FCC Test Report

Product Name	:	TracKing V5
Trade Name	:	Thermo King
Model No.	:	TKV5
FCC ID	:	Q37TKV5
Applicant	:	Thermo King Corporation
Address	:	314 West 90th Street, Minneapolis, MN USA 55420
Date of Receipt	:	Aug. 24, 2021
Issued Date	:	Nov. 12, 2021
Report No.	:	2181021R-E3042110007
Report Version	:	V1.0

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.
The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Test Report Certification

Product Name	:	TracKing V5
Applicant	:	Thermo King Corporation
Address	:	314 West 90th Street, Minneapolis, MN USA 55420
Manufacturer	:	Thermo King Corporation
Address	:	314 West 90th Street, Minneapolis, MN USA 55420
Trade Name	:	Thermo King
Model No.	:	TKV5
FCC ID	:	Q37TKV5
EUT Voltage	:	DC 14.2V
Testing Voltage	:	DC 14.2V
Applicable Standard	:	FCC CFR Title 47 Part 22 Subpart H FCC CFR Title 47 Part 24 Subpart E FCC CFR Title 47 Part 27 Subpart M ANSI/TIA-603-E
Test Lab	:	Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C. TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result	:	Complied

Documented By : Carol Tsai

(Carol Tsai / Senior Engineering Adm. Specialist)

Approved By : Louis Hsu

(Louis Hsu / Deputy Manager)

The test results relate only to the samples tested.
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Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Nov. 12, 2021

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1. General Information

1.1. EUT Description

Product Name	TracKing V5
Trade Name	Thermo King
Model No.	TKV5
Tx Frequency Range (MHz)	WCDMA Band 2: 1852.4-1907.6 WCDMA Band 4: 1712.4-1752.6 WCDMA Band 5: 826.4-846.6
Rx Frequency Range (MHz)	WCDMA Band 2: 1932.4-1987.6 WCDMA Band 4: 2112.4-2152.6 WCDMA Band 5: 871.4-891.6
Function	WCDMA / HSDPA / DC-HSDPA / HSUPA / HSPA+
Type of Modulation	BPSK / QPSK / 16QAM / 64QAM
Hardware Version	1.0
Software Version	1.00001
IMEI No.	864049050129487

Antenna Information						
Ant. No.	Manufacturer	Model No.	Ant. Type	Ant. Gain (dBi)		
				WCDMA Band 2	WCDMA Band 4	WCDMA Band 5
0	N/A	N/A	PCB	2.33	3.39	-0.27

Note:

1. The above EUT information is declared by the manufacturer.
2. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
3. This device was tested under all bandwidths, RB configurations and modulations.
   The worst case was found in RMC mode and show the worst case in the test report.
4. The 64QAM modulation for downlink only.

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: WCDMA Band 2 Mode 2: WCDMA Band 4 Mode 3: WCDMA Band 5

Note: The EUT was performed at X axis and Z axis position for radiated spurious emission test.

The worst case was found at Z axis, so the measurement will follow this same test configuration.

1.3. Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

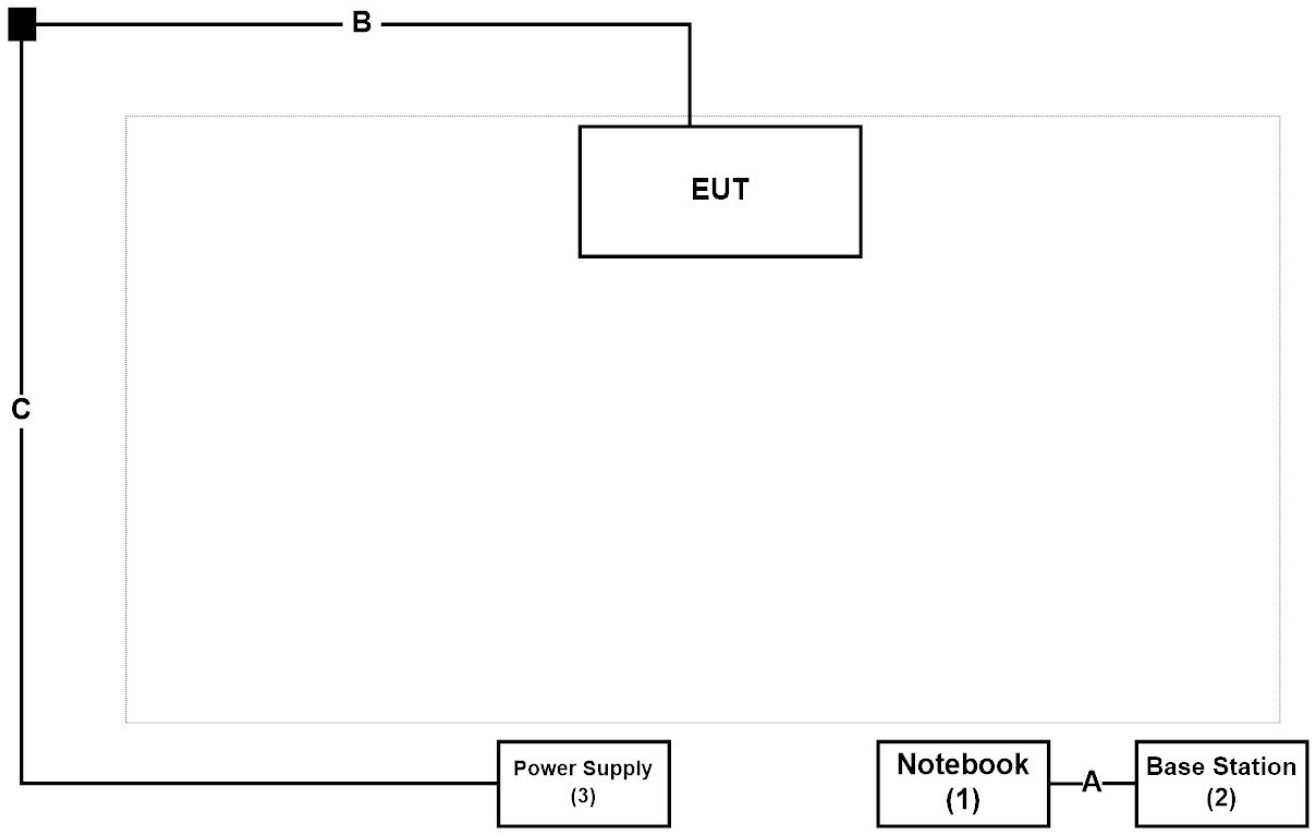
1.4. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Horn Antenna	Schwarzbeck	BBHA 9120D	1640	N/A	--
2	Base Station	R&S	CMW500	157118	N/A	Non-Shielded, 1.8m
3	Power Supply	Topward	6303D	8095908	N/A	Non-Shielded, 1.8m

1.5. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	RF Cable	Shielded, 6m
B	DC Cable	Non-Shielded, 3.15m
C	DC Cable	Non-Shielded, 10m

1.6. EUT Operation of during Test

1	Set the EUT as shown.
2	EUT is connected through the base station.
3	Configure test mode, test channel and data rate.
4	Let the EUT start sending continuously.
5	Verify that the device is working properly.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

WCDMA Band 2			
FCC Part 24 Subpart E			
Performed Item	FCC Rule	Limit	Result
RF Output Power	§2.1033 §2.1046 §24.232	< 2 Watts EIRP	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak to Average Ratio	§24.232(d)	≦ 13dB	Pass
Conducted Band Edge	§27.238	< -13dBm	Pass
Spurious Emission	§2.1053 §24.238	< -13dBm	Pass
Frequency Stability	§2.1055 §24.235	< 2.5 ppm	Pass

WCDMA Band 4			
FCC Part 27 Subpart M			
Performed Item	FCC Rule	Limit	Result
RF Output Power	§2.1046 § 27.50(h)(2)	< 1 Watts EIRP	Pass
Occupied Bandwidth	§ 2.1049 § 27.53(l)(6)	N/A	Pass
Peak to Average Ratio	§27.50(b)	≦ 13dB	Pass
Conducted Band Edge	§ 2.1051 §27.53(l)(4)(6)	< -13 dBm	Pass
Spurious Emission	§ 2.1051 §27.53(l)(4)(6)	< -25 dBm	Pass
Frequency Stability	§2.1055(a)(l) § 27.54	< 2.5 ppm	Pass

WCDMA Band 5			
FCC Part 22 Subpart H			
Performed Item	FCC Rule	Limit	Result
RF Output Power	§2.1033 §2.1046 §22.913	< 7 Watts ERP	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak to Average Ratio	§22.913(d)	≦ 13dB	Pass
Conducted Band Edge	§22.917	< -13dBm	Pass
Spurious Emission	§2.1053 §22.917	< -13dBm	Pass
Frequency Stability	§2.1055 §22.335	< 2.5 ppm	Pass

Note: Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.2. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Actually	Tested by	Test Date	Test Site
Temperature (°C)	RF Output Power	24 ~ 24.2	Getaz Yang	2021/8/29 ~ 2021/9/6	SR12-H
Humidity (%RH)		58 ~ 64			
Temperature (°C)	Occupied Bandwidth	24 ~ 24.2	Getaz Yang	2021/8/29 ~ 2021/9/6	SR12-H
Humidity (%RH)		58 ~ 64			
Temperature (°C)	Peak to Average Ratio	24 ~ 24.2	Getaz Yang	2021/8/29 ~ 2021/9/6	SR12-H
Humidity (%RH)		58 ~ 64			
Temperature (°C)	Conducted Band Edge	24 ~ 24.2	Getaz Yang	2021/8/29 ~ 2021/9/6	SR12-H
Humidity (%RH)		58 ~ 64			
Temperature (°C)	Spurious Emission (Conducted Spurious Emission)	24 ~ 24.2	Getaz Yang	2021/8/29 ~ 2021/9/6	SR12-H
Humidity (%RH)		58 ~ 64			
Temperature (°C)	Spurious Emission (Radiated Spurious Emission)	23.1 ~ 23.7	Getaz Yang Cyril Chen	2021/8/29 ~ 2021/8/31	CB2-H
Humidity (%RH)		61.3 ~ 64.3			
Temperature (°C)	Frequency Stability	25.3	Rueyyan Lin	2021/9/24	SR12-H
Humidity (%RH)		63			

Note: Test site information refers to Laboratory Information.

Laboratory Information

USA	**:**	**FCC Registration Number: TW3024**
Canada	**:**	**CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
Note: Test site number for address 1 includes SR2-H. Test site number for address 2 includes CB2-H, CB3-H, CB4-H, SR10-H and SR12-H.	

