

Passive RF intelligence for professional TSCM and field inspection.

FRAME RF is an integrated hardware and software platform designed to observe radio-frequency activity, classify behavioural patterns and support technical operators during live inspections and post-analysis. It focuses on RF presence, power, persistence, timing and operational context — without decoding communications content.



Live

RF MONITORING

Cellular

UPLINK INTELLIGENCE

Wi-Fi / BT / DECT

SPECIALIST MODULES

Reports

HTML / CSV WORKFLOW

Context, not just spectrum.

Traditional spectrum tools show RF energy. FRAME RF adds an operational layer: it groups events, highlights recurrence, interprets compatible behaviours and gives the operator a clearer decision path.

The platform is designed around professional TSCM practice: observe, classify, verify, document. It does not claim to identify private content or the person using a device; it describes what the RF behaviour is compatible with.

Core logic: persistence, continuity, density, recurrence, peak power, band context and timeline correlation are used to turn isolated RF hits into readable operational information.

A complete controlled setup

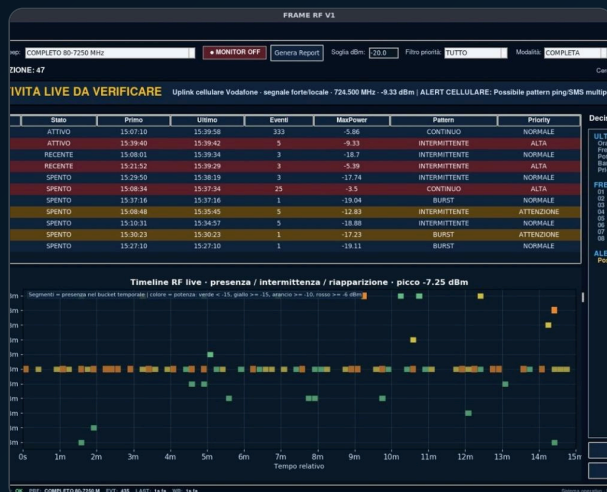
FRAME RF is supplied as a configured environment: workstation, SDR hardware, antennas, Linux operating environment, databases and software modules prepared for the intended country/frequency plan.



Portable workstation with SDR and antenna, prepared as a field-ready FRAME RF setup.



Protected transport case concept with the workstation stored inside the foam layout.



Live Monitor: active channels, RF priorities, dominant frequencies and timeline view.

Live RF situation awareness

The Live Monitor is the main operational dashboard. It receives sweep events, groups them by channel or band, assigns priority levels and presents the current RF state in a form that can be read during an inspection.

- **Operational status banner** for immediate triage.
- **Active channel table** with first/last event, peak power, count and pattern.
- **Timeline view** showing presence, intermittence, reappearance and peak intensity.
- **Decision panel** summarising the last event and dominant frequencies.

Purpose: reduce cognitive overload. The operator does not have to manually inspect thousands of RF rows before understanding what is active and what deserves attention.

ULTIMO EVENTO

Ora: 15:59:28
 Frequenza: 2424.5 MHz
 Potenza: -15.91 dBm
 Banda: WI-FI 2.4 GHz
 Priorità: **NORMALE**

FREQUENZE DOMINANTI · ultimi 300 eventi

01	Downlink LTE b28 Iliad	125
02	Wi-Fi 2.4 GHz	81
03	Uplink LTE b3 Vodafone	60
04	Downlink LTE b20 TIM	9
05	Downlink LTE b28 TIM	6
06	Uplink LTE b3 WindTre	5
07	Uplink LTE b1 Vodafone	5
08	Downlink UMTS b8 Iliad	3

ALERT CELLULARE

Possibile pattern ping/SMS multiplo

Decision panel with last event, dominant frequencies and a possible cellular alert.

