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Landis+Gyr



Series 5 Gridstream Mobile Radio T1501/T1551

Data Sheet

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Series 5 Gridstream Mobile Radio T1501/T1551 Data Sheet



Introduction

The Gridstream Mobile Radio (GMR) is a field tool device that enables customers to communicate with RF Mesh and Mesh IP devices. The device uses the standard USB-C serial cable to connect to a user's PC. Two-way communication with the GMR provides the capability to transmit and receive data from AMI endpoints.

This product is low power mode capable which helps connect to modules in single channel mode.

GMR contains Landis+Gyr's Series 5 Network Node which is a fully functional, Network Interface Card (NIC) that is mPCIe standard-enabled for simple network and sensor device integration.



Figure 1. Series 5 Gridstream Mobile Radio

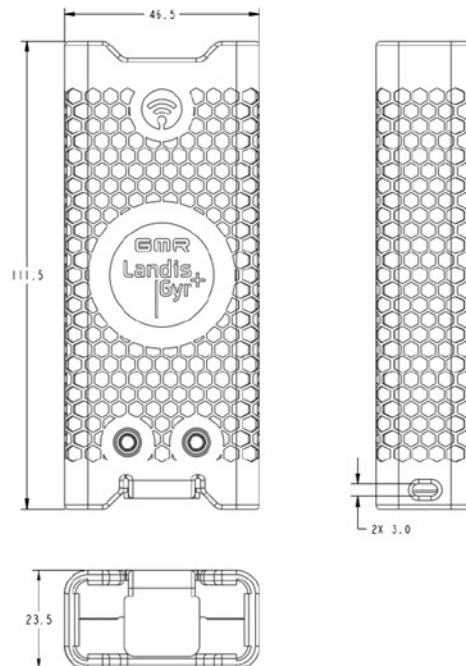
Table 1. Series 5 GMR T1551 Specification

Element	Description
Radio Model	Series 5 GMR T1551
Communication Protocol (PHY)	IEEE 802.15.4g, IEEE 802.15.4e, IPv6 (RPL & 6LoWPAN)
MAC/PHY Features	
MAC	Automatic selection of 'best' Band based on Link Quality
PHY	Adaptive Power Control (i.e., Short range output power back-off) Precision Output Power Management Clear Channel Assessment
Hardware Capabilities	
Clock Speed	120 MHz
RAM Memory	640 KB
FLASH Memory	2 MB + 4 MB External
RF Modulation	IEEE 802.15.4 SUN FSK
RF Bands	Sub-GHz
RF Port	Internal Multi-Band 1dBi Antenna
Mechanical	
Operating Temperature	-20 - 65C
Storage Temperature	-20 - 65C
Relative Humidity	5 - 85%
IP Rating	IP53 (when rubber plug is closed)
Sub-GHz Band Characteristics: India	
Frequency Range (Fc)	865.1 MHz to 866.9 MHz
Channel Width	200 KHz
Number of Channels	10
Multicast Modulation	2-FSK: 50 kbps
Unicast Modulation Support	2-FSK: 50 - 150 kbps
Data Rate Coverage	50 kbps – 150 kbps
Transmitter Power	50 mW - 500 mW
Receiver Sensitivity (IEEE 802.15.4)	F2B50 = -107 dBm F2B150 = -101 dBm

Table 2. Series 5 GMR T1501 Specification

Element	Description
Radio Model	Series 5 GMR T1501
Communication Protocol (PHY)	RF Mesh (Proprietary)
MAC/PHY Features	
MAC	Automatic selection of 'best' Band based on Link Quality
PHY	Precision Output Power Management
Hardware Capabilities	
Clock Speed	120 MHz
RAM Memory	640 KB
FLASH Memory	2 MB + 4 MB External
RF Modulation	2-FSK, 2-GFSK
RF Bands	Sub-GHz
RF Port	Internal Multi-Band 1dBi Antenna
Sub-GHz Band Characteristics: North America	
Frequency Range (Fc)	Narrowband: 904.0 - 927.8 MHz
	Wideband: 902.3 - 927.8 MHz
Channel Width	Narrowband: 100 KHz
	Wideband: 300 KHz
Number of Channels	Narrowband: 239
	Wideband: 86
Data Rate Coverage	Narrowband: 9.6 - 38.4 kbps
	Wideband: 9.6 - 115.2 kbps
Transmitter Output Power	50 mW - 974 mW (peak)
Receiver Sensitivity (IEEE 802.15.4)	9.6 kbps: -114 dBm 19.2 kbps: -112 dBm 19.2 kbps (MI=0.5): -111 dBm 38.4 kbps: -109 dBm 115.2 kbps: -104 dBm

Outer Dimensions



FCC, Industry Canada Compliance

FCC Class B

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult Landis+Gyr or an experienced radio technician for help.



WARNING: Changes or modifications to this device not expressly approved by Landis+Gyr could void the user's authority to operate the equipment.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiations FCC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être situé à proximité ou fonctionner en conjonction avec toute autre antenne ou émetteur.

Industry Canada

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.



NOTE: The GMR uses an internal antenna that complies with aforementioned requirements. There is no provision to use an external antenna.

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio (5294A-NG0R1S5LP) 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.

Regulatory Compliance India

WPC Guidelines

This device complies with WPC guidelines. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Regulatory Compliance Mexico

IFETEL Regulatory blurb will be updated after regulatory certification is obtained.