

## Exhibit B

### Analysis of Non-Ionizing Radiation for Honeywell MCS 8200 & 8000 Antennas

The analysis and calculations performed in this Annex comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65, first published in 1985 and revised in 1997 in Edition 97-01.

Bulletin No. 65 and the FCC R&O 96-326 specify two Maximum Permissible Exposure (MPE) limits that are dependent on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. These are described below:

- General population/uncontrolled environment MPE limit is  $1 \text{ mW/cm}^2$ . The general population/uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less.
- Occupational/controlled environment MPE limit is  $5 \text{ mW/cm}^2$ . The occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less.

The analysis provided in this report determined the power flux density levels of the antenna in the: 1) far-field, 2) near-field, 3) transition region, and 4) aperture surface.

#### 1.0 Analysis for the MCS 8200 Antenna<sup>1</sup>

##### 1.1 Calculations for the MCS 8200 antenna

Input Parameter	Value	Units	Symbol
Antenna Major Axis Dimension	0.61	m	D
Antenna Transmit Gain	39.8	dBi	G
Transmit Frequency	30000	MHz	F
Power Input to the Antenna	12.6	Watts	P
Antenna Surface Area	1129	cm <sup>2</sup>	A
Antenna Efficiency	0.71	Real	H

Calculated Parameter	Value	Units	Symbol	Formula
Gain Factor	9549.93	Real	G	$10^{(G/10)}$
Wavelength	0.0100	m	$\Lambda$	$300/f$

##### Antenna Field Distances

Calculated Parameter	Value	Units	Symbol	Formula
Near-Field Distance	9.3	m	Rnf	$D^2/(4\lambda)$
Distance to Far-Field	22.3	m	Rff	$0.6D^2/\lambda$
Distance of Transition Range	9.3	m	Rt	$Rt=Rnf$

<sup>1</sup>Since these antennas are identical, the measurements and data are reproduced from ISAT US Application SES-LIC-20141030-00832 for license E140114

Power Density Calculated Parameter	Value	Units	Symbol	Formula
Power Density in the Near Field	10.91	mW/cm <sup>2</sup>	S <sub>nf</sub>	$16\eta P/(\pi D^2)$
Power Density in the Far Field	1.0	mW/cm <sup>2</sup>	S <sub>ff</sub>	$gP/(4\pi R_{ff}^2)$
Power Density in the Transition Region	10.91	mW/cm <sup>2</sup>	S <sub>t</sub>	$S_{nf}*R_{nf}/R_t$
Power Density at Aperture Surface	39.8	mW/cm <sup>2</sup>	S <sub>surface</sub>	$4P/A$

## 1.2 Summary of Results

Region	Distance (m)	Calculated Power Density (mW/cm <sup>2</sup> )	Limit Controlled Environment ≤ 5 mW/cm <sup>2</sup>	Limit Uncontrolled Environment ≤ 1 mW/cm <sup>2</sup>
Near Field	9.3	10.91	exceeds limit	exceeds limit
Far Field	22.3	1.0	meets limit	meets limit

As summarized in the above table, the MCS 8200 antenna meets the FCC's MPE levels for controlled or uncontrolled environments in the far field region. The antenna does not meet the FCC's MPE levels for controlled or uncontrolled environments in the other regions defined above.

This antenna model, while designed for operation on larger commercial aircraft, will be installed on a building roof, protected by a locked access door. Since this unit will be used for testing hardware and software, it can be shut down altogether when personnel need access to the roof. Additionally, the exit hatchway to the roof will incorporate signage indicating the presence of RF energy.