Regulatory Gap & Security Architecture Report

Automated Compliance Analysis & Risk Assessment

TARGET OF EVALUATION

EcoTherm

SCOPE OF ASSESSMENT

Target Markets:	European Union, United Kingdom, United States
Declaration Date:	15 May 2026
Assessment Type:	Preliminary Design Declaration (Self-Attested)

Date of Issue: 15 May 2026

Disclaimer: This report identifies potential gaps based on provided design declarations. It does not constitute a certification of conformity.

Reader's Guide

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About This Audit

Assessment Context & Scope

This document constitutes an automated security & regulatory gap analysis derived from the manufacturer's technical declarations. It evaluates the device's design posture against the Active Regulatory Profile (covering applicable frameworks such as EU RED/CRA, UK PSTI, NIST, or ETSI) to detect critical compliance blockers prior to official laboratory testing.

Objective: To identify "Blocker" risks preventing market entry and reducing post-market liability.

Scope: Holistic verification of Hardware, Firmware, Connectivity, and Lifecycle Management.

Limitation: Preliminary risk assessment. Not a formal Certificate of Conformity.

Input Verification: The validity of these findings relies on the accuracy of the design parameters provided. The complete record of technical declarations used for this assessment is preserved in Technical Design Declaration.

Confidentiality Notice: This report contains sensitive vulnerability data. Distribution should be limited to authorized engineering and compliance personnel.

Executive Summary

Launch Readiness

High Launch Risk

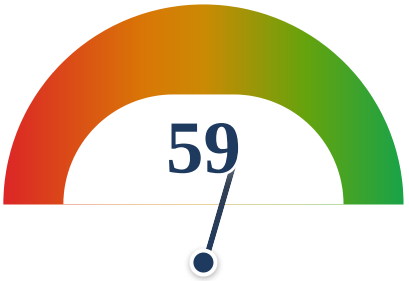
🛑 **Blocked**

Your architecture meets baseline **United States** requirements but fails specific **European Union, United Kingdom** mandates.

Market Assessment

Market	Status	Critical Gaps
European Union	⛔ Market Blocked	1 Blocker, 1 Critical
United Kingdom	⛔ Market Blocked	1 Blocker
United States	✅ Ready to Launch	None

Composite Defense Score



Aggregated score of Regulatory, Security, and Business risks.

Strategic Risk Profile

Findings grouped by business impact to justify the fix.

Regulatory

Assessment: 🟠 High

Risk Count: 9

Why Fix: GDPR cross-border transfer rules apply. Standard Contractual Clauses may be required.

Top Risk: Data Sovereignty Violation

Commercial

Assessment: 🟠 High

Risk Count: 12

Why Fix: Proprietary ML model is valuable IP.

Top Risk: AI Model Theft or Poisoning

Lifecycle

Assessment: 🟠 High

Risk Count: 6

Why Fix: Revocation relies on manual intervention, likely to fail during a mass compromise.

Top Risk: Manual Certificate Revocation

Security

Assessment: 🟠 High

Risk Count: 10

Why Fix: Self-signed certificate is vulnerable to active MITM (no trust anchor).

Top Risk: Man-in-the-Middle Susceptibility

Compliance Horizon

Timeline of regulatory deadlines affecting your product.

Active Market Restrictions (2)

🔴 **EU General Data Protection Regulation (GDPR)** (EU)

Non-compliance with Enhanced enforcement on AI/IoT data

🔴 **UK Data Protection Act 2018 (UK GDPR)** (UK)

Non-compliance with Mandatory compliance

Upcoming Deadlines (2)

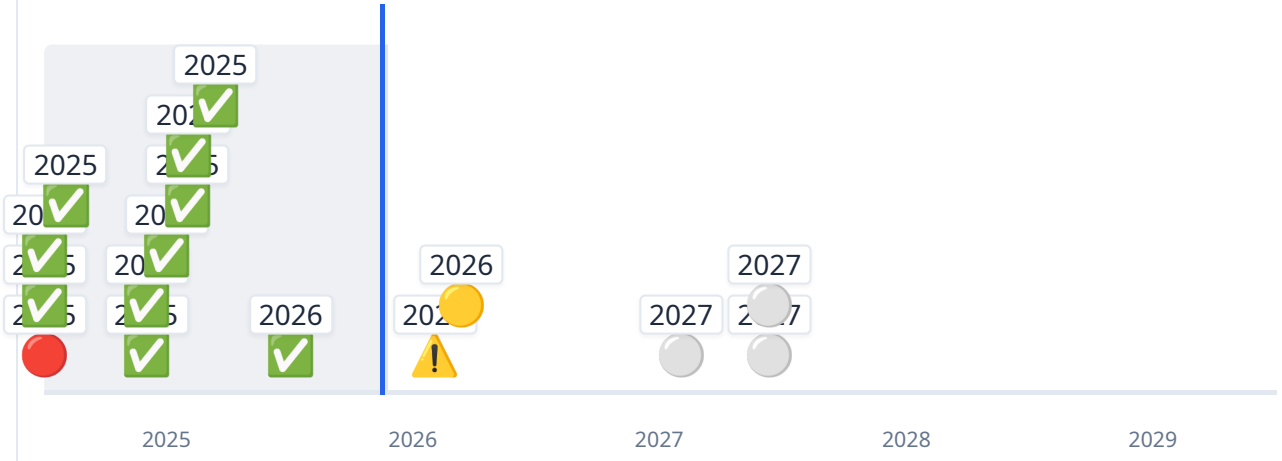
🔴 **EU AI Act (Regulation (EU) 2024/1689)** - 02 Aug 2026 (79 days)

Main application: Annex III high-risk AI systems + Art. 6(2) classification, Art. 25 distributor/importer duties, Art. 50 transparency to natural persons. Commission GPAI enforcement actions also begin. - 1 gap(s)

🟡 **EU Cyber Resilience Act (CRA)** - 11 Sept 2026 (119 days)

24h/72h incident reports mandatory

Regulatory Enforcement Timeline (2025-2029)



