

TEST REPORT

Applicant Name : Inrico Technologies Co.,Ltd
Address : A1703, Shenzhen National Engineering Laboratory Building, No. 20
Gaoxin South 7th Road, Shenzhen, China
Report Number : 2504S23848E-RF-00F
FCC ID: 2AIV6-BC680

Test Standard (s)

FCC PART 22H; FCC PART 24E; FCC PART 27; FCC PART 90

Sample Description

Product Type: 4G LTE Smart Terminal
Model No.: BC680
Trade Mark: **Inrico®**
Date Received: 2025-04-09
Date of Test: 2025-05-01 to 2025-08-21
Report Date: 2025-08-21

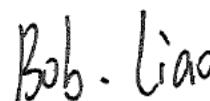
| | |
|--------------|--|
| Test Result: | The EUT complied with the standards above. |
|--------------|--|

Prepared and Checked By:



Matt Liang
EMC Engineer

Approved By:



Bob Liao
EMC Engineer

Note: This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA, or any agency of the Federal Government. The information marked “#” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included but no need marked.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Shenzhen Accurate Technology Co., Ltd.

Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Tel: +86 755-26503290

Web: www.atc-lab.com

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY..... 3

GENERAL INFORMATION..... 4

 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 4

 OBJECTIVE 5

 TEST METHODOLOGY 5

 TEST FACILITY 6

 MEASUREMENT UNCERTAINTY 6

SYSTEM TEST CONFIGURATION 7

 DESCRIPTION OF TEST CONFIGURATION..... 7

 SPECIAL ACCESSORIES 8

 EQUIPMENT MODIFICATIONS 8

 SUPPORT EQUIPMENT LIST AND DETAILS 8

 EXTERNAL I/O CABLE..... 8

 BLOCK DIAGRAM OF TEST SETUP 9

SUMMARY OF TEST RESULTS 10

TEST EQUIPMENT LIST 11

FCC §1.1310-RF EXPOSURE 13

FCC§2.1047-MODULATION CHARACTERISTIC 14

FCC §2.1046, §22.913, §24.232, §27.50, §90.635-RF OUTPUT POWER 15

 APPLICABLE STANDARD..... 15

 TEST PROCEDURE 16

 TEST DATA 16

FCC §2.1049, §22.917, §22.905, §24.238, §27.53, §90.209-OCCUPIED BANDWIDTH 17

 APPLICABLE STANDARD..... 17

 TEST PROCEDURE 17

 TEST DATA 17

FCC §2.1051, §22.917, §24.238, §27.53, §90.543, §90.691-SPURIOUS EMISSIONS AT ANTENNA
TERMINALS..... 18

 APPLICABLE STANDARD..... 18

 TEST PROCEDURE 18

 TEST DATA 18

FCC §2.1053, §22.917, §24.238, §27.53, §90.543, §90.691-SPURIOUS RADIATED EMISSIONS 19

 APPLICABLE STANDARD..... 19

 TEST PROCEDURE 19

 TEST DATA 21

FCC §22.917, §24.238, §27.53, §90.691-BAND EDGES..... 32

 APPLICABLE STANDARD..... 32

 TEST PROCEDURE 32

 TEST DATA 33

FCC §2.1055, §22.355, §24.235, §27.54, §90.213-FREQUENCY STABILITY 34

 APPLICABLE STANDARD..... 34

 TEST PROCEDURE 37

 TEST DATA 37

APPENDIX 38

EXHIBIT A-EUT PHOTOGRAPHS 39

EXHIBIT B-TEST SETUP PHOTOGRAPHS 40

DOCUMENT REVISION HISTORY

| Revision Number | Report Number | Description of Revision | Date of Revision |
|-----------------|--------------------|-------------------------|------------------|
| Rev.00 | 2504S23848E-RF-00F | Original Report | 2025-08-21 |

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

| | |
|--|--|
| Product | 4G LTE Smart Terminal |
| Tested Model | BC680 |
| Voltage Range [#] | AC 100V-240V 50/60Hz for adapter DC 5.0V from USB Type-C port DC 4.35V from desktop charger DC 3.8V from rechargeable battery |
| Adapter Information [#] | Model: HJ-0502000W2-US Input: 100-240 V~ 50/60Hz 0.3A Output: 5.0V ---2.0A 10.0W |
| Desktop Charger Information [#] | Model: CI-80E Input: 5V ---2000mA Output: 4.35V ---1000mA |

| | |
|---------------------------------------|---|
| 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 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 13: 777-787MHz(TX); 746-756MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 25: 1850-1915MHz(TX); 1930-1995MHz(RX) LTE Band 26: 814-849MHz(TX); 859-894MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2200MHz(RX) |
| Modulation Technique | GSM: GMSK, 8PSK WCDMA: BPSK, QPSK, 16QAM, 64QAM LTE: QPSK, 16QAM |
| Sample Serial Number | 315P-6 (For CE&RE Test), 315P-1 (For RF Conducted Test) (Assigned by ATC, Shenzhen) |
| Sample/EUT Status | Good condition |
| Normal/Extreme Condition [#] | L.V.: Low Voltage 3.4 V _{DC} N.V.: Normal Voltage 3.8 V _{DC} H.V.: High Voltage 4.35 V _{DC} (Note: the extreme test condition was declared by manufacturer.) |

Continued table:

| | | | |
|--|--|----------------------------|-------------------|
| Maximum Average Conducted Output Power | GSM850: 33.66dBm(GMSK), 27.94dBm (8PSK) | | |
| | PCS1900: 30.23dBm(GMSK), 27.12dBm (8PSK) | | |
| | WCDMA B2:23.96dBm | WCDMA B4:22.34dBm | WCDMA B5:24.02dBm |
| | LTE B2: 23.69dBm | LTE B4: 22.51dBm | LTE B5: 23.12dBm |
| | LTE B7: 23.15dBm | LTE B12: 23.48dBm | LTE B13: 23.25dBm |
| | LTE B17: 23.43dBm | LTE B25: 22.75dBm | LTE B26: 23.34dBm |
| | LTE B38: 22.83dBm | LTE B41: 23.05dBm | LTE B66: 22.93dBm |
| Antenna Specification [#] | Internal Antenna(Antenna Gain provided by the applicant) | | |
| | GSM850/ WCDMA B5/ LTE B5/ LTE B26:-0.53dBi | | |
| | PCS1900/ WCDMA B2/ LTE B2: -0.36dBi | | |
| | WCDMA B4/ LTE B4/ LTE B66:-0.38dBi | | |
| | LTE B7: 1.13dBi | LTE B12/ LTE B17: -0.67dBi | |
| | LTE B13: -0.65dBi | LTE B25: -0.36dBi | |
| | LTE B38: 1.24dBi | LTE B41: 1.32dBi | |

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27 and Part 90 of the Federal Communication Commission's rules.

The objective is to determine the compliance of the EUT with FCC 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:

Part 22 Subpart H - Public Mobile Services
 Part 24 Subpart E - Personal Communication Services
 Part 27 - Miscellaneous Wireless Communications Services
 Part 90 - Private Land Mobile Radio Services

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.

