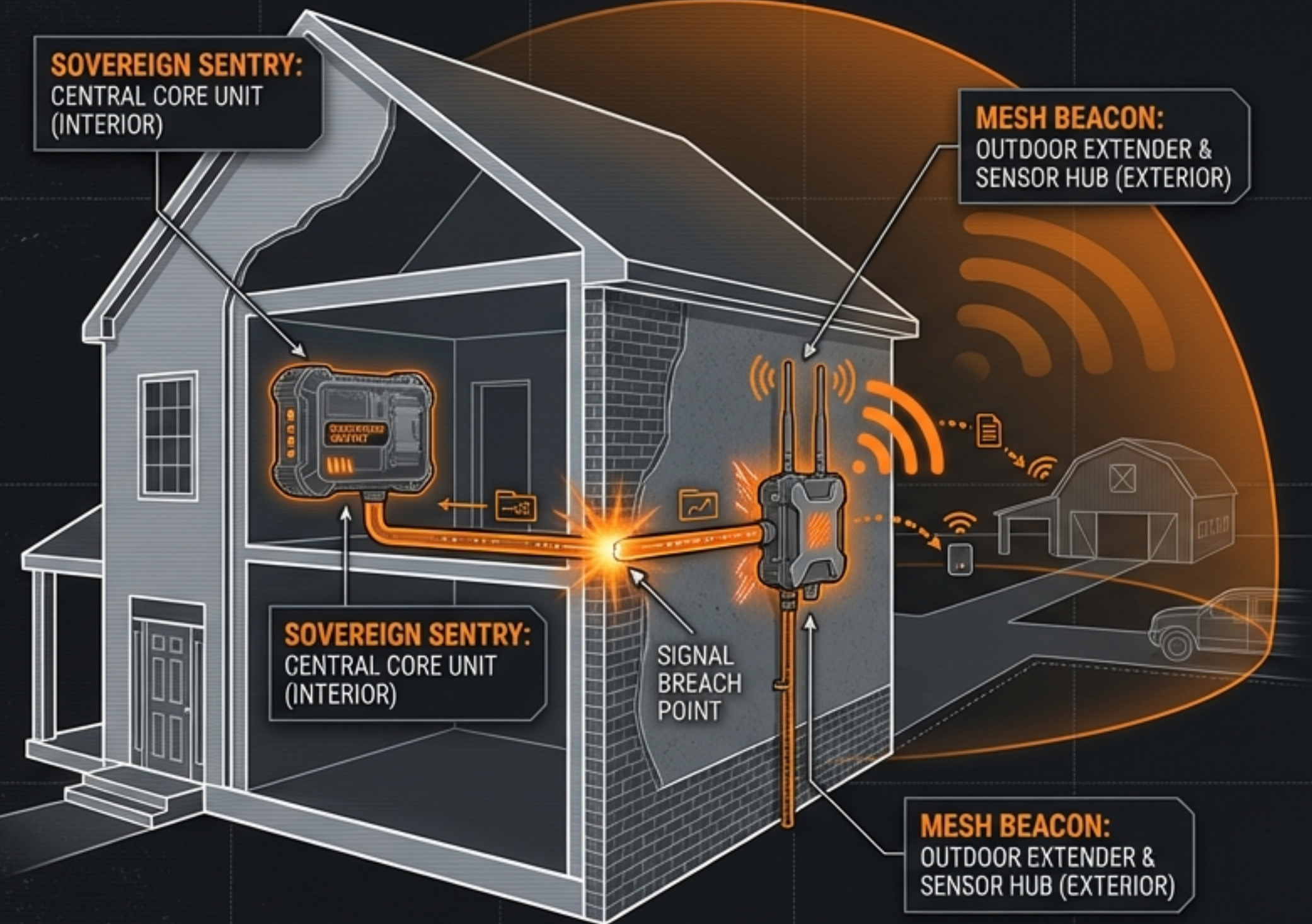




MESH BEACON: EXTEND YOUR SOVEREIGN TERRITORY

SKU: RIOS-EXT-01 // OUTDOOR EXTENDER & IOT GATEWAY

[STATUS: ACTIVE // V2.2]

**LEGEND:**

| **ORANGE LINE:** HIGH-SPEED DATA/POWER LINK | **ORANGE ARC:** WI-FI / IOT SIGNAL COVERAGE | **WHITE OUTLINES:** STRUCTURAL BARRIERS

THE LONG ARM OF THE NETWORK



“Wi-Fi shouldn't stop at the drywall.”

