FCC Test Report

(PART 24)

Report No.:	RF201118C03-7
FCC ID:	B32V2104G
Test Model:	V210 4G
Received Date:	Nov. 18, 2020
Test Date:	Nov. 28, 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
RF201118C03-7	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:	Nov. 28, 2020 ~ Jan. 05, 2021
Standards:	FCC Part 24, Subpart E

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 24 & Part 2			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 24.232	Effective Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
24.232(d)	Peak to Average Ratio	Pass	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.52 dB at 7520.00 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	00155510	Nov. 22, 2020	Nov. 21, 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
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	1850.2 ~ 1909.8 MHz
	WCDMA	1852.4 ~ 1907.6 MHz
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1909.3 MHz
	LTE Band 2 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1908.5 MHz
	LTE Band 2 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1907.5 MHz
	LTE Band 2 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1905.0 MHz
	LTE Band 2 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1902.5 MHz
	LTE Band 2 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1900.0 MHz
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1914.3 MHz
	LTE Band 25 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1913.5 MHz
	LTE Band 25 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1912.5 MHz
	LTE Band 25 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1910.0 MHz
	LTE Band 25 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1907.5 MHz
	LTE Band 25 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1905.0 MHz
Max. EIRP Power	GSM/GPRS	1836.54 mW
	EDGE	716.14 mW
	WCDMA	484.17 mW
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	452.90 mW
	LTE Band 2 (Channel Bandwidth: 3 MHz)	457.09 mW
	LTE Band 2 (Channel Bandwidth: 5 MHz)	461.32 mW
	LTE Band 2 (Channel Bandwidth: 10 MHz)	465.59 mW
	LTE Band 2 (Channel Bandwidth: 15 MHz)	469.89 mW
	LTE Band 2 (Channel Bandwidth: 20 MHz)	474.24 mW
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	544.50 mW
	LTE Band 25 (Channel Bandwidth: 3 MHz)	549.54 mW
	LTE Band 25 (Channel Bandwidth: 5 MHz)	554.63 mW
	LTE Band 25 (Channel Bandwidth: 10 MHz)	558.47 mW
	LTE Band 25 (Channel Bandwidth: 15 MHz)	563.64 mW
	LTE Band 25 (Channel Bandwidth: 20 MHz)	568.85 mW
Emission Designator	GSM/GPRS	248KGXW
	EDGE	248KG7W
	WCDMA	4M14F9W

	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 2 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 2 (Channel Bandwidth: 5 MHz)	4M49D7W
	LTE Band 2 (Channel Bandwidth: 10 MHz)	8M95G7D
	LTE Band 2 (Channel Bandwidth: 15 MHz)	13M5G7D
	LTE Band 2 (Channel Bandwidth: 20 MHz)	17M9G7D
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 25 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 25 (Channel Bandwidth: 5 MHz)	4M49D7W
	LTE Band 25 (Channel Bandwidth: 10 MHz)	8M95G7D
	LTE Band 25 (Channel Bandwidth: 15 MHz)	13M4G7D
	LTE Band 25 (Channel Bandwidth: 20 MHz)	17M9G7D
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.

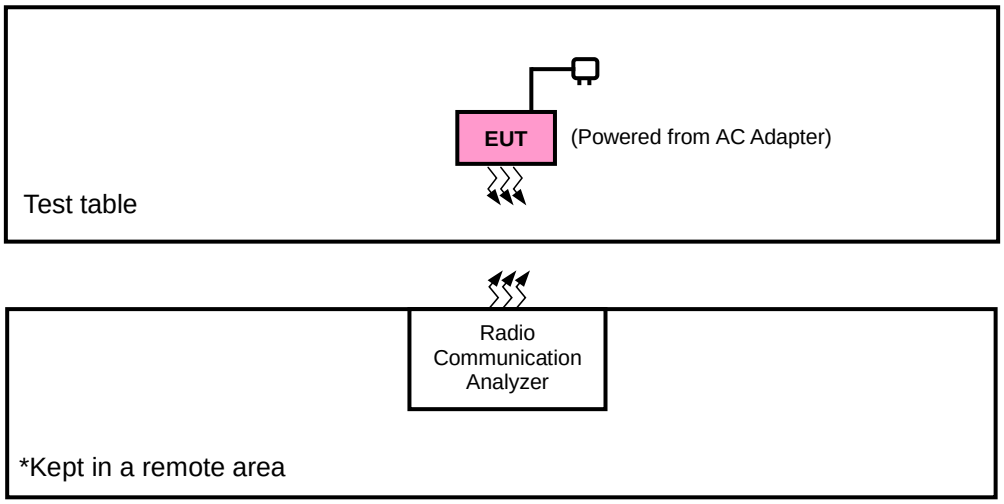
2. The antenna information is listed as below.

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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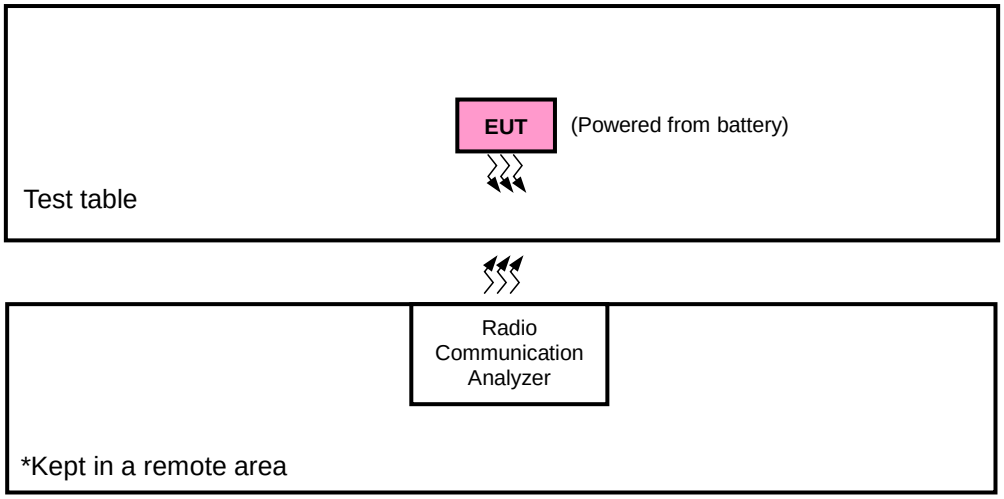


3.2.1 Description of Support Units

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	EIRP	Radiated Emission
GSM	Z-plane	X-plane
EDGE	Z-plane	X-plane
WCDMA	Z-plane	X-plane
LTE Band 2	Z-plane	Z-plane
LTE Band 25	Z-plane	Z-plane

GSM

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	512 to 810	512, 661, 810	GSM, EDGE
-	Modulation Characteristics	512 to 810	661	GSM, EDGE
-	Frequency Stability	512 to 810	512, 810	GSM, EDGE
-	Occupied Bandwidth	512 to 810	512, 661, 810	GSM, EDGE
-	Band Edge	512 to 810	512, 810	GSM, EDGE
-	Peak to Average Ratio	512 to 810	512, 661, 810	GSM, EDGE
-	Conducted Emission	512 to 810	512, 661, 810	GSM, EDGE
-	Radiated Emission	512 to 810	512, 661, 810	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
-	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
-	Modulation Characteristics	9262 to 9538	9400	WCDMA
-	Frequency Stability	9262 to 9538	9262, 9538	WCDMA
-	Occupied Bandwidth	9262 to 9538	9262, 9400, 9538	WCDMA
-	Band Edge	9262 to 9538	9262, 9538	WCDMA
-	Peak to Average Ratio	9262 to 9538	9262, 9400, 9538	WCDMA
-	Conducted Emission	9262 to 9538	9262, 9400, 9538	WCDMA
-	Radiated Emission	9262 to 9538	9262, 9400, 9538	WCDMA

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

LTE Band 2

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	1 RB / 50 RB Offset
-	Modulation Characteristics	18700 to 19100	18900	20 MHz	QPSK	100 RB / 0 RB Offset
		18625 to 19175		5 MHz	16QAM	25 RB / 0 RB Offset
-	Frequency Stability	18607 to 19193	18607, 19193	1.4 MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 19185	3 MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 19175	5 MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 19150	10 MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 19125	15 MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 19100	20 MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	1 RB / 50 RB Offset
-	Band Edge	18607 to 19193	18607	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19193	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18615 to 19185	18615	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			19185	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		18625 to 19175	18625	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			19175	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		18650 to 19150	18650	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			19150	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		18675 to 19125	18675	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			19125	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		18700 to 19100	18700	20 MHz	QPSK	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			19100	20 MHz	QPSK	1 RB / 99 RB Offset
						100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 2 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK	1 RB / 7 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK	1 RB / 12 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK	1 RB / 24 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK	1 RB / 37 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK	1 RB / 50 RB Offset
-	Radiated Emission	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 2 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK	1 RB / 12 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK	1 RB / 50 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 EIRP, 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 25

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		26055 to 26675	26055, 26365, 26675	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	1 RB / 50 RB Offset
-	Modulation Characteristics	26090 to 26640	26365	20 MHz	QPSK	100 RB / 0 RB Offset
		26065 to 26665		5 MHz	16QAM	25 RB / 0 RB Offset
-	Frequency Stability	26047 to 26683	26047, 26683	1.4 MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26055, 26675	3 MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065, 26665	5 MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26090, 26640	10 MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115, 26615	15 MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140, 26590	20 MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		26055 to 26675	26055, 26365, 26675	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	1 RB / 50 RB Offset
-	Band Edge	26047 to 26683	26047	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26683	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26055 to 26675	26055	3 MHz	QPSK	1 RB / 0 RB Offset
						1 RB / 0 RB Offset
			26675	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26065 to 26665	26065	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			26665	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26090 to 26640	26090	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26640	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26115 to 26615	26115	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			26615	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		26140 to 26590	26140	20 MHz	QPSK	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			26590	20 MHz	QPSK	1 RB / 99 RB Offset
						100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK	1 RB / 5 RB Offset
		26055 to 26675	26055, 26365, 26675	3 MHz	QPSK	1 RB / 7 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK	1 RB / 12 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK	1 RB / 24 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK	1 RB / 37 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK	1 RB / 50 RB Offset
-	Radiated Emission	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK	1 RB / 5 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK	1 RB / 12 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK	1 RB / 50 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 EIRP, 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
EIRP	26 deg. C, 58 % RH	3.7 Vdc	Karl Lee, Charles Hsiao
Modulation Characteristics	26 deg. C, 58 % RH	3.7 Vdc	Gavin Wu
Frequency Stability	26 deg. C, 58 % RH	3.7 Vdc	Gavin Wu
Occupied Bandwidth	26 deg. C, 58 % RH	3.7 Vdc	Gavin Wu
Band Edge	26 deg. C, 58 % RH	3.7 Vdc	Gavin Wu
Peak to Average Ratio	26 deg. C, 58 % RH	3.7 Vdc	Gavin Wu
Conducted Emission	26 deg. C, 58 % 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 24
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 2 watts e.i.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, 5 MHz for WCDMA, and 1.4 MHz、3 MHz、5 MHz、10 MHz、15 MHz、 20 MHz for LTE mode, and 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 of S.G – 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. Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss.

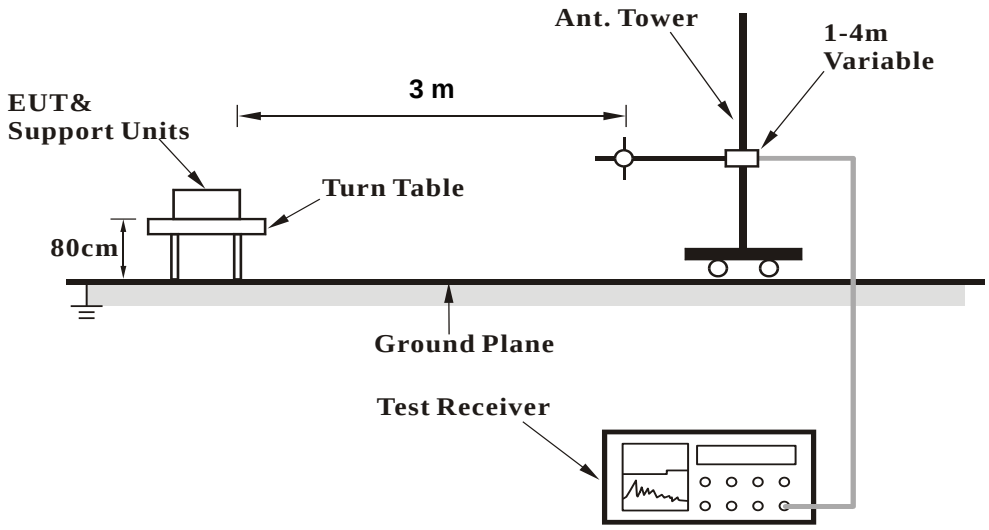
d. Measurement method refers to ANSI C63.26 section 5.2.7 & 5.2.4.

Conducted Power Measurement:

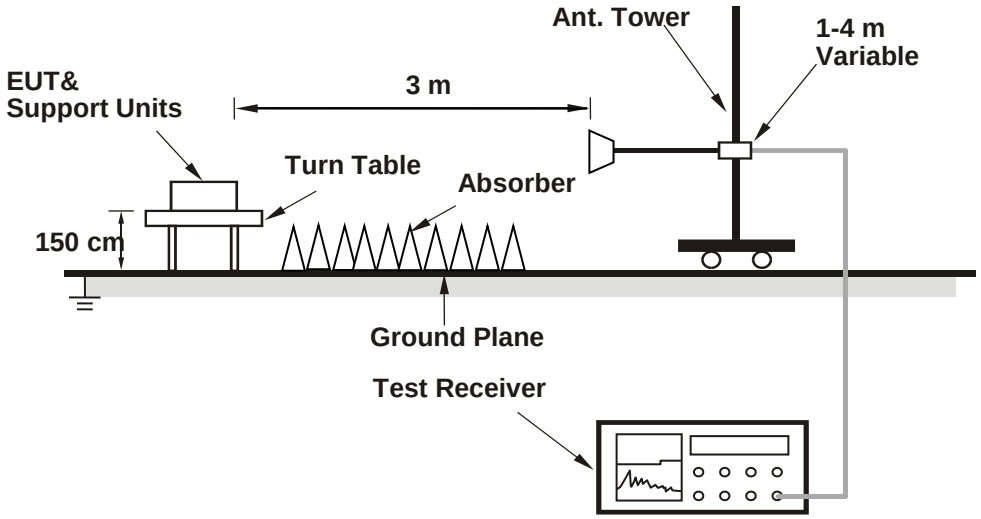
The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

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	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GPRS (GMSK, 1Tx-slot)	28.03	28.25	28.35
GPRS (GMSK, 2Tx-slot)	26.93	27.22	27.23
GPRS (GMSK, 3Tx-slot)	25.32	25.56	25.66
GPRS (GMSK, 4Tx-slot)	24.06	24.35	24.35
EDGE (8PSK, 1Tx-slot)	24.30	24.60	24.62
EDGE (8PSK, 2Tx-slot)	23.76	24.03	24.07
EDGE (8PSK, 3Tx-slot)	22.58	22.85	22.85
EDGE (8PSK, 4Tx-slot)	21.36	21.65	21.72

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	23.38	23.36	22.97
HSDPA Subtest-1	22.15	22.14	22.14
HSDPA Subtest-2	22.18	22.16	22.15
HSDPA Subtest-3	21.64	21.59	21.63
HSDPA Subtest-4	21.67	21.65	21.64
DC-HSDPA Subtest-1	22.12	22.15	22.15
DC-HSDPA Subtest-2	22.09	22.11	22.08
DC-HSDPA Subtest-3	21.59	21.62	21.59
DC-HSDPA Subtest-4	21.65	21.63	21.63
HSUPA Subtest-1	22.04	22.11	22.06
HSUPA Subtest-2	20.49	20.49	20.46
HSUPA Subtest-3	21.05	21.05	21.08
HSUPA Subtest-4	20.36	20.34	20.37
HSUPA Subtest-5	22.11	22.16	22.12

LTE Band 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		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	22.07	21.84	22.17	0	15M	QPSK	1	0	21.99	21.76	22.13	0
		1	50	22.76	22.60	22.93	0			1	37	22.73	22.54	22.91	0
		1	99	22.50	22.37	22.69	0			1	74	22.60	22.35	22.61	0
		50	0	21.67	21.50	21.77	1			36	0	21.70	21.40	21.79	1
		50	25	21.69	21.51	21.81	1			36	19	21.65	21.44	21.78	1
		50	50	21.68	21.46	21.73	1			36	39	21.61	21.40	21.79	1
		100	0	21.72	21.51	21.84	1			75	0	21.64	21.42	21.74	1
	16QAM	1	0	21.64	21.43	21.76	1		16QAM	1	0	21.61	21.40	21.73	1
		1	50	21.56	21.35	21.68	1			1	37	21.53	21.35	21.67	1
		1	99	21.49	21.28	21.61	1			1	74	21.43	21.28	21.58	1
		50	0							36	0				
		50	25							36	19				
		50	50							36	39				
		100	0							75	0				

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		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855.0	1880.0	1905.0				Frequency (MHz)		1852.5	1880.0	1907.5	
10M	QPSK	1	0	22.06	21.79	22.15	0	5M	QPSK	1	0	21.98	21.78	22.11	0
		1	24	22.78	22.58	22.88	0			1	12	22.83	22.55	22.84	0
		1	49	22.51	22.33	22.66	0			1	24	22.58	22.35	22.61	0
		25	0	21.71	21.44	21.82	1			12	0	21.64	21.49	21.76	1
		25	12	21.74	21.43	21.76	1			12	6	21.66	21.50	21.83	1
		25	25	21.64	21.39	21.70	1			12	13	21.62	21.36	21.72	1
		50	0	21.68	21.44	21.79	1			25	0	21.65	21.50	21.77	1
	16QAM	1	0	21.58	21.37	21.70	1		16QAM	1	0	21.53	21.32	21.65	1
		1	24	21.50	21.29	21.62	1			1	12	21.46	21.22	21.56	1
		1	49	21.43	21.22	21.55	1			1	24	21.38	21.17	21.50	1
		25	0	20.71	20.50	20.83	2			12	0	20.66	20.43	20.79	2
		25	12	20.62	20.41	20.74	2			12	6	20.59	20.38	20.71	2
		25	25	20.48	20.27	20.60	2			12	13	20.43	20.22	20.55	2
		50	0							25	0	20.41	20.20	20.53	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		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880.0	1908.5				Frequency (MHz)		1850.7	1880.0	1909.3	
3M	QPSK	1	0	21.98	21.83	22.08	0	1.4M	QPSK	1	0	22.03	21.78	22.11	0
		1	7	22.75	22.50	22.85	0			1	2	22.75	22.58	22.89	0
		1	14	22.52	22.31	22.63	0			1	5	22.58	22.30	22.67	0
		8	0	21.64	21.42	21.77	1			3	0	21.64	21.44	21.77	0
		8	3	21.64	21.48	21.75	1			3	1	21.67	21.51	21.81	0
		8	7	21.65	21.38	21.79	1			3	3	21.64	21.40	21.77	0
		15	0	21.68	21.44	21.81	1			6	0	21.68	21.47	21.78	1
	16QAM	1	0	21.49	21.28	21.61	1		16QAM	1	0	21.46	21.25	21.58	1
		1	7	21.42	21.18	21.52	1			1	2	21.39	21.15	21.49	1
		1	14	21.34	21.13	21.46	1			1	5	21.31	21.10	21.43	1
		8	0	20.62	20.39	20.75	2			3	0	21.32	21.36	21.23	1
		8	3	20.55	20.34	20.67	2			3	1	21.28	21.32	21.17	1
		8	7	20.39	20.18	20.51	2			3	3	21.11	21.15	21.08	1
		15	0	20.37	20.16	20.49	2			6	0	20.34	20.13	20.46	2

LTE Band 25

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		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	23.47	21.72	21.92	0	15M	QPSK	1	0	23.45	21.67	21.85	0
		1	50	23.48	23.49	23.47	0			1	37	23.46	23.46	22.95	0
		1	99	23.03	23.11	23.01	0			1	74	22.52	23.03	22.44	0
		50	0	22.04	22.06	22.01	1			36	0	21.45	21.37	21.26	1
		50	25	21.92	22.03	21.77	1			36	19	21.52	21.41	21.23	1
		50	50	21.81	21.73	21.58	1			36	39	21.30	21.14	21.07	1
		100	0	21.78	21.89	21.63	1			75	0	21.38	21.24	21.03	1
	16QAM	1	0	21.52	21.93	21.37	1		16QAM	1	0	21.96	22.02	21.91	1
		1	50	21.92	21.93	22.47	1			1	37	21.91	21.96	21.89	1
		1	99	21.45	21.96	21.30	1			1	74	21.91	21.40	21.82	1
		50	0							36	0				
		50	25							36	19				
		50	50							36	39				
		100	0							75	0				

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		26090	26365	26640				Channel		26065	26365	26665	
		Frequency (MHz)		2855.0	1882.5	1910.0				Frequency (MHz)		1852.5	1882.5	1912.5	
10M	QPSK	1	0	23.39	21.71	21.84	0	5M	QPSK	1	0	23.41	21.69	21.90	0
		1	24	23.44	23.45	22.93	0			1	12	23.42	23.43	22.96	0
		1	49	22.43	23.07	22.40	0			1	24	22.53	23.06	22.49	0
		25	0	21.45	21.38	21.25	1			12	0	21.48	21.33	21.25	1
		25	12	21.44	21.31	21.25	1			12	6	21.45	21.33	21.23	1
		25	25	21.25	21.14	20.98	1			12	13	21.26	21.15	21.05	1
		50	0	21.37	21.22	21.02	1			25	0	21.34	21.25	21.05	1
	16QAM	1	0	22.12	22.41	22.37	1		16QAM	1	0	22.31	22.32	22.41	1
		1	24	22.38	22.37	22.30	1			1	12	22.30	22.44	22.27	1
		1	49	21.40	21.79	22.36	1			1	24	21.32	21.25	21.12	1
		25	0	21.39	21.41	21.37	2			12	0	21.31	21.18	21.12	2
		25	12	21.20	21.34	21.34	2			12	6	21.12	21.01	20.85	2
		25	25	21.32	21.37	21.40	2			12	13	21.24	21.09	20.89	2
		50	0							25	0	21.05	21.01	20.81	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		26055	26365	26675				Channel		26047	26365	26683	
		Frequency (MHz)		1851.5	1882.5	1913.5				Frequency (MHz)		1850.7	1882.5	1914.3	
3M	QPSK	1	0	23.34	21.64	21.91	0	1.4M	QPSK	1	0	23.32	21.55	21.87	0
		1	7	23.41	23.42	22.90	0			1	2	23.43	23.44	22.79	0
		1	14	22.46	23.04	22.49	0			1	5	22.39	22.95	22.39	0
		8	0	21.43	21.30	21.20	1			3	0	22.40	22.23	22.19	0
		8	3	21.51	21.33	21.17	1			3	1	22.36	22.35	22.05	0
		8	7	21.25	21.19	21.01	1			3	3	22.13	22.05	21.96	0
		15	0	21.36	21.24	21.12	1			6	0	21.33	21.06	21.07	1
	16QAM	1	0	22.27	22.28	22.46	1		16QAM	1	0	22.15	22.16	22.34	1
		1	7	22.26	22.29	22.23	1			1	2	22.14	22.17	22.11	1
		1	14	21.28	21.21	21.08	1			1	5	21.16	21.09	21.05	1
		8	0	21.27	21.14	21.08	2			3	0	22.01	22.02	21.96	1
		8	3	21.08	20.97	20.81	2			3	1	21.96	21.95	21.69	1
		8	7	21.20	21.05	20.85	2			3	3	21.98	21.93	21.73	1
		15	0	21.01	20.97	20.77	2			6	0	20.89	20.85	20.65	2

EIRP Power (dBm)

GSM							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (mW)**	**Polarization (H/V)**
Z	512	1850.2	-5.55	38.19	32.64	1836.54	H
	661	1880.0	-6.25	38.70	32.45	1757.92	
	810	1909.8	-7.16	39.35	32.19	1655.77	
	512	1850.2	-12.04	38.48	26.44	440.55	V
	661	1880.0	-12.34	38.59	26.25	421.70	
	810	1909.8	-12.84	38.87	26.03	400.87	

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

EDGE							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (mW)**	**Polarization (H/V)**
Z	512	1850.2	-9.64	38.19	28.55	716.14	H
	661	1880.0	-10.34	38.70	28.36	685.49	
	810	1909.8	-11.16	39.35	28.19	659.17	
	512	1850.2	-16.14	38.48	22.34	171.40	V
	661	1880.0	-16.47	38.59	22.12	162.93	
	810	1909.8	-17.00	38.87	21.87	153.82	

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

WCDMA							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (mW)**	**Polarization (H/V)**
Z	9262	1852.4	-11.34	38.19	26.85	484.17	H
	9400	1880.0	-12.06	38.70	26.64	461.32	
	9538	1907.6	-12.90	39.35	26.45	441.57	
	9262	1852.4	-17.94	38.48	20.54	113.24	V
	9400	1880.0	-18.24	38.59	20.35	108.39	
	9538	1907.6	-18.75	38.87	20.12	102.80	

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

LTE Band 2							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18607	1850.7	-18.14	44.70	26.56	452.90	H
	18900	1880.0	-18.22	44.70	26.48	444.63	
	19193	1909.3	-18.21	44.57	26.36	432.81	
	18607	1850.7	-25.32	44.27	18.95	78.52	V
	18900	1880.0	-25.97	44.87	18.90	77.62	
	19193	1909.3	-25.86	44.61	18.75	75.04	
Channel Bandwidth: 1.4 MHz / 16QAM							
Z	18607	1850.7	-19.14	44.70	25.56	359.75	H
	18900	1880.0	-19.23	44.70	25.47	352.37	
	19193	1909.3	-19.22	44.57	25.35	343.00	
	18607	1850.7	-26.32	44.27	17.95	62.37	V
	18900	1880.0	-26.97	44.87	17.90	61.66	
	19193	1909.3	-26.87	44.61	17.74	59.47	

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

LTE Band 2							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18615	1851.5	-18.10	44.70	26.60	457.09	H
	18900	1880.0	-18.17	44.70	26.53	449.78	
	19185	1908.5	-18.16	44.57	26.41	437.82	
	18615	1851.5	-25.28	44.27	18.99	79.25	V
	18900	1880.0	-25.93	44.87	18.94	78.34	
	19185	1908.5	-25.81	44.61	18.80	75.91	
Channel Bandwidth: 3 MHz / 16QAM							
Z	18615	1851.5	-19.11	44.70	25.59	362.24	H
	18900	1880.0	-19.18	44.70	25.52	356.45	
	19185	1908.5	-19.16	44.57	25.41	347.78	
	18615	1851.5	-26.28	44.27	17.99	62.95	V
	18900	1880.0	-26.94	44.87	17.93	62.09	
	19185	1908.5	-26.83	44.61	17.78	60.02	

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

LTE Band 2							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18625	1852.5	-18.06	44.70	26.64	461.32	H
	18900	1880.0	-18.14	44.70	26.56	452.90	
	19175	1907.5	-18.12	44.57	26.45	441.88	
	18625	1852.5	-25.24	44.27	19.03	79.98	V
	18900	1880.0	-25.90	44.87	18.97	78.89	
	19175	1907.5	-25.77	44.61	18.84	76.61	
Channel Bandwidth: 5 MHz / 16QAM							
Z	18625	1852.5	-19.07	44.70	25.63	365.59	H
	18900	1880.0	-19.14	44.70	25.56	359.75	
	19175	1907.5	-19.12	44.57	25.45	350.99	
	18625	1852.5	-26.24	44.27	18.03	63.53	V
	18900	1880.0	-26.91	44.87	17.96	62.52	
	19175	1907.5	-26.77	44.61	17.84	60.86	

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

LTE Band 2							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18650	1855.0	-18.02	44.70	26.68	465.59	H
	18900	1880.0	-18.10	44.70	26.60	457.09	
	19150	1905.0	-18.08	44.57	26.49	445.96	
	18650	1855.0	-25.19	44.27	19.08	80.91	V
	18900	1880.0	-25.86	44.87	19.01	79.62	
	19150	1905.0	-25.73	44.61	18.88	77.32	
Channel Bandwidth: 10 MHz / 16QAM							
Z	18650	1855.0	-19.02	44.70	25.68	369.83	H
	18900	1880.0	-19.11	44.70	25.59	362.24	
	19150	1905.0	-19.08	44.57	25.49	354.24	
	18650	1855.0	-26.19	44.27	18.08	64.27	V
	18900	1880.0	-26.87	44.87	18.00	63.10	
	19150	1905.0	-26.74	44.61	17.87	61.28	

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

LTE Band 2							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18675	1857.5	-17.98	44.70	26.72	469.89	H
	18900	1880.0	-18.06	44.70	26.64	461.32	
	19125	1902.5	-18.05	44.57	26.52	449.06	
	18675	1857.5	-25.15	44.27	19.12	81.66	V
	18900	1880.0	-25.82	44.87	19.05	80.35	
	19125	1902.5	-25.69	44.61	18.92	78.04	
Channel Bandwidth: 15 MHz / 16QAM							
Z	18675	1857.5	-18.98	44.70	25.72	373.25	H
	18900	1880.0	-19.06	44.70	25.64	366.44	
	19125	1902.5	-19.05	44.57	25.52	356.70	
	18675	1857.5	-26.16	44.27	18.11	64.71	V
	18900	1880.0	-26.82	44.87	18.05	63.83	
	19125	1902.5	-26.70	44.61	17.91	61.84	

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

LTE Band 2							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	18700	1860.0	-17.94	44.70	26.76	474.24	H
	18900	1880.0	-18.02	44.70	26.68	465.59	
	19100	1900.0	-18.00	44.57	26.57	454.26	
	18700	1860.0	-25.10	44.27	19.17	82.60	V
	18900	1880.0	-25.78	44.87	19.09	81.10	
	19100	1900.0	-25.65	44.61	18.96	78.76	
Channel Bandwidth: 20 MHz / 16QAM							
Z	18700	1860.0	-18.94	44.70	25.76	376.70	H
	18900	1880.0	-19.02	44.70	25.68	369.83	
	19100	1900.0	-19.01	44.57	25.56	360.00	
	18700	1860.0	-26.11	44.27	18.16	65.46	V
	18900	1880.0	-26.78	44.87	18.09	64.42	
	19100	1900.0	-26.66	44.61	17.95	62.42	

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

LTE Band 25							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26047	1850.7	-17.34	44.70	27.36	544.50	H
	26365	1882.5	-17.45	44.70	27.25	530.88	
	26683	1914.3	-17.49	44.57	27.08	510.86	
	26047	1850.7	-22.23	44.27	22.04	159.96	V
	26365	1882.5	-22.94	44.87	21.93	155.96	
	26683	1914.3	-22.83	44.61	21.78	150.76	
Channel Bandwidth: 1.4 MHz / 16QAM							
Z	26047	1850.7	-18.34	44.70	26.36	432.51	H
	26365	1882.5	-18.46	44.70	26.24	420.73	
	26683	1914.3	-18.50	44.57	26.07	404.86	
	26047	1850.7	-23.24	44.27	21.03	126.77	V
	26365	1882.5	-23.94	44.87	20.93	123.88	
	26683	1914.3	-23.83	44.61	20.78	119.76	

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

LTE Band 25							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26055	1851.5	-17.30	44.70	27.40	549.54	H
	26365	1882.5	-17.42	44.70	27.28	534.56	
	26675	1913.5	-17.44	44.57	27.13	516.77	
	26055	1851.5	-22.19	44.27	22.08	161.44	V
	26365	1882.5	-22.91	44.87	21.96	157.04	
	26675	1913.5	-22.79	44.61	21.82	152.16	
Channel Bandwidth: 3 MHz / 16QAM							
Z	26055	1851.5	-18.31	44.70	26.39	435.51	H
	26365	1882.5	-18.42	44.70	26.28	424.62	
	26675	1913.5	-18.45	44.57	26.12	409.54	
	26055	1851.5	-23.19	44.27	21.08	128.23	V
	26365	1882.5	-23.91	44.87	20.96	124.74	
	26675	1913.5	-23.80	44.61	20.81	120.59	

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

LTE Band 25							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26065	1852.5	-17.26	44.70	27.44	554.63	H
	26365	1882.5	-17.38	44.70	27.32	539.51	
	26665	1912.5	-17.41	44.57	27.16	520.36	
	26065	1852.5	-22.14	44.27	22.13	163.31	V
	26365	1882.5	-22.88	44.87	21.99	158.12	
	26665	1912.5	-22.75	44.61	21.86	153.57	
Channel Bandwidth: 5 MHz / 16QAM							
Z	26065	1852.5	-18.27	44.70	26.43	439.54	H
	26365	1882.5	-18.38	44.70	26.32	428.55	
	26665	1912.5	-18.42	44.57	26.15	412.38	
	26065	1852.5	-23.14	44.27	21.13	129.72	V
	26365	1882.5	-23.89	44.87	20.98	125.31	
	26665	1912.5	-23.75	44.61	20.86	121.98	

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

LTE Band 25							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26090	1855.0	-17.23	44.70	27.47	558.47	H
	26365	1882.5	-17.34	44.70	27.36	544.50	
	26640	1910.0	-17.38	44.57	27.19	523.96	
	26090	1855.0	-22.10	44.27	22.17	164.82	V
	26365	1882.5	-22.84	44.87	22.03	159.59	
	26640	1910.0	-22.72	44.61	21.89	154.63	
Channel Bandwidth: 10 MHz / 16QAM							
Z	26090	1855.0	-18.23	44.70	26.47	443.61	H
	26365	1882.5	-18.34	44.70	26.36	432.51	
	26640	1910.0	-18.39	44.57	26.18	415.24	
	26090	1855.0	-23.11	44.27	21.16	130.62	V
	26365	1882.5	-23.84	44.87	21.03	126.77	
	26640	1910.0	-23.72	44.61	20.89	122.83	

