

TEST REPORT

FCC MSS Test for SM-F766U
Class II Permissive Change

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2505-FC059

DATE OF ISSUE
May 19, 2025

Tested by
Jae Ryang Do



Technical Manager
Jong Seok Lee



HCT CO., LTD.
Bongjai Huh
BongJai Huh / CEO

**HCT CO.,LTD.**

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.

HCT-RF-2505-FC059

DATE OF ISSUE

May 19, 2025

Additional Model

SM-F766U1

Applicant

SAMSUNG Electronics Co., Ltd.

129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Product Name

Mobile Phone

Model Name

SM-F766U

Date of Test

May 07, 2025 ~ May 13, 2025

FCC ID

A3LSMF766U

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

FCC Classification:

Licensed Non-Broadcast Station Transmitter (TNB)

Test Standard Used

FCC Rule Part(s) : § 25

Test Results

PASS

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	May 19, 2025	Initial Release

Notice

Content

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 853(a)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

CONTENTS

1. GENERAL INFORMATION	5
2. INTRODUCTION	6
2.1. DESCRIPTION OF EUT	6
2.2. MEASURING INSTRUMENT CALIBRATION.....	6
2.3. TEST FACILITY	6
3. DESCRIPTION OF TESTS.....	7
3.1 TEST PROCEDURE.....	7
3.2 RF OUTPUT POWER	8
3.3 RADIATED SPURIOUS EMISSIONS	9
3.4 CONDUCTED EMISSION MASK.....	10
3.5 OCCUPIED BANDWIDTH.	11
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	12
3.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	13
3.8 EMISSION LIMITS FOR PROTECTION OF AERONAUTICAL SERVICE.....	14
3.9 WORST CASE(RADIATED TEST).....	15
3.10 WORST CASE(CONDUCTED TEST)	16
4. LIST OF TEST EQUIPMENT	17
5. MEASUREMENT UNCERTAINTY	18
6. SUMMARY OF TEST RESULTS.....	19
7. SAMPLE CALCULATION	21
8. TEST DATA.....	23
8.1 EQUIVALENT ISOTROPIC RADIATED POWER	23
8.2 RADIATED SPURIOUS EMISSIONS	24
9. ANNEX A_ TEST SETUP PHOTO	25

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMF766U
Application Type:	Class II Permissive Change
FCC Classification:	Licensed Non-Broadcast Station Transmitter (TNB)
FCC Rule Part(s):	§ 25
EUT Type:	Mobile phone
Model(s):	SM-F766U
Additional Model(s):	SM-F766U1
Band	Mobile Satellite Service (MSS)
Modulation:	BPSK, QPSK
Peak antenna gain:	4.0 dBi
Authorized bandwidth:	230 kHz
Sub carrier spacing:	3.75 kHz, 15 kHz
Frequency range:	1626.5MHz ~ 1660.5MHz
Test frequency:	1626.6 MHz, 1643.5 MHz, 1660.4 MHz
Date(s) of Tests:	May 07, 2025 ~ May 13, 2025
Serial number:	Radiated: R3CY207MAGN Conducted : R3CY30SC51D
Antenna Information	Please refer to the Antenna Specification document.

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

Please refer to the [3G] Test Report.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Conducted Output Power	- N/A (See SAR Report)
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Conducted Emission Mask	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Emission limits for protection of aeronautical service	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Isotropic Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

3.2 RF OUTPUT POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW $\geq$ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $>$ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.
These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW $\geq$ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data
3. For spurious emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The spurious emissions is calculated by the following formula;

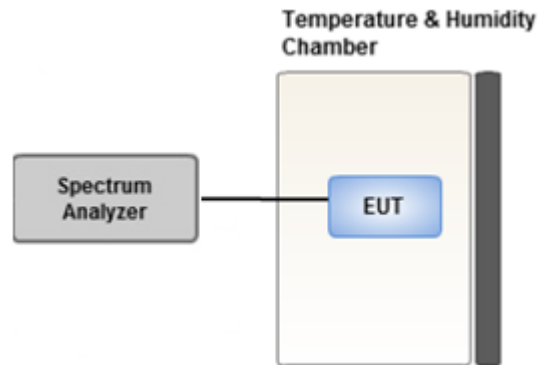
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

Where: P_g is the generator output power into the substitution antenna.

