EXHIBIT 5-2A   HS9-MRCH2 / 573R-MRCH2

SAR EXCLUSION CALCULATION - FCC

1.0 APPLICANT:

DATE:	3/12/2019
NAME OF APPLICANT:	Ademco Inc.
FCC ID:	HS9-MRCH2

2.0 RF EXPOSURE AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES:

KDB 447498 D01 Section 4.3.1 - Standalone SAR Test Exclusion Considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.[1] The minimum test separation distance defined in 4.1 f) is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting are required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops and tablets, etc.[2]

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR *test exclusion thresholds* are determined by the following:

[(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [$\sqrt{f(GHz)}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,[3] where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation[4]
- The result is rounded to one decimal place for comparison

3.0 UUT POWER OUTPUT / ANTENNA GAIN / SEPARATION DISTANCE

The maximum output power from Exhibit 5-1 is measured as 11.79 dBm.
The max antenna gain of the antenna is 0.2 dBi
Assumed separation distance is 0mm

4.0 SAR EXCLUSION CALCULATIONS:

Distances less than or equal to 50mm

Antenna	Tx Type	Frequency (MHz)	Output power[Note 2, 4]		Separation distance (mm)[Note 1 and 4]	SAR Exclusion Value[Note 3 and 4]	SAR Exclusion Threshold
			dBm	mW			10-g SAR
Integral	Redlink	915	11.79	15.10080	5	2.888953	7.5

Note 1: For distances < 5mm, a distance of 5mm is used to determine SAR exclusion. For distances < 50mm the clauclation must yield a value <= 3.0 to exlcude that position from body or head SAR and <=7.5 for Extremities

Note 2: Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.

Note 3: If the antenna separation distance is > 50mm then the threshold power value is calculated.

Note 4: Formulas round separation distance to nearest mm and power to nearest mW before determining if SAR is excluded.

5.0 RESULTS:

TEST RESULT: SAR testing not required per KDB 447498 Section 4.3

In the configuration tested the EUT complied with the standards specified above.

1 - Test exclusion is applied to the required test channels on a channel by channel basis.

2 - When SAR evaluation is required by the hotspot mode or UMPC mini-tablet procedures, that is, where an antenna is ≤ 2.5 cm from a surface or edge, the test separation distance from the phantom to the antenna or device enclosure, as appropriate, should be applied to determine further SAR test exclusion according to the criteria in this document. Do not use the antenna to device surface or edge distance.

3 - This is equivalent to the formula written as: [(max. power of channel, including tune-up tolerance, mW)/(60/√f(GHz) mW)]·[20 mm/(min. test separation distance, mm)] ≤ 1.0 for 1-g SAR; also see Appendix A for approximate exclusion threshold numerical values at selected frequencies and distances.

4 - Unless stated otherwise, the same rounding requirements should be applied to all similar equations in this document.