2.3. List of Test Equipment

SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2020/11/30	2021/11/29
Pulse Power Sensor	Anritsu	MA2411B	1531043	2020/11/30	2021/11/29
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Pulse Power Sensor	Anritsu	MA2411B	1531044	2020/11/30	2021/11/29
Power Meter	Keysight	8990B	MY51000248	2021/05/21	2022/05/20
Power Sensor	Keysight	N1923A	MY57240005	2021/05/21	2022/05/20
Spectrum Analyzer	Keysight	N9030B	MY57140404	2021/05/14	2022/05/13
Spectrum Analyzer	Keysight	N9010B	MY57110159	2021/03/29	2022/03/28
Wideband Radio Communication Tester	R&S	CMW500	106071	2021/01/27	2022/01/26
Wireless Conn. Tseter	R&S	CMW500	157118	2021/07/07	2022/07/06
Spectrum Analyzer	Agilent	N9010A	US47140172	2021/05/28	2022/05/27
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

CB2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2020/10/12	2021/10/11
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30
Signal Analyzer	R&S	FSVA40	101435	2021/06/04	2022/06/03
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Trilog Broadband Antenna	Schwarzbeck	VULB 9168	1272	2021/08/20	2022/08/19
Bilog Antenna	Teseq	CBL6112D	23191	2021/02/26	2022/02/25
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2021/05/17	2022/05/16
Horn Antenna	Schwarzbeck	BBHA 9170	202	2020/12/16	2021/12/15
Pre-Amplifier	EMCI	EMC01820I	980365	2021/05/28	2022/05/27
Pre-Amplifier	EMEC	EM01G18GA	060741	2021/07/02	2022/07/01
Pre-Amplifier	DEKRA	AP-400C	201801231	2020/11/16	2021/11/15
Wideband Radio Communication Tester	R&S	CMW500	106071	2021/01/27	2022/01/26
Wireless Conn. Tseter	R&S	CMW500	157118	2021/07/07	2022/07/06
Coaxial Cable(13m)	Huber+Suhner	SF104	CB2-H	2021/08/17	2022/08/16
Radiated Software	AUDIX	e3 V9	CB2-H	N/A	N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

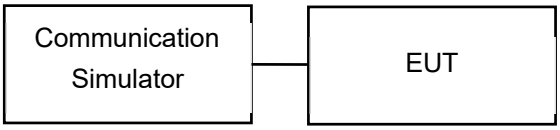
2.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

Test Item	Uncertainty
RF Output Power	± 1.16 dB
Occupied Bandwidth	± 214 Hz
Peak to Average Ratio	± 2.11dB
Conducted Band Edge	± 2.11 dB
Spurious Emissions	below 1GHz as ± 3.4 dB above 1GHz as ± 3.46 dB
FrequencyStability	± 214 Hz

3. RF Output Power

3.1. Test Setup



3.2. Test Procedure

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum conducted RF output power under transmission mode and specific channel frequency. The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$ERP \text{ or } EIRP = P_{Meas} + G_T - L_C$$

where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB

3.3. Test Methodology and Reference Procedures

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI C63.26-2015

3.4. Test Result of RF Output Power

WCDMA Band 2						
Test Mode	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	RF Output Power (dBm)	RF Output Power (W)	Limit (W) EIRP
RMC	1852.4	23.69	2.33	26.020	0.400	2
	1880	23.48	2.33	25.810	0.381	2
	1907.6	23.22	2.33	25.550	0.359	2
HSUPA Subtest 1	1852.4	22.29	2.33	24.620	0.290	2
	1880	22.05	2.33	24.380	0.274	2
	1907.6	21.92	2.33	24.250	0.266	2
HSUPA Subtest 2	1852.4	22.88	2.33	25.210	0.332	2
	1880	22.78	2.33	25.110	0.324	2
	1907.6	21.59	2.33	23.920	0.247	2
HSUPA Subtest 3	1852.4	23.19	2.33	25.520	0.356	2
	1880	23.01	2.33	25.340	0.342	2
	1907.6	22.92	2.33	25.250	0.335	2
HSUPA Subtest 4	1852.4	23.20	2.33	25.530	0.357	2
	1880	22.97	2.33	25.300	0.339	2
	1907.6	22.76	2.33	25.090	0.323	2
HSUPA Subtest 5	1852.4	22.99	2.33	25.320	0.340	2
	1880	22.89	2.33	25.220	0.333	2
	1907.6	22.42	2.33	24.750	0.299	2
HSDPA Subtest 1	1852.4	21.11	2.33	23.440	0.221	2
	1880	20.37	2.33	22.700	0.186	2
	1907.6	20.32	2.33	22.650	0.184	2
HSDPA Subtest 2	1852.4	20.48	2.33	22.810	0.191	2
	1880	20.42	2.33	22.750	0.188	2
	1907.6	20.42	2.33	22.750	0.188	2
HSDPA Subtest 3	1852.4	19.84	2.33	22.170	0.165	2
	1880	19.68	2.33	22.010	0.159	2
	1907.6	19.62	2.33	21.950	0.157	2
HSDPA Subtest 4	1852.4	20.36	2.33	22.690	0.186	2
	1880	20.28	2.33	22.610	0.182	2
	1907.6	20.01	2.33	22.340	0.171	2

Note: RF Output Power (W) EIRP = Conducted Output Power (dBm) + Antenna Gain (dBi)

WCDMA Band 4						
Test Mode	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	RF Output Power (dBm)	RF Output Power (W)	Limit (W) EIRP
RMC	1712.4	22.02	3.39	25.410	0.348	1
	1732.6	23.60	3.39	26.990	0.500	1
	1752.6	23.51	3.39	26.900	0.490	1
HSUPA Subtest 1	1712.4	20.72	3.39	24.110	0.258	1
	1732.6	22.10	3.39	25.490	0.354	1
	1752.6	22.01	3.39	25.400	0.347	1
HSUPA Subtest 2	1712.4	21.32	3.39	24.710	0.296	1
	1732.6	23.00	3.39	26.390	0.436	1
	1752.6	22.81	3.39	26.200	0.417	1
HSUPA Subtest 3	1712.4	21.52	3.39	24.910	0.310	1
	1732.6	23.20	3.39	26.590	0.456	1
	1752.6	23.21	3.39	26.600	0.457	1
HSUPA Subtest 4	1712.4	21.62	3.39	25.010	0.317	1
	1732.6	23.16	3.39	26.550	0.452	1
	1752.6	23.11	3.39	26.500	0.447	1
HSUPA Subtest 5	1712.4	21.42	3.39	24.810	0.303	1
	1732.6	23.00	3.39	26.390	0.436	1
	1752.6	22.91	3.39	26.300	0.427	1
HSDPA Subtest 1	1712.4	19.72	3.39	23.110	0.205	1
	1732.6	21.10	3.39	24.490	0.281	1
	1752.6	21.01	3.39	24.400	0.275	1
HSDPA Subtest 2	1712.4	18.72	3.39	22.110	0.163	1
	1732.6	20.40	3.39	23.790	0.239	1
	1752.6	20.31	3.39	23.700	0.234	1
HSDPA Subtest 3	1712.4	18.02	3.39	21.410	0.138	1
	1732.6	19.50	3.39	22.890	0.195	1
	1752.6	19.31	3.39	22.700	0.186	1
HSDPA Subtest 4	1712.4	18.52	3.39	21.910	0.155	1
	1732.6	20.50	3.39	23.890	0.245	1
	1752.6	20.01	3.39	23.400	0.219	1

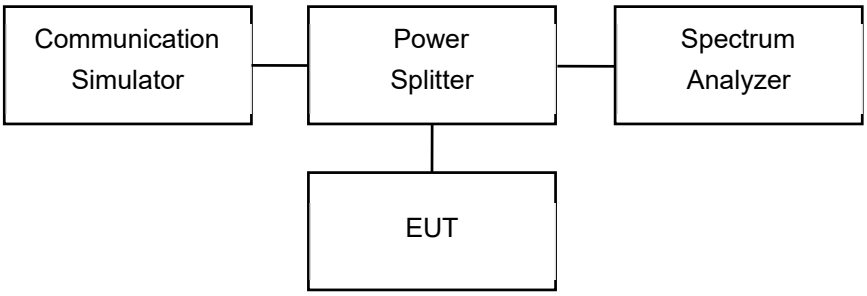
Note: RF Output Power (W) EIRP = Conducted Output Power (dBm) + Antenna Gain (dBi)

WCDMA Band 5						
Test Mode	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	RF Output Power (dBm)	RF Output Power (W)	Limit (W) ERP
RMC	826.4	23.79	-0.27	21.370	0.137	7
	836.6	23.76	-0.27	21.340	0.136	7
	846.6	23.81	-0.27	21.390	0.138	7
HSUPA Subtest 1	826.4	22.59	-0.27	20.170	0.104	7
	836.6	22.86	-0.27	20.440	0.111	7
	846.6	22.91	-0.27	20.490	0.112	7
HSUPA Subtest 2	826.4	23.19	-0.27	20.770	0.119	7
	836.6	23.36	-0.27	20.940	0.124	7
	846.6	23.51	-0.27	21.090	0.129	7
HSUPA Subtest 3	826.4	23.29	-0.27	20.870	0.122	7
	836.6	23.56	-0.27	21.140	0.130	7
	846.6	23.59	-0.27	21.170	0.131	7
HSUPA Subtest 4	826.4	23.19	-0.27	20.770	0.119	7
	836.6	23.43	-0.27	21.010	0.126	7
	846.6	23.45	-0.27	21.030	0.127	7
HSUPA Subtest 5	826.4	23.19	-0.27	20.770	0.119	7
	836.6	23.46	-0.27	21.040	0.127	7
	846.6	23.51	-0.27	21.090	0.129	7
HSDPA Subtest 1	826.4	21.59	-0.27	19.170	0.083	7
	836.6	21.66	-0.27	19.240	0.084	7
	846.6	21.91	-0.27	19.490	0.089	7
HSDPA Subtest 2	826.4	20.99	-0.27	18.570	0.072	7
	836.6	20.86	-0.27	18.440	0.070	7
	846.6	21.31	-0.27	18.890	0.077	7
HSDPA Subtest 3	826.4	19.59	-0.27	17.170	0.052	7
	836.6	19.96	-0.27	17.540	0.057	7
	846.6	20.21	-0.27	17.790	0.060	7
HSDPA Subtest 4	826.4	20.79	-0.27	18.370	0.069	7
	836.6	20.56	-0.27	18.140	0.065	7
	846.6	20.81	-0.27	18.390	0.069	7

Note: RF Output Power (W) ERP = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15dB

4. Occupied Bandwidth

4.1. Test Setup



4.2. Test Procedure

The EUT makes a call to the communication simulator. The 26dB bandwidth and 99% occupied bandwidth measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.

