

TEST REPORT

EUT Description	5G DIGITAL MOBILE PHONE
Brand Name	VERTU
Model Name	VTL-202502
FCC ID	2BGHD-VTL202502
IC ID	32468-VTL202502
Date of Test Start/End	2026-03-13 / 2026-05-15

Applicant	Chengdu Xiaochen Technology Co., Ltd
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Manufacturers	Same as Application
Address	Same as Application
Factory	Same as Application
Address	Same as Application

Reference Standards	47 CFR Part 2	RSS-132 Issue 4
	47 CFR Part 22	RSS-133 Issue 7
	47 CFR Part 24	RSS-139 Issue 4
	47 CFR Part 27	RSS-192 Issue 5
	47 CFR Part 90	RSS-195 Issue 3
	RSS-Gen Issue 5	RSS-199 Issue 4
	RSS-198 Issue1	(see section 1)

Test Report identification	RL20260313003EF
	Rev. 00
Revision Control	This test report revision replaces any previous test report revision. (see Document Changes)

Test Result: *Pass**

*The EUT complied with the test item(s) of the above standard (s), refer to the test summary for details.

Authorized for issue by:

Jim Chen



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Document Changes

Status	Date of issue	Revision	Description of the performed changes
Active	2025-08-26	Rev. 00	None (original version).



Test Summary

2.1 NR Band n5

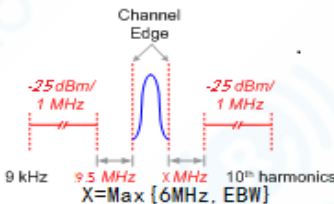
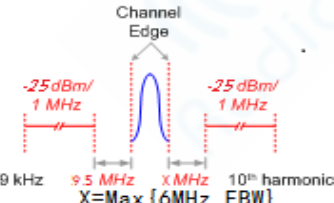
Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	FCC: ERP $\leq$ 7 W	Refer to the Appendixs	Pass
Peak-Average Ratio	§22.913(d)	Limit $\leq$ 13 dB		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §22.917(a)	$\leq$ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.		Pass
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	FCC: $\leq$ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.		Pass
Field Strength of Spurious Radiation	§2.1053, §22.917(a)	FCC: $\leq$ -13 dBm/100 kHz.		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §22.355	$\pm$ 2.5ppm.		Pass



2.2 NR Band n40

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Output Power Data	§27.50(a)	EIRP $\leq$ 250mW/5MHz(LTE Band 40)	Refer to the Appendixs	PASS
Peak-Average Ratio	§27.50(a)	$\leq$ 13dB		PASS
Modulation Characteristics	§2.1047	Digital modulation		PASS
Bandwidth	§2.1049(h)	OBW: No limit EBW: No limit		PASS
Band Edge Compliance	§27.53(a)	Refer to clause 6.4 for LTE Band40		PASS
Spurious emissions at antenna terminals	§27.53(a)	Refer to clause 6.5 for LTE Band40		PASS
Field strength of spurious radiation	§27.53(a)	Refer to clause 6.6 for LTE Band40		PASS
Frequency stability	§2.1055(a)(1)(b) §2.1055(d)(2) §27.54	$\leq \pm$ 2.5ppm.		PASS

2.3 NR Band n7/NR Band n38/NR Band n41

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)(2)	$EIRP \leq 2W$	Refer to the Appendixs	Pass
Peak-Average Ratio	---	≤ 13 dB		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.		Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)	 Channel Edge -25 dBm/1 MHz -25 dBm/1 MHz 9 kHz 5 MHz X MHz 10th harmonics $X = \text{Max} \{6\text{MHz}, \text{EBW}\}$		Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(m)	 Channel Edge -25 dBm/1 MHz -25 dBm/1 MHz 9 kHz 5 MHz X MHz 10th harmonics $X = \text{Max} \{6\text{MHz}, \text{EBW}\}$		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d) (2) §27.54	Within authorized bands of operation/frequency block.		Pass



2.4 NR Band n2/NR Band n25

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	$EIRP \leq 2\text{ W}$	Refer to the Appendixs	Pass
Peak-Average Ratio	§24.232(d)	Limit $\leq 13\text{ dB}$		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §24.238(a)	$\leq -13\text{ dBm}/1\% \cdot \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block.		Pass
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)	$\leq -13\text{ dBm}/1\text{ MHz}$, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.		Pass
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	$\leq -13\text{ dBm}/1\text{ MHz}$.		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d) (2) §24.235	Within authorized bands of operation/frequency block.		Pass



2.5 NR Band n66

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	$EIRP \leq 1\text{ W}$	Refer to the Appendixs	Pass
Peak-Average Ratio	§27.50(d)(5)	Limit $\leq 13\text{ dB}$		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §27.53(h)	$\leq -13\text{ dBm}/1\% \cdot \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block.		Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)	$\leq -13\text{ dBm}/1\text{ MHz}$, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.		Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(h)	$\leq -13\text{ dBm}/1\text{ MHz}$.		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d) (2) §27.54	Within authorized bands of operation/frequency block.		Pass



2.6 NR Band n77 / NR Band n78

3450-3550MHz:

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(k)(3)	EIRP $\leq$ 30dBm	Refer to the Appendixs	Pass
Peak-Average Ratio	§27.50(k)(4)	FCC: Limit $\leq$ 13 dB		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §27.50(n)(2)	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.		Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.50(n)(2)	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.		Pass
Field Strength of Spurious Radiation	§2.1053, §27.50(n)(2)	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.		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d) (2) §27.54	Within authorized bands of operation/ frequency block.		Pass

3700-3980MHz:

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(j)(3)	EIRP $\leq$ 1W	Refer to the Appendixs	Pass
Peak-Average Ratio	---	$\leq$ 13 dB		Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	§2.1051, §27.53(l)(2)	(2) 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		Pass



Test Item	FCC Rule No.	Requirements	Test Result	Verdict
		500 kHz.		
Spurious Emission at Antenna Terminals	§2.1051, §27.53(l)(2)	not exceed -13 dBm/MHz.		Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(l)(2)	not exceed -13 dBm/MHz		Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d) (2) §27.54	Within authorized bands of operation/frequency block.		Pass



2.7 NR Band n5

Test Item	ISED Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-Gen, §6.12; RSS-132, §5.4	ERP $\leq$ 3 W	Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-132, §5.4	Limit $\leq$ 13 dB		Pass
Bandwidth	RSS-Gen, §6.7	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	RSS-Gen, §6.13; RSS-132, §5.5	$\leq$ -13 dBm/1%*OBW, in 1 MHz bands immediately outside and adjacent to the sub-bands.		Pass
Spurious Emission at Antenna Terminals	RSS-Gen, §6.13; RSS-132, §5.5	$\leq$ -13 dBm/100 kHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz), after first 1.0 MHz immediately outside and adjacent to each of the sub-bands.		Pass
Field Strength of Spurious Radiation	RSS-Gen, §6.13; RSS-132, §5.5	$\leq$ -13 dBm/100 kHz, from max(min(lowest internal frequency, 30 MHz), 9 kHz) to min(10 * highest fundamental frequency, 40 GHz), after first 1.0 MHz immediately outside and adjacent to each of the sub-bands.		Pass
Frequency Stability	RSS-Gen, §6.11 RSS-132, §5.3	$\pm$ 2.5ppm.		Pass

