



**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

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-01-09	Initial Issue	Noah Bennett
V2	2025-02-19	TCB Feedback 1: -Updated Model Numbers -General Formatting Improvements.	Noah Bennett
V3	2025-03-14	TCB Feedback 2: -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 Updated power based on revised OD	Brian Kiewra

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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: SMCO600NV-AC, SMCO600NV

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
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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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	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:

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

Where

S = Power density in mW/cm²

EIRP = Equivalent Isotropic Radiated Power in mW

D = Separation distance in cm

Power density in units of mW/cm² is converted to units of W/m² by multiplying by 10.

DISTANCE

Distance is given by:

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power in mW

S = Power density in mW/cm²

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.

$$\text{Total EIRP} = (\text{EIRP1}) + (\text{EIRP2}) + \dots + (\text{EIRPn})$$

where

EIRPx = 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
(Power Density of chain or transmitter) / (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 ± 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