RF TEST REPORT

Applicant	Shanghai Sunmi Technology Co., Ltd.
FCC ID	2AH25T5F1BN
Product	Portable Data Processing Terminal
Brand	SUNMI
Model	T5F1B
Report No.	EFTA26060321-IE-02-R1V1
Issue Date	August 20, 2026

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR 47 Part 22H / FCC CFR 47 Part 24E / FCC CFR47 Part 27C / FCC CFR 47 Part 90R / FCC CFR 47 Part 90S**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Xu Ying | *Approved by: Xu Kai*

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Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	August 4, 2026
Rev.1	Update description.	August 20, 2026
Note: This revised report (Report No.: EFTA26060321-IE-02-R1V1) supersedes and replaces the previously issued report (Report No.: EFTA26060321-IE-02-R1). Please discard or destroy the previously issued report and dispose of it accordingly.		

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Summary of Measurement Results

Test Case	Clause in FCC rules	Limits	Verdict
GSM 850; WCDMA Band 5; LTE Band 5/26 (824-849MHz)			
RF Power Output and Effective Radiated Power	2.1046 22.913(a)(5)	≤ 7 W (38.45 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 22.917(a)	≤ -13 dBm	PASS
Peak-to-Average Power Ratio	22.913(d) KDB 971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 22.355(d)(1)	≤ 2.5 ppm	PASS
Spurious Emissions at Antenna Terminals	2.1051 22.917(a)	≤ -13 dBm	PASS
Radiated Spurious Emission	2.1053 22.917 (a)	≤ -13 dBm	PASS
GSM 1900; WCDMA Band 2; LTE Band 2/25			
RF Power Output and Effective Isotropic Radiated Power	2.1046 24.232(c)	≤ 2 W (33 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 24.238(a)	≤ -13 dBm	PASS
Peak-to-Average Power Ratio	24.232 (d) KDB 971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 24.235	The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.	PASS
Spurious Emissions at Antenna Terminals	2.1051 24.238(a)	≤ -13 dBm	PASS
Radiated Spurious Emission	2.1053 24.238(a)	≤ -13 dBm	PASS
WCDMA Band 4; LTE Band 4/66			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(d)(4)	≤ 1 W (30 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 27.53(h)	≤ -13 dBm	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
Peak-to-Average Power Ratio	27.50(d)(5) KDB971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 27.54	Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.	PASS
Spurious Emissions at Antenna Terminals	2.1051 27.53(h)	≤ -13 dBm	PASS
Radiated Spurious Emission	2.1053 27.53(h)	≤ -13 dBm	PASS
LTE Band 7/38/41			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(h)(2)	≤ 2 W (33 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 27.53(m)(4)	The attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.	PASS
Peak-to-Average Power Ratio	27.50(d)(5) KDB971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 27.54	Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
Spurious Emissions at Antenna Terminals	2.1051 27.53(m)	≤ -25 dBm	PASS
Radiated Spurious Emission	2.1053 27.53(m)	≤ -25 dBm	PASS
LTE Band 12/17/71			
RF Power Output and Effective Radiated Power	2.1046 27.50(c)(10)	≤ 3 W (34.77 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 27.53(g)	≤ -13 dBm	PASS
Peak-to-Average Power Ratio	KDB971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 27.54	Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.	PASS
Spurious Emissions at Antenna Terminals	2.1051 27.53(g)	≤ -13 dBm	PASS
Radiated Spurious Emission	2.1053 27.53(g)	≤ -13 dBm	PASS
LTE Band 13			
RF Power Output and Effective Radiated Power	2.1046 27.50(b)(10)	≤ 3 W (34.77 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 27.53(c)(2)	The power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;	PASS
Peak-to-Average Power Ratio	KDB971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 27.54	Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.	PASS
Spurious Emissions at Antenna Terminals	2.1051 27.53(c) 27.53(f)	Limit out of the band 1559-1610 MHz: ≤ -13 dBm Limit in the band 1559-1610 MHz: ≤ -40 dBm	PASS
Radiated Spurious Emission	2.1053 27.53(c) 27.53(f)	Limit out of the band 1559-1610 MHz: ≤ -13 dBm Limit in the band 1559-1610 MHz: ≤ -40 dBm	PASS
LTE Band 14			
RF power output and Effective Radiated Power	2.1046 90.542(a)(7)	≤ 3 W (34.77 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
Emission Masks	2.1051 90.543(e)	(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations. (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB. (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.	PASS
Peak-to-Average Power Ratio	KDB 971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 90.539 (c)	Must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate)	PASS
Spurious Emissions at Antenna Terminals	2.1051 90.543 (e)(f)	(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations. (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB. (5) Compliance with the provisions of paragraph (e)(3) of this section is based	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
		on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed. (f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.	
Radiated Spurious Emission	2.1053 90.543 (e)(f)	(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations. (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations. (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB. (4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
		instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment. (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed. (f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.	
LTE Band 26 (814-824MHz)			
RF Power Output and Effective Radiated Power	2.1046 90.635(b)	≤ 100 W (50 dBm)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Emission Masks	2.1051 90.691(a)(1)	For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log_{10}(f/6.1) decibels or 50 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.	PASS