2.8 NR Band n40

Test Item	ISED Rule No..	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Output Power Data	RSS-195 Issue3; RSS-Gen	EIRP $\leq$ 250mW/5MHz(LTE Band 40)	Refer to the Appendixs	PASS
Peak-Average Ratio	RSS-195 Issue3; RSS-Gen	$\leq$ 13dB		PASS
Modulation Characteristics	RSS-Gen	Digital modulation		PASS
Bandwidth	RSS-195 Issue3; RSS-Gen	OBW shall fit within the assigned WCS sub-blocks (e.g., 2305–2320 / 2345–2360 MHz)		PASS
Band Edge Compliance	RSS-195 Issue3; RSS-Gen	Refer to clause 6.4 for LTE Band40		PASS
Spurious emissions at antenna terminals	RSS-195 Issue3; RSS-Gen	Refer to clause 6.5 for LTE Band40		PASS

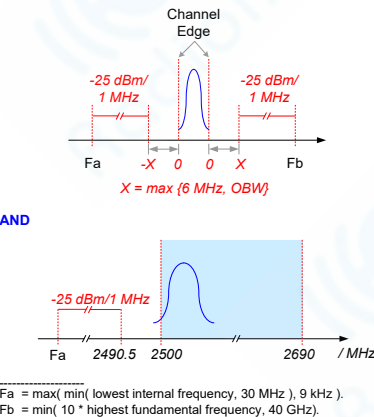
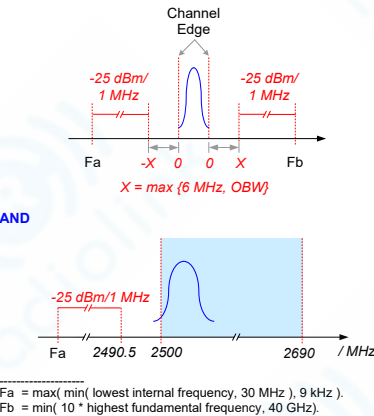


Field strength of spurious radiation	RSS-Gen	Refer to clause 6.6 for LTE Band40		PASS
Frequency stability	RSS-195 Issue3; RSS-Gen	$\leq \pm 2.5\text{ppm}$.		PASS



2.9 NR Band n7/NR Band n38 / NR Band n41

Test Item	ISED Rule No.	Requirements		Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-199, §5.5	EIRP ≤ 2W		Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-199, §5.4	≤13 dB			Pass
Bandwidth	RSS-199, §5.6	OBW: No limit. EBW: No limit.			Pass
Band Edges Compliance	RSS-199, §5.6	Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment		Refer to the Appendixs	Pass
		Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limits		
		0-1	-10 dBm/(2% of OB*)		
		1-5	-10 dBm/MHz		
		5-X**	-13 dBm/MHz		
		≥ X	-25 dBm/MHz		
		*OB is the occupied bandwidth			

Test Item	ISED Rule No.	Requirements	Test Result	Verdict
		** X is 6 MHz or the equipment occupied bandwidth, whichever is greater		
Spurious Emission at Antenna Terminals	RSS-199, §5.6	 AND Fa = max(min(lowest internal frequency, 30 MHz), 9 kHz). Fb = min(10 * highest fundamental frequency, 40 GHz).		Pass
Field Strength of Spurious Radiation	RSS-199, §5.6	 AND Fa = max(min(lowest internal frequency, 30 MHz), 9 kHz). Fb = min(10 * highest fundamental frequency, 40 GHz).		Pass
Frequency Stability	RSS-199, §5.4	Within authorized bands of operation/frequency block.		Pass



2.10 NR Band n2/ NR Band n25

Test Item	ISED Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-Gen, §6.12; RSS-133, §5.5	$EIRP \leq 2 \text{ W}$	Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-133, §5.5	Limit $\leq 13 \text{ dB}$		Pass
Bandwidth	RSS-133, §5.2	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	RSS-133, §5.6	$\leq -13 \text{ dBm}/1\% \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block.		Pass
Spurious Emission at Antenna Terminals	RSS-133, §5.6	$\leq -13 \text{ dBm}/1 \text{ MHz}$, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.		Pass
Field Strength of Spurious Radiation	RSS-133, §5.6	$\leq -13 \text{ dBm}/1 \text{ MHz}$.		Pass
Frequency Stability	RSS-133, §5.4	$\pm 2.5 \text{ ppm}$ for mobile stations $\pm 1.0 \text{ ppm}$ for base stations		Pass



2.11 NR Band n66

Test Item	ISED Rule No.	Requirements		Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-139, §5.5	30 dBm e.i.r.p./channel bandwidth		Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-139, §5.5	Limit≤13 dB			Pass
Bandwidth	RSS-Gen, §6.7	OBW: No limit. EBW: No limit.			Pass
Band Edges Compliance	RSS-139, §5.6	Offset from the edge of the frequency block or frequency block group	Unwanted emission limits		Pass
		1 MHz	-13 dBm/(1% of OB*)		
		>1 MHz	-13 dBm/MHz		
		*OB is the occupied bandwidth.			
Spurious Emission at Antenna Terminals	RSS-139, §5.6	Offset from the edge of the frequency block or frequency block group	Unwanted emission limits		Pass
		1 MHz	-13 dBm/(1% of OB*)		
		>1 MHz	-13 dBm/MHz		
		*OB is the occupied bandwidth.			
Field Strength of Spurious Radiation	RSS-139, §5.6	≤ -13 dBm/1 MHz.			Pass
Frequency Stability	RSS-139, §5.4	Within authorized bands of operation/frequency block.			Pass



2.12 NR Band n77

3450-3900MHz:

Test Item	ISED Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-Gen, §6.12; RSS-192 §5.5	Subscriber equipment other than fixed subscriber equipment:30 dBm e.i.r.p./channel bandwidth	Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-Gen, §5.5	Limit≤13 dB		Pass
Bandwidth	RSS-Gen,§6.7	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Spurious Emission at Antenna Terminals	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Field Strength of Spurious Radiation	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Frequency Stability	RSS-192 §5.4	Within authorized bands of operation/frequency block.		Pass



3900-3980MHz:

