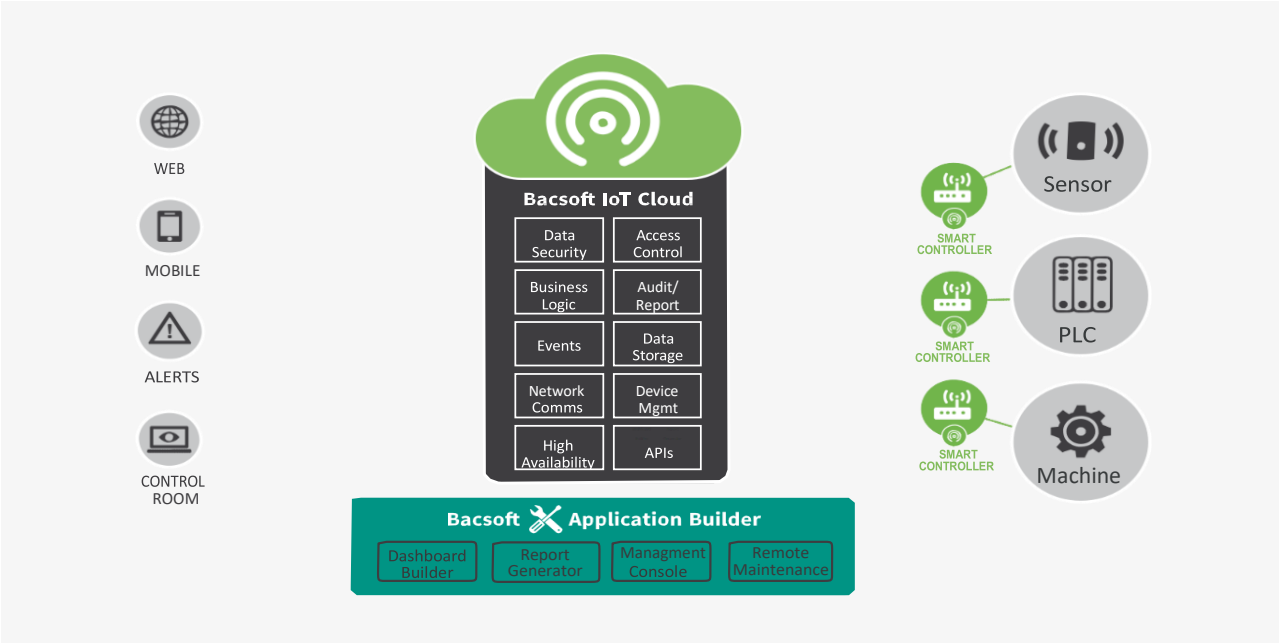
BACSOFT B-CONNECT SMART 4G
SMART COMMUNICATIONS CONTROLLER

BACSOFT IOT PLATFORM

The Bacsoft platform is an end-to-end solution for building and managing advanced IoT and M2M applications. Using Bacsoft, companies can rapidly connect their legacy infrastructure to the Industrial Internet and build applications to remotely monitor and control their operations.

Bacsoft reduces the complexity of IoT projects with a combination of robust and reliable remote connectivity, simple and rapid application development, and scalable cloud services. The platform features:



M2M COMMUNICATIONS:

Bacsoft B-Connect Smart 4G Communications Controllers offer built-in support for a wide variety of devices, interfaces and protocols. Designed to operate reliably under all kinds of conditions, the B-Connect Smart 4G Communications Controller is cost-effective and easy to deploy.

IOT CLOUD:

The Bacsoft IoT Cloud handles all aspects of communications, application execution, data storage, security and auditing. It easily scales to support thousands of connected devices.

APPLICATION BUILDER:

Rapid development tools enable integrators and IT organizations to easily build tailored IoT applications without coding and deploy them for mobile, web and control rooms.

BACSOFT B-CONNECT SMART 4G COMMUNICATIONS CONTROLLER: ETHERNET AND 4G CONNECTIVITY FOR LEGACY NETWORKS

The Bacsoft B-Connect Smart 4G Communications Controller provides Ethernet connectivity as well as bi- directional cellular communications over 4G networks. Through extensive experience with networks around the world, Bacsoft has developed technology to ensure reliable M2M communications at any site and under all conditions.

Each device manages the connectivity to the server and can adapt to field conditions by initiating communications, performing self-recovery and more. A hardware-based external watchdog ensures that the communications software is running properly at all times, and, in case of an error, reboots the controller.

Bacsoft secures M2M communications with optional TLS 1.2 encryption, along with the option to install private, self-signed certificates. To further increase security and eliminate the need for a fixed IP address, the controller identifies and verifies the server during each connection.

The B-Connect Smart 4G Communications Controller can be used to manage virtually any device. It includes built-in support for Modbus and Melsec and is easily adapted to work with any proprietary protocol, binary or ASCII. Where appropriate, one controller can manage a series of devices through a serial RS485 interface or Ethernet communication, simplifying deployment and eliminating multiple SIM cards.

