FCC Test Report

(PART 22)

Report No.:	RF201118C03-6
FCC ID:	B32V2104G
Test Model:	V210 4G
Received Date:	Nov. 18, 2020
Test Date:	Dec. 03, 2020 ~ Jan. 05, 2021
Issued Date:	Jan. 11, 2021
Applicant:	Verifone, Inc.
Address:	1400 West Stanford Ranch Road Suite 200 Rocklin CA 95765 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location (1):	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
Test Location (2):	B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan
FCC Registration / Designation Number:	427177 / TW0011

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Release Control Record

Issue No.	Description	Date Issued
RF201118C03-6	Original Release	Jan. 11, 2021

1 Certificate of Conformity

Product:	Point of Sale Terminal
Brand:	Verifone
Test Model:	V210 4G
Sample Status:	Identical Prototype
Applicant:	Verifone, Inc.
Test Date:	Dec. 03, 2020 ~ Jan. 05, 2021
Standards:	FCC Part 22, Subpart H

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Jan. 11, 2021

Gina Liu / Specialist

Approved by : _____ , **Date:** Jan. 11, 2021

Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 22.913 (a)	Effective Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
22.913 (d)	Peak to Average Ratio	Pass	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
22.917	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.59 dB at 2546.40 MHz.

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

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	**Frequency**	**Expanded Uncertainty (k=2) (±)**
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.0400 dB
	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~ 1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Aug. 24, 2020	Aug. 23, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101582	Mar. 31, 2020	Mar. 30, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 09, 2020	Nov. 08, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-631	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 22, 2020	Nov. 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
Preamplifier Agilent	310N	187226	Jun. 17, 2020	Jun. 16, 2021
Preamplifier Agilent	83017A	MY39501357	Jun. 17, 2020	Jun. 16, 2021
Preamplifier EMCI	EMC 184045	980116	Oct. 07, 2020	Oct. 06, 2021
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 17, 2020	Jun. 16, 2021
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 17, 2020	Jun. 17, 2021
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Radio Communication Analyzer Anritsu	MT8821C	6201462755	Feb. 13, 2020	Feb. 12, 2021
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 19, 2019	Aug. 18, 2021
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 09, 2020	Sep. 08, 2021
DC Power Supply Topward	33010D	807748	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HsinTien Chamber 1.

3 General Information

3.1 General Description of EUT

Product	Point of Sale Terminal	
Brand	Verifone	
Test Model	V210 4G	
Status of EUT	Identical Prototype	
Power Supply Rating	5.0 Vdc (adapter) 3.7 Vdc (battery)	
Modulation Type	GSM/GPRS	GMSK
	EDGE	GMSK, 8PSK
	WCDMA	QPSK
	LTE	QPSK, 16QAM
Frequency Range	GSM/GPRS/EDGE	824.2 ~ 848.8 MHz
	WCDMA	826.4 ~ 846.6 MHz
	LTE 5 (Channel Bandwidth: 1.4 MHz)	824.7 ~ 848.3 MHz
	LTE 5 (Channel Bandwidth: 3 MHz)	825.5 ~ 847.5 MHz
	LTE 5 (Channel Bandwidth: 5 MHz)	826.5 ~ 846.5 MHz
	LTE 5 (Channel Bandwidth: 10 MHz)	829 ~ 844 MHz
	LTE 26 (Channel Bandwidth: 1.4 MHz)	824.7 ~ 848.3 MHz
	LTE 26 (Channel Bandwidth: 3 MHz)	825.5 ~ 847.5 MHz
	LTE 26 (Channel Bandwidth: 5 MHz)	826.5 ~ 846.5 MHz
	LTE 26 (Channel Bandwidth: 10 MHz)	829 ~ 844 MHz
	LTE 26 (Channel Bandwidth: 15 MHz)	831.5 ~ 841.5 MHz
Max. ERP Power	GSM/GPRS	1856.95 mW
	EDGE	378.27 mW
	WCDMA	193.11 mW
	LTE 5 (Channel Bandwidth: 1.4 MHz)	219.38 mW
	LTE 5 (Channel Bandwidth: 3 MHz)	221.41 mW
	LTE 5 (Channel Bandwidth: 5 MHz)	223.46 mW
	LTE 5 (Channel Bandwidth: 10 MHz)	225.53 mW
	LTE 26 (Channel Bandwidth: 1.4 MHz)	204.08 mW
	LTE 26 (Channel Bandwidth: 3 MHz)	205.97 mW
	LTE 26 (Channel Bandwidth: 5 MHz)	207.87 mW
	LTE 26 (Channel Bandwidth: 10 MHz)	209.80 mW
	LTE 26 (Channel Bandwidth: 15 MHz)	211.74 mW

Emission Designator	GSM/GPRS	250KGXW
	EDGE	245KG7W
	WCDMA	4M14F9W
	LTE 5 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE 5 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE 5 (Channel Bandwidth: 5 MHz)	4M49D7W
	LTE 5 (Channel Bandwidth: 10 MHz)	8M96G7D
	LTE 26 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE 26 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE 26 (Channel Bandwidth: 5 MHz)	4M49G7D
	LTE 26 (Channel Bandwidth: 10 MHz)	8M95G7D
	LTE 26 (Channel Bandwidth: 15 MHz)	13M4G7D
Antenna Type	Refer to Note as below	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter (EU Type)	Verifone	AM11E-050A	I/P: 100-240 Vac, 50-60 Hz, 0.5 A O/P: 5 Vdc, 2.2 A
Adapter (US Type)	Verifone	AM11A-050A	I/P: 100-240 Vac, 50-60 Hz, 0.5 A O/P: 5 Vdc, 2.2 A
Battery	Verifone	BPK183-001	3.7 Vdc, 3100 mAh (11.47 Wh)

*Adapter of US Type was chosen for final test.

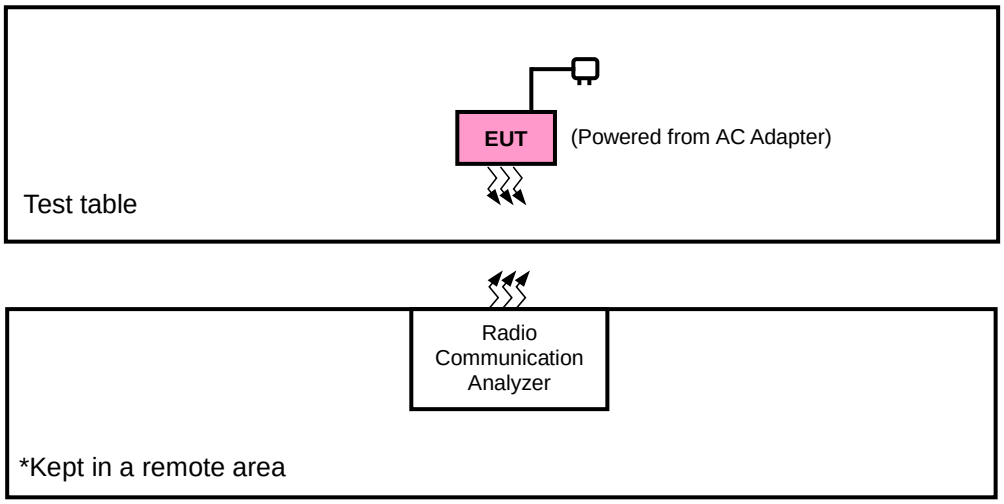
2. The antenna information is listed as below.

Ant. Type	Ant.	Antenna Peak Gain (dBi)								
		WCDMA 4 / LTE 4	GSM850 / WCDMA 5 / LTE 5	GSM1900 / WCDMA 2 / LTE 2, 25	LTE 7	LTE 12	LTE 13	LTE 26	LTE 38	LTE 41
Dipole	1	3.2	0	3.6	2.0	-0.5	0.3	0	2.3	3.1
	2	2.2	1.9	3.8	2.2	-4.5	-0.6	1.8	2.8	3.9
* The Max antenna gain was chosen for final test.										

3. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
4. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test

<Radiated Emission Test>



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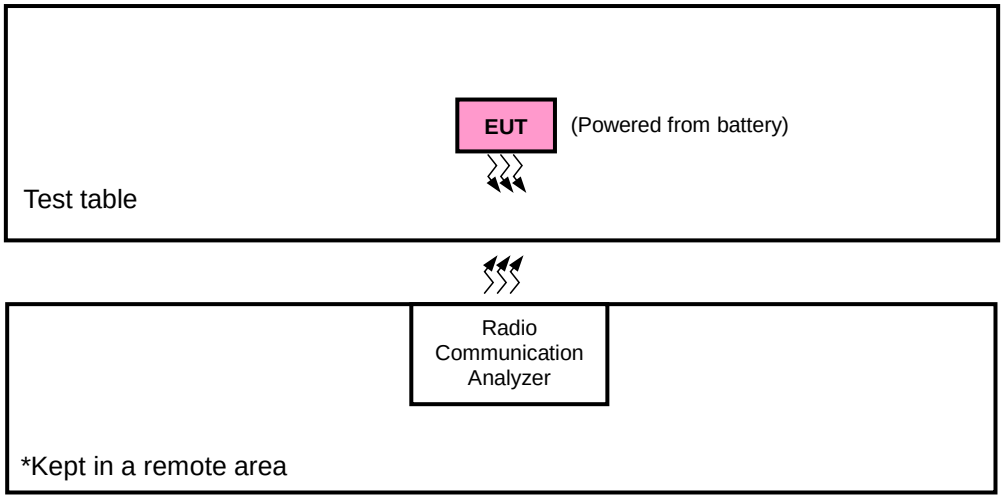


3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports.
The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP	Radiated Emission
GSM	X-plane	Y-axis
EDGE	X-plane	Y-axis
WCDMA	X-plane	Y-axis
LTE Band 5	X-plane	X-axis
LTE Band 26	Y-plane	Y-axis

GSM

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	128 to 251	128, 189, 251	GSM, EDGE
-	Modulation Characteristics	128 to 251	189	GSM, EDGE
-	Frequency Stability	128 to 251	128, 251	GSM, EDGE
-	Occupied Bandwidth	128 to 251	128, 189, 251	GSM, EDGE
-	Band Edge	128 to 251	128, 251	GSM, EDGE
-	Peak to Average Ratio	128 to 251	128, 189, 251	GSM, EDGE
-	Conducted Emission	128 to 251	128, 189, 251	GSM, EDGE
-	Radiated Emission	128 to 251	128, 189, 251	GSM, EDGE

Note: For radiated emission (below 1GHz) test items, select the worst radiated emission (above 1GHz) channel for final testing.

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
-	Modulation Characteristics	4132 to 4233	4182	WCDMA
-	Frequency Stability	4132 to 4233	4132, 4233	WCDMA
-	Occupied Bandwidth	4132 to 4233	4132, 4182, 4233	WCDMA
-	Band Edge	4132 to 4233	4132, 4233	WCDMA
-	Peak to Average Ratio	4132 to 4233	4132, 4182, 4233	WCDMA
-	Conducted Emission	4132 to 4233	4132, 4182, 4233	WCDMA
-	Radiated Emission	4132 to 4233	4132, 4182, 4233	WCDMA

Note: For radiated emission (below 1GHz) test items, select the worst radiated emission (above 1GHz) channel for final testing.

LTE Band 5

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	20407 to 20643	20407, 20525, 20643	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		20415 to 20635	20415, 20525, 20635	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		20425 to 20625	20425, 20525, 20625	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		20450 to 20600	20450, 20525, 20600	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Modulation Characteristics	20450 to 20600	20525	10 MHz	QPSK	50 RB / 0 RB Offset
		20425 to 20625		5 MHz	16QAM	25 RB / 0 RB Offset
-	Frequency Stability	20407 to 20643	20407, 20643	1.4 MHz	QPSK	6 RB / 0 RB Offset
		20415 to 20635	20415, 20635	3 MHz	QPSK	15 RB / 0 RB Offset
		20425 to 20625	20425, 20625	5 MHz	QPSK	25 RB / 0 RB Offset
		20450 to 20600	20450, 20600	10 MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	20407 to 20643	20407, 20525, 20643	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Band Edge	20407 to 20643	20407	1.4MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20643	1.4MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		20415 to 20635	20415	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20635	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		20425 to 20625	20425	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20625	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20450 to 20600	20450	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20600	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
-	Peak to Average Ratio	20407 to 20643	20407, 20525, 20643	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		20415 to 20635	20415, 20525, 20635	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		20425 to 20625	20425, 20525, 20625	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		20450 to 20600	20450, 20525, 20600	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Conducted Emission	20407 to 20643	20407, 20525, 20643	1.4 MHz	QPSK	1 RB / 2 RB Offset
		20415 to 20635	20415, 20525, 20635	3 MHz	QPSK	1 RB / 7 RB Offset
		20425 to 20625	20425, 20525, 20625	5 MHz	QPSK	1 RB / 12 RB Offset
		20450 to 20600	20450, 20525, 20600	10 MHz	QPSK	1 RB / 24 RB Offset
-	Radiated Emission	20407 to 20643	20407, 20525, 20643	1.4 MHz	QPSK	1 RB / 2 RB Offset
		20425 to 20625	20425, 20525, 20625	5 MHz	QPSK	1 RB / 12 RB Offset
		20450 to 20600	20450, 20525, 20600	10 MHz	QPSK	1 RB / 24 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 26

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	26797 to 27033	26797, 26915, 27033	1.4 MHz	QPSK, 16QAM	3 RB / 1 RB Offset
		26805 to 27025	26805, 26915, 27025	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		26840 to 26990	26840, 26915, 26990	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		26865 to 26965	26865, 26915, 26965	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
-	Modulation Characteristics	26865 to 26965	26915	15 MHz	QPSK	75 RB / 0 RB Offset
		26815 to 27015		5 MHz	16QAM	25 RB / 0 RB Offset
-	Frequency Stability	26797 to 27033	26797, 27033	1.4 MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26805, 27025	3 MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26815, 27015	5 MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26840, 26990	10 MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26865, 26965	15 MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	26797 to 27033	26797, 26915, 27033	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
-	Band Edge	26797 to 27033	26797	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			27033	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26805 to 27025	26805	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			27025	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26815 to 27015	26815	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			27015	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26840 to 26990	26840	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26990	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26865 to 26965	26865	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			26965	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
-	Peak to Average Ratio	26797 to 27033	26797, 26915, 27033	1.4 MHz	QPSK, 16QAM	3 RB / 1 RB Offset
		26805 to 27025	26805, 26915, 27025	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		26840 to 26990	26840, 26915, 26990	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		26865 to 26965	26865, 26915, 26965	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
-	Conducted Emission	26797 to 27033	26797, 26915, 27033	1.4 MHz	QPSK	3 RB / 1 RB Offset
		26805 to 27025	26805, 26915, 27025	3 MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5 MHz	QPSK	1 RB / 12 RB Offset
		26840 to 26990	26840, 26915, 26990	10 MHz	QPSK	1 RB / 24 RB Offset
		26865 to 26965	26865, 26915, 26965	15 MHz	QPSK	1 RB / 37 RB Offset
-	Radiated Emission	26797 to 27033	26797, 26915, 27033	1.4 MHz	QPSK	3 RB / 1 RB Offset
		26815 to 27015	26815, 26915, 27015	5 MHz	QPSK	1 RB / 12 RB Offset
		26865 to 26965	26865, 26915, 26965	15 MHz	QPSK	1 RB / 37 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	25 deg. C, 65 % RH	3.7 Vdc	Karl Lee, Charles Hsiao
Modulation Characteristics	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Frequency Stability	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Occupied Bandwidth	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Band Edge	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Peak to Average Ratio	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Conducted Emission	25 deg. C, 65 % RH	3.7 Vdc	Gavin Wu
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee, Charles Hsiao

3.4 EUT Operating Conditions

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.

3.5 General Description of Applied Standards and references

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test Standard:
FCC 47 CFR Part 2
FCC 47 CFR Part 22
ANSI 63.26-2015

Note: All test items have been performed and recorded as per the above standards.

References Test Guidance:
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI/TIA/EIA-603-E 2016

Note: All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

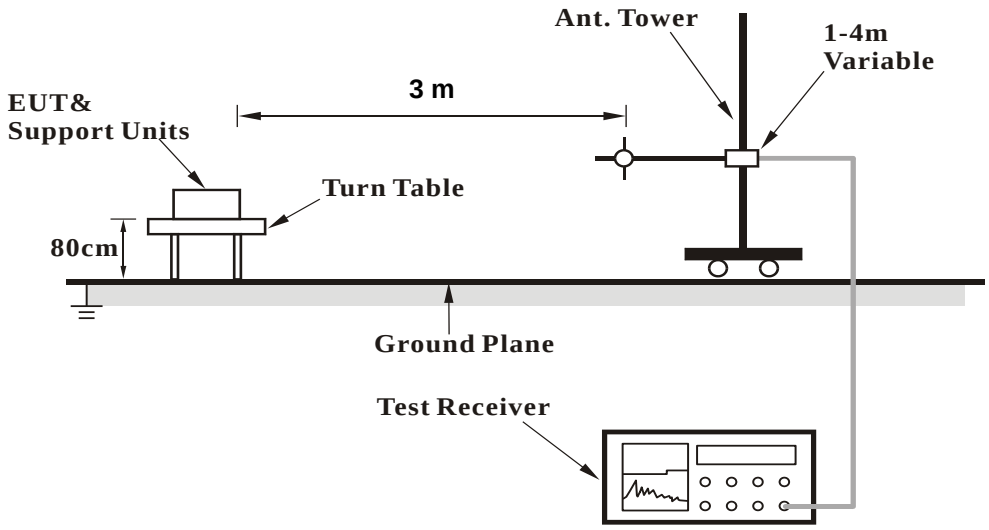
a. All measurements were done at low, middle and high operational frequency range. RBW is 1 MHz for GSM, GPRS & EDGE, and 5 MHz for WCDMA, and 1.4 MHz、3 MHz、5 MHz、10 MHz for LTE mode, VBW ≥ 3 x RBW.
b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
c. EIRP = Output power level – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.
d. Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss.
e. Measurement method refers to ANSI C63.26 section 5.2.7 & 5.2.4.

Conducted Power Measurement:

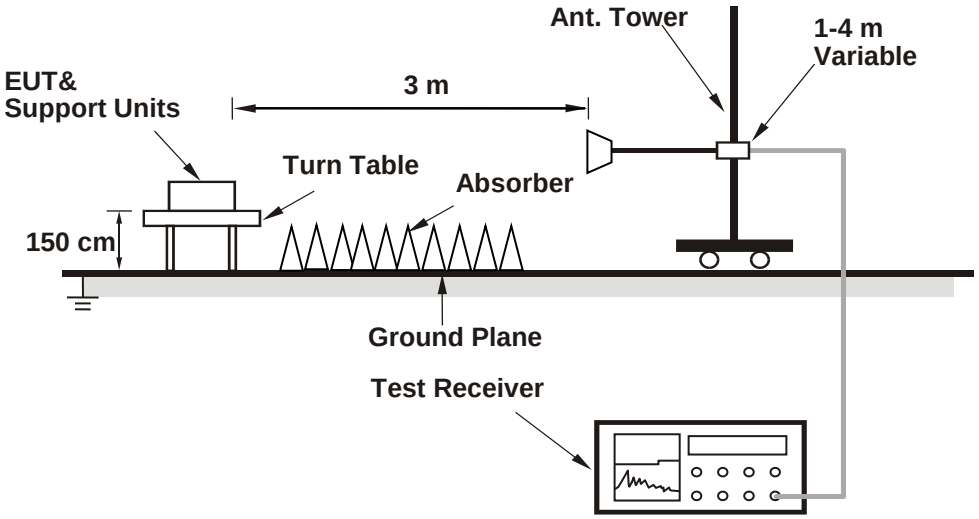
The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 Test Setup

EIRP / ERP Measurement:
<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Conducted Power Measurement:

4.1.4 Test Results

* For 16QAM modulated conducted output power and ERP/ EIRP power with bandwidth higher than 10MHz for reference.

Conducted Output Power (dBm)

Band	GSM850		
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
GPRS (GMSK, 1Tx-slot)	32.46	32.16	32.28
GPRS (GMSK, 2Tx-slot)	30.45	30.12	30.24
GPRS (GMSK, 3Tx-slot)	29.43	29.07	29.17
GPRS (GMSK, 4Tx-slot)	27.97	27.67	27.73
EDGE (8PSK, 1Tx-slot)	26.61	26.28	26.31
EDGE (8PSK, 2Tx-slot)	25.45	25.09	25.13
EDGE (8PSK, 3Tx-slot)	23.75	23.41	23.45
EDGE (8PSK, 4Tx-slot)	22.67	22.30	22.42

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	23.23	23.29	23.28
HSDPA Subtest-1	22.12	22.14	22.11
HSDPA Subtest-2	22.15	22.19	22.15
HSDPA Subtest-3	21.63	21.64	21.63
HSDPA Subtest-4	21.64	21.66	21.65
DC-HSDPA Subtest-1	22.11	22.08	22.04
DC-HSDPA Subtest-2	22.08	22.12	22.11
DC-HSDPA Subtest-3	21.59	21.62	21.64
DC-HSDPA Subtest-4	21.61	21.66	21.66
HSUPA Subtest-1	22.06	22.03	22.01
HSUPA Subtest-2	20.46	20.46	20.44
HSUPA Subtest-3	21.06	21.03	21.04
HSUPA Subtest-4	20.37	20.35	20.35
HSUPA Subtest-5	22.12	22.11	22.13

LTE Band 5

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	23.18	23.56	23.42	0	5M	QPSK	1	0	23.14	23.55	23.37	0
		1	24	23.68	23.77	23.66	0			1	12	23.68	23.76	23.61	0
		1	49	23.44	23.45	23.41	0			1	24	23.41	23.43	23.38	0
		25	0	22.32	22.38	22.35	1			12	0	22.28	22.32	22.33	1
		25	12	22.41	22.45	22.39	1			12	6	22.38	22.39	22.37	1
		25	25	22.26	22.31	22.24	1			12	13	22.16	22.21	22.22	1
		50	0	22.32	22.36	22.29	1			25	0	22.31	22.33	22.24	1
	16QAM	1	0	22.31	22.35	22.28	1		16QAM	1	0	22.26	22.30	22.23	1
		1	24	22.21	22.25	22.18	1			1	12	22.16	22.20	22.13	1
		1	49	22.17	22.21	22.14	1			1	24	22.12	22.16	22.09	1
		25	0	21.39	21.43	21.36	2			12	0	21.34	21.38	21.31	2
		25	12	21.34	21.38	21.31	2			12	6	21.29	21.33	21.26	2
		25	25	21.28	21.32	21.25	2			12	13	21.23	21.27	21.20	2
		50	0							25	0	21.12	21.16	21.09	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20415	20525	20635				Channel		20407	20525	20643	
		Frequency (MHz)		825.5	836.5	847.5				Frequency (MHz)		824.7	836.5	848.3	
3M	QPSK	1	0	23.11	23.56	23.41	0	1.4M	QPSK	1	0	23.06	23.46	23.31	0
		1	7	23.65	23.76	23.66	0			1	2	23.63	23.67	23.51	0
		1	14	23.36	23.37	23.35	0			1	5	23.31	23.30	23.28	0
		8	0	22.22	22.28	22.25	1			3	0	23.22	23.28	23.25	0
		8	3	22.33	22.43	22.34	1			3	1	23.33	23.25	23.20	0
		8	7	22.18	22.26	22.22	1			3	3	23.03	23.16	23.06	0
		15	0	22.30	22.32	22.23	1			6	0	22.21	22.26	22.17	1
	16QAM	1	0	22.23	22.27	22.20	1		16QAM	1	0	22.19	22.23	22.16	1
		1	7	22.13	22.17	22.10	1			1	2	22.09	22.13	22.06	1
		1	14	22.09	22.13	22.06	1			1	5	22.05	22.09	22.02	1
		8	0	21.31	21.35	21.28	2			3	0	21.97	21.91	21.94	1
		8	3	21.26	21.30	21.23	2			3	1	21.92	21.86	21.89	1
		8	7	21.20	21.24	21.17	2			3	3	21.86	21.81	21.83	1
		15	0	21.09	21.13	21.06	2			6	0	21.05	21.09	21.02	2

LTE Band 26

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26865	26915	26965	
		Frequency (MHz)		831.5	836.5	841.5	
15M	QPSK	1	0	23.15	23.14	23.30	0
		1	37	23.48	23.38	23.45	0
		1	74	23.01	22.94	23.42	0
		36	0	22.47	22.4	22.43	1
		36	19	22.49	22.45	22.45	1
		36	39	22.28	22.21	22.41	1
		75	0	22.43	22.42	22.42	1
	16QAM	1	0	22.41	22.37	22.40	1
		1	37	22.35	22.34	22.34	1
		1	74	22.32	22.32	22.31	1
		36	0				
		36	19				
		36	39				
		75	0				

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26840	26915	26990	
		Frequency (MHz)		829.0	836.5	844.0	
10M	QPSK	1	0	23.02	23.00	23.34	0
		1	24	23.37	23.35	23.37	0
		1	49	22.95	22.84	23.07	0
		25	0	22.46	22.33	22.46	1
		25	12	22.37	22.38	22.41	1
		25	25	22.14	22.13	22.43	1
		50	0	22.40	22.32	22.44	1
	16QAM	1	0	22.41	22.23	22.41	1
		1	24	22.21	22.27	22.36	1
		1	49	22.23	22.32	22.35	1
		25	0	21.23	21.22	21.47	2
		25	12	21.19	21.19	21.44	2
		25	25	21.16	21.22	21.48	2
		50	0				

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26815	26915	27015	
		Frequency (MHz)		826.5	836.5	846.5	
5M	QPSK	1	0	22.91	22.86	23.35	0
		1	12	23.36	23.2	23.38	0
		1	24	22.73	22.78	23.33	0
		12	0	22.37	22.21	22.45	1
		12	6	22.38	22.25	22.43	1
		12	13	22.21	22.13	22.37	1
		25	0	22.19	22.23	22.41	1
	16QAM	1	0	22.3	22.21	22.36	1
		1	12	22.32	22.25	22.31	1
		1	24	22.27	22.32	22.3	1
		12	0	21.13	21.13	21.42	2
		12	6	21.05	21.05	21.39	2
		12	13	21.09	21.17	21.43	2
		25	0	21.06	21.07	21.37	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26805	26915	27025	
		Frequency (MHz)		825.5	836.5	847.5	
3M	QPSK	1	0	22.92	23.32	23.41	1
		1	7	23.3	23.28	23.43	1
		1	14	22.72	22.96	23.39	1
		8	0	22.32	22.44	22.43	3
		8	3	22.25	22.34	22.45	3
		8	7	22.08	22.33	22.32	3
		15	0	22.29	22.34	22.42	6
	16QAM	1	0	22.19	22.3	22.33	1
		1	7	22.22	22.31	22.28	1
		1	14	22.22	22.25	22.27	1
		8	0	21.16	21.4	21.39	2
		8	3	21.11	21.3	21.36	2
		8	7	21.11	21.41	21.4	2
		15	0	21.13	21.16	21.34	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26797	26915	27033	
		Frequency (MHz)		824.7	836.5	848.3	
1.4M	QPSK	1	0	22.98	23.29	23.23	0
		1	2	23.24	23.26	23.21	0
		1	5	22.7	23.05	23.41	0
		3	0	23.32	23.34	23.34	0
		3	1	23.3	23.4	23.45	0
		3	3	23.12	23.41	23.33	0
		6	0	22.25	22.44	22.56	1
	16QAM	1	0	22.1	22.26	22.3	1
		1	2	22.27	22.29	22.25	1
		1	5	22.28	22.35	22.24	1
		3	0	22.2	22.46	21.86	1
		3	1	22.15	22.34	21.83	1
		3	3	22.22	22.35	21.77	1
		6	0	21.03	21.12	21.31	2

ERP Power (dBm)

GSM							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
X	128	824.2	3.63	29.058	32.69	1856.95	H
	189	836.4	3.35	29.15	32.50	1778.28	
	251	848.8	3.37	29.072	32.44	1754.69	
	128	824.2	-1.86	29.354	27.49	561.56	V
	189	836.4	-1.49	28.967	27.48	559.37	
	251	848.8	-2.42	29.772	27.35	543.50	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

EDGE							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
X	128	824.2	-3.28	29.058	25.78	378.27	H
	189	836.4	-3.49	29.15	25.66	368.13	
	251	848.8	-3.53	29.072	25.54	358.26	
	128	824.2	-8.80	29.354	20.55	113.61	V
	189	836.4	-8.56	28.967	20.41	109.82	
	251	848.8	-9.42	29.772	20.35	108.44	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

WCDMA							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
X	4132	826.4	-6.20	29.058	22.86	193.11	H
	4182	836.4	-6.40	29.15	22.75	188.36	
	4233	846.6	-6.41	29.072	22.66	184.59	
	4132	826.4	-11.61	29.354	17.74	59.48	V
	4182	836.4	-11.32	28.967	17.65	58.17	
	4233	846.6	-12.26	29.772	17.51	56.39	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 5							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	20407	824.7	-5.72	29.06	23.34	215.68	H
	20525	836.5	-5.85	29.15	23.30	213.80	
	20643	848.3	-5.66	29.07	23.41	219.38	
	20407	824.7	-11.07	29.35	18.28	67.36	V
	20525	836.5	-10.75	28.97	18.22	66.33	
	20643	848.3	-11.25	29.77	18.52	71.15	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	20407	824.7	-6.72	29.06	22.34	171.32	H
	20525	836.5	-6.85	29.15	22.30	169.82	
	20643	848.3	-6.67	29.07	22.40	173.86	
	20407	824.7	-12.08	29.35	17.27	53.38	V
	20525	836.5	-11.76	28.97	17.21	52.57	
	20643	848.3	-12.25	29.77	17.52	56.52	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 5							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	20415	825.5	-5.67	29.06	23.39	218.17	H
	20525	836.5	-5.81	29.15	23.34	215.77	
	20635	847.5	-5.62	29.07	23.45	221.41	
	20415	825.5	-11.03	29.35	18.32	67.98	V
	20525	836.5	-10.72	28.97	18.25	66.79	
	20635	847.5	-11.21	29.77	18.56	71.81	
Channel Bandwidth: 3 MHz / 16QAM							
X	20415	825.5	-6.67	29.06	22.39	173.30	H
	20525	836.5	-6.82	29.15	22.33	171.00	
	20635	847.5	-6.62	29.07	22.45	175.87	
	20415	825.5	-12.03	29.35	17.32	54.00	V
	20525	836.5	-11.73	28.97	17.24	52.93	
	20635	847.5	-12.22	29.77	17.55	56.91	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 5							
Channel Bandwidth: 5 MHz / QPSK							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
X	20425	826.5	-5.64	29.06	23.42	219.68	H
	20525	836.5	-5.77	29.15	23.38	217.77	
	20625	846.5	-5.58	29.07	23.49	223.46	
	20425	826.5	-10.98	29.35	18.37	68.77	V
	20525	836.5	-10.69	28.97	18.28	67.25	
	20625	846.5	-11.17	29.77	18.60	72.48	
Channel Bandwidth: 5 MHz / 16QAM							
X	20425	826.5	-6.64	29.06	22.42	174.50	H
	20525	836.5	-6.77	29.15	22.38	172.98	
	20625	846.5	-6.59	29.07	22.48	177.09	
	20425	826.5	-11.98	29.35	17.37	54.63	V
	20525	836.5	-11.70	28.97	17.27	53.30	
	20625	846.5	-12.17	29.77	17.60	57.57	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 5							
Channel Bandwidth: 10 MHz / QPSK							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
X	20450	829.0	-5.60	29.06	23.46	221.72	H
	20525	836.5	-5.74	29.15	23.41	219.28	
	20600	844.0	-5.54	29.07	23.53	225.53	
	20450	829.0	-10.94	29.35	18.41	69.41	V
	20525	836.5	-10.65	28.97	18.32	67.87	
	20600	844.0	-11.13	29.77	18.64	73.15	
Channel Bandwidth: 10 MHz / 16QAM							
X	20450	829.0	-6.61	29.06	22.45	175.71	H
	20525	836.5	-6.74	29.15	22.41	174.18	
	20600	844.0	-6.54	29.07	22.53	179.14	
	20450	829.0	-11.95	29.35	17.40	55.00	V
	20525	836.5	-11.66	28.97	17.31	53.79	
	20600	844.0	-12.14	29.77	17.63	57.97	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 26							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Y	26797	824.7	-5.96	29.058	23.10	204.08	H
	26915	836.5	-6.18	29.15	22.97	198.15	
	27033	848.3	-6.27	29.072	22.80	190.63	
	26797	824.7	-10.31	29.354	19.04	80.24	V
	26915	836.5	-10.07	28.967	18.90	77.57	
	27033	848.3	-11.03	29.772	18.74	74.85	
Channel Bandwidth: 1.4 MHz / 16QAM							
Y	26797	824.7	-6.96	29.058	22.098	162.11	H
	26915	836.5	-7.18	29.15	21.97	157.40	
	27033	848.3	-7.28	29.072	21.792	151.08	
	26797	824.7	-11.32	29.354	18.034	63.59	V
	26915	836.5	-11.08	28.967	17.887	61.48	
	27033	848.3	-12.03	29.772	17.742	59.46	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 26							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Y	26805	825.5	-5.92	29.058	23.14	205.97	H
	26915	836.5	-6.15	29.15	23.00	199.53	
	27025	847.5	-6.24	29.072	22.83	191.96	
	26805	825.5	-10.27	29.354	19.08	80.98	V
	26915	836.5	-10.02	28.967	18.95	78.47	
	27025	847.5	-10.99	29.772	18.78	75.54	
Channel Bandwidth: 3 MHz / 16QAM							
Y	26805	825.5	-6.93	29.058	22.128	163.23	H
	26915	836.5	-7.15	29.15	22	158.49	
	27025	847.5	-7.25	29.072	21.822	152.12	
	26805	825.5	-11.27	29.354	18.084	64.33	V
	26915	836.5	-11.03	28.967	17.937	62.19	
	27025	847.5	-12.00	29.772	17.772	59.87	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 26							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Y	26815	826.5	-5.88	29.058	23.18	207.87	H
	26915	836.5	-6.11	29.15	23.04	201.37	
	27015	846.5	-6.21	29.072	22.86	193.29	
	26815	826.5	-10.23	29.354	19.12	81.73	V
	26919	836.5	-9.99	28.967	18.98	79.01	
	27015	846.5	-10.96	29.772	18.81	76.07	
Channel Bandwidth: 5 MHz / 16QAM							
Y	26815	826.5	-6.88	29.058	22.178	165.12	H
	26915	836.5	-7.11	29.15	22.04	159.96	
	27015	846.5	-7.22	29.072	21.852	153.18	
	26815	826.5	-11.23	29.354	18.124	64.92	V
	26919	836.5	-10.99	28.967	17.977	62.76	
	27015	846.5	-11.97	29.772	17.802	60.28	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 26							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Y	26840	829.0	-5.84	29.058	23.218	209.80	H
	26915	836.5	-6.07	29.15	23.08	203.24	
	26990	844.0	-6.18	29.072	22.892	194.63	
	26840	829.0	-10.18	29.354	19.174	82.68	V
	26919	836.5	-9.96	28.967	19.007	79.56	
	26990	844.0	-10.92	29.772	18.852	76.77	
Channel Bandwidth: 10 MHz / 16QAM							
Y	26840	829.0	-6.85	29.058	22.208	166.26	H
	26915	836.5	-7.08	29.15	22.07	161.06	
	26990	844.0	-7.18	29.072	21.892	154.60	
	26840	829.0	-11.18	29.354	18.174	65.67	V
	26919	836.5	-10.97	28.967	17.997	63.05	
	26990	844.0	-11.94	29.772	17.832	60.70	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 26							
Channel Bandwidth: 15 MHz / QPSK							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (mW)**	**Polarization (H/V)**
Y	26865	831.5	-5.80	29.058	23.258	211.74	H
	26915	836.5	-6.04	29.15	23.11	204.64	
	26965	841.5	-6.14	29.072	22.932	196.43	
	26865	831.5	-10.14	29.354	19.214	83.44	V
	26915	836.5	-9.92	28.967	19.047	80.30	
	26965	841.5	-10.89	29.772	18.882	77.30	
Channel Bandwidth: 15 MHz / 16QAM							
Y	26865	831.5	-6.80	29.058	22.258	168.19	H
	26915	836.5	-7.04	29.15	22.11	162.55	
	26965	841.5	-7.15	29.072	21.922	155.67	
	26865	831.5	-11.15	29.354	18.204	66.13	V
	26915	836.5	-10.92	28.967	18.047	63.78	
	26965	841.5	-11.89	29.772	17.882	61.40	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

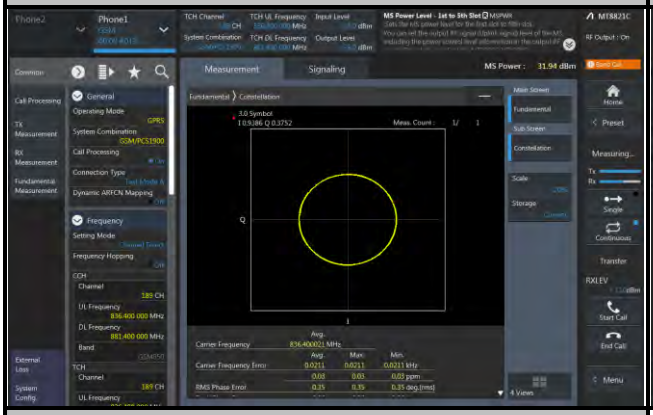
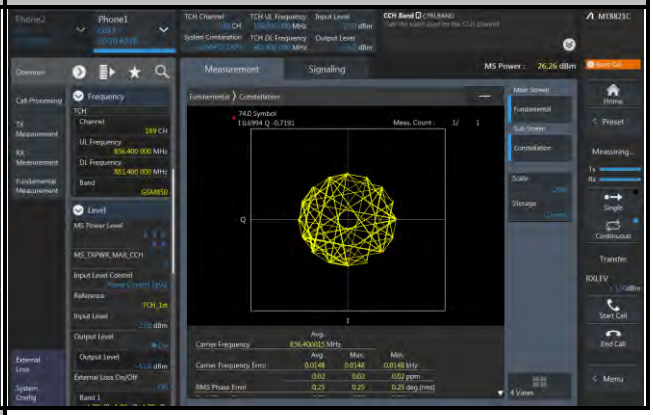
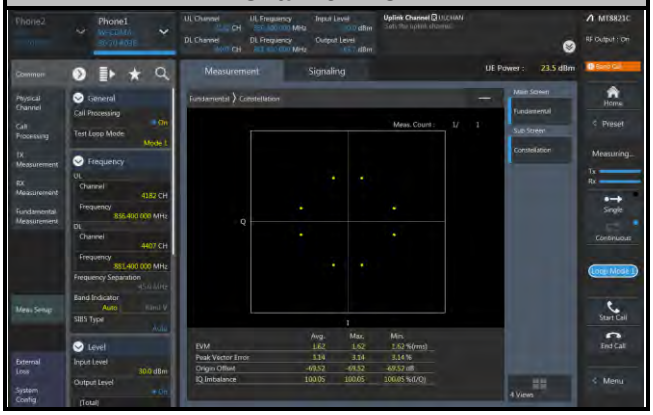
N/A

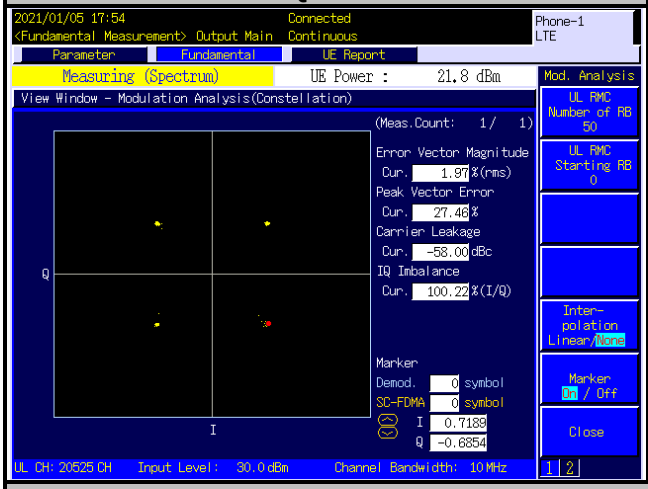
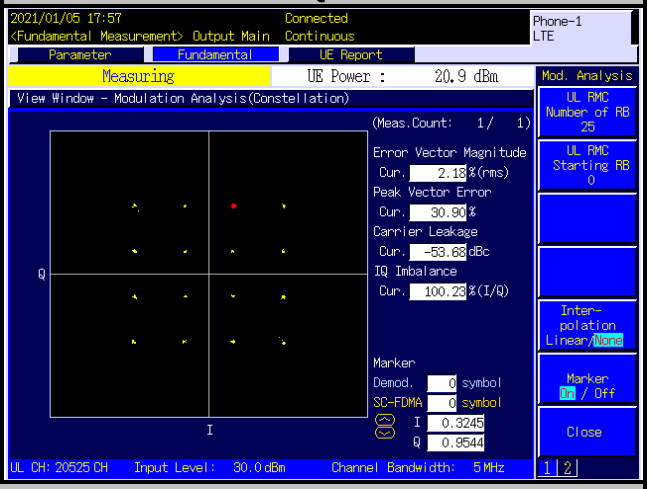
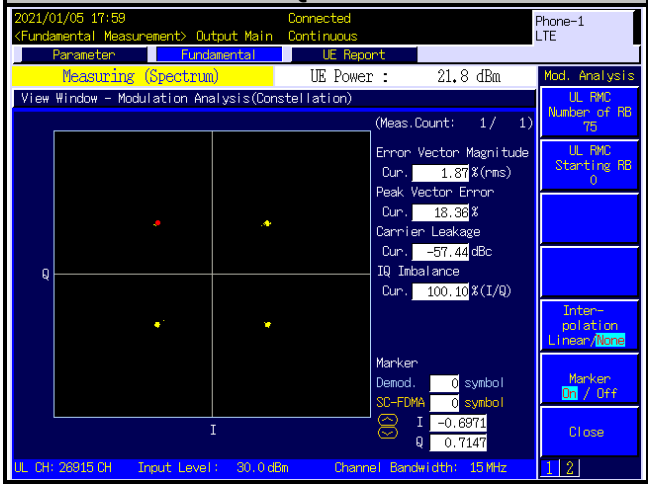
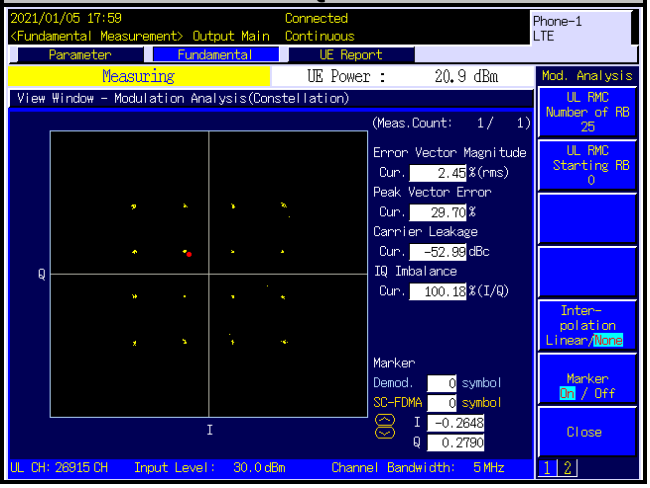
4.2.2 Test Setup