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Test Case	Clause in FCC rules	Limits	Verdict
Peak-to-Average Power Ratio	KDB 971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 90.213	Fixed and base stations: 1.5 Mobile stations: Over 2 watts output power: 2.5; 2 watts or less output power: 2.5	PASS
Spurious Emissions at Antenna Terminals	2.1051 90.691	≤ -13 dBm	PASS
Radiated Spurious Emission	2.1053 90.691	≤ -13 dBm	PASS
LTE Band 30			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(a)(3)	≤ 50 mW / 1MHz (17 dBm / 1MHz) ≤ 250 mW / 5MHz (24 dBm / 5MHz)	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 27.53(a) (4)	By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz; (ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; (iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.	PASS
Peak-to-Average Power Ratio	27.50(d)(5) KDB971168 D01(5.7)	≤ 13 dB	PASS
Frequency Stability	2.1055 / 27.54	Shall be sufficient to ensure that the	PASS

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<table>
<tr><th>Test Case</th><th>Clause in FCC rules</th><th>Limits</th><th>Verdict</th></tr>
<tr><td></td><td></td><td>fundamental emissions stay within the authorized bands of operation.</td><td></td></tr>
<tr><td>Spurious Emissions at Antenna Terminals</td><td>2.1051
27.53(a) (4)</td><td>By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;
(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;
(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.</td><td>PASS</td></tr>
<tr><td>Radiated Spurious Emission</td><td>2.1053
27.53(a) (4)</td><td><table>
<tr><td>Limit out of the band 2288-2360 MHz</td><td>-40 dBm</td></tr>
<tr><td>2288-2292 MHz</td><td>-37 dBm</td></tr>
<tr><td>2292-2296 MHz</td><td>-31 dBm</td></tr>
<tr><td>2296-2300 MHz</td><td>-25 dBm</td></tr>
<tr><td>2300-2305 MHz</td><td>-13 dBm</td></tr>
<tr><td>2305-2315 MHz</td><td>NA</td></tr>
<tr><td>2315-2320 MHz</td><td>-13 dBm</td></tr>
<tr><td>2320-2324 MHz</td><td>-25 dBm</td></tr>
<tr><td>2324-2328 MHz</td><td>-31 dBm</td></tr>
<tr><td>2328-2337 MHz</td><td>-37 dBm</td></tr>
<tr><td>2337-2341 MHz</td><td>-31 dBm</td></tr>
<tr><td>2341-2345 MHz</td><td>-25 dBm</td></tr>
<tr><td>2345-2350 MHz</td><td>-13 dBm</td></tr>
<tr><td>2350-2360 MHz</td><td>NA</td></tr>
</table></td><td>PASS</td></tr>
<tr><td colspan="4">Date of Testing: June 30, 2026 ~ July 29, 2026
Date of Sample Received: June 29, 2026</td></tr>
</table>

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Test Case	Clause in FCC rules	Limits	Verdict
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

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1 Test Laboratory

1.1 Notes of the Test Report

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1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
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2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Shanghai Sunmi Technology Co., Ltd.
Applicant address	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China
Manufacturer	Shanghai Sunmi Technology Co., Ltd.
Manufacturer address	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China

2.2 General information

EUT Description				
Model	T5F1B			
SN	Conducted	VA11253T41322		
	Radiated	VA47261GJ2834		
Hardware Version	SM03_MB_V1.1			
Software Version	QSC625VPBCJ10R01A03_BA01BP01GLM03V01			
Power Supply	Battery / AC adapter			
Antenna Type	PIFA Antenna			
Rated Power Supply Voltage	7.7VDC			
Operating Voltage	Minimum: 6.6VDC Maximum: 8.8VDC			
Operating Temperature	Lowest: -10 °C Highest: +55 °C			
Testing Temperature	Lowest: -10 °C Highest: +55 °C			
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)	Gain (dBi)
	GSM850	824 ~ 849	869 ~ 894	-0.82
	GSM1900	1850 ~ 1910	1930 ~ 1990	2.58
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990	2.58
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155	-0.09
	WCDMA Band V	824 ~ 849	869 ~ 894	-0.82
	LTE Band 2	1850 ~ 1910	1930 ~ 1990	2.58
	LTE Band 4	1710 ~ 1755	2110 ~ 2155	-0.09
	LTE Band 5	824 ~ 849	869 ~ 894	-0.82
	LTE Band 7	2500 ~ 2570	2620 ~ 2690	2.79
	LTE Band 12	699 ~ 716	729 ~ 746	-3.51
	LTE Band 13	777 ~ 787	746 ~ 756	0.98
	LTE Band 14	788 ~ 798	758 ~ 768	0.98
	LTE Band 17	704 ~ 716	734 ~ 746	-3.51
	LTE Band 25	1850 ~ 1915	1930 ~ 1995	2.58

