

TEST REPORT

Test Report No. :	HK2502080452-7E	Apr. 10, 2025
		Date of issue

Equipment under Test : Smart Phone
 Model /Type : S25 Ultra
 Series Models : F5 Pro, M13, F50 Pro, M5S Pro, F5, Note12 Pro, X40 Pro, X40 Edge, Mate 14, Mate 16, Mate 17, Mate 18, Mate 19, Mate 20, Mate 21, Mate 22, Mate 23, Mate 24, Mate 25, Mate 26, Mate 27, Mate 28, D14, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, R12 pro, P5 pro, E50 Ultra, I16 pro max, P6 pro, Sp20 Pro, OP12 pro, T3 Pro, P8 Pro

Applicant : **Shenzhen Haimeilan Technology Co., LTD.**
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 Manufacturer : **Shenzhen Haimeilan Technology Co., LTD.**
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Test Result:	PASS
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The test report merely corresponds to the test sample.
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Report No.: HK2502080452-7E

** Modified History **

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Apr. 10, 2025	Jason Zhou

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1 Test Standards

The tests were performed according to following standards:

FCC Part 2: Frequency Allocations And Radio Treaty Matters; General Rules And Regulations.

FCC Part 22 Subpart H: Private Land Mobile Radio Services.

FCC Part 24 Subpart E: Public Mobile Services.

ANSI/TIA-603-E-2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

ANSI C63.26-2015: IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

KDB971168 D01:v03r01 Measurement Guidance For Certification Of Licensed Digital Transmitters.



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2.3 Equipment Under Test

Power supply system utilised

Power supply system utilized		:		<input type="radio"/> 120V / 60 Hz	<input type="radio"/> 115V / 60Hz
		<input type="radio"/> 12 V DC		<input type="radio"/> 24 V DC	
		<input checked="" type="radio"/> Other (specified in blank below)			

DC5V from Type-C or DC3.85V from battery

Test Mode	TX/RX	RF Channel		
		Low(L)	Middle (M)	High (H)
WCDMA850	TX	Channel 4132	Channel 4182	Channel 4233
		826.4 MHz	836.4 MHz	846.6 MHz
	RX	Channel 4357	Channel 4407	Channel 4458
		871.4 MHz	881.4 MHz	891.6 MHz
Test Mode	TX/RX	RF Channel		
		Low(L)	Middle (M)	High (H)
WCDMA1900	TX	Channel 9262	Channel 9400	Channel 9538
		1852.4 MHz	1880.0 MHz	1907.6 MHz
	RX	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz



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

Test Item	FCC/IC Rule No.	Requirements	Verdict
Effective(Isotropic) Radiated Output Power	Part§2.1046, Part§24.232	EIRP ≤ 2W	Pass
Peak-Average Ratio	Part§2.1046, Part§24.232	FCC:Limit≤13dB	Pass
Bandwidth	Part§2.1049	OBW: No limit. EBW: No limit.	Pass
Band Edges Compliance	Part§2.1051, Part§24.238	≤ -13dBm/1%*EBW, In 1MHz bands immediately outside and adjacent to The frequency block.	Pass
Spurious Emission at Antenna Terminals	Part§2.1051, Part§24.238	≤-13dBm/1MHz, from 9kHz to 10th harmonics but outside authorized Operating frequency ranges.	Pass
Field Strength of Spurious Radiation	Part§2.1053, Part§24.238	≤ -13dBm/1MHz.	Pass
Frequency Stability	Part§2.1055, Part§24.235	FCC: within authorized frequency block.	Pass

NOTE 1: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".



3.4 Equipments Used During The Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	L.I.S.N.	R&S	ENV216	HKE-002	2024/02/20	2025/02/19
2	L.I.S.N.	R&S	ENV216	HKE-059	2024/02/20	2025/02/19
3	EMI Test Receiver	R&S	ESR	HKE-005	2024/02/20	2025/02/19
4	Spectrum analyzer	Agilent	N9020A	HKE-117	2024/02/20	2025/02/19
5	Spectrum analyzer	R&S	FSV3044	HKE-126	2024/02/20	2025/02/19
6	Preamplifier	EMCI	EMC051845S	HKE-006	2024/02/20	2025/02/19
7	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	2024/02/20	2025/02/19
8	Preamplifier	A.H. Systems	SAS-574	HKE-182	2024/02/20	2025/02/19
9	6dB Attenuator	Pasternack	6db	HKE-184	2024/02/20	2025/02/19
10	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	2024/02/20	2025/02/19
11	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	2024/02/21	2026/02/20
12	Loop Antenna	COM-POWER	AL-130R	HKE-014	2024/02/21	2026/02/20
13	Horn Antenna	Schwarzbeck	9120D	HKE-013	2024/02/21	2026/02/20
14	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16	RF Automatic control unit	Tonscend	JS0806-1	HKE-096	2024/02/20	2025/02/19
17	High pass filter unit	Tonscend	JS0806-F	HKE-055	2024/02/20	2025/02/19
18	Wireless Communication Test Set	R&S	CMU200	HKE-026	2024/02/20	2025/02/19
19	Wireless Communication Test Set	R&S	CMW500	HKE-027	2024/02/20	2025/02/19
20	High-low temperature chamber	Guangke	HT-80L	HKE-118	2024/06/10	2025/06/09
21	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2024/06/10	2025/06/09
22	RF Test Software	Tonscend	JS1120 Version 3.5.39	HKE-183	/	/
23	RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	/	/

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Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	L.I.S.N.	R&S	ENV216	HKE-002	2025/02/19	2026/02/18
2	L.I.S.N.	R&S	ENV216	HKE-059	2025/02/19	2026/02/18
3	EMI Test Receiver	R&S	ESR	HKE-005	2025/02/19	2026/02/18
4	Spectrum analyzer	Agilent	N9020A	HKE-117	2025/02/19	2026/02/18
5	Spectrum analyzer	R&S	FSV3044	HKE-126	2025/02/19	2026/02/18
6	Preamplifier	EMCI	EMC051845S	HKE-006	2025/02/19	2026/02/18
7	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	2025/02/19	2026/02/18
8	Preamplifier	A.H. Systems	SAS-574	HKE-182	2025/02/19	2026/02/18
9	6dB Attenuator	Pasternack	6db	HKE-184	2025/02/19	2026/02/18
10	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	2024/02/20	2025/02/19
11	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	2024/02/21	2026/02/20
12	Loop Antenna	COM-POWER	AL-130R	HKE-014	2024/02/21	2026/02/20
13	Horn Antenna	Schwarzbeck	9120D	HKE-013	2024/02/21	2026/02/20
14	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16	RF Automatic control unit	Tonscend	JS0806-1	HKE-096	2025/02/19	2026/02/18
17	High pass filter unit	Tonscend	JS0806-F	HKE-055	2025/02/19	2026/02/18
18	Wireless Communication Test Set	R&S	CMU200	HKE-026	2025/02/19	2026/02/18
19	Wireless Communication Test Set	R&S	CMW500	HKE-027	2025/02/19	2026/02/18
20	High-low temperature chamber	Guangke	HT-80L	HKE-118	2024/06/10	2025/06/09
21	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2024/06/10	2025/06/09
22	RF Test Software	Tonscend	JS1120 Version 3.5.39	HKE-183	/	/
23	RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	/	/

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4 Test Conditions and Results

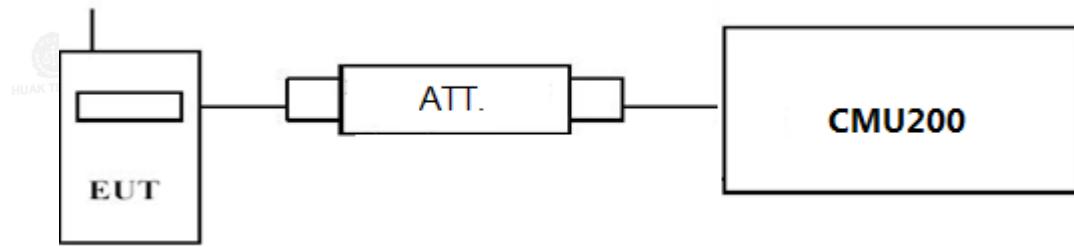
4.1 Output Power

TEST APPLICABLE

During the process of testing, the EUT was controlled via R&S Digital Radio Communication tester (CMU200) to ensure max power transmission and proper modulation. This result contains output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

4.1.1 Conducted Output Power

TEST CONFIGURATION



TEST PROCEDURE

Conducted Power Measurement:

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a CMU200 by an Att.
- c) EUT Communicate with CMU200 then selects a channel for testing.
- d) Add a correction factor to the display CMU200, and then test.

