Report on the Exposure Calculation of:

SRT Marine Systems
AIS Class B Transceiver, Model: VMS-100s

In accordance with RED EN 50665, FCC 47 CFR Part 2.1091 and ISED RSS-102

Prepared for: SRT Marine Systems plc
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ENGINEERING STATEMENT
The calculation of exposure for this product was found to be compliant at 49 cm with RED EN 50665, FCC 47 CFR Part 2.1091 and ISED RSS-102.

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EXECUTIVE SUMMARY
The calculation of exposure for this product was found to be compliant at 49 cm with RED EN 50665, FCC 47 CFR Part 2.1091 and ISED RSS-102.

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Contents

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	23 October 2019

Table 1

1.2 Introduction

Objective	To perform electromagnetic field exposure assessment to determine the equipment under test's (EUT's) compliance with the applied specifications.
Applicant	SRT Marine Systems plc
Manufacturer	SRT Marine Systems plc
Model Number(s)	VMS-100S
Hardware Version(s)	V3
Software Version(s)	15201.01.xx.xx
Specification/Issue/Date	• EN 50665:2017 Generic standard for assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz) • FCC 47 CFR Part 2 Subpart J 2.1091: 2018 • ISED Canada: Health Canada Safety Code 6:2015
Order Number Date	POR007580 06-June-2019
Related Document(s)	• EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz) • Directive 2013/35/EU on minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields). • European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz), Official Journal, L199, of 1999-7-30, p.59-70. • FCC 47 CFR Part 1 Subpart I 1.1310: 2018 • OET65:97 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields • IEEE C95.3:2002 IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields with Respect to Human Exposure to Such Fields, 100 kHz–300 GHz

- RSS-102 Issue 5 Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

1.3 Brief Summary of Results

The wireless device described within this report was compliant with the restrictions related to human exposure to electromagnetic fields for both general public and worker/occupational exposures.

The calculations shown in this report were made in accordance with the procedures specified in the applied test specification(s).

1.3.1 Configuration 1 - Single transmitters

Regional Requirement	RF Exposure Level at compliance boundary of 0.49 m							
	S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
	Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	0.03	N/A	3.53	61.00	0.0094	N/A	0.0118	0.2000
FCC	0.03	10.00	3.53	61.40	0.0094	0.1630	0.0118	N/A
CANADA	0.03	8.06	3.53	55.13	0.0094	0.1462	0.0118	N/A

Table 2 – Worker/Occupational Exposure Results (AIS)

The calculations show that the AIS complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Regional Requirement	RF Exposure Level at compliance boundary of 0.49 m							
	S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
	Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	0.03	2.00	3.53	28.00	0.0094	0.0730	0.0118	0.0920
FCC	0.03	2.00	3.53	27.50	0.0094	0.0730	0.0118	N/A
CANADA	0.03	1.29	3.53	22.06	0.0094	0.0585	0.0118	N/A

Table 3 – General Public Exposure Results (AIS)

The calculations show that the AIS complies with the general public exposure levels described in the listed specifications in Annex A at the point of investigation, 0.49 m.

Note 1: The manufacturers' declared compliance boundary distance of 0.2 m was less than that stated but has been increased due to the reasons stated in Section 2.4, to ensure the calculation is valid in the antenna field region.

Regional Requirement	RAT	RF Exposure Level at compliance boundary of 0.2 m							
		S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
		Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	WLAN 2.4 GHz	0.06	N/A	4.85	140.00	0.0129	N/A	0.0162	0.4500
EU	WLAN 5 GHz	0.05	N/A	4.49	140.00	0.0119	N/A	0.0150	0.4500
FCC	WLAN 2.4 GHz	0.06	50.00	4.85	N/A	0.0129	N/A	0.0162	N/A
FCC	WLAN 5 GHz	0.05	50.00	4.49	N/A	0.0119	N/A	0.0150	N/A
CANADA	WLAN 2.4 GHz	0.06	31.70	4.85	109.32	0.0129	0.2900	0.0162	N/A
CANADA	WLAN 5 GHz	0.05	46.46	4.49	132.34	0.0119	0.3511	0.0150	N/A

Table 4 – Worker/Occupational Exposure Results (WLAN)

The calculations show that the WLAN complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.2 m.

