RF Report

Product Name: pico Remote Radio Unit

Product Model: pRRU3911+WIFI

Report Number: SYBH(R)02376164EB-1

FCC ID: QISPRU11WIFI

IC: 6369A-PRU11WIFI

Reliability Laboratory of Huawei Technologies Co., Ltd.

(Global Compliance and Testing Center of Huawei Technologies Co., Ltd.)

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Notice

1. The laboratory has passed the accreditation by China National Accreditation Service for Conformity Assessment (CNAS). The accreditation number is L0310.

2. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.

3. The laboratory has been listed by the US Federal Communications Commission to perform electromagnetic emission measurements.

- The recognition number for the test site located in Shenzhen is 97456.
- The recognition number for the test site located in Shanghai is 684868.
- The recognition number for the test site located in Chengdu is 216797.

4. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements.

- The recognition number for the test site located in Shenzhen is 6369A-1.
- The recognition numbers for the test site located in Shanghai is 6369D, which contains 6369D-1 (3m chamber) and 6369D-2 (10m chamber).
- The recognition number for the test site located in Chengdu is 6369E-1.

5. The laboratory (Reliability Laboratory of Huawei Technologies Co., Ltd.) is also named as "Global Compliance and Testing Center of Huawei Technologies Co., Ltd."; the both names have coexisted since 2009.

6. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

7. The test report is invalid if there is any evidence of erasure and/or falsification.

8. The test report is only valid for the test samples.

9. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

Applicant:	Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Product Name:	pico Remote Radio Unit
Product Model:	pRRU3911+WIFI

Date of Receipt Sample:	2016-04-19
Start Date of Test:	2016-04-19
End Date of Test:	2016-05-18

Test Result: Pass

Approved by Senior Engineer:	2016-05-18	Ren Huasheng	Ren Huasheng
	Date	Name	Signature

Prepared by:	2016-05-18	Hu Wei	Hu Wei
	Date	Name	Signature

Modification Record

No.	Last Report No.	Modification Description
1	---	First report.

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1 General Information

1.1 Applied Standard

		(Accredited by)
Applied Rules/Standards:	47 CFR FCC Part 2 (10-1-14 Edition)	☐ CNAS, ☒ A2LA
	47 CFR FCC Part 22 (10-1-14 Edition)	☐ CNAS, ☒ A2LA
	47 CFR FCC Part 24 (10-1-14 Edition)	☐ CNAS, ☒ A2LA
	47 CFR FCC Part 27 (10-1-14 Edition)	☐ CNAS, ☒ A2LA
	IC RSS-Gen (Issue 4, November 2014)	☐ CNAS, ☒ A2LA
	IC RSS-132 (Issue 3, January 2013)	☒ CNAS, ☒ A2LA
	IC RSS-133 (Issue 6, January 2013)	☒ CNAS, ☒ A2LA
	IC RSS-139 (Issue 3, July 2015)	☐ CNAS, ☒ A2LA
	IC RSS-199 (Issue 2, October 2014)	☐ CNAS, ☒ A2LA

Test Methods:	FCC KDB 971168 D01 Power Meas License Digital Systems v02r02
(if applicable)	FCC KDB 662911 D01 Multiple Transmitter Output v02r01
	MILLIMETER WAVE TEST PROCEDURES (TCB council members & FCC lab)
	TR 14-1001 MMW Measurements with Harmonic Mixers (FCC)

1.2 Test Location

Test Location 1 (TL1):	Global Compliance and Testing Center of Huawei Technologies Co., Ltd.
	(Reliability Laboratory of Huawei Technologies Co., Ltd.)
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.3 Test Environment Condition

Ambient Temperature:	15 to 30 °C
Ambient Relative Humidity:	20 to 85 %
Atmospheric Pressure:	Not applicable

2 Test Summary

NOTE 1: Unless otherwise specified, all test items were tested in test location TL1 which has been accredited by A2LA. The test items tested in other test locations are marked with "(TL##, ####)" where "TL##" denotes test location and "####" denotes the accreditation organization of the laboratory responsible of this report.

NOTE 2: For IC, only requirements in RSS but not in SRSP are considered for compliance measurements for certification purposes, since the requirements of SRSP are to be addressed with the device at the time of licensing (except RSS refers to requirements of SRSP).

NOTE 3: In the following table(s), the "NA" denotes "Not applicable", the "NT" denotes "Not tested", and "NC" denotes "No conclusion".

2.1 Cellular Band (824-849 MHz paired with 869-894 MHz)

2.1.1 Measurement Technical Requirements

The test results in the following table refer to the document of "SYBH(R) 02376164EB-1A1":

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
Transmitter Output Power	§2.1046, §22.913	RSS-Gen,§6.12; RSS-132,§5.4	FCC	Base Transmitters / Cellular Repeaters	ERP Power ≤ 500 W.	Annex A	Pass
				Mobile Transmitter / Auxiliary Test Transmitter	ERP Power ≤ 7 W.		
			IC	Base Station	● Average EIRP Power ≤ 820 W (for HAAT ≤ 150 m). ● Average EIRP Power ≤ (29.14 – 20*lg(HAAT/150)) dBW (for HAAT > 150 m). ● PAPR ≤ 13 dB@0.1%.		

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
					Note 1): HAAT - Height Above Average Terrain.		
				Mobile Station	● Average EIRP Power ≤ 11.5 W. ● PAPR ≤ 13 dB@0.1%.		
Bandwidth	§2.1049, §22.917	RSS-Gen,§6.6	FCC	● OBW: No limit. ● EBW (-26 dBc): No limit.		Annex B	Pass
			IC	OBW: No limit.			
Band Edges Compliance / Emission Mask	§2.1051, §22.917	RSS-Gen,§6.13; RSS-132,§5.5	FCC	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block. _____ Note 1): EBW is -26 dBc EBW.		Annex C	Pass
			IC	≤ -13 dBm/1%*OBW, in 1 MHz bands immediately outside and adjacent to the sub-bands.			
Spurious Emission at Antenna Terminals	§2.1051, §22.917	RSS-Gen,§6.13; RSS-132,§5.5	FCC	≤ -13 dBm/100 kHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges/sub-bands.		Annex D	Pass
			IC	≤ -13 dBm/100 kHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges/sub-bands.			
Field Strength of Spurious Radiation / Radiated Spurious Emissions	§2.1053, §22.917	RSS-Gen,§6.13; RSS-132,§5.5	FCC	≤ -13 dBm/100 kHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges/sub-bands.		Annex E	Pass
			IC	≤ -13 dBm/100 kHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges/sub-bands.			
Frequency Stability	§2.1055, §22.355	RSS-Gen,§6.11; RSS-132,§5.3	FCC	Base Station / Fixed Station	● Test method: (Fc_meas - Fc_rated) / Fc_rated ≤ ±1.5 ppm. ● Test conditions: (1) NV, -30°C/…/+50°C step=+10°C. (2) NT, ±15%*NV.	Annex F	Pass

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
				Mobile Station	● Test method: (Fc_meas - Fc_rated) / Fc_rated ≤ ±2.5 ppm. ● Test conditions: (1) NV, -30°C/…/+50°C step=+10°C. (2) NT, ±15%*NV.		
			IC	Base Station	● Test method option #1: (Fc_meas - Fc_meas@20°C&NV) / Fc_meas@20°C&NV ≤ ±1.5 ppm. ● Test method option#2: OBW (OBW_lower to OBW_higher) within each sub-band. ● Test conditions: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV.		
				Mobile Station	● Test method option #1: (Fc_meas - Fc_meas@20°C&NV) / Fc_meas@20°C&NV ≤ ±2.5 ppm. ● Test method option #2: OBW (OBW_lower to OBW_higher) within each sub-band. ● Test conditions: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV.		
Receiver Spurious Emissions (Note 1, 2)	---	RSS-Gen,§5; RSS-Gen,§7; RSS-132,§5.6	● Radiated limit: RSS-Gen, §7.1.2 Receiver Radiated Limits. ● Conducted limit: (1) max (lowest internal frequency, 30 MHz) to 1000 MHz: ≤ -57 dBm/120 kHz (CISPR-QP); (2) 1 GHz to min (max (5 * highest tunable frequency, 5 * highest local oscillator frequency), 40 GHz): ≤ -53 dBm/1 MHz (AV).			Annex G	---
Note 1: For Receiver Spurious Emissions, If the receiver has a detachable antenna of known impedance, antenna conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method is recommended. The antenna conducted test shall be performed with the antenna disconnected and the receiver antenna terminals connected to a measuring instrument having equal impedance to that specified for the antenna. Note 2: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to IC requirements. All other receivers							

Test Item	FCC Rule	IC Rule	Requirements	Test Result	Verdict
	are excluded from any IC certification, testing, labelling and reporting requirements.				