TEST RESULTS

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Test Mode	Test Channel	Burst Average Conducted power (dBm)	
		UMTS Band V	UMTS Band II
UMTS/TM1	LCH	22.56	23.32
	MCH	22.63	23.37
	HCH	22.64	23.57
UMTS/TM2	LCH_SubTest-1	22.33	22.19
	LCH_SubTest-2	20.90	22.68
	LCH_SubTest-3	22.14	22.03
	LCH_SubTest-4	22.06	21.42
	MCH_SubTest-1	21.77	22.39
	MCH_SubTest-2	21.29	22.65
	MCH_SubTest-3	22.48	22.19
	MCH_SubTest-4	21.65	22.04
	HCH_SubTest-1	21.00	22.25
	HCH_SubTest-2	22.49	21.45
	HCH_SubTest-3	21.62	22.85
	HCH_SubTest-4	22.18	23.03
	LCH_SubTest-1	22.13	21.64
	LCH_SubTest-2	21.40	23.09
	LCH_SubTest-3	21.87	23.07
UMTS/TM3	LCH_SubTest-4	21.02	22.61
	LCH_SubTest-5	21.87	22.51
	MCH_SubTest-1	22.10	22.91
	MCH_SubTest-2	21.59	23.03
	MCH_SubTest-3	21.98	23.05
	MCH_SubTest-4	21.59	22.93
	MCH_SubTest-5	21.45	22.79
	HCH_SubTest-1	22.22	22.55
	HCH_SubTest-2	22.16	21.70
	HCH_SubTest-3	22.05	22.88
	HCH_SubTest-4	22.13	23.02
	HCH_SubTest-5	21.40	22.97

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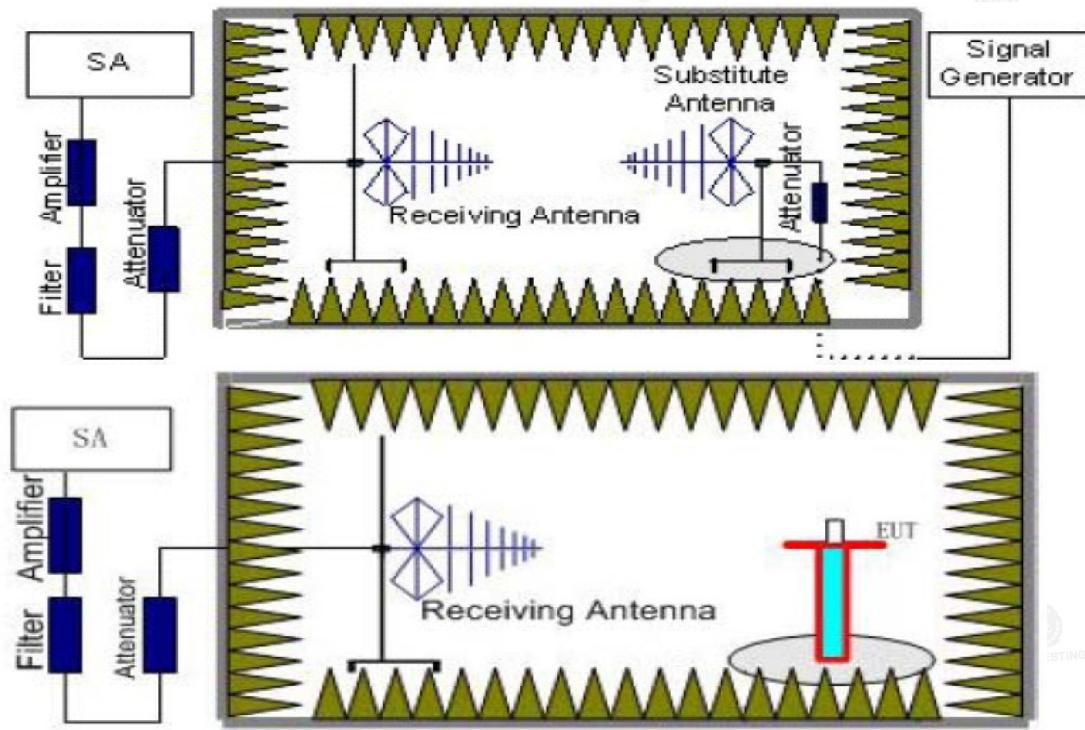
4.1.2 Radiated Output Power

TEST DESCRIPTION

This is the test for the maximum radiated power from the EUT.

"Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=10MHz, VBW=10MHz, And the maximum value of the receiver should be recorded as (P_r).

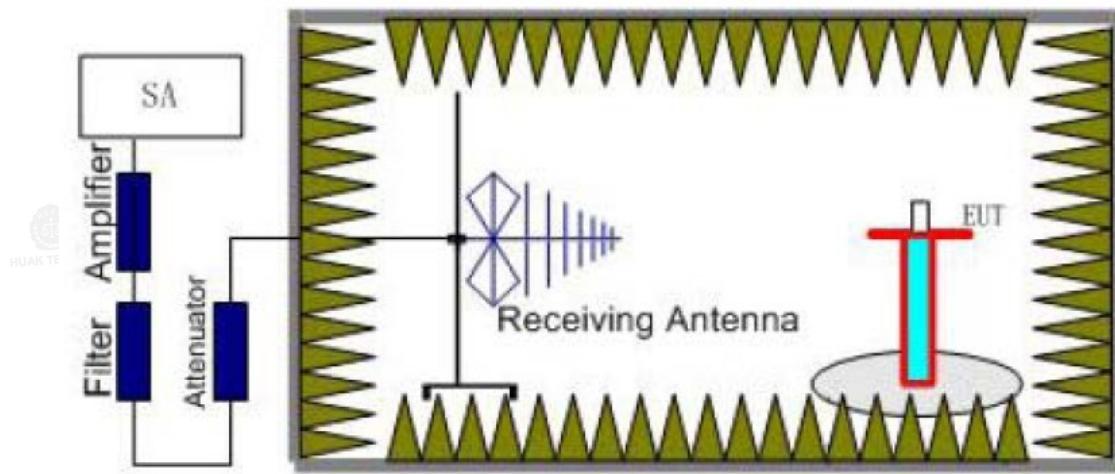
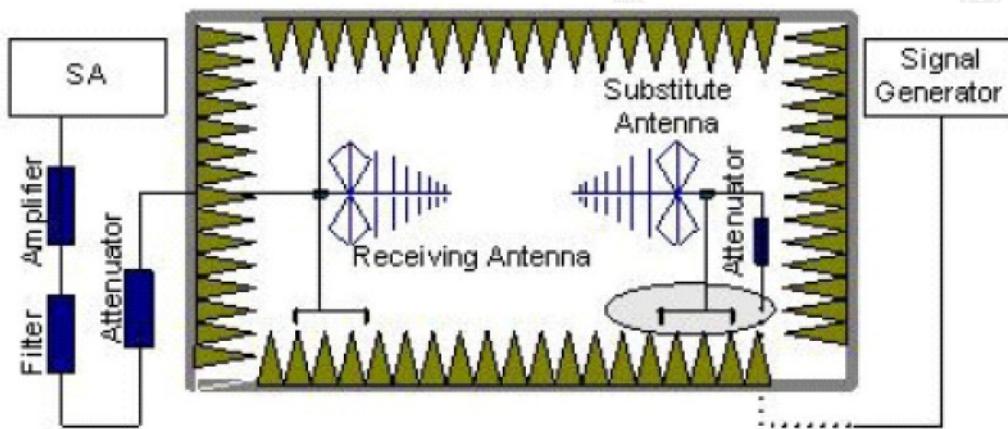


4.2 Radiated Spurious Emission

TEST APPLICABLE

According to the TIA/EIA 603D:2010 test method, The Receiver or Spectrum was scanned from 9 KHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz. The resolution bandwidth is set as outlined in TIA/EIA 603D:2010. The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of WCDMA Band II, WCDMA Band V, WCDMA Band IV.

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.



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TEST R

Remark:

1. We were tested all Configuration refer 3GPP TS134 121.
2. $EIRP = P_{\text{Mea}}(\text{dBm}) - P_{\text{cl}}(\text{dB}) + P_{\text{Ag}}(\text{dB}) + G_{\text{a}}(\text{dBi})$
3. $ERP = EIRP - 2.15\text{dBi}$ as EIRP by subtracting the gain of the dipole.
5. Margin = Limit – Emission Level
6. We test both H direction and V direction, recorded worst case direction.