Regional Requirement	RAT	RF Exposure Level at compliance boundary of 0.2 m							
		S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
		Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	WLAN 2.4 GHz	0.06	10.00	4.85	61.00	0.0129	0.1600	0.0162	0.2000
EU	WLAN 5 GHz	0.05	10.00	4.49	61.00	0.0119	0.1600	0.0150	0.2000
FCC	WLAN 2.4 GHz	0.06	10.00	4.85	N/A	0.0129	N/A	0.0162	N/A
FCC	WLAN 5 GHz	0.05	10.00	4.49	N/A	0.0119	N/A	0.0150	N/A
CANADA	WLAN 2.4 GHz	0.06	5.37	4.85	44.97	0.0129	0.1193	0.0162	N/A
CANADA	WLAN 5 GHz	0.05	9.05	4.49	58.40	0.0119	0.1549	0.0150	N/A

Table 5 – General Public Exposure Results (WLAN)

The calculations show that the WLAN complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.2 m.

1.3.1 Configuration 2 - Multiple transmitters

Regional Requirement	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
	S Power Density	E Field	H Field	B Field
	Summation for simultaneous exposure; value to be <1			
EU	N/A	0.0037	N/A	0.0039
FCC	0.0037	0.0033	0.0033	N/A
CANADA	0.0046	0.0046	0.0046	N/A

Table 6 – Worker/Occupational Exposure Results

The calculations show that the EUT complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Regional Requirement	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
	S Power Density	E Field	H Field	B Field
	Summation for simultaneous exposure; value to be <1			
EU	0.0185	0.0179	0.0185	0.0184
FCC	0.0185	0.0165	0.0165	N/A
CANADA	0.0285	0.0285	0.0285	N/A

Table 7 – General Public Exposure Results

The calculations show that the EUT complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

1.4 Product Information

1.4.1 Technical Description

Marine Automatic Identification System (AIS) Transponder, Class B supporting SOTDMA.

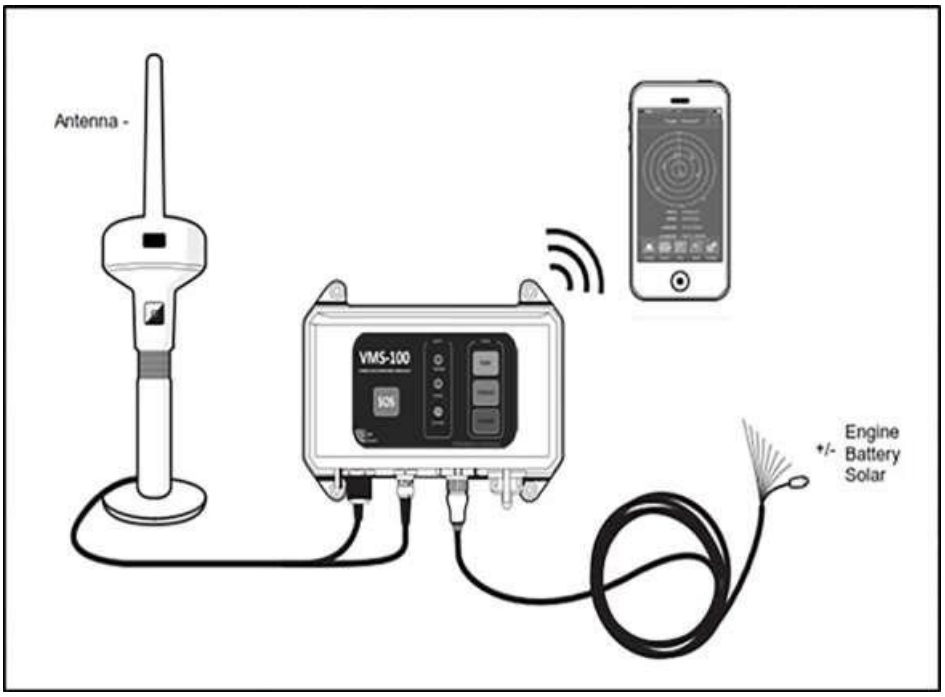

Figure 1 – VMS-100 System

1.4.2 Transmitter Description

The following radio access technologies and frequency bands are supported by the equipment under test.

