

RF Exposure Report

Project Number: 5179386**Offer Number:** SUW-202407006787**Report Number:** 5179386EMC13**Revision Level:** 2**Client:** Alarm.com Incorporated**Equipment Under Test:** Premium Video Camera**Host Model:** ADC-V730**Module FCC ID:** YL6-143V730**IC ID:** 9111A-143V730**Applicable Standards:** 47 C.F.R. §§ 2.1091

FCC KDB 447498 D01 General RF Exposure Guidance v06

FCC OET Bulletin 65

RSS-102, Issue 6 (December 15, 2023)

Report issued on: 20 February 2025**Report revised on:** 26 March 2025**Test Result:** Compliant

FOR THE SCOPE OF ACCREDITATION UNDER 17025 CERTIFICATE NUMBER: 3212.01

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Prepared by:


Daniel Alvarez, RF/EMC Sr. Staff Engineer

Reviewed by:


Stephen Whalen, EMC Lab Manager

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1 General Information

1.1 Client Information

Name: Alarm.com Incorporated
Address: 8281 Greensboro Drive, Suite 100
City, State, Zip, Country: Tysons, VA 22102, USA

1.2 Test Laboratory

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01
FCC Designation: US1126

1.3 General Information of EUT

Equipment Under Test: Premium Video Camera
Host Model: ADC-V730
Serial Number: 504074C00096 (Conducted Sample) / 504074C0250 (Radiated Sample)
LoRa: (902 – 928 MHz) CCS, 125kHz / 500kHz (Hybrid, FHSS, DTS) / Max: 18.48 dBm
BLE: (2402 – 2480 MHz) 1Mbps, 2Mbps (GFSK) / Max: 12.95 dBm
2.4GHz WLAN: (2412 – 2462 MHz) IEEE 802.11b/g/n (DSSS, OFDM) / Max: 23.83 dBm
5GHz WLAN: (5180 – 5825 MHz) IEEE 802.11a/n/ac/ax (OFDM, MCS, VHT) / Max: 19.23 dBm

*Antenna Gain:	Frequency(MHz)	2400	2450	2500	5150	5350	5550	5750	5850
Ant.1	Peak Gain(dBi)	3.0	3.1	2.9	5.2	5.3	5.0	4.0	3.9
	Efficiency(%)	64	62	58	73	76	78	73	69
Ant.2	Peak Gain(dBi)	4.2	4.0	3.5	4.7	4.5	3.9	3.9	3.8
	Efficiency(%)	67	66	61	73	71	73	77	77

	Frequency(MHz)	865	902	928
Ant.3	Peak Gain(dBi)	-0.4	-0.4	-0.5
	Efficiency(%)	41	43	40

*Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous regulatory filing or other.

1.4 Operating Modes and Conditions

Evaluation was performed as specified in FCC KDB 558074 D01 v05r02 and FCC KDB 447498 D01 v06. Maximum power levels were utilized for all calculations. Simultaneous transmission is possible with one LoRa band, one WLAN band and BLE. The separation distance from antenna and/or radiating structure is 20cm.

2 RF Exposure

2.1 Test Result

Test Description	Product Specific Standard	Test Result
RF Exposure	FCC Part 1.1310 & RSS-102	Compliant

2.2 Test Method

Using the maximum power (including tune-up tolerances), the power density was calculated. Maximum antenna gains were used.

The formula below was used to calculate power density.

$$S = \frac{PG}{4\pi R^2} \quad \text{or} \quad S = \frac{EIRP}{4\pi R^2}$$

where:

S = power density (mW/cm²)

P = maximum sourced based average power delivered to antenna port (mW)

G = maximum numeric power gain of antenna relative to an isotropic radiator (dBi -> linear)

R = distance from reference point of antenna (cm)

$EIRP$ = equivalent (or effective) isotropically radiated power

2.3 Single transmission RF Exposure Levels (mW/cm²)

FCC

Band of Operation		Conducted Power w/tolerance dBm	Antenna Gain	Cable Loss	Average EIRP		Distance (R) cm	Power Density EIRP _{Avg} /(4πR ²) mW/cm ²	FCC mW/cm ²	% of Limit	Verdict
Type	MHz				dBm	mW					
WLAN 2.4	2400-2483.5	23.8	4.2	0.0	28.0	631	20	0.126	1.00	13%	Pass
Bluetooth	2400-2483.5	13.0	4.2	0.0	17.2	52	20	0.010	1.00	1%	Pass
WLAN 5 GHz (UNII-2)	5250-5700	19.2	5.3	0.0	24.5	284	20	0.056	1.00	6%	Pass
LoRa	902-928	18.5	-0.4	0.0	18.1	64	20	0.013	0.60	2%	Pass

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Band of Operation		Conducted Power w/tolerance dBm	Antenna Gain	Cable Loss	Average EIRP		Distance (R) cm	Power Density EIRP _{Avg} /(4πR ²) W/m ²	IC W/m ²	% of Limit	Verdict
Type	MHz				dBm	mW					
WLAN 2.4	2400-2483.5	23.8	4.2	0.0	28.0	631	20	1.255	5.35	23%	Pass
Bluetooth	2400-2483.5	13.0	4.2	0.0	17.2	52	20	0.103	5.35	2%	Pass
WLAN 5 GHz (UNII-2)	5250-5700	19.2	5.3	0.0	24.5	284	20	0.565	9.13	6%	Pass
LoRa	902-928	18.5	-0.4	0.0	18.1	64	20	0.128	2.74	5%	Pass

2.4 Simultaneous Conditions

Simultaneous transmissions are evaluated using the equation and highest results from each technology.

$$\frac{S_1}{S_1 \text{ Limit}} + \frac{S_2}{S_2 \text{ Limit}} + \dots + \frac{S_n}{S_n \text{ Limit}} \leq 1.0$$

Example

LoRa + WLAN + BLE < 1.0

5% + 15% + 1% < 100%

Simultaneous Transmissions - Percent of Limit					
	WLAN 2.4	Bluetooth	WLAN 5 GHz (UNII-2)	LoRa	All
WLAN 2.4			18%	15%	18%
Bluetooth			7%	3%	9%
WLAN 5 GHz (UNII-2)	18%	7%		8%	20%
LoRa	15%	3%	8%		20%

3 Revision History

Revision Level	Description of changes	Revision Date
-	Draft Release	21 February 2025
0	Initial Release	21 February 2025
1	Updated RSS-102 table in section 2.3	21 February 2025
2	Updated section 2.3 and 2.4 to account for antenna gain	25 March 2025
3	Updated section 2.3 and 2.4 to account for antenna gain	26 March 2025