Test Model No.: S25 Ultra

UMTS/TM1/ WCDMA Band II Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3704.8	-41.42	4.39	3.00	12.34	-33.47	-13.00	20.47	H
5557.2	-48.52	5.31	3.00	13.52	-40.31	-13.00	27.31	H
3704.8	-44.78	4.39	3.00	12.34	-36.83	-13.00	23.83	V
5557.2	-50.95	5.31	3.00	13.52	-42.74	-13.00	29.74	V

UMTS/TM1/ WCDMA Band II Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-40.78	4.41	3.00	12.34	-32.85	-13.00	19.85	H
5640.0	-47.96	5.38	3.00	13.58	-39.76	-13.00	26.76	H
3760.0	-44.69	4.41	3.00	12.34	-36.76	-13.00	23.76	V
5640.0	-50.55	5.38	3.00	13.58	-42.35	-13.00	29.35	V

UMTS/TM1/ WCDMA Band II High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.37	4.45	3.00	12.45	-33.37	-13.00	20.37	H
5722.8	-48.6	5.47	3.00	13.66	-40.41	-13.00	27.41	H
3815.2	-44.93	4.45	3.00	12.45	-36.93	-13.00	23.93	V
5722.8	-51.19	5.48	3.00	13.66	-43.01	-13.00	30.01	V

UMTS/TM1/ WCDMA Band V Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1652.8	-34.79	3.00	3.00	9.58	-28.21	-13.00	15.21	H
2479.2	-36.39	3.03	3.00	10.72	-28.7	-13.00	15.7	H
1652.8	-36.52	3.00	3.00	9.68	-29.84	-13.00	16.84	V
2479.2	-39.61	3.03	3.00	10.72	-31.92	-13.00	18.92	V

UMTS/TM1/ WCDMA Band V Middle Channel

UMTS/HSPA WCDMA Band V - Middle Channel								
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1672.8	-35.21	3.00	3.00	9.58	-28.63	-13.00	15.63	H
2509.2	-36.42	3.03	3.00	10.72	-28.73	-13.00	15.73	H
1672.8	-36.99	3.00	3.00	9.68	-30.31	-13.00	17.31	V
2509.2	-39.41	3.03	3.00	10.72	-31.72	-13.00	18.72	V

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All modes of operation were investigated and the worst-case emissions are reported.
Series Model No.: R12 pro

UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-40.93	4.45	3.00	12.45	-32.93	-13.00	19.93	H
5722.8	-48.58	5.47	3.00	13.66	-40.39	-13.00	27.39	H
3815.2	-44.84	4.45	3.00	12.45	-36.84	-13.00	23.84	V
5722.8	-50.52	5.48	3.00	13.66	-42.34	-13.00	29.34	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.25	3.00	3.00	9.58	-28.67	-13.00	15.67	H
2539.8	-35.61	3.03	3.00	10.72	-27.92	-13.00	14.92	H
1693.2	-37.06	3.00	3.00	9.68	-30.38	-13.00	17.38	V
2539.8	-39.3	3.03	3.00	10.72	-31.61	-13.00	18.61	V

Series Model No.: P5 pro

UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.37	4.45	3.00	12.45	-33.37	-13.00	20.37	H
5722.8	-48.51	5.47	3.00	13.66	-40.32	-13.00	27.32	H
3815.2	-45.35	4.45	3.00	12.45	-37.35	-13.00	24.35	V
5722.8	-51.43	5.48	3.00	13.66	-43.25	-13.00	30.25	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-34.91	3.00	3.00	9.58	-28.33	-13.00	15.33	H
2539.8	-36.17	3.03	3.00	10.72	-28.48	-13.00	15.48	H
1693.2	-37.06	3.00	3.00	9.68	-30.38	-13.00	17.38	V
2539.8	-39.61	3.03	3.00	10.72	-31.92	-13.00	18.92	V

Series Model No.: E50 Ultra

UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.44	4.45	3.00	12.45	-33.44	-13.00	20.44	H
5722.8	-47.83	5.47	3.00	13.66	-39.64	-13.00	26.64	H
3815.2	-44.41	4.45	3.00	12.45	-36.41	-13.00	23.41	V
5722.8	-50.87	5.48	3.00	13.66	-42.69	-13.00	29.69	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.76	3.00	3.00	9.58	-29.18	-13.00	16.18	H
2539.8	-36.46	3.03	3.00	10.72	-28.77	-13.00	15.77	H
1693.2	-36.84	3.00	3.00	9.68	-30.16	-13.00	17.16	V
2539.8	-39.23	3.03	3.00	10.72	-31.54	-13.00	18.54	V

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Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-40.72	4.45	3.00	12.45	-32.72	-13.00	19.72	H
5722.8	-48.42	5.47	3.00	13.66	-40.23	-13.00	27.23	H
3815.2	-44.95	4.45	3.00	12.45	-36.95	-13.00	23.95	V
5722.8	-50.66	5.48	3.00	13.66	-42.48	-13.00	29.48	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-34.92	3.00	3.00	9.58	-28.34	-13.00	15.34	H
2539.8	-35.66	3.03	3.00	10.72	-27.97	-13.00	14.97	H
1693.2	-37.22	3.00	3.00	9.68	-30.54	-13.00	17.54	V
2539.8	-39.56	3.03	3.00	10.72	-31.87	-13.00	18.87	V

Series Model No.: P6 pro
UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.3	4.45	3.00	12.45	-33.3	-13.00	20.3	H
5722.8	-48.03	5.47	3.00	13.66	-39.84	-13.00	26.84	H
3815.2	-45.17	4.45	3.00	12.45	-37.17	-13.00	24.17	V
5722.8	-50.67	5.48	3.00	13.66	-42.49	-13.00	29.49	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.6	3.00	3.00	9.58	-29.02	-13.00	16.02	H
2539.8	-35.85	3.03	3.00	10.72	-28.16	-13.00	15.16	H
1693.2	-36.72	3.00	3.00	9.68	-30.04	-13.00	17.04	V
2539.8	-38.8	3.03	3.00	10.72	-31.11	-13.00	18.11	V

Series Model No.: Sp20 Pro
UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.38	4.45	3.00	12.45	-33.38	-13.00	20.38	H
5722.8	-48.71	5.47	3.00	13.66	-40.52	-13.00	27.52	H
3815.2	-44.42	4.45	3.00	12.45	-36.42	-13.00	23.42	V
5722.8	-51.33	5.48	3.00	13.66	-43.15	-13.00	30.15	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.07	3.00	3.00	9.58	-28.49	-13.00	15.49	H
2539.8	-35.68	3.03	3.00	10.72	-27.99	-13.00	14.99	H
1693.2	-37.22	3.00	3.00	9.68	-30.54	-13.00	17.54	V
2539.8	-39.4	3.03	3.00	10.72	-31.71	-13.00	18.71	V

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HUAK TESTING

Series Model No.: OP12 pro
UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.4	4.45	3.00	12.45	-33.4	-13.00	20.4	H
5722.8	-48.39	5.47	3.00	13.66	-40.2	-13.00	27.2	H
3815.2	-45.09	4.45	3.00	12.45	-37.09	-13.00	24.09	V
5722.8	-51.09	5.48	3.00	13.66	-42.91	-13.00	29.91	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.61	3.00	3.00	9.58	-29.03	-13.00	16.03	H
2539.8	-35.83	3.03	3.00	10.72	-28.14	-13.00	15.14	H
1693.2	-37.05	3.00	3.00	9.68	-30.37	-13.00	17.37	V
2539.8	-39.56	3.03	3.00	10.72	-31.87	-13.00	18.87	V

Series Model No.: T3 Pro
UMTS/TM1/WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.07	4.45	3.00	12.45	-33.07	-13.00	20.07	H
5722.8	-48.49	5.47	3.00	13.66	-40.3	-13.00	27.3	H
3815.2	-45	4.45	3.00	12.45	-37	-13.00	24	V
5722.8	-50.81	5.48	3.00	13.66	-42.63	-13.00	29.63	V

UMTS/TM1/ WCDMA Band V

UMTS/HSPA/ WCDMA Band V									
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization	
1693.2	-35.46	3.00	3.00	9.58	-28.88	-13.00	15.88	H	
2539.8	-36.31	3.03	3.00	10.72	-28.62	-13.00	15.62	H	
1693.2	-36.95	3.00	3.00	9.68	-30.27	-13.00	17.27	V	
2539.8	-38.75	3.03	3.00	10.72	-31.06	-13.00	18.06	V	

Series Model No.: P8 Pro
UMTS/TM1/ WCDMA Band II

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3815.2	-41.11	4.45	3.00	12.45	-33.11	-13.00	20.11	H
5722.8	-48.12	5.47	3.00	13.66	-39.93	-13.00	26.93	H
3815.2	-45.38	4.45	3.00	12.45	-37.38	-13.00	24.38	V
5722.8	-51.45	5.48	3.00	13.66	-43.27	-13.00	30.27	V

UMTS/TM1/ WCDMA Band V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1693.2	-35.12	3.00	3.00	9.58	-28.54	-13.00	15.54	H
2539.8	-35.54	3.03	3.00	10.72	-27.85	-13.00	14.85	H
1693.2	-37.27	3.00	3.00	9.68	-30.59	-13.00	17.59	V
2539.8	-39.42	3.03	3.00	10.72	-31.73	-13.00	18.73	V

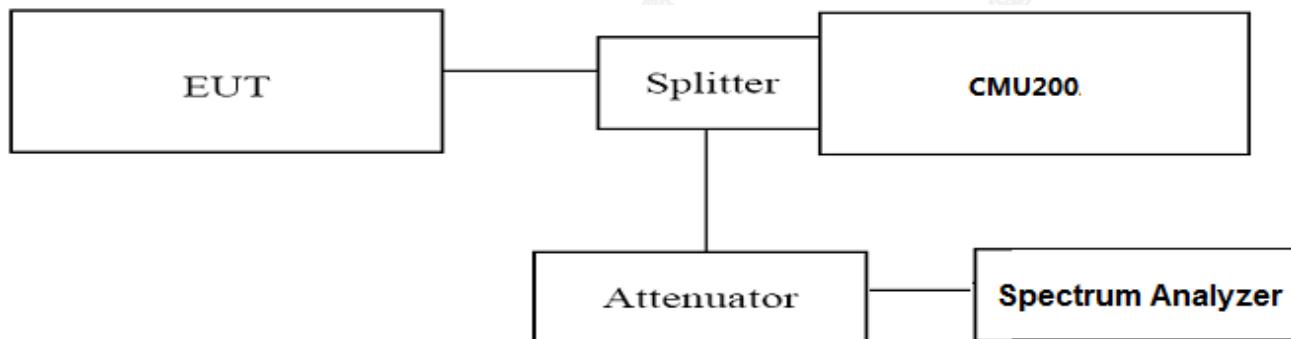
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4.3 Occupied Bandwidth and Emission Bandwidth

TEST APPLICABLE

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA Band II, WCDMA band V, WCDMA band IV. The table below lists the measured 99% Bandwidth and -26dBc Bandwidth.

