Product Features

Battery-Data Combiner

Battery DATA   Battery DATA   Battery DATA
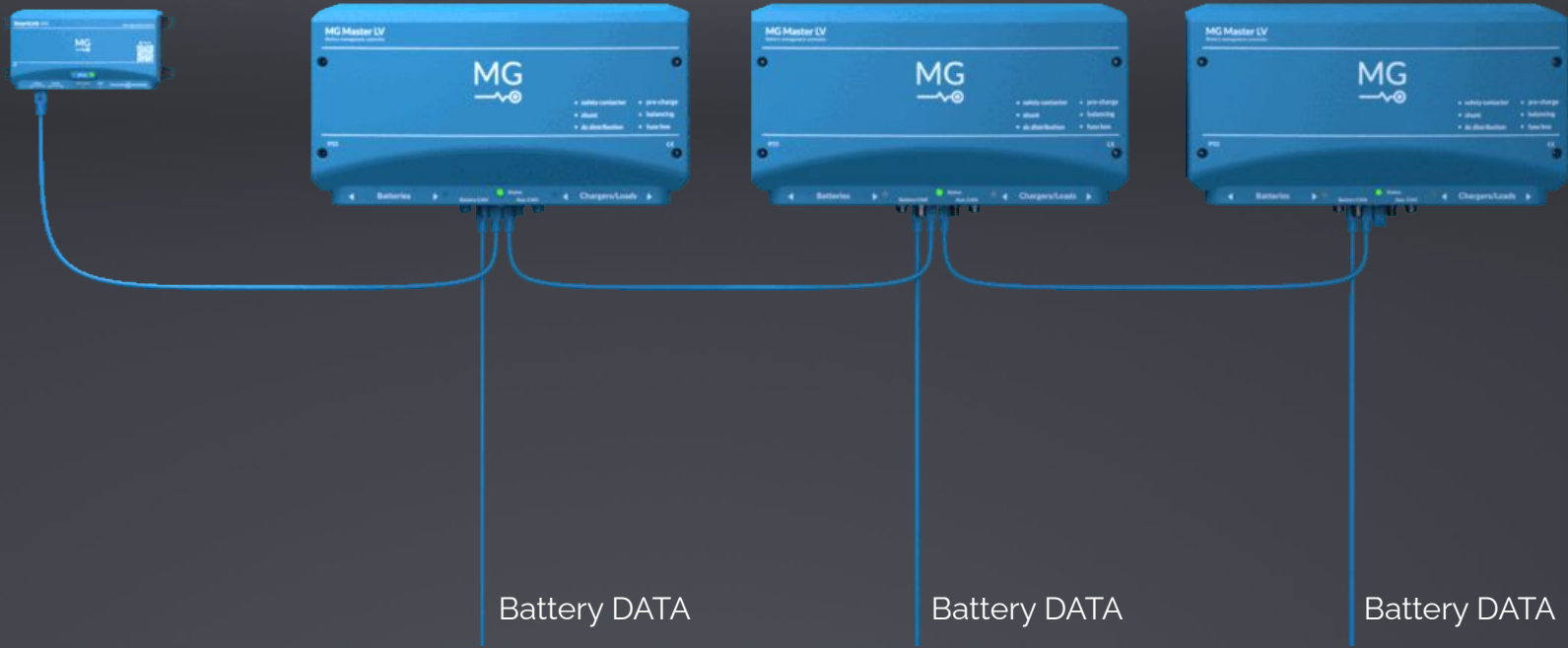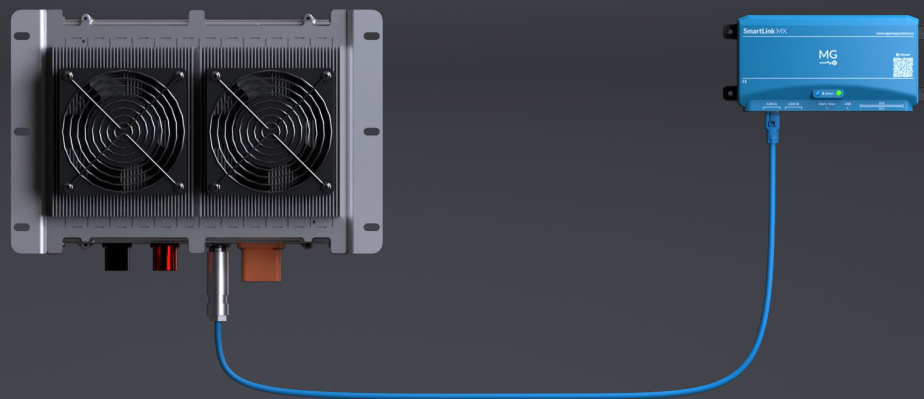
System Control