Test Item	ISED Rule No.	Requirements	Test Result	Verdict								
Effective (Isotropic) Radiated Power Output Data	RSS-Gen, §6.12; RSS-198 §5.5	Subscriber equipment other than fixed subscriber equipment: 30 dBm/channel bandwidth e.i.r.p.	Refer to the Appendixs	Pass								
Peak-Average Ratio	RSS-198 §5.5	Limit≤13 dB		Pass								
Bandwidth	RSS-Gen,§6.7	OBW: No limit. EBW: No limit.		Pass								
Band Edges Compliance	RSS-Gen, §6.13; RSS-198 §5.6	The unwanted emission outside the frequency block group shall not exceed the TRP or total conducted power (sum of conducted power across all antenna connectors) limits as specified in table 2. <table><tr><th colspan="2">Table 2: Unwanted emission limits for all equipment</th></tr><tr><th>Offset frequency from the edge of the frequency block group (MHz)</th><th>Unwanted emission limit</th></tr><tr><td>≤1</td><td>-13 dBm/1% OB*</td></tr><tr><td>>1</td><td>-13 dBm/MHz</td></tr></table> *OB is the occupied bandwidth		Table 2: Unwanted emission limits for all equipment		Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit	≤1	-13 dBm/1% OB*	>1	-13 dBm/MHz	Pass
Table 2: Unwanted emission limits for all equipment												
Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit											
≤1	-13 dBm/1% OB*											
>1	-13 dBm/MHz											
Spurious Emission at Antenna Terminals	RSS-Gen, §6.13; RSS-198 §5.6	The unwanted emission outside the frequency block group shall not exceed the TRP or total conducted power (sum of conducted power across all antenna connectors) limits as specified in table 2. <table><tr><th colspan="2">Table 2: Unwanted emission limits for all equipment</th></tr><tr><th>Offset frequency from the edge of the frequency block group (MHz)</th><th>Unwanted emission limit</th></tr><tr><td>≤1</td><td>-13 dBm/1% OB*</td></tr><tr><td>>1</td><td>-13 dBm/MHz</td></tr></table>	Table 2: Unwanted emission limits for all equipment		Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit	≤1	-13 dBm/1% OB*	>1	-13 dBm/MHz	Pass	
Table 2: Unwanted emission limits for all equipment												
Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit											
≤1	-13 dBm/1% OB*											
>1	-13 dBm/MHz											



Test Item	ISED Rule No.	Requirements	Test Result	Verdict		
		*OB is the occupied bandwidth				
Field Strength of Spurious Radiation	RSS-Gen, §6.13; RSS-198 §5.6	The unwanted emission outside the frequency block group shall not exceed the TRP or total conducted power (sum of conducted power across all antenna connectors) limits as specified in table 2.			Pass	
		Table 2: Unwanted emission limits for all equipment				
		Offset frequency from the edge of the frequency block group (MHz)				Unwanted emission limit
		≤1	-13 dBm/1% OB*			
		>1	-13 dBm/MHz			
		*OB is the occupied bandwidth				
Frequency Stability	RSS-Gen, §6.11; RSS-198 §5.4	Within authorized bands of operation/frequency block.		Pass		



2.13 NR Band n78

3450-3800MHz:

Test Item	ISED Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	RSS-Gen, §6.12; RSS-192 §5.5	Subscriber equipment other than fixed subscriber equipment:30 dBm e.i.r.p./channel bandwidth	Refer to the Appendixs	Pass
Peak-Average Ratio	RSS-Gen, §5.5	Limit≤13 dB		Pass
Bandwidth	RSS-Gen,§6.7	OBW: No limit. EBW: No limit.		Pass
Band Edges Compliance	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Spurious Emission at Antenna Terminals	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Field Strength of Spurious Radiation	RSS-Gen, §6.13; RSS-192 §5.6.3	Subscriber equipment shall have the TRP or conducted power (per antenna), where applicable, of unwanted emission not exceeding the following: a.the limits in table 6 b.a limit of -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band		Pass
Frequency Stability	RSS-192 §5.4	Within authorized bands of operation/frequency block.		Pass



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General Information

4.1 General Description of EUT

EUT Description:	5G DIGITAL MOBILE PHONE		
Model No.:	VTL-202502		
Trade Mark:	VERTU		
Hardware Version:	P10		
Software Version:	15.0.2_6.01.01.01		
Power Supply:	DC 3.83V from internal rechargeable battery which can be charge by AC/DC adapter		
Modulation Type:	QPSK, 16QAM, 64QAM, 256QAM, $\pi/2$ -BPSK, BPSK		
Antenna Type:	PIFA Antenna		
	NR Band n2:	-1.5dBi(Ant9);	
	NR Band n5:	-2.5dBi(Ant1);	
	NR Band n7:	-2.2dBi(Ant9); -5dBi(Ant1)	
	NR Band n25:	-1.5dBi(Ant9);	
	NR Band n38:	-2.2dBi(Ant9); -2.8dBi(Ant3)	
	NR Band n40a:	-2.2dBi(Ant9); -5dBi(Ant1)	
	NR Band n40b:	-2.2dBi(Ant9); -5dBi(Ant1)	
	NR Band n41:	-2.2dBi(Ant9); -2.8dBi(Ant3)	
	NR Band n66:	-1.7dBi(Ant9); -2.2dBi(Ant3)	
	NR Band n77a:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n77d:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n77g:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n77h:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n78a:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n78e:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
	NR Band n78f:	-5.8dBi(Ant8); -0.6dBi(Ant10)	
		Note:The antenna gain are derived from the gain information report provided by the manufacturer.	
RF Cable:	9kHz ~ 1000MHz (0.2dB)	1000MHz ~ 2000MHz (0.5dB)	2000MHz ~ 3000MHz (1dB)
	3000MHz ~ 5000MHz (1.5dB)	5000MHz ~ 6000MHz (2dB)	6000MHz ~ 18000MHz (3dB)
	Above 18000MHz(4dB)		
Note: 1. Conduction Power & EIRP of all antennas are tested, and only the worst data is presented 2. As above information is provided and confirmed by the applicant. Radiolink Testing(Shenzhen)Co., Ltd is not liable to the accuracy, suitability, reliability or/and integrity of the information.			



4.2 Test Mode

Test Mode	Test Modes Description
NR/TM1	NR system, DFT-s-Pi/2-BPSK modulation
NR/TM2	NR system, DFT-s-QPSK modulation
NR/TM3	NR system, DFT-s-16QAM modulation
NR/TM4	NR system, DFT-s-64QAM modulation
NR/TM5	NR system, DFT-s-256QAM modulation
NR/TM6	NR system, CP-QPSK modulation
NR/TM7	NR system, CP-16QAM modulation
NR/TM8	NR system, CP-64QAM modulation
NR/TM9	NR system, CP-256QAM modulation
Remark: The test mode(s) are selected according to relevant radio technology specifications.	

4.3 Test Environment

Environment Parameter	101 kPa Selected Values During Tests	
Relative Humidity	44-46 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	22~23	3.83
LTLV	-30	3.4
LTHV	-30	4.3
HTLV	50	3.4
HTHV	50	4.3
Remark:		
NV: Normal Voltage	LV: Low Extreme Test Voltage	HV: High Extreme Test Voltage
NT: Normal Temperature	LT: Low Extreme Test Temperature	HT: High Extreme Test Temperature



4.4 Test Channel

Test Frequencies

Reference test frequencies for NR operating band n2

Test frequencies for NR operating band n2 and SCS 15 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
5	Downlink	Low	1932.5	386500	15
		Mid	1960	392000	
		High	1987.5	397500	
	Uplink	Low	1852.5	370500	-
		Mid	1880	376000	
		High	1907.5	381500	
10	Downlink	Low	1935	387000	15
		Mid	1960	392000	
		High	1985	397000	
	Uplink	Low	1855	371000	-
		Mid	1880	376000	
		High	1905	381000	
15	Downlink	Low	1937.5	387500	15
		Mid	1960	392000	
		High	1982.5	396500	
	Uplink	Low	1857.5	371500	-
		Mid	1880	376000	
		High	1902.5	380500	
20	Downlink	Low	1940	388000	15
		Mid	1960	392000	
		High	1980	396000	
	Uplink	Low	1860	372000	-
		Mid	1880	376000	
		High	1900	380000	



