TEST REPORT

APPLICANT	:	Rhino Mobility LLC
PRODUCT NAME	:	Hotspot
MODEL NAME	:	H1
BRAND NAME	:	RHINO
FCC ID	:	2AUOUH1
STANDARD(S)	:	47 CFR Part 2 47 CFR Part 24 47 CFR Part 27 47 CFR Part 90 47 CFR Part 96
RECEIPT DATE	:	2024-10-28
TEST DATE	:	2024-12-06 to 2024-12-27
ISSUE DATE	:	2025-01-20

Edited by: Gan Jing

Gan Jing (Rapporteur)

Approved by: Shen Junsheng

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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2025-01-20	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Rhino Mobility LLC
Applicant Address:	8 The Green, Suite A, Dover, Delaware,19901, USA
Manufacturer:	Rhino Mobility LLC
Manufacturer Address:	8 The Green, Suite A, Dover, Delaware,19901, USA

1.2. Equipment Under Test (EUT) Description

Product Name:	Hotspot	
Hardware Version:	SD5001_V1.0	
Software Version:	H1(001)_20250109	
IMEI:	354668800000410	
Modulation Type:	DFT-s-OFDM	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM
	CP-OFDM	QPSK, 16QAM, 64QAM, 256QAM
SA Band:	n2, n5, n7, n12, n14, n25, n26, n30, n41, n48, n66, n71, n77, n78	
UE Catgory:	NR RadCap	
Power Class:	PC2:	Not Support
	PC3:	n2, n5, n7, n12, n14, n25, n26, n30, n41, n48, n66, n71, n77, n78
NR CA Band：	Not Support	
EN-DC:	Not Support	
Frequency Range:	n2	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
	n5	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	n7	Tx: 2500MHz-2570MHz
		Rx: 2620MHz-2690MHz
	n12	Tx: 699MHz-716MHz
		Rx: 729MHz-746MHz
	n14	Tx: 1850MHz-1915MHz
		Rx: 1930MHz-1995MHz

	n25	Tx: 1850MHz-1915MHz
		Rx: 1930MHz-1995MHz
	n26	Tx: 814MHz-824MHz
		Rx: 859MHz-869MHz
		Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	n30	Tx: 2305MHz-2315MHz
		Rx: 2350MHz-2360MHz
	n41	Tx: 2496MHz-2690MHz
		Rx: 2496MHz-2690MHz
	n48	Tx:3550 MHz–3700 MHz
		Rx:3550 MHz–3700 MHz
	n66	Tx: 1710MHz-1780MHz
		Rx: 2110MHz-2200MHz
	n71	Tx: 663MHz-698MHz
		Rx: 617MHz-652MHz
	n77 : (enabling bands)	Tx: 3450MHz-3550MHz
		Rx: 3450MHz-3550MHz
		Tx: 3700MHz-3980MHz
		Rx: 3700MHz-3980MHz
	n78: (enabling bands)	Tx: 3450MHz-3550MHz
		Rx: 3450MHz-3550MHz
		Tx: 3700MHz-3800MHz
		Rx: 3700MHz-3800MHz
Channel Bandwidth	n2	5MHz, 10MHz, 15MHz, 20MHz
	n5	5MHz, 10MHz, 15MHz, 20MHz
	n7	5MHz, 10MHz, 15MHz, 20MHz
	n12	5MHz, 10MHz, 15MHz
	n14	5MHz, 10MHz
	n25	5MHz, 10MHz, 15MHz, 20MHz
	n26	5MHz, 10MHz, 15MHz, 20MHz
	n30	5MHz, 10MHz
	n41	10MHz, 15MHz, 20MHz
	n48	10MHz, 15MHz, 20MHz
	n66	5MHz, 10MHz, 15MHz, 20MHz
	n71	5MHz, 10MHz, 15MHz, 20MHz
	n77	10MHz, 15MHz, 20MHz
	n78	10MHz, 15MHz, 20MHz

