGER**

"DANGER" identifies the most serious and immediate hazards that will likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.

#### **WARNING**

"WARNING" identifies hazards or unsafe practices that can result in serious personal injury or death if instructions, including recommended precautions, are not followed.

#### **CAUTION**

"CAUTION" identifies hazards or unsafe practices that can result in minor personal injury if instructions, including recommended precautions, are not followed.

#### **NOTICE**

"NOTICE" identifies important procedures or requirements that can result in product or property damage if instructions are not followed.

### Following Safety Instructions

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C's website [sandc.com](http://sandc.com), or call the S&C Global Support and Monitoring Center at 1-888-762-1100.

#### **NOTICE**

Read this instruction sheet thoroughly and carefully before installing your TripSaver II Gateway Controller.



### Replacement Instructions and Labels

If additional copies of this instruction sheet are needed, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

### Contents of TripSaver II Gateway Controller



Figure 1. The ac power cord.

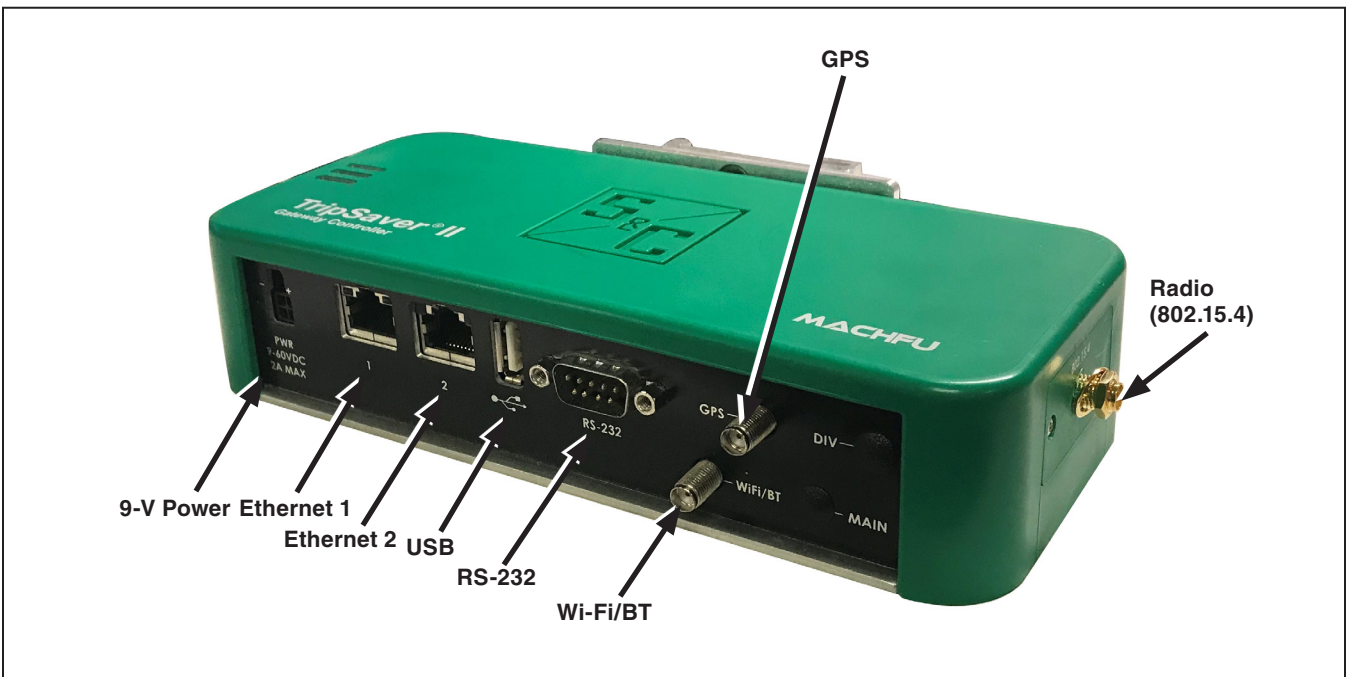


Figure 2. The TripSaver II Gateway Controller.

