

SKU: RIOS-OP-DECK

Sovereign Deck: Field Terminal

The Eyes of the Mesh.

Audit.

Repair.

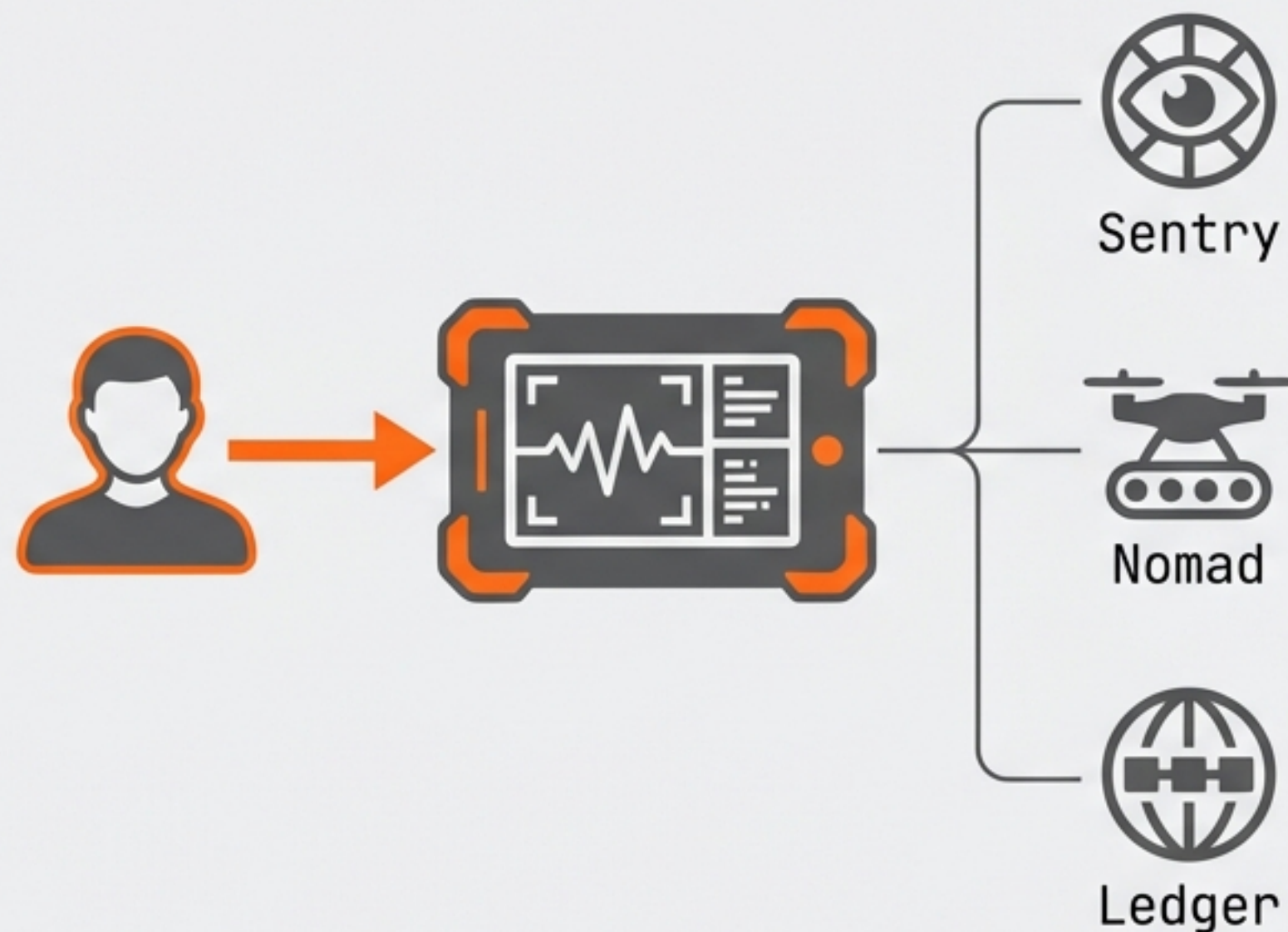
Certify.

VERDEAN DECK

The Human-Machine Interface for the DeReticular Ecosystem

While Nomad and Sentry nodes are autonomous, the Sovereign Deck is the essential tool for human operators to diagnose, repair, and authorize those nodes in the field.

