



DESCRIPTION AND APPLICATION

WCOM51 is the router/repeater for integration of up to 75 wireless devices. The communication is based on the encrypted Midam KFP protocol, which allows to update the device firmware on a wireless basis across the wireless network topology. Native modbus map grants seamless integration into the DDC/SCADA systems. Thanks to the „dual stack radio“ technology, it can read values from WMBus based devices simultaneously.

Application

- Modbus RTU to wireless Midam KFP protocol
- integration of up to 75 Midam KFP devices
- integration of up to 75 WMBus devices
- wireless coverage extension
- wired or wireless integration into SCADA systems

FUNCTION

WCOM51 has built-in 128-bit AES encryption, the most secure encryption standard for wireless connections. WCOM51 can work in two modes. Direct communication or cached mode. Each device is mapped to Modbus RTU register area. Up to 75 devices can be mapped with configurable offset and length. Communication status is available through timestamp, comm error and status. Wireless coverage area can be extended using the mesh functionality, which is possible thanks to connection of more WCOM51 devices in a row on a RS485 bus. Configuration and data message are exchanged between repeaters on a real time basis. Wireless communication uses higher radio frequency transmitter power up to +27 dBm and receiver contains +12 dB preamplifier. SMA antenna connector makes implementation of high gain external antenna possible. Direct mounting flex antenna, or external antenna on coaxial cable with SMA connector can be installed, for example for mounting outside switchboard in order to gain better radio signal reception. Gateway configuration is made by software tools over wireless network, or over wired RS485 terminals. PLC/DDC and SCADA driver is available. The device has factory-set values to ensure the correct default function and allows direct reading and writing of values to the Modbus map, which is available in a separate document. All settings are also stored in the Modbus map directly in the device. Before using the device for the first time, it is necessary to pair it and it is recommended to perform individual configuration, especially to enter the encryption password.

SCADA SYSTEM INTEGRATION

Direct integration into various SCADA systems through wired Modbus RTU (RS485) protocol is possible.

PAIRING

To pair your own sensors with the WCOM51 GSM gateway, the freely downloadable KFP-Lite software is available, which communicates with the gateway using the WUSB01 wireless USB configurator. Both devices must be powered and placed in close proximity to each other. Using the search function in the software interface, you can view a list of all available devices in range and assign or modify parameters based on the wireless identification code for each individual device.

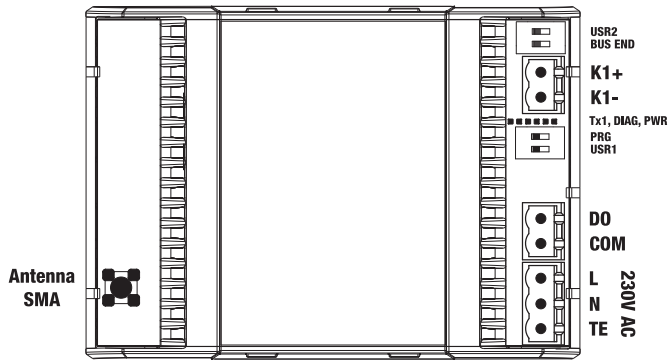
Using KFP-Lite, it is possible to change the communication frequency (default value 868.95 MHz).



SPECIFICATIONS

Wireless gateway/repeater	WCOM51
Power supply	24 to 240 V AC/DC
Consumption	4 W max., 2 W typical average
Communication	868.950 MHz, 100 kbps, WMBUS T1, KFP 868.300 MHz, 32 kbps, WMBUS S1, KFP 868.100 MHz, 100 kbps, KFP 869.525 MHz, 100 kbps, WMBUS C, KFP 868.300 MHz, 38 kbps, KFP RS485, 300 to 115200 bps, galvanic isolation 1 kV
Protocol	WMBUS (EN 13757-4), KFP (dual stack), Modbus RTU, 256 node (RS485)
Encryption	AES 128 PCBC, EN 13757-4
RF power	+27 to -20 dBm
Antenna	SMA female connector for external antenna
Communication range	500 m in free space, 150 m in buildings
Output	230 V AC, max. 4 A, AC1 general use, non-inductive load (EN60947-4-1), contact lifespan > 10 ⁵ cycles
Mechanical and dimensions	98×70×61mm, polycarbonate enclosure, IP 20 in accordance with EN 60529, as amended 3× LED (PWR, DIAG, TX) 4× Jumper (PRG/USR mode, RS485 bus end) 7× terminal M3 (power, output, RS485 communication) 1× SMA jack
Ambient conditions	-5 to 45 °C, 5 % to 95 % rH (EN 60721-3-3 class 3K5)

WIRING DIAGRAM



Antenna SMA External antenna connector

K1+ Serial line RS 485 +

K1- Serial line RS 485 -

DO Digital output, NO (normally open)

COM Common terminal

L, N Power supply, 230 V AC

TE Technical ground

LED INDICATION AND DIP SWITCHES

USR2 Not used

BUS END Bus end RS 485, the first and last devices on the bus should have bus end in ON position

TX1 Red LED – RS 485 transmitting data to the field bus

DIAG Red LED – diagnostic, wireless radio indication

PWR Green LED – power supply indicator

PRG In ON position – default frequency, power and password is used

USR1 Not used

DIMENSIONAL DRAFT