TEST CONFIGURATION



TEST PROCEDURE

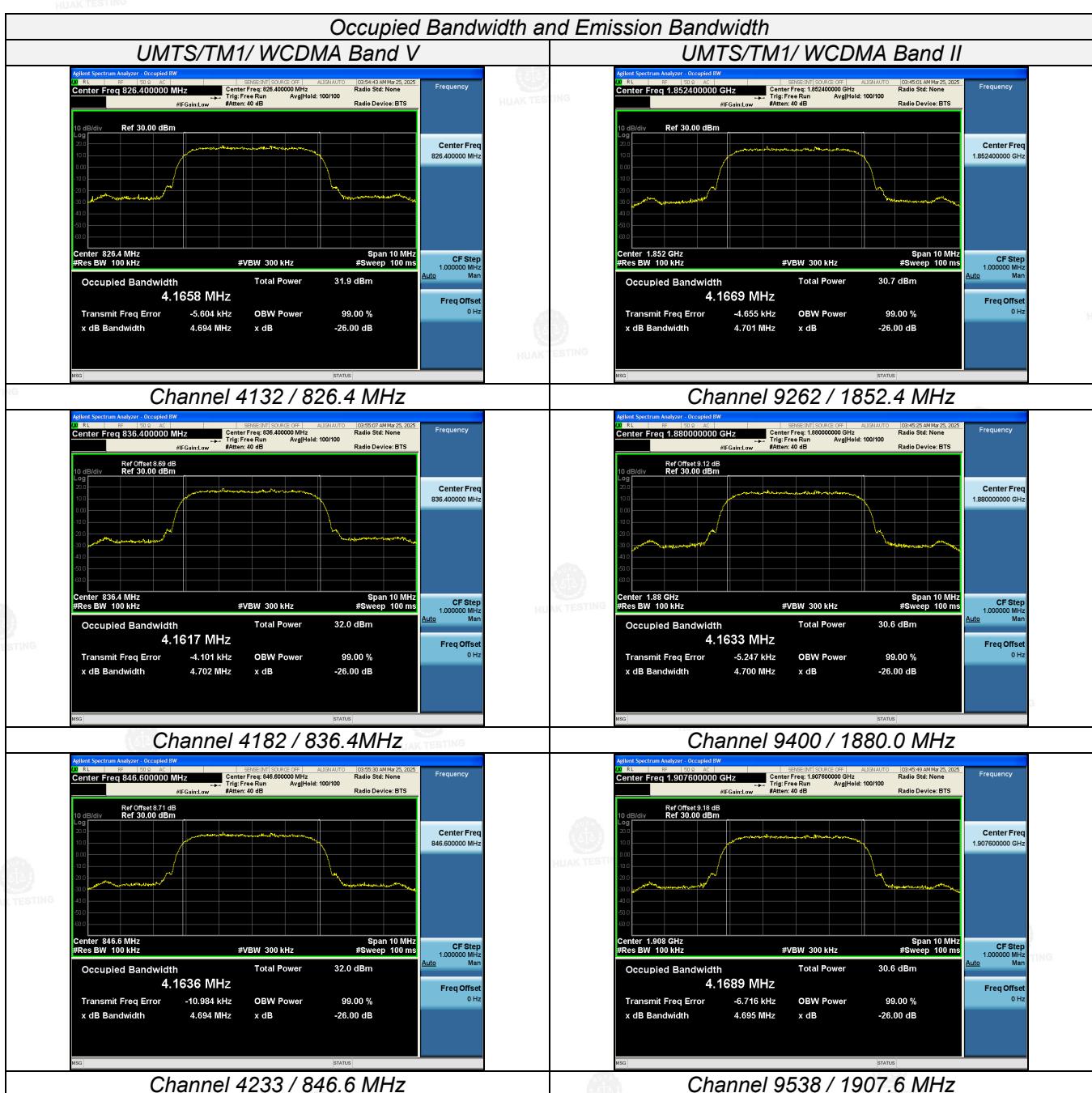
1. The EUT was set up for the max output power with pseudo random data modulation.
2. Set RBW=100KHz,VBW=300KHz,Span=10MHz, SWT=Auto.
3. Set SPA Max hold and View, Set 99% Occupied Bandwidth/ Set -26dBc Occupied Bandwidth.
4. These measurements were done at 3 frequencies for WCDMA band II A. (low, middle and high of operational frequency range).

TEST RESULTS

Test Mode	Channel	Frequency (MHz)	Occupied Bandwidth (99% BW) (MHz)	Emission Bandwidth (-26 dBc BW) (MHz)	Verdict
UMTS/TM1/ WCDMA Band V	4132	826.40	4.1658	4.694	PASS
	4182	836.40	4.1617	4.702	PASS
	4233	846.60	4.1636	4.694	PASS
UMTS/TM1/ WCDMA Band II	9262	1852.4	4.1669	4.701	PASS
	9400	1880.0	4.1633	4.700	PASS
	9538	1907.6	4.1689	4.695	PASS

Remark:

1. Test results including cable loss;
2. please refer to following plots;



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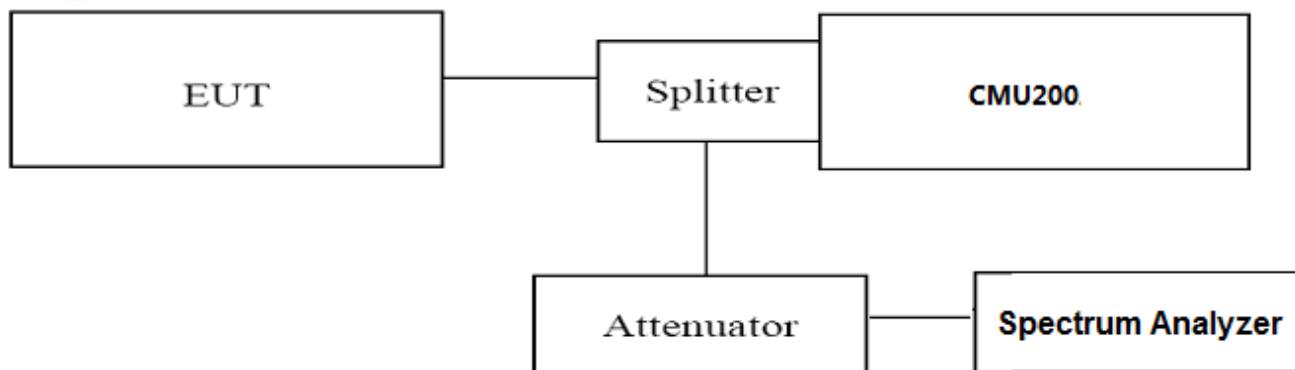
Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

4.4 Band Edge Compliance

TEST APPLICABLE

During the process of testing, the EUT was controlled via Agilent Digital Radio Communication tester (CMU200) to ensure max power transmission and proper modulation.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was set up for the max output power with pseudo random data modulation.
2. Set RBW=51KHz, VBW=150KHz, Span=2MHz, Dector: RMS.
3. These measurements were done at 2 frequencies (low and high of operational frequency range).