2.1.2 Non-measurement Technical Requirements

Description	FCC Rule	IC Rule	Requirements		Exhibit	Verdict
Frequency Plan	§22.905	RSS-132,§5.1	FCC	(a) Channel Block A: 869-880 MHz paired with 824-835 MHz, and 890-891.5 MHz paired with 845-846.5 MHz. (b) Channel Block B: 880-890 MHz paired with 835-845 MHz, and 891.5-894 MHz paired with 846.5-849 MHz.	See technical specification description.	Comply
			IC	A sub-allocation plan of the available spectrum, specifically designated for cellular and advanced services and providing for a maximum of two systems in given: 		
Modulation Characteristics	§2.1047	RSS-132,§5.2	Digital modulation.		See technical specification description.	Comply

2.2 PCS Band (1850-1915 MHz paired with 1930-1995 MHz)

2.2.1 Measurement Technical Requirements

The test results in the following table refer to the document of “SYBH(R) 02376164EB-1A2”:

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
Transmitter Output Power	§2.1046, §24.232	RSS-Gen,§6.12; RSS-133,§6.4; RSS-133,§4.1	FCC	Base Station	● Average EIRP Power (for EBW ≤ 1 MHz): (1) HAAT ≤ 300 m: ≤ 3280 (LPDC) or 1640 W (others), (2) HAAT ≤ 500 m: ≤ 2140 (LPDC) or 1070 W (others), (3) HAAT ≤ 1000 m: ≤ 980 (LPDC) or 490 W (others), (4) HAAT ≤ 1500 m: ≤ 540 (LPDC) or 270 W (others), (5) HAAT ≤ 2000 m: ≤ 320 (LPDC) or 160 W (others). ● Average EIRP PD (for EBW > 1 MHz): (1) HAAT ≤ 300 m: ≤ 3280 (LPDC) or 1640 W/MHz (others), (2) HAAT ≤ 500 m: ≤ 2140 (LPDC) or 1070 W/MHz (others), (3) HAAT ≤ 1000 m: ≤ 980 (LPDC) or 490 W/MHz (others), (4) HAAT ≤ 1500 m: ≤ 540 (LPDC) or 270 W/MHz (others), (5) HAAT ≤ 2000 m: ≤ 320 (LPDC) or 160 W/MHz (others). ● PAPR ≤ 13 dB@0.1%. _____ Note 1): HAAT - Height Above Average Terrain. Note 2): LPDC - counties with population densities of 100 persons or fewer per square mile.	Annex A	Pass
				Mobile Station / Portable Station	● Average EIRP ≤ 2 W. ● PAPR ≤ 13 dB@0.1%.		
			IC	Base Station	● Average EIRP Power (for ChBW ≤ 1 MHz):		

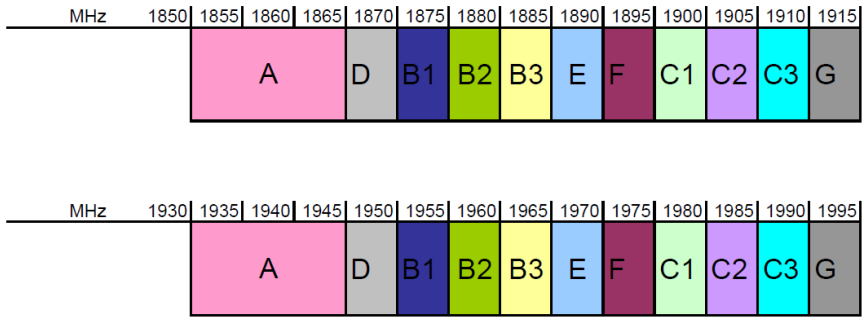
Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
					(1) HAAT ≤ 300 m: ≤ 1640 (urban) or 3280 W (others), (2) HAAT ≤ 500 m: ≤ 1070 W, (3) HAAT ≤ 1000 m: ≤ 490 W, (4) HAAT ≤ 1500 m: ≤ 270 W, (5) HAAT ≤ 2000 m: ≤ 160 W. ● Average EIRP PD (for ChBW > 1 MHz): (1) HAAT ≤ 300 m: ≤ 1640 (urban) or 3280 W/MHz (others), (2) HAAT ≤ 500 m: ≤ 1070 W/MHz, (3) HAAT ≤ 1000 m:≤ 490 W/MHz, (4) HAAT ≤ 1500 m: ≤ 270 W/MHz, (5) HAAT ≤ 2000 m: ≤ 160 W/MHz. ● Average Conducted Power ≤ 100 W (for 1930-1995 MHz). ● PAPR ≤ 13 dB@0.1%. _____ Note 1): HAAT - Height Above Average Terrain.		
				Mobile Station / Hand-held Portable Station	● Average EIRP Power ≤ 2 W. ● PAPR ≤ 13 dB@0.1%.		
Bandwidth	§2.1049, §24.238	RSS-Gen,§6.6; RSS-133,§2.3	FCC	● OBW: No limit. ● EBW (-26 dBc): No limit.		Annex B	Pass
			IC	● OBW: No limit, may in lieu of EBW (-20 dBc). ● EBW (-20 dBc, RBW ~= 1%*OBW): No limit.			
Band Edges Compliance / Emission Mask	§2.1051, §24.238	RSS-Gen,§6.13; RSS-133,§6.5	FCC	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block. _____ Note 1): EBW is -26 dBc EBW.		Annex C	Pass

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
			IC	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block. _____ Note 1): EBW is -20 dBc EBW, or OBW.			
Spurious Emission at Antenna Terminals	§2.1051, §24.238	RSS-Gen,§6.13; RSS-133,§6.5	FCC	≤ -13 dBm/1 MHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency blocks.		Annex D	Pass
			IC	≤ -13 dBm/1 MHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency blocks.			
Field Strength of Spurious Radiation / Radiated Spurious Emissions	§2.1053, §24.238	RSS-Gen,§6.13; RSS-133,§6.5	FCC	≤ -13 dBm/1 MHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency blocks.		Annex E	Pass
			IC	≤ -13 dBm/1 MHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency blocks.			
Frequency Stability	§2.1055, §24.235	RSS-Gen,§6.11; RSS-133,§6.3	FCC	● Test method: Fundamental emissions (Fc_meas) within the authorized frequency block. ● Test conditions: (1) NV, -30°C/…/+50°C step=+10°C. (2) NT, ±15%*NV.		Annex F	Pass
			IC	Base Station	● Test method option #1: (Fc_meas - Fc_meas@20°C&NV) / Fc_meas@20°C&NV ≤ ±1.0 ppm. ● Test method option#2: EBW (EBW_lower to EBW_higher) within frequency block. ● Test conditions: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV. _____ Note 1): EBW is -20 dBc EBW, or OBW.		

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
				Mobile Station	● Test method option #1: (Fc_meas - Fc_meas@20°C&NV) / Fc_meas@20°C&NV ≤ ±2.5 ppm. ● Test method option #2: EBW (EBW_lower to EBW_higher) within frequency block. ● Test conditions: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV. _____ Note 1): EBW is -20 dBc EBW, or OBW.		
Receiver Spurious Emission (Note 1)	---	RSS-Gen,§5; RSS-Gen,§7; RSS-133, §6.6	---			Annex G	---
Note 1: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to IC requirements. All other receivers are excluded from any IC certification, testing, labelling and reporting requirements.							

2.2.2 Non-measurement Technical Requirements

Description	FCC Rule	IC Rule	Requirements	Exhibit	Verdict
Frequency Plan	§24.229	RSS-133,§6.1	1850-1915 MHz paired with 1930-1995 MHz:	See technical specification description.	Comply

Description	FCC Rule	IC Rule	Requirements	Exhibit	Verdict
					
Modulation Characteristics	§2.1047	RSS-133,§6.2	Digital modulation.	See technical specification description.	Comply

2.3 AWS Band (1710-1780 MHz paired with 2110-2180 MHz)

2.3.1 Measurement Technical Requirements

The test results in the following table refer to the document of "SYBH(R) 02376164EB-1A3":

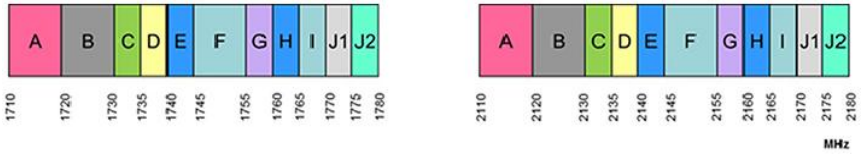
Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
Transmitter Output Power	§2.1046, §27.50(d), §27.50(i)	RSS-Gen,§6.12; RSS-139,§6.5; RSS-139,§4.1	FCC	Base Station / Fixed Station	● Average EIRP Power (for EBW ≤ 1 MHz & 2110 – 2180 MHz): ≤ 3280 (LPDC) or 1640 W (others). ● Average EIRP PD (for EBW > 1 MHz & 2110 – 2180 MHz): ≤ 3280 (LPDC) or 1640 W/MHz (others). ● Average EIRP Power ≤ 1 W (for 1710-1755 MHz). ● Antenna height above ground ≤ 10 m (for 1710-1755 MHz). ● PAPR ≤ 13 dB@0.1%. _____ Note 1): HAAT - Height Above Average Terrain. Note 2): LPDC - counties with population densities of 100 persons or fewer per square mile.	Annex A	Pass
				Mobile Station / Portable Station	● Average EIRP Power ≤ 1 W (for 1710-1780 MHz). ● PAPR ≤ 13dB@0.1%.		
			IC	Base Station / Fixed Station	● Average EIRP Power (for ChBW ≤ 1 MHz & 2110 – 2180 MHz): (1) HAAT ≤ 300 m: ≤ 3280 (LPDC) or 1640 W (others), (2) HAAT ≤ 500 m: ≤ 1070 W, (3) HAAT ≤ 1000 m: ≤ 490 W, (4) HAAT ≤ 1500 m: ≤ 270 W, (5) HAAT ≤ 2000 m: ≤ 160 W. ● Average EIRP PD (for ChBW > 1 MHz & 2110 – 2180 MHz):		

