LANSEN

LAN-WMBUS-B4-M-LR-A2-(X)-GPRS-(X)

Wireless M-Bus OMS GPRS mains gateway

DEVICE
The mains powered wireless M-Bus gateway is a highly configurable plug-and-play device used for collecting data from Wireless M-Bus meters and transmitting the data using GPRS. The enclosure is designed to make the gateway as discrete as possible.

PERFORMANCE
Long range and high sensitivity is achieved by using the latest technology in radio transceivers with sharp filtering and lowest noise amplifier. The performance in an urban environment with lots of radio disturbances from mobile phones, TV etc., is guaranteed with a high performance front end filter. This gives super blocking even when placed close to RF-transmitters.

ANTENNA
The device have many options regarding antennas. Both internal and external antenna interface is selectable to have maximum performance in each given installation. The internal antennas are mounted at 90 degrees from each other to take advantage of both horizontal and vertical polarizations for maximum range, while minimizing multipath problems. The antenna diversity prevents losses due to different polarization, especially indoors since meters and repeaters can be mounted both to the sides and above/below the gateway.

The external SMA-interfaces are suitable for antennas to cover larger areas or long distances, both for collecting Wireless M-Bus data or to transmit the data using GPRS.

LISTEN TIME (MAXIMIZE BATTERY LIFETIME)
To maximize the battery lifetime and still get the data when needed, a number of possible configuration parameters can be used, such as:
- Number of minutes to be active / not active
- Specific time during the day to start listen for meter data (e.g., at 12:30)
- Specific days to be active (e.g., Mondays and Wednesdays)
- Suppression timer (limit number of packets stored per meter/week/day/hour)

FIRMWARE UPPGRADE
The gateway firmware can be upgraded remotely using MQTT.

FILTERING AND MINIMIZE DATA
The list below displays a couple of parameters that can be used as filtering to mimimize data transfer and memory usage.
- Only recieve data from specific manufacturer, i.e., "LAS"
- Only recieve data from specific meter (White List)
- Only recieve one message per week/day/hour per device

GATEWAY WITH LANSEN REPEATER
If the gateway is used together with a Lansen repeater, the gateway can optionally extract and append the extra routing information added by the Lansen repeater, such as:
- How good the repeater received the message from a sensor
- Which repeater transmitted each message to the gateway
- Number of hops for the message before reaching the gateway

GATEWAY WITH BATTERY REPEATERS
Sometimes there are radio shadows between meters and gateway and then a Lansen repeater can be used. In the case of using a battery powered repeater, it is important that the repeater is syncronized so it is active at the same time every day. The Lansen gateway makes sure that this syncronization is maintained during the entire service life to ensure the system can operate optimally at any given time.

CONFIGURATION
Configuration can be done in different ways and is easiest with a Lansen Wireless M-Bus programming dongle together with our program, Lansen Configurator. However, configuration can also be done with other Wireless M-Bus transmitters or by doing remote configuration using the MQTT protocol.

It is possible to activate the 128 bit AES-key so all configuration data is encrypted and the gateway only accepts encrypted data.

CLOUD
The gateway connects using MQTT client to an MQTT server to deliver the raw M-Bus packets. This gives a 2-way connection between the gateway and the cloud. If the server is down, packets are buffered in the gateway for later delivery. All packets are stored and will survive a power loss if desireable depending on configuration. The gateway can work in two ways:

Constant connected
MQTT Connection to the server is always on. This means it is always possible to change parameters and transmit data to the gateway. Data is transmitted immediately to the cloud when data is received. If the connection to the MQTT server is down, the messages are stored in the flash memory and transmitted when the MQTT connection is back again.

Intervall mode
The gateway starts up a predefined intervall, for example:
- Start at 12 pm every day
- Listen for data for 20 minutes and store in the gateway
- Transmit the data to the server
- Listen for incoming configuration parameters

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FIRMWARE

INPUT MODE	T+C-mode (default) or S-mode
OUTPUT MODE	C-mode (default) or T-mode or S-mode
MAX SENSORS	2000 sensors
MAX WMBUS LENGTH	255 bytes
FILTERING	0 min to 127 hours suppression timer, RSSI, manufacturer, whitelisting, etc.
SECURITY	Supports recieving of Security Profile A and B according to OMS 4 or any W-Mbus compatible message.
STATUS TX INTERVAL	60 seconds

GENERAL INFORMATION

POWER SUPPLY	M: 100-305 VAC
STANDARDS	2014/53/EU (RED)
	EN 13757-3/4:2013, OMS
	EN 61000-6-1 (R4/uR, 3V/m)
	EN 61000-6-2 (R4-LR/RX4, 10V/m)
TEMPERATURE	M: Max: -30°C/+85°C, rec. -30°C/+50°C

RADIO CLOUD

TYPE	GPRS
CLOUD PROTOCOL	MQTT 3.1 (M-Bus compatible data)
ANTENNA	Internal high bandwidth antenna. Opt. External SMA int.

STORAGE

TYPE	Flash (survive power loss)
SIZE	~128 Mbit
	~270000 wM-Bus packets can be stored if size is ~50 bytes

RADIO

RECEIVER CLASS	2
TRANSMISSION	Listen before talk, polite spectrum access
HARDWARE FILTER	For LTE/GSM/GPRS and other disturbances.
RADIATED POWER	~14 dBm (< 25mW)
SENSITIVITY	Down to S/T,C -111 dBm/-108 dBm*
INPUT RF LIMIT	18 dBm

ENCLOSURE

DIMENSIONS	150x150x53 mm,
IP-CLASSIFICATION	A2: IP65 & IP67
COLOR	RAL 9003 (signal white)
MATERIAL	UV-resistant PC/ABS
FLAMMABILITY RATING	UL 94 HB

ACCESSORY

LAN-WMBUS-D2-TC	Configuration dongle
LANSEN CONFIGURATOR	Configuration software
LAN-A-PMB-KIT-ID58-78	Pole mounting kit
LAN-MAG-R4	Magnet with telescopic shaft

CURRENT CONSUMPTION

wM-Bus radio	12mA
GPRS	Typical 120 - 150 mA in transmission
	Max 600mA

*The sensitivity can be enhanced using the range extender LAN-WMBUS-FAMP868

OPTIONS FOR LAN-WMBUS-B4 GATEWAY

LAN-WMBUS -	SERIES -	POWER OPTION	- LTE/GSM filter -	ENCLOSURE IP-CLASS	- ANTENNA (wM-Bus)	- CLOUD CONNECTION -	ANTENNA (CLOUD TYPE)
	B4 Standard gateway	**M** 230 VAC	YES (default)	**A2** IP65 & IP67. Suited for indoor and outdoor use	(Blank) Dual internal antenna	**GPRS**	(Blank) Internal antenna
					X SMA connector for external antenna		**X** SMA connector for external antenna

Examples	Dual wM-Bus Internal antenna	External wMbus SMA interface	GPRS antenna
LAN-WMBUS-B4-M-LR-A2-GPRS	X		Internal
LAN-WMBUS-B4-M-LR-A2-X-GPRS-X		X	External

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