It is a ruggedized cyber-terminal. Unlike a consumer device, it integrates a hardened Linux kernel and a built-in Software Defined Radio (SDR) to visualize the invisible RF signals that sustain the mesh.



Built for the Field Operator



Field Technicians



Network Auditors



Ag-Tech Consultants

Consumer tablets shatter on impact and overheat in the sun. The Sovereign Deck is a tool, not a toy. It is built to be thrown into the passenger seat of a Kurb Kar, dropped in the mud, and used to diagnose critical node failures during a rainstorm.



Hardware Anatomy: The Brick

Processing

Intel® Celeron® N5100
Jasper Lake, Quad-Core, Fanless.
Low TDP for thermal management.

Memory

8GB LPDDR4x
Soldered to board.

Storage

256GB M.2 SSD
User-replaceable for maintenance
friendly upgrades.

Power

5000mAh Li-Po Battery
Hot-Swappable for indefinite
runtime during multi-day
operations.



Survival-Grade Hardware & Legacy I/O

Physical Resilience

- 🛡️ **IP65 Rating:** Water & Dust Resistant.
- 🛡️ **Drop Protection:** 1.5m survival (MIL-STD-810G tested) via reinforced rubber corners.
- 🛡️ **Display:** 10.1 inch IPS (1920x1200) pushing 800 nits. Sunlight-readable under direct glare.
- 🛡️ **Touch:** Capacitive multi-touch, wet-finger and glove capable.

Connectivity & I/O

- 🔌 **Wireless:** Wi-Fi 6 (AX201), Bluetooth 5.1, GPS/GLONASS/Beidou.
- 🔌 **Physical Ports:** 1x USB-C (PD Charge), 1x USB 3.0, 1x RJ45 (Gigabit Ethernet).
- 🔌 **Industrial Link:** 1x RS232 Serial (DB9).

Essential for interfacing with legacy solar inverters and industrial machinery.