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	LTE Band 26 (824 ~ 849)	824 ~ 849	869 ~ 894	-0.82
	LTE Band 26 (814 ~ 824)	814 ~ 824	859 ~ 869	-0.82
	LTE Band 30	2305 ~ 2315	2350 ~ 2360	1.71
	LTE Band 38	2570 ~ 2620	2570 ~ 2620	2.57
	LTE Band 41	2496 ~ 2690	2496 ~ 2690	2.89
	LTE Band 66	1710 ~ 1780	2110 ~ 2180	-0.09
	LTE Band 71	663 ~ 698	617 ~ 652	-3.51
Test Modulation	(GSM/GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (WCDMA) QPSK,16QAM; (LTE) QPSK, 16QAM, 64QAM;			
GPRS Multislot Class	33			
EGPRS Multislot Class	33			
HSDPA UE Category	24			
HSUPA UE Category	7			
DC_HSDPA	24			
HSPA+	6			
LTE Category	4			
Power Class	GSM 850: 4 GSM 1900: 1 WCDMA / LTE: 3			
EUT Accessory				
Adapter	Manufacturer: Shenzhen Tianyin Electronics Co., Ltd. Model: TPA-141A050200UU01			
Battery 1	Manufacturer: Guangdong Fenghua New Energy Co., Ltd. Model: FHPS DC 7.74V, 3000mAh			
Battery 2	Manufacturer: Hunan Gaoyuan Battery Co., Ltd Model: GYPB DC 7.74V, 3000mAh			
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.				

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The differences between variant and original is as below:

Description		FCC ID	HVIN	NFC	Scanner
Original (main test prototype)	SKU 1	2AH25T5F1BN	T5F1BNS	Y	Y
Variant	SKU 2	2AH25T5F1BN	T5F1BN	Y	N
The difference between the two EUT is only the Scanner. SKU 2 was tested based on the worst mode of SKU 1.					

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2.3 Maximum ERP/EIRP and Emission

FCC Rule	Frequency Band	Frequency Range(MHz)	Maximum ERP/EIRP (W)	Emission Designator
Part 22	GSM850(GMSK)	824.2 - 848.8	1.1298	248KGXW
Part 22	GSM850(EDGE)	824.2 - 848.8	0.3199	253KG7W
Part 24	GSM1900 (GMSK)	1850.2 - 1909.8	1.8232	248KGXW
Part 24	GSM1900 (EDGE)	1850.2 - 1909.8	0.8590	254KG7W

FCC Rule	Frequency Band	Frequency Range(MHz)	Maximum ERP/EIRP (W)	Emission Designator
Part 24	WCDMA Band II	1852.4 - 1907.6	0.3936	4M13F9W
Part 27	WCDMA Band IV	1712.44 - 1752.6	0.2286	4M14F9W
Part 22	WCDMA Band V	826.4 - 846.6	0.1127	4M14F9W

FCC Rule	Frequency Band	Frequency Range(MHz)	Maximum ERP/EIRP (W)	Emission Designator
Part 24	LTE Band 2 (QPSK)	1860-1900	0.4529	17M9G7D
Part 24	LTE Band 2 (QAM)	1860-1900	0.3273	17M9W7D
Part 27	LTE Band 4 (QPSK)	1715-1750	0.2588	8M98G7D
Part 27	LTE Band 4 (QPSK)	1720-1745	0.2535	17M9G7D
Part 27	LTE Band 4 (QAM)	1715-1750	0.1841	8M97W7D
Part 27	LTE Band 4 (QAM)	1720-1745	0.1791	18M0W7D
Part 22	LTE Band 5 (QPSK)	829-844	0.1199	8M98G7D
Part 22	LTE Band 5 (QAM)	829-844	0.0871	8M97W7D
Part 27	LTE Band 7 (QPSK)	2510-2560	0.5248	17M9G7D
Part 27	LTE Band 7 (QAM)	2510-2560	0.3855	17M9W7D
Part 27	LTE Band 12 (QPSK)	704-711	0.0627	9M00G7D
Part 27	LTE Band 12 (QAM)	704-711	0.0459	8M99W7D
Part 27	LTE Band 13 (QPSK)	782	0.1762	8M97G7D
Part 27	LTE Band 13 (QAM)	782	0.1340	9M00W7D
Part 90	LTE Band 14 (QPSK)	793	0.1811	8M96G7D
Part 90	LTE Band 14 (QAM)	793	0.1285	9M01W7D
Part 27	LTE Band 17 (QPSK)	709-711	0.0676	8M97G7D
Part 27	LTE Band 17 (QAM)	709-711	0.0449	9M00W7D

