TEST REPORT

Applicant Name:	Shenzhen Ulefone Technology Co., Ltd.
Address(FCC):	7A01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
Address(IC):	7A01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District Shenzhen City Guangdong 518110 China
Report Number:	2504Y05060E-RFG
FCC ID:	2AT9T-8001
IC:	28620-8001

Test Standard (s)

FCC PART 22H; FCC PART 24E; FCC PART 27
RSS-130 ISSUE 2, FEBRUARY 2019; RSS-132 ISSUE 4, JANUARY 31, 2023
RSS-133 ISSUE 7, JULY 24, 2024; RSS-139 ISSUE 4, OCTOBER 2022, AMENDMENT
RSS-199 ISSUE 4, JULY 2023; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2

Sample Description

Product Name:	Tablet
Model No.(FCC):	RugKing Pad Pro, GQ8001, RugKing Pad, RugKing Pad Ultra, RugKing Pad Lite, RugKing Pad Pro+
Model No.(IC):	RugKing Pad Pro
Trade Mark:	ulefone
Date Received:	2025-10-29
Report Date:	2026-01-28

Test Result:	The EUT complied with the standards above.

Prepared and Checked By:

Roger Ling

Roger Ling
EMC Engineer

Approved By:

Bob. Liao

Bob.Liao
EMC Engineer

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
Rev.00	2504Y05060E-RFG	Original Report	2026-01-28

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name	Tablet
Tested Model (FCC&IC)	RugKing Pad Pro
Multiple Model (FCC)	GQ8001, RugKing Pad, RugKing Pad Ultra, RugKing Pad Lite, RugKing Pad Pro+
Model Difference# (FCC)	The differences between the above models are in the model name and the sales channels. Please refer to DOS letter for details. The applicant provided model “RugKing Pad Pro” for testing.
HVIN	GQ8001
Voltage Range#	DC 5V/9V from adapter DC 3.87V from rechargeable battery DC 5V from desktop charger
Adapter Information#	Model: HJ-PD18W-US Input: 100-240 V~ 50/60Hz 0.8A Output: 5.0V ⎓ 3.0A 15.0W OR 9.0V ⎓ 2.0A 18.0W OR 12.0V ⎓ 1.5A 18.0W (Note: The manufacturer claims that EUT only support 5/9V for charging.)
EUT Manufacture Information#	Company Name: Shenzhen Gotron Electronic CO.,Ltd. Address: 7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China.

Radio	GSM, WCDMA, LTE		
Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 41: 2535-2655MHz(TX&RX) LTE Band 66: 1710-1780MHz(TX);2110-2200MHz(RX)		
Maximum Conducted Output Power(Average) (actual test result)	GSM850: 32.90dBm(GMSK), 25.71dBm (8PSK)		
	PCS1900: 29.95dBm(GMSK), 26.35dBm (8PSK)		
	WCDMA B2: 22.41dBm	WCDMA B4: 22.31dBm	WCDMA B5: 23.34dBm
	LTE B2: 24.32dBm	LTE B4: 24.17dBm	LTE B5: 24.26dBm
	LTE B12: 24.38dBm	LTE B17: 24.34dBm	LTE B41: 23.46dBm
	LTE B66: 24.29dBm	/	/
Modulation Technique	GSM: GMSK, 8PSK WCDMA: BPSK, QPSK, 16QAM, 64QAM LTE: QPSK, 16QAM		
Antenna Specification#	FPC Antenna (The gain is provided by the applicant.)		
	GSM850/WCDMA B5/LTE B5 -6.4dBi		
	PCS1900/WCDMA B2/LTE B2: -7.3dBi		
	WCDMA B4/LTE B4: -7.5dBi; LTE B12: -7.8dBi		
	LTE B17: -7.8dBi; LTE B41: -8dBi; LTE B66: -7.5dBi		

Continued Table

Sample Serial Number	For RSE Test: 3BVS-1 For RF Conducted Test: 3BVT-6 (Assigned by ATC, Shenzhen)
Sample/EUT Status	Good condition
Normal/Extreme Condition#	L.V.: Low Voltage 3.5 V_{DC} N.V.: Normal Voltage 3.87 V_{DC} H.V.: High Voltage 4.45 V_{DC} (Note: the extreme test condition was declared by manufacturer.)

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-Subpart E, Part 27 of the Federal Communication Commission's rules, and RSS-GEN, RSS-130, RSS-132, RSS-133, RSS-139, RSS-199 of the Innovation, science and Economic Development Canada.

The objective is to determine the compliance of the EUT with FCC and ISED rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J(as well as the following parts) and RSS-GEN, RSS-130, RSS-132, RSS-133, RSS-139, and RSS-199.

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services

Part 27 - Miscellaneous Wireless Communications Services

RSS-130 - Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz

RSS-132 - Cellular Systems Operating in the Bands 824-849 MHz and 869-894 MHz

RSS-133 - Personal Communications Service Equipment Operating in the Bands 1850-1915 MHz and 1930-1995 MHz

RSS-139 - Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz

RSS-199 - Broadband Radio Service (BRS) Equipment Operating in the Band 2500-2690 MHz

RSS-Gen - General Requirements for Compliance of Radio Apparatus

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Accredited by American Association for Laboratory Accreditation (A2LA).The Certificate Number is 4297.01.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements. The Registration Number is 30241.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		$0.064*10^{-7}$
RF output power, conducted		0.3 dB
Unwanted Emission, conducted		1.2 dB
Radiated Spurious Emissions	9kHz - 30MHz	2.1 dB
	30MHz - 1GHz	4.3 dB
	1GHz - 18GHz	4.9 dB
	18GHz - 26.5GHz	5.2 dB
	26.5GHz - 40GHz	4.6 dB
Temperature		1℃
Humidity		7%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The final qualification test was performed with the EUT operating at normal mode.

