

بيان BAYAN

Wireless
Area
Telemetry
Network



A QUALITY PRODUCT OF



Rawabi روابي



UNITED
United Safety

RAWABI UNITED SAFETY SERVICES

MADE IN SAUDI ARABIA

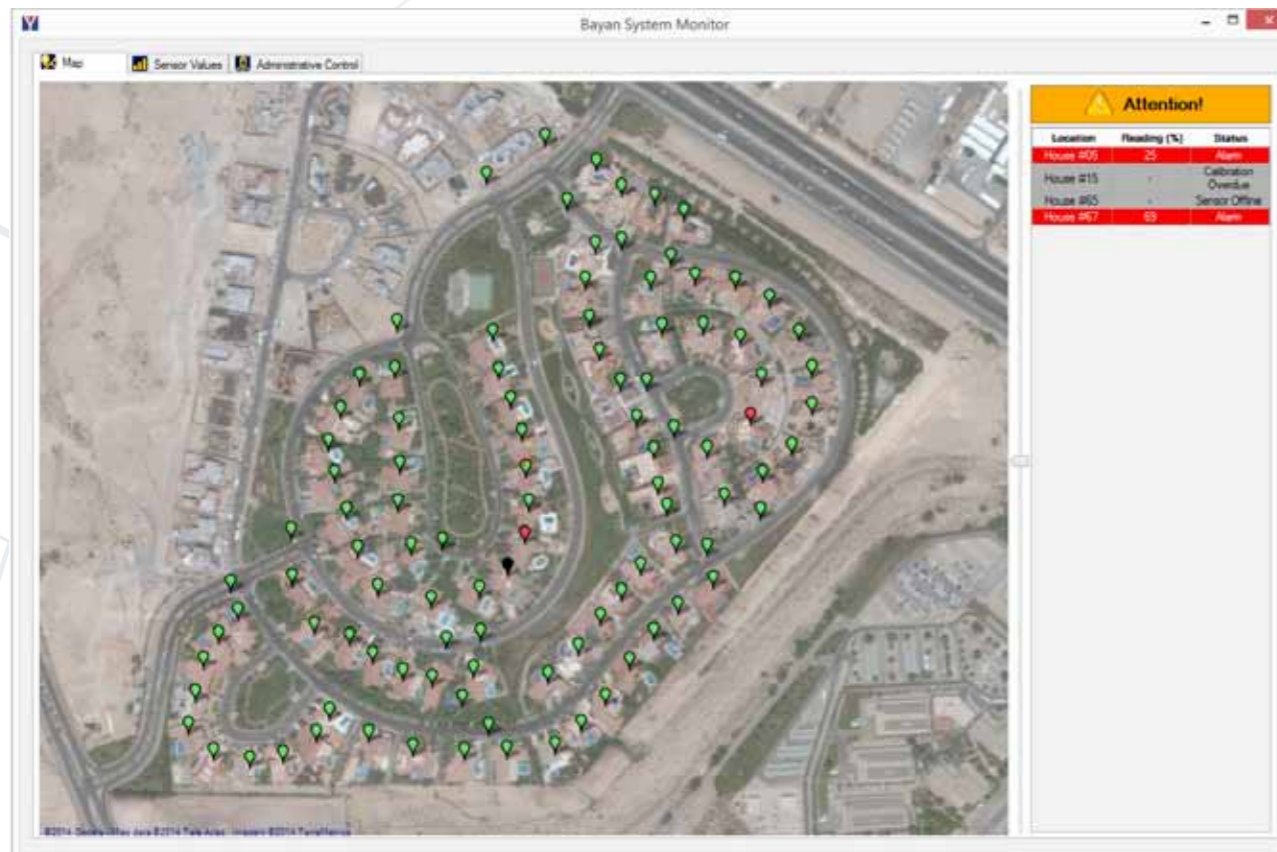
www.rawabiholding.com

Bayan is a wireless area telemetry network that provides a state-of-the-art supervisory monitoring and warning solution. It is used for the protection of communities from accidental toxic gas releases into the environment by monitoring the safety of operations or living conditions in or near hazardous areas such as O&G drilling and workover or petrochemical plants. Bayan could also provide construction or industrial contractors with a monitoring application when used with electrical or electromechanical sensors.