Timeline RF live · presenza / intermittenza



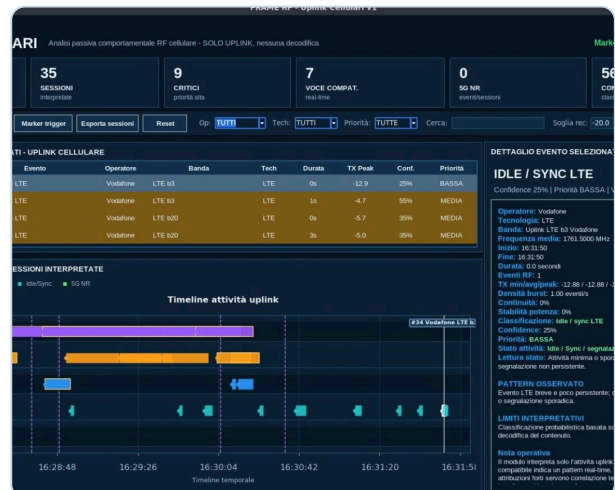
Timeline view showing cellular uplink presence, recurrence and power-coded segments.

Passive cellular behaviour analysis

The Cellular Uplink module is designed to observe uplink emissions and classify them according to RF behaviour. It does not decode traffic. It identifies patterns compatible with idle/sync signalling, data bursts, persistent data and voice-compatible real-time activity.

- Operator and band context where available.
- Session grouping from raw RF events.
- Confidence score and priority level.
- Timeline of interpreted sessions.
- Clear explanation of interpretation limits.

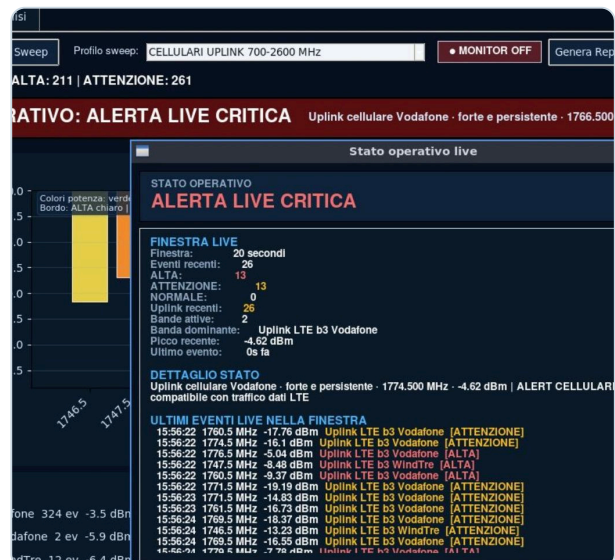
Correct positioning: the module says “compatible with” a pattern. It does not identify the app, the service, the user or the content.



Cellular uplink session interpretation with event count, session count, critical sessions and confidence.



Detailed cellular session: power evolution and raw RF events included in the interpreted session.



Live cellular alert window showing recent uplink events, band dominance and compatible traffic pattern.



RF Zoom focused on an LTE uplink frequency: spectrum, peak hold, waterfall and on/off timing.

Focused inspection of a selected signal

RF Zoom allows the operator to inspect a frequency or narrow span in detail after an event has been detected. It combines spectrum, recent waterfall and timing information in a single focused view.

- **Spectrum live + peak hold** to inspect intensity and recent maximum values.
- **Waterfall RF** to understand short-term recurrence and frequency movement.
- **On/off timeline** to distinguish continuous, intermittent or burst-like activity.
- **Operational tags** such as active state, behaviour, cellular class and risk level.

Operational use: after a live alert, the operator can zoom into the signal and decide whether to continue observing, move to proximity search or document the event.