If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

$$\text{EIRP}_{(\text{dBm})} = \text{ERP}_{(\text{dBm})} + 2.15$$

3.4 CONDUCTED EMISSION MASK



Test setup

Test Procedure

The conducted emission mask was connected to a calibrated Splitter and Communication Test equipment, the other end of which was connected to a spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

The mean power of the emissions shall be attenuated below the mean output power.

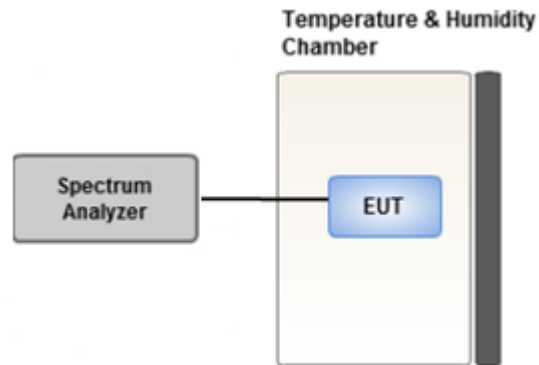
Test Settings

1. RBW $\geq$ 4 kHz
2. VBW $\geq$ 3 x RBW
3. Detector = RMS
4. Trace mode = Average
5. Sweep = auto couple
6. The trace was allowed to stabilize

Test Note

1. Mean output power = Conducted Output Power

3.5 OCCUPIED BANDWIDTH.



Test setup

Test Overview

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

The EUT makes a call to the communication simulator.

The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

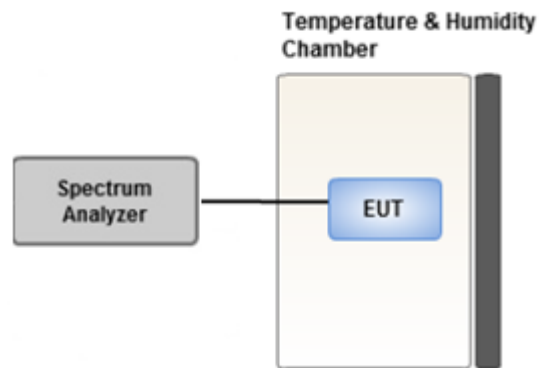
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW $\geq$ 3 x RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

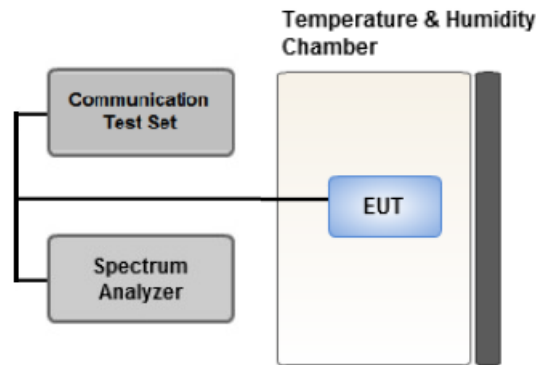
Test Settings

1. RBW = 1 MHz
2. VBW $\geq$ 3 MHz
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep time = auto couple
6. Number of points in sweep $\geq 2 \times \text{Span} / \text{RBW}$

Test Note

1. Mean output power = Conducted Power
2. Ref. offset of spectrum analyzer $_{(dB)} = \text{Path loss }_{(dB)} + \text{Duty Cycle Factor }_{(dB)}$