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
					(1) HAAT ≤ 300 m: ≤ 3280 (LPDC) or 1640 W/MHz (others), (2) HAAT ≤ 500 m: ≤ 1070 W/MHz, (3) HAAT ≤ 1000 m: ≤ 490 W/MHz, (4) HAAT ≤ 1500 m: ≤ 270 W/MHz, (5) HAAT ≤ 2000 m: ≤ 160 W/MHz. ● Average EIRP Power ≤ 1 W (for 1710-1780 MHz). ● PAPR ≤ 13 dB@0.1%. _____ Note 1): HAAT - Height Above Average Terrain. Note 2): LPDC - geographic areas at a distance greater than 26 km from large or medium population centres.		
				Mobile / Portable Transmitter	● Average EIRP Power ≤ 1 W. ● PAPR ≤ 13dB@0.1%.		
Bandwidth	§2.1049, §27.53(h)	RSS-Gen,§6.6; RSS-139,§2.3	FCC	● OBW: No limit. ● EBW (-26 dBc): No limit.		Annex B	Pass
			IC	● OBW: No limit			
Band Edges Compliance / Emission Mask	§2.1051, §27.53(h)	RSS-Gen,§6.13; RSS-139,§6.6	FCC	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block. _____ Note 1): EBW is -26 dBc EBW.		Annex C	Pass
			IC	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block. _____ Note 1): EBW is not defined.			
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)	RSS-Gen,§6.13; RSS-139,§6.6	FCC	≤ -13 dBm/1 MHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges.		Annex D	Pass

Test Item	FCC Rule	IC Rule	Requirements		Test Result	Verdict
			IC	≤ -13 dBm/1 MHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges.		
Field Strength of Spurious Radiation / Radiated Spurious Emissions	§2.1053, §27.53(h)	RSS-Gen,§6.13; RSS-139,§6.6	FCC	≤ -13 dBm/1 MHz, from max(lowest internal frequency, 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges.	Annex E	Pass
			IC	≤ -13 dBm/1 MHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz) but outside authorized operating frequency ranges.		
Frequency Stability	§2.1055, §27.54	RSS-Gen,§6.11; RSS-139,§6.4	FCC	● Test method: Fundamental emissions (Fc_meas) within the authorized bands of operation. ● Test conditions: (1) NV, -30°C/…/+50°C step=+10°C. (2) NT, ±15%*NV.	Annex F	Pass
			IC	● Test method: OBW (OBW_lower to OBW_higher) within frequency block. ● Test conditions: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV.		
Receiver Spurious Emission (Note 1)	---	RSS-Gen,§5; RSS-Gen,§7	---		Annex G	---
Note 1: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to IC requirements. All other receivers are excluded from any IC certification, testing, labelling and reporting requirements.						

2.3.2 Non-measurement Technical Requirements

Description	FCC Rule	IC Rule	Requirements	Exhibit	Verdict
Frequency Plan	§27.5(h)	RSS-139,§6.1	1710-1780 MHz paired with 2110-2180 MHz:	See technical specification description.	Comply

Description	FCC Rule	IC Rule	Requirements	Exhibit	Verdict
			 (Note: more frequency ranges than listed can be used according to FCC §27.5(h), i.e. 1695-1710, 1710-1755, 1755-1780, 1915-1920, 1995-2000, 2000-2020, 2110-2155, 2155-2180 and 2180-2200 MHz. See FCC §27.5(h) for detailed)		
Modulation Characteristics	§2.1047	RSS-139,§6.2	Any modulation.	See technical specification description.	Comply
Controlled Operations	---	RSS-139,§6.3	Mobile, portable and fixed user equipment in the band 1755-1780 MHz may operate only when under the control of a base station. The applicant shall include a statement of declaration of compliance and a description of how this control requirement is met.	See technical specification description.	Comply
Transmitter Power Control	§27.50(d)	RSS-139,§6.7	Mobile and portable equipment shall employ a means for limiting power to the minimum necessary for successful communications.	See technical specification description.	Comply
Interoperability Requirement	---	RSS-139,§6.8	Mobile and portable equipment that transmits in the band 1755-1780 MHz and receives in the band 2155-2180 MHz shall be certified only if it can be capable of operating on all frequencies in the frequency bands 1710-1780 MHz and 2110-2180 MHz.	See technical specification description.	Comply

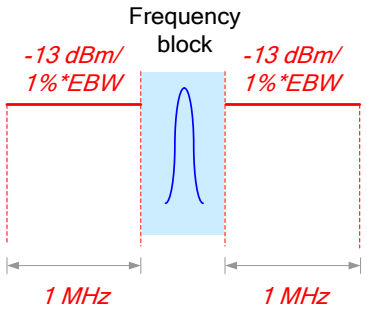
2.4 BRS&EBS Band (2496/2500-2690 MHz)

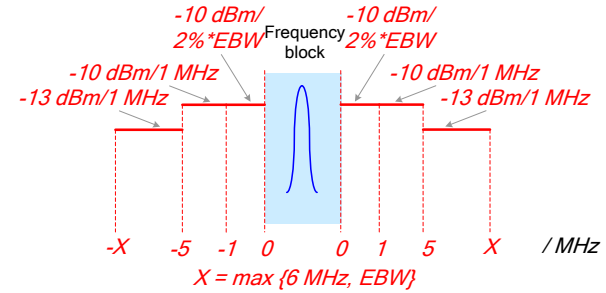
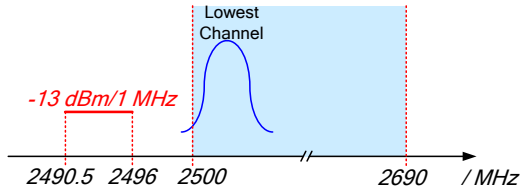
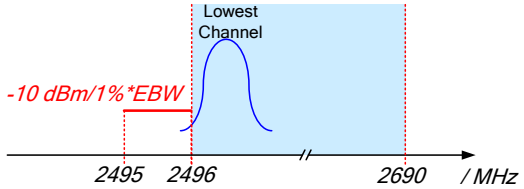
2.4.1 Measurement Technical Requirements

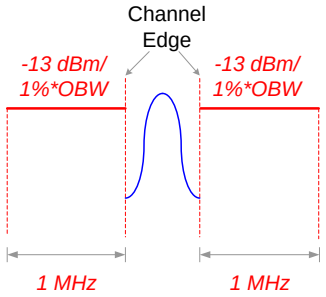
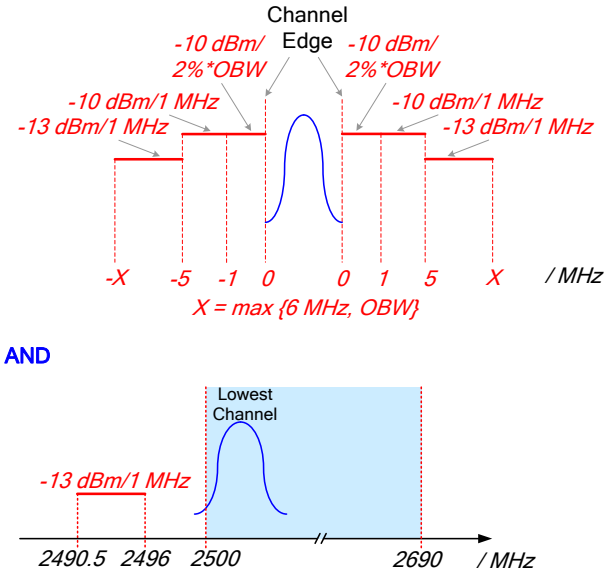
The test results in the following table refer to the document of “SYBH(R) 02376164EB-1A4”:

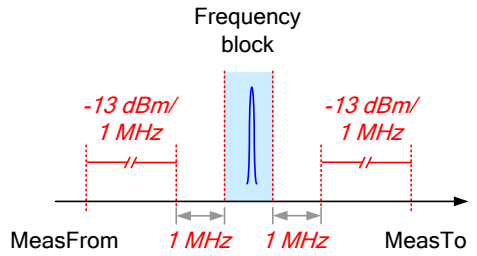
Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
Transmitter Output Power	§2.1046, §27.50(h), §27.50(i)	RSS-Gen,§6.12; RSS-199,§4.4	FCC	Main Station / Booster Station / Base Station / Response Station	● EIRP Power: (1) For SecST: EIRP Power ≤ 33 dBW + 10 lg(X/Y) dBW + 10 lg(360/beamwidth) dBW. (2) Others: EIRP Power ≤ 33 dBW + 10 lg(X/Y) dBW. ● For main, booster and response stations utilizing digital emissions with non-uniform power spectral density: EIRP PD (100 kHz RBW, within 6 MHz OccCh) ≤ EIRP Power / 60 (W/100 kHz). _____ Note 1): SecST - main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern. Note 2): X = ChBW (MHz). Note 3): Y = either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition. , Y = 5.5 MHz (LBS 2496 – 2572 MHz & UBS 2614 – 2690 MHz) or 6 MHz(MBS 2572 – 2614 MHz). Note 4): beamwidth = the total horizontal plane beamwidth of the individual transmitting antenna for the station or any	Annex A	Pass

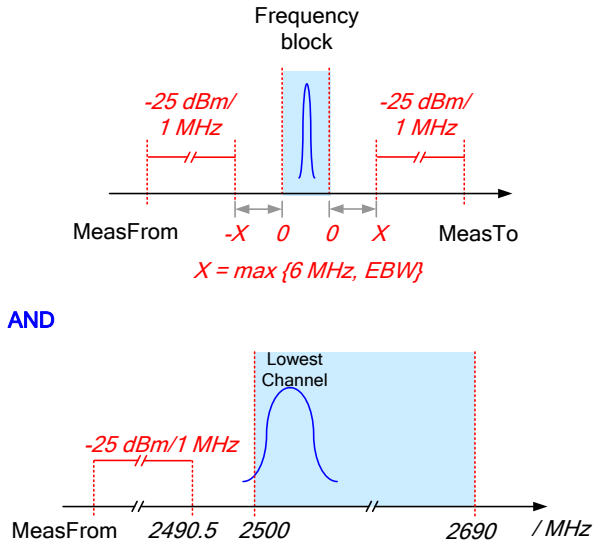
Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
					sector measured at the half-power points.		
				Mobile Station	● EIRP Power ≤ 2 W. ● Conducted Power ≤ 2 W.		
				Other User Station	Conducted Power ≤ 2 W.		
			IC	Fixed Station / Base Station	● EIRP PD: (1) HAAT ≤ 300 m: ≤ 1640 W/MHz (32.15 dBW/MHz), (2) HAAT ≤ 500 m: ≤ 32.15 dBW/MHz – 2 dB, (3) HAAT ≤ 1000 m: ≤ 32.15 dBW/MHz – 5 dB, (4) HAAT ≤ 1500 m: ≤ 32.15 dBW/MHz – 8 dB, (5) HAAT ≤ 2000 m: ≤ 32.15 dBW/MHz – 10 dB. _____ Note 1): HAAT - Height Above Average Terrain.		
				Mobile Subscriber Station	● EIRP Power ≤ 2 W. ● Peak detector.		
				Fixed Subscriber Station	● EIRP Power ≤ 40 W. ● Conducted Power ≤ 2 W. ● Peak detector.		
Bandwidth	§2.1049, §27.53(m)	RSS-Gen,§6.6	FCC	● OBW: No limit. ● EBW (-26 dBc): No limit.		Annex B	Pass
			IC	OBW: No limit.			

