# BACSOFT LE SMART COMMUNICATIONS CONTROLLER
## ADVANCED, LOW POWER M2M CONNECTIVITY FOR 3.5G NETWORKS

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.
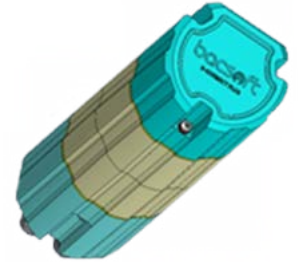
Bacsoft reduces the complexity of IoT projects with a combination of robust and reliable remote connectivity, simple and rapid application development, and scalable cloud services. The platform features:
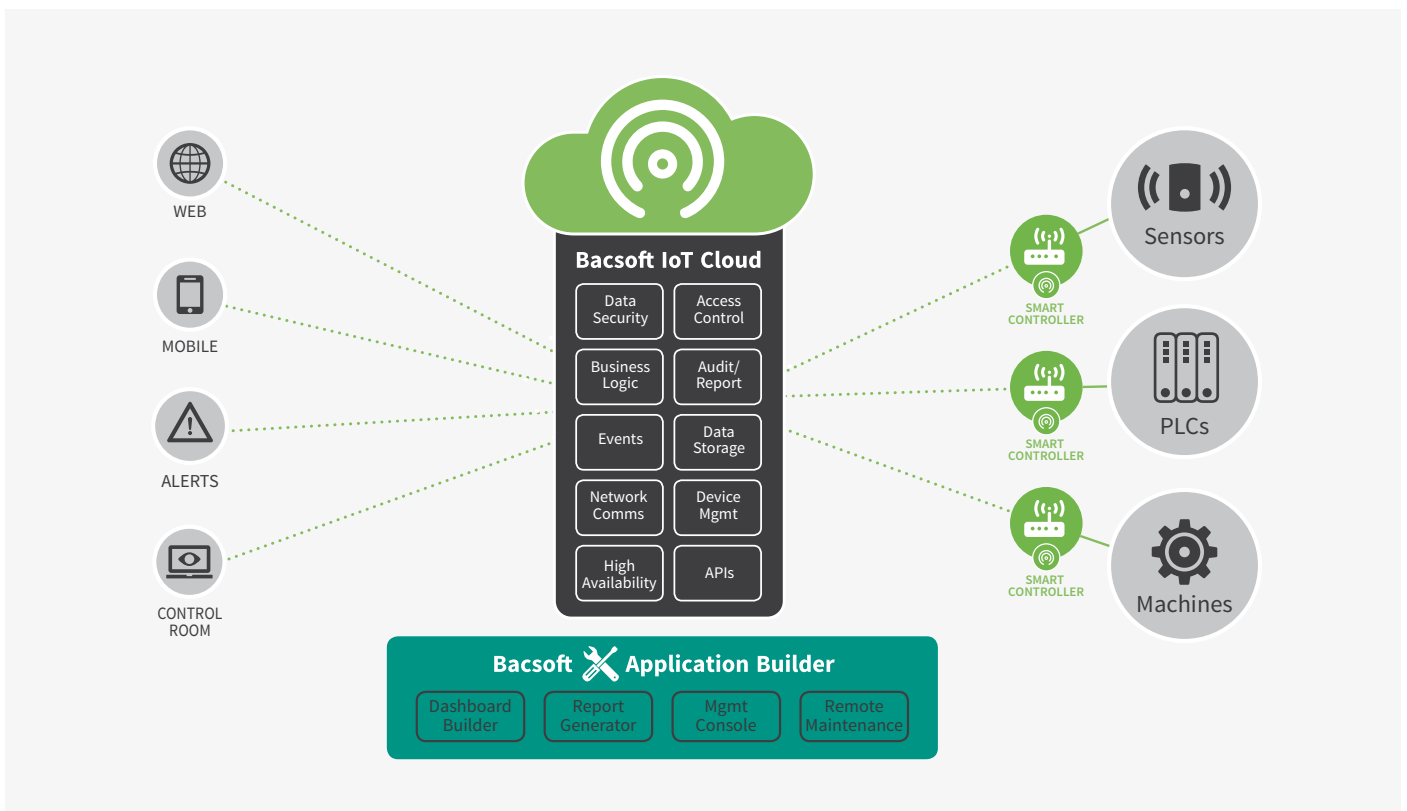
M2M COMMUNICATIONS:

The Bacsoft LE Smart Communications Controller offers battery operated, built-in support for a wide variety of devices, interfaces and protocols. Designed to operate reliably under all kinds of conditions, the LE Smart 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.