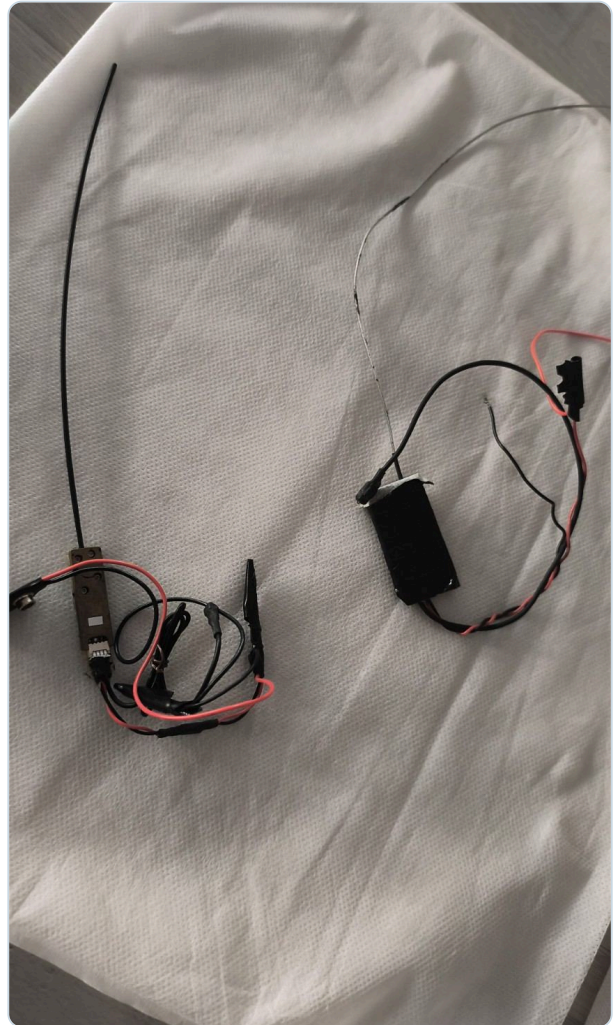
RF Proximity Locator

The Mobile Finder is a dedicated proximity workflow. The operator chooses the specific target frequency or band to investigate, then uses live RF strength, peak level and trend to physically approach the source.

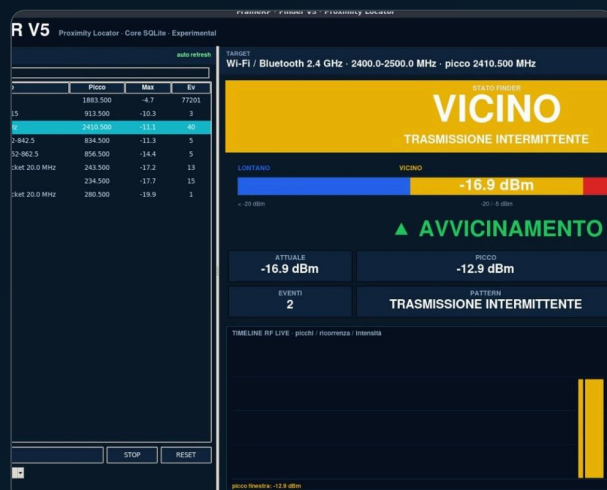
It is not an automatic “magic selection” system: the operator selects what to search, based on the active RF targets detected by the core monitor or by a specific inspection need.

- Manual selection of the target frequency / RF group.
- Large proximity state: Far, Near, Very Near.
- Current power, peak power, event count, trend and frequency.
- Timeline bars for intensity and recurrence during movement.
- Optional acoustic feedback for field search.

Field value: it turns an RF observation into a practical search procedure, helping the operator move from “signal detected” to “source area identified”.



Prototype RF beacon / test source used to validate proximity behaviour and field search logic.



Mobile Finder in NEAR state: selected Wi-Fi/Bluetooth range with signal trend and intermittent transmission.

Very-near confirmation

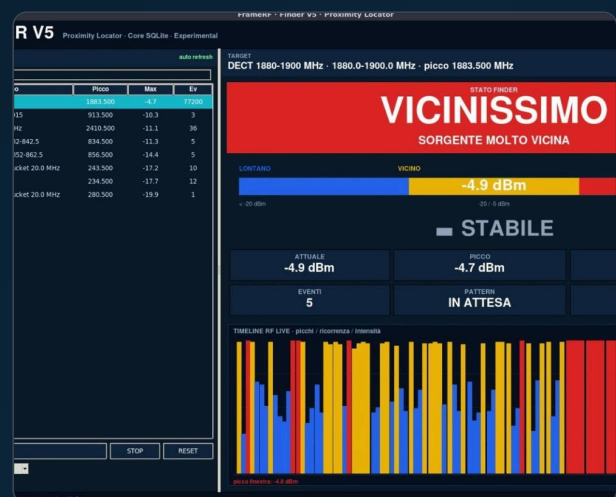
The Very Near state is used when power and stability suggest the source is physically close. The interface is intentionally simple: large visual state, power bar, frequency and recurrence timeline.

The purpose is not to replace manual inspection, but to guide it: the operator still verifies the physical environment, objects, furniture, cables and devices.

