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swiss made to measure

TEL-WLx.xX Wireless LAN Communication System

Features

- ❏ **2.4 GHz or 5.7 GHz operation**
- ❏ **Protected WLAN Network**
- ❏ **11 Mbps throughput**
- ❏ **Up to 100 kilometre operating range**
- ❏ **Point to point / Point to multipoint**
- ❏ **Repeater functionality**
- ❏ **Ruggedised enclosure**
- ❏ **Optional Cental Acquisition and Processing Computer with data buffering and forwarding capability**


Outline

GeoSIG's TEL-WLx.xX Wireless LAN Communications System offers versatility and ease of use in a variety of locations and applications.

TEL-WLx.xX allows combining an unlimited number of field stations to one single network, which feature easy data acquisition and maintenance. The authorized user has access to the data from every node inside the network. Additionally it is possible to change the settings of every field station and the equipment attached to it by remote. At the same time the network is fully protected from unauthorized access by WEP encryption and MAC address identification.

The proprietary wireless protocol is designed to address specific shortcomings of the wireless protocols defined by the 802.11 standards. In mission-critical point-to-multipoint environments, where the wireless network must support numerous interconnected LANs, it is crucial that the wireless bandwidth be used in the most efficient manner. TEL-WLx.xX delivers high-performance broadband wireless connectivity that is not effected by hidden node transmitters, scalability, bandwidth allocation, and excessive packet transmission overhead that standard 802.11 products suffer.

Every wireless module operates either in point to point or point to multipoint mode, selectable by software and by remote. In point to point mode wireless connections up to

100 km are possible. If the distance is shorter the wireless module can be set as a base station, which can connect to 8 other wireless modules.
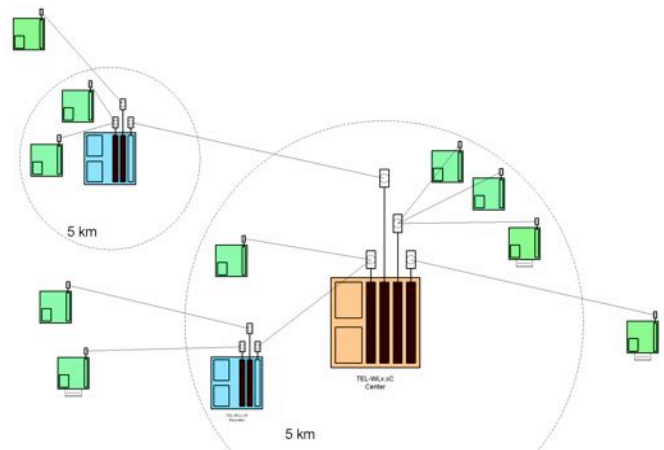
GeoSIG is able to assist its customers in finding the right equipment for their project as well as in the evaluation of potential telemetry links. Global terrain data allows GeoSIG to calculate line of sight profiles anywhere around the world.
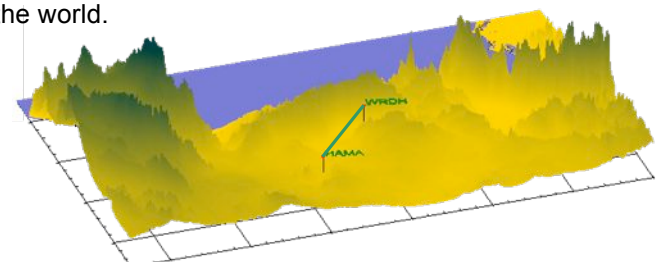
Specifications TEL-WLx.xX Wireless LAN Communication System

Link Module

Radio Characteristic:

Frequency Range	2401 to 2485 MHz
	5700 to 5775 MHz
RF Output power	1000 mW (lower power on request)
	30 dBm
Range, Line-of-sight	100 km
Sensitivity	-86 dBm
Method	802.11b, TurboCell® Wireless protocol
Rx/Tx Switching Time	< 1 us
Frequency Channels	11
Network IDs	15
Ethernet Connector	RJ45
RF Connector	Type N female
Impedance	50 Ohm
Number of connections	1 if link distance > 5 km
	8 if link distance < 5 km

Power Requirements and Environment:

Supply voltage	12 VDC – 24 VDC
Power Consumption	1 A @ 12 VDC for 1000 mW power out

TEL-WLx.xL
Link Module

Field Station / Repeater Station

Data Input

Connector	SUB-D9, male
Format	RS-232
Baudrate	9'600 / 19'200 / 38'400 / 115'200 Baud

Telemetry

|	
Included Link Modules	1 (Field Station)
	2 (Repeater Station)