System Control

System Reset/Stop

Charger Control

Combined I/Os

Centralized ATC and ATD

Bluetooth

Function Overview

Bluetooth

Combined I/Os

System Control
(start/stop/reset)

Charger
control

Battery data
combiner
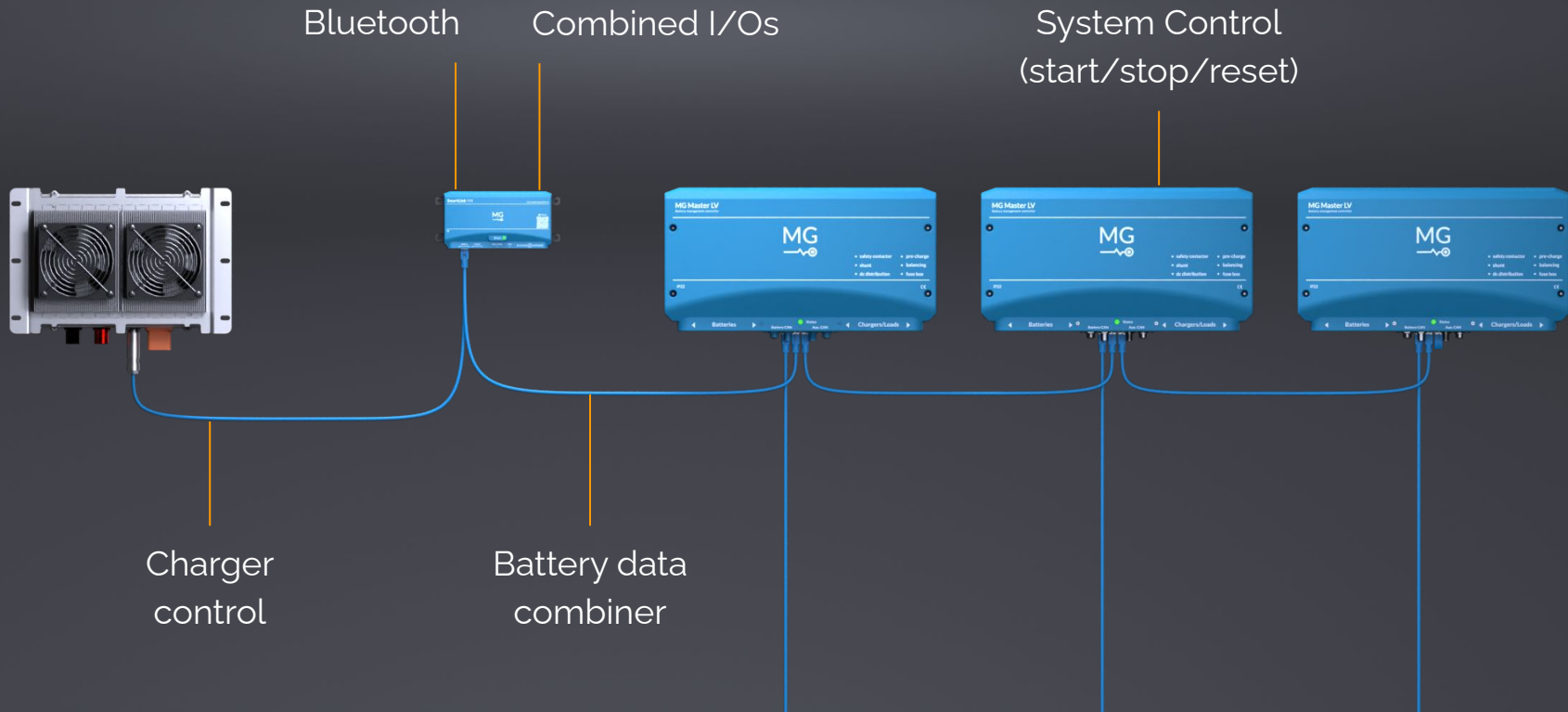
Coming Features

- Second CAN-Bus (MG Energy Monitor)
- Robust Charger (max 6)

