



Sayuk EVDS

EV battery diagnostics, by Sayuk

Know the battery before you close the deal.

Sayuk EVDS reads a used EV's battery management system through the OBD port and turns it into a report that a buyer, a lender and a workshop can all rely on.

Read from the car

Graded against UN GTR 22

Custom dashboards and integrations

Cell 51, one real pack

Lowest cell in **21%** of scans. By chance, one cell in a pack this size is lowest about **1%** of the time.

Used-EV resellers

Price the pack, not the badge

EV service centres

See what the car saw

A used EV is priced on a battery nobody has opened.

The battery is the most expensive part of the car and the hardest to judge. The dashboard shows a bar. The seller gives a percentage. The battery management system, the controller inside the pack, knows far more and will tell you, if you ask it.

What a deal usually rests on

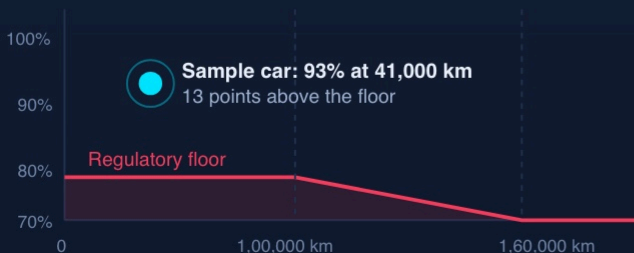
- ✗ A seller's word, or a screenshot of one number
- ✗ A dashboard bar that shows charge, not health
- ✗ A single reading, taken at whatever charge the car happened to have
- ✗ "Battery light is off" as proof of a healthy pack
- ✗ A report that gives every car a pass

What the controller holds

- ✓ State of health as the pack's own controller reports it
- ✓ Lowest and highest cell voltage, and which cells they are
- ✓ Cell spread, the gap that shows how balanced the pack is
- ✓ Pack temperature, balancing state, insulation, 12V battery
- ✓ Firmware versions, flash dates and the odometer

The yardstick: a published floor, not an opinion

UN GTR No. 22 is the durability regulation for electric-car batteries. A pack must keep at least 80% of its certified energy at 5 years or 1,00,000 km, and 70% at 8 years or 1,60,000 km. EVDS places a car's health against the floor for its own mileage.



Resellers

Disputes after delivery, returns, and a price that cannot be defended to the next buyer.

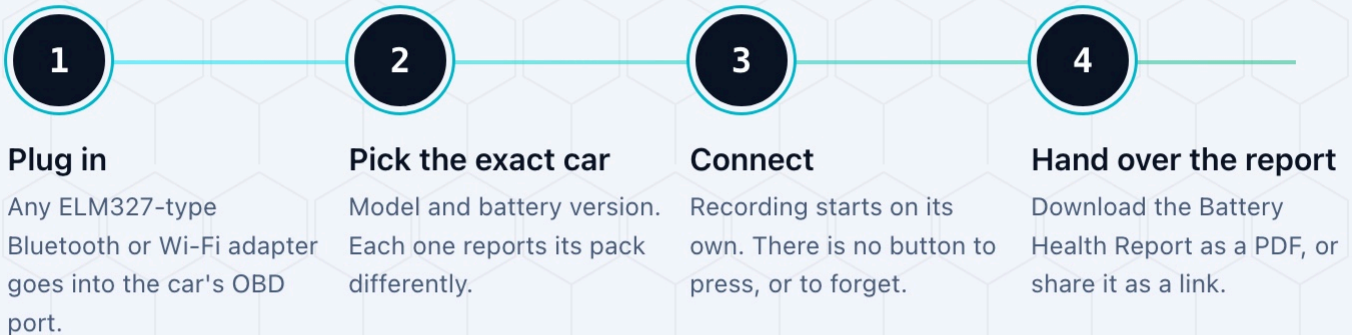


Service centres

"Battery warning, no fault found." A visit that ends without evidence to show the owner.

An adapter, a phone, and a car that is happy to answer.

No hardware to buy from us and nothing to install on the car. EVDS talks to the battery controller over a standard OBD adapter and only ever asks questions.



What it reads, and how it labels it

State of health and charge
As the controller reports them

Measured

Lowest and highest cell, and which cells
Voltage and cell number

Measured

Pack voltage, current, temperature
Plus 12V battery and insulation

Measured

Cell spread, pack power
Arithmetic on measured values

Derived

Per-cell grid, efficiency
Needs an assumption the car does not report

Modelled

BMS and vehicle firmware, flash dates
Read from the ECUs, or shown as "Not read"

Measured

Bluetooth or Wi-Fi



Android app connects to either. iPhone works through a Web Bluetooth browser such as Bluefy.