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

LTE Band 25							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26115	1857.5	-17.19	44.70	27.51	563.64	H
	26365	1882.5	-17.31	44.70	27.39	548.28	
	26615	1907.5	-17.33	44.57	27.24	530.03	
	26115	1857.5	-22.07	44.27	22.20	165.96	V
	26365	1882.5	-22.80	44.87	22.07	161.06	
	26615	1907.5	-22.67	44.61	21.94	156.42	
Channel Bandwidth: 15 MHz / 16QAM							
Z	26115	1857.5	-18.19	44.70	26.51	447.71	H
	26365	1882.5	-18.31	44.70	26.39	435.51	
	26615	1907.5	-18.34	44.57	26.23	420.05	
	26115	1857.5	-23.07	44.27	21.20	131.83	V
	26365	1882.5	-23.80	44.87	21.07	127.94	
	26615	1907.5	-23.68	44.61	20.93	123.97	

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

LTE Band 25							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	26140	1860.0	-17.15	44.70	27.55	568.85	H
	26365	1882.5	-17.27	44.70	27.43	553.35	
	26590	1905.0	-17.29	44.57	27.28	534.93	
	26140	1860.0	-22.03	44.27	22.24	167.49	V
	26365	1882.5	-22.76	44.87	22.11	162.55	
	26590	1905.0	-22.63	44.61	21.98	157.87	
Channel Bandwidth: 20 MHz / 16QAM							
Z	26140	1860.0	-18.15	44.70	26.55	451.86	H
	26365	1882.5	-18.27	44.70	26.43	439.54	
	26590	1905.0	-18.30	44.57	26.27	423.94	
	26140	1860.0	-23.04	44.27	21.23	132.74	V
	26365	1882.5	-23.77	44.87	21.10	128.82	
	26590	1905.0	-23.64	44.61	20.97	125.11	

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

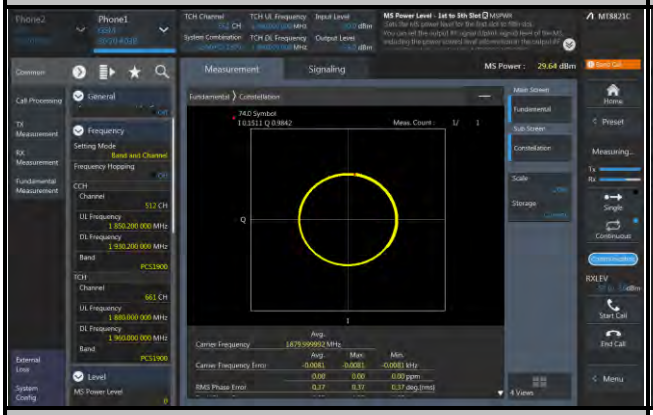
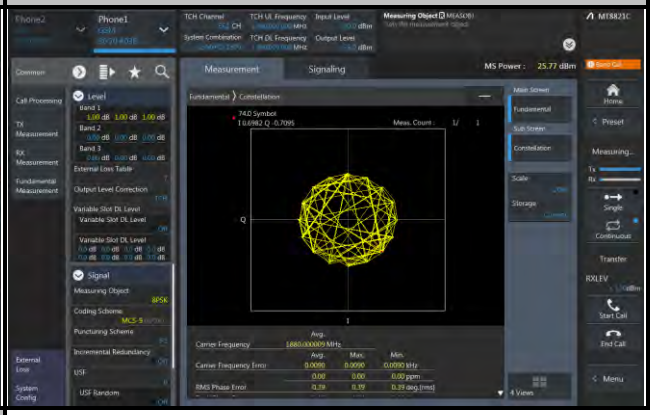
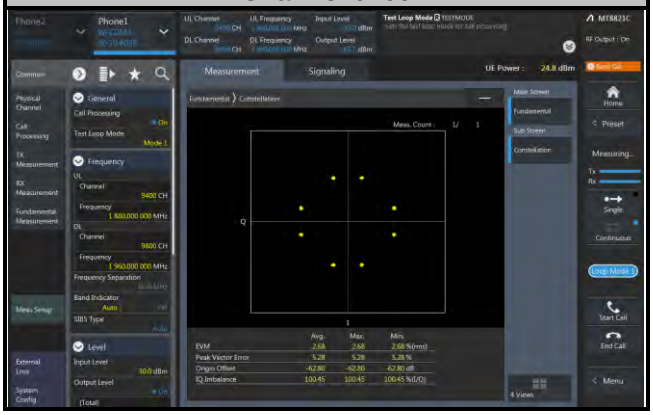
N/A

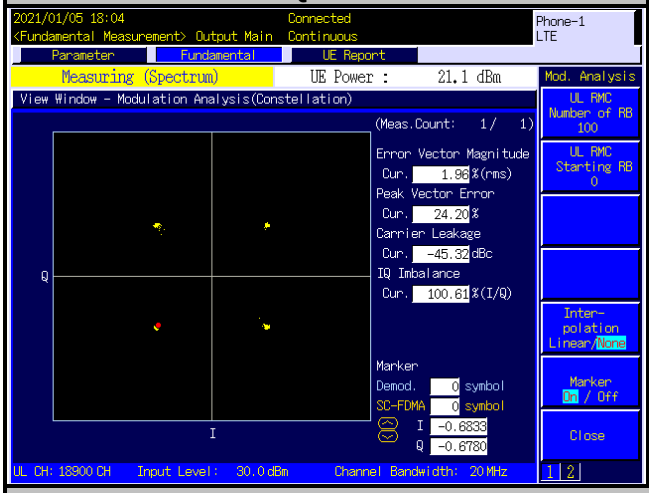
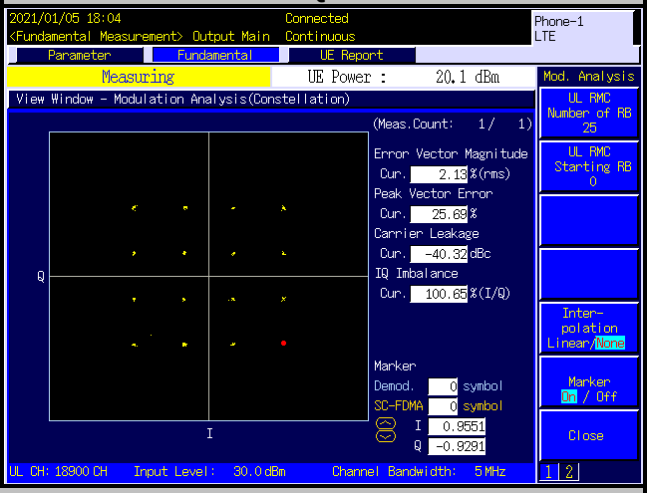
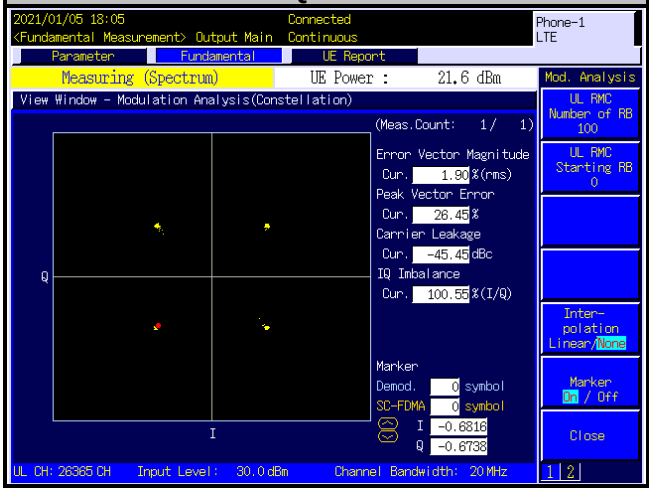
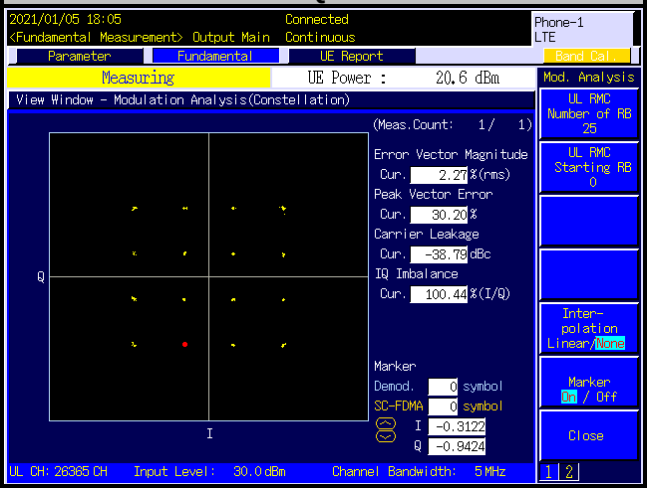
4.2.2 Test Setup

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 661	**Channel 661**
	
WCDMA	
Channel 9400	
	

Spectrum Plot of Measurement	
LTE Band 2	
Channel 18900	
QPSK	16QAM
	
LTE Band 25	
Channel 26365	
QPSK	16QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

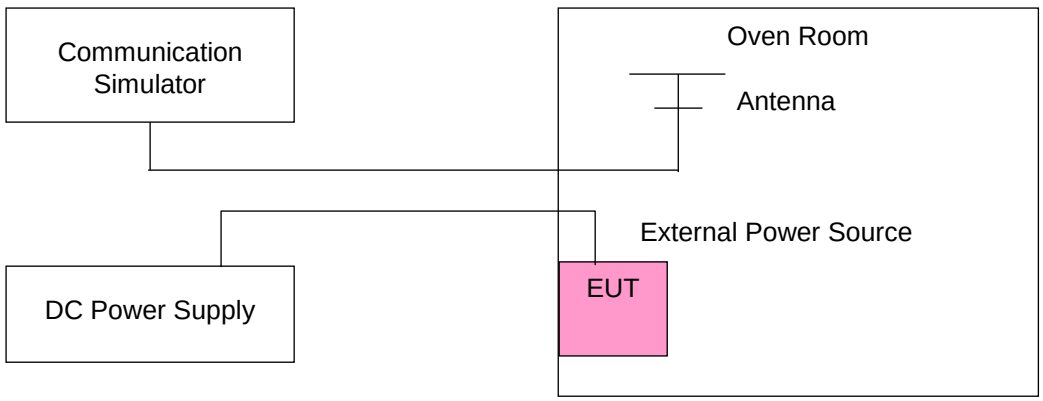
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1850.200003	0.001675	1909.800003	0.001571
3.14	1850.200004	0.002054	1909.800004	0.002094
4.25	1850.200002	0.001189	1909.800002	0.001152

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			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1850.200003	0.001675	1909.800004	0.001990
-10	1850.200004	0.002054	1909.800003	0.001728
0	1850.200001	0.000757	1909.800003	0.001780
10	1850.200003	0.001621	1909.800003	0.001780
20	1850.199999	-0.000757	1909.799997	-0.001466
30	1850.199996	-0.002054	1909.799998	-0.000890
40	1850.199997	-0.001405	1909.799996	-0.001990
50	1850.199999	-0.000757	1909.799998	-0.001047

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

Frequency Error vs. Voltage

Voltage (Volts)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1850.200001	0.000649	1909.800004	0.001990
3.14	1850.200002	0.001135	1909.800002	0.001204
4.25	1850.200002	0.000865	1909.800002	0.000943

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			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1850.200003	0.001513	1909.800001	0.000524
-10	1850.200003	0.001838	1909.800003	0.001728
0	1850.200003	0.001351	1909.800002	0.001152
10	1850.200004	0.001946	1909.800001	0.000681
20	1850.199996	-0.002162	1909.799998	-0.001047
30	1850.199998	-0.001297	1909.799999	-0.000524
40	1850.199999	-0.000811	1909.799997	-0.001676
50	1850.199998	-0.000973	1909.799999	-0.000733

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

Frequency Error vs. Voltage

Voltage (Volts)	WCDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1852.400002	0.000918	1907.600001	0.000734
3.14	1852.400003	0.001458	1907.600004	0.002044
4.25	1852.400001	0.000594	1907.600001	0.000734

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			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1852.400002	0.001296	1907.600002	0.000944
-10	1852.400003	0.001404	1907.600003	0.001415
0	1852.400003	0.001620	1907.600002	0.001153
10	1852.400003	0.001404	1907.600003	0.001625
20	1852.399997	-0.001458	1907.599998	-0.001048
30	1852.399997	-0.001781	1907.599998	-0.000839
40	1852.399997	-0.001458	1907.599997	-0.001363
50	1852.399998	-0.001242	1907.599999	-0.000734

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 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1850.700003	0.001351	1909.300000	0.000995
3.14	1850.700002	0.000865	1909.300003	0.001728
4.25	1850.700002	0.000919	1909.300001	0.000576

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 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1850.700004	0.001891	1909.300002	0.001048
-10	1850.700004	0.001945	1909.300003	0.001728
0	1850.700002	0.000919	1909.300003	0.001781
10	1850.700001	0.000540	1909.300001	0.000733
20	1850.699999	-0.000811	1909.299997	-0.001781
30	1850.699999	-0.000648	1909.299998	-0.000838
40	1850.699996	-0.001999	1909.299997	-0.001519
50	1850.699996	-0.001945	1909.299997	-0.001728

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 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1851.500004	0.001998	1908.500003	0.001310
3.14	1851.500001	0.000756	1908.500003	0.001415
4.25	1851.500004	0.002160	1908.500001	0.000681

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 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1851.500003	0.001404	1908.500004	0.001834
-10	1851.500004	0.001890	1908.500004	0.001886
0	1851.500002	0.000810	1908.500003	0.001572
10	1851.500003	0.001674	1908.500002	0.000943
20	1851.499996	-0.002160	1908.499998	-0.000996
30	1851.499999	-0.000702	1908.499996	-0.002043
40	1851.499999	-0.000810	1908.499997	-0.001415
50	1851.499997	-0.001782	1908.499998	-0.001100

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 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1852.500002	0.001188	1907.500004	0.001940
3.14	1852.500002	0.000972	1907.500003	0.001678
4.25	1852.500003	0.001619	1907.500003	0.001730

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 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1852.500004	0.001889	1907.500002	0.001101
-10	1852.500001	0.000594	1907.500004	0.002097
0	1852.500002	0.000864	1907.500004	0.001940
10	1852.500003	0.001457	1907.500002	0.000996
20	1852.499998	-0.001350	1907.499998	-0.001101
30	1852.499999	-0.000540	1907.499998	-0.000996
40	1852.499999	-0.000810	1907.499996	-0.002045
50	1852.499998	-0.001296	1907.499996	-0.002097

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 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1855.000003	0.001456	1905.000001	0.000630
3.14	1855.000001	0.000755	1905.000003	0.001627
4.25	1855.000002	0.000809	1905.000004	0.001942

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 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1855.000002	0.001024	1905.000003	0.001732
-10	1855.000004	0.001941	1905.000004	0.001995
0	1855.000004	0.002102	1905.000001	0.000577
10	1855.000004	0.002156	1905.000003	0.001312
20	1854.999996	-0.001995	1904.999997	-0.001627
30	1854.999996	-0.002102	1904.999998	-0.001050
40	1854.999997	-0.001402	1904.999998	-0.001155
50	1854.999999	-0.000701	1904.999997	-0.001732

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 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1857.500002	0.001131	1902.500003	0.001629
3.14	1857.500002	0.001023	1902.500002	0.000788
4.25	1857.500002	0.001023	1902.500002	0.001156

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 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1857.500001	0.000538	1902.500001	0.000736
-10	1857.500002	0.000915	1902.500003	0.001787
0	1857.500002	0.000861	1902.500002	0.001104
10	1857.500002	0.001292	1902.500003	0.001735
20	1857.499998	-0.001184	1902.499998	-0.001051
30	1857.499997	-0.001723	1902.499998	-0.000946
40	1857.499996	-0.001992	1902.499997	-0.001840
50	1857.499997	-0.001777	1902.499999	-0.000526

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 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1860.000003	0.001559	1900.000002	0.000895
3.14	1860.000002	0.000806	1900.000002	0.000947
4.25	1860.000002	0.000914	1900.000003	0.001737

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 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1860.000001	0.000753	1900.000003	0.001526
-10	1860.000004	0.001989	1900.000002	0.000842
0	1860.000001	0.000591	1900.000001	0.000632
10	1860.000003	0.001505	1900.000004	0.001895
20	1859.999999	-0.000806	1899.999997	-0.001789
30	1859.999998	-0.001237	1899.999998	-0.001263
40	1859.999997	-0.001882	1899.999999	-0.000684
50	1859.999999	-0.000753	1899.999996	-0.002105

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 25			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1850.700003	0.001729	1914.300004	0.001985
3.14	1850.700003	0.001621	1914.300002	0.001097
4.25	1850.700002	0.001243	1914.300004	0.001828

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 25			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1850.700001	0.000594	1914.300004	0.002090
-10	1850.700003	0.001783	1914.300002	0.000836
0	1850.700003	0.001783	1914.300002	0.001254
10	1850.700003	0.001513	1914.300002	0.000888
20	1850.699999	-0.000811	1914.299996	-0.001985
30	1850.699998	-0.001297	1914.299999	-0.000731
40	1850.699998	-0.001189	1914.299999	-0.000522
50	1850.699997	-0.001405	1914.299997	-0.001567

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 25			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1851.500004	0.002160	1913.500001	0.000679
3.14	1851.500002	0.001296	1913.500001	0.000627
4.25	1851.500002	0.000972	1913.500001	0.000732

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 25			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1851.500003	0.001674	1913.500001	0.000575
-10	1851.500003	0.001836	1913.500004	0.001934
0	1851.500002	0.001026	1913.500002	0.000888
10	1851.500002	0.000864	1913.500003	0.001516
20	1851.499996	-0.002106	1913.499998	-0.001045
30	1851.499996	-0.001944	1913.499996	-0.002090
40	1851.499998	-0.001188	1913.499999	-0.000523
50	1851.499998	-0.001350	1913.499996	-0.001986

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 25			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1852.500002	0.001026	1912.500003	0.001673
3.14	1852.500001	0.000648	1912.500003	0.001673
4.25	1852.500002	0.001134	1912.500002	0.001255

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 25			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1852.500001	0.000540	1912.500004	0.002092
-10	1852.500004	0.001889	1912.500003	0.001412
0	1852.500002	0.000972	1912.500003	0.001621
10	1852.500004	0.002105	1912.500002	0.000993
20	1852.499997	-0.001404	1912.499996	-0.001987
30	1852.499999	-0.000540	1912.499998	-0.001046
40	1852.499998	-0.001350	1912.499998	-0.001098
50	1852.499998	-0.001026	1912.499996	-0.001935

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 25			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1855.000003	0.001779	1910.000003	0.001571
3.14	1855.000002	0.001078	1910.000002	0.000995
4.25	1855.000004	0.002102	1910.000003	0.001571

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 25			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1855.000002	0.000863	1910.000002	0.000942
-10	1855.000002	0.001240	1910.000003	0.001361
0	1855.000003	0.001671	1910.000004	0.002094
10	1855.000002	0.000863	1910.000004	0.002094
20	1854.999999	-0.000809	1909.999996	-0.001937
30	1854.999998	-0.000916	1909.999998	-0.000838
40	1854.999999	-0.000539	1909.999996	-0.002094
50	1854.999998	-0.001078	1909.999999	-0.000733

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 25			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1857.500003	0.001400	1907.500003	0.001468
3.14	1857.500001	0.000592	1907.500004	0.002097
4.25	1857.500001	0.000754	1907.500002	0.001206

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 25			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1857.500001	0.000538	1907.500002	0.001258
-10	1857.500004	0.001884	1907.500002	0.000944
0	1857.500003	0.001615	1907.500003	0.001782
10	1857.500002	0.000808	1907.500004	0.001940
20	1857.499998	-0.000969	1907.499996	-0.002045
30	1857.499998	-0.001346	1907.499997	-0.001520
40	1857.499998	-0.001346	1907.499998	-0.001101
50	1857.499998	-0.000969	1907.499997	-0.001573

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 25			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.7	1860.000003	0.001559	1905.000002	0.001102
3.14	1860.000002	0.000914	1905.000003	0.001470
4.25	1860.000002	0.001129	1905.000004	0.001890

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 25			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1860.000002	0.000914	1905.000003	0.001575
-10	1860.000002	0.001075	1905.000002	0.000997
0	1860.000002	0.001075	1905.000003	0.001522
10	1860.000002	0.000968	1905.000001	0.000525
20	1859.999998	-0.001290	1904.999997	-0.001732
30	1859.999998	-0.001290	1904.999998	-0.001260
40	1859.999998	-0.000968	1904.999996	-0.001995
50	1859.999999	-0.000806	1904.999998	-0.001102

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

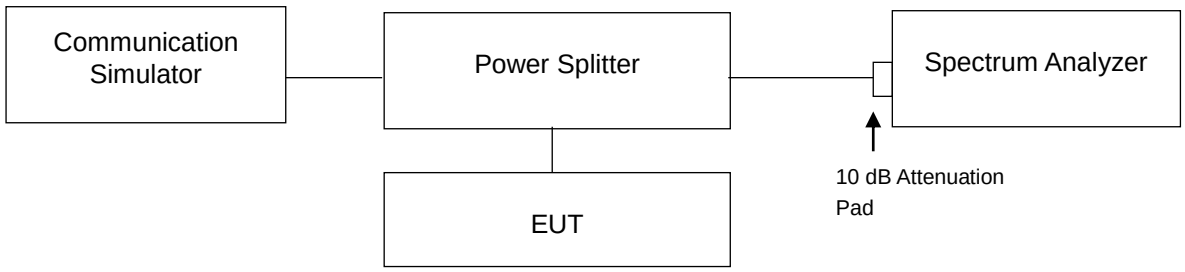
4.4 Occupied Bandwidth Measurement

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.

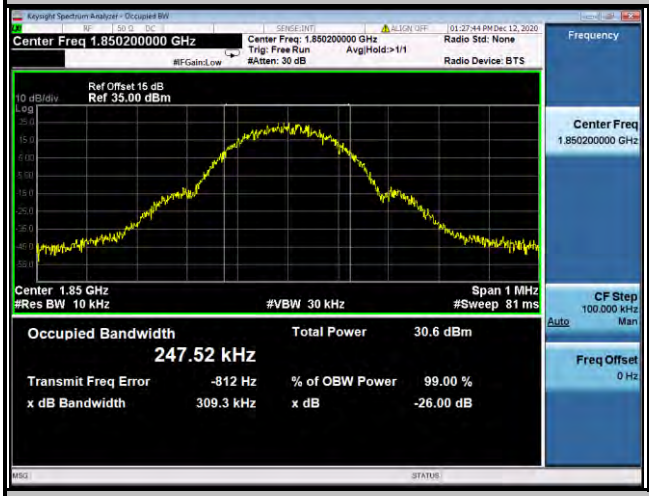
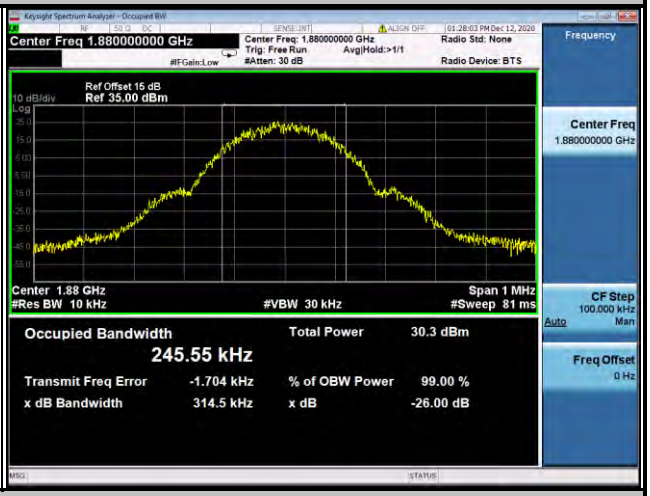
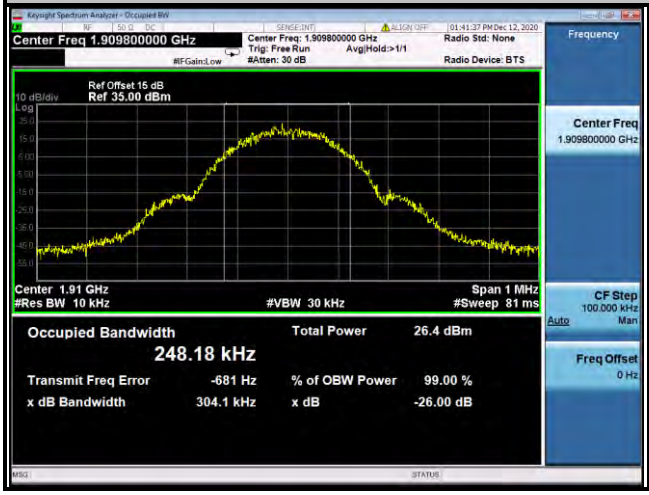
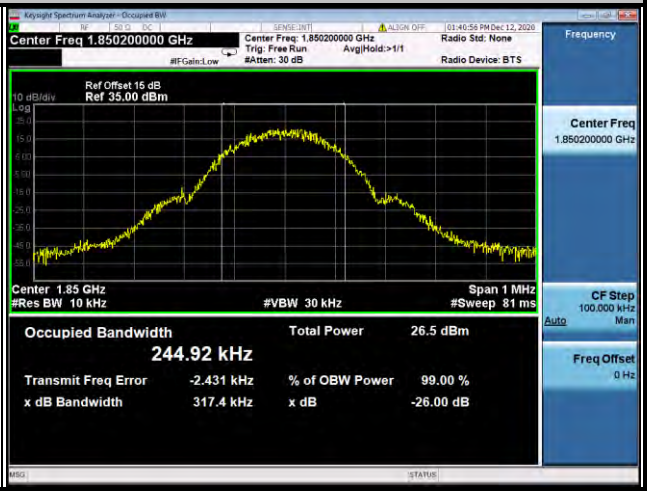
For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.2 Test Setup



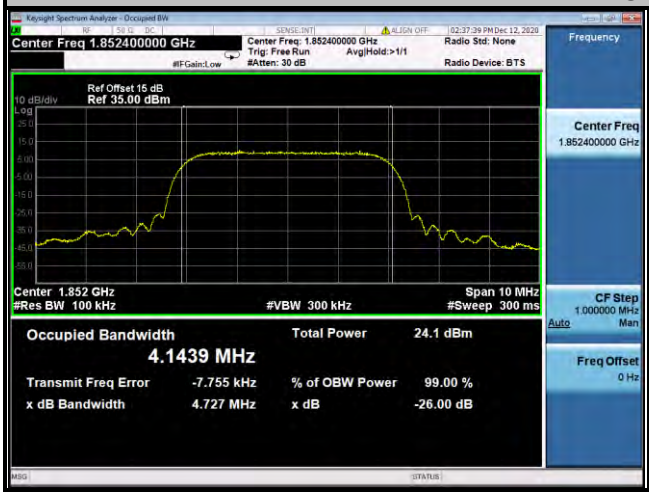
4.4.3 Test Result

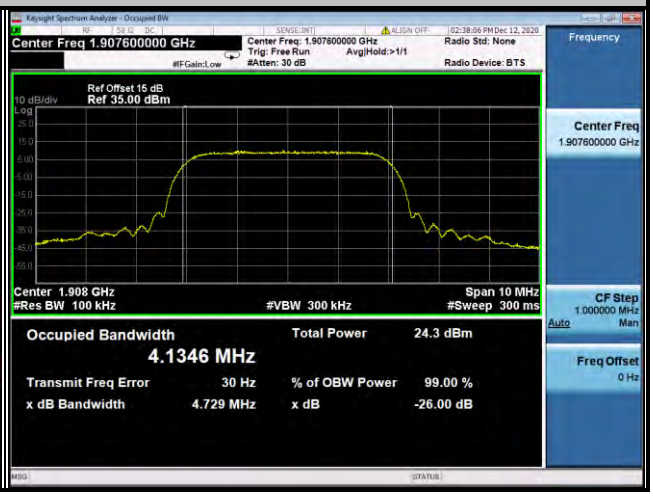
GSM				EDGE			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	247.52	309.30	512	1850.2	244.92	317.40
661	1880.0	245.55	314.50	661	1880.0	245.01	300.40
810	1909.8	245.30	310.00	810	1909.8	248.18	304.10

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

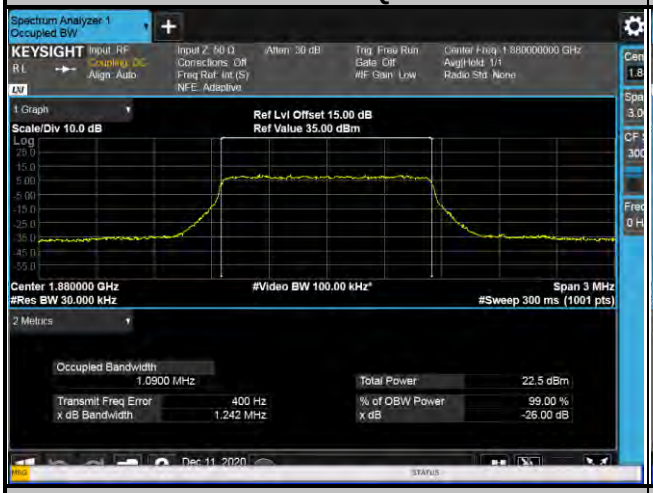
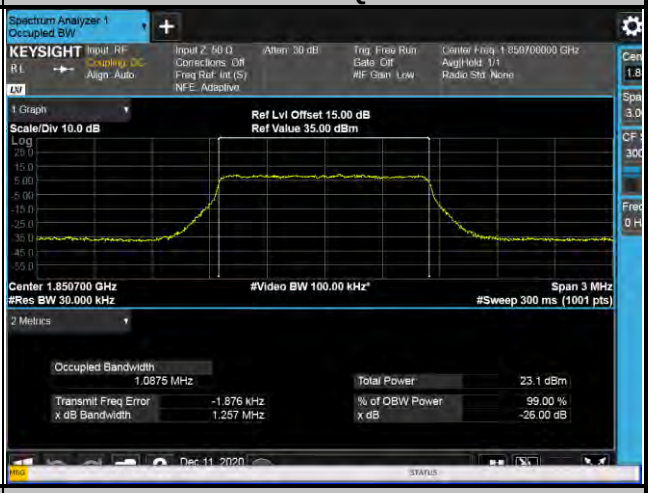
WCDMA			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1852.4	4.14	4.73
9400	1880.0	4.14	4.73
9538	1907.6	4.13	4.73

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

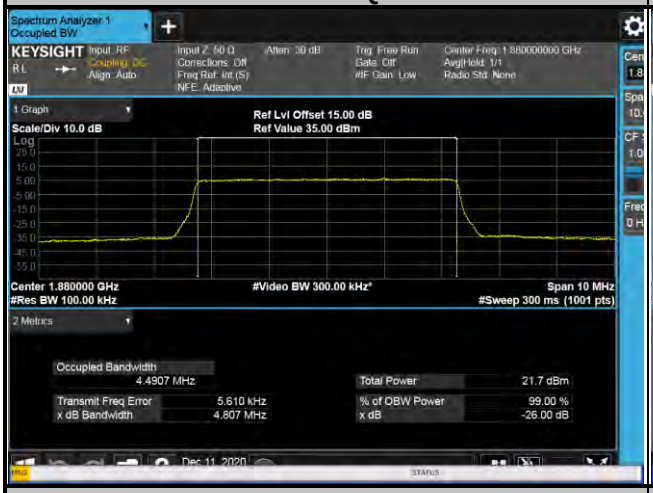
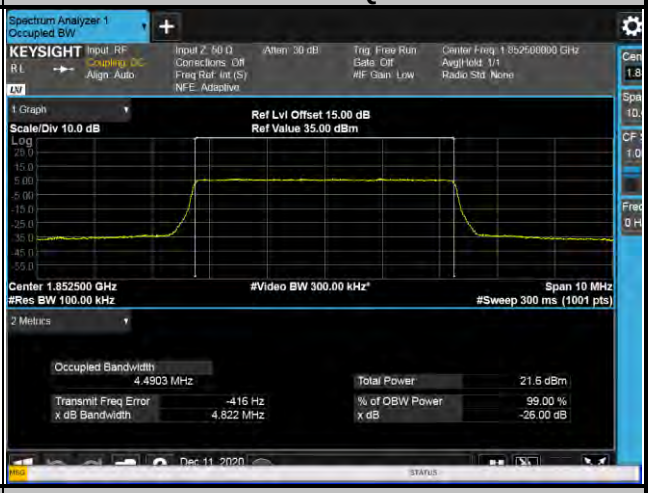
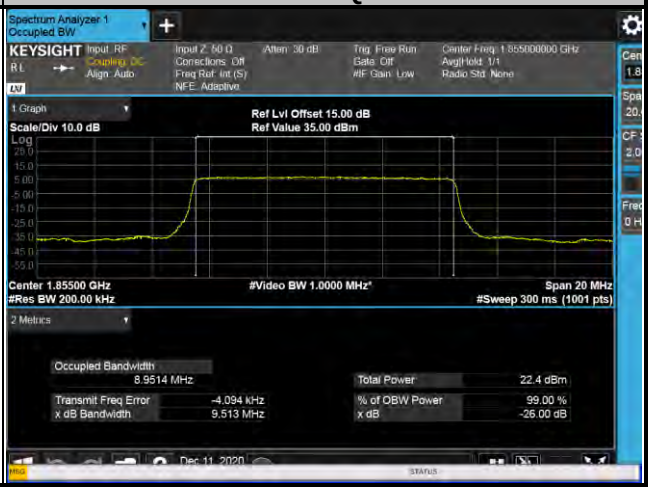