Marine System Example

MG Energy Monitor

Master LV 72 / 96 Vdc

SmartLink MX

MG Connect App

Charger

AC-In

Power supply from all Master LV Connector 'A'

NMEA2000

Motor controller

Electric motor

MG Energy Monitor

Master LV 72 / 96 Vdc

Charger

AC-In

NMEA2000

Allow to discharge

Motor controller

Electric motor

Single Line Diagram, not an installation drawing
DC-cabling to batteries in parallel must have same length
Refer to the manual for additional installation instructions

ESS System Example

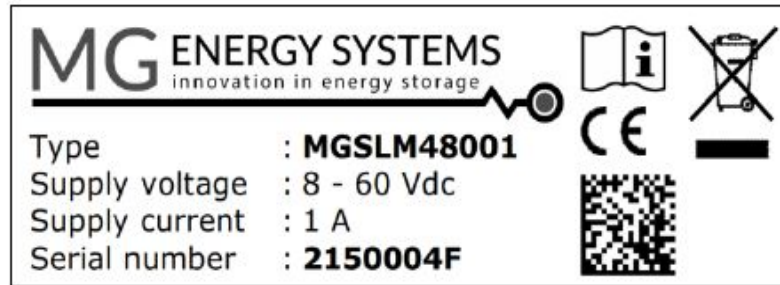# **What's** in the Box?

- MG SmartLink MX
  MGSLM48001

- 2x Connector Terminal Block Plug 1x6 5.08mm
  MG5000230

- 1x RJ45 terminator (bag of 2)
  MGRJ45000010

Identification Label

MG ENERGY SYSTEMS
innovation in energy storage

Type : **MGSLM48001**
Supply voltage : 8 - 60 Vdc
Supply current : 1 A
Serial number : **2150004F**

SmartLink MX

Front

Mounting points

QR-code for Manual

SmartLink MX

www.mgenergysystems.eu

MG

Manual

Status

Start / Stop

CAN-A   CAN-B   USB   IO-B
IO-A

Bluetooth LED   Status LED

Status LED

Off	No Power (Device is never sleeping)
Short on, Long off	Searching for BMS
50/50	Waiting for start command
Long on, Short off	Pre-charging
On	System running/waiting for running

Bottom

A CAN-A – 2x RJ45: NMEA2000 connection

B CAN-B – 2x RJ45: MG proprietary CAN-Bus

C Start/Stop/Reset Button

D USB interface (Upcoming)
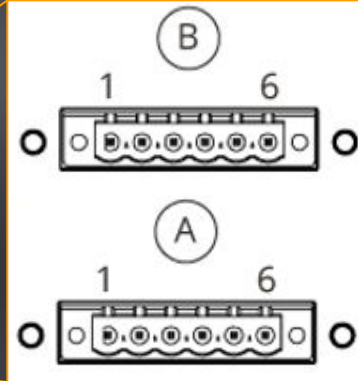
E I/O connector

I/O Connectors

I/O B — Digital relay contact outputs

I/O A — Power supply and digital I/Os

I/O Connectors

Connector pins and specifications

Conn.	Pin	I/O	Voltage	Current	Purpose
B	1	Out	Max. 60 VDC	0,8 A @ 60 VDC	Programmable output 1
	2				
	3	Out	Max. 60 VDC	0,8 A @ 60 VDC	Programmable output 2
	4				
	5	Out	Max. 60 VDC	0,8 A @ 60 VDC	Programmable output 3
	6				
A	1	In	60 V MAX	1 A	Power input
	2	Out	Power input	0,5 A @ 12 VDC	Programmable output
	3	In	60 V MAX		Programmable input
	4	In			External start button
	5	Out	5 VDC	10 mA	External status output
	6	-			GND

Installation

BMS Settings

Change settings in the BMS (Master LV or HV):

- **External CAN bus protocol: MG NMEA2000**
- **Combined battery mode: ENABLE**

Restart the BMS(s) after these changes

NMEA CAN-Bus

Connect to the **CAN-A** connectors using a RJ45 network cable

If it is the last device in the Bus, make sure to use a **RJ45 terminator** to end the bus