3.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

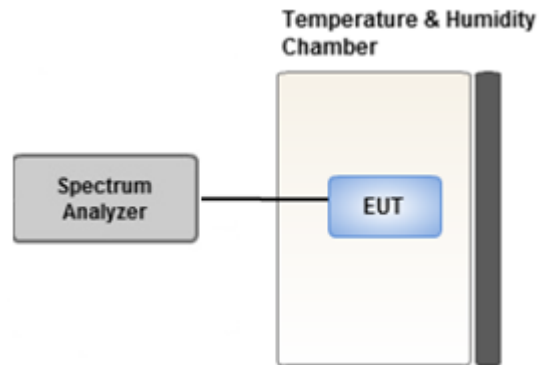
The frequency stability of the transmitter is measured by:

1. Temperature: The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.
2. Primary Supply Voltage:
 - Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
 - For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter.
Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

3.8 EMISSION LIMITS FOR PROTECTION OF AERONAUTICAL SERVICE



Test setup

Test Overview

Additional Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service and Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz band.

Test Procedure

The testing follows ANSI C63.26 section 5.7

The conducted emission mask was connected to a calibrated Splitter and Communication Test equipment, the other end of which was connected to a spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

Test Settings

1. RBW = 1MHz (Narrow Band: 10kHz)
2. VBW $\geq$ 3 MHz
3. Detector = RMS
4. Trace Mode = Average

Test Note

1. Narrow Band should be measured with an RBW=700Hz, but for testing convenience, it was measured with 10kHz.
2. Carrier-off state = Idle mode
3. Ref. offset of spectrum analyzer $_{(dB)} = \text{Path loss }_{(dB)} + \text{Peak. antenna gain }_{(dBi)} + \text{Duty Cycle Factor }_{(dB)}$
4. Result $_{(dBm)} = \text{Ref. Offset }_{(dB)} + \text{Measured value }_{(dBm)}$

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All test were measured with FTM software used to allow 100 % duty cycle transmission.
(Frequency stability testing was completed using the call equipment.)
- All modes of operation were investigated and the worst case configuration results are reported.
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
Worst case : Stand alone
- All SCS & **SC size** of operation were investigated and the worst case bandwidth results are reported.
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- SM-F766U & additional models were tested and the worst case results are reported.
(Worst case : SM-F766U)

[Worst case]				
Test Description	Modulation	SCS (kHz)	SC size	Axis
Effective Isotropic Radiated Power	BPSK, QPSK	3.75, 15	1SC0	Z
Radiated Spurious and Harmonic Emissions	BPSK	15	1SC0	Z

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported
- All test were measured with FTM software used to allow 100 % duty cycle transmission.
(Frequency stability testing was completed using the call equipment.)
- SM-F766U & additional models were tested and the worst case results are reported.
(Worst case : SM-F766U)

[Worst case]

Test Description	Modulation	SCS (kHz)	Frequency	SC size
Occupied Bandwidth	BPSK	3.75	Mid	1SC23
	BPSK, QPSK	15		1SC5, 12SC0
Emission Mask	BPSK	3.75	Low, Mid, High	1SC0, 1SC47
		15	Low, Mid, High	1SC0, 1SC11, 12SC0
Emission limits for protection of aeronautical service (1559 MHz – 1610 MHz)	BPSK	3.75	Low	1SC0
	BPSK, QPSK	15	Low	1SC0, 12SC0
Emission limits for protection of aeronautical service (Carrier-off state)	BPSK	3.75, 15	Low, Mid, High	1SC0
Spurious and Harmonic Emissions at Antenna Terminal	BPSK	3.75	Low, Mid, High	1SC0
	BPSK, QPSK	15		1SC0, 12SC0

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1 G HPF+LNA)	HCT CO., LTD.,	F2L2	12/12/2025	Annual
RF Switching System	Switch box(3 G HPF+LNA)	HCT CO., LTD.,	F2L3	12/12/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F2L5	12/12/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F2L14	12/12/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/10/2026	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/11/2026	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03197	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03201	11/28/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/14/2026	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/10/2026	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	ROHDE & SCHWARZ	101733	09/19/2025	Annual
Radio Communication Test Station	MT8821C	Anritsu Corp.	6262287702	05/16/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Radio Communication Test Station	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
Signal Analyzer(2 Hz ~ 50.0 GHz)	N9040B	KEYSIGHT	US55230216	12/09/2025	Annual
Signal & Spectrum Analyzer (2 Hz~67 GHz)	FSW67	REOHDE & SCHWARZ	101736	05/23/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.18 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.68 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