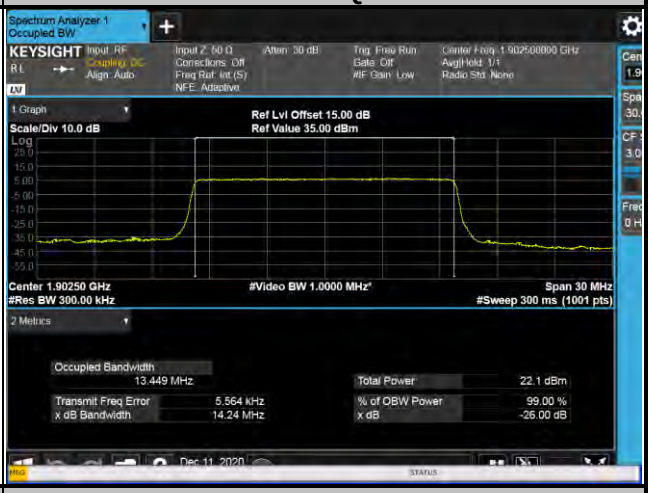
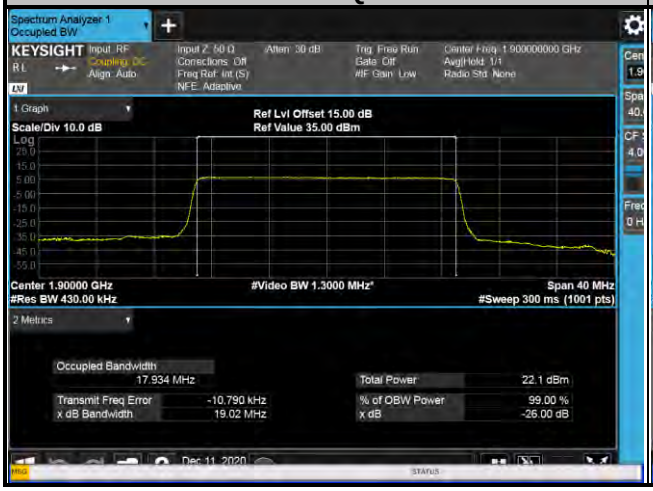
LTE Band 2					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18607	1850.7	1.09	1.09	1.26	1.25
18900	1880.0	1.09	1.09	1.25	1.24
19193	1909.3	1.09	1.09	1.25	1.25
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18615	1851.5	2.70	2.70	2.93	2.92
18900	1880.0	2.70	2.70	2.91	2.70
19185	1908.5	2.70	2.69	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
	

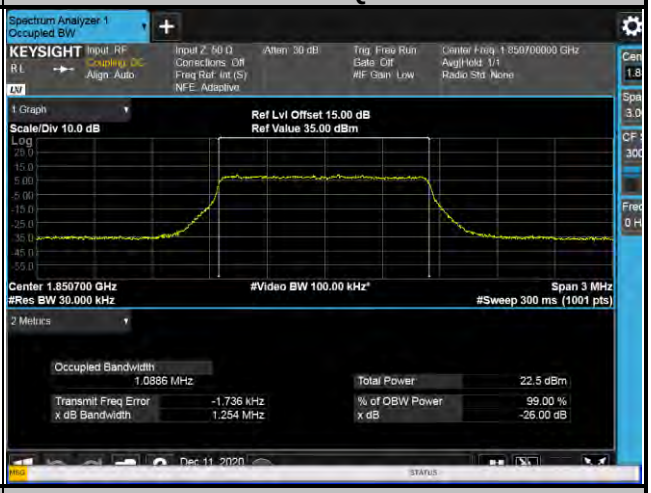
LTE Band 2					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18625	1852.5	4.49	4.49	4.82	4.82
18900	1880.0	4.49	4.49	4.81	4.81
19175	1907.5	4.48	4.49	4.82	4.81
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18650	1855.0	8.95	4.57	9.51	5.03
18900	1880.0	8.94	4.57	9.51	5.05
19150	1905.0	8.95	4.57	9.50	5.03

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / 16QAM	5 MHz / 16QAM
	
10 MHz / QPSK	10 MHz / QPSK
	

LTE Band 2					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18675	1857.5	13.43	4.66	14.22	5.22
18900	1880.0	13.40	4.67	14.20	5.22
19125	1902.5	13.45	4.67	14.24	5.24
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18700	1860.0	17.89	4.80	19.00	5.53
18900	1880.0	17.86	4.81	19.00	5.52
19100	1900.0	17.93	4.80	19.02	5.53

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
15 MHz / QPSK	15 MHz / QPSK
	
20 MHz / QPSK	20 MHz / QPSK
	

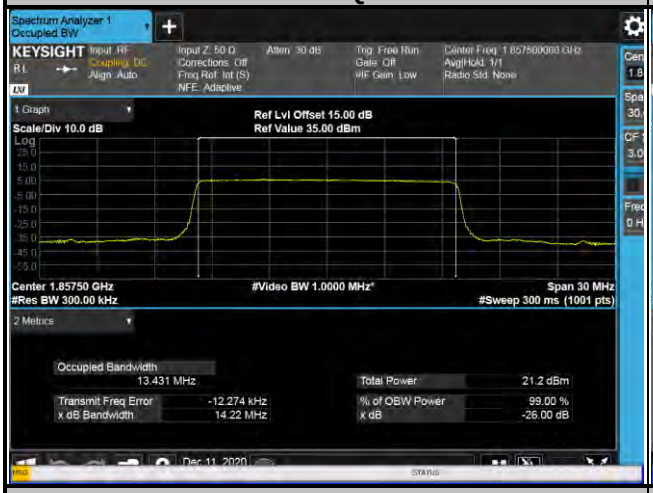
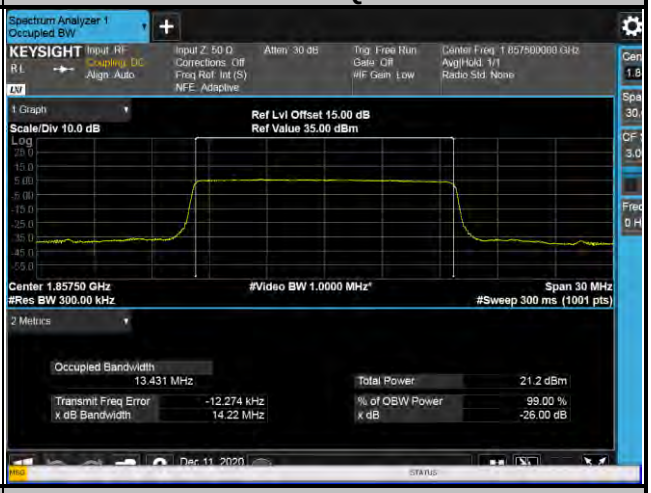
LTE Band 25					
Channel Bandwidth: 1.4 MHz					
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**		**26 dB Bandwidth (MHz)**	
		QPSK	**16QAM**	**QPSK**	**16QAM**
26047	1850.7	1.09	1.09	1.25	1.24
26365	1882.5	1.09	1.09	1.25	1.25
26683	1914.3	1.09	1.09	1.24	1.25
Channel Bandwidth: 3 MHz					
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**		**26 dB Bandwidth (MHz)**	
		QPSK	**16QAM**	**QPSK**	**16QAM**
26055	1851.5	2.70	2.70	2.91	2.93
26365	1882.5	2.70	2.70	2.92	2.92
26675	1913.5	2.70	2.70	2.91	2.91

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

LTE Band 25					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26065	1852.5	4.49	4.49	4.81	4.82
26365	1882.5	4.49	4.49	4.83	4.82
26665	1912.5	4.49	4.49	4.81	4.81
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26090	1855.0	8.95	4.56	9.50	5.02
26365	1882.5	8.94	4.56	9.51	5.02
26640	1910.0	8.91	4.56	9.47	5.01

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / 16QAM	5 MHz / QPSK
	
10 MHz / QPSK	10 MHz / QPSK
	

LTE Band 25					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26115	1857.5	13.43	4.66	14.22	5.23
26365	1882.5	13.41	4.66	14.21	5.22
26615	1907.5	13.36	4.66	14.19	5.23
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26140	1860.0	17.90	4.80	19.02	5.55
26365	1882.5	17.84	4.80	18.97	5.50
26590	1905.0	17.82	4.80	18.98	5.54

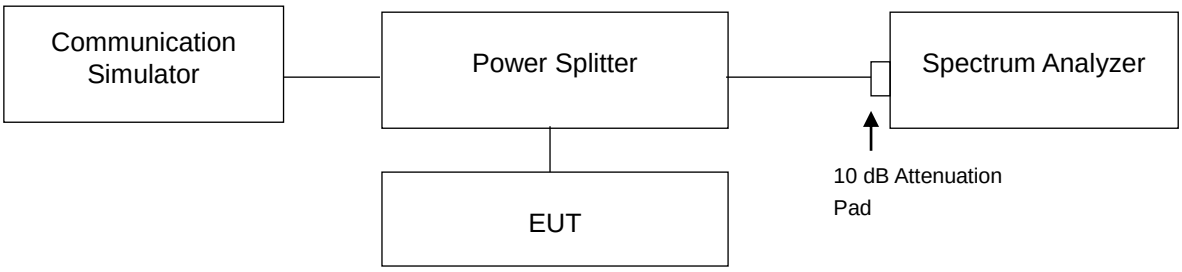
Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
15 MHz / QPSK	15 MHz / QPSK
	
20 MHz / QPSK	20 MHz / QPSK
	

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.

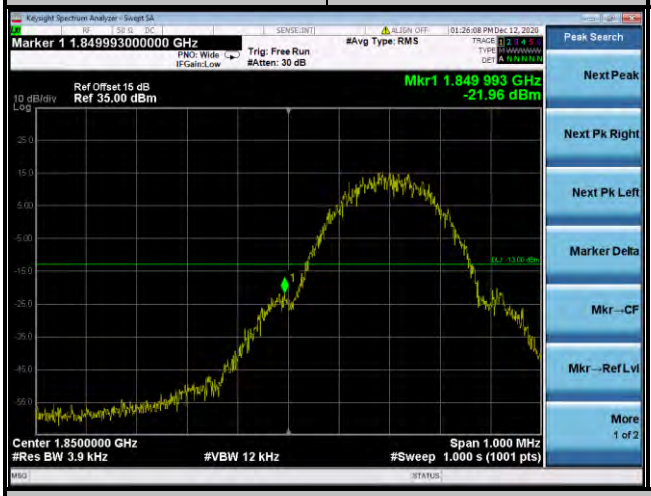
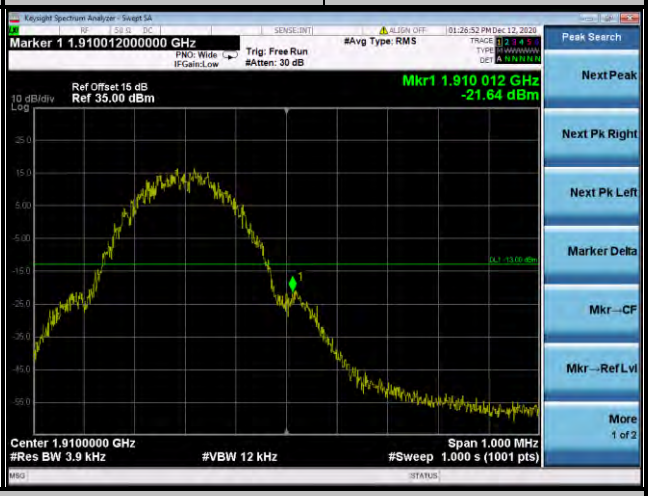
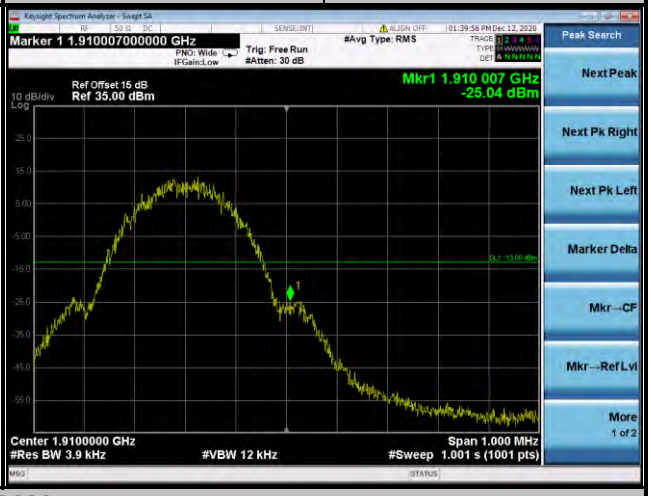
4.5.2 Test Setup

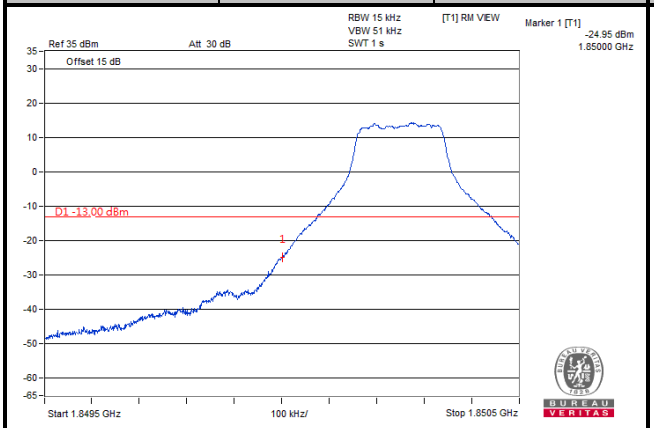
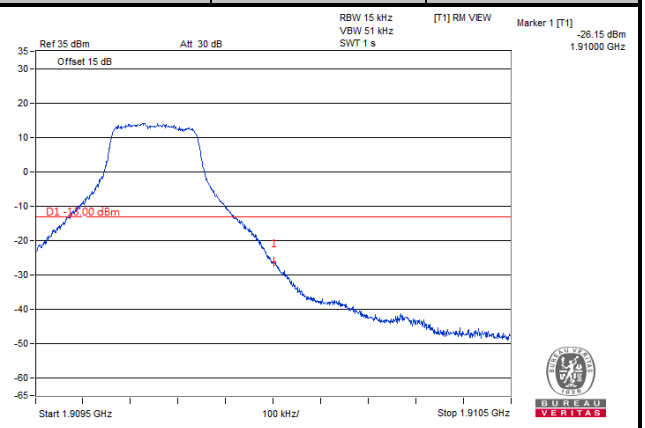
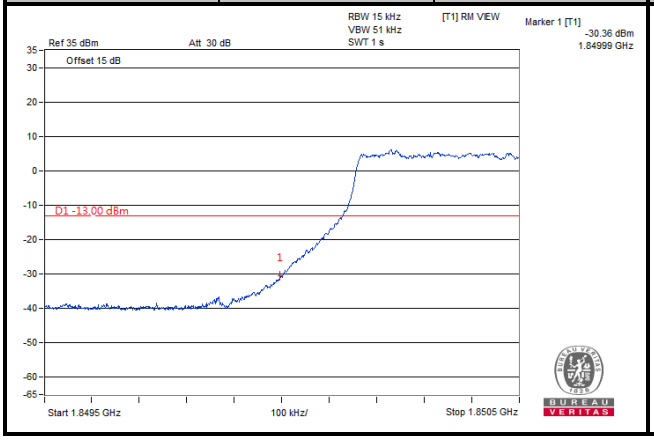
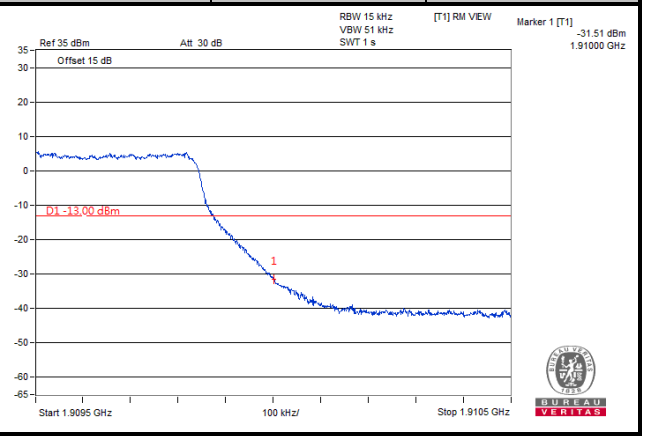


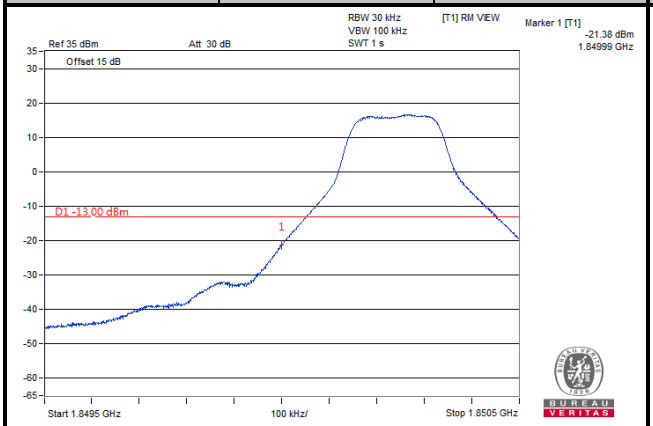
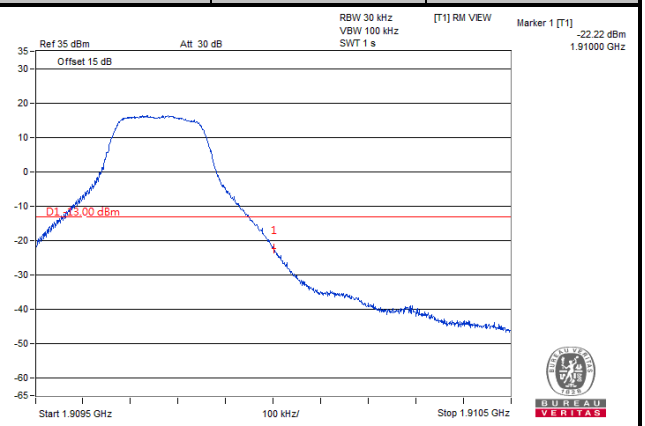
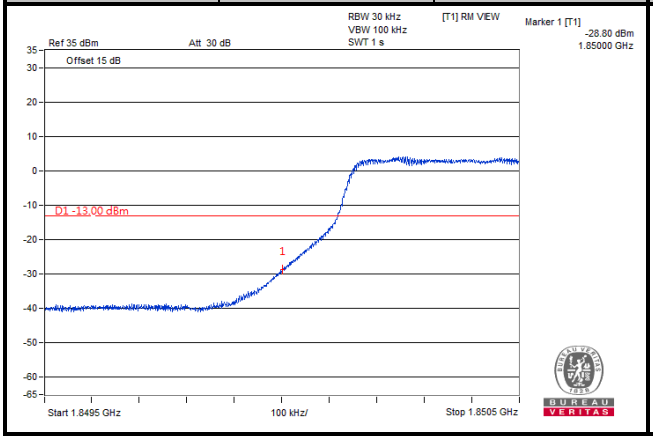
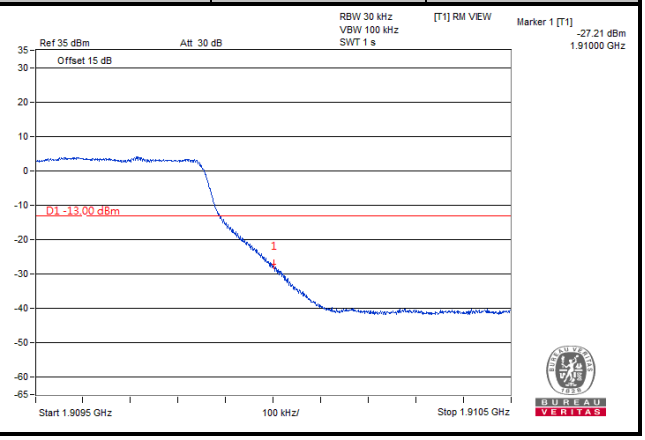
4.5.3 Test Procedures

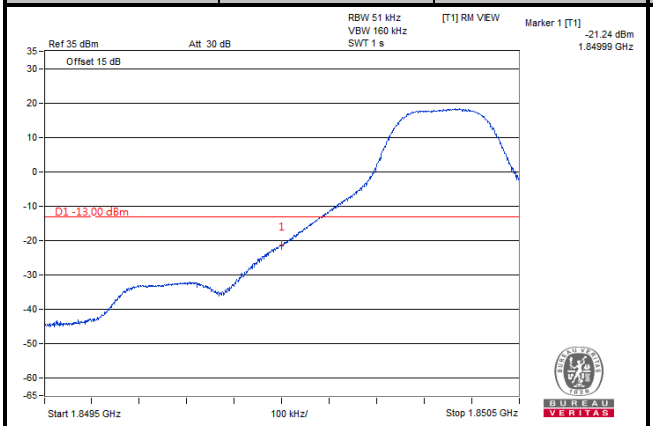
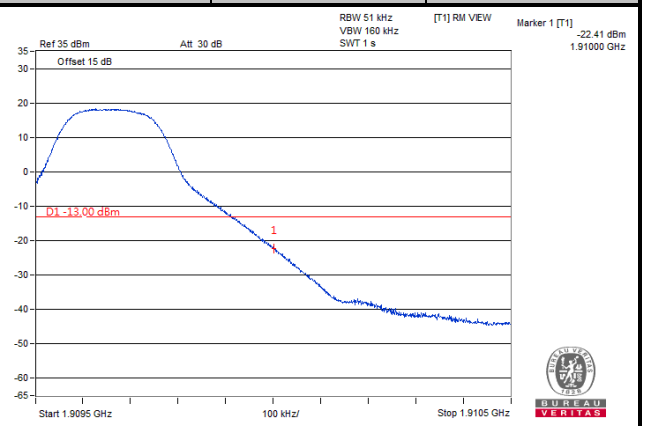
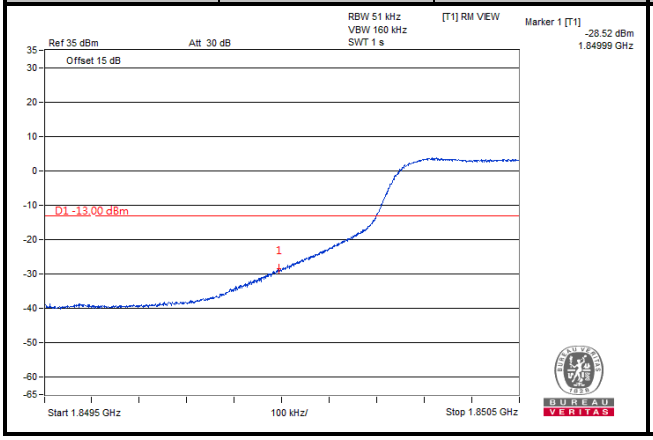
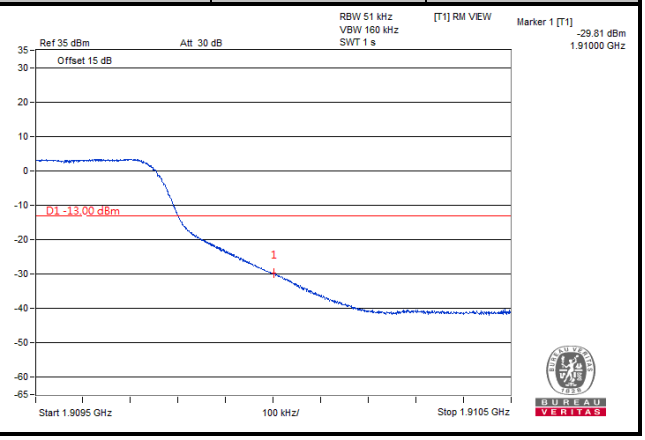
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 3.9 kHz and VB of the spectrum is 12 kHz (GSM/GPRS/EDGE).
c. The center frequency of spectrum is the band edge frequency and 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. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz).
j. Record the max trace plot into the test report.

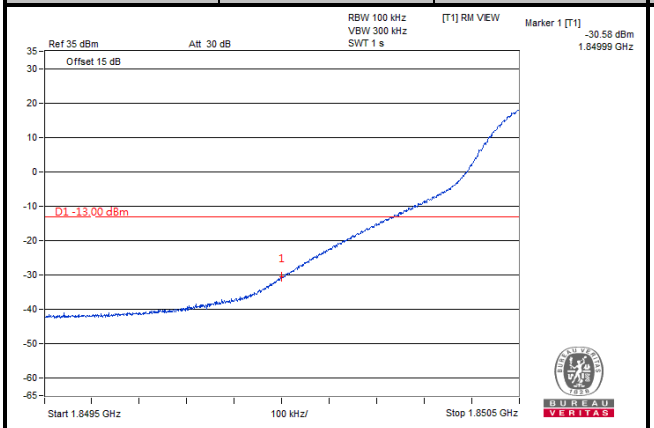
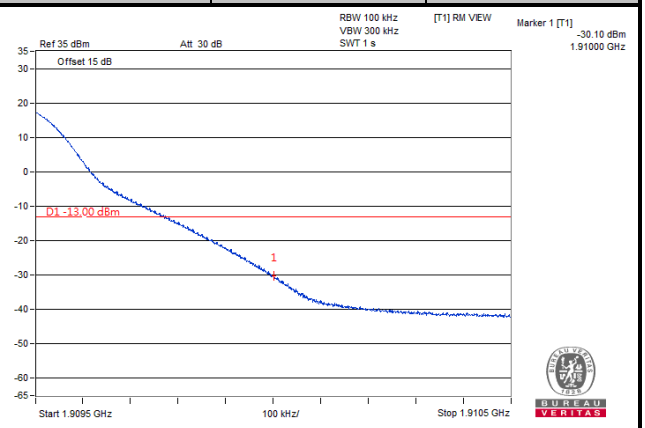
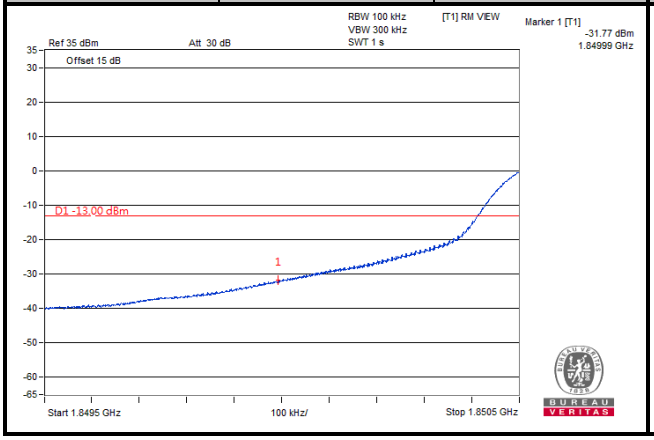
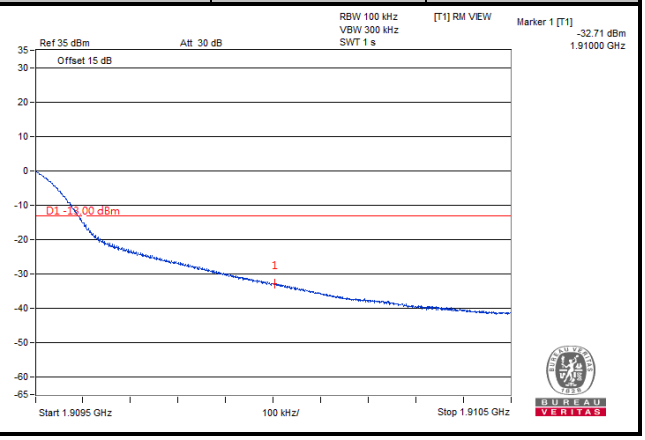
4.5.4 Test Results

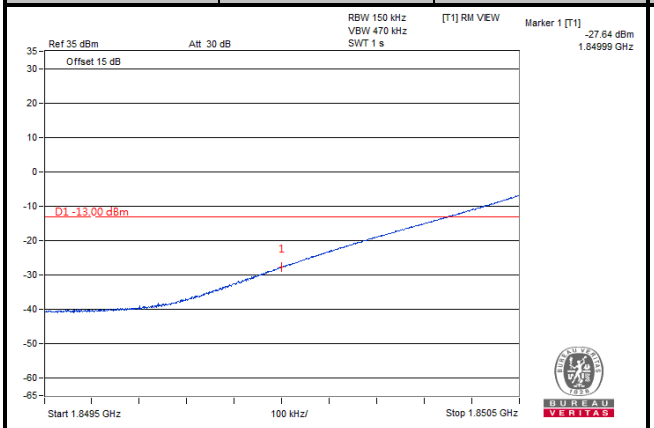
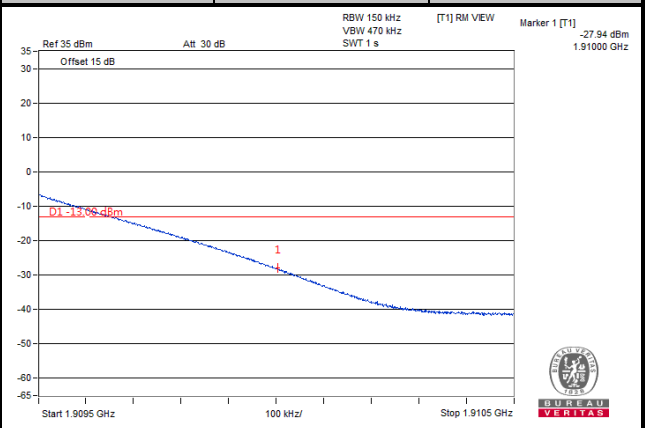
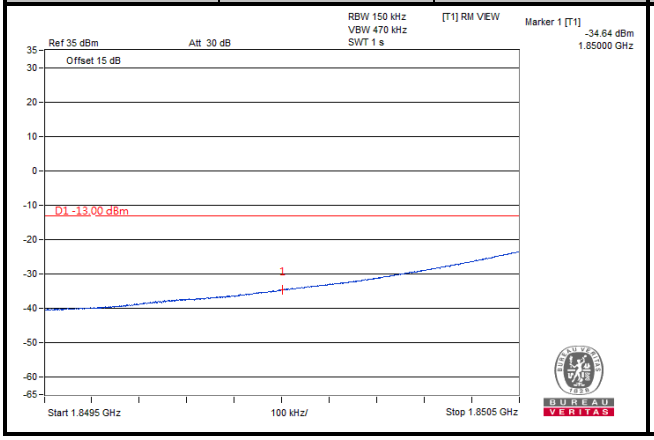
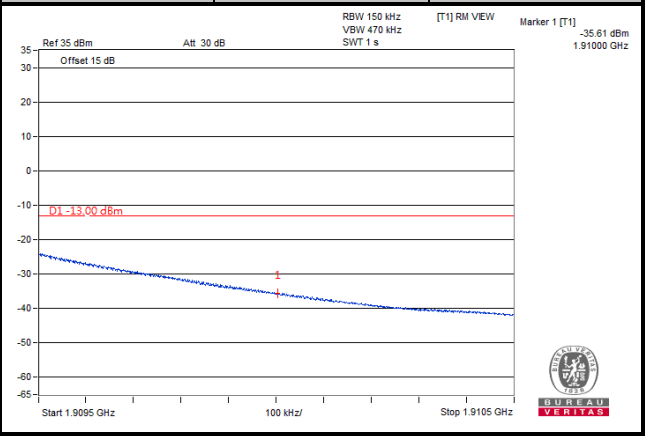
GSM			
Channel	512	Channel	810
			
EDGE			
Channel	512	Channel	810
			
WCDMA			
Channel	9262	Channel	9538
			

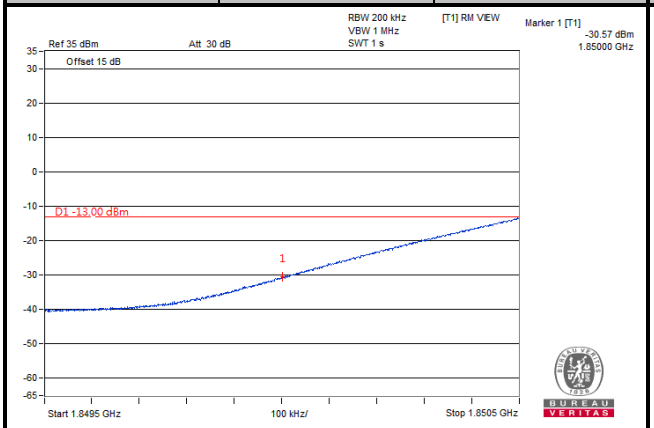
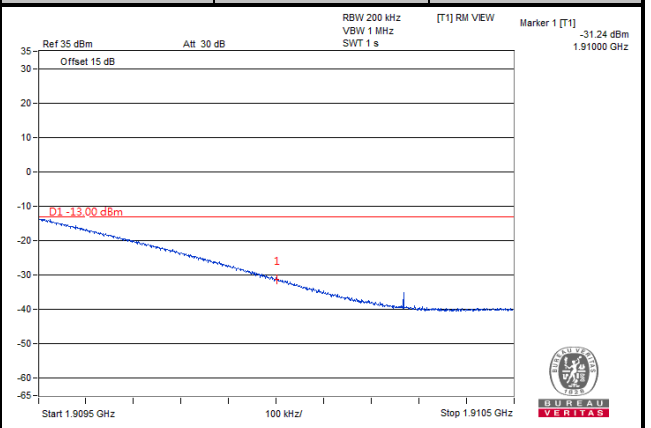
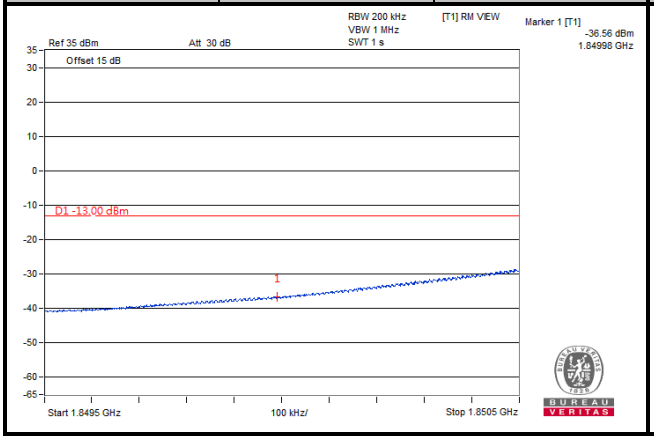
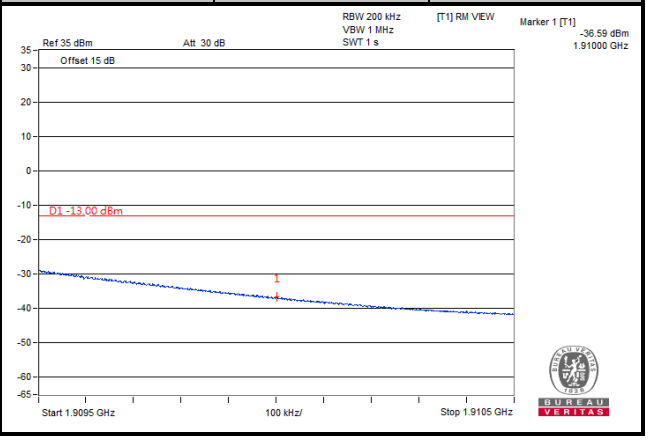
LTE Band 2					
Channel Bandwidth: 1.4 MHz					
Channel	18607	1 RB	Channel	19193	1 RB
					
