

Report on the Exposure Calculation of:

Nokia Solutions and Networks
AirScale and Flexi Multiradio Base Station
Multiband Products, (Bands 1, 2, 3, 5, 8, 12, 13,
14, 20, 25, 28, 29, 66, 66a, 70 and 71)

In accordance with EU, FCC, ISSED, AUS, NZ
exposure requirements

Prepared for: Nokia Solutions and Networks
Kaapelitie 4
Oulu
Finland



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Ryan Henley	Sales Manager RF and Telecoms	Authorised Signatory	11 July 2019

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ENGINEERING STATEMENT

The calculations shown in this report were made in accordance with the procedures described in EU, FCC, ISSED, AUS & NZ exposure requirements.

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Pete Dorey	Principal Consultant	Calculation	11 July 2019

FCC Accreditation

90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation

IC2932B-1 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

The calculation of exposure for this product was found to be compliant at the distances stated in this report.

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Registered number: SC215164

TÜV SÜD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuv-sud.co.uk

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom



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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	11 July 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	Nokia Solutions and Networks
Manufacturer	Nokia Solutions and Networks
Model Number(s)	Nokia AirScale and Flexi Multiradio Base Station Multiband Products, (Bands 1, 2, 3, 5, 8, 12, 13, 14, 20, 25, 28, 29, 66, 66a, 70 and 71)
Specification/Issue/Date	• EN 50385:2017 Product standard to demonstrate the compliance of base station equipment with radiofrequency electromagnetic field exposure limits (110 MHz - 100 GHz), when placed on the market • FCC 47 CFR Part 1.1310: 2018 • ISED Canada: Health Canada Safety Code 6:2015 • Australia: ARPANSA Radiation Protection Series No.3:2002 • NZS 2772.1:1999 Radiofrequency fields, Maximum exposure levels, 3 kHz to 300 GHz
Related Document(s)	• EN 62232:2017 Determination of RF field strength, power density and SAR in the vicinity of radiocommunication base stations for the purpose of evaluating human exposure • 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. • 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)
- AS/NZS 2772.2:2016 Radiofrequency fields, Part 2: principles and methods of measurement and computation, 3 kHz to 300 GHz



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 at the compliance distances calculated.

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

1.3.1 Compliance Boundary

Exposure Requirement	Radio Configuration	Radio Access Technology	Calculated Compliance Boundary (m) (rounded up to nearest 0.1 m)	
			Worker/Occupational	General Public
EU	1	LTE 3 bands, (B8/B20/B28)	6.2	13.4
EU	2	LTE 2 bands, (B1/B3)	5.1	11.3
EU	3	LTE 2 bands, (B66/B25)	6.0	13.3
EU	4	LTE 2 bands, (B66a/B25)	4.3	9.4
EU	5	LTE 2 bands, (B5/B13)	7.0	15.2
EU	6	LTE 2 bands, (B1/B3)	5.9	13.0
EU	7	LTE 2 bands, (B12/B14)	7.4	16.2
EU	8	LTE 2 bands, (B12/B71)	6.7	14.6
EU	9	LTE 2 bands, (B5/B13)	5.0	10.8
EU	10	LTE 2 bands, (B2/B66a)	6.0	13.3
EU	11	LTE 1 band, (B28)	7.4	16.0
EU	12	LTE 2 bands, (B29/B70)	5.3	11.5
EU	13	LTE 2 bands, (B25/B66)	7.4	16.2
EU	14	LTE 3 bands, (B12/B14/B29)	8.1	17.7
EU	15	LTE 2 bands, (B5/B28)	7.1	15.5
EU	16	LTE 2 bands, (B5/B29)	6.6	14.3
EU	17	LTE 2 bands, (B13/B71)	6.5	14.2
EU	18	LTE 3 bands, (B5/B8/B28)	6.2	13.4
EU	18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	6.0	13.0
EU	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	5.9	12.9
EU	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	6.4	13.9
EU	19	LTE 3 bands, (B8/B20/B28)	6.6	14.5
EU	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	6.4	13.9
EU	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	6.7	14.7
EU	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	6.9	15.0
FCC	1	LTE 3 bands, (B8/B20/B28)	5.3	11.6



Exposure Requirement	Radio Configuration	Radio Access Technology	Calculated Compliance Boundary (m) (rounded up to nearest 0.1 m)	
			Worker/Occupational	General Public
FCC	2	LTE 2 bands, (B1/B3)	4.9	10.9
FCC	3	LTE 2 bands, (B66/B25)	5.8	13.0
FCC	4	LTE 2 bands, (B66a/B25)	4.2	9.2
FCC	5	LTE 2 bands, (B5/B13)	5.9	13.2
FCC	6	LTE 2 bands, (B1/B3)	5.7	12.6
FCC	7	LTE 2 bands, (B12/B14)	6.3	14.0
FCC	8	LTE 2 bands, (B12/B71)	5.7	12.7
FCC	9	LTE 2 bands, (B5/B13)	4.2	9.3
FCC	10	LTE 2 bands, (B2/B66a)	5.8	13.0
FCC	11	LTE 1 band, (B28)	6.2	13.9
FCC	12	LTE 2 bands, (B29/B70)	4.8	10.7
FCC	13	LTE 2 bands, (B25/B66)	7.2	15.9
FCC	14	LTE 3 bands, (B12/B14/B29)	6.9	15.3
FCC	15	LTE 2 bands, (B5/B28)	6.0	13.4
FCC	16	LTE 2 bands, (B5/B29)	5.6	12.4
FCC	17	LTE 2 bands, (B13/B71)	5.5	12.3
FCC	18	LTE 3 bands, (B5/B8/B28)	5.2	11.6
FCC	18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	5.1	11.2
FCC	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	5.0	11.2
FCC	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	5.4	12.0
FCC	19	LTE 3 bands, (B8/B20/B28)	5.6	12.5
FCC	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	5.4	12.0
FCC	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	5.7	12.7
FCC	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	5.8	13.0
CANADA	1	LTE 3 bands, (B8/B20/B28)	6.4	16.9
CANADA	2	LTE 2 bands, (B1/B3)	6.5	16.0
CANADA	3	LTE 2 bands, (B66/B25)	7.7	18.9
CANADA	4	LTE 2 bands, (B66a/B25)	5.4	13.4
CANADA	5	LTE 2 bands, (B5/B13)	7.2	19.1
CANADA	6	LTE 2 bands, (B1/B3)	7.5	18.4
CANADA	7	LTE 2 bands, (B12/B14)	7.5	20.1
CANADA	8	LTE 2 bands, (B12/B71)	6.6	17.9
CANADA	9	LTE 2 bands, (B5/B13)	5.1	13.6
CANADA	10	LTE 2 bands, (B2/B66a)	7.7	18.9



Exposure Requirement	Radio Configuration	Radio Access Technology	Calculated Compliance Boundary (m) (rounded up to nearest 0.1 m)	
			Worker/Occupational	General Public
CANADA	11	LTE 1 band, (B28)	7.4	20.0
CANADA	12	LTE 2 bands, (B29/B70)	6.0	15.4
CANADA	13	LTE 2 bands, (B25/B66)	9.4	23.2
CANADA	14	LTE 3 bands, (B12/B14/B29)	8.1	21.9
CANADA	15	LTE 2 bands, (B5/B28)	7.3	19.5
CANADA	16	LTE 2 bands, (B5/B29)	6.5	17.7
CANADA	17	LTE 2 bands, (B13/B71)	6.4	17.4
CANADA	18	LTE 3 bands, (B5/B8/B28)	6.4	16.9
CANADA	18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	6.2	16.5
CANADA	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	6.3	16.6
CANADA	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	6.4	17.3
CANADA	19	LTE 3 bands, (B8/B20/B28)	6.9	18.3
CANADA	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	6.8	17.9
CANADA	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	6.9	18.4
CANADA	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	7.0	18.7
AUSTRALIA	1	LTE 3 bands, (B8/B20/B28)	6.0	13.4
AUSTRALIA	2	LTE 2 bands, (B1/B3)	4.9	11.2
AUSTRALIA	3	LTE 2 bands, (B66/B25)	5.9	13.2
AUSTRALIA	4	LTE 2 bands, (B66a/B25)	4.2	9.3
AUSTRALIA	5	LTE 2 bands, (B5/B13)	6.8	15.2
AUSTRALIA	6	LTE 2 bands, (B1/B3)	5.8	12.9
AUSTRALIA	7	LTE 2 bands, (B12/B14)	7.3	16.2
AUSTRALIA	8	LTE 2 bands, (B12/B71)	6.6	14.6
AUSTRALIA	9	LTE 2 bands, (B5/B13)	4.8	10.8
AUSTRALIA	10	LTE 2 bands, (B2/B66a)	5.9	13.2
AUSTRALIA	11	LTE 1 band, (B28)	7.2	16.1
AUSTRALIA	12	LTE 2 bands, (B29/B70)	5.2	11.5
AUSTRALIA	13	LTE 2 bands, (B25/B66)	7.2	16.1
AUSTRALIA	14	LTE 3 bands, (B12/B14/B29)	7.9	17.7
AUSTRALIA	15	LTE 2 bands, (B5/B28)	7.0	15.5
AUSTRALIA	16	LTE 2 bands, (B5/B29)	6.4	14.3
AUSTRALIA	17	LTE 2 bands, (B13/B71)	6.4	14.3
AUSTRALIA	18	LTE 3 bands, (B5/B8/B28)	6.0	13.4
AUSTRALIA	18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	5.8	13.0



Exposure Requirement	Radio Configuration	Radio Access Technology	Calculated Compliance Boundary (m) (rounded up to nearest 0.1 m)	
			Worker/Occupational	General Public
AUSTRALIA	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	5.8	12.9
AUSTRALIA	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	6.2	13.9
AUSTRALIA	19	LTE 3 bands, (B8/B20/B28)	6.5	14.5
AUSTRALIA	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	6.2	13.9
AUSTRALIA	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	6.6	14.7
AUSTRALIA	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	6.7	15.0
NEW ZEALAND	1	LTE 3 bands, (B8/B20/B28)	6.2	13.4
NEW ZEALAND	2	LTE 2 bands, (B1/B3)	5.1	11.2
NEW ZEALAND	3	LTE 2 bands, (B66/B25)	6.0	13.2
NEW ZEALAND	4	LTE 2 bands, (B66a/B25)	4.2	9.3
NEW ZEALAND	5	LTE 2 bands, (B5/B13)	7.0	15.2
NEW ZEALAND	6	LTE 2 bands, (B1/B3)	5.9	12.9
NEW ZEALAND	7	LTE 2 bands, (B12/B14)	7.4	16.2
NEW ZEALAND	8	LTE 2 bands, (B12/B71)	6.7	14.6
NEW ZEALAND	9	LTE 2 bands, (B5/B13)	5.0	10.8
NEW ZEALAND	10	LTE 2 bands, (B2/B66a)	6.0	13.2
NEW ZEALAND	11	LTE 1 band, (B28)	7.4	16.0
NEW ZEALAND	12	LTE 2 bands, (B29/B70)	5.3	11.5
NEW ZEALAND	13	LTE 2 bands, (B25/B66)	7.4	16.1
NEW ZEALAND	14	LTE 3 bands, (B12/B14/B29)	8.1	17.7
NEW ZEALAND	15	LTE 2 bands, (B5/B28)	7.1	15.5
NEW ZEALAND	16	LTE 2 bands, (B5/B29)	6.6	14.3
NEW ZEALAND	17	LTE 2 bands, (B13/B71)	6.5	14.2
NEW ZEALAND	18	LTE 3 bands, (B5/B8/B28)	6.2	13.4
NEW	18a	LTE 3 bands, (B5/B8/B28) –	6.0	13



Exposure Requirement	Radio Configuration	Radio Access Technology	Calculated Compliance Boundary (m) (rounded up to nearest 0.1 m)	
			Worker/Occupational	General Public
ZEALAND		Single B5 band		
NEW ZEALAND	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	5.9	12.9
NEW ZEALAND	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	6.4	13.9
NEW ZEALAND	19	LTE 3 bands, (B8/B20/B28)	6.6	14.5
NEW ZEALAND	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	6.4	13.9
NEW ZEALAND	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	6.7	14.7
NEW ZEALAND	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	6.9	15.0

Table 2 – Compliance Boundary Calculation Results

1.4 Product Information

1.4.1 Technical Description

Nokia AirScale and Flexi Multiradio Base Station Multiband Products, (Bands 1, 2, 3, 5, 8, 12, 13, 14, 20, 25, 28, 29, 66, 66a, 70 and 71). A full technical description can be found in the manufacturer's documentation.

