SGS Korea Co., Ltd.
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TEST REPORT

of

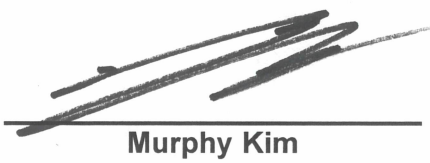
FCC Part 2 Subpart J, Part 22 Subpart C/H and Part 27 Subpart C
IC RSS-132 Issue 3, RSS-139 Issue 4,
RSS-199 Issue 3 and RSS-Gen Issue 5

FCC ID: TQ8LI99700020
IC Certification: 5074A-LI99700020

Equipment Under Test	:	Remote Vehicle Assistance
Model Name	:	LI99700020
Variant Model Name(s)	:	-
Applicant	:	FCC: HYUNDAI MOBIS CO., LTD. IC: Hyundai MOBIS Co., Ltd
Manufacturer	:	FCC: HYUNDAI MOBIS CO., LTD. IC: Hyundai MOBIS Co., Ltd
Date of Receipt	:	2022.07.11
Date of Test(s)	:	2022.07.11 ~ 2023.02.03
Date of Issue	:	2023.02.03

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

1) The results of this test report are effective only to the items tested.
2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
3) This test report cannot be reproduced, except in full, without prior written permission of the Company.
4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.
We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by:  **Murphy Kim**

Technical Manager:  **Jinhyoung Cho**

SGS Korea Co., Ltd. Gunpo Laboratory

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx.

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1.2. Details of Applicant

FCC Applicant : HYUNDAI MOBIS CO., LTD.
FCC Address : 203, Teheran-ro, Gangnam-gu, Seoul, South Korea, 135-977
IC Applicant : Hyundai MOBIS Co., Ltd
IC Address : 203, Teheran-ro, Gangnam-gu, Seoul, 135-977, Korea(Republic Of)
Contact Person : Choe, Seung-hoon
Phone No. : +82 31 260 0098

1.3. Details of Manufacturer

Company : Same as applicant
Address : Same as applicant

1.4. Description of EUT

Kind of Product	Remote Vehicle Assistance
Model Name	LI99700020
Serial Number	863789050196050
Power Supply	DC 12.7 V
Rated Power	LTE Band 2, 4, 5, 7, 12, 13, 14, 25, 26, 66, 71: 23 ㏈m
Frequency Range	LTE Band 2: 1 850 ㎒ ~ 1 910 ㎒ LTE Band 4: 1 710 ㎒ ~ 1 755 ㎒ LTE Band 5: 824 ㎒ ~ 849 ㎒ LTE Band 7: 2 500 ㎒ ~ 2 570 ㎒ LTE Band 12: 699 ㎒ ~ 716 ㎒ LTE Band 13: 777 ㎒ ~ 787 ㎒ LTE Band 14: 788 ㎒ ~ 798 ㎒ LTE Band 25: 1 850 ㎒ ~ 1 915 ㎒ LTE Band 26(FCC Only): 814 ㎒ ~ 824 ㎒ LTE Band 26: 824 ㎒ ~ 849 ㎒ LTE Band 66: 1 710 ㎒ ~ 1 780 ㎒ LTE Band 71: 663 ㎒ ~ 698 ㎒
Uplink CA Bands	5B, 7C, 66B, 66C
Modulation Technique	QPSK, 16QAM, 64QAM
Antenna Type	Monopole Antenna
Antenna Gain※	Refer to the clause 1.15
H/W Version	1.0
S/W Version	1.0
FVIN	N/A

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	R&S	SMA100B	106887	Oct. 13, 2022	Annual	Oct. 13, 2023
Signal Generator	R&S	SMBV100A	255834	May 25, 2022	Annual	May 25, 2023
Spectrum Analyzer	R&S	FSV30	103210	Dec. 07, 2022	Annual	Dec. 07, 2023
Spectrum Analyzer	Agilent	N9020A	MY53421758	Aug. 26, 2022	Annual	Aug. 26, 2023
Spectrum Analyzer	Agilent	N9030A	US51350132	Nov. 11, 2022	Annual	Nov. 11, 2023
Mobile Test Unit	R&S	CMW 500	144034	Feb. 21, 2022	Annual	Feb. 21, 2023
Communication Analyzer	Anritsu	MT8821C	6262192291	Oct. 11, 2022	Annual	Oct. 11, 2023
Power Meter	Anritsu	ML2495A	1223004	Nov. 29, 2022	Annual	Nov. 29, 2023
Power Sensor	Anritsu	MA2411B	1207272	May 27, 2022	Annual	May 27, 2023
Temperature Chamber	ESPEC CORP.	SH-662	93000533	Jun. 02, 2022	Annual	Jun. 02, 2023
Low Pass Filter	Mini-Circuits	NLP-1200+	V 8979400903-2	Feb. 10, 2022	Annual	Feb. 10, 2023
High Pass Filter	Wainwright Instrument GmbH	WHKX10-900-1000-18000-40SS	7	Mar. 04, 2022	Annual	Mar. 04, 2023
High Pass Filter	Wainwright Instrument GmbH	WHKX2.2/12.75G-10SS	8	Mar. 04, 2022	Annual	Mar. 04, 2023
High Pass Filter	Wainwright Instrument GmbH	WHKX3.0/18G-6SS	21	Jun. 09, 2022	Annual	Jun. 09, 2023
High Pass Filter	Wainwright Instrument GmbH	WHNX7.5/26.5G-6SS	11	Oct. 24, 2022	Annual	Oct. 24, 2023
BRIDGE COUPLER	MARKI MICROWAVE INC	CBR16-0012	1542	May 06, 2022	Annual	May 06, 2023
Directional Coupler	KRYTAR	152613	122660	Jul. 06, 2022	Annual	Jul. 06, 2023
DC Power Supply	R&S	HMP2020	102130	Apr. 22, 2022	Annual	Apr. 22, 2023
Preamplifier	H.P.	8447F	2944A03909	Aug. 04, 2022	Annual	Aug. 04, 2023
Preamplifier	R&S	SCU 18	10117	Jun. 13, 2022	Annual	Jun. 13, 2023
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	Sep. 27, 2022	Annual	Sep. 27, 2023
Test Receiver	R&S	ESCI 7	100911	Feb. 23, 2022	Annual	Feb. 23, 2023
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 23, 2021	Biennial	Aug. 23, 2023
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	01126	Feb. 07, 2022	Annual	Feb. 07, 2023
Horn Antenna	R&S	HF906	100326	Feb. 18, 2022	Annual	Feb. 18, 2023
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA 9170	9170-540	Nov. 30, 2022	Annual	Nov. 30, 2023
Antenna Master	Innco systems GmbH	MA4640-XP-ET	MA4640/536/383 30516/L	N.C.R.	N/A	N.C.R.
Turn Table	Innco systems GmbH	DS 1200S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/383 30516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	RFONE	MWX221-NMSNMS (4 m)	J1023142	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Coaxial Cable	Qualwave Inc.	QA500-18-NN-10 (10 m)	22200114	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182287	Aug. 18, 2022	Semi-Annual	Feb. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182288	Aug. 18, 2022	Semi-Annual	Feb. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182291	Aug. 18, 2022	Semi-Annual	Feb. 18, 2023

Note;
- For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 2, 22 and 27 / IC RSS-Gen Issue 5, RSS-132 Issue 3, RSS-139 Issue 4 and RSS-199 Issue 3			
Section in FCC	**Section in IC**	**Test Item(s)**	**Result**
§22.913(a)(5) §27.50(d)(4) §27.50(h)(2)	RSS-132 Issue 3 5.4 RSS-139 Issue 4 5.5 RSS-199 Issue 3 4.4	E.R.P. / E.I.R.P.	Complied
§22.917(a) §27.53(h)(1) §27.53(m)(4)	RSS-132 Issue 3 5.5 RSS-139 Issue 4 5.6 RSS-199 Issue 3 4.5	Radiated Spurious Emissions	Complied
§2.1046	RSS-Gen Issue 5 6.12	Conducted Output Power	Complied
§2.1049	RSS-Gen Issue 5 6.7	Occupied Bandwidth	Complied
§22.913(d) §27.50(d)(5)	RSS-132 Issue 3 5.4 RSS-139 Issue 4 5.5 RSS-199 Issue 3 4.4	Peak-Average Ratio	Complied
§22.917(a) §27.53(h)(1) §27.53(m)(4)	RSS-132 Issue 3 5.5 RSS-139 Issue 4 5.6 RSS-199 Issue 3 4.5	Spurious Emission at Antenna Terminal	Complied
§22.917(a) §27.53(h)(1) §27.53(m)(4)	RSS-132 Issue 3 5.5 RSS-139 Issue 4 5.6 RSS-199 Issue 3 4.5	Band Edge and Emission Mask	Complied
§2.1055 §22.355 §27.54	RSS-Gen Issue 5 6.11 RSS-132 Issue 3 5.3 RSS-139 Issue 4 5.4 RSS-199 Issue 3 4.3	Frequency Stability	Complied

1.7. Sample Calculation for Offset

Where relevant, the following sample calculation is provided:

1.7.1. Conducted Test

Offset value (㏈) = Directional Coupler (㏈) + Cable loss (㏈)

1.7.2. Radiation Test

- E.I.R.P. (㏈ m) = Measured level (㏈㎶) + Antenna factor (㏈/m) + Cable loss (㏈) + 20 Log D - 104.8; where D is the measurement distance in meters.
- E.R.P. (㏈ m) = E.I.R.P. (㏈ m) - 2.15 (㏈)

1.8. Manufacturer Declaration

One telematics unit contains five independent LTE modules that can operate simultaneously. Only one type of LTE module is fitted to the device via internal USB communication. All five independent modules have the electrically equivalent.
EUT has five (SIM1, SIM2, SIM3, SIM4 and SIM5) ports each with a port-specific antenna.

1.9. Device Capabilities

This device contains the following capabilities;

LTE Band 4 (1 710 ㎒ ~ 1 755 ㎒) is covered by LTE Band 66 (1 710 ㎒ ~ 1 780 ㎒) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth. Therefore test data provided in this report covers LTE Band 4 as well as Band 66.