Records with the screen off



On Android it keeps polling in the background and shows a notification while it does.

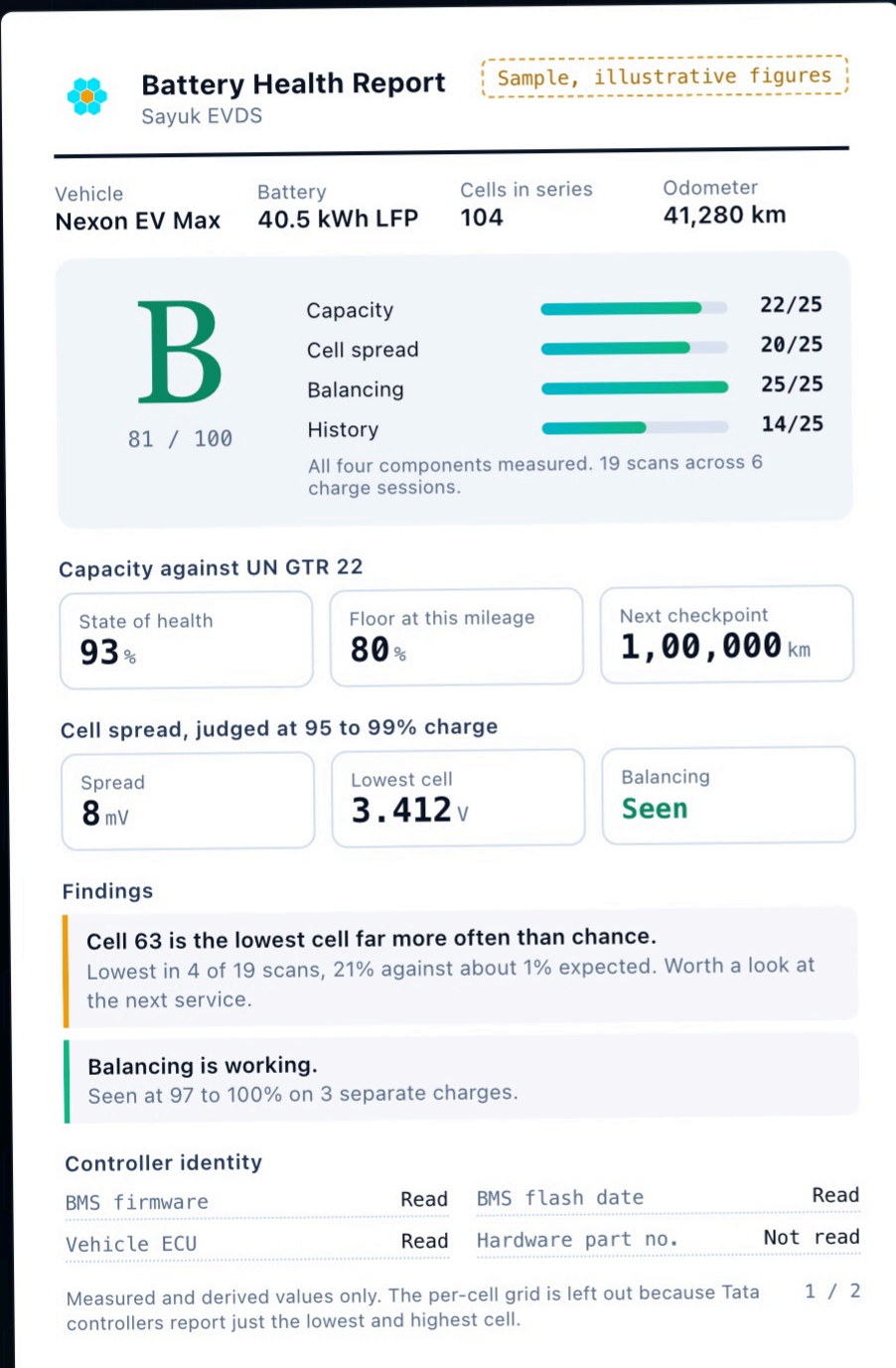
Works without a signal



Readings are saved on the phone and upload when the phone is back online.

One document the whole deal can rely on.

The report is built from the car's own scans. Every figure can be traced to a reading the adapter took, and anything the car did not answer says so.