-. The decision rule applies 'simple acceptance'

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	NT ^(Note 5, 6)
Emissions Mask	§ 25.202(f)	<u>Note 1</u>	NT ^(Note 5, 6)
Conducted Output Power	§ 2.1046	N/A	<u>See Note4</u>
Emission limits for protection of aeronautical service (1559 MHz – 1610 MHz)	§ 25.216(c)(h)	<u>Note 2, 3</u>	NT ^(Note 5, 6)
Emission limits for protection of aeronautical service (Carrier-off state)	§ 25.216(i)	e.i.r.p. density < –80 dBW/MHz(= -50 dBm)	NT ^(Note 5, 6)
Conducted Spurious Emissions	§ 25.202(f)(3)	< 43 + 10 log (P) dB (= -13dBm)	NT ^(Note 5, 6)
Frequency stability / variation of ambient temperature	§ 25.202(d)	0.001 % or 10 ppm	NT ^(Note 5, 6)

Note

- (1) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: 25 dB
(2) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: 35 dB;
(3) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: An amount equal to 43 dB plus 10 times the logarithm (to the base 10) of the transmitter power in watts;
- Wide Band(e.i.r.p. density): Linear interpolation from –70 dBW/MHz(= -40dBm/MHz) at 1605 MHz to –46dBW/MHz(= -16 dBm/MHz) at 1610 MHz.
- NarrowBand(e.i.r.p.): Linear interpolation from –80 dBW(= -50dBm) at 1605 MHz to –56 dBW(= -26 dBm) at 1610 MHz.
- See SAR Report
- C = Comply, NT = Not Tested, NA = Not Applicable, NC = Not Comply
- C2PC models are electrically identical to the Original models.

The Product Equality Declaration includes detailed information about the changes between the devices.

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 25.204 (a)	<u>Note 1</u>	C ^(Note 3, 4)
Radiated Spurious and Harmonic Emissions	§ 25.202(f)(3)	< 43 + 10 log (P) dB (= -13dBm)	C ^(Note 3, 4)

Note

- + 40 dBW in any 4 kHz band for $\theta \leq 0^\circ$
+ 40 + 30 dBW in any 4 kHz band for $0^\circ < \theta \leq 5^\circ$
- C = Comply, NT = Not Tested, NA = Not Applicable, NC = Not Comply
- C2PC models are electrically identical to the Original models.
The Product Equality Declaration includes detailed information about the changes between the devices.
- The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the test result of section 8.

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
20175	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	SCS /SC Size	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
									W	dBm
1660.4	15 kHz /1SC0	BPSK	-22.52	12.46	9.51	2.03	V	<u>Note1</u>	0.099	19.94

Note:

1. + 40 dBW in any 4 kHz band for $\theta \leq 0^\circ$

+ 40 + 3 θ dBW in any 4 kHz band for $0^\circ < \theta \leq 5^\circ$

Modulation	Frequency		Mode	Original (dBm)	C2PC (dBm)	Deviation (dB)
	MHz	Ch.				
1SC0	1660.4	261843	BPSK	20.84	19.94	0.90

8.2 RADIATED SPURIOUS EMISSIONS

- ▣ Modulation: BPSK
- ▣ Distance: 3 meters
- ▣ SC Size: 1SC0
- ▣ Limit: -13 dBm

Frequency (MHz)	Measured Frequency (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)
1660.4	4 981.20	-52.92	11.20	-53.82	3.69	V	-46.31

Modulation	Frequency		Mode	Original (dBm)	C2PC (dBm)	Deviation (dB)
	MHz	Ch.				
1SC0	4 981.20	261843	BPSK	-27.62	-46.31	18.69

9. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2505-FC059-P