TEST RESULTS

UMTS/TM1/WCDMA Band V					
Test Mode	Channel	Frequency (MHz)	Band Edg Compliance (dBm)	Limits (dBm)	Verdict
UMTS/TM1/WCDMA Band V	4132	824.00	-27.42	-13dBm	PASS
	4233	849.00	-27.93	-13dBm	
UMTS/TM1/WCDMA Band II					
Test Mode	Channel	Frequency (MHz)	Band Edg Compliance (dBm)	Limits (dBm)	Verdict
UMTS/TM1/WCDMA Band II	9262	1850.00	-28.38	-13dBm	PASS
	9538	1910.00	-28.17	-13dBm	

Remark:

1. Test results including cable loss.
2. please refer to following plots.

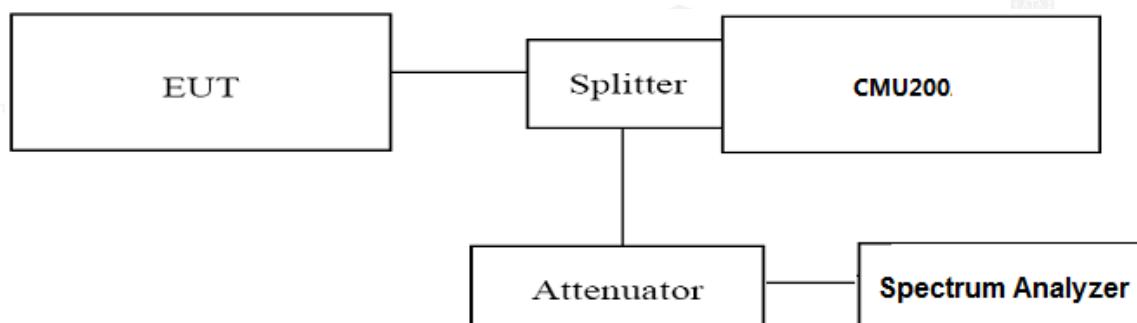
4.5 Spurious Emission on Antenna Port

TEST APPLICABLE

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of WCDMA band II data taken from 9 KHz to 20 GHz. For WCDMA Band V, data taken from 9 KHz to 9 GHz. WCDMA band I V data taken from 9 KHz to 20 GHz.
2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; if the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give an optimal sweep time according the selected span and RBW.
3. The procedure to get the conducted spurious emission is as follows:
The trace mode is set to MaxHold to get the highest signal at each frequency;
Wait 25 seconds; Get the result.
4. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was set up for the max output power with pseudo random data modulation.
2. These measurements were done at 3 frequencies (low, middle and high of operational frequency range) of each band.

TEST LIMIT

the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST RESULTS

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Test Mode	Channel	Frequency (MHz)	Frequency Range (Mhz)	Spurious RF Conducted Emission (dBm)	Limits (dBm)	Verdict
UMTS/TM1/WC DMA Band V	4132	826.40	150KHz-30MHz	-50.59	-13dBm	PASS
			30 MHz-1GHz	-58.78		
			1GHz-20GHz	-42.68		
	4182	836.40	150KHz-30MHz	-50.46		
			30 MHz-1GHz	-58.69		
			1GHz-20GHz	-42.62		
	4233	846.60	150KHz-30MHz	-50.37		
			30 MHz-1GHz	-58.95		
			1GHz-20GHz	-42.72		
UMTS/TM1/WC DMA Band II	9262	1852.40	150KHz-30MHz	-50.41	-13dBm	PASS
			30 MHz-1GHz	-49.09		
			1GHz-10GHz	-36.35		
	9400	1880.00	150KHz-30MHz	-50.17		
			30 MHz-1GHz	-49.11		
			1GHz-10GHz	-36.65		
	9538	1907.60	150KHz-30MHz	-50.03		
			30 MHz-1GHz	-49.03		
			1GHz-10GHz	-36.21		

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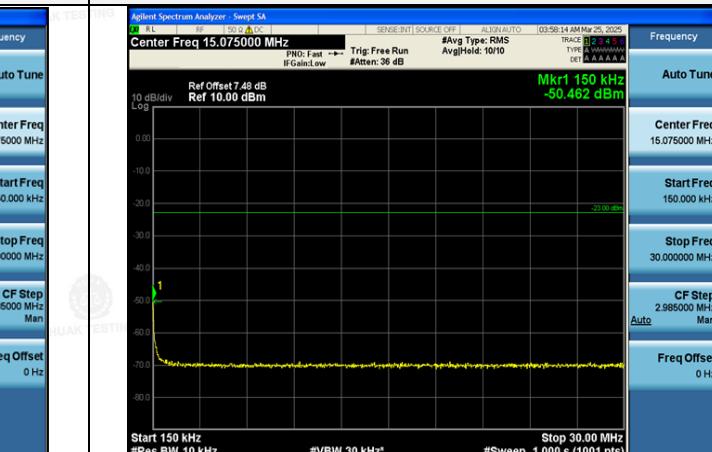
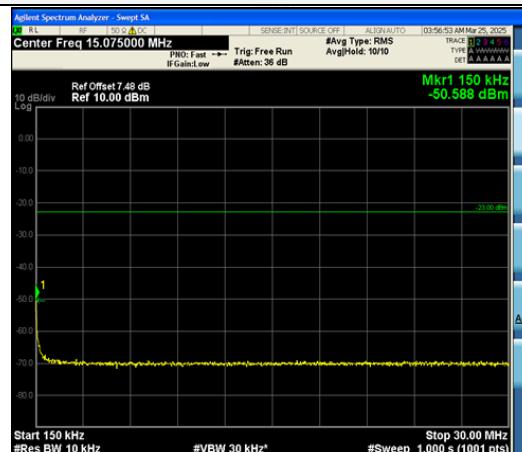


Spurious Emission on Antenna Port

UMTS/TM1/WCDMA Band V

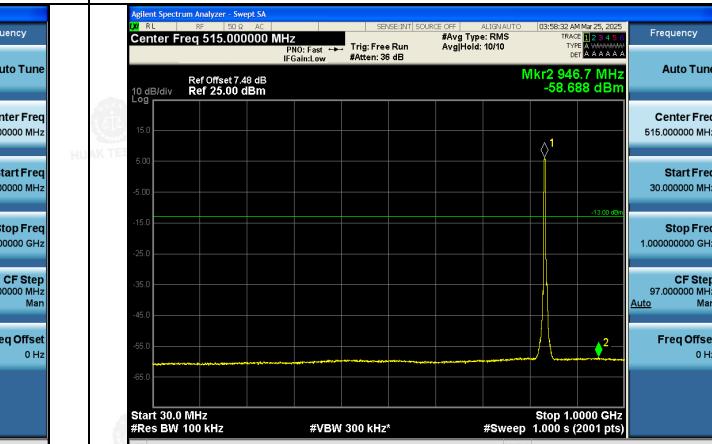
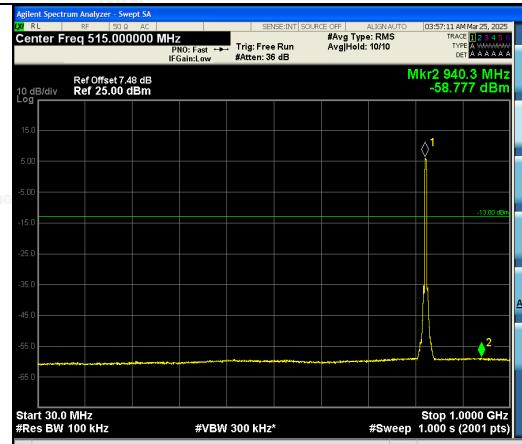
Channel 4132 / 826.4 MHz

Channel 4182 / 836.4 MHz



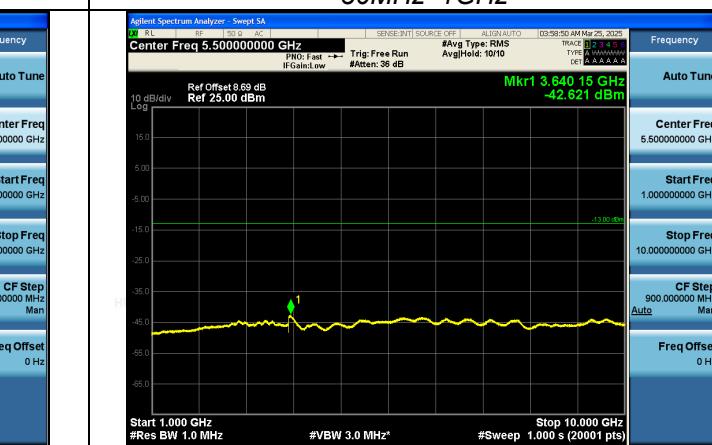
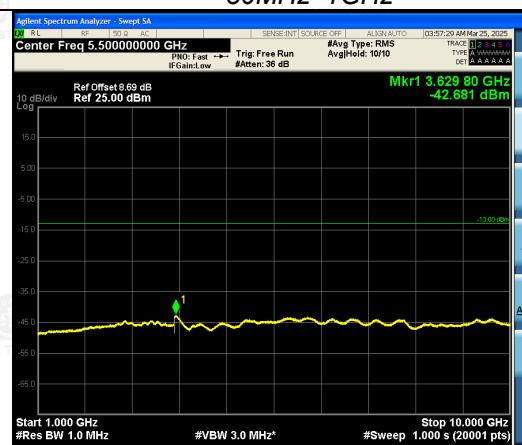
0.15MHz-30MHz

