LANSEN

WIRELESS BUILDING TECHNOLOGY

BATTERY REPEATER R3
OMS Wireless M-BUS

DEVICE

The battery powered LAN-WMBUS-R3-B is a wireless MBUS repeater mounted with a high performance lithium battery. The device is a plug-and-play and highly configurable repeater for extending the range between a device and a collector/gateway. The enclosure is chosen to make the repeater as discrete as possible.

ANTENNA

The device make use of 2 internal antenna high performance antennas. The antennas are mounted 90 degrees taking advantage of horizontal and vertical polarizations for maximum range. This diversity is important especially indoor operation since the meters and gateway can be mounted either to the side or above the repeater. If meters hava different polarization (antenna alignment) a loss of as much as 30 dBm can be observed. This also minimize multipath problems.

CONVERTER

The Repeater can also convert between different MBUS modes.

FIRMWARE

MODES	T and C or S mode (optional), (868MHz)
REPETITION	2 times. 1 transmission on each antenna.
MAX SENSORS	1024 sensors.
MAX PACKET LENGTH	255 bytes
FILTERING	0 to 30 min suppression timer, RSSI, manufacturer (tbi), longest packet etc.
SECURITY	Supports routing of Security Profile A and B according to OMS 4.
STATUS TX INTERVAL	60 seconds.

RADIO

RECEIVER CLASS	1,5
RADIATED POWER	< 14 dBm
SENSITIVITY	down to S/T,C -109 dBm/-105 dBm
TRANSMISSION	Listen before talk, polite spectrum access.

GENERAL INFORMATION

POWER SUPPLY	100-240V AC
STANDARDS	2014/53/EU (RED)
	EN 13757-3/4:2013, OMS 4.0.2*
	* retransmit delay time 20-50 ms
TEMPERATURE	-40⁰ / +85⁰
ENCLOSURE	IP 67, 130 x 130 x 50 mm.
MATERIAL	PC , Grey

POWER/LIFETIME

POWER SUPPLY	3,6V exchangeable Battery pack.
LIFETIME	72 minutes active per day gives about 5 years. (3 minutes / hours)
	36 minutes active per day gives about 10 years.

DEVICES

LAN-WMBUS-R3-B-H1/3	Battery powered. 1/3 hop support
LAN-WMBUS-D1-TC	Configuration dongle
LAN-PM-KIT-130-ID58-78	Pole mounting kit

PERFORMANCE

Every minute a message is sent from the device with number of routed packages and the number of routed slots used and sw revision. This message could be used as an indication the device is up and running and the load of the repeater. This message is also used for time synchronizing in multihop system. The battery lifetime is dependent on the time the device is active / not active. The active /not active time can be configured to allow for longest possible lifetime. For example 10 minutes active once per day or 3 minutes active every hour.

ROUTING

The advanced collision avoidance algorithm minimizes problems with collisions and data repetition. To ensure proper functionality a randomized delay is used before repeating the message. The repeater family normally works with maximum 1 hop. That means that data cannot be sent from repeater to repeater. The repeater is however also available with an transparent, static routing algorithm, that allow controlled static multihop repeating, of wireless MBUS packets. The repeater supports as standard the short and long transportheader as well as extended link layer 1-4.

CONFIGURATION

All devices could be used right out of the box but they are also highly configurable. It is for example possible to configure the "supression" timer to set the number of minutes before a data from a specific device should be routed again. For the multihop repeater is possible to setup the static routing used by the repeater, to allow safe multihop operation. It is also possible to configure the device to automatically append the RSSI value of the received data, to ease monitoring of the system. The configuration is performed using a Lansen Wireless M-BUS programming dongle.

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