Reference test frequencies for NR operating band n5

Test frequencies for NR operating band n5 and SCS 15 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
5	Downlink	Low	871.5	174300	15
		Mid	881.5	176300	
		High	891.5	178300	
	Uplink	Low	826.5	165300	-
		Mid	836.5	167300	
		High	846.5	169300	
10	Downlink	Low	874	174800	15
		Mid	881.5	176300	
		High	889	177800	
	Uplink	Low	829	165800	-
		Mid	836.5	167300	
		High	844	168800	
15	Downlink	Low	876.5	175300	15
		Mid	881.5	176300	
		High	886.5	177300	
	Uplink	Low	831.5	166300	-
		Mid	836.5	167300	
		High	841.5	168300	
20	Downlink	Low	879	175800	15
		Mid	881.5	176300	
		High	884	176800	
	Uplink	Low	834	166800	-
		Mid	836.5	167300	
		High	839	167800	



Reference test frequencies for NR operating band n7

Test frequencies for NR operating band n7 and SCS 15 kHz

Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
5	Downlink	Low	2622.5	524500	15
		Mid	2655	531000	
		High	2687.5	537500	
	Uplink	Low	2502.5	500500	-
		Mid	2535	507000	
		High	2567.5	513500	
10	Downlink	Low	2625	525000	15
		Mid	2655	531000	
		High	2685	537000	
	Uplink	Low	2505	501000	-
		Mid	2535	507000	
		High	2565	513000	
15	Downlink	Low	2627.5	525500	15
		Mid	2655	531000	
		High	2682.5	536500	
	Uplink	Low	2507.5	501500	-
		Mid	2535	507000	
		High	2562.5	512500	
20	Downlink	Low	2630	526000	15
		Mid	2655	531000	
		High	2680	536000	
	Uplink	Low	2510	502000	-
		Mid	2535	507000	
		High	2560	512000	
25	Downlink	Low	2632.5	526500	15
		Mid	2655	531000	
		High	2677.5	535500	
	Uplink	Low	2512.5	502500	-
		Mid	2535	507000	
		High	2557.5	511500	
30	Downlink	Low	2635	52700	15
		Mid	2655	531000	
		High	2675	535000	
	Uplink	Low	2515	503000	-
		Mid	2535	507000	
		High	2555	511000	



Reference test frequencies for NR operating band n25

Test frequencies for NR operating band n25 and SCS 15 kHz

1932.5-1985:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
5	Downlink	Low	1932.5	386500	15
		Mid	1962.5	392500	
		High	1992.5	398500	
	Uplink	Low	1852.5	370500	-
		Mid	1882.5	376500	
		High	1912.5	382500	
10	Downlink	Low	1935	387000	15
		Mid	1962.5	392500	
		High	1990	398000	
	Uplink	Low	1855	371000	-
		Mid	1882.5	376500	
		High	1910	382000	
15	Downlink	Low	1937.5	387500	15
		Mid	1962.5	392500	
		High	1987.5	397500	
	Uplink	Low	1857.5	371500	-
		Mid	1882.5	376500	
		High	1907.5	381500	
20	Downlink	Low	1940	388000	15
		Mid	1962.5	392500	
		High	1985	397000	
	Uplink	Low	1860	372000	-
		Mid	1882.5	376500	
		High	1905	381000	



Reference test frequencies for NR operating band n38

Test frequencies for NR operating band n38 and SCS 30 kHz

Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS SCS block [kHz]
10	Downlink & Uplink	Low	2575	515000	30
		Mid	2595	519000	
		High	2615	523000	
20	Downlink & Uplink	Low	2580	516000	30
		Mid	2595	519000	
		High	2610	522000	
		Mid	2595	519000	
		High	2607.5	521500	
30	Downlink & Uplink	Low	2585	517000	30
		Mid	2595	519000	
		High	2605	521000	
40	Downlink & Uplink	Low	2590	518000	30
		Mid	2595	519000	
		High	2600	520000	

Reference test frequencies for NR operating band n40

Test frequencies for NR operating band n40 and SCS 30 kHz

Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink	Low	2305	461000	30
	&	Mid	2350	470000	
	Uplink	High	2395	479000	
	&	Mid	2350	470000	
	Uplink	High	2392.5	478500	
20	Downlink	Low	2310	462000	30
	&	Mid	2350	470000	
	Uplink	High	2390	478000	
	&	Mid	2350	470000	
	Uplink	High	2387.5	477500	
30	Downlink	Low	2315	463000	30
	&	Mid	2350	470000	
	Uplink	High	2385	477000	
40	Downlink	Low	2320	464000	30
	&	Mid	2350	470000	
	Uplink	High	2380	476000	
50	Downlink	Low	2325	465000	30
	&	Mid	2350	470000	
	Uplink	High	2375	475000	
60	Downlink	Low	2330	466000	30



80	&	Mid	2350	470000	30
	Uplink	High	2370	474000	
	Downlink	Low	2340	468000	
	&	Mid	2350	470000	
	Uplink	High	2360	472000	

Reference test frequencies for NR operating band n41

Test frequencies for NR operating band n41 and SCS 30 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink & Uplink	Low	2501.01	500202	30
		Mid	2592.99	518598	
		High	2685	537000	
15	Downlink & Uplink	Low	2503.5	500700	30
		Mid	2592.99	518598	
		High	2682.48	536496	
20	Downlink & Uplink	Low	2506.02	501204	30
		Mid	2592.99	518598	
		High	2679.99	535998	
30	Downlink & Uplink	Low	2511	502200	30
		Mid	2592.99	518598	
		High	2674.98	534996	
40	Downlink & Uplink	Low	2516.01	503202	30
		Mid	2592.99	518598	
		High	2670	534000	
50	Downlink & Uplink	Low	2521.02	504204	30
		Mid	2592.99	518598	
		High	2664.99	532998	
60	Downlink & Uplink	Low	2526	505200	30
		Mid	2592.99	518598	
		High	2659.98	531996	
80	Downlink & Uplink	Low	2536.02	507204	30
		Mid	2592.99	518598	
		High	2649.99	529998	
90	Downlink & Uplink	Low	2541	508200	30
		Mid	2592.99	518598	
		High	2644.98	528996	
100	Downlink & Uplink	Low	2546.01	509202	30
		Mid	2592.99	518598	
		High	2640	528000	