Antenna Type:	PIFA Antenna	
Antenna Gain:	n2	1.14 dBi
	n5	1.71 dBi
	n7	-0.18 dBi
	n12	1.88 dBi
	n14	1.65 dBi
	n25	1.14 dBi
	n26	1.71 dBi
	n30	-1.66 dBi
	n41	0.06 dBi
	n48	-0.42 dBi
	n66	-0.24 dBi
	n71	-1.26 dBi
	n77	1.01 dBi
	n78	1.01 dBi
Accessory Information:	Battery	
	Brand Name:	RHINO
	Model No.:	SA3401
	Serial No.:	N/A
	Capacity:	4000 mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Jiade Energy Technology（Zhuhai）Co., Ltd.
	AC Adapter	
	Brand Name:	RHINO
	Model No.:	XT-C15
	Serial No.:	N/A
	Rated Output:	5.0V⎓2.0A
	Rated Input:	100-240V~50/60Hz, 0.3A
	Manufacturer:	DONGGUAN SUMMER ELECTRONICS CO., LTD.
	USB Type1	
	Model No.:	XSD607000014A
	Manufacturer:	DOWAYE ELECTRONICS CO., LTD

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Maximum ERP/EIRP and Emission Designator

The test results was recorded in Report No.: SZ24100188W01.

1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24, Part 27, Part 90 and Part 96 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	47 CFR Part 90	Miscellaneous Wireless Communications Services
6	47 CFR Part 96	CITIZENS BROADBAND RADIO SERVICE

n2 & n25			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	EIRP ≤ 2 W	PASS
Peak-Average Ratio	§24.232(d)	Limit≤13 dB	PASS
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §24.238(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)(b)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §24.235	No limit	N/A

Remark: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

n5& n26(824-849MHz)			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	ERP ≤ 7W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §22.917(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §22.917(a)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm	PASS

n7 & n41			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)(2)	EIRP ≤2W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(m)(4)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

n12			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(c)(10)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(g)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(g)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(g)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

Remark: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

n26(814-824MHz)			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §90.635(b)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §90.691(a)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §90.691(a)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §90.691(a)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §90.543	No limit	N/A

n14			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §90.542(a) (7)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §90.543(e)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §90.543(f)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §90.543(c)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §90.543	No limit	N/A

n30			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(a)(3)	ERP ≤250mW	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(a)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53	≤ -40 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53	≤ -40 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

n48			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §96.41(b)	Refer to section 2.1	PASS
Peak-Average Ratio	§96.39(g)	≤ 13 dB	PASS
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §96.41(e)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §96.41(e)	≤ -40 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §96.41(e)	≤ -40 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

n66			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	EIRP ≤1 W	PASS
Peak-Average Ratio	§27.50(d) (5)	Limit≤13 dB	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §27.53(h)(1) §27.53(h)(3)(i)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)(1)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(h)(1)	≤ -13 dBm/1MHz.	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

Remark: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

n71			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(c)(10)	ERP ≤ 3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(g)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(g)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(g)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

n77(3450~3550MHz) & n78(3450~3550MHz)			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(K)(3)	EIRP ≤ 1W	PASS
Peak-Average Ratio	§27.50(K)(4)	≤ 13 dB	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §27.53(l)(2)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(l)(2)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(l)(2)	≤ -13 dBm/1MHz.	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

Remark: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

n77(3700~3980MHz) & n78(3700~3800MHz)			
Item	**FCC Rule No.**	**Requirements**	**Result**
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(j)(3)	EIRP ≤ 1W	PASS
Peak-Average Ratio	§27.50(j)(4)	≤ 13 dB	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §27.53(n)(2)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(n)(2)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(m)(4)	≤ -13 dBm/1MHz.	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

Remark: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

Test detailed items/section required by FCC rules and results are as below:

Test Item	Test Engineer	Result	Method Determination /Remark
Transmitter Conducted Output Power and ERP/EIRP	Gan Jing	PASS	Nodeviation
Occupied Bandwidth	Gan Jing	PASS	Nodeviation
Frequency Stability	Gan Jing	PASS	Nodeviation
Peak to Average Radio	Gan Jing	PASS	Nodeviation
Conducted Spurious Emissions	Gan Jing	PASS	Nodeviation
Band Edge	Gan Jing	PASS	Nodeviation
Radiated Spurious Emissions	Zhong Xiangyun Li Hanbin	PASS	Nodeviation

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the “method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: The declared of product specification for EUT presented in the report are provided by manufacturer and the test laboratory is not responsible for the accuracy of the information.

Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

Note 5: These items please refer to the 5G module report SZ24100188W01 which The FCC ID is 2AUOUM3501 and the 5G module has been certified by Shenzhen Morlab Communications Technology Co., Ltd. on 01/13/2025.

Note 6: There is no extra evaluation for RSE, because hotspot used the same host RSE sample with that of module while tesing the RSE.

1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60

2. Summary Test Results And Description

2.1. Transmitter Conducted Output Power

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 24.232 (c) for n2, n25, the ERP of Mobile and portable stations are limited to 2 watts EIRP.

According to FCC section 27.50 (d)(4) for n66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

According to FCC section 22.913 (a)(5) for n5, n26(824-849MHz), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (h)(2) for n7, n41, mobile and other user stations. Mobile stations are limited to 2 watts E.I.R.P. All user stations are limited to 2 watts transmitter output power.

According to FCC section 27.50(c)(10) for n12, n71, 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 FCC section 90.635(b) for n26 (814-824MHz), the maximum output power of the transmitter for mobile stations is 100 watts.

According to FCC section 90.542 (a)(7)for n14, Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP.

According to FCC section 27.50 (a)(3)for n30, Mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average E.I.R.P. must not exceed 50 mill watts within any 1 megahertz of authorized bandwidth.

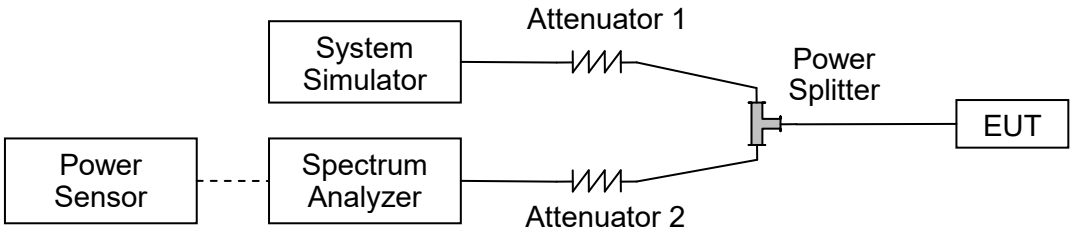
According to FCC section 96.41(b) for n48, the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table as below. Paragraph

Device	Maximum EIRP (dBm/10 megahertz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD[1]	47	37

According to FCC section 27.50(j)(3) for n77(3700-3980MHz), n78(3700-3800MHz), mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50(k)(3) for n77, n78(3450-3550MHz),Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

2.1.2.Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.1.3.Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

2.1.4.Conducted Output Power

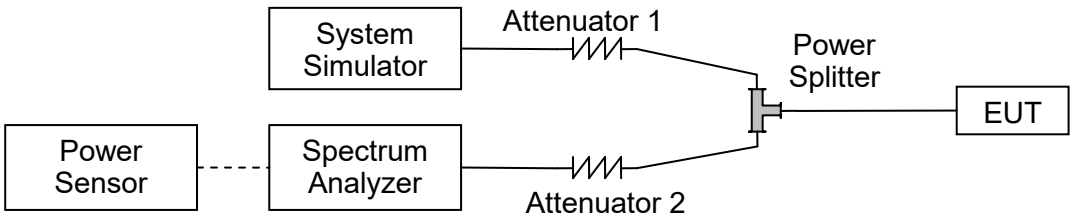
The test results was recorded in Report No.: SZ24100188W01.