4.3. Test Methodology and Reference Procedures

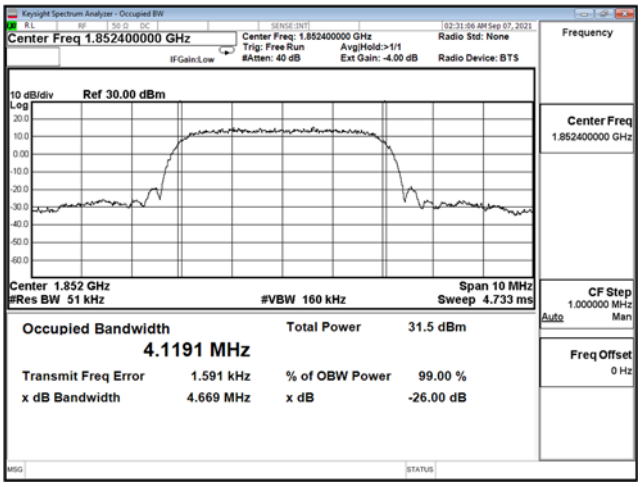
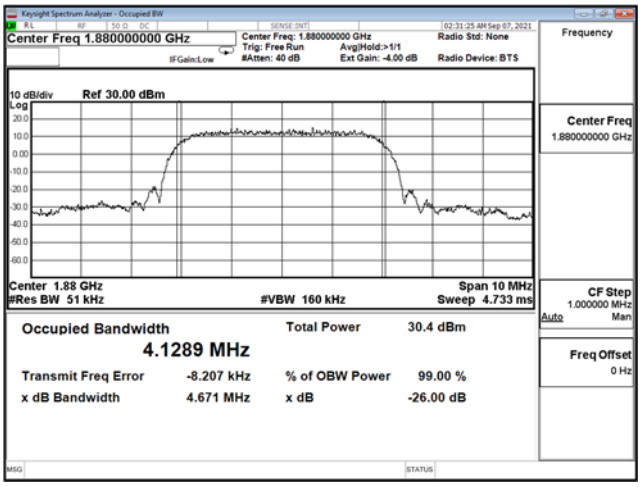
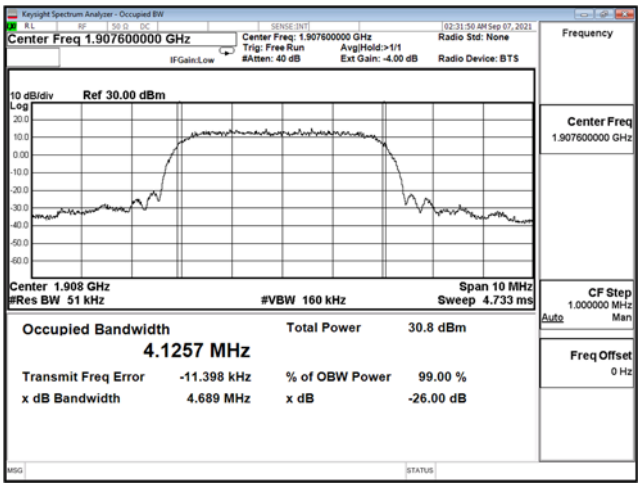
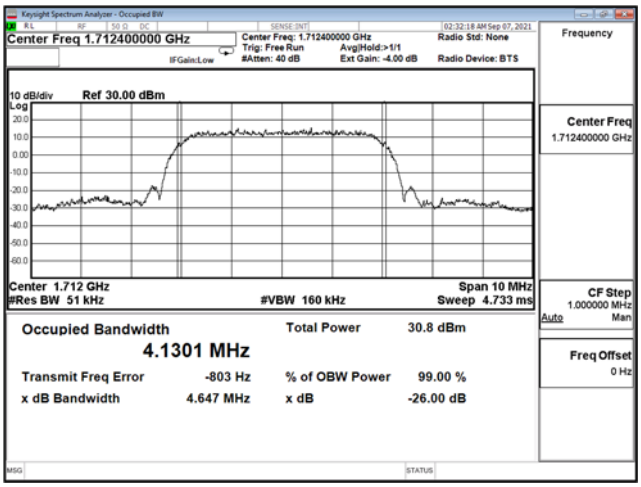
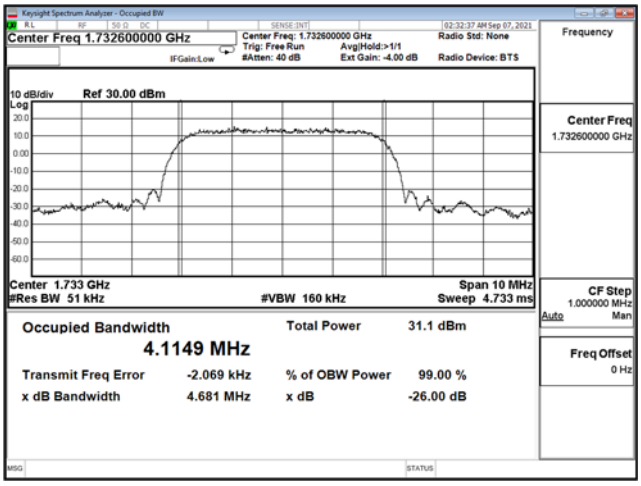
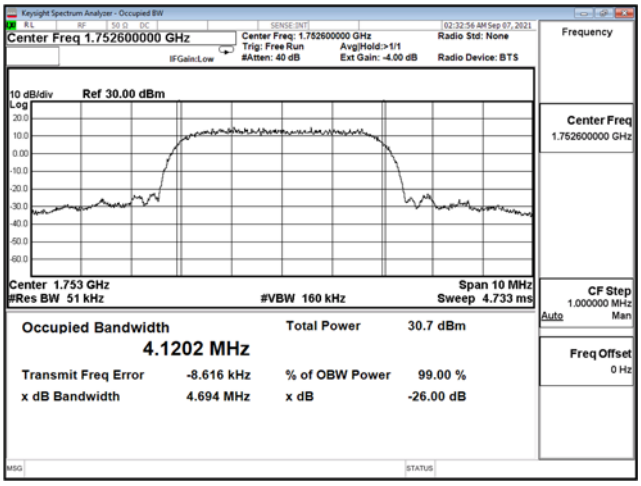
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI C63.26-2015

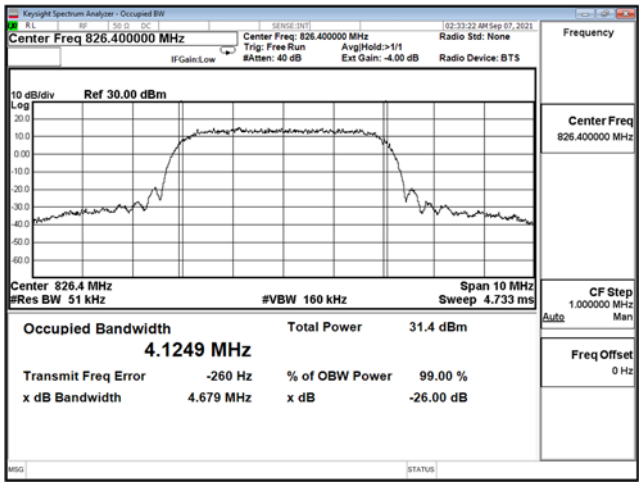
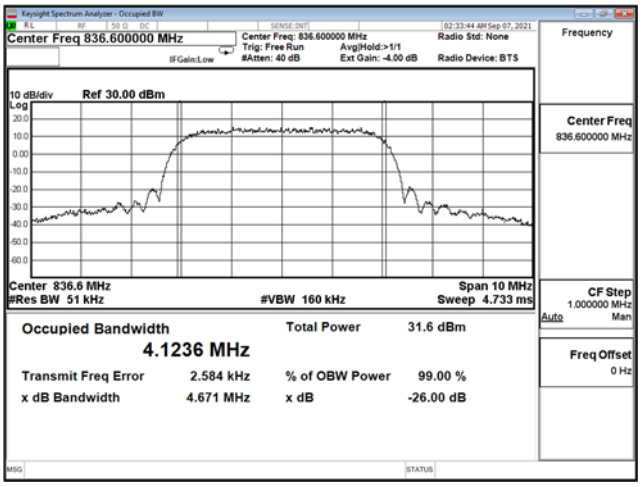
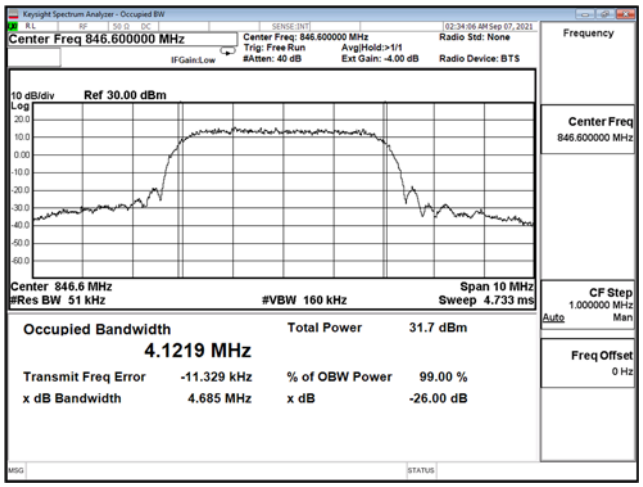
4.4. Test Result of Occupied Bandwidth

WCDMA Band 2					
Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% OBW	
RMC	9262	1852.4	4.669	4.1191	N/A
	9400	1880	4.671	4.1289	N/A
	9538	1907.6	4.689	4.1257	N/A

WCDMA Band 4					
Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% OBW	
RMC	1312	1712.4	4.647	4.1301	N/A
	1413	1732.6	4.681	4.1149	N/A
	1513	1752.6	4.694	4.1202	N/A

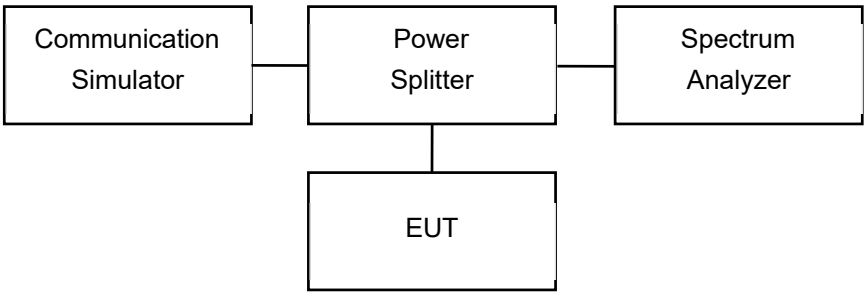
WCDMA Band 5					
Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% OBW	
RMC	4132	826.4	4.679	4.1249	N/A
	4183	836.6	4.671	4.1236	N/A
	4233	846.6	4.685	4.1219	N/A

WCDMA Band 2 / CH9262 / RMC	WCDMA Band 2 / CH9400 / RMC
	
WCDMA Band 2 / CH9538 / RMC	**WCDMA Band 4 / CH1312 / RMC**
	
WCDMA Band 4 / CH1413 / RMC	**WCDMA Band 4 / CH1513 / RMC**
	

WCDMA Band 5 / CH4132 / RMC	WCDMA Band 5 / CH4183 / RMC
	
WCDMA Band 5 / CH4233 / RMC	**N/A**
	

5. Peak to Average Ratio

5.1. Test Setup



5.2. Test Procedure

1. The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.
2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth.
3. Set the number of counts to a value that stabilizes the measured CCDF curve.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

5.3. Test Methodology and Reference Procedures

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ANSI C63.26-2015

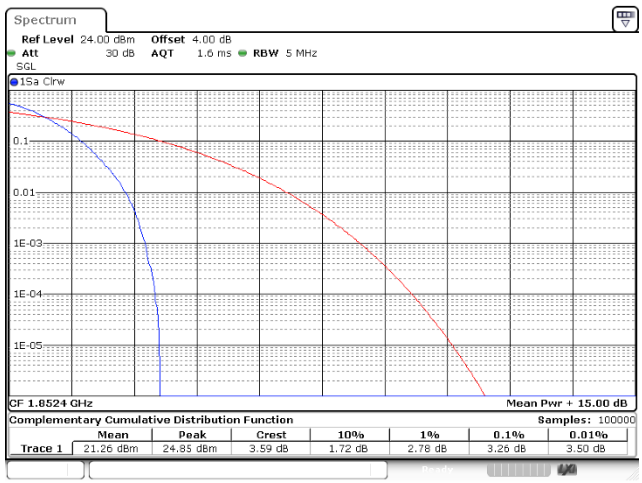
5.4. Test Result of Peak to Average Ratio

WCDMA Band 2					
Channel	Frequency (MHz)	Modulation	Peak (dBm)	Average (dBm)	PAPR (dB)
9262	1852.4	RMC	24.85	21.26	3.26
9400	1880		24.72	21.24	3.20
9538	1907.6		24.47	21.10	3.07

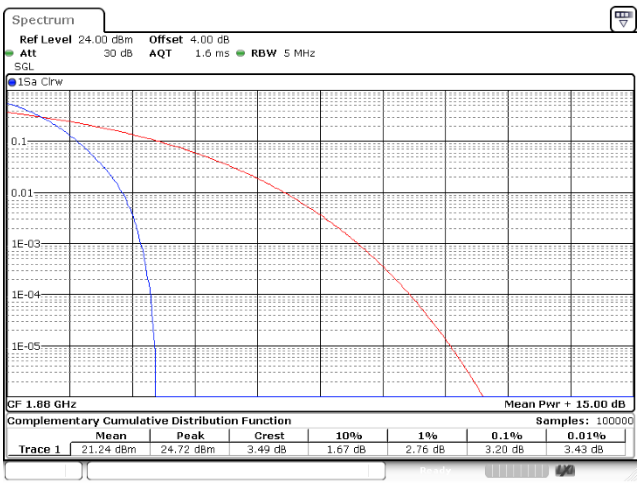
WCDMA Band 4					
Channel	Frequency (MHz)	Modulation	Peak (dBm)	Average (dBm)	PAPR (dB)
1312	1712.4	RMC	25.08	21.48	3.28
1413	1732.6		24.66	21.39	3.02
1513	1752.6		24.38	21.32	2.83

WCDMA Band 5					
Channel	Frequency (MHz)	Modulation	Peak (dBm)	Average (dBm)	PAPR (dB)
4132	826.4	RMC	25.47	21.82	3.30
4183	836.6		25.67	21.94	3.30
4233	846.6		25.57	21.94	3.28