Applicable Regulations

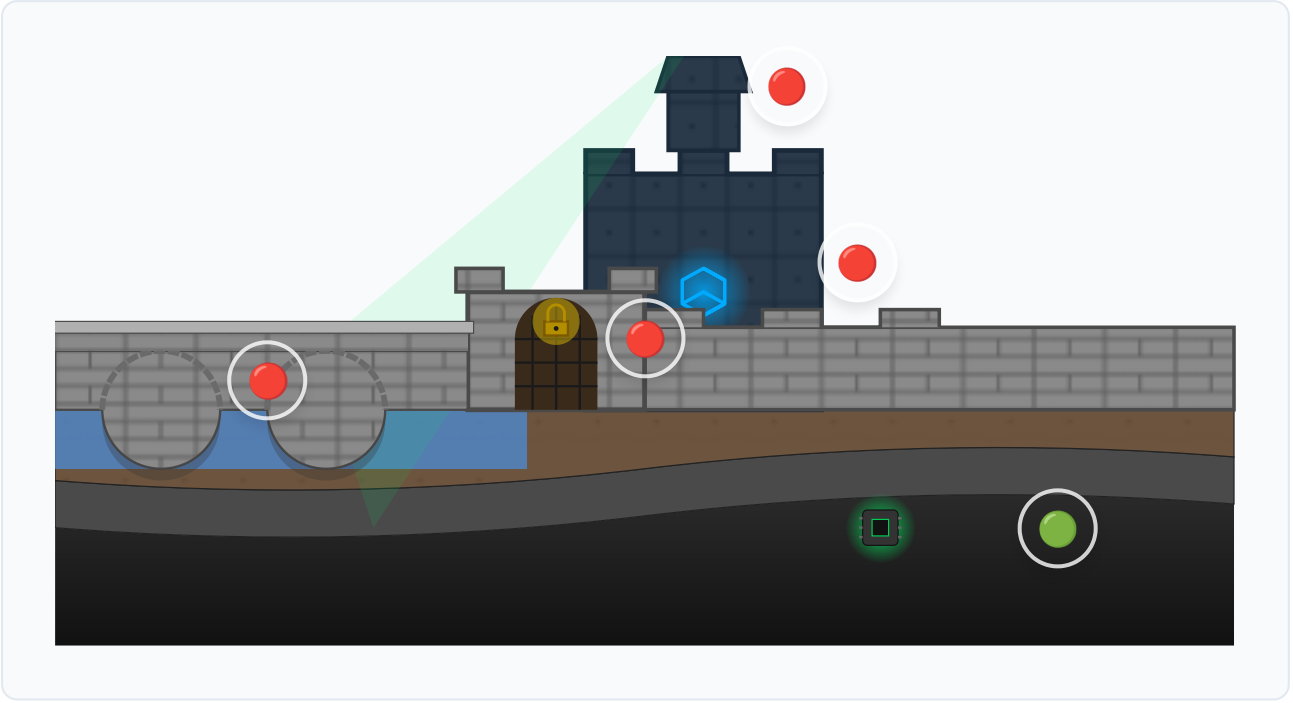
Regulation	Status	Next Deadline	Jurisdiction
EU Cyber Resilience Act (CRA)	compliant	11 Sept 2026	EU
EU CRA Supply Chain Requirements (Annex I)	compliant	11 Dec 2027	EU
EU Radio Equipment Directive (RED) 2014/53/EU	compliant	Active (01 Aug 2025)	EU
EU General Data Protection Regulation (GDPR)	non_compliant	Active (01 Jan 2025)	EU
EU AI Act (Regulation (EU) 2024/1689)	at_risk	02 Aug 2026	EU
EU Data Act (Regulation (EU) 2023/2854)	compliant	Active (12 Sept 2025)	EU
EU ePrivacy Directive (Cookie Law)	at_risk	Active (31 Jul 2002)	EU
EU WEEE Directive (Waste Electrical and Electronic Equipment)	compliant	Active (01 Jan 2026)	EU
UK Product Security and Telecommunications Infrastructure Act (PSTI)	conditional	Active (29 Apr 2024)	UK
UK Data Protection Act 2018 (UK GDPR)	non_compliant	Active (25 May 2018)	UK
UK Online Safety Act 2023	compliant	Active (01 Jan 2024)	UK
US IoT Cybersecurity Improvement Act of 2020	compliant	Active (23 Sept 2022)	US
US FCC Cyber Trust Mark (Voluntary IoT Labeling)	compliant	Active (01 Jan 2025)	US
US Cybersecurity Maturity Model Certification (CMMC 2.0)	compliant	Active (01 Jun 2025)	US-DoD
California IoT Security Law (SB-327)	compliant	Active (01 Jan 2020)	US-CA
US Children's Online Privacy Protection Act (COPPA)	at_risk	Active (21 Apr 2000)	US
US Oregon HB 2395 (Connected Device Security)	compliant	Active (01 Jan 2020)	US-OR
US State Privacy Patchwork (CCPA/CPRA/VCDPA/CPA)	at_risk	Active (01 Jan 2023)	US
Basel Convention on Hazardous Wastes (E-Waste Amendments)	compliant	Active (01 Jan 2025)	Global

Regulation	Status	Next Deadline	Jurisdiction
Global WEEE Extensions (UN/ITU Guidelines 2025)	compliant	Active (01 Jun 2025)	Global
NY SHIELD Act (Stop Hacks and Improve Electronic Data Security)	at_risk	Active (21 Mar 2020)	US-NY
FAA Part 107 Remote ID for Small UAS	compliant	Active (16 Sept 2023)	US

Architectural Defense Posture

Your architecture visualized as a fortress. Each layer represents a defense domain - color shows where the architecture is broken at a glance.

Overall Health: 🟠 Compromised



🔭 The Watchtower

Domain: Lifecycle & Process

Status: 🔴 At Risk (4 risks)

Finding: Revocation relies on manual intervention, likely to fail during a mass compromise.

📡 The Bridge

Domain: Network & Cloud

Status: 🔴 At Risk (2 risks)

Finding: Self-signed certificate is vulnerable to active MITM (no trust anchor).

🛡️ The Gate

Domain: Identity & Auth

Status: 🔴 At Risk (2 risks)

Finding: Violation of AI Act Art. 50 (Transparency obligations). Mandatory disclosure required.

🔒 The Keep

Domain: OS Hardening & Data

Status: 🔴 At Risk (3 risks)

Finding: Boot chain ends at bootloader. Application code unsigned.

⚙️ The Bedrock

Domain: Supply Chain & Hardware

Status: 🟢 Secure (2 risks)

Finding: Consumer electronics must comply with General Product Safety Regulation (GPSR) and RED Art 3(3).

Critical Findings & Remediation

Top priority risks requiring immediate architectural changes.

Risk Details

#1 Manual Certificate Revocation

HIGH

Finding:
Revocation relies on manual intervention, likely to fail during a mass compromise.

Remediation:
Implement automated CRL distribution or OCSP stapling.

💰 **Estimate:** Medium Effort, Medium Cost

#2 Data Sovereignty Violation

HIGH

Finding:
GDPR cross-border transfer rules apply. Standard Contractual Clauses may be required.

Remediation:
Ensure data residency in EU/adequate countries. Implement SCCs for necessary transfers.

💰 **Estimate:** High Effort, High Cost

#3 Man-in-the-Middle Susceptibility

HIGH

Finding:
Self-signed certificate is vulnerable to active MITM (no trust anchor).

Remediation:
Enforce TLS 1.3 and implement Certificate/Public Key Pinning.

💰 **Estimate:** Medium Effort, Medium Cost

#4 Missing Privacy Consent Mechanism

HIGH

Finding:
Processing PII without explicit user consent is a compliance violation.

Remediation:
Implement granular consent/opt-in mechanism and transparency.

💰 **Estimate:** Medium Effort, Medium Cost

#5 Root of Trust Compromise

HIGH

Finding:
Boot chain ends at bootloader. Application code unsigned.

Remediation:
Enable Hardware Secure Boot with full chain-of-trust to application.

💰 **Estimate:** High Effort, Medium Cost

#6 Unencrypted PII at Rest

MEDIUM

Finding:
User PII stored unencrypted. GDPR Article 32 requires encryption.

Remediation:
Implement AES-256 encryption for all data at rest with hardware-backed key storage.