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
Band Edges Compliance / Emission Mask	§2.1051, §27.53(m)	RSS-Gen,§6.13; RSS-199,§4.6	FCC	Digital Base Station	 Note 1): EBW is -26 dBc EBW.	Annex C	Pass

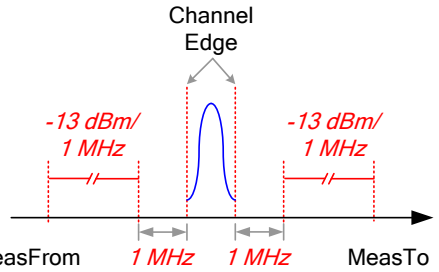
Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
				Mobile Digital Station	 **AND**  **AND, if 2495-2496MHz is immediately outside and adjacent to the frequency block**  Note 1): EBW is -26 dBc EBW.		

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
			IC	Base Station / Fixed Subscriber			
				Mobile Subscriber			

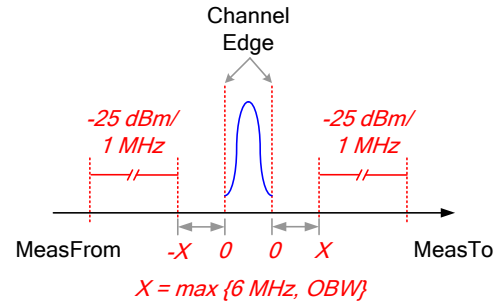
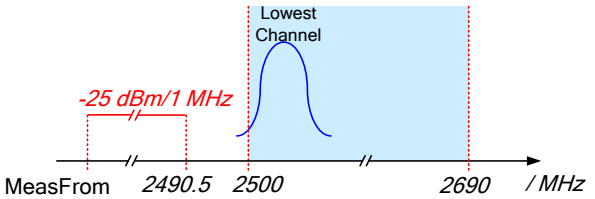
<table>
<tr><th>Test Item</th><th>FCC Rule</th><th>IC Rule</th><th colspan="3">Requirements</th><th>Test Result</th><th>Verdict</th></tr>
<tr><td rowspan="2">Spurious Emission at Antenna Terminals</td><td rowspan="2">§2.1051, §27.53(m)</td><td rowspan="2">RSS-Gen,§6.13; RSS-199,§4.6</td><td rowspan="2">FCC</td><td>Digital Base Station</td><td> 

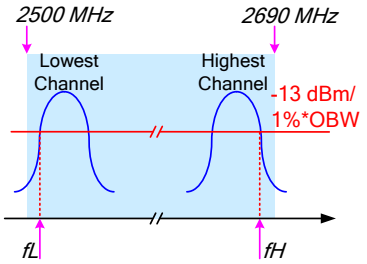
Note 1): MeasFrom: max(lowest internal frequency, 9 kHz).
Note 2): MeasTo: min(10 * highest fundamental frequency, 40 GHz).</td><td rowspan="2">Annex D</td><td rowspan="2">Pass</td></tr>
<tr><td>Mobile Digital Station</td><td> 

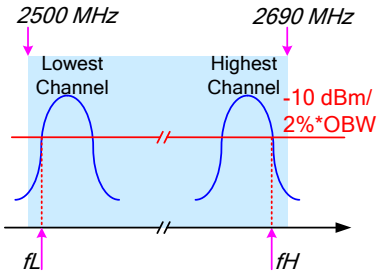
Note 1): EBW is -26 dBc EBW.</td></tr>
</table>

<table>
<tr><th>Test Item</th><th>FCC Rule</th><th>IC Rule</th><th colspan="3">Requirements</th><th>Test Result</th><th>Verdict</th></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td></td><td></td><td>Note 2): MeasFrom: max(lowest internal frequency, 9 kHz).
Note 3): MeasTo: min(10 * highest fundamental frequency, 40 GHz).</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>IC</td><td>Base Station / Fixed Subscriber</td><td> 

Note 1): MeasFrom: max(min(lowest internal frequency, 30 MHz), 9 kHz).
Note 2): MeasTo: min(10 * highest fundamental frequency, 40 GHz).</td></tr>
</table>

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
				Mobile Subscriber	 AND  Note 1): MeasFrom: max(min(lowest internal frequency, 30 MHz), 9 kHz). Note 2): MeasTo: min(10 * highest fundamental frequency, 40 GHz).		
Field Strength of Spurious Radiation / Radiated Spurious Emissions	§2.1053, §27.53(m)	RSS-Gen,§6.13; RSS-199,§4.6	Refer to requiremnts of ”Spurious Emission at Antenna Terminals”.			Annex E	Pass
Frequency Stability	§2.1055, §27.54	RSS-Gen,§6.11; RSS-199,§4.3	FCC	● Test method: Fundamental emissions (Fc_meas) within the authorized bands of operation. ● Test conditions: (1) NV, -30°C/…/+50°C step=+10°C. (2) NT, ±15%*NV.		Annex F	Pass

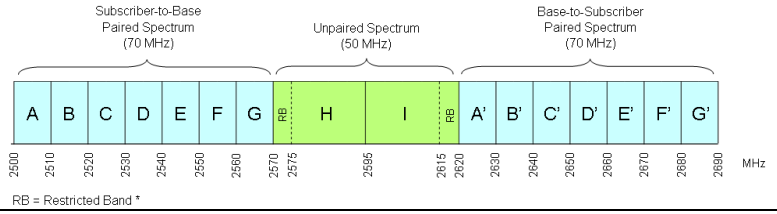
<table>
<tr><th>Test Item</th><th>FCC Rule</th><th>IC Rule</th><th colspan="3">Requirements</th><th>Test Result</th><th>Verdict</th></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">IC</td><td>Base Station / Fixed Subscriber Equipment</td><td>● Step 1:
f(offset): no limit.
● Step 2:
fL – |f(offset)| > 2500 MHz, fH + |f(offset)| < 2690 MHz.
 

● Test conditions for Step 1: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV.
● Test conditions for Step 2: NTNV.</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>Mobile Subscriber Equipment</td><td>● Step 1:
f(offset): no limit.
● Step 2:
fL – |f(offset)| > 2500 MHz, fH + |f(offset)| < 2690 MHz.
 

● Test conditions for Step 1: (1) NV, -30°C/+20°C/+50°C. (2)</td></tr>
</table>

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict
					+20°C, ±15%*NV. ● Test conditions for Step 2: NTNV.		
Receiver Spurious Emission (Note 1)	---	RSS-Gen,§5; RSS-Gen,§7	---			Annex G	---
Note 1: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to IC requirements. All other receivers are excluded from any IC certification, testing, labelling and reporting requirements.							

2.4.2 Non-measurement Technical Requirements

Description	FCC Rule	IC Rule	Requirements		Exhibit	Verdict
Frequency Plan	§27.5(i)	RSS-199,§2.2; SRSP-517	FCC	2496-2690 MHz.	See technical specification description.	Comply
			IC	2500-2690 MHz. 		
Modulation Characteristics	§2.1047	RSS-199,§4.1	Digital modulation.		See technical specification description.	Comply
Channel Bandwidth	---	RSS-199,§4.2	ChBW ≥ 1 MHz.		See technical specification description.	Comply
Equipment with Multiple Antennas	---	RSS-199,§4.5	Multiple Antennas EIRP: (1) Correlated transmission: Aggregate power + Gmax + 10 log10 N; (2) Uncorrelated transmission: Aggregate power + Gmax.		Considered during "Transmitter Output Power" test.	Comply

3 Description of the Equipment under Test (EUT)

3.1 General Description

The pRRU3911 is the pico Remote Radio Unit which is the element of LampSite indoor coverage network solutions. It supports GSM mode with DCU3900 and needs to be used with BBU and RHUB3908. It is a RF module and pRRU3911 performs modulation, demodulation, data processing, and combination and division of baseband signals and RF signals.

The pRRU processes RF signals as follows:

Performs digital-to-analog conversion on the baseband signals received from the BBU, up-converts these baseband signals to the transmit frequency band using the zero IF technology, filters and amplifies these signals, and sends them to the antenna for transmission over the transmit channel.

Receives the RF signals from the antenna over the receive channel, down-converts these RF signals to baseband signals, filters and amplifies these baseband signals, and sends them to the BBU for processing.