Channel	18607	6 RB	Channel	19193	6 RB
					

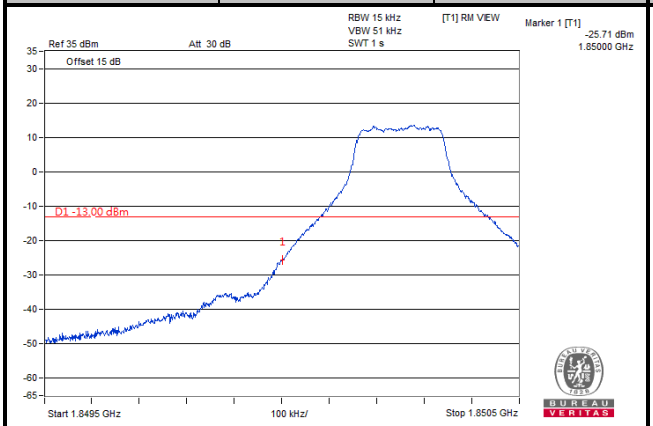
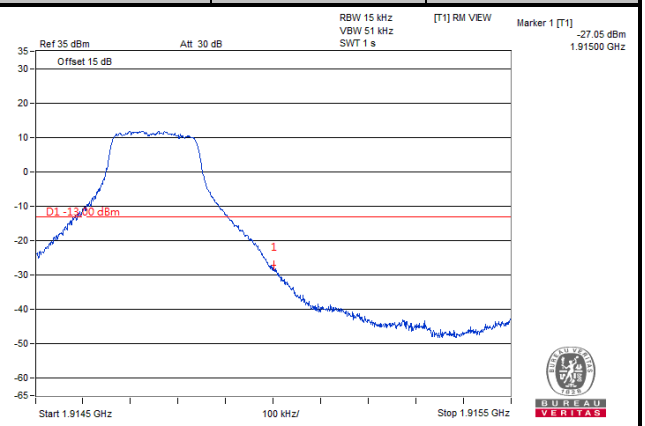
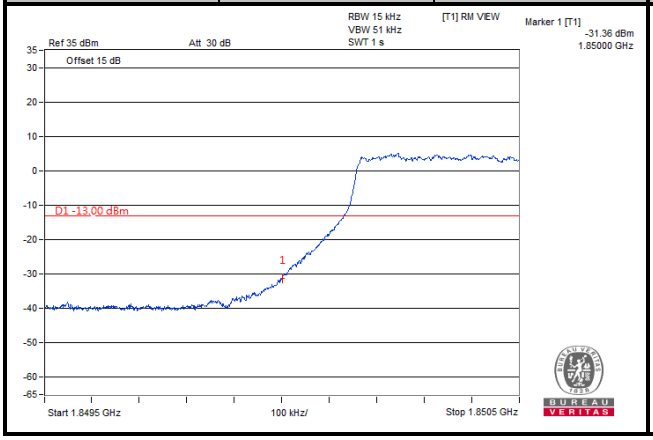
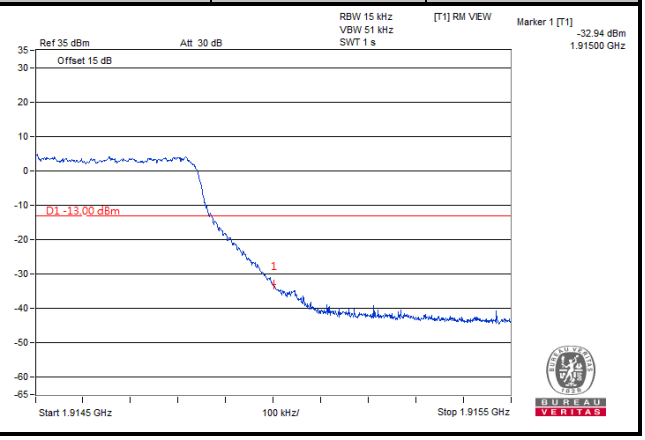
LTE Band 2					
Channel Bandwidth: 3 MHz					
Channel	18615	1 RB	Channel	19185	1 RB
					
Channel	18615	15 RB	Channel	19185	15 RB
					

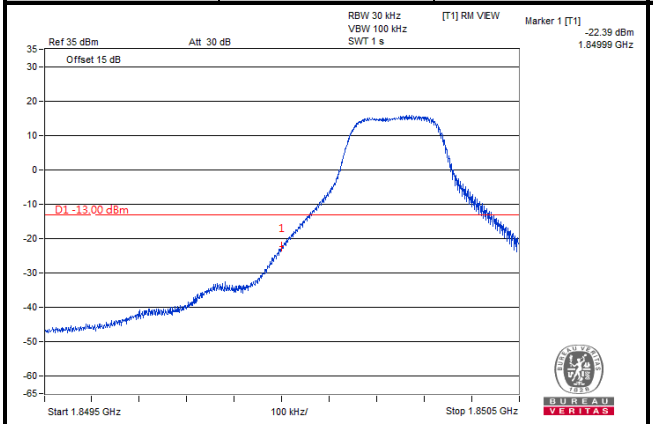
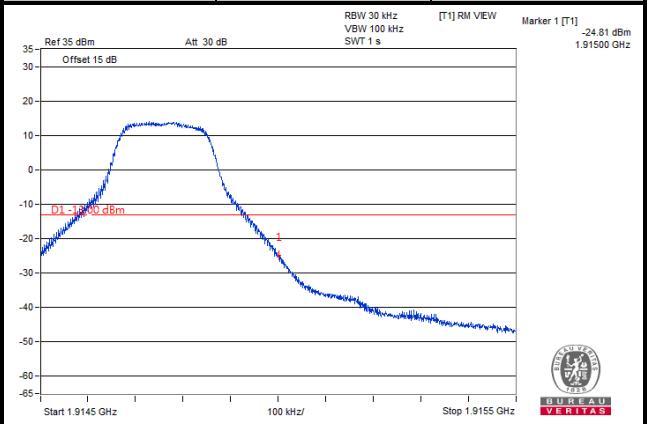
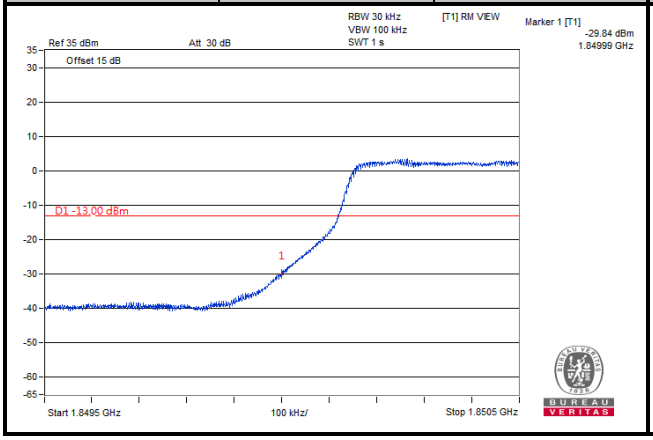
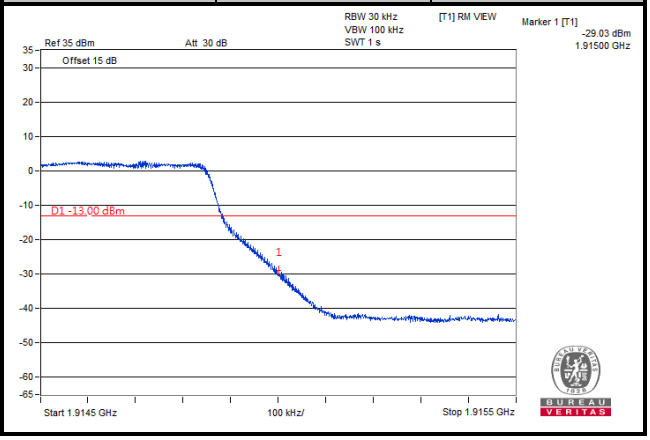
LTE Band 2					
Channel Bandwidth: 5 MHz					
Channel	18625	1 RB	Channel	19175	1 RB
					
Channel	18625	25 RB	Channel	19175	25 RB
					

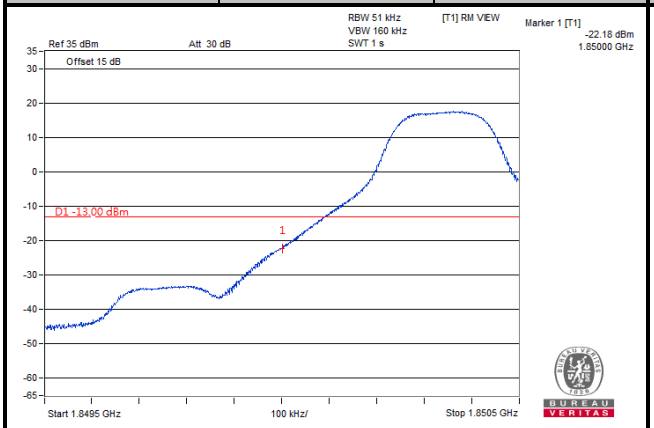
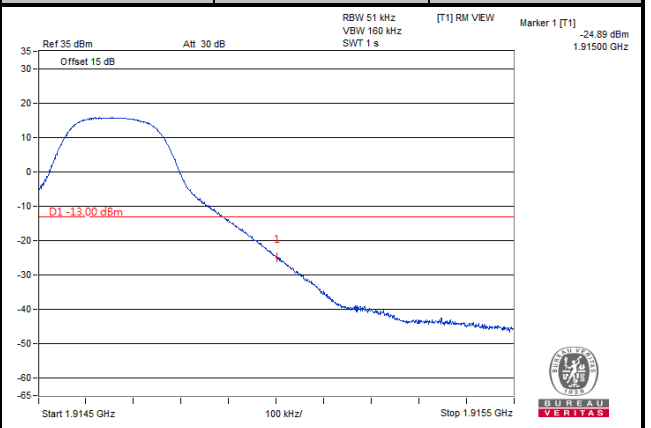
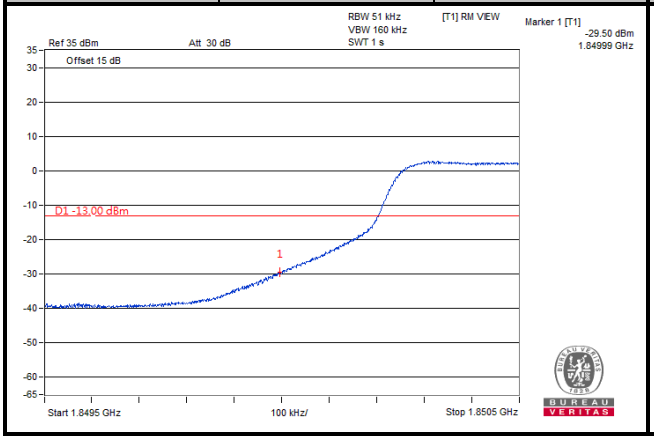
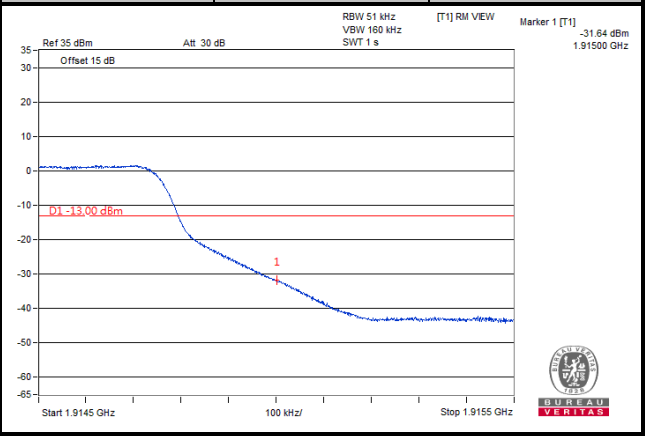
LTE Band 2					
Channel Bandwidth: 10 MHz					
Channel	18650	1 RB	Channel	19150	1 RB
					
Channel	18650	50 RB	Channel	19150	50 RB
					

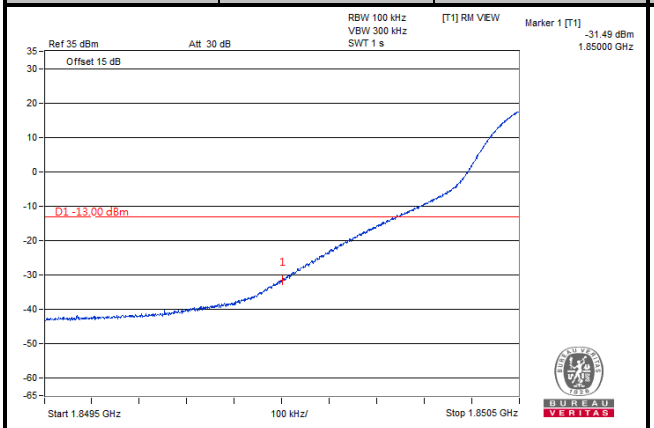
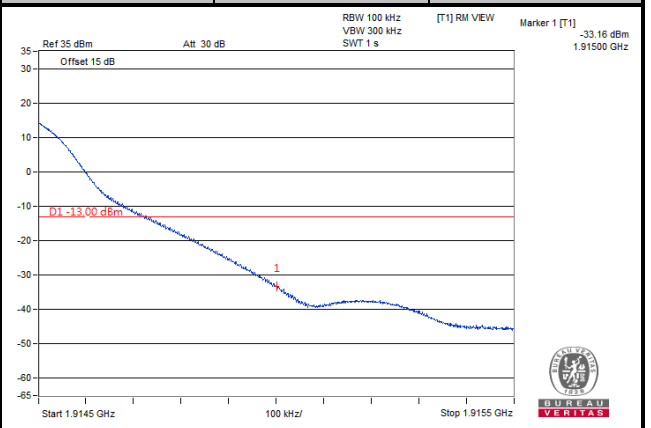
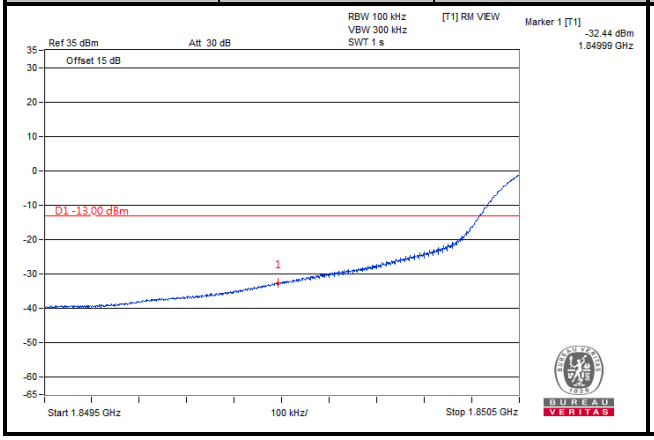
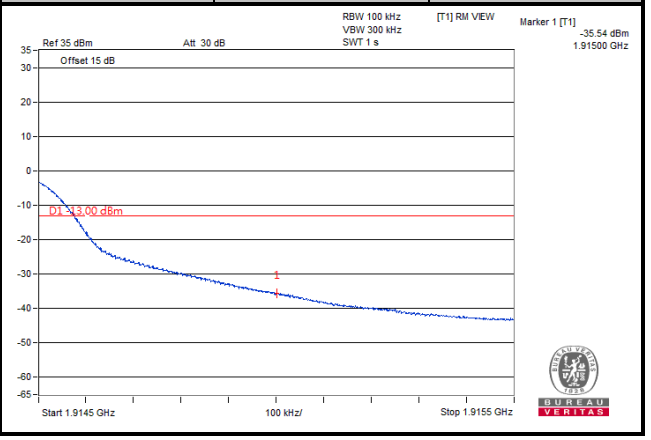
LTE Band 2					
Channel Bandwidth: 15 MHz					
Channel	18675	1 RB	Channel	19125	1 RB
					
Channel	18675	75 RB	Channel	19125	75 RB
					

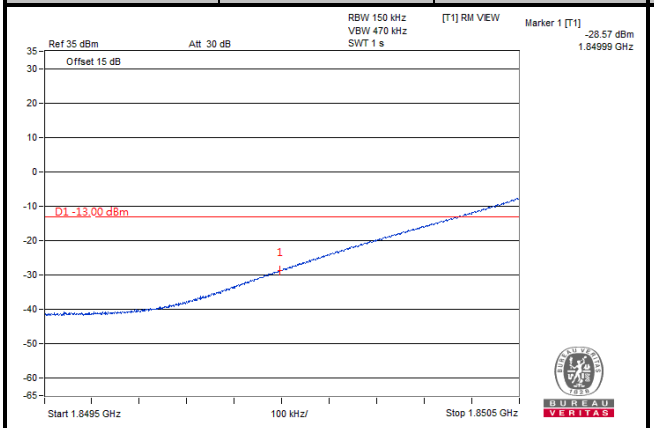
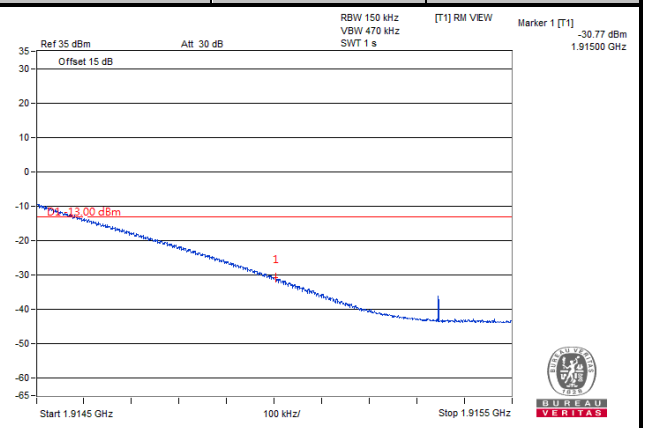
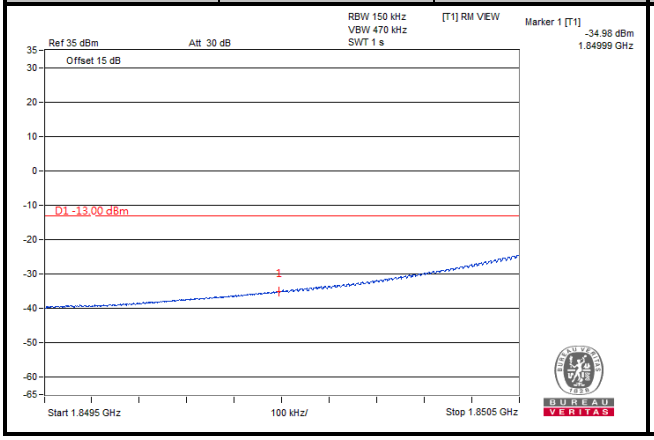
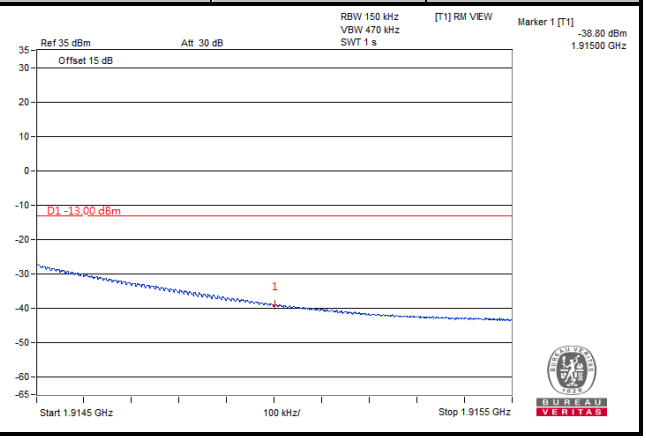
LTE Band 2					
Channel Bandwidth: 20 MHz					
Channel	18700	1 RB	Channel	19100	1 RB
					
Channel	18700	100 RB	Channel	19100	100 RB
					

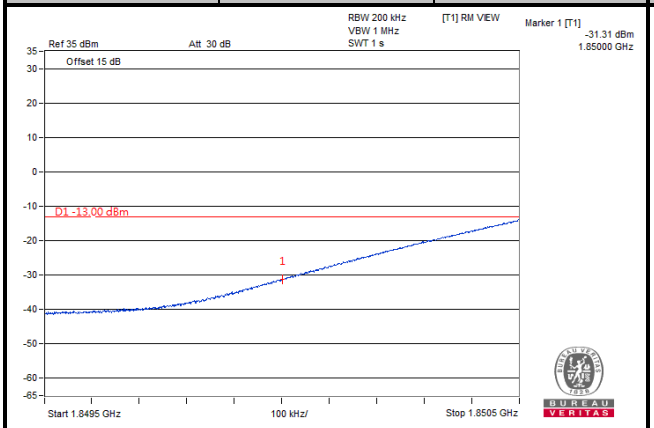
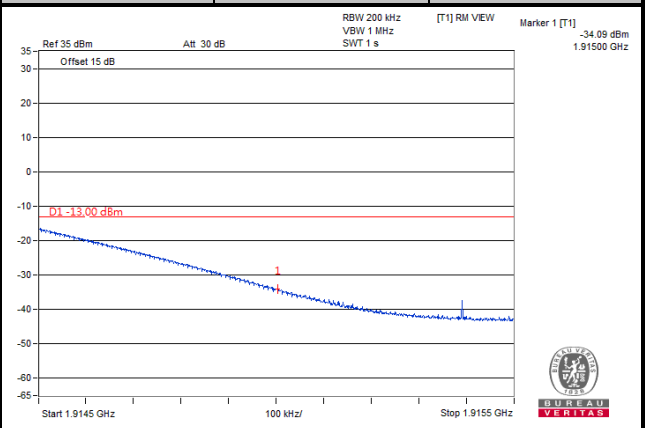
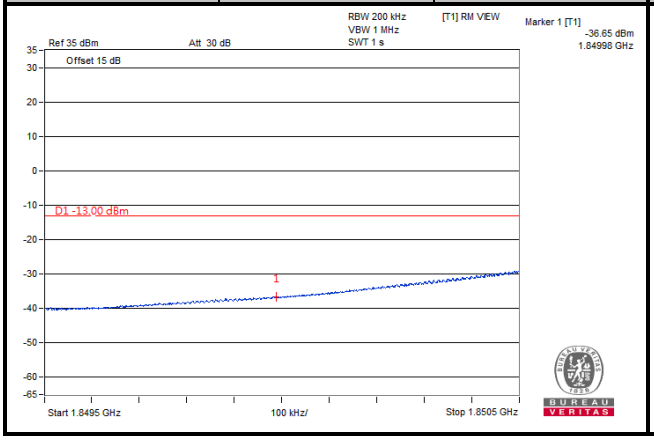
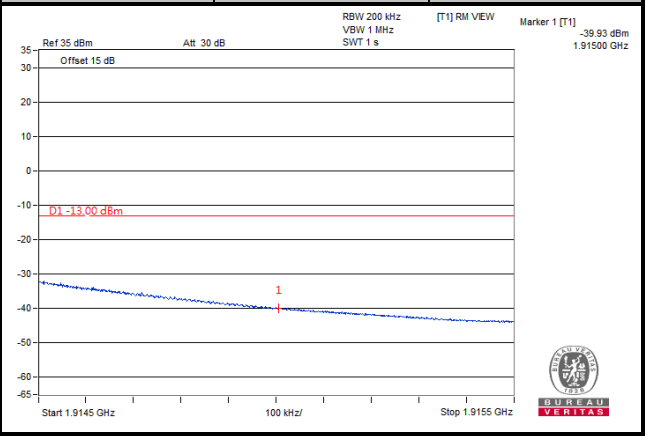
LTE Band 25					
Channel Bandwidth: 1.4 MHz					
Channel	26047	1 RB	Channel	26683	1 RB
					
Channel	26047	6 RB	Channel	26683	6 RB
					

LTE Band 25					
Channel Bandwidth: 3 MHz					
Channel	26055	1 RB	Channel	26675	1 RB
					
Channel	26055	15 RB	Channel	26675	15 RB
					

LTE Band 25					
Channel Bandwidth: 5 MHz					
Channel	26065	1 RB	Channel	26665	1 RB
					
Channel	26065	25 RB	Channel	26665	25 RB
					

LTE Band 25					
Channel Bandwidth: 10 MHz					
Channel	26090	1 RB	Channel	26640	1 RB
					
Channel	26090	50 RB	Channel	26640	50 RB
					

LTE Band 25					
Channel Bandwidth: 15 MHz					
Channel	26115	1 RB	Channel	26615	1 RB
					
Channel	26115	75 RB	Channel	26615	75 RB
					

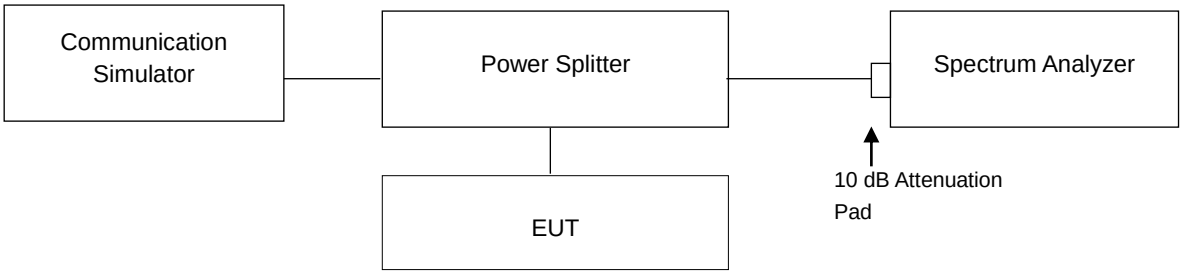
LTE Band 25					
Channel Bandwidth: 20 MHz					
Channel	26140	1 RB	Channel	26590	1 RB
					
Channel	26140	100 RB	Channel	26590	100 RB
					

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

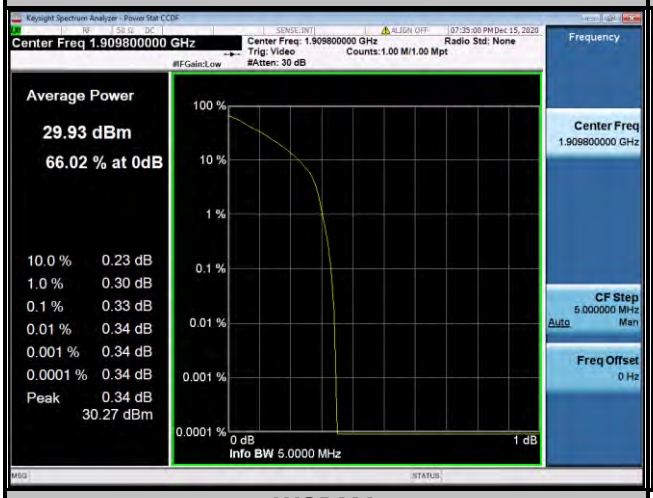
1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.6.4 Test Results

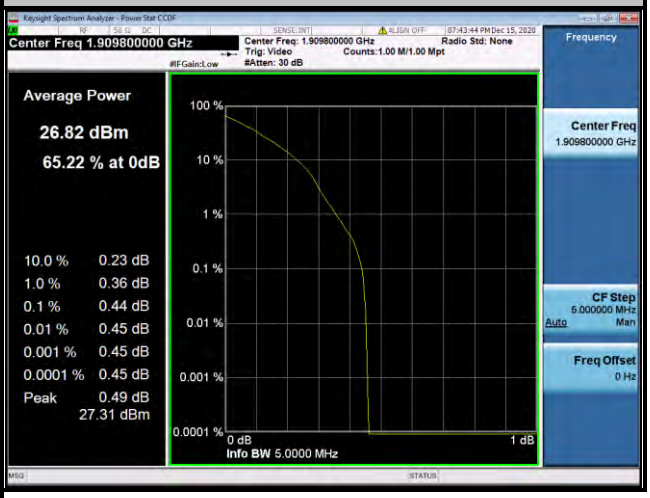
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)
		GSM	EDGE			WCDMA
512	1850.2	0.26	0.35	9262	1852.4	3.07
661	1880.0	0.29	0.39	9400	1880.0	3.10
810	1909.8	0.33	0.44	9538	1907.6	3.11

Spectrum Plot of Worst Value

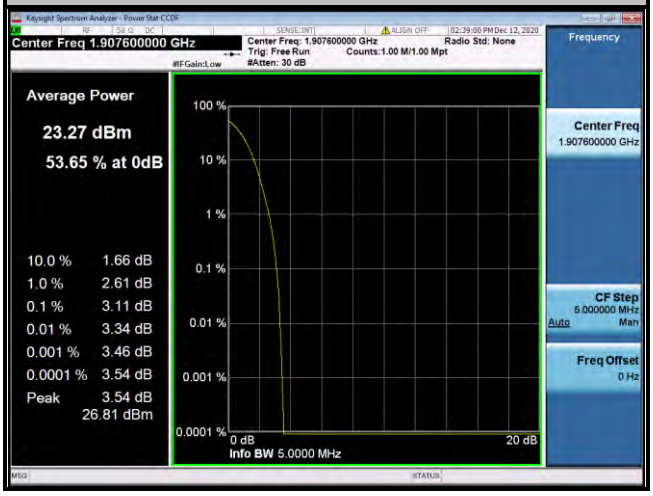
GSM



EDGE



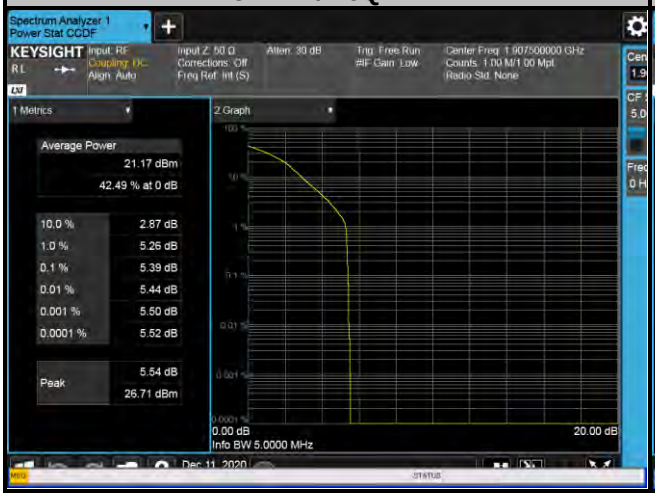
WCDMA



LTE Band 2							
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
18607	1850.7	4.53	5.32	18615	1851.5	4.51	5.28
18900	1880.0	4.65	5.44	18900	1880.0	4.64	5.41
19193	1909.3	4.60	5.36	19185	1908.5	4.64	5.36

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

LTE Band 2							
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
18625	1852.5	4.45	5.20	18650	1855.0	4.44	5.15
18900	1880.0	4.59	5.36	18900	1880.0	4.75	5.44
19175	1907.5	4.61	5.39	19150	1905.0	4.93	5.38

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

LTE Band 2							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	4.46	5.25	18700	1860.0	4.46	5.26
18900	1880.0	4.84	5.47	18900	1880.0	5.15	5.42
19125	1902.5	4.63	5.38	19100	1900.0	4.53	5.25

Spectrum Plot of Worst Value	
15 MHz / 16QAM	20 MHz / 16QAM
	

LTE Band 25							
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
26047	1850.7	4.59	5.30	26055	1851.5	4.58	5.32
26365	1882.5	4.66	5.38	26365	1882.5	4.65	5.42
26683	1914.3	5.06	5.42	26675	1913.5	4.86	5.41

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

LTE Band 25							
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
26065	1852.5	4.53	5.27	26090	1855.0	4.52	5.30
26365	1882.5	4.63	5.33	26365	1882.5	4.65	5.39
26665	1912.5	4.57	5.33	26640	1910.0	4.61	5.37

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

LTE Band 25							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
26115	1857.5	4.51	5.27	26140	1860.0	4.50	5.24
26365	1882.5	4.65	5.38	26365	1882.5	4.96	5.42
26615	1907.5	4.65	5.38	26590	1905.0	4.61	5.35

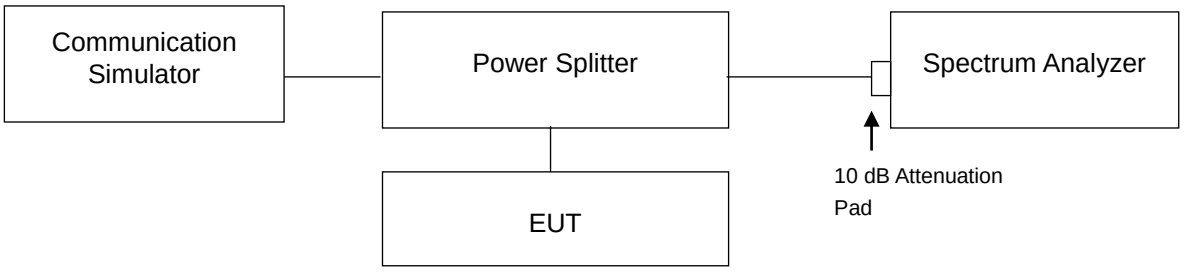
Spectrum Plot of Worst Value	
15 MHz / 16QAM	20 MHz / 16QAM
	

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.