Dimensional Drawings

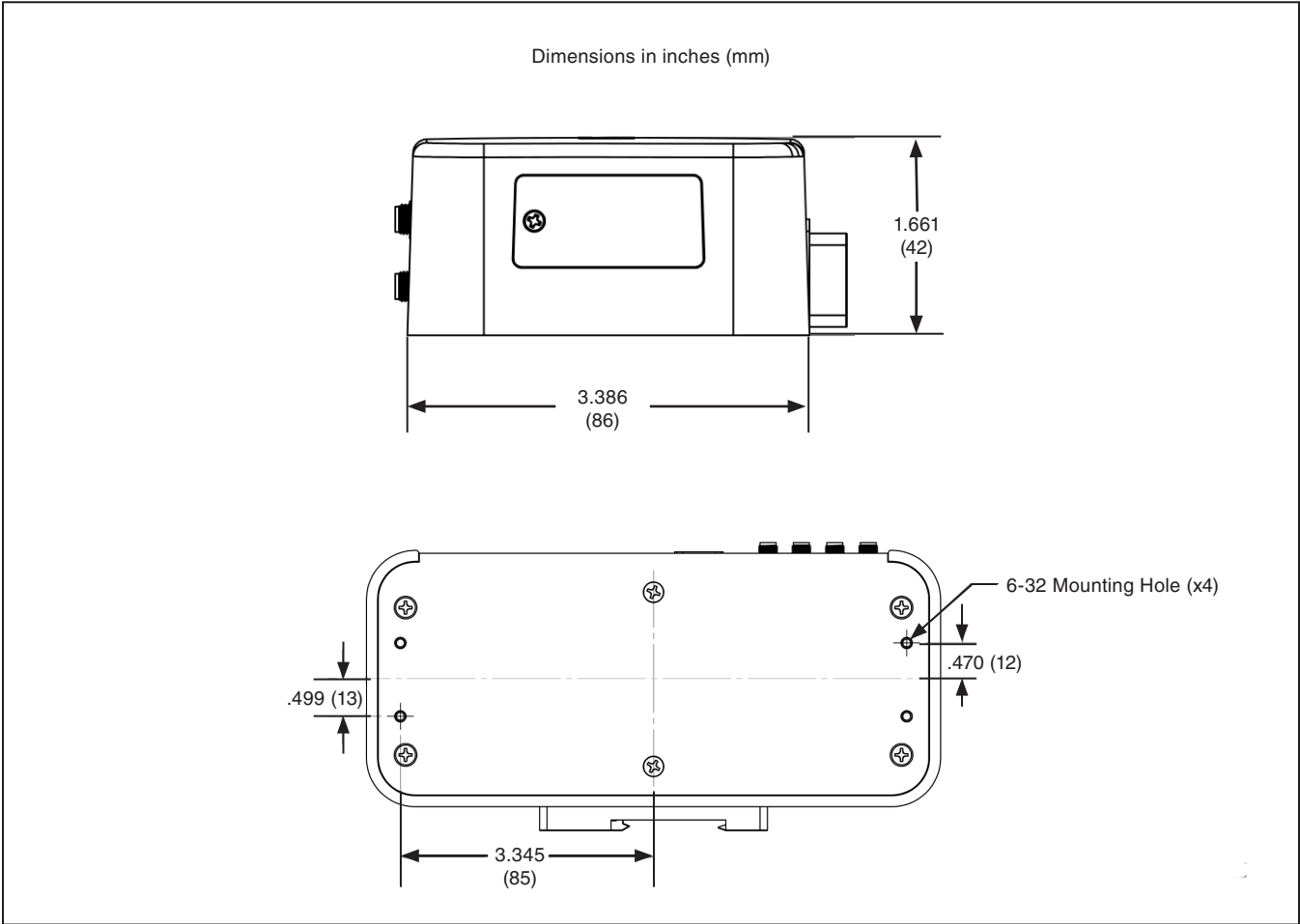


Figure 3. Gateway Controller

## Gateway Controller Specifications

Wi-Fi	IEEE 802.11 b/g/n (2.4 GHz) WPA2-PSK Security
ZigBee	IEEE 802.15.4 (2.4 GHz)
Bluetooth	Bluetooth 4.0 (+Bluetooth low energy) (Max: 12.5 dBm)
GPS	GPS/GNSS 1 PPS time service for stable and traceable time reference
Time management	NTP IEEE 1588 PTP
Ethernet	Two 10/100 base-T RJ45
USB	USB 2.0 Type A
Serial	RS-232 Sub-D 9pin TCP/UDP terminal server
Digital I/O (on power connector)	Pull-up Contact Input
Networking	Configurable network interfaces assigned to LAN or WAN Ethernet IEEE 802.3, 802.1Q/VLANs IP protocols TCP, UDP, ARP, DHCP Client/Server, ICMP
Routing and failover	IP pass-through; NAT, SNAT, DNAT, port forwarding and Ethernet bridging
Industrial protocols	Modbus Serial, Modbus TCP, DNP3 serial, DNP3 TCP
IoT protocols	MQTT, CoAP, HTTPS
Security	VPN: IPSec, IKEv2, NAT Traversal; SSL, Open VPN client, PPTP, L2TP (256 bits AES) Firewall Stateful L3-L4 Access Control List, Layer 2 MAC Filtering, NAT, Source NAT (Masquerading), Static NAT Secure Firmware, Digitally Signed Software
Wireless interface/connectors	Wi-Fi/Bluetooth/Zig Bee: SMA GPS: SMA 4 pin Microfit 3.0
Device management	SNMP
Dimension	See dimensional drawing on page 5.
Power	Input Voltage: 9 to 60 Vdc Idle 900 mW; Typical 2W, Max 4 W
Environmental	Operating Temperature: -40°C to +80°C (-40°F to +176°F) Humidity: 90% RH @ 60°C
Certification	FCC Part 15 and IC Ordinary locations: UL 60950-1, 2nd Edition, 2014-10-14
Product warranty	See "Warranty" on page 2.