Reference test frequencies for NR operating band n66

Test frequencies for NR operating band n66 and SCS 15 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
5	Downlink	Low	2112.5	422500	15
		Mid	2145	429000	
		High	2177.5	435500	
	Uplink	Low	1712.5	342500	-
		Mid	1745	349000	
		High	1777.5	355500	
10	Downlink	Low	2115	423000	15
		Mid	2145	429000	
		High	2175	435000	
	Uplink	Low	1715	343000	-
		Mid	1745	349000	
		High	1775	355000	
15	Downlink	Low	2117.5	423500	15
		Mid	2145	429000	
		High	2172.5	434500	
	Uplink	Low	1717.5	343500	-
		Mid	1745	349000	
		High	1772.5	354500	
20	Downlink	Low	2120	424000	15
		Mid	2145	429000	
		High	2170	434000	
	Uplink	Low	1720	344000	-
		Mid	1745	349000	
		High	1770	354000	
25	Downlink	Low	2122.5	424500	15
		Mid	2145	429000	
		High	2167.5	433500	
	Uplink	Low	1722.5	344500	-
		Mid	1745	349000	
		High	1767.5	353500	
30	Downlink	Low	2125	425000	15
		Mid	2145	429000	
		High	2165	433000	
	Uplink	Low	1725	345000	-
		Mid	1745	349000	
		High	1765	353000	
40	Downlink	Low	2130	426000	15
		Mid	2145	429000	
		High	2160	432000	
	Uplink	Low	1730	346000	-
		Mid	1745	349000	
		High	1760	352000	



Reference test frequencies for NR operating band n77
Test frequencies for NR operating band n77 and SCS 30 kHz
3700-3980:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink & Uplink	Low	3705	647000	30
		Mid	3840	656000	
		High	3975	665000	
15	Downlink & Uplink	Low	3707.52	647168	30
		Mid	3840	656000	
		High	3972.48	664832	
20	Downlink & Uplink	Low	3710.01	647334	30
		Mid	3840	656000	
		High	3969.99	664666	
25	Downlink & Uplink	Low	3712.5	647500	30
		Mid	3840	656000	
		High	3967.5	664500	
30	Downlink & Uplink	Low	3715.02	647668	30
		Mid	3840	656000	
		High	3964.98	664332	
40	Downlink & Uplink	Low	3720	648000	30
		Mid	3840	656000	
		High	3960	664000	
50	Downlink & Uplink	Low	3725.01	648334	30
		Mid	3840	656000	
		High	3954.99	663666	
60	Downlink & Uplink	Low	3730.02	648668	30
		Mid	3840	656000	
		High	3949.98	663332	
70	Downlink & Uplink	Low	3735	649000	30
		Mid	3840	656000	
		High	3945	663000	
80	Downlink & Uplink	Low	3740.01	649334	30
		Mid	3840	656000	
		High	3939.99	662666	
90	Downlink & Uplink	Low	3745.02	649668	30
		Mid	3840	656000	
		High	3934.98	662332	
100	Downlink & Uplink	Low	3750	650000	30
		Mid	3840	656000	
		High	3930	662000	



3450-3550:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink & Uplink	Low	3455.01	630334	30
		Mid	3500.01	633334	
		High	3544.98	636332	
15	Downlink & Uplink	Low	3457.5	630500	30
		Mid	3500.01	633334	
		High	3542.49	636166	
20	Downlink & Uplink	Low	3460.02	630668	30
		Mid	3500.01	633334	
		High	3540	636000	
25	Downlink & Uplink	Low	3462.51	630834	30
		Mid	3500.01	633334	
		High	3537.48	635832	
30	Downlink & Uplink	Low	3465	631000	30
		Mid	3500.01	633334	
		High	3534.99	635666	
40	Downlink & Uplink	Low	3470.01	631334	30
		Mid	3500.01	633334	
		High	3529.98	635332	
50	Downlink & Uplink	Low	3475.02	631668	30
		Mid	3500.01	633334	
		High	3525	635000	
60	Downlink & Uplink	Low	3480	632000	30
		Mid	3500.01	633334	
		High	3519.99	634666	
70	Downlink & Uplink	Low	3485.01	632334	30
		Mid	3500.01	633334	
		High	3514.98	634332	
80	Downlink & Uplink	Low	3490.02	632668	30
		Mid	3500.01	633334	
		High	3510	634000	
90	Downlink & Uplink	Low	3495	633000	30
		Mid	3500.01	633334	
		High	3504.99	633666	
100	Downlink & Uplink	Low	\	\	30
		Mid	3500.01	633334	
		High	\	\	

Reference test frequencies for NR operating band n78

Test frequencies for NR operating band n78 and SCS 30 kHz

3700-3800:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink & Uplink	Low	3705	647000	30
		Mid	3750	650000	
		High	3795	653000	
15	Downlink & Uplink	Low	3707.52	647168	30
		Mid	3750	650000	
		High	3792.48	652832	
20	Downlink & Uplink	Low	3710.01	647334	30
		Mid	3750	650000	
		High	3789.99	652666	
25	Downlink & Uplink	Low	3712.5	647500	30
		Mid	3750	650000	
		High	3787.5	652500	
30	Downlink & Uplink	Low	3715.02	647668	30
		Mid	3750	650000	
		High	3784.98	652332	
40	Downlink & Uplink	Low	3720	648000	30
		Mid	3750	650000	
		High	3780	652000	
50	Downlink & Uplink	Low	3725.01	648334	30
		Mid	3750	650000	
		High	3774.99	651666	
60	Downlink & Uplink	Low	3730.02	648668	30
		Mid	3750	650000	
		High	3769.98	651332	
70	Downlink & Uplink	Low	3735	649000	30
		Mid	3750	650000	
		High	3765	651000	
80	Downlink & Uplink	Low	3740.01	649334	30
		Mid	3750	650000	
		High	3759.99	650666	
90	Downlink & Uplink	Low	3745.02	649668	30
		Mid	3750	650000	
		High	3754.98	650332	
100	Downlink & Uplink	Low	/	/	30
		Mid	3750	650000	
		High	/	/	



3450-3550:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
10	Downlink & Uplink	Low	3455.01	630334	30
		Mid	3500.01	633334	
		High	3545.01	636334	
15	Downlink & Uplink	Low	3457.5	630500	30
		Mid	3500.01	633334	
		High	3542.49	636166	
20	Downlink & Uplink	Low	3460.02	630668	30
		Mid	3500.01	633334	
		High	3540	636000	
25	Downlink & Uplink	Low	3462.51	630834	30
		Mid	3500.01	633334	
		High	3537.48	635832	
30	Downlink & Uplink	Low	3465	631000	30
		Mid	3500.01	633334	
		High	3534.99	635666	
40	Downlink & Uplink	Low	3470.01	631334	30
		Mid	3500.01	633334	
		High	3529.98	635332	
50	Downlink & Uplink	Low	3475.02	631668	30
		Mid	3500.01	633334	
		High	3525	635000	
60	Downlink & Uplink	Low	3480	632000	30
		Mid	3500.01	633334	
		High	3519.99	634666	
70	Downlink & Uplink	Low	3485.01	632334	30
		Mid	3500.01	633334	
		High	3515.01	634334	
80	Downlink & Uplink	Low	3490.02	632668	30
		Mid	3500.01	633334	
		High	3510	634000	
90	Downlink & Uplink	Low	3495	633000	30
		Mid	3500.01	633334	
		High	3504.99	633666	
100	Downlink & Uplink	Low	\	\	30
		Mid	3500.01	633334	
		High	\	\	