1.10. The Test Channel Details

The EUT supports with carrier aggregation uplink. Intra-Band contiguous specification as below

E-UTRA Intra-Band CA configuration / Bandwidth combination set			
E-UTRA CA Configuration	Channel bandwidth for carrier (㎒)	Channel bandwidth for carrier (㎒)	Maximum aggregated bandwidth (㎒)
CA_5B	3	5	8
	5	3	
	5	10	15
	10	5	
	10	10	20
CA_7C	10	20	30
	20	10	
	15	15	
	15	10	25
	15	20	35
	20	15	
	20	20	40
CA_66B	5	5	10
	5	10	15
	10	5	
	5	15	20
	15	5	
	10	10	
CA_66C	10	15	25
	15	10	
	10	20	30
	20	10	
	15	15	
	15	20	35
	20	15	
	20	5	25
	5	20	
	20	20	40

1.11. Worst Case Configuration and Mode

Since all five ports are the electrically equivalent module, representatively, all test items were performed on port 1. Radiated spurious emissions were tested separately because the antennas are all different.

The worst-case is based on the conducted output power measurement investigation results. All testing was performed using QPSK and 16QAM modulations. However, the spurious radiated emission and spurious at antenna terminal were only performed on bandwidth and RB offset (with RB size 1) with the highest conducted power in QPSK.

The peak to average ratio were tested only 64QAM modulation as worst case.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z, and the worst case data is reported.

1.12. Measurement Configuration

Test Items	Band	Test Channel			Bandwidth (MHz)								Modulation			RB #		
		Low	Mid	High	8	10	15	20	25	30	35	40	QPSK	16QAM	64QAM	1	Half	Full
Conducted Output Power	5B	V	V	V	V		V	V					V	V	-	V	-	V
	7C	V	V	V					V	V	V	V	V	V	-	V	-	V
	66B	V	V	V		V	V	V					V	V	-	V	-	V
	66C	V	V	V					V	V	V	V	V	V	-	V	-	V
Frequency Stability	5B	-	V	-	V		V	V					V	-	-	-	-	V
	7C	-	V	-					V	V	V	V	V	-	-	-	-	V
	66B	-	V	-		V	V	V					V	-	-	-	-	V
	66C	-	V	-					V	V	V	V	V	-	-	-	-	V
Occupied Bandwidth	5B	-	V	-	V		V	V					V	V	-	-	-	V
	7C	-	V	-					V	V	V	V	V	V	-	-	-	V
	66B	-	V	-		V	V	V					V	V	-	-	-	V
	66C	-	V	-					V	V	V	V	V	V	-	-	-	V
Peak-to-Average Ratio	5B	-	V	-	V		V	V					-	-	V	-	-	V
	7C	-	V	-					V	V	V	V	-	-	V	-	-	V
	66B	-	V	-		V	V	V					-	-	V	-	-	V
	66C	-	V	-					V	V	V	V	-	-	V	-	-	V
Band edge	5B	V	-	V	V		V	V					V	V	-	-	-	V
	7C	V	-	V					V	V	V	V	V	V	-	-	-	V
	66B	V	-	V		V	V	V					V	V	-	-	-	V
	66C	V	-	V					V	V	V	V	V	V	-	-	-	V
Spurious at antenna terminal & Radiated Spurious Emissions	5B	V	V	V	Worst Case													
	7C	V	V	V	Worst Case													
	66B	V	V	V	Worst Case													
	66C	V	V	V	Worst Case													

1.13. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty	
RF Output Power	0.32 dB	
Occupied Bandwidth	3.90 ㎑	
Conducted Spurious Emissions	0.61 dB	
Peak to Average Ratio	0.60 dB	
Frequency Stability	5.97 ㎑	
Radiated Emission, 9 ㎑ to 30 ㎒	H	3.40 dB
	V	3.40 dB
Radiated Emission, below 1 ㎓	H	4.50 dB
	V	5.10 dB
Radiated Emission, above 1 ㎓	H	3.70 dB
	V	3.90 dB

All measurement uncertainty values are shown with a coverage factor of *k*=2 to indicate a 95 % level of confidence.

1.14. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003773	2023.02.03	Initial

1.15. Antenna Designation

Operating Frequency (㎒)		Antenna Peak Gain (㏈i)			
		Ant. No	Ant. Gain	Cable Loss[1)]	Final Gain[2)]
CA_5B	824 ~ 849	Ant. 1	6.49	1.40	5.09
		Ant. 2	5.31	1.40	3.91
		Ant. 3	6.53	1.40	5.13
		Ant. 4	5.21	1.40	3.81
		Ant. 5	5.83	1.40	4.43
CA_7C	2 500 ~ 2 570	Ant. 1	5.03	2.35	2.68
		Ant. 2	4.63	2.35	2.28
		Ant. 3	3.34	2.35	0.99
		Ant. 4	4.54	2.35	2.19
		Ant. 5	3.44	2.35	1.09
CA_66B	1 710 ~ 1 780	Ant. 1	-0.26	2.10	-2.36
		Ant. 2	-1.88	2.10	-3.98
		Ant. 3	-0.34	2.10	-2.44
		Ant. 4	-0.97	2.10	-3.07
		Ant. 5	-0.32	2.10	-2.42
CA_66C	1 710 ~ 1 780	Ant. 1	-0.26	2.10	-2.36
		Ant. 2	-1.88	2.10	-3.98
		Ant. 3	-0.34	2.10	-2.44
		Ant. 4	-0.97	2.10	-3.07
		Ant. 5	-0.32	2.10	-2.42

Note;
1) It is a cable that is permanently connected between the antenna and the EUT
2) In this report, Final gain reflecting the cable loss was used.

1.16. Emission Designator and Max Power

ANT1

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (㏈m)	Ant. Gain (㏈i)	E.R.P. / E.I.R.P. Average (㏈m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_5B	3+5	QPSK	825.6	846.5	22.20	5.09	27.29	0.536	7M45G7D
		16QAM			21.62		26.71	0.469	7M45D7D
	5+3	QPSK	825.6	847.4	22.20		27.29	0.536	7M47G7D
		16QAM			21.85		26.94	0.494	7M45D7D
	5+10	QPSK	826.8	844.0	24.22		29.31	0.853	13M8G7D
		16QAM			23.51		28.60	0.724	13M8D7D
	10+5	QPSK	829.0	846.2	24.25		29.34	0.859	13M8G7D
		16QAM			23.60		28.69	0.740	13M8D7D
	10+10	QPSK	829.0	844.0	24.29		29.38	0.867	18M7G7D
		16QAM			23.65		28.74	0.748	18M7D7D
CA_7C	10+20	QPSK	2 505.5	2 560.0	24.21	2.68	26.89	0.489	27M6G7D
		16QAM			23.42		26.10	0.407	27M6D7D
	20+10	QPSK	2 510.0	2 564.5	24.18		26.86	0.485	27M7G7D
		16QAM			23.38		26.06	0.404	27M6D7D
	15+15	QPSK	2 507.5	2 562.5	24.22		26.90	0.490	28M2G7D
		16QAM			23.41		26.09	0.406	28M2D7D
	15+10	QPSK	2 507.5	2 564.7	24.22		26.90	0.490	23M0G7D
		16QAM			23.40		26.08	0.406	23M1D7D
	15+20	QPSK	2 507.8	2 560.0	24.26		26.94	0.494	32M7G7D
		16QAM			23.40		26.08	0.406	32M6D7D
	20+15	QPSK	2 510.0	2 562.2	24.28		26.96	0.497	32M7G7D
		16QAM			23.41		26.09	0.406	32M6D7D
	20+20	QPSK	2 510	2 560	24.32		27.00	0.501	37M4G7D
		16QAM			23.46		26.14	0.411	37M5D7D
CA_66B	5+5	QPSK	1 712.5	1 777.5	23.56	-2.36	21.20	0.132	9M23G7D
		16QAM			22.68		20.32	0.108	9M21D7D
	5+10	QPSK	1 712.8	1 775.0	23.71		21.35	0.136	13M9G7D
		16QAM			22.84		20.48	0.112	13M9D7D
	10+5	QPSK	1 715.0	1 777.2	23.65		21.29	0.135	13M9G7D
		16QAM			22.89		20.53	0.113	13M9D7D
	5+15	QPSK	1 713.0	1 772.5	23.72		21.36	0.137	18M2G7D
		16QAM			22.85		20.49	0.112	18M1D7D
	15+5	QPSK	1 717.5	1 777.0	23.71		21.35	0.136	18M2G7D
		16QAM			22.88		20.52	0.113	18M3D7D
	10+10	QPSK	1 715.0	1 775.0	23.77		21.41	0.138	18M7G7D
		16QAM			22.92		20.56	0.114	18M8D7D

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Worst Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_66C	10+15	QPSK	1 715.3	1 772.5	23.91	-2.36	21.55	0.143	23M1G7D
		16QAM			23.02		20.66	0.116	23M0D7D
	15+10	QPSK	1 717.5	1 774.7	23.90		21.54	0.143	23M0G7D
		16QAM			22.98		20.62	0.115	23M1D7D
	10+20	QPSK	1 715.5	1 770.0	23.90		21.54	0.143	27M6G7D
		16QAM			22.89		20.53	0.113	27M6D7D
	20+10	QPSK	1 720.0	1 774.5	23.86		21.50	0.141	27M8G7D
		16QAM			22.84		20.48	0.112	27M7D7D
	15+15	QPSK	1 717.5	1 772.5	23.89		21.53	0.142	28M4G7D
		16QAM			22.95		20.59	0.115	28M2D7D
	15+20	QPSK	1 717.8	1 770.0	23.87		21.51	0.142	32M7G7D
		16QAM			22.96		20.60	0.115	32M7D7D
	20+15	QPSK	1 720.0	1 772.2	23.81		21.45	0.140	32M7G7D
		16QAM			22.95		20.59	0.115	32M7D7D
	20+5	QPSK	1 720.0	1 776.7	23.88		21.52	0.142	22M8G7D
		16QAM			22.89		20.53	0.113	22M9D7D
	5+20	QPSK	1 713.3	1 770.0	23.87		21.51	0.142	22M7G7D
		16QAM			22.92		20.56	0.114	22M7D7D
	20+20	QPSK	1 720.0	1 770.0	23.92		21.56	0.143	37M5G7D
		16QAM			23.04		20.68	0.117	37M6D7D