1.4.2 Transmitter Description

The following radio access technologies and frequency bands are supported by the equipment under test. As a number of different antennas may be used in each band, the antenna listed is selected from Table 4 as the one with the highest gain to give worst case result.

Radio Configuration No	Radio Access Technology	Antenna	Frequency Band	Minimum Frequency	Output Power	Duty Cycle
			MHz	MHz	dBm	%
1	LTE 3 bands, 4 Tx Antenna Connectors (B8/B20/B28)	15	Band 8 (925-960)	925	50.79	100
		23 / 28	Band 20 (791-821) / Band 28 (758-803)	758	50.79	100
2	LTE 2 bands, 2 TX antenna connectors (B1/B3)	4	Band 1 (2110-2170)	2110	50.79	100
		12	Band 3 (1805-1880)	1805	50.79	100
3	LTE 2 bands, 4 TX antenna connectors (B66/B25)	27	Band 25 (1930-1995)	1930	52.04	100
		35	Band 66 (2110-2200)	2110	52.04	100
4	LTE 2 bands, 4 TX antenna connectors (B66a/B25)	8	Band 2 (1930-1990)	1930	49.03	100
		39	Band 66a (2110-2180)	2110	49.03	100
5	LTE 2 bands, 4 TX antenna connectors (B5/B13)	13	Band 5 (869-894)	869	52.04	100
		18	Band 13 (746-756)	746	52.04	100
6	LTE 2 bands, 4 TX antenna connectors (B1/B3)	4	Band 1 (2110-2170)	2110	52.04	100
		12	Band 3 (1805-1880)	1805	52.04	100
7	LTE 2 bands, 4 TX antenna	16	Band 12 (729-746)	729	52.04	100



Radio Configuration No	Radio Access Technology	Antenna	Frequency Band	Minimum Frequency	Output Power	Duty Cycle
			MHz	MHz	dBm	%
	connectors (B12/B14)	20	Band 14 (758-768)	758	52.04	100
8	LTE 2 bands, 4 TX antenna connectors (B12/B71)	16	Band 12 (729-746)	729	50.79	100
		44	Band 71 (617-652)	617	50.79	100
9	LTE 2 bands, 4 TX antenna connectors (B5/B13)	13	Band 5 (869-894)	869	49.03	100
		18	Band 13 (746-756)	746	49.03	100
10	LTE 2 bands, 8 TX antenna connectors (four connectors per band) (B2/B66a)	8	Band 2 (1930-1990)	1930	52.04	100
		39	Band 66a (2110-2180)	2110	52.04	100
11	LTE 1 band, 4 TX antenna connectors (B28)	28	Band 28 (758-803)	758	55.05	100
12	LTE 2 bands, 4TX antenna connectors (two dedicated connectors per band) (B29/B70)	31	Band 29 (717-728)	717	49.03	100
		43	Band 70 (1995-2020)	1995	50.79	100
13	LTE 2 bands, 4TX antenna connectors (two dedicated connectors per band) (B25/B66)	27	Band 25 (1930-1995)	1930	55.05	100
		35	Band 66 (2110-2200)	2110	52.04	100
14	LTE 3 bands, 4 Tx Antenna Connectors (B12/B14/B29)	16 / 20 / 31	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717	53.22	100
		16	Band 12 (729-746) / Band 14 (758-768) /	729	52.04	100
15	LTE 2 bands, 4 Tx Antenna connectors (B5/B28)	13	Band 5 (869-894)	869	52.04	100
		28	Band 28 (758-803)	758	52.04	100
16	LTE 2 bands, 4 Tx Antenna connectors (B5/B29)	13 / 31	Band 5 (869-894) / Band 29 (717-728)	717	52.04	100
		31	Band 29 (717-728)	717	49.03	100
17	LTE 2 bands, 4 Tx Antenna connectors (B13/B71)	18	Band 13 (746-756)	746	50.79	100
		44	Band 71 (617-652)	617	50.79	100
18	LTE 3 bands, 2 Tx Antenna Connectors (B5/B8/B28)	13 / 28	Band 5 (869-894) / Band 28 (758-803)	758	50.79	100
		15	Band 8 (925-960)	925	50.79	100
18a	LTE 3 bands, 2 Tx Antenna Connectors (B5/B8/B28) – Single B5 band	13	Band 5 (869-894)	869	53.80	100
18b	LTE 3 bands, 2 Tx Antenna Connectors (B5/B8/B28) – Single B8 band	15	Band 8 (925-960)	925	53.80	100
18c	LTE 3 bands, 2 Tx Antenna Connectors (B5/B8/B28) – Single B28 band	28	Band 28 (758-803)	758	53.80	100
19	LTE 3 bands, 2 Tx Antenna Connectors (B8/B20/B28)	15	Band 8 (925-960)	925	51.46	100
		23 / 28	Band 20 (791-821) / Band 28 (758-803)	758	51.46	100
19a	LTE 3 bands, 2 Tx Antenna Connectors (B8/B20/B28) – Single B8 band	15	Band 8 (925-960)	925	54.47	100
19b	LTE 3 bands, 2 Tx Antenna Connectors (B8/B20/B28) – Single B20 band	23	Band 20 (791-821)	791	54.47	100
19c	LTE 3 bands, 2 Tx Antenna Connectors (B8/B20/B28) – Single B28 band	28	Band 28 (758-803)	758	54.47	100

Table 3 – Transmitter Description



1.4.3 Antenna Description

The following antennas are supported by the equipment under test.

Antenna No	Radio Access Technology	Frequency band (MHz)	Antenna Model	Gain	Antenna length
				dBi	cm
1	LTE Band 1	2110-2170	80011867 (Y1)	17.6±0.4 =18.0	149.90
2			80011867 (Y2)	17.9±0.3 =18.2	149.90
3			84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
4			80010621v02	18.2	145.20
5	LTE Band 2	1930-1990	80011867 (Y1)	17.9±0.3 =18.2	149.90
6			80011867 (Y2)	17.9±0.3 =18.2	149.90
7			84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
8			80010621v02	18.2	145.20
9	LTE Band 3	1805-1880	80011867 (Y1)	17.1±0.5 =17.6	149.90
10			80011867 (Y2)	17.3±0.3 =17.6	149.90
11			84010564 (Y1, Y2)	13.1±0.4 =13.5	61.00
12			80010621v02	17.6	145.20
13	LTE Band 5	869-894	80010901 (R1, R2)	15.6±0.2 =15.8	199.90
14	LTE Band 8	925-960	80011867 (R2)	14.8±0.4 =15.2	149.90
15			80010901 (R1, R2)	15.8±0.2 =16.0	199.90
16	LTE Band 12	729-746	FF-65C-R1	15.3 ±0.5 =15.8	243.70
17			80011867 (R1, R2)	14.0±0.4 =14.4	149.90
18	LTE Band 13	746-756	80010901 (R1, R2)	14.8±0.6 =15.4	199.90
19			80011867 (R1, R2)	14.0±0.4 =14.4	149.90
20	LTE Band 14	758-768	FF-65C-R1	15.3 ±0.5 =15.8	243.70
21			80011867 (R1, R2)	14.0±0.4 =14.4	149.90
22			80010901 (R1, R2)	14.8±0.6 =15.4	199.90
23	LTE Band 20	791-821	80010901 (R1, R2)	15.4±0.4 =15.8	199.90
24	LTE Band 25	1930-1995	80011867 (Y1)	17.6±0.4 =18.0	149.90
25			80011867 (Y2)	17.9±0.3 =18.2	149.90
26			84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
27			80010621v02	18.2	145.20
28	LTE Band 28	758-803	FF-65C-R1	15.3 ±0.5 =15.8	243.70
29			80011867 (R1, R2)	14.0±0.4 =14.4	149.90
30			80010901 (R1, R2)	14.8±0.6 =15.4	199.90
31	LTE Band 29	717-728	FF-65C-R1	15.3 ±0.5 =15.8	243.70
32			80011867 (R1, R2)	14.0±0.4 =14.4	149.90
33			80010901 (R1, R2)	14.8±0.6 =15.4	199.90
34	LTE Band 66	2110-2200	84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
35			80010621v02	18.2	145.20



Antenna No	Radio Access Technology	Frequency band (MHz)	Antenna Model	Gain	Antenna length
				dBi	cm
36	LTE Band 66a	2110-2180	80011867 (Y1)	17.6±0.4 =18.0	149.90
37			80011867 (Y2)	17.9±0.3 =18.2	149.90
38			84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
39			80010621v02	18.2	145.20
40	LTE Band 70	1995-2020	80011867 (Y1)	17.6±0.4 =18.0	149.90
41			80011867 (Y2)	17.9±0.3 =18.2	149.90
42			84010564 (Y1, Y2)	14.0±0.4 =14.4	61.00
43			80010621v02	18.2	145.20
44	LTE Band 71	617-652	FF-65C-R1	15.0 ±0.6 =15.6	243.70

Table 4 – Antenna description

Note: For each base station band, the highlighted antenna with the maximum gain was used in the calculation to provide worst case result.



1.4.4 Additional Antenna Data

The following additional antenna data is required to calculate the EU product installation compliance results in accordance with EN 62232:2017 Table 2.