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Part 24	LTE Band 25 (QPSK)	1855-1910	0.4786	9M00G7D
Part 24	LTE Band 25 (QPSK)	1860-1905	0.4613	17M9G7D
Part 24	LTE Band 25 (QAM)	1850.7-1914.3	0.3404	1M10W7D
Part 24	LTE Band 25 (QAM)	1860-1905	0.3162	17M9W7D
Part 22	LTE Band 26(824 ~ 849) (QPSK)	829-844	0.1186	8M97G7D
Part 22	LTE Band 26(824 ~ 849) (QPSK)	831.5-841.5	0.1119	13M4G7D
Part 22	LTE Band 26(824 ~ 849) (QAM)	824.7-848.3	0.0918	1M10W7D
Part 22	LTE Band 26(824 ~ 849) (QAM)	831.5-841.5	0.0820	13M5W7D
Part 90	LTE Band 26(814 ~ 824) (QPSK)	819	0.2114	8M96G7D
Part 90	LTE Band 26(814 ~ 824) (QAM)	814.7-823.3	0.1660	1M10W7D
Part 90	LTE Band 26(814 ~ 824) (QAM)	819	0.1570	8M97W7D
Part 27	LTE Band 30 (QPSK)	2307.5-2312.5	0.1941	4M51W7D
Part 27	LTE Band 30 (QPSK)	2310	0.1901	8M98G7D
Part 27	LTE Band 30 (QAM)	2310	0.1626	8M95W7D
Part 27	LTE Band 38 (QPSK)	2575-2615	0.5458	8M99G7D
Part 27	LTE Band 38 (QPSK)	2580-2610	0.4335	17M9G7D
Part 27	LTE Band 38 (QAM)	2575-2615	0.2917	8M99W7D
Part 27	LTE Band 38 (QAM)	2580-2610	0.2793	17M9W7D
Part 27	LTE Band 41 (QPSK)	2501-2685	0.4887	8M98G7D
Part 27	LTE Band 41 (QPSK)	2506-2680	0.4613	17M9G7D
Part 27	LTE Band 41 (QAM)	2506-2680	0.3251	17M9W7D
Part 27	LTE Band 66 (QPSK)	1715-1775	0.2588	8M99G7D
Part 27	LTE Band 66 (QPSK)	1720-1770	0.2570	17M9G7D
Part 27	LTE Band 66 (QAM)	1715-1775	0.1824	8M98W7D
Part 27	LTE Band 66 (QAM)	1720-1770	0.1770	17M9W7D
Part 27	LTE Band 71 (QPSK)	673-688	0.0649	17M9G7D
Part 27	LTE Band 71 (QAM)	673-688	0.0462	17M9W7D

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3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR 47 Part 22H

FCC CFR 47 Part 24E

FCC CFR 47 Part 27C

FCC CFR 47 Part 90S

FCC CFR 47 Part 90R

Reference standard:

FCC CFR 47 Part 2

ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

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4 Test Configuration

There is more than one SIM card slot, each one should be applied throughout the compliance test respectively, and however, only the worst case (SIM 1) will be recorded in this report

Subsequently, only the worst case emissions are reported.
The following testing in GSM/WCDMA/LTE is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:

Band	Frequency Range (MHz)
GSM850	824.2 ~ 848.8
GSM1900	1850.2 ~ 1909.8
WCDMA Band 2	1852.4 ~ 1907.6
WCDMA Band 4	1712.4 ~ 1752.6
WCDMA Band 5	826.4 ~ 846.6

Band	BW(MHz)	Frequency Range (MHz)
LTE Band 2	1.4	1850.7 ~ 1909.3
	3	1851.5 ~ 1908.5
	5	1852.5 ~ 1907.5
	10	1855.0 ~ 1905.0
	15	1857.5 ~ 1902.5
	20	1860.0 ~ 1900.0
LTE Band 4	1.4	1710.7 ~ 1754.3
	3	1711.5 ~ 1753.5
	5	1712.5 ~ 1752.5
	10	1715.0 ~ 1750.0
	15	1717.5 ~ 1747.5
	20	1720.0 ~ 1745.0
LTE Band 5	1.4	824.7 ~ 848.3
	3	825.5 ~ 847.5
	5	826.5 ~ 846.5
	10	829.0 ~ 844.0
LTE Band 7	5	2502.5 ~ 2567.5
	10	2505.0 ~ 2565.0
	15	2507.5 ~ 2562.5
	20	2510.0 ~ 2560.0
LTE Band 12	1.4	699.7 ~ 715.3
	3	700.5 ~ 714.5
	5	701.5 ~ 713.5
	10	704.0 ~ 711.0
LTE Band 13	5	779.5 ~ 784.5
	10	782.0