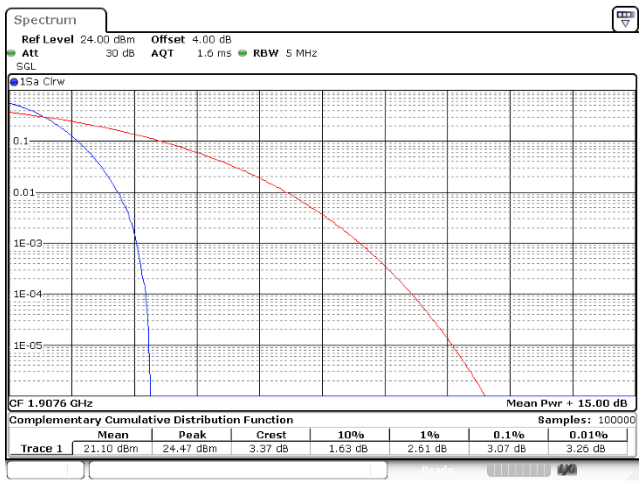
WCDMA Band 2 / CH9262 / RMC



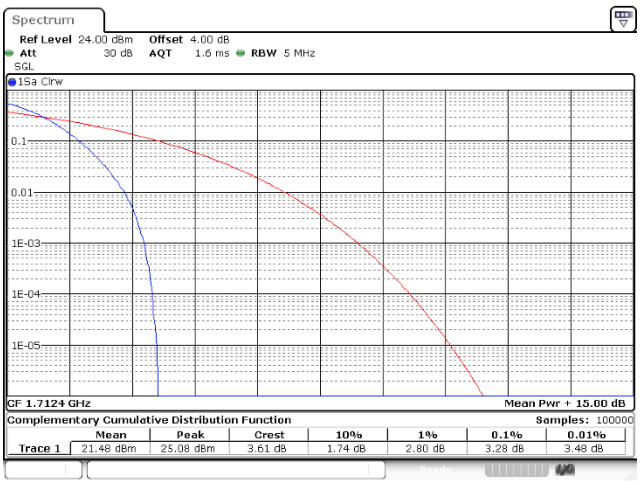
WCDMA Band 2 / CH9400 / RMC



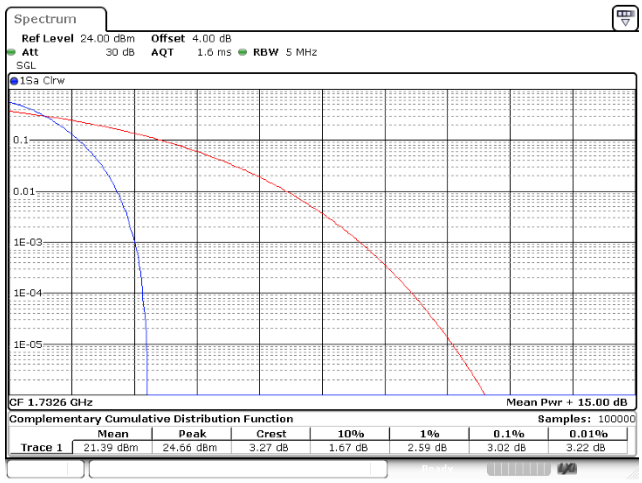
WCDMA Band 2 / CH9538 / RMC



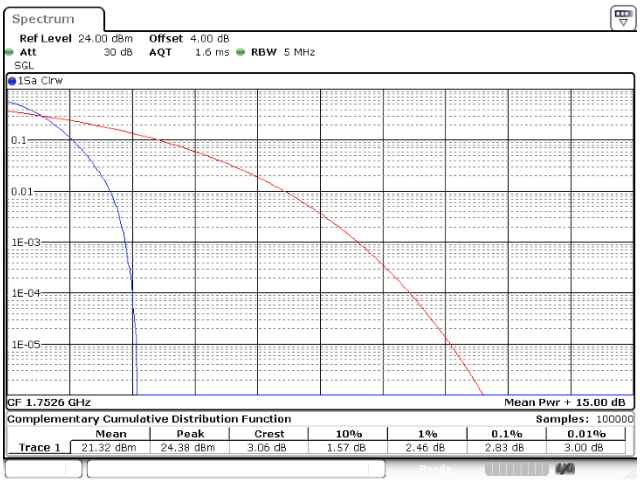
WCDMA Band 4 / CH1312 / RMC

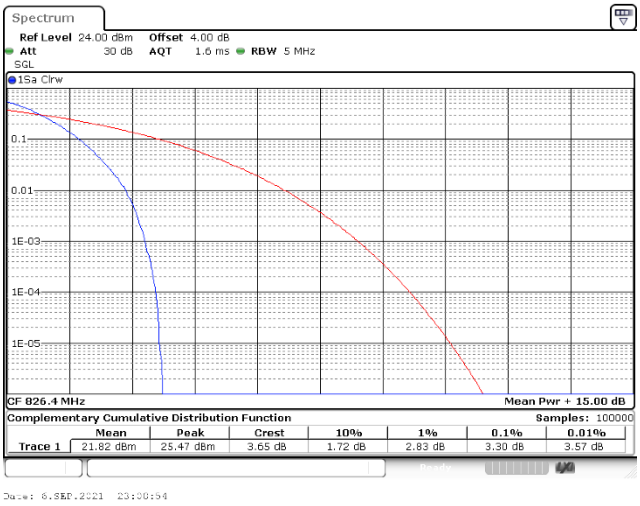
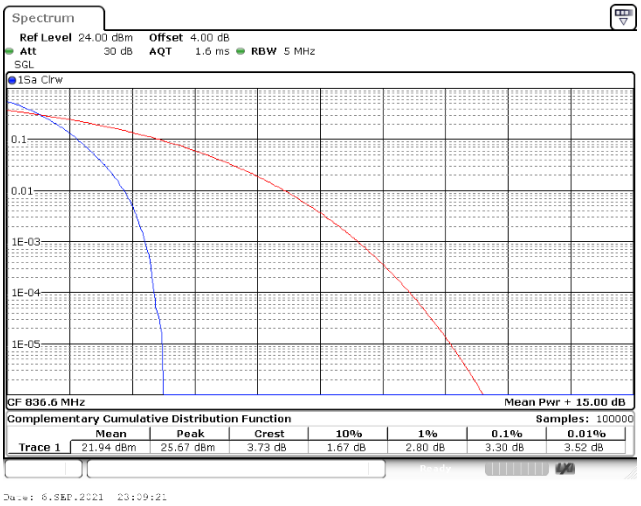
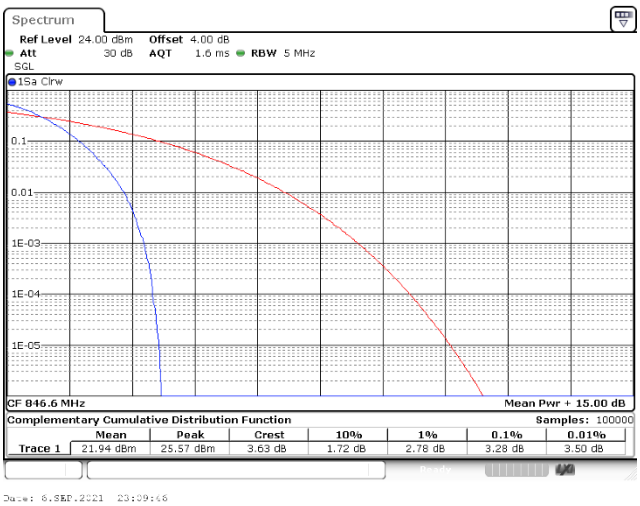


WCDMA Band 4 / CH1413 / RMC



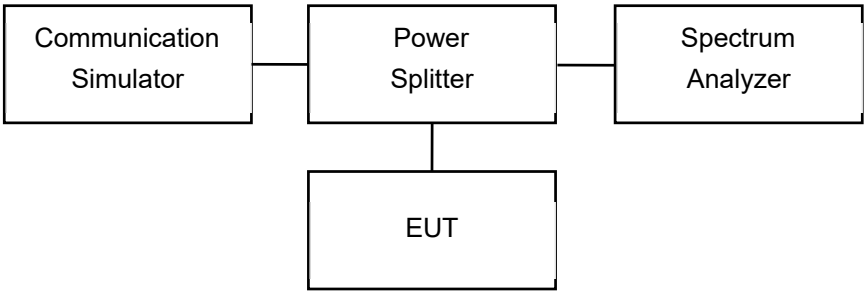
WCDMA Band 4 / CH1513 / RMC



WCDMA Band 5 / CH4132 / RMC	WCDMA Band 5 / CH4183 / RMC
	
WCDMA Band 5 / CH4233 / RMC	**N/A**
	

6. Conducted Band Edge

6.1. Test Setup



6.2. Test Procedure

1. The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.
2. In the 1MHz 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 to measure the out of band Emissions.

6.3. Test Methodology and Reference Procedures

KDB 971168 D01 Power Meas License Digital Systems v03r01

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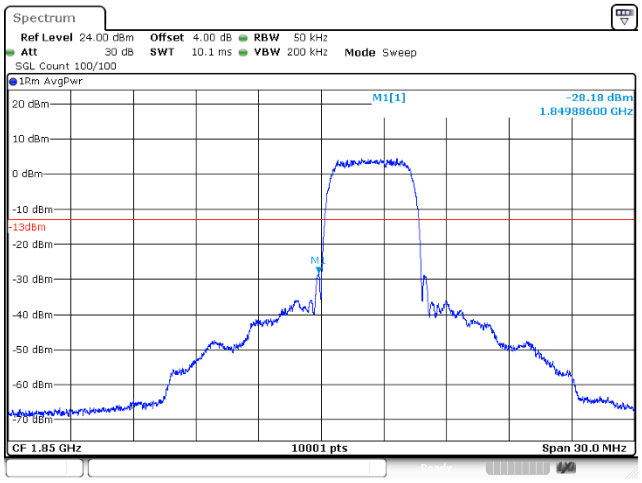
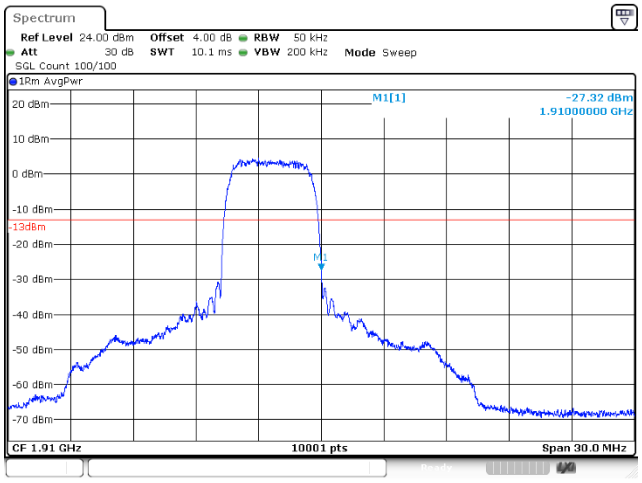
6.4. Test Result of Conducted Band Edge

