



## Data Reference Plan

Date: 11/17/2025

Attn: FCC Office of Engineering and Technology / UL Verification Services TCB

Applicant: Resideo LLC.

Reference Device: ElitePro S1200; **FCC ID: HS9-THX1200WF01 / 573R-THX1200WF01**

New Variant: ElitePro S900; **FCC ID: HS9-THX900WF01 / 573R-THX900WF01**

TCB: UL Verification Services TCB

Guidance: KDB 484596 D01 Referencing Test Data v03

### 1. Purpose

This Data Reference Plan describes how ElitePro S900 will leverage the previously completed ElitePro S1200 test data to minimize duplicate testing while ensuring compliance with FCC Part 15.247 and FCC Part 15.407 requirements.

### 2. Description of variant

|                              | Reference Device                                                  | Variant                                                |
|------------------------------|-------------------------------------------------------------------|--------------------------------------------------------|
| Product Description          | Thermostat with 802.11 b/g/n/ac/ax, BLE, Redlink and 60 GHz Radar | Thermostat with 802.11 b/g/n/ac/ax and BLE             |
| FCC ID                       | <b>HS9-THX1200WF01</b>                                            | <b>HS9-THX900WF01</b>                                  |
| IC                           | <b>573R-THX1200WF01</b>                                           | <b>573R-THX900WF01</b>                                 |
| Model Name                   | ElitePro S1200                                                    | ElitePro S900                                          |
| Applicable Standards         | 15.247; 15.407; RSS-247                                           | 15.247; 15.407; RSS-247                                |
| Antenna types: Wi-Fi and BLE | 2 PCB dual band antennas connected to a DPDT RF switch            | 2 PCB dual band antennas connected to a DPDT RF switch |
| Antenna Gain Wi-Fi and BLE   | Identical                                                         | Identical                                              |
| Rated Power table            | Identical                                                         | Identical                                              |
| Chipset 1                    | IW612HN/A1IMP for Wi-Fi and BLE                                   | IW612HN/A1IMP for Wi-Fi and BLE                        |
| Chipset 2                    | CC1354P10T0RGZ for Redlink                                        | None                                                   |



|                            |                                                               |                                                               |
|----------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Chipset 3                  | BGT60TR13C Infineon for Radar                                 | None                                                          |
| Frequency Band allocations | ISM 900 MHz, 2.4 GHz, 5 GHz, 60 GHz                           | ISM 2.4 GHz, 5 GHz                                            |
| Simultaneous Transmission  | when Wi-Fi is operating at 5Ghz and BLE is also transmitting. | when Wi-Fi is operating at 5Ghz and BLE is also transmitting. |
| DFS Detection              | Identical                                                     | Identical                                                     |
| Display Size               | 5"                                                            | 4.3"                                                          |
| RF exposure separation     | At least 20 cm from all persons                               | At least 20 cm from all persons                               |

### 3. Basis for Data Referencing

Per KDB 484596 D01, a new model may reuse prior test data when:

- The RF circuitry is identical
- The antennas are identical
- Differences do not degrade RF performance
- A Spot-Check plan confirms worst-case alignment

All these conditions are satisfied:

#### 3.1 RF Circuitry identity

- ElitePro S900 uses the identical PCB, RF routing, chipset, FEM/PA, filters, matching clock, and antenna feed as ElitePro S1200.
- Only two radios are removed: 60 GHz radar and Sub-1 GHz Redlink.
- No circuitry associated with Wi-Fi and BLE has changed

#### 3.2 Antenna Identity

- Same antenna types, locations, feed geometry and ground reference as ElitePro S900.
- Cosmetic housing differences do not intersect the RF volume.

#### 3.3 Mechanical Differences

- ElitePro S900 has a smaller (4.3") display and a housing "chin" extension.
- Back housing latch geometry is adjusted
- These do not affect antenna regions or RF pathway

#### 3.4 Expected RF Impact

- Removal of radios reduces the total RF activity and co-location exposure.
- Wi-Fi/BLE RF performance is unchanged by design.
- Enclosure changes are non-RF-critical



## 4. Radios eligible for Data Referencing

| Radio           | ElitePro S1200 | ElitePro S900 | Data Reuse Eligible |
|-----------------|----------------|---------------|---------------------|
| Wi-Fi 2.4 GHz   | Yes            | Yes           | ✓                   |
| BLE 2.4 GHz     | Yes            | Yes           | ✓                   |
| Wi-Fi 5GHz UNII | Yes            | Yes           | ✓                   |
| 60 GHz Radar    | Yes            | Removed       | N/A                 |
| Redlink         | Yes            | Removed       | N/A                 |

Only the common radios (Wi-Fi + BLE) are included in data referencing.

## 5. Data NOT Reused (Radios Removed)

- 60 GHz radar – removed, no testing required
- Redlink – removed, no testing required

## 6. Data to be confirmed by Spot-Check Testing

Spot-checks will verify all measurements from the original filing including the following:

- Conducted output power for each mode
- 99% OBW
- 6 dB Emissions bandwidth
- PSD
- Conducted Band edge
- Spurious conducted emissions
- Radiated spurious emissions
- Radiated band-edge
- DFS functionality
- Worst-case channel selection

Worst case shall be chosen from the original filing data for comparison per section 3.2 of KDB 484596.

The Reference data will be provided in forms of report files from the FCC certification of **HS9-THX1200WF01** certification.

The details appear in the Spot-Check Plan.