ANT2

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_5B	3+5	QPSK	825.6	846.5	22.20	3.91	26.11	0.408	7M45G7D
		16QAM			21.62		25.53	0.357	7M45D7D
	5+3	QPSK	825.6	847.4	22.20		26.11	0.408	7M47G7D
		16QAM			21.85		25.76	0.377	7M45D7D
	5+10	QPSK	826.8	844.0	24.22		28.13	0.650	13M8G7D
		16QAM			23.51		27.42	0.552	13M8D7D
	10+5	QPSK	829.0	846.2	24.25		28.16	0.655	13M8G7D
		16QAM			23.60		27.51	0.564	13M8D7D
	10+10	QPSK	829.0	844.0	24.29		28.20	0.661	18M7G7D
		16QAM			23.65		27.56	0.570	18M7D7D
CA_7C	10+20	QPSK	2 505.5	2 560.0	24.21	2.28	26.49	0.446	27M6G7D
		16QAM			23.42		25.70	0.372	27M6D7D
	20+10	QPSK	2 510.0	2 564.5	24.18		26.46	0.443	27M7G7D
		16QAM			23.38		25.66	0.368	27M6D7D
	15+15	QPSK	2 507.5	2 562.5	24.22		26.50	0.447	28M2G7D
		16QAM			23.41		25.69	0.371	28M2D7D
	15+10	QPSK	2 507.5	2 564.7	24.22		26.50	0.447	23M0G7D
		16QAM			23.40		25.68	0.370	23M1D7D
	15+20	QPSK	2 507.8	2 560.0	24.26		26.54	0.451	32M7G7D
		16QAM			23.40		25.68	0.370	32M6D7D
	20+15	QPSK	2 510.0	2 562.2	24.28		26.56	0.453	32M7G7D
		16QAM			23.41		25.69	0.371	32M6D7D
	20+20	QPSK	2 510	2 560	24.32		26.60	0.457	37M4G7D
		16QAM			23.46		25.74	0.375	37M5D7D
CA_66B	5+5	QPSK	1 712.5	1 777.5	23.56	-3.98	19.58	0.091	9M23G7D
		16QAM			22.68		18.70	0.074	9M21D7D
	5+10	QPSK	1 712.8	1 775.0	23.71		19.73	0.094	13M9G7D
		16QAM			22.84		18.86	0.077	13M9D7D
	10+5	QPSK	1 715.0	1 777.2	23.65		19.67	0.093	13M9G7D
		16QAM			22.89		18.91	0.078	13M9D7D
	5+15	QPSK	1 713.0	1 772.5	23.72		19.74	0.094	18M2G7D
		16QAM			22.85		18.87	0.077	18M1D7D
	15+5	QPSK	1 717.5	1 777.0	23.71		19.73	0.094	18M2G7D
		16QAM			22.88		18.90	0.078	18M3D7D
	10+10	QPSK	1 715.0	1 775.0	23.77		19.79	0.095	18M7G7D
		16QAM			22.92		18.94	0.078	18M8D7D

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Worst Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_66C	10+15	QPSK	1 715.3	1 772.5	23.91	-3.98	19.93	0.098	23M1G7D
		16QAM			23.02		19.04	0.080	23M0D7D
	15+10	QPSK	1 717.5	1 774.7	23.90		19.92	0.098	23M0G7D
		16QAM			22.98		19.00	0.079	23M1D7D
	10+20	QPSK	1 715.5	1 770.0	23.90		19.92	0.098	27M6G7D
		16QAM			22.89		18.91	0.078	27M6D7D
	20+10	QPSK	1 720.0	1 774.5	23.86		19.88	0.097	27M8G7D
		16QAM			22.84		18.86	0.077	27M7D7D
	15+15	QPSK	1 717.5	1 772.5	23.89		19.91	0.098	28M4G7D
		16QAM			22.95		18.97	0.079	28M2D7D
	15+20	QPSK	1 717.8	1 770.0	23.87		19.89	0.097	32M7G7D
		16QAM			22.96		18.98	0.079	32M7D7D
	20+15	QPSK	1 720.0	1 772.2	23.81		19.83	0.096	32M7G7D
		16QAM			22.95		18.97	0.079	32M7D7D
	20+5	QPSK	1 720.0	1 776.7	23.88		19.90	0.098	22M8G7D
		16QAM			22.89		18.91	0.078	22M9D7D
	5+20	QPSK	1 713.3	1 770.0	23.87		19.89	0.097	22M7G7D
		16QAM			22.92		18.94	0.078	22M7D7D
	20+20	QPSK	1 720.0	1 770.0	23.92		19.94	0.099	37M5G7D
		16QAM			23.04		19.06	0.081	37M6D7D

ANT3

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_5B	3+5	QPSK	825.6	846.5	22.20	5.13	27.33	0.541	7M45G7D
		16QAM			21.62		26.75	0.473	7M45D7D
	5+3	QPSK	825.6	847.4	22.20		27.33	0.541	7M47G7D
		16QAM			21.85		26.98	0.499	7M45D7D
	5+10	QPSK	826.8	844.0	24.22		29.35	0.861	13M8G7D
		16QAM			23.51		28.64	0.731	13M8D7D
	10+5	QPSK	829.0	846.2	24.25		29.38	0.867	13M8G7D
		16QAM			23.60		28.73	0.746	13M8D7D
	10+10	QPSK	829.0	844.0	24.29		29.42	0.875	18M7G7D
		16QAM			23.65		28.78	0.755	18M7D7D
CA_7C	10+20	QPSK	2 505.5	2 560.0	24.21	0.99	25.20	0.331	27M6G7D
		16QAM			23.42		24.41	0.276	27M6D7D
	20+10	QPSK	2 510.0	2 564.5	24.18		25.17	0.329	27M7G7D
		16QAM			23.38		24.37	0.274	27M6D7D
	15+15	QPSK	2 507.5	2 562.5	24.22		25.21	0.332	28M2G7D
		16QAM			23.41		24.40	0.275	28M2D7D
	15+10	QPSK	2 507.5	2 564.7	24.22		25.21	0.332	23M0G7D
		16QAM			23.40		24.39	0.275	23M1D7D
	15+20	QPSK	2 507.8	2 560.0	24.26		25.25	0.335	32M7G7D
		16QAM			23.40		24.39	0.275	32M6D7D
	20+15	QPSK	2 510.0	2 562.2	24.28		25.27	0.337	32M7G7D
		16QAM			23.41		24.40	0.275	32M6D7D
	20+20	QPSK	2 510	2 560	24.32		25.31	0.340	37M4G7D
		16QAM			23.46		24.45	0.279	37M5D7D
CA_66B	5+5	QPSK	1 712.5	1 777.5	23.56	-2.44	21.12	0.129	9M23G7D
		16QAM			22.68		20.24	0.106	9M21D7D
	5+10	QPSK	1 712.8	1 775.0	23.71		21.27	0.134	13M9G7D
		16QAM			22.84		20.40	0.110	13M9D7D
	10+5	QPSK	1 715.0	1 777.2	23.65		21.21	0.132	13M9G7D
		16QAM			22.89		20.45	0.111	13M9D7D
	5+15	QPSK	1 713.0	1 772.5	23.72		21.28	0.134	18M2G7D
		16QAM			22.85		20.41	0.110	18M1D7D
	15+5	QPSK	1 717.5	1 777.0	23.71		21.27	0.134	18M2G7D
		16QAM			22.88		20.44	0.111	18M3D7D
	10+10	QPSK	1 715.0	1 775.0	23.77		21.33	0.136	18M7G7D
		16QAM			22.92		20.48	0.112	18M8D7D

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (㏈m)	Worst Ant. Gain (㏈i)	E.R.P. / E.I.R.P. Average (㏈m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_66C	10+15	QPSK	1 715.3	1 772.5	23.91	-2.44	21.47	0.140	23M1G7D
		16QAM			23.02		20.58	0.114	23M0D7D
	15+10	QPSK	1 717.5	1 774.7	23.90		21.46	0.140	23M0G7D
		16QAM			22.98		20.54	0.113	23M1D7D
	10+20	QPSK	1 715.5	1 770.0	23.90		21.46	0.140	27M6G7D
		16QAM			22.89		20.45	0.111	27M6D7D
	20+10	QPSK	1 720.0	1 774.5	23.86		21.42	0.139	27M8G7D
		16QAM			22.84		20.40	0.110	27M7D7D
	15+15	QPSK	1 717.5	1 772.5	23.89		21.45	0.140	28M4G7D
		16QAM			22.95		20.51	0.112	28M2D7D
	15+20	QPSK	1 717.8	1 770.0	23.87		21.43	0.139	32M7G7D
		16QAM			22.96		20.52	0.113	32M7D7D
	20+15	QPSK	1 720.0	1 772.2	23.81		21.37	0.137	32M7G7D
		16QAM			22.95		20.51	0.112	32M7D7D
	20+5	QPSK	1 720.0	1 776.7	23.88		21.44	0.139	22M8G7D
		16QAM			22.89		20.45	0.111	22M9D7D
	5+20	QPSK	1 713.3	1 770.0	23.87		21.43	0.139	22M7G7D
		16QAM			22.92		20.48	0.112	22M7D7D
	20+20	QPSK	1 720.0	1 770.0	23.92		21.48	0.141	37M5G7D
		16QAM			23.04		20.60	0.115	37M6D7D