4.5 Operating Bands and Applicable FCC Rule Parts&ISED Standards

Band	Frequency (MHz / GHz)	FCC Rule Part	ISED RSS Standard
NR n2	1850–1990	Part 24 (Subpart E)	RSS-133 + RSS-Gen
NR n5	824–894	Part 22 (Subpart H)	RSS-132 + RSS-Gen
NR n7	2500–2690	Part 27 (BRS/EBS)	RSS-199 + RSS-Gen
NR n25	1850–1995	Part 24 (Subpart E)	RSS-133 + RSS-Gen
NR n38	2570–2620	Part 27 (BRS/EBS)	RSS-199 + RSS-Gen
NR n40	2300–2400	Part 27 (WCS / BRS-adj)	RSS-139 / RSS-195 + RSS-Gen
NR n41	2496–2690	Part 27 (BRS/EBS)	RSS-199 + RSS-Gen
NR n66	1710–1780 / 2110–2200	Part 27 (AWS-3)	RSS-139 + RSS-Gen
NR n77 (≤ 3900)	3300–3900	Part 27 (Subpart O)	RSS-192 Issue 5 + RSS-Gen
NR n77 (> 3900)	3900–4200	Part 27 (Subpart O)	RSS-198 Issue 1 + RSS-Gen
NR n78	3300–3800	Part 27 (Subpart O)	RSS-192 Issue 5 + RSS-Gen

4.6 Description of Support Units

The EUT has been tested as an independent unit.

4.7 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:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	$\pm 0.41\text{dB}$
2	RF power density, conducted	$\pm 1.96\text{dB}$
3	Spurious emissions, conducted	$\pm 0.41\text{dB}$
4	Radio Frequency	$\pm 7.10 \times 10^{-8}$
5	Duty Cycle	$\pm 0.49\%$
6	Occupied Bandwidth	$\pm 0.2\%$
7	Radiated Spurious emission test(UE)	$\pm 4.8\text{dB}$ (30MHz-1GHz)
		$\pm 4.68\text{dB}$ (1GHz-6GHz)
		$\pm 4.52\text{dB}$ (6GHz-18GHz)
		$\pm 5.26\text{dB}$ (18GHz-40GHz)

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{cisp/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



4.8 Test Location

All tests were performed at:

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

No tests were sub-contracted.

4.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:
. A2LA (Certificate No. 7572.01)
Radiolink Testing (Shenzhen) Co., Ltd, Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7572.01.

4.10 Deviation from Standards

None

4.11 Abnormalities from Standard Conditions

None



Equipment List

Transmitter unwanted emissions in the spurious domain/ Receiver spurious emissions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	TDK	966	RL01-01	2024/11/22	2027/11/21
Horn Antenna(1GHz-18GHz)	Schwarzbeck	BBHA 9120D	RL03-01	2025/3/28	2028/3/27
BiConiLog Antenna(30MHz-3GHz)	Schwarzbeck	VULB9163	RL03-02	2025/4/7	2028/4/6
Active Loop Antenna(9kHz-30MHz)	Schwarzbeck	FMZB 1519B	RL03-03	2025/3/28	2028/3/27
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	RL03-04	2025/3/28	2028/3/27
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	RL03-05	2025/3/28	2028/3/27
MXE EMI Receiver(3Hz-8.4GHz)	KEYSIGHT	N9038A	RL04-01	2025/3/31	2026/3/30
MXE EMI Receiver(3Hz-8.4GHz)	KEYSIGHT	N9038A	RL04-01	2026/4/03	2027/4/02
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2025/3/31	2026/3/30
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2026/4/3	2027/4/2
Pre-Amplifier(500MHz-18GHz)	Tonscend	TPA-011845	RL06-02	2025/3/31	2026/3/30
Pre-Amplifier(500MHz-18GHz)	Tonscend	TPA-011845	RL06-02	2026/4/3	2027/4/2
Pre-Amplifier(18GHz-26GHz)	Tonscend	TPA-182645	RL06-03	2025/3/31	2026/3/30
Pre-Amplifier(18GHz-26GHz)	Tonscend	TPA-182645	RL06-03	2026/4/3	2027/4/2
Pre-Amplifier(26GHz-40GHz)	Tonscend	TPA-184045	RL06-04	2025/3/31	2026/3/30
Pre-Amplifier(26GHz-40GHz)	Tonscend	TPA-184045	RL06-04	2026/4/3	2027/4/2
Pre-Amplifier(0.4GHz-8GHz)	TST PASS	LNA04080G30	RL06-05	2025/4/11	2026/4/10
Pre-Amplifier(0.4GHz-8GHz)	TST PASS	LNA04080G30	RL06-05	2026/4/3	2027/4/2
Attenuation Clamp(150kHz-1000MHz)	Teseq	KEMA 801A	RL07-09	2025/4/3	2026/4/2
Attenuation Clamp(150kHz-1000MHz)	Teseq	KEMA 801A	RL07-09	2026/4/13	2027/4/12
AC Power Source	Preen	KDF-11002G	RL08-03	2025/3/31	2026/3/30
AC Power Source	Preen	KDF-11002G	RL08-03	2026/4/3	2027/4/2
Intelligent Line Power Conditioner	Preen	APS-11040GG	RL08-04	2025/3/31	2026/3/30
Intelligent Line Power Conditioner	Preen	APS-11040GG	RL08-04	2026/4/3	2027/4/2



Coaxial Cable(9kHz-30MHz)	Radiolink	N/A	RL20-01	N/A	N/A
Coaxial Cable(30MHz-1000MHz)	Radiolink	N/A	RL20-02	N/A	N/A
Coaxial Cable(1GHz-18GHz)	Radiolink	N/A	RL20-03	N/A	N/A
Coaxial Cable(18GHz-40GHz)	Radiolink	N/A	RL20-04	N/A	N/A
Coaxial Cable(9kHz-30MHz)	Radiolink	N/A	RL20-05	N/A	N/A
Measurement Software	AUDIX	e3 230303 emcrt, V9 (C) AUDIX	N/A	N/A	N/A



RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2025/3/31	2026/3/30
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2026/4/3	2027/4/2
MXG Vector Signal Generator(100kHz-6GHz)	N5182A	N5182A	RL05-05	2025/3/31	2026/3/30
MXG Vector Signal Generator(100kHz-6GHz)	N5182A	N5182A	RL05-05	2026/4/3	2027/4/2
SIGNAL GENERATOR(10MHz-20GHz)	SMP22	SMP22	RL05-06	2025/3/31	2026/3/30
SIGNAL GENERATOR(10MHz-20GHz)	SMP22	SMP22	RL05-06	2026/4/3	2027/4/2
Wideband Radio Communication Tester	CMW 500	CMW 500	RL05-07	2025/3/31	2026/3/30
Wideband Radio Communication Tester	CMW 500	CMW 500	RL05-07	2026/4/3	2027/4/2
Measurement Software	TST	TSTPASS V2.0	N/A	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Electronic Hygrothermograph	deli	8838	RL02-02	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-02	2026/5/7	2027/5/6
Electronic Hygrothermograph	deli	8838	RL02-03	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-03	2026/4/23	2027/4/22
Electronic Hygrothermograph	deli	8838	RL02-04	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-04	2026/4/23	2027/4/22
Electronic Hygrothermograph	deli	8838	RL02-05	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-05	2026/4/8	2027/4/07
Barometer	Shanghai Mengte Instrument	DYM3	RL02-01	2025/3/31	2026/3/30
Barometer	Shanghai Mengte Instrument	DYM3	RL02-01	2026/4/8	2027/4/7



Description of Tests

6.1 Conducted Output Power

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.2.1

The transmitter output was connected to a calibrated coaxial cable, attenuator and power meter, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading. The tests were performed at three frequencies (low channel, middle channel and high channel) and on the highest power levels, which can be setup on the transmitters.

