

WiFi Sniffer

TETHERED MODE

Four independent radios. Zero transmission. Total visibility.

WiFi Sniffer (Tethered Mode) is a promiscuous 802.11 capture and wireless intrusion detection platform built around a simple, defensible idea: up to four independent radios watching four channels at once, entirely receive-only, with no cloud dependency and no subscription required to get a complete product. It is designed for penetration testers, independent IT consultants, warehouse and roaming-IoT diagnostics, and technical training labs -- anyone who needs to see what is actually happening on the air, not a simulated test of it.

WHAT IT DOES

- **Four independent radios, one host** -- One primary plus up to three satellite radios, each with its own channel, hop group, dwell time, and channel width -- assign roles independently instead of sharing one radio's view of one channel.
- **Dual-band on ESP32-C5** -- The primary/satellite firmware core targets Espressif's ESP32-C5, adding 5 GHz capture alongside 2.4 GHz on the same wire protocol and dashboard -- no rewrite, no new UI to learn.
- **Built-in wireless intrusion detection (WIDS)** -- Nine detector types -- deauth/disassoc flood, evil-twin rogue APs, an explainable retry-rate anomaly model with no external dependency, broadcast deauth/disassoc, beacon/probe-response flood, karma/honeypot APs, security downgrade, association/authentication flood, and AP-silent -- running on-device, not just on the host, so detection keeps working even without a laptop attached.
- **Receive-only by construction** -- No transmit capability of any kind -- not gated, not disabled, physically absent from the firmware. It cannot deauth a network, cannot be repurposed into a device that does, and cannot be misrepresented as having done so. A procurement argument, not a limitation.
- **Live dashboard, zero install** -- A single static binary serves an embedded, real-time web dashboard over WebSocket -- network/client discovery, channel airtime and congestion, an RSSI-based radar view, and live frame inspection, from any browser on the local network.
- **Native Wireshark integration** -- Appears as an ordinary live capture interface inside Wireshark itself via a standard extcap binary -- use Wireshark's own 802.11 dissector, don't fight it.
- **Reliable over-the-air updates** -- Firmware updates the primary over USB and every satellite over the shared carrier link, including a one-call sequential upgrade for a whole fleet of identical satellite modules.
- **Country-aware, regulation-first** -- Channel lists and max transmit power for capture-adjacent settings are driven by a configured regulatory domain, not a hardcoded assumption.
- **Own your data, own your license** -- Runs entirely on the local network with no cloud dependency. Entitlement is a signed, offline license file -- no phone-home, no service to run, no data leaves the building.

BUILT FOR

Independent penetration testers - Independent IT consultants - Smart-warehouse & roaming-IoT diagnostics - Technical training labs

SPECIFICATIONS

Radios	1 primary + up to 3 satellites (4 total)
Target silicon	Espressif ESP32-C5 (dual-band 802.11 b/g/n/ax, 2.4 + 5 GHz)
Current shipping hardware	ESP32-C6 (2.4 GHz) -- C5 migration in progress
Transmit capability	None -- receive-only by design, not configuration
Host connection	USB (primary); shared SPI carrier link (satellites)
Capture export	pcap / radiotap -- native Wireshark extcap integration
Dashboard	Embedded web UI, live WebSocket updates, any modern browser
Detection engine	9 WIDS detector types, on-device and host, no cloud/ML dependency
Licensing	Offline, ed25519-signed license file -- free base tier is a complete product
Firmware updates	USB (primary) and OTA over the carrier link (satellites, incl. fleet upgrade)

Specifications describe the tethered operating mode's targeted feature set, including capabilities in active development for the ESP32-C5 platform (dual-band 5 GHz capture, PSRAM-backed on-device tracking tables). Current production hardware is ESP32-C6 (2.4 GHz only); see the ESP32-C5 migration roadmap for status. Specifications subject to change without notice.