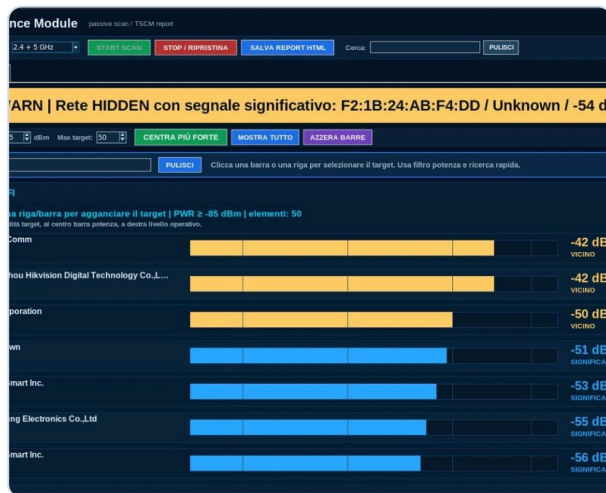
Near-state guidance

When the selected target becomes stronger, the interface moves the operator into the Near zone. The screen emphasises direction of movement, current dBm, peak value and short-term trend.

This is especially useful when the emission is intermittent: the timeline helps the operator avoid overreacting to a single spike and instead follow repeated RF evidence.



Mobile Finder in VERY NEAR state on a DECT target, with strong and stable RF presence.



Wi-Fi Intelligence Module: AP/client visibility, hidden network warning and proximity bars.

AP, client and hidden-network visibility

The Wi-Fi module supports passive inspection of wireless environments where access points, clients, hidden networks and vendor hints must be reviewed quickly.

- AP and client tables with signal level.
- Hidden SSID warning when the signal is significant.
- Manufacturer hints when available.
- Finder-style bars for prioritising nearby Wi-Fi devices.
- HTML report export for documentation.

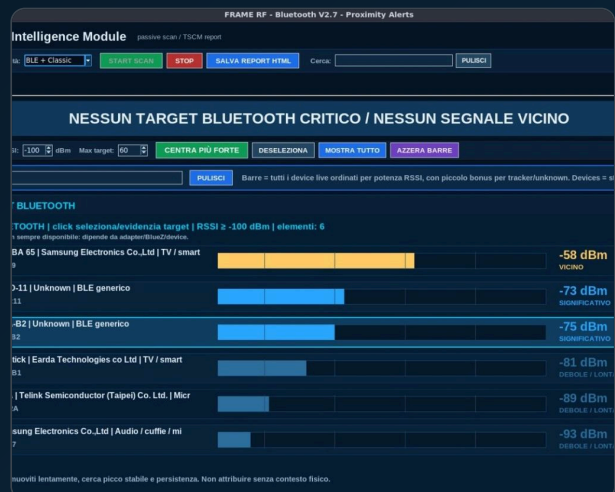
Use correctly: Wi-Fi analysis depends on compatible adapters and authorised operating conditions. The module supports technical inspection; it does not bypass authorisation requirements.

Bluetooth and BLE proximity intelligence

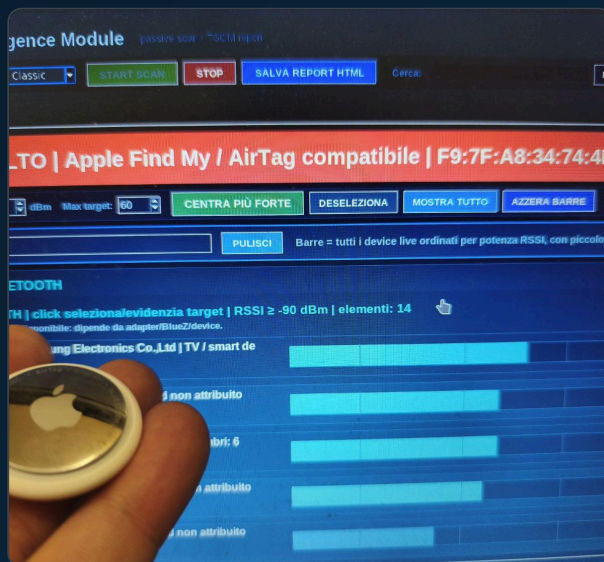
The Bluetooth module observes Classic and BLE devices, ranks them by signal strength and highlights tracker-compatible patterns. It is designed for TSCM scenarios where small BLE transmitters, consumer trackers or nearby smart devices must be assessed.