A grade with a confidence line

Score out of 100, built from up to four components. A component the car could not produce is left out, and the report says so.

Health against the floor for this car's kilometres

Not a generic pass mark. 92% at 1,40,000 km is excellent. 92% at 18,000 km is not.

Spread read where it means something

Only between 95 and 99% charge. Below that, an LFP pack is too flat to judge.

Findings are sentences with evidence

Each one states the claim, the numbers behind it and, only when useful, what to do. If nothing fires, nothing is printed.

The identity a dealer checks

Firmware versions and flash dates from the car. Unanswered fields read "Not read", never a stand-in.

A grade that refuses to flatter the car.

A pass that every car gets carries no information. EVDS is built to say "not enough evidence yet" before it says anything it cannot support.

26–66%

of report pairs changed letter within six hours

We tested our own grade and it failed. Replaying real ownership histories, the first formula moved cars from A+ to D between two reports taken hours apart, while state of health had not moved at all. The cause was the formula, not the batteries. It now judges whole charge sessions, and holds back a letter until the evidence exists.

Same healthy pack, two very different readings

At 100% charge every LFP pack shows a wide cell spread, often 150 to 260 mV. At 95 to 97% the same packs read 4 to 10 mV. Judging at the wrong charge fails good cars, so EVDS reads spread only from 95 to 99%.



Schematic of a typical healthy LFP pack.

Measured Read straight from an ECU

Charge, health, pack voltage and current, lowest and highest cell and which they are, temperatures, odometer.

Derived Arithmetic on measured values

Cell spread is highest minus lowest. Pack power is voltage times current. Nothing assumed.

Modelled Needs an assumption

Efficiency, and the per-cell grid. Useful on screen, and never printed as a measurement.

Zero is not a reading

A pack at 0% health is not a pack. Those rows are treated as "did not answer", not as data.

No odometer, strictest floor

If mileage was not read, the 80% floor applies and the report says so. It would rather understate than flatter.

Fewer than 3 charges, no verdict

Balancing not being seen means little until three high-charge scans exist, so it is withheld, not scored against the car.

Price the battery, not the badge.

For platforms and dealers who take EVs in, list them and stand behind them.
Give every car the same evidence, taken the same way.



At intake or trade-in

Plug in during inspection and read the pack before you quote. Health against the regulatory floor for the car's mileage, cell spread, balancing, temperature and the odometer the car itself reports.

State of health vs GTR 22

Cell extremes

Odometer read from the car



On the listing

Attach the Battery Health Report to the car's page. Download it as a PDF, or share it as a link the buyer opens without an account. The buyer sees the same page you did.

PDF report

Shareable link

Provenance badge on every figure



Before handover

Scan again and compare with the intake reading. If the pack moved, or a weak cell started to show, you know before the customer does.

Compare two sessions

Weakest-cell tracking

Findings with evidence

Repeat weakest cell

Which cell is lowest each time, against what chance predicts for that pack size.

Firmware and flash dates

BMS and vehicle ECU identity, ready to check against what the model should carry.

Charge behaviour

How fully the car reaches the top of a charge, and how the spread looks there.



What one scan can and cannot do. A first scan gives measured readings, findings and the controller's identity. The letter grade needs evidence from charge sessions, so a car scanned once shows "More readings needed" with a checklist of what is missing. For the strongest report, connect during a slow AC charge through 95 to 99%. The app guides the capture.

See what the car saw, then show the owner.

A battery warning with no fault found is a bad visit for everyone. EVDS gives the technician the live numbers, the history behind them, and a document to hand over.

Live cockpit

Sample readout

State of charge	56.4 %	Measured
Pack volts, amps	341.2 V / -12.4 A	Measured
Lowest cell #51	3.281 V	Measured
Highest cell #17	3.286 V	Measured
Cell spread	5 mV	Derived
Efficiency	7.1 km/kWh	Modelled

Seven powertrain temperatures

Motor winding	fresh
Inverter	fresh
AC compressor	fresh
PDU busbars (2)	fresh
DC-DC converter	fresh
Inverter coolant	fresh

Each tile shows how old its reading is. A sensor that stops answering disappears instead of freezing.



History that means something

Trends per vehicle, never pooled across cars. Top-of-charge history and weakest-cell recurrence show a fault forming before a warning does.



Fault codes in plain language

Look up or decode trouble codes without a separate reference, and read the raw values behind any tile when an engineer needs them.