💰 **Estimate:** Medium Effort, Medium Cost

#7 EU AI Act: Missing Transparency Disclosures

MEDIUM

Finding:
Violation of AI Act Art. 50 (Transparency obligations). Mandatory disclosure required.

Remediation:
Implement clear, easily recognizable AI interaction notices or watermarks.

💰 **Estimate:** Low Effort, Low Cost

#8 ETSI 303 645 Compliance Delayed

HIGH

Finding:
Planning phase is insufficient for immediate market access in EU/UK.

Remediation:
Accelerate certification timeline. Pre-compliance testing recommended.

💰 **Estimate:** Medium Effort, Medium Cost

#9 Consumer Product Safety (GPSR/Toy Safety / RED)

LOW

Finding:
Consumer electronics must comply with General Product Safety Regulation (GPSR) and RED Art 3(3).

Remediation:
Conduct GPSR risk assessment. For toys, ensure EN 62115 compliance. Perform HARA for safety-critical hardware.

💰 **Estimate:** Medium Effort, Medium Cost

#10 Unmanaged Supply Chain

LOW

Finding:
CRA requires due diligence on third-party components.

Remediation:
Implement supply chain vetting and continuous SBOM monitoring.

💰 **Estimate:** High Effort, High Cost

#11 AI Model Theft or Poisoning

LOW

Finding:
Proprietary ML model is valuable IP.

Remediation:
Encrypt model at rest. Implement input sanitization and anomaly detection.

💰 **Estimate:** High Effort, High Cost

#12 Build Pipeline Injection

LOW

Finding:
No SAST/SCA to detect malicious dependencies.

Remediation:
Implement SLSA Level 3. Signed builds with provenance attestation.

💰 **Estimate:** High Effort, High Cost

#13 No Automated Vulnerability Scanning

LOW

Finding:
Firmware shipped without continuous vulnerability scanning.

Remediation:
Integrate vulnerability scanning (e.g., Trivy, Snyk) into CI/CD pipeline.

💰 **Estimate:** Low Effort, Low Cost

Next Steps

Remediation & Assurance Plan

To move from this preliminary audit to a market-ready state, we recommend the following 3-step assurance cycle. This process prioritizes regulatory safety before investing in expensive physical testing.

1. Validate & Annotate

Use the **Traceability Matrix** in **Appendix B** as your working document.

- **Validate:** Review each finding against your specific implementation context.
- **Annotate:** Mark findings as "Confirmed," "False Positive," or "Risk Accepted" (where legally permissible).
- **Decision:** Clearly differentiate between *Architecture Blockers* (which require hardware changes) and *Documentation Gaps* (which require paperwork).

2. Strategic Remediation

Address the "Bedrock" issues first.

- **Hardware First:** Fix Secure Boot, Silicon EOL, and Debug Port (JTAG) issues immediately. These are expensive to fix after the PCB is finalized.
- **Re-Assess:** Once remediation is complete, re-run your compliance assessment to verify your **Composite Defense Score** has improved.
- **Lab Testing:** Only proceed to formal laboratory testing (CE/FCC) once the architectural gaps are closed.

3. Continuous Vigilance

Compliance is a snapshot in time; regulations drift.

- **Monitor:** Review the **Compliance Horizon** quarterly. New laws (like the EU Cyber Resilience Act) often introduce requirements for products already in the field.
- **Certify:** Prepare the Technical File for Notified Body review only if your specific market mandates third-party certification.

> 💡 **Auditor's Tip:**
>
> **Do not fix everything.** Focus exclusively on the **Regulatory Blockers** first. A secure device that cannot legally be sold is a failed product. Optimize for *Market Access*, then iterate for *Perfection*.

Legal Disclaimer & Limitation of Scope

1. Nature of Assessment: This document is a preliminary design audit generated by the Device Prophet Engine. Whether generated automatically or subjected to expert triage, this analysis is based exclusively on the documentation and technical declarations provided by the user. It does not constitute a physical security test, source code audit, or laboratory verification of the actual hardware.
2. Accuracy of Inputs: The validity of these findings is directly dependent on the accuracy of the input data. Device Prophet accepts no liability for false negatives resulting from incomplete, inaccurate, or misleading design declarations.
3. Regulatory Status: This report identifies potential compliance gaps for risk management purposes. It does not constitute a formal "Declaration of Conformity" (DoC), a certification by a Notified Body, or a legal guarantee of market access.
4. Expert Review: Any findings marked as "Expert Reviewed" or "Triaged" represent a validation of the logic applied to the provided data, not a validation of the physical device itself.
5. Cost & Effort Estimates: All cost and effort estimates (e.g., "Medium Effort") are relative indicators based on typical industry averages for similar device categories. They do not represent a commercial quote or guaranteed timeline. Actual implementation costs vary significantly based on existing architecture and technical debt.

Appendix A: Technical Design Declaration

The following technical parameters were formally declared and serve as the frozen basis for this gap analysis.

Declaration Date: 15 May 2026

Document Reference: sample-ecotherm

1. Declared Specifications

> Product Context
>
> Privacy & Data Handling
>
> Sector-Specific Details
>
> Hardware & Software Platform
>
> AI/ML Integration
>
> Product Security
>
> Network & Access
>
> Security Process
>
> Maintenance & Lifecycle
>
> Timeline & Organizational Scope

Product Context

Report Name (Computed) `[q_name]`

```
EcoTherm
```

Product Name / Reference (Optional) `[q_device_name]`

Why we ask: Correctly identifying your product in the final PDF report allows for easy sharing with stakeholders and regulators.

```
EcoTherm
```

Where will this product be sold or deployed? `[q_market]`

Impact: Different regions have radically different rules coming into force from 2026-2028. Currently, this audit fully supports only EU, UK, and USA markets (other regions are in progress).

- ◉ **European Union (EU)**
- ◉ **United Kingdom (UK)**
- ◉ **United States (USA)**

What is your primary industry sector? `[q_industry]`

Impact: Your sector determines which standards become mandatory (e.g., IEC 62443 for industrial, MDR for medical) and the severity of non-compliance fines.

◉ **Consumer Electronics / Wearables**

○ Medical / Healthcare

○ Industrial / OT / ICS / Critical Infrastructure

○ Automotive / Transportation

○ Smart City / Public Infrastructure

○ Telecom / Networking

○ Finance / POS / Payment

○ Maritime / Shipping / Offshore

○ Agriculture / AgTech / Farming

○ Defense / Military

○ Energy / Utilities / Smart Grid

○ Aerospace / Aviation

○ Other

Is this an EV charging station/EVSE? `[q_ev_charger]`

(Skipped)

○ Yes - AC/DC charger or EVSE

○ No

What is the primary role of the product? `[q_device_role]`

Impact: Distinguishes monitoring devices from those with physical safety implications, affecting IEC 62443, UN R155, MDR, and safety risk weighting.