Remark: Reference test setup 1



6.2 Effective (Isotropic) Radiated Power of Transmitter

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.8.4

Calculate power in dBm by the following formula:

ERP (dBm) = Conducted Power (dBm) + antenna gain (dBd)

EIRP(dBm) = Conducted Power (dBm) + antenna gain (dBi)

EIRP=ERP+2.15dB



6.3 Occupied Bandwidth

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 4.2 & 4.3

The occupied bandwidth, that 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 shall be measured. The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel). The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.

Remark: Reference test setup 1

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7



6.4 Band Edge at Antenna Terminals

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 6.0

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at two frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to rms.

Remark: Reference test setup 1

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. $RBW \geq 1\%$ of the emission bandwidth
4. $VBW \geq 3 \times RBW$
5. Detector = RMS
6. Number of sweep points $\geq 2 \times \text{Span}/RBW$
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize



6.5 Spurious And Harmonic Emissions at Antenna Terminal

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 6.0

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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 emission are attenuated at least 26 dB below the transmitter power.

Remark: Reference test setup 1

Test Settings

1. Start frequency was set to 9kHz and stop frequency was set to at least 10* the fundamental frequency (Separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings



6.6 Peak-Average Ratio

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.7.2

A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. The traces are generated with the spectrum analyzer set to zero span mode.

Remark: Reference test setup 1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power



6.7 Field Strength of Spurious Radiation

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.8

Below 1GHz test procedure as below:

- 1). The EUT was powered ON and placed on a 80cm high table in the chamber. The antenna of the transmitter was extended to its maximum length.
- 2). The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
- 3). Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
- 4). Test the EUT in the lowest channel, the middle channel ,the Highest channel.
- 5). The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, Only the test worst case mode is recorded in the report.
- 6). Repeat above procedures until all frequencies measured was complete.

$$E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + (\text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)} - \text{AMP(dB)})$$

$$\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \log D - 104.8; \text{ where D is the measurement distance in meters}$$

Above 1GHz test procedure as below:

- 1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber
- 2) Calculate power in dBm by the following formula:
$$E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + (\text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)} - \text{AMP(dB)})$$

$$\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \log D - 104.8; \text{ where D is the measurement distance in meters}$$
- 3). Test the EUT in the lowest channel, the middle channel the Highest channel
- 4). The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, Only the test worst case mode is recorded in the report.
- 5). Repeat above procedures until all frequencies measured was complete

Remark1: Reference test setup 2

Remark2: The emission below 18G were measured at a 3m test distance, while emissions above 18GHz were measured at a 1m test distance. At a measurement distance of 1 meter the limit line was increased by $20 \cdot \log(3/1) = 9.54 \text{ dB}$.

Remark: Reference test setup 2

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & AMP. The basic equation with a sample calculation is as follows:

$$\text{AF} = \text{Antenna Factor(dB/m)}$$

$$\text{Factor} = \text{Cable Factor(dB)} - \text{Preamplifier (dB)}$$

$$\text{Level} = \text{Reading Level} + \text{AF} + \text{Factor} - 95.26$$

$$\text{Margin} = \text{Limit} - \text{Level}$$

- 2) Scan from 9kHz to 40GHz, The disturbance between 9KHz to 30MHz and 18GHz to 40GHz was very low, and the harmonics were the highest point could be found when testing, so only the harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) All modes have been tested, but only the worst case data displayed in this report.



6.8 Frequency Stability / Temperature Variation

Measurement Procedure:

Frequency stability testing is performed in accordance with the guidelines of FCC KDB 971168 D01 V03r01; Section 9

. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

Time Period and Procedure:

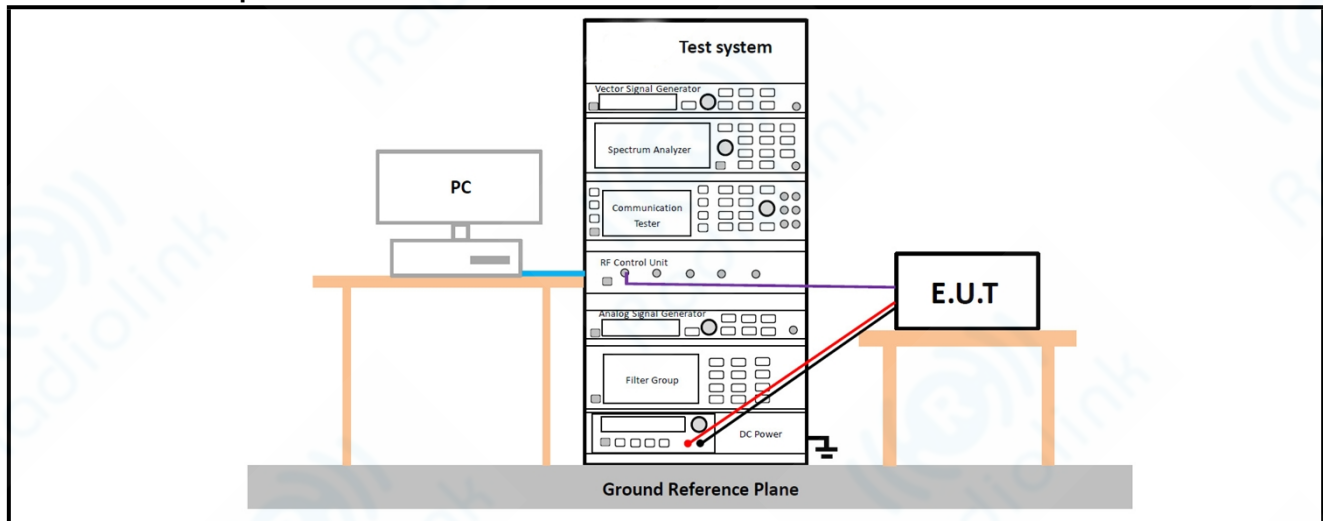
1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Remark: Reference test setup 3