THE PROBLEM:

- ❌ Standard routers fail at exterior brick and stucco.
- ❌ Signal degradation beyond 10 meters.
- ❌ IoT devices outside perimeter disconnected.

THE SOLUTION:

- ✅ A ruggedized, IP67-rated outdoor Access Point.
- ✅ Military-grade signal penetration technology.
- ✅ Hardened conduit connection.

THE ROLE:

- > Blasts high-speed internet to barns and driveways.
- > Extends secure network umbrella.
- > While listening for low-power IoT sensor data.

STATUS: OPERATIONAL | DATE: 2024.10.27
DOC ID: NET-EXP-001-A | APPROVED BY: FIELD COMMAND



DUAL-RADIO INDUSTRIAL ARCHITECTURE

RADIO A (SPEED):
Wi-Fi 6 (802.11ax) AX3000.
574Mbps (2.4GHz) +
2402Mbps (5GHz).

RADIO B (RANGE):
LoRaWAN Gateway
(Semtech SX1302).
Frequency: US915.

THE REACH:
4x Internal High-Gain
Omni Antennas (5dBi).

THE BRAIN:
Qualcomm IPQ5018 /
MediaTek MT7981 SoC.

CLASSIFIED // LEVEL 5
VISUAL: HARDWARE DEPLOYMENT DIAGRAM



STATUS: OPERATIONAL | DATE: 2024.10.27
DOC ID: NET EXP-002-A | APPROVED BY: FIELD COMMAND

BUILT FOR THE STORM

RATING

IP67 (Dust Tight
+ Immersion 1m)

MATERIAL

UV-Stabilized
ASA Plastic

TEMP RANGE

-30°C to 70°C
(-22°F to 158°F)

MOUNTING

Integrated Pole
Clamp & Wall Bracket

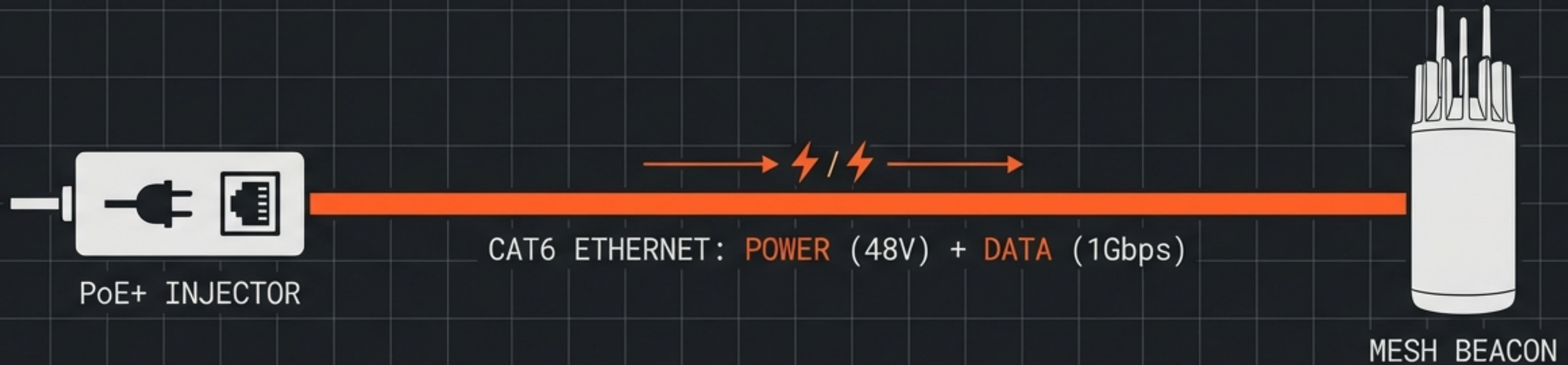
CLASSIFIED // LEVEL 5

VISUAL: HARDWARE DEPLOYMENT DIAGRAM



STATUS: OPERATIONAL | DATE: 2024.10.27
DOC ID: NET EXP-B02-A | APPROVED BY: FIELD COMMAND

ONE CABLE. ZERO HEADACHES.