(Skipped)

○ Monitoring and alerting only (no direct control)

○ Supportive/assistive (e.g., recommendations, remote disable)

○ Direct actuation/safety-critical control (e.g., braking, treatment delivery)

Planned commercial support lifespan of the product (years)? `[q_lifespan]`

Impact: Regulations require you to provide security updates for the entire expected lifespan of the product. If hardware capabilities (e.g., flash/RAM) can't support updates for 10 years, the product becomes illegal to sell.

```
10
```

Expected total lifetime deployed units? `[q_fleet_size]`

Impact: Large fleets are attractive targets for nation-state actors and botnets. The CRA imposes stricter reporting obligations on 'Critical' products, often defined by their deployment scale and impact.

○ Micro / Pilot (< 5k units)

○ Small Scale (5k - 50k)

○ Medium Scale (50k - 500k)

○ Large Scale (500k - 5M)

◉ **Mass Market (> 5M)**

Privacy & Data Handling

Does the product or cloud process personal data (IP, location, biometrics, usage)?

`[q_personal_data]`

Impact: Processing personal data triggers GDPR (EU) and CCPA (US) obligations, including the 'Right to Erasure' and 72-hour breach notification windows, with fines up to 4% of global turnover.

- ○ No
- ○ Yes, but anonymised/pseudonymised
- ◉ **Yes, identifiable PII or special-category**

How is personal/sensitive data handled on the product? `[q_data_minimization]`

Impact: Privacy-enhancing approaches reduce GDPR exposure and may mitigate data-at-rest risks.

- ◉ **Transient/buffered only (deleted after sync)**
- ○ Federated/on-device processing (no raw transmission)
- ◉ **Minimized (e.g., aggregated/anonymized before storage)**
- ◉ **Full persistent storage of raw data**

(Optional) Is cloud data processing/storage restricted to EU-adequate jurisdictions by default?

`[q_data_sovereignty]`

Why we ask: Avoids assumption-based GDPR sovereignty risks.

- ○ Yes
- ○ Configurable by customer
- ◉ **No / global**

What types of biometric data does the product process? `[q_biometric_type]`

Impact: Biometric data is GDPR 'special category' (Art 9). Voice/face systems face deepfake spoofing risks. The EU AI Act classifies remote biometric ID as 'high-risk'.

(Skipped)

- ○ Facial recognition / Face ID
- ○ Voice print / Speaker ID
- ○ Fingerprint
- ○ Iris / Retina scan
- ○ Emotion detection
- ○ Genetic / DNA data
- ○ Behavioral biometrics (gait, typing)
- ○ No biometric processing

What is the primary target user demographic? `[q_target_users]`

Impact: Devices for children face extremely strict privacy limits (US COPPA, UK Children's Code, EU GDPR-K) and safety rules (EU Toy Safety Reg). Data collection must be minimized.

(Skipped)

- ○ General Audience (Adults)
- ○ Children (Under 13 or 16)
- ○ Mixed Audience (Likely accessed by children)
- ○ Professional / Industrial / Business Use

Does the product include a mechanism for obtaining user consent before data processing? `[q_privacy_consent]`

Impact: GDPR/ePrivacy require explicit, informed, granular opt-in consent. COPPA requires Verifiable Parental Consent for children.

(Skipped)

- ○ Yes, granular opt-in (GDPR compliant)
- ○ Yes, Verifiable Parental Consent (COPPA compliant)
- ○ Yes, simple accept (Terms of Service)
- ○ No explicit consent mechanism

Sector-Specific Details

Is this a consumer product with wireless connectivity sold directly to end users (e.g., smart lights, cameras, plugs, doorbells)? `[q_consumer_radio]`

Why we ask: Consumer wireless devices are the primary target of new laws like the EU RED Delegated Act and UK PSTI, which ban default passwords and require defined support periods.

- ◉ **Yes**
- ○ No - it's enterprise or industrial

Are you using a pre-certified radio module or a discrete chip-down design? `[q_module_strategy]`

Why we ask: Using a pre-certified radio module simplifies RF compliance (RED/FCC) but does not absolve you of cybersecurity software obligations under the CRA.

- ◉ **Pre-certified module**
- ○ Discrete chip-down design
- ○ I don't know

(Optional) Are you designing to the European consumer IoT security standard (ETSI EN 303 645 / EN 18031) or equivalent labels? `[q_consumer_radio_etsi]`

Impact: This standard (EN 303 645) is the technical baseline for consumer IoT provisions in the EU, UK, Singapore, Australia, and 15+ other nations. Compliance here solves 80% of consumer regulatory hurdles.

- ○ Yes, we follow it
- ◉ **Planning to**
- ○ No / not aware

(Optional) Working toward UN R155 / ISO 21434 certification or CSMS? `[q_automotive_unr155]`

Why we ask: These regulations mandate a certified Cybersecurity Management System (CSMS) for the manufacturer. Without it, you cannot type-approve new vehicles in 60+ countries.

(Skipped)

- ○ Yes
- ○ In progress
- ○ No
- ○ Don't know these numbers

(Optional) Targeting any additional sector-specific cybersecurity standard (e.g., IMO for maritime, FAA for drones, ISO 15118 for EV charging)? `[q_niche_regulations]`

Captures niche regulatory requirements not covered by main industry categories.

(Skipped)

- ○ Yes
- ○ No

Hardware & Software Platform

Exact SoC / MCU (Optional) `[q_exact_soc]`

Why we ask: Accurate risk analysis depends on hardware capabilities. Start typing to see suggestions (e.g., 'STM32', 'ESP32'). Identifying the chip allows us to check for known hardware vulnerabilities/errata.

```
Espressif ESP32-C6
```

Operating System / RTOS Environment? `[q_os]`

Impact: High-level OSs (Linux/Android) have immense attack surfaces and SBOM complexity. The CRA distinguishes between 'General Purpose' and 'embedded' systems for update requirements.

- ○ Zephyr RTOS
- ◉ **FreeRTOS**
- ○ Linux (Yocto/Buildroot/OpenWrt)
- ○ Linux (Debian/Ubuntu/Raspbian)
- ○ Android (AOSP)
- ○ Bare Metal / No OS
- ○ Azure RTOS (ThreadX)
- ○ Other / Custom

Connectivity methods (select all that apply) `[q_connectivity]`

Impact: Every network interface is an attack vector. Unnecessary open ports on these interfaces are the #1 cause of IoT compromises.

- ◉ **Wi-Fi**
- ○ Bluetooth/BLE
- ◉ **Thread / Zigbee / Matter**
- ○ Ethernet
- ○ Cellular (4G/5G/Cat-M/NB-IoT)
- ○ LoRa / LoRaWAN
- ○ Air-gapped / no external connectivity

Which smart home protocols are supported? `[q_smart_home_protocol]`

(Skipped)

- ○ Matter
- ○ Thread
- ○ Apple HomeKit
- ○ None / Proprietary

Does the solution include a companion mobile app or web dashboard? `[q_companion_app]`

Impact: Mobile apps and dashboards trigger additional regulations (EU Digital Services Act, ePrivacy Directive for cookies/tracking) and are common entry points for attacks.

(Skipped)

- ○ Yes
- ○ No (Device only / API only)

Is protecting firmware/algorithms from theft or cloning a core requirement? `[q_ipr_goal]`

Why we ask: If your business value is in the firmware algorithms, you need hardware-backed readout protection. Standard microcontroller 'readout protection' (aka RDP Level 1) is often trivially bypassable.