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
PCS1900	0.25	1850.2	1880.0	1909.8
WCDMA B2	4.2	1852.4	1880.0	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880.0	1909.3
	3	1851.5	1880.0	1908.5
	5	1852.5	1880.0	1907.5
	10	1855	1880.0	1905.0
	15	1857.5	1880.0	1902.5
	20	1860.0	1880.0	1900.0
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715.0	1732.5	1750.0
	15	1717.5	1732.5	1747.5
	20	1720.0	1732.5	1745.0
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829.0	836.5	844.0
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B17	5	706.5	710	713.5
	10	709.0	710	711
LTE B41 (2535MHz-2655 MHz)	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645
LTE B66 (1710MHz -1780MHz)	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

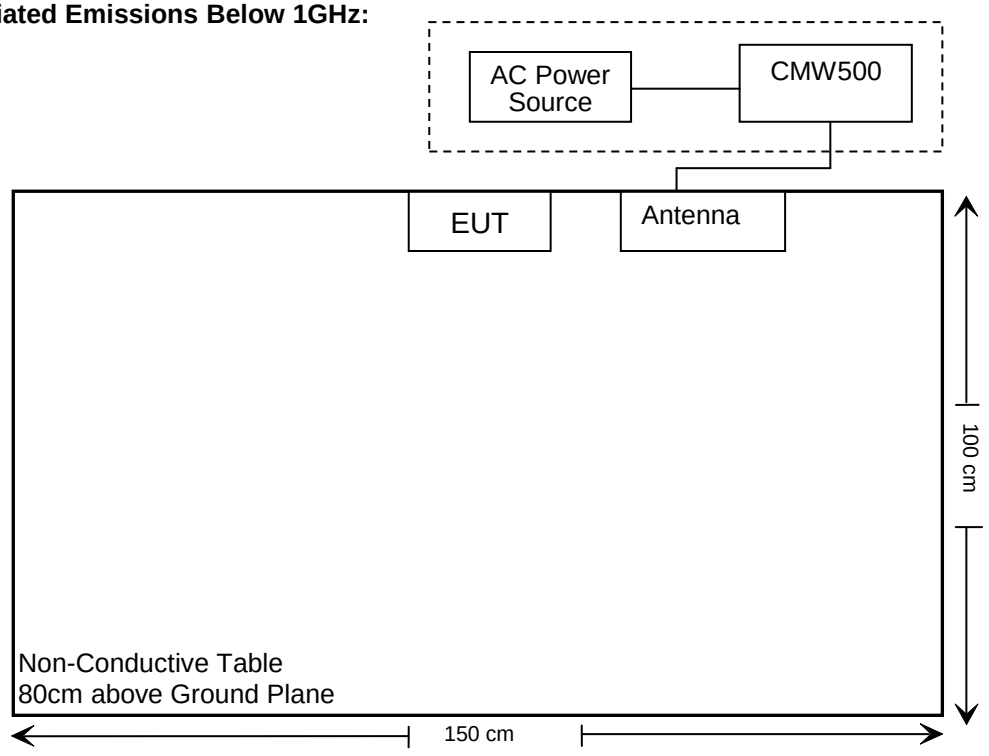
Manufacturer	Description	Model	Serial Number
Unknown	Antenna	Unknown	Unknown
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606

External I/O Cable

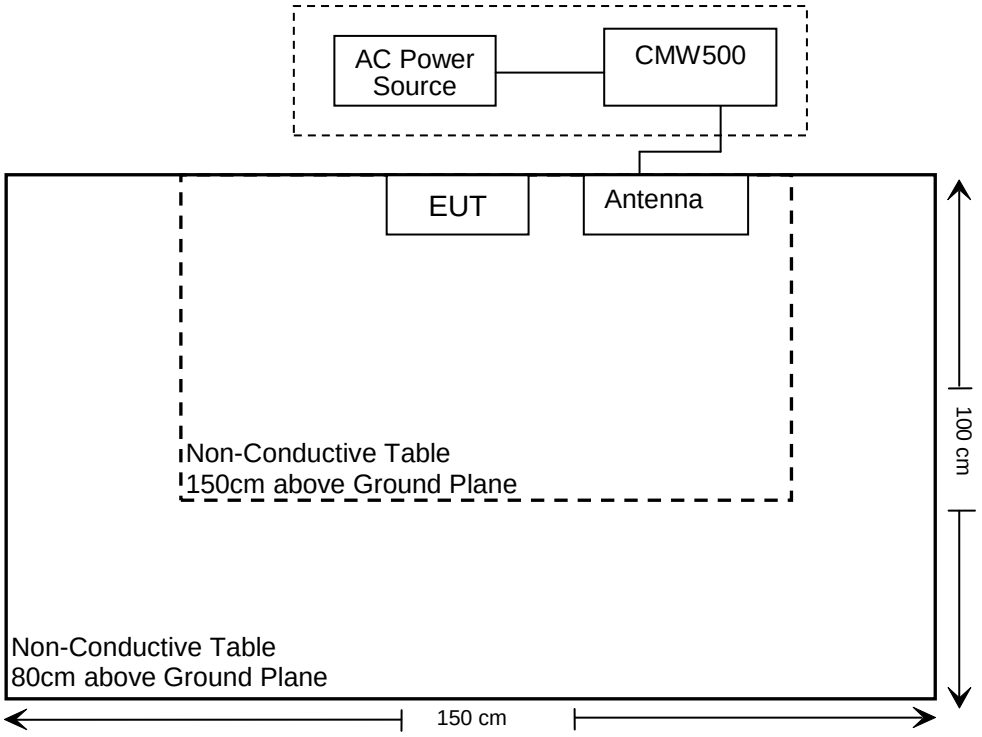
Cable Description	Shielding Type	Length (m)	From Port	To
/	/	/	/	/

Block Diagram of Test Setup

For Radiated Emissions Below 1GHz:



For Radiated Emissions Above 1GHz:



SUMMARY OF TEST RESULTS

FCC Standard Rule(s)	ISEDC Standard Rule(s)	Description of Test	Result
§1.1310; §2.1093	RSS-102	RF Exposure(SAR)	Compliance
/	RSS-130 Clause 4.3 RSS-130 Clause 4.4 RSS-132 Clause 5.1 RSS-133 Clause 5.2 RSS-139 Clause 5.2 RSS-199 Clause 5.2	Frequency block Interoperability requirement Frequency Sub-bands Band plan	Compliance
/	RSS-130 Clause 4.2 RSS-132 Clause 5.2 RSS-133 Clause 5.3 RSS-199 Clause 5.3 RSS-139 Clause 5.3	Modulation Characteristics and Types	Compliance
§2.1046 § 22.913 (a)(d) §24.232(c)(d) §27.50(d)(h)	RSS-130 Clause 4.6 RSS-132 Clause 5.4 RSS-133 Clause 5.5 RSS-139 Clause 5.5 RSS-199 Clause 5.5	RF Output Power	Compliance
§2.1049 §22.905 §22.917 §24.238 §27.53	RSS-Gen Clause 6.7	Occupied Bandwidth and 26dB Bandwidth	Compliance
§2.1051 §22.917(a) §24.238(a) §27.53	RSS-130 Clause 4.7 RSS-132 Clause 5.5 RSS-133 Clause 5.6 RSS-139 Clause 5.6 RSS-199 Clause 5.6	Spurious Emissions at Antenna Terminal	Compliance
§2.1053 §22.917(a) §24.238(a) §27.53	RSS-130 Clause 4.7 RSS-132 Clause 5.5 RSS-133 Clause 5.6 RSS-139 Clause 5.6 RSS-199 Clause 5.6	Field Strength of Spurious Radiation	Compliance
§2.1053 §22.917(a) §24.238(a) §27.53	RSS-130 Clause 4.7 RSS-132 Clause 5.5 RSS-133 Clause 5.6 RSS-139 Clause 5.6 RSS-199 Clause 5.6	Band Edge	Compliance
§2.1055 §2.1046 §22.355 §24.235 §27.50	RSS-130 Clause 4.5 RSS-132 Clause 5.3 RSS-133 Clause 5.6 RSS-139 Clause 5.4 RSS-199 Clause 5.4	Frequency stability	Compliance
/	RSS-139 Clause 5.7	Additional Requirements for Subscriber Equipment	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Spurious Emission Test(Below 1GHz)					
Rohde & Schwarz	Test Receiver	ESR	102725	2025/09/18	2026/09/17
SONOMA INSTRUMENT	Amplifier	310N	186131	2025/03/26	2026/03/25
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2024/08/08	2027/08/07
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2023/02/14	2026/02/13
Agilent	Signal Generator	N5183A	MY47420360	2025/08/29	2026/08/28
Unknown	RF Coaxial Cable	No.12	N040	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.13	N300	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.14	N800	2025/05/30	2026/05/29
Test Software: e3 191218 (V9)					
Radiated Spurious Emission Test(Above 1GHz)					
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2025/09/17	2026/09/16
A.H. Systems, inc.	Preamplifier	PAM-0118	226	2025/03/20	2026/03/19
Schwarzbeck	Horn Antenna	BBHA9120D	837	2023/02/22	2026/02/21
Unknown	RF Coaxial Cable	No.10	N050	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.11	N1000	2025/05/30	2026/05/29
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2023/12/12	2026/12/11
BACL	Amplifier	BACL-1313-A1840	4012521	2025/05/30	2026/05/29
Agilent	Signal Generator	N5183A	MY47420360	2025/08/29	2026/08/28
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2023/11/27	2026/11/26
PASTERNACK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
Unknown	RF Coaxial Cable	No.15	N600	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.16	N650	2025/05/30	2026/05/29
Test Software: e3 191218 (V9)					
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101948	2025/09/18	2026/09/17
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2025/09/18	2026/09/17
BACL	Temp. & Humid. Chamber	BTH-150-40	30192	2025/09/18	2026/09/17
WEINSCHEL	10dB Attenuator	5324	AU 3842	2025/03/26	2026/03/25
Mini-Circuits	Power Splitter	ZFRSC-183-S+	SF10944151S	2025/03/26	2026/03/25
UNI-T	DC Power Supply	UTP1306S	2109D0903324	2025/03/26	2026/03/25
Test Software: JDAutoTestSystem V1.0.0					

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

RF EXPOSURE

Applicable Standard

FCC §1.1310 & §2.1093, RSS-102

According to RSS-102 §5.2.2 table 3, SAR basic restrictions limits (100 kHz to 6 GHz).

Body region	Uncontrolled environment average SAR (W/kg)	Controlled environment average SAR (W/kg)	Averaging time (minutes)	Averaging mass (g)
Whole body	0.08	0.4	6	whole body
Localized head, neck and trunk	1.6	8	6	1
Localized limbs	4	20	6	10

Measurement Result: Compliance.
Please refer to FCC SAR Report: 2504Y05060E-SAA and IC SAR Report: 2504Y05060E-SAB.

CHANNELLING ARRANGEMENTS & FREQUENCY PLAN & INTEROPERABILITY REQUIREMENT

Applicable Standard

According to RSS-130 §4.3, the frequency bands 698-756 MHz and 777-787 MHz are divided into small frequency blocks as per SRSP-518. Equipment shall operate according to the frequency plan given in the SRSP.

According to RSS-130 §4.4, mobile and portable stations in the bands 617-652 MHz and 663-698 MHz must be capable of operating on all frequencies in these bands.

According to RSS-132 §5.1, the frequency bands 824-849 MHz and 869-894 MHz are divided into sub-bands as described in SRSP-503. These sub-bands are:
824-835 MHz, 835-845 MHz, 845-846.5 MHz, and 846.5-849 MHz for mobile transmit; and
869-880 MHz, 880-890 MHz, 890-891.5 MHz, and 891.5-894 MHz for base transmit.

According to RSS-133 §5.2, the bands 1850-1915 MHz and 1930-1995 MHz are divided into 11 paired frequency blocks. Frequency blocks may be aggregated to form a frequency block group. SRSP 510, Technical Requirements for Personal Communications Services (PCS) in the Bands 1850-1915 MHz and 1930-1995 MHz, contains the detailed band plan.

According to RSS-139 §5.2, the bands 1710-1780 MHz and 2110-2180 MHz are divided into 11 paired blocks. Standard Radio System Plan SRSP-513, Technical Requirements for Advanced Wireless Services in the Bands 1710-1780 MHz and 2110-2180 MHz, contains the detailed band plan.
The band 2180-2200 MHz is divided into two downlink-only blocks. SRSP-519, Technical Requirements for the Ancillary Terrestrial Component of Mobile-Satellite Service Systems Operating in the Bands 2000-2020 MHz and 2180-2200 MHz, contains the detailed band plan. In this RSS, AWS-4 is referred to as ATC band 2180-2200 MHz.

According to RSS-199 §5.2, Standard Radio System Plan SRSP-517, Technical Requirements for Broadband Radio Service (BRS) in the Band 2500-2690 MHz

Result

(1) Channeling arrangement meets all relevant conditions specified in SRSP-503, SRSP-510, SRSP-513, SRSP-517, SRSP-518 and SRSP-519.
(2) The device employs all the range of 663-698MHz for this band.

MODULATION CHARACTERISTIC & TYPES

Applicable Standard

According to RSS-130 §4.2, equipment certified under this standard shall employ digital modulation.

According to RSS-132 §5.2, equipment certified under this standard shall use digital modulation.

According to RSS-133 §5.3, the modulation used shall be digital.

According to RSS-139 §5.3, the devices may employ any type of modulation techniques. The type of modulation used must be reported.

According to RSS-199 §5.3, equipment certified under this standard shall employ digital modulation.

Result

Compliant, the device operates under this standard use digital modulation.

The EUT uses GMSK &8PSK& QPSK & BPSK & 16QAM & 64QAM modulation.

RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §22.913(a),
The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232(c)(d),
Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

According to §27.50(d),
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(h),
The maximum EIRP must not exceed 2Watts (33dBm) for 2496-2690MHz.