Main Parameter	Detailed Parameter	Antenna No							
		4	8	12	13	15	16	18	20
Side Lobe Suppression	Manufacturers sidelobe level dB	18	18	18	15	14	17	14	17
	A _{sl} side lobe suppression value in linear scale	0.01585	0.01585	0.01585	0.03162	0.03981	0.01995	0.03981	0.01995
Tilt	Manufacturer's electric tilt °	2-14	2-14	2-14	2-12	2-12	2-13	2-12	2-13
	Manufacturer's mechanical tilt °	0-15	0-15	0-15	0-14	0-14	0-10 ¹	0-14	0-10 ¹
	α downtilt in radians	0.5061	0.5061	0.5061	0.4538	0.4538	0.4014	0.4538	0.4014
Vertical Beamwidth	Manufacturer's half power width in vertical plane °	6.0	6.7	6.7	10.5±0.4 =10.9	10.2±0.4 =10.6	9.2±0.7 =9.9	11.9±0.8 =12.7	9.2±0.7 =9.9
	θ _{bw} Vertical half power beamwidth in radians	0.1047	0.1169	0.1169	0.1902	0.1850	0.1728	0.2217	0.1728
Note 1: Estimated as manufacturer does not specify a mechanical tilt range									

Table 5 – Additional Antenna Data

Main Parameter	Detailed Parameter	Antenna No							
		23	27	28	31	35	39	43	44
Side Lobe Suppression	Manufacturers sidelobe level dB	14	18	17	17	18	18	18	19
	A _{sl} side lobe suppression value in linear scale	0.03981	0.01585	0.01995	0.01995	0.01585	0.01585	0.01585	0.01259
Tilt	Manufacturer's electric tilt °	2-12	2-14	2-13	2-13	2-14	2-14	2-14	2-13
	Manufacturer's mechanical tilt °	0-14	0-15	0-10 ¹	0-10 ¹	0-15	0-15	0-15	0-10 ¹
	α downtilt in radians	0.4538	0.5061	0.4014	0.4014	0.5061	0.5061	0.5061	0.4014
Vertical Beamwidth	Manufacturer's half power width in vertical plane °	11.0±0.8 =11.8	6.0	9.2±0.7 =9.9	9.2±0.7 =9.9	6.0	6.0	6.0	10.3±0.6 =10.9
	θ _{bw} Vertical half power beamwidth in radians	0.2059	0.1047	0.1728	0.1728	0.1047	0.1047	0.1047	0.1902
Note 1: Estimated as manufacturer does not specify a mechanical tilt range									

Table 6 – Additional Antenna Data (continued)

1.4.5 Equipment Configuration

LTE basestations operating at maximum power in the bands specified in Table 3.



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:

μ_o – Permeability of free space $4\pi \times 10^{-7} \text{ H/m}$

Where additional calculations are required by the exposure 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 Approach for Product Installation Compliance Calculation

EU, EN 62232:2017 specifies additional product installation calculation requirements in clause 6.2.4, extract below. This data is used by the network operator or entity putting the Base Station into service. The separation distance calculations D_m take ground reflection into account and EN 62232:2017 Table 2 Note b specifies a ground reflection factor of 1 (i.e. worst case full in-phase reflection). Additionally, the minimum height H_m is required to be calculated.

For frequencies between 100 MHz and 400 MHz:

$$H_m = \max \left\{ \begin{array}{l} 2 + \sqrt{\frac{EIRP \cdot A_{sl}}{2\pi}} \\ 2 + \sqrt{\frac{EIRP}{2\pi}} \sin(\alpha + 1.129\theta_{bw}) \end{array} \right. \quad D_m = \sqrt{\frac{EIRP}{2\pi}} \quad (6.1)$$

For frequencies between 400 MHz and 2 000 MHz:

$$H_m = \max \left\{ \begin{array}{l} 2 + \sqrt{\frac{EIRP \cdot 200 A_{sl}}{f\pi}} \\ 2 + \sqrt{\frac{200 \cdot EIRP}{f\pi}} \sin(\alpha + 1.129\theta_{bw}) \end{array} \right. \quad D_m = \sqrt{\frac{EIRP \cdot 200}{f\pi}} \quad (6.2)$$

For frequencies between 2 000 MHz and 100 000 MHz (i.e. 100 GHz):

$$H_m = \max \left\{ \begin{array}{l} 2 + \sqrt{\frac{EIRP \cdot A_{sl}}{10\pi}} \\ 2 + \sqrt{\frac{EIRP}{10\pi}} \sin(\alpha + 1.129\theta_{bw}) \end{array} \right. \quad D_m = \sqrt{\frac{EIRP}{10\pi}} \quad (6.3)$$

where:

- f is the frequency of operation of the RBS in MHz;
- A_{sl} is the side lobe suppression value in linear scale;
- α is the downtilt in radians (both electric and mechanic);
- θ_{bw} is the vertical half power beamwidth in radians.



2.3 Combined Antenna Port RF Exposure Results

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 exposure requirements is shown in Annex A.

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. The compliance boundary distance has been calculated to ensure the summation is ≤ 1 .

2.3.1 EU Result

EU EN 62232 specifies the method of summation in clause Annex B.6 with results as follows:

Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be < 1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		N/A	0.4477	N/A	0.4476
		Band 20 (791-821) / Band 28 (758-803)	758		N/A	0.5217	N/A	0.5217
		Summation at boundary		6.2	N/A	0.9694	N/A	0.9693
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		N/A	0.4664	N/A	0.5015
		Band 3 (1805-1880)	1805		N/A	0.4901	N/A	0.4900
		Summation at boundary		5.1	N/A	0.9564	N/A	0.9916
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		N/A	0.5070	N/A	0.5070
		Band 66 (2110-2200)	2110		N/A	0.4493	N/A	0.4832
		Summation at boundary		6.0	N/A	0.9563	N/A	0.9902
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		N/A	0.4936	N/A	0.4936
		Band 66a (2110-2180)	2110		N/A	0.4374	N/A	0.4704
		Summation at boundary		4.3	N/A	0.9311	N/A	0.9640
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		N/A	0.4761	N/A	0.4760
		Band 13 (746-756)	746		N/A	0.5058	N/A	0.5057
		Summation at boundary		7.0	N/A	0.9818	N/A	0.9818
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		N/A	0.4647	N/A	0.4997
		Band 3 (1805-1880)	1805		N/A	0.4883	N/A	0.4883
		Summation at boundary		5.9	N/A	0.9530	N/A	0.9880
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		N/A	0.5078	N/A	0.5078
		Band 14 (758-768)	758		N/A	0.4884	N/A	0.4883
		Summation at boundary		7.4	N/A	0.9962	N/A	0.9961
8	LTE 2 bands,	Band 12 (729-746)	729		N/A	0.4645	N/A	0.4645



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B12/B71)	Band 71 (617-652)	617		N/A	0.5241	N/A	0.5241
		Summation at boundary		6.7	N/A	0.9887	N/A	0.9886
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		N/A	0.4666	N/A	0.4665
		Band 13 (746-756)	746		N/A	0.4957	N/A	0.4956
		Summation at boundary		5.0	N/A	0.9623	N/A	0.9622
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		N/A	0.5070	N/A	0.5070
		Band 66a (2110-2180)	2110		N/A	0.4493	N/A	0.4832
		Summation at boundary		6.0	N/A	0.9563	N/A	0.9902
11	LTE 1 band, (B28)	Band 28 (758-803)	758		N/A	0.9767	N/A	0.9766
		Summation at boundary		7.4	N/A	0.9767	N/A	0.9766
12	LTE 2 bands, (B29/B70)	Band 29 (717-728)	717		N/A	0.5033	N/A	0.5032
		Band 70 (1995-2020)	1995		N/A	0.4714	N/A	0.4714
		Summation at boundary		5.3	N/A	0.9747	N/A	0.9746
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		N/A	0.6666	N/A	0.6665
		Band 66 (2110-2200)	2110		N/A	0.2954	N/A	0.3177
		Summation at boundary		7.4	N/A	0.9620	N/A	0.9842
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		N/A	0.5654	N/A	0.5654
		Band 12 (729-746) / Band 14 (758-768) /	729		N/A	0.4238	N/A	0.4238
		Summation at boundary		8.1	N/A	0.9893	N/A	0.9892
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		N/A	0.4627	N/A	0.4627
		Band 28 (758-803)	758		N/A	0.5305	N/A	0.5305
		Summation at boundary		7.1	N/A	0.9933	N/A	0.9932
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		N/A	0.6490	N/A	0.6490
		Band 29 (717-728)	717		N/A	0.3245	N/A	0.3245
		Summation at boundary		6.6	N/A	0.9736	N/A	0.9735
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		N/A	0.4399	N/A	0.4398
		Band 71 (617-652)	617		N/A	0.5569	N/A	0.5569
		Summation at boundary		6.5	N/A	0.9967	N/A	0.9967
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		N/A	0.5217	N/A	0.5217
		Band 8 (925-960)	925		N/A	0.4477	N/A	0.4476
		Summation at boundary		6.2	N/A	0.9694	N/A	0.9693
18a	LTE 3 bands,	Band 5 (869-894)	869		N/A	0.9718	N/A	0.9717



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
		Summation for simultaneous exposure; value to be <1						
	(B5/B8/B28) – Single B5 band	Summation at boundary		6.0	N/A	0.9718	N/A	0.9717
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		N/A	0.9886	N/A	0.9886
		Summation at boundary		5.9	N/A	0.9886	N/A	0.9886
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		N/A	0.9792	N/A	0.9791
		Summation at boundary		6.4	N/A	0.9792	N/A	0.9791
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		N/A	0.4609	N/A	0.4609
		Band 20 (791-821) / Band 28 (758-803)	758		N/A	0.5372	N/A	0.5372
		Summation at boundary		6.6	N/A	0.9981	N/A	0.9981
19a	LTE 3 bands, (B8/B20/B28) Single B8 band	Band 8 (925-960)	925		N/A	0.9803	N/A	0.9803
		Summation at boundary		6.4	N/A	0.9803	N/A	0.9803
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		N/A	0.9990	N/A	0.9989
		Summation at boundary		6.7	N/A	0.9990	N/A	0.9989
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		N/A	0.9829	N/A	0.9828
		Summation at boundary		6.9	N/A	0.9829	N/A	0.9828

Table 7 – 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 compliance boundary shown in the table.