## Antenna Specifications

The gateway controller is professionally installed equipment. The radio frequency (RF) output power does not exceed the maximum limit allowed in the country of operation.

### ⚠ CAUTION

Unauthorized antenna, modifications, or attachments may damage the gateway controller, violate regulations, or cause minor injury.

**Note:** Use only the supplied or an equivalent replacement antenna.

**Note:** Any modification to the controller or use of an unauthorized antenna not expressly approved by S&C Electric Company is the sole responsibility of the user, configurator, or operator. Any modification or use of an unauthorized antenna must reassess the equipment in accordance with all applicable international safety, EMC, and RF standards. Authorized antennas are listed as follows:

### Mobile Broadband (SMA male):

Frequency	Type Avg. Gain (dBi)	Peak Gain (dBi)
2200 – 2483	1.5	4

### GPS: Monopole (SMA male):

Frequency	Type Avg. Gain (dBi)	Peak Gain (dBi)
1571 - 1578	28	-
1601 – 1603	28	-

## Connecting to the Gateway Controller

Complete the following steps to connect to the gateway controller:

- STEP 1.** Connect the four-pin ac power cable to the gateway controller. Plug in the gateway controller to a 120-Vac outlet.
- STEP 2.** Connect an Ethernet cable to Ethernet 1 on the gateway controller. Connect the other end to the Ethernet port on a personal computer (PC).

**Note:** The gateway controller will take between 5 and 15 minutes to fully boot. After powering the gateway controller, wait at least five minutes before trying to log in to the controller.



Figure 4. Connecting the gateway controller to ac power and Ethernet 1 port.

## Logging in to a TripSaver II Gateway Controller

Complete the following steps to log in to the controller:

- STEP 1.** The communication gateway software is stored onboard the gateway controller and is accessed using a Web-browser interface. The default configuration of the gateway controller's IP gateway is 192.168.1.1 with DHCP set as "On." To join the gateway controller's network, set the PC's network address to "Obtain an IP Address Automatically" and "Obtain DNS Server Address Automatically" under the PC's LAN address settings to enable a network connection to the gateway controller. Alternately, a static IP address within the 192.168.1.x network may be used.
- STEP 2.** Allow approximately 5 minutes for the communication gateway to boot. Confirm the PC has successfully joined the communication gateway network by launching an MSDOS command prompt and issuing a ping 192.168.1.1 -t command. A MSDOS ping "Reply" message will display, confirming the connection between the PC and communication gateway is active.

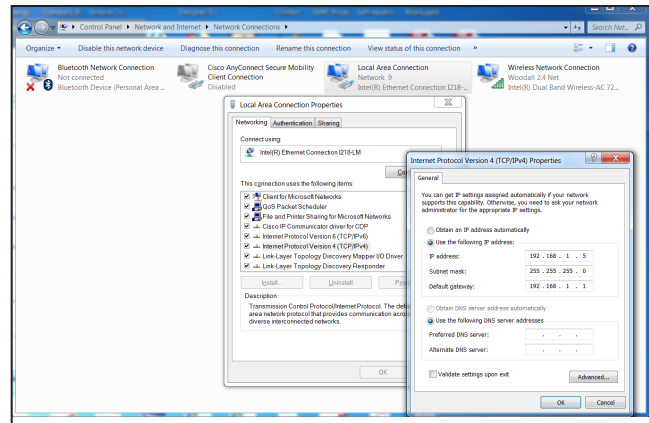


Figure 5. Setting a static IP address on a PC to connect to the gateway controller.