ANT4

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (㏈m)	Ant. Gain (㏈i)	E.R.P. / E.I.R.P. Average (㏈m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_5B	3+5	QPSK	825.6	846.5	22.20	3.81	26.01	0.399	7M45G7D
		16QAM			21.62		25.43	0.349	7M45D7D
	5+3	QPSK	825.6	847.4	22.20		26.01	0.399	7M47G7D
		16QAM			21.85		25.66	0.368	7M45D7D
	5+10	QPSK	826.8	844.0	24.22		28.03	0.635	13M8G7D
		16QAM			23.51		27.32	0.540	13M8D7D
	10+5	QPSK	829.0	846.2	24.25		28.06	0.640	13M8G7D
		16QAM			23.60		27.41	0.551	13M8D7D
	10+10	QPSK	829.0	844.0	24.29		28.10	0.646	18M7G7D
		16QAM			23.65		27.46	0.557	18M7D7D
CA_7C	10+20	QPSK	2 505.5	2 560.0	24.21	2.19	26.40	0.437	27M6G7D
		16QAM			23.42		25.61	0.364	27M6D7D
	20+10	QPSK	2 510.0	2 564.5	24.18		26.37	0.434	27M7G7D
		16QAM			23.38		25.57	0.361	27M6D7D
	15+15	QPSK	2 507.5	2 562.5	24.22		26.41	0.438	28M2G7D
		16QAM			23.41		25.60	0.363	28M2D7D
	15+10	QPSK	2 507.5	2 564.7	24.22		26.41	0.438	23M0G7D
		16QAM			23.40		25.59	0.362	23M1D7D
	15+20	QPSK	2 507.8	2 560.0	24.26		26.45	0.442	32M7G7D
		16QAM			23.40		25.59	0.362	32M6D7D
	20+15	QPSK	2 510.0	2 562.2	24.28		26.47	0.444	32M7G7D
		16QAM			23.41		25.60	0.363	32M6D7D
	20+20	QPSK	2 510	2 560	24.32		26.51	0.448	37M4G7D
		16QAM			23.46		25.65	0.367	37M5D7D
CA_66B	5+5	QPSK	1 712.5	1 777.5	23.56	-3.07	20.49	0.112	9M23G7D
		16QAM			22.68		19.61	0.091	9M21D7D
	5+10	QPSK	1 712.8	1 775.0	23.71		20.64	0.116	13M9G7D
		16QAM			22.84		19.77	0.095	13M9D7D
	10+5	QPSK	1 715.0	1 777.2	23.65		20.58	0.114	13M9G7D
		16QAM			22.89		19.82	0.096	13M9D7D
	5+15	QPSK	1 713.0	1 772.5	23.72		20.65	0.116	18M2G7D
		16QAM			22.85		19.78	0.095	18M1D7D
	15+5	QPSK	1 717.5	1 777.0	23.71		20.64	0.116	18M2G7D
		16QAM			22.88		19.81	0.096	18M3D7D
	10+10	QPSK	1 715.0	1 775.0	23.77		20.70	0.117	18M7G7D
		16QAM			22.92		19.85	0.097	18M8D7D

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Worst Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_66C	10+15	QPSK	1 715.3	1 772.5	23.91	-3.07	20.84	0.121	23M1G7D
		16QAM			23.02		19.95	0.099	23M0D7D
	15+10	QPSK	1 717.5	1 774.7	23.90		20.83	0.121	23M0G7D
		16QAM			22.98		19.91	0.098	23M1D7D
	10+20	QPSK	1 715.5	1 770.0	23.90		20.83	0.121	27M6G7D
		16QAM			22.89		19.82	0.096	27M6D7D
	20+10	QPSK	1 720.0	1 774.5	23.86		20.79	0.120	27M8G7D
		16QAM			22.84		19.77	0.095	27M7D7D
	15+15	QPSK	1 717.5	1 772.5	23.89		20.82	0.121	28M4G7D
		16QAM			22.95		19.88	0.097	28M2D7D
	15+20	QPSK	1 717.8	1 770.0	23.87		20.80	0.120	32M7G7D
		16QAM			22.96		19.89	0.097	32M7D7D
	20+15	QPSK	1 720.0	1 772.2	23.81		20.74	0.119	32M7G7D
		16QAM			22.95		19.88	0.097	32M7D7D
	20+5	QPSK	1 720.0	1 776.7	23.88		20.81	0.121	22M8G7D
		16QAM			22.89		19.82	0.096	22M9D7D
	5+20	QPSK	1 713.3	1 770.0	23.87		20.80	0.120	22M7G7D
		16QAM			22.92		19.85	0.097	22M7D7D
	20+20	QPSK	1 720.0	1 770.0	23.92		20.85	0.122	37M5G7D
		16QAM			23.04		19.97	0.099	37M6D7D

ANT5

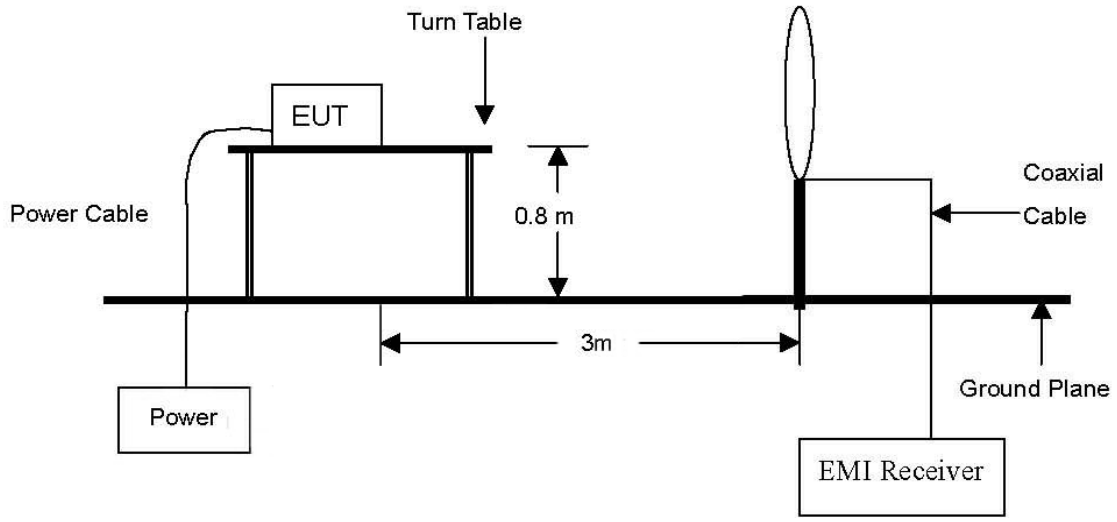
Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (dB m)	Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_5B	3+5	QPSK	825.6	846.5	22.20	4.43	26.63	0.460	7M45G7D
		16QAM			21.62		26.05	0.403	7M45D7D
	5+3	QPSK	825.6	847.4	22.20		26.63	0.460	7M47G7D
		16QAM			21.85		26.28	0.425	7M45D7D
	5+10	QPSK	826.8	844.0	24.22		28.65	0.733	13M8G7D
		16QAM			23.51		27.94	0.622	13M8D7D
	10+5	QPSK	829.0	846.2	24.25		28.68	0.738	13M8G7D
		16QAM			23.60		28.03	0.635	13M8D7D
	10+10	QPSK	829.0	844.0	24.29		28.72	0.745	18M7G7D
		16QAM			23.65		28.08	0.643	18M7D7D
CA_7C	10+20	QPSK	2 505.5	2 560.0	24.21	1.09	25.30	0.339	27M6G7D
		16QAM			23.42		24.51	0.282	27M6D7D
	20+10	QPSK	2 510.0	2 564.5	24.18		25.27	0.337	27M7G7D
		16QAM			23.38		24.47	0.280	27M6D7D
	15+15	QPSK	2 507.5	2 562.5	24.22		25.31	0.340	28M2G7D
		16QAM			23.41		24.50	0.282	28M2D7D
	15+10	QPSK	2 507.5	2 564.7	24.22		25.31	0.340	23M0G7D
		16QAM			23.40		24.49	0.281	23M1D7D
	15+20	QPSK	2 507.8	2 560.0	24.26		25.35	0.343	32M7G7D
		16QAM			23.40		24.49	0.281	32M6D7D
	20+15	QPSK	2 510.0	2 562.2	24.28		25.37	0.344	32M7G7D
		16QAM			23.41		24.50	0.282	32M6D7D
	20+20	QPSK	2 510	2 560	24.32		25.41	0.348	37M4G7D
		16QAM			23.46		24.55	0.285	37M5D7D
CA_66B	5+5	QPSK	1 712.5	1 777.5	23.56	-2.42	21.14	0.130	9M23G7D
		16QAM			22.68		20.26	0.106	9M21D7D
	5+10	QPSK	1 712.8	1 775.0	23.71		21.29	0.135	13M9G7D
		16QAM			22.84		20.42	0.110	13M9D7D
	10+5	QPSK	1 715.0	1 777.2	23.65		21.23	0.133	13M9G7D
		16QAM			22.89		20.47	0.111	13M9D7D
	5+15	QPSK	1 713.0	1 772.5	23.72		21.30	0.135	18M2G7D
		16QAM			22.85		20.43	0.110	18M1D7D
	15+5	QPSK	1 717.5	1 777.0	23.71		21.29	0.135	18M2G7D
		16QAM			22.88		20.46	0.111	18M3D7D
	10+10	QPSK	1 715.0	1 775.0	23.77		21.35	0.136	18M7G7D
		16QAM			22.92		20.50	0.112	18M8D7D

Band	Band width (㎒)	Modulation	Low Freq. (㎒)	Upper Freq. (㎒)	Conducted Average (㏈m)	Worst Ant. Gain (㏈i)	E.R.P. / E.I.R.P. Average (㏈m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
CA_66C	10+15	QPSK	1 715.3	1 772.5	23.91	-2.42	21.49	0.141	23M1G7D
		16QAM			23.02		20.60	0.115	23M0D7D
	15+10	QPSK	1 717.5	1 774.7	23.90		21.48	0.141	23M0G7D
		16QAM			22.98		20.56	0.114	23M1D7D
	10+20	QPSK	1 715.5	1 770.0	23.90		21.48	0.141	27M6G7D
		16QAM			22.89		20.47	0.111	27M6D7D
	20+10	QPSK	1 720.0	1 774.5	23.86		21.44	0.139	27M8G7D
		16QAM			22.84		20.42	0.110	27M7D7D
	15+15	QPSK	1 717.5	1 772.5	23.89		21.47	0.140	28M4G7D
		16QAM			22.95		20.53	0.113	28M2D7D
	15+20	QPSK	1 717.8	1 770.0	23.87		21.45	0.140	32M7G7D
		16QAM			22.96		20.54	0.113	32M7D7D
	20+15	QPSK	1 720.0	1 772.2	23.81		21.39	0.138	32M7G7D
		16QAM			22.95		20.53	0.113	32M7D7D
	20+5	QPSK	1 720.0	1 776.7	23.88		21.46	0.140	22M8G7D
		16QAM			22.89		20.47	0.111	22M9D7D
	5+20	QPSK	1 713.3	1 770.0	23.87		21.45	0.140	22M7G7D
		16QAM			22.92		20.50	0.112	22M7D7D
	20+20	QPSK	1 720.0	1 770.0	23.92		21.50	0.141	37M5G7D
		16QAM			23.04		20.62	0.115	37M6D7D