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LTE Band 14	5	790.5 ~ 795.5
	10	793.0
LTE Band 17	5	706.5 ~ 713.5
	10	709.0 ~ 711.0
LTE Band 25	1.4	1850.7 ~ 1914.3
	3	1851.5 ~ 1913.5
	5	1852.5 ~ 1912.5
	10	1855.0 ~ 1910.0
	15	1857.5 ~ 1907.5
	20	1860.0 ~ 1905.0
LTE Band 26(814 ~ 824)	1.4	814.7 ~ 823.3
	3	815.5 ~ 822.5
	5	816.5 ~ 821.5
	10	819.0
LTE Band 26(824 ~ 849)	1.4	824.7 ~ 848.3
	3	825.5 ~ 847.5
	5	826.5 ~ 846.5
	10	829.0 ~ 844.0
	15	831.5 ~ 841.5
LTE Band 30	5	2307.5 ~ 2312.5
	10	2310.0
LTE Band 38	5	2572.5 ~ 2617.5
	10	2575.0 ~ 2615.0
	15	2577.5 ~ 2612.5
	20	2580.0 ~ 2610.0
LTE Band 41	5	2498.5 ~ 2687.5
	10	2501.0 ~ 2685.0
	15	2503.5 ~ 2682.5
	20	2506.0 ~ 2680.0
LTE Band 66	1.4	1710.7 ~ 1779.3
	3	1711.5 ~ 1778.5
	5	1712.5 ~ 1777.5
	10	1715.0 ~ 1775.0
	15	1717.5 ~ 1772.5
	20	1720.0 ~ 1770.0
LTE Band 71	5	665.5 ~ 695.5
	10	668.0 ~ 693.0
	15	670.5 ~ 690.5
	20	673.0 ~ 688.0

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Test items	Modes/Modulation	
	GSM 850 / GSM 1900	WCDMA Band 2/4/5
RF Power Output and Effective (Isotropic) Radiated power	GSM GPRS EGPRS	RMC HSDPA/HSUPA DC-HSDPA/HSPA+
Occupied Bandwidth	GSM GPRS (1Tx slot) EGPRS (1Tx slot)	RMC
Band Edge Compliance	GSM GPRS (1Tx slot) EGPRS (1Tx slot)	RMC
Peak-to-Average Power Ratio	GSM GPRS (1Tx slot) EGPRS (1Tx slot)	RMC
Frequency Stability	GSM	RMC
Spurious Emissions at Antenna Terminals	GSM	RMC
Radiated Spurious Emission	GSM	RMC

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Test modes are chosen to be reported as the worst case configuration below for LTE Band:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM/ 64QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	LTE 2	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 5	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 14	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 25	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 26	O	O	O	O	O	-	O	O	O	O	O	O	O	O
	LTE 30	-	-	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 71	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	LTE 2	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 5	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O			O	O	O	O
	LTE 14	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 25	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	-	O	O	-	-	O	O	O	O
	LTE 30	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 71	-	-	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 2	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 5	O	O	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 12	O	O	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 13	-	-	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 14	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 17	-	-	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 25	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 26	O	O	O	O	O	-	O	O	O	-	O	O	-	O
	LTE 30	-	-	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 38	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 41	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 66	O	O	O	O	O	O	O	O	O	-	O	O	-	O

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	LTE 71	-	-	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 2	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 5	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 14	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 25	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	-	O	O	-	-	O	O	O	O
	LTE 30	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 71	-	-	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 2	O	O	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 4	O	O	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 5	O	O	O	O	-	-	O	-	-	-	O	-	O	-
	LTE 7	-	-	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 12	O	O	O	O	-	-	O	-	-	-	O	O	-	O
	LTE 13	-	-	O	O	-	-	O	-	-	-	O	O	-	O
	LTE 14	O	O	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 17	-	-	O	O	-	-	O	-	-	-	O	O	-	O
	LTE 25	O	O	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 26	O	O	O	O	O	-	O	-	-	-	O	-	O	-
	LTE 30	-	-	O	O	-	-	O	-	-	-	O	O	-	O
	LTE 38	-	-	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 41	-	-	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 66	O	O	O	O	O	O	O	-	-	-	O	O	-	O
	LTE 71	-	-	O	O	O	O	O	-	-	-	O	O	-	O
Spurious Emissions at Antenna Terminals	LTE 2	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 5	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 14	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 17	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 25	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 26	O	O	O	O	O	-	O	-	O	-	-	O	O	O
	LTE 30	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 38	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 41	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 66	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 71	-	-	O	O	O	O	O	-	O	-	-	O	O	O
Radiated	LTE 2	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 4	-	-	O	-	-	-	O	-	O	-	-	-	O	-

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Spurious Emission	LTE 5	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 7	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 12	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 13	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 14	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 17	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 25	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 26	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 30	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 38	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 41	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 66	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 71	-	-	O	-	-	-	O	-	O	-	-	-	O	-
Note	1. The mark “O” means that this configuration is chosen for testing. 2. The mark “-” means that this configuration is not testing.														