Radio Access Technology	Antenna Port	Frequency Band	Minimum Frequency	Output Power	Duty Cycle
		MHz	MHz	dBm	%
AIS	1	156.025-162.025	156.025	37.0	1
WLAN 2.4 GHz	2	2400-2500	2412	14.5	100
WLAN 5 GHz	2	5180-5825	5180	13.8	100

Table 8 – Transmitter Description

1.4.3 Antenna Description

The following antennas are supported by the equipment under test.

Antenna No	Radio Access Technology	Antenna Model	Gain	Antenna length	Minimum Separation Distance
			dBi	cm	cm
1	AIS	MD70A	3	150	20
2	WLAN	ODIN-W2 (internal)	0.5	1.4	20

Table 9 – Antenna description

1.4.4 Equipment Configuration

Simultaneous operation of AIS 156 – 162 MHz, WLAN 2.4 GHz and 5 GHz transmitters.

2 Assessment Details

2.1 Assessment Method

The assessment method is by calculation of the power density S, electric field strength E, magnetic field strength H or magnetic flux density B.

The calculation uses the spherical model applicable under far field conditions.

$$S = E \times H = \frac{E^2}{\eta} = H^2 \times \eta = \frac{P \times G_i}{4 \times \pi \times r^2}$$

Where:
η - Impedance of free space (377 ohm in far field)
P – Transmitter power W
G_i – Antenna gain ratio relative to isotropic
R – Separation distance m

The magnetic flux density is related to the magnetic field strength by a constant:

$$B = \mu_o \times H$$

Where:
µo – Permeability of free space 4xπ E-7 H/m

Where additional calculations are required by the regional specifications these are detailed below.

The far field region boundary depends on the frequency and wavelength and also on the antenna dimension. The boundary of the far field region is calculated below to demonstrate the validity of using the spherical model.

2.2 Individual Antenna Port Exposure Results

2.2.1 Calculation of Exposure at Specified Separation Distance

The frequencies shown in the tables below have been chosen based on the lowest possible frequency that the EUT can transmit. A full list of the regional requirements is shown in Annex A.

Regional Requirement	Antenna Port	RAT	Frequency (MHz)	RF Exposure Level at compliance boundary of 0.49 m							
				S Power Density (W/m²)		E Field (V/m)		H Field (A/m)		B Field (µT)	
				Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	1	AIS	156.025	0.03	N/A	3.53	61.00	0.0094	N/A	0.0118	0.2000
FCC	1	AIS	156.025	0.03	10.00	3.53	61.40	0.0094	0.1630	0.0118	N/A
CANADA	1	AIS	156.025	0.03	8.06	3.53	55.13	0.0094	0.1462	0.0118	N/A

Table 10 – Worker/Occupational Individual Transmitter Result (AIS)

The calculations show that the AIS complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Note 1: The manufacturers' declared compliance boundary distance of 0.2 m was less than that stated but has been increased due to the reasons stated in Section 2.4, to ensure the calculation is valid in the antenna field region.