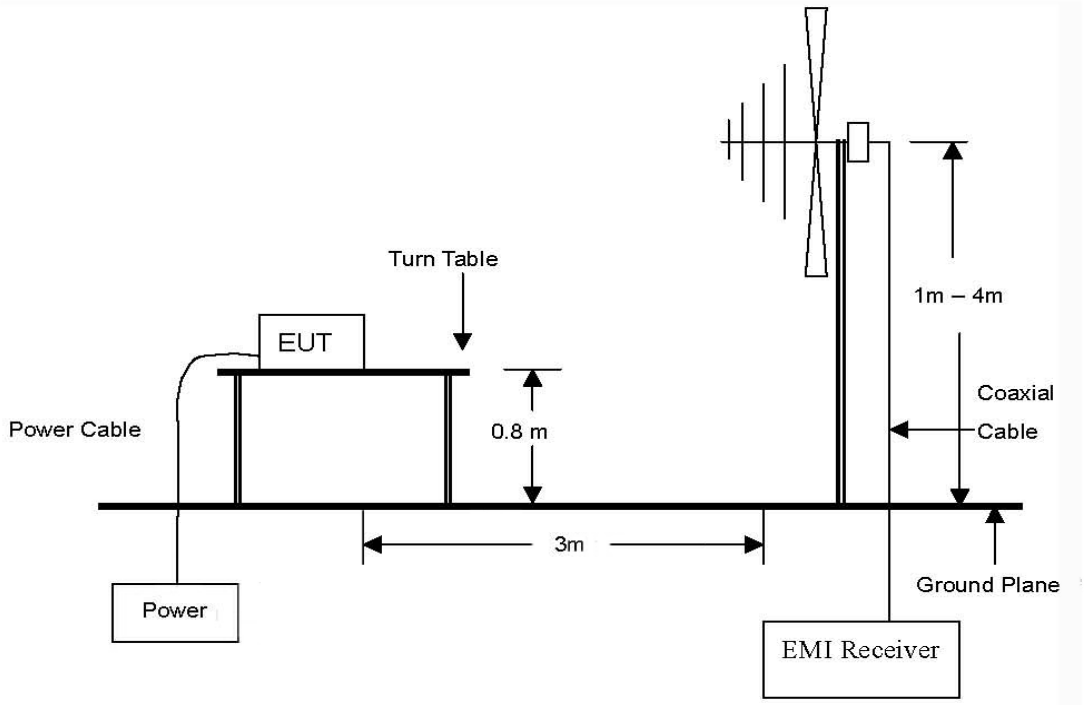
2. E.R.P. / E.I.R.P. & Radiated Spurious Emissions

2.1. Test setup

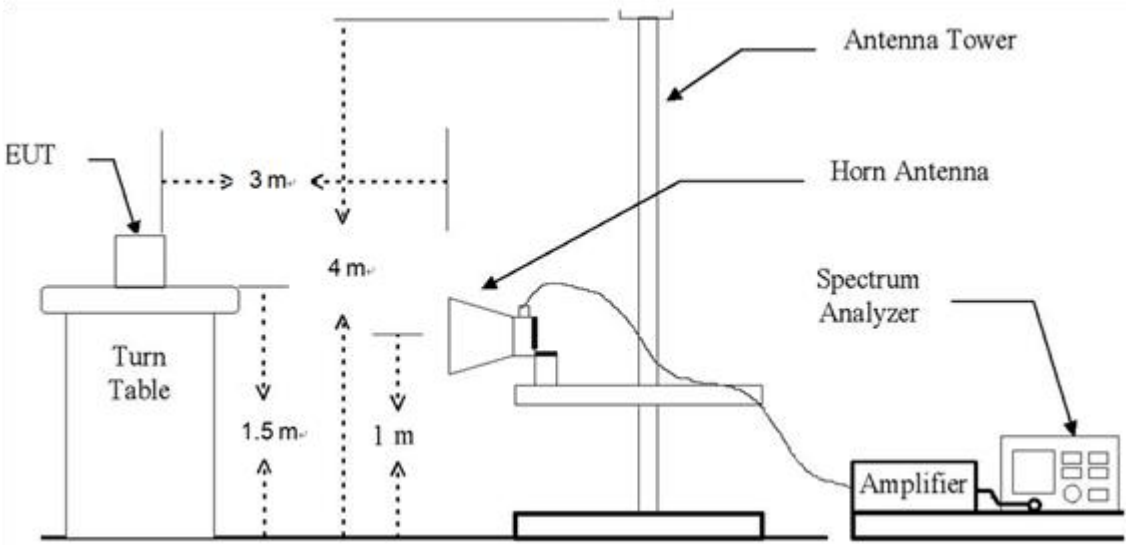
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to 26 ㎓ Emissions.



2.2. Limit

2.2.1. Limit of E.R.P. / E.I.R.P.

FCC

- §22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

- §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 ㎒ band and mobile and portable stations operating in the 1 695-1 710 ㎒ and 1 755-1 780 ㎒ bands are limited to 1 watt EIRP.

- §27.50(h)(2), Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

IC

- RSS-132 Issue 3

5.4, the transmitter output power shall be measured in terms of average power.
The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.
Refer to SRSP-503 for base station e.i.r.p. limits.

- RSS-139 Issue 4

5.5, The maximum output power of the equipment shall comply with the limits specified below. In the tables, maximum power refers to the equivalent isotropically radiated power (e.i.r.p.) or total radiated power (TRP), measured in terms of average values.

Table 3: Maximum power of equipment in the band 1 710-1 780 ㎒

Equipment type	Maximum power
Fixed station and base station	30 ㏈m e.i.r.p./ channel bandwidth
Subscriber equipment	30 ㏈m e.i.r.p./ channel bandwidth

- RSS-199 Issue 3

4.4, the transmitter output power shall be measured in terms of average value.
For base station equipment, refer to SRSP-517 for the maximum permissible e.i.r.p.
For mobile subscriber equipment, the e.i.r.p. shall not exceed 2 W. For fixed subscriber equipment, the transmitter output power shall not exceed 2 W and the e.i.r.p. shall be limited to 40 W.

2.2.2. Limit of Radiated Spurious Emissions

FCC

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) ㏈.

- §27.53(h)(1), for operations in the 1 695-1 710 ㎒, 1 710-1 755 ㎒, 1 755-1 780 ㎒, 1 915-1 920 ㎒, 1 995-2 000 ㎒, 2 000-2 020 ㎒, 2 110-2 155 ㎒, 2 155-2 180 ㎒, and 2 180-2 200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) ㏈.

- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 $\log_{10}$ (P) ㏈ on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 $\log_{10}$ (P) ㏈ on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 $\log_{10}$ (P) ㏈ on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 $\log_{10}$ (P) ㏈ on all frequencies between 2 490.5 ㎒ and 2 496 ㎒ and 55 + 10 $\log_{10}$ (P) ㏈ at or below 2 490.5 ㎒. Mobile Satellite Service licensees operating on frequencies below 2 495 ㎒ may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

IC

- RSS-132 Issue 3

5.5, Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 ㎒ band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated (in ㏈) below the transmitter output power P (㏈ W) by at least 43 + 10 $\log_{10}$ p (watts).

(ii) After the first 1.0 ㎒ immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 ㎑ bandwidth shall be attenuated (in ㏈) below the transmitter output power P (㏈ W) by at least 43 + 10 $\log_{10}$ p (watts). If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 ㎑ is required.

- RSS-139 Issue 4

5.6, Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 3: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limit
1 ㎒	-13 ㏈m/(1% of OB)*
>1 ㎒	-13 ㏈m

* OB is the occupied bandwidth

- RSS-199 Issue 3
4.5, In the 1 ㎒ band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment, and 2% for mobile subscriber equipment. Beyond the 1 ㎒ band, a resolution bandwidth of 1 ㎒ shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 ㎒, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:

for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in ㏈) below the transmitter power, P (㏈ W), by at least 43 + 10 log10 p for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in ㏈) below the transmitter power, P (㏈ W), by at least:

i. 40 + 10 log10 p from the channel edges to 5 ㎒ away
ii. 43 + 10 log10 p between 5 ㎒ and X ㎒ from the channel edges, and
iii. 55 + 10 log10 p at X ㎒ and beyond from the channel edges

In addition, the attenuation shall not be less than 43 + 10 log10 p on all frequencies between 2 490.5 ㎒ and 2 496 ㎒, and 55 + 10 log10 p at or below 2 490.5 ㎒.

In (a) and (b), p is the transmitter power measured in watts and X is 6 ㎒ or the equipment occupied bandwidth, whichever is greater.

2.3. Test Procedure: Based on ANSI/TIA 603E: 2016 and ANSI C63.26-2015 and KDB 971168 D01 Power Meas License Digital Systems v03r01.

1. On a test site, the EUT shall be placed at 0.8 m or 1.5 m height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. Radiated spurious emissions measurement method was set as follows:
   RBW = 100 ㎑ for emissions below 1 ㎓ and 1 ㎒ for emissions above 1 ㎓, VBW ≥ 3 x RBW,
   Detector = RMS, trace mode = max hold, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
5. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
11. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
12. The measurement shall be repeated with the test antenna orientated for horizontal polarization.