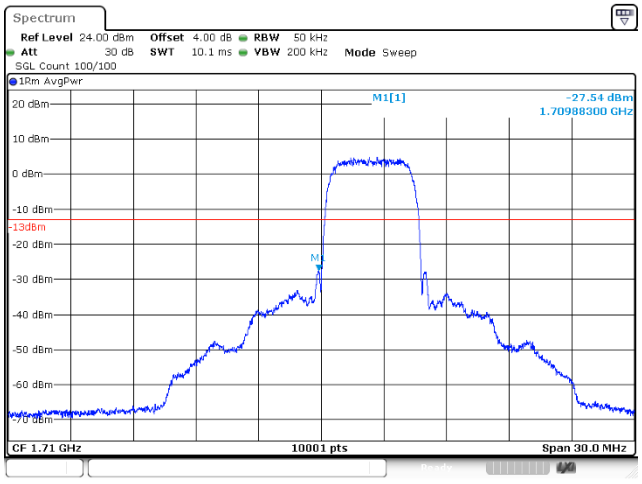
WCDMA Band 2 / CH9262 / RMC



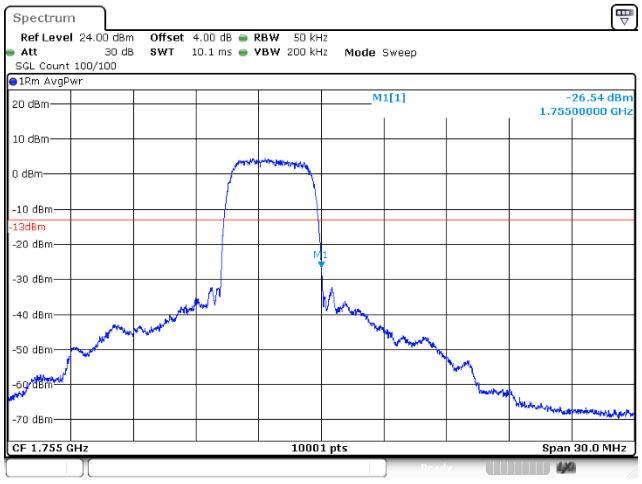
WCDMA Band 2 / CH9538 / RMC



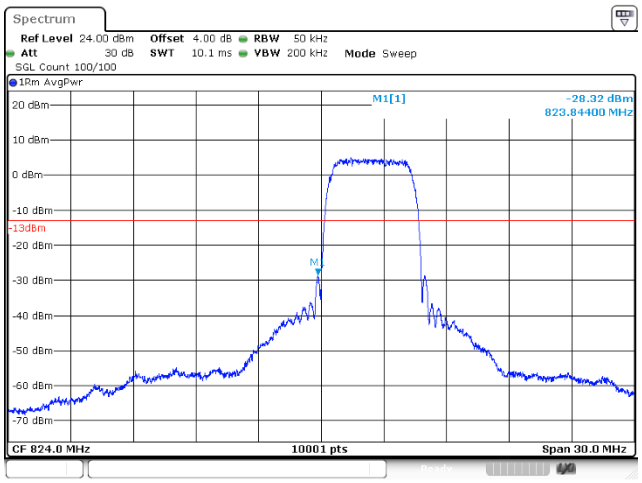
WCDMA Band 4 / CH1312 / RMC



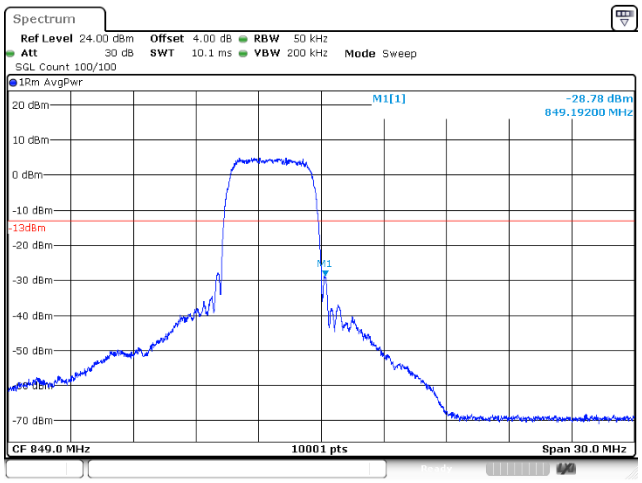
WCDMA Band 4 / CH1513 / RMC



WCDMA Band 5 / CH4132 / RMC



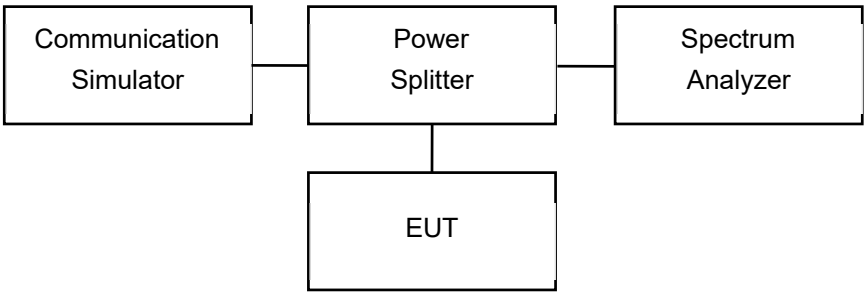
WCDMA Band 5 / CH4233 / RMC



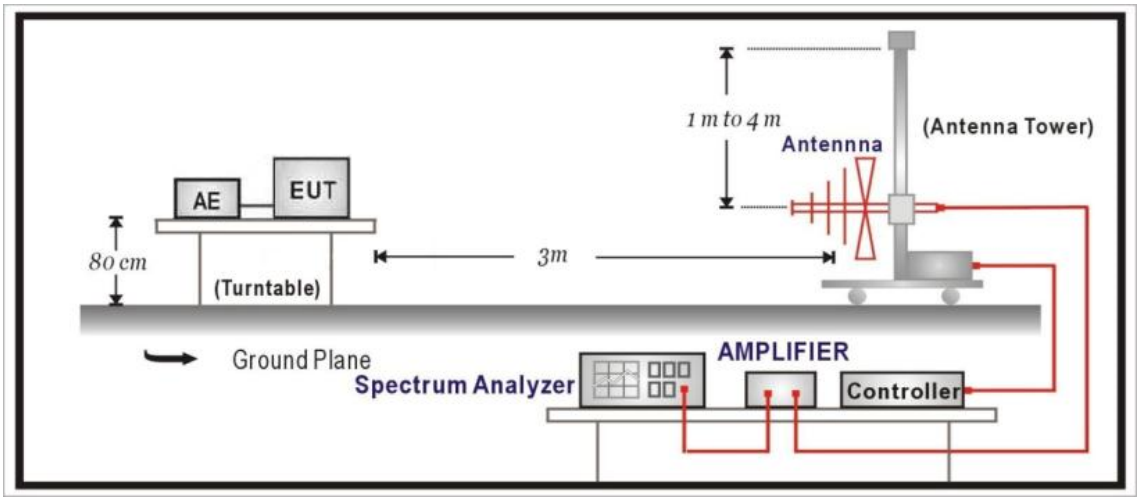
7. Spurious Emission

7.1. Test Setup

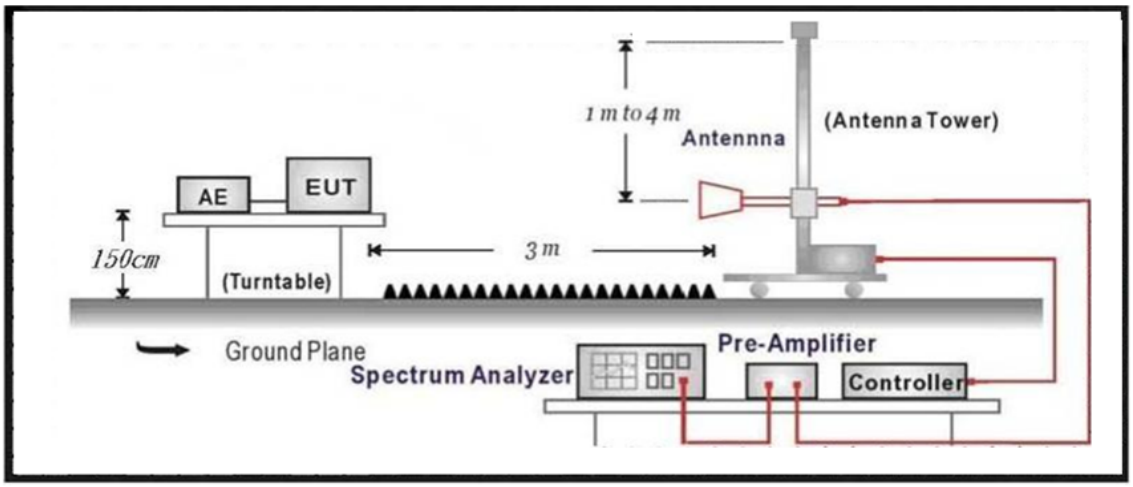
Conducted Spurious Measurement



Radiated Spurious Measurement (below 1GHz)



Radiated Spurious Measurement (above 1GHz)



7.2. Test Procedure

Conducted Spurious Measurement:

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement. The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10^{th} harmonic.

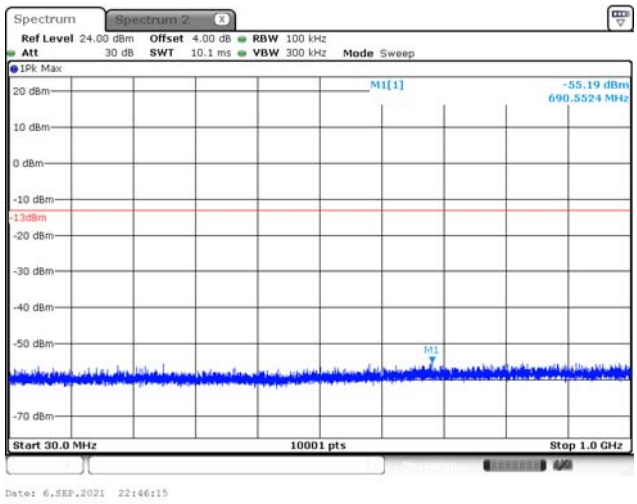
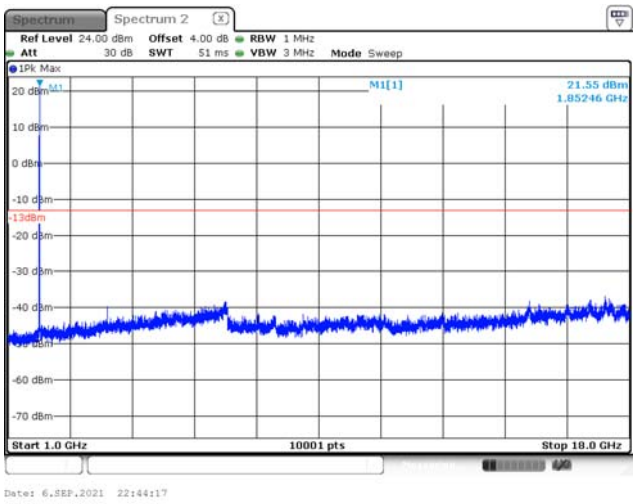
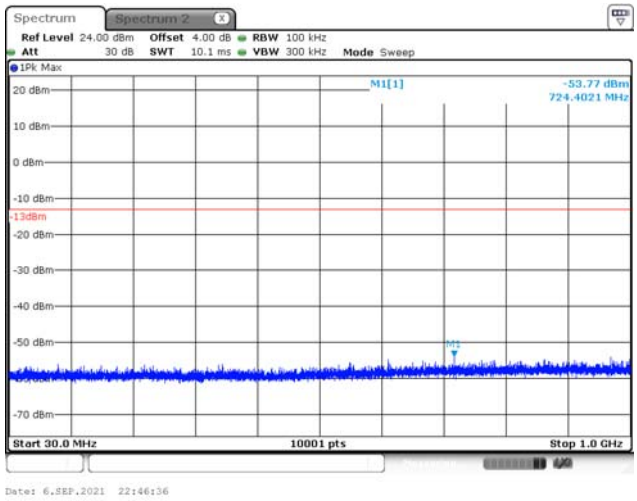
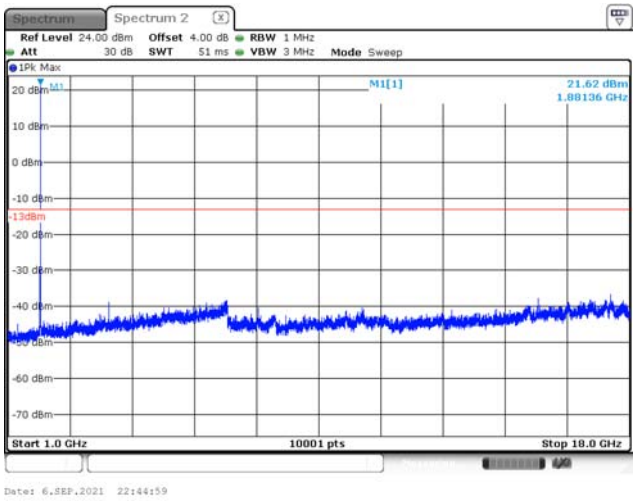
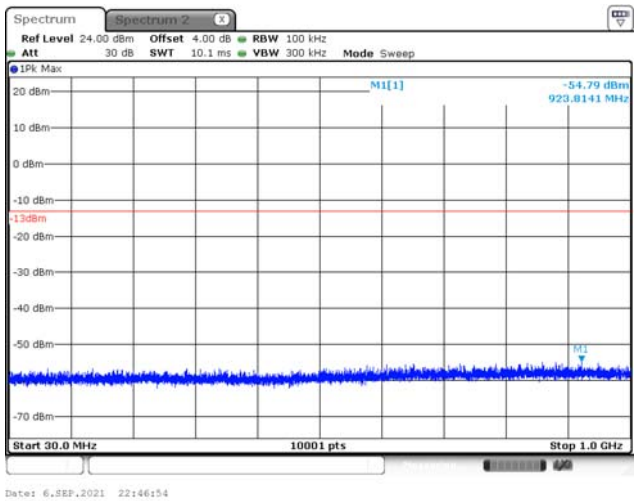
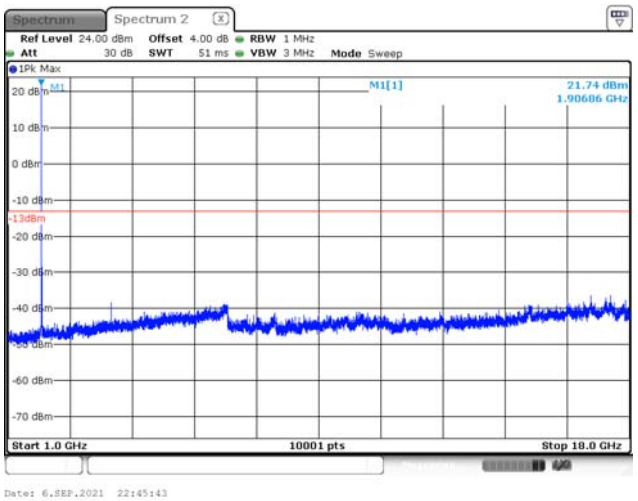
Radiated Spurious Measurement:

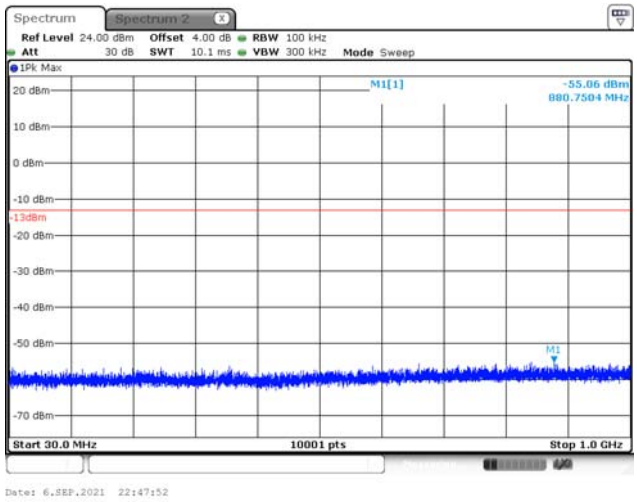
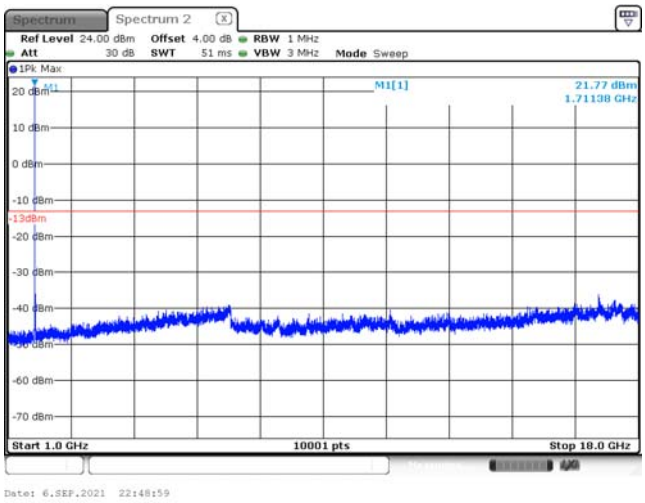
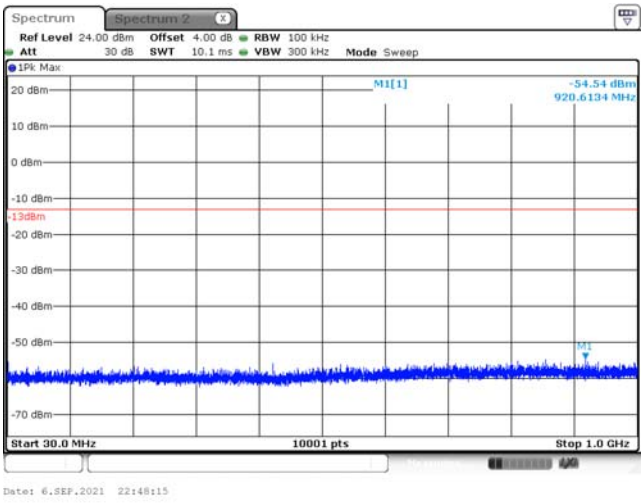
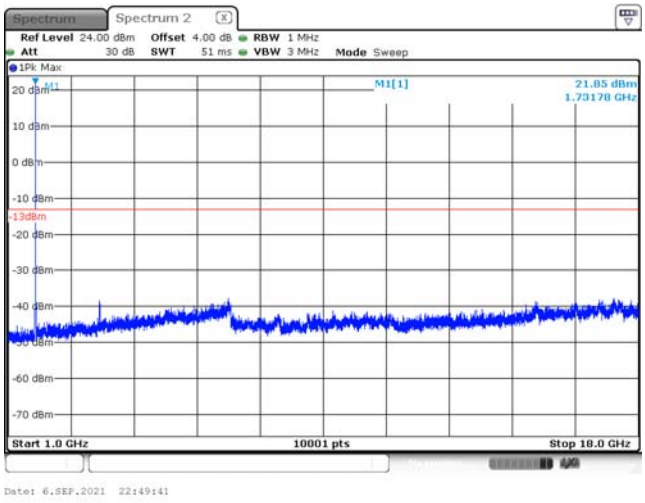
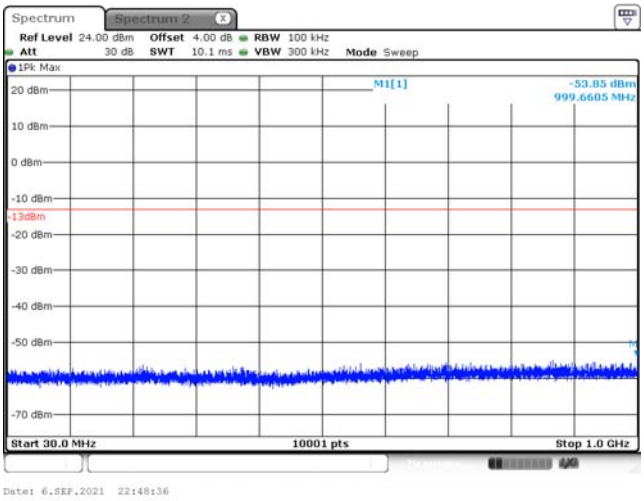
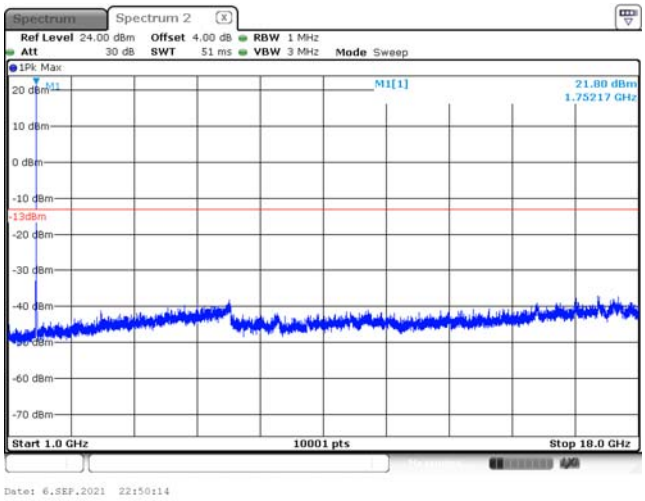
The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations. The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10th harmonic. Taking the record of maximum spurious emission.