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 |
| Emissions, Radiated | 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 tables:

| 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 B7 | 5 | 2502.5 | 2535 | 2567.5 |
| | 10 | 2505.0 | 2535.0 | 2565.0 |
| | 15 | 2507.5 | 2535.0 | 2562.5 |
| | 20 | 2510.0 | 2535.0 | 2560.0 |
| 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 | 704.0 | 707.5 | 711.0 |
| LTE B13 | 5 | 779.5 | / | 784.5 |
| | 10 | / | 782.0 | / |
| LTE B17 | 5 | 706.5 | 710.0 | 713.5 |
| | 10 | 709.0 | 710.0 | 711.0 |
| LTE B25 | 1.4 | 1850.7 | 1882.5 | 1914.3 |
| | 3 | 1851.5 | 1882.5 | 1913.5 |
| | 5 | 1852.5 | 1882.5 | 1912.5 |
| | 10 | 1855.0 | 1882.5 | 1910.0 |
| | 15 | 1857.5 | 1882.5 | 1907.5 |
| | 20 | 1860.0 | 1882.5 | 1905.0 |

| Frequency band | Bandwidth (MHz) | Test Frequency(MHz) | | |
|--------------------------------|-----------------|---------------------|--------|--------|
| | | Low | Middle | High |
| LTE B26_1 (814MHz-824MHz) | 1.4 | 814.7 | / | 823.3 |
| | 3 | 815.5 | / | 822.5 |
| | 5 | 816.5 | / | 821.5 |
| | 10 | 819.0 | / | / |
| | 15 | 821.5 | / | / |
| LTE B26_2 (824MHz-849MHz) | 1.4 | 824.7 | 831.5 | 848.3 |
| | 3 | 825.5 | 831.5 | 847.5 |
| | 5 | 826.5 | 831.5 | 846.5 |
| | 10 | 829.0 | 831.5 | 844.0 |
| | 15 | 831.5 | 836.5 | 841.5 |
| LTE B38 | 5 | 2572.5 | 2595.0 | 2617.5 |
| | 10 | 2575.0 | 2595.0 | 2615.0 |
| | 15 | 2577.5 | 2595.0 | 2612.5 |
| | 20 | 2580.0 | 2595.0 | 2610.0 |
| LTE B41_2 (2535MHz-2655MHz) | 5 | 2537.5 | 2595.0 | 2652.5 |
| | 10 | 2540.0 | 2595.0 | 2650.0 |
| | 15 | 2542.5 | 2595.0 | 2647.5 |
| | 20 | 2545.0 | 2595.0 | 2645.0 |
| LTE B66 | 1.4 | 1710.7 | 1745.0 | 1779.3 |
| | 3 | 1711.5 | 1745.0 | 1778.5 |
| | 5 | 1712.5 | 1745.0 | 1777.5 |
| | 10 | 1715.0 | 1745.0 | 1775.0 |
| | 15 | 1717.5 | 1745.0 | 1772.5 |
| | 20 | 1720.0 | 1745.0 | 1770.0 |

| Frequency band | Bandwidth (MHz) | Channel Cross 90S and 22H (MHz) |
|-----------------------|-----------------|---------------------------------|
| LTE B26_3 (824MHz) | 1.4 | 824.0 |
| | 3 | 824.0 |
| | 5 | 824.0 |
| | 10 | 824.0 |
| | 15 | 824.0 |

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

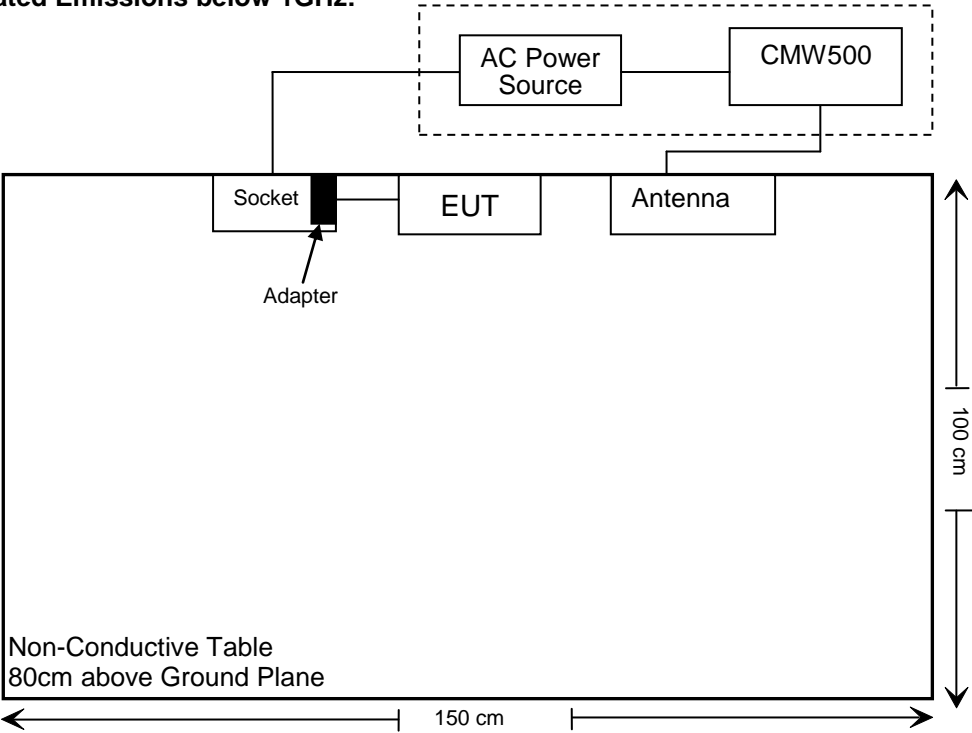
| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| / | / | / | / |

External I/O Cable

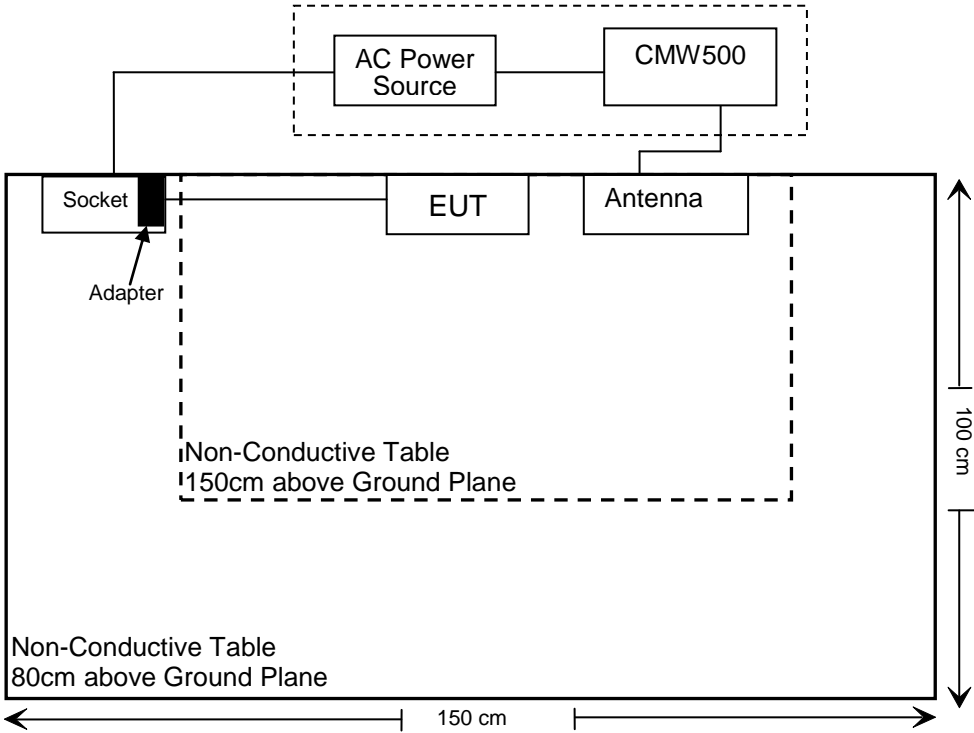
| Cable Description | Shielding Type | Length (m) | From Port | To |
|-------------------|----------------|------------|-----------|-----|
| USB Cable | No | 1.18 | Adapter | EUT |