2.2. Occupied Bandwidth

2.2.1.Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2.Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.2.3.Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

2.2.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.3. Frequency Stability

2.3.1.Requirement

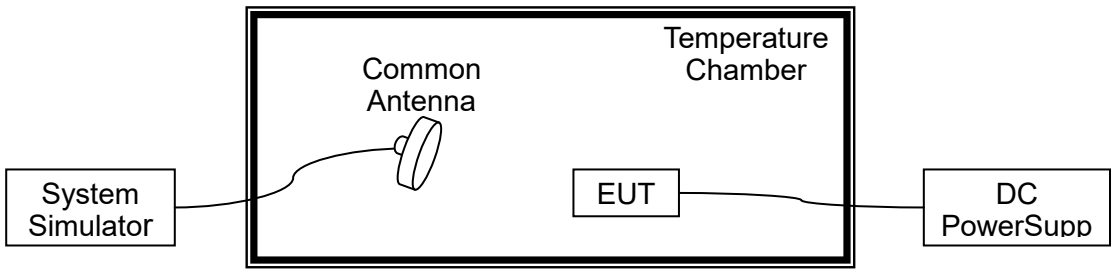
According to FCC section 2.1055, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from 0°C to +35°C at intervals of not more than 10°C.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

Note: The operating temperature of EUT is from -10°C to 55°C, which are specified by the applicant.

2.3.2.Test Description



The EUT which is powered by the DC Power Supply directly is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

2.3.3.Test procedure

KDB 971168 D01v03 Section 9.0 and ANSI/TIA-603-E-2016.

2.3.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.4. Peak to Average Ratio

2.4.1.Requirement

According to FCC section 24.232(d) for n2, n25, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

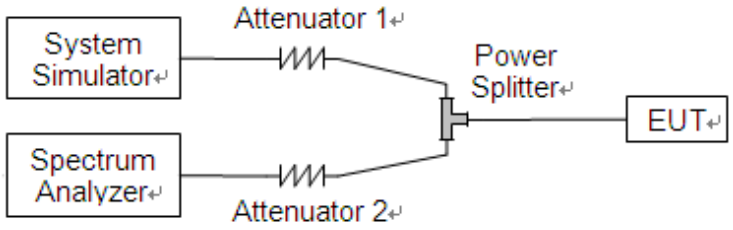
According to FCC section 96.41(g) for n48, the peak-to-average power ratio (PAPR) of any CBSD transmitter output power must not exceed 13 dB. PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities or another Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

According to FCC section 27.50(d)(5) for n66, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to FCC section 27.50(j)(4) and 25.50(k)(4) for n77,n78, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

2.4.2.Test Description

Test Set:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.4.3.Test procedure

KDB 971168 D01v03 Section 5.7 and ANSI/TIA-603-E-2016.

2.4.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.5. Conducted Spurious Emissions

2.5.1.Requirement

According to FCC section 2.1051, section 22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

According to FCC section 24.238(a) for n2, n25, 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.

Additional to FCC section 22.917(a) for n5, n26, 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. This calculated to be -13dBm.

According to FCC section 90.543(f) for n14, on any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

According to FCC section 27.53(m)(4) for n7, n41, 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 55 + 10 log(P) dB. This calculated to be -25dBm.

According to FCC section 27.53(g) for n12, n71, for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a 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, by at least 43 + 10 log (P) dB.

According to FCC section 27.53 for n30, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

According to FCC section 96.41(e) for n48, the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

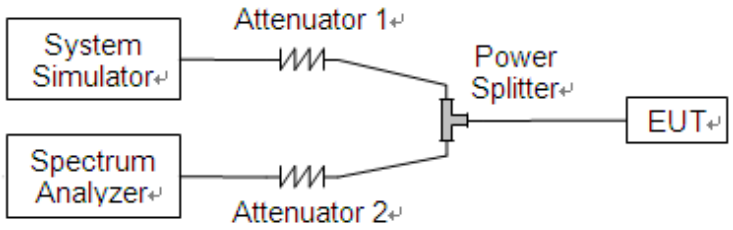
According to FCC section 27.53(h) for n66, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB.

According to FCC section 27.53(l)(2) for n77, n78, for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not

exceed −13 dBm/MHz.

According to FCC section 27.53(n)(2) for n77, n78, for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

2.5.2.Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.5.3.Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

2.5.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.6. End User Device Additional Requirements (CBSD Protocol)

2.6.1.Requirement

According to FCC section Part 96.47,

(a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

(b) Any device operated at higher power than specified for End User Devices in Part 96.41 will be classified as, and subject to, the operational requirements of a CBSD.