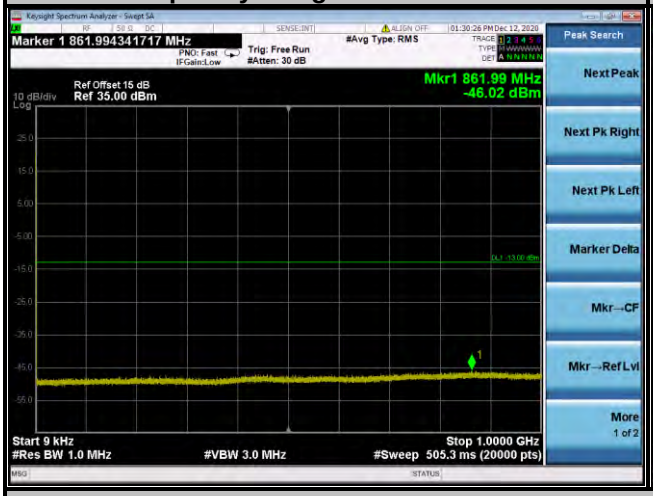
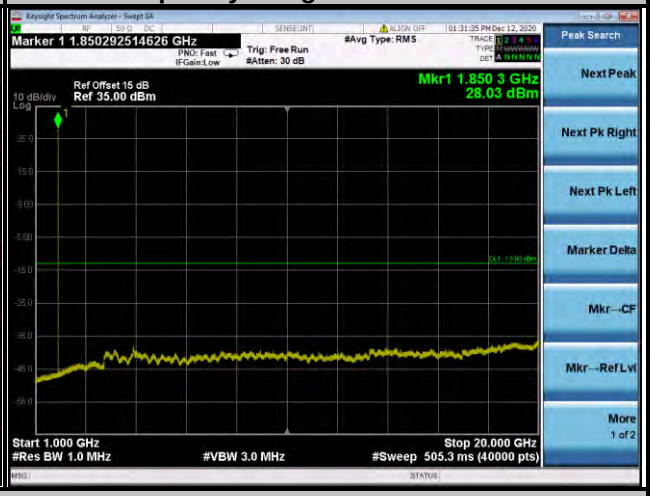
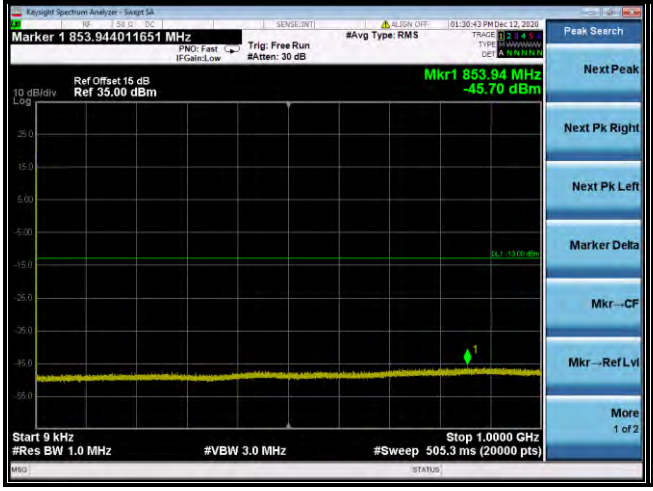
4.7.2 Test Setup



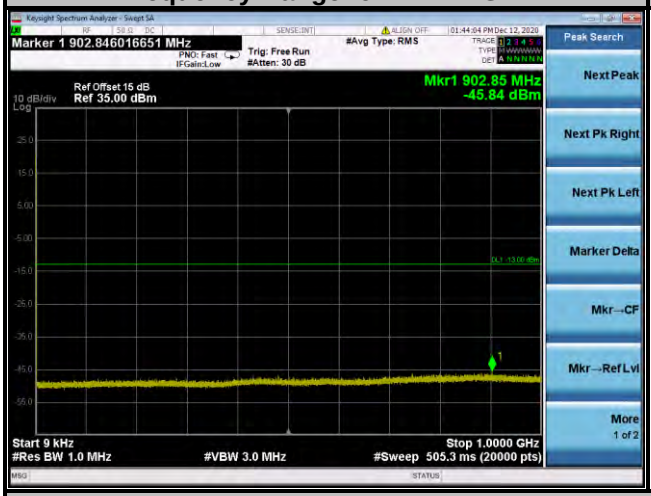
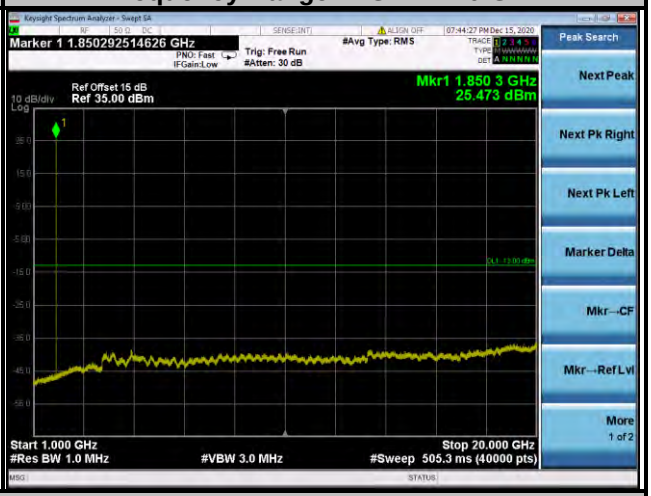
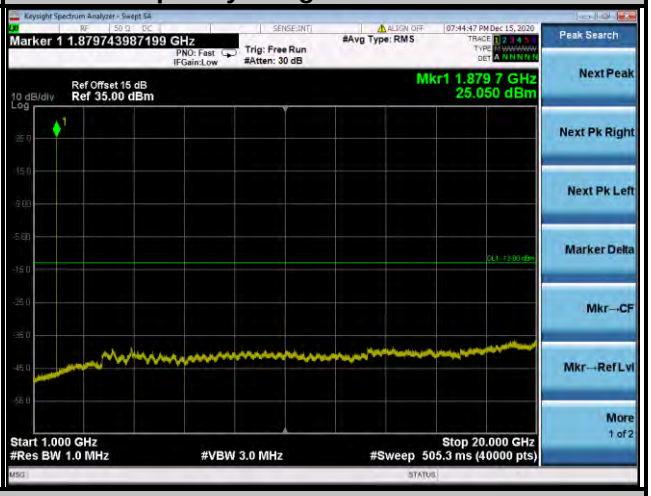
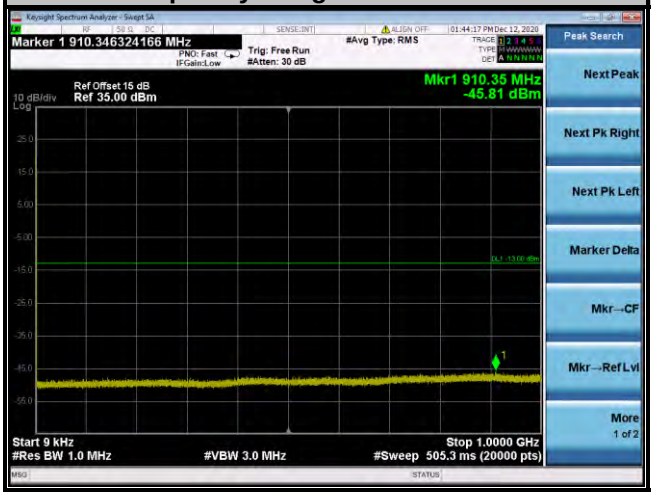
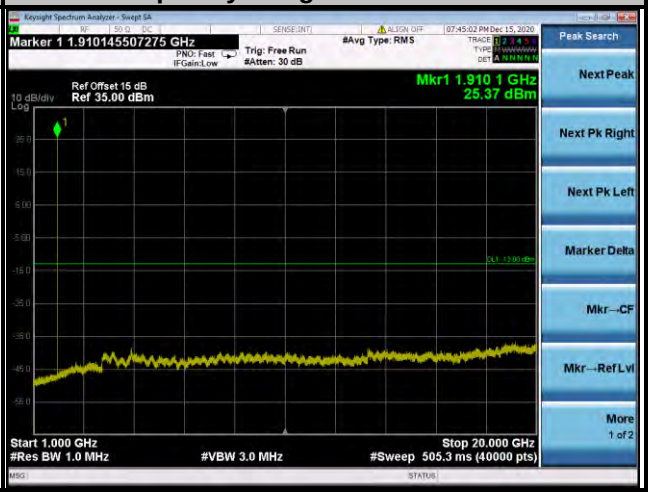
4.7.3 Test Procedure

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 = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.
c. Measuring frequency range is from 1 GHz to 20 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

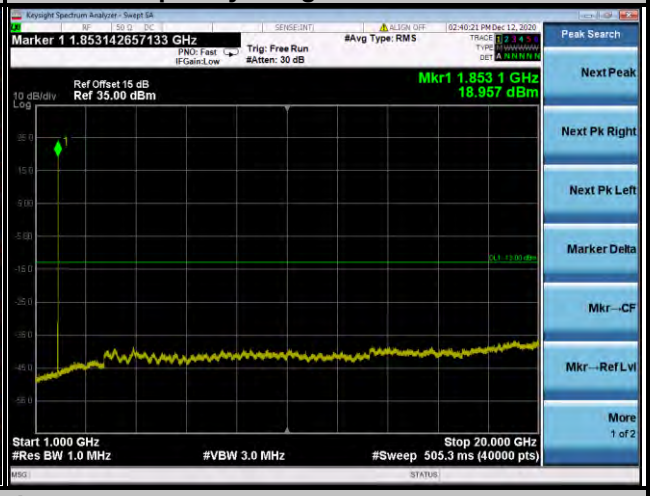
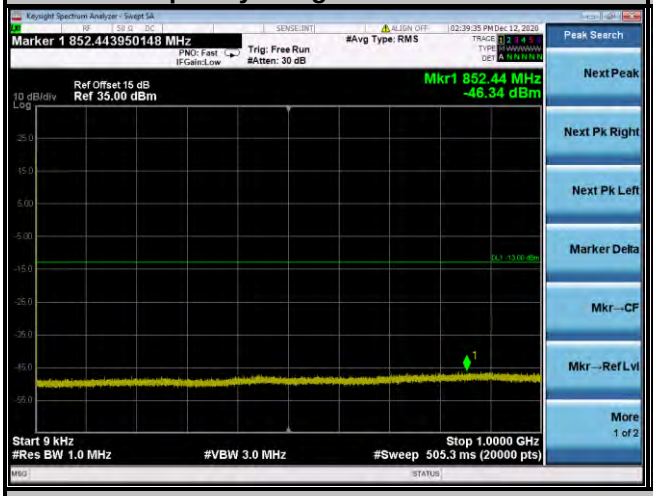
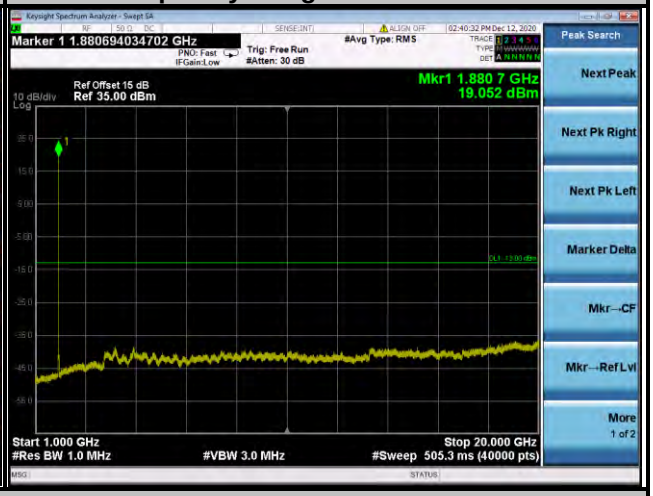
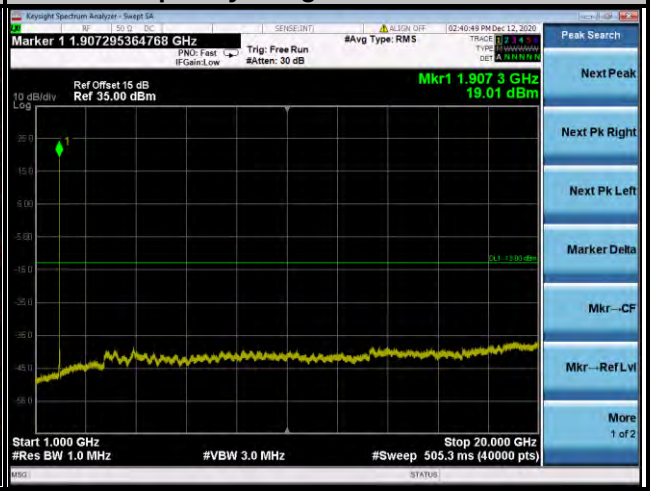
4.7.4 Test Results

GSM	
Channel 512	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 661	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 810	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

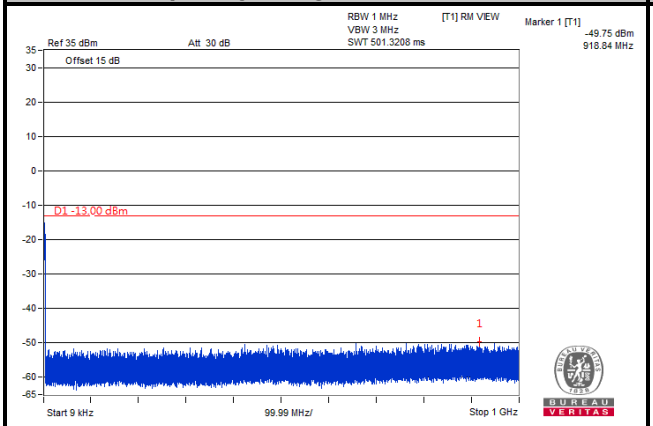
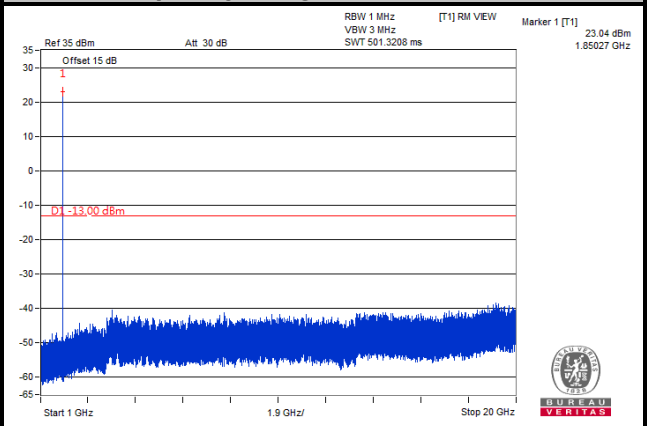
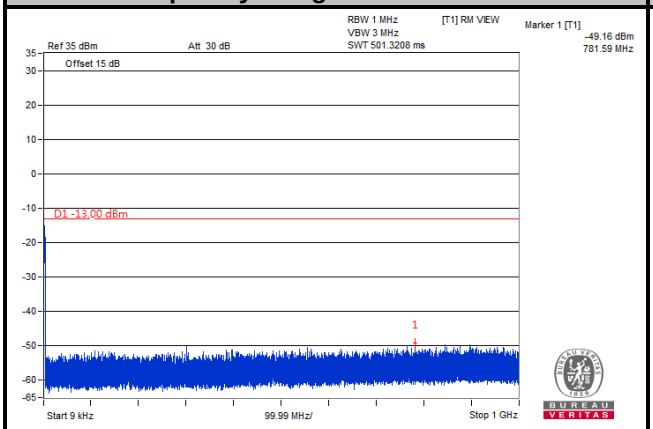
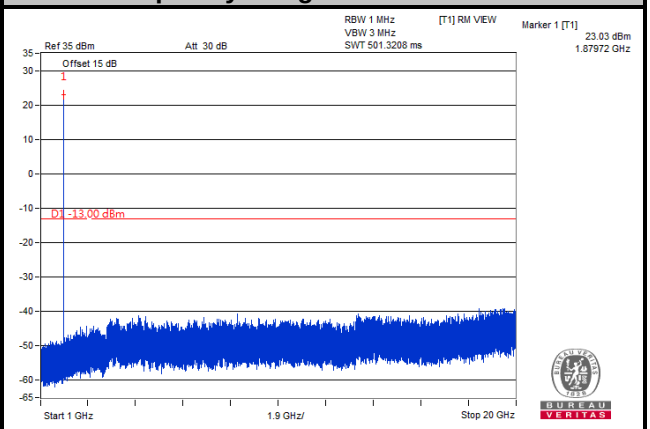
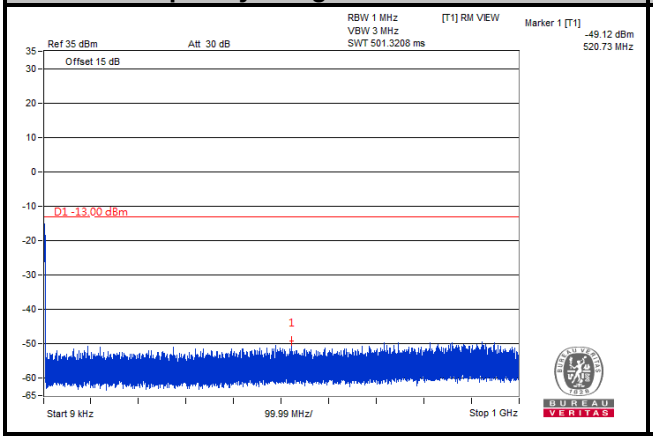
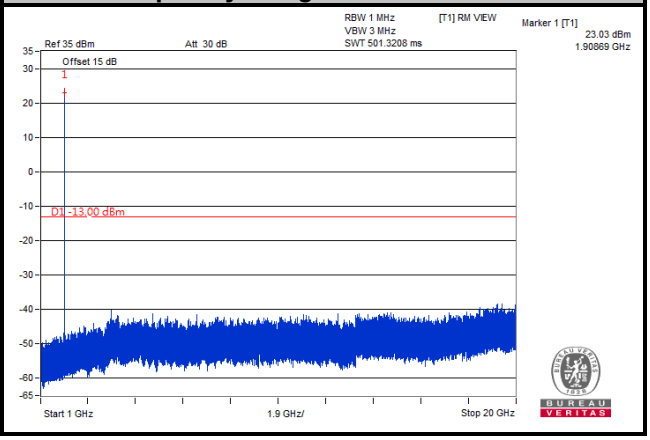
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

EDGE	
Channel 512	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 661	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 810	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

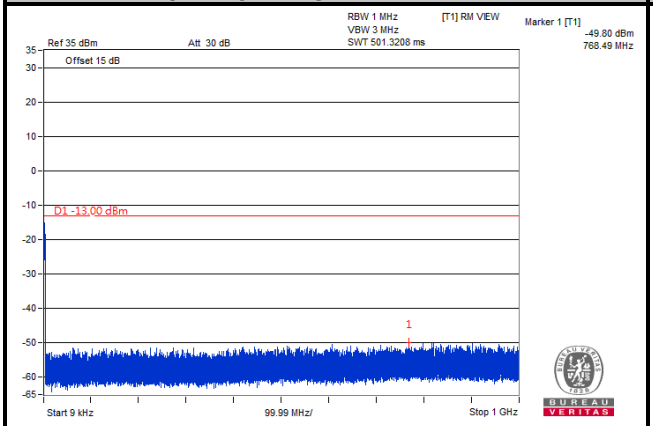
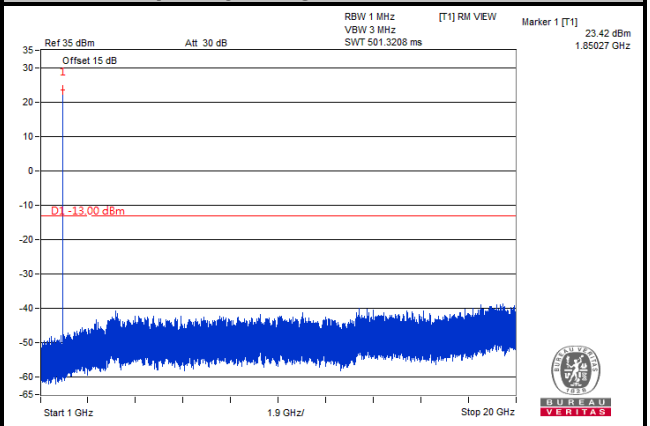
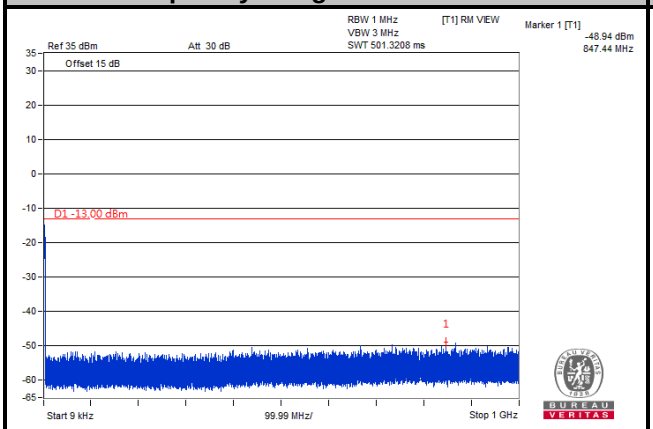
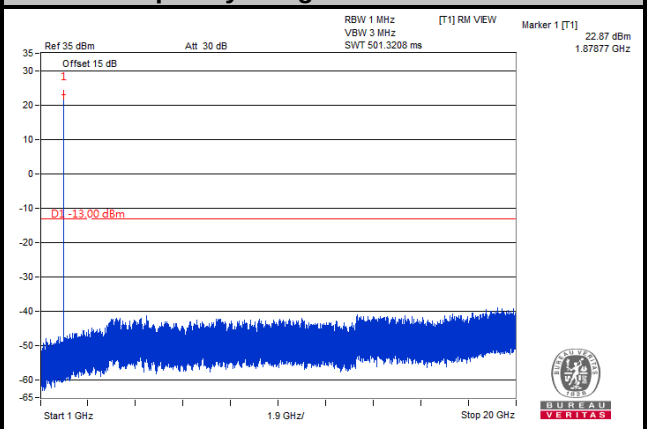
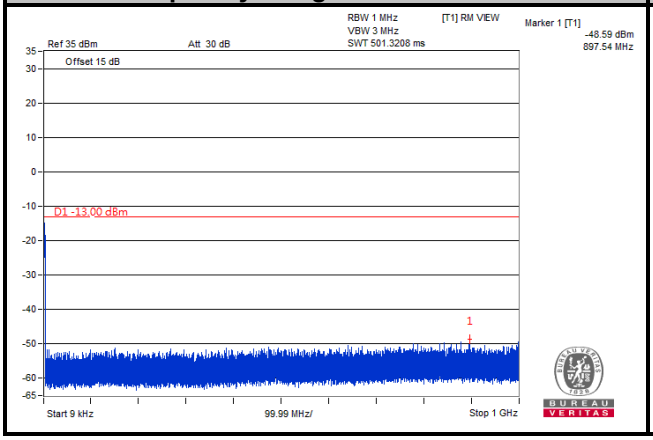
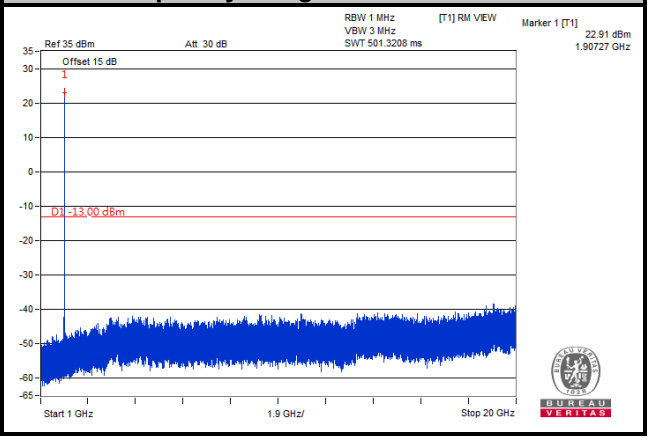
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

WCDMA	
Channel 9262	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 9400	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 9538	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

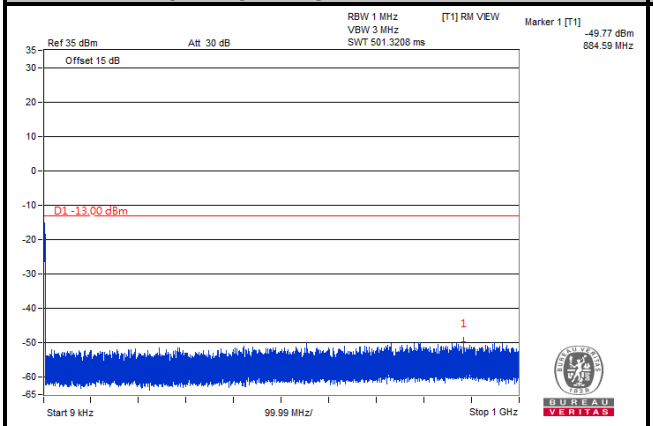
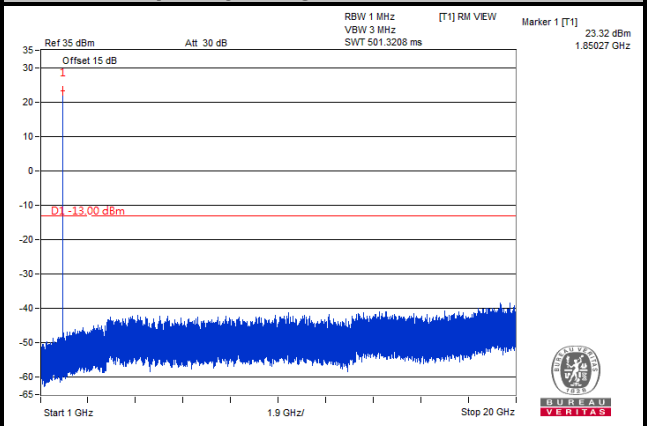
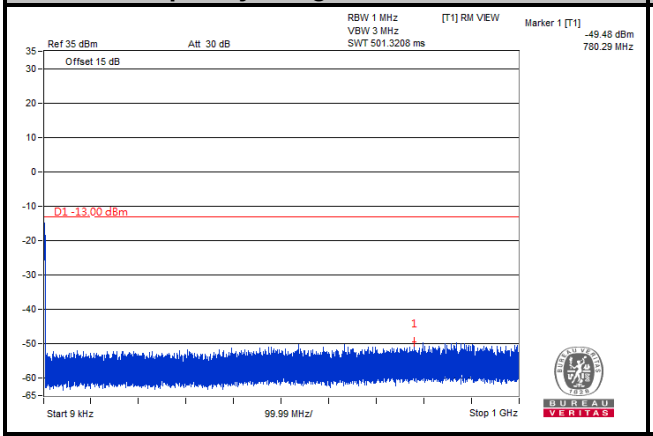
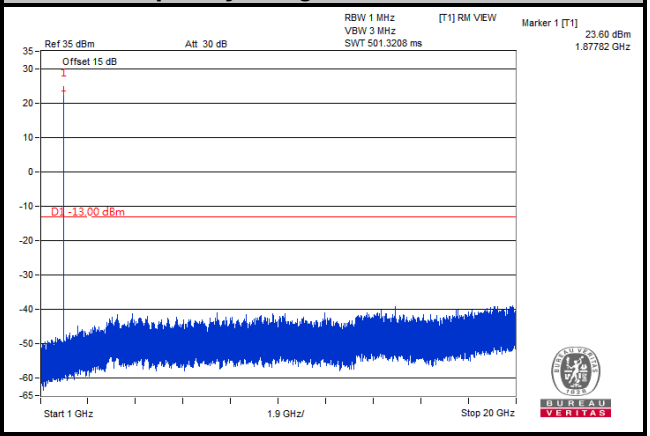
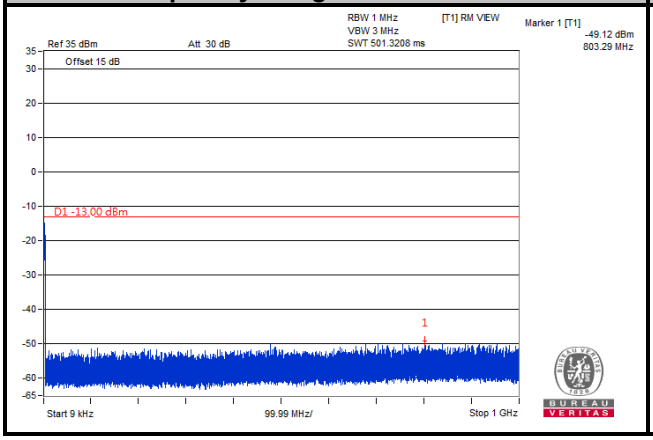
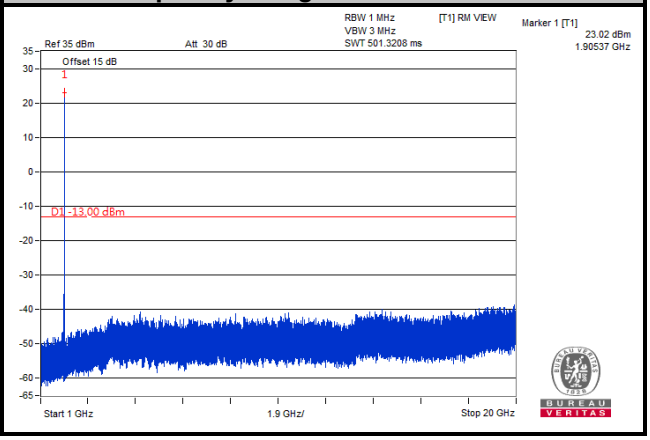
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 1.4 MHz	
Channel 18607	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19193	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

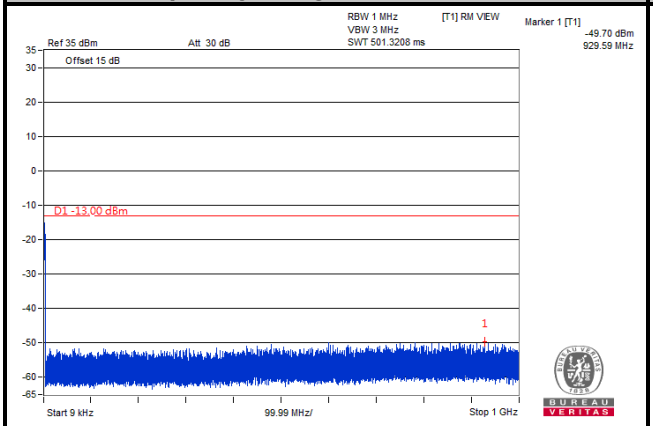
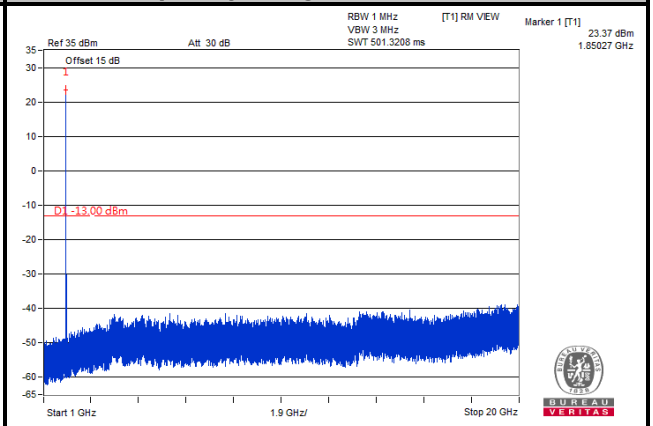
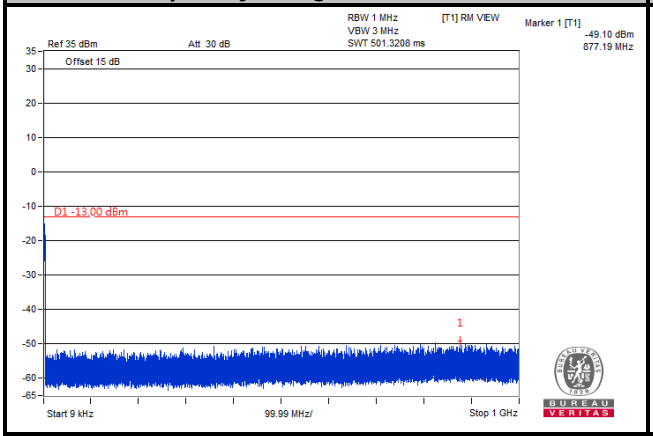
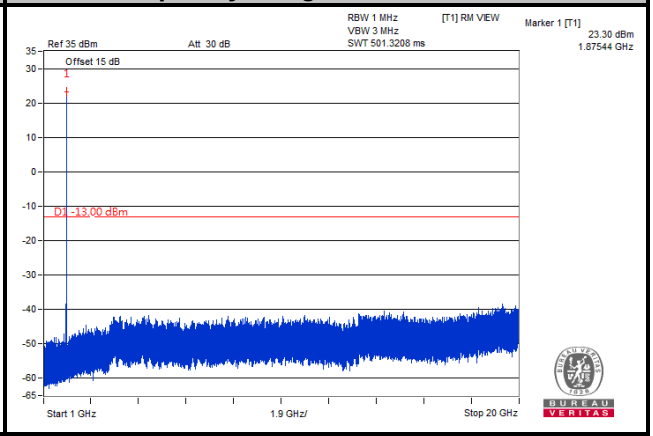
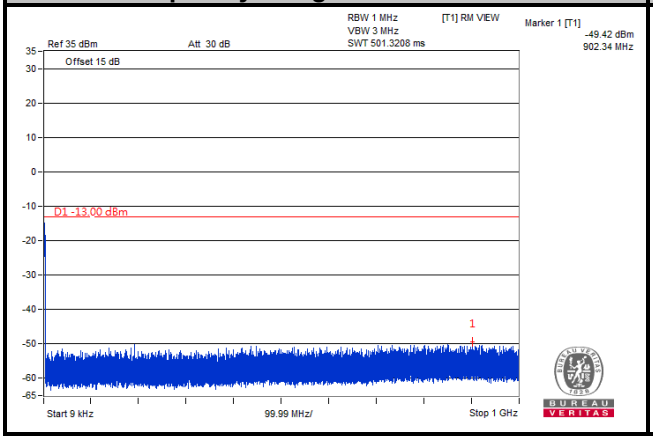
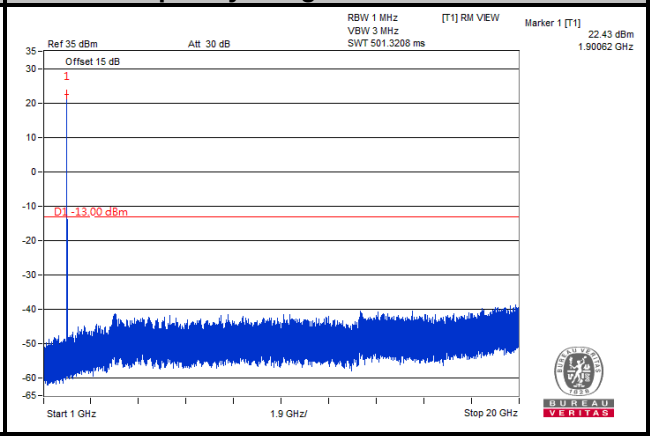
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 3 MHz	
Channel 18615	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19185	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

