



RF Test Report

Product Name: Remote Radio Unit

Product Model: RU3261

Report Number: SYBH(R)01939189EB-1

FCC ID: QISRU3261

IC: 6369A-RU3261

Reliability Laboratory of Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,
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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, which contains 6369A-1 (3m chamber in G2), 6369A-2 (3m chamber in K3) and 6369A-3 (10m chamber in K3).
 - 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.
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6. The test report is invalid if there is any evidence of erasure and/or falsification.
7. The test report is only valid for the test samples.
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Applicant: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
 Bantian, Longgang District, Shenzhen, 518129, P.R.C
Product Name: Remote Radio Unit
Product Model: RU3261

Date of Receipt Sample: 2015-07-14
Start Date of Test: 2015-07-14
End Date of Test: 2015-07-17

Test Result: Pass

Approved by Senior Engineer:	2015-07-31	Zhang Xinghai	<i>Zhang Xing hai</i>
	Date	Name	Signature

Prepared by:	2015-07-31	Liang Changguan	<i>Liang Changguan</i>
	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**

Applied Rules: 47 CFR FCC Part 2 (10-1-14 Edition)
47 CFR FCC Part 27 (10-1-14 Edition)
IC RSS-Gen (Issue 4, November 2014)
IC RSS-199 (Issue 2, October 2014)

Test Method: FCC KDB 971168 D01 Power Meas License Digital Systems v02r02
(if applicable) FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.2 **Test Location**

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

Test Location 2 (TL2): Reliability Laboratory of Huawei Technologies Co., Ltd.
Address: No.2222, Xin Jinqiao Road, Pudong New Area, Shanghai, 201206, P.R.C

Test Location 3 (TL3): Reliability Laboratory of Huawei Technologies Co., Ltd.
Address: No.1899 Xiyuan Avenue, Hi-tech Western District, Chengdu, 611731, P.R.C

1.3 **Test Environment Condition**

Temperature: 26 to 33 °C (Ambient)
Relative Humidity: 56 to 60 % (Ambient)
Atmospheric Pressure: Not applicable



2 Test Summary

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

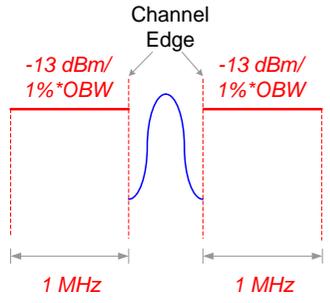
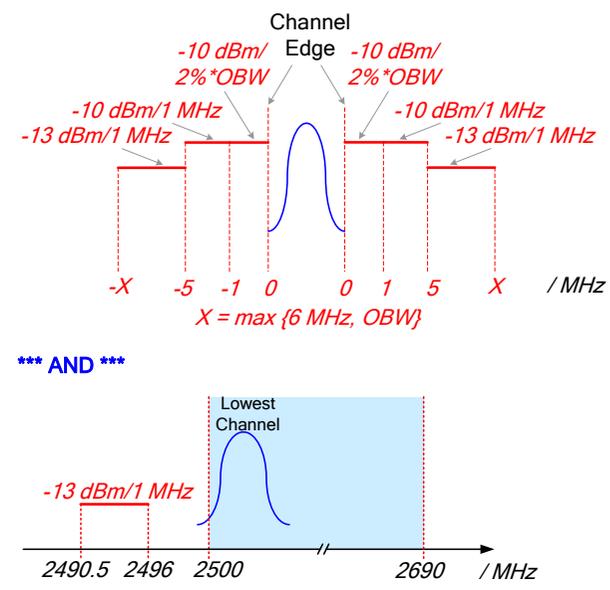
2.1.1 Measurement Technical Requirements

Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict	Test Location
Transmitter Output Power	§2.1046, §27.50(h)	RSS-Gen,§6.12; RSS-199,§4.4	FCC	Base Station	EIRP Power $\leq 33 \text{ dBW} + 10 \lg(X/Y) \text{ dBW} + 10 \lg(360/\text{beamwidth}) \text{ dBW}$, where $X=\text{ChBW}(\text{MHz})$, $Y=5.5$ or 6 MHz .	Annex A1	Pass	TL1
				Mobile Subscriber Station	EIRP Power $\leq 2 \text{ W}$.			
				Subscriber Station	Conducted Power $\leq 2 \text{ W}$.			
			IC	Base Station	<ul style="list-style-type: none"> ● HAAT $\leq 300 \text{ m}$: EIRP PD $\leq 1640 \text{ W/1 MHz}$. ● HAAT $\leq 2000 \text{ m}$: EIRP PD $\leq 164 \text{ W/1 MHz}$. ● Peak detector. 			
				Mobile Subscriber	<ul style="list-style-type: none"> ● EIRP Power $\leq 2 \text{ W}$. ● Peak detector. 			
				Fixed Subscriber	<ul style="list-style-type: none"> ● EIRP Power $\leq 40 \text{ W}$. ● Condt. Power $\leq 2 \text{ W}$. ● Peak detector. 			
Bandwidth	§2.1049, §27.53(m)	RSS-Gen,§6.6	FCC	<ul style="list-style-type: none"> ● OBW: No limit. ● EBW (-26 dBc): No limit. 	Annex B1	Pass	TL1	
			IC	OBW: No limit.				



Test Item	FCC Rule	IC Rule	Requirements		Test Result	Verdict	Test Location	
Band Edges Compliance / Emission Mask	§2.1051, §27.53(m)	RSS-Gen, §6.13; RSS-199, §4.6	FCC	Base Station / Fixed Subscriber Station	<p>Channel Edge</p> <p>-13 dBm/1%*EBW</p> <p>-13 dBm/1%*EBW</p> <p>1 MHz</p> <p>1 MHz</p> <p>(EBW is -26 dBc EBW)</p>	Annex C1	Pass	TL1
				Mobile Station	<p>Channel Edge</p> <p>-13 dBm</p> <p>-13 dBm</p> <p>4.5 MHz 1 MHz 1 MHz 4.5 MHz</p> <p>RBW = 1 MHz RBW ≥ 1%*EBW RBW ≥ 1%*EBW RBW = 1 MHz</p> <p>(EBW is -26 dBc EBW)</p>			



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



Test Item	FCC Rule	IC Rule	Requirements			Test Result	Verdict	Test Location
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)	RSS-Gen, §6.13; RSS-199, §4.6	FCC	Base Station / Fixed Subscriber Station	<p>Channel Edge</p> <p>-13 dBm/1 MHz</p> <p>9 kHz 1 MHz 1 MHz 10th harmonics</p>	Annex D1	Pass	TL1
				Mobile Station	<p>Channel Edge</p> <p>-25 dBm/1 MHz</p> <p>9 kHz 5.5 MHz 5.5 MHz 10th harmonics</p>			
			IC	Base Station and Fixed Subscriber	<p>Channel Edge</p> <p>-13 dBm/1 MHz</p> <p>9 kHz 1 MHz 1 MHz 10th harmonics</p> <p>(Peak detector)</p>			



Test Item	FCC Rule	IC Rule	Requirements		Test Result	Verdict	Test Location
			Mobile Subscriber	<p>Channel Edge</p> <p>-25 dBm/1 MHz</p> <p>9 kHz -X 0 0 X 10th harmonics</p> <p>X = max {6 MHz, OBW}</p> <p>*** AND ***</p> <p>Lowest Channel</p> <p>-25 dBm/1 MHz</p> <p>9 kHz 2490.5 2500 2690 / MHz</p> <p>(Peak detector)</p>			
Field Strength of Spurious Radiation / Radiated Spurious Emissions	§2.1053, §27.53(m)	RSS-Gen,§6.13; RSS-199,§4.6	Refer to requirements of "Spurious Emission at Antenna Terminals". (ERP level)		Annex E1	Pass	TL3
Frequency Stability	§2.1055, §27.54	RSS-Gen,§6.11; RSS-199,§4.3	FCC	<ul style="list-style-type: none"> 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 F1	Pass	TL1
			IC	<p>Base Station and Fixed Subscriber Equipment</p> <ul style="list-style-type: none"> Step 1: f(offset): no limit. Step 2: fL - f(offset) > 2500 MHz, fH + f(offset) < 2690 MHz. 			