0.15MHz-30MHz



30MHz-1GHz

30MHz-1GHz



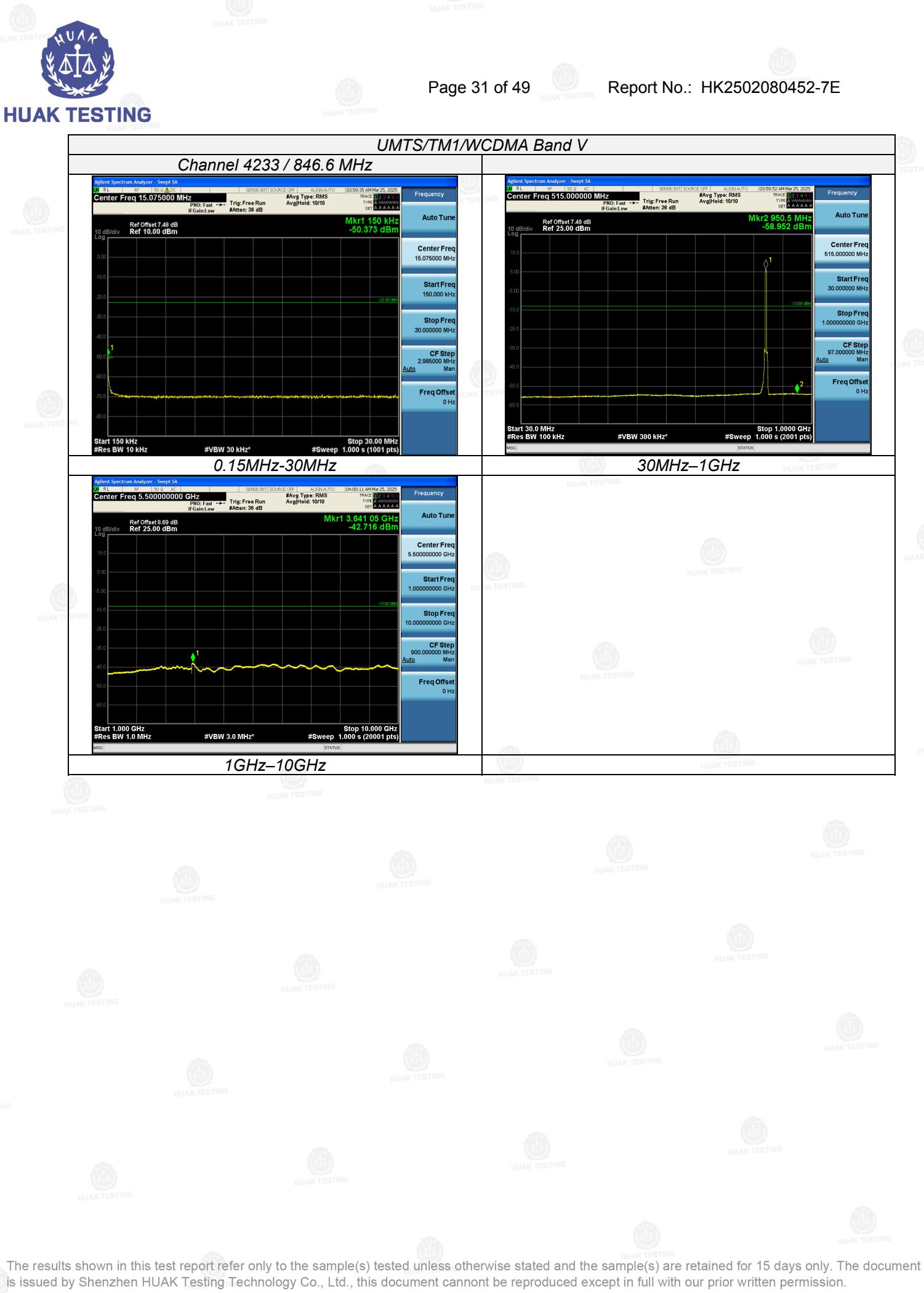
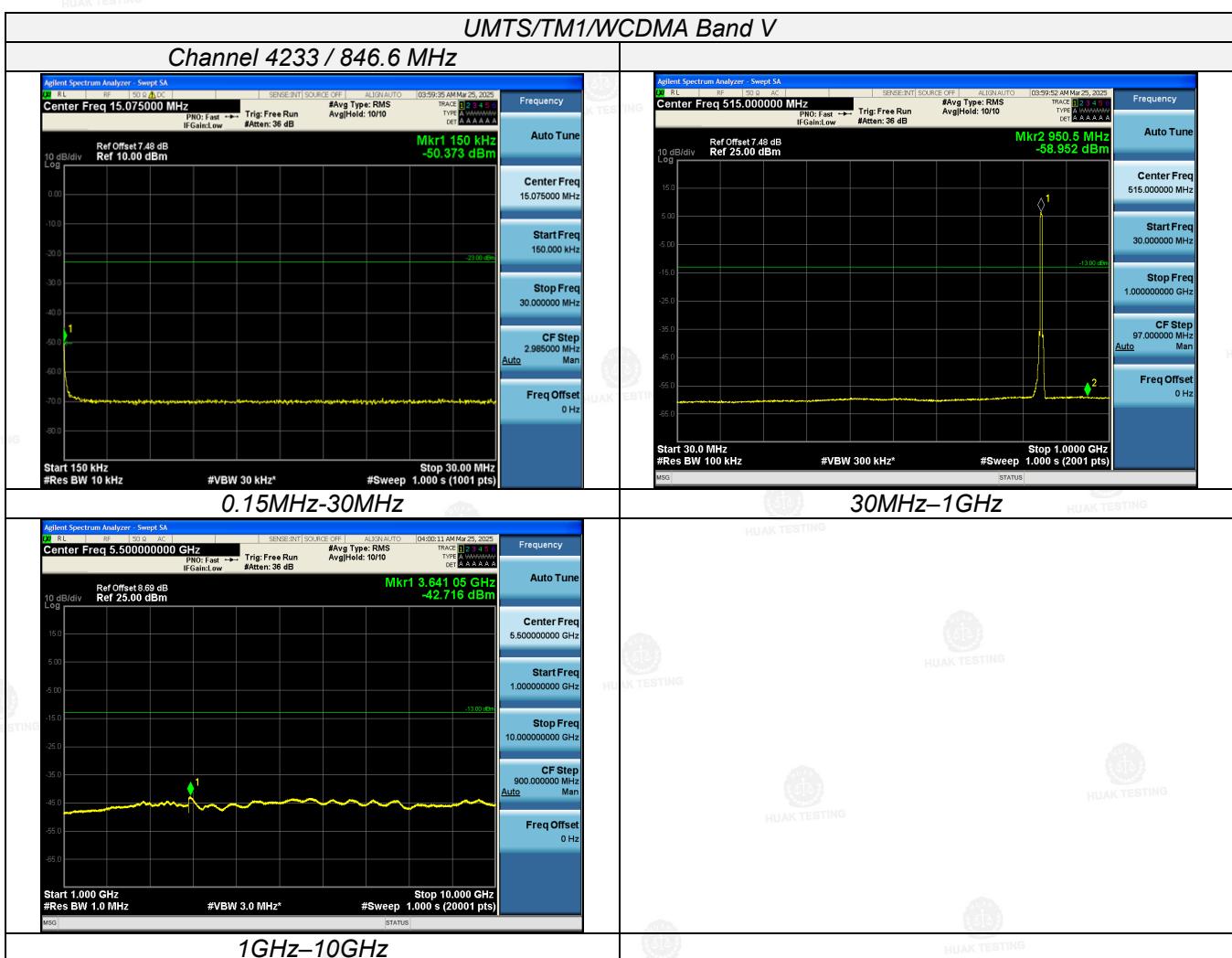
1GHz-10GHz

1GHz-10GHz

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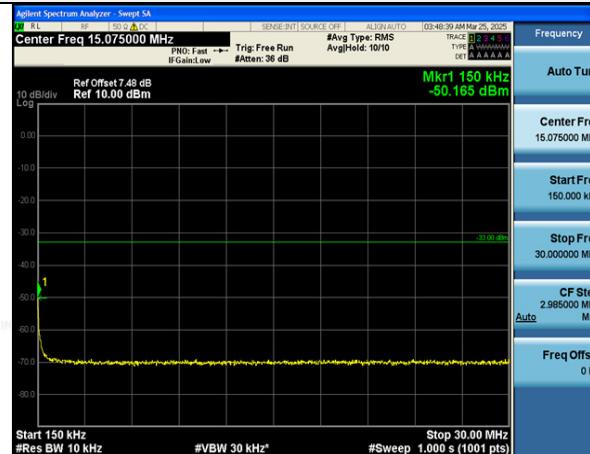
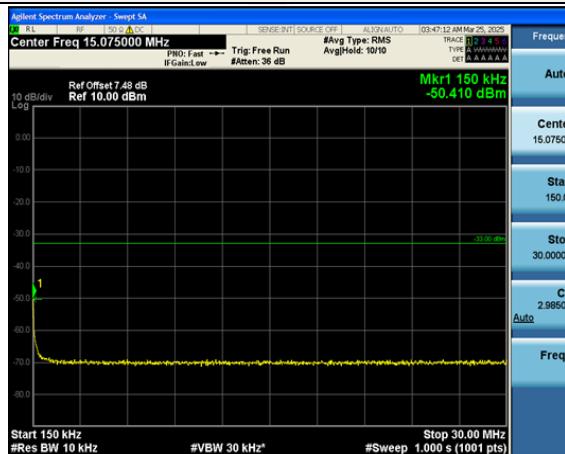