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4576	0.4562	0.4433	0.4529
		Band 20 (791-821) / Band 28 (758-803)	758		0.5333	0.5317	0.5166	0.5278
		Summation at boundary		13.4	0.9908	0.9879	0.9599	0.9807
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.4939	0.5004	0.5118	0.5172
		Band 3 (1805-1880)	1805		0.4766	0.4752	0.4618	0.4717
		Summation at boundary		11.3	0.9705	0.9756	0.9735	0.9889
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.4927	0.4912	0.4773	0.4876
		Band 66 (2110-2200)	2110		0.4754	0.4817	0.4926	0.4978
		Summation at boundary		13.3	0.9681	0.9729	0.9699	0.9855
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.4932	0.4917	0.4778	0.4881
		Band 66a (2110-2180)	2110		0.4759	0.4822	0.4931	0.4984
		Summation at boundary		9.4	0.9691	0.9739	0.9709	0.9865
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4821	0.4806	0.4670	0.4771
		Band 13 (746-756)	746		0.5121	0.5106	0.4962	0.5069
		Summation at boundary		15.2	0.9942	0.9912	0.9632	0.9840
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.4976	0.5042	0.5156	0.5211
		Band 3 (1805-1880)	1805		0.4802	0.4788	0.4653	0.4753
		Summation at boundary		13	0.9779	0.9830	0.9809	0.9964
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5059	0.5044	0.4901	0.5007
		Band 14 (758-768)	758		0.4865	0.4851	0.4714	0.4815
		Summation at boundary		16.2	0.9924	0.9895	0.9615	0.9822
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4671	0.4657	0.4525	0.4623
		Band 71 (617-652)	617		0.5270	0.5254	0.5106	0.5216
		Summation at boundary		14.6	0.9941	0.9911	0.9631	0.9839
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4775	0.4760	0.4626	0.4726
		Band 13 (746-756)	746		0.5073	0.5057	0.4914	0.5021
		Summation at boundary		10.8	0.9847	0.9818	0.9540	0.9746
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.4927	0.4912	0.4773	0.4876
		Band 66a (2110-2180)	2110		0.4754	0.4817	0.4926	0.4978
		Summation at boundary		13.3	0.9681	0.9729	0.9699	0.9855
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9975	0.9945	0.9664	0.9873
		Summation at boundary		16.0	0.9975	0.9945	0.9664	0.9873
12	LTE 2 bands,	Band 29 (717-728)	717		0.5104	0.5089	0.4945	0.5052



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B29/B70)	Band 70 (1995-2020)	1995		0.4781	0.4766	0.4631	0.4732
		Summation at boundary		11.5	0.9885	0.9855	0.9576	0.9783
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6641	0.6621	0.6434	0.6573
		Band 66 (2110-2200)	2110		0.3204	0.3247	0.3320	0.3356
		Summation at boundary		16.2	0.9845	0.9868	0.9754	0.9928
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5654	0.5637	0.5478	0.5596
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4238	0.4225	0.4106	0.4194
		Summation at boundary		17.7	0.9892	0.9862	0.9583	0.9790
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4636	0.4622	0.4491	0.4588
		Band 28 (758-803)	758		0.5315	0.5299	0.5149	0.5260
		Summation at boundary		15.5	0.9951	0.9921	0.9640	0.9849
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6601	0.6581	0.6395	0.6534
		Band 29 (717-728)	717		0.3301	0.3291	0.3198	0.3267
		Summation at boundary		14.3	0.9902	0.9872	0.9593	0.9800
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4401	0.4387	0.4263	0.4355
		Band 71 (617-652)	617		0.5571	0.5555	0.5398	0.5514
		Summation at boundary		14.2	0.9972	0.9942	0.9661	0.9869
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5333	0.5317	0.5166	0.5278
		Band 8 (925-960)	925		0.4576	0.4562	0.4433	0.4529
		Summation at boundary		13.4	0.9908	0.9879	0.9599	0.9807
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9884	0.9854	0.9575	0.9782
		Summation at boundary		13.0	0.9884	0.9854	0.9575	0.9782
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9874	0.9845	0.9566	0.9773
		Summation at boundary		12.9	0.9874	0.9845	0.9566	0.9773
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9911	0.9881	0.9602	0.9809
		Summation at boundary		13.9	0.9911	0.9881	0.9602	0.9809
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4560	0.4546	0.4418	0.4513
		Band 20 (791-821) / Band 28 (758-803)	758		0.5314	0.5298	0.5148	0.5259
		Summation at boundary		14.5	0.9874	0.9844	0.9566	0.9772
19a	LTE 3 bands,	Band 8 (925-960)	925		0.9923	0.9893	0.9614	0.9821



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
		Summation for simultaneous exposure; value to be <1						
	(B8/B20/B28) Single B8 band	Summation at boundary		13.9	0.9923	0.9893	0.9614	0.9821
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9909	0.9879	0.9599	0.9807
		Summation at boundary		14.7	0.9909	0.9879	0.9599	0.9807
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9930	0.9901	0.9621	0.9828
		Summation at boundary		15.0	0.9930	0.9901	0.9621	0.9828

Table 8 – EU General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.

2.3.2 FCC Result

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

Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4388	N/A	N/A	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5113	N/A	N/A	N/A
		Summation at boundary		5.3	0.9501	N/A	N/A	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5253	N/A	N/A	N/A
		Band 3 (1805-1880)	1805		0.4575	N/A	N/A	N/A
		Summation at boundary		4.9	0.9829	N/A	N/A	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5000	N/A	N/A	N/A
		Band 66 (2110-2200)	2110		0.5000	N/A	N/A	N/A
		Summation at boundary		5.8	1.0000	N/A	N/A	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.4768	N/A	N/A	N/A
		Band 66a (2110-2180)	2110		0.4768	N/A	N/A	N/A
		Summation at boundary		4.2	0.9536	N/A	N/A	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4799	N/A	N/A	N/A
		Band 13 (746-756)	746		0.5099	N/A	N/A	N/A
		Summation at boundary		5.9	0.9898	N/A	N/A	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5177	N/A	N/A	N/A
		Band 3 (1805-1880)	1805		0.4509	N/A	N/A	N/A
		Summation at boundary		5.7	0.9686	N/A	N/A	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5018	N/A	N/A	N/A
		Band 14 (758-768)	758		0.4826	N/A	N/A	N/A
		Summation at boundary		6.3	0.9843	N/A	N/A	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4597	N/A	N/A	N/A
		Band 71 (617-652)	617		0.5187	N/A	N/A	N/A
		Summation at boundary		5.7	0.9783	N/A	N/A	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4736	N/A	N/A	N/A
		Band 13 (746-756)	746		0.5031	N/A	N/A	N/A
		Summation at boundary		4.2	0.9767	N/A	N/A	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5000	N/A	N/A	N/A
		Band 66a (2110-2180)	2110		0.5000	N/A	N/A	N/A
		Summation at boundary		5.8	1.0000	N/A	N/A	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9965	N/A	N/A	N/A
		Summation at boundary		6.2	0.9965	N/A	N/A	N/A
12	LTE 2 bands, (B29/B70)	Band 29 (717-728)	717		0.4395	N/A	N/A	N/A
		Band 70 (1995-2020)	1995		0.5474	N/A	N/A	N/A
		Summation at boundary		4.8	0.9869	N/A	N/A	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6489	N/A	N/A	N/A
		Band 66 (2110-2200)	2110		0.3245	N/A	N/A	N/A
		Summation at boundary		7.2	0.9733	N/A	N/A	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5581	N/A	N/A	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4183	N/A	N/A	N/A
		Summation at boundary		6.9	0.9764	N/A	N/A	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4641	N/A	N/A	N/A
		Band 28 (758-803)	758		0.5320	N/A	N/A	N/A
		Summation at boundary		6.0	0.9961	N/A	N/A	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6457	N/A	N/A	N/A
		Band 29 (717-728)	717		0.3229	N/A	N/A	N/A
		Summation at boundary		5.6	0.9685	N/A	N/A	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4400	N/A	N/A	N/A
		Band 71 (617-652)	617		0.5571	N/A	N/A	N/A
		Summation at boundary		5.5	0.9971	N/A	N/A	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5312	N/A	N/A	N/A
		Band 8 (925-960)	925		0.4558	N/A	N/A	N/A
		Summation at boundary		5.2	0.9870	N/A	N/A	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9633	N/A	N/A	N/A
		Summation at boundary		5.1	0.9633	N/A	N/A	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9859	N/A	N/A	N/A
		Summation at boundary		5.0	0.9859	N/A	N/A	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9850	N/A	N/A	N/A
		Summation at boundary		5.4	0.9850	N/A	N/A	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4586	N/A	N/A	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5344	N/A	N/A	N/A
		Summation at boundary		5.6	0.9930	N/A	N/A	N/A
19a	LTE 3 bands, (B8/B20/B28) Single B8 band	Band 8 (925-960)	925		0.9862	N/A	N/A	N/A
		Summation at boundary		5.4	0.9862	N/A	N/A	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9885	N/A	N/A	N/A
		Summation at boundary		5.7	0.9885	N/A	N/A	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9963	N/A	N/A	N/A
		Summation at boundary		5.8	0.9963	N/A	N/A	N/A

Table 9 – FCC Worker/Occupational Combined Exposure

The calculations show that the EUT complies with the worker/occupational exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4580	N/A	N/A	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5337	N/A	N/A	N/A
		Summation at boundary		11.6	0.9917	N/A	N/A	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5308	N/A	N/A	N/A
		Band 3 (1805-1880)	1805		0.4623	N/A	N/A	N/A
		Summation at boundary		10.9	0.9931	N/A	N/A	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.4976	N/A	N/A	N/A
		Band 66 (2110-2200)	2110		0.4976	N/A	N/A	N/A
		Summation at boundary		13.0	0.9953	N/A	N/A	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.4968	N/A	N/A	N/A
		Band 66a (2110-2180)	2110		0.4968	N/A	N/A	N/A
		Summation at boundary		9.2	0.9937	N/A	N/A	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4794	N/A	N/A	N/A
		Band 13 (746-756)	746		0.5093	N/A	N/A	N/A
		Summation at boundary		13.2	0.9887	N/A	N/A	N/A
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5297	N/A	N/A	N/A
		Band 3 (1805-1880)	1805		0.4614	N/A	N/A	N/A
		Summation at boundary		12.6	0.9911	N/A	N/A	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5080	N/A	N/A	N/A
		Band 14 (758-768)	758		0.4886	N/A	N/A	N/A
		Summation at boundary		14.0	0.9966	N/A	N/A	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4630	N/A	N/A	N/A
		Band 71 (617-652)	617		0.5224	N/A	N/A	N/A
		Summation at boundary		12.7	0.9853	N/A	N/A	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4829	N/A	N/A	N/A
		Band 13 (746-756)	746		0.5131	N/A	N/A	N/A
		Summation at boundary		9.3	0.9960	N/A	N/A	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.4976	N/A	N/A	N/A
		Band 66a (2110-2180)	2110		0.4976	N/A	N/A	N/A
		Summation at boundary		13.0	0.9953	N/A	N/A	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9912	N/A	N/A	N/A
		Summation at boundary		13.9	0.9912	N/A	N/A	N/A
12	LTE 2 bands,	Band 29 (717-728)	717		0.4422	N/A	N/A	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B29/B70)	Band 70 (1995-2020)	1995		0.5508	N/A	N/A	N/A
		Summation at boundary		10.7	0.9930	N/A	N/A	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6653	N/A	N/A	N/A
		Band 66 (2110-2200)	2110		0.3327	N/A	N/A	N/A
		Summation at boundary		15.9	0.9979	N/A	N/A	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5675	N/A	N/A	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4254	N/A	N/A	N/A
		Summation at boundary		15.3	0.9929	N/A	N/A	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4652	N/A	N/A	N/A
		Band 28 (758-803)	758		0.5333	N/A	N/A	N/A
		Summation at boundary		13.4	0.9986	N/A	N/A	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6584	N/A	N/A	N/A
		Band 29 (717-728)	717		0.3292	N/A	N/A	N/A
		Summation at boundary		12.4	0.9877	N/A	N/A	N/A
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4399	N/A	N/A	N/A
		Band 71 (617-652)	617		0.5569	N/A	N/A	N/A
		Summation at boundary		12.3	0.9968	N/A	N/A	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5337	N/A	N/A	N/A
		Band 8 (925-960)	925		0.4580	N/A	N/A	N/A
		Summation at boundary		11.6	0.9917	N/A	N/A	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9987	N/A	N/A	N/A
		Summation at boundary		11.2	0.9987	N/A	N/A	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9824	N/A	N/A	N/A
		Summation at boundary		11.2	0.9824	N/A	N/A	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9974	N/A	N/A	N/A
		Summation at boundary		12.0	0.9974	N/A	N/A	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4602	N/A	N/A	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5363	N/A	N/A	N/A
		Summation at boundary		12.5	0.9965	N/A	N/A	N/A
19a	LTE 3 bands,	Band 8 (925-960)	925		0.9986	N/A	N/A	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B8/B20/B28) Single B8 band	Summation at boundary		12.0	0.9986	N/A	N/A	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9956	N/A	N/A	N/A
		Summation at boundary		12.7	0.9956	N/A	N/A	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9916	N/A	N/A	N/A
		Summation at boundary		13.0	0.9916	N/A	N/A	N/A

Table 10 – FCC General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.