2.4. Test results

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

2.4.1. E.R.P. / E.I.R.P.

ANT 1

Band	Frequency (㎒)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
5B	824 ~ 849	24.29	0.269	5.09	29.38	0.867	27.23	0.528	7 W E.R.P.
7C	2 500 ~ 2 570	24.32	0.270	2.68	27.00	0.501			2 W E.I.R.P.
66B	1 710 ~ 1 780	23.77	0.238	-2.36	21.41	0.138			1 W E.I.R.P.
66C	1 710 ~ 1 780	23.92	0.247	-2.36	21.56	0.143			1 W E.I.R.P.

ANT 2

Band	Frequency (㎒)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
5B	824 ~ 849	24.29	0.269	3.91	28.20	0.661	26.05	0.403	7 W E.R.P.
7C	2 500 ~ 2 570	24.32	0.270	2.28	26.60	0.457			2 W E.I.R.P.
66B	1 710 ~ 1 780	23.77	0.238	-3.98	19.79	0.095			1 W E.I.R.P.
66C	1 710 ~ 1 780	23.92	0.247	-3.98	19.94	0.099			1 W E.I.R.P.

ANT 3

Band	Frequency (㎒)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
5B	824 ~ 849	24.29	0.269	5.13	29.42	0.875	27.27	0.533	7 W E.R.P.
7C	2 500 ~ 2 570	24.32	0.270	0.99	25.31	0.340			2 W E.I.R.P.
66B	1 710 ~ 1 780	23.77	0.238	-2.44	21.33	0.136			1 W E.I.R.P.
66C	1 710 ~ 1 780	23.92	0.247	-2.44	21.48	0.141			1 W E.I.R.P.

ANT 4

Band	Frequency (㎒)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
5B	824 ~ 849	24.29	0.269	3.81	28.10	0.646	25.95	0.394	7 W E.R.P.
7C	2 500 ~ 2 570	24.32	0.270	2.19	26.51	0.448			2 W E.I.R.P.
66B	1 710 ~ 1 780	23.77	0.238	-3.07	20.70	0.117			1 W E.I.R.P.
66C	1 710 ~ 1 780	23.92	0.247	-3.07	20.85	0.122			1 W E.I.R.P.

ANT 5

Band	Frequency (㎒)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
5B	824 ~ 849	24.29	0.269	4.43	28.72	0.745	26.57	0.454	7 W E.R.P.
7C	2 500 ~ 2 570	24.32	0.270	1.09	25.41	0.348			2 W E.I.R.P.
66B	1 710 ~ 1 780	23.77	0.238	-2.42	21.35	0.136			1 W E.I.R.P.
66C	1 710 ~ 1 780	23.92	0.247	-2.42	21.50	0.141			1 W E.I.R.P.

Remark;

1. E.I.R.P. (dB m) = Maximum Conducted Power (dB m) + Antenna Gain (dB i)
2. E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.

2.4.2. Radiated spurious emissions

ANT 1
ULCA_5B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_Low Channel (829 ㎒ + 838.9 ㎒)									
1 666.88	62.00	H	25.80	-38.67	49.13	-97.41	-48.28	-13	35.28
1 666.78	65.05	V	25.80	-38.67	52.18	-97.41	**-45.23**	-13	32.23
1 875.03	50.82	H	27.45	-38.01	40.26	-97.41	-57.15	-13	44.15
1 875.16	49.69	V	27.45	-38.01	39.13	-97.41	-58.28	-13	45.28
2 124.67	47.14	H	27.55	-37.03	37.66	-97.41	-59.75	-13	46.75
2 124.94	50.76	V	27.55	-37.03	41.28	-97.41	-56.13	-13	43.13
2 374.88	49.94	H	27.95	-36.18	41.71	-97.41	-55.70	-13	42.70
2 375.84	47.05	V	27.96	-36.18	38.83	-97.41	-58.58	-13	45.58
Above 2 400.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ Middle Channel (831.6 ㎒ + 841.5 ㎒)									
1 672.00	58.99	H	25.86	-38.66	46.19	-97.41	-51.22	-13	38.22
1 672.00	61.74	V	25.86	-38.66	48.94	-97.41	-48.47	-13	35.47
1 875.05	50.33	H	27.45	-38.01	39.77	-97.41	-57.64	-13	44.64
1 875.24	49.20	V	27.45	-38.01	38.64	-97.41	-58.77	-13	45.77
2 124.73	46.63	H	27.55	-37.03	37.15	-97.41	-60.26	-13	47.26
2 124.91	50.07	V	27.55	-37.03	40.59	-97.41	-56.82	-13	43.82
2 374.98	50.11	H	27.95	-36.18	41.88	-97.41	-55.53	-13	42.53
2 374.56	47.26	V	27.95	-36.18	39.03	-97.41	-58.38	-13	45.38
Above 2 400.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ High Channel (834.1 ㎒ + 844.0 ㎒)									
1 677.00	58.24	H	25.92	-38.67	45.49	-97.41	-51.92	-13	38.92
1 677.12	60.95	V	25.93	-38.67	48.21	-97.41	-49.20	-13	36.20
1 874.91	50.50	H	27.45	-38.01	39.94	-97.41	-57.47	-13	44.47
1 874.90	49.11	V	27.45	-38.01	38.55	-97.41	-58.86	-13	45.86
2 125.15	46.20	H	27.55	-37.03	36.72	-97.41	-60.69	-13	47.69
2 125.13	50.54	V	27.55	-37.03	41.06	-97.41	-56.35	-13	43.35
2 374.80	50.52	H	27.95	-36.18	42.29	-97.41	-55.12	-13	42.12
2 374.34	48.12	V	27.95	-36.18	39.89	-97.41	-57.52	-13	44.52
Above 2 400.00	Not detected	–	–	–	–	–	–	–	–

ULCA_7C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_Low Channel (2 510 ㎒ + 2 529.8 ㎒)									
10 075.96	47.21	H	37.80	-31.52	53.49	-95.26	-41.77	-25	16.77
10 075.72	50.95	V	37.80	-31.52	57.23	-95.26	**-38.03**	-25	13.03
Above 10 100.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ Middle Channel (2 525.1 ㎒ + 2 544.9 ㎒)									
10 136.10	47.18	H	37.87	-31.62	53.43	-95.26	-41.83	-25	16.83
10 136.30	50.09	V	37.87	-31.62	56.34	-95.26	-38.92	-25	13.92
Above 10 200.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ High Channel (2 540.2 ㎒ + 2 560 ㎒)									
10 198.34	46.22	H	37.90	-31.60	52.52	-95.26	-42.74	-25	17.74
10 198.62	48.23	V	37.90	-31.59	54.54	-95.26	-40.72	-25	15.72
Above 10 200.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_Low Channel (1 715 ㎒ + 1 724.9 ㎒)									
3 438.79	50.46	H	31.01	-36.82	44.65	-95.26	-50.61	-13	37.61
3 438.65	52.16	V	31.01	-36.82	46.35	-95.26	-48.92	-13	35.92
5 159.74	51.92	H	33.34	-35.42	49.84	-95.26	-45.42	-13	32.42
5 159.44	52.01	V	33.34	-35.42	49.93	-95.26	-45.33	-13	32.33
6 878.54	42.15	H	35.30	-33.68	43.77	-95.26	-51.49	-13	38.49
6 877.64	45.71	V	35.30	-33.69	47.32	-95.26	-47.94	-13	34.94
8 597.88	49.90	H	36.60	-33.72	52.78	-95.26	-42.49	-13	29.49
8 600.06	55.60	V	36.60	-33.74	58.46	-95.26	-36.80	-13	23.80
10 319.80	41.89	H	37.80	-30.97	48.72	-95.26	-46.54	-13	33.54
10 319.76	44.68	V	37.80	-30.97	51.51	-95.26	-43.76	-13	30.76
Above 10 400.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_ Middle Channel (1 750.1 ㎒ + 1 760 ㎒)									
3 509.08	49.95	H	31.08	-36.72	44.31	-95.26	-50.95	-13	37.95
3 509.20	47.49	V	31.08	-36.72	41.85	-95.26	-53.41	-13	40.41
5 263.51	51.44	H	33.65	-35.00	50.09	-95.26	-45.17	-13	32.17
5 263.43	52.70	V	33.65	-35.00	51.35	-95.26	-43.91	-13	30.91
7 019.08	38.96	H	35.50	-33.13	41.33	-95.26	-53.94	-13	40.94
7 019.20	40.83	V	35.50	-33.13	43.20	-95.26	-52.06	-13	39.06
8 773.66	50.56	H	37.05	-33.41	54.20	-95.26	-41.06	-13	28.06
8 775.80	49.51	V	37.05	-33.37	53.19	-95.26	-42.07	-13	29.07
10 527.02	40.00	H	37.70	-30.98	46.72	-95.26	-48.55	-13	35.55
10 527.58	40.66	V	37.70	-30.98	47.38	-95.26	-47.88	-13	34.88
Above 10 600.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ High Channel (1 765.1 ㎒ + 1 775 ㎒)									
3 539.18	47.72	H	31.02	-36.93	41.81	-95.26	-53.45	-13	40.45
3 539.00	45.58	V	31.02	-36.92	39.68	-95.26	-55.58	-13	42.58
5 308.53	48.86	H	33.82	-34.75	47.93	-95.26	-47.33	-13	34.33
5 308.55	52.21	V	33.82	-34.75	51.28	-95.26	-43.98	-13	30.98
7 079.17	44.22	H	35.56	-33.10	46.68	-95.26	-48.58	-13	35.58
7 079.25	46.10	V	35.56	-33.10	48.56	-95.26	-46.70	-13	33.70
8 848.88	52.96	H	37.20	-32.99	57.17	-95.26	-38.09	-13	25.09
8 848.44	55.82	V	37.20	-32.99	60.03	-95.26	**-35.23**	-13	22.23
10 618.06	40.37	H	37.80	-30.97	47.20	-95.26	-48.06	-13	35.06
10 617.14	42.50	V	37.80	-30.96	49.34	-95.26	-45.92	-13	32.92
Above 10 700.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_Low Channel (1 720 ㎒ + 1 739.8 ㎒)									
5 188.64	50.18	H	33.45	-35.23	48.40	-95.26	-46.86	-13	33.86
5 188.62	49.01	V	33.45	-35.23	47.23	-95.26	-48.03	-13	35.03
8 646.82	54.61	H	36.69	-34.01	57.29	-95.26	-37.97	-13	24.97
8 646.55	49.90	V	36.69	-34.00	52.59	-95.26	-42.67	-13	29.67
Above 8 700.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ Middle Channel (1 745.1 ㎒ + 1 764.9 ㎒)									
5 261.95	47.70	H	33.65	-35.01	46.34	-95.26	-48.92	-13	35.92
5 262.23	49.79	V	33.65	-35.01	48.43	-95.26	-46.84	-13	33.84
8 776.06	53.79	H	37.05	-33.37	57.47	-95.26	-37.79	-13	24.79
8 770.34	54.64	V	37.04	-33.46	58.22	-95.26	-37.04	-13	24.04
Above 8 800.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ High Channel (1 750.2 ㎒ + 1 770 ㎒)									
5 277.64	49.50	H	33.71	-34.91	48.30	-95.26	-46.96	-13	33.96
5 277.22	50.63	V	33.71	-34.91	49.43	-95.26	-45.83	-13	32.83
8 797.50	54.90	H	37.10	-33.14	58.86	-95.26	**-36.40**	-13	23.40
8 797.50	51.11	V	37.10	-33.14	55.07	-95.26	-40.19	-13	27.19
Above 8 800.00	Not detected	–	–	–	–	–	–	–	–