Spurious Emission on Antenna Port

UMTS/TM1/WCDMA Band II

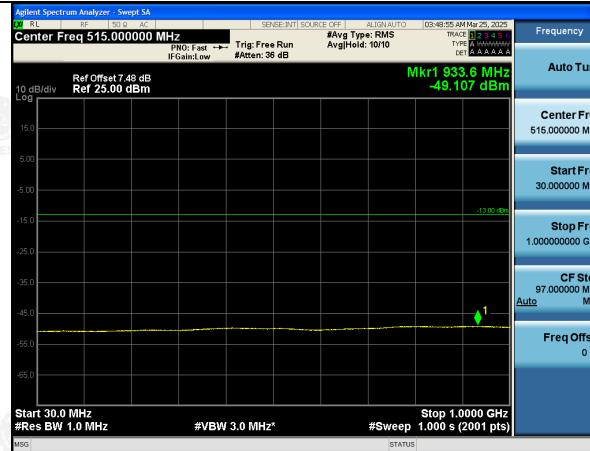
Channel 9262 / 1852.4 MHz

Channel 9400 / 1880.0 MHz



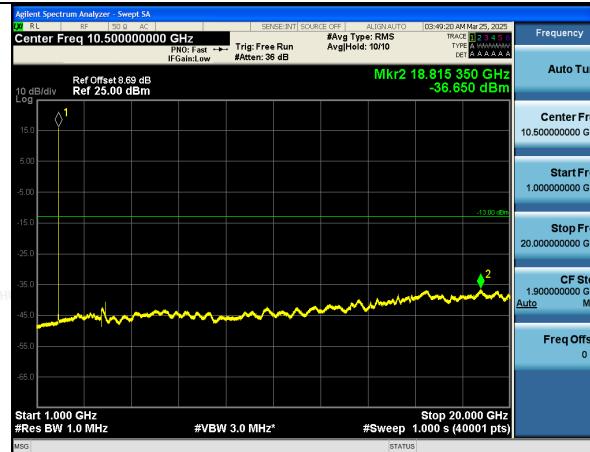
0.15MHz-30MHz

0.15MHz-30MHz



30MHz-1GHz

30MHz-1GHz



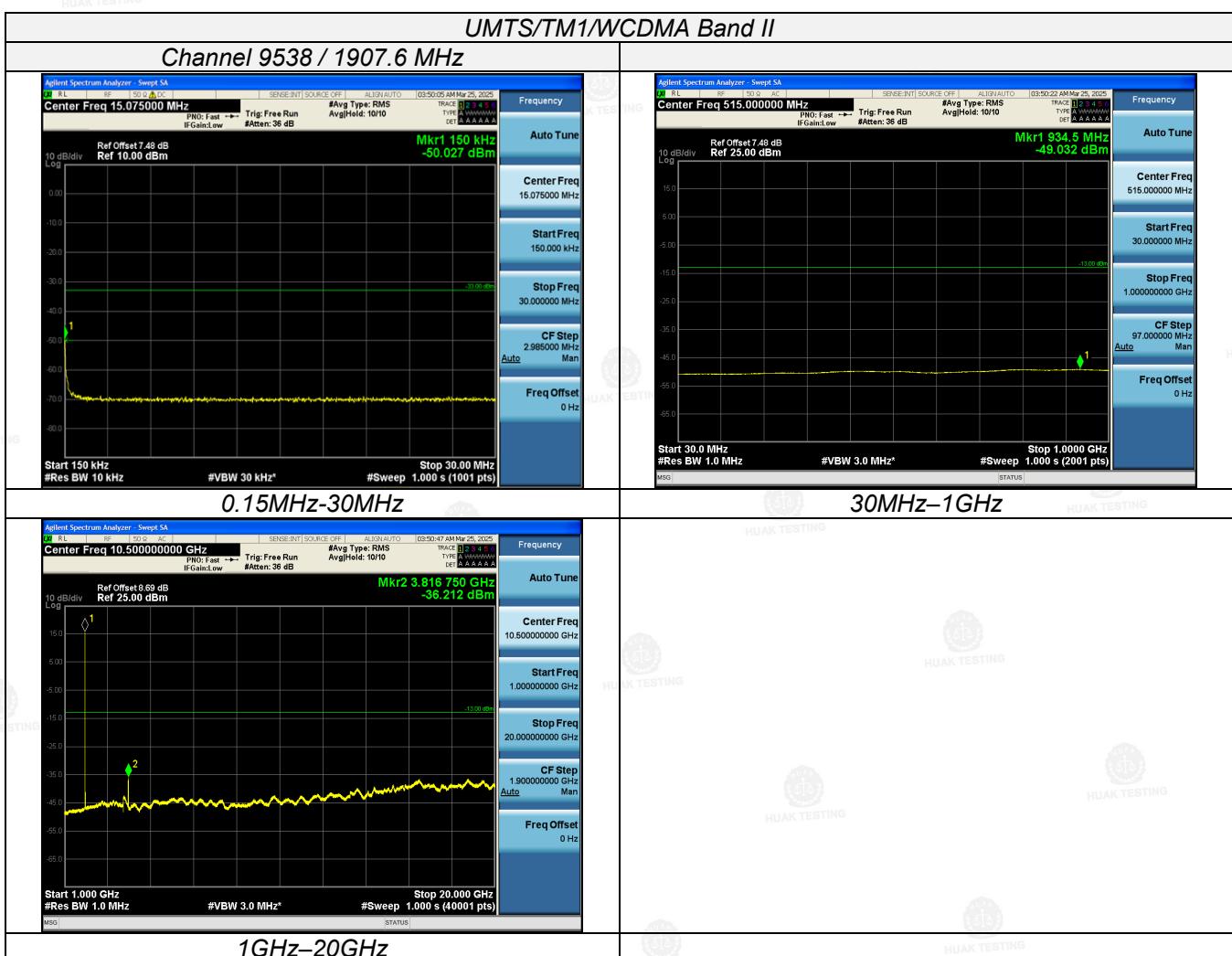
1GHz-20GHz

1GHz-20GHz

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TEST APPLICABLE

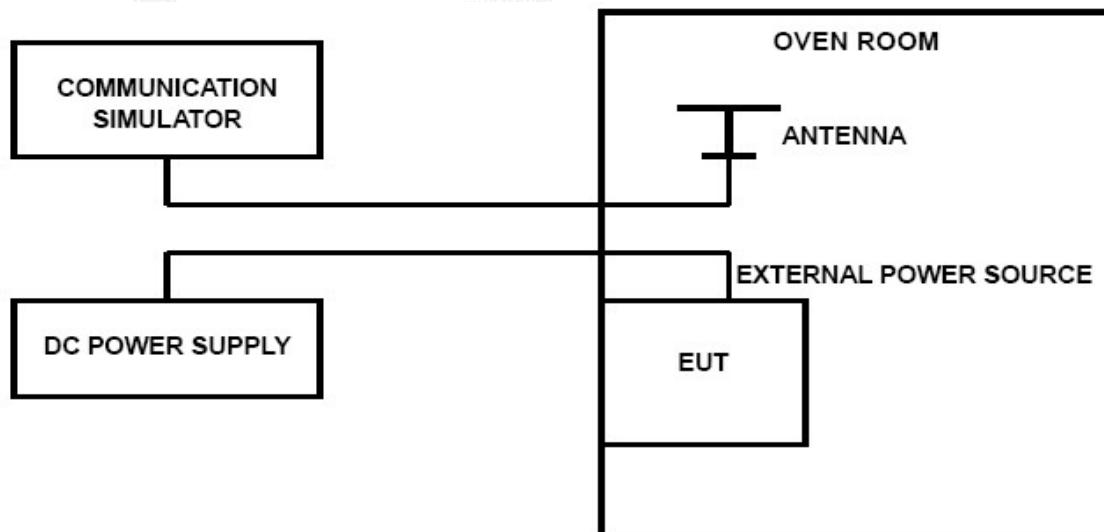
1. According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to +50°C centigrade.
2. According to FCC Part 2 Section 2.1055 (E) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacturer.
3. Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried voltage equipment and the end voltage point was 3.40V.

TEST PROCEDURE

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on middle channel of WCDMA Band V, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 0.5 hours at each temperature, unpowered, before making measurements.
5. Remeasure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments remeasuring carrier frequency at each voltage. Pause at nominal voltage for 0.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10°C increments from +50°C to -30°C. Allow at least 0.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

TEST CONFIGURATION



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**TEST LIMITS*****For Hand carried battery powered equipment***

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.40VDC and 4.20VDC, with a nominal voltage of 3.80DC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

TEST RESULTS**UMTS/TM1/WCDMA Band II**

DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict
4.25	20	-17.26	-0.009318	±2.50	PASS
5.0	20	-13.95	-0.007531	±2.50	PASS
5.75	20	-13.07	-0.007056	±2.50	PASS
5.0	-30	-7.10	-0.003777	±2.50	PASS
5.0	-20	-7.25	-0.003856	±2.50	PASS
5.0	-10	-12.18	-0.006479	±2.50	PASS
5.0	0	-12.71	-0.006663	±2.50	PASS
5.0	10	-13.21	-0.006925	±2.50	PASS
5.0	20	-12.80	-0.006710	±2.50	PASS
5.0	30	-10.72	-0.005787	±2.50	PASS
5.0	40	-7.02	-0.003790	±2.50	PASS
5.0	50	-11.79	-0.006365	±2.50	PASS