According to RSS-130 §4.6,

The transmitter output power shall be measured in terms of average power. In addition,
the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

4.6.2 Frequency bands 617-652 MHz and 663-698 MHz
The e.r.p. shall not exceed 3 watts for mobile equipment, fixed subscriber equipment and portable equipment.

For base and fixed equipment other than fixed subscriber equipment, refer to SRSP-518 for the equivalent isotropically radiated power (e.i.r.p.) limits.

4.6.3 Frequency bands 698-756 MHz and 777-787 MHz
The e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment. The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

For base and fixed equipment other than fixed subscriber equipment, refer to SRSP-518 for the e.i.r.p. limits.

According to RSS-132 §5.4,

The transmitter output power shall be measured in terms of average power. The equivalent radiated power (e.r.p.) shall not exceed 7 watts for mobile equipment and 3 watts for portable equipment.

The effective isotropic radiated power (e.i.r.p.) shall not exceed the limits specified in SRSP-503 for base station equipment.

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

According to RSS-133 §5.5,

The maximum power spectral density of the equipment, measured in terms of average values, shall comply with the limits specified in table 2. These limits are either specified in terms of equivalent isotropically radiated power (e.i.r.p.) or TRP for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-510 for more deployment details in the bands 1850-1915 MHz and 1930-1995 MHz.
AAS equipment with eight antenna elements or less can demonstrate compliance with the e.i.r.p limit specified for non-AAS equipment in table 2, instead of the TRP limit.

Table 2: Maximum power spectral density of equipment

Equipment type	Maximum power spectral density
Non-AAS fixed station and base station	3280 W/MHz e.i.r.p
AAS fixed station and base station	46 dBm/MHz TRP
Subscriber equipment	2 W /channel bandwidth e.i.r.p

In addition, the peak-to-average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal corresponding to the highest PAPR during periods of continuous transmission.

According to RSS-139 §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.

The limits in this RSS are specified for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-513 and SRSP-519 for more details on the bands 2110-2180 MHz and 2180-2200 MHz respectively.

Table 3: Maximum power of equipment in the band 1710-1780 MHz

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

Table 4: Maximum power of equipment in the band 2110-2180 MHz

Equipment type	Maximum power
Non-AAS fixed station and base station	65 dBm e.i.r.p./MHz
AAS fixed station and base station	46 dBm TRP/MHz
Subscriber equipment	30 dBm e.i.r.p./channel bandwidth

Table 5: Maximum power of equipment in the band 2180-2200 MHz

Equipment type	Maximum power
Non-AAS base station	65 dBm e.i.r.p./MHz
AAS base station	46 dBm TRP/MHz

In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

According to RSS-199 §5.5,

The maximum output power of the equipment shall comply with the limits specified in table 3. In this table, maximum power refers to the equivalent isotropically radiated power (e.i.r.p.) or total radiated power (TRP), measured in terms of average values.
Subscriber equipment other than fixed subscriber equipment shall not exceed an e.i.r.p of 2W per channel bandwidth.
Fixed subscriber equipment shall not exceed the following:

i. conducted power of 2W per channel bandwidth for all ports
ii. e.i.r.p of 40 W per channel bandwidth

The maximum power limits for fixed station and base station are provided in Table 3. The limits in this RSS are specified for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-517 for more deployment details in the band 2500-2690 MHz.

Table 3: Maximum power of fixed station and base station in the band 2500-2690 MHz

Equipment type	Maximum power
Non-AAS fixed station and base station	e.i.r.p of 1640 W /MHz
AAS fixed station and base station	TRP of 43 dBm /MHz

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

Test Procedure

According to CFR Part 2.1046, ANSI C63.26-2015 Section 5.2.5.5:

In many cases, RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

ERP or EIRP = $P_{Meas} + G_T$

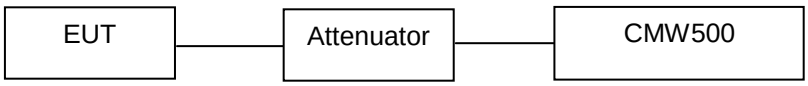
Where

ERP or EIRP	effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)
P_{Meas}	measured transmitter output power or PSD, in dBm or dBW
G_T	gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

According to ANSI C63.26-2015 Section 5.2

Conducted method:

The RF output of the transmitter was connected to the CMW500 through sufficient attenuation.



Note: the path loss (cable loss and attenuator) has including in result.

Test Data

Please refer to the Appendix.

OCCUPIED BANDWIDTH & 26DB BANDWIDTH

Applicable Standard

FCC §2.1049, §22.917, §22.905, §24.238, §27.53.

According to RSS-GEN §6.7,
The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “26 dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated 26 dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

Test Procedure

According to ANSI C63.26-2015 Section 5.4.3

Occupied bandwidth—Relative measurement procedure

The OBW is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). The typical ratio for transmitters is −26 dB, corresponding to the 26 dB BW; however, other ratios can be specified. In this subclause, the ratio is designated by “−X dB.”

NOTE—This parameter, when expressed in relative terms, is often referred to in regulations as the EBW.

The reference level is either the amplitude of the unmodulated carrier, or the highest amplitude of the spectral envelope of the modulated signal, as stated by the applicable requirement. Some requirements can specify a particular maximum or minimum value for the “−X dB” bandwidth; other requirements can specify that the “−X dB” bandwidth be entirely contained within the authorized or designated frequency band.

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “−X dB” requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f) Determine the reference value by either of the following:
    1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
    2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
g) Determine the “−X dB amplitude” as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
h) If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).
i) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “−X dB amplitude” determined in step f). If a marker is below this “−X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
The spectral envelope can cross the “−X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “−X dB amplitude.”

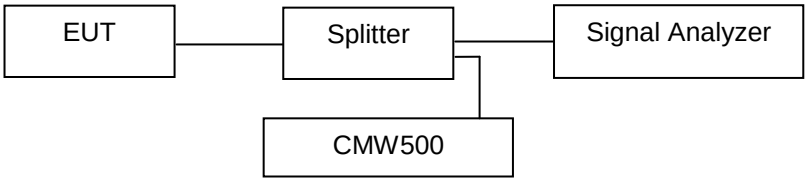
j) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

According to ANSI C63.26-2015 Section 5.4.4

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient).
b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
d) Set the detection mode to peak, and the trace mode to max-hold.
e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.
f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).



Note: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.

Test Data

Please refer to the Appendix.