Regional Requirement	Antenna Port	RAT	Frequency (MHz)	RF Exposure Level at compliance boundary of 0.2 m							
				S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
				Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	2	WLAN 2.4 GHz	2412	0.06	N/A	4.85	140.00	0.0129	N/A	0.0162	0.4500
EU	2	WLAN 5 GHz	5180	0.05	N/A	4.49	140.00	0.0119	N/A	0.0150	0.4500
FCC	2	WLAN 2.4 GHz	2412	0.06	50.00	4.85	N/A	0.0129	N/A	0.0162	N/A
FCC	2	WLAN 5 GHz	5180	0.05	50.00	4.49	N/A	0.0119	N/A	0.0150	N/A
CANADA	2	WLAN 2.4 GHz	2412	0.06	31.70	4.85	109.32	0.0129	0.2900	0.0162	N/A
CANADA	2	WLAN 5 GHz	5180	0.05	46.46	4.49	132.34	0.0119	0.3511	0.0150	N/A

Table 11 – Worker/Occupational Individual Transmitter Result (WLAN)

The calculations show that the WLAN complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.2 m.

Regional Requirement	Antenna Port	RAT	Frequency (MHz)	RF Exposure Level at compliance boundary of 0.49 m							
				S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
				Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	1	AIS	156.025	0.03	2.00	3.53	28.00	0.0094	0.0730	0.0118	0.0920
FCC	1	AIS	156.025	0.03	2.00	3.53	27.50	0.0094	0.0730	0.0118	N/A
CANADA	1	AIS	156.025	0.03	1.29	3.53	22.06	0.0094	0.0585	0.0118	N/A

Table 12 – General Public Individual Transmitter Result (AIS)

The calculations show that the AIS complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Note 1: The manufacturers' declared compliance boundary distance of 0.2 m was less than that stated but has been increased due to the reasons stated in Section 2.4, to ensure the calculation is valid in the antenna field region.

Regional Requirement	Antenna Port	RAT	Frequency (MHz)	RF Exposure Level at compliance boundary of 0.2 m							
				S Power Density (W/m^2)		E Field (V/m)		H Field (A/m)		B Field (µT)	
				Result	Limit	Result	Limit	Result	Limit	Result	Limit
EU	2	WLAN 2.4 GHz	2412	0.06	10.00	4.85	61.00	0.0129	0.1600	0.0162	0.2000
EU	2	WLAN 5 GHz	5180	0.05	10.00	4.49	61.00	0.0119	0.1600	0.0150	0.2000
FCC	2	WLAN 2.4 GHz	2412	0.06	10.00	4.85	N/A	0.0129	N/A	0.0162	N/A
FCC	2	WLAN 5 GHz	5180	0.05	10.00	4.49	N/A	0.0119	N/A	0.0150	N/A
CANADA	2	WLAN 2.4 GHz	2412	0.06	5.37	4.85	44.97	0.0129	0.1193	0.0162	N/A
CANADA	2	WLAN 5 GHz	5180	0.05	9.05	4.49	58.40	0.0119	0.1549	0.0150	N/A

Table 13 – General Public Individual Transmitter Result (WLAN)

The calculations show that the WLAN complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.2 m.

2.3 Combined Antenna Port RF Exposure Results

As the frequency of operation for each transmitter is not the same, in order to evaluate compliance with the limit which is dependent on frequency, the fractional exposure value is calculated: The calculated S power density is divided by the limit to get a fractional exposure value. The calculated E and H fields are divided by the limit and squared to get a fractional exposure value. The summation of the fractional RF exposure results for each transmitter provides the combined result. Any values less than one are compliant with the limit.

As the compliance boundaries established in section 2.2 for AIS is 0.49 m and for WLAN is 0.2 m, the combined exposure is calculated at the larger compliance boundary of 0.49 m as this represents the closest point of approach for AIS.

EU EN 62311 specifies the method of summation in clause 8.3 with results as follows:

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	N/A	0.0034	N/A	0.0035
2	WLAN 2.4 GHz	2412	N/A	0.0002	N/A	0.0002
2	WLAN 5 GHz	5180	N/A	0.0002	N/A	0.0002
		Summation	N/A	0.0037	N/A	0.0039

Table 14 – EU Worker/Occupational Combined Exposure

The calculations show that the EUT complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	0.0165	0.0159	0.0165	0.0164
2	WLAN 2.4 GHz	2412	0.0010	0.0011	0.0011	0.0011
2	WLAN 5 GHz	5180	0.0009	0.0009	0.0009	0.0009
		Summation	0.0185	0.0179	0.0185	0.0184