Test Item	FCC Rule	IC Rule	Requirements	Test Result	Verdict	Test Location
			<div data-bbox="1120 287 1478 542" data-label="Figure"> </div> <ul style="list-style-type: none"> ● Test conditions for Step 1: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV. ● Test conditions for Step 2: NTV. 			
			<p>Mobile Subscriber Equipment</p> <ul style="list-style-type: none"> ● Step 1: f(offset): no limit. ● Step 2: fL - f(offset) > 2500 MHz, fH + f(offset) < 2690 MHz. <div data-bbox="1120 861 1478 1117" data-label="Figure"> </div> <ul style="list-style-type: none"> ● Test conditions for Step 1: (1) NV, -30°C/+20°C/+50°C. (2) +20°C, ±15%*NV. ● Test conditions for Step 2: NTV. 			
Receiver Spurious Emissions	---	RSS-Gen,§5; RSS-Gen,§7;	---	Annex G1	---	---



2.1.2 Non-measurement Technical Requirements

Description	FCC Rule	IC Rule	Requirements	Test Result	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 RU3261 is an outdoor remote radio unit which is powered by a power cabinet. It is the RF module of the distributed base station and is installed close to the antenna. The RU3261 performs modulation, demodulation, data processing, and combination and division of baseband signals and RF signals. By using the software-defined radio (SDR) technology, the RU3261 can work in 2600M(LO) through software configurations.

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

Board		
Board Name	Hardware Version	Description
WD5ALRAG70	Ver.B	Manufactured Board,MARP FDD,WD5ALRAG70,Power Amplifier Board,4T4R,2600M,1*1
WD5ALRXC70B	Ver.B	Manufactured Board,MARP RRU,WD5ALRXC70B,Transceiver Board,1*1

3.2.2 Sub-Assembly

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
AC/DC Adapter	DA12-120U S-401	HEDA	Input voltage: ~100 V-240 V/50-60 Hz Output voltage: +12 V, 1 A Rate power: 10 W
UMPT	---	Huawei---	Main Processing &Transmission Unit---
UBBP	---	Huawei	BaseBand Processing Unit