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

FCC §2.1051, §22.917(a), §24.238(a), §27.53,

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

According to RSS-130 §4.7

Clause 4.7.1 General unwanted emissions limits
The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10 $\log_{10}$ p (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

Clause 4.7.2 Additional unwanted emissions limits
In addition to the limit outlined in above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:
a). the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:
(i). 76 + 10 $\log_{10}$ p (watts), dB, for base and fixed equipment and
(ii). 65 + 10 $\log_{10}$ p (watts), dB, for mobile and portable equipment
b). the e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

According to RSS-132 §5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(i) In the first 1.0 MHz 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 dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

According to RSS-133 §5.6

Unwanted emissions shall be measured in terms of average values while the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.

Equipment shall meet the unwanted emission limits, specified in table 3, outside each frequency block group. For each channel bandwidth supported by the equipment under test, the unwanted emissions shall be measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment’s operating frequency range.

For the unwanted emission limits, in the 1 MHz bands immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth (OBW). Beyond these 1 MHz bands, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% of the OBW, as applicable.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

Table 3: Unwanted emission limits for all equipment

Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dBm/(1% of OBW)
> 1	-13 dBm/MHz

According to RSS-139 §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 6: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limits
≤1 MHz	-13 dBm/(1% of B*)
>1 MHz	-13 dBm/MHz

*B is the frequency block or frequency block group.

In addition to complying with the above limits, equipment operating in the band 2180-2200 MHz may require additional filtering (see SRSP-519).

According to RSS-199 §5.6

Unwanted emissions shall be measured in terms of average values when the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.

Equipment shall meet the unwanted emission limits, specified below, outside each frequency block group. For each channel bandwidth supported by the equipment under test, the unwanted emissions shall be measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment’s operating frequency range.

For the unwanted emission limits, in the 1 MHz band immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for fixed stations, base stations, and fixed subscriber equipment, and 2% for subscriber equipment other than fixed subscriber equipment. Beyond this 1 MHz band, a resolution bandwidth of 1 MHz 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 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

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

Table 4: Unwanted emission limits for fixed station, base station and fixed subscriber equipment

Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limits
≤ 1	-13 dBm/(1% of OB*)
> 1	-13 dBm/MHz

*OB is the occupied bandwidth.

Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment	
Offset from the edge of the frequency block or frequency block group (MHz)	**Unwanted emission limits**
0-1	-10 dBm/(2% of OB*)
1-5	-10 dBm/MHz
5-X**	-13 dBm/MHz
≥ X	-25 dBm/MHz

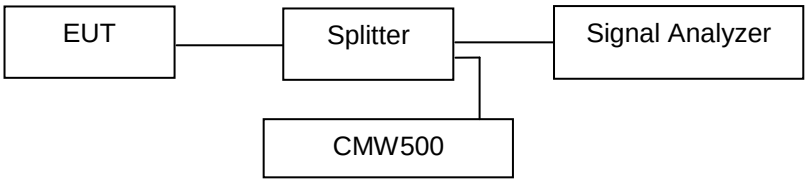
*OB is the occupied bandwidth.
** X is 6 MHz or the equipment occupied bandwidth, whichever is greater

In addition to complying with the limits in above table, subscriber equipment other than fixed subscriber equipment shall not exceed -13 dBm/MHz on all frequencies between 2490.5 MHz and 2496 MHz, and -25 dBm/MHz at or below 2490.5 MHz.

Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Data

Please refer to the Appendix.

SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917(a), §24.238(a), §27.53.

RSS-130 §4.7, RSS-132 §5.5, RSS-133 §5.6, RSS-139 §5.6, RSS-199 §5.6

Test Procedure

According to ANSI C63.26-2015 Section 5.5.3:

●**Test setup:**

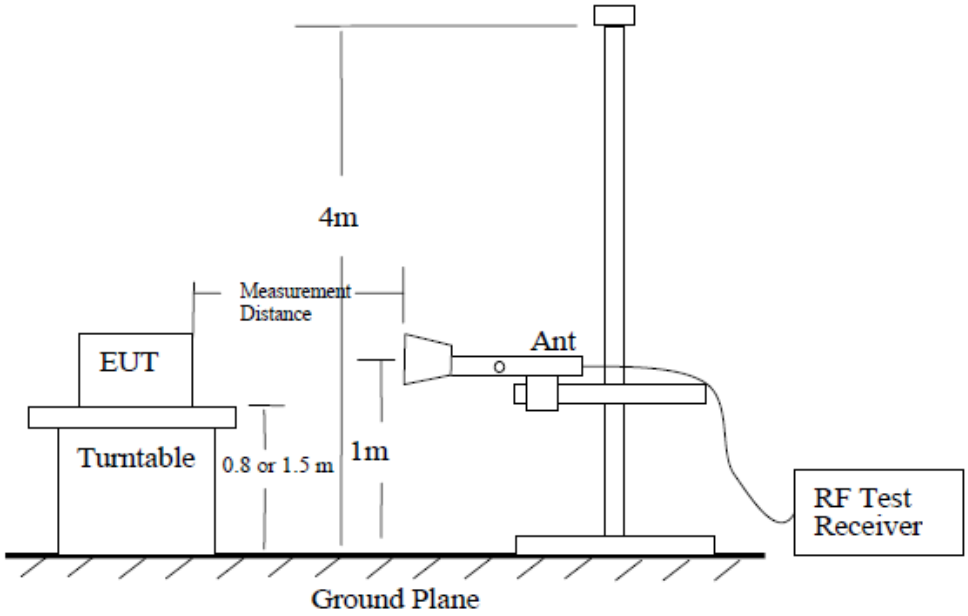


Figure 6 —Test site-up for radiated ERP and/or EIRP measurements

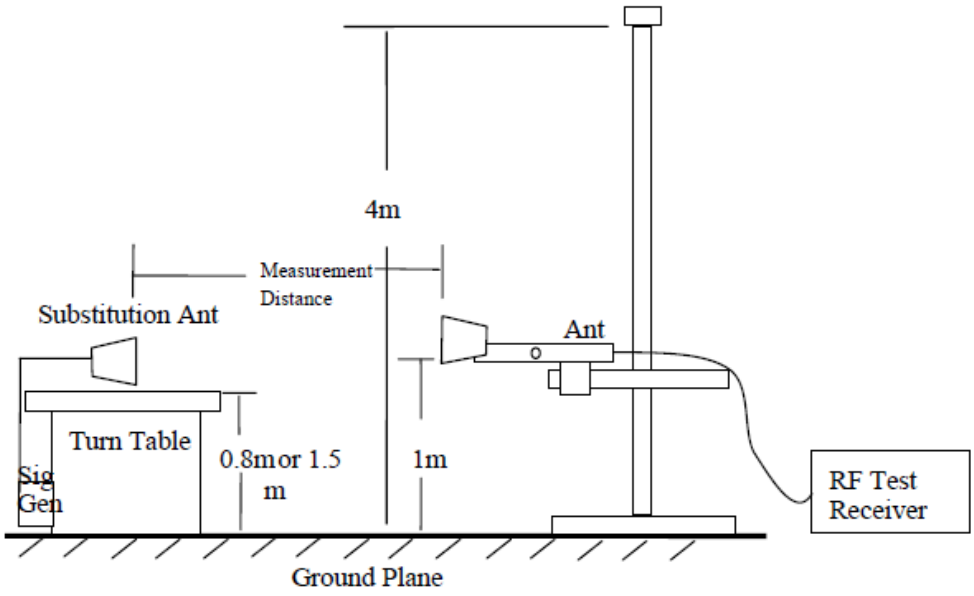


Figure 7 —Substitution method set-up for radiated emission

● **Final radiated emissions testing**

a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.

b) Each emission under consideration shall be evaluated:

1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.