Block Diagram of Test Setup

For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|--|--|----------------|
| §1.1310; §2.1093 | RF Exposure(SAR) | Compliance |
| §2.1046; §22.913(a)(d); §24.232(c)(d); §27.50(b)(c)(d)(h); §90.635 | RF Output Power | Compliance |
| §2.1047 | Modulation Characteristics | Not Applicable |
| §2.1049; §22.905; §22.917; §24.238; §27.53; §90.209 | Occupied Bandwidth | Compliance |
| §2.1051; §22.917(a); §24.238(a); §27.53; §90.543; §90.691 | Spurious Emissions at Antenna Terminal | Compliance |
| §2.1053; §22.917(a); §24.238(a); §27.53 §90.543; §90.691 | Field Strength of Spurious Radiation | Compliance |
| §22.917 (a); §24.238 (a); §27.53; §90.691 | Band Edge | Compliance |
| §2.1055; §22.355; §24.235; §27.54; §90.213 | Frequency stability | 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 | 2024/11/08 | 2025/11/07 |
| 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 | 2024/09/02 | 2025/09/01 |
| Unknown | RF Coaxial Cable | No.12 | N040 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.13 | N300 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.14 | N800 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.40 | / | 2024/10/08 | 2025/10/07 |
| Test Software: e3 191218 (V9) | | | | | |
| Radiated Spurious Emission Test(Above 1GHz) | | | | | |
| Rohde & Schwarz | Spectrum Analyzer | FSV40 | 101949 | 2024/10/08 | 2025/10/07 |
| 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 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.11 | N1000 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.40 | / | 2024/10/08 | 2025/10/07 |
| Schwarzbeck | HORN ANTENNA | BBHA9170 | 9170-359 | 2023/12/12 | 2026/12/11 |
| BACL | Amplifier | BACL-1313-A18 40 | 4012521 | 2025/05/30 | 2026/05/29 |
| Agilent | Signal Generator | N5183A | MY47420360 | 2024/09/02 | 2025/09/01 |
| Schwarzbeck | Horn Antenna | BBHA9120D | 9120D-655 | 2022/12/26 | 2025/12/25 |
| PASTERNAK | Horn Antenna | PE9852/2F-20 | 1120 (ATC-BA-024-1) | 2023/01/04 | 2026/01/03 |
| Unknown | RF Coaxial Cable | No.15 | N600 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.16 | N650 | 2024/10/08 | 2025/10/07 |
| Test Software: e3 191218 (V9) | | | | | |

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|--|-------------------------------------|--------------|---------------|------------------|----------------------|
| RF Conducted test | | | | | |
| Rohde & Schwarz | Spectrum Analyzer | FSV-40 | 101495 | 2024/10/08 | 2025/10/07 |
| Rohde & Schwarz | Wideband Radio Communication Tester | CMW500 | 124441 | 2024/10/08 | 2025/10/07 |
| Agilent | 10dB Attenuator | 8491B | A5825 | 2024/10/08 | 2025/10/07 |
| Unknown | RF Coaxial Cable | No.35 | / | 2024/10/08 | 2025/10/07 |
| BACL | Temp. & Humid. Chamber | BTH-150-40 | 30192 | 2024/10/08 | 2025/10/07 |
| 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).

FCC §1.1310-RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Please refer to the SAR report number: 2504S23848E-SAB.

FCC§2.1047-MODULATION CHARACTERISTIC

According to FCC §2.1047(d), Part 22H&24E&27&90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC §2.1046, §22.913, §24.232, §27.50, §90.635-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(b), portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

According to §27.50(c), control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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 §90.635, the maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Test Procedure

According to 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:

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

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)

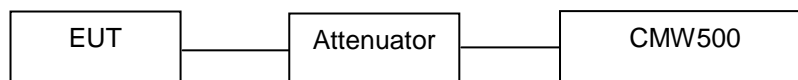
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

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.

FCC §2.1049, §22.917, §22.905, §24.238, §27.53, §90.209-OCCUPIED BANDWIDTH

Applicable Standard

FCC §2.1049, §22.917, §22.905, §24.238, §27.53, §90.209.

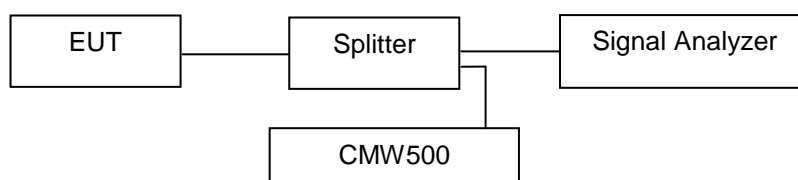
Test Procedure

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:

- 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 $1.5 \times \text{OBW}$ is sufficient).
- 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 $\geq 3 \times \text{RBW}$.
- 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.
- Set the detection mode to peak, and the trace mode to max-hold.
- 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.
- 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.

FCC §2.1051, §22.917, §24.238, §27.53, §90.543, §90.691-SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

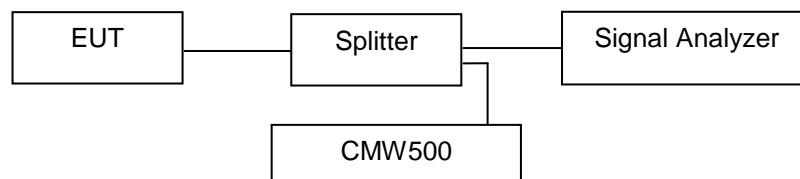
FCC §2.1051, §22.917(a), §24.238(a), §27.53, §90.543, §90.691.

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

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.



Note1: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.

Note2: For 30MHz-1GHz test of FCC Part 24 and Part 27, RBW is set to 100 kHz because the margin is much greater than 10 dB.

Offset=10*Log (Reference RBW/Measure RBW)=10*(1MHz/100kHz)=10dB

Test Data

Please refer to the Appendix.

FCC §2.1053, §22.917, §24.238, §27.53, §90.543, §90.691-SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917(a), §24.238(a), §27.53, §90.543, §90.691.