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5 Test Case Results

5.1 RF Power Output and Effective Isotropic Radiated Power

Ambient condition

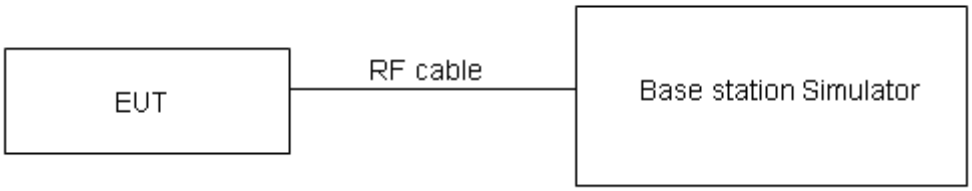
Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:
EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)
EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=0.4 dB for RF power output, k = 2, U= 1.19 dB for ERP/EIRP.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX A Test Result

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5.2 Occupied Bandwidth

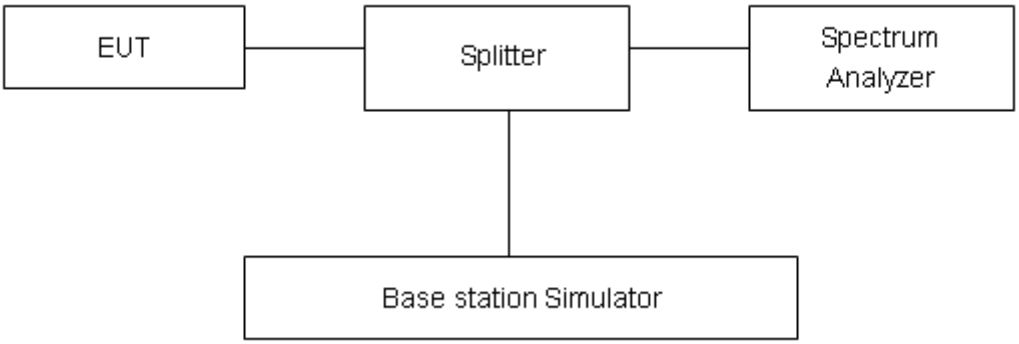
Ambient condition

Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.
RBW is set to ⩾1%EBW, VBW is set to 3x RBW.
99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=624Hz.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX B Test Result

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5.3 Band Edge Compliance

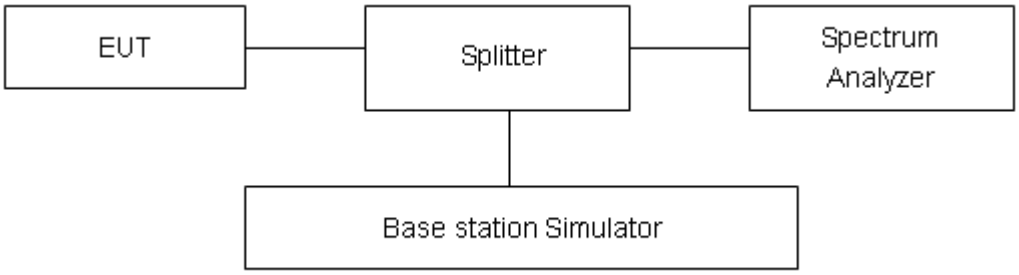
Ambient condition

Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.
The testing follows KDB 971168 D01 v03r01 Section 6.0
The EUT was connected to spectrum analyzer and system simulator via a power divider.
The band edges of low and high channels for the highest RF powers were measured.
For LTE Band 7/38 set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
For LTE Band 41 the middle channel, high channel set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used; Low channel set RBW >= 2% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
RBW is set to ⩾1%EBW, VBW is set to 3x RBW on spectrum analyzer.
Set spectrum analyzer with RMS detector.
The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Checked that all the results comply with the emission limit line.

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX C Test Result

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5.4 Peak-to-Average Power Ratio (PAPR)

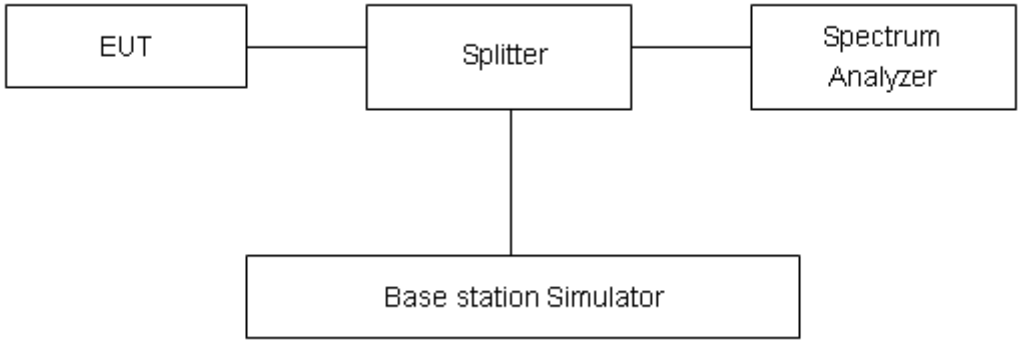
Ambient condition

Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Methods of Measurement

The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
The EUT was connected to spectrum and system simulator via a power divider and Set the CCDF in spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX D Test Result

