DEVICE

The mains powered LAN-WMWUS-R3/RX3 is a wireless MBUS repeater mounted with AC/DC adapter in combined enclosure. 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 either make use of 2 internal antenna high performance antennas or 1 to 2 external antennas. The ainternal ntennas 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 have different polarization (antenna alignment) a loss of as much as 30 dBm can be observed. This also minimize multipath problems.

The repeaters with external SMA interface can be used when large antennas are desirable to cover larger areas

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 device is highly immune to electrical disturbances that could be generated from example LED lights in buildings, etc.

FEATURES

The repeater support synchronization via OMS time protocol. The configuration can be protected via a 16 byte AES key to avoid unauthorized change of the configuration. It is always possible to read out data from the repeater even without the key.

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 on site configuration is performed using a Lansen Wireless M-BUS programming dongle. The configuration is performed using a Lansen Wireless M-BUS programming dongle and the LansenConfigurator tool. Using this tool it is possible to see the routing and the how good the repeater hears the meters.

Rev. 1.3

LANSEN
WIRELESS BUILDING TECHNOLOGY

FIRMWARE

MODES	T and C or S mode (optional), (868MHz)
REPETITION	2 times. 1 transmission on each antenna R3 with internal. For external 2 times on the same antenna
MAX SENSORS	936 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 R3
	2 RX3
RADIATED POWER	< 14 dBm
TRANSMISSION	Listen before talk, polite spectrum access.
HARDWARE FILTER	For GSM/GPRS and other disturbances. R3 NA, R3-LR Yes, RX3 Yes Enhanced

GENERAL INFORMATION

POWER SUPPLY	-M 100-240V AC,
	-M24 24 V AC/DC
	-B 3.6V Li-SOCl2,
STANDARDS	2014/53/EU (RED)
	EN 13757-3/4:2013, OMS 4.0.2*
	* retransmit delay time 20-100 ms
TEMPERATURE	-40^0 / $+85^0$
ENCLOSURE	-M IP 67, 130 x 130 x 35 mm.
	-B IP 67, 130 x130 x 50 mm-
MATERIAL	PC, Grey

ACCESSORY

LAN-WMBUS-D1-TC	Configuration dongle
LAN-PM-KIT-130-ID58-78	Pole mounting kit
LAN-OS-TILT3	Outer shell to further protect the repeater.
LAN-OS-TILT3-N	Outer shell with one N-type antenna connection.

	Battery	Dual Internal antenna	LTE/ GSM filter.	External SMA inter-face.	Typ sensi-tivity mode -S/T,C	Target app	Accurate clock for better timing.	Listen time battery lifetime.	Optemized for
LAN-WMBUS-R3-M		X			-107/-105	Always on			Indoor multi floor building.
LAN-WMBUS-R3-B	X	X			-107/-105	Hourly		3 min/h 5 years. 30 min/ day 10 year.	Battery lifetime. Indoor multi floor building.
LAN-WMBUS-R3-M-EH		X			-107/-105	Always on	X		Indoor multi floor building.
LAN-WMBUS-R3-B-EH	X	X			-107/-105	Hourly	X	3 min/h 5 years. 30 min/ day 10 year.	Indoor multi floor building.
LAN-WMBUS-R3-M-LR		X	X		-111/-108	Always on	X		Indoor multi floor building.
LAN-WMBUS-R3-B-LR	X	X	X		-111/-108	Daily.	X	20 min/ day 10 years	Indoor multi floor building.
LAN-WMBUS-R3-M-LR-X			X	1 TX/RX	-111/-108	Always on	X		Outdoor for longest range in one direction.
LAN-WMBUS-R3-B-LR-X	X		X	1 TX/RX	-111/-108	Daily	X	20 min/ day 10 years	Outdoor for longest range in one direction.
LAN-WMBUS-RX3-M-LR-X			XX	1 TX 1 RX	-113/-110	Always on			Maximum sensitivity long-est range in one direction.