The Special Sauce: Integrated Spectrum Analysis

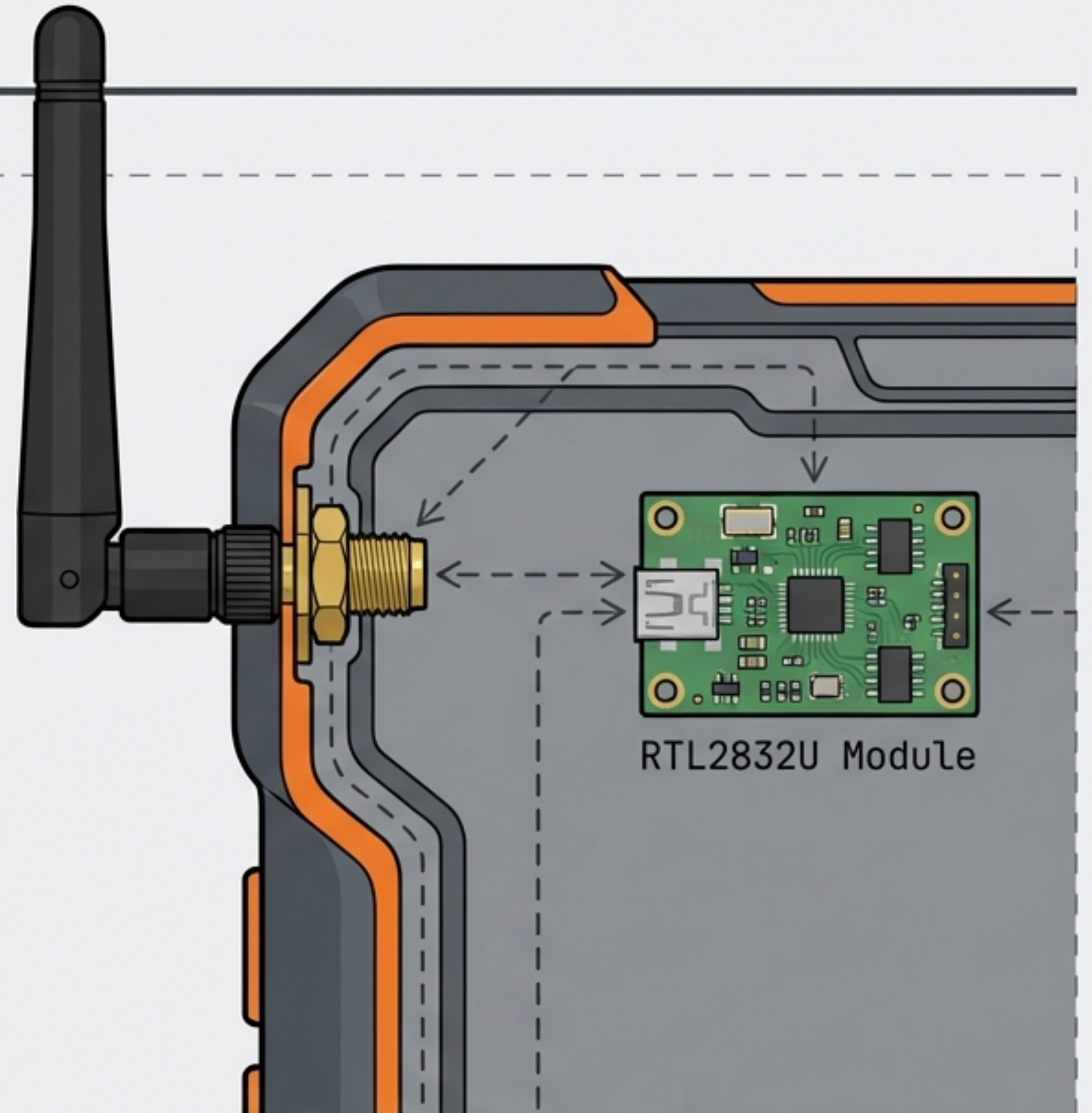
Hardware Integration

Built-in RTL-SDR (Software Defined Radio) receiver connected via an internal USB header to a dedicated marine-sealed SMA port.

Tunable range: 100kHz - 1.7GHz.

Visualize the Noise

Map the airwaves instead of guessing.
Detect specific electromagnetic signatures of industrial equipment to verify Proof of Work without trusting digital logs.



Software Stack: Kali Linux Field Edition

We don't ship Windows. The Deck runs a hardened, touch-optimized version of Kali Linux designed for rapid field deployment.



SDR++

Pre-configured to visualize the RF spectrum in real-time. Presets included for 915MHz (LoRa) and 2.4GHz (Wi-Fi) troubleshooting.



HempGrade AI

Local TensorFlow Lite model. Uses the rear 8MP camera to grade biomass quality entirely offline without cloud dependency.



Locutus CLI

Command-line tools to manually trigger ledger syncs or flash emergency rescue firmware to unresponsive nodes via USB serial.



Identity Manager

GUI utility for managing cryptographic Sovereign Keys via the tablet's built-in NFC reader hardware.

In the Field: The Ghost Hunter

Scenario: Interference Debugging at 915MHz

Problem: A farm's LoRaWAN sensors are randomly dropping packets.

Action: Operator deploys the Deck, attaches the telescopic antenna, and launches SDR++.

Discovery: The spectrum analyzer visualizes a massive noise spike in the 915MHz band originating from an old, unshielded water pump motor.

Resolution: The motor is repaired, and the local mesh network heals.

In the Field: The Crop Auditor

Scenario: Offline AI Biomass Grading

Step 1: Capture



A farmer claims a Grade A hemp harvest. The auditor snaps ten macro photos using the Deck's rear camera.

Step 2: Analyze



HempGrade AI processes the images locally, analyzing trichome density without requiring internet or cloud API calls.

Step 3: Certify



A cryptographic Quality Certificate is generated, signed by the auditor's Sovereign Key, and minted directly to the Locutus Ledger.

In the Field: Disaster Recovery

Scenario: Resuscitating Bricked Nodes

01. Crisis:

A remote Sentry Nontry Node is corrupted by a failed firmware update and drops entirely offline.