Powering SmartLink MX

I/O - connector A:
Ground (pin 6)
Power input (pin 1)

Powering from multiple masters

Operation

Wakeup BMS's

1. Apply settings to BMSs

2. Turn on all BMSs

3. SmartLink MX detects all BMSs

4. SmartLink MX detects system state

System Start

Hold start/stop button for 2 seconds

The system will:
- Pre-charge the DC bus
- All BMS's will close the contactor
  (when in a safe voltage window of 0.6% of the system voltage for 10 seconds)

System Stop

Hold start/stop button for 2 seconds

All connected BMS's will:
- Open their contactor at the same time
  (No more DC power on the charger/load side)
- Automatically go to standby

SmartLink MX Tool

SmartLink MX Tool

Requirements
- Laptop/PC (≥ Windows 7)
- A USB to CAN-Bus interface.
  Supported interfaces:
  MG USB-CAN (article number: MGUSBCAN001)
  Kvaser (Kvaser Leaf Light HS v2 M12 USB CAN Interface: MGUSBCAN002)
  PEAK-system PCAN-USB
- RJ45 Cable
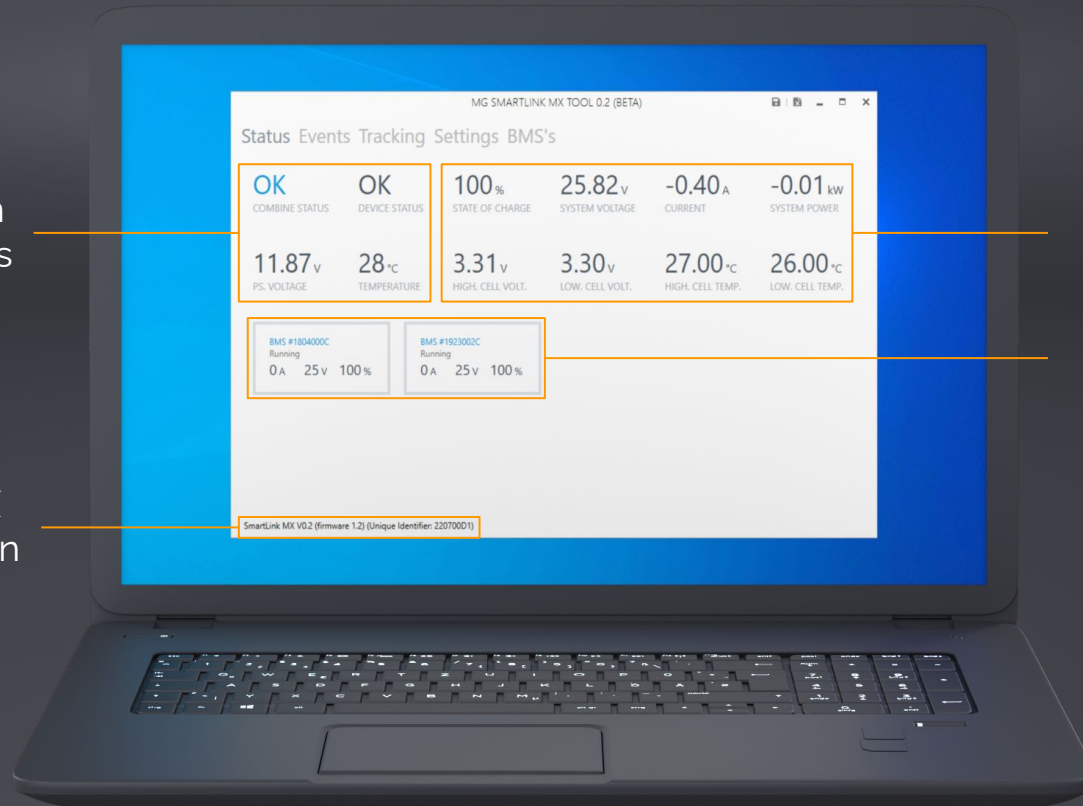 for connection with the SmartLink MX (only with MG USB-CAN)