4.2.3 Test Procedure

Connect the EUT to Communication Simulator via the antenna connector. The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.4 Test Results

Spectrum Plot of Measurement	
GSM	**EDGE**
Channel 189	**Channel 189**
	
WCDMA	
Channel 4182	
	

Spectrum Plot of Measurement	
LTE Band 5	
Channel 20525	
QPSK	16QAM
	
LTE Band 26	
Channel 26915	
QPSK	16QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

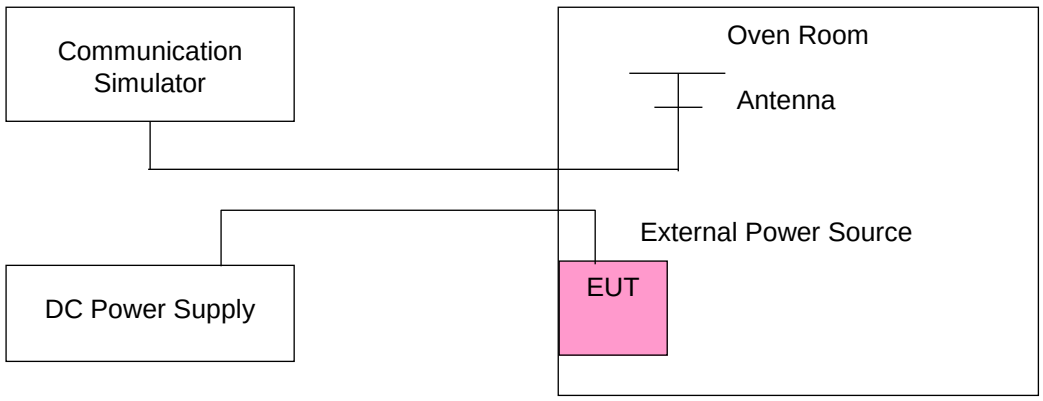
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	GSM				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	824.200002	0.002184	848.800002	0.001767	2.5
3.14	824.200002	0.001820	848.800003	0.003888	2.5
4.25	824.200003	0.003155	848.800004	0.004713	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	GSM				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	824.200003	0.003519	848.800002	0.002003	2.5
-10	824.200003	0.003397	848.800004	0.004241	2.5
0	824.200001	0.001456	848.800003	0.003181	2.5
10	824.200001	0.001335	848.800003	0.003181	2.5
20	824.199999	-0.001335	848.799997	-0.003770	2.5
30	824.199997	-0.003883	848.799997	-0.003652	2.5
40	824.199999	-0.001820	848.799997	-0.003417	2.5
50	824.199997	-0.003883	848.799998	-0.002121	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	EDGE				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	824.200001	0.001213	848.800001	0.001296	2.5
3.14	824.200004	0.004247	848.800002	0.002238	2.5
4.25	824.200002	0.002912	848.800002	0.002356	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	EDGE				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	824.200004	0.004489	848.800002	0.002474	2.5
-10	824.200004	0.004853	848.800001	0.001649	2.5
0	824.200001	0.001456	848.800001	0.001178	2.5
10	824.200001	0.001456	848.800003	0.003534	2.5
20	824.199996	-0.004611	848.799997	-0.003534	2.5
30	824.199999	-0.001456	848.799999	-0.001414	2.5
40	824.199998	-0.002912	848.799997	-0.003770	2.5
50	824.199997	-0.003883	848.799998	-0.002474	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	WCDMA				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	826.400002	0.002904	846.600003	0.004016	2.5
3.14	826.400002	0.002662	846.600003	0.003662	2.5
4.25	826.400003	0.003146	846.600001	0.001536	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA				Limit (ppm)
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	826.400003	0.003509	846.600004	0.004370	2.5
-10	826.400002	0.002783	846.600002	0.001890	2.5
0	826.400002	0.001936	846.600002	0.002835	2.5
10	826.400003	0.003509	846.600003	0.003662	2.5
20	826.399997	-0.003509	846.599997	-0.003780	2.5
30	826.399997	-0.003751	846.599998	-0.002008	2.5
40	826.399998	-0.002057	846.599999	-0.001772	2.5
50	826.399998	-0.001936	846.599999	-0.001536	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	824.700003	0.003880	848.300003	0.003772	2.5
3.14	824.700002	0.002304	848.300001	0.001179	2.5
4.25	824.700002	0.002061	848.300004	0.004597	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	824.700001	0.001455	848.300002	0.002004	2.5
-10	824.700003	0.003759	848.300002	0.002711	2.5
0	824.700001	0.001334	848.300001	0.001532	2.5
10	824.700001	0.001698	848.300003	0.002947	2.5
20	824.699998	-0.002668	848.299996	-0.004715	2.5
30	824.699996	-0.004729	848.299997	-0.003301	2.5
40	824.699998	-0.002061	848.299996	-0.004244	2.5
50	824.699996	-0.004608	848.299998	-0.002711	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	825.500003	0.003513	847.500003	0.003068	2.5
3.14	825.500002	0.002180	847.500002	0.002832	2.5
4.25	825.500003	0.003150	847.500002	0.002360	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	825.500001	0.001696	847.500003	0.002950	2.5
-10	825.500003	0.004119	847.500003	0.003776	2.5
0	825.500003	0.003513	847.500003	0.003658	2.5
10	825.500002	0.002059	847.500002	0.002478	2.5
20	825.499997	-0.003876	847.499999	-0.001298	2.5
30	825.499997	-0.003150	847.499998	-0.002596	2.5
40	825.499998	-0.002786	847.499998	-0.002124	2.5
50	825.499999	-0.001454	847.499998	-0.002832	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	826.500003	0.003388	846.500004	0.004135	2.5
3.14	826.500002	0.002662	846.500003	0.002953	2.5
4.25	826.500001	0.001694	846.500002	0.002599	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	826.500004	0.004235	846.500003	0.002953	2.5
-10	826.500001	0.001573	846.500003	0.003426	2.5
0	826.500001	0.001573	846.500004	0.004607	2.5
10	826.500002	0.002783	846.500002	0.002363	2.5
20	826.499997	-0.003267	846.499998	-0.001890	2.5
30	826.499999	-0.001694	846.499996	-0.004253	2.5
40	826.499999	-0.001815	846.499998	-0.002363	2.5
50	826.499999	-0.001452	846.499997	-0.003544	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	829.000004	0.004584	844.000003	0.002962	2.5
3.14	829.000002	0.002051	844.000004	0.004265	2.5
4.25	829.000002	0.001930	844.000003	0.003081	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	829.000002	0.002533	844.000004	0.004384	2.5
-10	829.000001	0.001206	844.000004	0.004384	2.5
0	829.000003	0.003860	844.000003	0.003199	2.5
10	829.000003	0.003378	844.000002	0.001777	2.5
20	828.999997	-0.004101	843.999997	-0.003673	2.5
30	828.999996	-0.004704	843.999998	-0.002133	2.5
40	828.999997	-0.004222	843.999997	-0.003555	2.5
50	828.999999	-0.001448	843.999998	-0.002962	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	824.700003	0.003638	848.300003	0.003536	2.5
3.14	824.700003	0.003759	848.300003	0.003183	2.5
4.25	824.700002	0.001819	848.300002	0.002476	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	824.700004	0.004486	848.300003	0.003183	2.5
-10	824.700004	0.004244	848.300002	0.002358	2.5
0	824.700004	0.004850	848.300004	0.004244	2.5
10	824.700002	0.002546	848.300001	0.001650	2.5
20	824.699999	-0.001334	848.299999	-0.001650	2.5
30	824.699998	-0.002061	848.299997	-0.003654	2.5
40	824.699999	-0.001334	848.299998	-0.001886	2.5
50	824.699998	-0.002668	848.299999	-0.001532	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	825.500002	0.002180	847.500002	0.002832	2.5
3.14	825.500003	0.003392	847.500003	0.002950	2.5
4.25	825.500002	0.001938	847.500003	0.003894	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	825.500003	0.003998	847.500003	0.002950	2.5
-10	825.500004	0.004361	847.500002	0.001888	2.5
0	825.500001	0.001333	847.500004	0.004720	2.5
10	825.500002	0.002544	847.500001	0.001534	2.5
20	825.499999	-0.001333	847.499997	-0.003186	2.5
30	825.499999	-0.001817	847.499998	-0.002596	2.5
40	825.499996	-0.004724	847.499998	-0.002360	2.5
50	825.499996	-0.004846	847.499998	-0.002832	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	826.500003	0.003993	846.500001	0.001418	2.5
3.14	826.500002	0.002783	846.500003	0.003780	2.5
4.25	826.500001	0.001573	846.500001	0.001418	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	826.500001	0.001694	846.500001	0.001536	2.5
-10	826.500001	0.001210	846.500003	0.003426	2.5
0	826.500003	0.003630	846.500001	0.001418	2.5
10	826.500002	0.001936	846.500003	0.003426	2.5
20	826.499998	-0.002783	846.499998	-0.002835	2.5
30	826.499998	-0.002178	846.499999	-0.001299	2.5
40	826.499996	-0.004477	846.499999	-0.001418	2.5
50	826.499998	-0.002541	846.499998	-0.002835	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	829.000002	0.001930	844.000003	0.003555	2.5
3.14	829.000002	0.002533	844.000001	0.001303	2.5
4.25	829.000003	0.004101	844.000002	0.002370	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	829.000003	0.003498	844.000003	0.003199	2.5
-10	829.000002	0.001809	844.000001	0.001659	2.5
0	829.000002	0.002051	844.000001	0.001303	2.5
10	829.000001	0.001206	844.000004	0.004147	2.5
20	828.999999	-0.001689	843.999997	-0.004147	2.5
30	828.999998	-0.002774	843.999998	-0.002962	2.5
40	828.999997	-0.003257	843.999999	-0.001659	2.5
50	828.999997	-0.003981	843.999999	-0.001422	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 15 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.7	831.500003	0.004089	841.500004	0.004753	2.5
3.14	831.500003	0.003728	841.500004	0.004753	2.5
4.25	831.500002	0.002646	841.500001	0.001188	2.5

Note: The applicant defined the normal working voltage of the battery is from 3.14 Vdc to 4.25 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26				Limit (ppm)
	Channel Bandwidth: 15 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-20	831.500002	0.002526	841.500003	0.003565	2.5
-10	831.500001	0.001563	841.500003	0.003565	2.5
0	831.500002	0.002766	841.500002	0.002496	2.5
10	831.500004	0.004209	841.500003	0.003684	2.5
20	831.499996	-0.004450	841.499997	-0.004040	2.5
30	831.499997	-0.003247	841.499996	-0.004278	2.5
40	831.499998	-0.001924	841.499996	-0.004635	2.5
50	831.499998	-0.002285	841.499999	-0.001664	2.5

Note: When the EUT temperature is below -20°C, it will shut down and will not work.

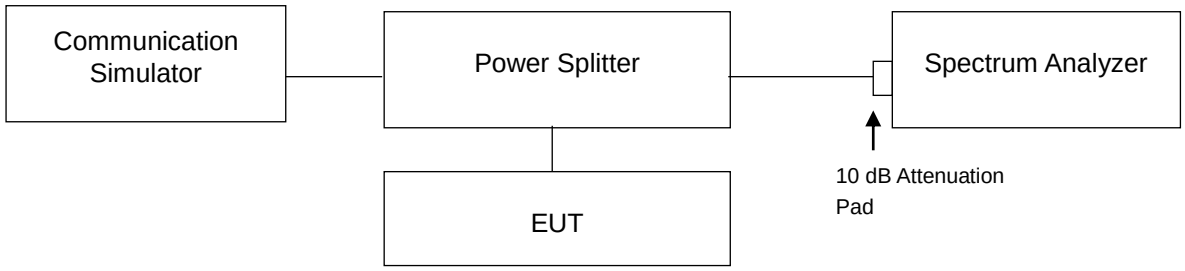
4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All 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. Measurement method refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

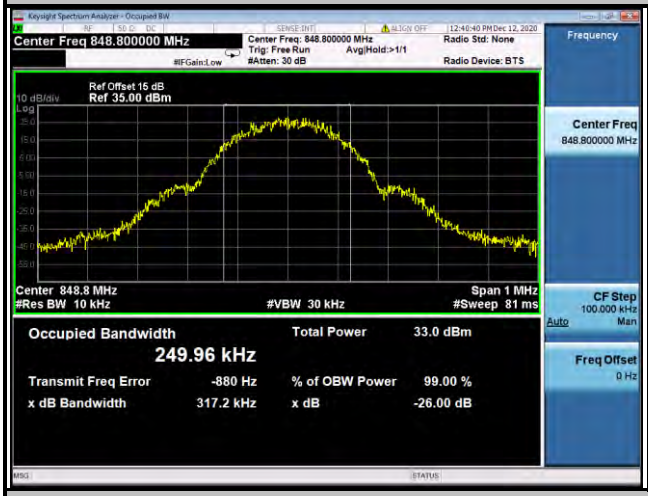
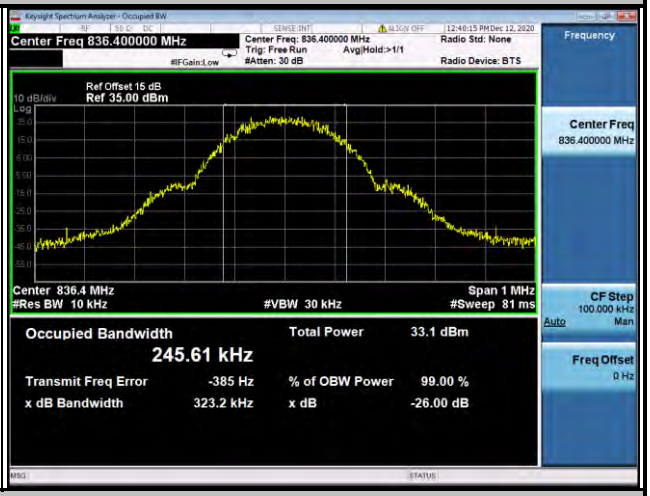
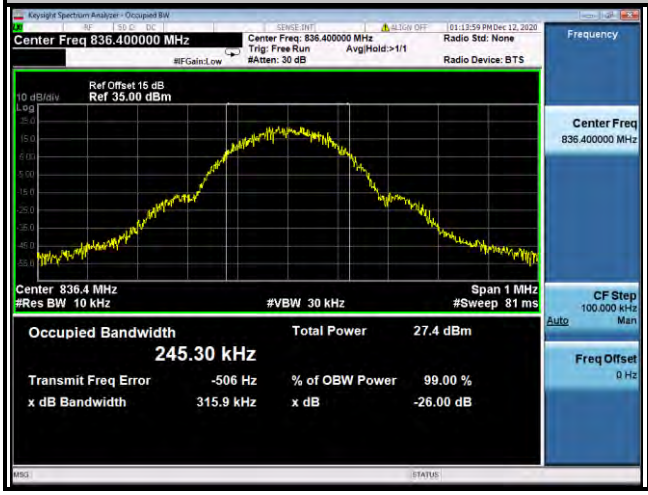
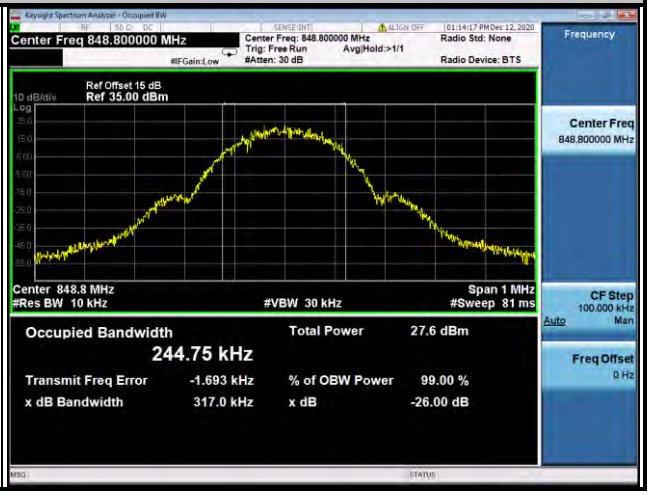
For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.2 Test Setup



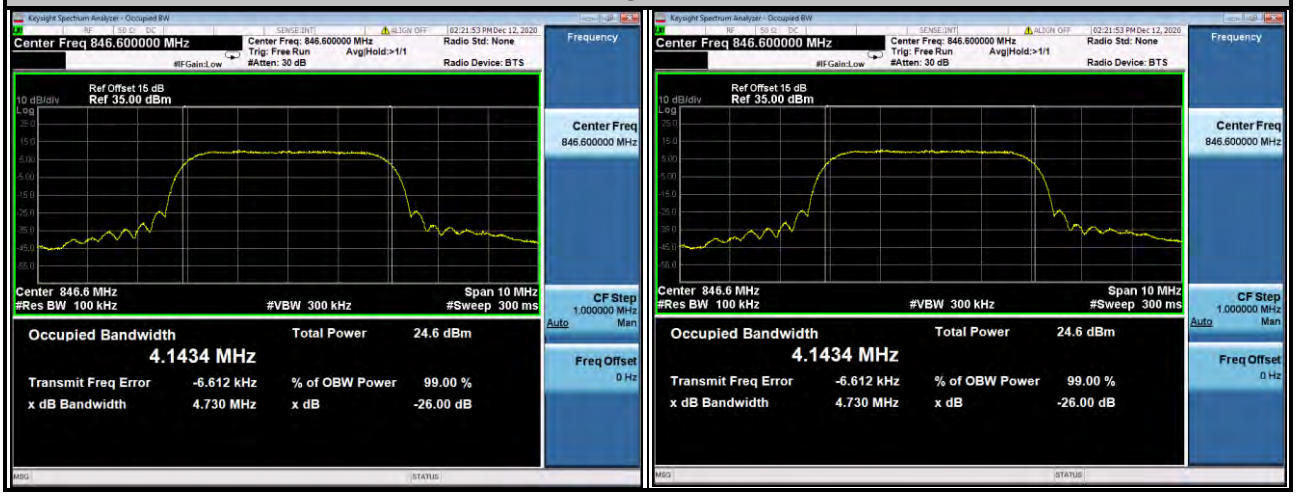
4.4.3 Test Result

GSM				EDGE			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	242.92	316.30	128	824.2	245.24	314.70
189	836.4	245.61	323.20	189	836.4	245.30	315.90
251	848.8	249.96	317.20	251	848.8	244.75	317.00

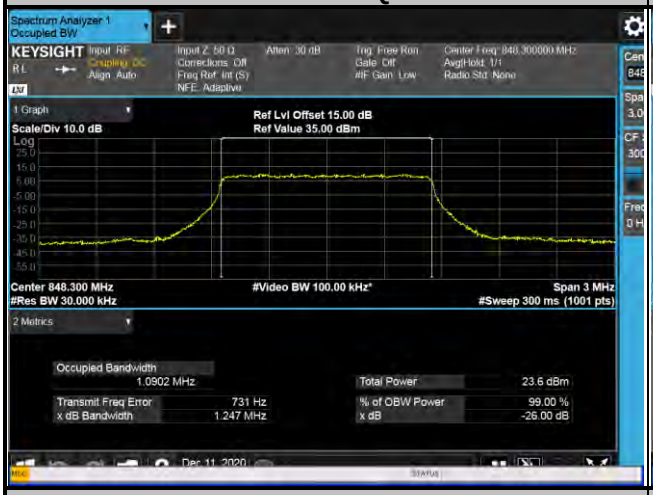
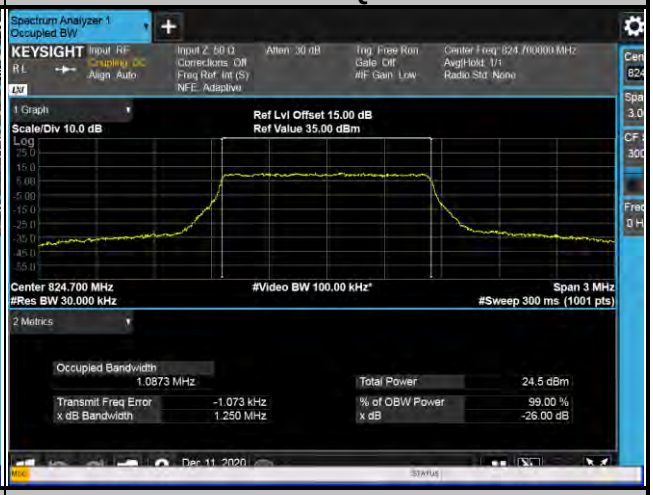
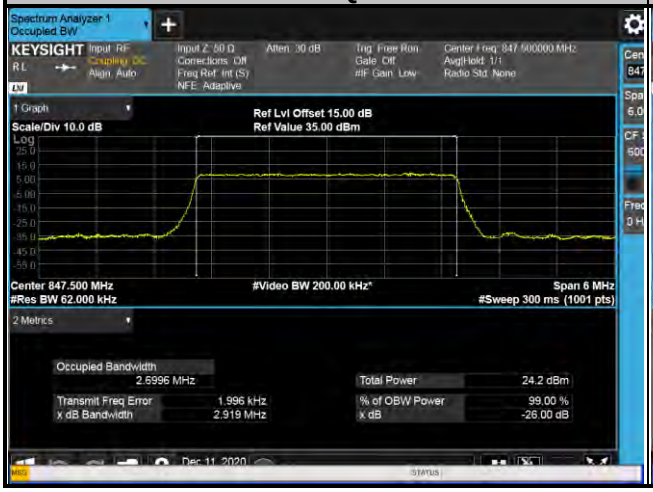
Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
GSM	
	
EDGE	
	

WCDMA			
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**	**26 dB Bandwidth (MHz)**
4132	826.4	4.14	4.72
4182	836.4	4.14	4.73
4233	846.6	4.14	4.73

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	**26 dB Bandwidth**
WCDMA	



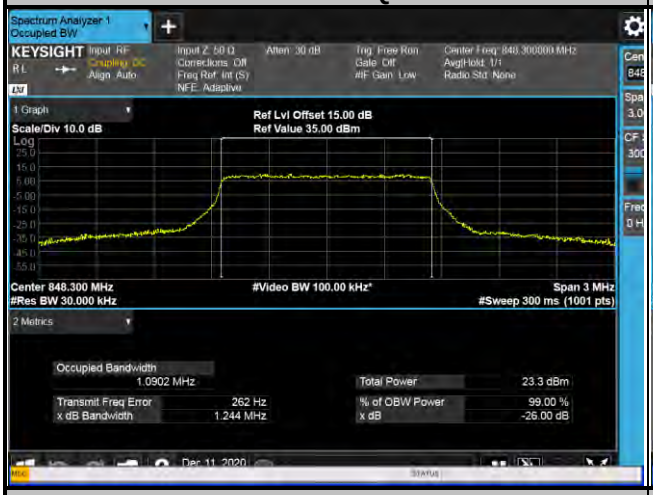
LTE Band 5					
Channel Bandwidth: 1.4 MHz					
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**		**26 dB Bandwidth (MHz)**	
		QPSK	**16QAM**	**QPSK**	**16QAM**
20407	824.7	1.09	1.09	1.25	1.25
20525	836.5	1.09	1.09	1.25	1.24
20643	848.3	1.09	1.09	1.24	1.25
Channel Bandwidth: 3 MHz					
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**		**26 dB Bandwidth (MHz)**	
		QPSK	**16QAM**	**QPSK**	**16QAM**
20415	825.5	2.70	2.69	2.92	2.92
20525	836.5	2.70	2.70	2.93	2.92
20635	847.5	2.70	2.70	2.92	2.92

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	**26 dB Bandwidth**
1.4 MHz / 16QAM	**1.4 MHz / QPSK**
	
3 MHz / QPSK	**3 MHz / QPSK**
	

LTE Band 5					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20425	826.5	4.49	4.49	4.80	4.81
20525	836.5	4.49	4.49	4.82	4.81
20625	846.5	4.49	4.49	4.80	4.81
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20450	829.0	8.95	4.57	9.50	5.04
20525	836.5	8.96	4.57	9.49	5.03
20600	844.0	8.94	4.56	9.50	5.05

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / QPSK	5 MHz / QPSK
	
10 MHz / QPSK	10 MHz / QPSK
	

LTE Band 26					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26797	824.7	1.09	1.09	1.24	1.25
26915	836.5	1.09	1.09	1.25	1.25
27033	848.3	1.09	1.09	1.18	1.24
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26805	825.5	2.70	2.69	2.91	2.92
26915	836.5	2.70	2.70	2.91	2.92
27025	847.5	2.70	2.70	2.93	2.92

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
1.4 MHz / 16QAM	1.4 MHz / QPSK
	
3 MHz / QPSK	3 MHz / QPSK
	

LTE Band 26					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26815	826.5	4.49	4.49	4.83	4.82
26915	836.5	4.49	4.49	4.83	4.81
27015	846.5	4.49	4.49	4.83	4.81
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26840	829.0	8.95	4.57	9.51	5.02
26915	836.5	8.95	4.56	9.50	5.03
26990	844.0	8.95	4.57	9.51	5.02

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / QPSK	5 MHz / QPSK
	
10 MHz / QPSK	10 MHz / QPSK
	

LTE Band 26					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26865	831.5	13.42	4.66	14.23	5.23
26915	836.5	13.44	4.67	14.23	5.23
26965	841.5	13.42	4.66	14.22	5.24

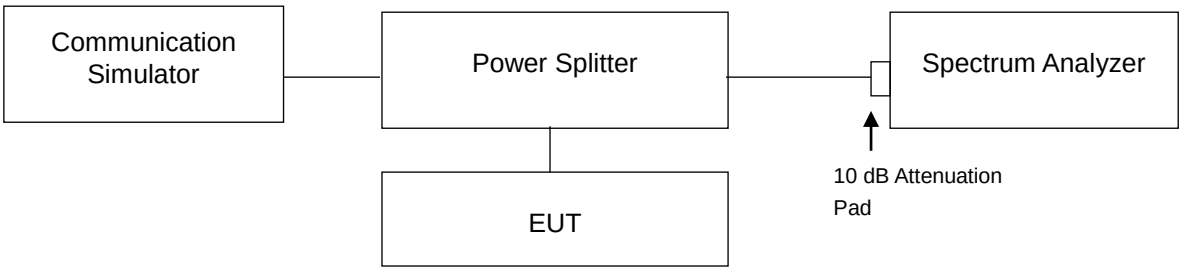
Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
15 MHz / QPSK	15 MHz / QPSK
	

4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

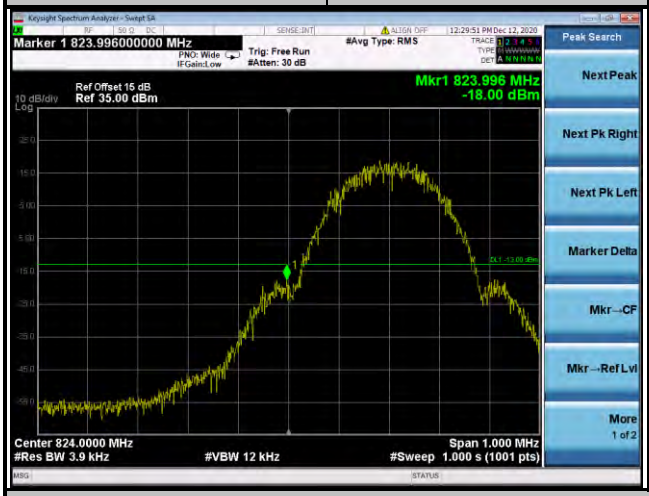
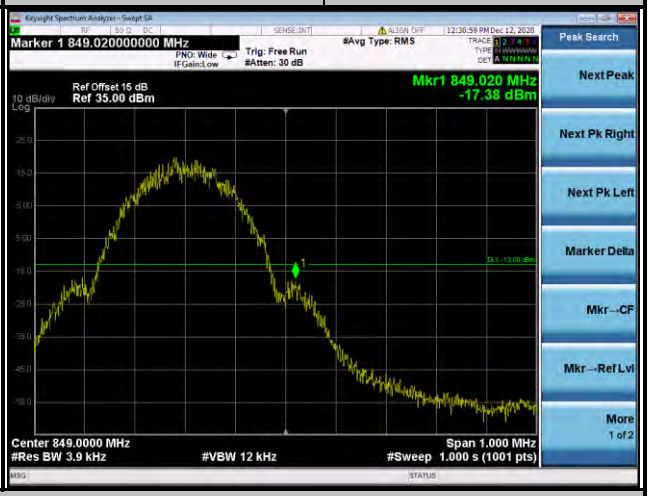
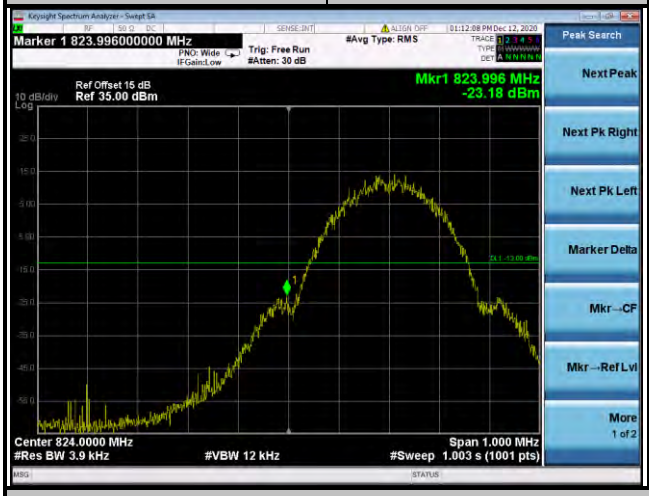
4.5.2 Test Setup

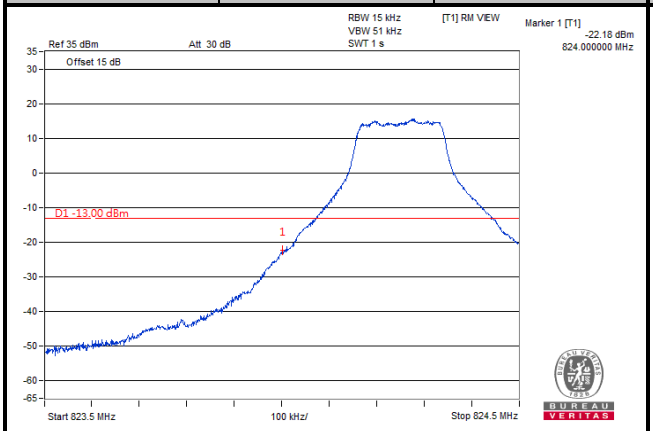
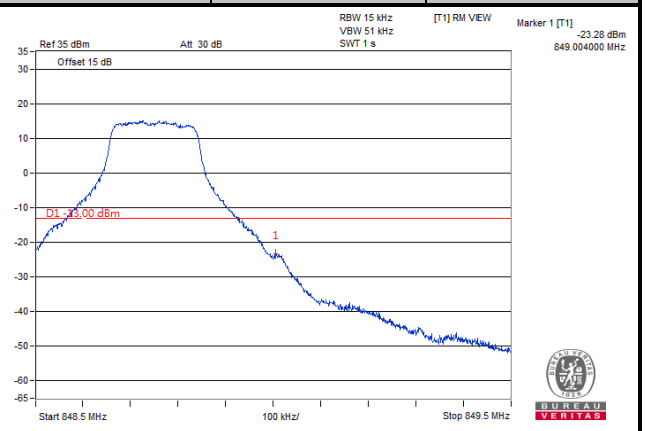
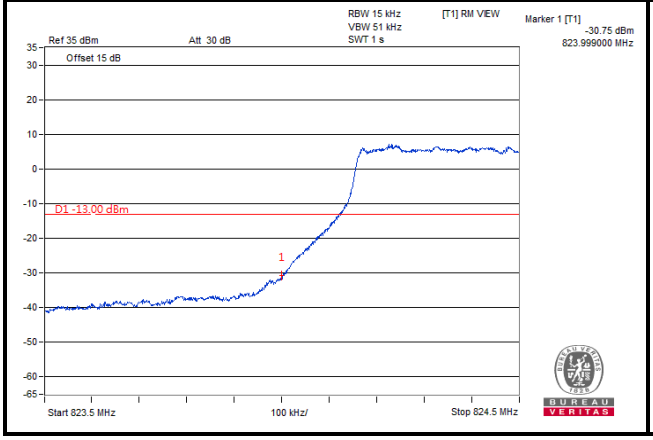
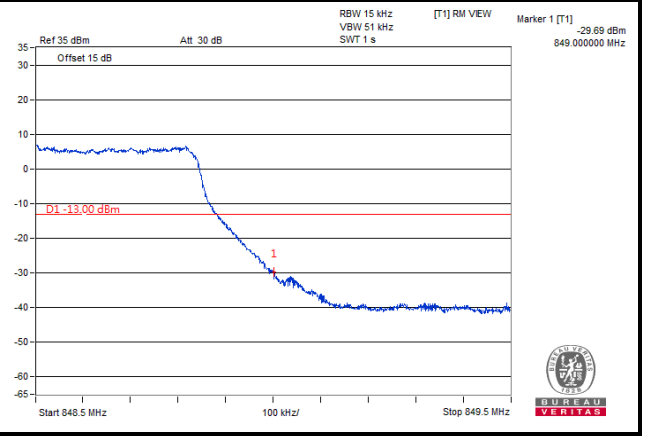


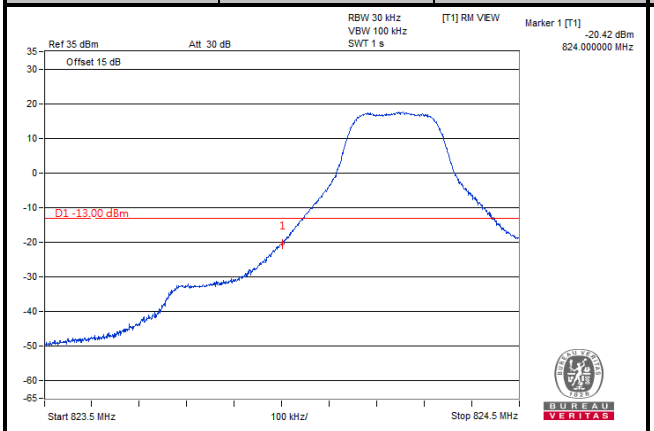
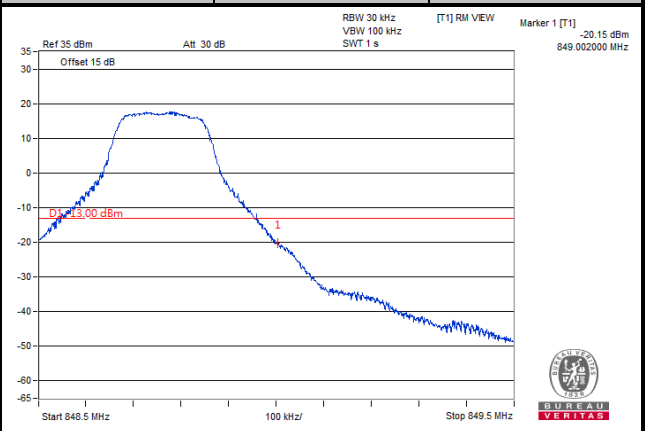
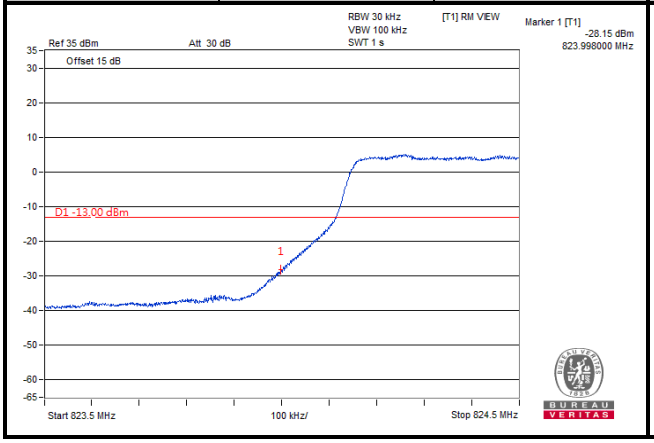
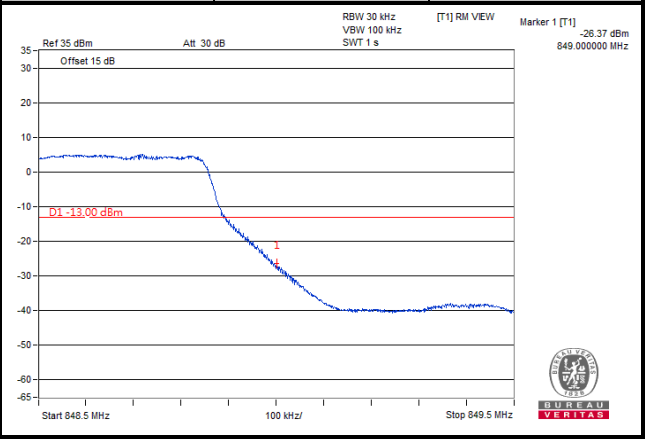
4.5.3 Test Procedures

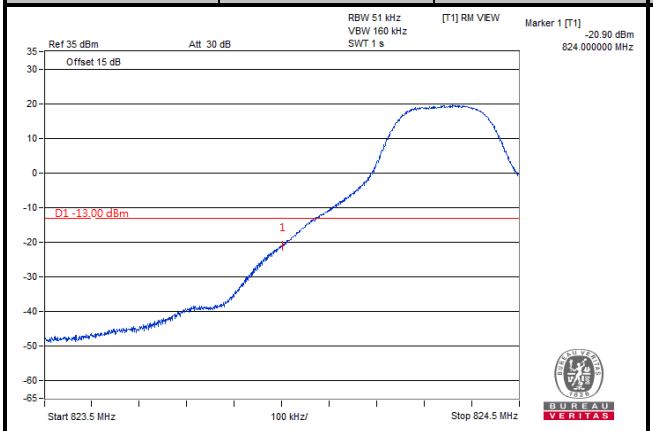
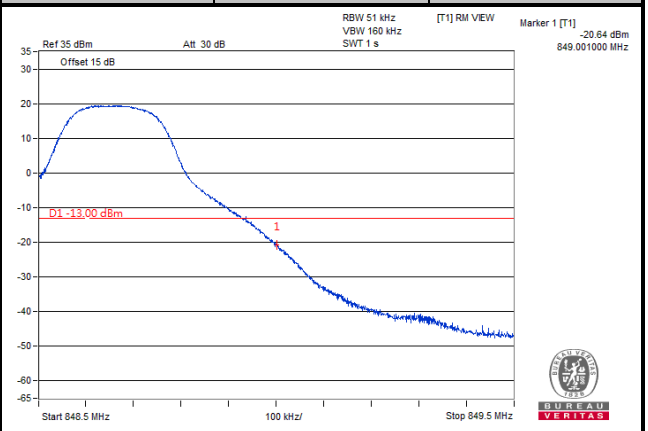
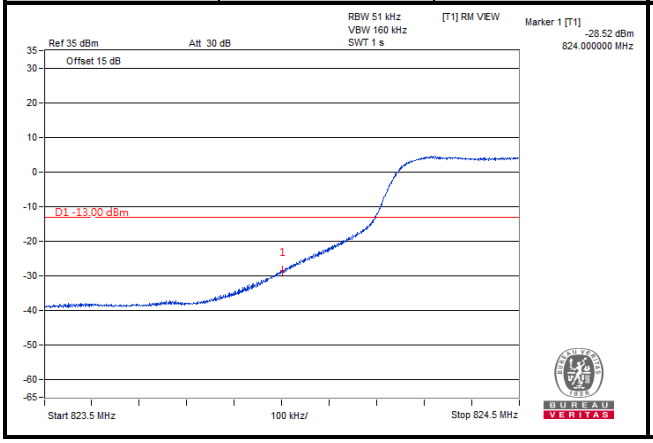
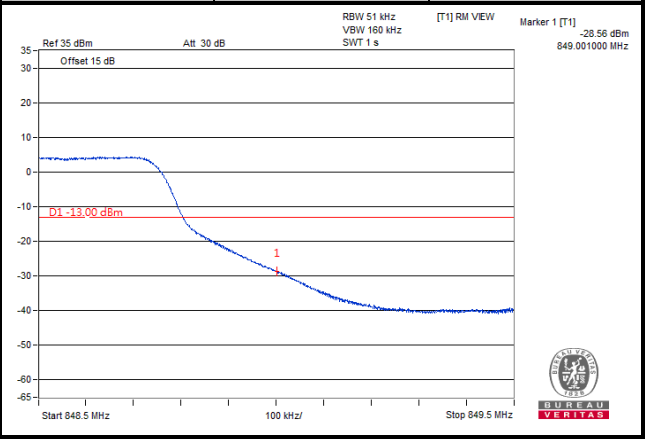
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 3.9 kHz and VB of the spectrum is 12 kHz (GPRS/EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (WCDMA).
d. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 15 kHz and VB of the spectrum is 51 kHz (LTE Bandwidth 1.4 MHz).
e. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (LTE Bandwidth 5 MHz).
g. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 10 MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150 kHz and VB of the spectrum is 470 kHz (LTE Bandwidth 15 MHz).
i. Record the max trace plot into the test report.