02. Tether:

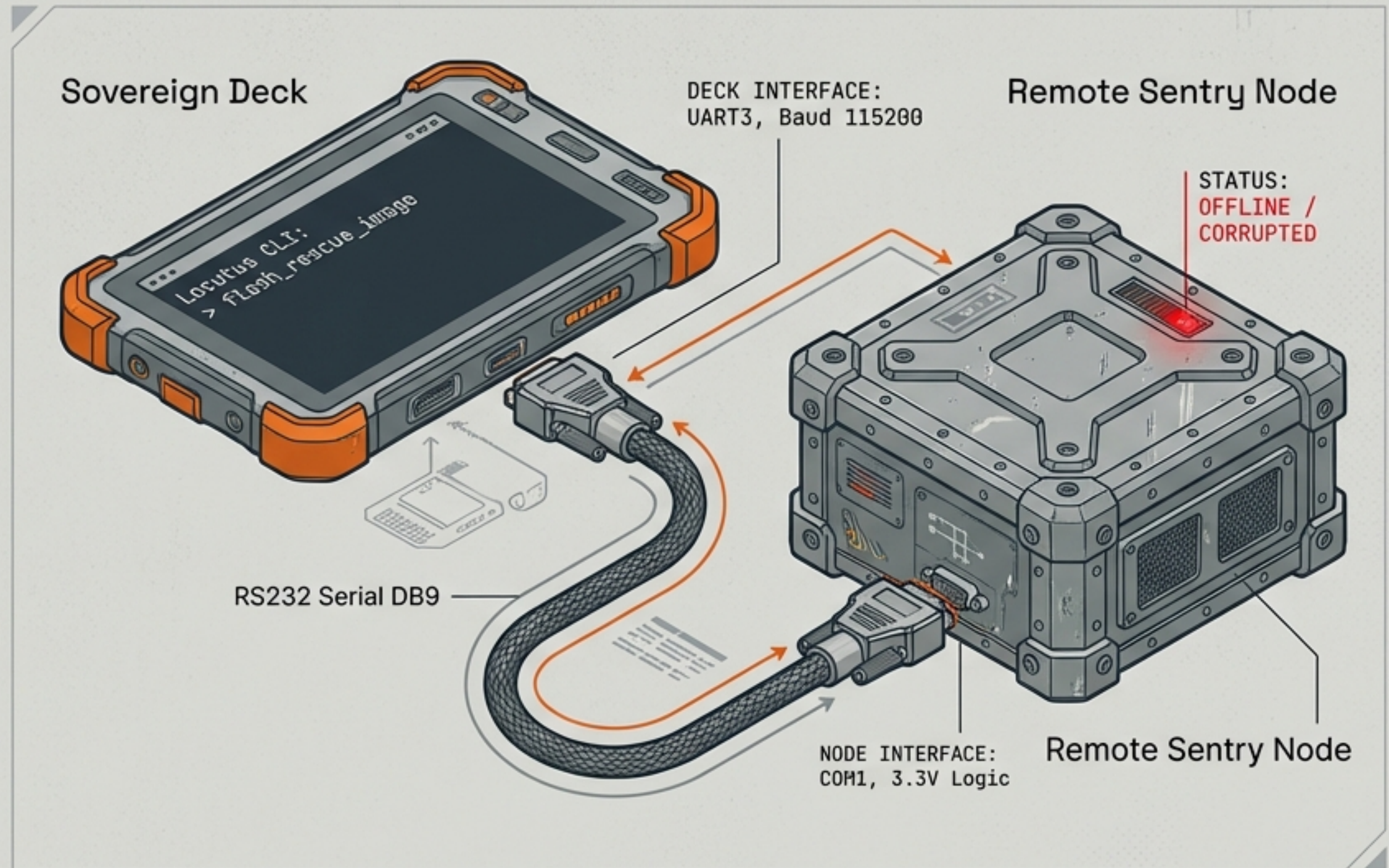
The operator physically connects the Deck to the Sentry node using the RS232 Serial port.

03. Injection:

Using the Locutus CLI terminal, the operator bypasses the corrupted boot-loader and injects a fresh Rescue Image.