Test Procedure

According to ANSI C63.26-2015 Section 5.5.3:

●Test setup:

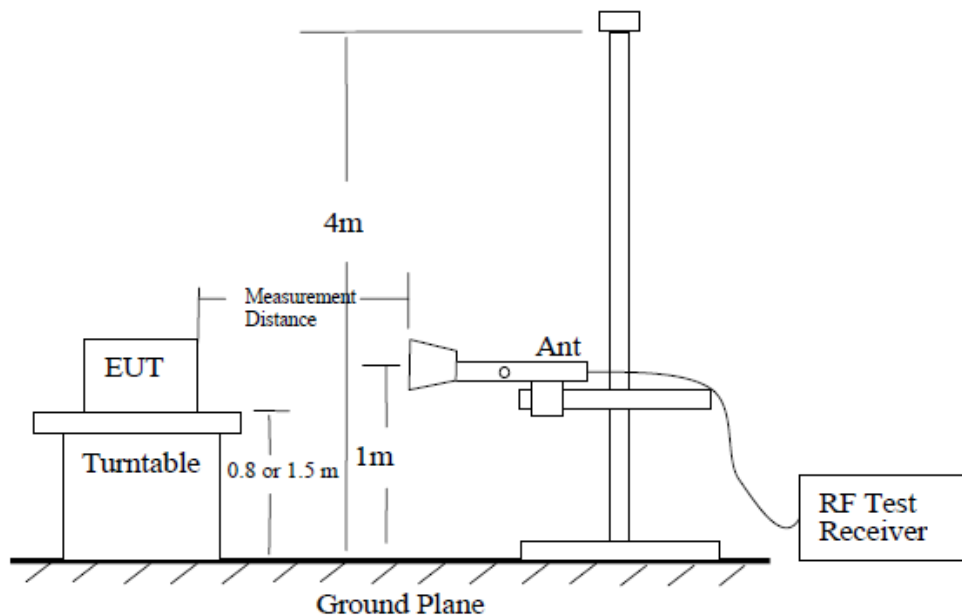


Figure 6 —Test site-up for radiated ERP and/or EIRP measurements

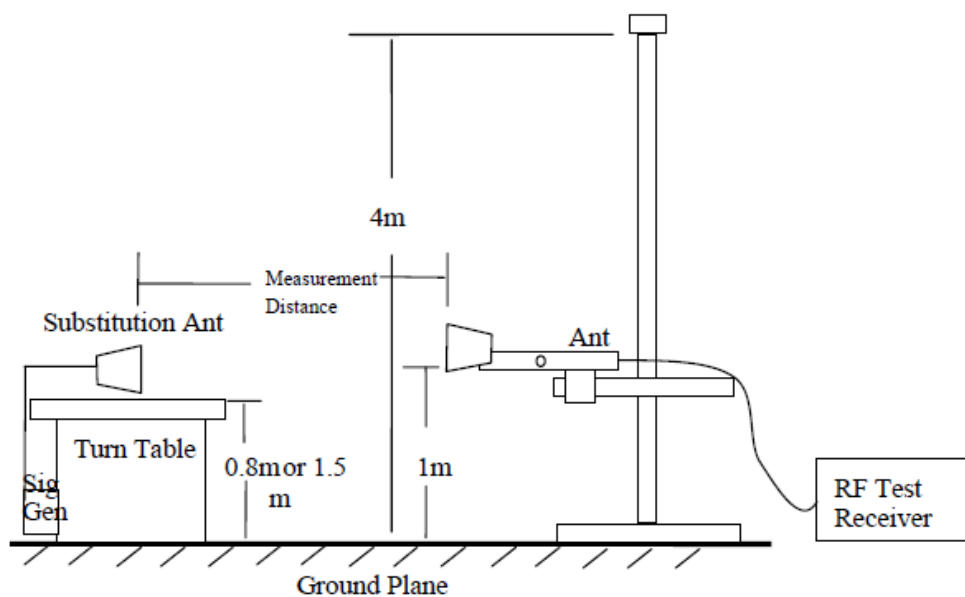


Figure 7 —Substitution method set-up for radiated emission

● 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:
$$P_e = P_s(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$
where
 P_e = equivalent emission power in dBm
 P_s = 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: $\text{gain (dBd)} = \text{gain (dBi)} - 2.15 \text{ dB}$. 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: | 24.4 °C | 24.6 °C |
| Relative Humidity: | 55 % | 56 % |
| ATM Pressure: | 100.1 kPa | 100.2 kPa |
| Test Engineer: | Colin Lin | Kevin Lv |
| Test Date: | 2025-05-30 | 2025-07-25 |
| EUT Operation Mode: | Transmitting | Transmitting |