- > **POWER:** PoE+ (802.3at) Active or 48V Passive (<12W)
- > **OS:** OpenWRT (DeReticular Hardened Fork)
- > **PROTOCOL:** BATMAN-adv Mesh Routing
- > **PROVISIONING:** Zero-Touch Adoption



OPERATIONAL USE CASES

THE SMART FARM

Inspect crops and monitor soil moisture sensors/irrigation valves up to 3 miles away.



THE DRIVEWAY MECHANIC

Kurb Kar telemetry syncing and firmware updates in the garage or driveway (Nomad Link).



THE COMMUNITY NODE

Creating a localized mesh with neighbors to earn Peering Credits and strengthen network resilience.

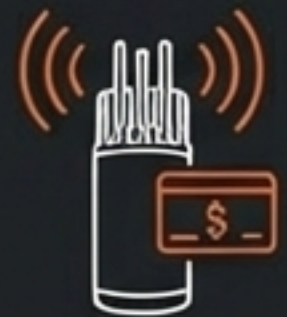


PROOF OF COVERAGE = PROOF OF REWARDS

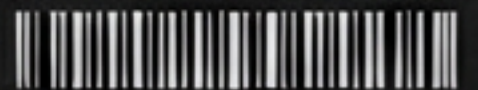


COVERAGE IS CURRENCY.

Deploying a Mesh Beacon expands the network footprint. The RIOS protocol recognizes this increased Proof of Coverage, boosting the credit yield of the connected Sovereign Sentry.

