

● CABLE-THEFT & CUT DETECTION · 1 M - 10 KM

Know the cable is cut. Know where.

cut32 LongRange runs a slim, self-adhesive sensing tape alongside the cable you need to protect. The moment the tape is severed, the alarm goes out over LTE — and seconds later the system names the exact section of the run, on a map, on your engineers' phones.

10 km

Maximum protected run
from a single control box

<1 ms

On-board cut detection —
alarm raised instantly

1 node

Cut located to a single
tape section — nodes 1–50
m

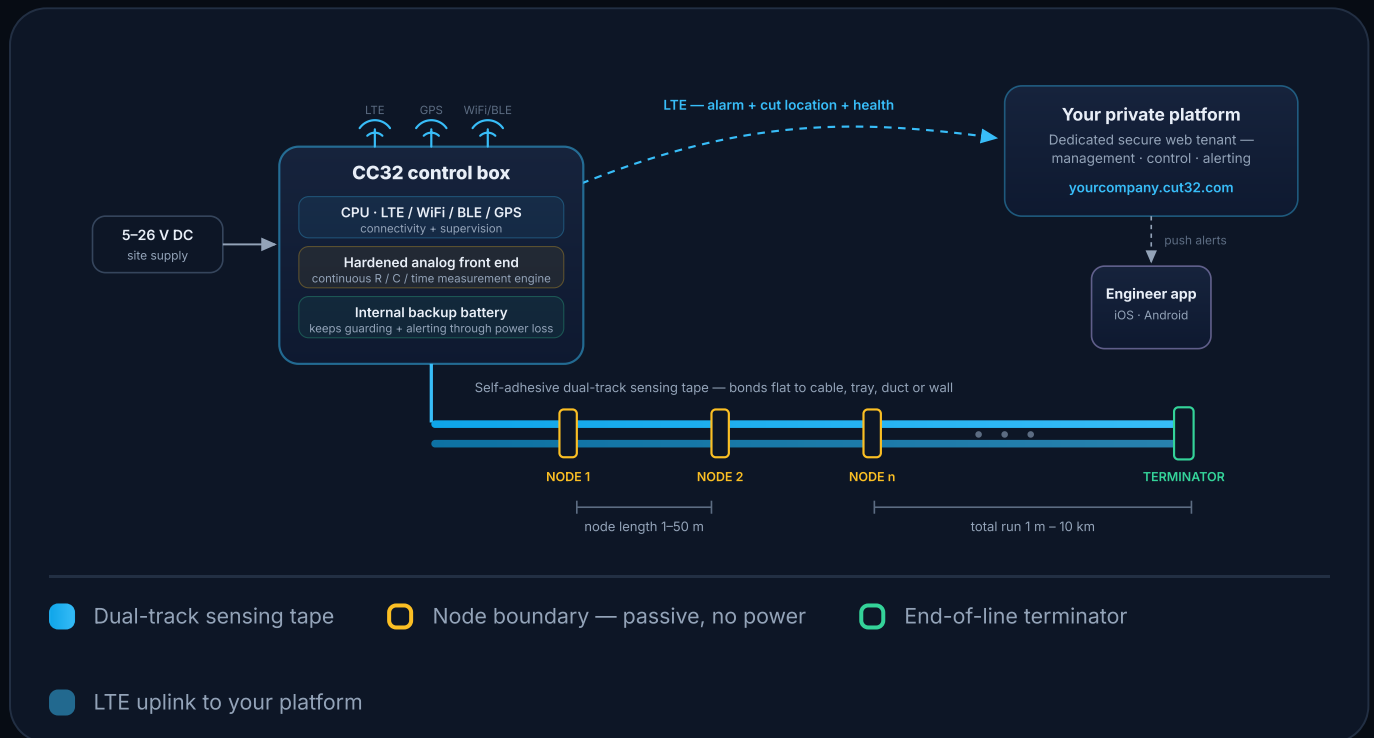
<0.5 m

Location of shorts and
cutting attempts at 1 km

THE SYSTEM IN PLACE

One box, one tape, the whole run covered.