3.3 Technical Specification

3.3.1 General Technical Description

Characteristics	Description
Radio System Type	Single Radio <input type="checkbox"/> GSM Access Technology <input type="checkbox"/> UMTS (Single-RAT): <input checked="" type="checkbox"/> LTE <input type="checkbox"/> CDMA <input type="checkbox"/> WiMAX Multi-Standard <input type="checkbox"/> GSM & UMTS Radio <input type="checkbox"/> GSM & LTE (MSR): <input type="checkbox"/> GSM & UMTS & LTE <input type="checkbox"/> UMTS & LTE <input type="checkbox"/> WiMAX & LTE <input type="checkbox"/> CDMA & LTE
Equipment Type	#1 <input checked="" type="checkbox"/> Base Station <input type="checkbox"/> CPE (Customer Premises Equipment) Station <input type="checkbox"/> Subscriber Station (User Equipment) #2 <input checked="" type="checkbox"/> Fixed Station <input type="checkbox"/> Mobile Station <input type="checkbox"/> Portable Station #3 <input type="checkbox"/> Indoor Station <input checked="" type="checkbox"/> Outdoor Station
Supported Frequency Range	Transmission (TX): 2620 to 2690 MHz Receiving (RX): 2500 to 2570 MHz
TX and RX Antenna Ports	TX & RX port: 4 TX-only port: 0 RX-only port: 0
Multiple Carrier Supported	3
Maximum RF Bandwidth	Contiguous spectrum operation: 60 MHz Non-contiguous spectrum operation: 60 MHz
TX Output Power	Max. 30 W (per antenna port) Max. 120 W (four antenna ports)
Supported Channel Bandwidth	GSM system: <input type="checkbox"/> 200 kHz UMTS system: <input type="checkbox"/> 5 MHz LTE system: <input type="checkbox"/> 1.4 MHz, <input type="checkbox"/> 3 MHz, <input checked="" type="checkbox"/> 5 MHz, <input checked="" type="checkbox"/> 10 MHz, <input checked="" type="checkbox"/> 15 MHz, <input checked="" type="checkbox"/> 20 MHz CDMA system: <input type="checkbox"/> 1.23 MHz, <input type="checkbox"/> 1.25 MHz WiMAX system: <input type="checkbox"/> 5 MHz, <input type="checkbox"/> 7 MHz, <input type="checkbox"/> 10 MHz
Modulation Type	GSM system: Not applicable UMTS system: Not applicable LTE system: Base-band: QPSK, 16QAM, 64QAM Carrier: OFDM/OFDMA



Characteristics	Description
	CDMA system: Not applicable WiMAX system: Not applicable
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: 4M48D9W, 8M95D9W, 13M4D9W, 17M9D9W CDMA system: Not applicable WiMAX system: Not applicable
Power Supply	Power Supply Type: <ul style="list-style-type: none"> <input type="checkbox"/> External AC mains, <input checked="" type="checkbox"/> External DC mains, <input type="checkbox"/> AC/DC Adapter, <input type="checkbox"/> Powered over Ethernet (PoE) Nominal Voltage, Input to EUT: -48 VDC Voltage Range, Input to EUT: -36VDC to -57VDC
Antenna Assembles	Antenna Type: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> External <input type="checkbox"/> Integrated Smart Antenna: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> MIMO <input type="checkbox"/> Non MIMO Antenna Gain: 17 dBi (per antenna port, max.) Remark: When the EUT is put into service, the practical maximum antenna gain may exceed the value as described above, and if exceed, the combination of the practical output power and the practical antenna gain should NOT exceed the required ERP/EIRP limit.



3.3.2 Transmit Power Description

Carrier configuration	Transmit power (per antenna port)
1*L	1L*44.77 dBm (5MHz, 10MHz, 15MHz, 20MHz)
2*L	1*41.76 dBm (5MHz)&1*41.76 dBm (5MHz) 1*41.76 dBm (10MHz)&1*41.76 dBm (10MHz) 1*41.76 dBm (15MHz)&1*41.76 dBm (15MHz) 1*41.76 dBm (20MHz)&1*41.76 dBm (20MHz) 1*41.76 dBm (5MHz)&1*41.76 dBm (10MHz) 1*41.76 dBm (10MHz)&1*41.76 dBm (20MHz) 1*40dBm (5MHz)&1*43.0 dBm (5MHz) 1*40dBm (10MHz)&1*43.0 dBm (10MHz) 1*40dBm (15MHz)&1*43.0 dBm (15MHz) 1*40dBm (20MHz)&1*43.0 dBm (20MHz) 1*40dBm (5MHz)&1*43.0 dBm (10MHz) 1*40dBm (10MHz)&1*43.0 dBm (20MHz)
3*L	1*40dBm(5M)&1*40dBm(5M)&1*40dBm(5M) 1*40dBm(10M)&1*40dBm(10M)&1*40dBm(10M) 1*40dBm(15M)&1*40dBm(15M)&1*40dBm(15M) 1*40dBm(20M)&1*40dBm(20M)&1*40dBm(20M) 1*38.75dBm(10M)&1*38.75dBm(10M)&1*41.76dBm(20M) 1*37.78dBm(10M)&1*40.79dBm(20M)&1*40.79dBm(20M)
Note: in the table, the L means LTE.	