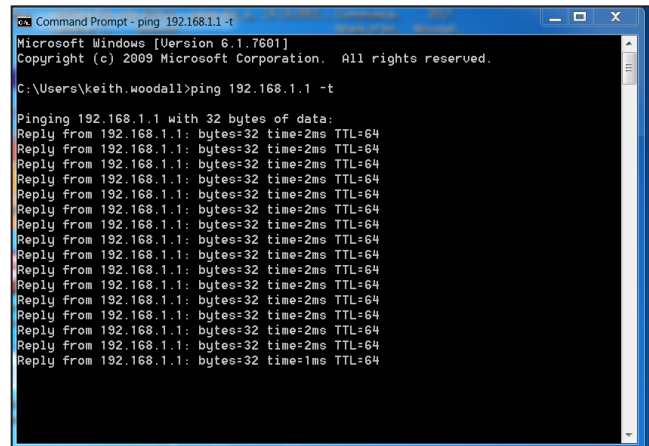


Figure 6. A ping response in the MSDOS command window.



**STEP 3.** With the CAT5 cable attached to the gateway controller's Ethernet Port 1, launch a Web browser on the PC. In the URL address line, type the gateway controller default IP address of 192.168.1.1 and press the <Return> key. (Browser versions supported include Google Chrome and Internet Explorer.) The *Login* screen will open with a username and password challenge.

**Note:** The default username and password can be requested from S&C by calling the Global Support and Monitoring Center at 888-762-1100 or by contacting S&C through the S&C Customer Portal at [sandc.com/en/support/sc-customer-portal/](http://sandc.com/en/support/sc-customer-portal/).

**STEP 4.** After a successful login, the browser will open the communication gateway *General Status* screen with an application navigation menu on the left side. The **Navigation** menu will remain visible for all subordinate menu-interface screens. When logging in for the first time, users will be sent to the *Profile* screen and be prompted to change the default password.

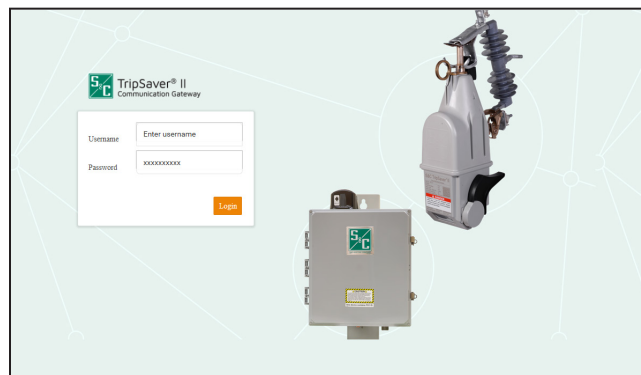


Figure 7. The gateway controller *Login* screen.

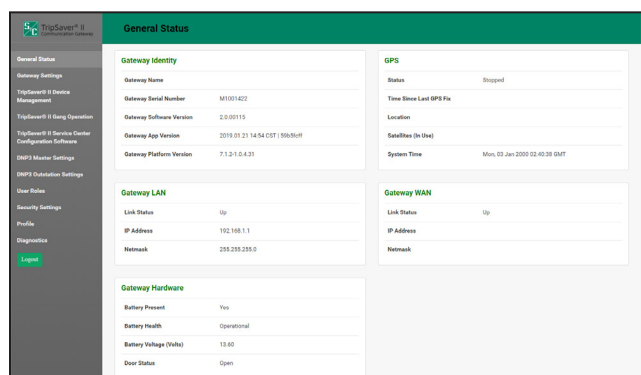


Figure 8. The *Status* screen.

### FCC Statement

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antennae used for this transmitter must be installed to provide a separation distance of at least 20 centimeters (7.9 inches) from all people and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the non-co-location statement.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

### Industry Canada Statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

### Industry Canada Radiation Exposure Statement

This radio transmitter with model: Gateway Controller has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio with model: Gateway Controller a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Taoglas	GW.05	Monopole	Standard RP – SMA (M)	1.25

### Australia/New Zealand (ACMA)

The above-mentioned product complies with the requirements of the relevant ACMA Standards made under the Radiocommunications Act 1992 and the Telecommunications Act 1997. These Standards are referenced in notices made under section 182 of the Radiocommunications Act and 407 of the Telecommunications Act.

### Brazil (ANATEL)

Atendimento à Regulamentação Anatel Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Este produto está homologado pela ANATEL, de acordo com os procedimentos regulamentados pela Resolução 242/2000, e atende aos requisitos técnicos aplicados.

Para maiores informações, consulte o site da ANATEL. [www.anatel.gov.br](http://www.anatel.gov.br)



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