The control box powers and continuously interrogates a dual-track conductive sensing tape laid along the protected cable. The run is divided into **nodes** — passive, maintenance-free sections with no electronics, no power and nothing to service in the field. A terminator closes the far end of the loop.

**01****Lay the tape**

Run the slim, self-adhesive sensing tape along the cable, tray, duct or wall it protects. Node boundaries go wherever suits the site — every 1 to 50 metres — setting the location resolution you'll get.

02**Scan each node**

At each node, scan its QR label with the installer app. One scan captures the node's identity, its order along the run and its GPS position — building the live map as you walk the route.

03**Verified before you leave**

The control box measures the finished line and the platform confirms it can see exactly the nodes you scanned — a bad joint or a missed scan is flagged on site, not discovered at 3 a.m.

MEASUREMENT ENGINE

Three measurement technologies. One hardened front end.

A dedicated measurement processor interrogates the tape continuously through a surge-protected analog front end, combining three complementary techniques — so the system doesn't just see that something happened, it can say what happened and where.

RESISTANCE

Precision loop resistance

A calibrated current source and 16-bit precision converter track loop resistance against its commissioning baseline. A degrading joint shows up as drift — and because the tape has a known resistance per metre, anything bridging the tracks reads out directly as a distance.

<0.5 m location of shorts & attempts at 1 km

CAPACITANCE

Node counting — the locator

Every node boundary carries a precision capacitive marker. After a cut, the control box measures total line capacitance and counts the markers still reachable — the count names the severed node. Fully passive along the whole run: nothing needs power or maintenance, ever.

±1 node cut location, on the map

TIME DOMAIN

Nanosecond event timing

The measurement engine resolves events to roughly a nanosecond, timing signal edges and charge ramps in hardware. It underpins the capacitance locator, timestamps the attack forensics — and supports TDR on high-conductivity tape variants.

~1 ns hardware timing resolution

Always watching — and it records the attack itself

Detection never sleeps and never depends on the network: the measurement processor guards the line autonomously, raising the alarm in under a millisecond. A high-speed capture engine samples the line ten million times a second into a rolling buffer — so when a blade touches the tape, the entire electrical fingerprint of the attack is frozen and uploaded as forensic evidence, alongside the alarm.

STRAIGHT NUMBERS

EVENT	HOW IT'S MEASURED	DETECTION	LOCATION
Cable cut tape fully severed	Loop opens instantly; capacitive node count then names the last reachable node.	<1 ms ON-BOX	±1 node node length 1–50 m, yours to choose
Cutting attempt / short blade bridging the tracks	Precision resistance reads the distance directly — ohms become metres.	<1 ms ON-BOX	<0.5 m at 1 km metre-class to 10 km

PLATFORM & APPS

Your own tenant.
Your engineers' pockets.

Every customer gets a private, secure tenant on the cut32 platform — your own branded hostname, your devices, your people, fully isolated.

- Private web platform

Live status of every run, alarm history, health trends, user management and alert routing — under your own name.cut32.com hostname.
- Engineer apps — iOS & Android

Alerts tailored to each engineer's area and responsibilities. A cut drops a pin on the map, names the node and guides the engineer to the exact section — plus a simple interface for repair and commissioning.
- Closed-loop commissioning

Each node is QR-scanned in sequence at install — identity, order and GPS in one action. The platform verifies the measured node count against the scans before the installer leaves site.



SPECIFICATIONS

Protected run length	1 m – 10 km per control box	Node length	1 – 50 m, configurable per site
Cut detection	< 1 ms, autonomous on-box	Cut location	± 1 node
Short / attempt location	< 0.5 m at 1 km · metre-class at 10 km	Attack forensics	10 Msps waveform capture, uploaded with alarm
Sensing element	Dual-track conductive cloth tape, self-adhesive	Field electronics along run	None — nodes & terminator fully passive
Supply	5 – 26 V DC	Backup	Internal battery — guards through power loss
Connectivity	LTE (primary) · WiFi · BLE · GPS	Line protection	Gas-discharge + transient suppression front end
Platform	Private secure tenant, branded hostname, full API	Alerting	Push to iOS / Android, per-engineer routing, map pin