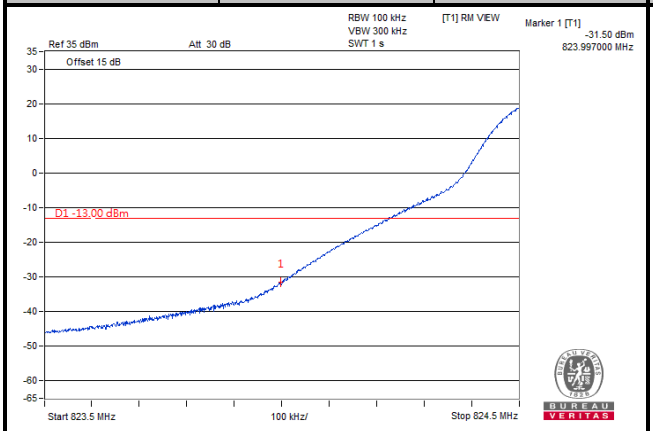
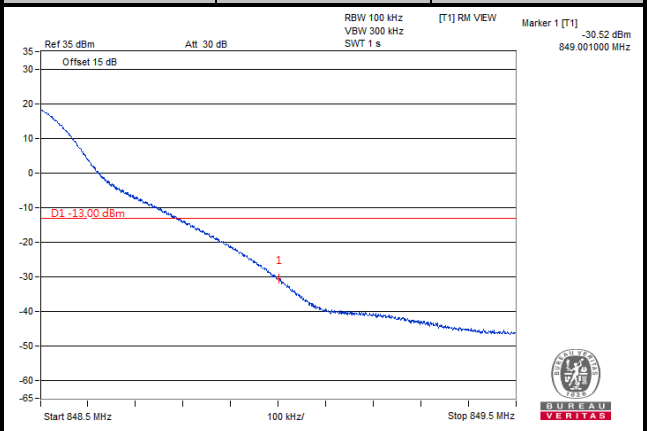
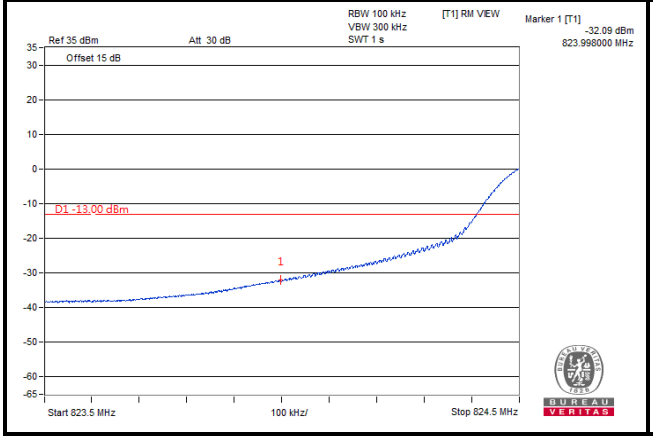
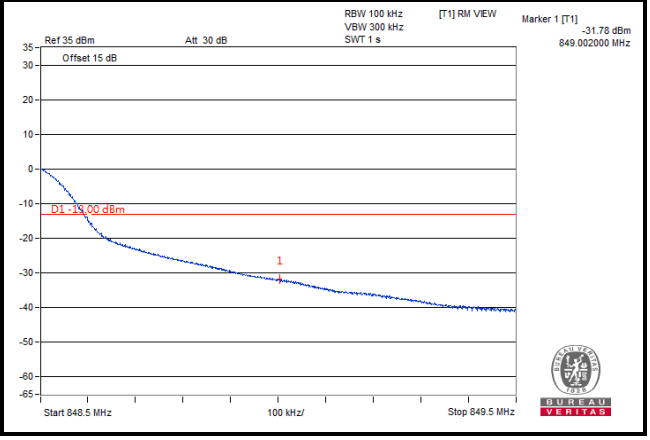
4.5.4 Test Results

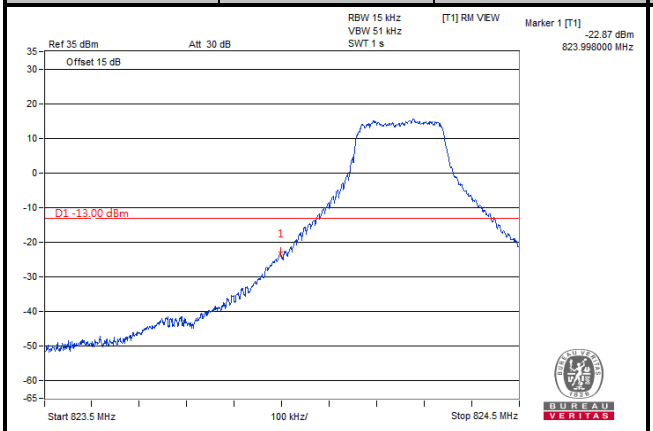
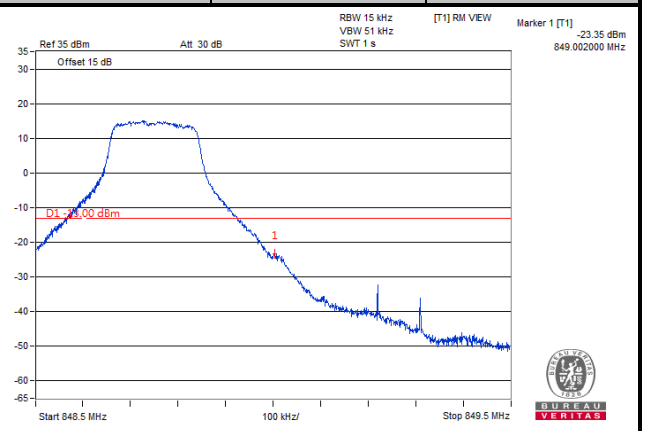
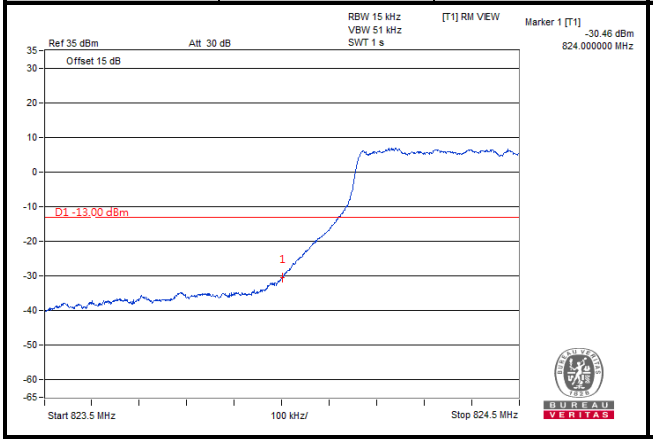
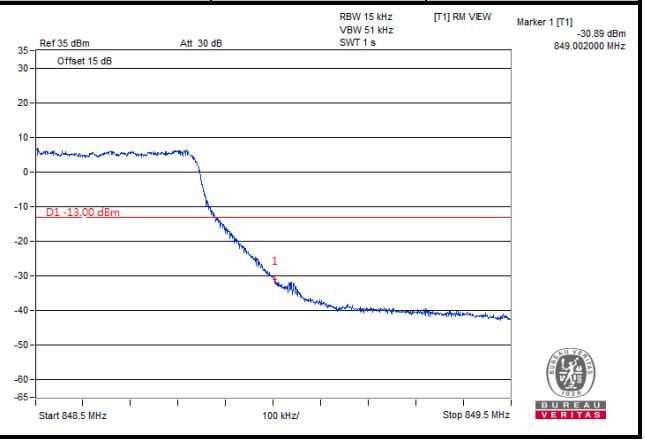
GSM			
Channel	128	Channel	251
			
EDGE			
Channel	128	Channel	251
			
WCDMA			
Channel	4132	Channel	4233
			

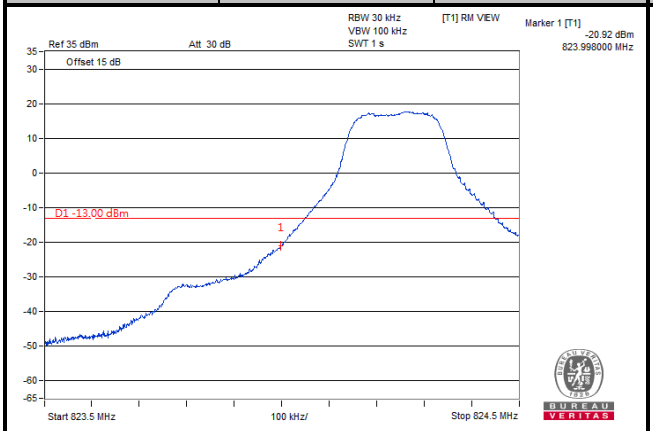
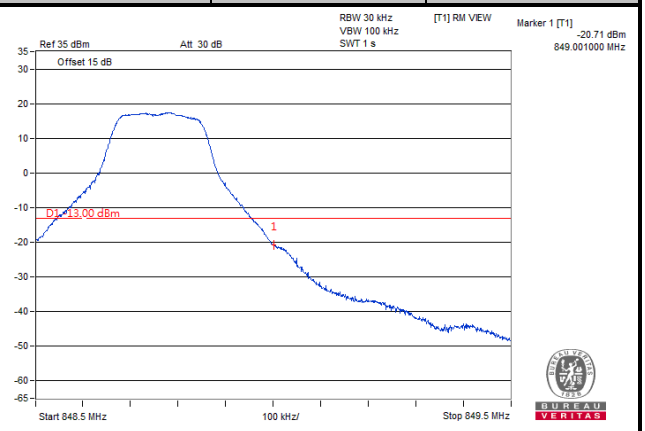
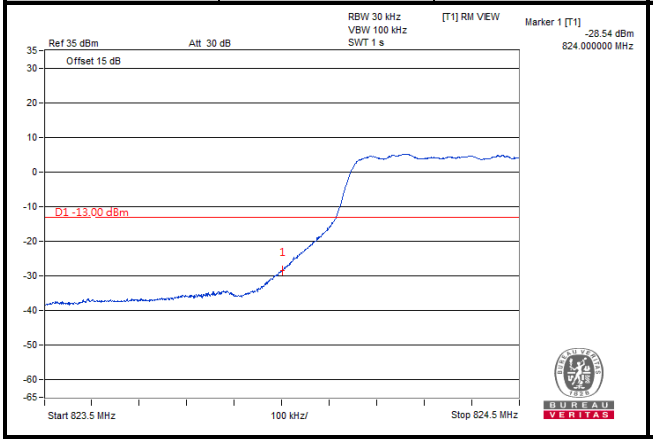
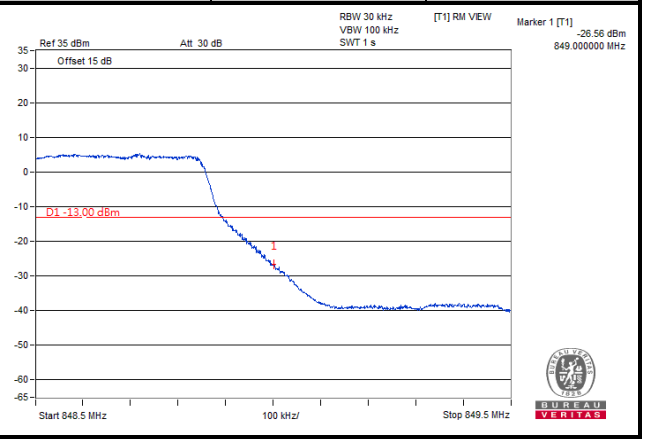
LTE Band 5					
Channel Bandwidth: 1.4 MHz					
Channel	20407	1 RB	Channel	20643	1 RB
					
Channel	20407	6 RB	Channel	20643	6 RB
					

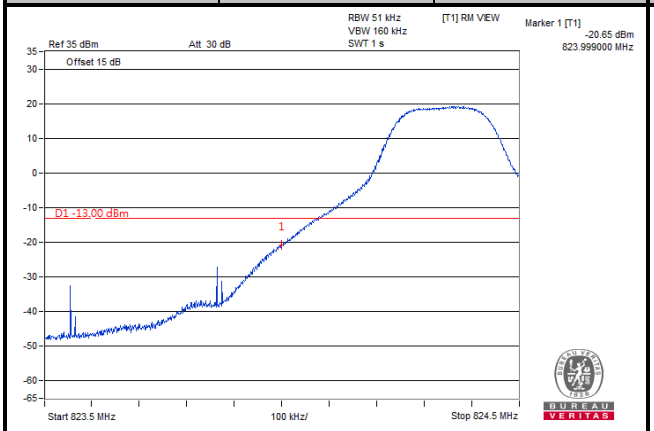
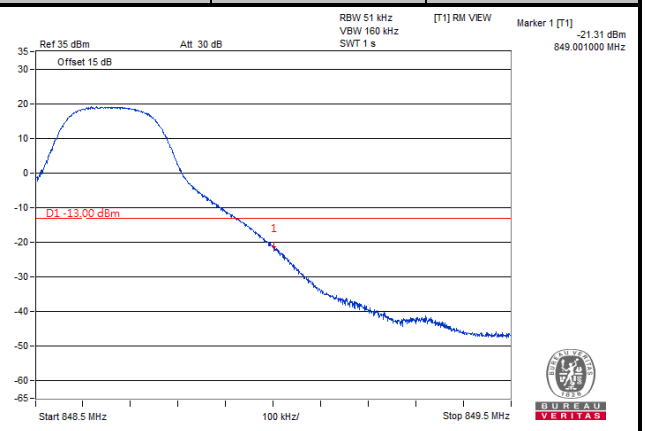
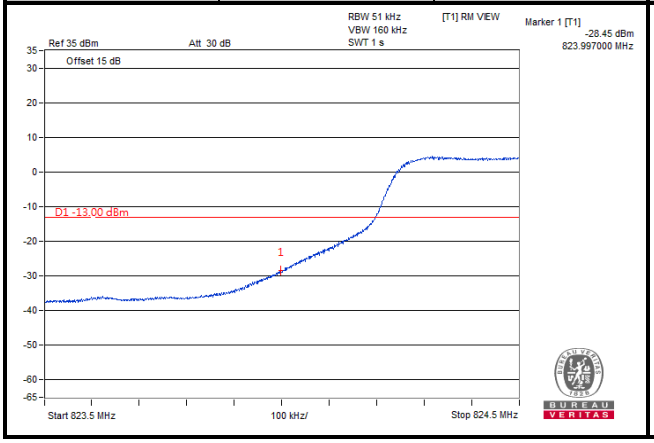
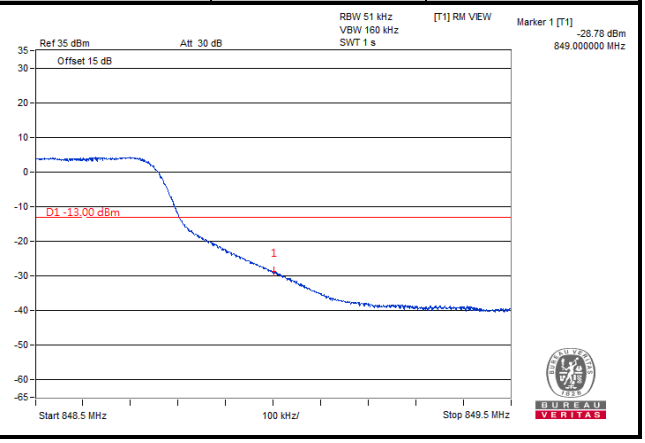
LTE Band 5					
Channel Bandwidth: 3 MHz					
Channel	20415	1 RB	Channel	20635	1 RB
					
Channel	20415	15 RB	Channel	20635	15 RB
					

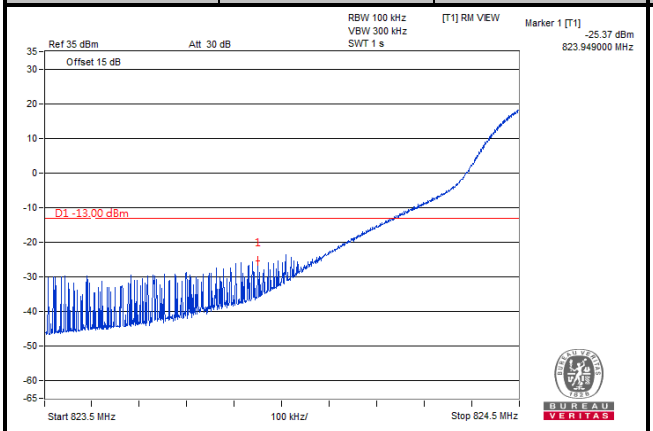
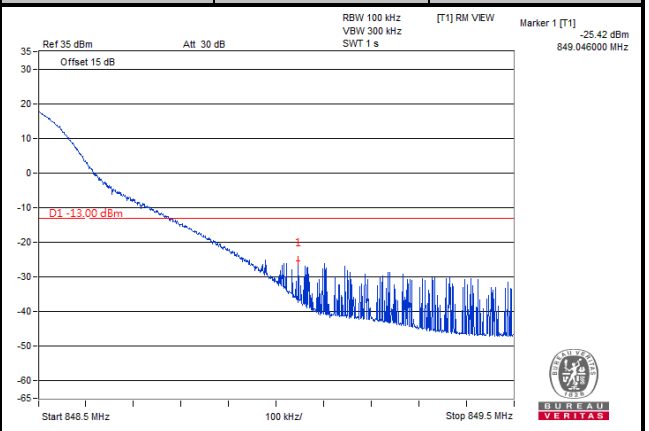
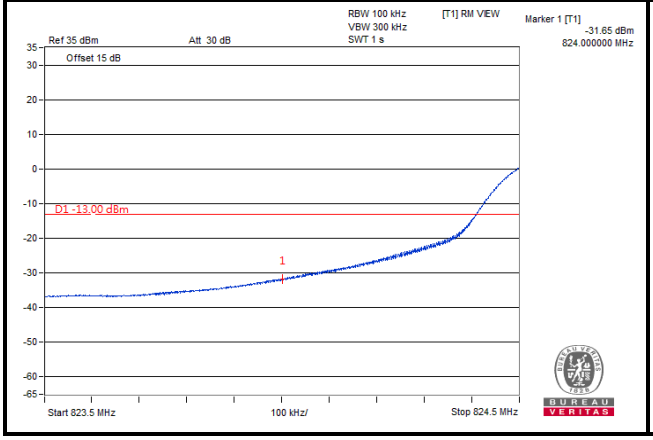
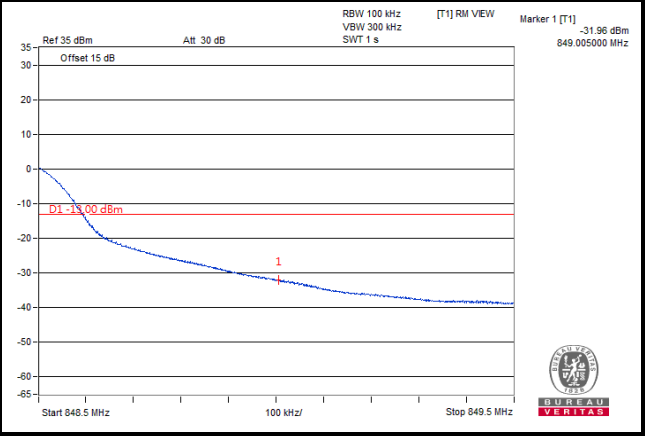
LTE Band 5					
Channel Bandwidth: 5 MHz					
Channel	20425	1 RB	Channel	20625	1 RB
					
Channel	20425	25 RB	Channel	20625	25 RB
					

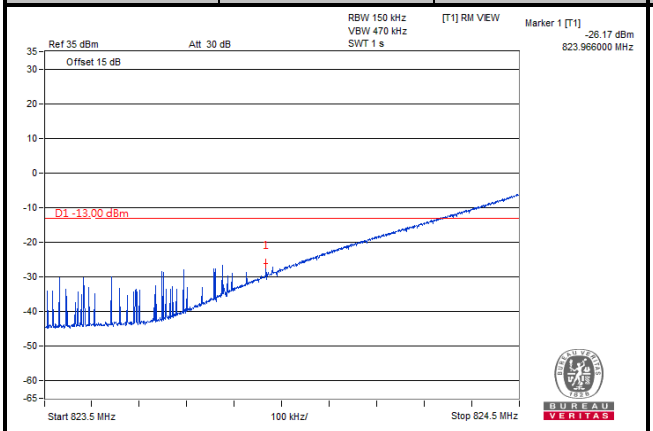
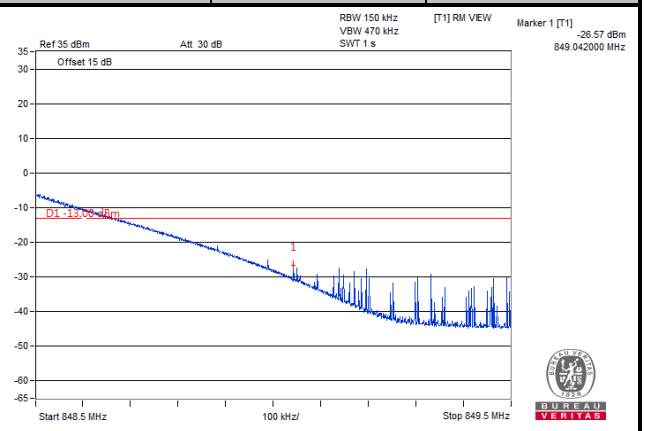
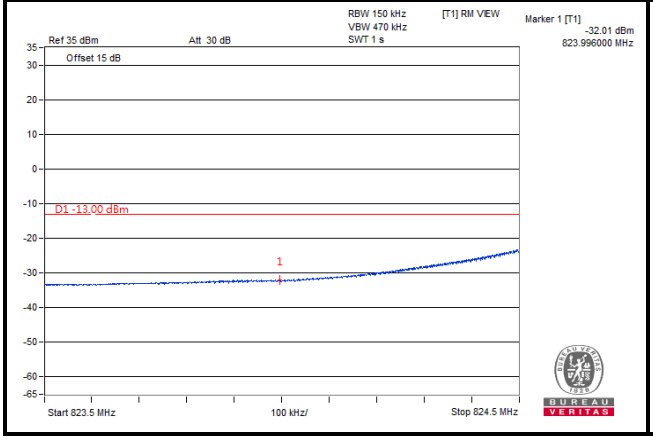
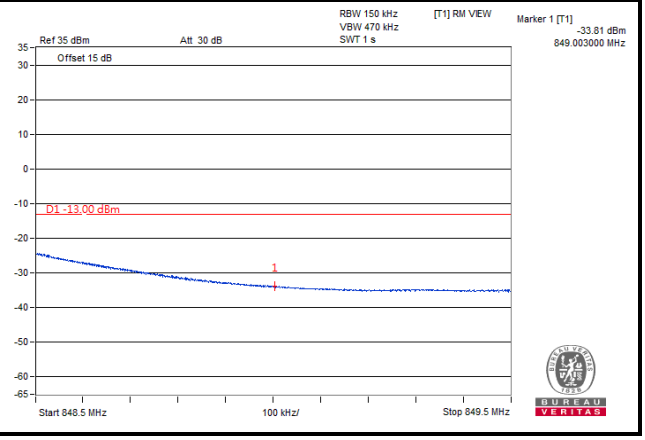
LTE Band 5					
Channel Bandwidth: 10 MHz					
Channel	20450	1 RB	Channel	20600	1 RB
					
Channel	20450	50 RB	Channel	20600	50 RB
					

LTE Band 26					
Channel Bandwidth: 1.4 MHz					
Channel	26797	1 RB	Channel	27033	1 RB
					
Channel	26797	6 RB	Channel	27033	6 RB
					

LTE Band 26					
Channel Bandwidth: 3 MHz					
Channel	26805	1 RB	Channel	27025	1 RB
					
Channel	26805	15 RB	Channel	27025	6 RB
					

LTE Band 26					
Channel Bandwidth: 5 MHz					
Channel	26815	1 RB	Channel	27015	1 RB
					
Channel	26815	25 RB	Channel	27015	25 RB
					

LTE Band 26					
Channel Bandwidth: 10 MHz					
Channel	26840	1 RB	Channel	26990	1 RB
					
Channel	26840	50 RB	Channel	26990	50 RB
					

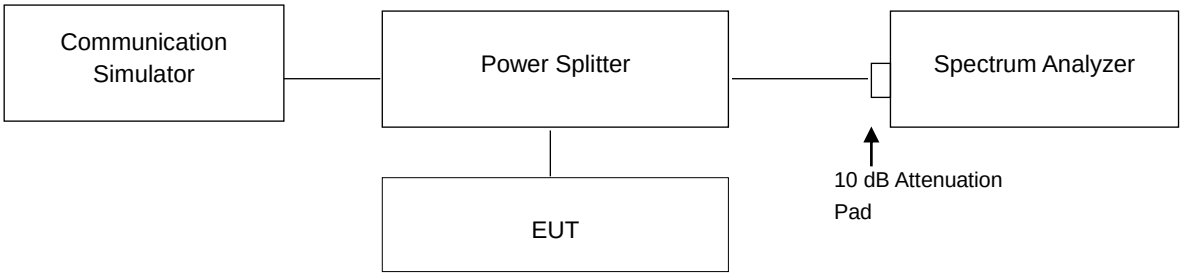
LTE Band 26					
Channel Bandwidth: 15 MHz					
Channel	26865	1 RB	Channel	26965	1 RB
					
Channel	26865	75 RB	Channel	26965	75 RB
					

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

4.6.2 Test Setup



4.6.3 Test Procedures

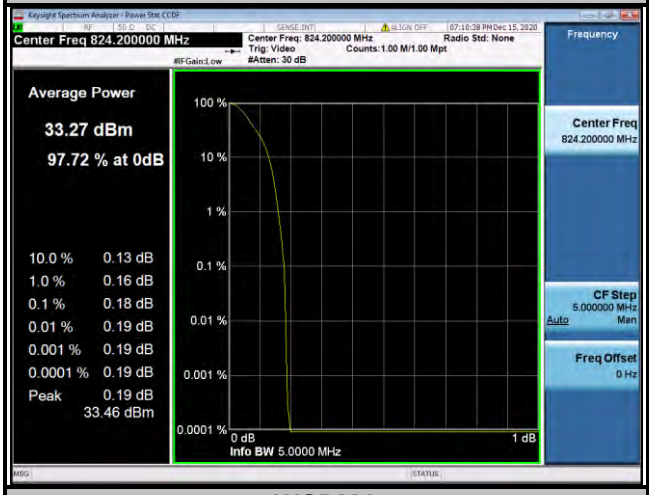
1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.6.4 Test Results

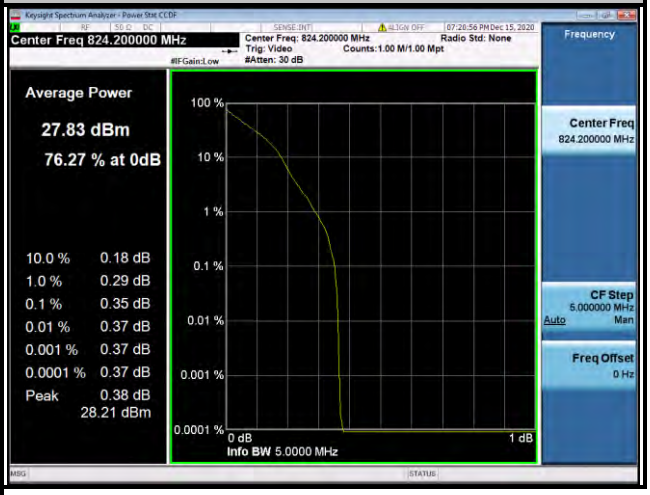
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)
		GSM	EDGE			WCDMA
128	824.2	0.18	0.35	4132	826.4	3.18
189	836.4	0.17	0.35	4182	836.4	3.13
251	848.8	0.16	0.29	4233	846.6	3.09

Spectrum Plot of Worst Value

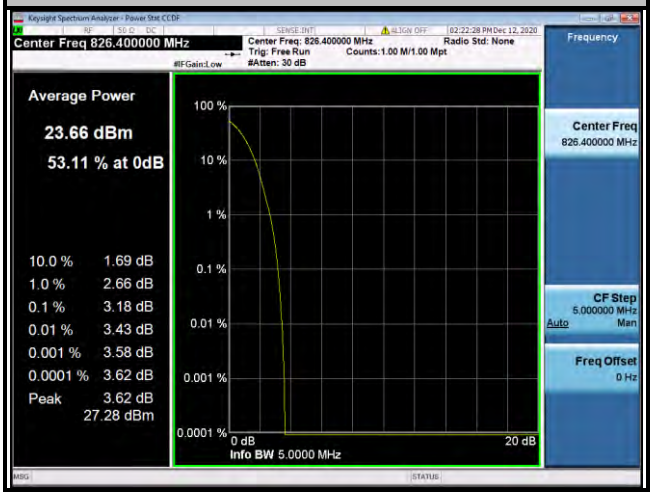
GSM



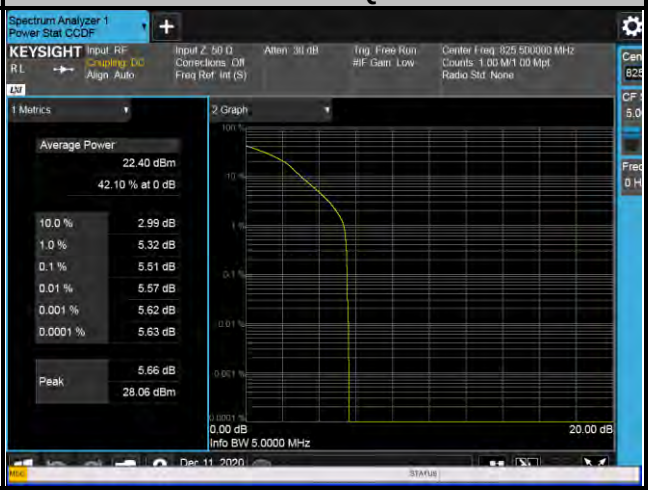
EDGE



WCDMA



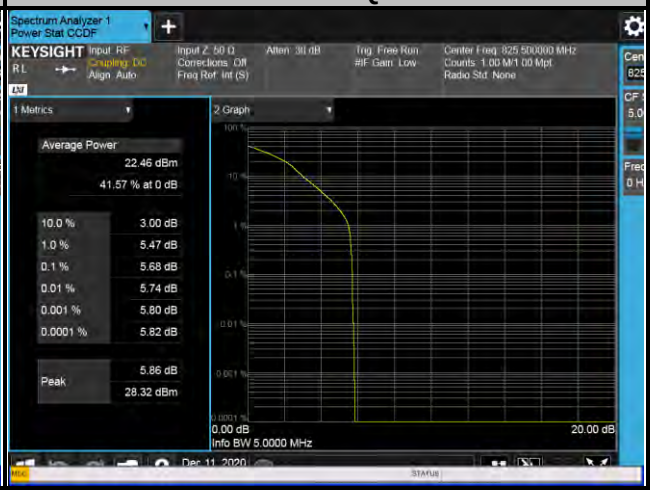
LTE Band 5							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	4.62	5.51	20415	825.5	4.66	5.51
20525	836.5	4.57	5.45	20525	836.5	4.61	5.43
20643	848.3	4.14	5.07	20635	847.5	4.10	5.03

Spectrum Plot of Worst Value	
1.4 MHz / 16QAM	3 MHz / 16QAM
	

LTE Band 5							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	4.59	5.44	20450	829.0	4.52	5.64
20525	836.5	4.55	5.43	20525	836.5	4.40	5.47
20625	846.5	4.06	4.99	20600	844.0	4.27	5.47

Spectrum Plot of Worst Value	
5 MHz / 16QAM	10 MHz / 16QAM
	

LTE Band 26							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
26797	824.7	4.83	5.65	26805	825.5	4.83	5.68
26915	836.5	4.77	5.62	26915	836.5	4.78	5.62
27033	848.3	4.39	5.32	27025	847.5	4.27	5.22

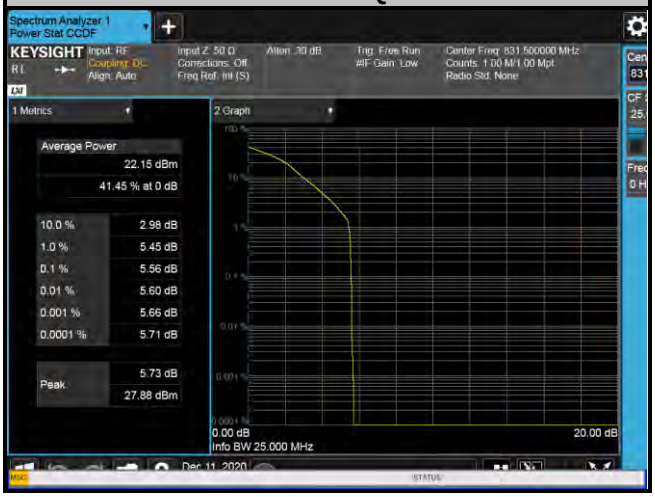
Spectrum Plot of Worst Value	
1.4 MHz / 16QAM	3 MHz / 16QAM
	

LTE Band 26							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
26815	826.5	4.74	5.60	26840	829.0	5.26	5.61
26915	836.5	4.74	5.56	26915	836.5	4.84	5.55
27015	846.5	4.26	5.19	26990	844.0	4.56	5.45

Spectrum Plot of Worst Value	
5 MHz / 16QAM	10 MHz / 16QAM
	

LTE Band 26			
Channel Bandwidth: 15 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM
26865	831.5	4.77	5.56
26915	836.5	4.65	5.48
26965	841.5	4.72	5.54

Spectrum Plot of Worst Value
15 MHz / 16QAM

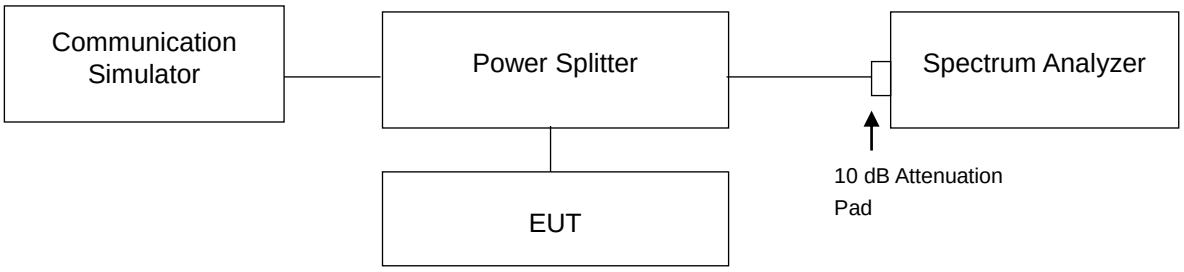


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

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 emission limit equal to -13 dBm.

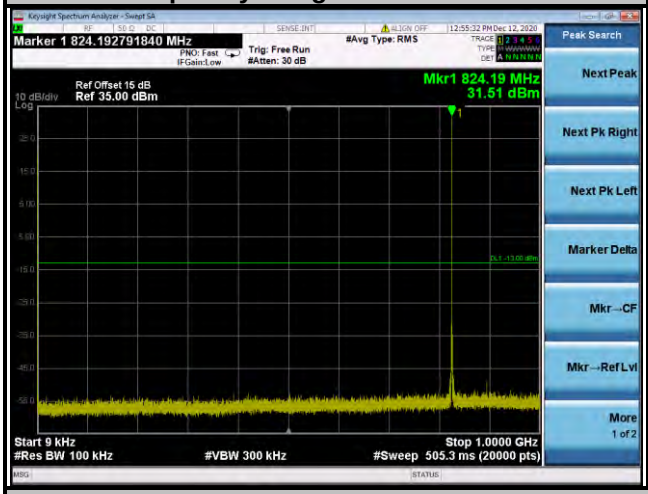
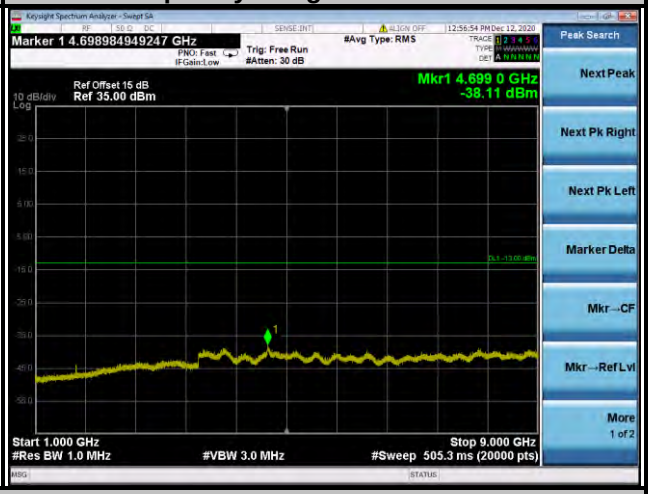
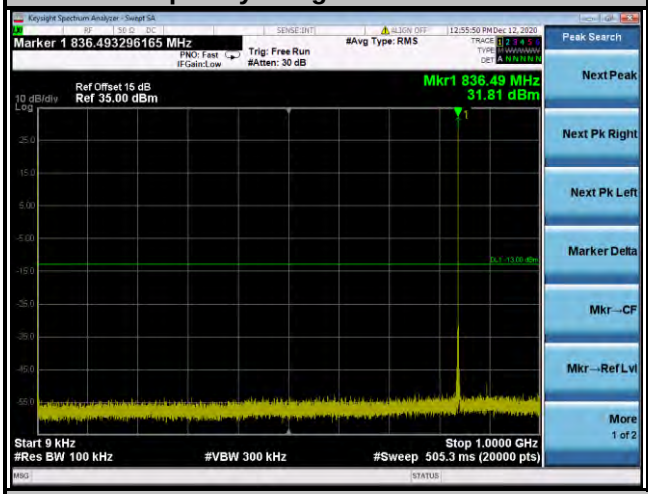
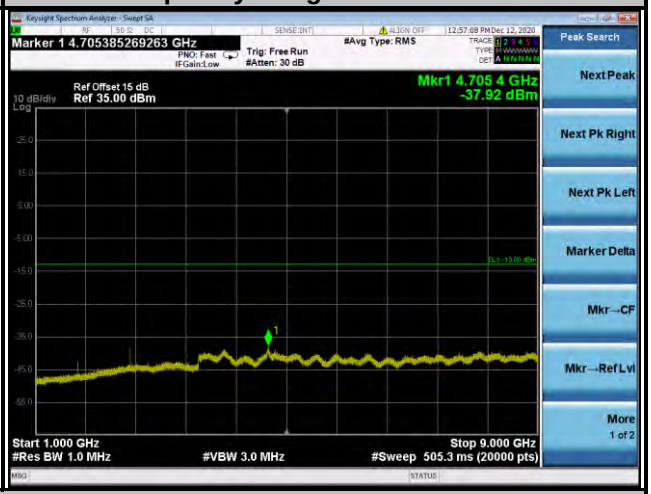
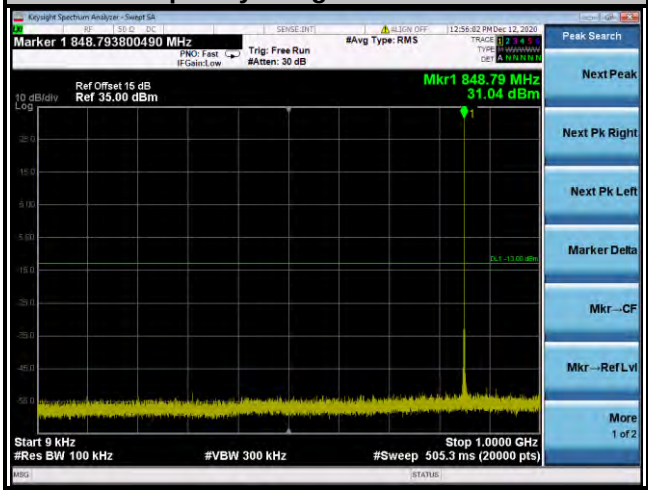
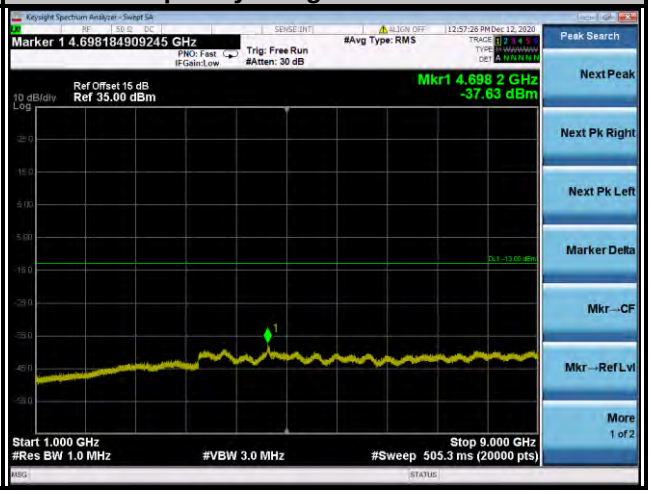
4.7.2 Test Setup



