BAYLAN GPRS-WIFI COLLECTOR PRODUCT GUIDE

BAYLAN
ELECTRONICS

www.baylanwatermeters.com

BAYLAN ELECTRONICS

1-) COLLECTOR FEATURES

- Model No: WGK-903
- STM32L151RDT6 32 Bit Arm Cortex M3 Core High Speed Microcontroller
- 2 x 64 Kbyte (AT24C512) non-volatile external EEPROM Memory
- Telit Dual-Band GL865 Embedded GSM/GPRS Module
- Super-Tech WiFi Module 802.11b/g/n
- Built-in High Power Sub-1 Ghz RF Transceiver
- Wireless MBUS EN13757 Protocol Support

1-A) GPRS MODULE FEATURES

- Dual-band EGSM 900 / 1800 MHz
- GSM/GPRS protocol stack 3GPP Release 4 compliant
- Output power

- Class 4 (2W) @ 900 MHz
- Class 1 (1W) @ 1800 MHz

- Control via AT commands according to 3GPP 27.005, 27.007 and Telit custom AT commands
- Control via Remote AT commands
- Power consumption (typical values)

- Power off: ‹ 62 uA
- Idle (registered, power saving): 1.5 mA @ DRX=9

- Serial port multiplexer 3GPP 27.010
- SIM Application Toolkit 3GPP TS 51.014
- SIM Access Profile
- Extended Supply voltage range: 3.22 – 4.5 V DC (3.8 V DC nominal)
- TCP/IP stack access via AT commands
- Sensitivity:

≤- 108 dBm (typ.) @ 900 MHz
≤- 107 dBm (typ.) @ 1800 MHz

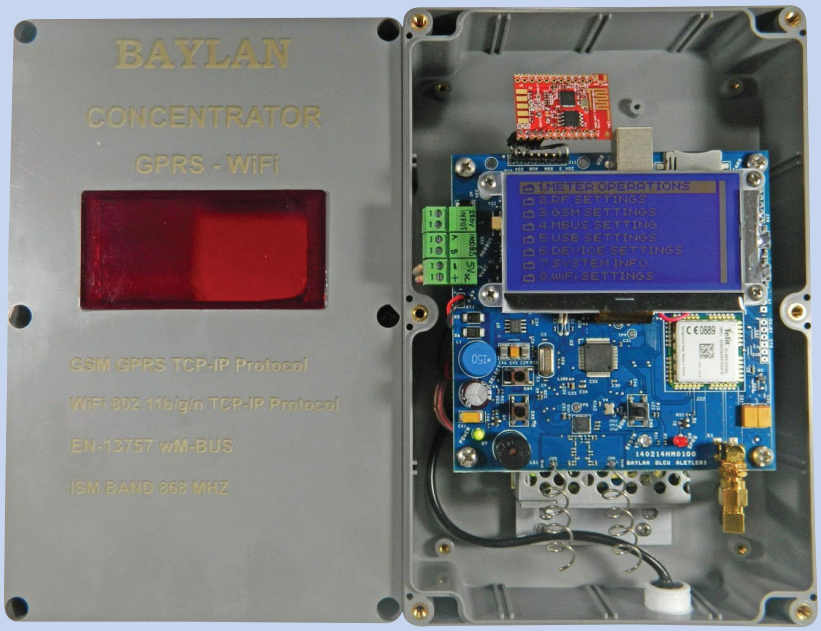
- DARP/SAIC support
- Enhanced Measurement Report support
- Dimensions: 24,4 x 24,4 x 2,7 mm
- Weight: 3.5 grams
- Extended temperature range

-40°C to +85°C (operational)
-40°C to +85°C (storage temperature)

- RoHS compliant

ITU-T V.24 serial link through CMOS UART:

- Baud rate from 300 to 115.200 bps
- Autobauding up to 115.200 bps



1-B) RF MODULE FEATURES

- Base Frequency = 868.03 MHz (License-free 868 MHz European SRD/ISM Band)
- Channel spacing = 59.9 kHz
- Channel number = 0-10 (Default set to zero)
- Modulation = GFSK
- Frequency Deviation = 19 kHz
- Datarate = 38.4 kbps
- Transmission Power = 20dBm (100mW)
- Transmission Current Consumption = 125 mA
- Receiver Filter Bandwidth = 102 kHz (Configuration for Receiver/HANDHELD)
- Crystal Frequency = 32 MHz +- 10ppm
- CRC Calculation Before Transmission = ON
- Device Address = 0 (Broadcasting Mode)
- Range = max. 750 m Line of Sight (Depending on installation conditions)

2-) WORKING OF COLLECTOR

The purpose of the GPRS Baylan collector ;

- Read and keep in memory the index-status information of BAYLAN RF meters located in a circle around 750m
- Send this information to server computer via GPRS or WİFİ when the command line received from server computer.

When the collector power is on, the buzzer will sound 2 times. The collector tries to connect to the server computer thanks to GPRS TCP/IP stack via SIM Card during 30sec.

Error Messages;

- If Collector can not connect to the server can be read "GSM=ERR & WiFi=ERR" on the screen.

After connect to the server computer, Collector starts reading meter as RF in the environment and keep these informations in own memory as totally 255 items list. If the same meter read again it doesn't add to the list , just replaced with a new index, and status information. The list is not cleared even if energy is lost. The meter information can be read on the screen.

Collector can communicate with the server computer via server program , collect and send the meter information to the server and get the various command from server for adjusment.
If The Collector can't get the command from server computer every hour, realize access to the server protocol again.

3-) COLLECTOR FEATURES

- Communicate with the server computer via GPRS without any Distance limitation
- Read and save the information of max 750 meter and valve as Radio Frequance.

Server computer features ;

- Prepare the autolist which include must-read meters and save.
- Create a list of automatic meter reading all the meters of the collector senses
- Operation mode selection
- Valve control and intervention
- Changing and perception of RF communication frequency values
- New software loading to Collector via GPRS
- Reading Collector software version via GPRS
- Learning IP number via GPRS
- All these features can be realize with BAYLAN Handmodul

4-) ENVIRONMENTAL FEATURES

- Operating Temperature = -20 C to +70 C
- Relative Humidity = 5% - 95% (non-condensing)
- Dimensions = 145mm x 220mm x 75mm
- Weight = 840gr.