3.2 EUT Identity

NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

3.2.1 Board

Name	Hardware Version	Description
WD6DXAA6AT	VER.B	Manufactured Board,pRRU3911,WD6DXAA6AT,Transceiver Board,2 T2R*3,850M+PCS+AWS+2600M-1*1
WD6DXWF52W00	VER.C	Manufactured Board,WA373DD-CE,WD6DXWF52W00,WiFi Card-11a bgnac,3x3 Dual-Band-2*1

3.2.2 Sub-Assembly

Name	Model	Manufacturer	Description
UMPT	WD22UMPTa2	Huawei	BBU3900-WD22UMPTa2-Universal Main Processing & Transmission unit with 4E1 and 2FE/GE interface
UBBP	WD22LBBPD6	Huawei	Manufactured Board,BBU3900,WD22UBBPd6,Baseband Processing and Interface Unit ,1*1
RHUB3908	WD6M39RHUB00	Huawei	RHUB3908,WD6M1RBH2,pRRU pool and PoE support(2* CPRI SFP,8*CPRI OVER PHY with PSE,PSU,Global)

3.3 Technical Specification

3.3.1 Cellular Band

Characteristics	Description		
Radio System Type	☐ GSM (GO) ☒ UMTS (UO) ☒ LTE (LO) ☐ CDMA (CO) ☐ GSM & UMTS (GU) ☐ GSM & LTE (GL) ☐ GSM & UMTS & LTE (GUL) ☐ CDMA & LTE (CL) ☒ UMTS & LTE (UL) ☐ P2P		
Equipment Type	Type #1	☒ Base Station Equipment ☐ CPE (Customer Premises Equipment) Equipment ☐ Subscriber Equipment (User Equipment) ☐ Fixed Point-to-Point Equipment	
	Type #2	☒ Fixed ☐ Mobile ☐ Portable	
	Type #3	☒ Indoor ☐ Outdoor	
Frequency Range (Transmission (TX) and Receiving (RX))	#1	TX: 869 to 894 MHz RX: 824 to 849 MHz	
	#2	Not applicable	
	…	Not applicable	
	#N	Not applicable	
TX and RX Antenna Ports	TX & RX port: 2(for LTE), 1(for UMTS) TX-only port: 0(for LTE), 0(for UMTS) RX-only port: 0(for LTE), 1(for UMTS)		
Multiple Carrier Supported	2		
Maximum RF Bandwidth	10 MHz		
TX Output Power	Max. 0.2 W (two antenna ports)		
Supported Channel Bandwidth	5 MHz, 10 MHz		
Modulation Type	GSM system:	Base-band: GMSK, 8PSK Carrier: TDMA	
	UMTS system:	Base-band: QPSK, 16QAM, 64QAM Carrier: CDMA	
	LTE system:	Base-band: QPSK, 16QAM,64QAM	

Characteristics	Description	
		Carrier: OFDM/OFDMA
	CDMA system:	Base-band: QPSK, 16QAM,64QAM Carrier: CDMA
	WiMAX system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	GSM system:	Not applicable
	UMTS system:	4M17F9W
	LTE system:	4M49D9W, 8M93D9W,
	CDMA system:	Not applicable
	WiMAX system:	Not applicable
Power Supply	Type:	☐ External AC mains, ☐ External DC mains, ☐ AC/DC Adapter, ☒ Powered over Ethernet (PoE)
	Nominal Voltage, Input to EUT:	-48 VDC
	Voltage Range, Input to EUT:	-36 to -57 VDC

3.3.2 PCS Band

Characteristics	Description	
Radio System Type	☐ GSM (GO) ☒ UMTS (UO) ☒ LTE (LO) ☐ CDMA (CO) ☐ GSM & UMTS (GU) ☐ GSM & LTE (GL) ☐ GSM & UMTS & LTE (GUL) ☐ CDMA & LTE (CL) ☒ UMTS & LTE (UL) ☐ P2P	
Equipment Type	Type #1	☒ Base Station Equipment ☐ CPE (Customer Premises Equipment) Equipment ☐ Subscriber Equipment (User Equipment) ☐ Fixed Point-to-Point Equipment
	Type #2	☒ Fixed ☐ Mobile ☐ Portable

Characteristics	Description		
	Type #3	☒ Indoor ☐ Outdoor	
Frequency Range (Transmission (TX) and Receiving (RX))	#1	TX: 1930 to 1990 MHz RX: 1850 to 1910 MHz	
	#2	Not applicable	
	…	Not applicable	
	#N	Not applicable	
TX and RX Antenna Ports	TX & RX port: 2(for LTE), 1(for UMTS) TX-only port: 0(for LTE), 0(for UMTS) RX-only port: 0(for LTE), 1(for UMTS)		
Multiple Carrier Supported	2		
Maximum RF Bandwidth	20 MHz		
TX Output Power	Max. 0.2 W (two antenna ports)		
Supported Channel Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz		
Modulation Type	GSM system:	Base-band: GMSK, 8PSK Carrier: TDMA	
	UMTS system:	Base-band: QPSK, 16QAM, 64QAM Carrier: CDMA	
	LTE system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA	
	CDMA system:	Base-band: QPSK, 16QAM,64QAM Carrier: CDMA	
	WiMAX system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA	
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	GSM system:	Not applicable	
	UMTS system:	4M17F9W	
	LTE system:	4M51D9W, 8M94D9W, 13M4D9W, 17M8D9W	
	CDMA system:	Not applicable	
	WiMAX system:	Not applicable	
Power Supply	Type:	☐ External AC mains, ☐ External DC mains, ☐ AC/DC Adapter, ☒ Powered over Ethernet (PoE)	
	Nominal Voltage,	-48 VDC	

Characteristics	Description	
	Input to EUT:	
	Voltage Range, Input to EUT:	-36 to -57 VDC

3.3.3 AWS Band

Characteristics	Description	
Radio System Type	☐ GSM (GO) ☒ UMTS (UO) ☒ LTE (LO) ☐ CDMA (CO) ☐ GSM & UMTS (GU) ☐ GSM & LTE (GL) ☐ GSM & UMTS & LTE (GUL) ☐ CDMA & LTE (CL) ☒ UMTS & LTE (UL) ☐ P2P	
Equipment Type	Type #1	☒ Base Station Equipment ☐ CPE (Customer Premises Equipment) Equipment ☐ Subscriber Equipment (User Equipment) ☐ Fixed Point-to-Point Equipment
	Type #2	☒ Fixed ☐ Mobile ☐ Portable
	Type #3	☒ Indoor ☐ Outdoor
Frequency Range (Transmission (TX) and Receiving (RX))	#1	TX: 2110 to 2155 MHz RX: 1710 to 1755 MHz
	#2	Not applicable
	…	Not applicable
	#N	Not applicable
TX and RX Antenna Ports	TX & RX port: 2(for LTE), 1(for UMTS) TX-only port: 0(for LTE), 0(for UMTS) RX-only port: 0(for LTE), 1(for UMTS)	
Multiple Carrier Supported	2	
Maximum RF Bandwidth	20 MHz	
TX Output Power	Max. 0.2 W (two antenna ports)	
Supported Channel Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz	
Modulation Type	GSM system:	Base-band: GMSK, 8PSK

Characteristics	Description	
		Carrier: TDMA
	UMTS system:	Base-band: QPSK, 16QAM, 64QAM Carrier: CDMA
	LTE system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA
	CDMA system:	Base-band: QPSK, 16QAM,64QAM Carrier: CDMA
	WiMAX system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	GSM system:	Not applicable
	UMTS system:	4M17F9W
	LTE system:	4M51D9W, 8M94D9W, 13M4D9W, 17M8D9W
	CDMA system:	Not applicable
	WiMAX system:	Not applicable
Power Supply	Type:	☐ External AC mains, ☐ External DC mains, ☐ AC/DC Adapter, ☒ Powered over Ethernet (PoE)
	Nominal Voltage, Input to EUT:	-48 VDC
	Voltage Range, Input to EUT:	-36 to -57 VDC

3.3.4 BRS&EBS

Characteristics	Description	
Radio System Type	☐ GSM (GO) ☐ UMTS (UO) ☒ LTE (LO) ☐ CDMA (CO) ☐ GSM & UMTS (GU) ☐ GSM & LTE (GL) ☐ GSM & UMTS & LTE (GUL) ☐ CDMA & LTE (CL) ☐ UMTS & LTE (UL) ☐ P2P	
Equipment Type	Type #1	☒ Base Station Equipment

Characteristics	Description		
		☐ CPE (Customer Premises Equipment) Equipment ☐ Subscriber Equipment (User Equipment) ☐ Fixed Point-to-Point Equipment	
	Type #2	☒ Fixed ☐ Mobile ☐ Portable	
	Type #3	☒ Indoor ☐ Outdoor	
Frequency Range (Transmission (TX) and Receiving (RX))	#1	TX: 2620 to 2690 MHz RX: 2500 to 2570 MHz	
	#2	Not applicable	
	…	Not applicable	
	#N	Not applicable	
TX and RX Antenna Ports	TX & RX port: 2, TX-only port: 0, RX-only port: 0		
Multiple Carrier Supported	1		
Maximum RF Bandwidth	20 MHz		
TX Output Power	Max. 0.2 W (two antenna ports)		
Supported Channel Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz		
Modulation Type	GSM system:	Base-band: GMSK, 8PSK Carrier: TDMA	
	UMTS system:	Base-band: QPSK, 16QAM, 64QAM Carrier: CDMA	
	LTE system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA	
	CDMA system:	Base-band: QPSK, 16QAM,64QAM Carrier: CDMA	
	WiMAX system:	Base-band: QPSK, 16QAM,64QAM Carrier: OFDM/OFDMA	
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	GSM system:	Not applicable	
	UMTS system:	Not applicable	
	LTE system:	4M49D9W, 8M93D9W, 13M4D9W, 17M8D9W	
	CDMA system:	Not applicable	
	WiMAX system:	Not applicable	

Characteristics	Description	
Power Supply	Type:	☐ External AC mains, ☐ External DC mains, ☐ AC/DC Adapter, ☒ Powered over Ethernet (PoE)
	Nominal Voltage, Input to EUT:	-48 VDC
	Voltage Range, Input to EUT:	-36 to -57 VDC

4 General Test Conditions / Configurations

4.1 EUT Configurations

4.1.1 General

Configuration	Description
Test Antenna Ports	Until otherwise specified, ● All TX tests are ONLY performed at the main TX antenna port (e.g. TRXA, TXA or similar) of the EUT, and ● All RX tests are ONLY performed at the main RX antenna port (e.g. TRXA, RXB or similar) of the EUT.
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

4.1.2 Test Modes

NOTE: The test mode(s) are selected according to relevant radio technology specifications.