Environment / Housing

Type	Steel housing
Size (W x H x D)	600 x 400 x 220 mm
Operating temperature	-10 °C - +50 °C
Protection:	IP65, EMI & Earthquake resistant

Power Requirements:

Supply voltage	12 VDC
Power Consumption	
Field Station	1.2 A @ 12 VDC for 1000 mW power out
Repeater Station	2.3 A @ 12 VDC for 1000 mW power out
Solar Panels	Optional
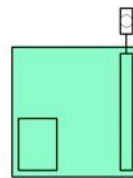
TEL-WLx.xO
Outside Station
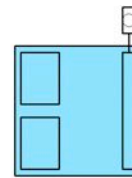
TEL-WLx.xR
Repeater

TEL-WLx.xL
Link Module

Central Station

Data Output

Connector	SUB-D9, male
Format	RS-232
Baudrate	9'600 / 19'200 / 38'400 / 115'200 Baud

Telemetry

Link Modules	Up to 8

Environment / Housing

Type	Steel housing
Size (W x H x D)	600 x 575 x 370 mm
Operating temperature	0 °C - +50 °C

Power Requirements:

Supply voltage	24 VDC
Power Consumption	3.6 A @ 24 VDC
Solar Panels	Optional
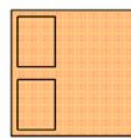
TEL-WLx.xC
Center

TEL-WLx.xL
Link Module

Optional Central Acquisition and Processing Computer

Computer	Intel Celeron 1.2 GHz or better
	80 GB HDD or more
	USB, COM, Mouse, Keyboard
Operating System	Windows XP Professional
Data Logger Software	GeoDAS (optionally SEISLOG)
Communication	Ethernet TCP/IP
Screen	15'' TFT, 1024 x 768

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Field Station / Repeater Station
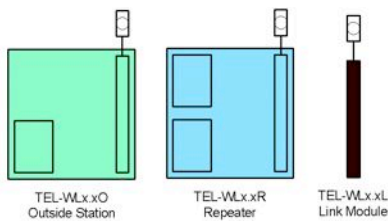
The Field Station TEL_WLx.xO and Repeater Station TEL_WLx.xR convert the incoming data from RS-232 to the Ethernet and forward them to the Central Station.

Additionally the Field Station and Repeater Station supervise the connected equipment, the Telemetry Link Modules and the power supply via a watchdog, which also protects the batteries from deep discharge. The strong steel housing and the over voltage and lightning-protection guarantee the best protection also under rough conditions.

Central Station
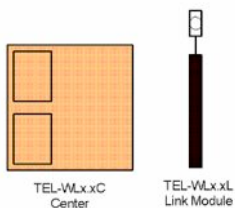
The Central Station TEL_WLx.xC can accommodate up to 8 TEL-WLx.xL Link Modules. Each Module can separately set for point to point or point to multipoint operation. Up to 100 km or 8 Field Stations are possible, therefore data from 64 Field Stations and more can be received and analysed.

To achieve this each Field Station has its dedicated digital channel to the TEL_WLx.xC, which is established by a telemetry link directly or via a Repeater Station.

The Central Station collects all necessary data and controls related system components.

Analysing of the data can be optionally done right on the Central Station itself using an optional Cental Acquisition and Processing Computer TEL_WLCAPC. This computer can also buffer and forward the data to a network, such as to a leased line.
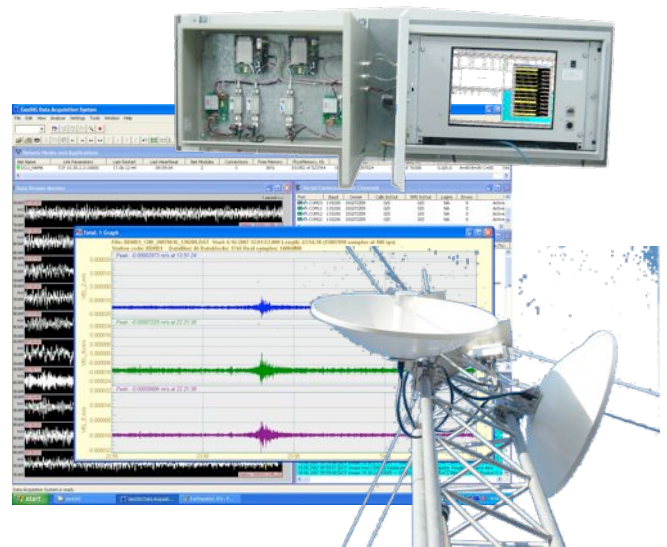
The system is supervised by a watchdog, which resets the system in case of a hang up. Additionally it measures the supply voltage and shut down the system to protect the batteries from deep discharge.

All in- and outputs are protected against over-voltage and lightning.