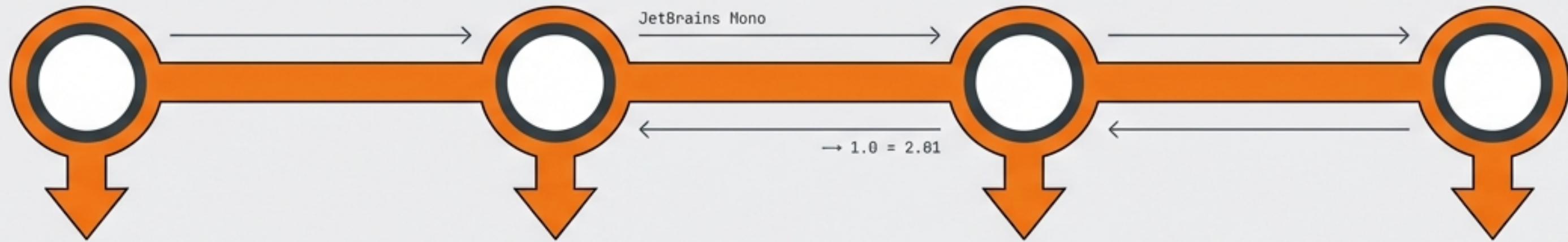
04. Result:

Critical infrastructure is brought back online in minutes.



Fulfillment Workflow: The Cyberdeck Mod

Standard Operating Procedure at Node 3 Workshop (Arizona)



Phase 1: Intake & Triage

Power on white-label base units. Perform dead pixel checks and digitizer linearity verification.

Phase 2: The Mod

Break water seal. Mount RTL-SDR PCB. Drill top chassis frame for SMA connector. Seal with marine-grade epoxy to restore IP65 rating. Wire internal USB.