LE SMART COMMUNICATIONS CONTROLLER: ADVANCED, LOW POWER 3.5 G CONNECTIVITY

Bacsoft's LE Smart Communications Controller provides battery operated, bi-directional cellular communications over 3.5G networks. Through extensive experience with networks around the world, Bacsoft has developed technology to ensure reliable M2M communications 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 SSL 3.0 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 LE Smart 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.

FEATURES ★

Battery operated for 5-7 years based on hourly sampling and daily server connection

Plug & Play Connectivity

GPS integrated, antenna both internal and external

Built in 3 wire PT-100 standard temperature sensing

4 Digital Inputs / Counters (both dry and wet contact), interruptible

3 LEDS for data, application and GPS

IP-68 special tube casing

Remotely programmable from the Bacsoft Administrator Console

Automatic "wake up and report" under the following conditions:
1. Change of digital input state
   (either from 0 to 1 or from 1 to 0), dry or wet contact
2. Movement sensor senses movement (sensitivity can be remotely configured)
3. A sample has reached user-defined upper/lower limit
4. Any user-defined setting occurs
5. Any user-defined counter setting is reached

Self-monitoring of battery level & alert when replacement is needed

Query and setup using standard SMS messages

OTAP (Over the Air Provisioning) support for software updates

SSL Version 3 with embedded server certificate for secure applications

Functions from multiple electric sources: battery operated or 12-24V power supply, and switches seamlessly between them

APPLICATIONS

AMR – AUTOMATIC METER READING

CATHODIC PROTECTION – MEASUREMENTS POINTS

MONITORING AND CONTROL OF SENSORS

LEAK DETECTION

TRANSFORMER THEFT ALARM

VALVE CONTROL

METEOROLOGY STATION & MONITORING

MONITORING TEMPERATURE, HUMIDITY, CO2, ETC.

SECURITY

ANY EQUIPMENT AT ANY LOCATION WITHOUT A POWER SOURCE

GSM SPECIFICATIONS

Bands	850/900/1800/1900 MHz
Data Class	GPRS, EDGE & HSDPA (3.5G) cat 6&8
GSM	Five Bands UMTS (WCDMA /FDD)

SYSTEM SPECIFICATIONS

POWER REQUIREMENTS

Input Voltage Range	3.6-32 VDC
Protected Over Voltage	32-60 VDC

CURRENT CONSUMPTION

Sleep/Idle Mode	0.005 mA
While Sampling (1 second)	2.4 mA
GSM/GPRS 3.5G Mode	100 mA (Avg)

MEMORY CHARACTERISTICS

Type	Read Write
Max Storage Capacity	Up to 30000 Measurements

ENVIRONMENTS

Operating Temperature	-25°C to 55°C
Storage Temperature	-35°C + 65°C
Operating Humidity	5% to 95%

INTERFACES

4 Analog Inputs	0-10V/4-20mA – High resolution 24 bit
1 PT-100	-50° + 200°
4 Digital Output	Dry contact, 24V 2A switching capacity
4 Digital Input/Counter	0-10 VDC
Serial RS-232	RJ45 Ethernet connector
RS485	2 wire
SDI-12	2 wire
USB	Micro USB
Digital Output Relay	

ADVANCED TECHNICAL INFORMATION

DIGITAL INPUT CHANNEL SPECIFICATION

Input Range - On	0 - 3V ("1")
Input Range - Off	0 - 1V ("0")
Input Resistance	280Kohm
Over Voltage Protection	5V

Interruptible – Every state change generates connection to the server. Supports both dry and wet contact.
The Digital Input can be configured to act as digital counter for use with sensors that generate pulses.

DIGITAL OUTPUT CHANNEL SPECIFICATION

Type	Letch-Relay - Dry Contact
Switching Power	60W (DC) 62.5VA (AC), 2A / 30Vdc, 0.5A / 125V ac
VRMS for 1 min	1,000 between open contacts

ANALOG INPUT CHANNEL SPECIFICATION

Current Mode-Input Range	4..20ma
Current Mode-Load	56.2Ω
Current Mode-Resolution	24bit
Voltage Mode 0-10V-Input Range	0-10V
Voltage Mode 0-10V-Resistance	500KΩ
Voltage Mode 0-10V-Resolution	24bit

Tailored
IOT
Applications

bacsoft