- BLE + Classic scan mode.
- RSSI-based proximity bars.
- Vendor / class hints when available.
- Tracker-compatible classification with confidence and risk.
- Dedicated detail window for selected targets.

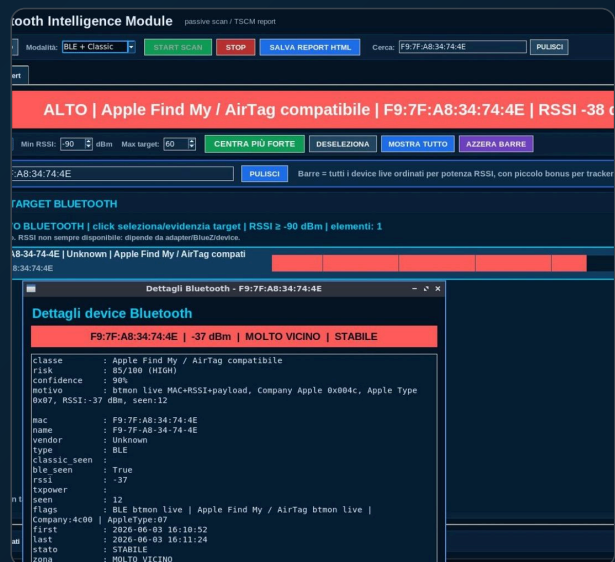
Interpretation model: the module reports compatibility with known BLE / tracker behaviour. Physical verification remains part of the workflow.



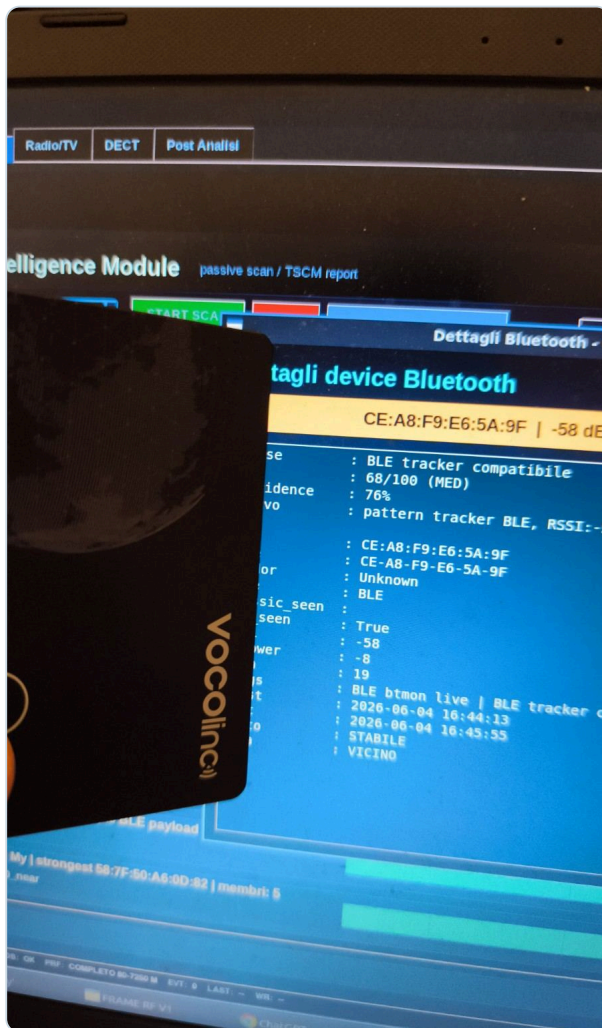
Bluetooth Intelligence Module: nearby BLE and Classic devices ordered by signal strength.