Controller identity probe

BMS and vehicle ECU firmware, part numbers, supplier and flash dates, read automatically the first time you connect.



Before and after

Compare two sessions to prove a service changed something, or that it did not.



12V battery and insulation

Auxiliary battery health and insulation resistance sit next to the traction pack, since a weak 12V causes plenty of "battery" complaints.



Trips, charging and costs

Trips start and end on their own. A logbook records charging and service bills against a plate, and shows charging loss between charger and pack.

29 configurations across six brands.

Tata has the deepest coverage, proven on real cars every day. Other brands have profiles built and ready. A few newer models still read only part of the pack.

Tata

- Punch EV 25, 35, 40 kWh (two packs)
- Nexon EV Prime, Max, 45 kWh
- Tiago and Tigor EV 19.2 to 26 kWh
- Curvv EV 45, 55 kWh
- Harrier EV 65, 75 kWh
- Sierra EV 75 kWh

MG

- Windsor EV Pro, 52.9 kWh
- ZS EV 50.3 kWh
- Comet EV 17.3 kWh

BYD

- Atto 3, Seal 60.5, 82.6 kWh
- Dolphin, Dolphin Mini 44.9, 38 kWh

Mahindra

- XUV400 EV 39.4 kWh
- XUV 3XO EV 39.4 kWh
- BE 6, XEV 9e, XEV 9S 79 kWh

Hyundai and Kia

- Hyundai Ioniq 5 72.6 kWh
- Kia EV6 GT-Line, 77.4 kWh

The pack's chemistry, cell count and layout come with the profile, so a 102-cell Punch and a 118-cell Harrier are each read on their own terms.

● Scanned on real cars ● Profile ready ● Partial readings for now

11,600+

scans recorded, 12 to 29 Sep 2026

241,000

time-series samples behind them

11

configurations scanned on real cars

29

configurations with a built profile

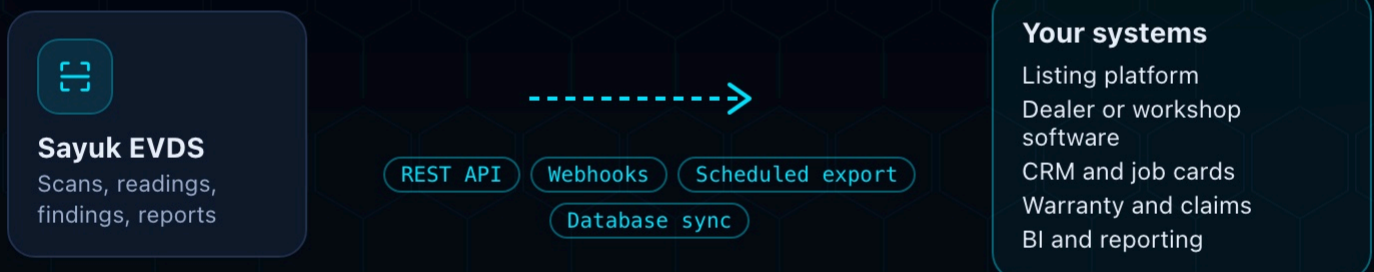
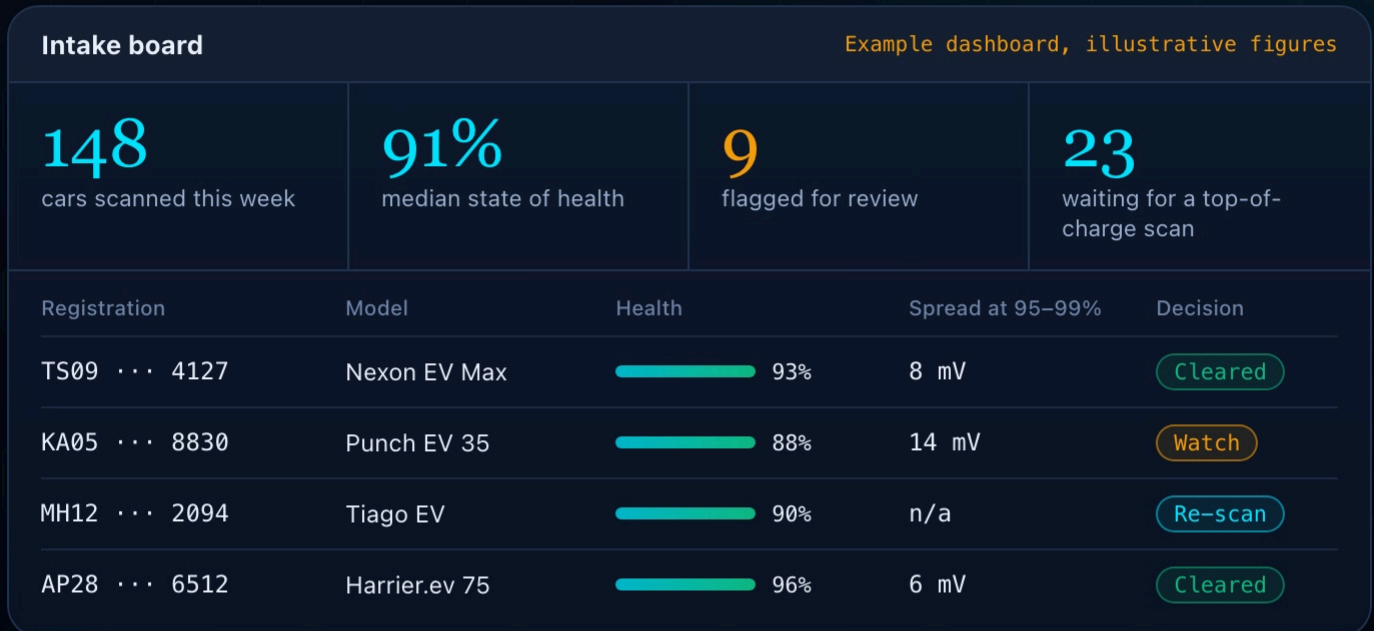


