Gridstream® Connect Mobile Radio

Enabling Communications with RF Mesh, Mesh IP, and Wi-SUN Devices

The Landis+Gyr Gridstream Connect Mobile Radio (GMR) is a field tool device that replaces the Comms Adapter to enable communication with RF Mesh, Mesh IP, and Wi-SUN devices. The GMR 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. The product is low power mode-capable which helps connect to modules in single channel mode. The GMR contains Landis+Gyr's Network Node, a fully functional Network Interface Card (NIC) that is mPCIe standard-enabled for simple network and sensor device integration.

The GMR requires Landis+Gyr's TechStudio software. Using Landis+Gyr's Gridstream Connect IoT platform, TechStudio provides commissioning, testing, and modification capability for RF network devices, including street light controllers, electric meters, gas/water modules, and line sensors, all from a single software platform.

GMR connectivity models are available to support the following protocols:

Part Number	Network Interface Card	Communications Protocol	Modulation
T1501	Series 5	RF Mesh (L+G Proprietary)	FSK
T1651	Series 6	Mesh IP (IEEE802.15.4g RPL IP-based)	FSK
T1661	Series 6	Wi-SUN FAN 1.1 (Wi-SUN Standard)	FSK, OFDM

Note: The GMR is not applicable for LTE-M networks.

KEY FEATURES

- Supports RF Mesh, Mesh IP, and Wi-SUN protocols
- Supports single-channel mode connection to modules
- Uses industry-standard USB-C interface
- Powered directly from PC

Landis+Gyr

PRODUCT SPECIFICATIONS

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

	Narrowband	Wideband
Frequency Range (Fc)	904.0 - 927.8 MHz	902.3 - 927.8 MHz
Channel Width	100 KHz	300 KHz
Number of Channels	239	86
Data Rate Coverage	9.6 - 38.4 kbps	9.6 - 115.2 kbps
Transmitter Output Power	Transmitter Output Power	
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	

This information is provided on an "as is" basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

Landis+Gyr

PRODUCT SPECIFICATIONS

Radio Model	Series 6 GMR T1651
Communication Protocol (PHY)	IEEE 802.15.4-2020
MAC/PHY FEATURES	
MAC	• Simultaneous multi-band support • Automatic selection of 'best' band based on link quality • Automatic selection of 'best' modulation 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, and OFDM
RF Bands	Sub-GHz & 2.4-GHz Simultaneous Operation
RF Port	Single 50Ω U.FL Male Connector
MECHANICAL	
Operating Temperature	-20 - 65C
Storage Temperature	-20 - 65C
Relative Humidity	5 - 85%
IP Rating	IP53 (when rubber plug is closed)
Weight	0.20 lbs

SUB-GHZ BAND CHARACTERISTICS: NORTH AMERICA, MEXICO & BRAZIL

Network Operating Mode	Series 5 Compatible	Greenfield
Frequency Range (Fc)	USA/Canada/Mexico:	
	902.4 - 927.6 MHz	902.4 - 926.8MHz
	Brazil:	
	902.4 - 907.2 MHz 915.6 - 927.6 MHz	904 - 906.4 MHz 916 - 926.8 MHz
Channel Width	400 KHz	1200 KHz
Number of Channels	USA/Canada/Mexico:	
	64	20
	Brazil:	
	44	13
Multicast Modulation	2-FSK 50 kbps	OFDM Option 1 MCS0 (100 kbps)
Data Rate Coverage	50 - 600 kbps	100 - 2400 kbps
Transmitter Output Power	400 µW (peak)	N/A
Receiver Sensitivity (IEEE 802.15.4)	F2B50 = -108 dBm F2B150 = -100 dBm F2B200 = -99 dBm O3M3 = -107 dBm O3M4 = -105 dBm O3M5 = -102 dBm O3M6 = -97 dBm	O1M0 = -110 dBm O1M1 = -109 dBm O1M2 = -105 dBm O1M3 = -102 dBm O1M4 = -99 dBm O1M5 = -96 dBm O1M6 = -90 dBm

SUB-GHZ BAND CHARACTERISTICS: PHILLIPINES

Network Operating Mode	Series 5 Compatible
Frequency Range (Fc)	915.2 - 917.6 MHz
Channel Width	400 KHz
Number of Channels	7
SUN Modulation Support	2-FSK: 50 - 200 kbps OFDM Option 3: MCS3 - MCS6
Data Rate Coverage	50 kbps - 150 kbps
Transmitter Power	50 mW - 800 mW
Receiver Sensitivity (IEEE 802.15.4)	F2B50 = -108 dBm F2B150 = -100 dBm F2B200 = -99 dBm O3M3 = -107 dBm O3M4 = -105 dBm O3M5 = -102 dBm O3M6 = -97 dBm