- ○ Critical - our IP is the main value
- ◉ **Important but not critical**
- ○ No - value is in cloud/service

Primary Power Source? `[q_power_source]`

Impact: The new EU Battery Regulation mandates a 'Battery Passport' for batteries > 2kWh, requiring digital history tracking and carbon footprint reporting.

- ◉ **Mains / Line Power**
- ○ Rechargeable Battery (> 2kWh) / EV
- ○ Consumer Battery / Coin Cell
- ○ Energy Harvesting

AI/ML Integration

Does your product use AI/ML for decision making? `[q_ai_usage]`

Impact: Using AI/ML triggers the EU AI Act. Most embedded AI is 'minimal risk,' but safety components or biometric ID systems are 'High Risk' with massive compliance burdens.

- ◉ **Yes**
- ○ No

Does the AI directly influence safety-critical or diagnostic decisions? `[q_ai_influence]`

Impact: Determines EU AI Act classification and robustness requirements.

- ◉ **No - insights/alerts only (minimal-risk)**
- ○ Supportive/recommendations (potential high-risk)
- ○ Direct/autonomous influence (high-risk)

What does the AI system do? (select all that apply) `[q_ai_application]`

Impact: The EU AI Act classifies AI by application. HR/education/credit scoring are HIGH-RISK (Annex III). Chatbots and content generation require transparency. Safety-critical autonomous control triggers Annex I.

(Skipped)

- ○ Classifies/categorizes data or images
- ○ Predicts outcomes or behaviors
- ○ Detects objects, anomalies, or patterns
- ○ Makes recommendations to users
- ○ Autonomous control/actuation decisions
- ○ Generates text, images, audio, or video
- ○ Conversational AI / Chatbot interface
- ○ HR/recruitment screening or decisions
- ○ Educational assessment or grading
- ○ Credit, insurance, or financial scoring
- ○ Biometric identification of individuals

AI model sourcing: Open-source/third-party? `[q_ai_sourcing]`

Impact: The EU AI Act places responsibility on the integrator. Using 'black box' third-party models without understanding their training data creates unmanageable liability.

- ○ Open Source
- ○ Third Party
- ◉ **Proprietary / In-house**

Model poisoning defenses: Input validation/sanitization? `[q_ai_poisoning]`

Why we ask: AI models can be tricked by malicious inputs ('adversarial examples'). High-risk AI systems must demonstrate 'robustness' against such attacks under the AI Act.

- ○ Yes
- ◉ **Partial**
- ○ No

Over-the-air AI updates segregated? `[q_ai_ota]`

Why we ask: Updating the AI model independently of the firmware allows for rapid patching of model drift or bias without risking the device's core stability.

- ○ Yes
- ◉ **No**

Federated learning for privacy? `[q_ai_federated]`

Impact: Federated learning keeps data on-device, significantly reducing GDPR exposure. It is a 'Privacy Enhancing Technology' (PET) highly favored by regulators.

- ○ Yes
- ◉ **No**

Edge AI anomaly detection enabled? `[q_ai_edge]`

Why we ask: On-device anomaly detection can catch 'zero-day' attacks or insider threats that deviate from normal operational patterns, a requirement for critical infrastructure (NIS2).

◉ **Yes**

○ No

Does the AI system logging meet EU AI Act traceability reqs? `[q_ai_logging]`

Why we ask: High-risk AI systems must automatically log events (Article 12) to enable post-market monitoring.

◉ **Yes (Automatic recording of events)**

○ No

Is human oversight built into the AI system design? `[q_ai_human_oversight]`

Why we ask: Article 14 mandates that high-risk AI tools can be overseen by natural persons to prevent or minimize risks.

○ Yes

◉ **No**

Is accuracy, robustness, and cybersecurity tested/declared? `[q_ai_accuracy]`

Why we ask: Article 15 requires high-risk AI to achieve appropriate levels of accuracy, robustness, and cybersecurity.

◉ **Yes**

○ No

Are instructions and interpretability measures in place? `[q_ai_transparency]`

Why we ask: Article 13 requires operation sufficiently transparent to enable users to interpret the system's output.

◉ **Yes**

○ No

Is technical documentation and record-keeping maintained? `[q_ai_record_keeping]`

Why we ask: Article 11 requires extensive technical documentation for conformity assessment.

◉ **Yes**

○ No

Product Security

Does the product ship with a default admin password? `[q_default_creds]`

Impact: Static passwords (e.g., 'admin/admin') are illegal in the UK (PSTI) and banned by the EU RED Delegated Act. This is the single fastest way to get your product banned from sale.

◉ **No, each unit has a unique random password**

○ Yes, but user is forced to change it on first setup

○ Yes, same password for all devices (e.g., 'admin')

○ No password / Unauthenticated

Is disk/flash encryption enabled for data-at-rest? `[q_data_at_rest_encryption]`

Impact: Mandatory for GDPR (protecting PII) and medical devices (patient data). Unencrypted flash allows attackers to desolder the chip and read all secrets in minutes.

- ○ Yes, full disk/partition encryption
- ◉ **No**

Typical physical deployment environment? `[q_physical_security]`

Why we ask: 'Physical access is total access.' If an attacker can touch the product (e.g., a smart doorbell), they can attempt side-channel power analysis or glitching attacks to extract keys.

- ○ Physically secure (locked cabinet)
- ○ Semi-secure (office, factory)
- ◉ **Public or consumer home**

Why is advanced physical tamper resistance not implemented (if applicable)? `[q_tamper_practical]`

Impact: Explains absence of tamper features in consumer/wearable contexts.

- ◉ **Form factor/cost constraints (e.g., wearable/portable)**
- ○ Deployment environment (e.g., consumer access expected)
- ○ Risk assessment deems unnecessary
- ○ Actually implemented (e.g., seals/potting)

Debug ports (JTAG/SWD/UART) in production? `[q_debug_ports]`

Impact: Leaving JTAG/SWD open is like leaving the keys in the door. It allows anyone to read/write firmware and bypass all security controls. Must be fused off or cryptographically locked.

- ○ Permanently disabled (eFuses)
- ◉ **Disabled in software only**
- ○ Present but hidden
- ○ Left enabled

Do you implement Secure Boot? `[q_secure_boot]`

Impact: Secure Boot ensures only YOUR signed software runs on the product. Without it, malware can persist even after a factory reset. A mandatory requirement for CRA and PSTI.

- ◉ **Yes**
- ○ Partial / vendor default
- ○ No

How complete is your Secure Boot chain? `[q_secure_boot_depth]`

Why we ask: A 'chain of trust' is only as strong as its weakest link. Securing the bootloader but not the kernel (or filesystem) leaves the system wide open to modification.

- ○ Full chain (kernel + rootfs, dm-verity/A/B)
- ◉ **Bootloader only**
- ○ Vendor default only

Hardware root of trust present? `[q_hw_rot]`

Impact: A Hardware Root of Trust (like a Secure Element or TPM) provides a safe vault for keys that even the main processor cannot read. It is the gold standard for device identity.