SmartLink MX Tool

CAN-B

USB-CAN Interface

USB to PC

Status Screen

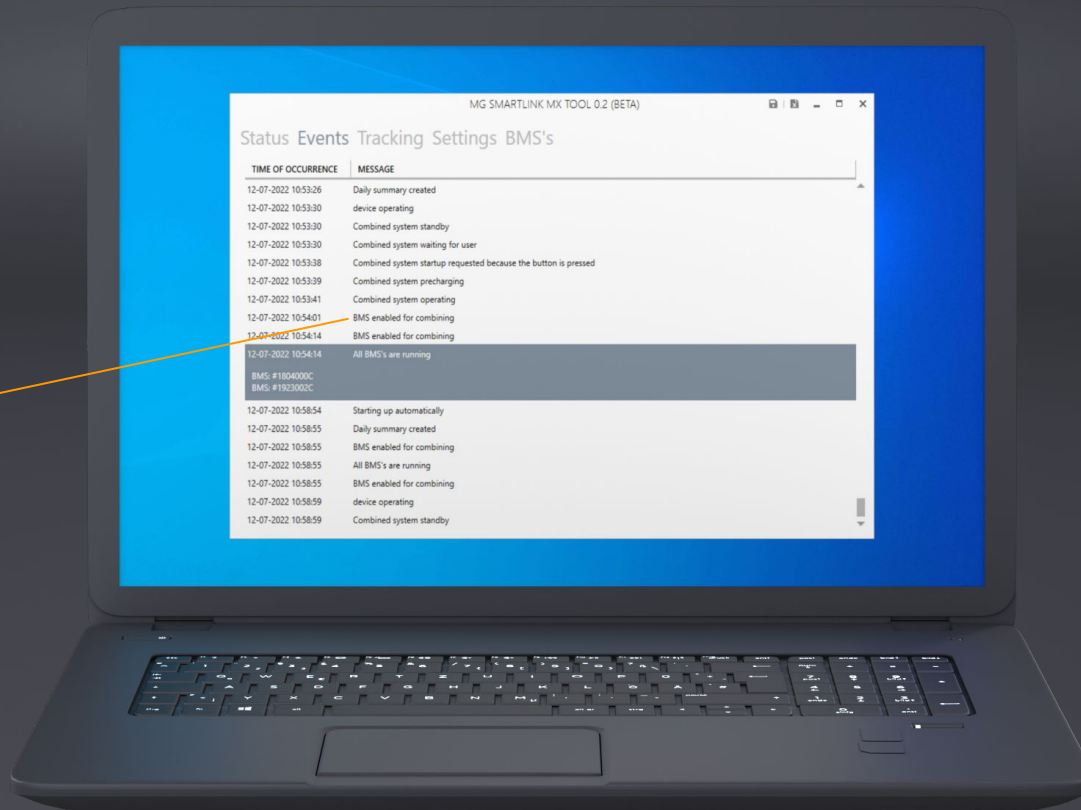Device information and combine status

Overview of combined data

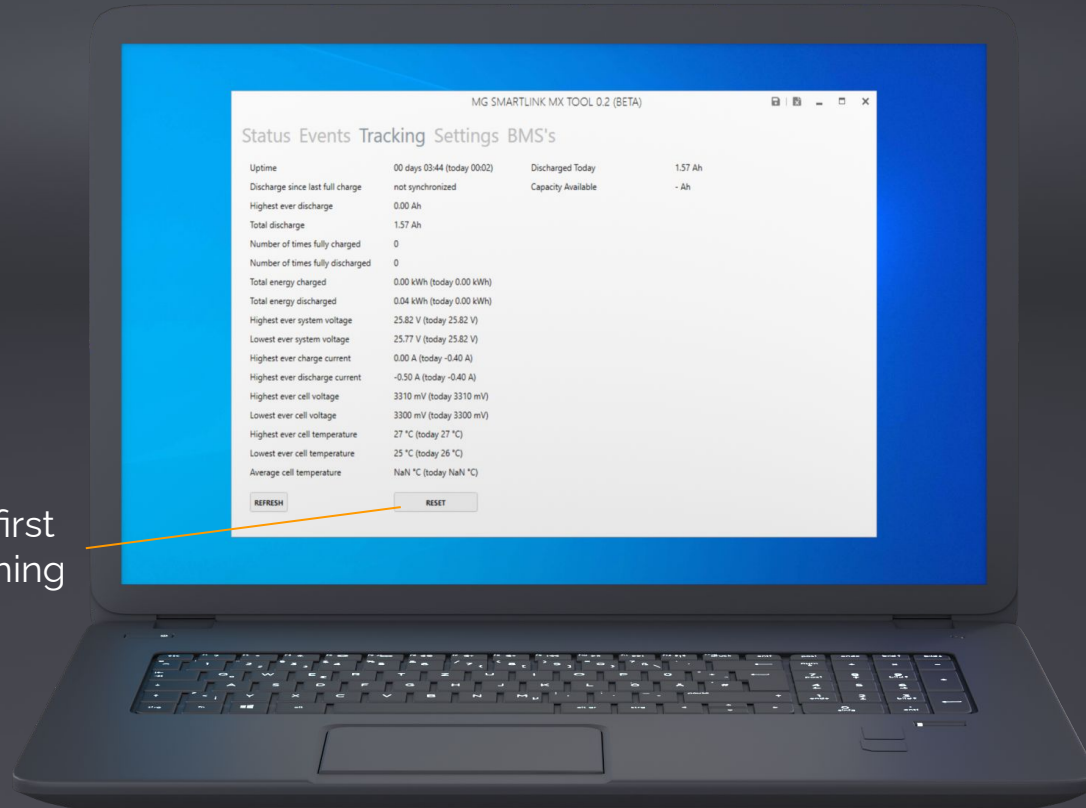BMS detailed information

MG SmartLink MX detailed information

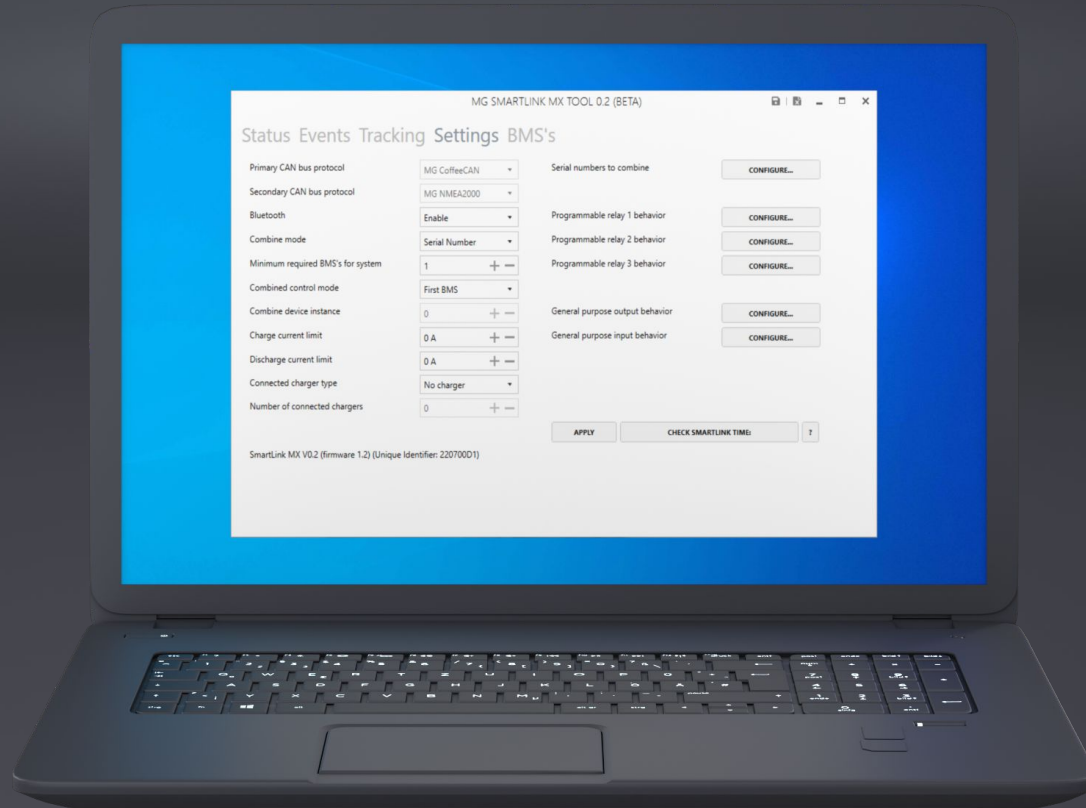# **Events** Screen

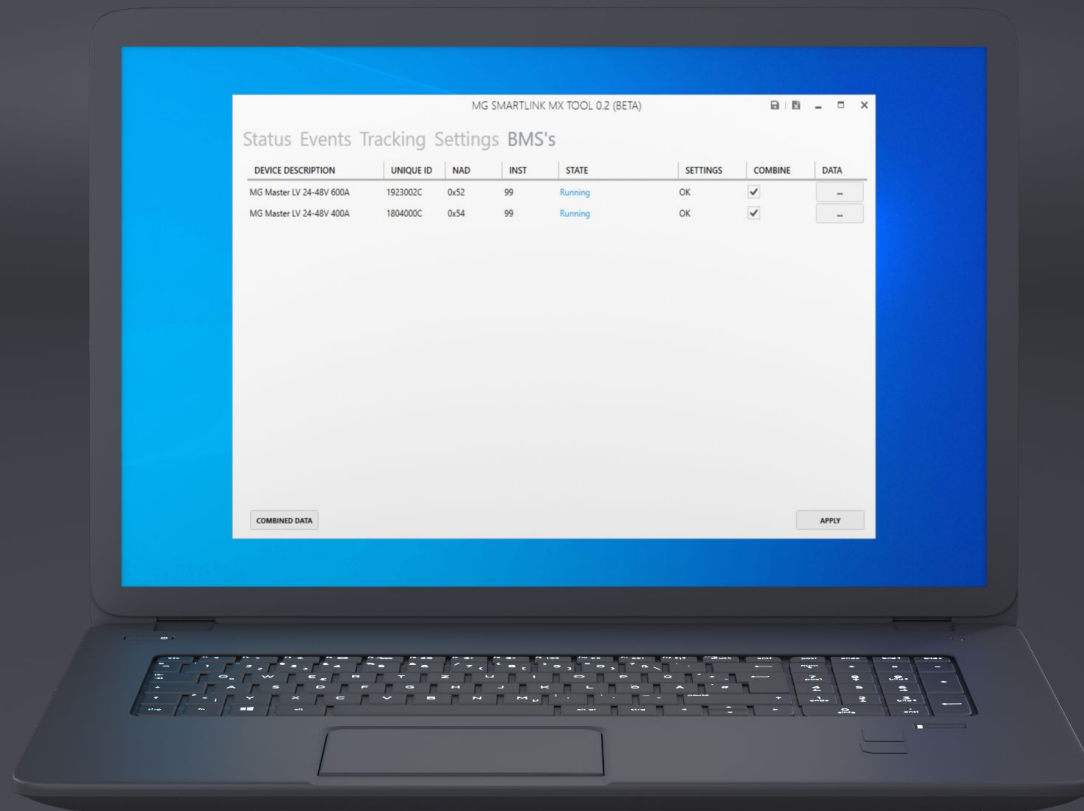**Save the events**
Right mouse-click:
"save to file"

Tracking Screen

MG SMARTLINK MX TOOL 0.2 (BETA)

Status Events **Tracking** Settings BMS's

