



FCC Part 1 Subpart I  
FCC Part 2 Subpart J

**RF EXPOSURE EXEMPTION REPORT**

**FOR**

**EUT: Wireless Smart Smoke & Carbon Monoxide Alarm**

**MODEL NUMBERS: SMCO600NV-AC, SMCO600NV**

**FCC ID: M7U-BT110T**

**REPORT NUMBER: R15511224-E4**

**ISSUE DATE: 2025-03-21**

*Prepared for*  
**Ademco Inc**  
**2 Corporate Center Drive**  
**Melville, NY, 11749**

*Prepared by*  
**UL LLC**  
**12 LABORATORY DR.**  
**RESEARCH TRIANGLE PARK, NC 27709, U.S.A.**  
**TEL: (919) 549-1400**



### Revision History

| Rev. | Issue Date | Revisions  | Revised By   |
|------|------------|--|--------------|
| V1   | 2025-01-09 | Initial Issue  | Noah Bennett |
| V2   | 2025-02-19 | TCB Feedback 1:<br>-Updated Model Numbers<br>-General Formatting Improvements. | Noah Bennett |
| V3   | 2025-03-14 | TCB Feedback 2:<br>-Added ISED Model(s)  | Noah Bennett |
| V4   | 2025-03-18 | Updated Model Differences statement in section 3                               | Noah Bennett |
| V5   | 2025-03-21 | Removed ISED references<br>Updated power based on revised OD                   | Brian Kiewra |

## TABLE OF CONTENTS

|  |   |
|--|---|
| 1. ATTESTATION OF TEST RESULTS .....                         | 4 |
| 2. TEST METHODOLOGY .....                                    | 5 |
| 3. REFERENCES .....  | 5 |
| 4. FACILITIES AND ACCREDITATION .....                        | 5 |
| 5. DECISION RULES AND MEASUREMENT UNCERTAINTY .....          | 5 |
| 5.1. METROLOGICAL TRACEABILITY .....                         | 5 |
| 5.2. DECISION RULES .....                                    | 5 |
| 5.3. MEASUREMENT UNCERTAINTY .....                           | 5 |
| 6. MAXIMUM PERMISSIBLE EXPOSURE (LIMITS AND EQUATIONS) ..... | 6 |
| 6.1. FCC RULES .....   | 6 |
| 6.2. EQUATIONS .....   | 7 |
| 7. RF EXPOSURE RESULTS .....                                 | 9 |
| END OF REPORT .....  | 9 |

## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Ademco Inc  
2 Corporate Center Drive  
Melville, NY, 11749

**EUT DESCRIPTION:** Wireless Smart Smoke & Carbon Monoxide Alarm

**MODELS:** SMC0600NV-AC, SMC0600NV

**SERIAL NUMBER:** 565, 643, 5CFCE152F6EE, 5CFCE152F786, 5CFCE152F786,  
5CFCE1512B91, 5CFCE15129AB

**DATE TESTED:** 2024-10-15 thru 2024-12-30

| APPLICABLE STANDARDS                    |              |
|---|--------------|
| STANDARD                                | TEST RESULTS |
| FCC PART 1 SUBPART I & PART 2 SUBPART J | Complies     |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For

UL LLC By:



Jeff Moser  
Operations Manager  
CONSUMER TECHNOLOGY DIVISION  
UL LLC

Prepared By:



Noah Bennett  
Engineer  
CONSUMER TECHNOLOGY DIVISION  
UL LLC

## 2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 1.1310, 2.1091, 2.1093, KDB 447498 D01 v06, KDB 447498 D03 V01, IEEE Std C95.1-2005, and IEEE Std C95.3-2002.

## 3. REFERENCES

Output power, and Antenna gain data is excerpted from product documentation provided by the applicant.

100% Duty Cycle used as worst case.

**Note:** Output Power is the declared maximum power across production units.

The primary distinction between the two variants is their power source: the SMCO600NV-AC operates on AC power with a DC battery backup, whereas the SMCO600NV relies solely on DC battery power. Beyond this, both variants are identical in terms of electrical and mechanical design.

## 4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number 0751.06.

## 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 5.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 5.2. DECISION RULES

For all tests where the applicable  $U_{LAB} \leq U_{MAX}$  the Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2, where  $U_{MAX} = 30\% (0.3)$  for RF Exposure evaluations. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

For all tests where the applicable  $U_{LAB} > U_{MAX}$  the Decision Rule is based on Guarded Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.3.2, with a guard band equal to  $(U_{LAB} - U_{MAX})$ , where  $U_{MAX} = 30\% (0.3)$  for RF Exposure evaluations. (Test results are adjusted by the value of the guard band to determine conformity with a specified requirement.)

### 5.3. MEASUREMENT UNCERTAINTY

Not applicable – calculations are based on the maximum output power and, where applicable, nominal antenna gains as declared by the manufacturer.

## 6. MAXIMUM PERMISSIBLE EXPOSURE (LIMITS AND EQUATIONS)

### 6.1. FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range (MHz)  | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposure</b>         |                               |                               |                                     |                          |
| 0.3-3.0  | 614                           | 1.63                          | *100                                | 6                        |
| 3.0-30   | 1842/f                        | 4.89/f                        | *900/f <sup>2</sup>                 | 6                        |
| 30-300   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1,500  |                               |                               | f/300                               | 6                        |
| 1,500-100,000  |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34   | 614                           | 1.63                          | *100                                | 30                       |
| 1.34-30  | 824/f                         | 2.19/f                        | *180/f <sup>2</sup>                 | 30                       |
| 30-300   | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1,500  |                               |                               | f/1500                              | 30                       |
| 1,500-100,000  |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz

\* = Plane-wave equivalent power density

#### Notes:

- (1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
- (2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

## 6.2. EQUATIONS

### POWER DENSITY

Power density is given by:

$$S = \text{EIRP} / (4 * \pi * D^2)$$

Where

S = Power density in mW/cm<sup>2</sup>

EIRP = Equivalent Isotropic Radiated Power in mW

D = Separation distance in cm

Power density in units of mW/cm<sup>2</sup> is converted to units of W/m<sup>2</sup> by multiplying by 10.