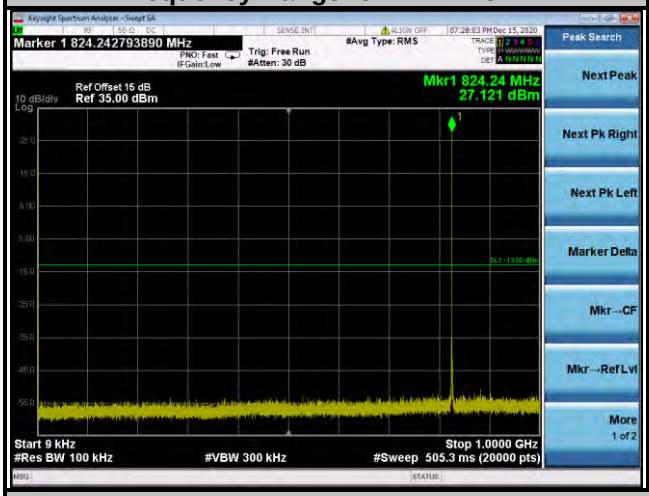
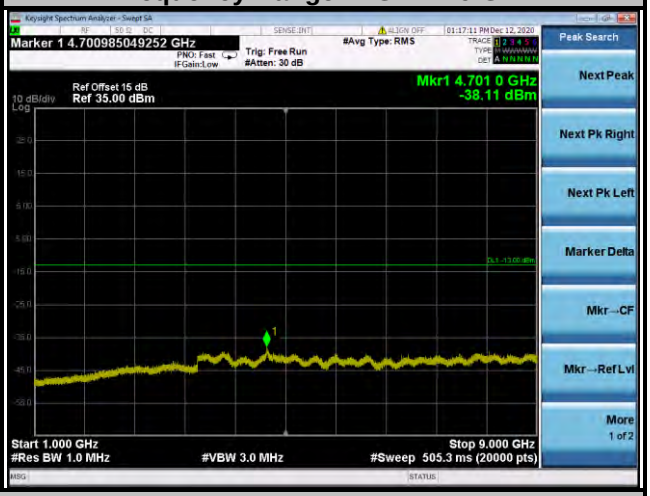
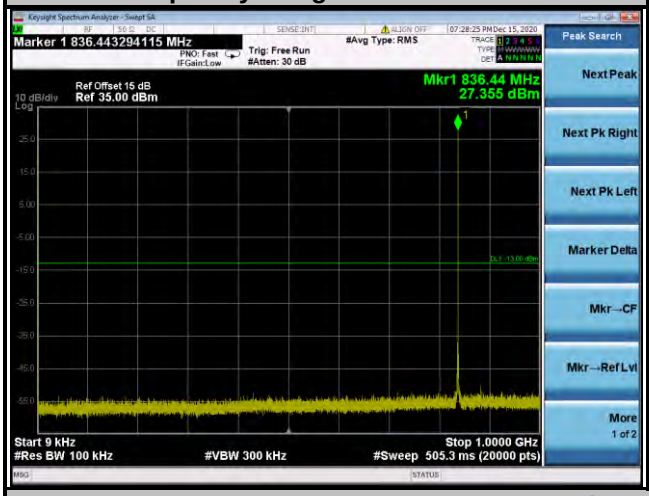
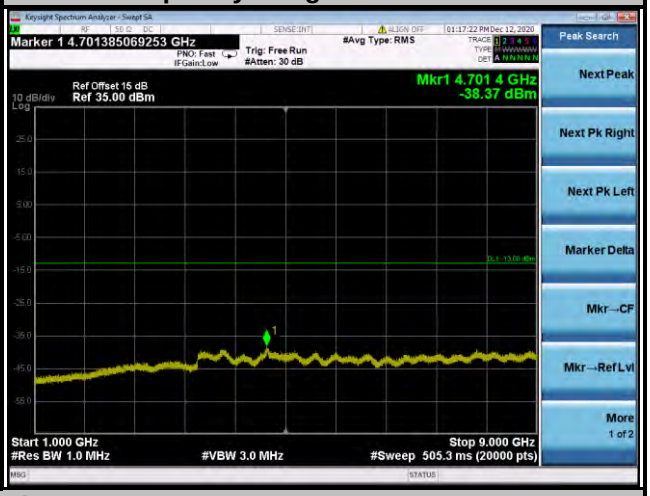
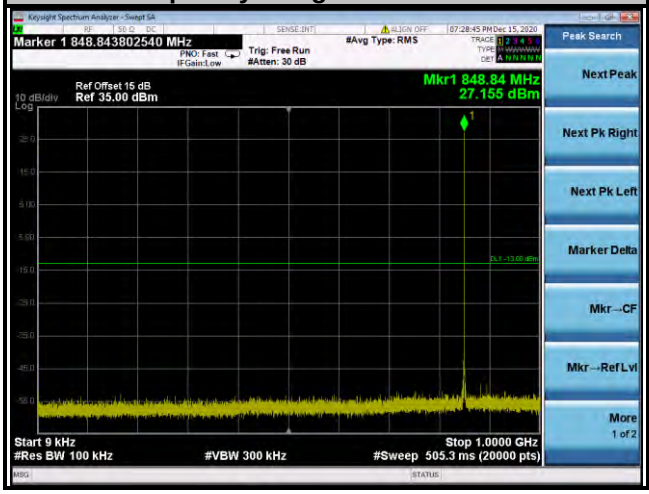
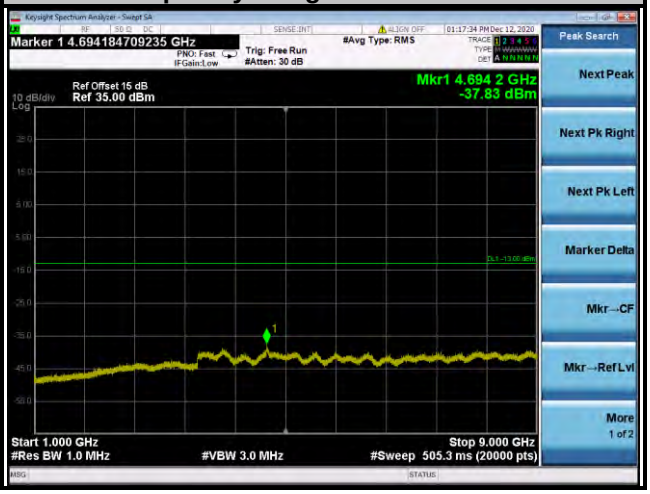
4.7.3 Test Procedure

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.
c. Measuring frequency range is from 1 GHz to 9 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

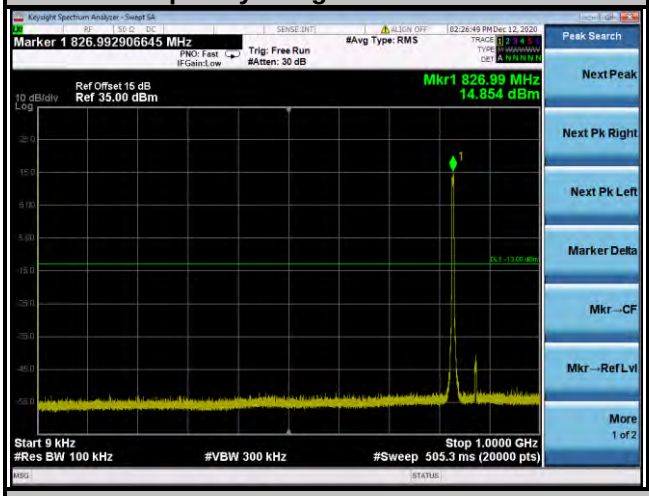
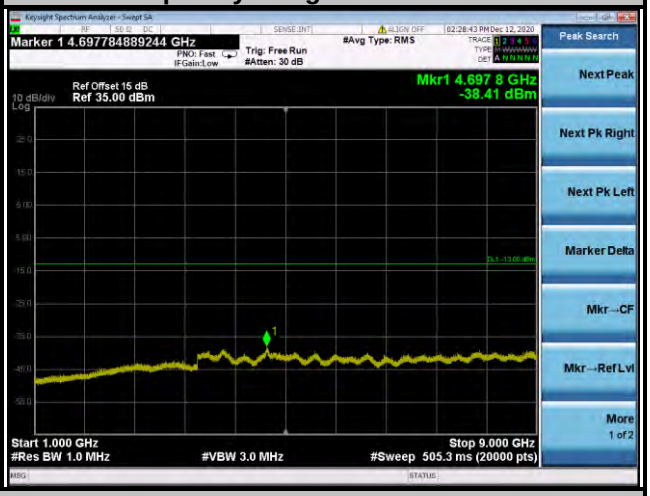
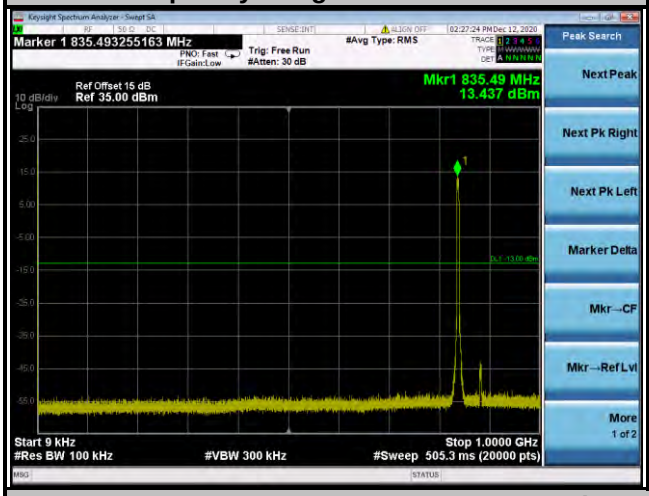
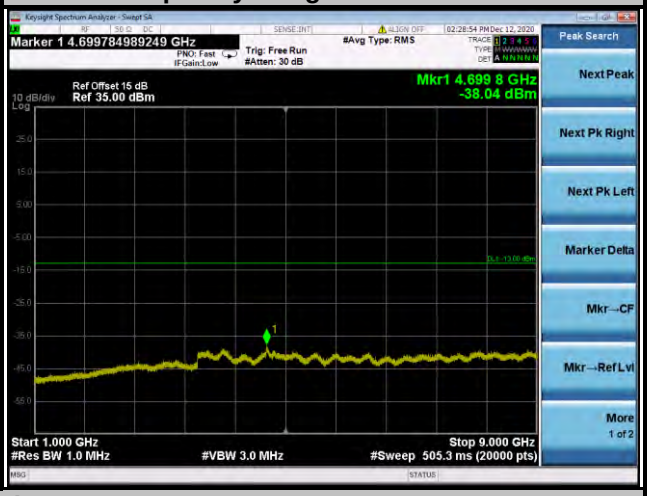
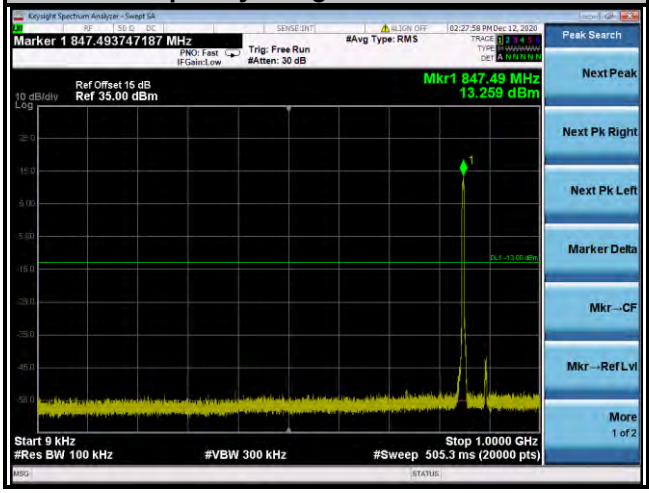
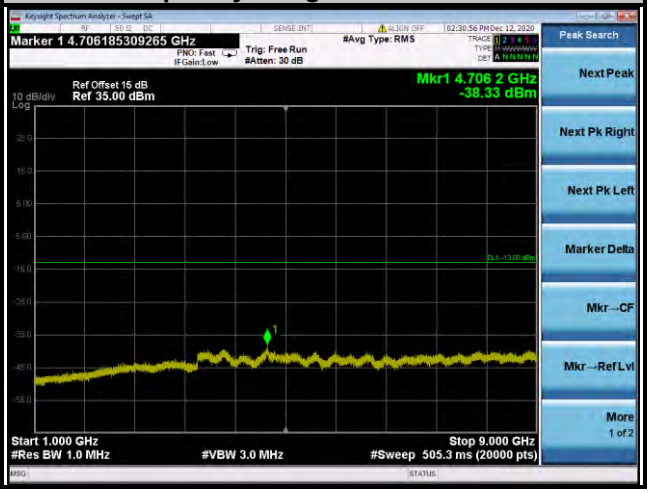
4.7.4 Test Results

GSM	
Channel 128	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 189	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 251	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

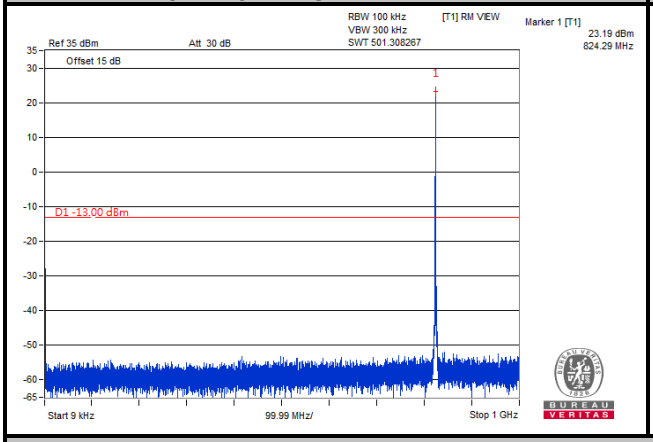
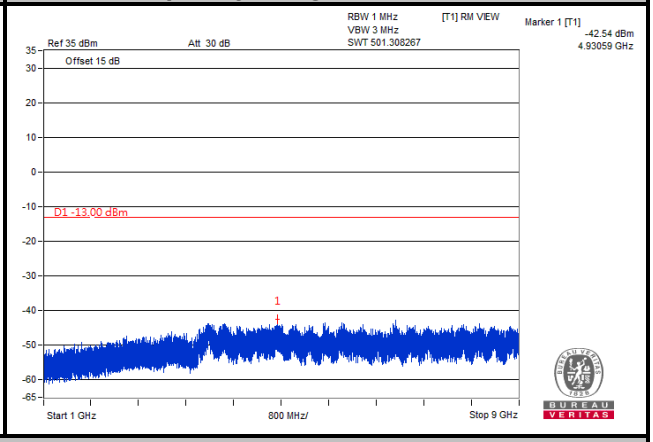
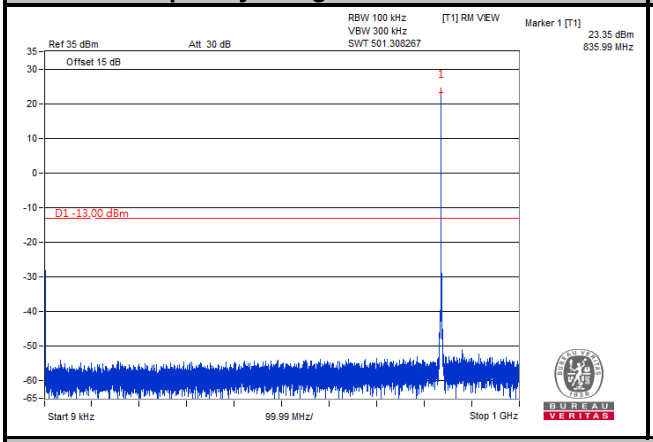
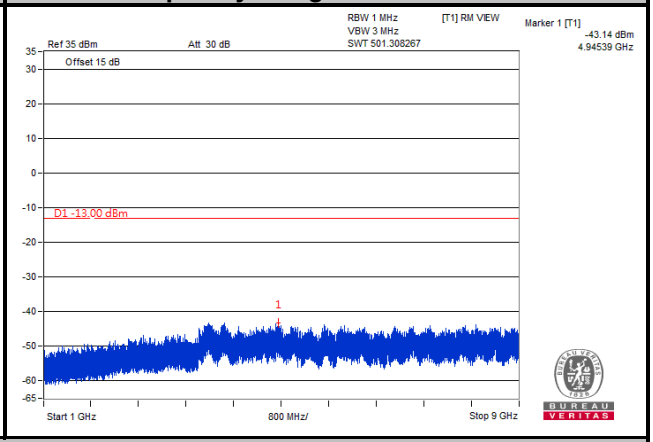
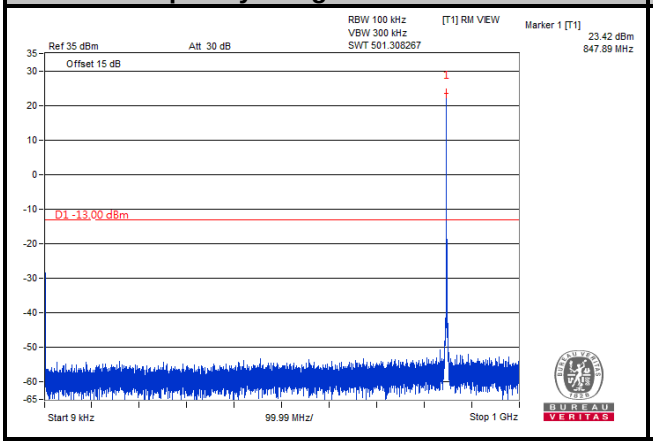
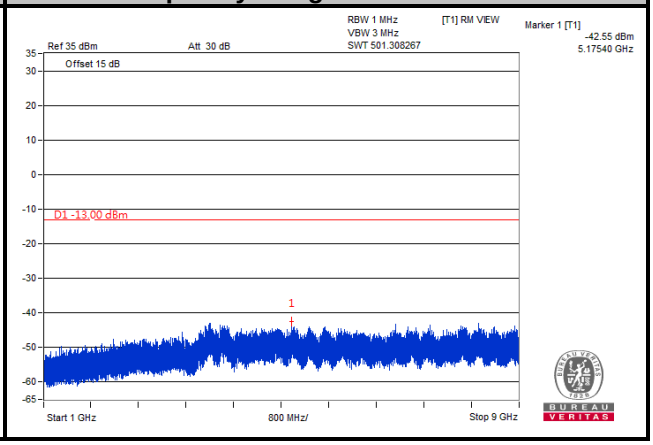
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

EDGE	
Channel 128	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 189	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 251	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

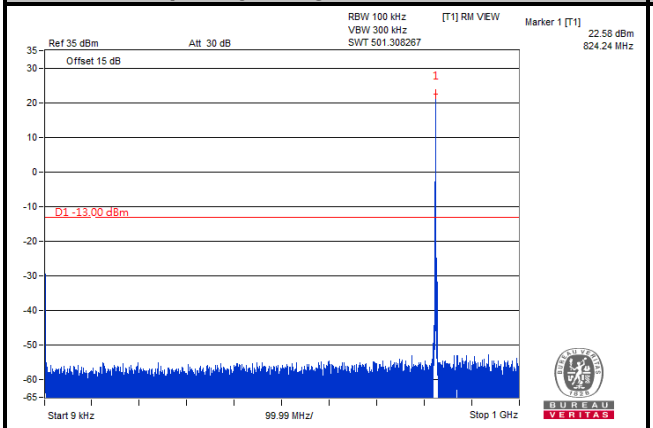
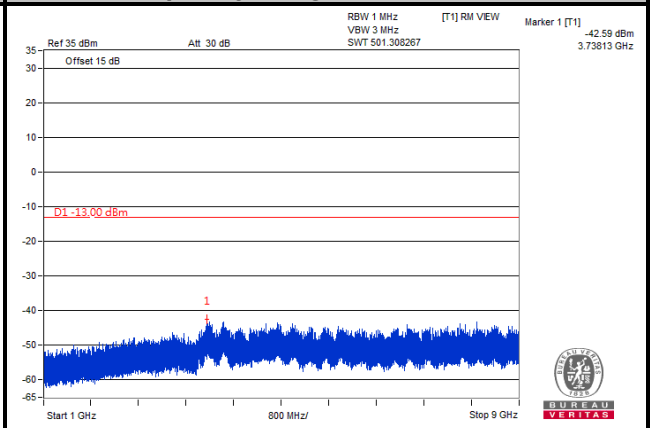
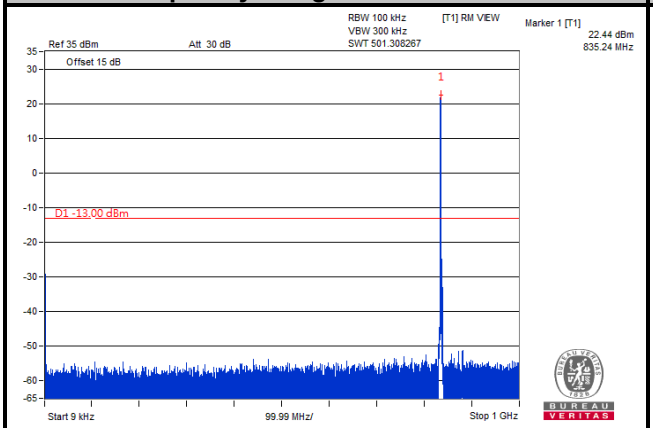
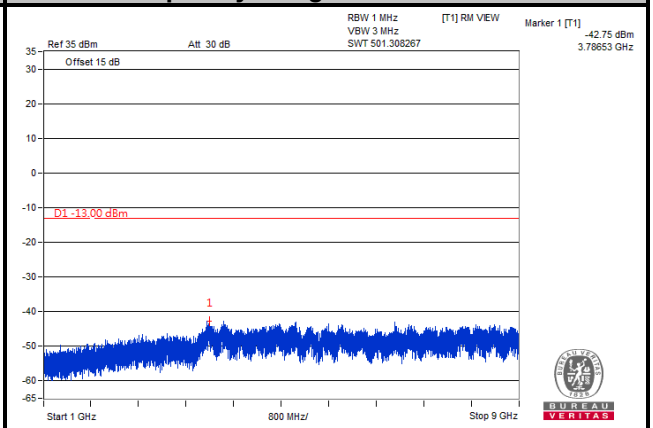
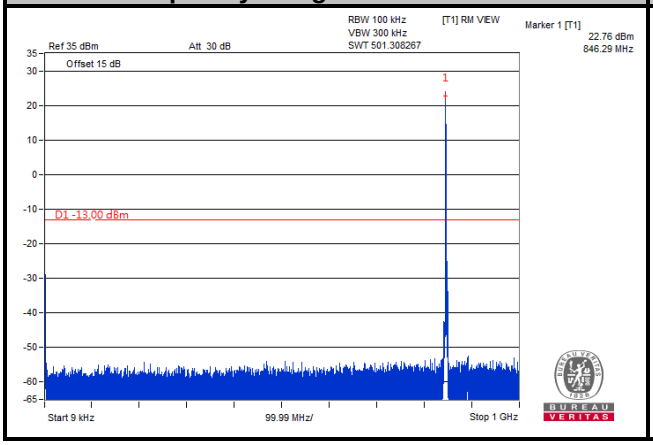
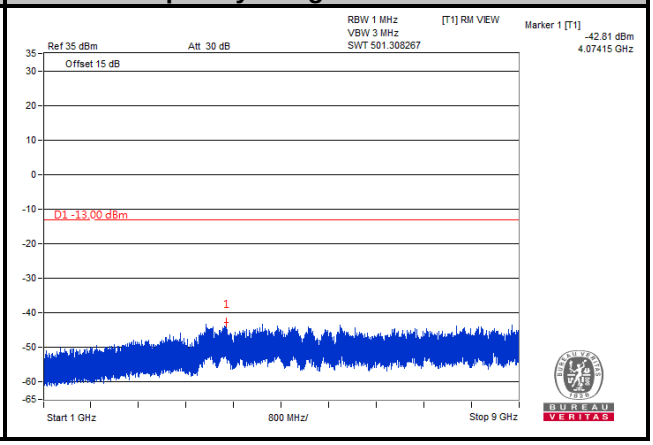
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

WCDMA	
Channel 4132	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 4182	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 4233	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

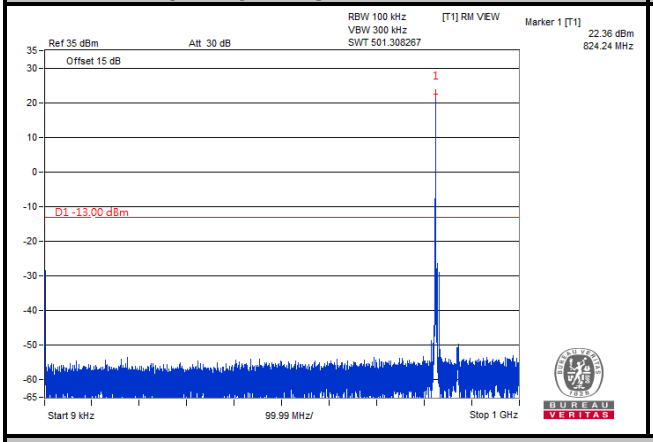
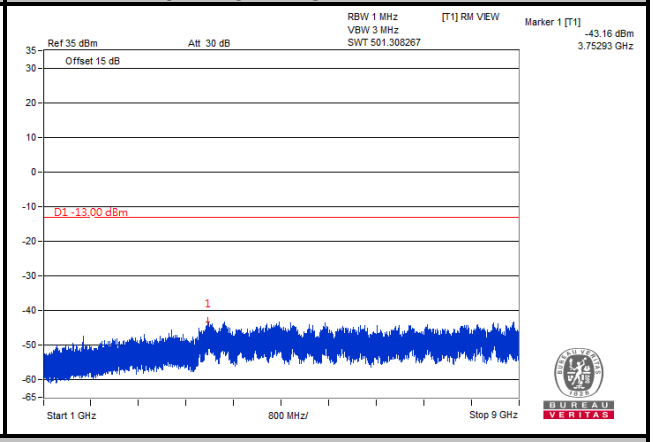
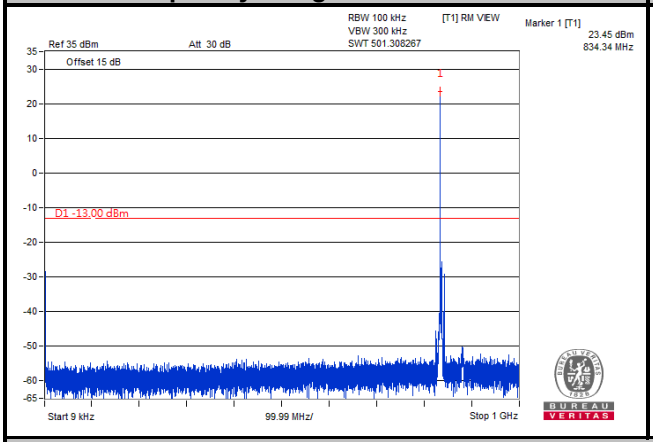
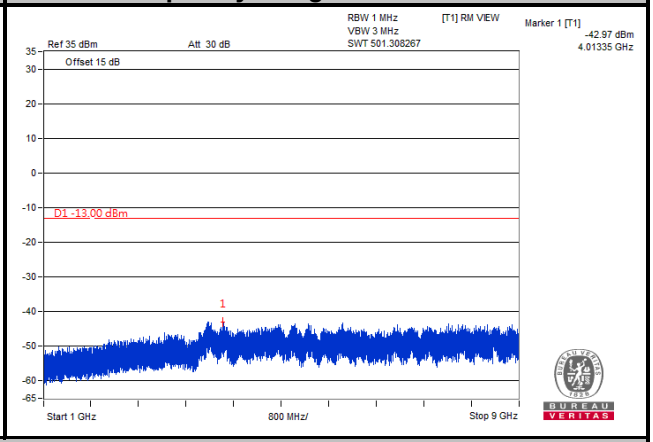
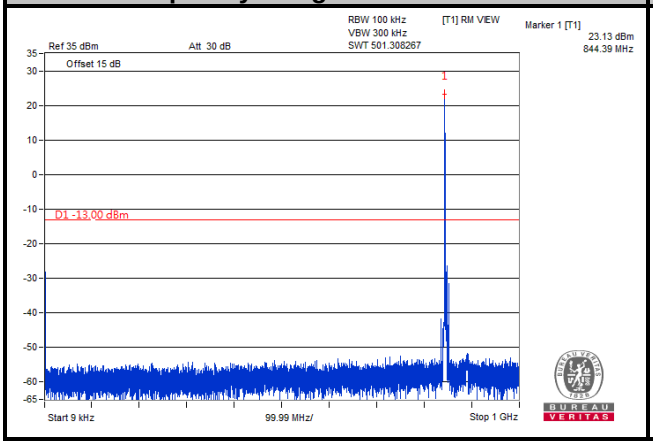
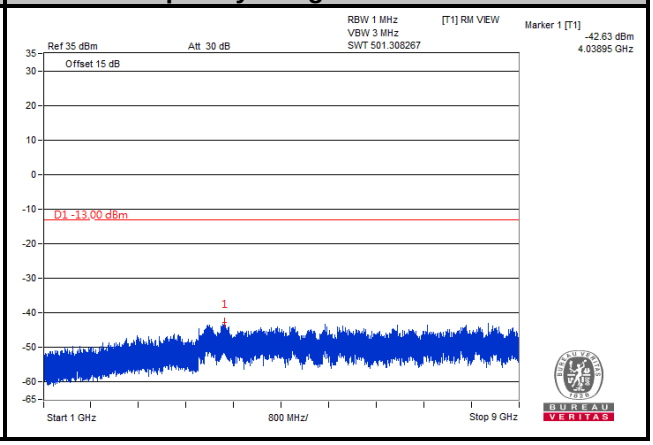
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 5	
Channel Bandwidth: 1.4 MHz	
Channel 20407	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20525	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20643	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

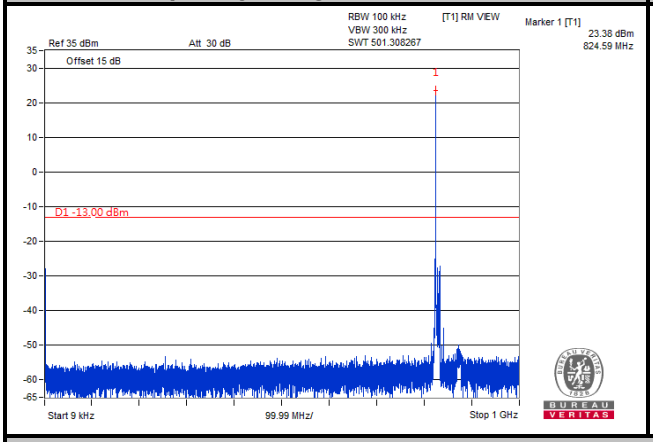
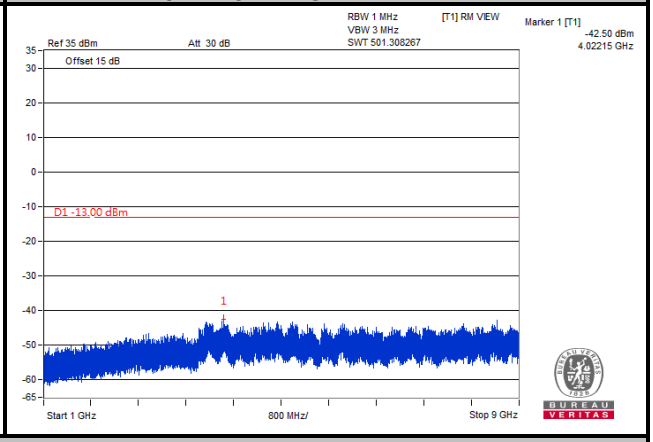
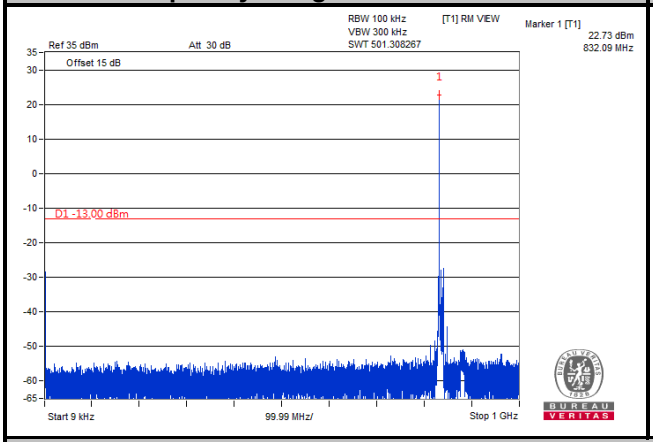
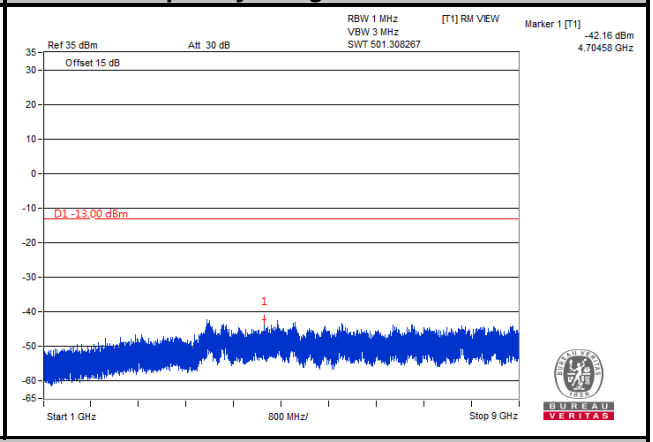
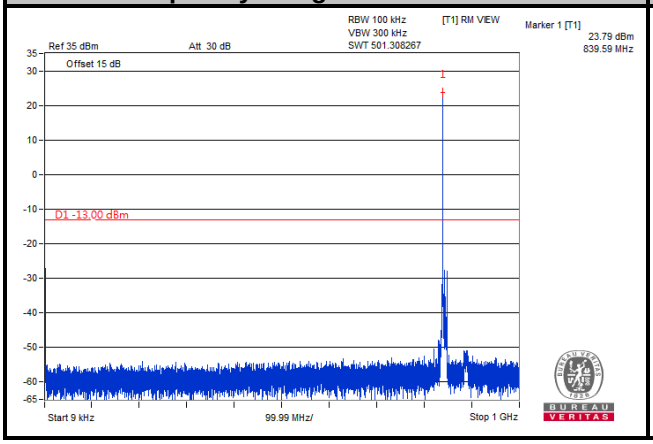
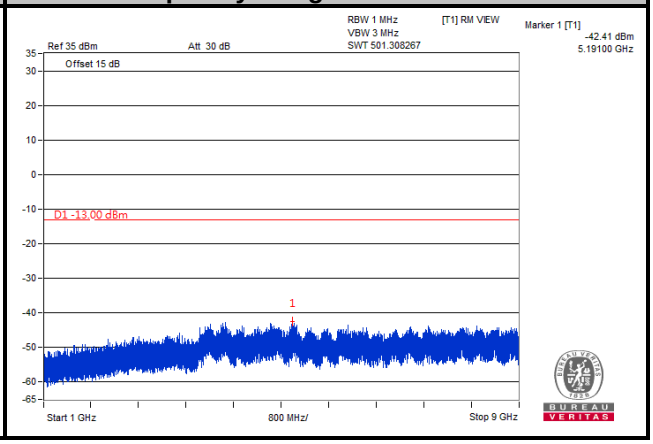
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 5	
Channel Bandwidth: 3 MHz	
Channel 20415	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20525	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20635	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

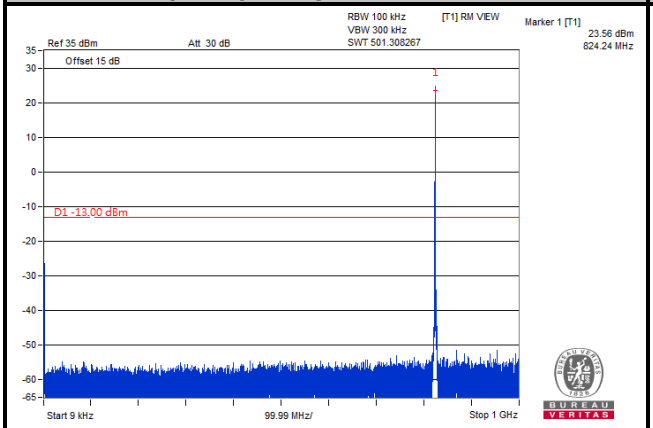
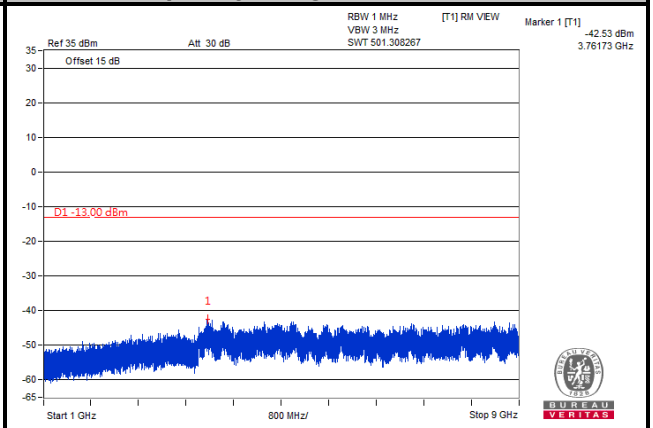
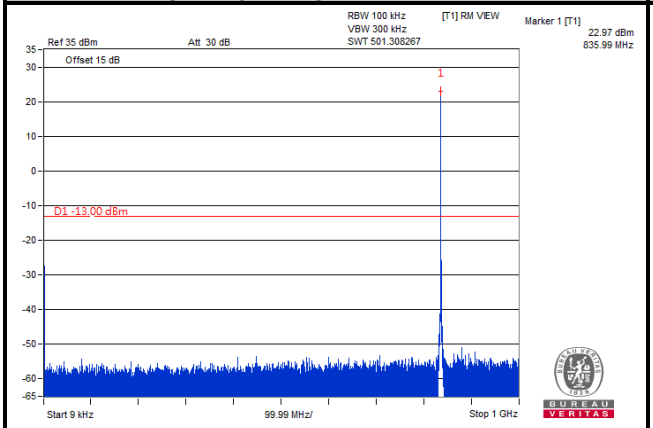
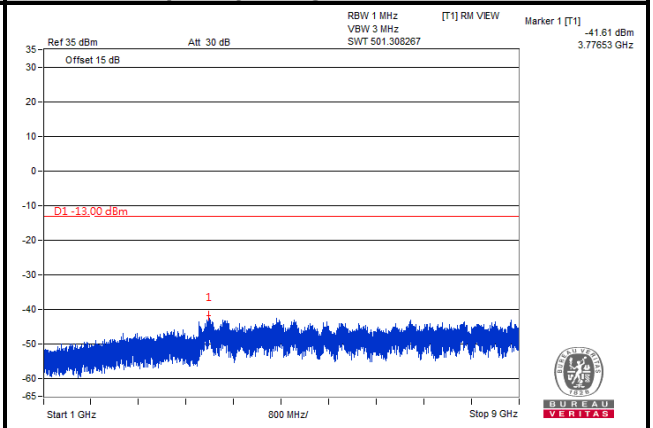
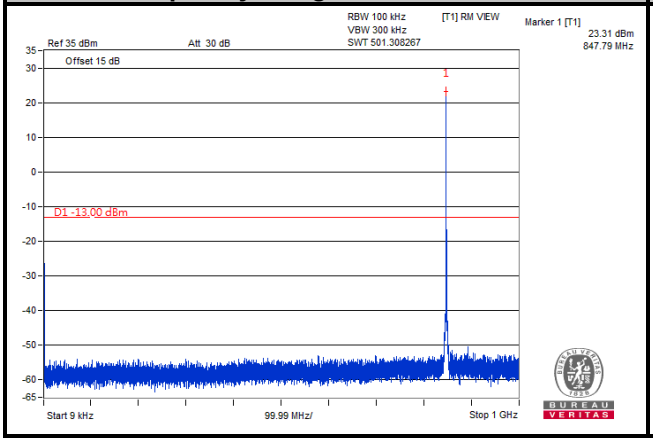
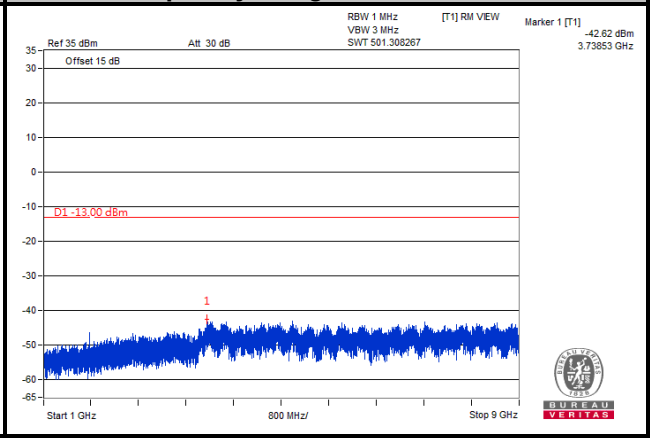
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 5	
Channel Bandwidth: 5 MHz	
Channel 20425	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20525	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20625	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

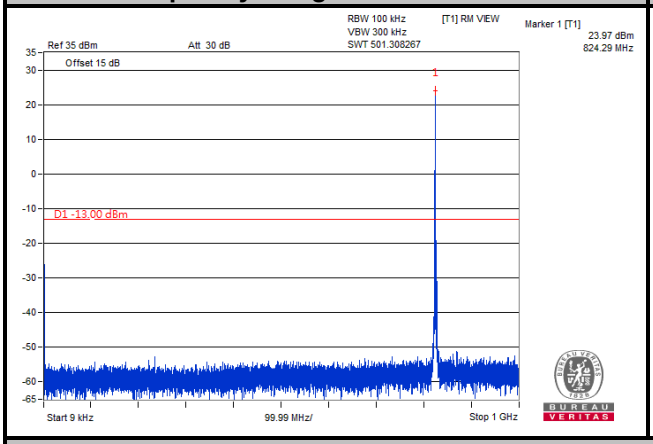
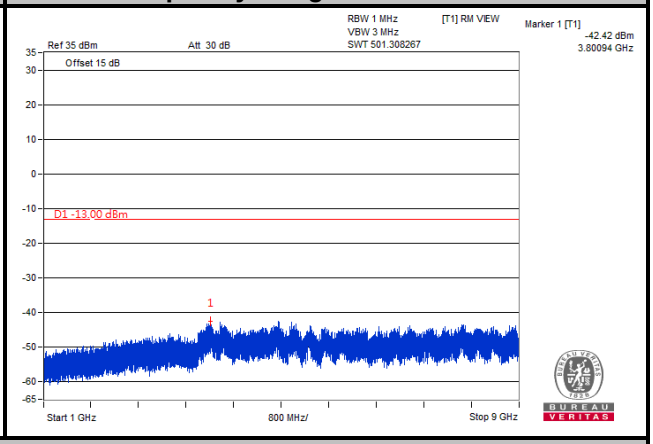
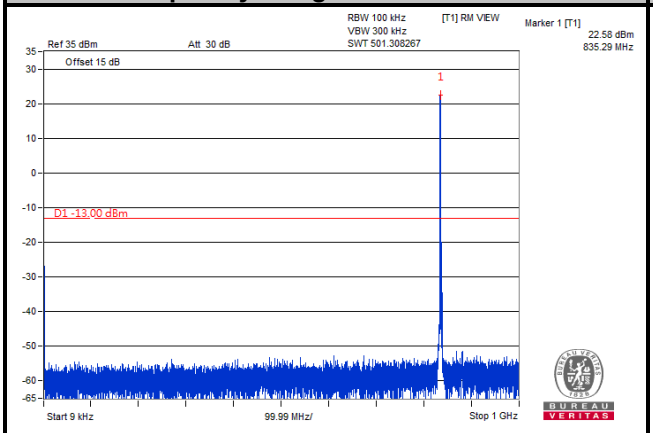
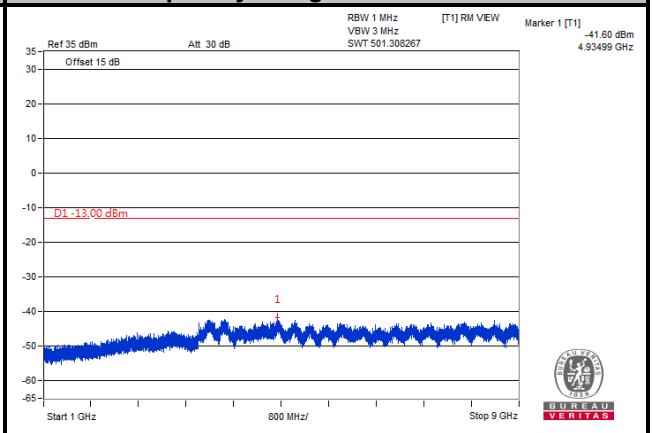
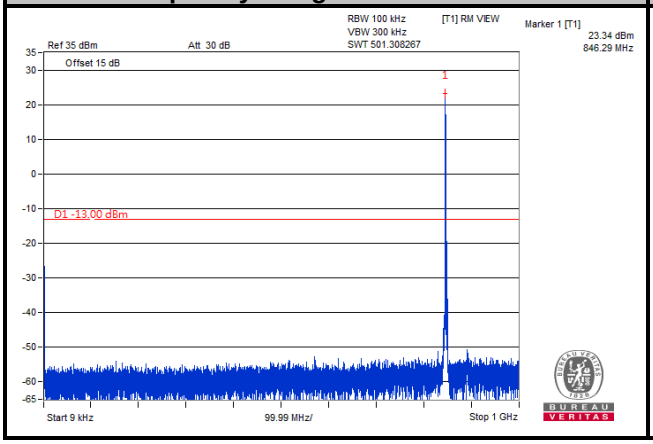
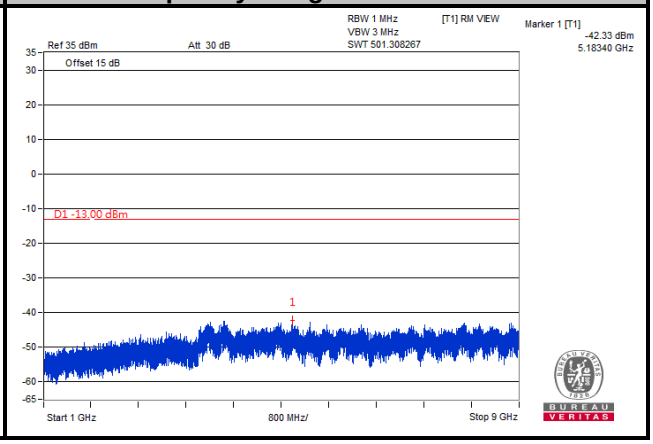
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 5	
Channel Bandwidth: 10 MHz	
Channel 20450	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20525	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 20600	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