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5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

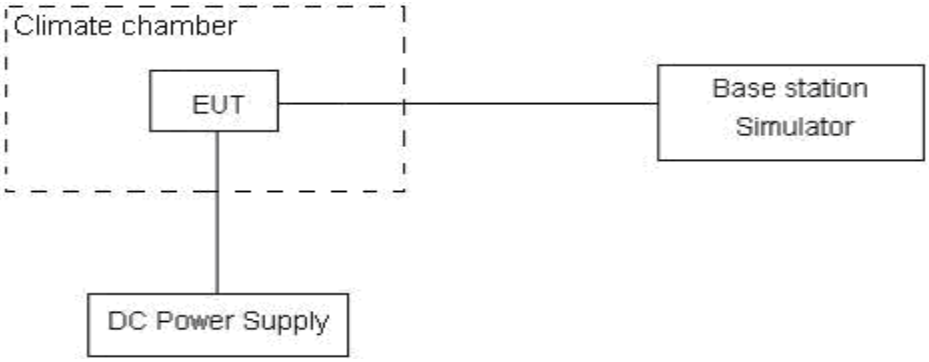
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 6.6V and 8.8 V, with a nominal voltage of 7.7V.

Test setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX E Test Result

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5.6 Spurious Emissions at Antenna Terminals

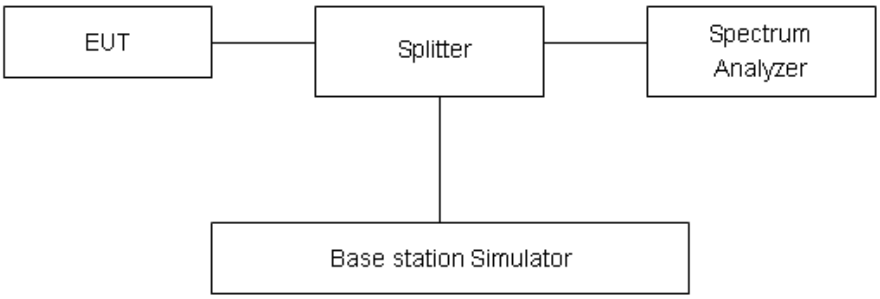
Ambient condition

Temperature	Relative humidity	Pressure
20°C ~ 25°C	45% ~ 55%	101 kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),
RBW is set to 10 kHz (0.15 MHz~ 30 MHz)
RBW is set to 1000 kHz (30MHz~1000 MHz)
RBW is set to 1000 kHz (above 1000MHz)
For Band 2/7/38/41/66, the RBW is set to 100KHz below 1G, and the factor is 10dB for 1MHz.
Sweep is set to AUTO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
above 1GHz	1.407 dB

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX F Test Result

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5.7 Radiated Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26-2015.
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dB.