2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.

3) Return the turntable to the azimuth where the highest emission amplitude level was observed.

4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.

5) Record the measured emission amplitude level and frequency using the appropriate RBW.

c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.

d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.

e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.

f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.

g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:

1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.

2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).

3) Record the output power level of the signal generator when equivalence is achieved in step 2).

h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.

i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

Pe = Ps(dBm) − cable loss (dB) + antenna gain (dBd)

where

Pe = equivalent emission power in dBm

Ps = source (signal generator) power in dBm

NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) − 2.15 dB. If necessary, the antenna gain can be calculated from calibrated antenna factor information

k) Provide the complete measurement results as a part of the test report.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Test Data

Environmental Conditions

Test Item:	RSE Below 1GHz	RSE Above1GHz
Temperature:	24.5 °C	25.3 °C
Relative Humidity:	54 %	55 %
ATM Pressure:	101.1 kPa	100.9 kPa
Test Engineer:	Colin Lin	Kevin Lv
Test Date:	2025-11-08	2025-12-02
EUT Operation Mode:	Transmitting	Transmitting

Test Result: Compliance, please refer to the below data.

Note 1: After pre-scan in the X, Y and Z axes of orientation, the worst case as setup photos was recorded.

Note 2: For LTE, the Worst modulation and bandwidth were below data.

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
GSM 850(Test Frequency 30MHz~10GHz)						
Low Channel						
54.62	-63.92	H	1.20	-62.72	-13	-49.72
152.33	-55.42	V	-2.12	-57.54	-13	-44.54
1648.4	-51.62	H	-1.20	-52.82	-13	-39.82
1648.4	-53.60	V	-1.55	-55.15	-13	-42.15
2472.6	-35.53	H	1.07	-34.46	-13	-21.46
2472.6	-40.94	V	1.40	-39.54	-13	-26.54
Middle Channel						
54.62	-64.17	H	1.20	-62.97	-13	-49.97
152.33	-54.92	V	-2.12	-57.04	-13	-44.04
1673.2	-51.84	H	-1.53	-53.37	-13	-40.37
1673.2	-56.35	V	-1.53	-57.88	-13	-44.88
2509.8	-33.40	H	1.07	-32.33	-13	-19.33
2509.8	-43.10	V	0.93	-42.17	-13	-29.17
High Channel						
54.62	-63.60	H	1.20	-62.40	-13	-49.40
152.33	-55.52	V	-2.12	-57.64	-13	-44.64
1697.6	-52.40	H	-1.88	-54.28	-13	-41.28
1697.6	-54.58	V	-1.50	-56.08	-13	-43.08
2546.4	-32.65	H	1.48	-31.17	-13	-18.17
2546.4	-42.00	V	1.35	-40.65	-13	-27.65
GSM 1900(Test Frequency 30MHz~20GHz)						
Low Channel						
54.62	-63.97	H	1.20	-62.77	-13	-49.77
152.33	-55.42	V	-2.12	-57.54	-13	-44.54
3700.4	-57.47	H	2.86	-54.61	-13	-41.61
3700.4	-57.31	V	3.34	-53.97	-13	-40.97
Middle Channel						
54.62	-63.67	H	1.20	-62.47	-13	-49.47
152.33	-55.28	V	-2.12	-57.40	-13	-44.40
3760	-58.21	H	3.33	-54.88	-13	-41.88
3760	-57.98	V	3.23	-54.75	-13	-41.75
High Channel						
54.62	-63.57	H	1.20	-62.37	-13	-49.37
152.33	-55.37	V	-2.12	-57.49	-13	-44.49
3819.6	-59.66	H	3.85	-55.81	-13	-42.81
3819.6	-56.40	V	3.67	-52.73	-13	-39.73

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
WCDMA Band 2 (Test Frequency 30MHz~20GHz)						
Low Channel						
55.03	-64.30	H	1.04	-63.26	-13	-50.26
153.87	-56.35	V	-2.12	-58.47	-13	-45.47
3704.8	-57.60	H	2.86	-54.74	-13	-41.74
3704.8	-56.51	V	3.32	-53.19	-13	-40.19
Middle Channel						
55.03	-64.10	H	1.04	-63.06	-13	-50.06
153.87	-56.31	V	-2.12	-58.43	-13	-45.43
3760	-57.95	H	3.33	-54.62	-13	-41.62
3760	-57.55	V	3.23	-54.32	-13	-41.32
High Channel						
55.03	-64.42	H	1.04	-63.38	-13	-50.38
153.87	-56.38	V	-2.12	-58.50	-13	-45.50
3815.2	-59.28	H	3.9	-55.38	-13	-42.38
3815.2	-58.01	V	3.31	-54.70	-13	-41.70
WCDMA Band 4(30MHz-18GHz)						
Low Channel						
55.03	-63.86	H	1.04	-62.82	-13	-49.82
153.87	-56.72	V	-2.12	-58.84	-13	-45.84
3424.8	-55.80	H	2.25	-53.55	-13	-40.55
3424.8	-57.82	V	2.33	-55.49	-13	-42.49
Middle Channel						
55.03	-64.73	H	1.04	-63.69	-13	-50.69
153.87	-56.73	V	-2.12	-58.85	-13	-45.85
3465.2	-57.51	H	2.53	-54.98	-13	-41.98
3465.2	-57.27	V	2.48	-54.79	-13	-41.79
High Channel						
55.03	-64.53	H	1.04	-63.49	-13	-50.49
153.87	-55.94	V	-2.12	-58.06	-13	-45.06
3502.2	-57.72	H	2.8	-54.92	-13	-41.92
3502.2	-56.59	V	2.77	-53.82	-13	-40.82