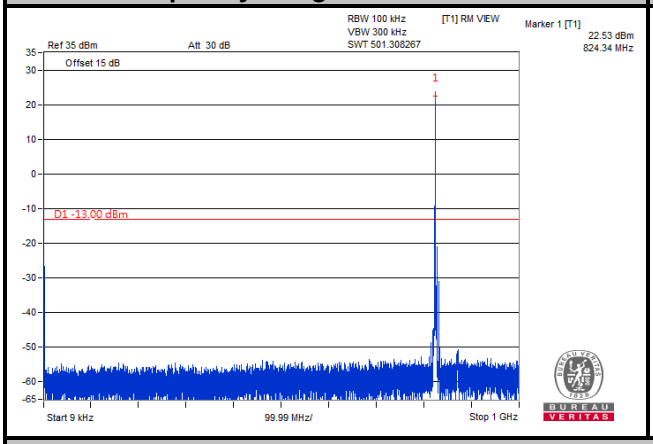
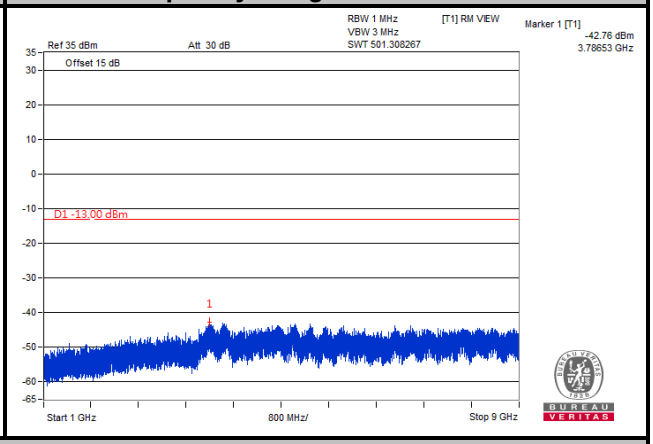
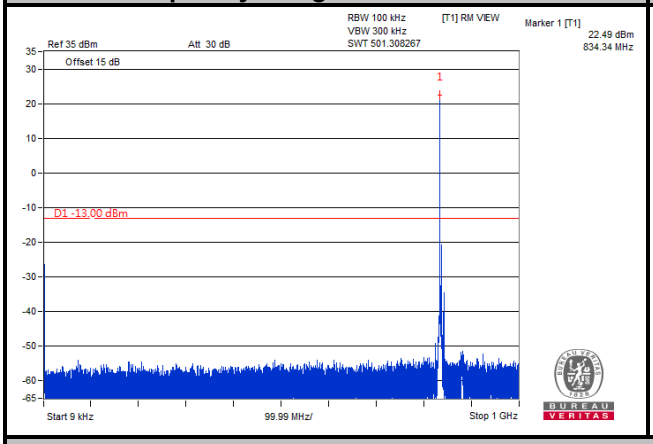
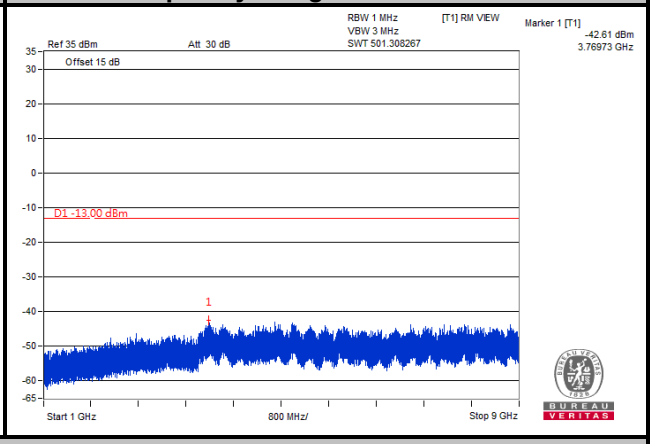
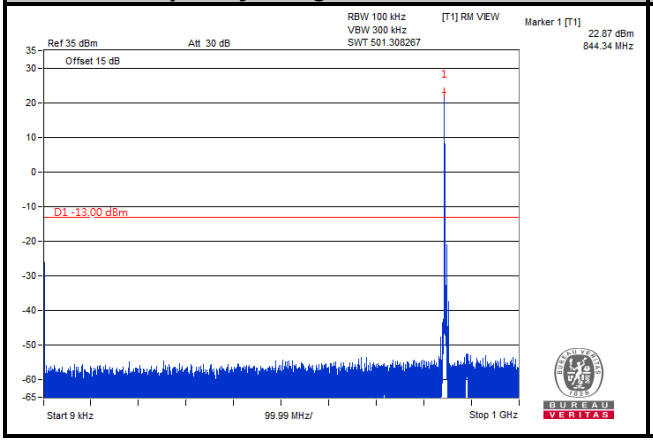
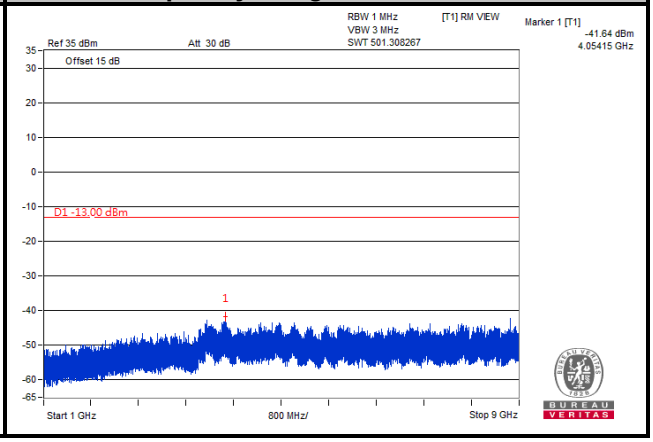
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 26	
Channel Bandwidth: 1.4 MHz	
Channel 26797	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26915	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 27033	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

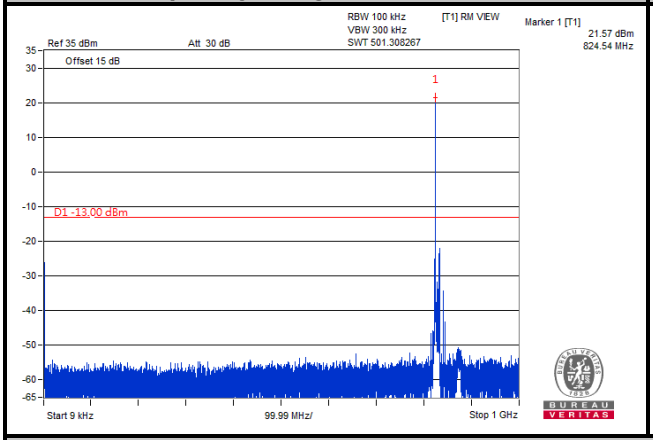
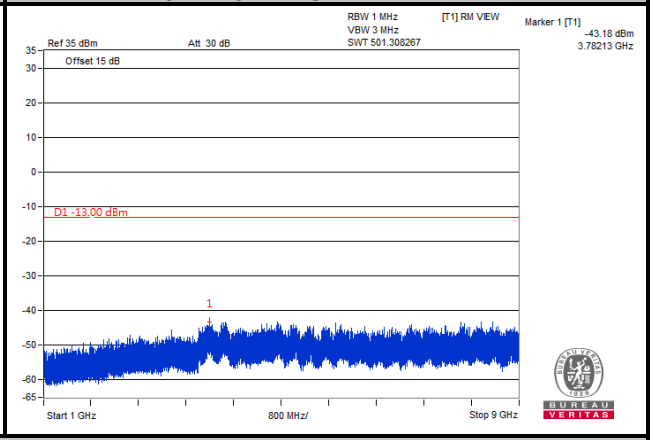
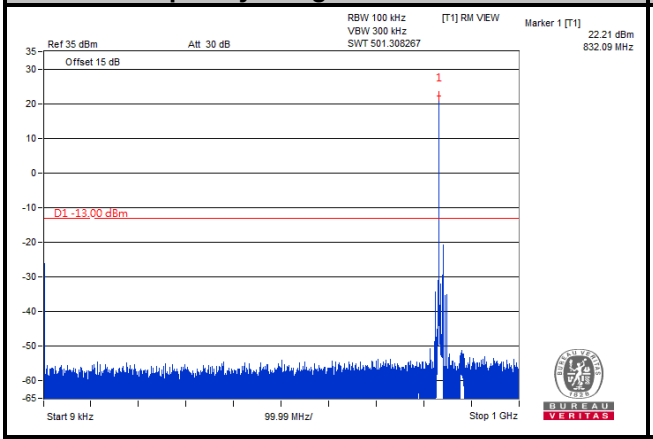
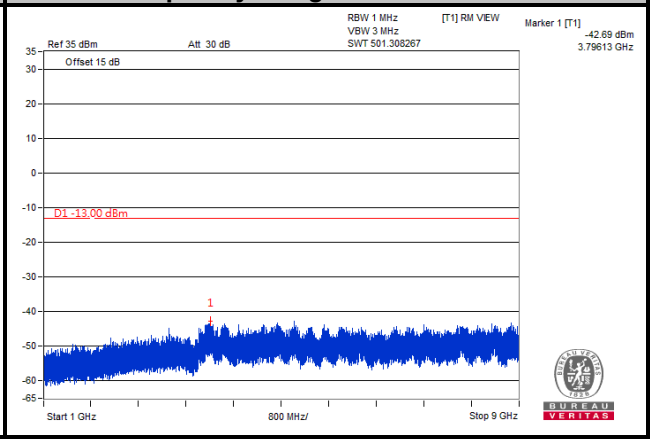
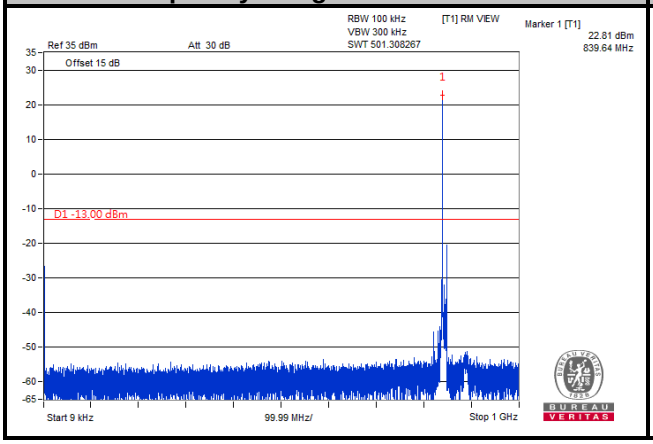
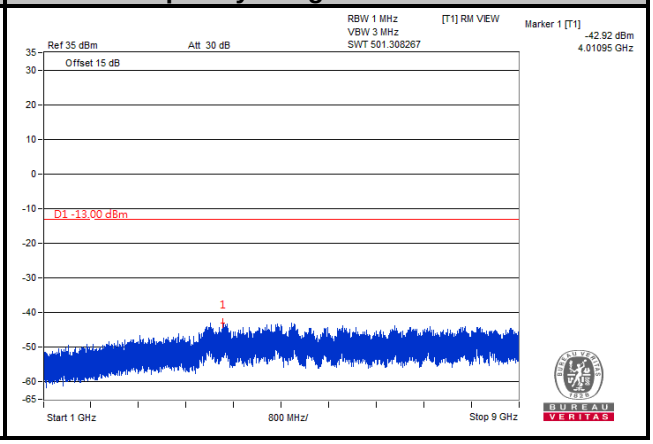
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 26	
Channel Bandwidth: 3 MHz	
Channel 26805	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26915	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 27025	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

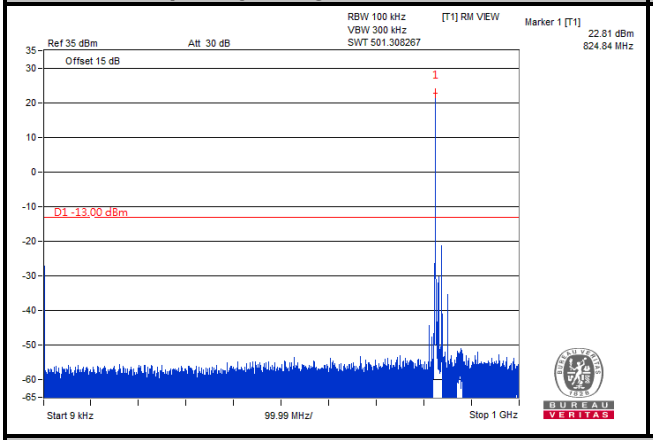
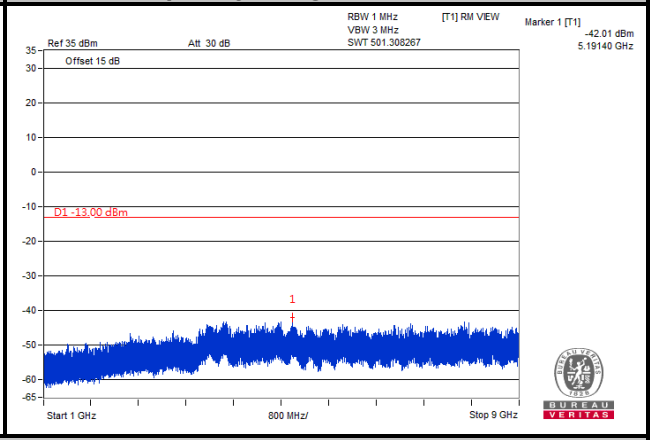
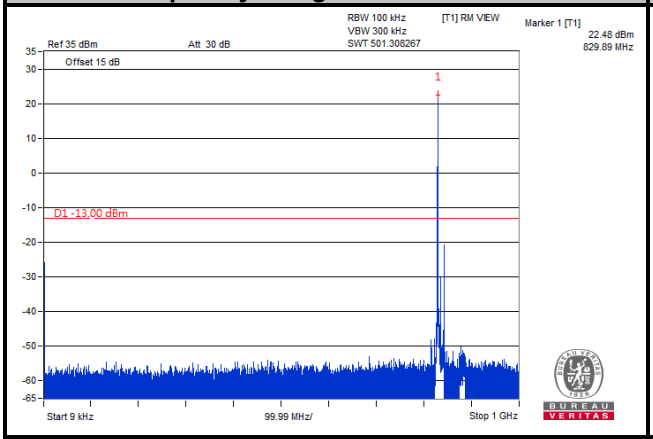
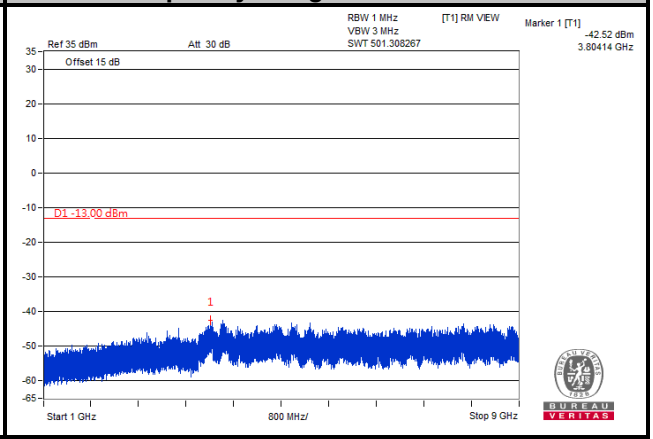
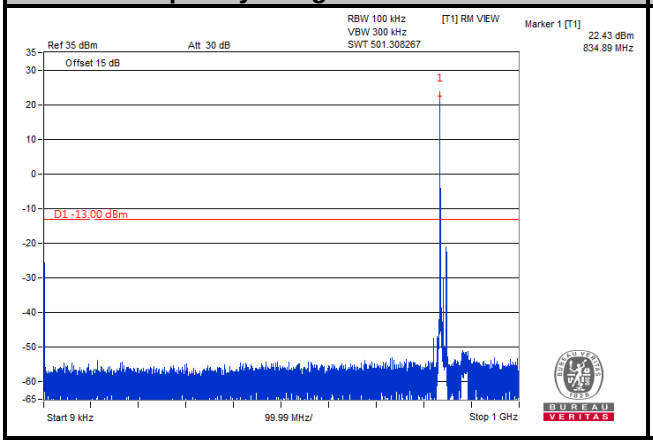
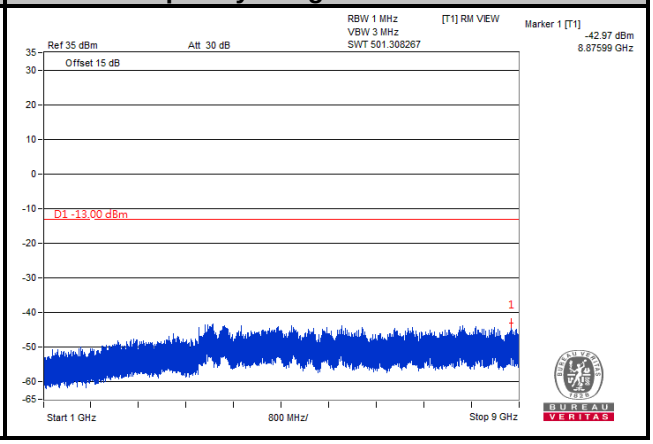
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 26	
Channel Bandwidth: 5 MHz	
Channel 26815	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26915	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 27015	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 26	
Channel Bandwidth: 10 MHz	
Channel 26840	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26915	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26990	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 26	
Channel Bandwidth: 15 MHz	
Channel 26865	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26915	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	
Channel 26965	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 9 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

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 emission limit is equal to -13 dBm.

4.8.2 Test Procedure

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
b. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
c. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB. Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss. Measurement method refers to ANSI C63.26 section 5.5.3.2.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:

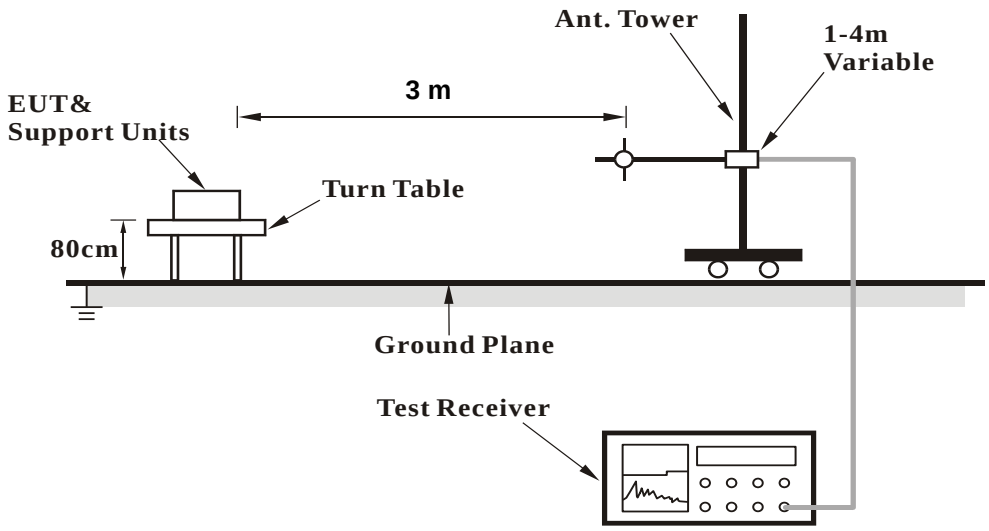
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

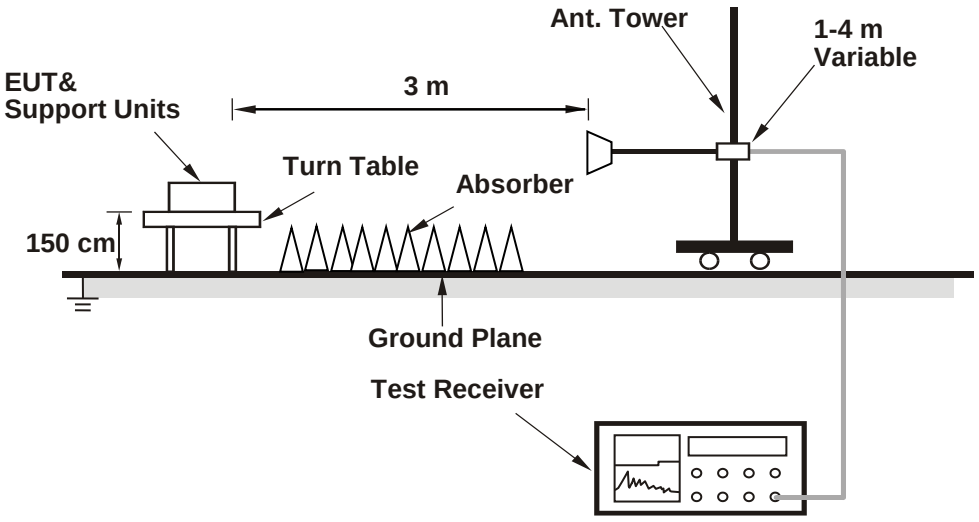
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



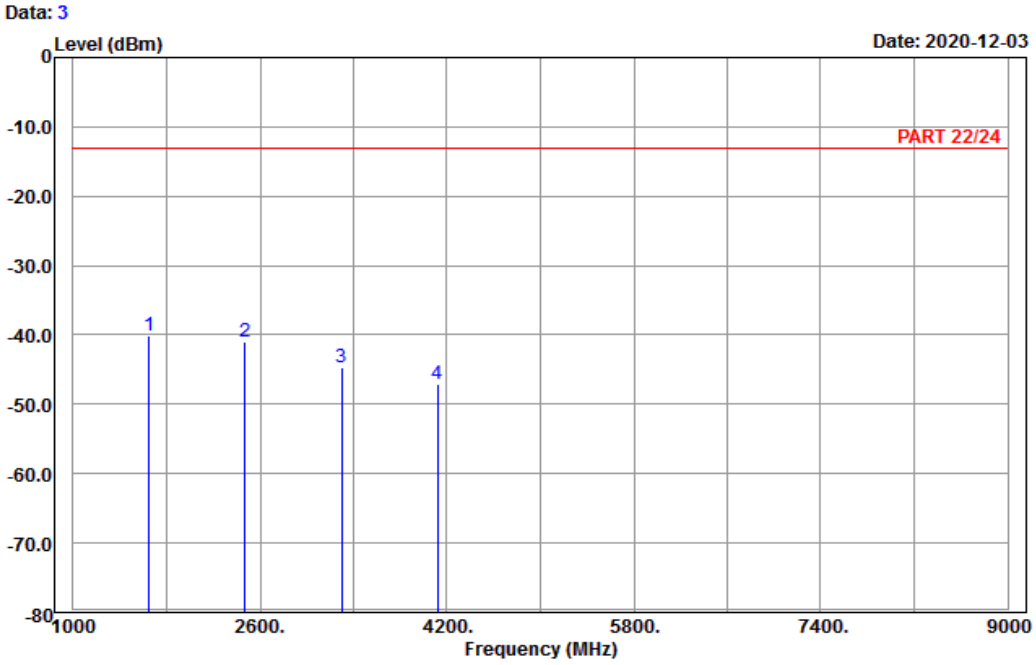
For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

GSM:

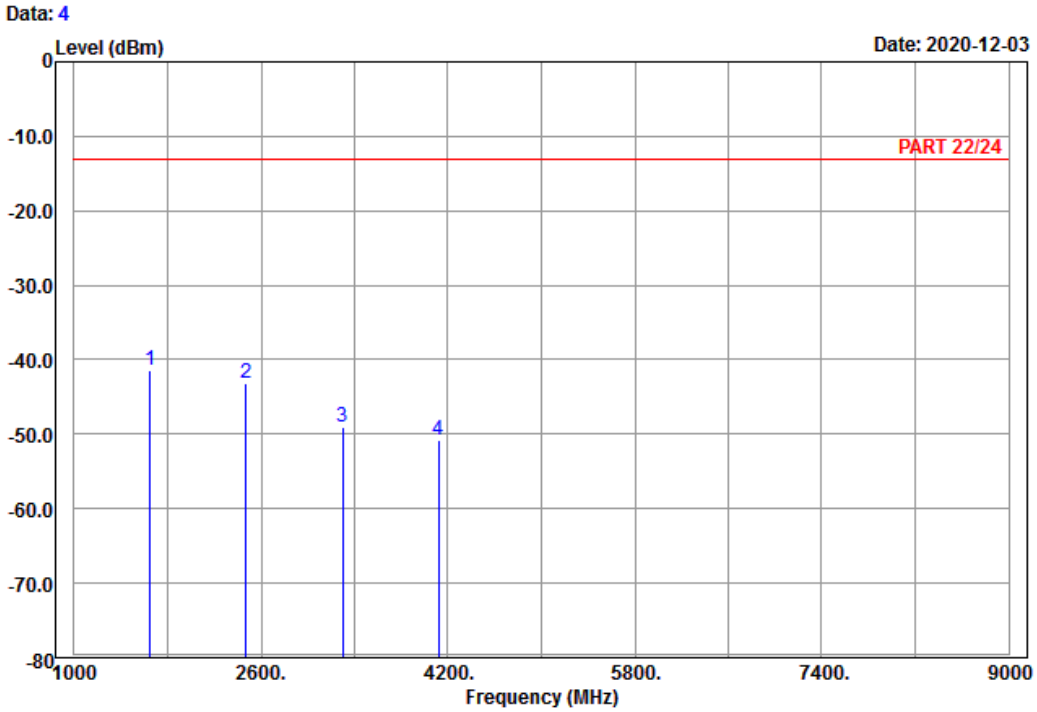
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




```
Site      : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark    : GPRS 850_Link_L-Ch
Tested by: Karl Lee
```

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1648.40	-40.07	-47.80	7.73	-13.00	-27.07	Peak
2	2472.60	-41.01	-52.04	11.03	-13.00	-28.01	Peak
3	3296.80	-44.61	-58.91	14.30	-13.00	-31.61	Peak
4	4121.00	-47.09	-64.07	16.98	-13.00	-34.09	Peak

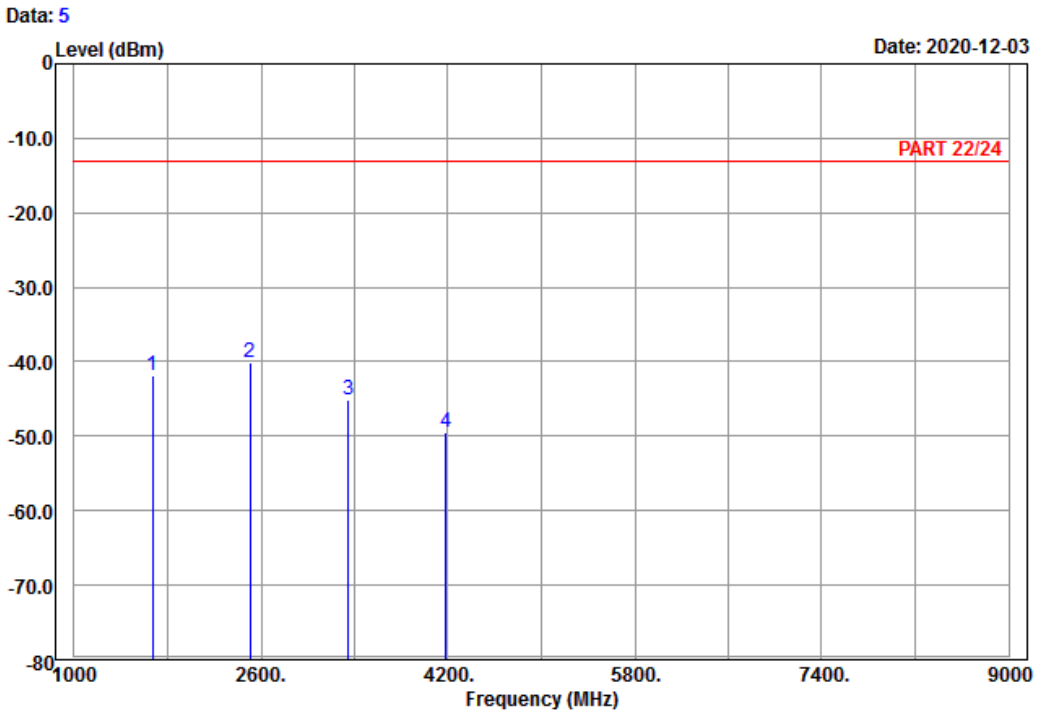


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 850_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1648.40	-41.39	-49.12	7.73	-13.00	-28.39	Peak
2	2472.60	-43.12	-54.15	11.03	-13.00	-30.12	Peak
3	3296.80	-49.05	-63.35	14.30	-13.00	-36.05	Peak
4	4121.00	-50.81	-67.79	16.98	-13.00	-37.81	Peak

Middle Channel

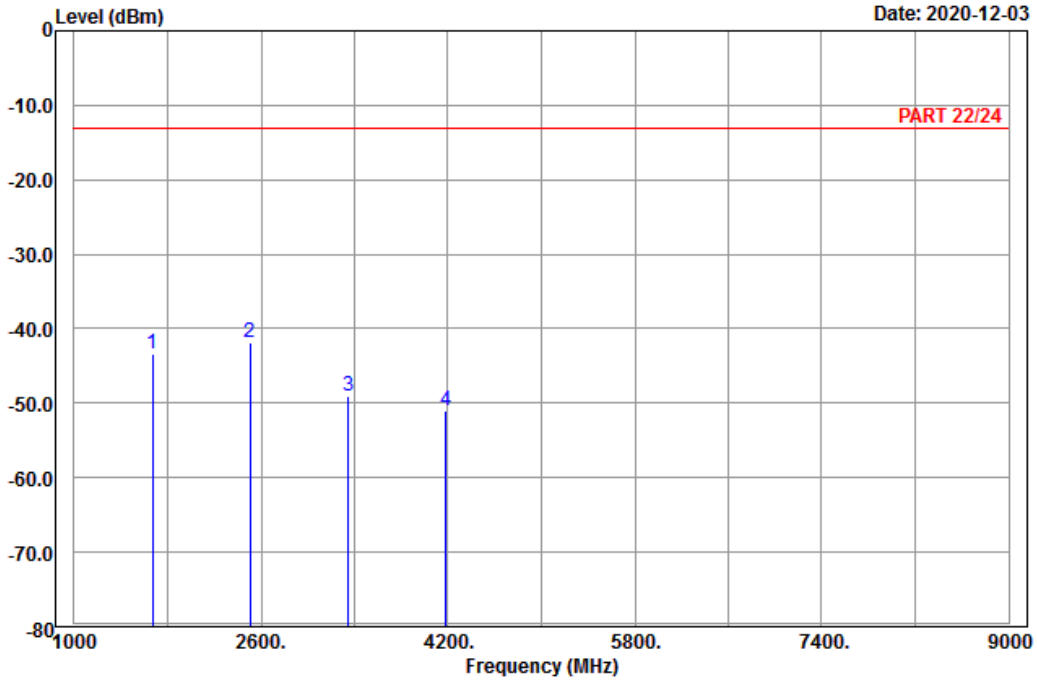
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : GPRS 850_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1672.80	-41.96	-49.87	7.91	-13.00	-28.96	Peak
2 pp	2509.20	-40.07	-51.35	11.28	-13.00	-27.07	Peak
3	3345.60	-45.05	-59.50	14.45	-13.00	-32.05	Peak
4	4182.00	-49.51	-66.64	17.13	-13.00	-36.51	Peak

Data: 6

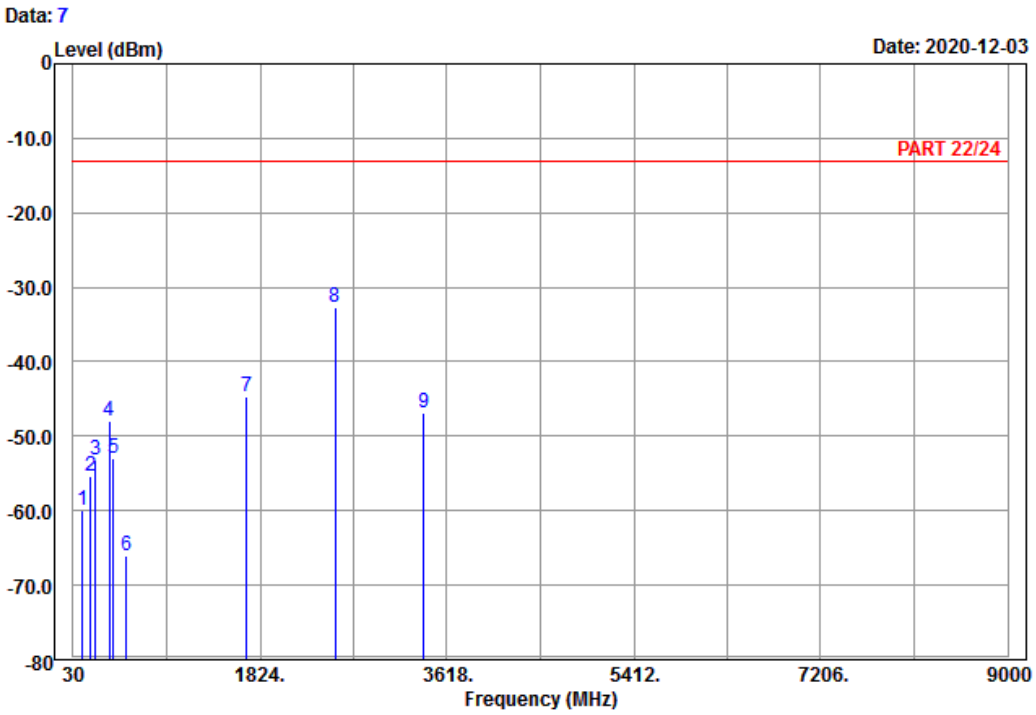


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 850_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1672.80	-43.46	-51.37	7.91	-13.00	-30.46	Peak
2 pp	2509.20	-41.76	-53.04	11.28	-13.00	-28.76	Peak
3	3345.60	-48.97	-63.42	14.45	-13.00	-35.97	Peak
4	4182.00	-50.90	-68.03	17.13	-13.00	-37.90	Peak

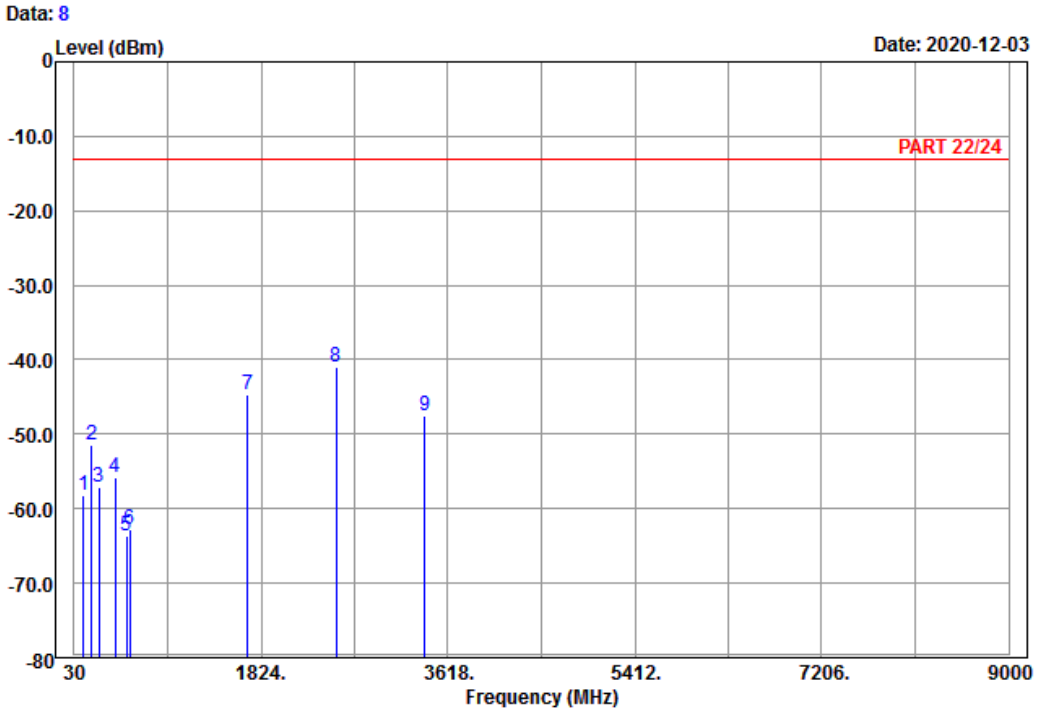
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : GPRS 850_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	120.72	-60.01	-51.82	-8.19	-13.00	-47.01	Peak
2	197.40	-55.42	-49.33	-6.09	-13.00	-42.42	Peak
3	241.68	-53.16	-47.54	-5.62	-13.00	-40.16	Peak
4	374.90	-47.90	-43.87	-4.03	-13.00	-34.90	Peak
5	419.70	-52.94	-49.75	-3.19	-13.00	-39.94	Peak
6	540.80	-66.07	-63.77	-2.30	-13.00	-53.07	Peak
7	1697.60	-44.64	-52.78	8.14	-13.00	-31.64	Peak
8 pp	2546.40	-32.59	-44.06	11.47	-13.00	-19.59	Peak
9	3395.20	-46.81	-61.21	14.40	-13.00	-33.81	Peak

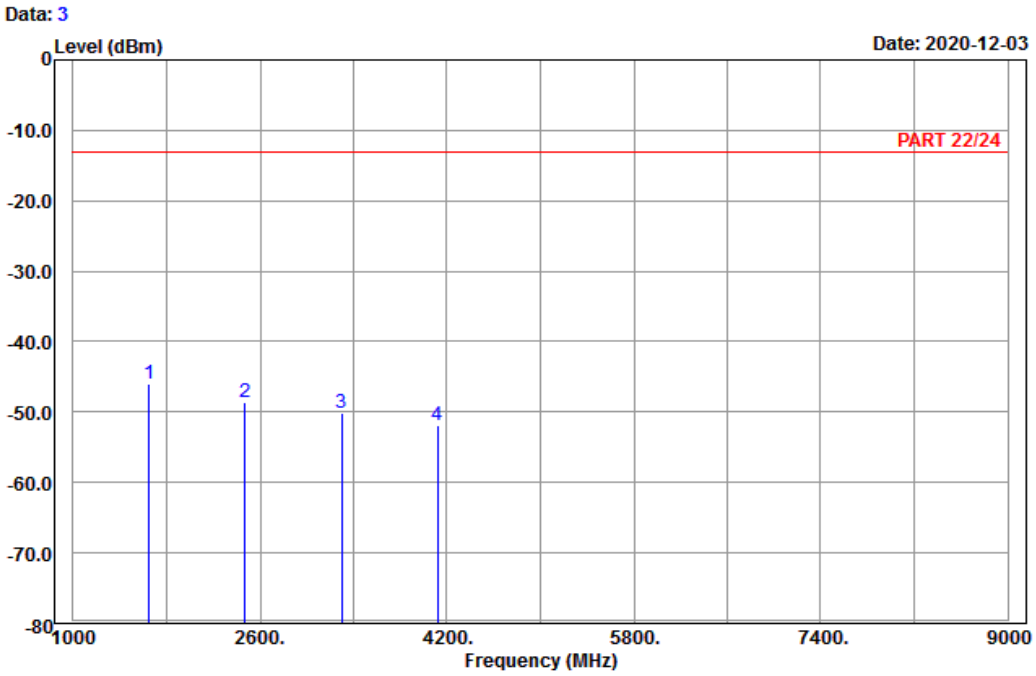


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 850_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	120.99	-58.17	-49.98	-8.19	-13.00	-45.17	Peak
2	200.64	-51.42	-45.25	-6.17	-13.00	-38.42	Peak
3	265.71	-57.14	-51.49	-5.65	-13.00	-44.14	Peak
4	426.00	-55.82	-52.51	-3.31	-13.00	-42.82	Peak
5	534.50	-63.58	-60.78	-2.80	-13.00	-50.58	Peak
6	566.00	-62.72	-61.74	-0.98	-13.00	-49.72	Peak
7	1697.60	-44.76	-52.90	8.14	-13.00	-31.76	Peak
8 pp	2546.40	-40.91	-52.38	11.47	-13.00	-27.91	Peak
9	3395.20	-47.51	-61.91	14.40	-13.00	-34.51	Peak