- ○ Discrete Secure Element / TPM
- ◉ **Integrated TEE/TrustZone/TPM**
- ○ SoC built-in only
- ○ None

How are cryptographic keys / product identity stored? `[q_key_storage]`

Impact: Using a shared key across all devices means one reverse-engineered device compromises your entire fleet of millions. Unique per-device keys are essential.

- ◉ **Hardware-backed (SE/TEE/TPM)**
- ○ Software but encrypted
- ○ Software plaintext/obfuscated
- ○ Shared secret (all devices same key)
- ○ No unique identity

Secure initial provisioning / zero-touch enrollment method? `[q_provisioning]`

Why we ask: Manual provisioning (typing codes, burning keys in factories) is error-prone and insecure. PKI-based 'Zero Touch' automated provisioning is the only scalable, secure way for commercial IoT.

- ○ PKI / Device Provisioning Service
- ◉ **Manufacturer-signed device certificate**
- ○ Manual token / activation code
- ○ None / open enrollment

Certificate/key revocation mechanism? `[q_revocation]`

Impact: If a device key is stolen, you must be able to 'revoke' it so the attacker cannot impersonate the device. The CRA explicitly mandates a working revocation process.

- ○ CRL/OCSP or automated revocation
- ◉ **Manual (e.g., push notifications)**
- ○ None

Post-quantum cryptography readiness: Integrated NIST-approved algorithms? `[q_pqc_readiness]`

Impact: Quantum computers (expected ~2030) will break current RSA/ECC crypto. If your device will be in the field then, you must plan for 'Post-Quantum Cryptography' (PQC) transitions now.

- ○ Yes
- ◉ **Planning by 2029**
- ○ No

Network & Access

Which local services are exposed for configuration/maintenance? `[q_local_services]`

Impact: Legacy protocols like Telnet and FTP send passwords in cleartext. Their presence is an automatic 'fail' for almost every modern security standard (ETSI 303 645, NIST 8259).

- ○ SSH
- ◉ **Web Interface (HTTP/HTTPS)**
- ○ Legacy (Telnet / FTP / TFTP)
- ○ Android Debug Bridge (ADB)
- ○ UART / Serial Console only
- ○ None / Sealed

How is the Local Web Interface secured? `[q_web_security]`

Impact: HTTP is insecure. Anyone on the same Wi-Fi network can sniff admin credentials. Modern browsers and regulations demand HTTPS even for local interfaces.

- ○ HTTPS (Public/Private CA Signed)
- ◉ **HTTPS (Self-Signed)**
- ○ HTTP (Plaintext)

Product-to-cloud authentication method? `[q_cloud_auth]`

Impact: Weak cloud authentication allows attackers to control your products remotely. Static API keys are easily extracted from firmware dumps; mTLS is the industry standard.

- ○ mTLS with per-device certs
- ○ mTLS but shared cert/PSK
- ◉ **Rotating JWT / token**
- ○ Vendor proprietary (e.g., AWS/Azure keys)
- ○ Static API key / shared secret
- ○ None / open

All cloud communication encrypted with TLS 1.3 + pinning? `[q_encryption_transit]`

Impact: Unencrypted traffic allows valid credentials to be stolen. 'Certificate Pinning' prevents Man-in-the-Middle attacks by trusting only your specific server certificate.

- ○ Yes + certificate pinning
- ◉ **Yes, standard TLS**
- ○ Partial
- ○ No

Product network segmentation? `[q_network_segmentation]`

Why we ask: A 'flat' network means if one product is hacked, the attacker can talk to everything else. Segmentation isolates critical functions from potential breaches.

- ○ Fully isolated / zero-trust
- ◉ **Restricted VLAN / firewall**
- ○ Flat network

Security Process

Threat modeling performed? `[q_threat_modeling]`

Impact: You cannot secure what you don't understand. Regulations like ISO 21434 and the CRA require formal Threat Modeling (e.g., STRIDE) to prove you designed security in, not just bolted it on.

- ○ Yes, documented and reviewed annually
- ◉ **Initial (design phase only)**
- ○ None

Automated vulnerability scanning process? `[q_vuln_scanning]`

Impact: New vulnerabilities are discovered daily. The CRA mandates a process to 'continuously monitoring' your product's software stack for known CVEs.

- ○ Continuous (Integrated into CI/CD pipeline)
- ◉ **Periodic (quarterly scans)**
- ○ None

SBOM & vulnerability disclosure policy? `[q_sbom_vdp]`

Impact: You must be able to tell customers EXACTLY what software is inside your product (Software Bill of Materials). The CRA imposes fines for failing to handle vulnerability reports from researchers.

- ○ Full SBOM published + public vuln disclosure / PSIRT
- ◉ **Internal SBOM only**
- ○ Basic security.txt or contact
- ○ None

Third-party / open-source component management? `[q_third_party_mgmt]`

Why we ask: Modern firmware is 80-90% open source. Without automated tracking (SCA), you are unknowingly shipping vulnerabilities that others have already fixed.

- ○ Automated SCA in CI/CD + auto-updates
- ◉ **SCA tool but manual**
- ○ Manual review only
- ○ No process

FOSS license scanning automated? `[q_foss_scanning]`

Why we ask: Accidental inclusion of GPLv3 code ('copyleft') can legally force you to open-source your entire proprietary codebase. Automating this check prevents legal disasters.

- ○ Yes, automated
- ◉ **No**

Advanced security validation performed? `[q_security_testing]`

Why we ask: Automated scanners miss logic bugs. Fuzzing (throwing random data at inputs) and Penetration Testing are the only way to find deeper flaws. Required for higher assurance levels.

- ○ Continuous (fuzzing / DAST in CI/CD)
- ◉ **Periodic (e.g., annual pen-tests / third-party audits)**
- ○ None

How are firmware signing keys protected? `[q_code_signing_hsm]`

Impact: Your code signing keys are the 'Crown Jewels.' If stolen, attackers can sign their malware as your legitimate update. An HSM keeps these keys offline and secure.

- ○ Hardware Security Module (HSM)
- ◉ **Cloud-based HSM (AWS KMS, Azure Key Vault)**
- ○ Software keystore / encrypted file
- ○ No dedicated protection

Maintenance & Lifecycle

How will you deliver security updates? `[q_updates]`

Impact: Remote update capability is the #1 mandatory requirement for all new IoT laws (CRA, PSTI, RED). Without signed OTA, you cannot fix bugs, rendering the product illegal to sell once a vulnerability is found.

- ◉ **Signed & encrypted OTA (A/B or rollback)**
- ○ Signed OTA only
- ○ Unsigned OTA
- ○ Manual (USB, technician)
- ○ No updates

Minimum guaranteed security update period (years)? `[q_update_commitment]`

Impact: You must publicly state how long you will provide security updates (e.g., 'Software updates guaranteed until 2030'). The EU CRA requires this period to match the 'expected product lifetime' (often 5+ years).

```
10
```

Does the product log security events locally? `[q_audit_logging]`

Why we ask: If an attack happens, logs are the 'black box' flight recorder. Without them, you cannot perform the forensics analysis mandated by the CRA and GDPR.