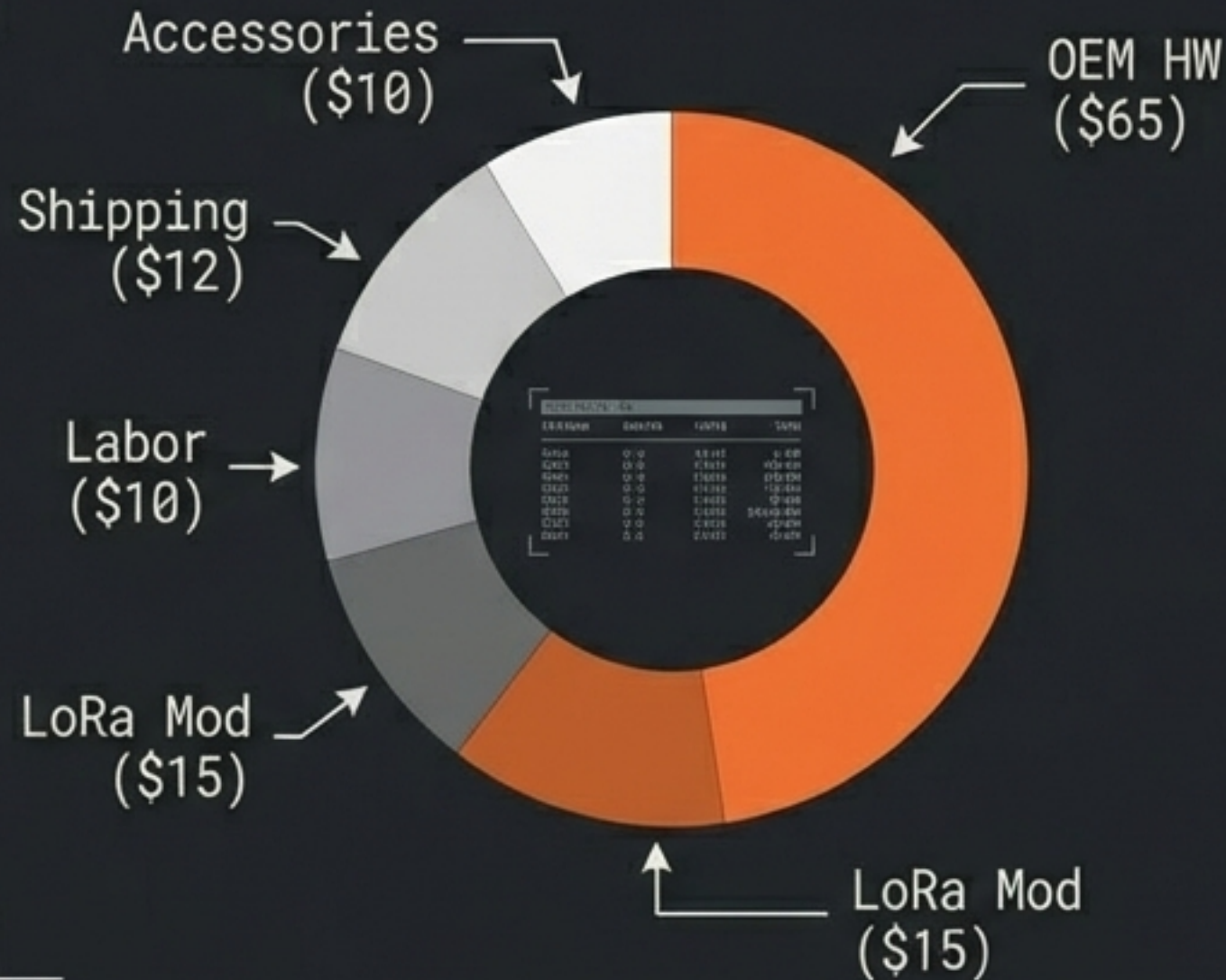


CLASSIFIED // LEVEL 5
VISUAL: HARDWARE DEPLOYMENT DIAGRAM



STATUS: OPERATIONAL | DATE: 2024.10.27
DOC ID: NET EXP-B02-A | APPROVED BY: FIELD COMMAND

UNIT ECONOMICS & SOURCING



MSRP: \$189.00

COST: ~\$115.00

GROSS MARGIN: ~39%

Sourcing Strategy: White-label OEM + Semtech SX1302 Concentrator Card.



FULFILLMENT WORKFLOW: NODE 3 WORKSHOP

INTAKE & MOD

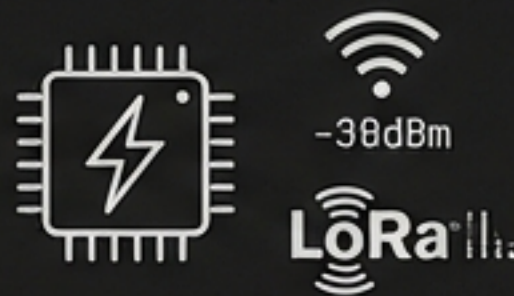


Roboto Mono

Unbox OEM units.
Install LoRaWAN card
into mini-PCIe slot.



FLASH & VERIFY

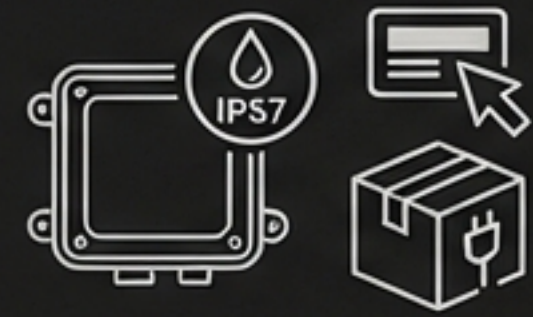


Roboto Mono

Run `flash_beacon.sh`.
Verify Wi-Fi SSID (-30dBm)
and LoRa packets.



KIT & SEAL


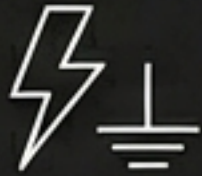
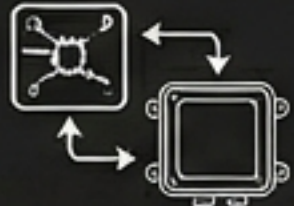


Roboto Mono

Re-assemble for IP67
seal. Apply SKU label.
Pack with PoE injector.



RISK REGISTER & MITIGATION

RISK IDENTIFIED	PROTOCOL MITIGATION
Risk: Water Ingress (Cable Gland Failure)	Mitigation: Bright yellow warning card in box: "MUST INSTALL GLAND" . 
Risk: Lightning Strike (ESD)	Mitigation: Recommend shielded Ethernet; chassis grounding lug. 
Risk: Incompatibility (Standalone Use)	Mitigation: Clear messaging: "Requires Sovereign Sentry" . 





SPECIFICATION SUMMARY

IDENTITY: Mesh Beacon (RIOS-EXT-01)

MSRP: \$189.00 USD

RADIOS: Wi-Fi 6 AX3000 + LoRaWAN US915

POWER: PoE+ (Active/Passive)

BUILD: IP67, UV-Stabilized ASA

WARRANTY: 1-Year Limited Hardware

**“NO DEAD ZONES. NO MONTHLY FEES.
TOTAL SOVEREIGNTY.”**