## Appendix A

### Spot-check Test Plan

Date: 11/17/2025

Attn: FCC Office of Engineering and Technology / UL Verification Services TCB

Applicant: Resideo LLC.

Reference Device: ElitePro S1200; **FCC ID: HS9-THX1200WF01 / 573R-THX1200WF01**

New Variant: ElitePro S900; **FCC ID: HS9-THX900WF01 / 573R-THX900WF01**

TCB: UL Verification Services TCB

Guidance: KDB 484596 D01 Referencing Test Data v03

#### 1. Purpose

To define the radiated and DFS spot-check tests required to confirm that ElitePro S900 exhibits equal or lower RF emissions than ElitePro S1200.

#### 2. Spot-Check approach

- Worst-case configuration and mode based on the worst-case from the original certification
- Spot check all tests from original certification

#### 3. Spot-Check Tests

##### 3.1 Wi-Fi 2.4 GHz (DTS)

- Performed Spot-checks
  - Radiated spurious to 18 GHz
  - Radiated band-edge (2.4 GHz restricted bands)
  - Maximum Conducted Output Power
  - 6 dB Bandwidth
  - 99% Occupied Bandwidth
  - Max PSD
  - Conducted Band edge
  - Conducted Spurious
- Worst-case configuration and mode



- EUT set to transmit on channel with the highest output power. Only worst-case per mode
- Band edge and radiated spurious between 1 GHz and 18 GHz with EUT set to transmit at the highest output power.
- Worst-case data-rates as follows:
  - 802.11ax HE20 (26T-242T) mode : MCS0
  - 802.11ax HE20 (SU) mode : MCS8
  - 802.11ax HE40 (484T) mode : MCS0
  - 802.11ax HE40 (SU) mode : MCS8
- PSD: Modes with highest power and narrowest bandwidth.
- Orientation: Intended orientation of operation only

## 3.2 BLE (2.4 GHz)

- Performed Spot checks
  - Radiated spurious to 18 GHz
  - Radiated band-edge (2.4 GHz restricted bands)
  - Maximum Conducted Output Power
  - 6 dB Bandwidth
  - 99% Occupied Bandwidth
  - Max PSD
  - Conducted Band edge
  - Conducted Spurious
- Worst-case:
  - BLE only supports 1 Mbps
  - Orientation: Intended orientation of operation only

## 3.3 Wi-Fi 5 GHz (UNII-1, UNII-2A, UNII-3, UNII-4)

- Performed Spot checks
  - Radiated spurious to 1-18 GHz
  - Radiated band-edge measurements
  - Maximum Conducted Output Power
  - 26 dB Bandwidth
  - 6 dB Bandwidth
  - 99% Occupied Bandwidth
  - Max PSD
  - Conducted Band edge



- Conducted Spurious
- DFS functionality
- Worst-case configuration and mode
  - EUT set to transmit on channel with the highest output power. Only worst-case per mode
  - Band edge and radiated spurious between 1 GHz and 18 GHz with EUT set to transmit at the highest output power.
  - Worst-case data-rates as follows:
    - 802.11a mode: 6 Mbps
    - 802.11n HT20/802.11ac VHT20 mode : MCS0
    - 802.11n HT40 mode : MCS0
    - 802.11ac VHT80 mode : MCS0
    - 802.11ax HE20 (26T-242T) mode : MCS0
    - 802.11ax HE20 (SU) mode : MCS8
    - 802.11ax HE40 (484T) mode : MCS0
    - 802.11ax HE40 (SU) mode : MCS8
    - 802.11ax HE80 (996T) mode : MCS0
    - 802.11ax HE80 (996T) mode : MCS0
  - PSD: Modes with highest power and narrowest bandwidth.
  - Orientation: Intended orientation of operation only

## 3.4 Removed Radios

- 60 GHz radar – no testing
- Redlink – no testing

## 4. Acceptance criteria

Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, may show a deviation  $d_{dB}$  from the reference data no larger than 3 dB (applicable for both field and power quantities):

$$d_{dB} = |V_{dB} - R_{dB}| \leq 3 \text{ dB}, \quad (1)$$

where between  $V_{dB}$ , the variant spot-check level in dB, and  $R_{dB}$  is the corresponding measurement level in dB for the reference model.

Alternatively, it can be evaluated how far the reference data  $R_{dB}$  is from the compliance threshold  $C_{dB}$  (also expressed in dB), for the particular test under consideration.



In this case, if  $M_{dB} = |C_{dB} - R_{dB}|$  is the margin in dB from the compliance limit, a spot check may be considered acceptable when the deviation  $d_{dB}$  from the reference data satisfies the following condition:

$$d_{dB} = |V_{dB} - R_{dB}| \leq (3 + M_{dB} / 20) \text{ dB, for } 0 \leq M_{dB} \leq 60 \text{ dB} \quad (2)$$
$$d_{dB} = |V_{dB} - R_{dB}| = 6 \text{ dB, for } 0 \leq M_{dB} \leq 60 \text{ dB}$$

Failure in spot-check will require additional expanded radiated testing

Tolerance for the output Power values reported in this document is +/- 2 dB for 2.4Ghz band and 2.5 dBm for 5Ghz band.

## 5. Deliverables to TCB

- Spot-Check Test Plan
- Data Reference Plan
- Spot-Check Test Report
- Reference Data
- External and Internal photos
- Labels
- Declaration of Similarity
- Cover Letter

The Reference data will be provided in forms of report files from the FCC certification of **HS9-THX1200WF01** certification.