ANT 2
ULCA_5B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_Low Channel (829 ㎒ + 838.9 ㎒)									
1 667.14	56.34	H	25.81	-38.67	43.48	-97.41	-53.93	-13	40.93
1 666.82	58.90	V	25.80	-38.67	46.03	-97.41	-51.38	-13	38.38
2 500.44	66.98	H	28.10	-37.20	57.88	-97.41	-39.53	-13	26.53
2 500.18	68.89	V	28.10	-37.21	59.78	-97.41	**-37.63**	-13	24.63
3 333.88	52.61	H	30.63	-37.01	46.23	-97.41	-51.18	-13	38.18
3 333.82	52.32	V	30.63	-37.01	45.94	-97.41	-51.47	-13	38.47
Above 3 400.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ Middle Channel (831.6 ㎒ + 841.5 ㎒)									
1 672.10	55.26	H	25.87	-38.66	42.47	-97.41	-54.94	-13	41.94
1 671.96	57.46	V	25.86	-38.66	44.66	-97.41	-52.76	-13	39.76
2 509.11	62.74	H	28.15	-37.08	53.81	-97.41	-43.60	-13	30.60
2 508.23	64.71	V	28.15	-37.09	55.77	-97.41	-41.64	-13	28.64
3 345.30	50.89	H	30.61	-37.00	44.50	-97.41	-52.91	-13	39.91
3 344.00	50.48	V	30.61	-36.99	44.10	-97.41	-53.31	-13	40.31
Above 3 400.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ High Channel (834.1 ㎒ + 844.0 ㎒)									
1 678.16	55.83	H	25.94	-38.68	43.09	-97.41	-54.32	-13	41.32
1 677.14	58.49	V	25.93	-38.67	45.75	-97.41	-51.66	-13	38.66
2 517.74	62.75	H	28.21	-36.95	54.01	-97.41	-43.40	-13	30.40
2 516.68	63.03	V	28.20	-36.97	54.26	-97.41	-43.15	-13	30.15
3 356.06	51.02	H	30.61	-36.98	44.65	-97.41	-52.76	-13	39.76
3 355.26	50.28	V	30.61	-36.98	43.91	-97.41	-53.50	-13	40.50
Above 3 400.00	Not detected	–	–	–	–	–	–	–	–

ULCA_7C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_Low Channel (2 510 ㎒ + 2 529.8 ㎒)									
5 037.88	47.92	H	33.00	-35.22	45.70	-95.26	-49.56	-25	24.56
5 037.76	49.02	V	33.00	-35.22	46.80	-95.26	-48.46	-25	23.46
7 556.70	46.29	H	35.90	-32.72	49.47	-95.26	-45.79	-25	20.79
7 558.66	49.13	V	35.90	-32.70	52.33	-95.26	-42.93	-25	17.93
10 075.58	51.67	H	37.80	-31.52	57.95	-95.26	-37.31	-25	12.31
10 075.76	56.47	V	37.80	-31.52	62.75	-95.26	-32.52	-25	7.52
Above 10 100.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ Middle Channel (2 525.1 ㎒ + 2 544.9 ㎒)									
5 067.90	47.28	H	33.07	-35.28	45.07	-95.26	-50.19	-25	25.19
5 068.05	48.54	V	33.07	-35.28	46.33	-95.26	-48.93	-25	23.93
7 601.85	52.64	H	35.90	-32.62	55.92	-95.26	-39.34	-25	14.34
7 602.00	52.13	V	35.90	-32.62	55.41	-95.26	-39.85	-25	14.85
10 138.00	52.44	H	37.88	-31.61	58.71	-95.26	-36.55	-25	11.55
10 140.00	57.19	V	37.88	-31.61	63.46	-95.26	**-31.80**	-25	6.80
Above 10 200.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ High Channel (2 540.2 ㎒ + 2 560 ㎒)									
5 100.25	45.26	H	33.20	-35.42	43.04	-95.26	-52.22	-25	27.22
5 098.45	47.38	V	33.19	-35.41	45.16	-95.26	-50.10	-25	25.10
7 649.05	49.79	H	35.90	-32.42	53.27	-95.26	-41.99	-25	16.99
7 647.10	50.04	V	35.90	-32.43	53.51	-95.26	-41.75	-25	16.75
10 196.65	48.71	H	37.90	-31.60	55.01	-95.26	-40.26	-25	15.26
10 198.40	52.98	V	37.90	-31.60	59.28	-95.26	-35.98	-25	10.98
Above 10 200.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_Low Channel (1 715 ㎒ + 1 724.9 ㎒)									
3 438.82	59.57	H	31.01	-36.82	53.76	-95.26	-41.50	-13	28.50
3 438.82	60.91	V	31.01	-36.82	55.10	-95.26	-40.16	-13	27.16
5 160.10	58.95	H	33.34	-35.42	56.87	-95.26	-38.39	-13	25.39
5 159.26	61.57	V	33.34	-35.42	59.49	-95.26	-35.77	-13	22.77
6 877.94	53.39	H	35.30	-33.69	55.00	-95.26	-40.26	-13	27.26
6 877.50	57.69	V	35.30	-33.69	59.30	-95.26	-35.96	-13	22.96
8 598.48	60.06	H	36.60	-33.72	62.94	-95.26	-32.32	-13	19.32
8 598.12	59.25	V	36.60	-33.72	62.13	-95.26	-33.13	-13	20.13
10 316.68	42.51	H	37.80	-31.02	49.29	-95.26	-45.98	-13	32.98
10 316.80	46.09	V	37.80	-31.02	52.87	-95.26	-42.39	-13	29.39
13 759.86	34.34	H	40.50	-28.19	46.65	-95.26	-48.61	-13	35.61
13 755.22	38.70	V	40.50	-28.19	51.01	-95.26	-44.25	-13	31.25
Above 13 800.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ Middle Channel (1 750.1 ㎒ + 1 760 ㎒)									
3 509.08	59.00	H	31.08	-36.72	53.36	-95.26	-41.90	-13	28.90
3 508.98	60.99	V	31.08	-36.72	55.35	-95.26	-39.91	-13	26.91
5 263.30	61.55	H	33.65	-35.00	60.20	-95.26	-35.06	-13	22.06
5 263.70	63.25	V	33.65	-35.00	61.90	-95.26	-33.36	-13	20.36
7 018.24	48.18	H	35.50	-33.13	50.55	-95.26	-44.71	-13	31.71
7 018.00	57.13	V	35.50	-33.13	59.50	-95.26	-35.76	-13	22.76
8 773.63	60.95	H	37.05	-33.41	64.59	-95.26	-30.67	-13	17.67
8 773.57	63.65	V	37.05	-33.41	67.29	-95.26	**-27.97**	-13	14.97
10 527.42	45.14	H	37.70	-30.98	51.86	-95.26	-43.40	-13	30.40
10 527.00	45.39	V	37.70	-30.98	52.11	-95.26	-43.15	-13	30.15
14 070.80	34.23	H	40.94	-28.30	46.87	-95.26	-48.39	-13	35.39
13 961.60	34.66	V	40.72	-27.52	47.86	-95.26	-47.40	-13	34.40
Above 14 100.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_ High Channel (1 765.1 ㎒ + 1 775 ㎒)									
3 539.10	59.50	H	31.02	-36.92	53.60	-95.26	-41.66	-13	28.66
3 539.02	59.09	V	31.02	-36.92	53.19	-95.26	-42.07	-13	29.07
5 308.58	65.73	H	33.82	-34.75	64.80	-95.26	-30.47	-13	17.47
5 308.42	65.90	V	33.82	-34.75	64.97	-95.26	-30.29	-13	17.29
7 077.83	51.36	H	35.56	-33.10	53.82	-95.26	-41.44	-13	28.44
7 078.01	61.57	V	35.56	-33.10	64.03	-95.26	-31.23	-13	18.23
8 849.00	59.58	H	37.20	-32.99	63.79	-95.26	-31.47	-13	18.47
8 847.55	61.57	V	37.20	-32.98	65.79	-95.26	-29.48	-13	16.48
10 617.45	47.85	H	37.80	-30.96	54.69	-95.26	-40.57	-13	27.57
10 616.95	49.51	V	37.80	-30.95	56.36	-95.26	-38.90	-13	25.90
14 192.96	33.30	H	41.27	-26.67	47.90	-95.26	-47.36	-13	34.36
14 108.00	33.17	V	41.02	-28.17	46.02	-95.26	-49.24	-13	36.24
Above 14 200.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_Low Channel (1 720 ㎒ + 1 739.8 ㎒)									
3 459.75	58.99	H	31.10	-36.76	53.33	-95.26	-41.93	-13	28.93
3 457.85	59.46	V	31.10	-36.76	53.80	-95.26	-41.46	-13	28.46
5 186.85	58.31	H	33.45	-35.24	56.52	-95.26	-38.74	-13	25.74
5 188.50	60.42	V	33.45	-35.23	58.64	-95.26	-36.62	-13	23.62
6 915.80	50.56	H	35.33	-33.45	52.44	-95.26	-42.82	-13	29.82
6 915.65	55.84	V	35.33	-33.45	57.72	-95.26	-37.54	-13	24.54
8 644.80	58.83	H	36.69	-34.00	61.52	-95.26	-33.74	-13	20.74
8 646.65	57.95	V	36.69	-34.01	60.63	-95.26	-34.63	-13	21.63
10 379.30	41.16	H	37.80	-30.84	48.12	-95.26	-47.14	-13	34.14
10 377.55	44.66	V	37.80	-30.83	51.63	-95.26	-43.63	-13	30.63
Above 10 400.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ Middle Channel (1 745.1 ㎒ + 1 764.9 ㎒)									
3 508.05	59.07	H	31.08	-36.71	53.44	-95.26	-41.82	-13	28.82
3 507.90	60.94	V	31.08	-36.71	55.31	-95.26	-39.95	-13	26.95
5 262.05	61.34	H	33.65	-35.01	59.98	-95.26	-35.28	-13	22.28
5 262.00	63.23	V	33.65	-35.01	61.87	-95.26	-33.39	-13	20.39
7 016.25	47.73	H	35.50	-33.12	50.11	-95.26	-45.15	-13	32.15
7 016.10	56.79	V	35.50	-33.12	59.17	-95.26	-36.09	-13	23.09
8 771.90	60.74	H	37.04	-33.43	64.35	-95.26	-30.91	-13	17.91
8 771.95	63.43	V	37.04	-33.43	67.04	-95.26	**-28.22**	-13	15.22
10 526.05	45.15	H	37.70	-30.98	51.87	-95.26	-43.39	-13	30.39
10 523.80	45.74	V	37.70	-30.99	52.45	-95.26	-42.81	-13	29.81
Above 10 600.00	Not detected	–	–	–	–	–	–	–	–