2.6.2.Test Description

End user device additional requirements (CBSD Protocol) are tested per the test procedures listedbelow. During testing, the EUT is connected to a certified CBSD (kingsignal LBS7320 FCC ID: P27-SCE5164-B48) as a companion device to show compliance with Part 96.47.End User Devices may operate only if they can positively receive and decode an authorizationsignal transmitted by a CBSD, including the frequencies and power limits for their operationAn End User Device must discontinue operations, change frequencies, or change its operationapower level within 10 seconds of receiving instructions from its associated CBSD.

2.6.3.Test Procedure

KDB 940660 D01 Part 96 CBRS Eqpt v02.

2.6.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.7. Band Edge

2.7.1.Requirement

n2, 25

According to FCC section 24.238(a), for operations in the 1850–1910MHz bands, 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) dBm a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

n5, 26(824-849MHz)

According to FCC section 22.917(a), for operations in the 824–849MHz bands, 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) dBm a 100kHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

n7, 38, 41

According to FCC section 27.53(m) (4), for mobile digital stations, 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.

n12, 71

According to FCC section 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a 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, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

n14

According to FCC section 90.543(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 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(2) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(3) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(4) 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.

n26 (814-824MHz)

According to FCC section 90.691(a) (2), for any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(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 37.5 kHz.

n30

According to FCC section 27.53(a) (4), for mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) 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.

n48
Part 96.41(e)(1)(i)
For channel and frequency assignments made by the SAS to CBSDs, the conducted power of any CBSD emission outside the fundamental emission bandwidth as specified in paragraph (e)(3) of this section (whether the emission is inside or outside of the authorized band) shall not exceed −13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any CBSD emission shall not exceed −25 dBm/MHz.
Part 96.41(e)(1)(ii)
For channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed −25 dBm/MHz.
Part 96.41(e)(2)
For CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

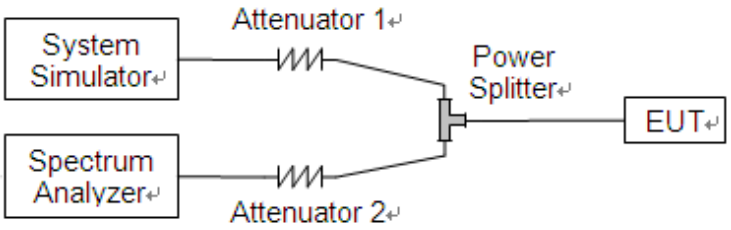
n66
According to FCC section 27.53(h),for operations in the 1710–1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dBm 1MHz bandwidth. However, in the 1 MHz bands immediately

outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

n77 (3700-3980MHz)
According to FCC section 27.53(l) (2) for, for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (l)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1-megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

n77 (3450-3550MHz)
According to FCC section 27.53(n) (2) for,for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

2.7.2.Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.7.3.Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

2.7.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

2.8. Radiated Spurious Emissions

2.8.1.Requirement

According to FCC section 2.1051, section 22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

According to FCC section 24.238(a) for n2, n25, 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.

Additional to FCC section 22.917(a) for n5, n26, 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. This calculated to be -13dBm.

According to FCC section 27.53(m)(4) for n7, n41, 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 55 + 10 log(P) dB. This calculated to be -25dBm.

According to FCC section 27.53(g) for n12, n71, for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a 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, by at least 43 + 10 log (P) dB.