2.3.3 Canada Result

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

Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4726	0.4725	0.4725	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.4985	0.4985	0.4985	N/A
		Summation at boundary		6.4	0.9711	0.9711	0.9711	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5034	0.5034	0.5034	N/A
		Band 3 (1805-1880)	1805		0.4741	0.4740	0.4740	N/A
		Summation at boundary		6.5	0.9775	0.9774	0.9774	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5002	0.5002	0.5002	N/A
		Band 66 (2110-2200)	2110		0.4784	0.4784	0.4784	N/A
		Summation at boundary		7.7	0.9786	0.9785	0.9785	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.5085	0.5085	0.5085	N/A
		Band 66a (2110-2180)	2110		0.4864	0.4863	0.4864	N/A
		Summation at boundary		5.4	0.9949	0.9949	0.9949	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4906	0.4906	0.4906	N/A
		Band 13 (746-756)	746		0.4829	0.4829	0.4829	N/A
		Summation at boundary		7.2	0.9735	0.9734	0.9735	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5042	0.5042	0.5042	N/A
		Band 3 (1805-1880)	1805		0.4748	0.4748	0.4748	N/A
		Summation at boundary		7.5	0.9791	0.9790	0.9790	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.4936	0.4936	0.4936	N/A
		Band 14 (758-768)	758		0.4841	0.4841	0.4841	N/A
		Summation at boundary		7.5	0.9777	0.9777	0.9777	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4780	0.4780	0.4780	N/A
		Band 71 (617-652)	617		0.4962	0.4962	0.4962	N/A
		Summation at boundary		6.6	0.9742	0.9742	0.9742	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4889	0.4889	0.4889	N/A
		Band 13 (746-756)	746		0.4813	0.4812	0.4812	N/A
		Summation at boundary		5.1	0.9702	0.9701	0.9702	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5002	0.5002	0.5002	N/A
		Band 66a (2110-2180)	2110		0.4784	0.4784	0.4784	N/A
		Summation at boundary		7.7	0.9786	0.9785	0.9785	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9945	0.9944	0.9944	N/A
		Summation at boundary		7.4	0.9945	0.9944	0.9944	N/A
12	LTE 2 bands, (B29/B70)	Band 29 (717-728)	717		0.3889	0.3889	0.3889	N/A
		Band 70 (1995-2020)	1995		0.6076	0.6076	0.6076	N/A
		Summation at boundary		6.0	0.9965	0.9964	0.9965	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6712	0.6712	0.6712	N/A
		Band 66 (2110-2200)	2110		0.3210	0.3210	0.3210	N/A
		Summation at boundary		9.4	0.9922	0.9922	0.9922	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5600	0.5599	0.5599	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4232	0.4232	0.4232	N/A
		Summation at boundary		8.1	0.9832	0.9831	0.9831	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4772	0.4772	0.4772	N/A
		Band 28 (758-803)	758		0.5110	0.5110	0.5110	N/A
		Summation at boundary		7.3	0.9882	0.9882	0.9882	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6627	0.6627	0.6627	N/A
		Band 29 (717-728)	717		0.3314	0.3313	0.3314	N/A
		Summation at boundary		6.5	0.9941	0.9940	0.9940	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4583	0.4583	0.4583	N/A
		Band 71 (617-652)	617		0.5277	0.5277	0.5277	N/A
		Summation at boundary		6.4	0.9860	0.9860	0.9860	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.4985	0.4985	0.4985	N/A
		Band 8 (925-960)	925		0.4726	0.4725	0.4725	N/A
		Summation at boundary		6.4	0.9711	0.9711	0.9711	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9922	0.9922	0.9922	N/A
		Summation at boundary		6.2	0.9922	0.9922	0.9922	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9753	0.9753	0.9753	N/A
		Summation at boundary		6.3	0.9753	0.9753	0.9753	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9970	0.9970	0.9970	N/A
		Summation at boundary		6.4	0.9970	0.9970	0.9970	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4744	0.4744	0.4744	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5005	0.5004	0.5004	N/A
		Summation at boundary		6.9	0.9748	0.9748	0.9748	N/A
19a	LTE 3 bands, (B8/B20/B28) Single B8 band	Band 8 (925-960)	925		0.9768	0.9767	0.9768	N/A
		Summation at boundary		6.8	0.9768	0.9767	0.9768	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9797	0.9797	0.9797	N/A
		Summation at boundary		6.9	0.9797	0.9797	0.9797	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9724	0.9724	0.9724	N/A
		Summation at boundary		7.0	0.9724	0.9724	0.9724	N/A

Table 11 – 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 compliance boundary shown in the table.



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4773	0.4774	0.4773	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5223	0.5224	0.5223	N/A
		Summation at boundary		16.9	0.9996	0.9998	0.9996	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5030	0.5031	0.5030	N/A
		Band 3 (1805-1880)	1805		0.4875	0.4875	0.4875	N/A
		Summation at boundary		16.0	0.9905	0.9906	0.9905	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5110	0.5110	0.5109	N/A
		Band 66 (2110-2200)	2110		0.4807	0.4808	0.4807	N/A
		Summation at boundary		18.9	0.9917	0.9918	0.9917	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.5083	0.5083	0.5083	N/A
		Band 66a (2110-2180)	2110		0.4782	0.4783	0.4782	N/A
		Summation at boundary		13.4	0.9865	0.9866	0.9865	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4967	0.4967	0.4967	N/A
		Band 13 (746-756)	746		0.5028	0.5028	0.5027	N/A
		Summation at boundary		19.1	0.9994	0.9995	0.9994	N/A
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5072	0.5073	0.5072	N/A
		Band 3 (1805-1880)	1805		0.4915	0.4916	0.4915	N/A
		Summation at boundary		18.4	0.9988	0.9989	0.9987	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5057	0.5057	0.5057	N/A
		Band 14 (758-768)	758		0.4924	0.4924	0.4924	N/A
		Summation at boundary		20.1	0.9981	0.9982	0.9980	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4781	0.4782	0.4781	N/A
		Band 71 (617-652)	617		0.5118	0.5118	0.5118	N/A
		Summation at boundary		17.9	0.9899	0.9900	0.9899	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4898	0.4899	0.4898	N/A
		Band 13 (746-756)	746		0.4958	0.4959	0.4958	N/A
		Summation at boundary		13.6	0.9857	0.9858	0.9857	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5110	0.5110	0.5109	N/A
		Band 66a (2110-2180)	2110		0.4807	0.4808	0.4807	N/A
		Summation at boundary		18.9	0.9917	0.9918	0.9917	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9946	0.9947	0.9945	N/A
		Summation at boundary		20.0	0.9946	0.9947	0.9945	N/A
12	LTE 2 bands,	Band 29 (717-728)	717		0.4357	0.4357	0.4357	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B29/B70)	Band 70 (1995-2020)	1995		0.5642	0.5643	0.5642	N/A
		Summation at boundary		15.4	0.9999	1.0000	0.9998	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6782	0.6782	0.6781	N/A
		Band 66 (2110-2200)	2110		0.3191	0.3191	0.3190	N/A
		Summation at boundary		23.2	0.9972	0.9973	0.9972	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5653	0.5654	0.5653	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4260	0.4260	0.4260	N/A
		Summation at boundary		21.9	0.9913	0.9914	0.9913	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4765	0.4766	0.4765	N/A
		Band 28 (758-803)	758		0.5231	0.5232	0.5231	N/A
		Summation at boundary		19.5	0.9996	0.9998	0.9996	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6595	0.6596	0.6595	N/A
		Band 29 (717-728)	717		0.3298	0.3298	0.3298	N/A
		Summation at boundary		17.7	0.9893	0.9895	0.9893	N/A
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4543	0.4543	0.4543	N/A
		Band 71 (617-652)	617		0.5416	0.5417	0.5416	N/A
		Summation at boundary		17.4	0.9959	0.9960	0.9959	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5223	0.5224	0.5223	N/A
		Band 8 (925-960)	925		0.4773	0.4774	0.4773	N/A
		Summation at boundary		16.9	0.9996	0.9998	0.9996	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9981	0.9982	0.9981	N/A
		Summation at boundary		16.5	0.9981	0.9982	0.9981	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9894	0.9895	0.9894	N/A
		Summation at boundary		16.6	0.9894	0.9895	0.9894	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9968	0.9969	0.9968	N/A
		Summation at boundary		17.3	0.9968	0.9969	0.9968	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4750	0.4751	0.4750	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5197	0.5198	0.5197	N/A
		Summation at boundary		18.3	0.9947	0.9949	0.9947	N/A
19a	LTE 3 bands,	Band 8 (925-960)	925		0.9929	0.9930	0.9928	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B8/B20/B28) Single B8 band	Summation at boundary		17.9	0.9929	0.9930	0.9928	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9986	0.9988	0.9986	N/A
		Summation at boundary		18.4	0.9986	0.9988	0.9986	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9954	0.9955	0.9954	N/A
		Summation at boundary		18.7	0.9954	0.9955	0.9954	N/A

Table 12 – CANADA General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.