See where a car sits among its peers. With the owner's consent, EVDS compares a car against others of the same model in plain words, such as "healthier than 6 of the 9 Nexon EV Max cars counted". Nothing shows until at least 5 cars are counted.

Your data, on your dashboard, in your software.

Built to order

Every scan is already recorded per car, with its readings and findings. We build the views and connections your team needs on top of that.



- Dashboards for each role**

One view per role: inspector, branch, head office, insurer.

Rules and alerts

Flag a car when health, spread or a repeat weak cell crosses your own threshold.

Your branding

The same measured report, carrying your name, colours and wording.

Workflow hooks

Attach the report to the listing, open the job card, notify the buyer, automatically.

- 1

Tell us the workflow

Who scans, who decides, which systems hold the truth today.

2

We map the fields

Your car and customer records matched to EVDS scans.

3

Pilot on your cars

A dashboard and a sync, tried on real vehicles from your lot or bay.

4

Go live, then refine

Rules and views adjusted as your team uses them.

It reads. It never writes.

You are plugging into someone's car. EVDS only asks the controller for readings, and handles the data as if it were yours.



On the car

- Diagnostic reads only. Commands that write to memory, reset a controller, clear faults or disable fault detection are refused by default.
- The rule is an allow-list checked on the phone that owns the adapter, so a mistake elsewhere cannot get past it.
- A remote session, used to map a new model, shows a banner on the phone and can be ended at any time.



On the data

- Try it without an account. Accounts add history across devices.
- Download everything you have recorded, or ask for deletion, which can be undone for 30 days.
- Diagnostic codes and raw readings are never shown to other members.
- Peer comparison is opt-in and anonymous.

Allowed: questions the car answers

Read	Data by identifier, such as health and cell voltages
Read	Current data, freeze frames and vehicle information
Read	Stored and pending trouble codes
Open	A diagnostic session, and keep it alive

Refused: anything that changes the car

Write	Data to controller memory
Run	Manufacturer routines and actuator tests
Reset, clear	Controllers, fault history, adaptation data
Silence	Bus messages, or switch off fault detection

Anything not on the allowed list is refused, so a service added to the diagnostic standard tomorrow is blocked by default.



Adapter

Reads the car



Phone

Records and stores, even offline



Sayuk server

History, grade and findings



Report

PDF or link, plus your dashboards



Bring a car. We'll bring the report.

Tell us how you buy, sell or service EVs. We will show you what the battery says on a car from your own lot or bay.

Resellers

Scan a few cars at intake and see what the report adds to your quote.

Service centres

Take the next "battery warning, no fault found" and bring evidence to the owner.

Fleets and platforms

Describe the dashboard and the system you want it synced to. We build it.

What you need: an Android phone and an ELM327-type Bluetooth or Wi-Fi OBD adapter.
The app is free today.

Write to us
hello@sayuk.cloud

Learn more
sayuk.cloud/evds

Open the app
evds.sayuk.cloud