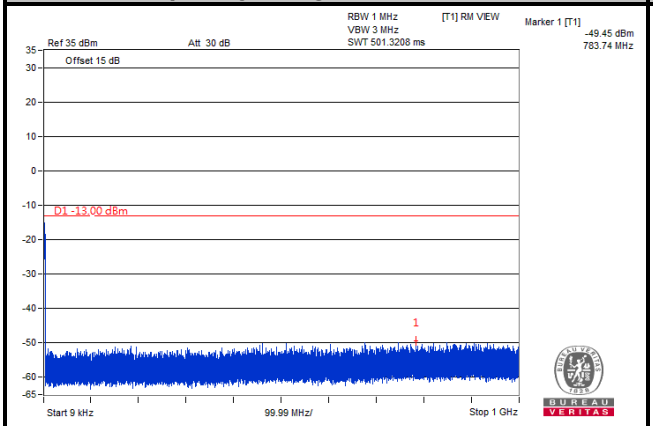
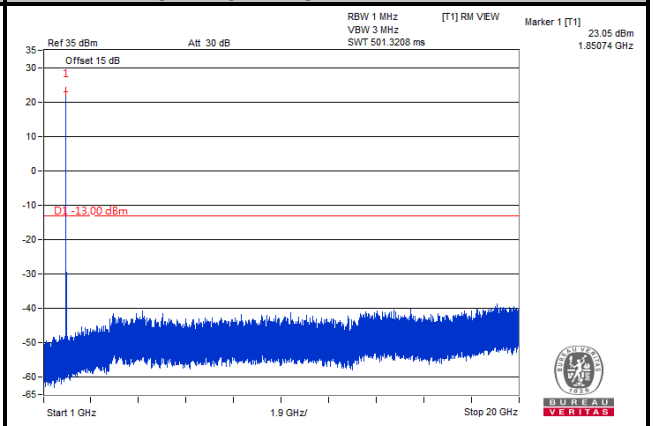
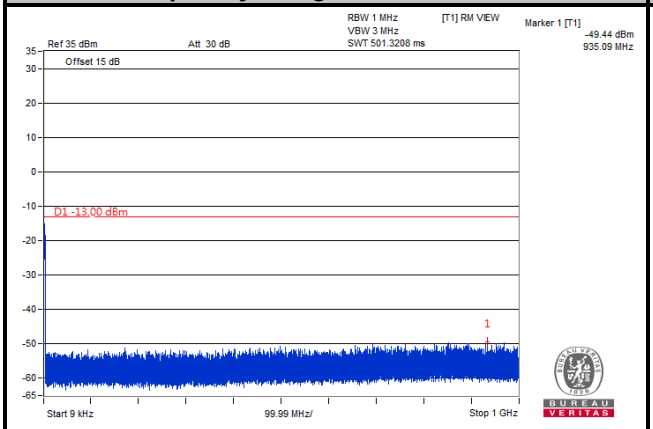
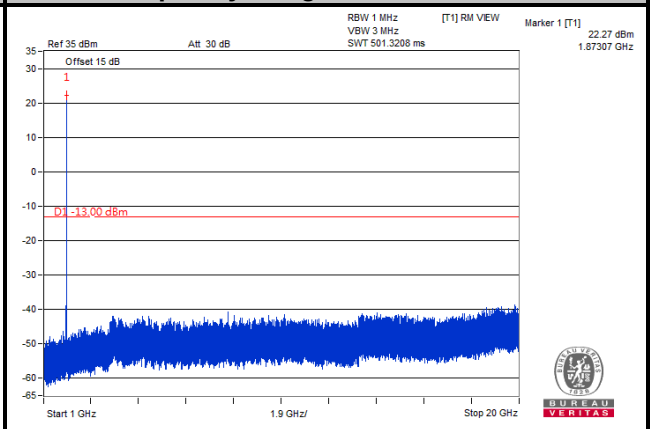
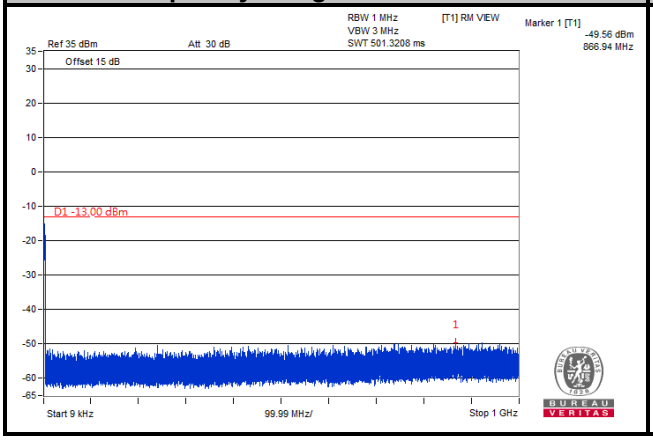
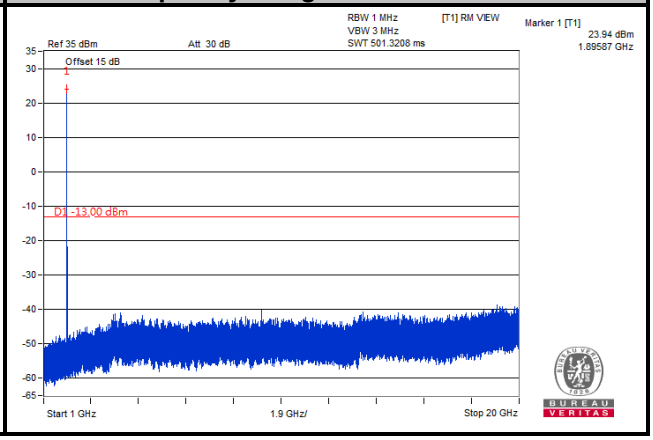
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 5 MHz	
Channel 18625	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

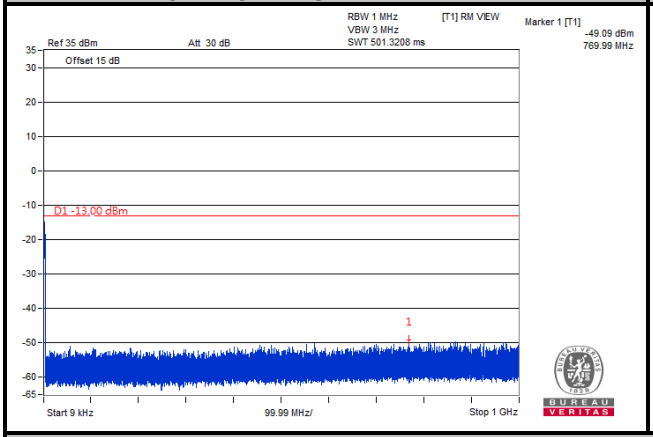
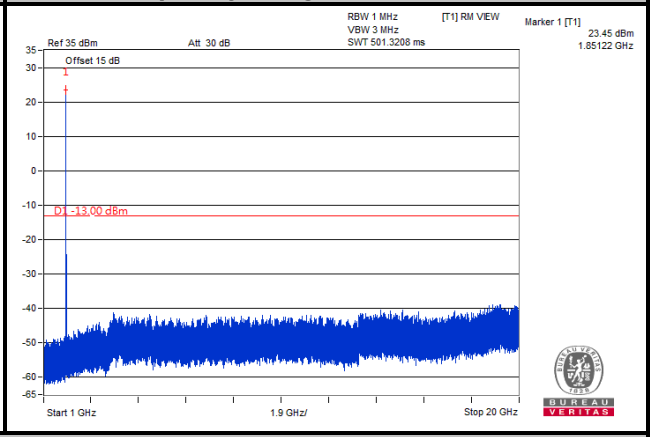
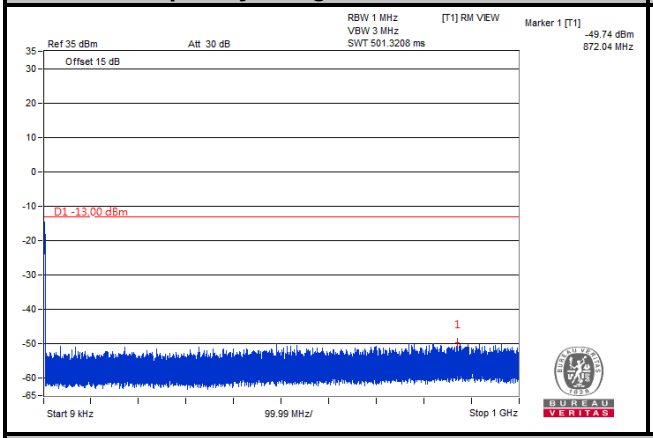
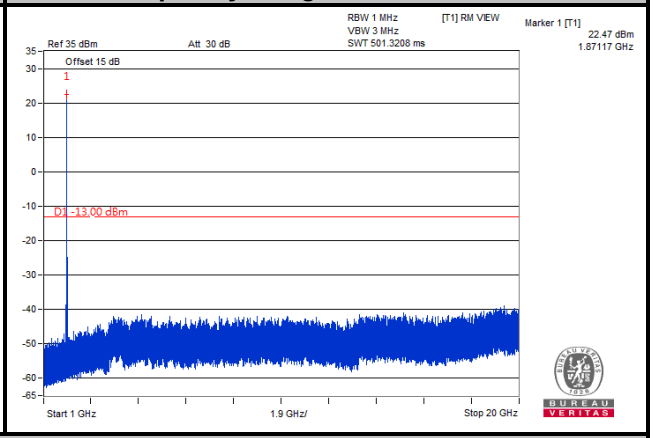
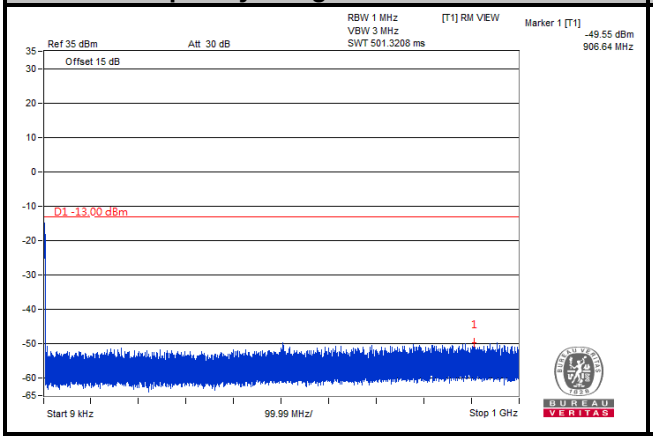
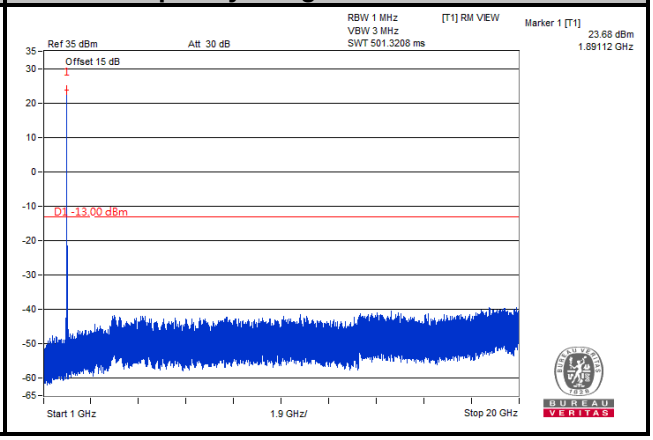
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 10 MHz	
Channel 18650	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19150	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

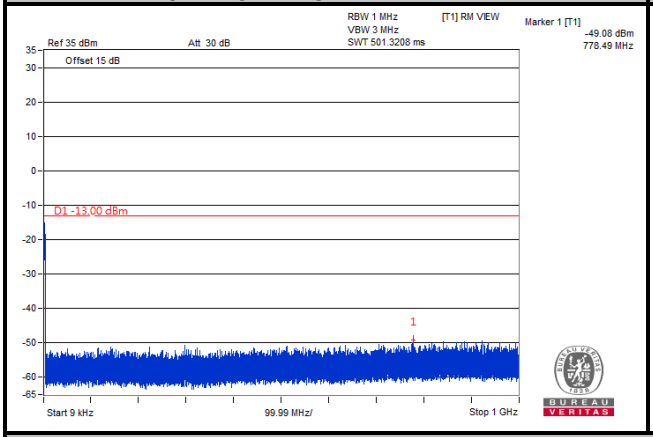
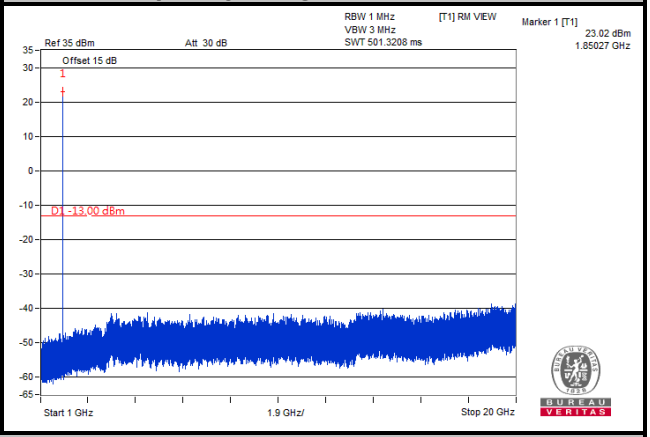
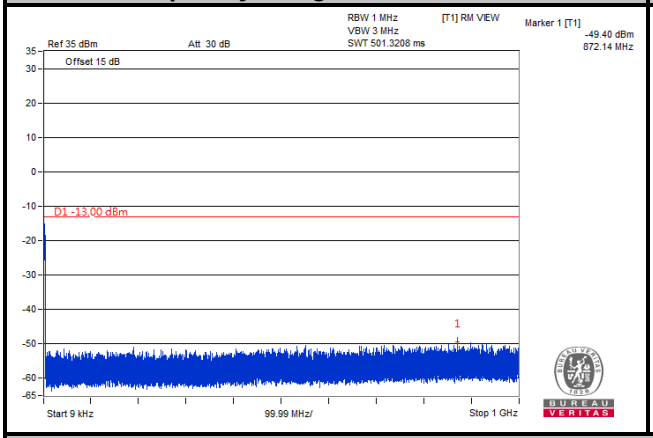
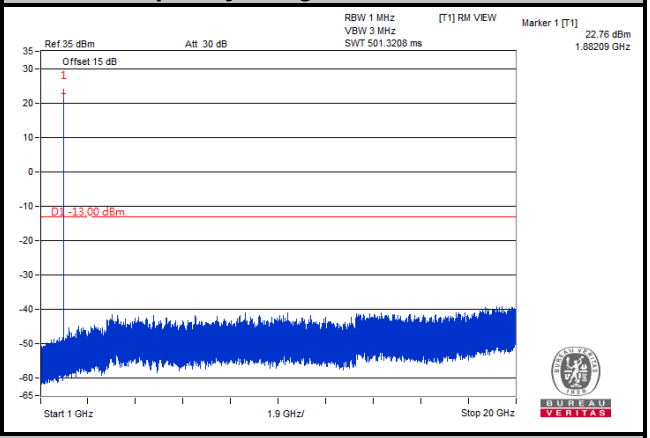
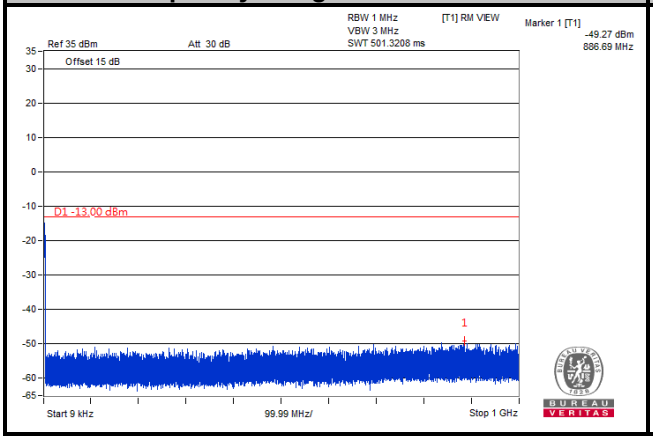
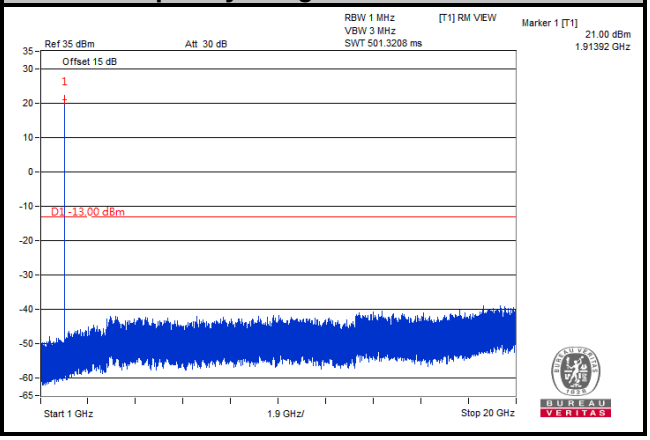
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 15 MHz	
Channel 18675	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19125	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

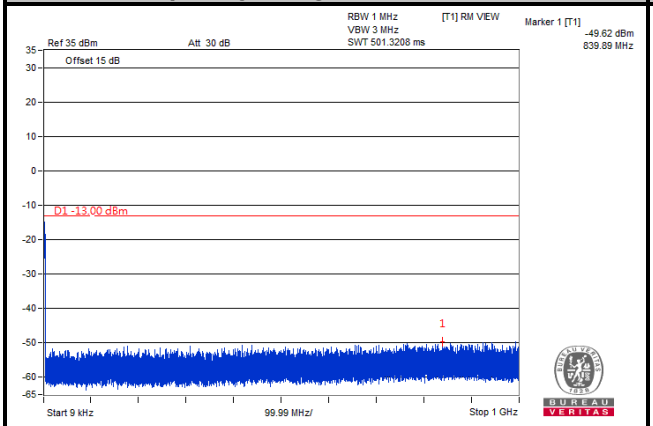
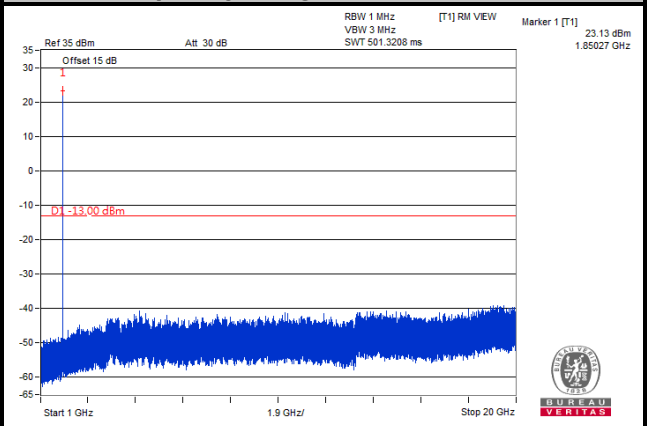
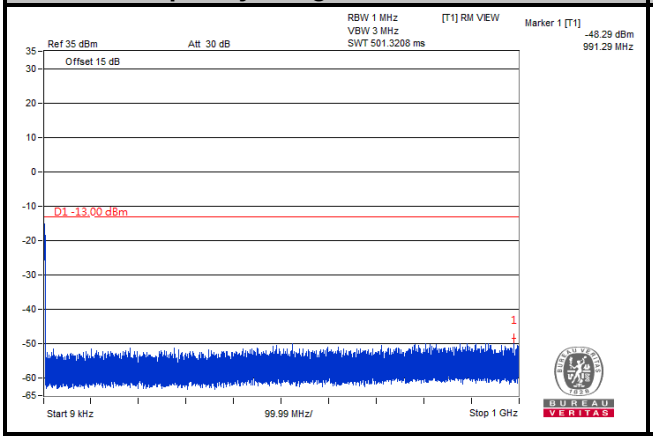
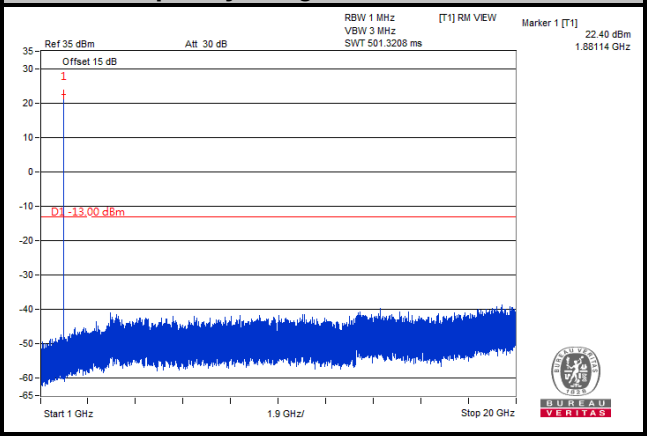
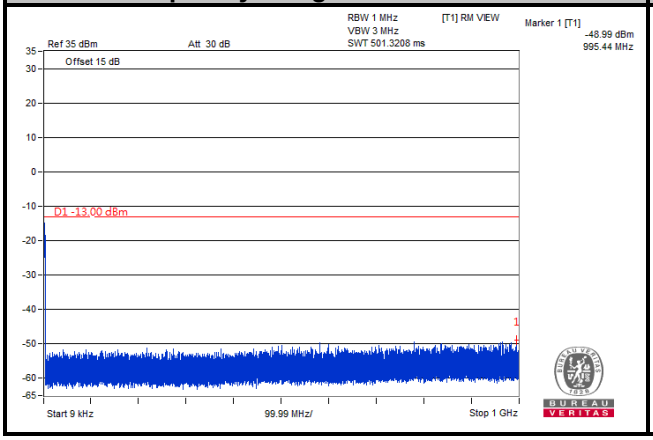
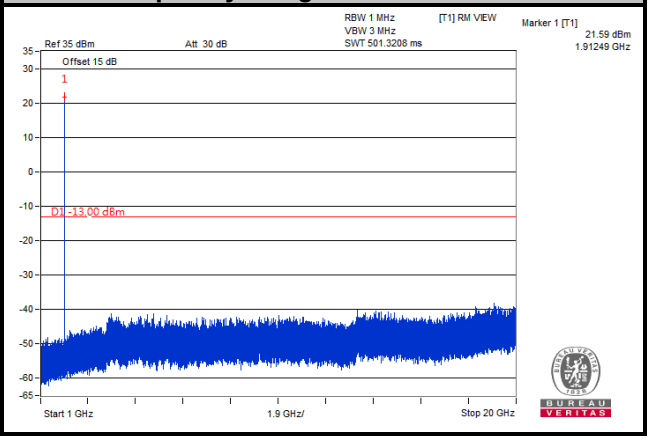
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 20 MHz	
Channel 18700	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 19100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

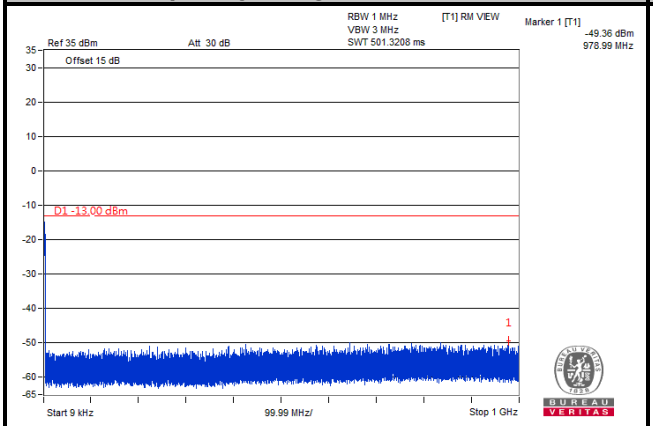
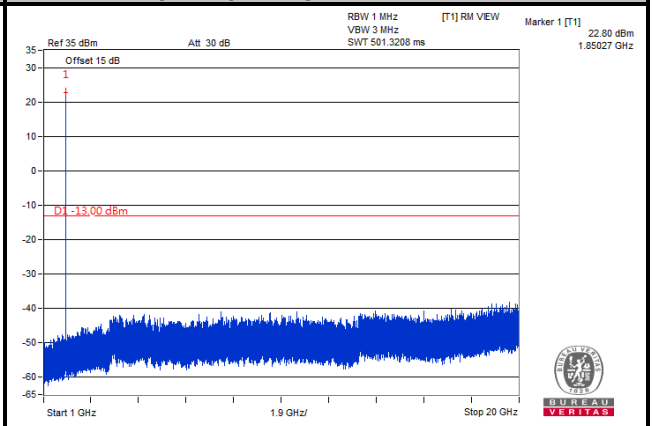
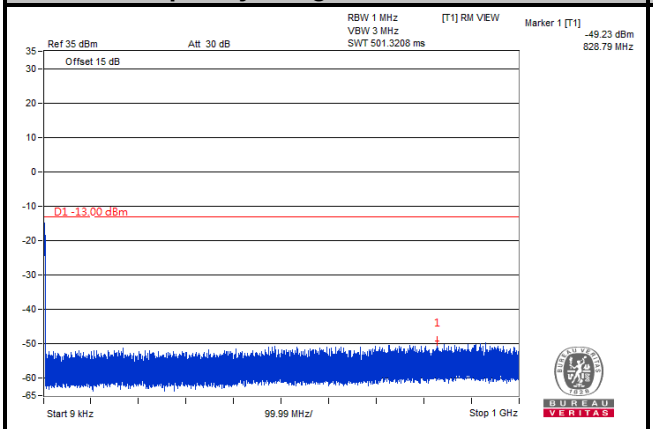
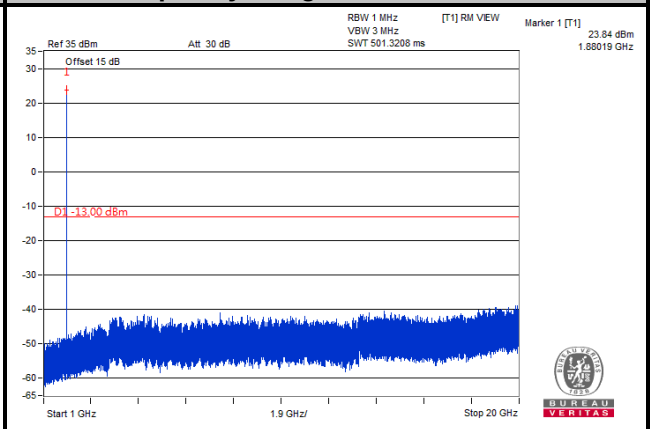
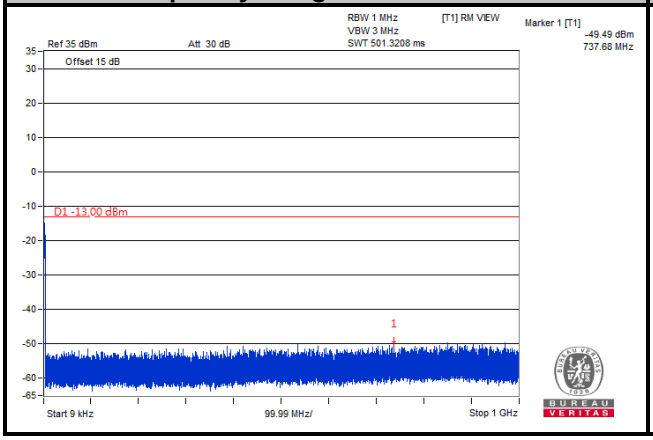
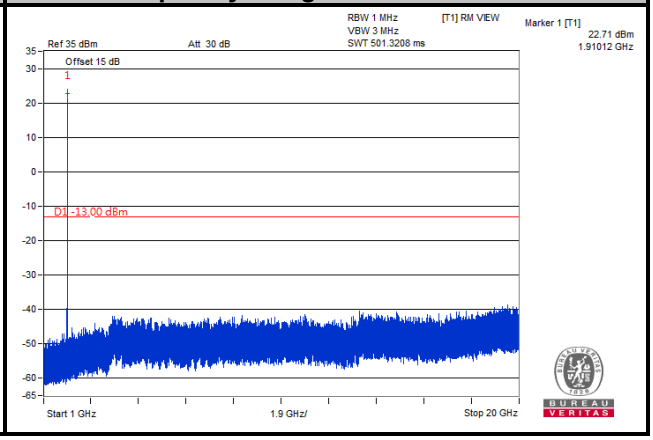
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 1.4 MHz	
Channel 26047	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26683	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

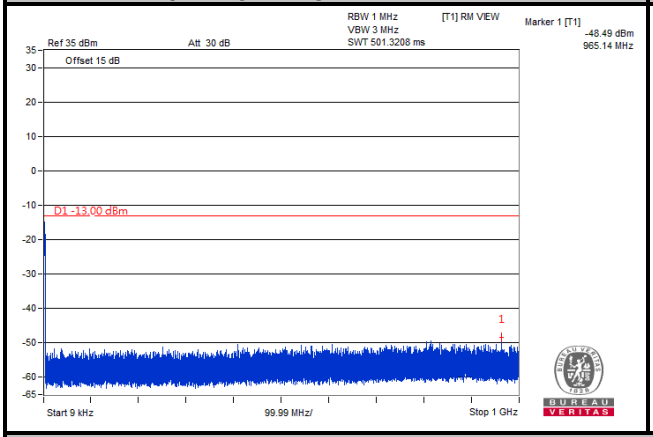
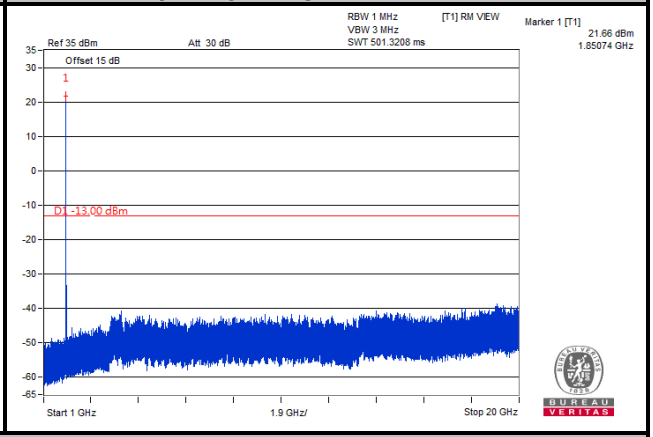
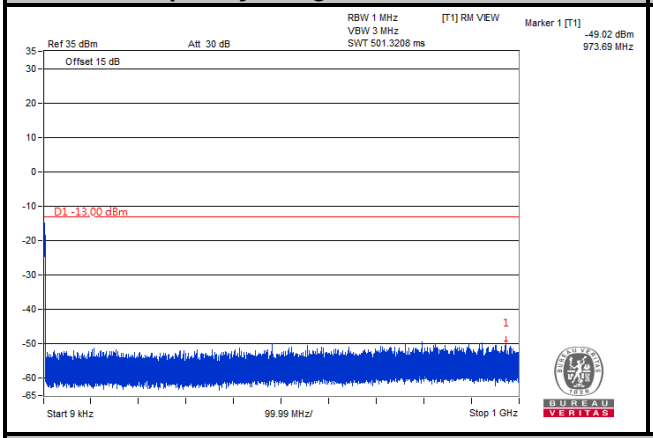
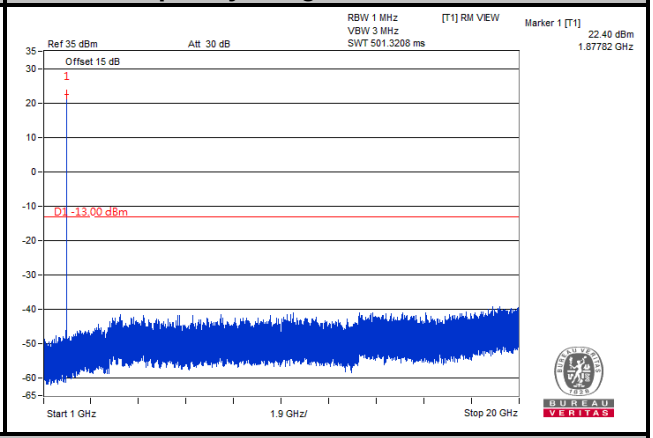
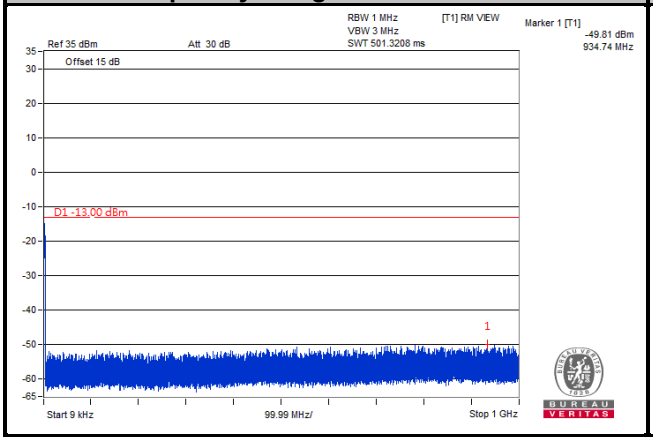
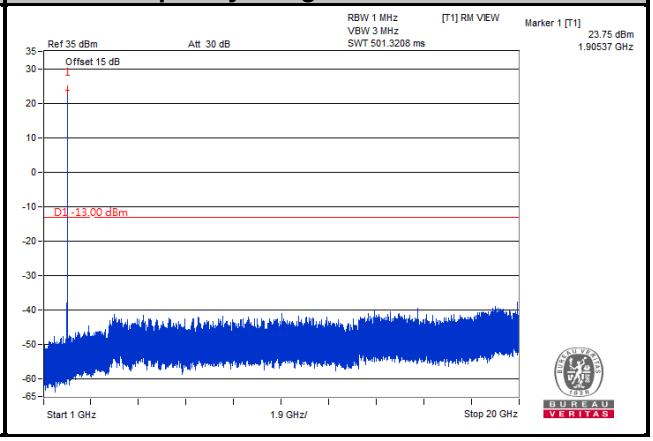
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 3 MHz	
Channel 26055	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26675	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