2.3.4 Australia Result

AUSTRALIA ARPANSA Radiation Protection Series No.3 specifies the method of summation in clause 3.4 with results as follows:

Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4565	0.4565	0.4568	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5320	0.5320	0.5324	N/A
		Summation at boundary		6.0	0.9884	0.9884	0.9892	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5045	0.5067	0.5050	N/A
		Band 3 (1805-1880)	1805		0.4869	0.4869	0.4873	N/A
		Summation at boundary		4.9	0.9914	0.9936	0.9923	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5007	0.5007	0.5011	N/A
		Band 66 (2110-2200)	2110		0.4832	0.4853	0.4837	N/A
		Summation at boundary		5.9	0.9839	0.9860	0.9848	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.4941	0.4941	0.4945	N/A
		Band 66a (2110-2180)	2110		0.4768	0.4788	0.4773	N/A
		Summation at boundary		4.2	0.9709	0.9729	0.9717	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4817	0.4817	0.4821	N/A
		Band 13 (746-756)	746		0.5118	0.5118	0.5122	N/A
		Summation at boundary		6.8	0.9935	0.9935	0.9944	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5000	0.5021	0.5005	N/A
		Band 3 (1805-1880)	1805		0.4825	0.4825	0.4829	N/A
		Summation at boundary		5.8	0.9825	0.9847	0.9834	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.4983	0.4983	0.4987	N/A
		Band 14 (758-768)	758		0.4792	0.4792	0.4796	N/A
		Summation at boundary		7.3	0.9775	0.9775	0.9783	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4571	0.4571	0.4575	N/A
		Band 71 (617-652)	617		0.5158	0.5158	0.5162	N/A
		Summation at boundary		6.6	0.9729	0.9729	0.9737	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4834	0.4834	0.4838	N/A
		Band 13 (746-756)	746		0.5136	0.5136	0.5140	N/A
		Summation at boundary		4.8	0.9971	0.9970	0.9979	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5007	0.5007	0.5011	N/A
		Band 66a (2110-2180)	2110		0.4832	0.4853	0.4837	N/A
		Summation at boundary		5.9	0.9839	0.9860	0.9848	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9852	0.9852	0.9860	N/A
		Summation at boundary		7.2	0.9852	0.9852	0.9860	N/A
12	LTE 2 bands, (B29/B70)	Band 29 (717-728)	717		0.4993	0.4993	0.4997	N/A
		Band 70 (1995-2020)	1995		0.4676	0.4676	0.4680	N/A
		Summation at boundary		5.2	0.9669	0.9669	0.9677	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6724	0.6724	0.6730	N/A
		Band 66 (2110-2200)	2110		0.3245	0.3258	0.3248	N/A
		Summation at boundary		7.2	0.9969	0.9982	0.9977	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5676	0.5676	0.5681	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4255	0.4255	0.4258	N/A
		Summation at boundary		7.9	0.9931	0.9931	0.9939	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4546	0.4546	0.4550	N/A
		Band 28 (758-803)	758		0.5212	0.5212	0.5216	N/A
		Summation at boundary		7.0	0.9758	0.9758	0.9766	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6591	0.6591	0.6597	N/A
		Band 29 (717-728)	717		0.3296	0.3296	0.3299	N/A
		Summation at boundary		6.4	0.9887	0.9887	0.9895	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4333	0.4333	0.4336	N/A
		Band 71 (617-652)	617		0.5485	0.5485	0.5490	N/A
		Summation at boundary		6.4	0.9818	0.9818	0.9826	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5320	0.5320	0.5324	N/A
		Band 8 (925-960)	925		0.4565	0.4565	0.4568	N/A
		Summation at boundary		6.0	0.9884	0.9884	0.9892	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9931	0.9930	0.9939	N/A
		Summation at boundary		5.8	0.9931	0.9930	0.9939	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9769	0.9769	0.9777	N/A
		Summation at boundary		5.8	0.9769	0.9769	0.9777	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9963	0.9963	0.9971	N/A
		Summation at boundary		6.2	0.9963	0.9963	0.9971	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4538	0.4538	0.4542	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5289	0.5289	0.5293	N/A
		Summation at boundary		6.5	0.9827	0.9827	0.9835	N/A
19a	LTE 3 bands, (B8/B20/B28) Single B8 band	Band 8 (925-960)	925		0.9975	0.9975	0.9984	N/A
		Summation at boundary		6.2	0.9975	0.9975	0.9984	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9831	0.9831	0.9839	N/A
		Summation at boundary		6.6	0.9831	0.9831	0.9839	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9955	0.9955	0.9963	N/A
		Summation at boundary		6.7	0.9955	0.9955	0.9963	N/A

Table 13 – AUSTRALIA 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 compliance boundary shown in the table.



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4576	0.4595	0.4580	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5333	0.5356	0.5338	N/A
		Summation at boundary		13.4	0.9908	0.9951	0.9918	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5028	0.5027	0.5019	N/A
		Band 3 (1805-1880)	1805		0.4852	0.4873	0.4857	N/A
		Summation at boundary		11.2	0.9879	0.9900	0.9876	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5002	0.5023	0.5007	N/A
		Band 66 (2110-2200)	2110		0.4827	0.4827	0.4819	N/A
		Summation at boundary		13.2	0.9828	0.9850	0.9825	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.5038	0.5060	0.5044	N/A
		Band 66a (2110-2180)	2110		0.4862	0.4862	0.4854	N/A
		Summation at boundary		9.3	0.9901	0.9922	0.9898	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4821	0.4841	0.4826	N/A
		Band 13 (746-756)	746		0.5121	0.5143	0.5127	N/A
		Summation at boundary		15.2	0.9942	0.9985	0.9952	N/A
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5054	0.5054	0.5046	N/A
		Band 3 (1805-1880)	1805		0.4877	0.4898	0.4882	N/A
		Summation at boundary		12.9	0.9931	0.9952	0.9928	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5059	0.5081	0.5064	N/A
		Band 14 (758-768)	758		0.4865	0.4886	0.4870	N/A
		Summation at boundary		16.2	0.9924	0.9967	0.9934	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4671	0.4691	0.4675	N/A
		Band 71 (617-652)	617		0.5270	0.5293	0.5276	N/A
		Summation at boundary		14.6	0.9941	0.9984	0.9951	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4775	0.4795	0.4780	N/A
		Band 13 (746-756)	746		0.5073	0.5094	0.5078	N/A
		Summation at boundary		10.8	0.9847	0.9890	0.9857	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5002	0.5023	0.5007	N/A
		Band 66a (2110-2180)	2110		0.4827	0.4827	0.4819	N/A
		Summation at boundary		13.2	0.9828	0.9850	0.9825	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9851	0.9894	0.9861	N/A
		Summation at boundary		16.1	0.9851	0.9894	0.9861	N/A
12	LTE 2 bands,	Band 29 (717-728)	717		0.5104	0.5126	0.5109	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B29/B70)	Band 70 (1995-2020)	1995		0.4781	0.4801	0.4785	N/A
		Summation at boundary		11.5	0.9885	0.9927	0.9894	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6724	0.6753	0.6730	N/A
		Band 66 (2110-2200)	2110		0.3244	0.3244	0.3239	N/A
		Summation at boundary		16.1	0.9968	0.9997	0.9970	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5654	0.5678	0.5660	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4238	0.4256	0.4242	N/A
		Summation at boundary		17.7	0.9892	0.9934	0.9902	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4636	0.4656	0.4641	N/A
		Band 28 (758-803)	758		0.5315	0.5338	0.5320	N/A
		Summation at boundary		15.5	0.9951	0.9993	0.9961	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6601	0.6630	0.6608	N/A
		Band 29 (717-728)	717		0.3301	0.3315	0.3304	N/A
		Summation at boundary		14.3	0.9902	0.9945	0.9912	N/A
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4339	0.4358	0.4344	N/A
		Band 71 (617-652)	617		0.5494	0.5517	0.5499	N/A
		Summation at boundary		14.3	0.9833	0.9875	0.9843	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5333	0.5356	0.5338	N/A
		Band 8 (925-960)	925		0.4576	0.4595	0.4580	N/A
		Summation at boundary		13.4	0.9908	0.9951	0.9918	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9884	0.9926	0.9893	N/A
		Summation at boundary		13.0	0.9884	0.9926	0.9893	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9874	0.9917	0.9884	N/A
		Summation at boundary		12.9	0.9874	0.9917	0.9884	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9911	0.9954	0.9921	N/A
		Summation at boundary		13.9	0.9911	0.9954	0.9921	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4560	0.4579	0.4564	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5314	0.5337	0.5319	N/A
		Summation at boundary		14.5	0.9874	0.9916	0.9884	N/A
19a	LTE 3 bands,	Band 8 (925-960)	925		0.9923	0.9966	0.9933	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B8/B20/B28) Single B8 band	Summation at boundary		13.9	0.9923	0.9966	0.9933	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9909	0.9951	0.9918	N/A
		Summation at boundary		14.7	0.9909	0.9951	0.9918	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9930	0.9973	0.9940	N/A
		Summation at boundary		15.0	0.9930	0.9973	0.9940	N/A

Table 14 – AUSTRALIA General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.

2.3.5 New Zealand Result

NEW ZEALAND NZS 2772 Part 1 specifies the method of summation in clause 7 with results as follows:

Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4275	0.4477	0.4429	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.4982	0.5217	0.5162	N/A
		Summation at boundary		6.2	0.9257	0.9694	0.9592	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.4849	0.4870	0.4963	N/A
		Band 3 (1805-1880)	1805		0.4680	0.4901	0.4849	N/A
		Summation at boundary		5.1	0.9529	0.9771	0.9812	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.4842	0.5070	0.5017	N/A
		Band 66 (2110-2200)	2110		0.4672	0.4692	0.4781	N/A
		Summation at boundary		6.0	0.9514	0.9762	0.9798	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.4941	0.5174	0.5119	N/A
		Band 66a (2110-2180)	2110		0.4768	0.4788	0.4879	N/A
		Summation at boundary		4.2	0.9709	0.9962	0.9999	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4546	0.4761	0.4710	N/A
		Band 13 (746-756)	746		0.4830	0.5058	0.5004	N/A
		Summation at boundary		7.0	0.9376	0.9818	0.9715	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.4832	0.4853	0.4945	N/A
		Band 3 (1805-1880)	1805		0.4663	0.4883	0.4832	N/A
		Summation at boundary		5.9	0.9495	0.9736	0.9776	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.4849	0.5078	0.5024	N/A
		Band 14 (758-768)	758		0.4664	0.4884	0.4832	N/A
		Summation at boundary		7.4	0.9513	0.9962	0.9857	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4436	0.4645	0.4596	N/A
		Band 71 (617-652)	617		0.5005	0.5241	0.5186	N/A
		Summation at boundary		6.7	0.9441	0.9887	0.9782	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4455	0.4666	0.4617	N/A
		Band 13 (746-756)	746		0.4733	0.4957	0.4905	N/A
		Summation at boundary		5.0	0.9189	0.9623	0.9521	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.4842	0.5070	0.5017	N/A
		Band 66a (2110-2180)	2110		0.4672	0.4692	0.4781	N/A
		Summation at boundary		6.0	0.9514	0.9762	0.9798	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9326	0.9767	0.9664	N/A
		Summation at boundary		7.4	0.9326	0.9767	0.9664	N/A
12	LTE 2 bands, (B29/B70)	Band 29 (717-728)	717		0.4806	0.5033	0.4980	N/A
		Band 70 (1995-2020)	1995		0.4501	0.4714	0.4664	N/A
		Summation at boundary		5.3	0.9307	0.9747	0.9644	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6365	0.6666	0.6596	N/A
		Band 66 (2110-2200)	2110		0.3072	0.3085	0.3143	N/A
		Summation at boundary		7.4	0.9437	0.9751	0.9739	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5400	0.5654	0.5595	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4047	0.4238	0.4194	N/A
		Summation at boundary		8.1	0.9447	0.9893	0.9788	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4419	0.4627	0.4579	N/A
		Band 28 (758-803)	758		0.5066	0.5305	0.5249	N/A
		Summation at boundary		7.1	0.9485	0.9933	0.9828	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6198	0.6490	0.6422	N/A
		Band 29 (717-728)	717		0.3099	0.3245	0.3211	N/A
		Summation at boundary		6.6	0.9297	0.9736	0.9633	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4200	0.4399	0.4352	N/A
		Band 71 (617-652)	617		0.5318	0.5569	0.5510	N/A
		Summation at boundary		6.5	0.9518	0.9967	0.9862	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.4982	0.5217	0.5162	N/A
		Band 8 (925-960)	925		0.4275	0.4477	0.4429	N/A
		Summation at boundary		6.2	0.9257	0.9694	0.9592	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9280	0.9718	0.9615	N/A
		Summation at boundary		6.0	0.9280	0.9718	0.9615	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9441	0.9886	0.9782	N/A
		Summation at boundary		5.9	0.9441	0.9886	0.9782	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9350	0.9792	0.9688	N/A
		Summation at boundary		6.4	0.9350	0.9792	0.9688	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4402	0.4609	0.4561	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5130	0.5372	0.5315	N/A
		Summation at boundary		6.6	0.9531	0.9981	0.9876	N/A
19a	LTE 3 bands, (B8/B20/B28) Single B8 band	Band 8 (925-960)	925		0.9362	0.9803	0.9700	N/A
		Summation at boundary		6.4	0.9362	0.9803	0.9700	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9539	0.9990	0.9884	N/A
		Summation at boundary		6.7	0.9539	0.9990	0.9884	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9386	0.9829	0.9725	N/A
		Summation at boundary		6.9	0.9386	0.9829	0.9725	N/A

Table 15 – NEW ZEALAND 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 compliance boundary shown in the table.