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
WCDMA Band 5(30MHz-10GHz)						
Low Channel						
55.03	-64.79	H	1.04	-63.75	-13	-50.75
153.87	-56.67	V	-2.12	-58.79	-13	-45.79
1652.8	-58.27	H	-1.24	-59.51	-13	-46.51
1652.8	-58.79	V	-1.55	-60.34	-13	-47.34
Middle Channel						
55.03	-64.76	H	1.04	-63.72	-13	-50.72
153.87	-56.11	V	-2.12	-58.23	-13	-45.23
1673.2	-58.96	H	-1.53	-60.49	-13	-47.49
1673.2	-59.24	V	-1.53	-60.77	-13	-47.77
High Channel						
55.03	-64.17	H	1.04	-63.13	-13	-50.13
153.87	-56.58	V	-2.12	-58.70	-13	-45.70
1693.2	-59.21	H	-1.81	-61.02	-13	-48.02
1693.2	-58.02	V	-1.51	-59.53	-13	-46.53

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band 2(30MHz-20GHz)						
1RB, 1.4MHz, QPSK						
Low Channel						
54.93	-63.73	H	1.09	-62.64	-13	-49.64
152.66	-55.87	V	-2.12	-57.99	-13	-44.99
3701.4	-55.12	H	2.96	-52.16	-13	-39.16
3701.4	-56.23	V	2.64	-53.59	-13	-40.59
Middle Channel						
54.93	-64.13	H	1.09	-63.04	-13	-50.04
152.66	-55.93	V	-2.12	-58.05	-13	-45.05
3760	-54.20	H	3.32	-50.88	-13	-37.88
3760	-57.55	V	3.23	-54.32	-13	-41.32
High Channel						
54.93	-63.69	H	1.09	-62.60	-13	-49.60
152.66	-55.73	V	-2.12	-57.85	-13	-44.85
3818.6	-52.10	H	3.88	-48.22	-13	-35.22
3818.6	-53.42	V	3.71	-49.71	-13	-36.71
LTE Band 4(30MHz-18GHz)						
1RB, 1.4MHz, QPSK,						
Low Channel						
54.93	-64.18	H	1.09	-63.09	-13	-50.09
152.66	-55.68	V	-2.12	-57.80	-13	-44.80
3421.4	-56.62	H	2.24	-54.38	-13	-41.38
3421.4	-58.52	V	2.36	-56.16	-13	-43.16
Middle Channel						
54.93	-64.14	H	1.09	-63.05	-13	-50.05
152.66	-55.85	V	-2.12	-57.97	-13	-44.97
3465	-57.50	H	2.53	-54.97	-13	-41.97
3465	-58.04	V	2.48	-55.56	-13	-42.56
High Channel						
54.93	-63.74	H	1.09	-62.65	-13	-49.65
152.66	-56.34	V	-2.12	-58.46	-13	-45.46
3508.6	-56.55	H	2.86	-53.69	-13	-40.69
3508.6	-58.65	V	2.82	-55.83	-13	-42.83

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band 5(30MHz-10GHz):						
1RB, 1.4MHz, QPSK						
Low Channel						
54.93	-63.85	H	1.09	-62.76	-13	-49.76
152.66	-55.80	V	-2.12	-57.92	-13	-44.92
1649.4	-43.90	H	-1.21	-45.11	-13	-32.11
1649.4	-50.38	V	-1.69	-52.07	-13	-39.07
2474.1	-39.23	H	1.06	-38.17	-13	-25.17
2474.1	-52.91	V	1.37	-51.54	-13	-38.54
Middle Channel						
54.93	-64.34	H	1.09	-63.25	-13	-50.25
152.66	-55.84	V	-2.12	-57.96	-13	-44.96
1673	-43.41	H	-1.53	-44.94	-13	-31.94
1673	-49.77	V	-1.53	-51.30	-13	-38.30
2509.5	-37.95	H	1.07	-36.88	-13	-23.88
2509.5	-55.42	V	0.93	-54.49	-13	-41.49
High Channel						
54.93	-63.90	H	1.09	-62.81	-13	-49.81
152.66	-55.54	V	-2.12	-57.66	-13	-44.66
1696.6	-37.65	H	-1.86	-39.51	-13	-26.51
1696.6	-51.65	V	-1.29	-52.94	-13	-39.94
2544.9	-43.65	H	1.46	-42.19	-13	-29.19
2544.9	-52.87	V	1.33	-51.54	-13	-38.54
LTE Band 12 (30MHz-10GHz)						
1RB, 1.4MHz, QPSK						
Low Channel						
54.93	-64.16	H	1.09	-63.07	-13	-50.07
152.66	-55.94	V	-2.12	-58.06	-13	-45.06
1399.4	-51.83	H	-1.34	-53.17	-13	-40.17
1399.4	-54.70	V	-1.56	-56.26	-13	-43.26
Middle Channel						
54.93	-64.29	H	1.09	-63.20	-13	-50.20
152.66	-55.97	V	-2.12	-58.09	-13	-45.09
1415	-50.03	H	-1.30	-51.33	-13	-38.33
1415	-52.98	V	-1.41	-54.39	-13	-41.39
High Channel						
54.93	-64.45	H	1.09	-63.36	-13	-50.36
152.66	-55.62	V	-2.12	-57.74	-13	-44.74
1430.6	-51.00	H	-1.27	-52.27	-13	-39.27
1430.6	-53.92	V	-1.26	-55.18	-13	-42.18

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band 17 (30MHz-10GHz)						
1RB, 5MHz, QPSK						
Low Channel						
54.93	-64.34	H	1.09	-63.25	-13	-50.25
152.66	-56.17	V	-2.12	-58.29	-13	-45.29
1413	-52.14	H	-1.31	-53.45	-13	-40.45
1413	-53.29	V	-1.43	-54.72	-13	-41.72
Middle Channel						
54.93	-63.84	H	1.09	-62.75	-13	-49.75
152.66	-55.67	V	-2.12	-57.79	-13	-44.79
1420	-50.87	H	-1.29	-52.16	-13	-39.16
1420	-51.32	V	-1.36	-52.68	-13	-39.68
High Channel						
54.93	-64.36	H	1.09	-63.27	-13	-50.27
152.66	-56.26	V	-2.12	-58.38	-13	-45.38
1427	-50.66	H	-1.28	-51.94	-13	-38.94
1427	-51.34	V	-1.3	-52.64	-13	-39.64
LTE Band 41 (30MHz-27GHz)						
1RB, 5MHz, QPSK,						
Low Channel						
54.93	-63.92	H	1.09	-62.83	-25	-37.83
152.66	-55.52	V	-2.12	-57.64	-25	-32.64
5075	-59.46	H	6.12	-53.34	-25	-28.34
5075	-61.54	V	6.04	-55.5	-25	-30.5
Middle Channel						
54.93	-64.11	H	1.09	-63.02	-25	-38.02
152.66	-56.02	V	-2.12	-58.14	-25	-33.14
5190	-57.71	H	5.49	-52.22	-25	-27.22
5190	-57.00	V	5.28	-51.72	-25	-26.72
High Channel						
54.93	-63.64	H	1.09	-62.55	-25	-37.55
152.66	-56.24	V	-2.12	-58.36	-25	-33.36
5305	-58.15	H	5.14	-53.01	-25	-28.01
5305	-55.97	V	4.83	-51.14	-25	-26.14

