



ELTON TestLink

How on-device testing works, from the order to the evidence

Real hardware | Out-of-band 5G | Paired to the digital twin
Included in every ELTON subscription



Exploitability Lives on the Device

Source code, an SBOM and an architecture diagram can point at what might be exploitable. Proving it takes an attack on the running product.

L1 Digital twin

30-40%

of candidate findings resolved Not Affected

- SBOM and architecture
- Component mapping
- Reachability analysis

L2 Code and firmware

50-65%

of candidate findings resolved Not Affected

- Source and firmware images
- Custom test harnesses
- Static analysis

L3 Runtime on hardware

70-85%

of candidate findings resolved Not Affected

- The real device, cabled to TestLink
- Live exploit attempts on its interfaces
- Real-world runtime conditions

TestLink keeps the running product one cable away, wherever it sits, so L3 evidence becomes routine.

Not Affected at L3 means we tried to exploit it on your hardware, it failed, and the test evidence is attached.

TestLink: A Pentester in a Box

A hardened case that cables to the product, carries its own 5G link to the platform, and runs the pipeline against the live interfaces.



Its own 5G radio

An out-of-band link to the platform. It never touches your LAN, so it needs no firewall change, IT ticket or jump host.

An interface plate per product

USB, Ethernet, serial and UART, CAN, JTAG and SWD, GPIO, BLE and Wi-Fi. Cables and adapters are built for the device.

Driven by the platform

The platform sends each test case and stays in control while TestLink runs it on the live port and streams results back.

Included in every subscription

TestLink comes with managed operation and platform access. Request a unit and it ships to your site or to our lab.

Three Ways to Put a Device in the Loop

Every path runs the same pipeline. Only the place the device sits changes, and you can switch as the program moves.

Lab shipment

Ship the product to the ELTON lab. We cable it to a TestLink on our bench and run the testing.

Remote on-site

The device stays in your building. We ship TestLink to your site, your team cables it, and we drive the testing.

Self-service

The unit transfers to your team, and you start runs on demand. Results still land in ELTON.

←

TESTLINK

● Ready ● Online

TL-0417

Run connectivity check

Return unit

SERIAL TB-26-0417 | MODEL TestLink 5G · v2 | FIRMWARE 2.4.1 | TENANT Acme Medical

DEPLOYMENT TYPE · *editable*

LOCATION

CONNECTED AT

Lab shipment Remote on-site Self-service

ELTON Lab · Naperville, IL

Lab bench 3 · rack B

Your device is at the ELTON lab, cabled to this unit.

SITE CONTACT

CONNECTION

STATUS

PAIRED VIEW

ELTON lab

● Online
5G · 84 ms · heartbeat 20 s ago

● Ready
online and paired

Acme Infusion Systems / AX200 / v2
2 interfaces paired · one view at a time

RUNS VIA THIS TESTLINK

PORT PANEL

4 In the last 30 days · L3 evidence

ETH-1 Ethernet ETH-2 Ethernet USB-1 USB / serial CAN-1 CAN RF-1 RF (BLE / Wi-Fi)

Switching models is one setting on the unit, and ELTON handles the logistics.

A move to the lab issues a return label and an intake slot for the device. A move to your site ships the unit to your site contact, and self-service transfers it to your team.

From Order to Evidence in Five Steps

You order the test, cable the unit and proceed, then ELTON runs it. Every step leaves a record on the test.

01

Order

Choose TestLink as the remote method. The order derives what each interface needs and who executes it.

02

Pair

Cable the unit, then point each cable at its interface on the digital twin.

03

Pre-flight

TestLink checks every cabled interface before testing starts. Issues come back with the reason.

04

Execute

ELTON runs the plan. Cases on a paired interface run through the unit, live.

05

Evidence

Results, findings and twin discoveries land on the test, pinned to the build.

telemetry the whole way: every unit reports its state, with a heartbeat every 10 seconds while it executes

Nothing to open on your network and no run to schedule. Proceeding from the pre-flight hands the test to ELTON.

Self-service units are the exception, where your team starts the runs directly.

TestLink Goes on the Test Order

Pick how ELTON reaches the device. The order then derives what ELTON needs to reach each component, and who executes each item.

Choose the access path

Ship it to ELTON, host ELTON on site, or have ELTON test remotely over a TestLink. Combine as needed.

The order derives the rest

Each thing ELTON needs to reach a component becomes an item, executed by a TestLink, an ELTON Agent or an ELTON tester.

Decide every item

Mark each item Provided or Will not provide before the pre-flight runs. A TestLink paired to the interface counts as Provided.