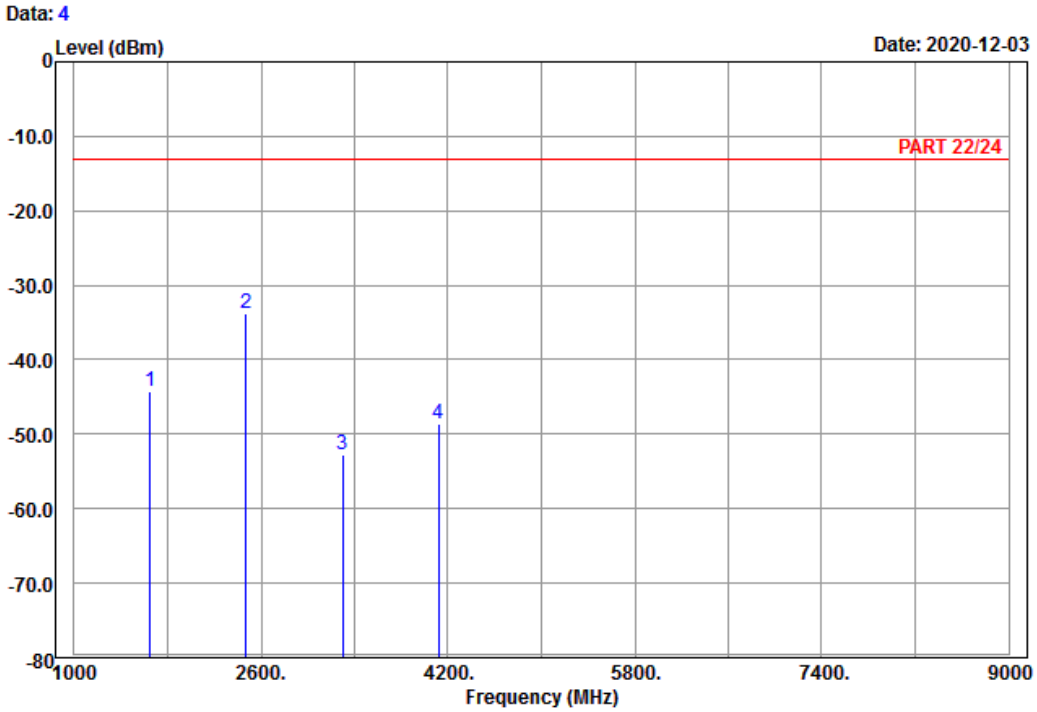
EDGE:
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : EDGE 850_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1648.40	-46.10	-53.83	7.73	-13.00	-33.10	Peak
2	2472.60	-48.57	-59.60	11.03	-13.00	-35.57	Peak
3	3296.80	-50.07	-64.37	14.30	-13.00	-37.07	Peak
4	4121.00	-51.81	-68.79	16.98	-13.00	-38.81	Peak

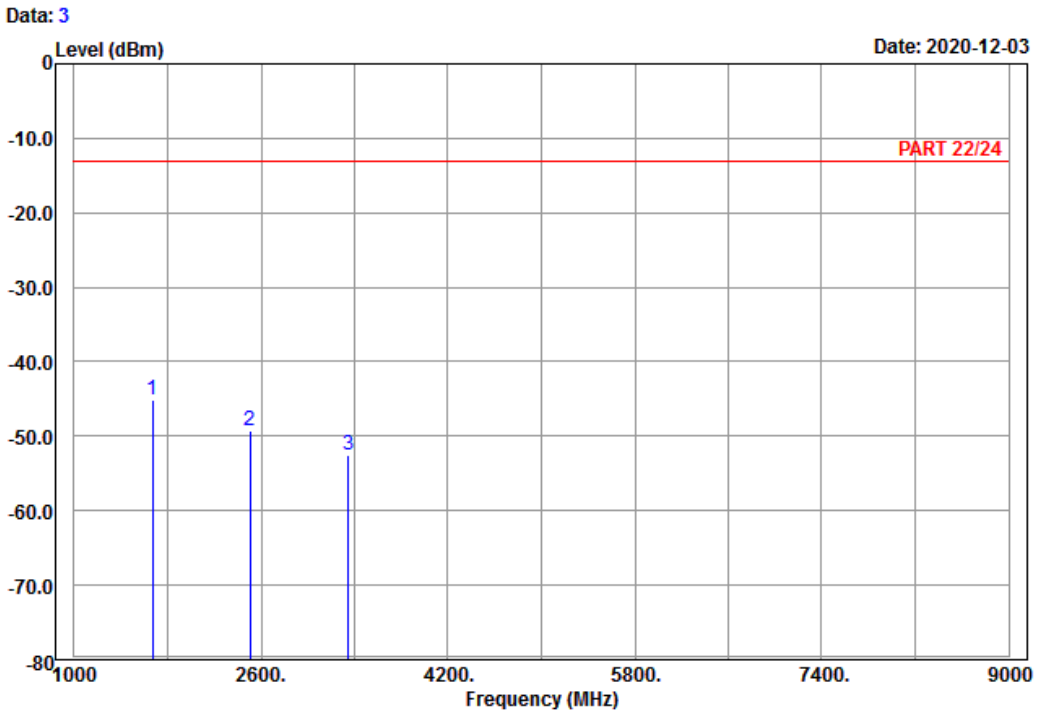


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 850_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1648.40	-44.33	-52.06	7.73	-13.00	-31.33	Peak
2 pp	2472.60	-33.72	-44.75	11.03	-13.00	-20.72	Peak
3	3296.80	-52.76	-67.06	14.30	-13.00	-39.76	Peak
4	4121.00	-48.57	-65.55	16.98	-13.00	-35.57	Peak

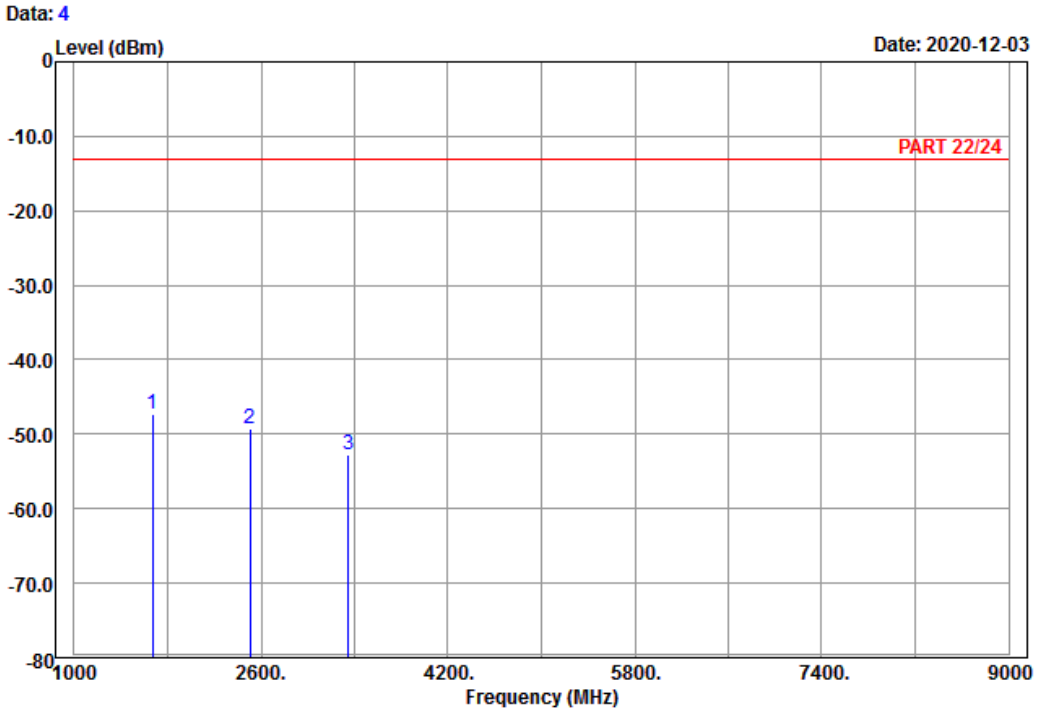
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : EDGE 850_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1672.80	-45.22	-53.13	7.91	-13.00	-32.22	Peak
2	2509.20	-49.37	-60.65	11.28	-13.00	-36.37	Peak
3	3345.60	-52.47	-66.92	14.45	-13.00	-39.47	Peak

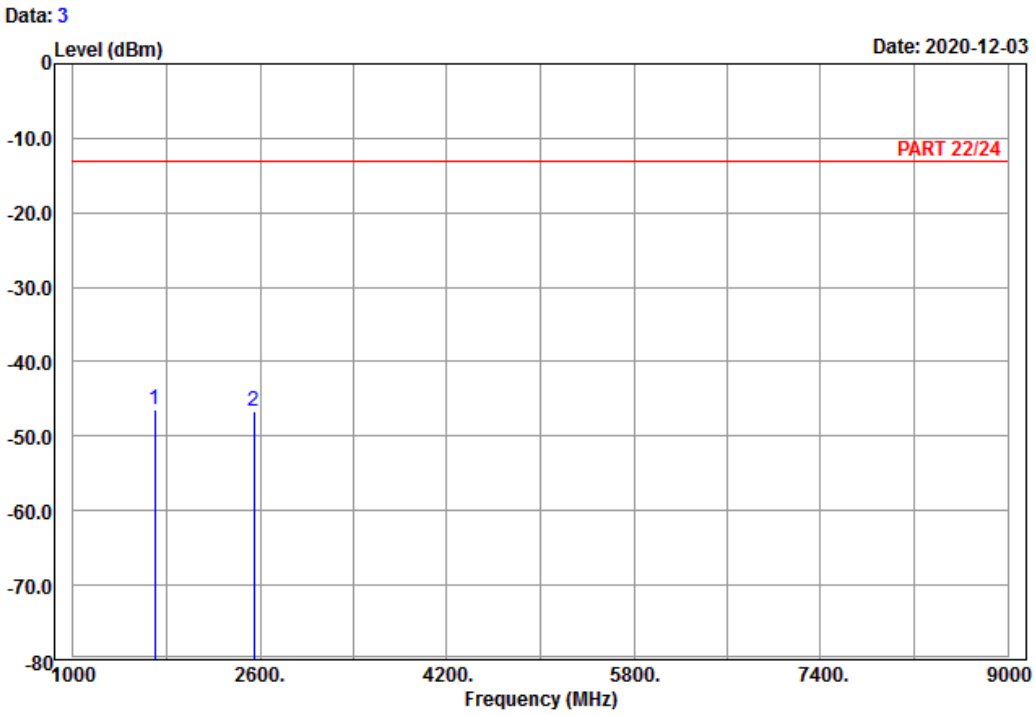


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 850_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1672.80	-47.22	-55.13	7.91	-13.00	-34.22	Peak
2	2509.20	-49.24	-60.52	11.28	-13.00	-36.24	Peak
3	3345.60	-52.86	-67.31	14.45	-13.00	-39.86	Peak

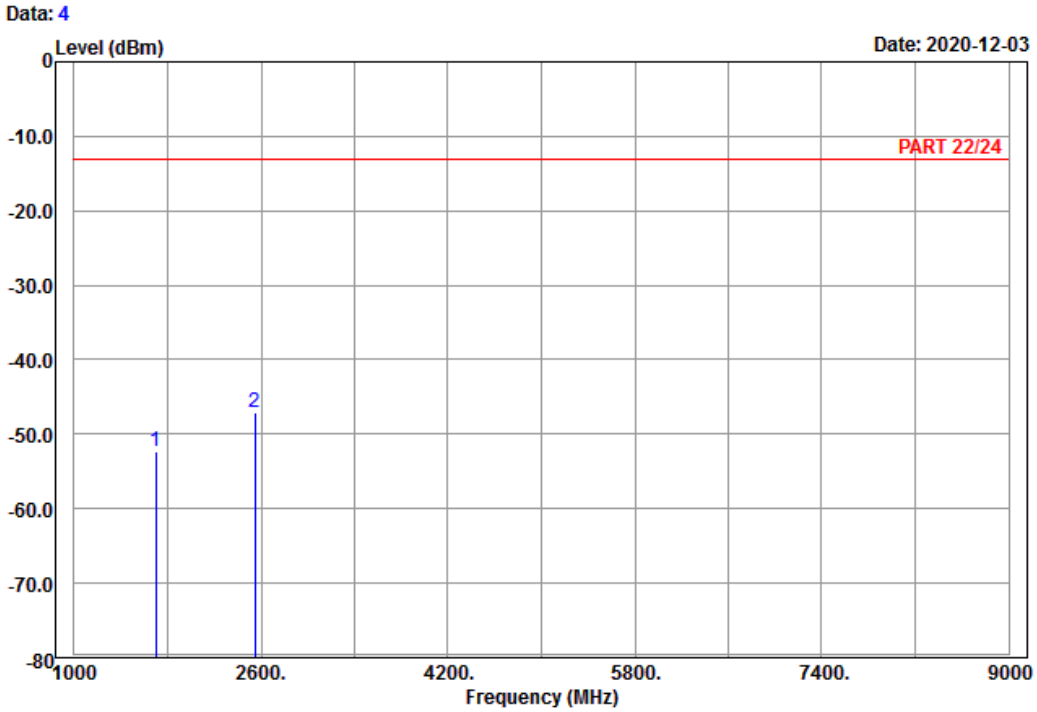
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : EDGE 850_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1697.60	-46.50	-54.64	8.14	-13.00	-33.50	Peak
2	2546.40	-46.68	-58.15	11.47	-13.00	-33.68	Peak



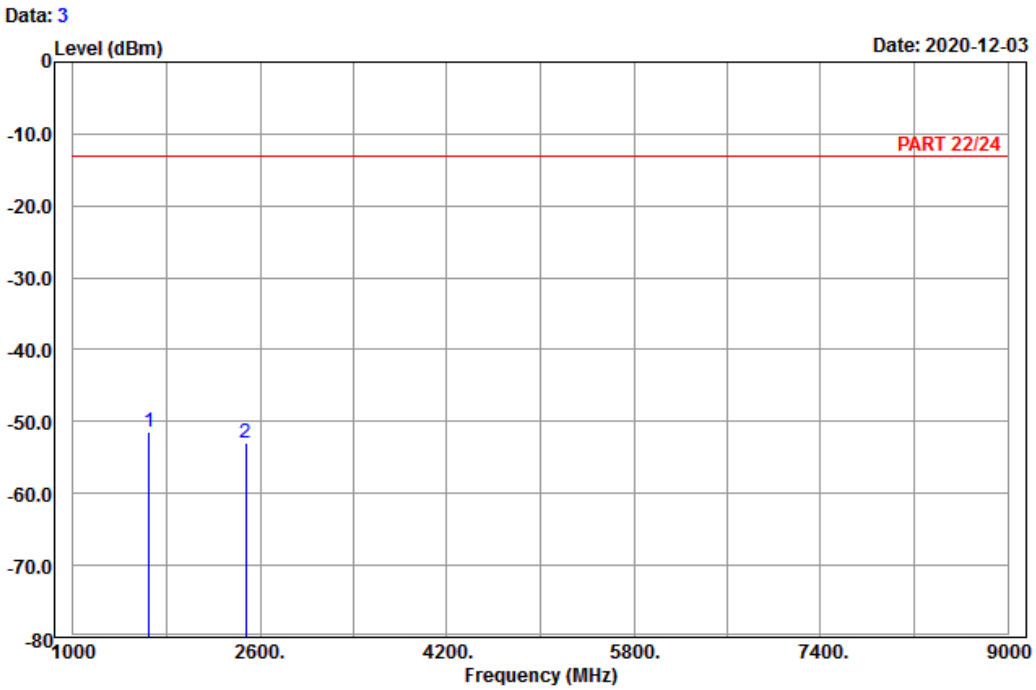
Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 850_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1697.60	-52.42	-60.56	8.14	-13.00	-39.42	Peak
2 pp	2546.40	-47.12	-58.59	11.47	-13.00	-34.12	Peak

WCDMA:

Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

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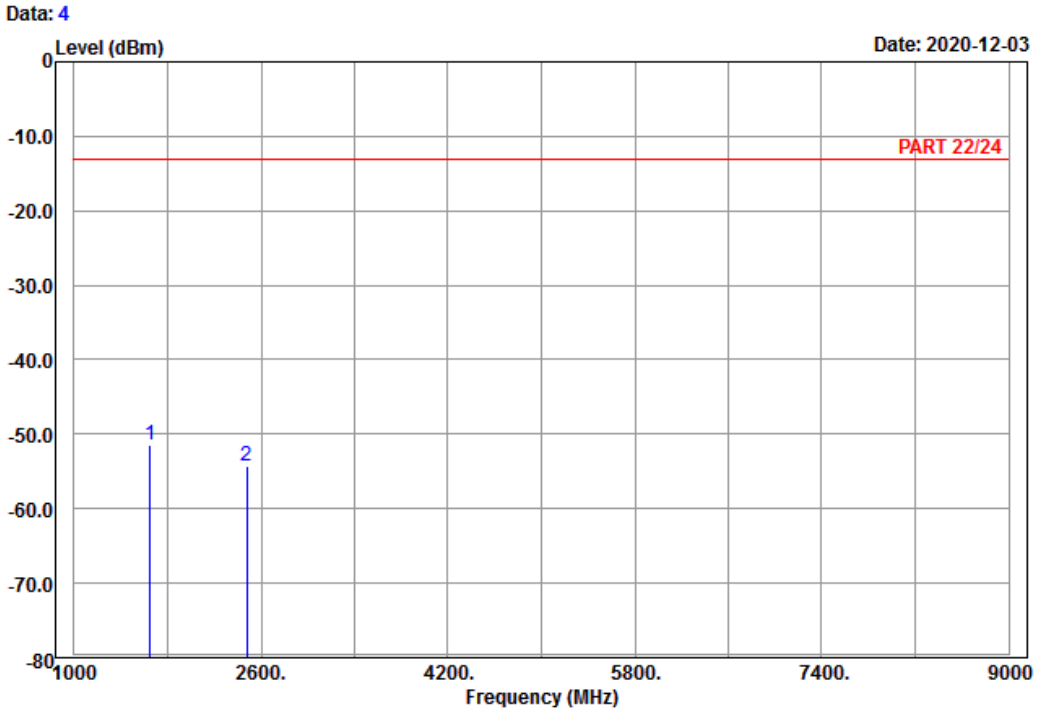
Site      : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark    : Band V_Link_L-Ch
Tested by: Karl Lee
```

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1652.80	-51.43	-59.16	7.73	-13.00	-38.43	Peak
2	2479.20	-53.07	-64.10	11.03	-13.00	-40.07	Peak

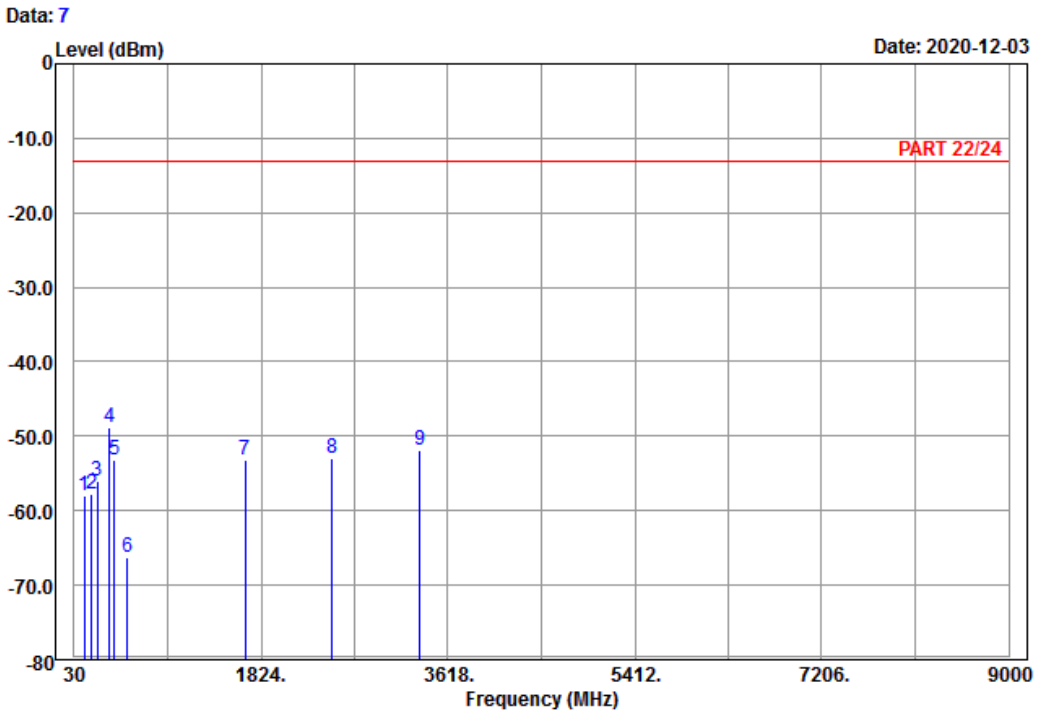


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band V_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1652.80	-51.51	-59.24	7.73	-13.00	-38.51	Peak
2	2479.20	-54.17	-65.20	11.03	-13.00	-41.17	Peak

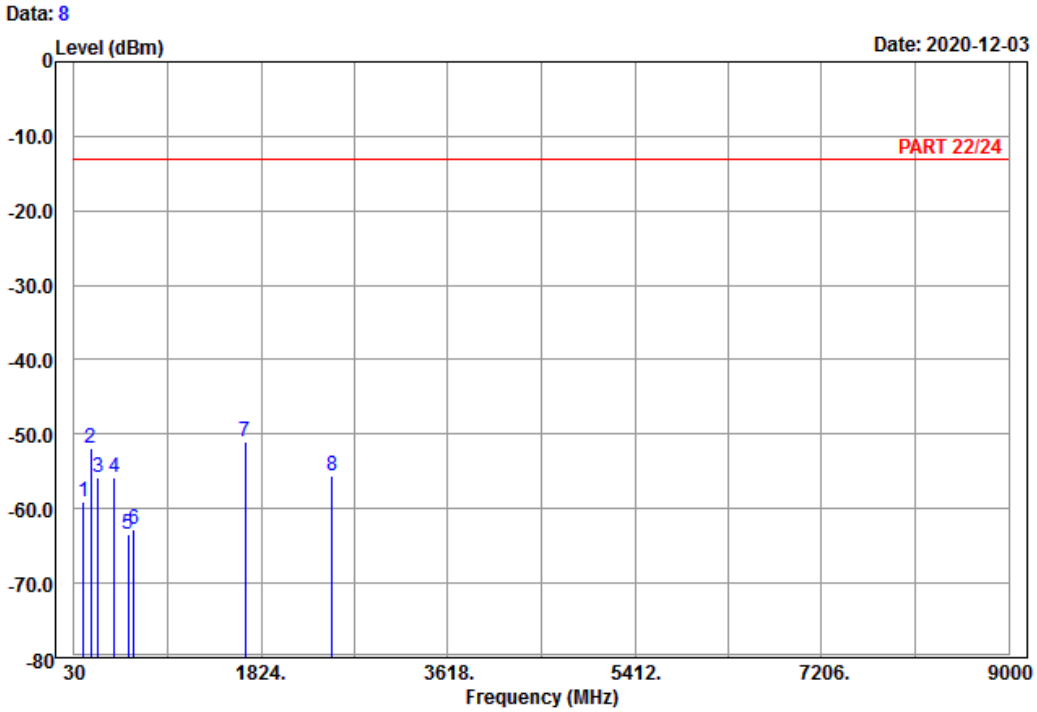
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : Band V_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	126.66	-57.95	-50.12	-13.00	-44.95	-7.83	Peak
2	199.56	-57.66	-51.48	-13.00	-44.66	-6.18	Peak
3	253.29	-56.11	-50.58	-13.00	-43.11	-5.53	Peak
4 pp	372.10	-48.82	-44.63	-13.00	-35.82	-4.19	Peak
5	416.90	-53.24	-50.12	-13.00	-40.24	-3.12	Peak
6	543.60	-66.23	-64.07	-13.00	-53.23	-2.16	Peak
7	1672.80	-53.17	-61.08	-13.00	-40.17	7.91	Peak
8	2509.20	-52.87	-64.15	-13.00	-39.87	11.28	Peak
9	3345.60	-51.98	-66.43	-13.00	-38.98	14.45	Peak

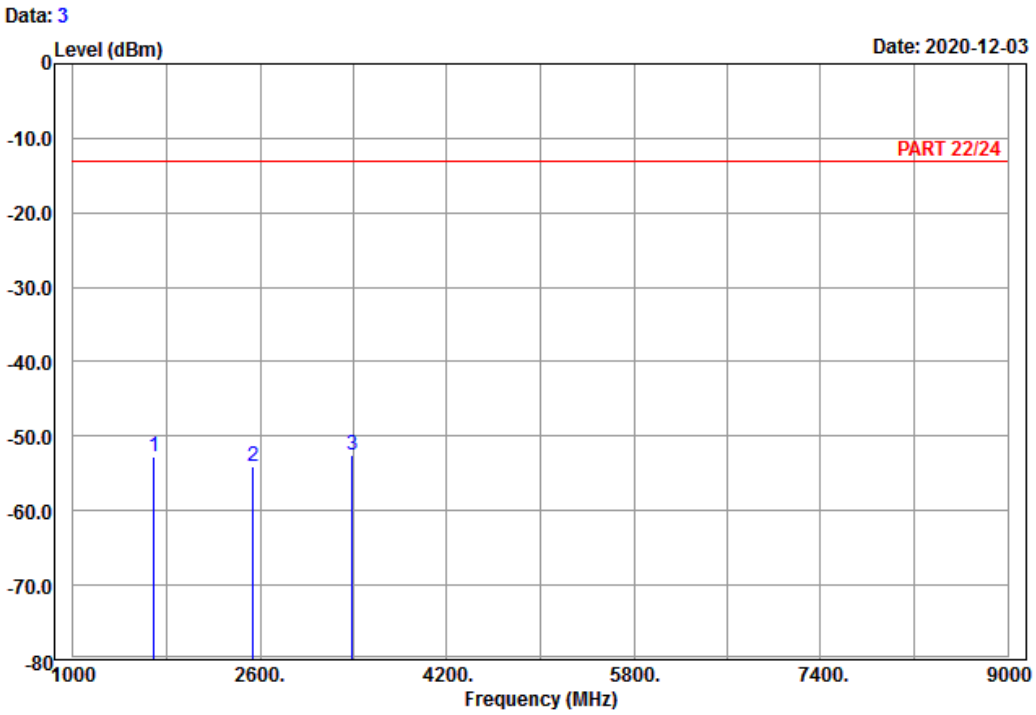


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band V_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	122.34	-59.05	-50.92	-13.00	-46.05	-8.13	Peak
2	190.38	-51.90	-46.17	-13.00	-38.90	-5.73	Peak
3	257.07	-55.81	-50.24	-13.00	-42.81	-5.57	Peak
4	419.70	-55.89	-52.70	-13.00	-42.89	-3.19	Peak
5	546.40	-63.43	-61.48	-13.00	-50.43	-1.95	Peak
6	601.70	-62.85	-63.27	-13.00	-49.85	0.42	Peak
7 pp	1672.80	-51.07	-58.98	-13.00	-38.07	7.91	Peak
8	2509.20	-55.57	-66.85	-13.00	-42.57	11.28	Peak

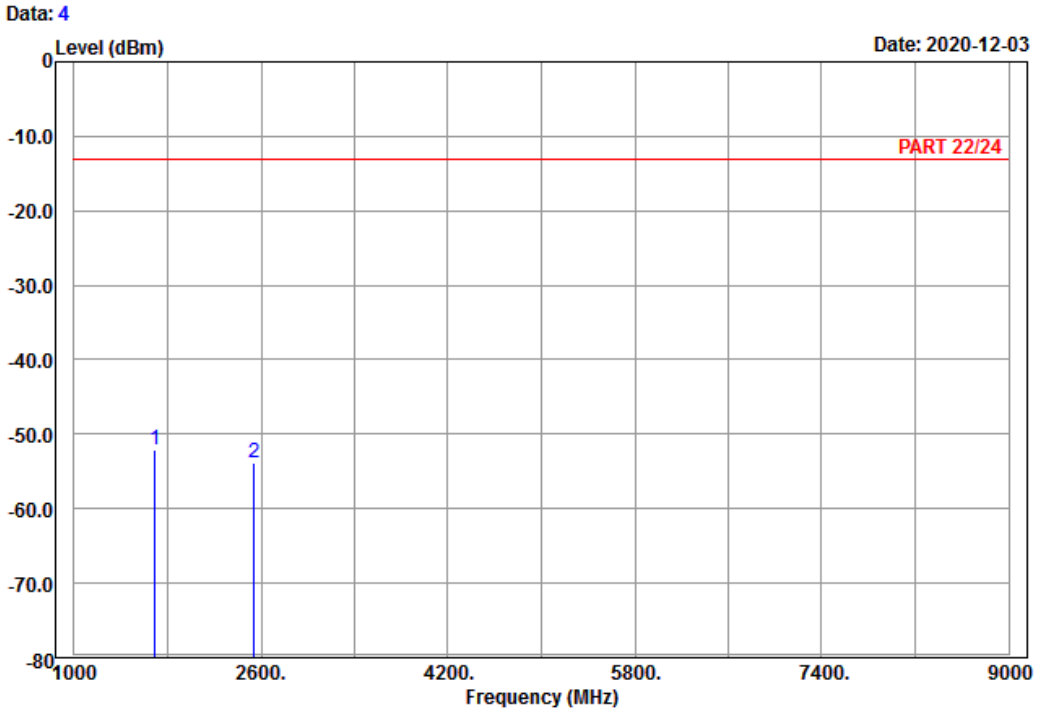
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : Band V_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1693.20	-52.77	-60.91	8.14	-13.00	-39.77	Peak
2	2539.80	-54.07	-65.54	11.47	-13.00	-41.07	Peak
3 pp	3386.40	-52.60	-67.00	14.40	-13.00	-39.60	Peak

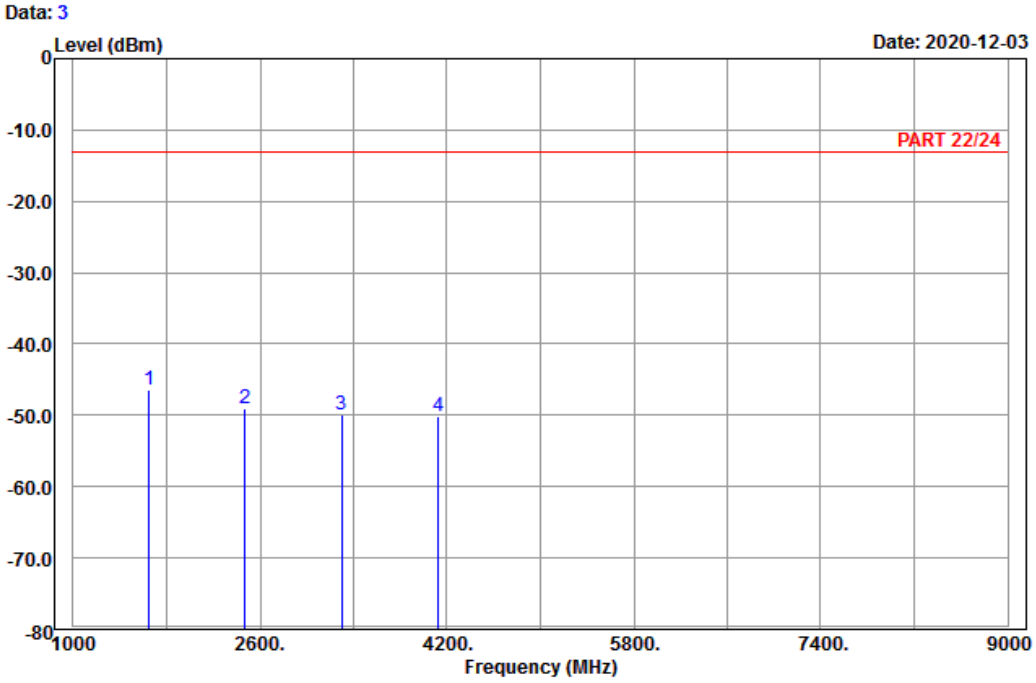


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band V_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1693.20	-52.10	-60.24	8.14	-13.00	-39.10	Peak
2	2539.80	-53.89	-65.36	11.47	-13.00	-40.89	Peak

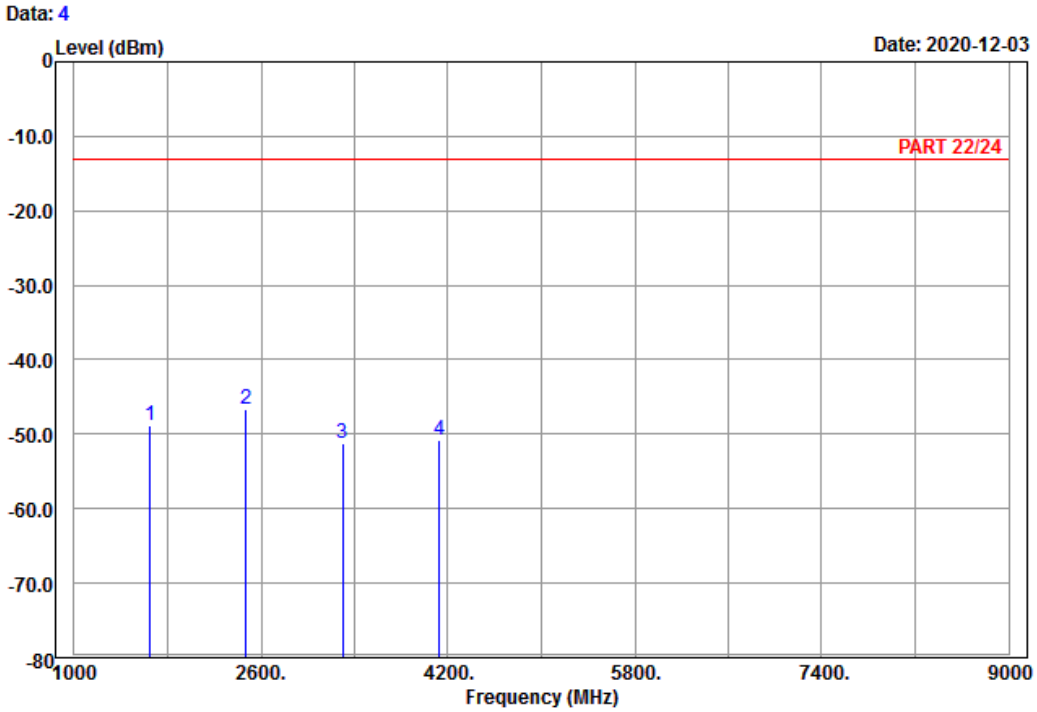
LTE Band 5
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1649.40	-46.37	-54.10	7.73	-13.00	-33.37	Peak
2	2474.10	-48.96	-59.99	11.03	-13.00	-35.96	Peak
3	3298.80	-49.96	-64.26	14.30	-13.00	-36.96	Peak
4	4123.50	-50.05	-67.07	17.02	-13.00	-37.05	Peak

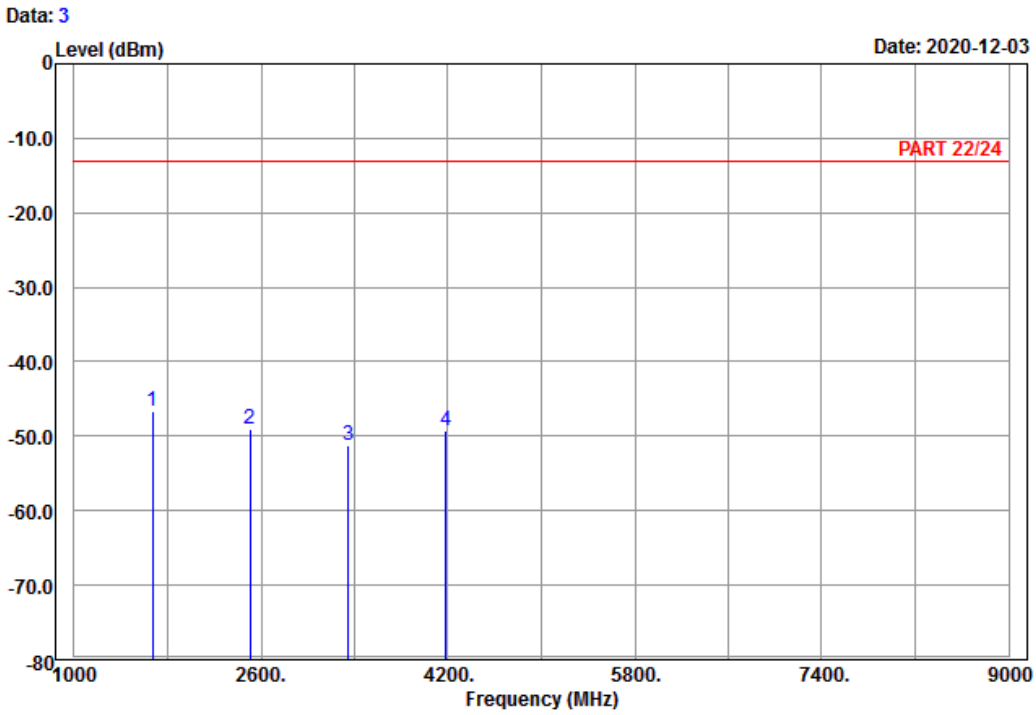


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1649.40	-48.77	-56.50	7.73	-13.00	-35.77	Peak
2 pp	2474.10	-46.67	-57.70	11.03	-13.00	-33.67	Peak
3	3298.80	-51.19	-65.49	14.30	-13.00	-38.19	Peak
4	4123.50	-50.81	-67.83	17.02	-13.00	-37.81	Peak

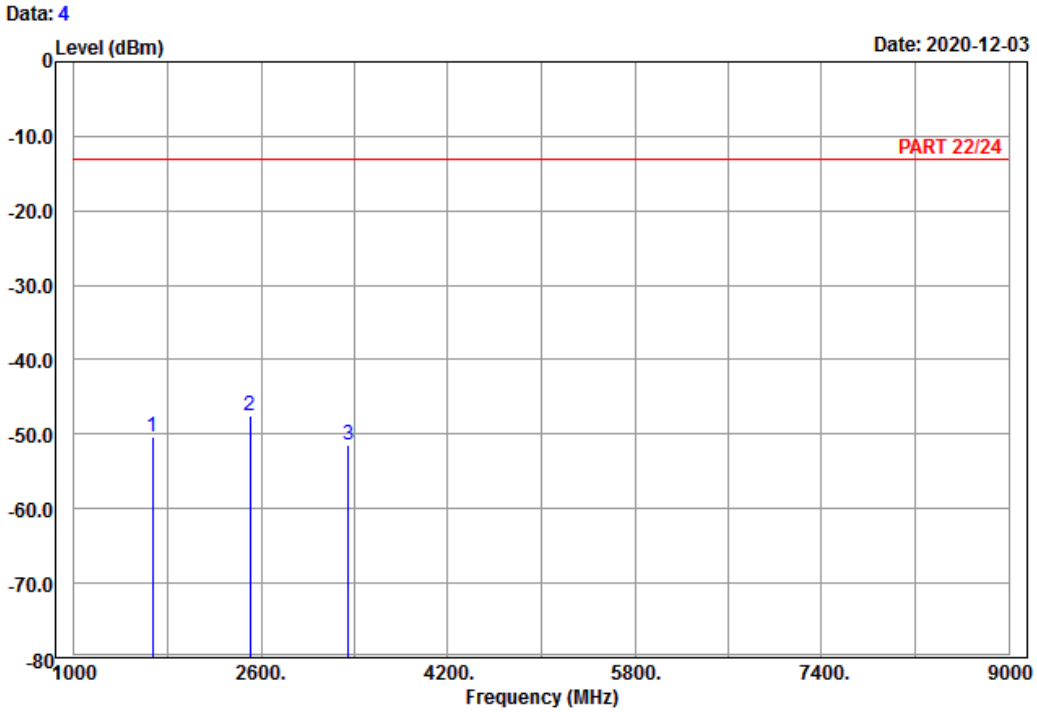
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1673.00	-46.67	-54.58	7.91	-13.00	-33.67	Peak
2	2509.50	-49.12	-60.40	11.28	-13.00	-36.12	Peak
3	3346.00	-51.31	-65.76	14.45	-13.00	-38.31	Peak
4	4182.50	-49.33	-66.46	17.13	-13.00	-36.33	Peak

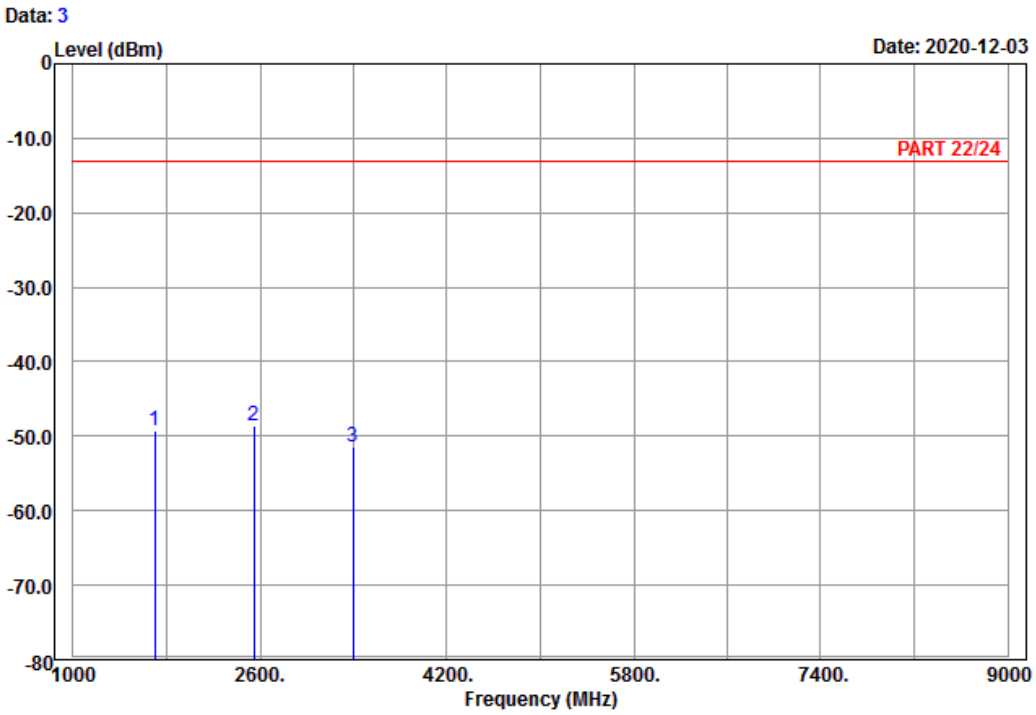


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1673.00	-50.33	-58.24	7.91	-13.00	-37.33	Peak
2 pp	2509.50	-47.58	-58.86	11.28	-13.00	-34.58	Peak
3	3346.00	-51.53	-65.98	14.45	-13.00	-38.53	Peak

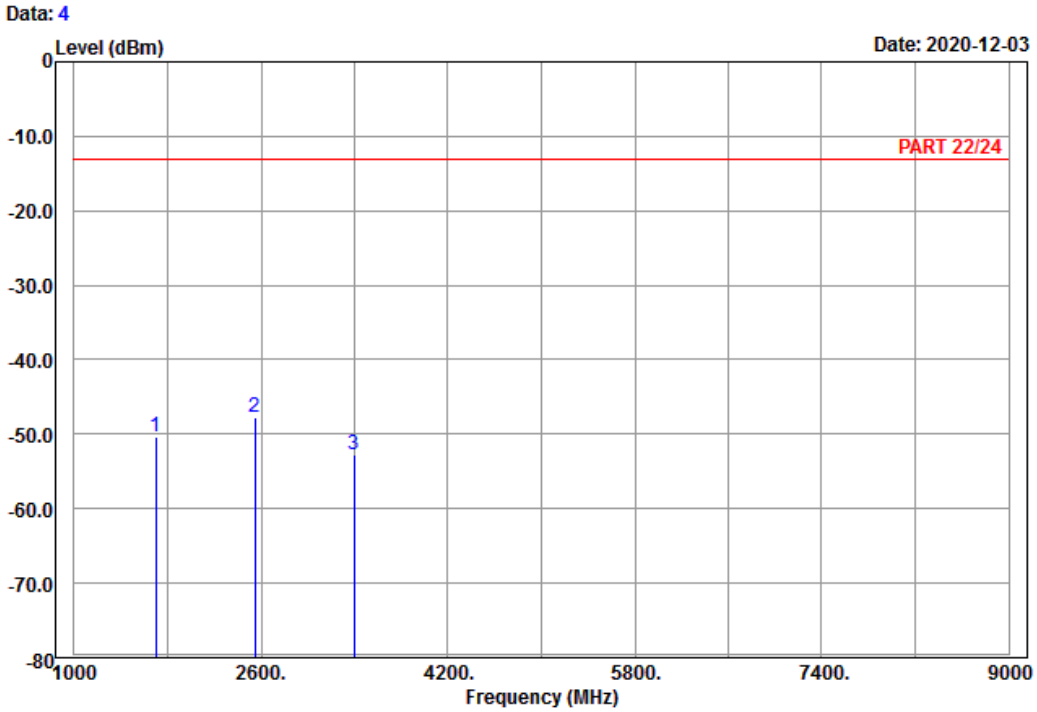
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1696.60	-49.36	-57.50	8.14	-13.00	-36.36	Peak
2 pp	2544.90	-48.62	-60.09	11.47	-13.00	-35.62	Peak
3	3393.20	-51.41	-65.81	14.40	-13.00	-38.41	Peak

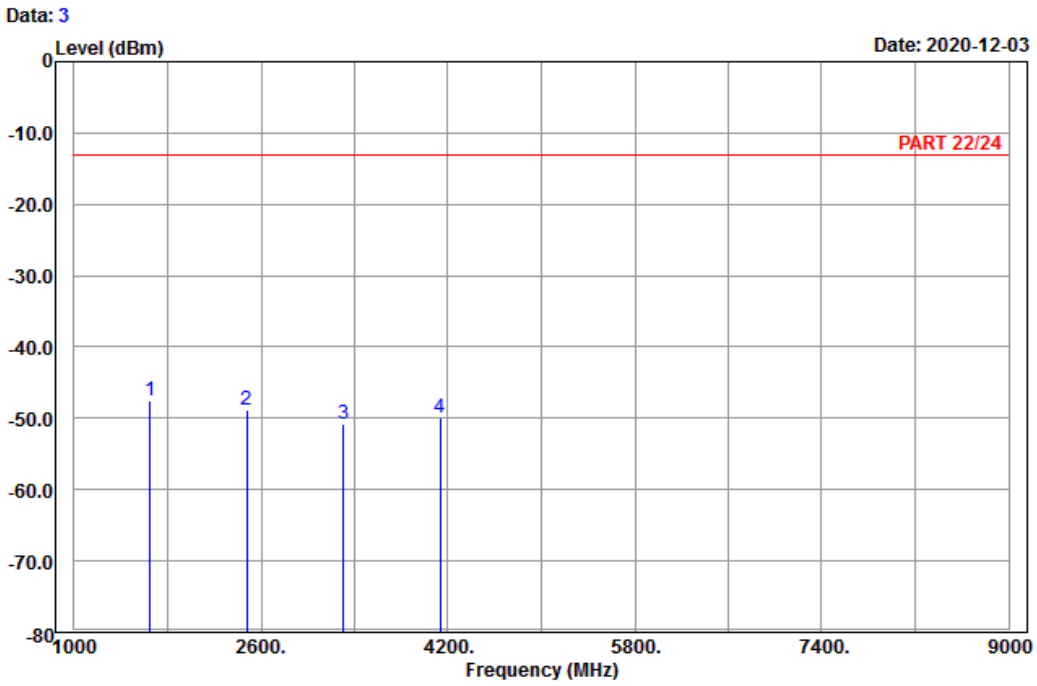


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1696.60	-50.36	-58.50	8.14	-13.00	-37.36	Peak
2 pp	2544.90	-47.79	-59.26	11.47	-13.00	-34.79	Peak
3	3393.20	-52.86	-67.26	14.40	-13.00	-39.86	Peak

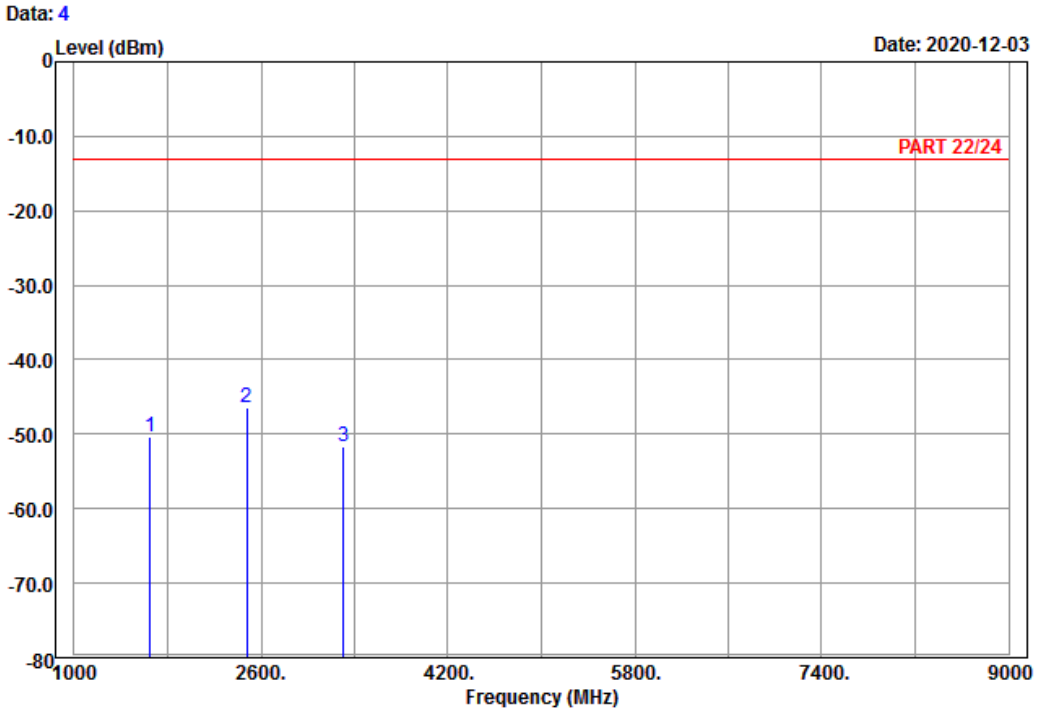
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1653.00	-47.47	-55.20	7.73	-13.00	-34.47	Peak
2	2479.50	-48.79	-59.82	11.03	-13.00	-35.79	Peak
3	3306.00	-50.75	-65.05	14.30	-13.00	-37.75	Peak
4	4132.50	-49.99	-67.01	17.02	-13.00	-36.99	Peak

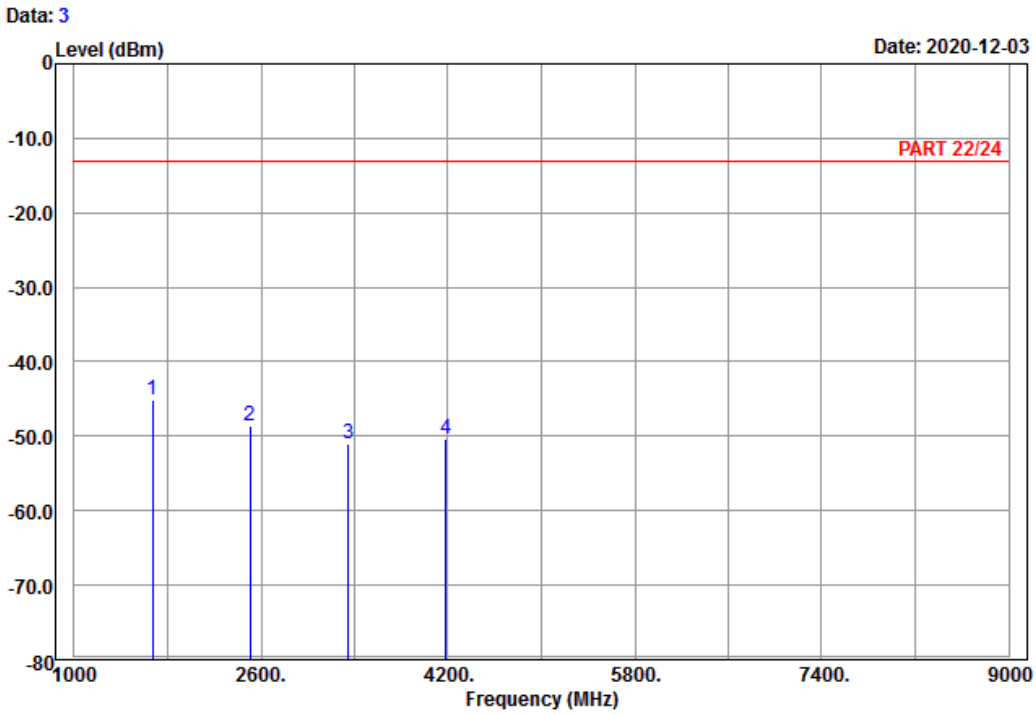


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1653.00	-50.27	-58.00	7.73	-13.00	-37.27	Peak
2 pp	2479.50	-46.34	-57.37	11.03	-13.00	-33.34	Peak
3	3306.00	-51.64	-65.94	14.30	-13.00	-38.64	Peak

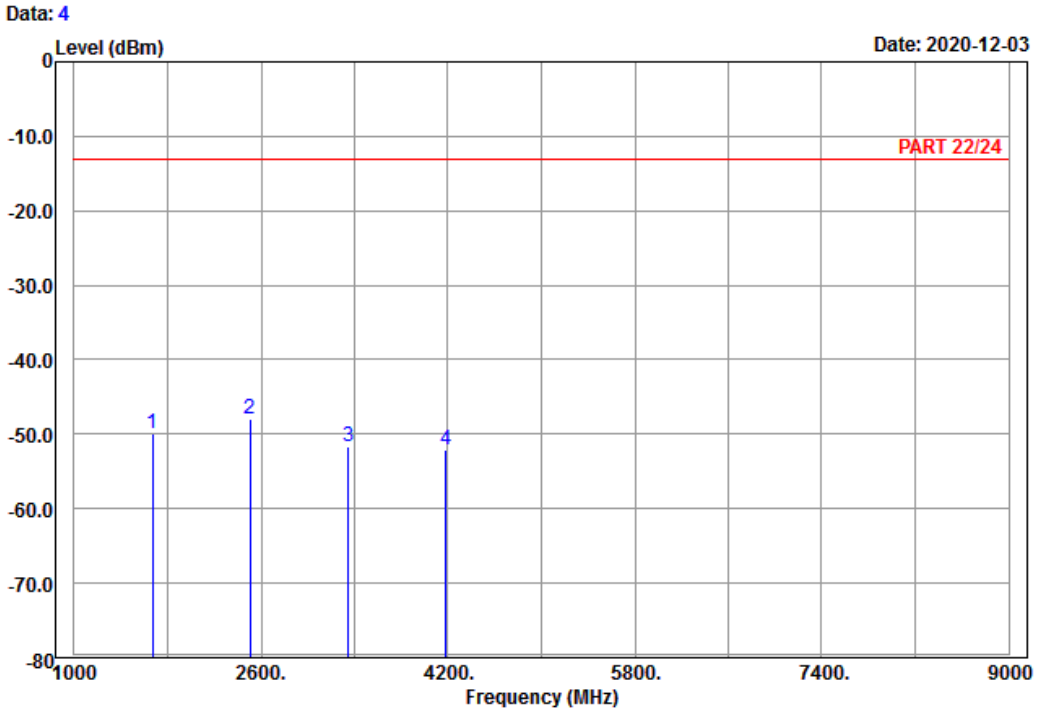
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1673.00	-45.10	-53.01	7.91	-13.00	-32.10	Peak
2	2509.50	-48.57	-59.85	11.28	-13.00	-35.57	Peak
3	3346.00	-51.04	-65.49	14.45	-13.00	-38.04	Peak
4	4182.50	-50.25	-67.38	17.13	-13.00	-37.25	Peak

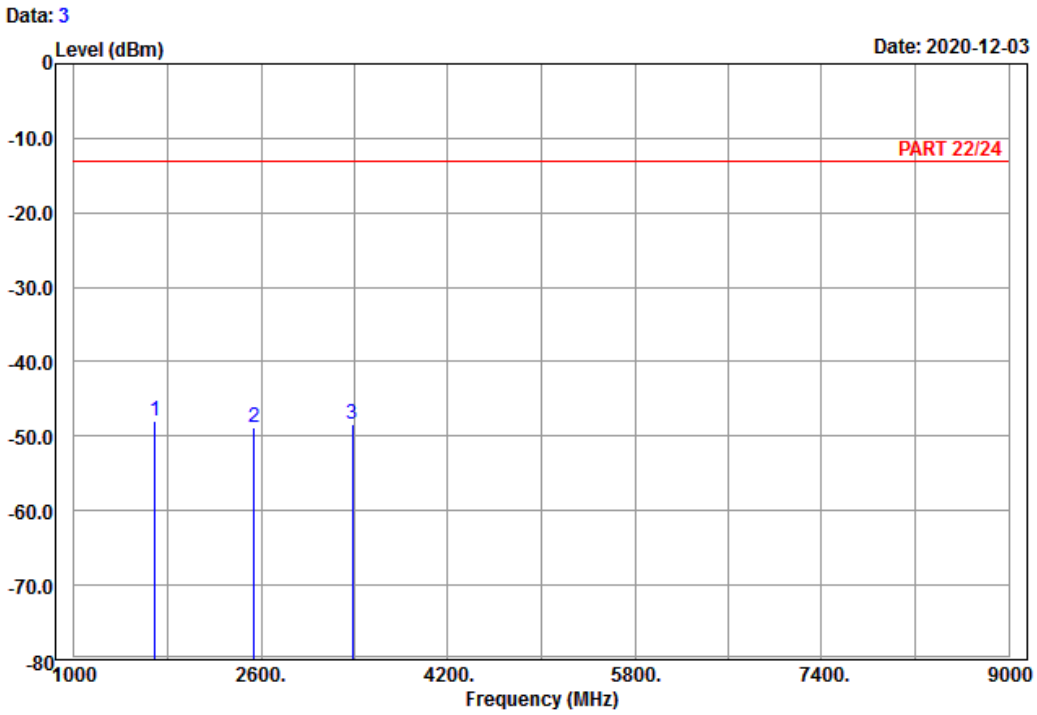


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1673.00	-49.97	-57.88	7.91	-13.00	-36.97	Peak
2 pp	2509.50	-47.85	-59.13	11.28	-13.00	-34.85	Peak
3	3346.00	-51.61	-66.06	14.45	-13.00	-38.61	Peak
4	4182.50	-51.99	-69.12	17.13	-13.00	-38.99	Peak

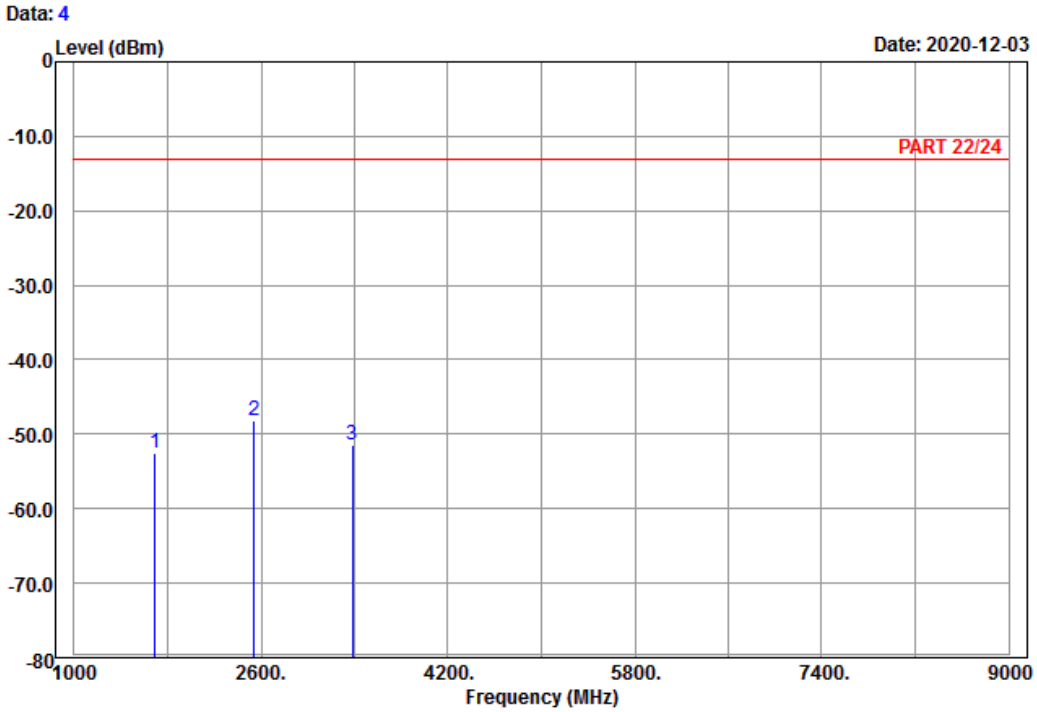
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1693.00	-47.87	-55.89	8.02	-13.00	-34.87	Peak
2	2539.50	-48.90	-60.37	11.47	-13.00	-35.90	Peak
3	3386.00	-48.42	-62.82	14.40	-13.00	-35.42	Peak

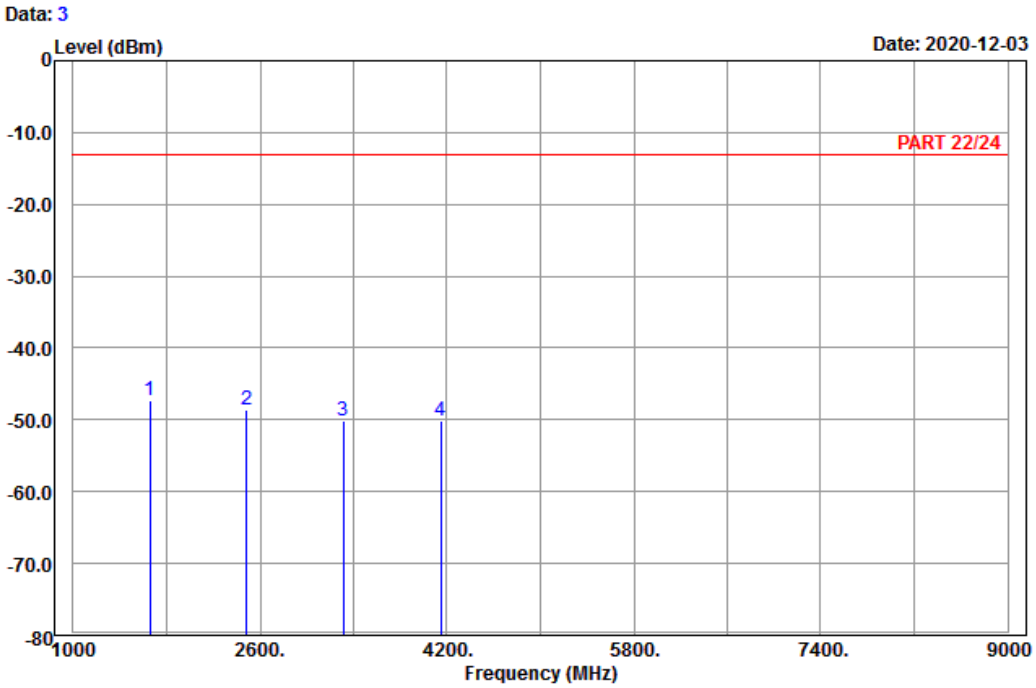


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1693.00	-52.60	-60.62	8.02	-13.00	-39.60	Peak
2 pp	2539.50	-48.07	-59.54	11.47	-13.00	-35.07	Peak
3	3386.00	-51.51	-65.91	14.40	-13.00	-38.51	Peak

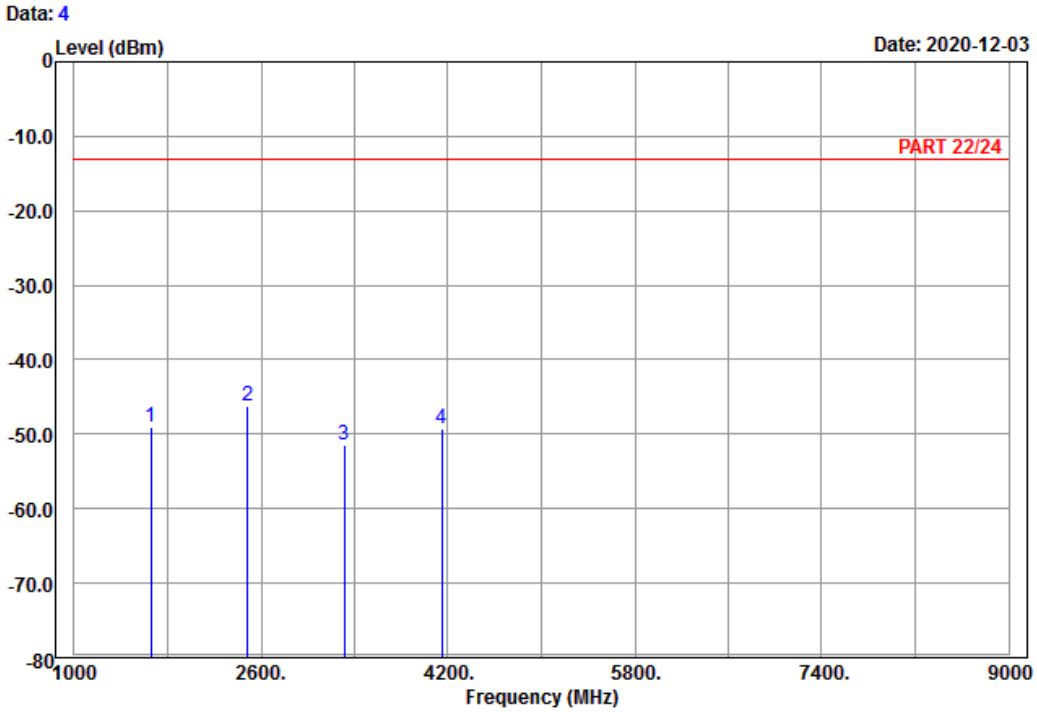
Channel Bandwidth: 10 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1658.00	-47.23	-55.14	7.91	-13.00	-34.23	Peak
2	2487.00	-48.61	-59.65	11.04	-13.00	-35.61	Peak
3	3316.00	-50.19	-64.57	14.38	-13.00	-37.19	Peak
4	4145.00	-50.16	-67.22	17.06	-13.00	-37.16	Peak

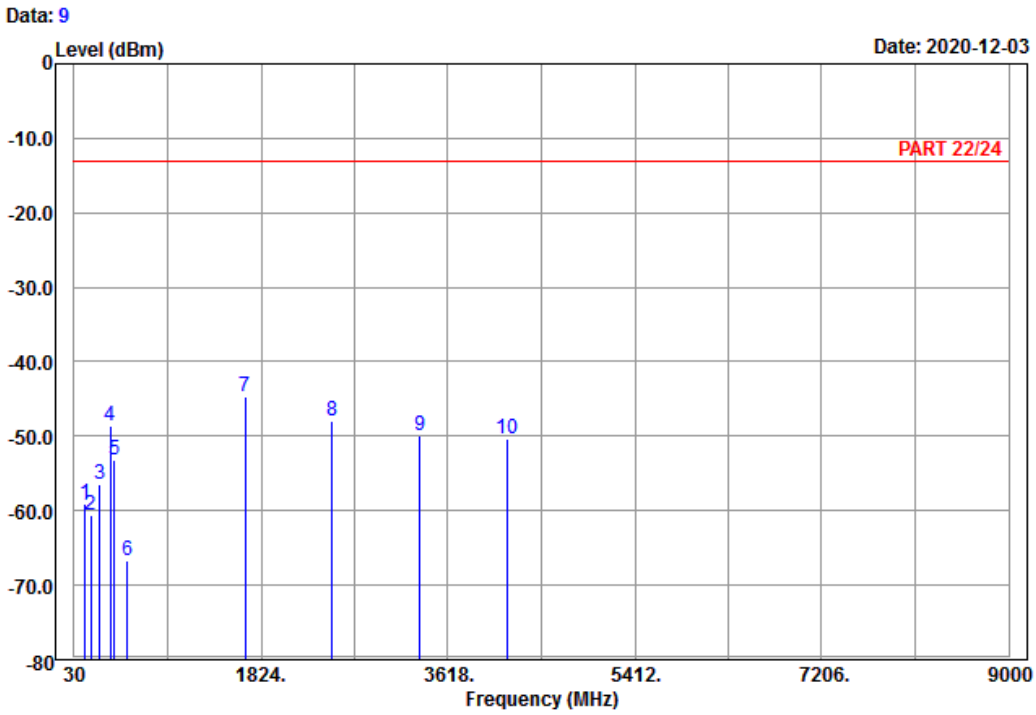


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1658.00	-49.00	-56.91	7.91	-13.00	-36.00	Peak
2 pp	2487.00	-46.31	-57.35	11.04	-13.00	-33.31	Peak
3	3316.00	-51.37	-65.75	14.38	-13.00	-38.37	Peak
4	4145.00	-49.31	-66.37	17.06	-13.00	-36.31	Peak

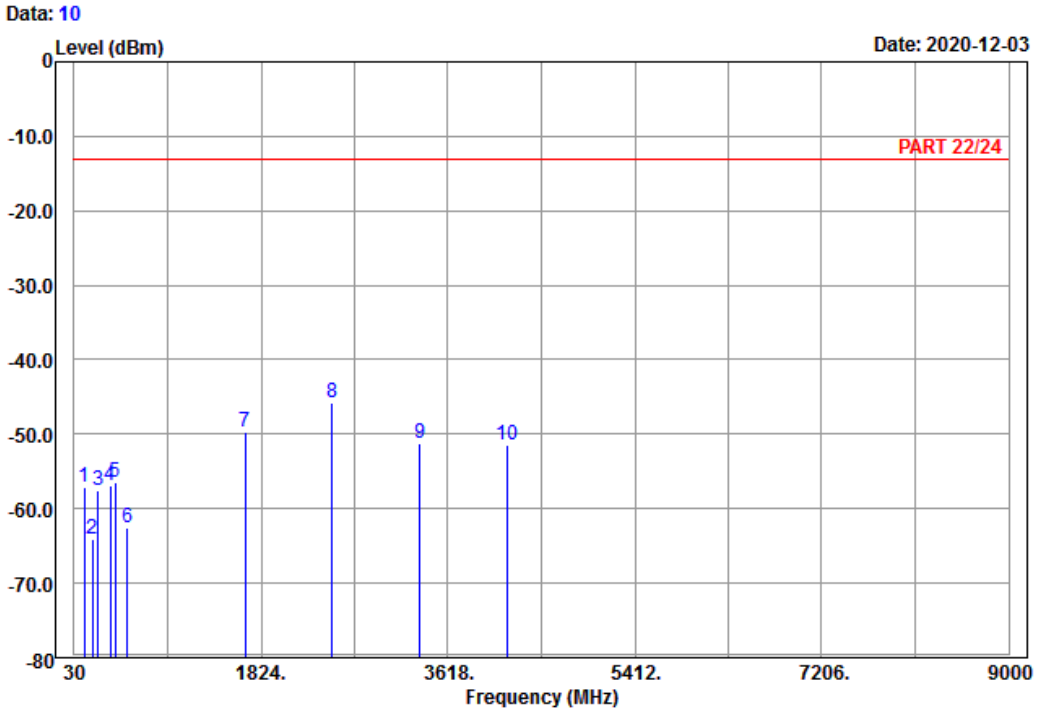
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	134.76	-59.12	-51.45	-7.67	-13.00	-46.12	Peak
2	192.81	-60.62	-54.75	-5.87	-13.00	-47.62	Peak
3	271.92	-56.49	-50.79	-5.70	-13.00	-43.49	Peak
4	380.50	-48.69	-44.92	-3.77	-13.00	-35.69	Peak
5	419.70	-53.19	-50.00	-3.19	-13.00	-40.19	Peak
6	543.60	-66.70	-64.54	-2.16	-13.00	-53.70	Peak
7 pp	1673.00	-44.76	-52.67	7.91	-13.00	-31.76	Peak
8	2509.50	-47.85	-59.13	11.28	-13.00	-34.85	Peak
9	3346.00	-49.86	-64.31	14.45	-13.00	-36.86	Peak
10	4182.50	-50.31	-67.44	17.13	-13.00	-37.31	Peak

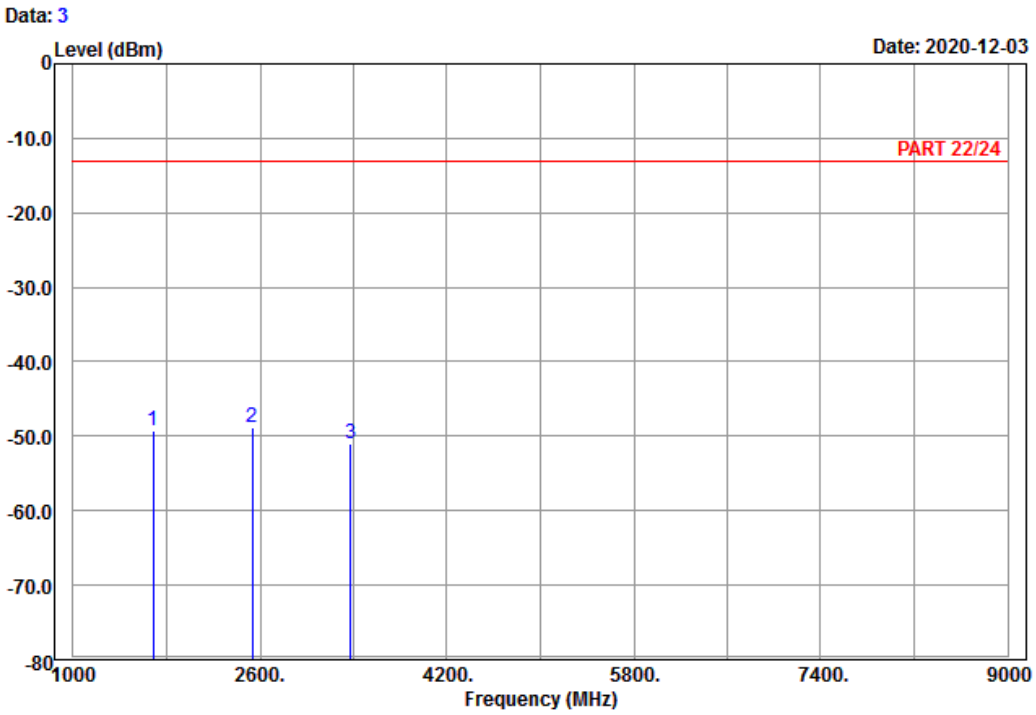


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_M-Ch