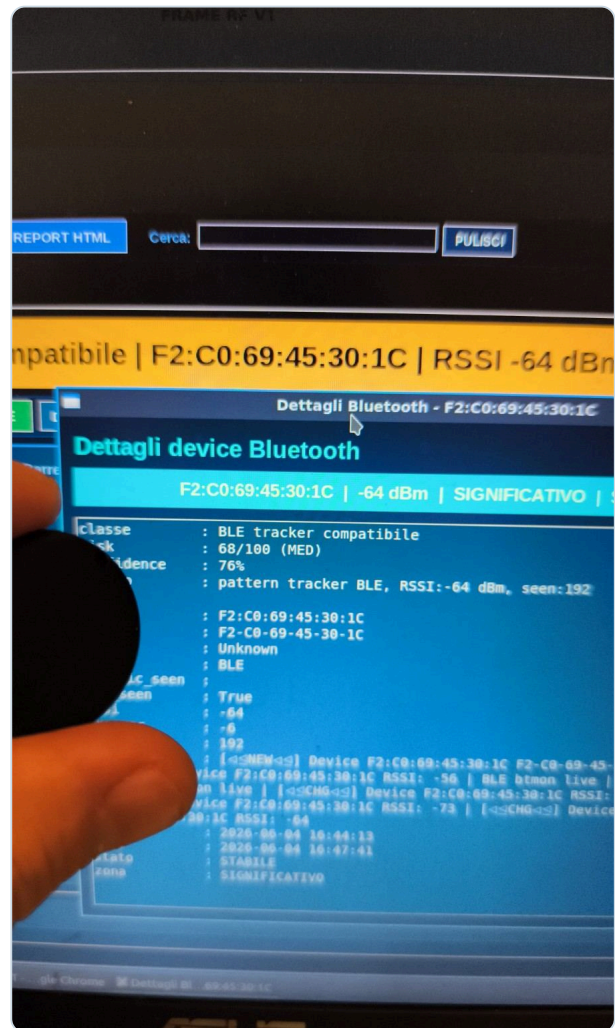
Live test with Apple Find My / AirTag-compatible alert shown on the Bluetooth module.



AirTag-compatible target with high risk, confidence, RSSI and detailed BLE payload indicators.

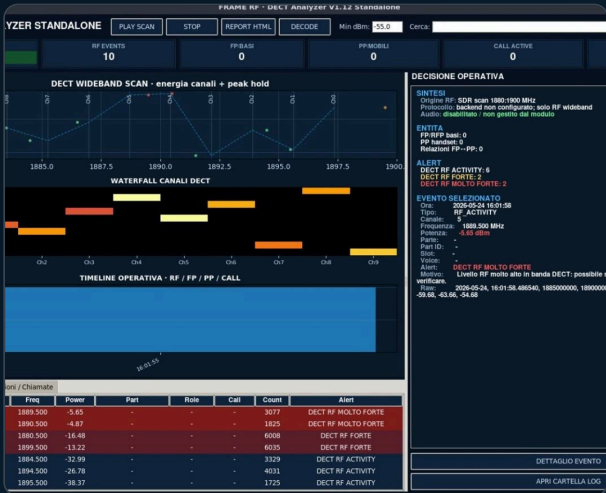


BLE tracker-compatible detail window during a physical test with a smart tag.



Generic BLE tracker-compatible target: RSSI, stability, confidence and device details.

How to read these screens: the operator sees a risk class, confidence score, RSSI/proximity zone, stability state, BLE visibility and notes explaining why the target is compatible with tracker behaviour. These fields make the alert explainable rather than just alarming.



Live interpretation table

The interpretation view organises observed DECT parts, channels, last seen time and compatible state. This helps distinguish generic DECT presence from more relevant operational indicators such as base activity or probable FP ↔ PP call relation.

DECT RF and call-compatible activity

The DECT module monitors the 1880–1900 MHz band and provides an operational view of channel energy, strong RF activity, base/handset indicators and possible active-call situations when supported by available data.

- Wideband DECT RF scan.
- Channel-level waterfall and peak hold.
- FP / PP / call counters where available.
- Decision panel with selected event details.
- Alert categories such as RF activity, strong RF and very strong RF.