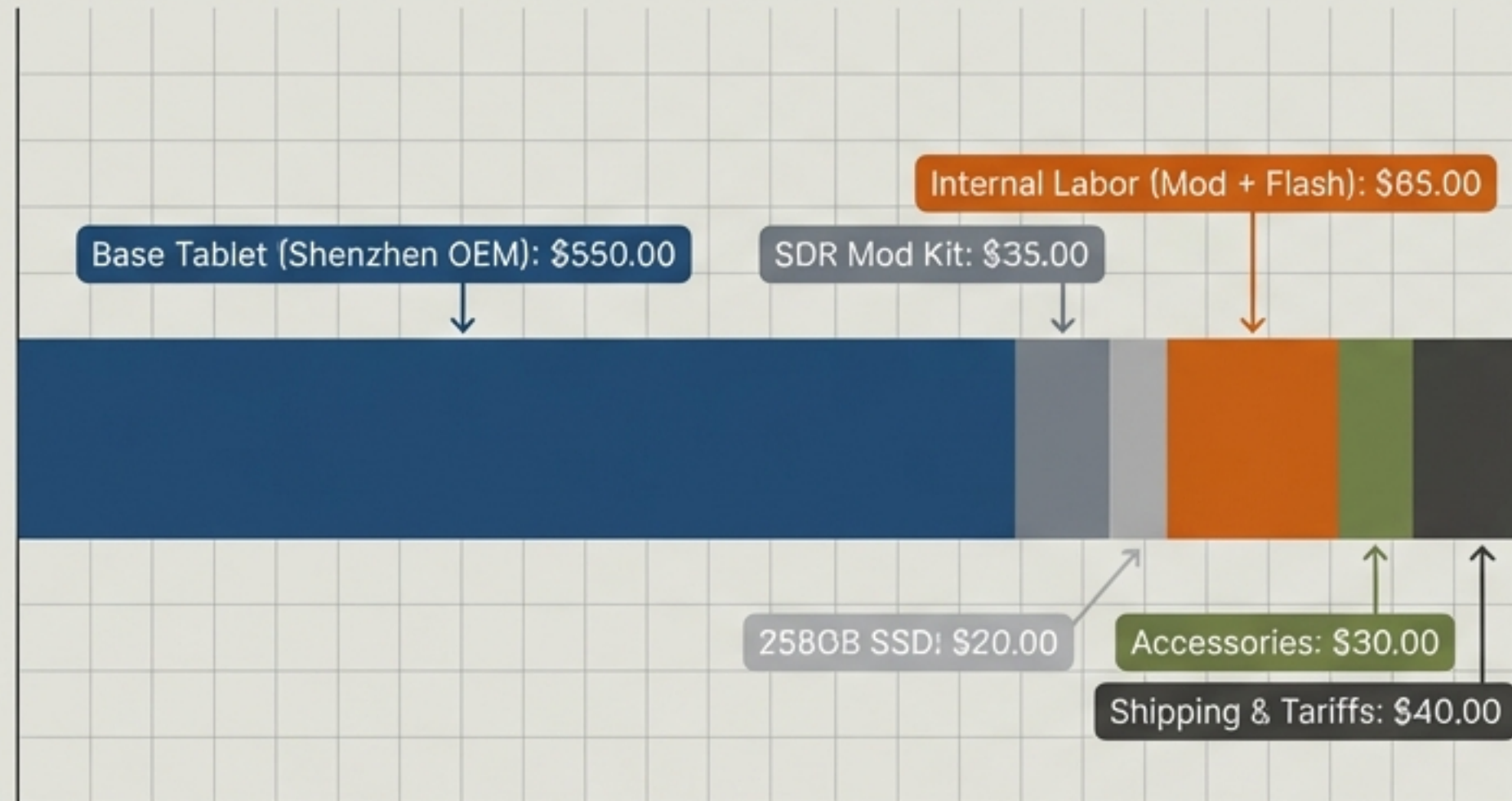
Phase 3: The Flash

Wipe stock Windows IoT. Flash Kali Linux (Field Edition). Calibrate SDR PPM error. Generate unique Device ID.

Phase 4: Kitting

Attach nylon strap and stylus. Pack wideband antenna. Box in rugged cardboard with foam inserts.

Financials & Bill of Materials



■ Base Tablet (Shenzhen OEM): \$550.00	■ Internal Labor (Mod + Flash): \$65.00
■ SDR Mod Kit: \$35.00	■ Accessories: \$30.00
■ 256GB SSD: \$20.00	■ Shipping & Tariffs: \$40.00

Total Est. BOM:
~\$740.00

Target MSRP:
\$1,299.00

Gross Margin:
~43%

Risk Register & Mitigation Strategy



Hardware (R-IP65-01)

Risk:

Drilling the case for the SDR mod risks breaching the IP65 water seal.

Mitigation:

Strict epoxy protocol. SMA connector sealed with marine epoxy and vacuum pressure-tested before shipping.



Software (R-DRV-01)

Risk:

Linux touch drivers on generic digitizers can be unstable.

Mitigation:

Custom compiled kernel with baked-in drivers. Updates disabled by default (Kernel Locking).



Legal (R-LAW-01)

Risk:

SDR allows eavesdropping on unencrypted analog comms (Police/EMS).

Mitigation:

Mandatory liability waiver on first boot. Software strictly defaults to ISM bands (915MHz/2.4GHz).

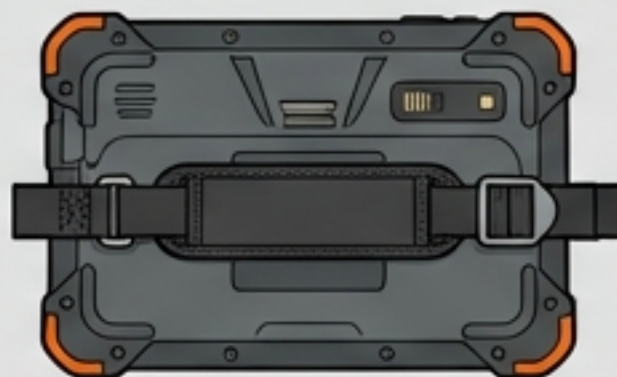
Deployment: What's in the Box?



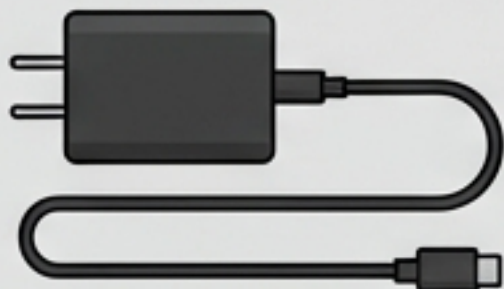
1x Sovereign Deck Unit



1x Telescopic SMA Antenna (Wideband)



1x Nylon Hand Strap (Pre-installed)



1x 45W USB-C Charger



1x Stylus Pen (Tethered)



1x Quick Start Guide



Required Accessory

An NFC-enabled Sovereign Key is strictly required to log in to the OS and sign audit reports.

The Multimeter for the Mesh.

SEE THE INVISIBLE. AUDIT. REPAIR. CERTIFY.

1-Year Limited Hardware Warranty (covers manufacturer defects). Enterprise Support Ticket Queue.
Exclusions: Drops exceeding 1.5m; water damage from SMA port tampering.