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
1	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4576	0.4562	0.4433	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5333	0.5317	0.5166	N/A
		Summation at boundary		13.4	0.9908	0.9879	0.9599	N/A
2	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5028	0.5094	0.5209	N/A
		Band 3 (1805-1880)	1805		0.4852	0.4837	0.4700	N/A
		Summation at boundary		11.2	0.9879	0.9931	0.9910	N/A
3	LTE 2 bands, (B66/B25)	Band 25 (1930-1995)	1930		0.5002	0.4987	0.4846	N/A
		Band 66 (2110-2200)	2110		0.4827	0.4890	0.5001	N/A
		Summation at boundary		13.2	0.9828	0.9877	0.9847	N/A
4	LTE 2 bands, (B66a/B25)	Band 2 (1930-1990)	1930		0.5038	0.5023	0.4881	N/A
		Band 66a (2110-2180)	2110		0.4862	0.4926	0.5038	N/A
		Summation at boundary		9.3	0.9901	0.9949	0.9919	N/A
5	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4821	0.4806	0.4670	N/A
		Band 13 (746-756)	746		0.5121	0.5106	0.4962	N/A
		Summation at boundary		15.2	0.9942	0.9912	0.9632	N/A
6	LTE 2 bands, (B1/B3)	Band 1 (2110-2170)	2110		0.5054	0.5120	0.5236	N/A
		Band 3 (1805-1880)	1805		0.4877	0.4862	0.4725	N/A
		Summation at boundary		12.9	0.9931	0.9983	0.9961	N/A
7	LTE 2 bands, (B12/B14)	Band 12 (729-746)	729		0.5059	0.5044	0.4901	N/A
		Band 14 (758-768)	758		0.4865	0.4851	0.4714	N/A
		Summation at boundary		16.2	0.9924	0.9895	0.9615	N/A
8	LTE 2 bands, (B12/B71)	Band 12 (729-746)	729		0.4671	0.4657	0.4525	N/A
		Band 71 (617-652)	617		0.5270	0.5254	0.5106	N/A
		Summation at boundary		14.6	0.9941	0.9911	0.9631	N/A
9	LTE 2 bands, (B5/B13)	Band 5 (869-894)	869		0.4775	0.4760	0.4626	N/A
		Band 13 (746-756)	746		0.5073	0.5057	0.4914	N/A
		Summation at boundary		10.8	0.9847	0.9818	0.9540	N/A
10	LTE 2 bands, (B2/B66a)	Band 2 (1930-1990)	1930		0.5002	0.4987	0.4846	N/A
		Band 66a (2110-2180)	2110		0.4827	0.4890	0.5001	N/A
		Summation at boundary		13.2	0.9828	0.9877	0.9847	N/A
11	LTE 1 band, (B28)	Band 28 (758-803)	758		0.9975	0.9945	0.9664	N/A
		Summation at boundary		16.0	0.9975	0.9945	0.9664	N/A
12	LTE 2 bands,	Band 29 (717-728)	717		0.5104	0.5089	0.4945	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B29/B70)	Band 70 (1995-2020)	1995		0.4781	0.4766	0.4631	N/A
		Summation at boundary		11.5	0.9885	0.9855	0.9576	N/A
13	LTE 2 bands, (B25/B66)	Band 25 (1930-1995)	1930		0.6724	0.6704	0.6514	N/A
		Band 66 (2110-2200)	2110		0.3244	0.3287	0.3362	N/A
		Summation at boundary		16.1	0.9968	0.9991	0.9876	N/A
14	LTE 3 bands, (B12/B14/B29)	Band 12 (729-746) / Band 14 (758-768) / Band 29 (717-728)	717		0.5654	0.5637	0.5478	N/A
		Band 12 (729-746) / Band 14 (758-768) /	729		0.4238	0.4225	0.4106	N/A
		Summation at boundary		17.7	0.9892	0.9862	0.9583	N/A
15	LTE 2 bands, (B5/B28)	Band 5 (869-894)	869		0.4636	0.4622	0.4491	N/A
		Band 28 (758-803)	758		0.5315	0.5299	0.5149	N/A
		Summation at boundary		15.5	0.9951	0.9921	0.9640	N/A
16	LTE 2 bands, (B5/B29)	Band 5 (869-894) / Band 29 (717-728)	717		0.6601	0.6581	0.6395	N/A
		Band 29 (717-728)	717		0.3301	0.3291	0.3198	N/A
		Summation at boundary		14.3	0.9902	0.9872	0.9593	N/A
17	LTE 2 bands, (B13/B71)	Band 13 (746-756)	746		0.4401	0.4387	0.4263	N/A
		Band 71 (617-652)	617		0.5571	0.5555	0.5398	N/A
		Summation at boundary		14.2	0.9972	0.9942	0.9661	N/A
18	LTE 3 bands, (B5/B8/B28)	Band 5 (869-894) / Band 28 (758-803)	758		0.5333	0.5317	0.5166	N/A
		Band 8 (925-960)	925		0.4576	0.4562	0.4433	N/A
		Summation at boundary		13.4	0.9908	0.9879	0.9599	N/A
18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	Band 5 (869-894)	869		0.9884	0.9854	0.9575	N/A
		Summation at boundary		13.0	0.9884	0.9854	0.9575	N/A
18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	Band 8 (925-960)	925		0.9874	0.9845	0.9566	N/A
		Summation at boundary		12.9	0.9874	0.9845	0.9566	N/A
18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	Band 28 (758-803)	758		0.9911	0.9881	0.9602	N/A
		Summation at boundary		13.9	0.9911	0.9881	0.9602	N/A
19	LTE 3 bands, (B8/B20/B28)	Band 8 (925-960)	925		0.4560	0.4546	0.4418	N/A
		Band 20 (791-821) / Band 28 (758-803)	758		0.5314	0.5298	0.5148	N/A
		Summation at boundary		14.5	0.9874	0.9844	0.9566	N/A
19a	LTE 3 bands,	Band 8 (925-960)	925		0.9923	0.9893	0.9614	N/A



Radio Config	RAT	Bands	Frequency (MHz)	Compliance Boundary m	Calculated RF exposure level at compliance boundary as a fraction of the limit			
					S Power Density	E Field	H Field	B Field
					Summation for simultaneous exposure; value to be <1			
	(B8/B20/B28) Single B8 band	Summation at boundary		13.9	0.9923	0.9893	0.9614	N/A
19b	LTE 3 bands, (B8/B20/B28) Single B20 band	Band 20 (791-821)	791		0.9909	0.9879	0.9599	N/A
		Summation at boundary		14.7	0.9909	0.9879	0.9599	N/A
19c	LTE 3 bands, (B8/B20/B28) Single B28 band	Band 28 (758-803)	758		0.9930	0.9901	0.9621	N/A
		Summation at boundary		15.0	0.9930	0.9901	0.9621	N/A

Table 16 – NEW ZEALAND General Public Combined Exposure

The calculations show that the EUT complies with the general public exposure levels described in the listed specifications in Annex A at the compliance boundary shown in the table.

2.4 Limits

The following table shows the exposure requirements for the frequencies used in the RF exposure calculation. A full list of the requirements is shown in Annex A.

Exposure Requirement	Frequency (MHz)	Worker/Occupational Limit				General Public Limit			
		S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)	S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)
EU	617	N/A	74.52	N/A	0.2484	3.09	34.15	0.0919	0.1143
	717	N/A	80.33	N/A	0.2678	3.59	36.82	0.0991	0.1232
	729	N/A	81.00	N/A	0.2700	3.65	37.13	0.0999	0.1242
	746	N/A	81.94	N/A	0.2731	3.73	37.56	0.1011	0.1256
	758	N/A	82.60	N/A	0.2753	3.79	37.86	0.1019	0.1266
	791	N/A	84.37	N/A	0.2812	3.96	38.67	0.1041	0.1294
	869	N/A	88.44	N/A	0.2948	4.35	40.53	0.1091	0.1356
	925	N/A	91.24	N/A	0.3041	4.63	41.82	0.1125	0.1399
	1805	N/A	127.46	N/A	0.4249	9.03	58.42	0.1572	0.1954
	1930	N/A	131.80	N/A	0.4393	9.65	60.41	0.1625	0.2021
	1995	N/A	134.00	N/A	0.4467	9.98	61.41	0.1653	0.2055
	2110	N/A	140.00	N/A	0.4500	10.00	61.00	0.1600	0.2000
FCC	617	20.57	N/A	N/A	N/A	4.11	N/A	N/A	N/A
	717	23.90	N/A	N/A	N/A	4.78	N/A	N/A	N/A
	729	24.30	N/A	N/A	N/A	4.86	N/A	N/A	N/A
	746	24.87	N/A	N/A	N/A	4.97	N/A	N/A	N/A
	758	25.27	N/A	N/A	N/A	5.05	N/A	N/A	N/A