4 General Test Conditions / Configurations

4.1 Test Modes

NOTE: The test mode(s) are selected according to relevant radio technology specifications, and these test mode(s) reflect the worst case scenario.

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
UL/TM1	MSR system, 3GPP TS 37.141 clause 4.9.2 (UMTS/TM1; LTE/TM1.1)



4.2 EUT Configurations

4.2.1 General Configurations

Configuration	Description
Test Antenna Ports	Until otherwise specified, <ul style="list-style-type: none"> 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.

4.2.2 Customized Configurations

NOTE: For the carrier configurations, the description of “n*TxxxM(yyyW)@zzz” denotes the n * multiple carriers of the radio system type T (G - GSM system, U - UMTS system, L - LTE system, C - CDMA system, W - WiMAX system), for which the channel bandwidth of each carrier is xxx MHz (applicable for T supporting various channel bandwidths) and the power level of each carrier is yyy Watts, at the antenna port zzz (if specified). While the combinations of several “n*TxxxM(yyyW)@zzz”s denotes the carrier configurations of the MSR system.

4.2.2.1 BRS&EBS Band

EUT Conf.	RF Ch	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
5M_B	B	2622.5	2502.5	5	44.8	LTE/TM1.1
5M_M	M	2655	2535	5	44.8	LTE/TM1.1
5M_T	T	2687.5	2567.5	5	44.8	LTE/TM1.1
10M_B	B	2625	2505	10	44.8	LTE/TM1.1
10M_M	M	2655	2535	10	44.8	LTE/TM1.1
10M_T	T	2685	2565	10	44.8	LTE/TM1.1
15M_B	B	2627.5	2507.5	15	44.8	LTE/TM1.1
15M_M	M	2655	2535	15	44.8	LTE/TM1.1
15M_T	T	2682.5	2562.5	15	44.8	LTE/TM1.1
20M_B	B	2630	2510	20	44.8	LTE/TM1.1
20M_M	M	2655	2535	20	44.8	LTE/TM1.1
20M_T	T	2680	2560	20	44.8	LTE/TM1.1
2L_5+5_B	B	2622.5, 2677.5	2502.5, 2557.5	5,5	41.8,41.8	LTE/TM1.1
2L_5+5_T	T	2632.5, 2687.5	2512.5, 2567.5	5,5	41.8,41.8	LTE/TM1.1
2L_10+10_B	B	2625,2675	2505, 2555	10,10	41.8,41.8	LTE/TM1.1
2L_10+10_T	T	2635,2685	2515, 2565	10,10	41.8,41.8	LTE/TM1.1
2L_15+15	B	2627.5,2672.5	2507.5, 2552.5	15,15	40,43	LTE/TM1.1



EUT Conf.	RF Ch	TX Freq. [MHz]	RX Freq. [MHz]	Ch. BW [MHz]	Power Level [dBm]	Test Mode
_B						
2L_15+15 _T	T	2637.5,2682.5	2517.5, 2562.5	15,15	40,43	LTE/TM1.1
2L_20+20 _B	B	2630,2670	2510, 2550	20,20	40,43	LTE/TM1.1
2L_20+20 _T	T	2640,2680	2520, 2560	20,20	40,43	LTE/TM1.1
3L_5+5+5 _B	B	2622.5, 2650,2677.5	2502.5, 2530,2557.5	5,5,5	40,40,40	LTE/TM1.1
3L_5+5+5 _T	T	2632.5, 2660,2687.5	2512.5,2540, 2567.5	5,5,5	40,40,40	LTE/TM1.1