Table 15 – EU General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

FCC OET 65 specifies the method of summation in clause; Multiple-Transmitter Sites and Complex Environments; with results as follows:

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	0.0033	0.0033	0.0033	N/A
2	WLAN 2.4 GHz	2412	0.0002	N/A	N/A	N/A
2	WLAN 5 GHz	5180	0.0002	N/A	N/A	N/A
		Summation	0.0037	0.0033	0.0033	N/A

Table 16 – FCC Worker/Occupational Combined Exposure

The calculations show that the EUT complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	0.0165	0.0165	0.0165	N/A
2	WLAN 2.4 GHz	2412	0.0010	N/A	N/A	N/A
2	WLAN 5 GHz	5180	0.0009	N/A	N/A	N/A
		Summation	0.0185	0.0165	0.0165	N/A

Table 17 – FCC General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

CANADA Health Canada Safety Code 6 specifies the method of summation in clause 2.2.1 Note 6 with results as follows:

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	0.0041	0.0041	0.0041	N/A
2	WLAN 2.4 GHz	2412	0.0003	0.0003	0.0003	N/A
2	WLAN 5 GHz	5180	0.0002	0.0002	0.0002	N/A
		Summation	0.0046	0.0046	0.0046	N/A

Table 18 – CANADA Worker/Occupational Combined Exposure

The calculations show that the EUT complies with the worker/occupational exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

Antenna Port	RAT	Frequency (MHz)	Calculated RF exposure level at compliance boundary of 0.49 m as a fraction of the limit			
			S Power Density	E Field	H Field	B Field
			Summation for simultaneous exposure; value to be <1			
1	AIS	156.025	0.0256	0.0256	0.0256	N/A
2	WLAN 2.4 GHz	2412	0.0019	0.0019	0.0019	N/A
2	WLAN 5 GHz	5180	0.0010	0.0010	0.0010	N/A
		Summation	0.0285	0.0285	0.0285	N/A

Table 19 – CANADA General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in in the listed specifications in Annex A at the point of investigation, 0.49 m.

2.4 Far Field Region Boundary Results

The far field region boundary calculation result is shown in Tables 21 and 22.

Near Field / Far Field Boundary (Ref: IEEE C95.3 Annex B.2, EN 62311 Annex A, Technical Guide for Interpretation and Compliance Assessment of Health Canada's Radiofrequency Exposure Guidelines 7.1, AS/NZS 2772.2 Appendix B)			
RAT Name	Frequency MHz	Reactive Near Field Boundary (Wave Impedance Dependent)	Far Field Boundary (Antennas on axis)
		λ/4 (m)	$2D^2/\lambda$ (m)
AIS	156.025	0.4807	2.3404
WLAN 2.4 GHz	2412	0.0311	0.0032
WLAN 5 GHz	5180	0.0145	0.0068

Table 20 – Far Field Boundary

The table below shows the maximum calculated near field / far field region boundaries for AIS and WLAN. Locations within the reactive near field region are a potential under estimate of the exposure using the approach described in section 2.1.

Therefore to avoid the need for a SAR assessment for AIS, it is recommended that the compliance boundary is increased to 0.49 m as shown in the Table 21 to bring it within the radiating near field where the approach described in section 2.1 is an overestimate of the exposure and therefore a conservative assessment.

Field Region	Reactive Near Field Region	Radiating Near Field Region	Far Field Region
Maximum Boundary	0.4807 m	0.4807 – 2.3404 m	2.3404 m
Validity of Regions	Spherical model potential under-estimate: SAR assessment required	Spherical model over-estimate and conservative	Spherical model valid
Compliance Boundary Location	(0.2 m not recommended)	0.49 m recommended	N/A

Table 21 – Assessment Method Validity (AIS)

The compliance boundary of 0.2 m is in the far field region for the WLAN as shown in Table 22 and therefore, the approach described in section 2.1 is valid.