According to FCC section 90.543(f) for n14, on any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

According to FCC section 27.53 for n30, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

According to FCC section 96.41(e) for n48, the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

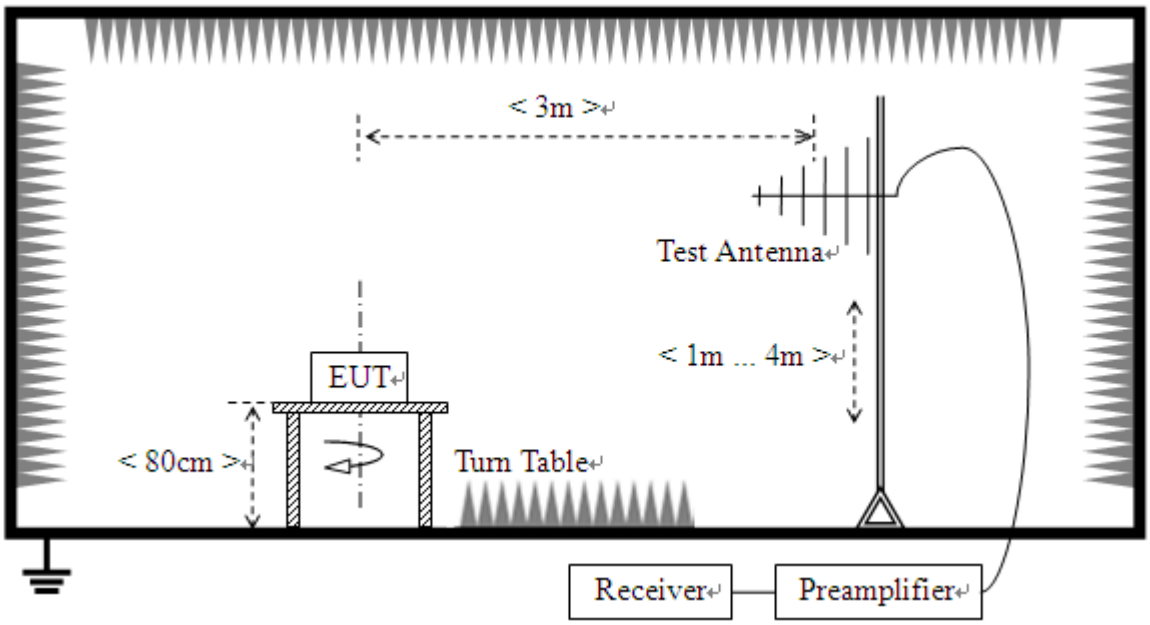
According to FCC section 27.53(h) for n66, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB.

According to FCC section 27.53(l)(2) for n77, n78, for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not

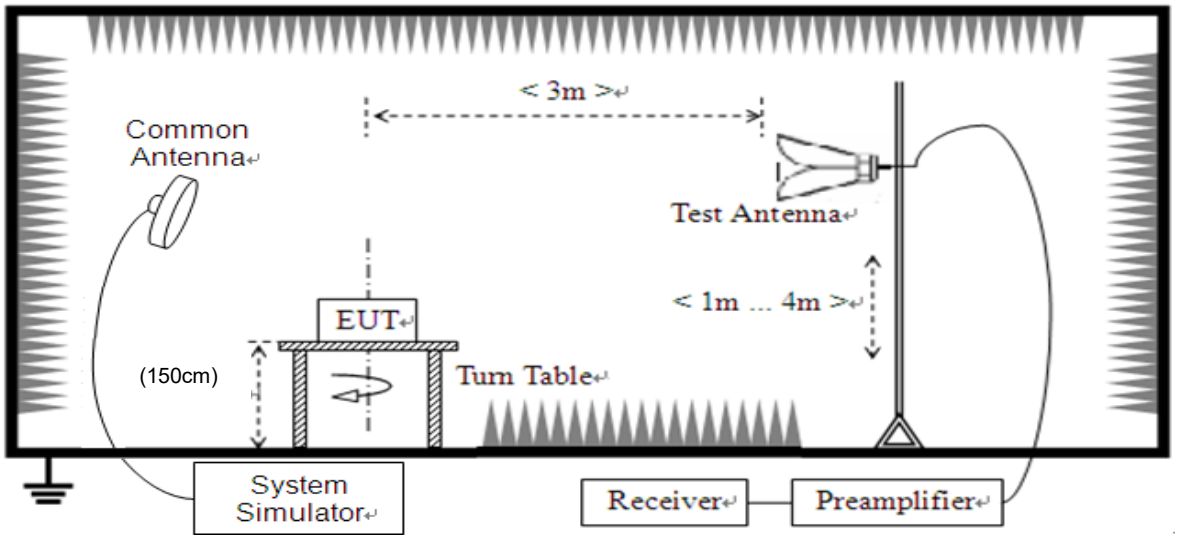
exceed −13 dBm/MHz.