Test Mode	Test Modes Description
UMTS/TM1	UMTS system, 3GPP TS 25.141 clause 6.1.1, Test Model 1, QPSK modulation
LTE/TM1.1	LTE system, 3GPP TS 36.141 clause 6.1.1, E-TM 1.1
LTE/TM1.2	LTE system, 3GPP TS 36.141 clause 6.1.1, E-TM 1.2
UL/TM1	MSR system, 3GPP TS 37.141 clause 4.9.2 (UMTS/TM1; LTE/TM1.1)

4.1.3 Test Configurations

4.1.3.1 Cellular Band

EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
1L5M_B	B	871.5	---	5	20	LTE/TM1.1
1L5M_M	M	881.5	---	5	20	LTE/TM1.1
1L5M_T	T	891.5	---	5	20	LTE/TM1.1
1L10M_B	B	874	---	10	20	LTE/TM1.1
1L10M_M	M	881.5	---	10	20	LTE/TM1.1
1L10M_T	T	889	---	10	20	LTE/TM1.1
1U_B	B	871.4	---	5	20	UMTS/TM1
1U_M	M	881.4	---	5	20	UMTS/TM1
1U_T	T	891.6	---	5	20	UMTS/TM1
2U_B	B	871.4, 876.4	---	5,5	17,17	UMTS/TM1
2U_M	M	879, 884	---	5,5	17,17	UMTS/TM1
2U_T	T	886.6, 891.6	---	5,5	17,17	UMTS/TM1
1U1L5M_B	B	871.4, 876.4	---	5,5	17,17	MSR/TM1
1U1L5M_M	M	879, 884	---	5,5	17,17	MSR/TM1
1U1L5M_T	T	886.4, 891.4	---	5,5	17,17	MSR/TM1

4.1.3.2 PCS Band

EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
1L5M_B	B	1932.5	---	5	20	LTE/TM1.1
1L5M_M	M	1960	---	5	20	LTE/TM1.1
1L5M_T	T	1987.5	---	5	20	LTE/TM1.1
1L10M_B	B	1935	---	10	20	LTE/TM1.1
1L10M_M	M	1960	---	10	20	LTE/TM1.1
1L10M_T	T	1985	---	10	20	LTE/TM1.1
1L15M_B	B	1937.5	---	15	20	LTE/TM1.1
1L15M_M	M	1960	---	15	20	LTE/TM1.1
1L15M_T	T	1982.5	---	15	20	LTE/TM1.1
1L20M_B	B	1940	---	20	20	LTE/TM1.1
1L20M_M	M	1960	---	20	20	LTE/TM1.1
1L20M_T	T	1980	---	20	20	LTE/TM1.1
1U_B	B	1932.4	---	5	23	UMTS/TM1
1U_M	M	1960	---	5	23	UMTS/TM1
1U_T	T	1987.6	---	5	23	UMTS/TM1
2U_B	B	1932.4,1937.4	---	5,5	19,19	UMTS/TM1
2U_M	M	1957.4,1962.4	---	5,5	19,19	UMTS/TM1

EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
2U_T	T	1982.6,1987.6	---	5,5	19,19	UMTS/TM1
1U1L5M_B	B	1932.4,1937.4	---	5,5	17,17	UL/TM1
1U1L5M_M	M	1957.4,1962.4	---	5,5	17,17	UL/TM1
1U1L5M_T	T	1982.4,1987.4	---	5,5	17,17	UL/TM1
1U1L10M_B	B	1932.4,1939.9	---	5,10	17,17	UL/TM1
1U1L10M_M	M	1957.4,1964.9	---	5,10	17,17	UL/TM1
1U1L10M_T	T	1977.4,1984.9	---	5,10	17,17	UL/TM1
1U1L15M_B	B	1932.4,1942.4	---	5,15	17,17	UL/TM1
1U1L15M_M	M	1957.4,1967.4	---	5,15	17,17	UL/TM1
1U1L15M_T	T	1972.4,1982.4	---	5,15	17,17	UL/TM1

4.1.3.3 AWS Band

EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
1L5M_B	B	2112.5	---	5	20	LTE/TM1.1
1L5M_M	M	2132.5	---	5	20	LTE/TM1.1
1L5M_T	T	2152.5	---	5	20	LTE/TM1.1
1L10M_B	B	2115	---	10	20	LTE/TM1.1
1L10M_M	M	2132.5	---	10	20	LTE/TM1.1
1L10M_T	T	2150	---	10	20	LTE/TM1.1
1L15M_B	B	2117.5	---	15	20	LTE/TM1.1
1L15M_M	M	2132.5	---	15	20	LTE/TM1.1
1L15M_T	T	2147.5	---	15	20	LTE/TM1.1
1L20M_B	B	2120	---	20	20	LTE/TM1.1
1L20M_M	M	2132.5	---	20	20	LTE/TM1.1
1L20M_T	T	2145	---	20	20	LTE/TM1.1
1U_B	B	2112.4	---	5	23	UMTS/TM1
1U_M	M	2132.4	---	5	23	UMTS/TM1
1U_T	T	2152.6	---	5	23	UMTS/TM1
2U_B	B	2112.4, 2117.4	---	5,5	19,19	UMTS/TM1
2U_M	M	2130,2135	---	5,5	19,19	UMTS/TM1
2U_T	T	2147.6, 2152.6	---	5,5	19,19	UMTS/TM1
1U1L5M_B	B	2112.4, 2117.4	---	5,5	17,17	UL/TM1
1U1L5M_M	M	2130,2135	---	5,5	17,17	UL/TM1
1U1L5M_T	T	2147.4, 2152.4	---	5,5	17,17	UL/TM1
1U1L10M_B	B	2112.4, 2119.9	---	5,10	17,17	UL/TM1
1U1L10M_M	M	2130,2137.5	---	5,10	17,17	UL/TM1
1U1L10M_T	T	2142.4, 2149.9	---	5,10	17,17	UL/TM1
1U1L15M_B	B	2112.4, 2122.4	---	5,15	17,17	UL/TM1
1U1L15M_M	M	2130,2140	---	5,15	17,17	UL/TM1

EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
1U1L15M_T	T	2137.4, 2147.4	---	5,15	17,17	UL/TM1

4.1.3.4 BRS&EBS

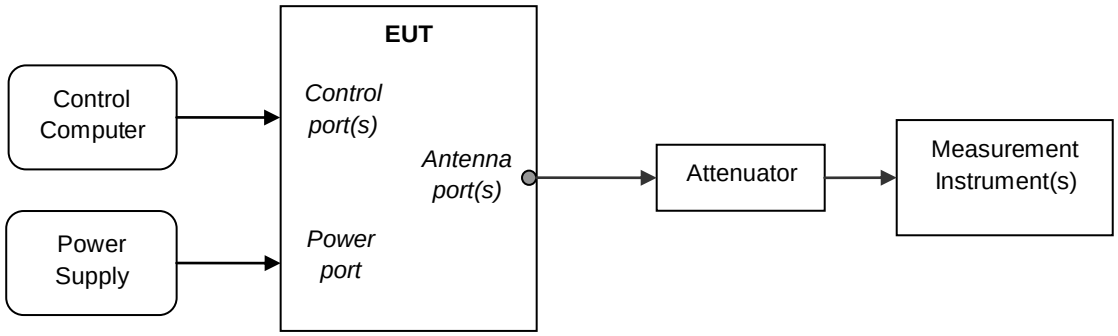
EUT Conf.	RF Ch.	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
1L5M_B	B	2622.5	---	5	20	LTE/TM1.1
1L5M_M	M	2655	---	5	20	LTE/TM1.1
1L5M_T	T	2687.5	---	5	20	LTE/TM1.1
1L10M_B	B	2625	---	10	20	LTE/TM1.1
1L10M_M	M	2655	---	10	20	LTE/TM1.1
1L10M_T	T	2685	---	10	20	LTE/TM1.1
1L15M_B	B	2627.5	---	15	20	LTE/TM1.1
1L15M_M	M	2655	---	15	20	LTE/TM1.1
1L15M_T	T	2682.5	---	15	20	LTE/TM1.1
1L20M_B	B	2630	---	20	20	LTE/TM1.1
1L20M_M	M	2655	---	20	20	LTE/TM1.1
1L20M_T	T	2680	---	20	20	LTE/TM1.1