(Skipped)

- ○ Yes (failed logins, config changes, firmware updates)
- ○ Basic (only critical events)
- ○ No local logging

Post-market security monitoring / telemetry? `[q_telemetry]`

Impact: You cannot fix what you cannot see. Post-market monitoring is a legal requirement to detect active exploitation in the field (CRA Article 11, FDA).

- ◉ **Advanced (anomaly detection, fleet visibility)**
- ○ Basic heartbeat / status
- ○ None

Documented incident response and breach notification plan? `[q_incident_response]`

Impact: When a breach occurs, the clock starts ticking. The EU CRA requires notification within 24 hours. A pre-tested plan is the difference between a manageable incident and a PR disaster.

- ○ Yes, documented and tested annually
- ◉ **Basic plan exists**
- ○ No

End-of-Life (EOL) & Data Destruction Policy? `[q_lifecycle_eol]`

Why we ask: Making it easy for users to securely wipe data (Factory Reset) prevents privacy leaks when devices are resold or recycled. Verification of this is required by GDPR.

- ○ Secure EOL (keys revoked + crypto zeroization)
- ◉ **Graceful (warning in app + factory reset)**
- ○ No plan / nothing

Timeline & Organizational Scope

Target Market Launch Year? `[q_launch_year]`

Impact: Regulations like the EU CRA apply differently to 'New' products vs. 'Legacy' stock. Launching after 2027 forces full compliance immediately.

- ◉ **2026**
- ○ 2027
- ○ 2028+
- ○ Already on market (Legacy Fleet)

Organization Size Category `[q_org_size]`

This helps determine regulatory exemptions and obligations: - SME: Qualifies for CRA/AI Act SME exemptions (reduced fines, extended deadlines). Typically <250 employees or <€50M turnover. - Large: May trigger additional obligations under NIS2, CSRD (sustainability reporting for €450M+ turnover), and CSDDD (supply chain due diligence for €1.5B+ turnover). - Other: Use if unsure or prefer not to disclose. No exemptions will be applied.

- ◉ **SME (Small/Medium Enterprise)**
- ○ Large Enterprise
- ○ Other / Prefer not to say

Cyber Insurance Status `[q_cyber_insurance]`

Insurers increasingly mandate technical controls like SBOMs and MFA. This check helps align your architecture with those standard requirements. Select 'I don't know' if you are unsure about your organization's insurance status.

- ◉ **Yes, policy is active**
- ○ No coverage
- ○ I don't know

Additional Parameters

Parameters added by SoC or derived context.

Main processor class? `[q_class]`

`mcu`

Primary SoC / MCU family? `[q_soc_vendor]`

`Espressif`

2. Raw Token Data

The following raw identifiers were used for automated rule processing:

q_ai_accuracy: yes

q_ai_edge: yes

q_ai_federated: no

q_ai_human_oversight: no

q_ai_influence: no

q_ai_logging: yes

q_ai_ota: no

q_ai_poisoning: partial

q_ai_record_keeping: yes

q_ai_sourcing: proprietary

q_ai_transparency: yes

q_ai_usage: yes

q_class: mcu

q_cloud_auth: jwt

q_code_signing_hsm: cloud_hsm

q_connectivity: wifi, thread_zigbee

q_consumer_radio: yes

q_consumer_radio_etsi: planning

q_cyber_insurance: yes

q_data_at_rest_encryption: no

q_data_minimization: transient, minimized, full_persist

q_data_sovereignty: no

q_debug_ports: disabled_sw

q_default_creds: unique

q_device_name: EcoTherm

q_encryption_transit: yes

q_exact_soc: Espressif ESP32-C6

q_fleet_size: huge

q_foss_scanning: no

q_hw_rot: integrated_tee

q_incident_response: basic

q_industry: consumer

q_ipr_goal: important

q_key_storage: hardware

q_launch_year: 2026

q_lifecycle_eol: graceful

q_lifespan: 10

q_local_services: web_ui

q_market: eu, uk, usa

q_module_strategy: certified_module

q_name: EcoTherm

q_network_segmentation: restricted

q_org_size: sme

q_os: freertos

q_personal_data: pii

q_physical_security: insecure

q_power_source: mains

q_pqc_readiness: planning

q_provisioning: manufacturer_cert

q_revocation: manual

q_sbom_vdp: internal

q_secure_boot: yes

q_secure_boot_depth: bootloader

q_security_testing: periodic

q_soc_vendor: Espressif

q_tamper_practical: form_factor

q_telemetry: advanced

q_third_party_mgmt: sca_manual

q_threat_modeling: initial

q_update_commitment: 10

q_updates: ota_signed_enc

q_vuln_scanning: periodic

q_web_security: https_self

Appendix B: Risk Traceability Matrix

This matrix enables verification of why specific risks were triggered based on your device configuration.

Manual Certificate Revocation (risk-life-manual-revocation)

Severity: 🟠 High

Triggering Inputs:

- `q_revocation`: manual

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Data Sovereignty Violation (risk-priv-data-sovereignty)

Severity: 🟠 High

Triggering Inputs:

- `q_personal_data`: pii

Checked Exclusions (Risk NOT suppressed because):

- Tag `data_eu_sovereign`: Not Present
  - *Requires:* Data processing restricted to EU-adequate jurisdictions
  - *Source inputs:*
    - `q_data_sovereignty`: expected equals 'yes', got 'no'
- Tag `data_anonymised`: Not Present
  - *Requires:* Device handles anonymised personal data
  - *Source inputs:*
    - `q_personal_data`: expected equals 'anonymised', got 'pii'

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Man-in-the-Middle Susceptibility (risk-net-mitm)

Severity: 🟠 High

Triggering Inputs:

- `q_web_security`: https_self

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Missing Privacy Consent Mechanism (risk-priv-no-consent)

Severity: 🟠 High

Triggering Inputs:

- `q_personal_data`: pii
- `q_market`: eu,uk,usa

Checked Exclusions (Risk NOT suppressed because):

- Tag `has_consent_gdpr`: Not Present
  - *Requires:* Granular user consent mechanism (GDPR/ePrivacy compliant)
  - *Source inputs:*
    - `q_privacy_consent`: expected in ['yes_granular', 'yes_vpc'], got (not answered)

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Root of Trust Compromise (risk-tech-no-secure-boot)

Severity: 🟠 High

Triggering Inputs:

- `q_secure_boot`: yes
- `q_secure_boot_depth`: bootloader

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Unencrypted PII at Rest (risk-priv-pii-unencrypted)

Severity: 🟡 Medium

Triggering Inputs:

- `q_data_at_rest_encryption`: no
- `q_personal_data`: pii

Checked Exclusions (Risk NOT suppressed because):

- Tag `data_anonymised`: Not Present
  - *Requires:* Device handles anonymised personal data
  - *Source inputs:*
    - `q_personal_data`: expected equals 'anonymised', got 'pii'

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

EU AI Act: Missing Transparency Disclosures (risk-ai-transparency-gap)

Severity: 🟡 Medium

Triggering Inputs:

- `q_ai_usage`: yes

Checked Exclusions (Risk NOT suppressed because):

- Tag `ai_transparency_opt_in`: Not Present
  - *Requires:* Condition not met
- Tag `ai_disclaimer_present`: Not Present
  - *Requires:* Condition not met