Tested by: Charles Hsiao

		Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
		MHz	dBm	dBm	dB	dBm	dB	
1		126.93	-57.19	-49.36	-7.83	-13.00	-44.19	Peak
2		202.53	-64.01	-57.87	-6.14	-13.00	-51.01	Peak
3		263.01	-57.52	-51.90	-5.62	-13.00	-44.52	Peak
4		374.20	-56.90	-52.82	-4.08	-13.00	-43.90	Peak
5		426.00	-56.35	-53.04	-3.31	-13.00	-43.35	Peak
6		543.60	-62.64	-60.48	-2.16	-13.00	-49.64	Peak
7		1673.00	-49.66	-57.57	7.91	-13.00	-36.66	Peak
8	pp	2509.50	-45.86	-57.14	11.28	-13.00	-32.86	Peak
9		3346.00	-51.31	-65.76	14.45	-13.00	-38.31	Peak
10		4182.50	-51.36	-68.49	17.13	-13.00	-38.36	Peak

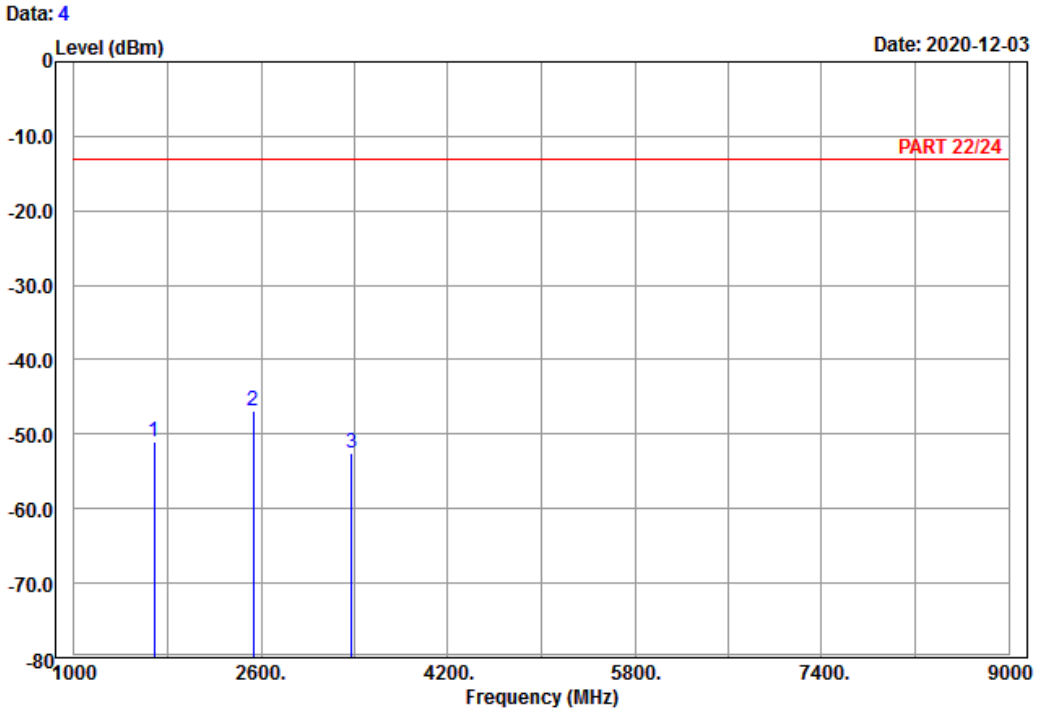
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1688.00	-49.24	-57.26	8.02	-13.00	-36.24	Peak
2 pp	2532.00	-48.90	-60.28	11.38	-13.00	-35.90	Peak
3	3376.00	-51.10	-65.52	14.42	-13.00	-38.10	Peak

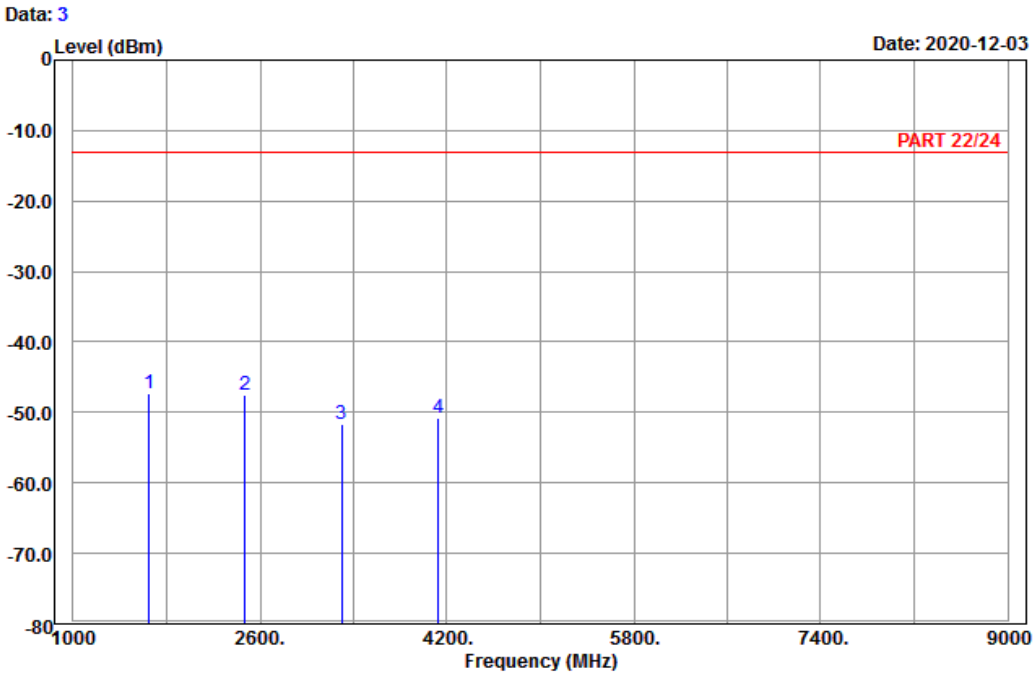


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 5_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1688.00	-50.99	-59.01	8.02	-13.00	-37.99	Peak
2 pp	2532.00	-46.87	-58.25	11.38	-13.00	-33.87	Peak
3	3376.00	-52.57	-66.99	14.42	-13.00	-39.57	Peak

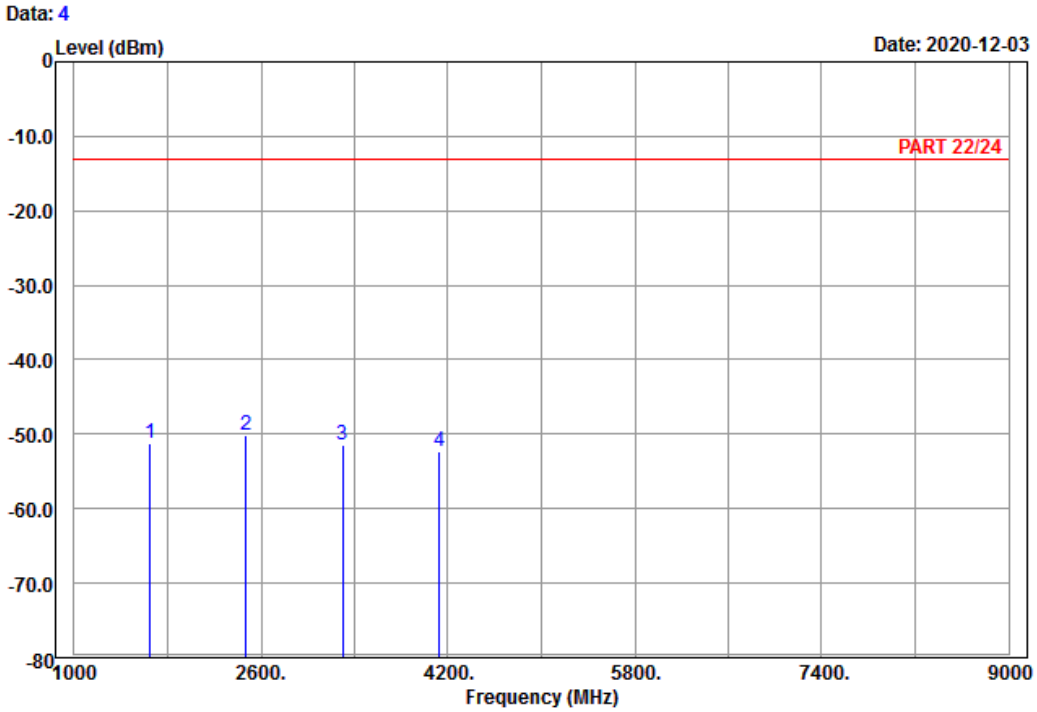
LTE Band 26
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1649.40	-47.33	-55.06	7.73	-13.00	-34.33	Peak
2	2474.10	-47.58	-58.61	11.03	-13.00	-34.58	Peak
3	3298.80	-51.63	-65.93	14.30	-13.00	-38.63	Peak
4	4123.50	-50.81	-67.83	17.02	-13.00	-37.81	Peak

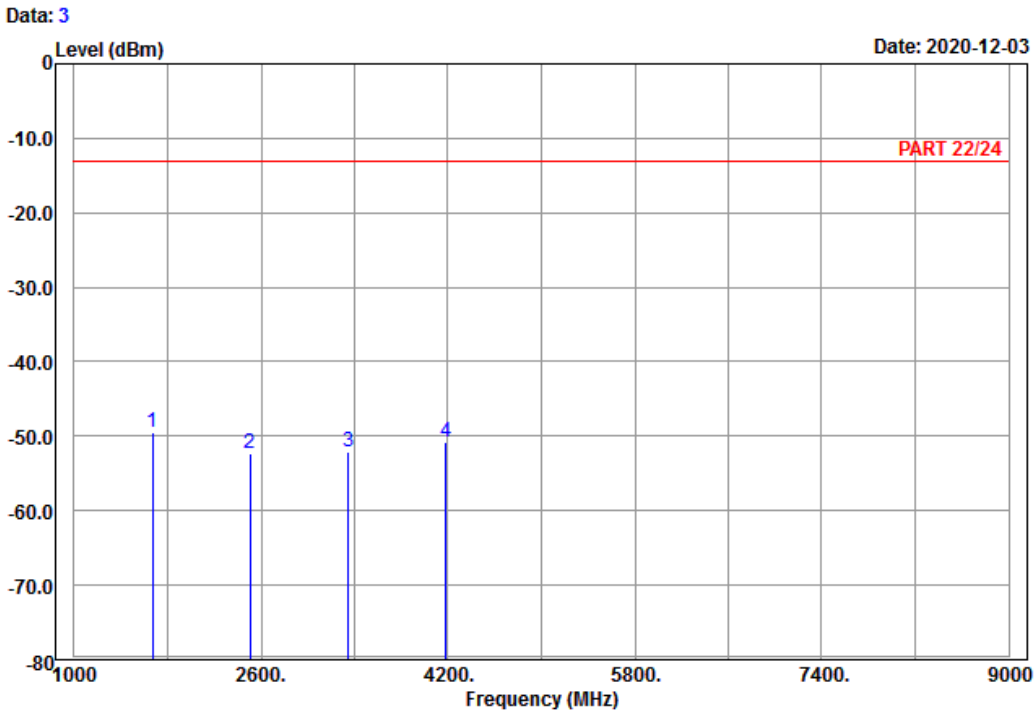


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1649.40	-51.22	-58.95	7.73	-13.00	-38.22	Peak
2 pp	2474.10	-50.12	-61.15	11.03	-13.00	-37.12	Peak
3	3298.80	-51.42	-65.72	14.30	-13.00	-38.42	Peak
4	4123.50	-52.37	-69.39	17.02	-13.00	-39.37	Peak

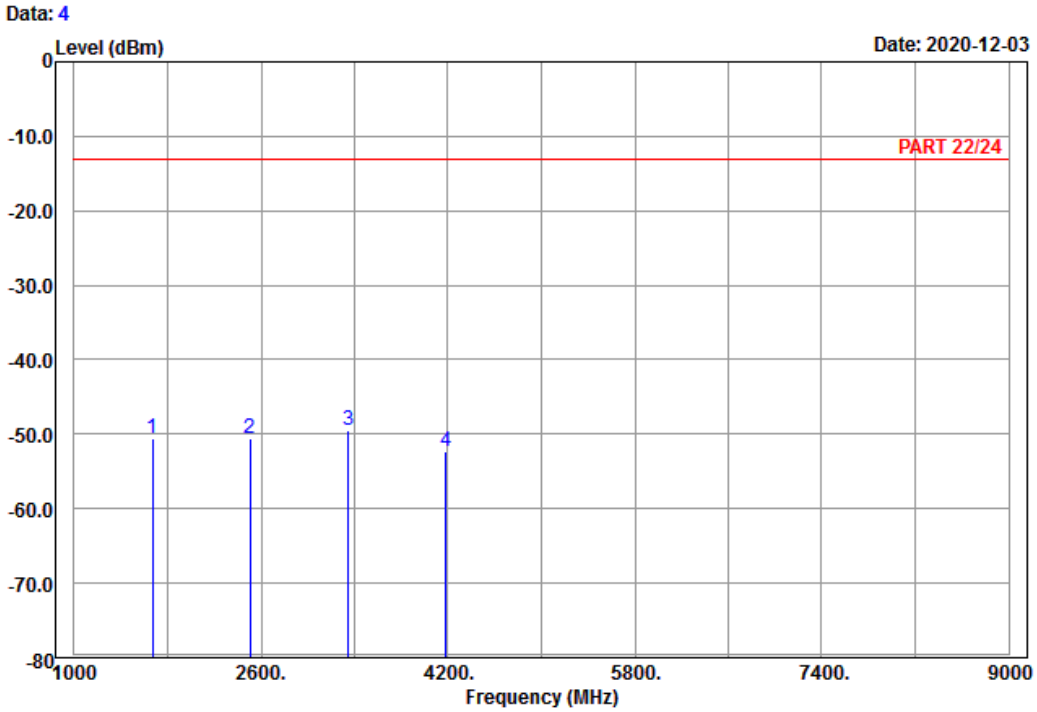
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1673.00	-49.47	-57.38	7.91	-13.00	-36.47	Peak
2	2509.50	-52.37	-63.65	11.28	-13.00	-39.37	Peak
3	3346.00	-52.14	-66.59	14.45	-13.00	-39.14	Peak
4	4182.50	-50.69	-67.82	17.13	-13.00	-37.69	Peak

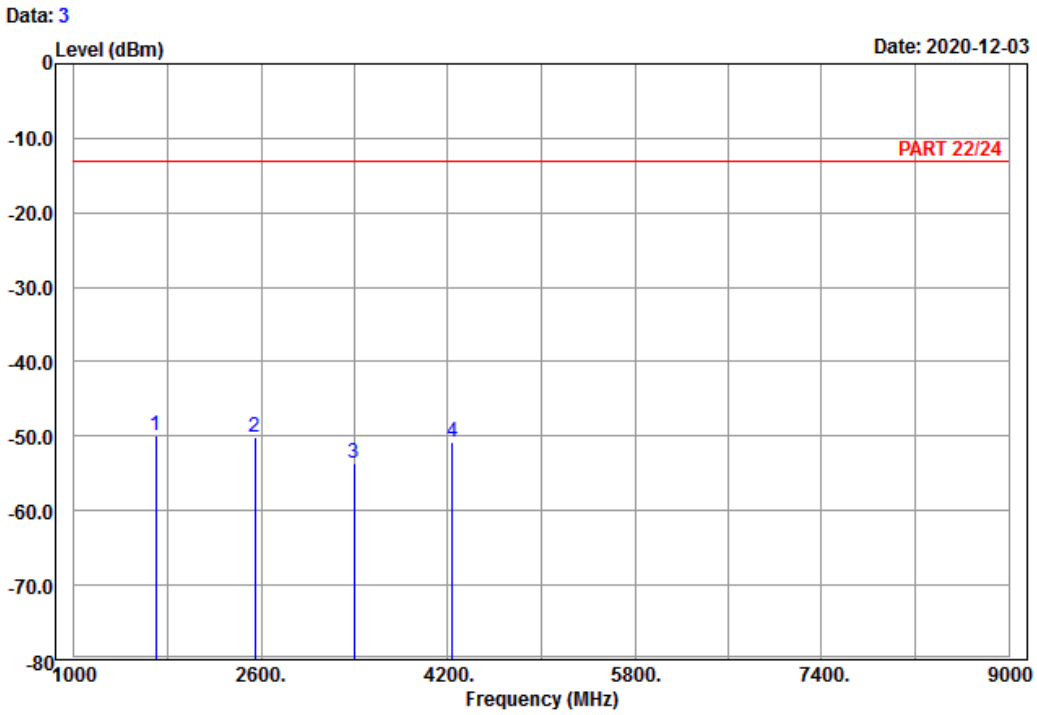


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1673.00	-50.65	-58.56	7.91	-13.00	-37.65	Peak
2	2509.50	-50.57	-61.85	11.28	-13.00	-37.57	Peak
3 pp	3346.00	-49.56	-64.01	14.45	-13.00	-36.56	Peak
4	4182.50	-52.31	-69.44	17.13	-13.00	-39.31	Peak

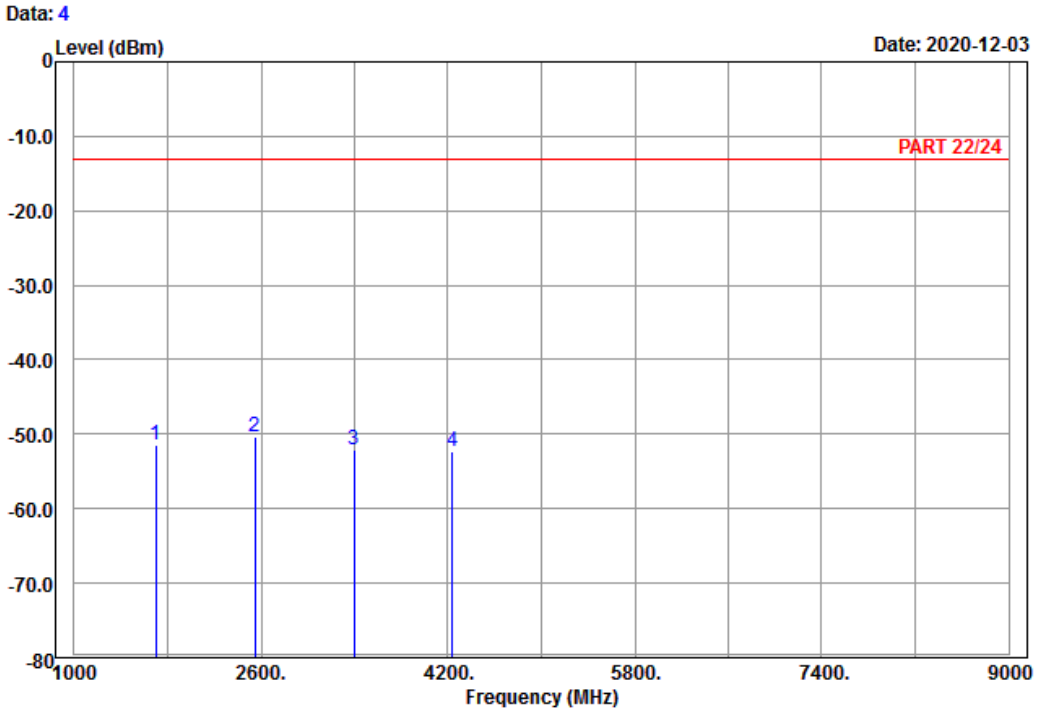
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1696.60	-49.90	-58.04	8.14	-13.00	-36.90	Peak
2	2544.90	-50.12	-61.59	11.47	-13.00	-37.12	Peak
3	3393.20	-53.63	-68.03	14.40	-13.00	-40.63	Peak
4	4241.50	-50.69	-68.05	17.36	-13.00	-37.69	Peak

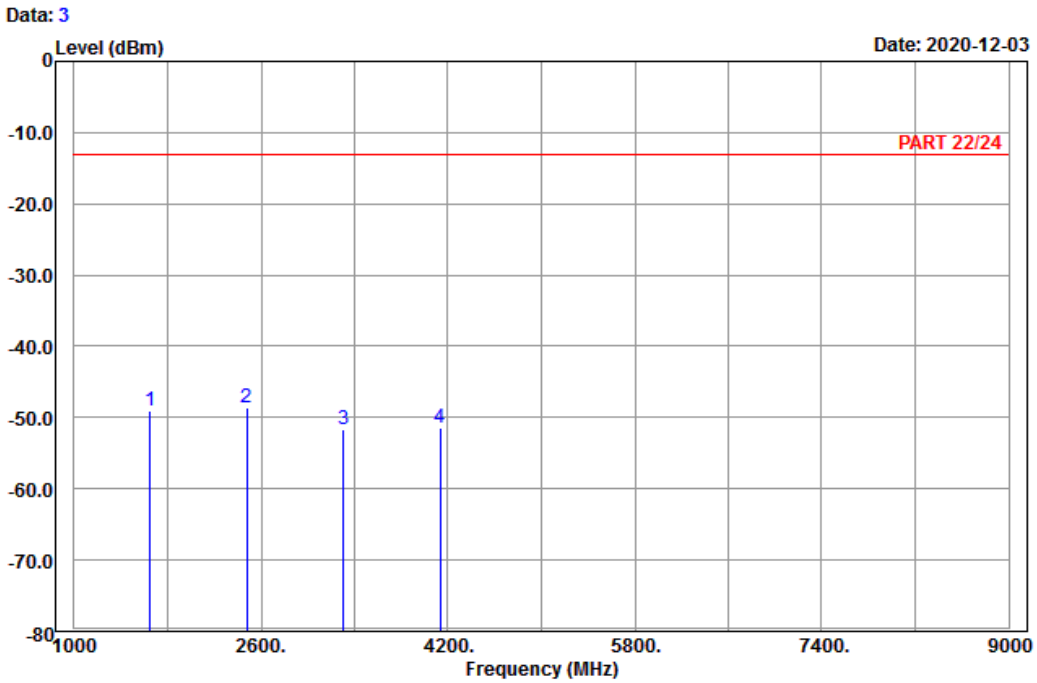


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1696.60	-51.50	-59.64	8.14	-13.00	-38.50	Peak
2 pp	2544.90	-50.37	-61.84	11.47	-13.00	-37.37	Peak
3	3393.20	-52.19	-66.59	14.40	-13.00	-39.19	Peak
4	4241.50	-52.25	-69.61	17.36	-13.00	-39.25	Peak

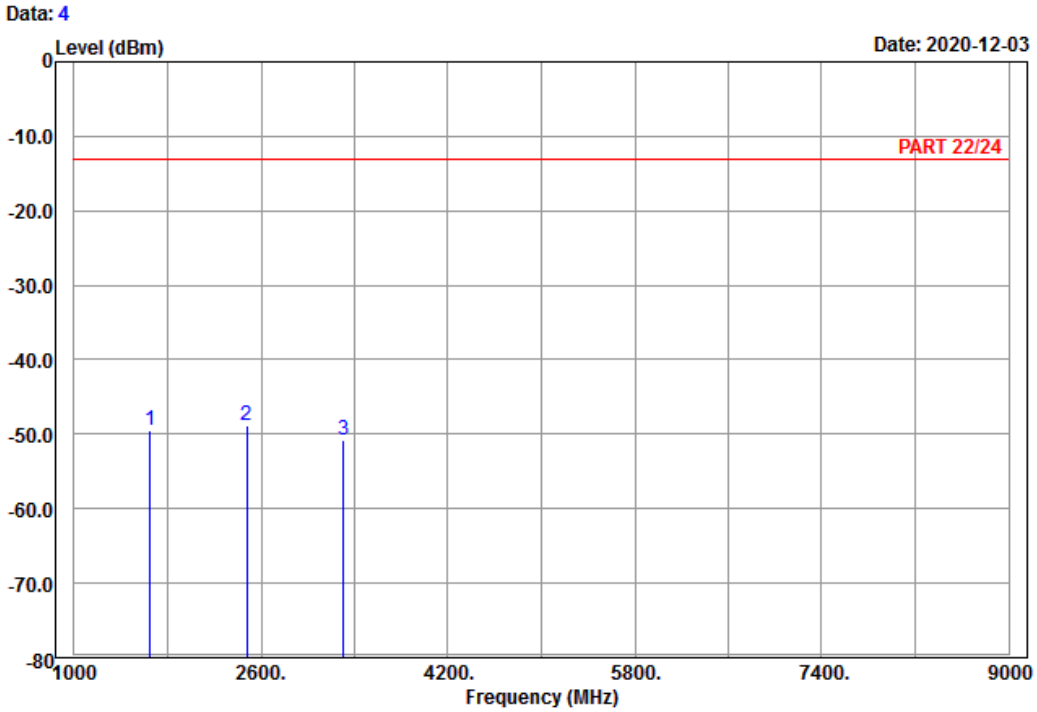
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1653.00	-49.14	-56.87	7.73	-13.00	-36.14	Peak
2 pp	2479.50	-48.57	-59.60	11.03	-13.00	-35.57	Peak
3	3306.00	-51.75	-66.05	14.30	-13.00	-38.75	Peak
4	4132.50	-51.37	-68.39	17.02	-13.00	-38.37	Peak

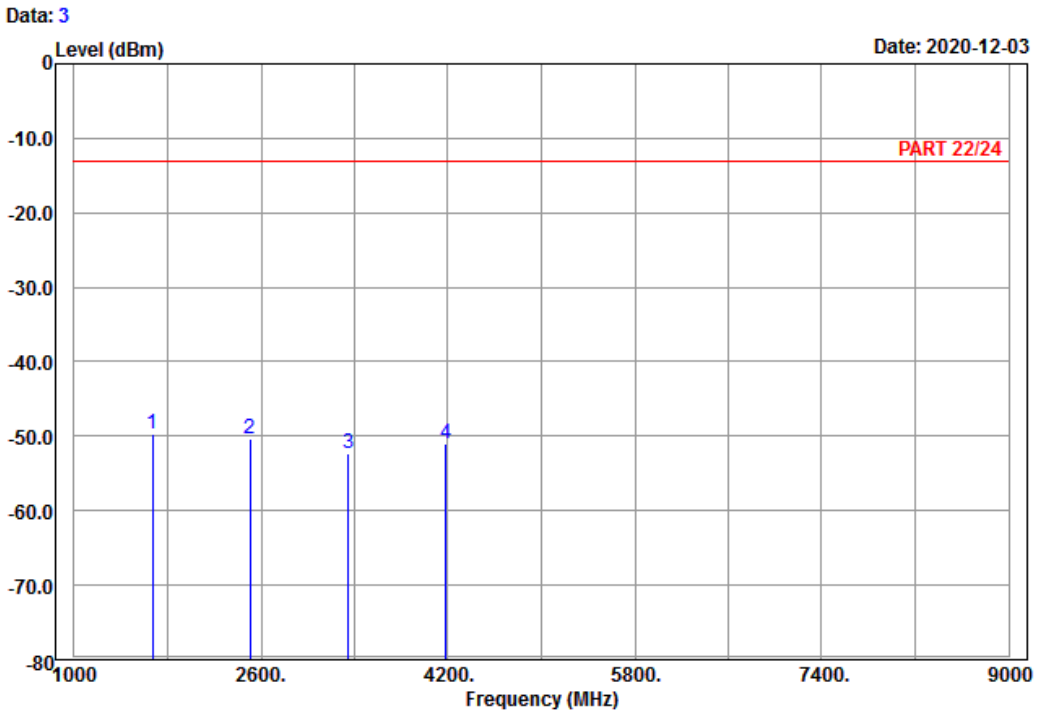


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1653.00	-49.44	-57.17	7.73	-13.00	-36.44	Peak
2 pp	2479.50	-48.75	-59.78	11.03	-13.00	-35.75	Peak
3	3306.00	-50.69	-64.99	14.30	-13.00	-37.69	Peak

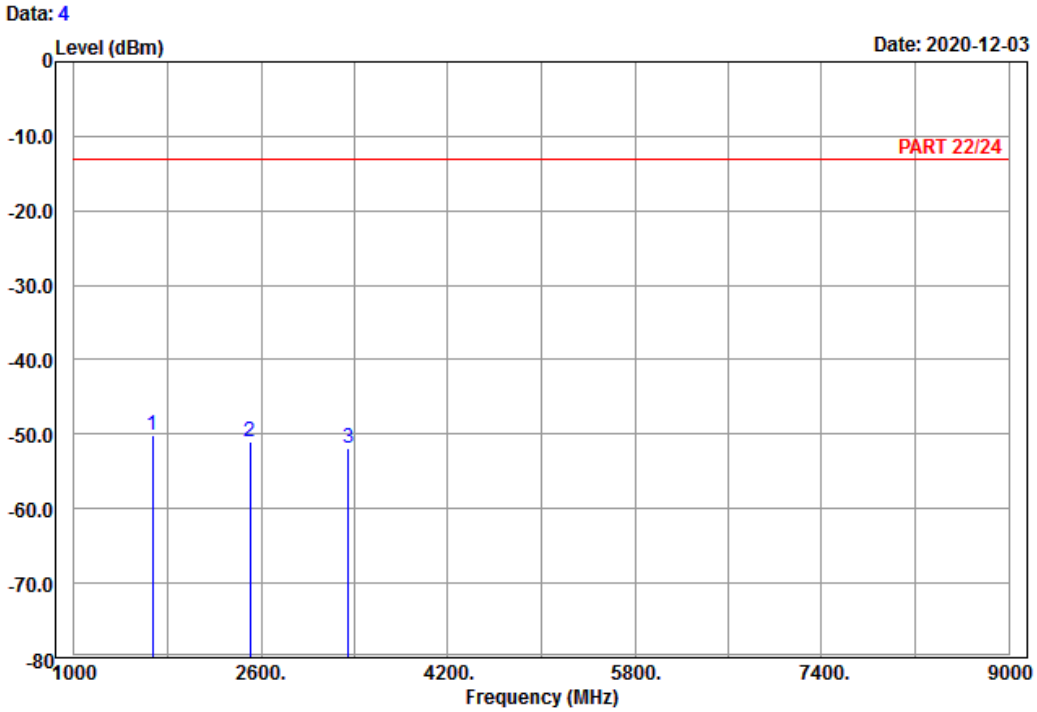
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1673.00	-49.66	-57.57	7.91	-13.00	-36.66	Peak
2	2509.50	-50.37	-61.65	11.28	-13.00	-37.37	Peak
3	3346.00	-52.41	-66.86	14.45	-13.00	-39.41	Peak
4	4182.60	-50.92	-68.05	17.13	-13.00	-37.92	Peak

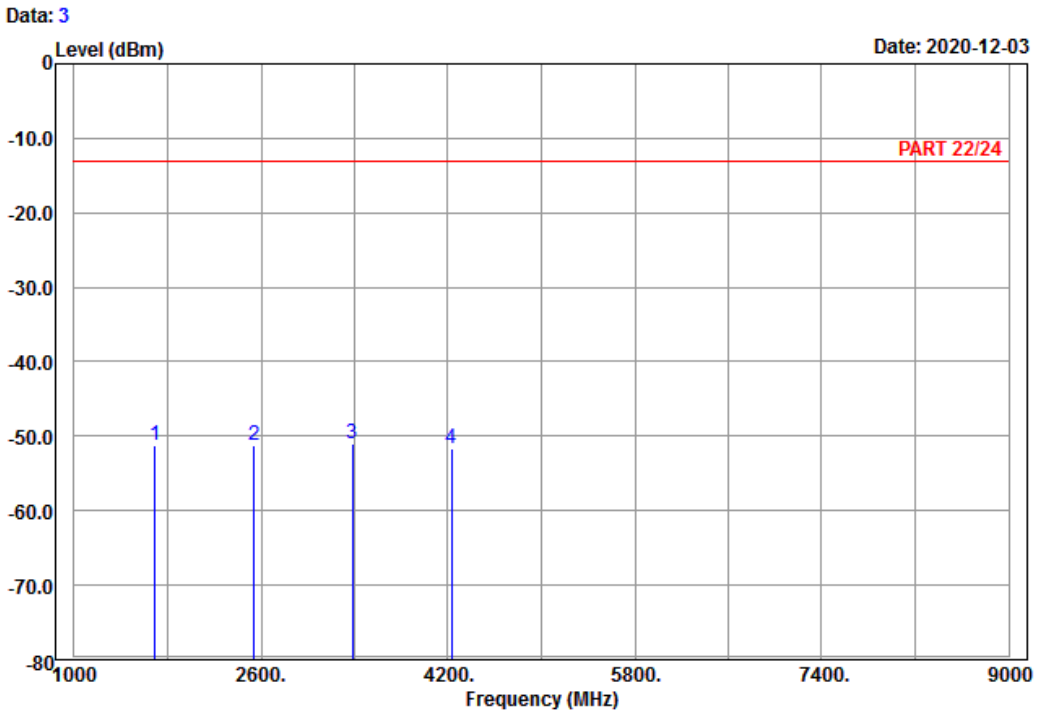


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1673.00	-50.22	-58.13	7.91	-13.00	-37.22	Peak
2	2509.50	-50.97	-62.25	11.28	-13.00	-37.97	Peak
3	3346.00	-51.97	-66.42	14.45	-13.00	-38.97	Peak

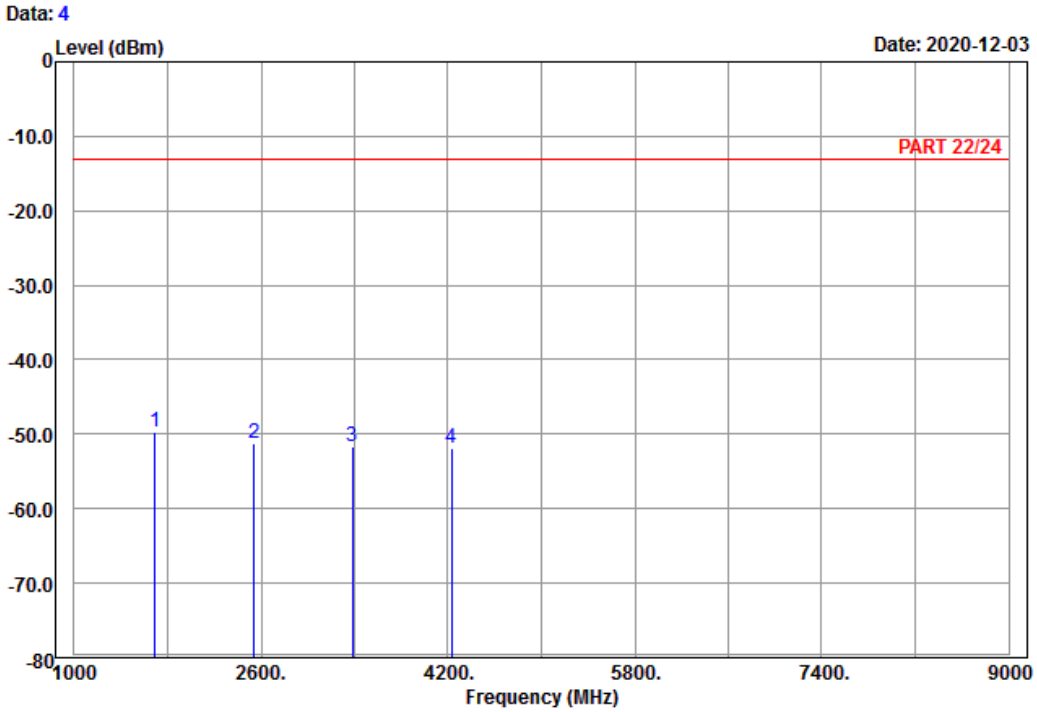
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1693.00	-51.22	-59.24	8.02	-13.00	-38.22	Peak
2	2539.50	-51.17	-62.64	11.47	-13.00	-38.17	Peak
3 pp	3386.00	-51.11	-65.51	14.40	-13.00	-38.11	Peak
4	4232.50	-51.56	-68.92	17.36	-13.00	-38.56	Peak

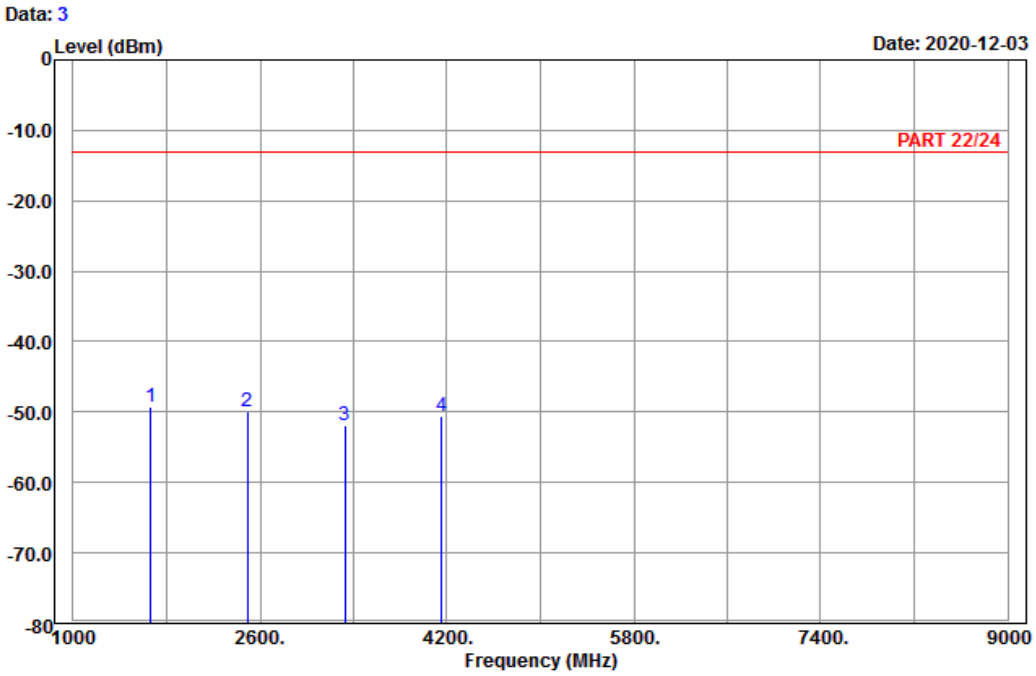


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1693.00	-49.62	-57.64	8.02	-13.00	-36.62	Peak
2	2539.50	-51.22	-62.69	11.47	-13.00	-38.22	Peak
3	3386.00	-51.63	-66.03	14.40	-13.00	-38.63	Peak
4	4232.50	-51.95	-69.31	17.36	-13.00	-38.95	Peak

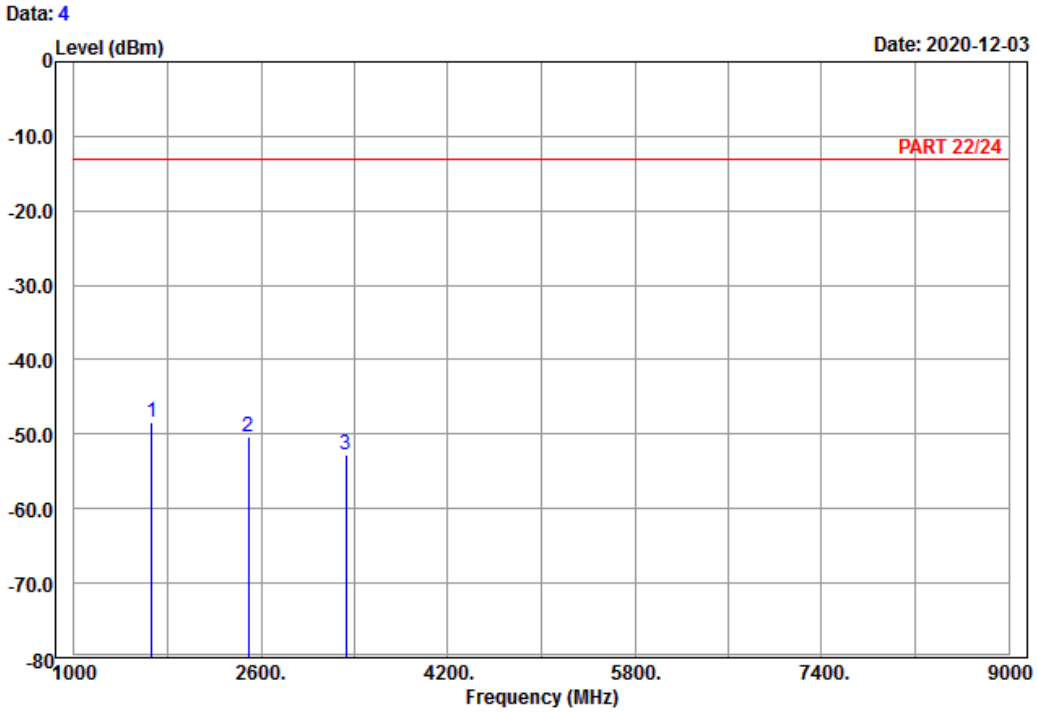
Channel Bandwidth: 15 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1663.00	-49.24	-57.15	7.91	-13.00	-36.24	Peak
2	2494.50	-49.87	-60.91	11.04	-13.00	-36.87	Peak
3	3326.00	-51.97	-66.35	14.38	-13.00	-38.97	Peak
4	4157.50	-50.47	-67.53	17.06	-13.00	-37.47	Peak

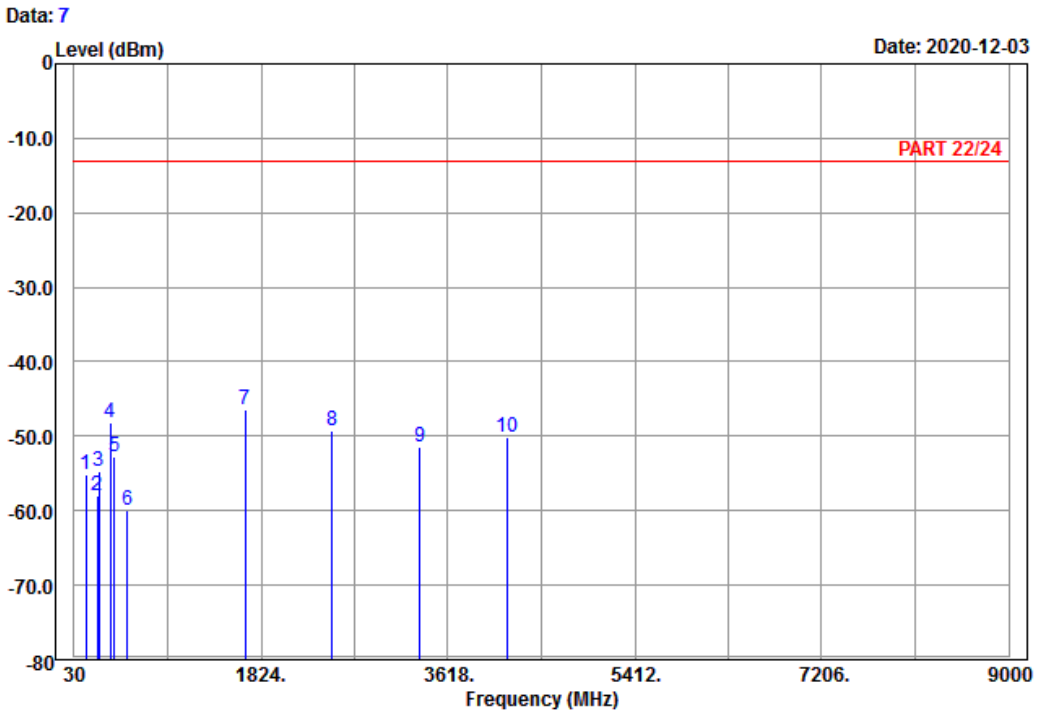


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1663.00	-48.39	-56.30	7.91	-13.00	-35.39	Peak
2	2494.50	-50.35	-61.39	11.04	-13.00	-37.35	Peak
3	3326.00	-52.86	-67.24	14.38	-13.00	-39.86	Peak

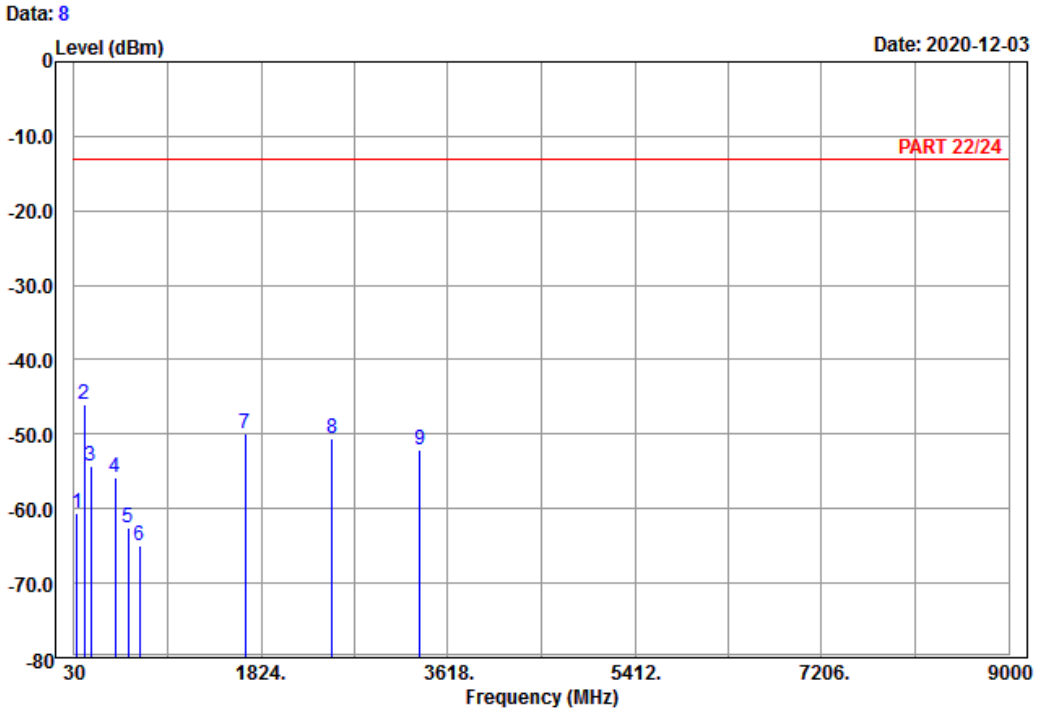
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	139.89	-55.13	-47.44	-7.69	-13.00	-42.13	Peak
2	250.86	-57.92	-52.40	-5.52	-13.00	-44.92	Peak
3	268.95	-54.77	-49.09	-5.68	-13.00	-41.77	Peak
4	374.20	-48.27	-44.19	-4.08	-13.00	-35.27	Peak
5	419.70	-52.74	-49.55	-3.19	-13.00	-39.74	Peak
6	543.60	-60.04	-57.88	-2.16	-13.00	-47.04	Peak
7 pp	1673.00	-46.43	-54.34	7.91	-13.00	-33.43	Peak
8	2509.50	-49.28	-60.56	11.28	-13.00	-36.28	Peak
9	3346.00	-51.43	-65.88	14.45	-13.00	-38.43	Peak
10	4182.60	-50.07	-67.20	17.13	-13.00	-37.07	Peak

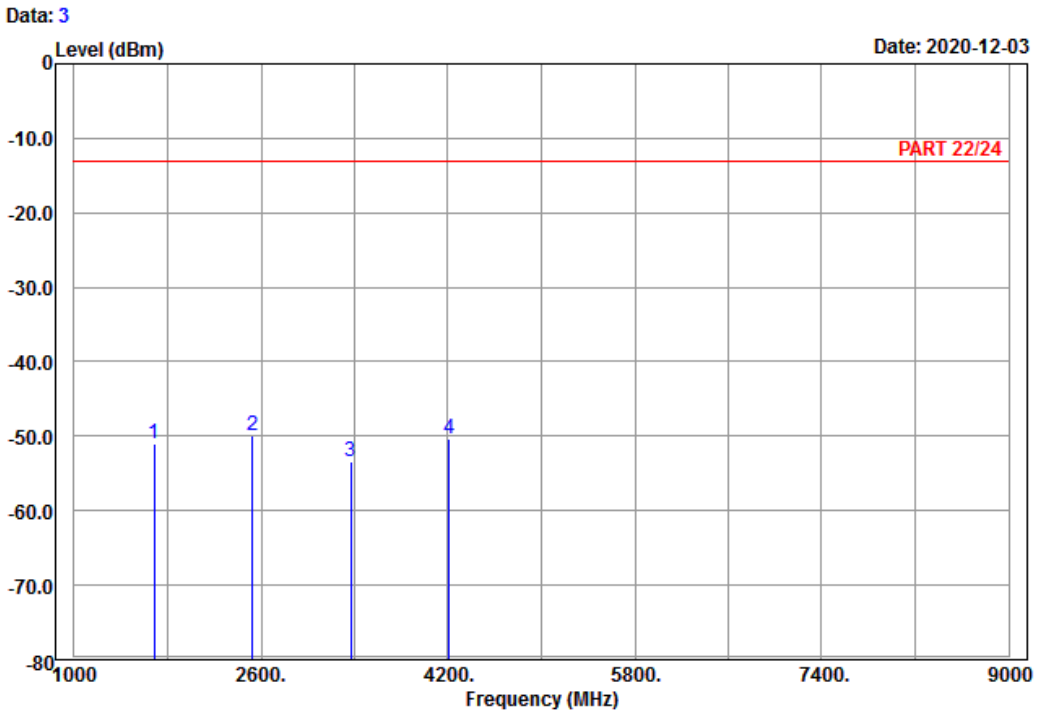


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	55.92	-60.63	-46.57	-14.06	-13.00	-47.63	Peak
2 pp	128.28	-46.06	-38.29	-7.77	-13.00	-33.06	Peak
3	186.87	-54.35	-48.66	-5.69	-13.00	-41.35	Peak
4	426.00	-55.75	-52.44	-3.31	-13.00	-42.75	Peak
5	546.40	-62.66	-60.71	-1.95	-13.00	-49.66	Peak
6	657.70	-65.02	-64.85	-0.17	-13.00	-52.02	Peak
7	1673.00	-50.00	-57.91	7.91	-13.00	-37.00	Peak
8	2509.50	-50.57	-61.85	11.28	-13.00	-37.57	Peak
9	3346.00	-52.02	-66.47	14.45	-13.00	-39.02	Peak

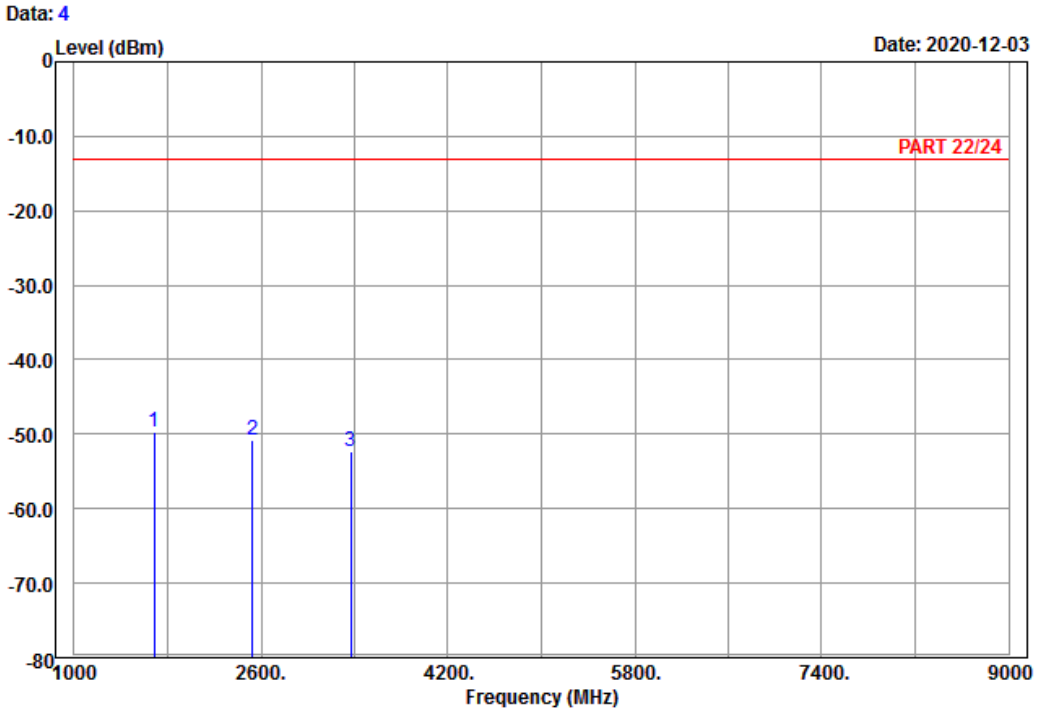
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	1683.00	-50.90	-58.92	8.02	-13.00	-37.90	Peak
2 pp	2524.50	-49.90	-61.28	11.38	-13.00	-36.90	Peak
3	3366.00	-53.38	-67.82	14.44	-13.00	-40.38	Peak
4	4207.50	-50.46	-67.66	17.20	-13.00	-37.46	Peak



Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 26_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1683.00	-49.77	-57.79	8.02	-13.00	-36.77	Peak
2	2524.50	-50.77	-62.15	11.38	-13.00	-37.77	Peak
3	3366.00	-52.31	-66.75	14.44	-13.00	-39.31	Peak

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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