6.9 Test Setups

6.9.1 Test Setup 1



6.9.2 Test Setup 2

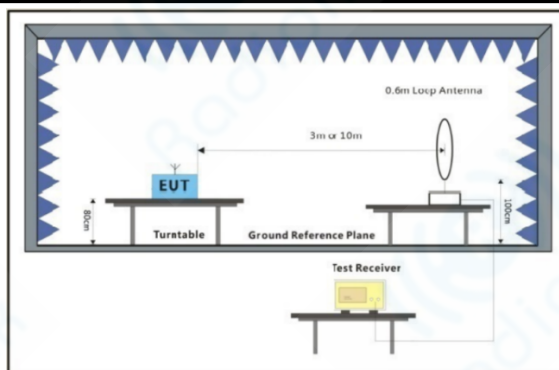


Figure 1. Below 30MHz

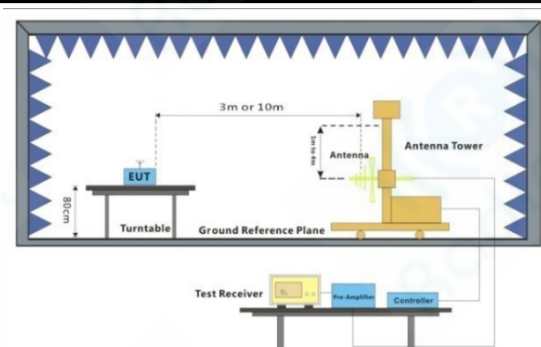


Figure 2. 30MHz to 1GHz

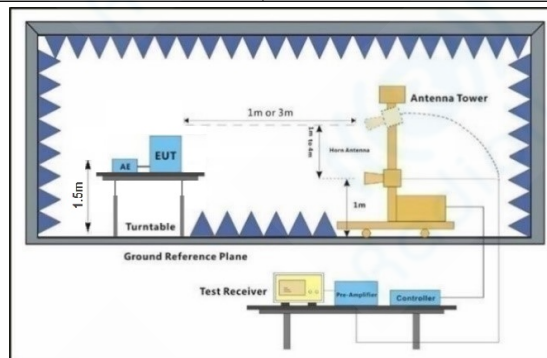
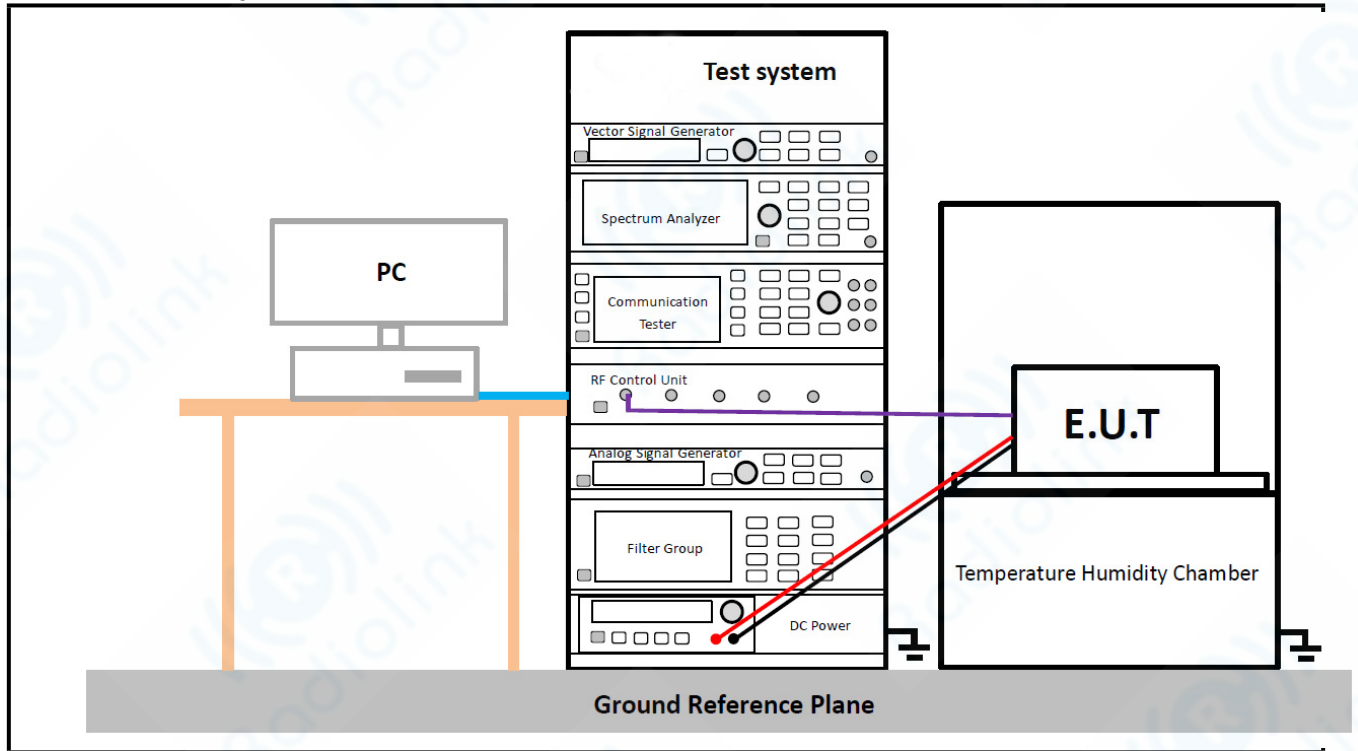


Figure 3. above 1GHz

6.9.3 Test Setup 3



6.10 Test Conditions

Transmit Output Power Data - Average Power, Total	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM1; NR/TM2
Peak-to-Average Ratio	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM2; NR/TM3
Bandwidth - Occupied Bandwidth	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM1; NR/TM2
Bandwidth - Emission Bandwidth	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM1; NR/TM2
Adjacent Channel Leakage Ratio	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels	L, M, H (L= low channel, M= middle channel, H= high channel)

(TX)	
Test Mode	NR/TM1; NR/TM2; NR/TM3
Band Edges Compliance	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, H (L= low channel, H= high channel)
Test Mode	NR/TM1
Spurious Emission at Antenna Terminals	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 1
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM1
Field Strength of Spurious Radiation	
Test Case	Test Conditions
Test Environment	Ambient Climate & Rated Voltage
Test Setup	Test Setup 2
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Mode	NR/TM1 Remark: All bandwidth and modulation of NR/TM1 have been pre tested, and only the worst results are reflected in the report.
Frequency Stability	
Test Case	Test Conditions
Test Environment	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage (2) VL, VN and VH of Rated Voltage at Ambient Climate.
Test Setup	Test Setup 3
RF Channels (TX)	M (M= middle channel)
Test Mode	NR/TM1 The report only show the bandwidth with the worst case.



Appendixes

SZCR2507002868WM Appendix	Setup Photo
Appendix B NR Band n2	NR Band n2
Appendix B NR Band n5	NR Band n5
Appendix B NR Band n7	NR Band n7
Appendix B NR Band n25	NR Band n25
Appendix B NR Band n38	NR Band n38
Appendix B NR Band n40a	NR Band n40a
Appendix B NR Band n40b	NR Band n40b
Appendix B NR Band n41	NR Band n41
Appendix B NR Band n66	NR Band n66
Appendix B NR Band n77a	NR Band n77a
Appendix B NR Band n77d	NR Band n77d
Appendix B NR Band n77g	NR Band n77g
Appendix B NR Band n77h	NR Band n77h
Appendix B NR Band n78a	NR Band n78a
Appendix B NR Band n78e	NR Band n78e
Appendix B NR Band n78f	NR Band n78f
Appendix D Field Strength of Spurious Radition-5G	NR RSE

- End of the Report -

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