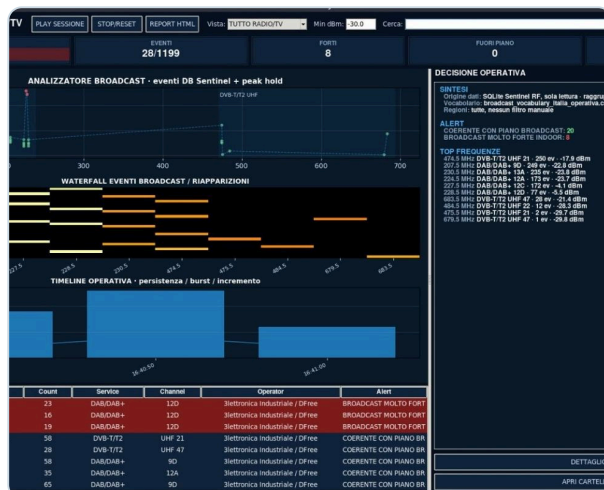
Voice	Canale	Frequenza MHz	Canali visti	
	4	1890.432	4,5	195
	4	1890.432	2,3,4	45
	3	1892.160	2,3	67
	9	1881.792	4,8,9	47
	2	1893.888	1,2	17
	8	1883.520	4,7,8	9
	4	1890.432	3,4	8
	0	1897.344	0,9	5
	8	1883.520	8	4
	3	1892.160	2,3	4
	2	1893.888	2,7,8	4
	1	1895.616	0,1	3
	7	1885.248	6,7	2

DECT live interpretation table with RFP, PP, channel visibility and probable call indication.

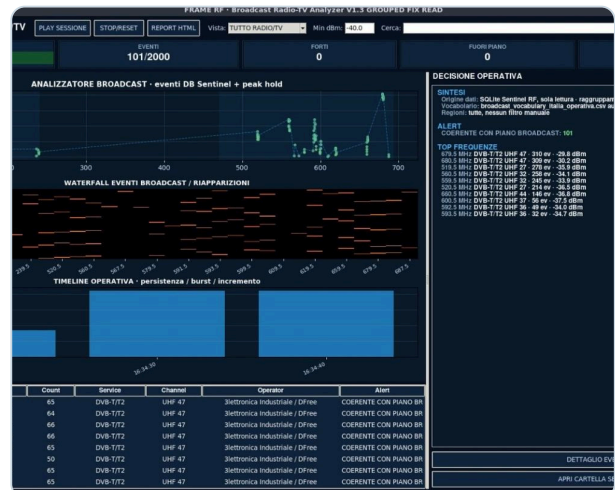
National-plan aware broadcast analysis

The Broadcast Radio/TV module compares observed activity with a frequency vocabulary and national plan context. The objective is to avoid treating every strong broadcast signal as suspicious while still highlighting out-of-plan or unusually strong observations.

- FM, DAB/DAB+ and DVB-T/T2 awareness.
- Frequency vocabulary and channel context.
- Coherent / to verify / out-of-plan states.
- Waterfall of reappearances and persistence.
- Decision panel with top frequencies and alert rationale.



Broadcast module in "to verify" state due to strong DAB/DVB activity requiring operator review.

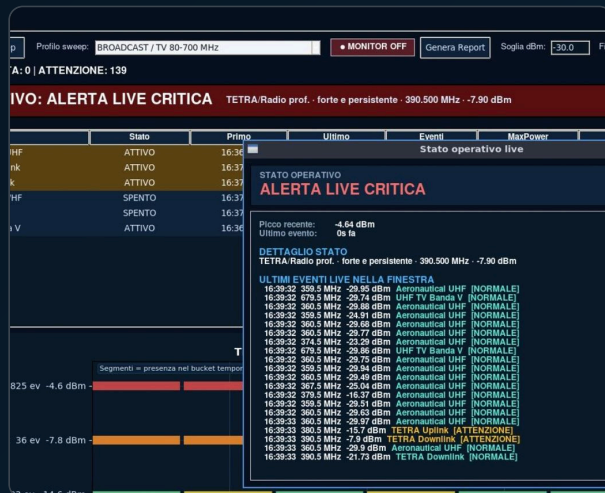


Broadcast module in coherent state: observed events match the broadcast frequency plan.

Why this module matters

Broadcast bands are crowded and can easily produce false positives. FRAME RF gives the operator an explicit vocabulary-based reading, making the difference between normal environmental RF and signals that deserve manual verification clearer.

Country configuration: broadcast and cellular databases should be prepared according to the country where the system will be used.