### DISTANCE

Distance is given by:

$$D = \sqrt{\text{EIRP} / (4 * \pi * S)}$$

Where

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power in mW

S = Power density in mW/cm<sup>2</sup>

### SOURCE-BASED DUTY CYCLE

Where applicable (for example, multi-slot cell phone applications) a duty cycle factor may be applied.

$$\text{Source-based time-averaged EIRP} = (\text{DC} / 100) * \text{EIRP}$$

Where

DC = Duty Cycle in %, as applicable

EIRP = Equivalent Isotropic Radiated Power in mW

### **MIMO AND COLOCATED TRANSMITTERS (IDENTICAL LIMIT FOR ALL TRANSMITTERS)**

For multiple chain devices, and colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the EIRP (in linear units) of each transmitter.

$$\text{Total EIRP} = (\text{EIRP}_1) + (\text{EIRP}_2) + \dots + (\text{EIRP}_n)$$

where

$\text{EIRP}_x$  = Source-based time-averaged EIRP of chain x or transmitter x

The total EIRP is then used to calculate the Power Density or the Distance as applicable.

### **MIMO AND COLOCATED TRANSMITTERS (NON-IDENTICAL LIMIT FOR ALL TRANSMITTERS)**

For multiple colocated transmitters operating simultaneously in frequency bands where different limits apply:

The Power Density at the specified separation distance is calculated for each transmitter chain or transmitter.

The fraction of the exposure limit is calculated for each chain or transmitter as  $(\text{Power Density of chain or transmitter}) / (\text{Limit applicable to that chain or transmitter})$ .

The fractions are summed.

Compliance is established if the sum of the fractions is less than or equal to one.

## 7. RF EXPOSURE RESULTS

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for correctly integrating customer-provided data with measurements performed by UL LLC.

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

| Single Chain and non-colocated transmitters |      |         |                      |                        |                 |                |           |                  |                        |
|---|------|---------|----------------------|------------------------|-----------------|----------------|-----------|------------------|------------------------|
| Antenna                                     | Band | Mode    | Separ. Distance (cm) | Output AVG Power (dBm) | Ant. Gain (dBi) | Duty Cycle (%) | EIRP (mW) | FCC PD (mW/cm^2) | FCC PD Limit (mW/cm^2) |
| 1   | 2.4  | WLAN    | 20                   | 22.00                  | 2.54            | 100.0          | 284.45    | 0.06             | 1.608                  |
|   | 2.4  | BLE     | 20                   | 8.00                   | 2.54            | 100.0          | 11.32     | 0.00             | 1.608                  |
|   | 5.0  | WLAN    | 20                   | 21.00                  | 6.32            | 100.0          | 539.51    | 0.11             | 3.453                  |
| 2   | 2.4  | WLAN    | 20                   | 22.00                  | 2.34            | 100.0          | 271.64    | 0.05             | 1.608                  |
|   | 2.4  | BLE     | 20                   | 8.00                   | 2.34            | 100.0          | 10.81     | 0.00             | 1.608                  |
|   | 5.0  | WLAN    | 20                   | 21.00                  | 4.50            | 100.0          | 354.81    | 0.07             | 3.453                  |
| 3   | 2.4  | Zigbee  | 20                   | 22.00                  | 2.81            | 100.0          | 302.69    | 0.06             | 1.608                  |
|   | 2.4  | WLAN    | 20                   | 22.00                  | 2.87            | 100.0          | 306.90    | 0.06             | 1.608                  |
| 4   | 2.4  | ZigBbee | 20                   | 22.00                  | 2.25            | 100.0          | 266.07    | 0.05             | 1.608                  |
|   | 2.4  | WLAN    | 20                   | 22.00                  | 2.95            | 100.0          | 312.61    | 0.06             | 1.608                  |

Notes:

1. 100% Duty Cycle was used as worst-case.
2. Power values are maximum declared by manufacturer including  $\pm 2$ dB tolerance.
3. The EUT has Sim Tx capabilities with the BLE radio on Antenna 1 and 2, along with BLE and 802.15.4 on Antenna 3 and 4. The worst-case combination, based on output power, is calculated below.

| Multiple chain or colocated transmitters |        |                  |                   |                        |                 |                |           |                  |                 |                        |
|--|--------|------------------|-------------------|------------------------|-----------------|----------------|-----------|------------------|-----------------|------------------------|
| Band                                     | Mode   | Chain for Sim Tx | Separ. Dist. (cm) | Output AVG Power (dBm) | Ant. Gain (dBi) | Duty Cycle (%) | EIRP (mW) | FCC PD (mW/cm^2) | ISED PD (W/m^2) | FCC PD Limit (mW/cm^2) |
| 2.4 GHz                                  | BLE    | 1                |                   | 8.00                   | 2.54            | 100.0          | 11.32     |                  |                 |                        |
| 2.4 GHz                                  | Zigbee | 3                |                   | 22.00                  | 2.81            | 100.0          | 302.69    |                  |                 |                        |
| Combined                                 |        |                  | 20                |                        |                 |                | 314.02    | 0.06             | 0.63            | 1.61                   |

## END OF REPORT