Uptime	00 days 03:44 (today 00:02)	Discharged Today	1.57 Ah
Discharge since last full charge	not synchronized	Capacity Available	- Ah
Highest ever discharge	0.00 Ah		
Total discharge	1.57 Ah		
Number of times fully charged	0		
Number of times fully discharged	0		
Total energy charged	0.00 kWh (today 0.00 kWh)		
Total energy discharged	0.04 kWh (today 0.00 kWh)		
Highest ever system voltage	25.82 V (today 25.82 V)		
Lowest ever system voltage	25.77 V (today 25.82 V)		
Highest ever charge current	0.00 A (today -0.40 A)		
Highest ever discharge current	-0.50 A (today -0.40 A)		
Highest ever cell voltage	3310 mV (today 3310 mV)		
Lowest ever cell voltage	3300 mV (today 3300 mV)		
Highest ever cell temperature	27 °C (today 27 °C)		
Lowest ever cell temperature	25 °C (today 26 °C)		
Average cell temperature	NaN °C (today NaN °C)		

REFRESH   RESET

Click Reset at the first
system commissioning

Settings Screen

BMS's Screen

SmartLink PLC

SmartLink PLC

- Same functions SmartLink MX
- MOD-Bus TCP
- Certified hardware (class type approval)

SmartLink Impression