Test Result: Compliance, please refer to the 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 Rang: 30MHz~10GHz | | | | | | |
| Low Channel | | | | | | |
| 823.51 | -73.42 | H | 11.25 | -62.17 | -13 | -49.17 |
| 858.91 | -73.22 | V | 11.03 | -62.19 | -13 | -49.19 |
| 1648.4 | -27.07 | H | -1.20 | -28.27 | -13 | -15.27 |
| 1648.4 | -33.79 | V | -1.55 | -35.34 | -13 | -22.34 |
| 2472.6 | -37.54 | H | 1.07 | -36.47 | -13 | -23.47 |
| 2472.6 | -35.04 | V | 1.40 | -33.64 | -13 | -20.64 |
| Middle Channel | | | | | | |
| 823.51 | -73.15 | H | 11.25 | -61.90 | -13 | -48.90 |
| 858.91 | -73.35 | V | 11.03 | -62.32 | -13 | -49.32 |
| 1673.2 | -26.24 | H | -1.53 | -27.77 | -13 | -14.77 |
| 1673.2 | -35.53 | V | -1.53 | -37.06 | -13 | -24.06 |
| 2509.8 | -35.51 | H | 1.07 | -34.44 | -13 | -21.44 |
| 2509.8 | -38.39 | V | 0.93 | -37.46 | -13 | -24.46 |
| High Channel | | | | | | |
| 823.51 | -73.91 | H | 11.25 | -62.66 | -13 | -49.66 |
| 858.91 | -73.71 | V | 11.03 | -62.68 | -13 | -49.68 |
| 1697.6 | -27.46 | H | -1.88 | -29.34 | -13 | -16.34 |
| 1697.6 | -35.88 | V | -1.50 | -37.38 | -13 | -24.38 |
| 2546.4 | -36.99 | H | 1.48 | -35.51 | -13 | -22.51 |
| 2546.4 | -38.74 | V | 1.35 | -37.39 | -13 | -24.39 |
| GSM 1900 | | | | | | |
| Test Frequency Rang: 30MHz~20GHz | | | | | | |
| Low Channel | | | | | | |
| 823.51 | -73.76 | H | 11.25 | -62.51 | -13 | -49.51 |
| 858.91 | -73.64 | V | 11.03 | -62.61 | -13 | -49.61 |
| 3700.4 | -51.13 | H | 2.86 | -48.27 | -13 | -35.27 |
| 3700.4 | -53.80 | V | 3.34 | -50.46 | -13 | -37.46 |
| Middle Channel | | | | | | |
| 823.51 | -73.43 | H | 11.25 | -62.18 | -13 | -49.18 |
| 858.91 | -72.94 | V | 11.03 | -61.91 | -13 | -48.91 |
| 3760 | -52.94 | H | 3.33 | -49.61 | -13 | -36.61 |
| 3760 | -54.75 | V | 3.23 | -51.52 | -13 | -38.52 |
| High Channel | | | | | | |
| 823.51 | -73.53 | H | 11.25 | -62.28 | -13 | -49.28 |
| 858.91 | -73.10 | V | 11.03 | -62.07 | -13 | -49.07 |
| 3819.6 | -52.14 | H | 3.85 | -48.29 | -13 | -35.29 |
| 3819.6 | -53.64 | V | 3.67 | -49.97 | -13 | -36.97 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| WCDMA Band2 | | | | | | |
| Test Frequency Rang: 30MHz~20GHz | | | | | | |
| Low Channel | | | | | | |
| 815.25 | -73.06 | H | 11.19 | -61.87 | -13 | -48.87 |
| 850.66 | -72.66 | V | 10.68 | -61.98 | -13 | -48.98 |
| 3704.8 | -55.51 | H | 2.86 | -52.65 | -13 | -39.65 |
| 3704.8 | -57.66 | V | 3.31 | -54.35 | -13 | -41.35 |
| Middle Channel | | | | | | |
| 815.25 | -73.47 | H | 11.19 | -62.28 | -13 | -49.28 |
| 850.66 | -72.29 | V | 10.68 | -61.61 | -13 | -48.61 |
| 3760 | -56.06 | H | 3.33 | -52.73 | -13 | -39.73 |
| 3760 | -58.23 | V | 3.23 | -55.00 | -13 | -42.00 |
| High Channel | | | | | | |
| 815.25 | -73.19 | H | 11.19 | -62.00 | -13 | -49.00 |
| 850.66 | -72.37 | V | 10.68 | -61.69 | -13 | -48.69 |
| 3815.2 | -55.44 | H | 3.9 | -51.54 | -13 | -38.54 |
| 3815.2 | -57.97 | V | 3.72 | -54.25 | -13 | -41.25 |
| WCDMA Band4, | | | | | | |
| Test Frequency Rang: 30MHz~18GHz | | | | | | |
| Low Channel | | | | | | |
| 815.25 | -72.63 | H | 11.19 | -61.44 | -13 | -48.44 |
| 850.66 | -72.45 | V | 10.68 | -61.77 | -13 | -48.77 |
| 3424.8 | -49.92 | H | 2.25 | -47.67 | -13 | -34.67 |
| 3424.8 | -57.72 | V | 2.33 | -55.39 | -13 | -42.39 |
| Middle Channel | | | | | | |
| 815.25 | -72.80 | H | 11.19 | -61.61 | -13 | -48.61 |
| 850.66 | -72.74 | V | 10.68 | -62.06 | -13 | -49.06 |
| 3465.2 | -51.20 | H | 2.55 | -48.65 | -13 | -35.65 |
| 3465.2 | -56.61 | V | 2.48 | -54.13 | -13 | -41.13 |
| High Channel | | | | | | |
| 815.25 | -72.62 | H | 11.19 | -61.43 | -13 | -48.43 |
| 850.66 | -72.62 | V | 10.68 | -61.94 | -13 | -48.94 |
| 3502.2 | -50.01 | H | 2.8 | -47.21 | -13 | -34.21 |
| 3502.2 | -56.05 | V | 2.77 | -53.28 | -13 | -40.28 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| WCDMA Band5 | | | | | | |
| Test Frequency Rang: 30MHz~10GHz | | | | | | |
| Low Channel | | | | | | |
| 815.25 | -73.30 | H | 11.19 | -62.11 | -13 | -49.11 |
| 850.66 | -72.22 | V | 10.68 | -61.54 | -13 | -48.54 |
| 1652.8 | -36.11 | H | -1.24 | -37.35 | -13 | -24.35 |
| 1652.8 | -43.16 | V | -1.55 | -44.71 | -13 | -31.71 |
| 2479.2 | -50.62 | H | 1.04 | -49.58 | -13 | -36.58 |
| 2479.2 | -53.33 | V | 1.26 | -52.07 | -13 | -39.07 |
| Middle Channel | | | | | | |
| 815.25 | -72.91 | H | 11.19 | -61.72 | -13 | -48.72 |
| 850.66 | -72.65 | V | 10.68 | -61.97 | -13 | -48.97 |
| 1672.8 | -31.91 | H | -1.53 | -33.44 | -13 | -20.44 |
| 1672.8 | -42.22 | V | -1.53 | -43.75 | -13 | -30.75 |
| 2509.2 | -50.06 | H | 1.07 | -48.99 | -13 | -35.99 |
| 2509.2 | -52.73 | V | 0.93 | -51.80 | -13 | -38.80 |
| High Channel | | | | | | |
| 815.25 | -73.31 | H | 11.19 | -62.12 | -13 | -49.12 |
| 850.66 | -72.48 | V | 10.68 | -61.80 | -13 | -48.80 |
| 1693.2 | -33.33 | H | -1.81 | -35.14 | -13 | -22.14 |
| 1693.2 | -41.13 | V | -1.51 | -42.64 | -13 | -29.64 |
| 2539.8 | -46.86 | H | 1.41 | -45.45 | -13 | -32.45 |
| 2539.8 | -51.57 | V | 1.27 | -50.30 | -13 | -37.30 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTEBand2 | | | | | | |
| Test Frequency Rang: 30MHz~20GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.80 | H | 11.32 | -61.48 | -13 | -48.48 |
| 844.72 | -72.09 | V | 10.43 | -61.66 | -13 | -48.66 |
| 3701.4 | -57.93 | H | 2.55 | -55.38 | -13 | -42.38 |
| 3701.4 | -55.93 | V | 2.64 | -53.29 | -13 | -40.29 |
| Middle Channel | | | | | | |
| 819.19 | -72.56 | H | 11.32 | -61.24 | -13 | -48.24 |
| 844.72 | -71.80 | V | 10.43 | -61.37 | -13 | -48.37 |
| 3760 | -56.52 | H | 3.32 | -53.20 | -13 | -40.20 |
| 3760 | -57.90 | V | 3.23 | -54.67 | -13 | -41.67 |
| High Channel | | | | | | |
| 819.19 | -72.69 | H | 11.32 | -61.37 | -13 | -48.37 |
| 844.72 | -71.61 | V | 10.43 | -61.18 | -13 | -48.18 |
| 3818.6 | -59.66 | H | 3.65 | -56.01 | -13 | -43.01 |
| 3818.6 | -57.26 | V | 3.71 | -53.55 | -13 | -40.55 |
| LTE Band4 | | | | | | |
| Test Frequency Rang: 30MHz~18GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -73.07 | H | 11.32 | -61.75 | -13 | -48.75 |
| 844.72 | -72.56 | V | 10.43 | -62.13 | -13 | -49.13 |
| 3421.4 | -44.12 | H | 2.41 | -41.71 | -13 | -28.71 |
| 3421.4 | -51.91 | V | 2.36 | -49.55 | -13 | -36.55 |
| Middle Channel | | | | | | |
| 819.19 | -73.25 | H | 11.32 | -61.93 | -13 | -48.93 |
| 844.72 | -72.33 | V | 10.43 | -61.90 | -13 | -48.90 |
| 3465 | -46.50 | H | 2.53 | -43.97 | -13 | -30.97 |
| 3465 | -53.71 | V | 2.48 | -51.23 | -13 | -38.23 |
| High Channel | | | | | | |
| 819.19 | -73.10 | H | 11.32 | -61.78 | -13 | -48.78 |
| 844.72 | -71.81 | V | 10.43 | -61.38 | -13 | -48.38 |
| 3508.6 | -46.91 | H | 2.86 | -44.05 | -13 | -31.05 |
| 3508.6 | -50.65 | V | 2.82 | -47.83 | -13 | -34.83 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTE Band5 | | | | | | |
| Test Frequency Rang: 30MHz~10GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.64 | H | 11.32 | -61.32 | -13 | -48.32 |
| 844.72 | -71.86 | V | 10.43 | -61.43 | -13 | -48.43 |
| 1649.4 | -29.67 | H | -1.65 | -31.32 | -13 | -18.32 |
| 1649.4 | -33.76 | V | -1.69 | -35.45 | -13 | -22.45 |
| Middle Channel | | | | | | |
| 819.19 | -72.84 | H | 11.32 | -61.52 | -13 | -48.52 |
| 844.72 | -72.14 | V | 10.43 | -61.71 | -13 | -48.71 |
| 1673 | -30.64 | H | -1.51 | -32.15 | -13 | -19.15 |