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

ETSI 303 645 Compliance Delayed (risk-std-etsi-planning)

Severity: 🟠 High

Triggering Inputs:

- `q_consumer_radio`: yes
- `q_consumer_radio_etsi`: planning

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Consumer Product Safety (GPSR/Toy Safety / RED) (risk-consumer-product-safety)

Severity: 🟢 Low

Triggering Inputs:

- `q_industry`: consumer
- `q_consumer_radio`: yes

Checked Exclusions (Risk NOT suppressed because):

- Tag `sector_medical`: Not Present
  - *Requires:* Medical sector (MDR/FDA applies)
  - *Source inputs:*
    - `q_industry`: expected equals 'medical', got 'consumer'
- Tag `sector_industrial`: Not Present
  - *Requires:* Industrial sector (IEC 62443 applies)
  - *Source inputs:*
    - `q_industry`: expected equals 'industrial', got 'consumer'
- Tag `role_monitoring`: Not Present
  - *Requires:* Device role is monitoring/alerting only
  - *Source inputs:*
    - `q_device_role`: expected equals 'monitoring_alerting', got (not answered)

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Unmanaged Supply Chain (risk-supply-chain-unmanaged)

Severity: 🟢 Low

Triggering Inputs:

- `q_foss_scanning`: no

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

AI Model Theft or Poisoning (risk-comp-ai-model)

Severity: 🟢 Low

Triggering Inputs:

- `q_ai_usage`: yes

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Build Pipeline Injection (risk-comp-build-pipeline)

Severity: 🟢 Low

Triggering Inputs:

- `q_foss_scanning`: no

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

No Automated Vulnerability Scanning (risk-dev-no-vuln-scanning)

Severity: 🟢 Low

Triggering Inputs:

- `q_foss_scanning`: no

Validation (For Customer Use Only):

☐ **Confidence Level:** High / Medium / Low

Notes/Comments:

Appendix C: Standards Alignment Analysis

This appendix provides an informational analysis of how this device's security posture aligns with recognized industry standards. This is supplementary information to assist with compliance planning and is not a formal conformity assessment.

22	0	6
Regulations Analyzed	Strong Alignment	Partial Alignment

⚠️ EU Cyber Resilience Act (CRA)

Jurisdiction: EU | **Status:** Conformity not demonstrated for EU Cyber Resilience Act (CRA)

Article	Standard	Coverage	Presumption
Annex I (Essential Requirements)	**std-etsi-303-645**	81%	❌ Not Granted
Annex I (Essential Requirements)	**std-iec-62443**	79%	❌ Not Granted
Annex I (Essential Requirements)	**std-nist-csf-2**	76%	❌ Not Granted

⚠️ **std-etsi-303-645 - Unaddressed Controls:** 5.5-3, 5.6-3, 5.7-1, 5.8-1

⚠️ **std-iec-62443 - Unaddressed Controls:** FR3-SR3.1, FR3-SR3.2, FR3-SR3.4, FR4-SR4.1

⚠️ **std-nist-csf-2 - Unaddressed Controls:** PR.DS-01, PR.DS-02, PR.IR-01, DE.CM-06

⚠️ EU Radio Equipment Directive (RED) 2014/53/EU

Jurisdiction: EU | **Status:** Conformity not demonstrated for EU Radio Equipment Directive (RED) 2014/53/EU

Article	Standard	Coverage	Presumption
3(3)(d)	**std-en-18031-1**	71%	❌ Not Granted
3(3)(e)	**std-en-18031-2**	60%	❌ Not Granted
3(3)(f)	**std-en-18031-3**	63%	❌ Not Granted

⚠️ **std-en-18031-1 - Unaddressed Controls:** CSR-2.1, CSR-2.2, CSR-2.3, CSR-3.3

⚠️ **std-en-18031-2 - Unaddressed Controls:** PDR-1.1, PDR-1.2, PDR-1.3, PDR-3.1

⚠️ **std-en-18031-3 - Unaddressed Controls:** FPR-1.2, FPR-1.3, FPR-3.1

⚠️ EU AI Act (Regulation (EU) 2024/1689)

Jurisdiction: EU | **Status:** Conformity not demonstrated for EU AI Act (Regulation (EU) 2024/1689)

Article	Standard	Coverage	Presumption
Chapter III, Section 2 (High-Risk AI Requirements)	**std-iso-42001**	78%	❌ Not Granted
Article 9 (Risk Management)	**std-nist-csf-2**	76%	❌ Not Granted

⚠️ **std-iso-42001 - Unaddressed Controls:** 8.4-01, 8.6-01

⚠️ **std-nist-csf-2 - Unaddressed Controls:** PR.DS-01, PR.DS-02, PR.IR-01, DE.CM-06

⚠️ UK Product Security and Telecommunications Infrastructure Act (PSTI)

Jurisdiction: UK | **Status:** Conformity not demonstrated for UK Product Security and Telecommunications Infrastructure Act (PSTI)

Article	Standard	Coverage	Presumption
Schedule 1	**std-etsi-303-645**	81%	❌ Not Granted

⚠️ **std-etsi-303-645 - Unaddressed Controls:** 5.5-3, 5.6-3, 5.7-1, 5.8-1

⚠️ US FCC Cyber Trust Mark (Voluntary IoT Labeling)

Jurisdiction: US | **Status:** Conformity not demonstrated for US FCC Cyber Trust Mark (Voluntary IoT Labeling)

Article	Standard	Coverage	Presumption
Labeling Criteria	**std-nist-ir-8259**	83%	❌ Not Granted
Labeling Criteria	**std-nist-csf-2**	76%	❌ Not Granted

⚠️ **std-nist-ir-8259 - Unaddressed Controls:** data-protection

⚠️ **std-nist-csf-2 - Unaddressed Controls:** PR.DS-01, PR.DS-02, PR.IR-01, DE.CM-06

⚠️ US Cybersecurity Maturity Model Certification (CMMC 2.0)

Jurisdiction: US-DoD | **Status:** Conformity not demonstrated for US Cybersecurity Maturity Model Certification (CMMC 2.0)

Article	Standard	Coverage	Presumption
Level 2 / Level 3 control set	**std-nist-800-53**	79%	❌ Not Granted

⚠️ **std-nist-800-53 - Unaddressed Controls:** AC-17, SC-8, SC-13, SC-28, SI-3, SI-7

Appendix D: Audit Support & Services

Methodology

Unlike generic AI scanners, this assessment was performed by the Device Prophet Expert System - a deterministic logic engine. It uses strict rule-mapping to correlate your specific architectural inputs against 30+ regulatory frameworks (EU RED, CRA, AI Act, UK PSTI, etc.) without "hallucinating" requirements.

Verification & Support

While our algorithms are rigorous, architectural context matters. If you have questions regarding the report findings, need technical verification, or wish to dispute a "False Positive" due to a specific compensating control in your design, please contact our engineering team directly:

- **Email:** info@deviceprophet.com
- **Web:** deviceprophet.com/contact

Beyond the Report

Identifying the gaps is only the first step. For teams requiring implementation support, deep-dive architectural reviews, or formal certification management, our engineering team is available to assist.

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