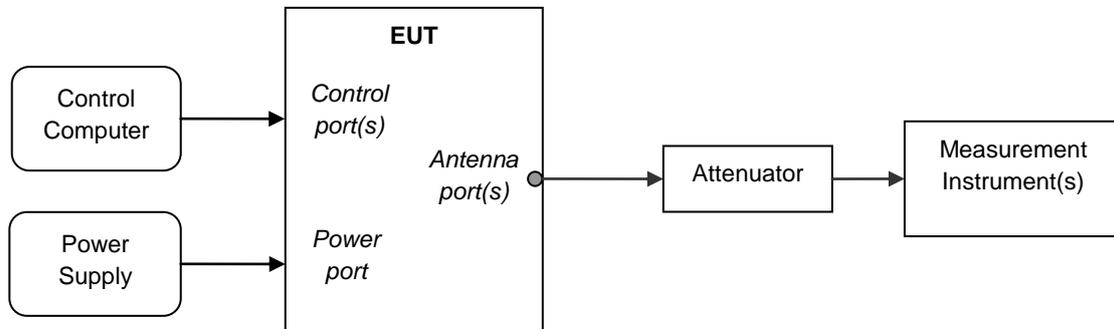


4.3 Test Environments

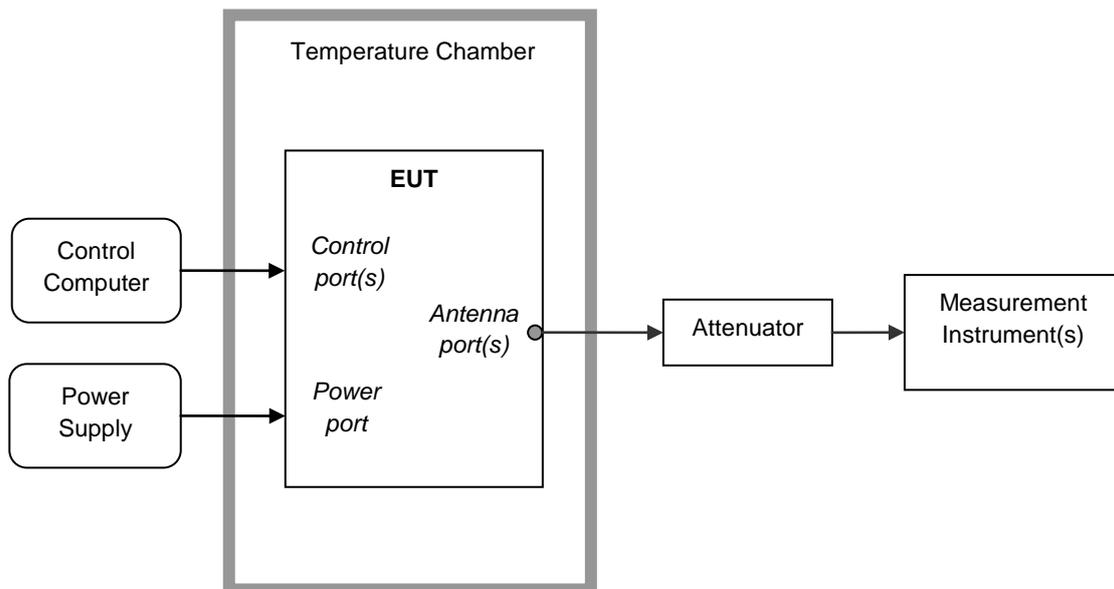
Environment Parameter	Selected Values During Tests		
	Temperature	Voltage	Relative Humidity
Ambient Climate	Ambient	---	Ambient
Rated Voltage	---	-48 VDC	---