| 1673 | -40.60 | V | -1.53 | -42.13 | -13 | -29.13 |
| High Channel | | | | | | |
| 819.19 | -72.50 | H | 11.32 | -61.18 | -13 | -48.18 |
| 844.72 | -71.49 | V | 10.43 | -61.06 | -13 | -48.06 |
| 1696.6 | -33.03 | H | -1.32 | -34.35 | -13 | -21.35 |
| 1696.6 | -39.85 | V | -1.29 | -41.14 | -13 | -28.14 |
| LTE Band7 | | | | | | |
| Test Frequency Rang: 30MHz~26GHz | | | | | | |
| QPSK 5MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.63 | H | 11.32 | -61.31 | -25 | -36.31 |
| 844.72 | -71.61 | V | 10.43 | -61.18 | -25 | -36.18 |
| 5005 | -50.25 | H | 5.91 | -44.34 | -25 | -19.34 |
| 5005 | -56.16 | V | 5.88 | -50.28 | -25 | -25.28 |
| 4G BAND7, Middle Channel | | | | | | |
| 819.19 | -72.60 | H | 11.32 | -61.28 | -25 | -36.28 |
| 844.72 | -72.24 | V | 10.43 | -61.81 | -25 | -36.81 |
| 5070 | -48.11 | H | 6.1 | -42.01 | -25 | -17.01 |
| 5070 | -54.59 | V | 6.03 | -48.56 | -25 | -23.56 |
| 4G BAND7, High Channel | | | | | | |
| 819.19 | -72.62 | H | 11.32 | -61.30 | -25 | -36.30 |
| 844.72 | -71.66 | V | 10.43 | -61.23 | -25 | -36.23 |
| 5135 | -47.78 | H | 6.24 | -41.54 | -25 | -16.54 |
| 5135 | -51.86 | V | 6.39 | -45.47 | -25 | -20.47 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTE Band12 | | | | | | |
| Test Frequency Rang: 30MHz~8GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -73.20 | H | 11.32 | -61.88 | -13 | -48.88 |
| 844.72 | -72.45 | V | 10.43 | -62.02 | -13 | -49.02 |
| 1399.4 | -46.80 | H | -1.34 | -48.14 | -13 | -35.14 |
| 1399.4 | -52.09 | V | -1.56 | -53.65 | -13 | -40.65 |
| Middle Channel | | | | | | |
| 819.19 | -72.59 | H | 11.32 | -61.27 | -13 | -48.27 |
| 844.72 | -72.18 | V | 10.43 | -61.75 | -13 | -48.75 |
| 1415 | -50.07 | H | -1.30 | -51.37 | -13 | -38.37 |
| 1415 | -54.91 | V | -1.41 | -56.32 | -13 | -43.32 |
| High Channel | | | | | | |
| 819.19 | -72.97 | H | 11.32 | -61.65 | -13 | -48.65 |
| 844.72 | -71.82 | V | 10.43 | -61.39 | -13 | -48.39 |
| 1430.6 | -53.02 | H | -1.27 | -54.29 | -13 | -41.29 |
| 1430.6 | -54.31 | V | -1.26 | -55.57 | -13 | -42.57 |
| LTE Band13 | | | | | | |
| Test Frequency Rang: 30MHz~8GHz | | | | | | |
| QPSK 5MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.60 | H | 11.32 | -61.28 | -13 | -48.28 |
| 844.72 | -71.90 | V | 10.43 | -61.47 | -13 | -48.47 |
| 1559 | -40.66 | H | -2.28 | -42.94 | -40 | -2.94 |
| 1559 | -41.55 | V | -1.99 | -43.54 | -40 | -3.54 |
| High Channel | | | | | | |
| 819.19 | -72.56 | H | 11.32 | -61.24 | -13 | -48.24 |
| 844.72 | -72.00 | V | 10.43 | -61.57 | -13 | -48.57 |
| 1569 | -41.10 | H | -2.03 | -43.13 | -40 | -3.13 |
| 1569 | -42.18 | V | -1.88 | -44.06 | -40 | -4.06 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTE Band17 | | | | | | |
| Test Frequency Rang: 30MHz~8GHz | | | | | | |
| QPSK 5MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -73.41 | H | 11.32 | -62.09 | -13 | -49.09 |
| 844.72 | -72.14 | V | 10.43 | -61.71 | -13 | -48.71 |
| 1413 | -54.54 | H | -1.31 | -55.85 | -13 | -42.85 |
| 1413 | -54.86 | V | -1.43 | -56.29 | -13 | -43.29 |
| Middle Channel | | | | | | |
| 819.19 | -73.25 | H | 11.32 | -61.93 | -13 | -48.93 |
| 844.72 | -72.14 | V | 10.43 | -61.71 | -13 | -48.71 |
| 1420 | -51.78 | H | -1.29 | -53.07 | -13 | -40.07 |
| 1420 | -59.57 | V | -1.36 | -60.93 | -13 | -47.93 |
| High Channel | | | | | | |
| 819.19 | -73.35 | H | 11.32 | -62.03 | -13 | -49.03 |
| 844.72 | -72.37 | V | 10.43 | -61.94 | -13 | -48.94 |
| 1427 | -52.38 | H | -1.28 | -53.66 | -13 | -40.66 |
| 1427 | -56.05 | V | -1.3 | -57.35 | -13 | -44.35 |
| LTE Band25 | | | | | | |
| Test Frequency Rang: 30MHz~20GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -73.47 | H | 11.32 | -62.15 | -13 | -49.15 |
| 844.72 | -71.96 | V | 10.43 | -61.53 | -13 | -48.53 |
| 3701.4 | -52.43 | H | 2.86 | -49.57 | -13 | -36.57 |
| 3701.4 | -54.61 | V | 3.34 | -51.27 | -13 | -38.27 |
| Middle Channel | | | | | | |
| 819.19 | -73.03 | H | 11.32 | -61.71 | -13 | -48.71 |
| 844.72 | -71.69 | V | 10.43 | -61.26 | -13 | -48.26 |
| 3765 | -54.32 | H | 3.44 | -50.88 | -13 | -37.88 |
| 3765 | -56.17 | V | 3.31 | -52.86 | -13 | -39.86 |
| High Channel | | | | | | |
| 819.19 | -72.53 | H | 11.32 | -61.21 | -13 | -48.21 |
| 844.72 | -71.86 | V | 10.43 | -61.43 | -13 | -48.43 |
| 3828.6 | -56.25 | H | 3.65 | -52.60 | -13 | -39.60 |
| 3828.6 | -55.08 | V | 3.56 | -51.52 | -13 | -38.52 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|------------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTE Band26_1(814MHz-824MHz) | | | | | | |
| Test Frequency Rang: 30MHz~10GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.63 | H | 11.32 | -61.31 | -13 | -48.31 |
| 844.72 | -72.38 | V | 10.43 | -61.95 | -13 | -48.95 |
| 1629.4 | -59.40 | H | -1.23 | -60.63 | -13 | -47.63 |
| 1629.4 | -63.89 | V | 3.27 | -60.62 | -13 | -47.62 |
| High Channel | | | | | | |
| 819.19 | -72.64 | H | 11.32 | -61.32 | -13 | -48.32 |
| 844.72 | -72.02 | V | 10.43 | -61.59 | -13 | -48.59 |
| 1646.6 | -59.32 | H | -1.2 | -60.52 | -13 | -47.52 |
| 1646.6 | -59.36 | V | -1.55 | -60.91 | -13 | -47.91 |
| LTE Band26_2(824MHz-849MHz) | | | | | | |
| Test Frequency Rang: 30MHz~10GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.54 | H | 11.32 | -61.22 | -13 | -48.22 |
| 844.72 | -71.96 | V | 10.43 | -61.53 | -13 | -48.53 |
| 1649.4 | -59.82 | H | -1.2 | -61.02 | -13 | -48.02 |
| 1649.4 | -60.35 | V | -1.55 | -61.90 | -13 | -48.90 |
| Middle Channel | | | | | | |
| 819.19 | -72.41 | H | 11.32 | -61.09 | -13 | -48.09 |
| 844.72 | -72.48 | V | 10.43 | -62.05 | -13 | -49.05 |
| 1663 | -60.72 | H | -1.23 | -61.95 | -13 | -48.95 |
| 1663 | -60.26 | V | -1.54 | -61.80 | -13 | -48.80 |
| High Channel | | | | | | |
| 819.19 | -72.88 | H | 11.32 | -61.56 | -13 | -48.56 |
| 844.72 | -72.27 | V | 10.43 | -61.84 | -13 | -48.84 |
| 1696.6 | -59.19 | H | -1.87 | -61.06 | -13 | -48.06 |
| 1696.6 | -57.92 | V | -1.5 | -59.42 | -13 | -46.42 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------|----------------|----------------|
| LTE Band26_3 (824MHz) | | | | | | |
| Test Frequency Rang: 30MHz~10GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Cross 90S and 22H Channel | | | | | | |
| 819.19 | -72.44 | H | 11.32 | -61.12 | -13 | -48.12 |
| 844.72 | -72.50 | V | 10.43 | -62.07 | -13 | -49.07 |
| 1648 | -58.81 | H | -1.2 | -60.01 | -13 | -47.01 |
| 1648 | -59.35 | V | -1.55 | -60.90 | -13 | -47.90 |
| LTE Band38 | | | | | | |
| Test Frequency Rang: 30MHz~27GHz | | | | | | |
| QPSK 5MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.74 | H | 11.32 | -61.42 | -25 | -36.42 |
| 844.72 | -71.56 | V | 10.43 | -61.13 | -25 | -36.13 |
| 5145 | -50.79 | H | 5.14 | -45.65 | -25 | -20.65 |
| 5145 | -51.57 | V | 4.98 | -46.59 | -25 | -21.59 |
| Middle Channel | | | | | | |
| 819.19 | -72.99 | H | 11.32 | -61.67 | -25 | -36.67 |
| 844.72 | -71.75 | V | 10.43 | -61.32 | -25 | -36.32 |
| 5190 | -51.89 | H | 5.48 | -46.41 | -25 | -21.41 |
| 5190 | -52.30 | V | 5.27 | -47.03 | -25 | -22.03 |
| High Channel | | | | | | |
| 819.19 | -72.34 | H | 11.32 | -61.02 | -25 | -36.02 |
| 844.72 | -71.86 | V | 10.43 | -61.43 | -25 | -36.43 |
| 5235 | -52.40 | H | 5.91 | -46.49 | -25 | -21.49 |
| 5235 | -51.51 | V | 5.64 | -45.87 | -25 | -20.87 |