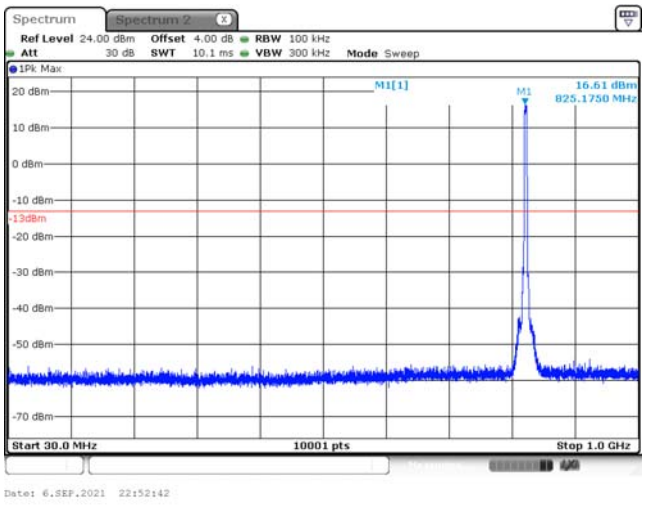
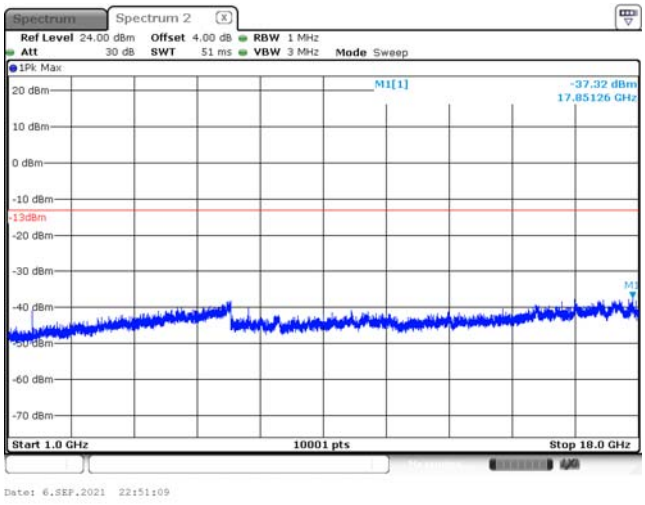
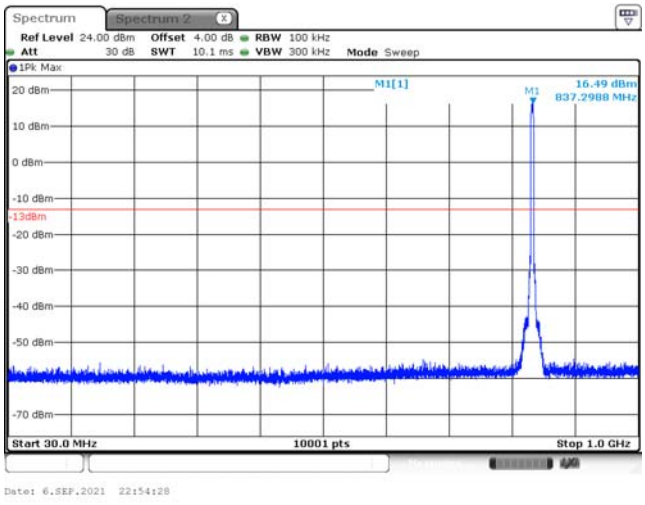
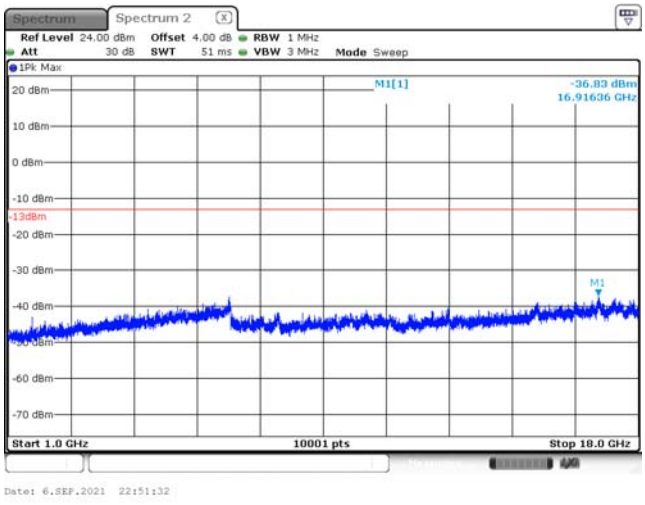
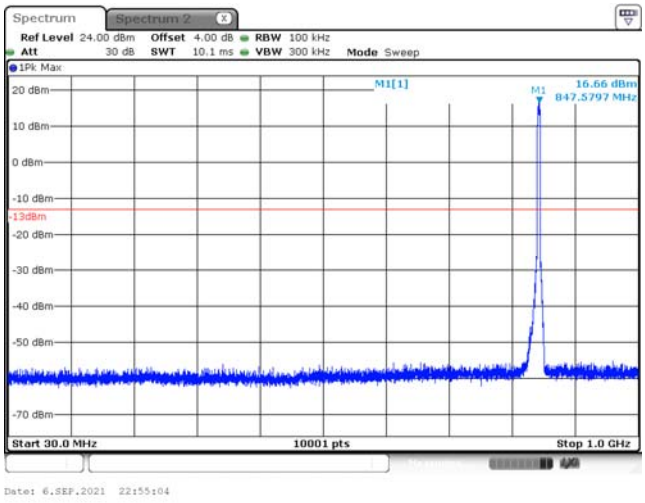
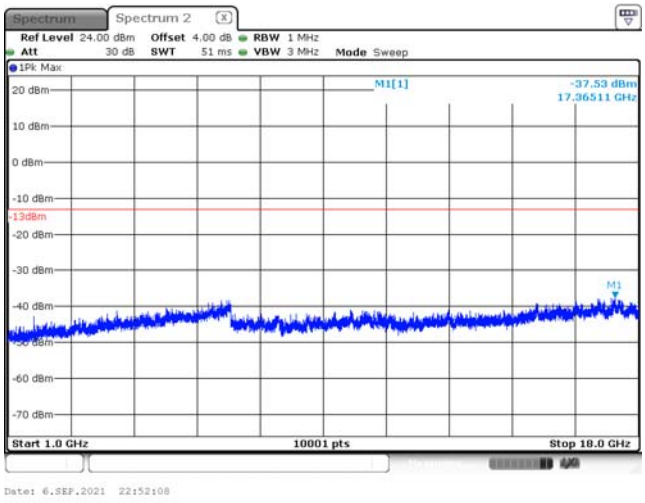
7.3. Test Methodology and Reference Procedures

KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI C63.26-2015

7.4. Test Result of Conducted Spurious Emission

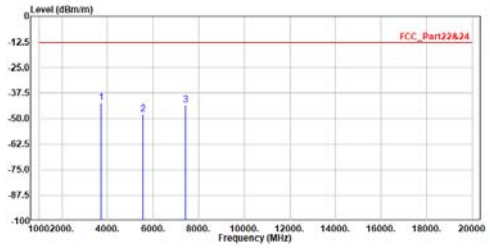
WCDMA Band 2 / CH9262 / RMC (below 1GHz)	WCDMA Band 2 / CH9262 / RMC (above 1GHz)
	
WCDMA Band 2 / CH9400 / RMC (below 1GHz)	WCDMA Band 2 / CH9400 / RMC (above 1GHz)
	
WCDMA Band 2 / CH9538 / RMC (below 1GHz)	WCDMA Band 2 / CH9538 / RMC (above 1GHz)
	

WCDMA Band 4 / CH1312 / RMC (below 1GHz)	WCDMA Band 4 / CH1312 / RMC (above 1GHz)
	
WCDMA Band 4 / CH1413 / RMC (below 1GHz)	WCDMA Band 4 / CH1413 / RMC (above 1GHz)
	
WCDMA Band 4 / CH1513 / RMC (below 1GHz)	WCDMA Band 4 / CH1513 / RMC (above 1GHz)
	

WCDMA Band 5 / CH4132 / RMC (below 1GHz)	WCDMA Band 5 / CH4132 / RMC (above 1GHz)
	
WCDMA Band 5 / CH4183 / RMC (below 1GHz)	WCDMA Band 5 / CH4183 / RMC (above 1GHz)
	
WCDMA Band 5 / CH4233 / RMC (below 1GHz)	WCDMA Band 5 / CH4233 / RMC (above 1GHz)
	

7.5. Test Result of Radiated Spurious Emission

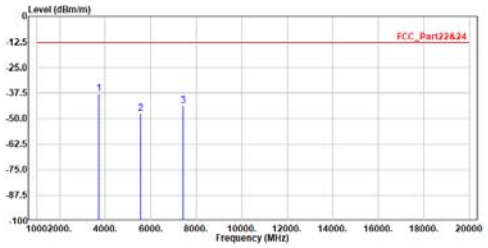
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B2_Ch9262
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3704.800	-42.33	-13.00	-29.33	-36.56	-5.77	Peak
2	5557.200	-47.94	-13.00	-34.94	-48.49	0.55	Peak
3	7409.600	-43.55	-13.00	-30.55	-50.87	7.32	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

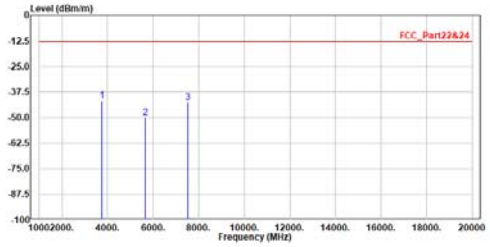
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B2_Ch9262
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3704.800	-37.89	-13.00	-24.89	-32.12	-5.77	Peak
2	5557.200	-47.41	-13.00	-34.41	-47.96	0.55	Peak
3	7409.600	-43.86	-13.00	-30.86	-51.18	7.32	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

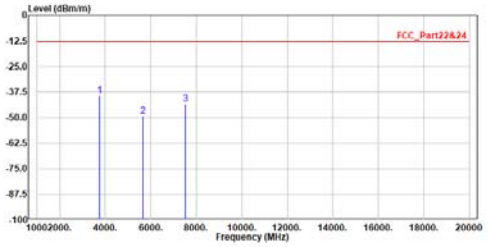
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B2_Ch9400
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.000	-42.05	-13.00	-29.05	-36.49	-5.56	Peak
2	5640.000	-50.29	-13.00	-37.29	-51.26	0.97	Peak
3	7520.000	-42.70	-13.00	-29.70	-50.10	7.40	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

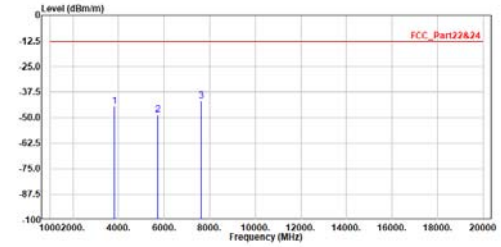
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B2_Ch9400
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.000	-39.24	-13.00	-26.24	-33.68	-5.56	Peak
2	5640.000	-49.32	-13.00	-36.32	-50.29	0.97	Peak
3	7520.000	-43.56	-13.00	-30.56	-50.96	7.40	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

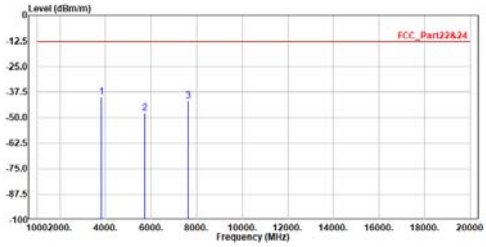
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B2_Ch9538
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3815.200	-44.35	-13.00	-31.35	-39.01	-5.34	Peak
2	5722.800	-48.58	-13.00	-35.58	-49.98	1.40	Peak
3	7630.400	-41.72	-13.00	-28.72	-48.94	7.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

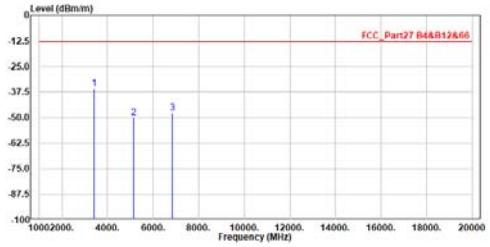
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B2_Ch9538
Test By :Cyril



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3815.200	-40.00	-13.00	-27.00	-34.66	-5.34	Peak
2	5722.800	-47.92	-13.00	-34.92	-49.32	1.40	Peak
3	7630.400	-42.08	-13.00	-29.08	-49.30	7.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

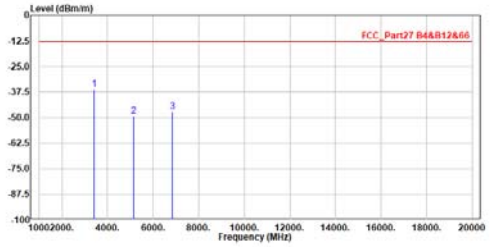
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B4_Ch1312
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3424.800	-35.71	-13.00	-22.71	-29.06	-6.65	Peak
2	5137.200	-50.25	-13.00	-37.25	-49.40	-0.85	Peak
3	6849.600	-47.85	-13.00	-34.85	-53.89	6.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

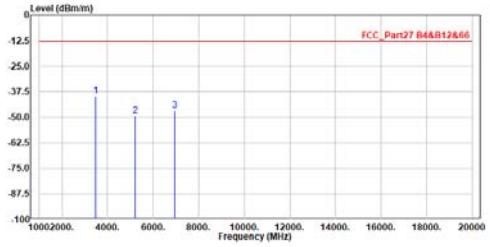
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B4_Ch1312
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3424.800	-36.35	-13.00	-23.35	-29.70	-6.65	Peak
2	5137.200	-49.39	-13.00	-36.39	-48.54	-0.85	Peak
3	6849.600	-47.26	-13.00	-34.26	-53.30	6.04	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

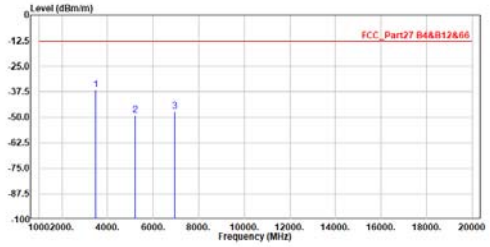
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B4_Ch1413
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.200	-39.55	-13.00	-26.55	-32.95	-6.60	Peak
2	5197.800	-49.52	-13.00	-36.52	-48.85	-0.67	Peak
3	6930.400	-46.97	-13.00	-33.97	-53.42	6.45	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

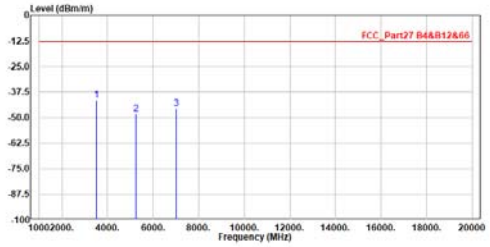
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B4_Ch1413
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.200	-36.76	-13.00	-23.76	-30.16	-6.60	Peak
2	5197.800	-48.89	-13.00	-35.89	-48.22	-0.67	Peak
3	6930.400	-47.13	-13.00	-34.13	-53.58	6.45	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