Required Component Access						
9 across 4 components		6 required	3 provided			
ID	COMPONENT ACCESS	TYPE	REQUIRED BY	EXECUTED BY	STATUS	
RCA-01	Service-account session on the AX200 Main Console	Session/Token	AX200 Main Console	ELTON-Agent	Provided	
RCA-02	Console keyboard, display and USB ports	Physical Access	AX200 Main Console	ELTON-TestLink	Pending	
RCA-04	Peripheral Controller API over TLS from the clinical VLAN	Network Position	Peripheral Controller	ELTON-TestLink	Provided	
RCA-05	Peripheral Controller board in hand - debug UART and test points	Physical Access	Peripheral Controller	ELTON-Tester	Pending	
RCA-07	Pump head SWD header	Physical Access	AX200 Pump Head	ELTON-TestLink	Pending	
RCA-08	CAN bus and JTAG header on the chassis	Physical Access	AX200 Chassis	ELTON-TestLink	Pending	

Cable It, Then Pair It to the Twin

Pairing tells the platform which twin interface each cable lands on. The plan scopes to those interfaces, and every result pins to the release.

TestLink associated with this test
one per test

TESTLINK

TL-0417

ELTON Lab · Naperville · bench 3

CONNECTION

Online

5G · 84 ms · heartbeat 20 s ago

PAIRED

8/17/2026 · K. Lee

held by this test until removed

TWIN INTERFACES

CONNECTED

3

no limit · each with its port and device connection

Remove TestLink from this test

All TestLinks · Testing view →

Connected twin interfaces
3

TWIN INTERFACE	PORT	DEVICE CONNECTION	STATE	NOW	
Peripheral Controller API over TLS	ETH-1	Console rear panel · RJ45 service port 2	Executing	TC-Ym4Rc-8sPd1 · step 4 of 7 · 09:41:12	Remove
CAN bus	CAN-1	Chassis CAN OBD tap · J12	Executing	CAN batch · 9 of 9 complete 9/22	Remove
Console USB ports	USB-1	Console front panel · USB-A port 1	Idle	batch complete 9/23 · waiting for re-queued cases · 09:40:58	Remove

Pair a TestLink
connect an interface

TestLink unit

TL-0417 · associated with this test · Et

Twin interface

Choose an interface of the twin...

TestLink port

ETH-1

Device connection

e.g. Pump head service port

Connect interface

One unit per test

The test holds it until someone removes it, and no other test can route through it meanwhile.

Any number of interfaces

USB, serial, Ethernet, CAN and debug headers, as many as the device needs. Three or four at a time is common.

Port to device connection

Each row names the TestLink port and where the cable lands on the device. It shows Connecting until the unit confirms the cable.

Pre-flight Confirms Access Before Testing

The agents check every in-scope access path, TestLink checks each interface it is cabled to, and the materials are checked against the build.

Phase 2 · Pre-flight 5 issues · 3 passed Run pre-flight again			
PREREQUISITE	STATUS	RESULT	REASON
RQ-28 · RQ-30	Pending	Issue	Unit #2 is at intake and not paired to the Pump protocol (serial) or the SWD header · the Pump Head cannot be reached
CND-06	Pending	Issue	Login to the Peripheral Controller API failed · no clinician session credentials
RQ-53	Provided · other version	Issue	The SBOM on file (SRC-02) covers 4.2.118; the console runs 4.2.140
RCA-05	Pending	Issue	No enabled context gives physical access to the Peripheral Controller board, and the lab unit is sealed · the ELTON tester cannot reach the debug UART
RQ-51 · RQ-58 · RQ-31	Pending	Issue	No SBOM on file for the console rev C or the bootloader, and no bootloader image · SCA and the bootloader DAST cases cannot start
CND-05	Provided	OK	Reachable · Peripheral Controller API over TLS and the CAN bus respond
CND-03	Verified	OK	Reachable · console keyboard, display and USB respond
CND-01 · CND-02	Verified	OK	Sessions established · the console, Install Manager, Embedded Browser and PostgreSQL are reachable
Ran 8/29/2026 09:40 · started by J. Doe · 5 issues · 3 checks passed			
Execution proceeded with these issues accepted · the Plan tab's readiness shows what each one still holds up			

OK or Issue, with the reason

Each check names its source, the TestLink, an agent or the tester, and what it found.

Fix and re-run, or proceed

Your team decides, and proceeding with the issues accepted starts execution.

Gaps become named blockers

A case that cannot run names its blocker, so an incomplete result always says why.

Every Test Case Takes a Known Path

The path comes from the pairing and the scope. The plan shows it as *Via*, and it updates the moment a pairing changes.

TestLink

Cases that target an interface in scope run through the unit cabled to it, the same attack surface an adversary would touch.