| Frequency (MHz) | Receiver Reading (dBm) | Rx Antenna Polar (H/V) | Substituted Factor (dB) | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|----------------------------------|------------------------|------------------------|-------------------------|----------------------|-------------|-------------|
| LTE Band41_2 | | | | | | |
| Test Frequency Rang: 30MHz~27GHz | | | | | | |
| QPSK 5MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -73.10 | H | 11.32 | -61.78 | -25 | -36.78 |
| 844.72 | -71.96 | V | 10.43 | -61.53 | -25 | -36.53 |
| 5075 | -49.73 | H | 5.16 | -44.57 | -25 | -19.57 |
| 5075 | -52.36 | V | 5.27 | -47.09 | -25 | -22.09 |
| Middle Channel | | | | | | |
| 819.19 | -72.55 | H | 11.32 | -61.23 | -25 | -36.23 |
| 844.72 | -71.84 | V | 10.43 | -61.41 | -25 | -36.41 |
| 5190 | -50.90 | H | 5.5 | -45.40 | -25 | -20.4 |
| 5190 | -52.00 | V | 5.32 | -46.68 | -25 | -21.68 |
| High Channel | | | | | | |
| 819.19 | -72.84 | H | 11.32 | -61.52 | -25 | -36.52 |
| 844.72 | -71.70 | V | 10.43 | -61.27 | -25 | -36.27 |
| 5305 | -53.85 | H | 5.81 | -48.04 | -25 | -23.04 |
| 5305 | -52.82 | V | 5.93 | -46.89 | -25 | -21.89 |
| LTE Band66 | | | | | | |
| Test Frequency Rang: 30MHz~18GHz | | | | | | |
| QPSK 1.4MHz Bandwidth_ RB1#0 | | | | | | |
| Low Channel | | | | | | |
| 819.19 | -72.51 | H | 11.32 | -61.19 | -13 | -48.19 |
| 844.72 | -72.41 | V | 10.43 | -61.98 | -13 | -48.98 |
| 3421.4 | -45.89 | H | 2.24 | -43.65 | -13 | -30.65 |
| 3421.4 | -47.91 | V | 2.33 | -45.58 | -13 | -32.58 |
| Middle Channel | | | | | | |
| 819.19 | -73.28 | H | 11.32 | -61.96 | -13 | -48.96 |
| 844.72 | -71.99 | V | 10.43 | -61.56 | -13 | -48.56 |
| 3490 | -47.38 | H | 2.70 | -44.68 | -13 | -31.68 |
| 3490 | -52.12 | V | 2.68 | -49.44 | -13 | -36.44 |
| High Channel | | | | | | |
| 819.19 | -73.10 | H | 11.32 | -61.78 | -13 | -48.78 |
| 844.72 | -71.91 | V | 10.43 | -61.48 | -13 | -48.48 |
| 3558.6 | -49.37 | H | 3.23 | -46.14 | -13 | -33.14 |
| 3558.6 | -51.28 | V | 3.06 | -48.22 | -13 | -35.22 |