ULCA_66C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_ High Channel (1 750.2 ㎒ + 1 770 ㎒)									
3 518.28	58.31	H	31.06	-36.79	52.58	-95.26	-42.68	-13	29.68
3 518.28	60.00	V	31.06	-36.79	54.27	-95.26	-41.00	-13	28.00
5 277.30	63.42	H	33.71	-34.91	62.22	-95.26	-33.04	-13	20.04
5 277.45	63.74	V	33.71	-34.91	62.54	-95.26	-32.72	-13	19.72
7 036.25	52.42	H	35.50	-33.13	54.79	-95.26	-40.47	-13	27.47
7 036.80	59.94	V	35.50	-33.13	62.31	-95.26	-32.95	-13	19.95
8 797.70	62.22	H	37.10	-33.13	66.19	-95.26	-29.07	-13	16.07
8 797.70	62.76	V	37.10	-33.13	66.73	-95.26	-28.53	-13	15.53
10 560.60	44.73	H	37.72	-30.92	51.53	-95.26	-43.73	-13	30.73
10 554.55	46.87	V	37.71	-30.97	53.61	-95.26	-41.65	-13	28.65
Above 10 600.00	Not detected	–	–	–	–	–	–	–	–

ANT 3.
ULCA_5B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_Low Channel (829 ㎒ + 838.9 ㎒)									
1 625.58	54.43	H	25.55	-38.61	41.37	-97.41	-56.04	-13	43.04
1 625.48	51.75	V	25.55	-38.61	38.69	-97.41	-58.72	-13	45.72
1 666.76	57.39	H	25.80	-38.67	44.52	-97.41	-52.89	-13	39.89
1 667.00	53.17	V	25.80	-38.67	40.30	-97.41	-57.11	-13	44.11
2 501.41	51.89	H	28.11	-37.19	42.81	-97.41	-54.60	-13	41.60
2 501.22	54.93	V	28.11	-37.19	45.85	-97.41	-51.56	-13	38.56
3 333.52	58.25	H	30.63	-37.01	51.87	-97.41	-45.54	-13	32.54
3 333.70	54.67	V	30.63	-37.01	48.29	-97.41	-49.12	-13	36.12
4 167.82	46.20	H	31.96	-36.21	41.95	-97.41	-55.46	-13	42.46
4 168.16	45.22	V	31.96	-36.21	40.97	-97.41	-56.44	-13	43.44
5 000.04	41.23	H	33.00	-35.26	38.97	-97.41	-58.44	-13	45.44
5 000.16	44.99	V	33.00	-35.26	42.73	-97.41	-54.68	-13	41.68
Above 5 100.00	Not detected	–	–	–	–	–	–	–	–
PCC 10 ㎒ + SCC 10 ㎒_ Middle Channel (831.6 ㎒ + 841.5 ㎒)									
1 624.70	54.67	H	25.55	-38.61	41.61	-97.41	-55.80	-13	42.80
1 625.24	52.76	V	25.55	-38.61	39.70	-97.41	-57.71	-13	44.71
1 673.04	58.05	H	25.88	-38.66	45.27	-97.41	-52.15	-13	39.15
1 672.14	55.35	V	25.87	-38.66	42.56	-97.41	-54.85	-13	41.85
2 507.95	52.12	H	28.15	-37.10	43.17	-97.41	-54.24	-13	41.24
2 509.61	54.39	V	28.16	-37.07	45.48	-97.41	-51.93	-13	38.93
3 346.12	58.33	H	30.61	-36.99	51.95	-97.41	-45.46	-13	32.46
3 346.14	53.62	V	30.61	-36.99	47.24	-97.41	-50.17	-13	37.17
4 183.30	45.24	H	31.93	-36.25	40.92	-97.41	-56.49	-13	43.49
4 181.20	43.85	V	31.94	-36.25	39.54	-97.41	-57.87	-13	44.87
5 000.14	41.27	H	33.00	-35.26	39.01	-97.41	-58.41	-13	45.41
4 999.96	44.99	V	33.00	-35.26	42.73	-97.41	-54.68	-13	41.68
Above 5 100.00	Not detected	–	–	–	–	–	–	–	–

ULCA_5B

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 10 ㎒ + SCC 10 ㎒_ High Channel (834.1 ㎒ + 844.0 ㎒)									
1 625.10	54.33	H	25.55	-38.61	41.27	-97.41	-56.15	-13	43.15
1 625.46	52.25	V	25.55	-38.61	39.19	-97.41	-58.22	-13	45.22
1 677.04	59.47	H	25.92	-38.67	46.72	-97.41	-50.69	-13	37.69
1 676.96	57.64	V	25.92	-38.67	44.89	-97.41	-52.52	-13	39.52
2 516.50	52.70	H	28.20	-36.97	43.93	-97.41	-53.49	-13	40.49
2 516.58	56.85	V	28.20	-36.97	48.08	-97.41	-49.33	-13	36.33
3 354.02	59.95	H	30.61	-36.97	53.59	-97.41	**-43.82**	-13	30.82
3 353.96	56.92	V	30.61	-36.97	50.56	-97.41	-46.85	-13	33.85
4 192.76	46.76	H	31.91	-36.25	42.42	-97.41	-54.99	-13	41.99
4 194.90	45.52	V	31.91	-36.25	41.18	-97.41	-56.23	-13	43.23
4 999.95	41.05	H	33.00	-35.26	38.79	-97.41	-58.63	-13	45.63
4 999.87	44.81	V	33.00	-35.26	42.55	-97.41	-54.86	-13	41.86
Above 5 000.00	Not detected	–	–	–	–	–	–	–	–

ULCA_7C

Frequency (㎒)	Measured Level (dB㎶)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB㎶/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
PCC 20 ㎒ + SCC 20 ㎒_Low Channel (2 510 ㎒ + 2 529.8 ㎒)									
7 556.65	48.41	H	35.90	-32.72	51.59	-95.26	-43.67	-25	18.67
7 556.70	54.14	V	35.90	-32.72	57.32	-95.26	-37.94	-25	12.94
10 077.75	50.63	H	37.80	-31.52	56.91	-95.26	-38.35	-25	13.35
10 075.75	54.41	V	37.80	-31.52	60.69	-95.26	**-34.57**	-25	9.57
12 488.40	35.16	H	38.48	-28.66	44.98	-95.26	-50.28	-25	25.28
12 459.40	34.38	V	38.42	-28.55	44.25	-95.26	-51.01	-25	26.01
Above 12 500.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ Middle Channel (2 525.1 ㎒ + 2 544.9 ㎒)									
7 604.00	54.90	H	35.90	-32.62	58.18	-95.26	-37.08	-25	12.08
7 604.05	57.43	V	35.90	-32.62	60.71	-95.26	-34.55	-25	9.55
10 138.05	49.13	H	37.88	-31.61	55.40	-95.26	-39.86	-25	14.86
10 136.15	53.86	V	37.87	-31.62	60.11	-95.26	-35.15	-25	10.15
12 669.75	38.33	H	38.64	-28.92	48.05	-95.26	-47.21	-25	22.21
12 669.85	38.49	V	38.64	-28.92	48.21	-95.26	-47.06	-25	22.06
Above 12 700.00	Not detected	–	–	–	–	–	–	–	–
PCC 20 ㎒ + SCC 20 ㎒_ High Channel (2 540.2 ㎒ + 2 560 ㎒)									
7 649.38	52.46	H	35.90	-32.41	55.95	-95.26	-39.31	-25	14.31
7 649.16	52.43	V	35.90	-32.42	55.91	-95.26	-39.35	-25	14.35
10 196.73	44.25	H	37.90	-31.60	50.55	-95.26	-44.71	-25	19.71
10 196.48	48.11	V	37.90	-31.60	54.41	-95.26	-40.85	-25	15.85
12 826.80	33.39	H	38.95	-27.39	44.95	-95.26	-50.32	-25	25.32
12 745.40	34.22	V	38.88	-27.84	45.26	-95.26	-50.00	-25	25.00
Above 12 900.00	Not detected	–	–	–	–	–	–	–	–