Exposure Requirement	Frequency (MHz)	Worker/Occupational Limit				General Public Limit			
		S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)	S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)
	791	26.37	N/A	N/A	N/A	5.27	N/A	N/A	N/A
	869	28.97	N/A	N/A	N/A	5.79	N/A	N/A	N/A
	925	30.83	N/A	N/A	N/A	6.17	N/A	N/A	N/A
	1805	50	N/A	N/A	N/A	10.00	N/A	N/A	N/A
	1930	50	N/A	N/A	N/A	10.00	N/A	N/A	N/A
	1995	50.00	N/A	N/A	N/A	10.00	N/A	N/A	N/A
	2110	50	N/A	N/A	N/A	10.00	N/A	N/A	N/A
CANADA	617	16.03	77.75	0.2062	N/A	2.11	28.23	0.0749	N/A
	717	17.28	80.72	0.2141	N/A	2.34	29.71	0.0788	N/A
	729	17.43	81.06	0.2150	N/A	2.37	29.88	0.0793	N/A
	746	17.63	81.53	0.2163	N/A	2.41	30.12	0.0799	N/A
	758	17.77	81.85	0.2171	N/A	2.43	30.28	0.0803	N/A
	791	18.15	82.73	0.2194	N/A	2.50	30.73	0.0815	N/A
	869	19.03	84.70	0.2247	N/A	2.67	31.73	0.0842	N/A
	925	19.63	86.03	0.2282	N/A	2.79	32.41	0.0860	N/A
	1805	27.42	0.00	0.2697	N/A	4.40	40.73	0.1081	N/A
	1930	28.36	103.40	0.2743	N/A	4.61	41.68	0.1106	N/A
	1995	28.83	104.26	0.2766	N/A	4.71	42.15	0.1118	N/A
	2110	29.65	0.00	0.2805	N/A	4.90	42.96	0.1140	N/A
AUSTRALIA	617	15.43	76.26	0.2022	N/A	3.09	34.03	0.0904	N/A
	717	17.93	82.20	0.2180	N/A	3.59	36.68	0.0975	N/A
	729	18.23	82.89	0.2198	N/A	3.65	36.99	0.0983	N/A
	746	18.65	83.85	0.2223	N/A	3.73	37.42	0.0994	N/A
	758	18.95	84.52	0.2241	N/A	3.79	37.72	0.1002	N/A
	791	19.78	86.34	0.2289	N/A	3.96	38.53	0.1024	N/A
	869	21.73	90.50	0.2400	N/A	4.35	40.39	0.1073	N/A
	925	23.13	93.37	0.2475	N/A	4.63	41.67	0.1107	N/A
	1805	45.125	130.43	0.3458	N/A	9.03	58.20	0.1546	N/A
	1930	48.25	134.87	0.3576	N/A	9.65	60.19	0.1599	N/A
	1995	49.88	137.12	0.3636	N/A	9.98	61.19	0.1626	N/A
	2110	50	137.00	0.364	N/A	10.00	61.40	0.1630	N/A
NEW ZEALAND	617	15.43	74.52	0.1987	N/A	3.09	34.15	0.0919	N/A
	717	17.93	80.33	0.2142	N/A	3.59	36.82	0.0991	N/A
	729	18.23	81.00	0.2160	N/A	3.65	37.13	0.0999	N/A
	746	18.65	81.94	0.2185	N/A	3.73	37.56	0.1011	N/A
	758	18.95	82.60	0.2202	N/A	3.79	37.86	0.1019	N/A
	791	19.78	84.37	0.2250	N/A	3.96	38.67	0.1041	N/A



Exposure Requirement	Frequency (MHz)	Worker/Occupational Limit				General Public Limit			
		S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)	S Power Density (W/m ²)	E Field (V/m)	H Field (A/m)	B Field (μT)
	869	21.73	88.44	0.2358	N/A	4.35	40.53	0.1091	N/A
	925	23.13	91.24	0.2433	N/A	4.63	41.82	0.1125	N/A
	1805	45.125	127.46	0.3399	N/A	9.03	58.42	0.1572	N/A
	1930	48.25	131.80	0.3515	N/A	9.65	60.41	0.1625	N/A
	1995	49.88	134.00	0.3573	N/A	9.98	61.41	0.1653	N/A
	2110	50	137.00	0.36	N/A	10.00	61.00	0.1600	N/A

Table 17 - Limits

2.5 Additional Product Installation Calculation Results

The results for the EU product installation compliance in accordance with EN 62232:2017 Table 2 are:

Exposure Requirement	Standard Reference	Radio Config	RAT	Frequency MHz	Compliance Distance D _m (m)	Minimum Height H _m (m)
EU	EN 62232 Para 6.2.4	1	LTE 3 bands, (B8/B20/B28)	925 / 758	26.7	17.7
EU	EN 62232 Para 6.2.4	2	LTE 2 bands, (B1/B3)	2110 / 1805	22.5	15.2
EU	EN 62232 Para 6.2.4	3	LTE 2 bands, (B66/B25)	1930 / 2110	26.5	17.3
EU	EN 62232 Para 6.2.4	4	LTE 2 bands, (B66a/B25)	1930 / 2110	18.7	13.0
EU	EN 62232 Para 6.2.4	5	LTE 2 bands, (B5/B13)	869 / 746	30.4	21.3
EU	EN 62232 Para 6.2.4	6	LTE 2 bands, (B1/B3)	2110 / 1805	26.0	17.2
EU	EN 62232 Para 6.2.4	7	LTE 2 bands, (B12/B14)	729 / 758	32.3	20.2
EU	EN 62232 Para 6.2.4	8	LTE 2 bands, (B12/B71)	729 / 617	29.2	18.7
EU	EN 62232 Para 6.2.4	9	LTE 2 bands, (B5/B13)	869 / 746	21.5	15.6
EU	EN 62232 Para 6.2.4	10	LTE 2 bands, (B2/B66a)	1930 / 2110	26.5	17.5
EU	EN 62232 Para 6.2.4	11	LTE 1 band, (B28)	759	32.0	20.0
EU	EN 62232 Para 6.2.4	12	LTE 2 bands, (B29/B70)	717 / 1995	22.9	15.1
EU	EN 62232 Para 6.2.4	13	LTE 2 bands, (B25/B66)	1930 / 2110	32.3	20.8
EU	EN 62232 Para 6.2.4	14	LTE 3 bands, (B12/B14/B29)	717 / 729	35.3	21.8
EU	EN 62232 Para 6.2.4	15	LTE 2 bands, (B5/B28)	869 / 758	31.0	20.3



Exposure Requirement	Standard Reference	Radio Config	RAT	Frequency MHz	Compliance Distance D _m (m)	Minimum Height H _m (m)
EU	EN 62232 Para 6.2.4	16	LTE 2 bands, (B5/B29)	717 / 717	28.5	19.2
EU	EN 62232 Para 6.2.4	17	LTE 2 bands, (B13/B71)	746 / 617	28.4	19.3
EU	EN 62232 Para 6.2.4	18	LTE 3 bands, (B5/B8/B28)	758 / 925	26.7	17.7
EU	EN 62232 Para 6.2.4	18a	LTE 3 bands, (B5/B8/B28) – Single B5 band	869	25.9	18.1
EU	EN 62232 Para 6.2.4	18b	LTE 3 bands, (B5/B8/B28) – Single B8 band	925	25.7	17.8
EU	EN 62232 Para 6.2.4	18c	LTE 3 bands, (B5/B8/B28) – Single B28 band	758	27.7	17.6
EU	EN 62232 Para 6.2.4	19	LTE 3 bands, (B8/B20/B28)	925 / 758	28.9	19.0
EU	EN 62232 Para 6.2.4	19a	LTE 3 bands, (B8/B20/B28) – Single B8 band	925	27.7	19.1
EU	EN 62232 Para 6.2.4	19b	LTE 3 bands, (B8/B20/B28) – Single B20 band	791	29.3	20.6
EU	EN 62232 Para 6.2.4	19c	LTE 3 bands, (B8/B20/B28) – Single B28 band	758	29.9	18.8

Table 18 – Product Installation Compliance Data



2.6 Far Field Region Boundary Results

The far field region boundary calculation result is shown in Table 19:

Near Field / Far Field Boundary (Ref: EN 62232 Annex A, IEEE C95.3 Annex B.2, 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)	Boundary of validity for calculation (Calculation overestimates within boundary). Maximum is boundary	
		$\lambda/4$ (m)	Rayleigh Range Boundary $2D^2/\lambda$ (m)	Alternative boundary $D/2+2.5\lambda$ (m)
LTE band 1	2110	0.0355	29.6568	1.0815
LTE band 2	1930	0.0389	27.1268	1.1146
LTE band 3	1805	0.0416	25.3699	1.1415
LTE band 5	869	0.0863	23.1502	1.8626
LTE band 8	925	0.0811	24.6420	1.8103
LTE band 12	729	0.1029	28.8634	2.2473
LTE band 13	746	0.1005	19.8734	2.0049
LTE band 14	758	0.0989	30.0116	2.2079
LTE band 20	791	0.0948	31.3182	2.1667
LTE band 25	1930	0.0389	27.1268	1.1146
LTE band 28	758	0.0989	30.0116	2.2079
LTE band 29	717	0.1046	28.3883	2.2645
LTE band 66	2110	0.0355	29.6568	1.0815
LTE band 66a	2110	0.0355	29.6568	1.0815
LTE band 70	1995	0.0376	28.0404	1.1019
LTE band 71	617	0.1216	24.4290	2.4341

Table 19 – Far Field Boundary

The table below shows the maximum calculated near field / far field region boundaries. The compliance boundary of 4.2 m (minimum) is in the radiating near field region and therefore, the approach described in section 2.1 is an over estimate of the exposure and therefore a conservative assessment.



Field Region	Reactive Near Field Region	Radiating Near Field Region	Far Field Region
Maximum Boundary	< 0.1216 m	0.1216 m – 31.3182 m	> 31.3182 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	4.2 m	N/A

Table 20 – Assessment Method Validity

2.7 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. (Reference EN 62232 clause B.4.1).

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 2.6.



ANNEX A

EXPOSURE 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		$3 \cdot f^{0.5}$	N/A	$1E-2 \cdot f^{0.5}$
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	$1.375 \cdot f^{0.5}$	$0.0037 \cdot f^{0.5}$	$0.0046 \cdot f^{0.5}$
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 (2017) 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 (2017) General Public Limits

Note 1: The calculations and limits presented in this report for power density are in units of W/m². The conversion factor is; 1 mW/cm² = 10 W/m².

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

Frequency Range (MHz)	Power Density (W/m ²)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0.1 - 1	-	614	$1.63/f$
1 - 10	$1000/f^2$	$614/f$	$1.63/f$
10 - 400	10	61.4	0.163
400 - 2000	$f/40$	$3.07*f^{0.5}$	$0.00814*f^{0.5}$
2000 - 300000	50	137	0.364

Table A.7 – ARPANSA Radiation Protection Series No.3 Worker/Occupational Limits

Frequency Range (MHz)	Power Density (W/m ²)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0.1 - 0.15	-	86.8	4.86
0.15 - 1	-	86.8	$0.729/f$
1 - 10	-	$86.8/f^{0.5}$	$0.729/f$
10 - 400	2	27.4	0.0729
400 - 2000	$f/200$	$1.37*f^{0.5}$	$0.00364*f^{0.5}$
2000 - 300000	10	61.4	0.163

Table A.8 – ARPANSA Radiation Protection Series No.3 General Public Limits



Frequency Range (MHz)	Power Density (W/m ²)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0.1 - 1	-	614	1.63/f
1 - 10	1000/f ²	614/f	1.63/f
10 - 400	10	61.4	0.163
400 - 2000	f/40	3.07*f ^{0.5}	0.00814*f ^{0.5}
2000 - 300000	50	137	0.364

Table A.9 – NZS 2772 Part 1:1999 Worker/Occupational Limits

Frequency Range (MHz)	Power Density (W/m ²)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)
0.1 - 0.15	-	86.8	4.86
0.15 - 1	-	86.8	0.729/f
1 - 10	-	86.8/f ^{0.5}	0.729/f
10 - 400	2	27.4	0.0729
400 - 2000	f/200	1.37*f ^{0.5}	0.00364*f ^{0.5}
2000 - 300000	10	61.4	0.163

Table A.10 – NZS 2772 Part 1:1999 General Public Limits