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.

FCC §22.917, §24.238, §27.53, §90.691-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.

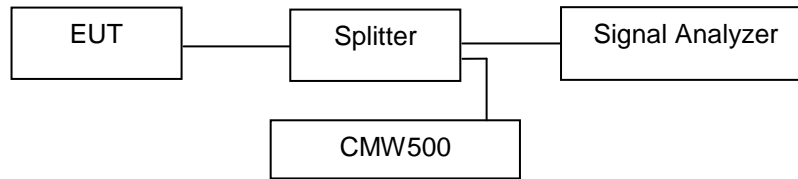
Rule Part 90.691 specifies that "The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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 $\geq 2 \times \text{span} / \text{RBW}$.
- 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 $\geq 98\%$), set the (sweep time) $> (\text{number of points in sweep}) \times (\text{symbol period})$ (e.g., by a factor of $10 \times \text{symbol period} \times \text{number of points}$). 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 $> (\text{number of points in sweep}) \times (\text{symbol period})$ 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 $> (\text{number of points in sweep}) \times (\text{transmitter period})$ (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by $[10 \log(1/\text{duty cycle})]$. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation $\leq \pm 2\%$).
 - 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 $> \pm 2\%$), set the sweep time so that the averaging is performed over the on-period by setting the sweep time $> (\text{symbol period}) \times (\text{number of points})$, while also maintaining the sweep time $< (\text{transmitter on-time})$. 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.

FCC §2.1055, §22.355, §24.235, §27.54, §90.213-FREQUENCY STABILITY

Applicable Standard

FCC §2.1055, §22.355, §24.235, §27.54, §90.213

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:

| Table C-1—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 §90.213, (a) unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

Table 1 to § 90.213(a)—Minimum Frequency Stability

[Parts per million (ppm)]

| Frequency range (MHz) | Fixed and base stations | Mobile stations | |
|--------------------------|----------------------------|------------------------------|---------------------------------|
| | | Over 2 watts output power | 2 watts or less output power |
| Below 25 | ^{1 2 3} 100 | 100 | 200 |
| 25–50 | 20 | 20 | 50 |
| 72–76 | 5 | | 50 |
| 150–174 | ^{5 11} 5 | ⁶ 5 | ^{4 6} 50 |
| 216–220 | 1.0 | | 1.0 |
| 220–222 ¹² | 0.1 | 1.5 | 1.5 |
| 421–512 | ^{7 11 14} 2.5 | ⁸ 5 | ⁸ 5 |
| 806–809 | ¹⁴ 1.0 | 1.5 | 1.5 |
| 809–824 | ¹⁴ 1.5 | 2.5 | 2.5 |
| 851–854 | 1.0 | 1.5 | 1.5 |
| 854–869 | 1.5 | 2.5 | 2.5 |
| 896–901 | ¹⁴ 0.1 | 1.5 | 1.5 |
| 902–928 | 2.5 | 2.5 | 2.5 |
| 902–928 ¹³ | 2.5 | 2.5 | 2.5 |
| 929–930 | 1.5 | | |
| 935–940 | 0.1 | 1.5 | 1.5 |
| 1427–1435 | ⁹ 300 | 300 | 300 |
| Above 2450 ¹⁰ | | | |

¹ Fixed and base stations with over 200 watts transmitter power must have a frequency stability of 50 ppm except for equipment used in the Public Safety Pool where the frequency stability is 100 ppm.

² For single sideband operations below 25 MHz, the carrier frequency must be maintained within 50 Hz of the authorized carrier frequency.

³ Travelers information station transmitters operating from 530–1700 kHz and transmitters exceeding 200 watts peak envelope power used for disaster communications and long distance circuit operations pursuant to §§ 90.242 and 90.264 must maintain the carrier frequency to within 20 Hz of the authorized frequency.

⁴ Stations operating in the 154.45 to 154.49 MHz or the 173.2 to 173.4 MHz bands must have a frequency stability of 5 ppm.

⁵ In the 150–174 MHz band, fixed and base stations with a 12.5 kHz channel bandwidth must have a frequency stability of 2.5 ppm. Fixed and base stations with a 6.25 kHz channel bandwidth must have a frequency stability of 1.0 ppm.

⁶ In the 150–174 MHz band, mobile stations designed to operate with a 12.5 kHz channel bandwidth or designed to operate on a frequency specifically designated for itinerant use or designed for low-power operation of two watts or less, must have a frequency stability of 5.0 ppm. Mobile stations designed to operate with a 6.25 kHz channel bandwidth must have a frequency stability of 2.0 ppm.

⁷ In the 421–512 MHz band, fixed and base stations with a 12.5 kHz channel bandwidth must have a frequency stability of 1.5 ppm. Fixed and base stations with a 6.25 kHz channel bandwidth must have a frequency stability of 0.5 ppm.

⁸ In the 421–512 MHz band, mobile stations designed to operate with a 12.5 kHz channel bandwidth must have a frequency stability of 2.5 ppm. Mobile stations designed to operate with a 6.25 kHz channel bandwidth must have a frequency stability of 1.0 ppm.

⁹ Fixed stations with output powers above 120 watts and necessary bandwidth less than 3 kHz must operate with a frequency stability of 100 ppm. Fixed stations with output powers less than 120 watts and using time-division multiplex, must operate with a frequency stability of 500 ppm.

¹⁰ Frequency stability for DSRCS equipment in the 5895–5925 MHz band is specified in [subpart M of this part](#). For all other equipment, frequency stability is to be specified in the station authorization.

¹¹ Paging transmitters operating on paging-only frequencies must operate with frequency stability of 5 ppm in the 150–174 MHz band and 2.5 ppm in the 421–512 MHz band.

¹² Mobile units may utilize synchronizing signals from associated base stations to achieve the specified carrier stability.

¹³ Fixed non-multilateration transmitters with an authorized bandwidth that is more than 40 kHz from the band edge, intermittently operated hand-held readers, and mobile transponders are not subject to frequency tolerance restrictions.

¹⁴ Control stations may operate with the frequency tolerance specified for associated mobile frequencies.

(b) For the purpose of determining the frequency stability limits, the power of a transmitter is considered to be the maximum rated output power as specified by the manufacturer.

Test Procedure

According to ANSI C63.26-2015 Section 5.6:

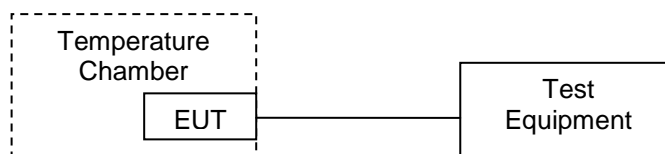
Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

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 $\pm 15\%$ 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.

APPENDIX

| Frequency band | Remark |
|----------------|---|
| GSM | Refer to the 2504S23848E-RF-00F-Appendix A-GSM. |
| WCDMA | Refer to the 2504S23848E-RF-00F-Appendix B-WCDMA. |
| LTE | Refer to the 2504S23848E-RF-00F-Appendix C-LTE. |

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the Annex: 2504S23848E-RF EUT EXTERNAL PHOTOGRAPHS and 2504S23848E-RF EUT INTERNAL PHOTOGRAPHS.

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the Attachment: 2504S23848E-RF-00F TEST SETUP PHOTOGRAPHS.

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