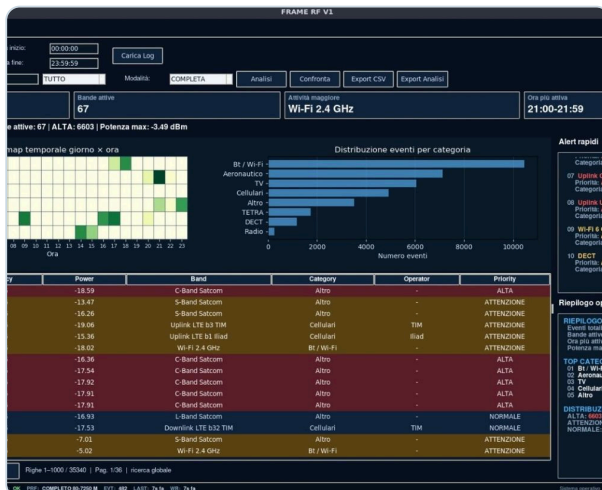
Live alert for TETRA / professional radio activity with recent event list and status window.

Professional-band awareness

FRAME RF can classify and prioritise professional radio activity such as TETRA-related bands, aeronautical ranges and other defined RF categories. The interface highlights strong or persistent activity and provides a fast status window for recent events.

- Band identification and category labelling.
- Persistent / strong activity highlighted.
- Recent event window for quick review.
- Operator decision support without overclaiming.

The purpose is to keep the operator oriented: what is active, how strong it is, whether it is recurring and which band context it belongs to.



Post-analysis dashboard: heatmap, category distribution, event table and quick alerts.

From inspection data to technical reporting

After a sweep, FRAME RF supports review of the captured RF activity by date, time, frequency, category, operator, power and priority. This turns a field session into structured technical evidence.

- Heatmap by day and hour.
- Distribution by category.
- Highest activity window.
- Searchable event table.
- Quick alerts and operational summary.
- CSV / HTML export workflow.

Reporting value: the operator can explain why a signal was considered ordinary, relevant, attention-level or high priority.

FRAME RF modules explained

Module	Purpose	Typical output
Core Live Monitor	Continuous RF awareness and triage of active bands.	Status banner, active channels, power, event count, priority, timeline.
Cellular Uplink Intelligence	Passive behavioural classification of cellular uplink activity.	Idle/sync, data burst, persistent data, voice-compatible session, confidence score.
RF Zoom	Focused inspection of a selected frequency/span.	Spectrum, peak hold, waterfall, on/off timing, behaviour tag.
Mobile Finder	Operator-selected proximity search for a specific RF target.	Far/Near/Very Near state, dBm, peak, trend, event count and optional beep intensity.
Wi-Fi Intelligence	Inspection of APs, clients, hidden networks and nearby Wi-Fi devices.	AP/client list, vendor hints, hidden SSID warnings, proximity bars, report.
Bluetooth Intelligence	BLE / Classic visibility and tracker-compatible alerts.	RSSI ranking, risk, confidence, Apple Find My / tracker-compatible indicators.
DECT Analyzer	DECT band monitoring and operational indicators.	Channel activity, FP/PP indicators, probable call-compatible interpretation.
Broadcast Radio/TV	Comparison with broadcast vocabulary and national plan context.	Coherent / to verify / out-of-plan reading, top frequencies and waterfall.
Post Analysis	Historical review, statistics and documentation.	Heatmap, category distribution, event table, quick alerts, export.

Commercial positioning: FRAME RF is a professional platform for trained operators. It is not a consumer detector and it is not presented as a content-interception system.

FRAME RF

PROFESSIONAL RF BEHAVIOURAL ANALYSIS PLATFORM



Built for technical operators who need evidence, context and a practical search workflow.

FRAME RF combines live RF monitoring, cellular uplink intelligence, RF Zoom, Mobile Finder, Wi-Fi, Bluetooth, DECT, Broadcast Radio/TV and Post Analysis into a single controlled environment for professional TSCM activity.

Passive by design

No communication content decoding. The platform focuses on RF behaviour and operational compatibility.

Country configurable

Frequency databases and plans can be prepared for the intended operational country.

Field oriented

From detection to proximity search and report generation, the workflow is built for real inspections.