Field Region	Reactive Near Field Region	Radiating Near Field Region	Far Field Region
Maximum Boundary	0.0311 m	N/A	0.0311 m
Validity of Regions	Spherical model potential under-estimate: SAR assessment required	Spherical model over-estimate and conservative	Spherical model valid
Compliance Boundary Location	N/A	N/A	0.2 m

Table 22 – Assessment Method Validity (WLAN)

2.5 Uncertainty

The basic computation formulas presented in section 2.1 are conservative formulas for the estimation of RF field strength or power density. No uncertainty estimations are required when using these formulas but there is clear guidance on where and when these formulas are applicable.

For the estimate of S, E or H to be conservative, the transmitter power P and antenna gain G_i values shall be the upper bounds of uncertainty therefore maximum values are used.

The spherical formula is valid under far field conditions which are established in section 2.4.

ANNEX A

REGIONAL REQUIREMENTS

Frequency Range (MHz)	Power Density (W/m^2)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m) (Converted from µT)	Magnetic Flux Density (µT)
0.1 - 1	-	610	N/A	2/f
1 - 10	-	610/f	N/A	2/f
10 - 400	-	61	N/A	0.2
400 - 2000	-	3*f^0.5	N/A	1E-2*f^0.5
2000 - 6000	-	140	N/A	0.45
6000 -300000	50	140	N/A	0.45

Table A.1 – EU: Action levels in Directive 2013/35/EU Annex III Table B1 Worker/Occupational Limits

Frequency Range (MHz)	Power Density (W/m^2)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Magnetic Flux Density (µT)
0.003 - 0.15	-	87	5	6.25
0.15 - 1	-	87	0.73/f	0.92/f
1 - 10	-	87/f^0.5	0.73/f	0.92/f
10 - 400	2	28	0.073	0.092
400 - 2000	f/200	1.375*f^0.5	0.0037*f^0.5	0.0046*f^0.5
2000 - 300000	10	61	0.16	0.2

Table A.2 – EU: Council Recommendation 1999/519/EC Annex II Table 1 General Public Limits

Frequency Range (MHz)	Power Density (mW/cm^2) Note 1	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0 - 0.3	-	-	-
0.3 - 3	100	614	1.63
3 - 30	900/f^2	1842/f	4.89/f
30 - 300	1	61.4	0.163
300 - 1500	f/300	-	-
1500 - 100000	5	-	-

Table A.3 – CFR 47 Pt1.1310 (2019) Worker/Occupational Limits

Frequency Range (MHz)	Power Density (mW/cm^2) Note 1	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0 - 0.3	-	-	-
0.3 - 3	100	614	1.63
3 - 30	180/f^2	824/f	2.19/f
30 - 300	0.2	27.5	0.073
300 - 1500	f/1500	-	-
1500 - 100000	1	-	-

Table A.4 – CFR 47 Pt1.1310 (2019) General Public Limits

Note 1: The calculations and limits presented in this report for power density are in units of W/m^2. The conversion factor is; 1 mW/cm^2 = 10 W/m^2.

Frequency Range (MHz)	Power Density (W/m^2)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
10 - 20	10	61.4	0.163
20 - 48	44.72/f^0.5	129.8/f^0.25	0.3444/f^0.25
48 - 100	6.455	49.33	0.1309
100 - 6000	0.6455*f^0.5	15.60*f^0.25	0.04138*f^0.25
6000 - 150000	50	137	0.364

Table A.5 – Health Canada Safety Code 6 Worker/Occupational Limits

Frequency Range (MHz)	Power Density (W/m^2)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
10 - 20	2	27.46	0.0728
20 - 48	8.944/f^0.5	58.07/f^0.25	0.1540/f^0.25
48 - 300	1.291	22.06	0.05852
300 - 6000	0.02619*f^0.6834	3.142*f^0.3417	0.008335*f^0.3417
6000 - 15000	10	61.4	0.163

Table A.6 – Health Canada Safety Code 6 General Public Limits