SUB-GHZ BAND CHARACTERISTICS: HONG KONG & BANGLEDESH

Network Operating Mode	Series 5 Compatible
Frequency Range (Fc)	920.6 MHz - 924.6 MHz
Channel Width	400 KHz
Number of Channels	11
SUN Modulation Support	2-FSK: 50 - 200 kbps
Data Rate Coverage	50 kbps – 200 kbps
Transmitter Power	50 mW - 800 mW
Receiver Sensitivity (IEEE 802.15.4)	F2B50 = -108 dBm F2B150 = -100 dBm F2B200 = -99 dBm

This information is provided on an "as is" basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

PRODUCT SPECIFICATIONS (CONTINUED)

SUB-GHZ BAND CHARACTERISTICS: AUSTRALIA

Network Operating Mode	Series 5 Compatible
Frequency Range (Fc)	915.6 MHz - 927.6 MHz
Channel Width	400 KHz
Number of Channels	31
SUN Modulation Support	2-FSK: 50 - 200 kbps
Data Rate Coverage	50 kbps – 200 kbps
Transmitter Power	50 mW - 800 mW
Receiver Sensitivity (IEEE 802.15.4)	F2B50 = -108 dBm F2B150 = -100 dBm F2B200 = -99 dBm O3M3 = -107 dBm O3M4 = -105 dBm O3M5 = -102 dBm O3M6 = -97 dBm

SUB-GHZ BAND CHARACTERISTICS: INTERNATIONAL

Network Operating Mode	2.4-GHz
Frequency Range (Fc)	2410.8 MHz to 2461.2 MHz
Channel Width	1200 KHz
Number of Channels	43
Multicast Modulation	OFDM Option 1 MCS0 (100 kbps)
Unicast Modulation Support	OFDM Option 1: MCS0 - MCS6
Data Rate Coverage	100 kbps - 2400 kbps
Transmitter Power	100 mW - 490 mW (average)
Receiver Sensitivity (IEEE 802.15.4)	O1M0 = -112 dBm O1M1 = -111 dBm O1M2 = -107 dBm O1M3 = -105 dBm O1M4 = -102 dBm O1M5 = -99 dBm O1M6 = -93 dBm

This information is provided on an "as is" basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

Landis+Gyr

PRODUCT SPECIFICATIONS

Radio Model	Series 6 GMR T1661
Communication Protocol (PHY)	IEEE 802.15.4-2015

MAC/PHY FEATURES

MAC	• Automatic selection of 'best' modulation 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, O-QPSK & OFDM
RF Bands	Sub-GHz
RF Port	Internal Multi-Band 1dBi Antenna

SUB-GHZ BAND CHARACTERISTICS: NORTH AMERICA

Network Operating Mode	Wi-SUN
Frequency Range (Fc)	902.2 - 927.8 MHz
Channel Width	200, 400, 800 & 1200 kHz
Number of Channels	129, 64 31 & 21
Multicast Modulation	2-FSK 50 kbps
Unicast Modulation Support	• 2-FSK: 50 - 200 kbps • OFDM Option 3: MCS2 - MCS3 (100 - 200 kbps) • OFDM Option 2: MCS3 - MCS (400 - 800 kbps) • OFDM Option 1: MCS5 - MCS6 (1600 - 2400 kbps)
Data Rate Coverage	50 - 2400 kbps
Transmitter Output Power	50 - 800 mW
Receiver Sensitivity (10% PER, conducted)	F2B50 = -108 dBm F2B150 = -100 dBm F2B200 = -99 dBm O3M2 = -109 dBm O3M3 = -107 dBm O2M3 = -106 dBm O2M4 = -104 dBm O2M5 = -101 dBm O1M5 = -96 dBm O1M6 = -90 dBm

This information is provided on an "as is" basis and does not imply any kind of guarantee or warranty, express or implied. Changes may be made to this information.

GET IN TOUCH.

For more information and nationwide warranty terms, visit us at landisgyr.com or call us at 888-390-5733.

LET'S BUILD A BRIGHTER FUTURE TOGETHER

Since 1896, Landis+Gyr has been a global leader of energy management solutions. We've provided more than 3,500 utility companies all over the world with the broadest portfolio of products and services in the industry. With a worldwide team of 1,300+ engineers and research professionals, as well as an ISO certification for quality and environmental processes, we are committed to improving energy efficiency, streamlining operations,

Landis+Gyr