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band 66 (30MHz-18GHz)						
1RB, 1.4MHz, QPSK						
Low Channel						
54.93	-64.59	H	1.09	-63.50	-13	-50.50
152.66	-56.35	V	-2.12	-58.47	-13	-45.47
3421.4	-59.83	H	2.24	-57.59	-13	-44.59
3421.4	-58.46	V	2.33	-56.13	-13	-43.13
Middle Channel						
54.93	-64.26	H	1.09	-63.17	-13	-50.17
152.66	-55.83	V	-2.12	-57.95	-13	-44.95
3490	-58.15	H	2.70	-55.45	-13	-42.45
3490	-57.95	V	2.68	-55.27	-13	-42.27
High Channel						
54.93	-63.79	H	1.09	-62.70	-13	-49.70
152.66	-55.84	V	-2.12	-57.96	-13	-44.96
3558.6	-53.79	H	3.23	-50.56	-13	-37.56
3558.6	-54.49	V	3.06	-51.43	-13	-38.43

Note 1: Absolute Level = Reading Level + Substituted Factor
Note 2: Substituted Factor = Substituted Level - Cable loss+ Antenna Gain
Note 3: Margin = Absolute Level - Limit
Note 4: The data which below the 20 dB limit was not recorded.

BAND EDGES

Applicable Standard

According to §22.917(a),

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

According to §24.238(a),

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

According to §27.53,

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 + 10 log(P) dB.

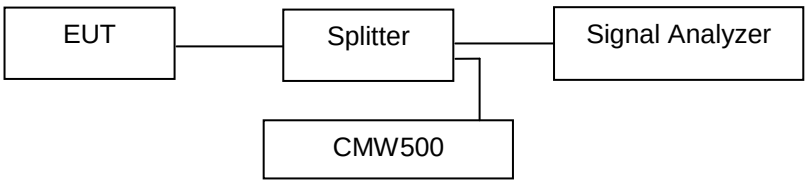
RSS-130 §4.7, RSS-132 §5.5, RSS-133 §5.6, RSS-139 §5.6, RSS-199 §5.6

Test Procedure

According to ANSI C63.26-2015 Section 5.7.3:

a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.
c) Set the number of points in sweep ≥ 2 × span / RBW.
d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:
   1) If the device can be configured to transmit continuously (duty cycle ≥ 98%), set the (sweep time) > (number of points in sweep) × (symbol period) (e.g., by a factor of 10 × symbol period × number of points). Increasing the sweep time (i.e., slowing the sweep speed) will allow for averaging over multiple symbols
   2) If the device cannot transmit continuously (duty cycle < 98%), a gated sweep shall be used when possible (i.e., gate triggered such that the analyzer only sweeps when the device is transmitting at full power), set the sweep time > (number of points in sweep) × (symbol period) but the sweep time shall always be maintained at a value that is less than or equal to the minimum transmission time.
   3) If the device cannot be configured to transmit continuously (duty cycle < 98%) and a free-running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time > (number of points in sweep) × (transmitter period) (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by [10 log (1/duty cycle)]. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation ≤ ±2%).
   4) If the device cannot be configured to transmit continuously and a free-running sweep must be used, and if the transmissions exhibit a non-constant duty cycle (duty cycle variations > ±2%), set the sweep time so that the averaging is performed over the on-period by setting the sweep time > (symbol period) × (number of points), while also maintaining the sweep time < (transmitter on-time). The trace mode shall be set to max hold, since not every display point will be averaged only over just the on-time. Thus, multiple sweeps (e.g., 100) in maximum hold are necessary to ensure that the maximum power is measured.

e) The test report shall include the plots of the measuring instrument display and the measured data.
f) See Annex I for example emission mask plots.



Note: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.

Test Data

Please refer to the Appendix.

FREQUENCY STABILITY

Applicable Standard

According to §2.1055,

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355,

The carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile > 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235&§27.54,

The frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

According to RSS-130 §4.5,

The frequency stability shall be sufficient to ensure that the occupied bandwidth remains within each frequency block range when tested at the temperature and supply voltage variations specified in RSS-Gen.

According to RSS-132 §5.3,

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen.

According to RSS-133 §5.4,

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

According to RSS-139 §5.4,

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

According to RSS-199 §5.4,

he frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

Test Procedure

According to ANSI C63.26-2015 Section 5.6:

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

a) At 10 °C intervals of temperatures between −30 °C and +50 °C at the manufacturer's rated supply voltage, and
b) At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the −15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy). Full details on the choice of values shall be included in the test report.

Test Data

Please refer to the Appendix.

ADDITIONAL REQUIREMENTS FOR SUBSCRIBER EQUIPMENT

Applicable Standard

According to RSS-139 clause 5.7,
Subscriber equipment other than fixed subscriber equipment shall use transmitter power control to limit power. The applicant shall include, with the application for certification, a declaration of compliance that confirms the control requirement was met and that includes a description of how the requirement was met. The declaration of compliance may be included as a separate document or attached (e.g. as an annex) to the test report.

Subscriber equipment operating in the band 1755-1780 MHz shall operate only when under the control of a base station. The applicant shall include, with the application for certification, a declaration of compliance that confirms the control requirement was met and that includes a description of how the requirement was met. The declaration of compliance may be included as a separate document or attached (e.g. as an annex) to the test report.

Result

Compliance, the devices use transmitter power control to limit power and operate under the control of a base station.

APPENDIX

Frequency band	Remark
GSM	Refer to the 2504Y05060E-RFG--Appendix C-GSM.
WCDMA	Refer to the 2504Y05060E-RFG-Appendix D-WCDMA.
LTE	Refer to the 2504Y05060E-RFG-Appendix E-LTE.

EXHIBIT A-EUT PHOTOGRAPHS

For FCC, please refer to the Attachment No.1 2504Y05060E-RF-00 EUT External Photos and Attachment No.2 2504Y05060E-RF EUT Internal Photos.

For IC, please refer to the Attachment No.8 2504Y05060E-RF-08 EUT External Photos and Attachment No.2 2504Y05060E-RF EUT Internal Photos.

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the Attachment No.7 2504Y05060E-RFG Test Photos.

******* END OF REPORT *******