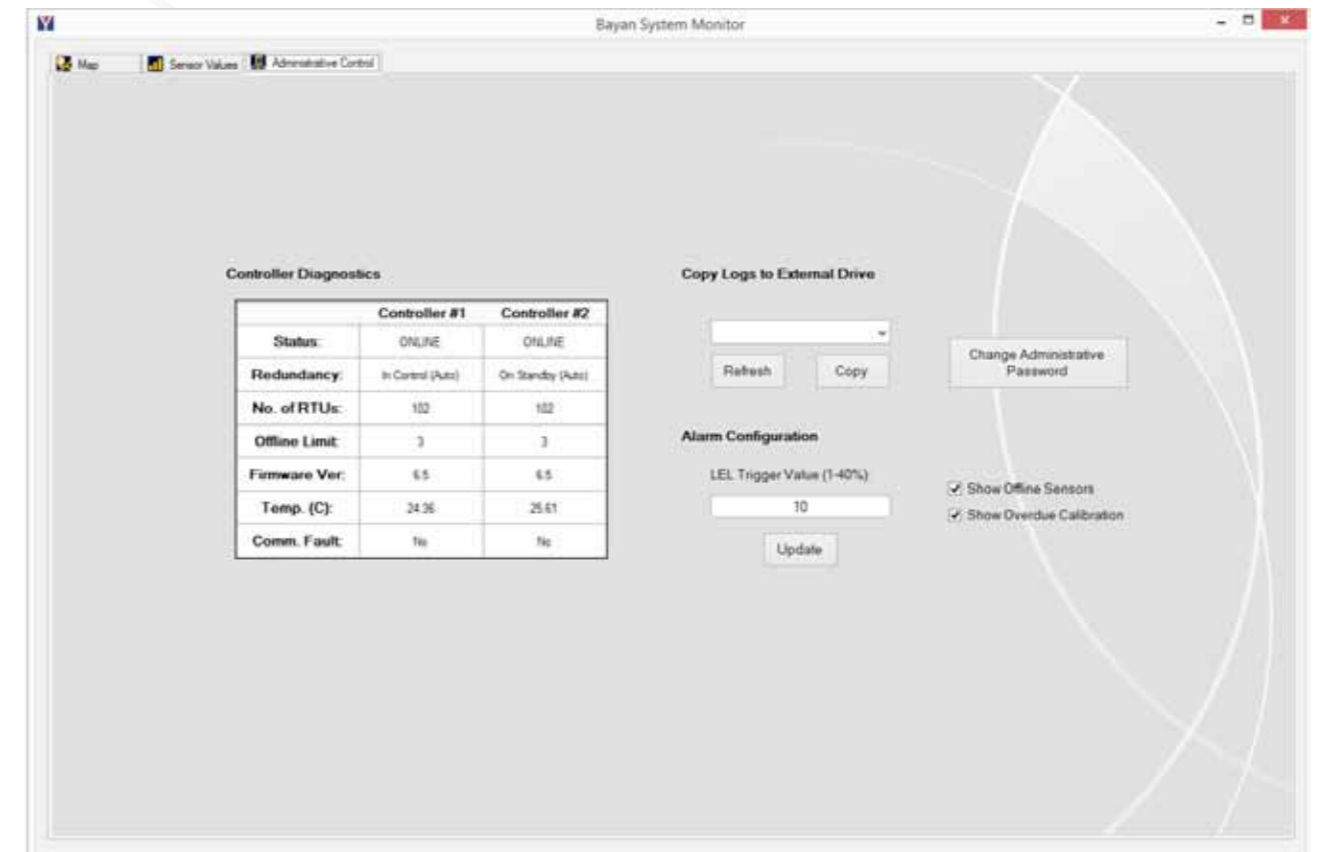
Bayan can be designed as a single-layer network using ModBus communications protocol. It can also be designed in a multi-layer supervisory architectural network when used with PolarBus, RUSS' proprietary protocol allowing for very large scale sensor expansion, wider area coverage, and more effective redundancy. The master station is RUSS' proprietary microprocessor based control system that can be used with a wide variety of sensors. The communications between the control panel and the remote sensor transmitters is accomplished through MHz wireless network. Bayan can also accommodate other client-specified radio frequency as the wireless frequency is independent of system design.