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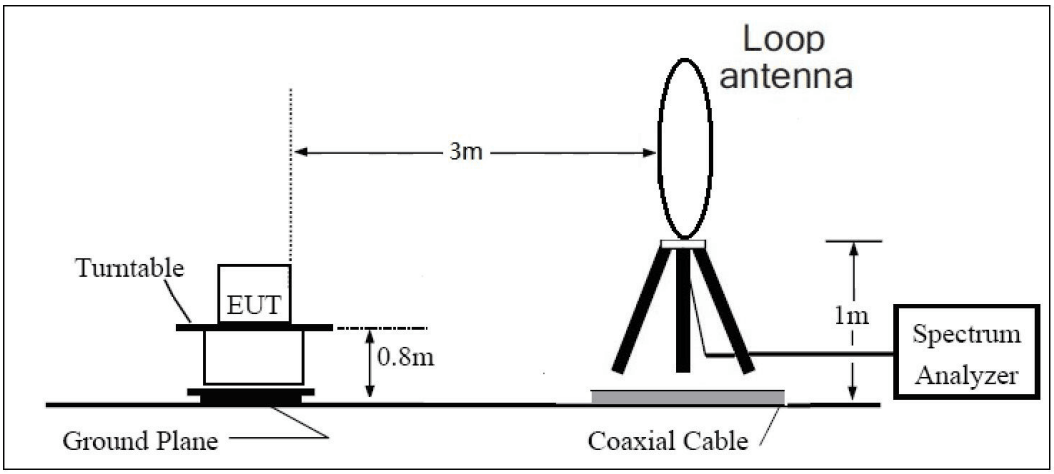
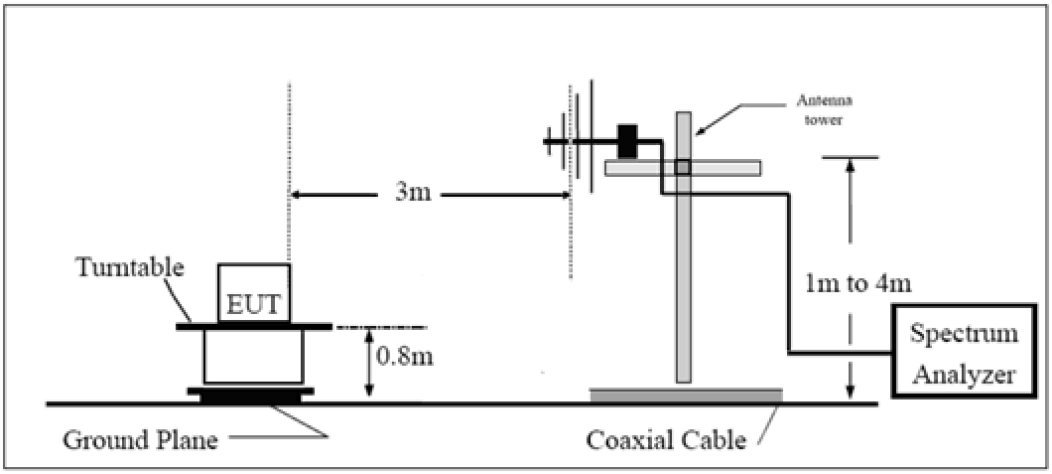
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

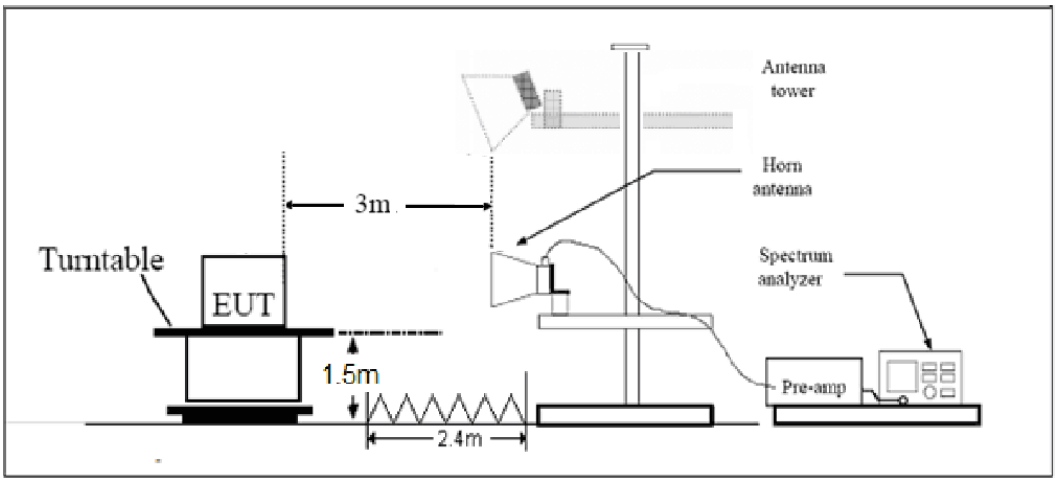
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor *k* = ±1.96, *U*= ±3.55 dB.

Test Results

The detailed test data see EFTA26060321-IE-02-R1-ANNEX G Test Result

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6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Wireless Communication Tester	Anritsu	MT8821C	6201538758	2026-04-21	2027-04-20
Climate Chamber	WEISS	VT 4002	58226119450010	2026-04-20	2027-04-19
Wideband Radio Communication Tester	R&S	CMW500	125261	2026-04-21	2027-04-20
Spectrum Analyzer	Keysight	N9020A	MY52330084	2026-04-20	2027-04-19
DC Power Supply	UNI-T	UTP1310+	C220795889	2026-04-20	2027-04-19
Spectrum Analyzer	R&S	FSV3030	101411	2025-11-24	2026-11-23
Software	MW	MTS 8200	V2.0.0.0	-	-
Spectrum Analyzer	R&S	FSV30	104028	2026-04-20	2027-04-19
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2026-04-12	2029-04-11
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1439	2024-07-06	2027-07-05
Horn Antenna	SCHWARZBECK	BBHA 9120D	1594	2023-12-05	2026-12-04
Horn Antenna	R&S	BBHA 9170	101301	2023-09-16	2026-09-15
Software	R&S	EMC32	10.35.10	/	/

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7 The EUT Appearance

Refer to *EUT Appearance*.

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8 Test Setup Photos

Refer to *Part 22_24_27_90 Test Setup.*

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

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