Via TL-0417 · ETH-1

ELTON Agent

ELTON's software agent runs cases on a component through a session or network position. TestLink can supply that position.

Via ELTON Agent · CTX-04

Materials

SAST, SCA and code review run on source, binaries and the SBOM. No device needed.

Via Materials

Not testable

An interface with no TestLink cabled, or a component nothing in scope can reach. The plan says what would fix it.

Via none · pair a unit

ELTON creates and schedules every run against the build in scope.

When the pipeline finds a new path at the port, it proposes a supplementary test case for your team to accept or decline. Strict mode turns proposals off.

Watch Every Unit Live

Every TestLink and every ELTON Agent reports as a source: what it is paired to, its state and the last thing it did.

Telemetry ● live

what the ELTON TestLinks and agents report, as it arrives

SOURCE	TEST · RUN	PAIRED	STATE	NOW
ELTON TestLink TL-0417	AX200 v2 · Annual Penetration Test	Peripheral Controller · Chassis · ...	● Executing	TC-Ym4Rc-8sPd1 · Session token expiry enforce...
ELTON TestLink TL-0422	available	not cabled · ELTON lab bench 3	● Idle	available · last run complete 9/23
ELTON TestLink TL-0455	available	AX200 Pump Head · pairing pen...	● Not paired	unit #2 at intake · 12 test cases wait on it
ELTON TestLink TL-0388	Halo 3 · Cloud & API Assessment	HL Cloud API · ETH-1	● Executing	TC-Cn2Rt-5kVp8 · Cloud tenant enumeration · st...
ELTON TestLink TL-0301	Vista v4 · Annual Penetration Test	not cabled · Customer lab	● Offline	last seen 5d ago · 9/17 14:02 · pair it to Vista v4 o...
ELTON Agent CTX-01 · CTX-02	AX200 v2 · Annual Penetration Test	Internal Runtime · console, Instal...	● Executing	TC-Wd8Pq-3tHs6 · No hardcoded database cred...
ELTON Agent CTX-04	AX200 v2 · Annual Penetration Test	Clinician Session · Peripheral Co...	● Blocked	no clinician session (CND-06 · Pending) · 7 test c...
ELTON Agent materials	AX200 v2 · Annual Penetration Test	SAST · SCA on the sources and ...	● Complete	SAST · Install Manager 4.2.140 and Embedded Br...

Heartbeat every 10 seconds

A unit reports while it executes, and any source silent for 60 seconds gets flagged.

States you can read

Executing, Idle, Not paired, Blocked, Complete and Offline.

Unit detail

Connection and latency, firmware, the port panel, every run through the unit and its activity log.

Results Pinned to the Build They Ran On

Each run snapshots the twin at start, so every result traces to the build, the interface and the scope that authorized it.

Test runs									
5 runs 1 in progress 1 draft									
ELTON creates and schedules the runs - a row opens the run's overview below									
RUN	STATUS	BUILD	START	END	TEST CASES	PASSED	FAILED	FINDINGS	
Run 1 · Console & OS hardening	Complete	4.2.118	8/19/2026	8/23/2026	96	65%	35%	11	
Run 2 · Pump head & CAN bus	Complete	PH-fw 3.2.1	8/24/2026	8/29/2026	74	74%	26%	6	
Run 3 · Peripheral Controller API	Complete	4.2.118	9/02/2026	9/09/2026	141	79%	21%	14	
Run 4 · Retest of Run 1 findings	In Progress	4.2.140	9/10/2026	-	101	60%	14%	3	
Run 5 · Pump head retest	Draft	PH-fw 3.2.2	-	-	38	0%	0%	0	

Retest on the next build

The same case reruns on the same interface and reports fixed, regressed, still failing or still passing.

Twin discoveries

Interfaces and components a run finds go into the twin, marked Discovered in testing.

L3 evidence

Not Affected backed by an attempted exploit on the real hardware, with the record attached.

Every finding traces to the test case that produced it.

A reviewer can follow any result back to the run, the build and the cable it ran through.

When a Cabled Device Pays Off

After commissioning, TestLink can stay cabled to the device or reconnect whenever testing is needed.

Premarket submission

Test the release headed to FDA on real hardware, with every Not Affected backed by evidence.

New firmware build

Load the build on the cabled device and rerun the cases without a new shipment or new scoping.

Researcher disclosure

Reproduce the claim on the cabled device without waiting on a shipment. Confirm it, or document why it does not hold.

Multi-release triage

Stage each release on the device and check one finding across all of them.

If we can't exploit it, we won't call it a vulnerability. TestLink keeps the real device one cable away, so proof stops waiting on a shipping label.