Bayan features a noncomplex desktop monitor. The desktop monitor serves as a platform where all network sensors' information is provided to the user in an intuitive graphical user interface (GUI). Bayan HMI is the Supervisory Data Acquisition SW; it enables the user to switch between table display and map display as well as provide the user with the ability to sensor set threshold limits for triggering alarms or sending SMS/email notifications.





Bayan System Monitoring Software – Map View



Bayan System Monitoring Software – Administrative Controls View

Key Features

- Large scale wireless network system with single or multi master/slave architecture
- Client defined radio frequency
- Interfaces with a wide variety of sensors
- On-site network expansion
- Audio and visual alarms
- SMS/email notification
- Desktop monitor with web-based GUI that provides real-time datalog and network diagnostics information
- High degree redundancy
- High system availability

Key Benefits

- Large scale perimeter allows wide area protection with one network
- Low down time with field replaceable and configurable instruments to minimize maintenance costs
- Provides the user with accurate and reliable information to understand and diagnose a situation from a central location
- Supports visual interface with a Birdseye view of the field and a graphical illustration of each network node to allow quick and well informed decisions
- Provides secure, reliable wireless network to prevent interference and unauthorized network access
- Technical and engineering support is 100% available locally

System Specifications

PART NUMBER RUSY00013-100

REDUNDANCY SPECIFICATIONS

Algorithm	Automatic control switch in case of master or/and network failures
Cases	Controller failure Controller offline Controller modem/RF feeder/antenna fault Gateway/LAN cable fault
Maximum control switch timeout	30 seconds
Installation	No hardwire is required between controllers. Primary and Secondary controllers can be installed in two different locations

NETWORK AND RF SPECIFICATIONS

Operating frequency band	350 MHz; user selectable
Minimum fade margin	10 dB
Modulation scheme	4-bit FSK
Bit error rate	10E-6
RF throughput (for one Modbus poll)	940 bps
Network capacity	240 AWDMs

ADVANCED WIRELESS DETECTION MODULE (AWDM)

Input power	100~240 VAC , 50~60 Hz
Maximum number of RTUs	3
Communication Interface with RTU	Serial (RS 485)
Maximum cable length to RTU	30 meters
Communication protocol	Modbus RTU Slave
Antenna	5 dBi gain directional panel antenna
Antenna connector	N-female panel mount connector with lightning arrestor
Sensors	Toxic and combustible sensors
Operating temperature	0-70 C

MASTER CONTROL MODULE (MCM)

Input power	100~240 VAC , 50~60 Hz
Built-in watchdog timer	Controller resets after 8 seconds of inactivity
Communication Protocol	Modbus RTU master over RF and Modbus TCP slave over LAN; PolarBus™
Display	7 inch text based display
Antenna	7.8 dBi Omni directional fiberglass
Antenna connector	N-female panel mount connector with lightning arrestor
Operating Temperature	0-70 C

DESKTOP SYSTEM MONITOR

Input power	100~240 VAC , 50~60 Hz
Type	Industrial, Windows-based PC
Operating system	Windows 7
Built-in watchdog timer	Controller resets after 8 seconds of inactivity
Communication Protocol	Modbus TCP Master over LAN
Display	15 inch graphical user interface
Operating temperature	0-50 C
Software	Bayan 1.0 ModBus Edition or PolarBus™ Edition
Notifications	Visual: Blue Strobe Audible: Siren 80 dB @ 1 meter SMS (optional) On screen <ul style="list-style-type: none">Color change of WDM icon on map based on fault/alarm typeHighlighting WDM in table tab with distinguished colorPop-up on side attention table
Data representation	Map view: <ul style="list-style-type: none">Iconic representation of all WDMs with pop-up attention table Table view: <ul style="list-style-type: none">Sensor IDSensor nameSensor readingSensor statusDays since last calibrationSensor life
Access levels	1. Operator 2. Administrator 3. Developer



روابي Rawabi



RAWABI UNITED SAFETY SERVICES

P.O. Box 79800, Al Khobar 31952
Kingdom of Saudi Arabia

T +966 13 812 7758
F +966 13 812 7759

safetyservices@rawabiunited.com
www.unitedsafety.net
www.rawabiunited.com

SN: BRH00001-100