4.2 Test Environments

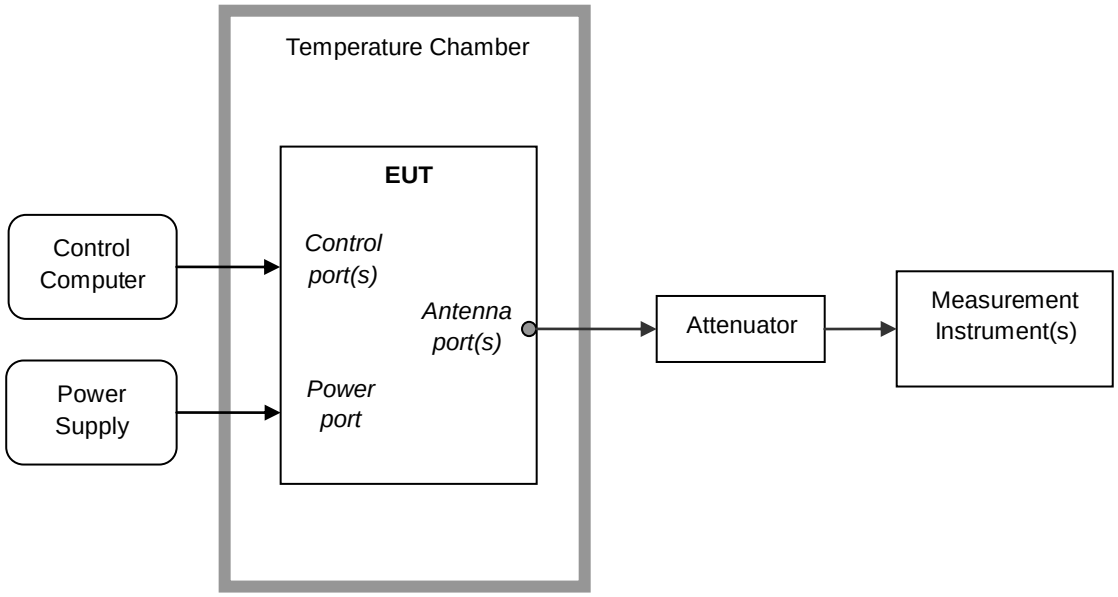
Environment Parameter	Selected Values During Tests		
	Temperature	Voltage	Relative Humidity
Ambient Climate (See clause 1.3)	Ambient	---	Ambient
Rated Voltage	---	-48 VDC	---

4.3 Test Setups

4.3.1 Test Setup 1



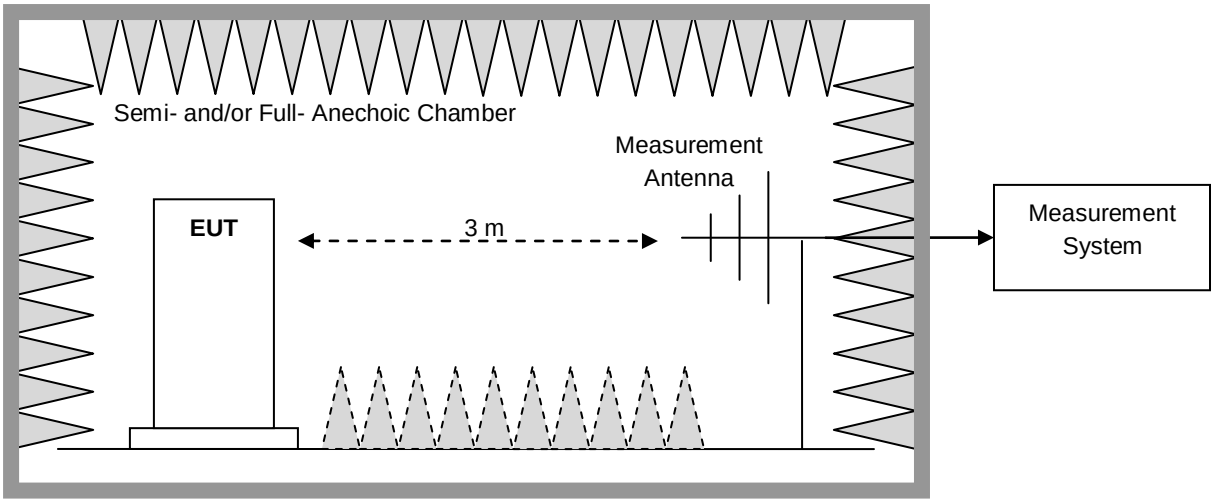
4.3.2 Test Setup 2



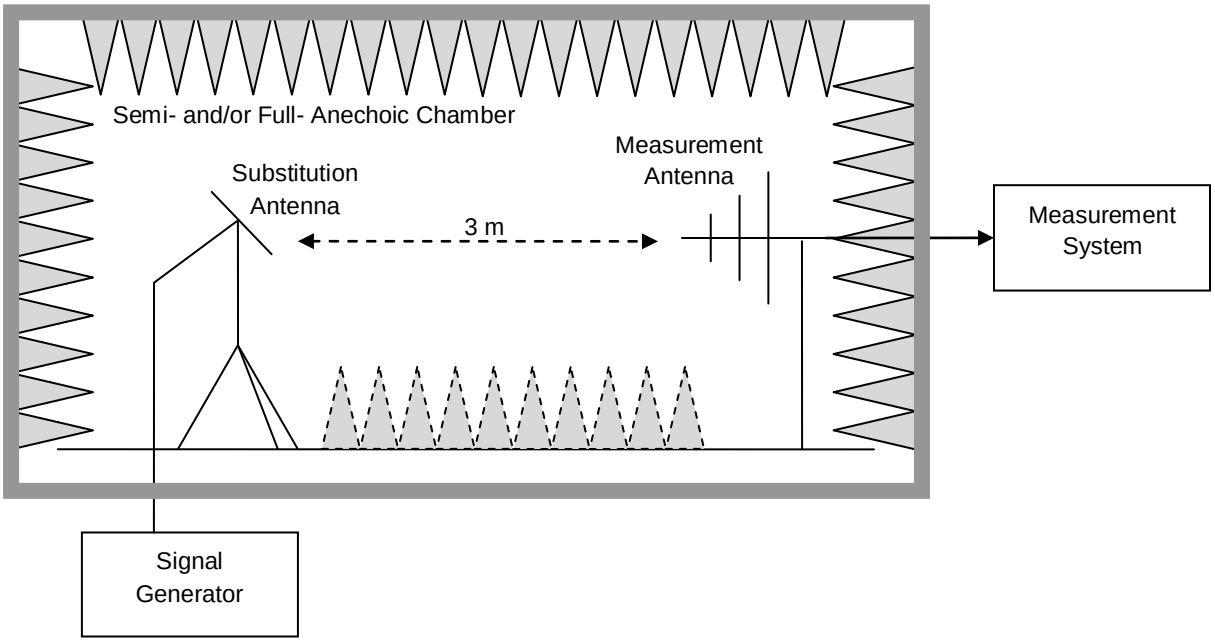
4.3.3 Test Setup 3

NOTE: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

4.3.3.1 Step 1: Pre-test



4.3.3.2 Step 2: Substitution method to verify the maximum ERP



4.4 Test Conditions

4.4.1 Cellular Band

Test Case		Test Conditions	
Transmitter Output Power	Channel Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1U_B, 1U_M, 1U_T 2U_B, 2U_M, 2U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T
	Power Spectral Density (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable
	Peak-to-Average Ratio (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1U_B, 1U_M, 1U_T
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1U_B, 1U_M, 1U_T
	Emission Bandwidth (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1U_B, 1U_M, 1U_T
Band Edges Compliance / Emission Mask		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_T 1L10M_B, 1L10M_T 1U_B, 1U_T 1U1L5M_B, 1U1L5M_T
Spurious Emission at Antenna Terminals		Test Type	☒ Conducted ☐ Radiated (go to test case of Field Strength of Spurious Radiation / Radiated Spurious Emissions) NOTE: According to FCC §2.1053 and KDB 971168 §6.1&§5.8, in the cases of the EUTs that are portable

Test Case		Test Conditions	
			or hand-held devices utilizing one or more integral transmit antennas, measurements cannot be performed in a conducted measurement configuration, it becomes necessary to perform the described compliance measurements in a radiated test arrangement.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1U_B, 1U_M, 1U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T
Field Strength of Spurious Radiation / Radiated Spurious Emissions		Test Type	☒ Field Strength of Spurious Radiation ☐ Radiated Spurious Emissions NOTE: According to FCC §2.1053 and KDB 971168, when antenna-port conducted measurements (i.e. Spurious Emission at Antenna Terminals measurement) are performed to demonstrate compliance to the applicable unwanted emission limits, a separate radiated measurement (i.e. this Field Strength of Spurious Radiation measurement) is required to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation (, and with the transmit antenna port(s) terminated). Note that when radiated measurements for spurious emissions at antenna terminals are performed to demonstrate compliance to the unwanted emission limits (e.g., an EUT with integral transmit antenna), the field strength of spurious radiation measurement is not required.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 3
		EUT Conf.	1L5M_M NOTE: If applicable, the EUT Conf. that has maximum power density (based on the equivalent power level) is selected.
Frequency Stability	Frequency Error	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Climate.
		Test Setup	Test Seup 2

Test Case		Test Conditions	
		EUT Conf.	1L5M_M NOTE: A representative EUT Conf. was selected since the un-modulation carrier configuration was required by the standards/rules.
	Frequency Range (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 2
		EUT Conf.	Not applicable
Receiver Spurious Emissions		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable

4.4.2 PCS Band

Test Case		Test Conditions	
Transmitter Output Power	Channel Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T 2U_B, 2U_M, 2U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T 1U1L10M_B, 1U1L10M_M, 1U1L10M_T 1U1L15M_B, 1U1L15M_M, 1U1L15M_T
	Power Spectral Density (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1U_B, 1U_M, 1U_T
	Peak-to-Average Ratio (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T