4.4 Test Setups

4.4.1 Test Setup 1



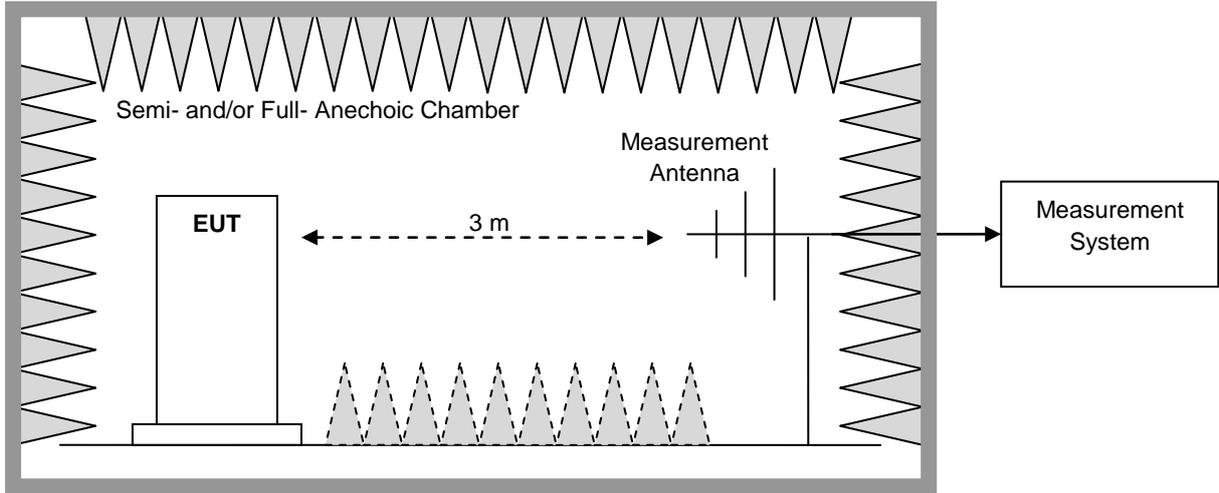
4.4.2 Test Setup 2



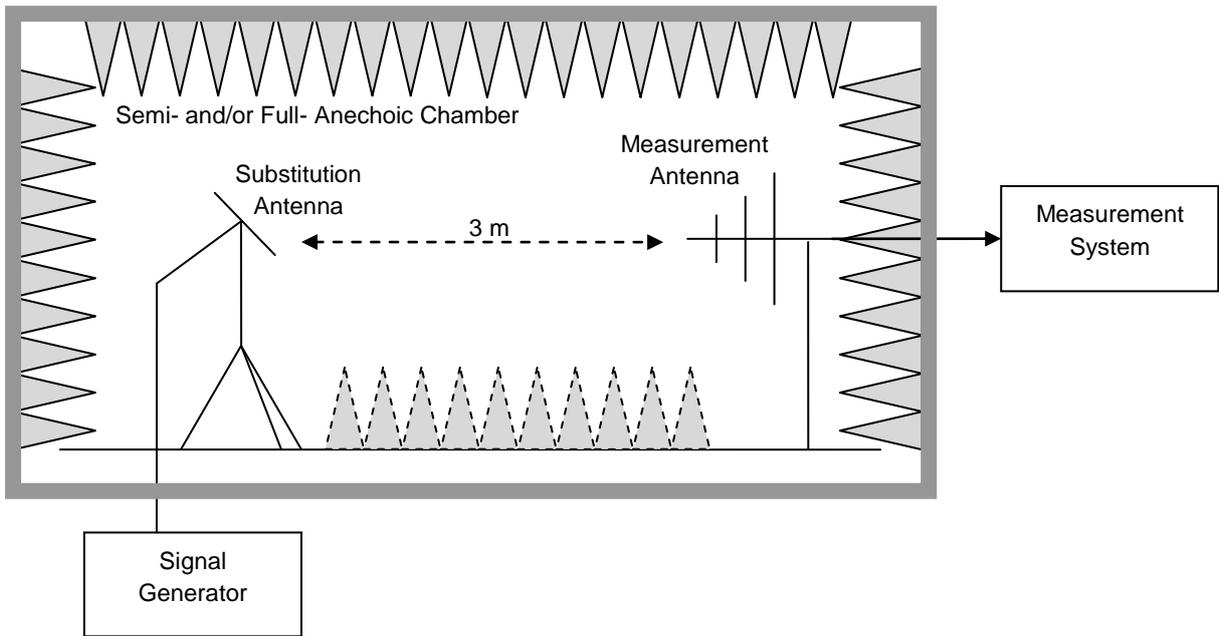
4.4.3 Test Setup 3

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

4.4.3.1 Step 1: Pre-test



4.4.3.2 Step 2: Substitution method to verify the maximum ERP





4.5 Test Conditions

4.5.1 BRS&EBS Band

Test Case		Test Conditions	
Transmitter Output Power	Channel Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	5M_B,5M_M,5M_T 10M_B,10M_M,10M_T 15M_B,15M_M,15M_T 20M_B,20M_M,20M_T 2L_5+5_B, 2L_5+5_T 2L_10+10_B, 2L_10+10_T 2L_15+15_B, 2L_15+15_T 2L_20+20_B, 2L_20+20_T 3L_5+5+5_B, 3L_5+5+5_T
	Power Spectral Density	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	5M_B,5M_M,5M_T 20M_B,20M_M,20M_T
	Peak-to-Average Ratio	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	Not applicable
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	5M_B,5M_M,5M_T 10M_B,10M_M,10M_T 15M_B,15M_M,15M_T 20M_B,20M_M,20M_T
	Emission Bandwidth(-26 dBc)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	5M_B,5M_M,5M_T 10M_B,10M_M,10M_T 15M_B,15M_M,15M_T 20M_B,20M_M,20M_T
Band Edges Compliance	Test Env.	Ambient Climate & Rated Voltage	
	Test Setup	Test Setup 1	
	EUT Conf.	5M_B,5M_T 20M_B,20M_T 2L_5+5_B, 2L_5+5_T	
Spurious Emission at Antenna Terminals	Test Env.	Ambient Climate & Rated Voltage	
	Test Setup	Test Setup 1	
	EUT Conf.	5M_B,5M_M,5M_T 20M_B,20M_M,20M_T	