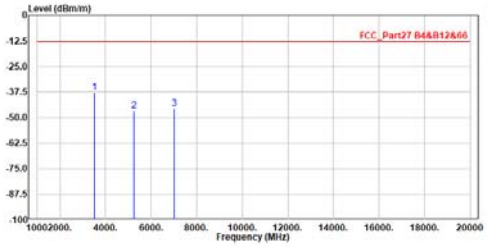
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B4_Ch1513
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3505.200	-41.66	-13.00	-28.66	-35.11	-6.55	Peak
2	5257.800	-48.12	-13.00	-35.12	-47.64	-0.48	Peak
3	7010.400	-45.84	-13.00	-32.84	-52.65	6.81	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

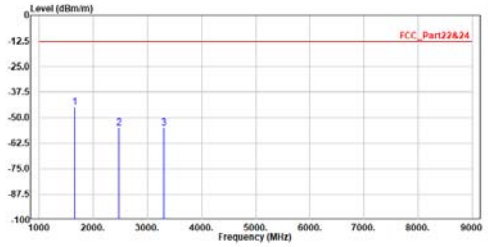
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B4_Ch1513
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3505.200	-37.85	-13.00	-24.85	-31.30	-6.55	Peak
2	5257.800	-46.61	-13.00	-33.61	-46.13	-0.48	Peak
3	7010.400	-45.79	-13.00	-32.79	-52.60	6.81	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

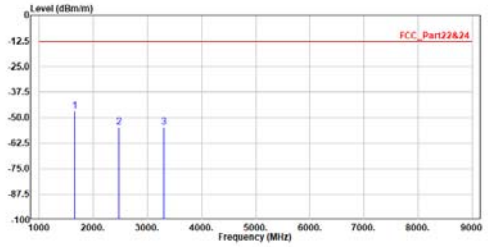
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B5_Ch4132
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1652.800	-45.05	-13.00	-32.05	-32.27	-12.78	Peak
2	2479.200	-55.21	-13.00	-42.21	-45.82	-9.39	Peak
3	3305.600	-55.01	-13.00	-42.01	-48.20	-6.81	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

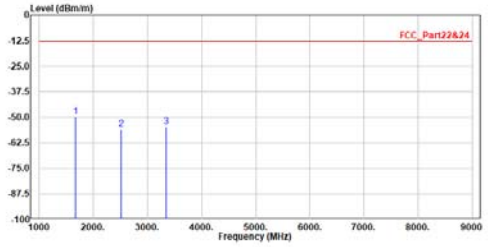
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B5_Ch4132
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1652.800	-46.78	-13.00	-33.78	-34.00	-12.78	Peak
2	2479.200	-54.67	-13.00	-41.67	-45.28	-9.39	Peak
3	3305.600	-54.85	-13.00	-41.85	-48.04	-6.81	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

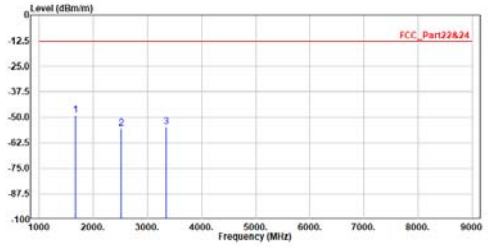
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B5_Ch4183
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1673.200	-49.65	-13.00	-36.65	-36.95	-12.70	Peak
2	2509.800	-55.88	-13.00	-42.88	-46.62	-9.26	Peak
3	3346.400	-54.55	-13.00	-41.55	-47.79	-6.76	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

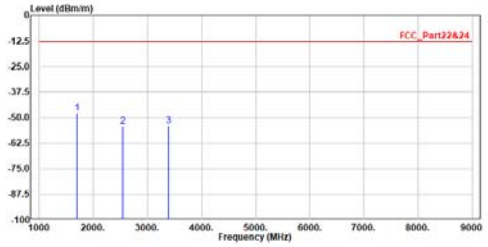
Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B5_Ch4183
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1673.200	-49.10	-13.00	-36.10	-36.40	-12.70	Peak
2	2509.800	-55.39	-13.00	-42.39	-46.13	-9.26	Peak
3	3346.400	-54.76	-13.00	-41.76	-48.00	-6.76	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

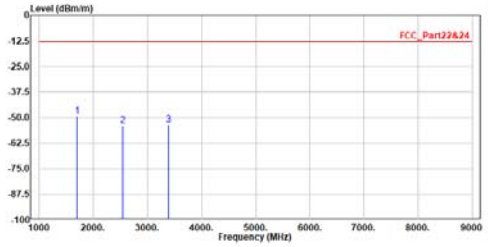
Site :CB2-H
Condition :3m Horizontal
Mode :WCDMA_B5_Ch4233
Test By :Ling



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1693.200	-47.98	-13.00	-34.98	-35.34	-12.64	Peak
2	2539.800	-54.20	-13.00	-41.20	-45.07	-9.13	Peak
3	3386.400	-53.99	-13.00	-40.99	-47.28	-6.71	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

Site :CB2-H
Condition :3m Vertical
Mode :WCDMA_B5_Ch4233
Test By :Ling

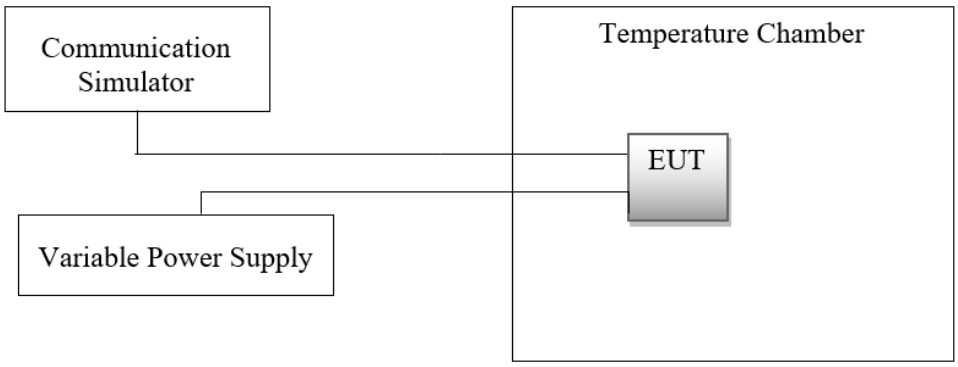


No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1693.200	-49.46	-13.00	-36.46	-36.82	-12.64	Peak
2	2539.800	-53.78	-13.00	-40.78	-44.65	-9.13	Peak
3	3386.400	-53.75	-13.00	-40.75	-47.04	-6.71	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor + Aux Factor
3. Over Limit = Level - Limit Line
4. Aux Factor = Convert E (dBuVm) to EIRP (dBm)
= 107 + 20log(3) - 104.8 = 11.8 dB
5. The other emission levels were very low against the limit.
6. The emission under 1GHz was not included since the emission levels are very low against the limit.

8. Frequency Stability

8.1. Test Setup



8.2. Test Procedure

Frequency Stability under Temperature Variations:

The EUT under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a communication simulator. The EUT was placed inside the temperature chamber. Set the EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30 ℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20℃. Use a variable AC or DC power supply to power the EUT and set the voltage to rated voltage. Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

8.3. Test Methodology and Reference Procedures

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI C63.26-2015

8.4. Test Result of Frequency Stability

WCDMA Band 2 _ 1852.4MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	0.14	0.0001
14.20	2.03	0.0011
10.20	1.61	0.0009

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.81	0.0010
-30	0.19	0.0001
-20	2.22	0.0012
-10	1.01	0.0005
0	1.57	0.0008
10	1.44	0.0008
20	1.46	0.0008
30	1.74	0.0009
40	1.23	0.0007
50	1.46	0.0008
60	1.89	0.0010
70	1.35	0.0007
85	2.06	0.0011

WCDMA Band 2 _ 1880MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	0.18	0.0001
14.20	1.59	0.0008
10.20	0.79	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.32	0.0007
-30	1.33	0.0007
-20	-0.02	0.0000
-10	1.60	0.0009
0	0.94	0.0005
10	2.17	0.0012
20	2.16	0.0011
30	1.13	0.0006
40	1.27	0.0007
50	0.38	0.0002
60	1.58	0.0008
70	1.00	0.0005
85	1.30	0.0007

WCDMA Band 2 _ 1907.6MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	0.38	0.0002
14.20	1.59	0.0008
10.20	1.28	0.0007

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	0.14	0.0001
-30	0.08	0.0000
-20	0.84	0.0004
-10	0.43	0.0002
0	1.96	0.0010
10	1.76	0.0009
20	1.02	0.0005
30	1.25	0.0007
40	1.15	0.0006
50	1.31	0.0007
60	1.03	0.0005
70	1.89	0.0010
85	1.46	0.0008

WCDMA Band 4 _1712.4MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	1.54	0.0009
14.20	2.03	0.0012
10.20	1.69	0.0010

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.95	0.0011
-30	1.91	0.0011
-20	1.58	0.0009
-10	1.55	0.0009
0	0.85	0.0005
10	2.11	0.0012
20	1.95	0.0011
30	0.60	0.0004
40	1.35	0.0008
50	1.99	0.0012
60	0.51	0.0003
70	1.54	0.0009
85	1.89	0.0011

WCDMA Band 4 _ 1732.6MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	1.67	0.0010
14.20	1.59	0.0009
10.20	1.34	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.90	0.0011
-30	1.49	0.0009
-20	1.70	0.0010
-10	1.00	0.0006
0	0.55	0.0003
10	0.74	0.0004
20	0.67	0.0004
30	0.58	0.0003
40	1.43	0.0008
50	2.07	0.0012
60	0.56	0.0003
70	0.09	0.0001
85	2.06	0.0012

WCDMA Band 4 _ 1752.6MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	2.12	0.0012
14.20	1.59	0.0009
10.20	0.86	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.89	0.0011
-30	0.69	0.0004
-20	1.37	0.0008
-10	0.38	0.0002
0	1.12	0.0006
10	1.53	0.0009
20	0.52	0.0003
30	1.42	0.0008
40	0.75	0.0004
50	0.29	0.0002
60	1.67	0.0010
70	0.70	0.0004
85	0.68	0.0004

WCDMA Band 5 _ 826.4MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	2.27	0.00275
14.20	2.03	0.00246
10.20	1.08	0.00131

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	2.22	0.0027
-30	1.29	0.0016
-20	1.69	0.0020
-10	1.63	0.0020
0	0.73	0.0009
10	1.36	0.0016
20	1.64	0.0020
30	0.48	0.0006
40	1.85	0.0022
50	1.63	0.0020
60	1.15	0.0014
70	1.19	0.0014
85	1.22	0.0015

WCDMA Band 5 _ 835MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	1.09	0.0013
14.20	1.59	0.0019
10.20	1.74	0.0021

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.27	0.0015
-30	1.33	0.0016
-20	0.73	0.0009
-10	1.04	0.0012
0	1.80	0.0022
10	1.02	0.0012
20	2.05	0.0025
30	1.12	0.0013
40	1.15	0.0014
50	0.72	0.0009
60	0.45	0.0005
70	1.39	0.0017
85	1.15	0.0014

WCDMA Band 5 _ 837.6MHz

Voltage (VDC)	Frequency Stability (Hz)	Frequency Stability (ppm)
27.60	1.30	0.0016
14.20	1.59	0.0019
10.20	0.47	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-40	1.63	0.0019
-30	0.56	0.0007
-20	0.54	0.0006
-10	0.80	0.0010
0	1.40	0.0017
10	0.60	0.0007
20	0.98	0.0012
30	0.11	0.0001
40	0.84	0.0010
50	0.87	0.0010
60	1.52	0.0018
70	1.29	0.0015
85	1.23	0.0015