FEATURES

- Plug & Play Connectivity (easy setup, all wireless)
- Always On - refresh rate of data read and data write is around 1 seconds both ways
- Includes external hardware watchdog for fail-safe operation
- Very Low Data Usage
  (A few megabytes per whole month 24/7 connectivity)
- Communication Interfaces:
  2 * RS232/RS485
  2 * Ethernet RJ45
  Cellular: Global LTE cat 4
  Dual SIM
- Multiple Drivers and Linux OS
- Logging Capabilities
- Debug and setup using standard SMS messages
- OTAP (Over the Air Provisioning) support for software
- Optional SSL with embedded server certificate for secure applications
- Option to open a raw tunnel directly to remote equipment

APPLICATIONS

INDUSTRY APPLICATIONS

Multi PLC Control
All Types of Sensors Readings (Modbus/ASCII/Binary)

ENVIRONMENTAL APPLICATIONS

Temperature, Humidity, CO2 (etc) Monitoring
Forest Fire Detection
Meteorology Station and Monitoring
Early Earthquake Detection
Snow Level Monitoring
Air Pollution
More

SMART CITY APPLICATIONS

Parking Control
Smart Lighting
Traffic Control
Waste Control
More

METERING APPLICATIONS

Tank Level (Oil/Gas/Fuel)
Silos Material Measurement
Electric/Water Meter Reading

WATER APPLICATIONS

Remote Control of Valves
Leak Detection
Valve Control
Water Meters (Pulses, Binary, ASCII)
Water Leakage
River Height and Flood Alerting
Swimming Pool Monitoring

AGRICULTURE APPLICATIONS

Green Houses
All Type of Irrigations Controllers
Low-Energy Sensors (Tensitometers etc)
Hen House / Cowshed Control

SECURITY APPLICATIONS

Transformer Theft Alarm
All Types of Security Sensors (Entry, Step-on, etc.)
Access Control

SYSTEM SPECIFICATIONS

POWER REQUIREMENTS

Supply Voltage Range	10 – 30 VDC
Typical consumption	2.4W @ 24VDC

SYSTEM CHARACTERISTICS

CPU	Arm Cortex A8 – 32 bit, 600 MHz
RAM Memory	DDR3L 256MB
Watchdog	Yes
Real-Time Clock	Yes
Certification	CE, FCC

SOFTWARE CHARACTERISTICS

OS Support	Yocto Linux
Communication Protocol Drivers	IEC-60870-5-104 Modbus TCP/RTU, MQTT FTP/HTTP/DHCP/TCP/IP
Data Logger	Real Time Data Logger
Database uplink	ODBC/FTP
Programming Support	Linux C, Restful API, Web Service API, Event Manager

MEMORY CHARACTERISTICS

Storage	512MB NAND Flash
SD Slot	Micro-SD Slot

INTERFACES

Serial Ports	2 x RS-232/RS-485 (isolation optional)
Ethernet Ports	2 x 10/100 Base-T RJ-45
SIM Card Socket	2 x Socket - Push type
Antenna Connector	SMA Female
LED Indications	LEDs for Power, LAN (LINK, ACT), Programmable
Power Supply Socket	Terminal Block

ENVIRONMENTS

Operating Temperature	-40°C a 70°C
Storage Temperature	-40°C a 85°C
Operating Humidity	5% a 95%
Mounting	Wall-Mount/DIN-Rail

DIMENSIONS/WEIGHT

Dimensions	114.05 mm x 93.5 mm x 30 mm
Weight	500 gr.

CELLULAR NETWORK CONNECTION

MODEM

Version	QUECTEL EG25-G Mini PCIe

FREQUENCY BANDS

LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28
LTE-TDD	B38/B39/B40/B41
WCDMA	B1/B2/B4/B5/B6/B8/B19
GSM	B2/B3/B5/B8

DATA

LTE-FDD	DL: Max 150 Mbps UL: Max 50 Mbps
LTE-TDD	DL: Max 130 Mbps UL: Max 30 Mbps
UMTS-DC-HSDPA	DL: Max 42 Mbps
UMTS-HSUPA	UL: Max 5.75 Mbps
UMTS-WCDMA	DL: Max 384 Kbps UL: Max 384 Kbps
GSM-EDGE	DL: Max 296 Kbps UL: Max 236.8 Kbps
GSM-GPRS	DL: Max 107 Kbps UL: Max 85.6 Kbps

ELECTRICAL CHARACTERISTICS

Output Power	Class 3 (23dBm±2dB) for LTE-FDD bands Class 3 (23dBm±2dB) for LTE-TDD bands Class 3 (24dBm+1/-3dB) for WCDMA bands Class E2 (27dBm±3dB) for GSM850 8-PSK Class E2 (27dBm±3dB) for EGSM900 8-PSK Class E2 (26dBm±3dB) for DCS1800 8-PSK Class E2 (26dBm±3dB) for PCS1900 8-PSK Class 4 (33dBm±2dB) for GSM850 Class 4 (33dBm±2dB) for EGSM900 Class 1 (30dBm±2dB) for DCS1800 Class 1 (30dBm±2dB) for PCS1900	
Consumption	3.6mA @Sleep, Typ. 35mA @Idle	
Sensitivity	LTE B1: -99.5 (10MHz) LTE B2: -99.9dBm (10MHz) LTE B3: -99.7dBm (10MHz) LTE B4: -99.7dBm (10MHz) LTE B5: -99.9dBm (10MHz) LTE B7: -99.2dBm (10MHz) LTE B8: -99.8dBm (10MHz) LTE B12: -99.8dBm (10MHz) LTE B13: -99.5dBm (10MHz) LTE B18: -100dBm (10MHz) LTE B19: -99.9dBm (10MHz) LTE B20: -99.8dBm (10MHz) LTE B25: -100dBm (10MHz) LTE B26: -99.5dBm (10MHz) LTE B28: -99.6dBm (10MHz) LTE B38: -99dBm (10MHz) LTE B39: -99.5dBm (10MHz) LTE B40: -99.2dBm (10MHz) LTE B41: -99dBm (10MHz)	WCDMA B2: -110dBm WCDMA B4: -109.7dBm WCDMA B5: -110.4dBm WCDMA B6: -110.5dBm WCDMA B8: -110.5dBm WCDMA B19: -110.1dBm GSM850: -108dBm EGSM900: -108dBm DCS: -107.5dBm PCS: -107.5dBm