Test Case		Test Conditions	
			2L_20+20_B, 2L_20+20_T 3L_5+5+5_B, 3L_5+5+5_T
Field Strength of Spurious Radiation		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 3
		EUT Conf.	20M_M (Worst case) 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 Setup 2
		EUT Conf.	5M_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 Setup 2
		EUT Conf.	5M_B, 5M_T
Receiver Spurious Emissions		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Setup 1
		EUT Conf.	Not applicable



5 Main Test Instruments

NOTE: 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	Agilent	E4440A	MY49420179	2016-03-24
Spectrum Analyzer	Agilent	N9020A	MY51240619	2016-03-25
Spectrum Analyzer	Agilent	N9030A	MY49431033	2016-05-21
Vector Signal Generator	Agilent	E8257D	MY49281095	2015-11-03
Power supply	Chroma	6530	653000008611	2016-10-20
Temperature Chamber	ESPEC	EW0470S	12113066	2015-10-20
Test Setup 3				
EMI Test receiver	Agilent	N9038A	MY52260169	2015-11-23
Spectrum analyser	Agilent	N9010A	MY52220816	2016-03-15
Bilog Antenna	TESQ	CBL 6112D	35238	2015-12-01
Horn Antenna	SWARZBECK	BBHA 9120D	1077	2015-12-01
Horn Antenna	ETS	3160-09	00117544	2015-12-26



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	ERP [dBm]	For 3 m Chamber: U = 4.6 dB (30 MHz to 1GHz) U = 3.0 dB (above 1 GHz) For 10 m Chamber: U = 4.6 dB (30 MHz to 1GHz) U = 3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy [ppm]	U = 0.21 ppm

END