UMTS/TM1/WCDMA Band V

DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict
4.25	20	-11.99	-0.014509	±2.50	PASS
5.0	20	-10.95	-0.013250	±2.50	PASS
5.75	20	-9.07	-0.010975	±2.50	PASS
5.0	-30	-7.42	-0.008871	±2.50	PASS
5.0	-20	-7.63	-0.009122	±2.50	PASS
5.0	-10	-8.33	-0.009959	±2.50	PASS
5.0	0	-10.46	-0.012355	±2.50	PASS
5.0	10	-10.69	-0.012627	±2.50	PASS
5.0	20	-8.34	-0.009851	±2.50	PASS
5.0	30	-10.64	-0.012875	±2.50	PASS
5.0	40	-11.65	-0.014097	±2.50	PASS
5.0	50	-7.51	-0.009088	±2.50	PASS

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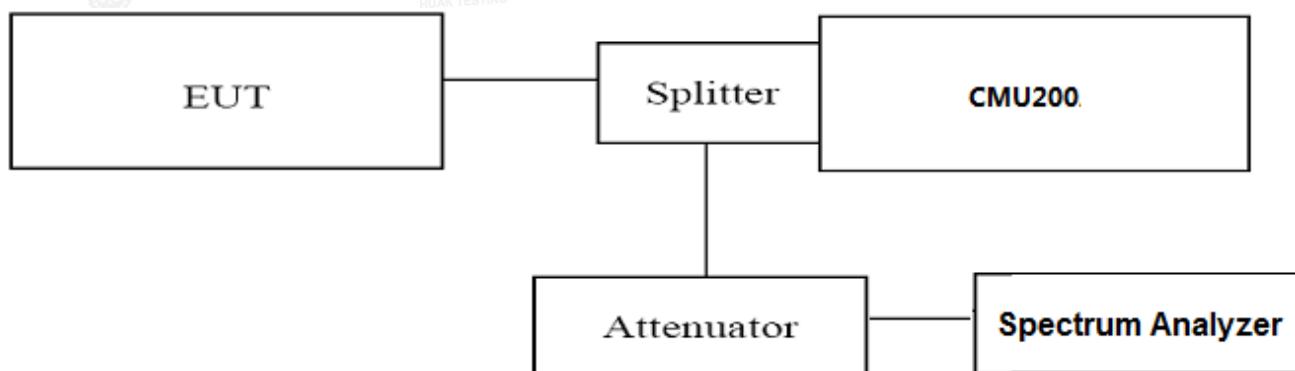
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LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
2. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
3. Set the number of counts to a value that stabilizes the measured CCDF curve;
4. Set the measurement interval as follows:
 - 1). for continuous transmissions, set to 1 ms;
 - 2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
5. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

Test Mode	Channel	Frequency (MHz)	PAPR Value (dB)	Limits (dB)	Verdict
UMTS/TM1/WCDMA Band II	9262	1852.40	3.02	13.0	PASS
	9400	1880.00	3.04	13.0	PASS
	9538	1907.60	3.08	13.0	PASS
UMTS/TM1/ WCDMA Band V	4132	826.40	3.01	13.0	PASS
	4182	836.40	2.94	13.0	PASS
	4233	846.60	3.04	13.0	PASS

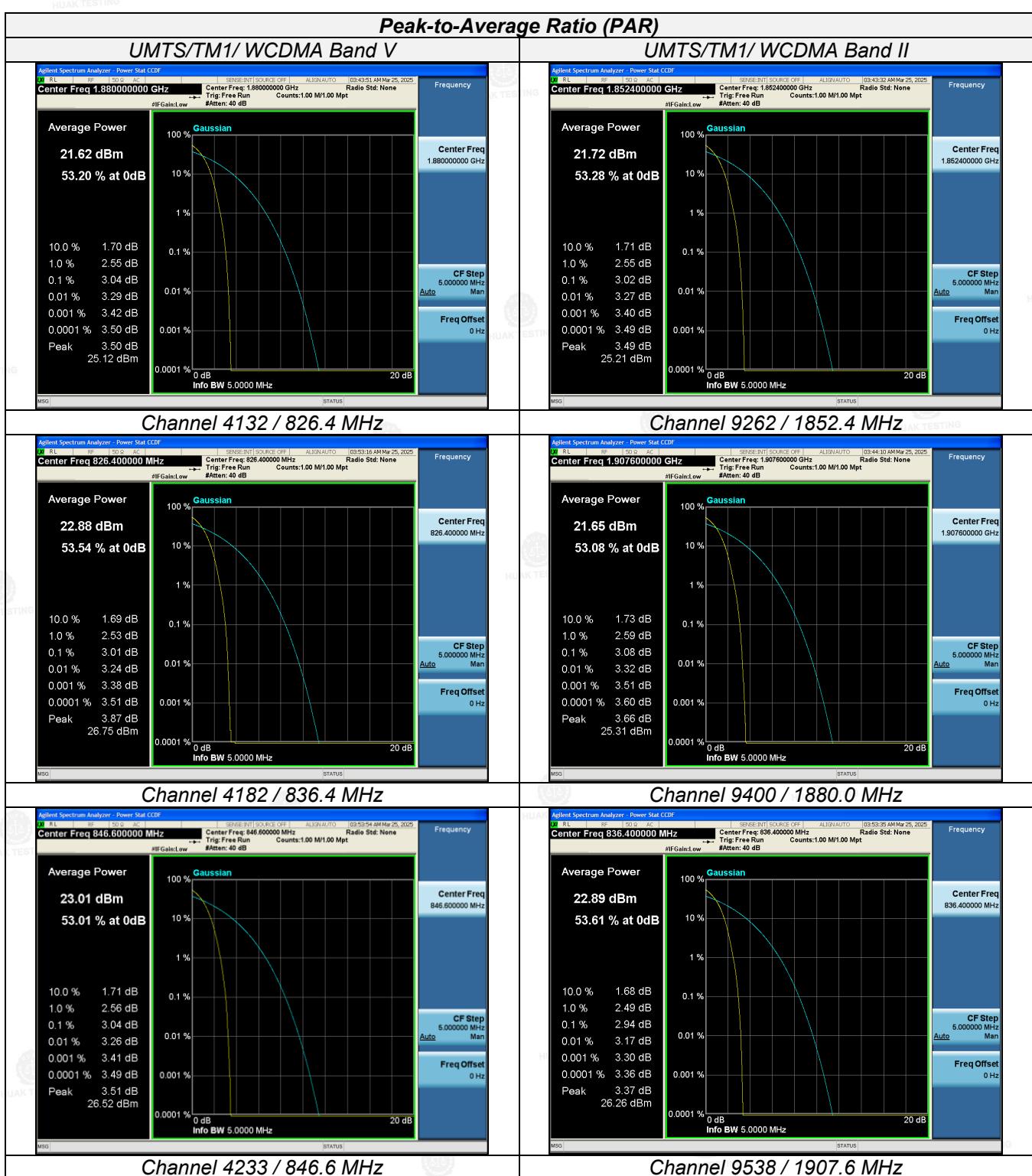
Remark:

1. Test results including cable loss;
2. please refer to following plots;

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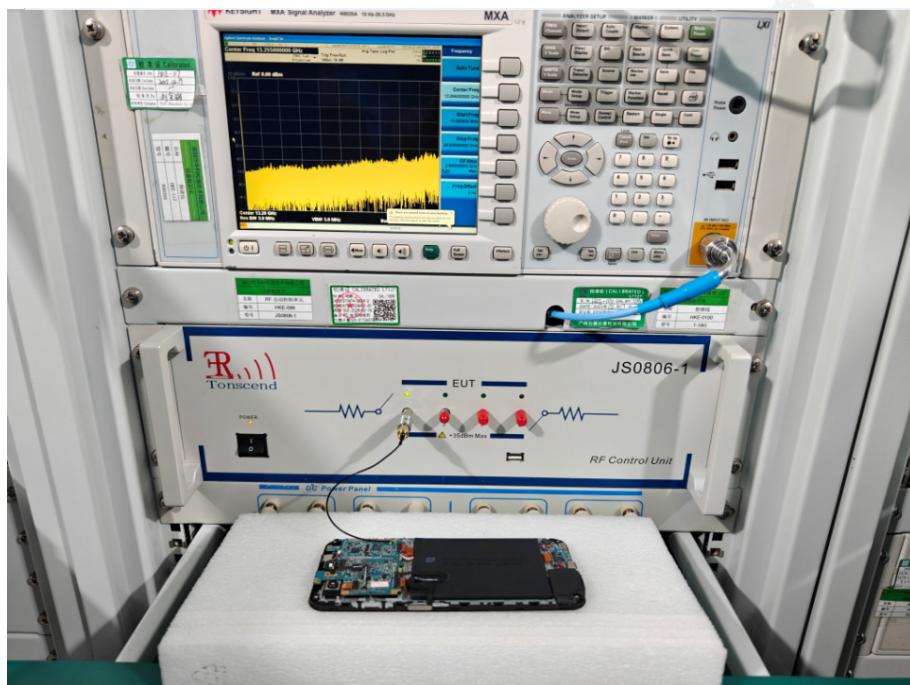
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RF Conducted Emission



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