

Battery Analyzer and **DAS** are the powerful monitoring software based on BatteryDAQ's experience and focus. It provides users critical information about their batteries by data, tables and charts. The real-time string voltage, current, temperature, cell voltage, and internal resistance are collected and historical data is stored in the database. Battery condition can be easily visualized and analyzed/trended.

Client (Battery Analyzer) and server (DAS) communicate through standard Modbus-TCP protocol. One server can provide battery data for multiple clients. It is easy to integrate data and alarm to the enterprise central management informatics platform and building security system.

Features

- Real-time data display for current, string voltage, cell voltage, cell internal resistance, inter-cell connection resistance (depending on connected battery monitor model.)
- Real-time analysis and color indication for outliers
- Excel sheet export and report generation
- Easy to locate battery location, number and date/time
- Trend charts for voltage and internal resistance
- Store battery data, alarm and discharge events to database
- Record the entire discharge event with duration and discharge curve for each battery
- Modbus-TCP for integration to multiple systems
- Email and/or SMS alarm delivery
- SNMP to 3 IP addresses with trap management
- Can be installed for multiple users, each with its own selected sites and settings
- Compatible with MyBattery Platform™, a cloud based battery data access and management platform

Alarm Settings

- String/Bus voltage high and low alarm
- Temperature high/low

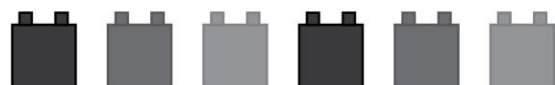
- Individual battery voltage high and low alarm
- Individual cell resistance high and low alarm
- Individual cell resistance warning as a percentage of alarm threshold
- Individual battery voltage low alarm during discharge
- Discharge string current high

Reports

- Alarm list/condition reporting – Excel
- Battery out-of-limits summary report – Excel
- Individual battery voltages over time – graph or Excel
- Individual battery resistance values over time – graph or Excel
- Total battery voltage over time – graph or Excel
- Battery temperature / room temperature over time – graph or Excel
- Discharge report: total battery voltage decay vs. time – graph or Excel
- Discharge report: battery voltage decay vs. time – graph or Excel

Minimum PC Requirements

- Windows 7, Windows 8 and Windows 10 operation system
- RAM 2G, Disk 200G
- Able to install Microsoft SQL Express



Battery Analyzer Screenshots of Partial Functionality

The screenshot shows the main interface of Battery Analyzer Version 3.4. It features a menu bar (Setting, Display, Operation, About), a toolbar, and a digital clock showing 16:44:42. The interface is divided into several sections:

- Device List:** A tree view on the left showing various devices, with 'CFE GSM (ID:2)' selected.
- Alarm List:** A table in the center showing alarm details. Two alarms are listed:

Alarm #	Device	String #	Cell #	Alarm Description	Start Date/Time
2	2	1	60	ResistanceAbnormal	6/5/2016 6:59:00 AM
1	2	1	51	ResistanceAbnormal	6/5/2016 6:59:00 AM
- Cells Data of Device CFE GSM:** A table on the right showing cell-level data.

Cell #	Voltage(V)	IR(mOhm)	Baseline	Change(%)	Inter-cell	Gravity
1	2.163	0.207	0.207	0.0%	0.077	1.23
2	2.144	0.209	0.209	0.0%	0.216	1.22
3	2.153	0.189	0.189	0.0%	0.247	1.23
4	2.143	0.210	0.210	0.0%	0.300	1.22
5	2.159	0.209	0.209	0.0%	0.211	1.23
6	2.154	0.210	0.210	0.0%	0.219	1.23
7	2.154	0.205	0.205	0.0%	0.279	1.23
8	2.158	0.200	0.200	0.0%	0.166	1.23
9	2.148	0.198	0.198	0.0%	0.222	1.22
10	2.145	0.179	0.179	0.0%	0.193	1.22
11	2.154	0.189	0.189	0.0%	0.192	1.23
12	2.162	0.195	0.195	0.0%	0.102	1.23
13	2.154	0.175	0.175	0.0%	0.218	1.23
14	2.158	0.187	0.187	0.0%	0.138	1.23
- IR/Impedance of CFE GSM:** A bar graph at the bottom showing IR values for various cells (NO.1 to NO.58). The y-axis ranges from 0.10 to 0.35. A prominent red bar is visible at NO.49.
- Left Panel:** Shows device settings for 'String' (Voltage: 129.1 V, Current: 0.7 A, Ripple: 0.0 A, Temp: 25.9°C / 78.6°F) and 'Analysis' (Avg. IR: 0.206 mΩ, Max: 2.166, Cell #: 49, Min: 2.138).

The 'Device Management' window displays a tree view of equipment on the left and configuration details on the right. The 'CFE GSM' device is selected.

- Equipment List:** RemoteST8, Kamer12111, onlinepower, Test4012, Titan 12095, Titan 12094, local-4012, Italy 12112, Wilder Center, CFE-Handheld, Tessco 12113, AT&T12114.
- Base information:** CellsPerUnit: 60, DeviceID: 1-59999, DeviceName: CFE GSM, DisplayCellsTemperature: False, DisplayContactResistance: True, GroupID: 21, ModbusID: 21, NominalVoltage: 2, ServerIPAddress: 50.62.40.65, ServerPort: 502, Show Strings: True, Station ID: 1, StringVoltage: ByCalculation.
- Cells limits for alarm:** ChargeVoltageHigh: 2.55, DischargeVoltageLow: 1.8, FloatVoltageHigh: 2.5.
- Specific Gravity:** ParamA: 1.225, ParamB: 1.23, SpecificGravity/Viable: True.
- String limits for alarm:** ChargeVoltageHigh: 500, DischargeVoltageHigh: 150, CurrentThreshold: 10, DischargeCurrentLow: -10, DischargeVoltageLow: 108, FloatVoltageHigh: 150, FloatVoltageLow: 120, TemperatureHigh: 40, TemperatureLow: 15.

The 'Alarm Notification Setting' dialog box allows users to configure notification preferences:

- Enable Email Notification: Email(s) tony.frank@att.com, Send a test button.
- Enable SMS notification: SMS Receiver field, Add button, Send a test button.
- Buttons: Advanced, Apply, Cancel.

The 'SNMPSetting' dialog box is used for configuring SNMP traps and polling:

- Trap Setting:** Recipient 1 (IP: 127.0.0.1, Port: 162, Version: V1), Recipient 2 (IP: 127.0.0.1, Port: 162, Version: V1), Recipient 3 (IP: 127.0.0.1, Port: 162, Version: V1). Trap Interval: 5 Min. Send a test button.
- Location Name:** LONG-TOSHIBA3, Community Strings: public.
- Enable SNMP Polling: Port: 161, Polling Delay: 100 ms.
- Buttons: Apply, Cancel.