Test Case		Test Conditions	
			1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
	Emission Bandwidth (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
Band Edges Compliance / Emission Mask		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_T 1L20M_B, 1L20M_T 1U_B, 1U_T 1U1L5M_B, 1U1L5M_T
Spurious Emission at Antenna Terminals		Test Type	☒ Conducted ☐ Radiated (go to test case of Field Strength of Spurious Radiation / Radiated Spurious Emissions) NOTE: According to FCC §2.1053 and KDB 971168 §6.1&§5.8, in the cases of the EUTs that are portable or hand-held devices utilizing one or more integral transmit antennas, measurements cannot be performed in a conducted measurement configuration, it becomes necessary to perform the described compliance measurements in a radiated test arrangement.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T
Field Strength of Spurious Radiation / Radiated Spurious Emissions		Test Type	☒ Field Strength of Spurious Radiation ☐ Radiated Spurious Emissions NOTE: According to FCC §2.1053 and KDB 971168, when antenna-port conducted measurements (i.e. Spurious Emission at Antenna Terminals measurement) are performed to demonstrate compliance to the applicable unwanted emission limits, a separate radiated measurement (i.e. this Field Strength of

Test Case		Test Conditions	
			Spurious Radiation measurement) is required to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation (, and with the transmit antenna port(s) terminated). Note that when radiated measurements for spurious emissions at antenna terminals are performed to demonstrate compliance to the unwanted emission limits (e.g., an EUT with integral transmit antenna), the field strength of spurious radiation measurement is not required.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 3
		EUT Conf.	1U1L5M_M NOTE: If applicable, the EUT Conf. that has maximum power density (based on the equivalent power level) is selected.
Frequency Stability	Frequency Error	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Climate.
		Test Setup	Test Seup 2
		EUT Conf.	1L5M_M NOTE: A representative EUT Conf. was selected since the un-modulation carrier configuration was required by the standards/rules.
	Frequency Range (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 2
		EUT Conf.	Not applicable
Receiver Spurious Emissions		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable

4.4.3 AWS Band

Test Case		Test Conditions	
Transmitter Output Power	Channel Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T

Test Case		Test Conditions	
			1U_B, 1U_M, 1U_T 2U_B, 2U_M, 2U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T 1U1L10M_B, 1U1L10M_M, 1U1L10M_T 1U1L15M_B, 1U1L15M_M, 1U1L15M_T
	Power Spectral Density (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1U_B, 1U_M, 1U_T
	Peak-to-Average Ratio (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
	Emission Bandwidth (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T
Band Edges Compliance / Emission Mask		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_T 1L20M_B, 1L20M_T 1U_B, 1U_T 1U1L5M_B, 1U1L5M_T
Spurious Emission at Antenna Terminals		Test Type	☒ Conducted ☐ Radiated (go to test case of Field Strength of Spurious Radiation / Radiated Spurious Emissions) NOTE: According to FCC §2.1053 and KDB 971168

Test Case		Test Conditions	
			§6.1&§5.8, in the cases of the EUTs that are portable or hand-held devices utilizing one or more integral transmit antennas, measurements cannot be performed in a conducted measurement configuration, it becomes necessary to perform the described compliance measurements in a radiated test arrangement.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L20M_B, 1L20M_M, 1L20M_T 1U_B, 1U_M, 1U_T 1U1L5M_B, 1U1L5M_M, 1U1L5M_T
Field Strength of Spurious Radiation / Radiated Spurious Emissions		Test Type	☒ Field Strength of Spurious Radiation ☐ Radiated Spurious Emissions NOTE: According to FCC §2.1053 and KDB 971168, when antenna-port conducted measurements (i.e. Spurious Emission at Antenna Terminals measurement) are performed to demonstrate compliance to the applicable unwanted emission limits, a separate radiated measurement (i.e. this Field Strength of Spurious Radiation measurement) is required to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation (, and with the transmit antenna port(s) terminated). Note that when radiated measurements for spurious emissions at antenna terminals are performed to demonstrate compliance to the unwanted emission limits (e.g., an EUT with integral transmit antenna), the field strength of spurious radiation measurement is not required.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 3
		EUT Conf.	1U1L5M_M NOTE: If applicable, the EUT Conf. that has maximum power density (based on the equivalent power level) is selected.
Frequency Stability	Frequency Error	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Climate.
		Test Setup	Test Seup 2
		EUT Conf.	1L5M_M

Test Case		Test Conditions	
			NOTE: A representative EUT Conf. was selected since the un-modulation carrier configuration was required by the standards/rules.
	Frequency Range (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 2
		EUT Conf.	1L5M_B, 1L5M_T 1L10M_B, 1L10M_T 1L15M_B, 1L15M_T 1L20M_B, 1L20M_T 1U_B, 1U_T
Receiver Spurious Emissions		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable

4.4.4 BRS&EBS

Test Case		Test Conditions	
Transmitter Output Power	Channel Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T
	Power Spectral Density (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T
	Peak-to-Average Ratio (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T
	Emission Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1

Test Case		Test Conditions	
	(if required)	EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L10M_B, 1L10M_M, 1L10M_T 1L15M_B, 1L15M_M, 1L15M_T 1L20M_B, 1L20M_M, 1L20M_T
Band Edges Compliance / Emission Mask		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_T 1L20M_B, 1L20M_T
Spurious Emission at Antenna Terminals		Test Type	☒ Conducted ☐ Radiated (go to test case of Field Strength of Spurious Radiation / Radiated Spurious Emissions) NOTE: According to FCC §2.1053 and KDB 971168 §6.1&§5.8, in the cases of the EUTs that are portable or hand-held devices utilizing one or more integral transmit antennas, measurements cannot be performed in a conducted measurement configuration, it becomes necessary to perform the described compliance measurements in a radiated test arrangement.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	1L5M_B, 1L5M_M, 1L5M_T 1L20M_B, 1L20M_M, 1L20M_T
Field Strength of Spurious Radiation / Radiated Spurious Emissions		Test Type	☒ Field Strength of Spurious Radiation ☐ Radiated Spurious Emissions NOTE: According to FCC §2.1053 and KDB 971168, when antenna-port conducted measurements (i.e. Spurious Emission at Antenna Terminals measurement) are performed to demonstrate compliance to the applicable unwanted emission limits, a separate radiated measurement (i.e. this Field Strength of Spurious Radiation measurement) is required to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation (, and with the transmit antenna port(s) terminated). Note that when radiated measurements for spurious emissions at

Test Case		Test Conditions	
			antenna terminals are performed to demonstrate compliance to the unwanted emission limits (e.g., an EUT with integral transmit antenna), the field strength of spurious radiation measurement is not required.
		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 3
		EUT Conf.	1L5M_M NOTE: If applicable, the EUT Conf. that has maximum power density (based on the equivalent power level) is selected.
Frequency Stability	Frequency Error	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Climate.
		Test Setup	Test Seup 2
		EUT Conf.	1L5M_M NOTE: A representative EUT Conf. was selected since the un-modulation carrier configuration was required by the standards/rules.
	Frequency Range (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 2
		EUT Conf.	1L5M_B, 1L5M_T 1L10M_B, 1L10M_T 1L15M_B, 1L15M_T 1L20M_B, 1L20M_T
Receiver Spurious Emissions		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		EUT Conf.	Not applicable

5 Main Test Instruments

NOTE 1: NCR = No calibration required, VOU = Verified on use.

NOTE 2: Unless otherwise specified, the calibration intervals for test instruments were Annual (per year). The other intervals, if applicable, are marked with (##y), which denotes ## years calibration interval.

Equipment Name	Manufacturer	Model	Serial Number	Cal. Due
Test Setup 1 & 2				
Spectrum Analyzer	R&S	FSQ26	200988	2017-01-10
Signal Generator	R&S	SMU200A	103717	2017-01-10
Signal Generator	Agilent	E8257D	MY49281095	2016-10-29
Vector Network Measurement System	Anritsu	MS4622B	051604	2016-07-27
Climate chamber	Chongqing Yinhe	ESS-SDJ71	20070305	2016-09-08
Power supply	Chroma	6530	653000008611	2016-10-20
Test Setup 3				
EMI test receiver	Agilent	N9038A	MY52260169	2016-10-26
Spectrum analyser	Agilent	N9010A	MY52220816	2017-01-10
Bilog antenna	TESEQ	CBL 6112B	35238	2017-11-27 (2y)
Bilog antenna	TESEQ	CBL 6112B	35239	2017-12-11 (2y)
Horn antenna (1-18GHz)	SWARZBECK	BBHA 9120D	1077	2017-11-27 (2y)
Horn antenna (1-18GHz)	SWARZBECK	BBHA 9120D	1078	2017-11-06 (2y)
Horn antenna (26.5-40GHz)	ETS	3160-09	00117544	2017-11-06 (2y)
Horn antenna (26.5-40GHz)	ETS	3160-10	00144745	2017-11-27 (2y)

6 Measurement Uncertainty

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmitter Output Power	Power [dBm]	U = 0.39 dB
Bandwidth	Magnitude [%]	U = 0.2%
Band Edge Compliance	Disturbance Power [dBm]	U = 2.0 dB
Spurious Emissions, Conducted	Disturbance Power [dBm]	U = 2.0 dB
Field Strength of Spurious Radiation / Radiated Spurious Emissions	Power [dBm] / Field Strength [dBµV/m]	For 3 m Chamber: U = 4.15 dB (30 MHz-1 GHz) U = 3.64 dB (1 GHz-18 GHz) U = 3.26 dB (18 GHz-26.5 GHz) U = 3.83 dB (26.5 GHz-40 GHz) For 10 m Chamber: U = 4.8 dB (30MHz to 1GHz) U = 4.3 dB (1 GHz to 26.5GHz)
Frequency Stability	Frequency Accuracy [ppm]	U = 0.21 ppm

END