According to FCC section 27.53(n)(2) for n77, n78, for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

2.8.2.Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUTis located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360°to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: When doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.8.3.Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.

2.8.4.Test Result

The test results was recorded in Report No.: SZ24100188W01.

Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Output Power	±2.22 dB
Bandwidth	±5%
Conducted Spurious Emission	±2.77 dB
Band Edge	±2.77 dB
Equivalent Isotropic Radiated Power	±2.22 dB
Radiated Spurious Emissions	±6 dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.

4. Test Equipment Utilized

4.1 Conducted Test Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	N/A	N/A
Directional Coupler (10-67GHz)	N/A	110067016	KRYTAR	N/A	N/A
Attenuator	N/A	20dB	Resnet	N/A	N/A
Attenuator (DC-40GHz)	N/A	10dB	RFTOP	N/A	N/A
EXA Signal Analyzer	MY54170556	N9030A	Keysight	2023.10.07	2024.10.06
System Simulator	6262012906	MT8000A	Anritsu	2024.06.03	2025.06.02
System Simulator	6261830572	MT8821C	Anritsu	2024.01.25	2025.01.24
System Simulator	MY58300665	E7515B	Anritsu	2023.10.07	2024.10.06
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
RF cable (DC-40GHz)	N/A	NYK360	Qualwave	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	S02217710100089001	KMT-36LF1A0	KOMEG	2024.09.18	2025.09.17
Test system	N/A	WCS FCC V22.02.041801	CeSheng	N/A	N/A
Minitype 5GC	2302M1205	MINIPC-M1	CWWK	N/A	N/A
n48 Integrated microbase station	2209DR6000177	SCE5164-B48	SERCOM	N/A	N/A

4.2 Radiated Test Equipment

Equipment Name	Type	Serial No.	Manufacturer	Cal. Date	Cal. Due
Bi-Log Antenna	VULB 9163	9163-274	SCHWARZBECK	2024/6/29	2025/6/28
Horn Antenna	BBHA 9120D	9120D-963	SCHWARZBECK	2024/6/3	2025/6/2
Signal&Spectrum Analyzer	FSW	1406.6000K03-183151-sS	R&S	2024/5/30	2025/5/29
Signal Analyzer	N9020A	MY56060145	Agilent	2024/5/30	2025/5/29
6db Attenuator	BW-N6W5+	E191001	Mini-circuits	2024/9/11	2025/9/10
Preamplifier（2GHz-18GHz）	S020180L3203	61171/61172	LUCIX CORP.	2024/5/30	2025/5/29
Preamplifier（10MHz-6GHz）	S10M100L3802	46732	LUCIX CORP.	2024/5/30	2025/5/29
System Simulator	CMW500	152038	R&S	2024/9/11	2025/9/10
System Simulator	MT8000A	6262148249	anritsu	2024/6/30	2025/6/29
System Simulator	MT8821C	6261830572	anritsu	2024/1/25	2025/1/24
RF Coaxial Cable（DC-18GHz）	PE330	MRE001	Pasternack	2024/5/30	2025/5/29
RF Coaxial Cable（DC-18GHz）	CLU18	MRE002	Pasternack	2024/5/30	2025/5/29
RF Coaxial Cable（DC-18GHz）	CLU18	MRE003	Pasternack	2024/5/30	2025/5/29
RF Coaxial Cable（DC-40GHz）	QA360-40-KK-0.5	22290045	Qualwave	2024/9/11	2025/9/10
RF Coaxial Cable（DC-40GHz）	QA360-40-KKF-2	22290046	Qualwave	2024/9/11	2025/9/10
RF Coaxial Cable（DC-18GHz）	QA500-18-NN-5	22120181	Qualwave	2024/9/11	2025/9/10

END OF REPORT