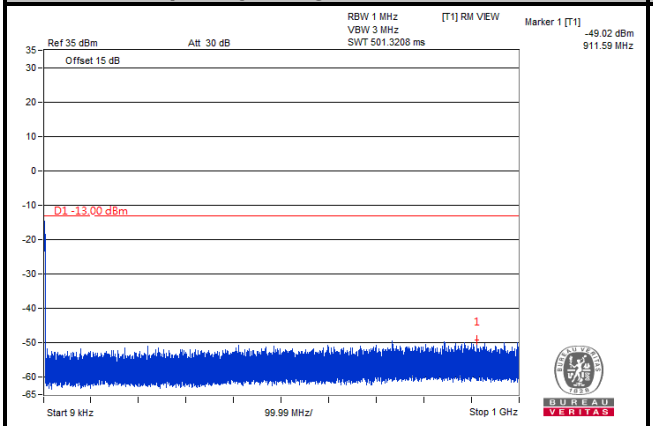
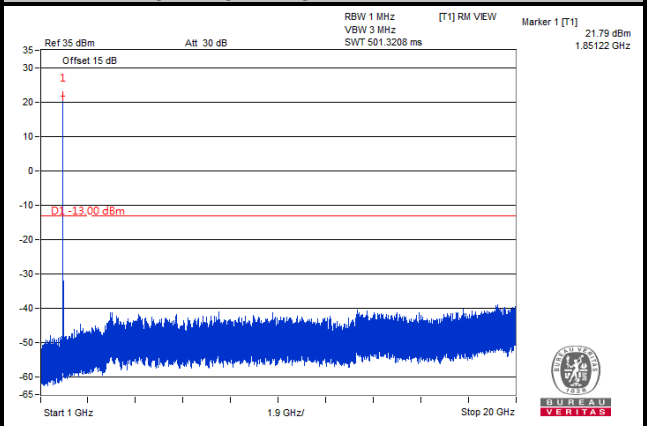
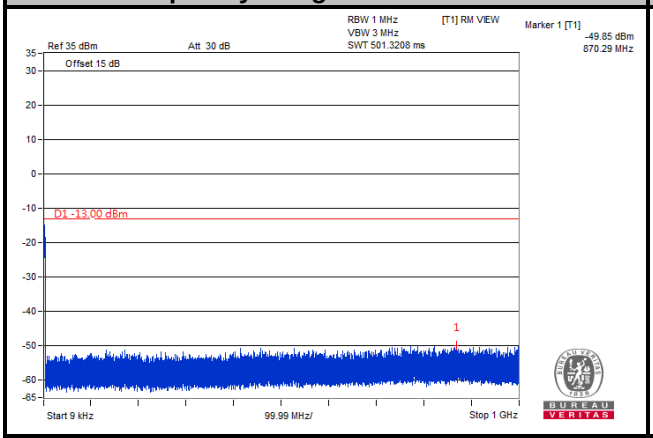
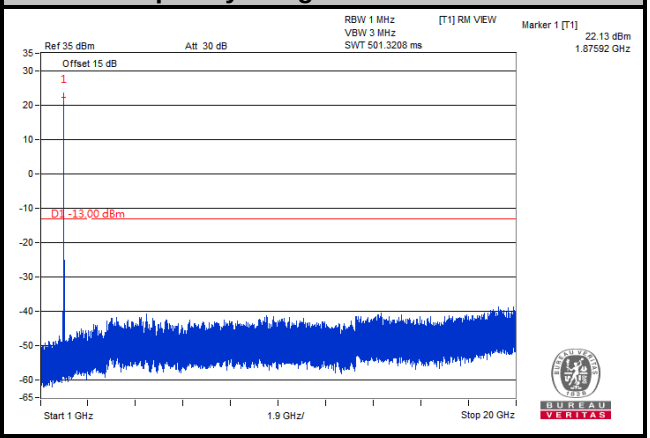
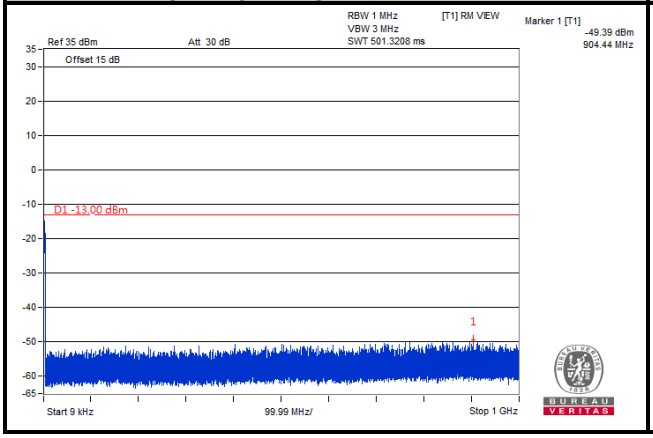
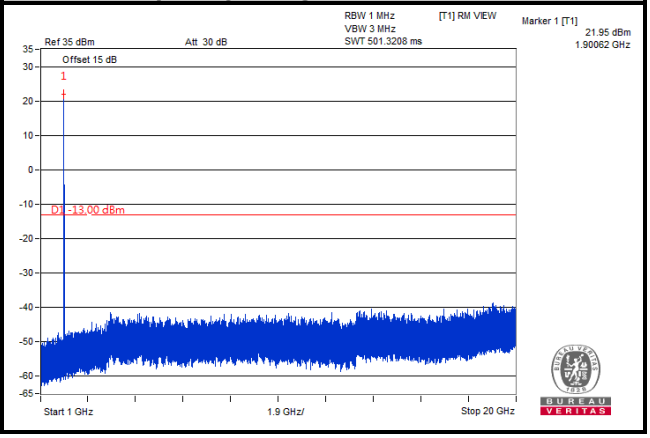
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 5 MHz	
Channel 26065	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26665	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

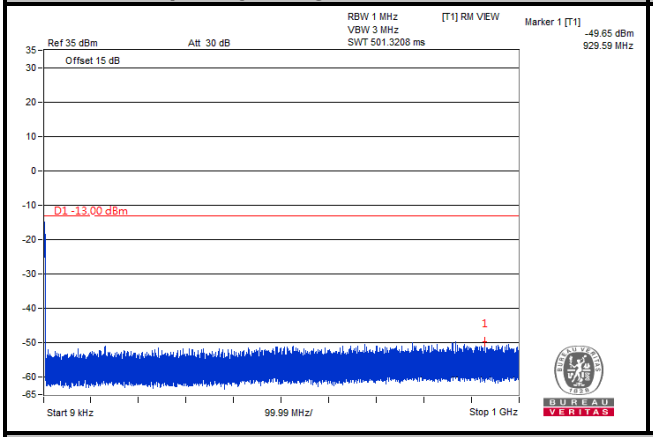
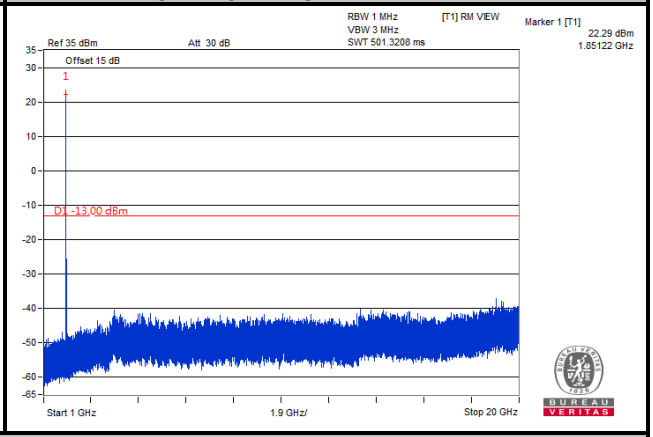
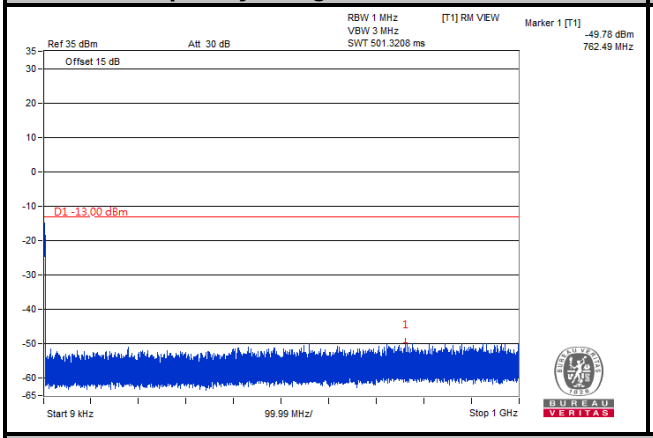
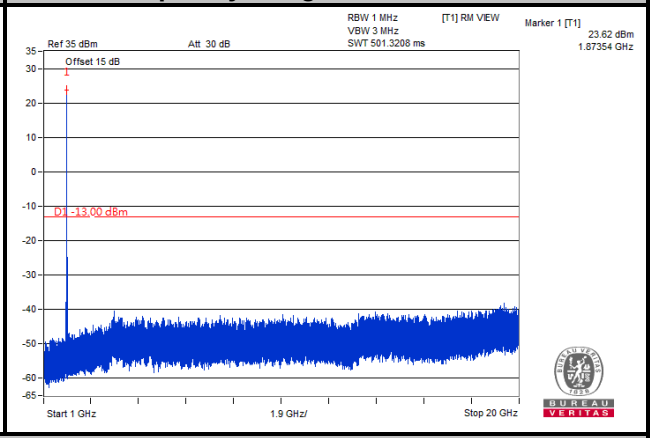
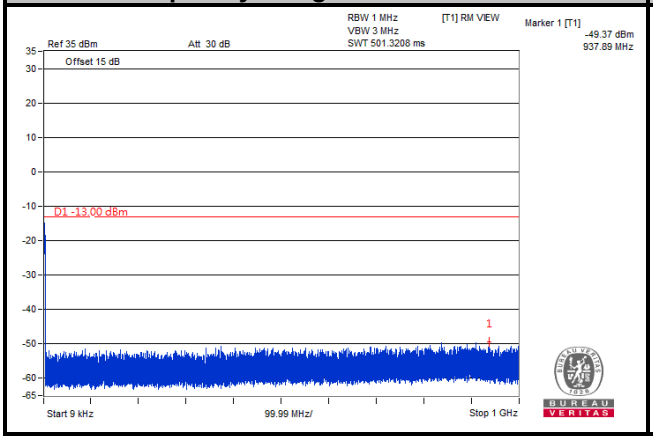
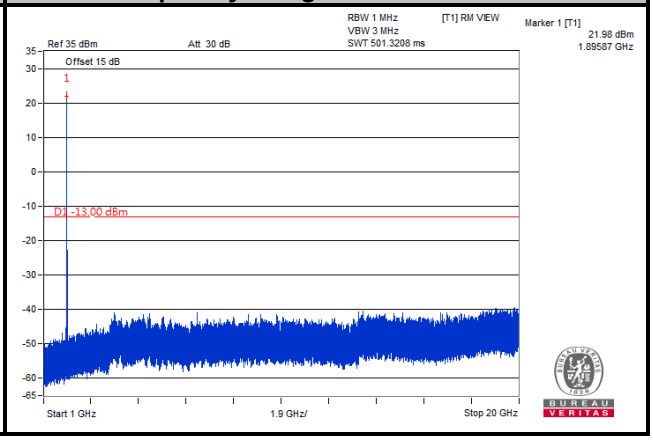
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 10 MHz	
Channel 26090	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26640	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

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

LTE Band 25	
Channel Bandwidth: 15 MHz	
Channel 26115	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26615	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	

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

LTE Band 25	
Channel Bandwidth: 20 MHz	
Channel 26140	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 GHz
	
Channel 26590	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 20 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:

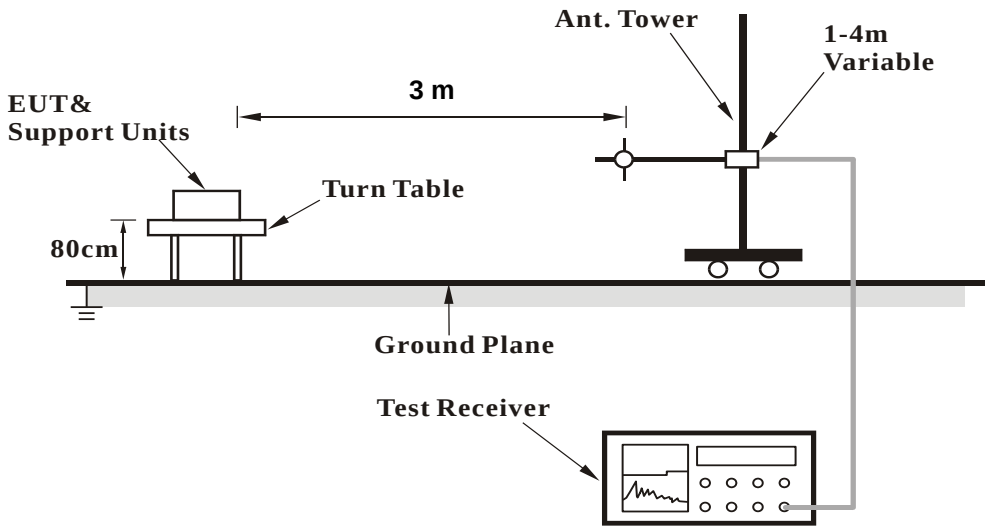
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

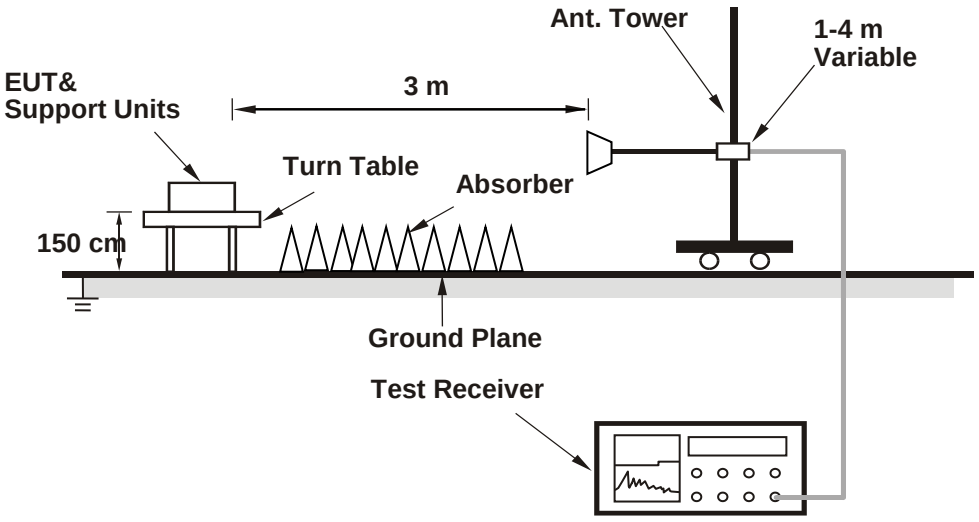
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



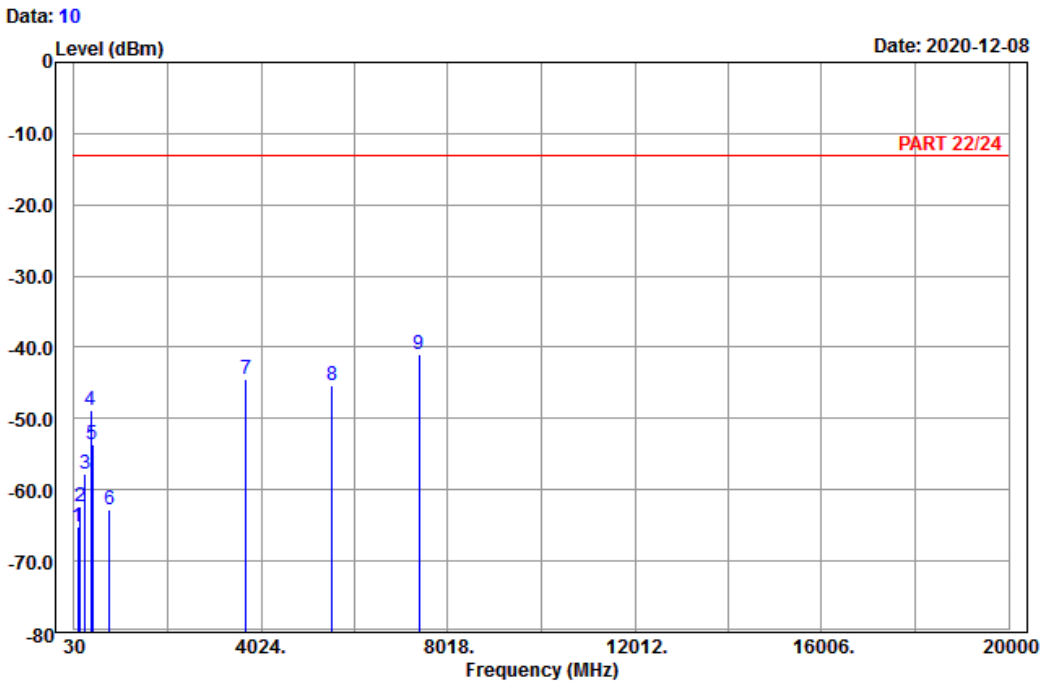
For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

GSM:

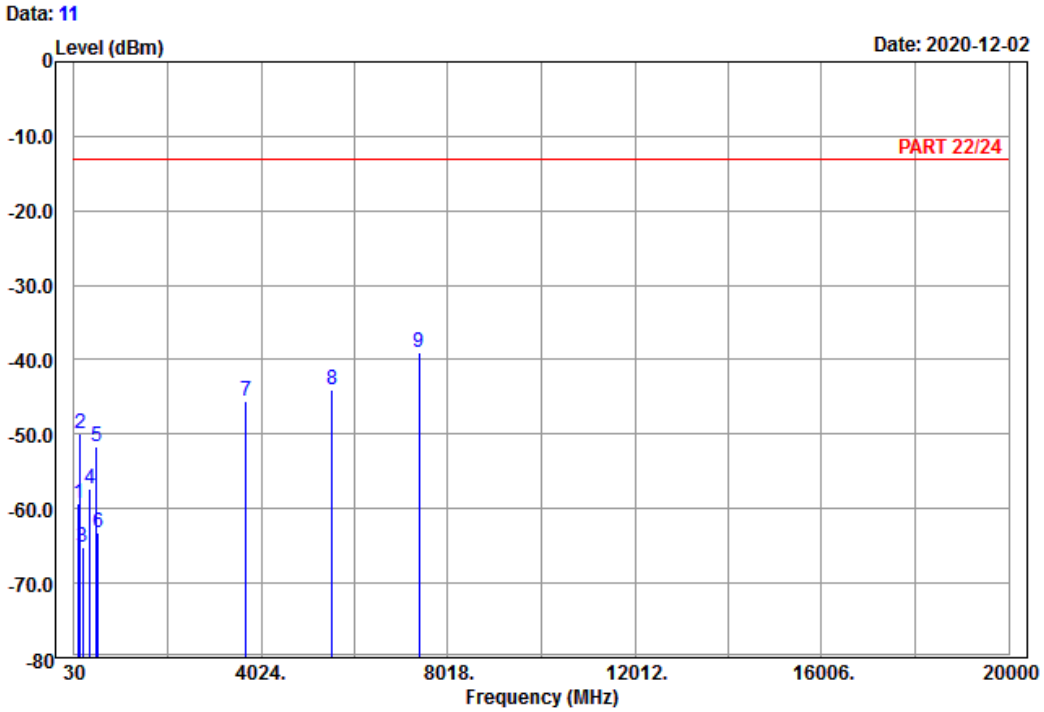
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : GPRS 1900_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	105.06	-65.28	-55.75	-9.53	-13.00	-52.28	Peak
2	163.11	-62.42	-55.04	-7.38	-13.00	-49.42	Peak
3	264.90	-57.77	-52.13	-5.64	-13.00	-44.77	Peak
4	383.30	-48.89	-45.27	-3.62	-13.00	-35.89	Peak
5	414.10	-53.56	-50.50	-3.06	-13.00	-40.56	Peak
6	780.20	-62.76	-63.43	0.67	-13.00	-49.76	Peak
7	3700.40	-44.54	-60.42	15.88	-13.00	-31.54	Peak
8	5550.60	-45.28	-65.62	20.34	-13.00	-32.28	Peak
9 pp	7400.80	-41.08	-63.36	22.28	-13.00	-28.08	Peak

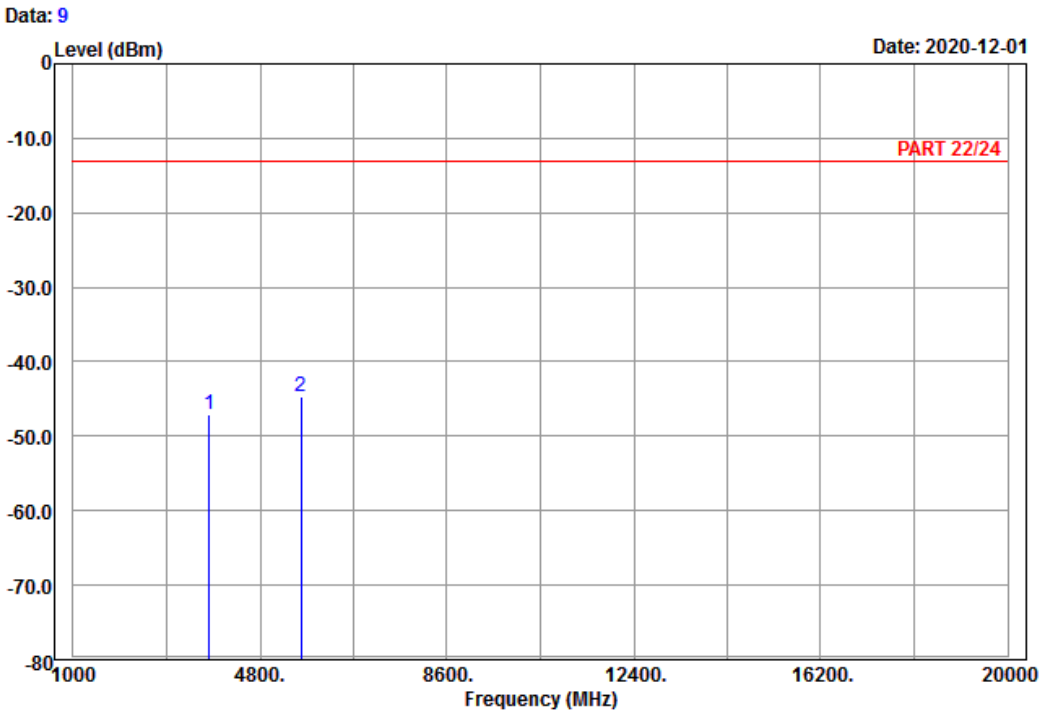


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 1900_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	122.61	-59.37	-51.24	-8.13	-13.00	-46.37	Peak
2	161.49	-49.89	-42.42	-7.47	-13.00	-36.89	Peak
3	211.71	-65.23	-59.20	-6.03	-13.00	-52.23	Peak
4	368.60	-57.37	-52.97	-4.40	-13.00	-44.37	Peak
5	508.60	-51.75	-47.04	-4.71	-13.00	-38.75	Peak
6	535.90	-63.22	-60.56	-2.66	-13.00	-50.22	Peak
7	3700.40	-45.52	-61.40	15.88	-13.00	-32.52	Peak
8	5550.60	-44.00	-64.34	20.34	-13.00	-31.00	Peak
9 pp	7400.80	-39.01	-61.29	22.28	-13.00	-26.01	Peak

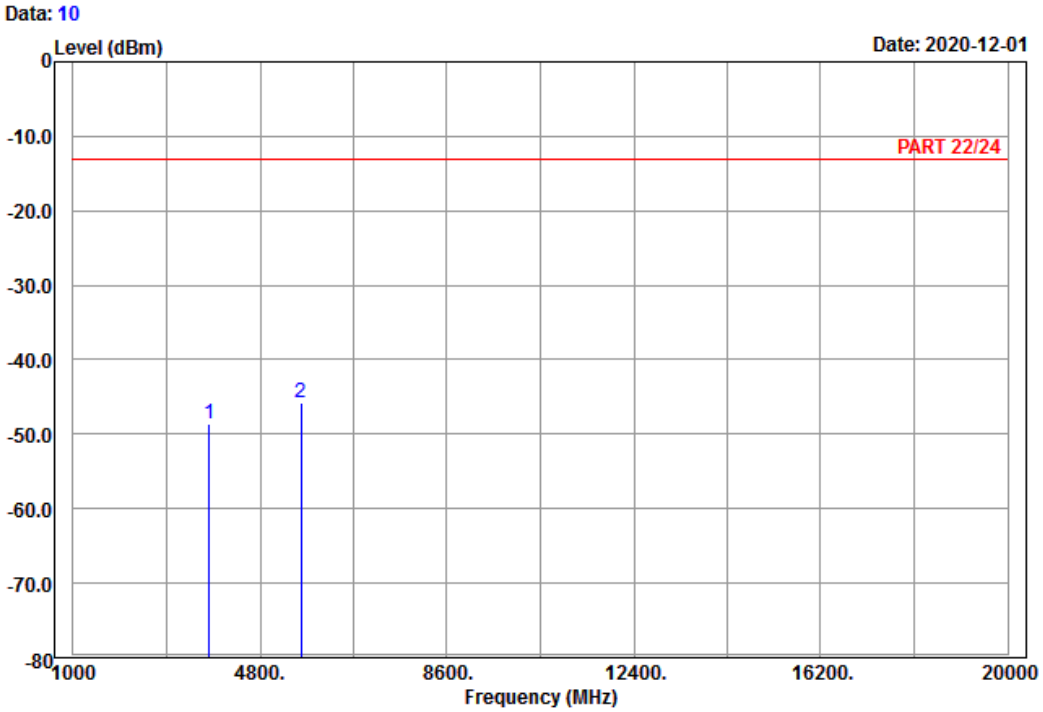
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : GPRS 1900_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-47.00	-63.14	16.14	-13.00	-34.00	Peak
2 pp	5640.00	-44.72	-65.19	20.47	-13.00	-31.72	Peak

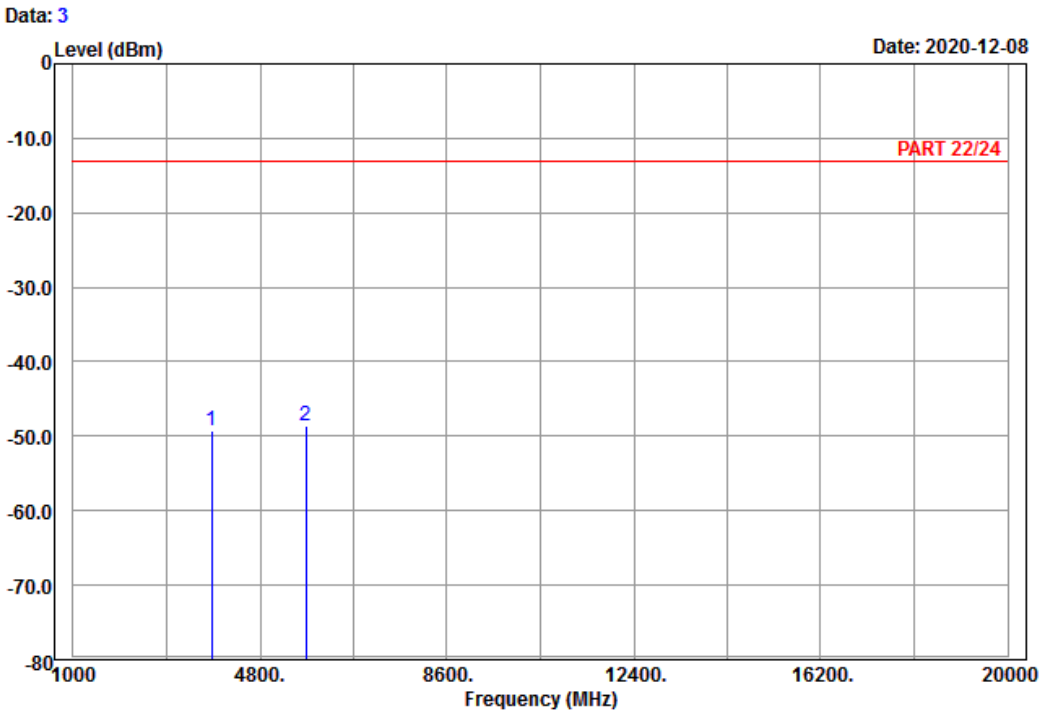


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 1900_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-48.51	-64.65	16.14	-13.00	-35.51	Peak
2 pp	5640.00	-45.74	-66.21	20.47	-13.00	-32.74	Peak

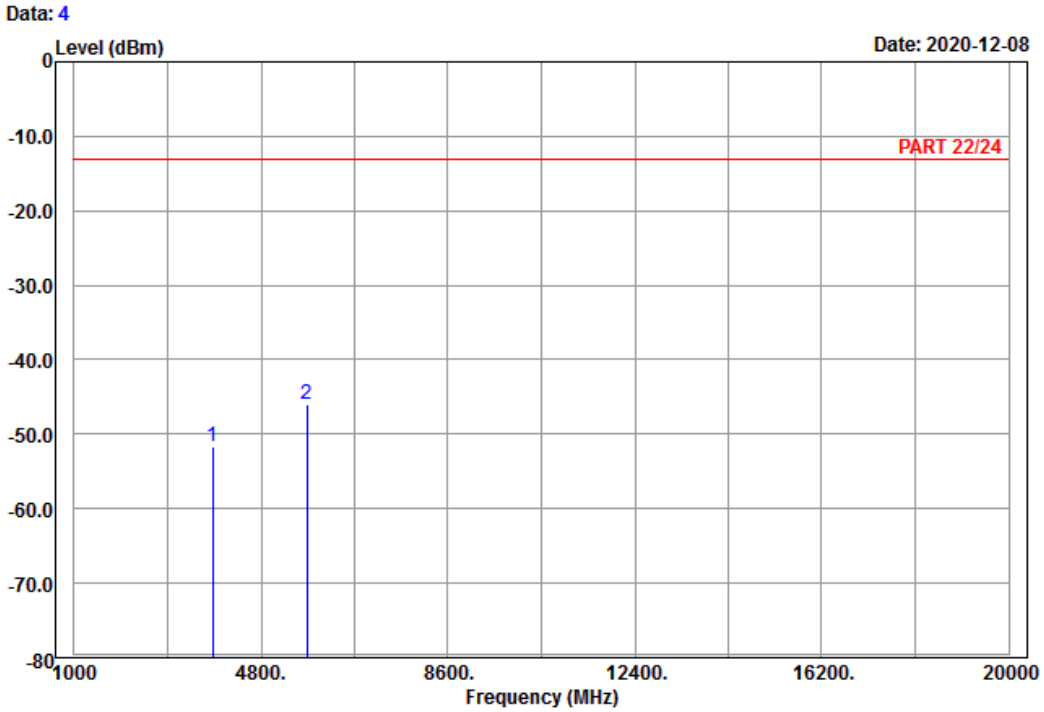
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : GPRS 1900_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3819.60	-49.22	-65.72	16.50	-13.00	-36.22	Peak
2 pp	5729.40	-48.57	-68.91	20.34	-13.00	-35.57	Peak



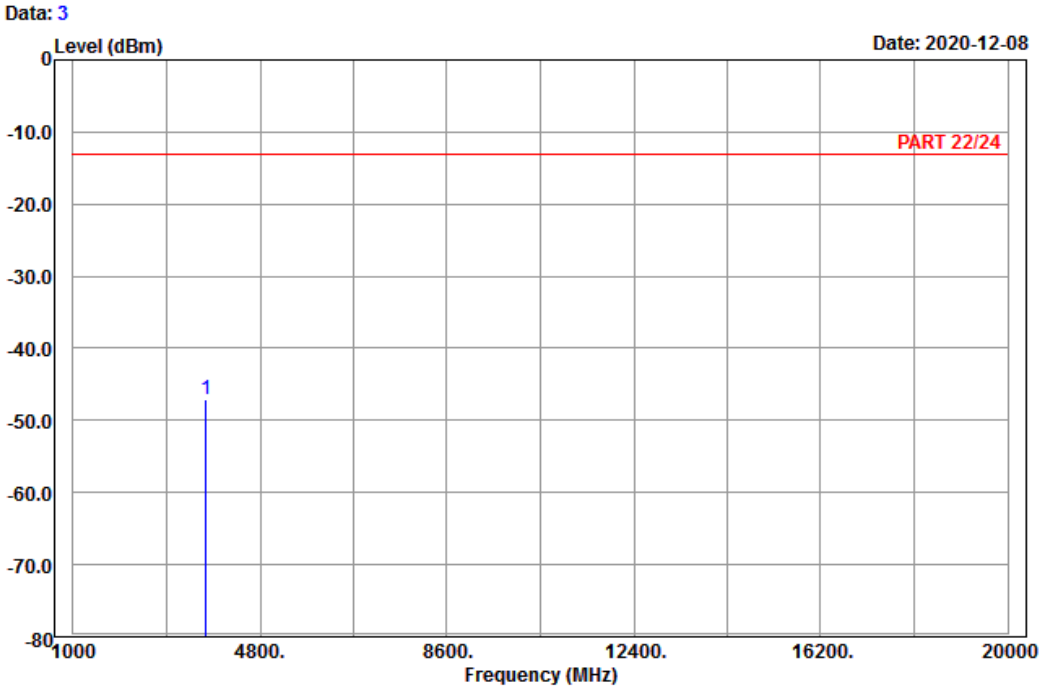
Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : GPRS 1900_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3819.60	-51.68	-68.18	16.50	-13.00	-38.68	Peak
2 pp	5729.40	-46.05	-66.39	20.34	-13.00	-33.05	Peak

EDGE:

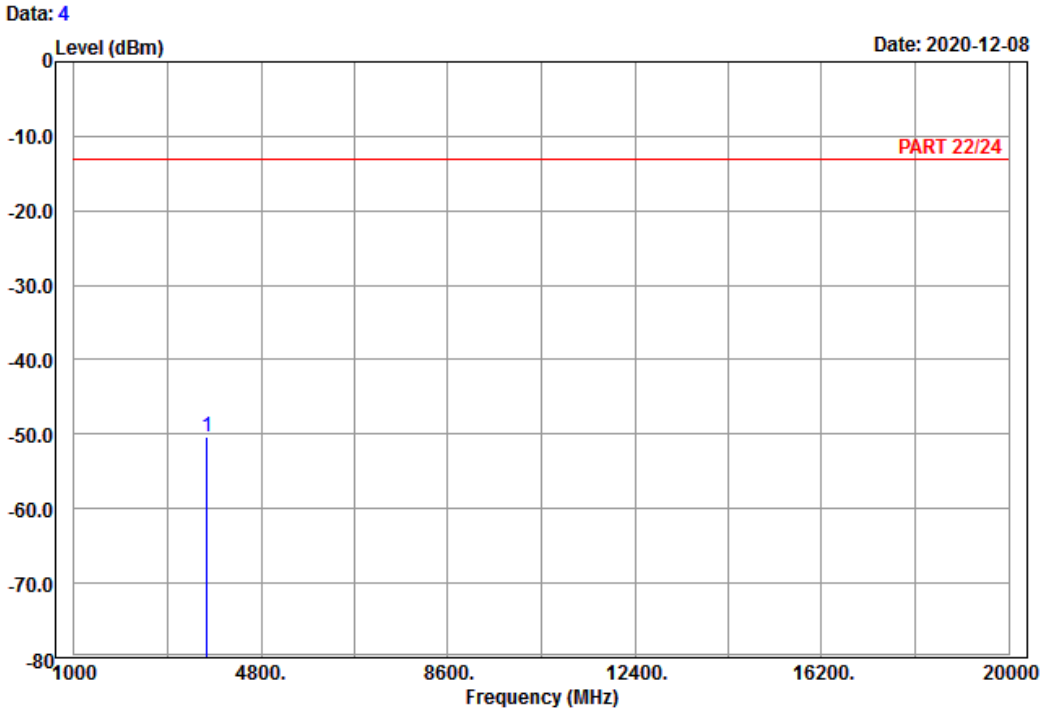
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




```
Site      : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark    : EDGE 1900_Link_L-Ch
Tested by: Charles Hsiao
                          Read          Limit   Over
           Freq  Level   Level Factor   Line  Limit Remark
          _____ _______ _____ ______ _______ _____ ________
                 MHz     dBm   dBm      dB    dBm     dB

  1 pp  3700.40 -47.13 -63.01  15.88 -13.00 -34.13 Peak
```

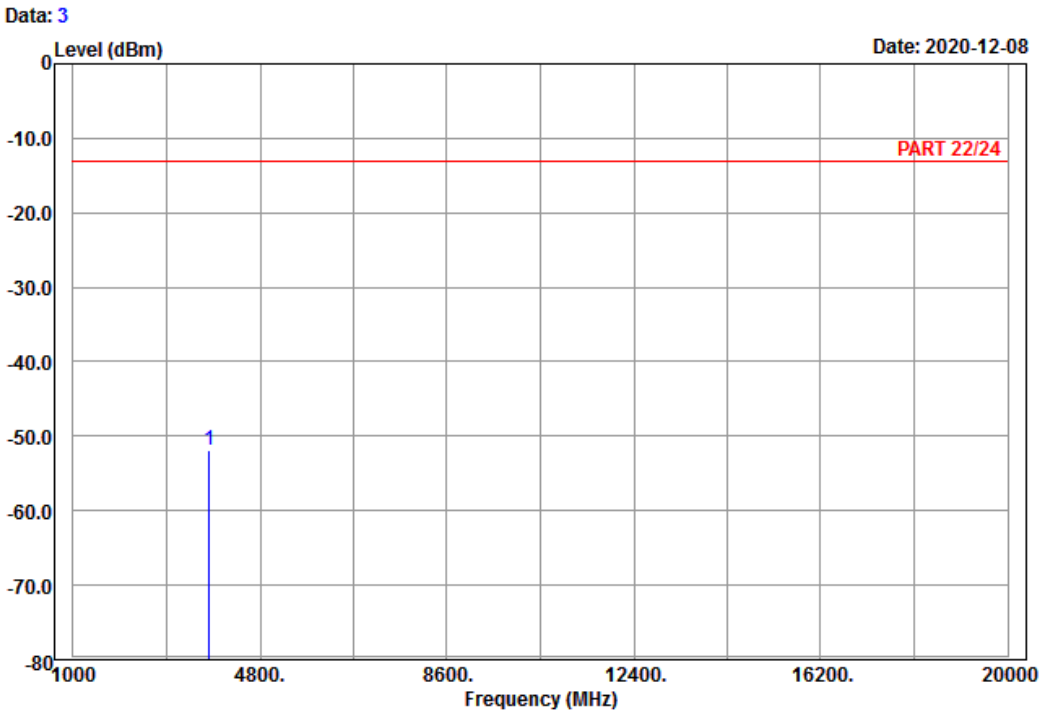


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 1900_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	3700.40	-50.39	-66.27	15.88	-13.00	-37.39	Peak

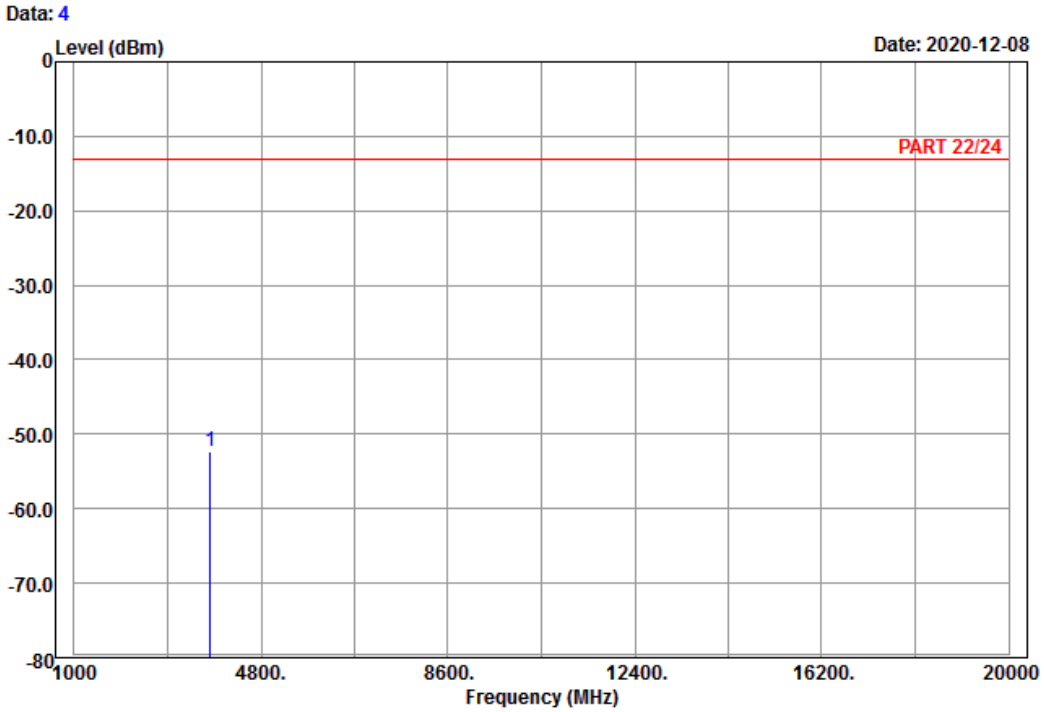
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : EDGE 1900_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	3760.00	-51.96	-68.10	16.14	-13.00	-38.96	Peak

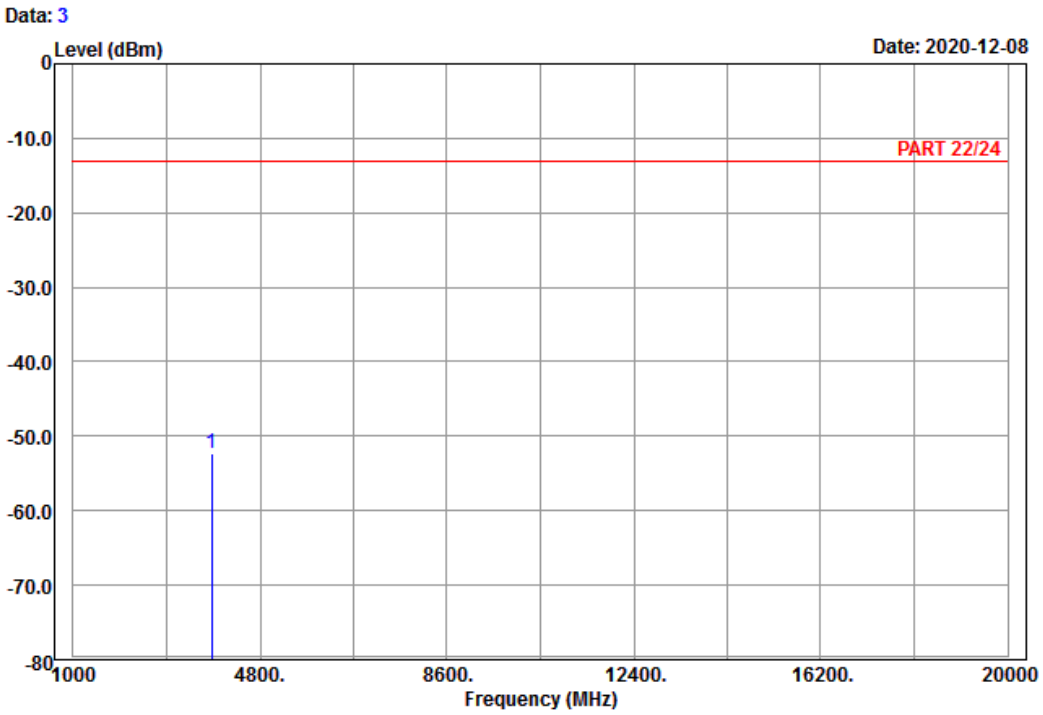


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 1900_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	3760.00	-52.24	-68.38	16.14	-13.00	-39.24	Peak

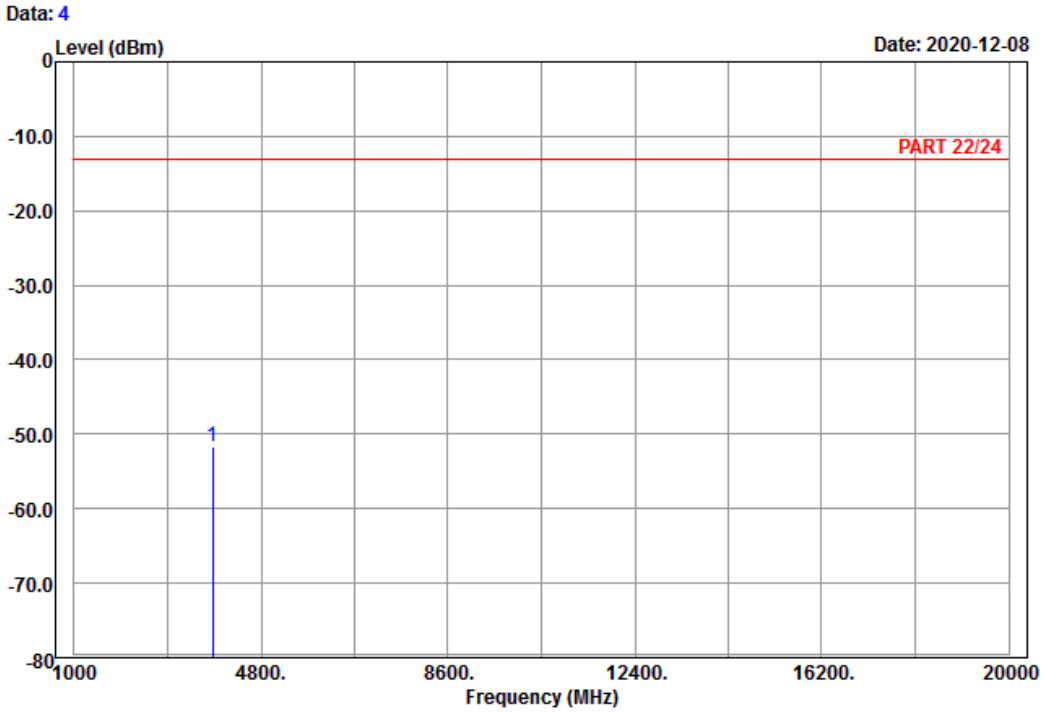
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : EDGE 1900_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	3819.60	-52.29	-68.79	16.50	-13.00	-39.29	Peak



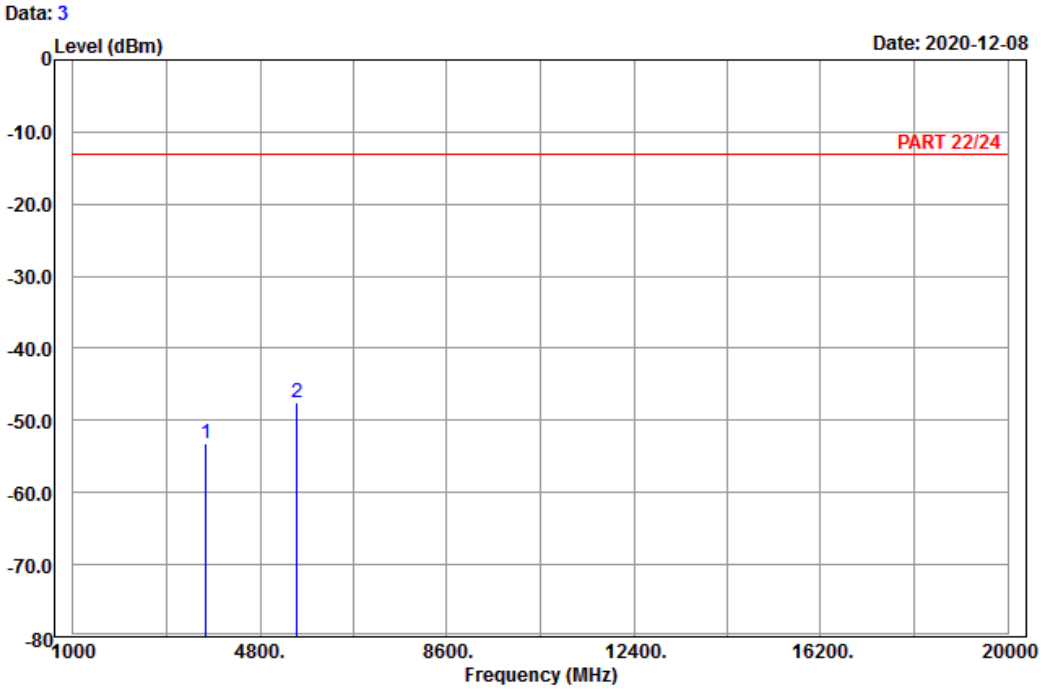
Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : EDGE 1900_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	3819.60	-51.76	-68.26	16.50	-13.00	-38.76	Peak

WCDMA:

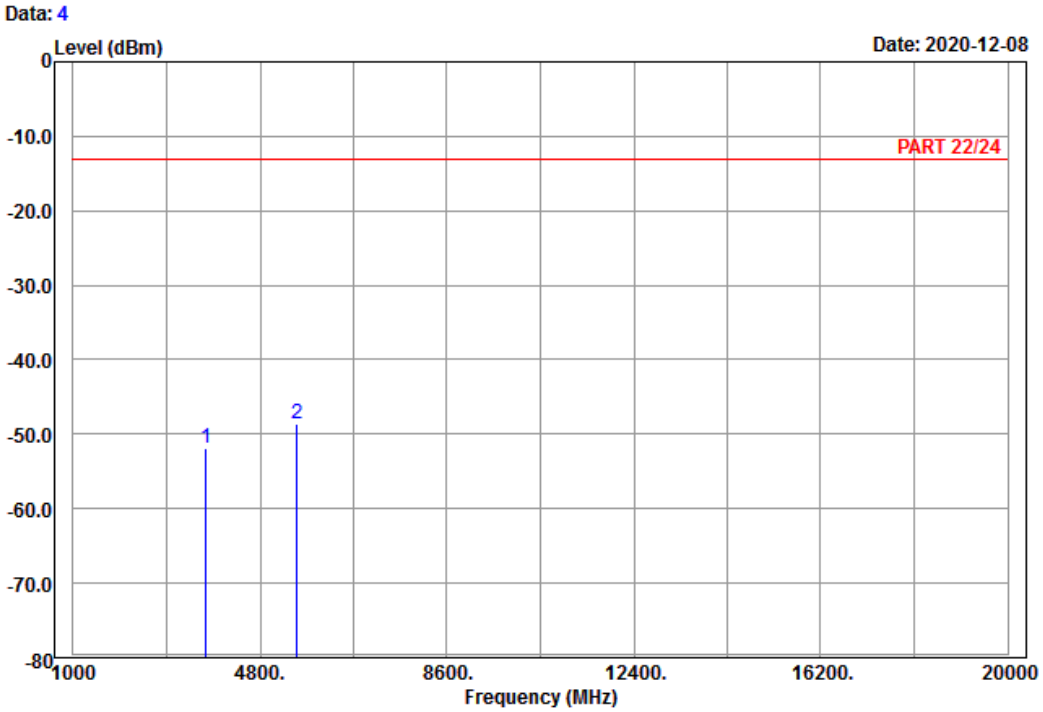
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




```
Site      : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark    : Band II_Link_L-Ch
Tested by: Karl Lee
                          Read          Limit   Over
            Freq  Level   Level Factor   Line  Limit Remark
          _______ _______ _____ ______ _______ _____ _______
                  MHz     dBm   dBm    dB     dBm    dB

  1     3704.80 -53.08 -68.96  15.88 -13.00 -40.08 Peak
  2 pp  5557.80 -47.43 -67.77  20.34 -13.00 -34.43 Peak
```

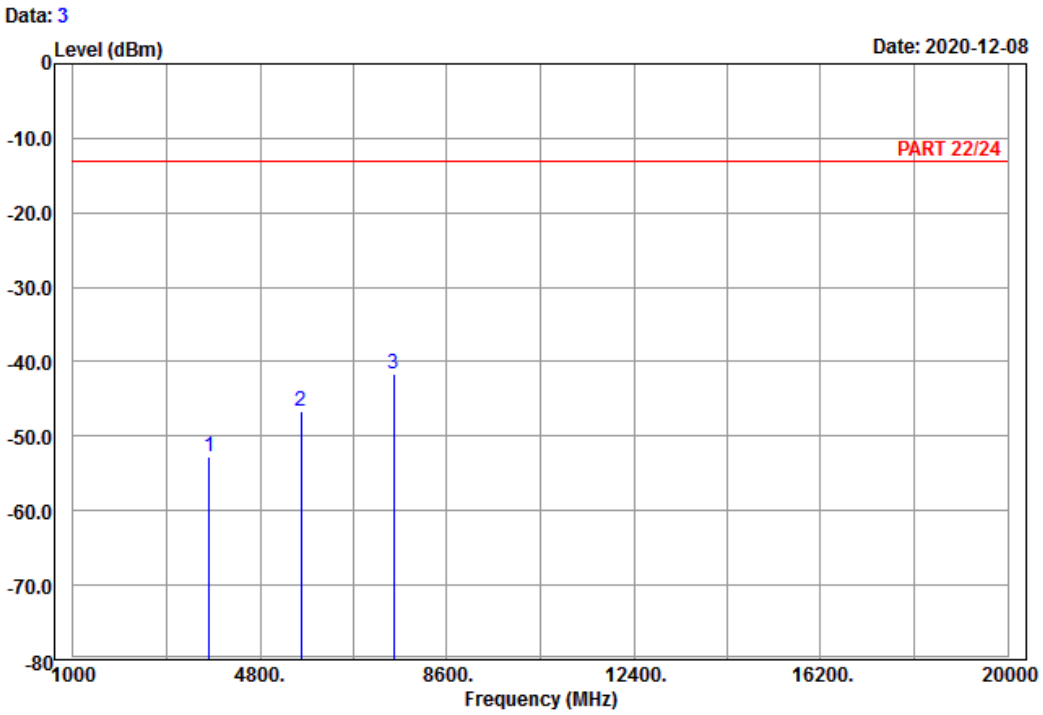


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band II_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3704.80	-51.88	-67.76	15.88	-13.00	-38.88	Peak
2 pp	5557.20	-48.68	-69.02	20.34	-13.00	-35.68	Peak

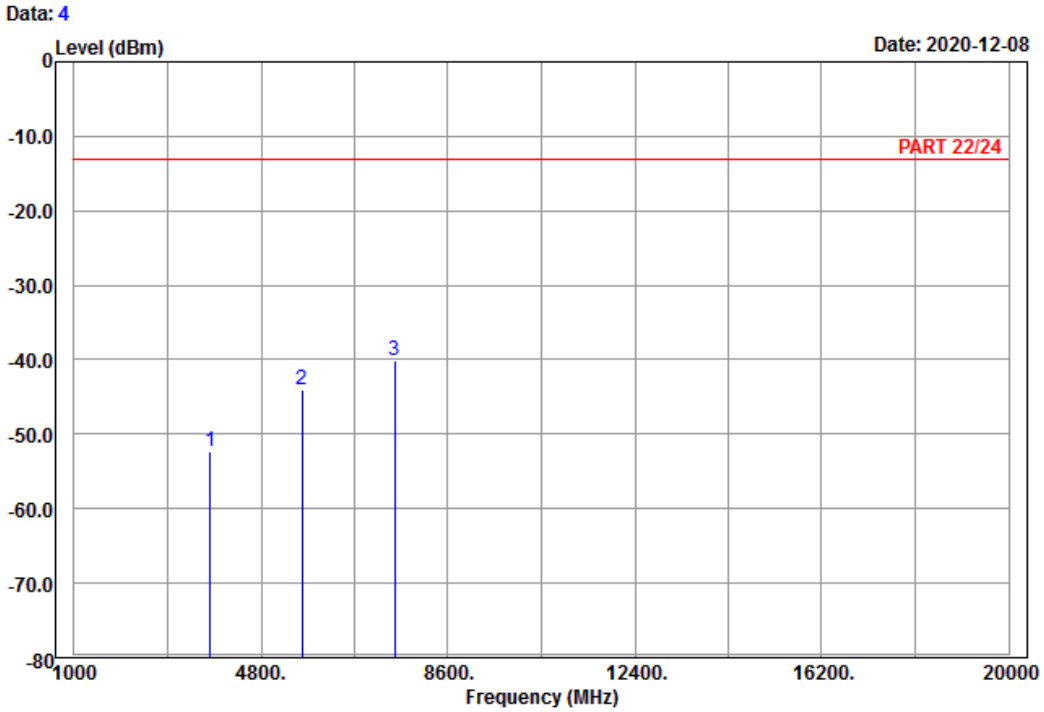
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



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

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.71	-68.85	16.14	-13.00	-39.71	Peak
2	5640.00	-46.72	-67.19	20.47	-13.00	-33.72	Peak
3 pp	7520.00	-41.66	-64.34	22.68	-13.00	-28.66	Peak

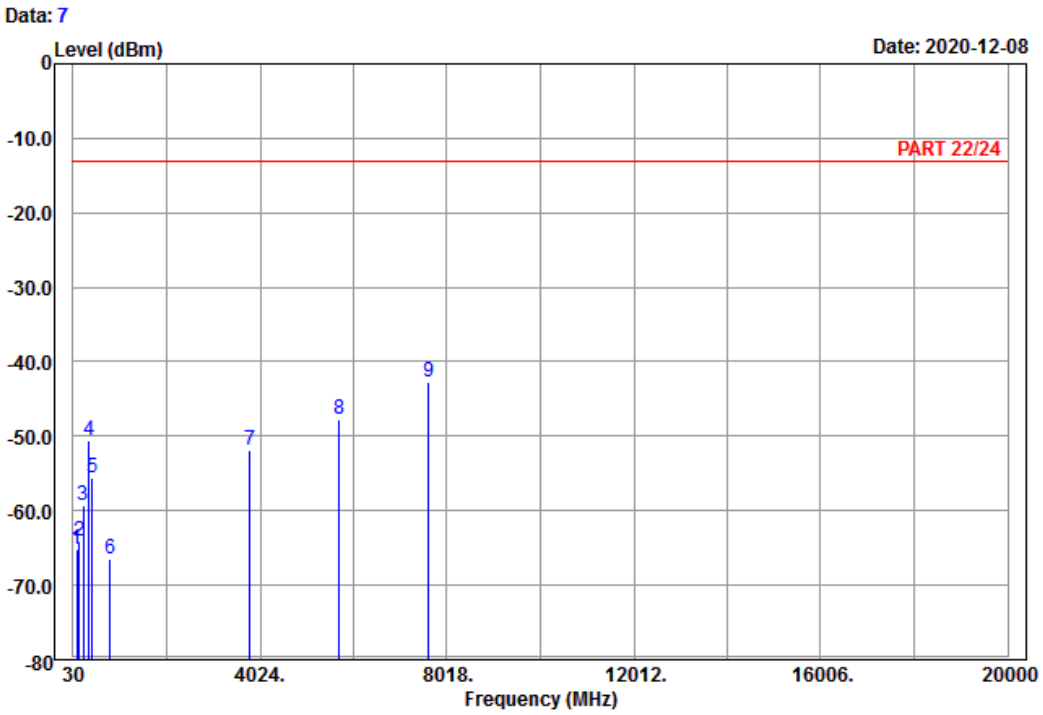


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band II_Link_M-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.23	-68.37	16.14	-13.00	-39.23	Peak
2	5640.00	-43.96	-64.43	20.47	-13.00	-30.96	Peak
3 pp	7520.00	-40.14	-62.82	22.68	-13.00	-27.14	Peak

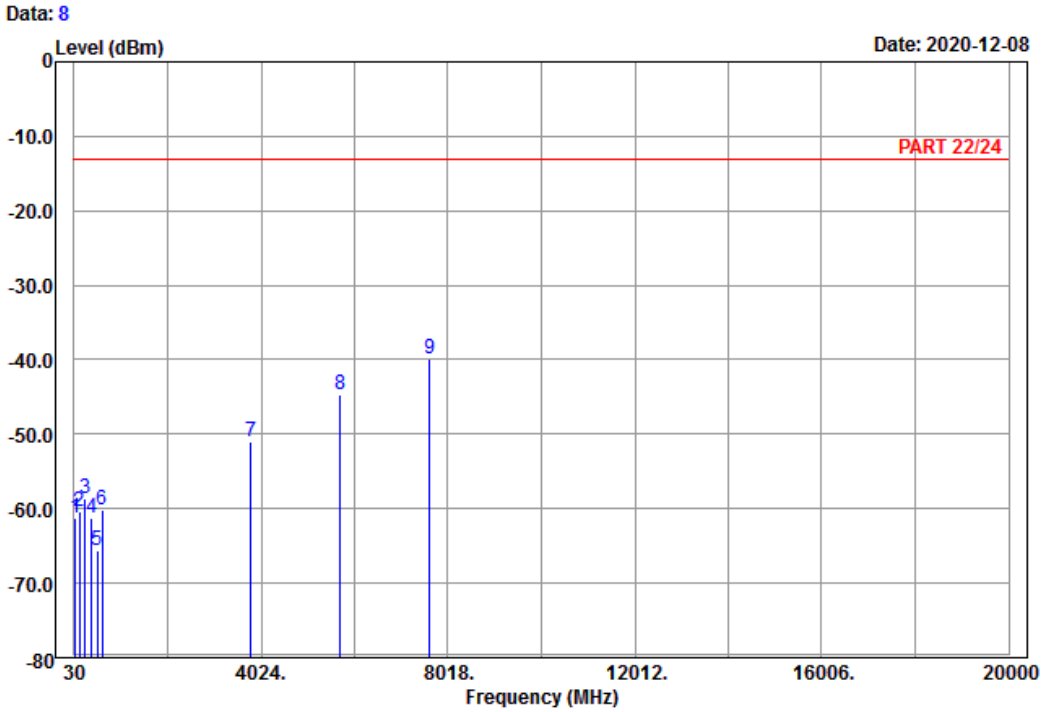
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	115.59	-65.08	-56.51	-13.00	-52.08	-8.57	Peak
2	166.35	-64.17	-57.18	-13.00	-51.17	-6.99	Peak
3	253.83	-59.33	-53.79	-13.00	-46.33	-5.54	Peak
4	365.10	-50.67	-46.07	-13.00	-37.67	-4.60	Peak
5	435.10	-55.57	-52.04	-13.00	-42.57	-3.53	Peak
6	813.80	-66.51	-68.37	-13.00	-53.51	1.86	Peak
7	3815.20	-51.92	-68.33	-13.00	-38.92	16.41	Peak
8	5722.80	-47.83	-68.10	-13.00	-34.83	20.27	Peak
9 pp	7630.40	-42.78	-65.80	-13.00	-29.78	23.02	Peak

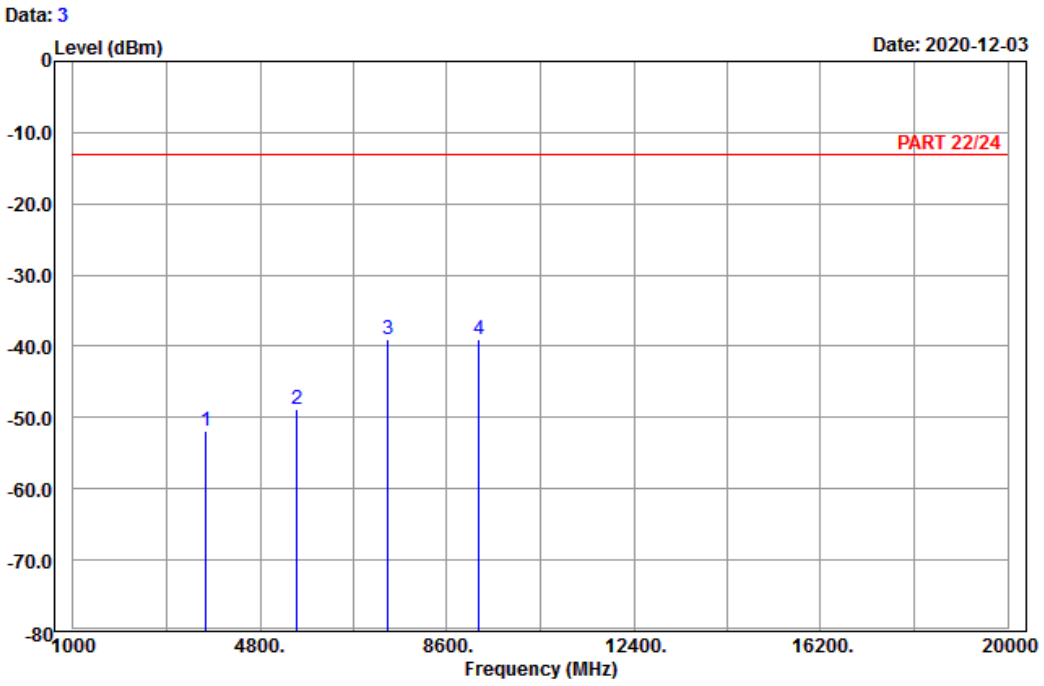


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band II_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	57.54	-61.16	-47.10	-13.00	-48.16	-14.06	Peak
2	135.84	-60.47	-52.80	-13.00	-47.47	-7.67	Peak
3	259.77	-58.55	-52.95	-13.00	-45.55	-5.60	Peak
4	398.00	-61.21	-58.37	-13.00	-48.21	-2.84	Peak
5	528.90	-65.60	-62.38	-13.00	-52.60	-3.22	Peak
6	624.80	-60.17	-60.32	-13.00	-47.17	0.15	Peak
7	3815.20	-51.10	-67.51	-13.00	-38.10	16.41	Peak
8	5722.80	-44.70	-64.97	-13.00	-31.70	20.27	Peak
9 pp	7630.40	-39.95	-62.97	-13.00	-26.95	23.02	Peak

LTE Band 2
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 2_Link_L-Ch
Tested by: Charles Hsiao
                        Read          Limit   Over
           Freq  Level  Level Factor   Line  Limit Remark
          _____ _____ _____ _____ _____ _____ _____
            MHz   dBm   dBm    dB    dBm    dB

  1     3701.40 -51.78 -67.66  15.88 -13.00 -38.78 Peak
  2     5552.10 -48.80 -69.14  20.34 -13.00 -35.80 Peak
  3     7402.80 -39.09 -61.37  22.28 -13.00 -26.09 Peak
  4 pp  9253.50 -38.96 -64.56  25.60 -13.00 -25.96 Peak
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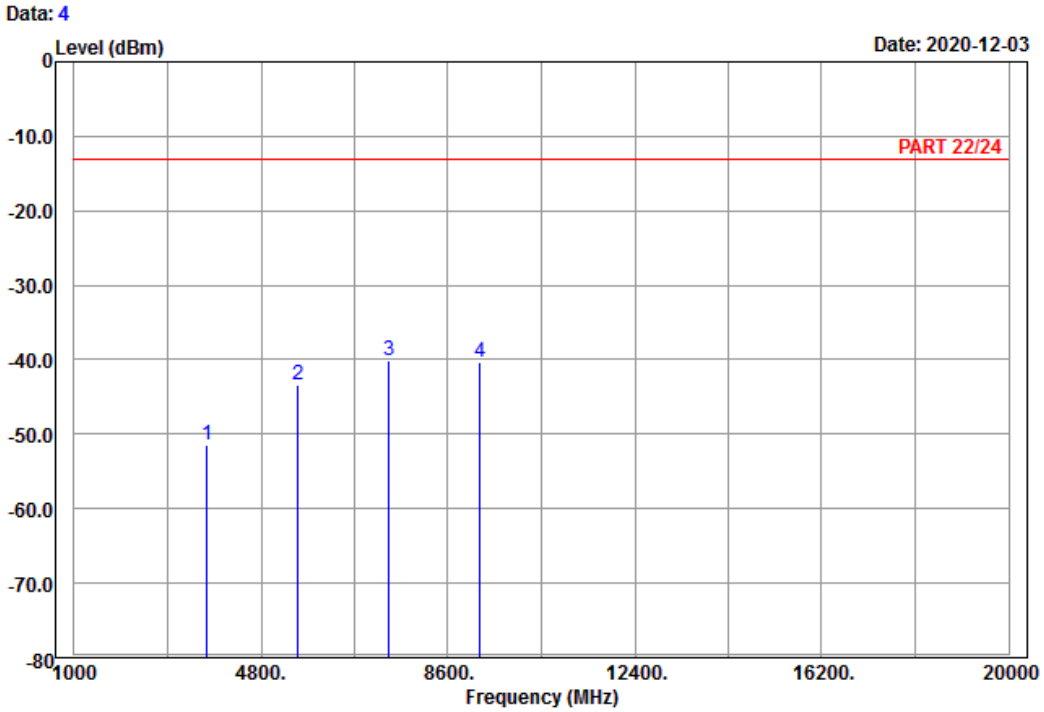
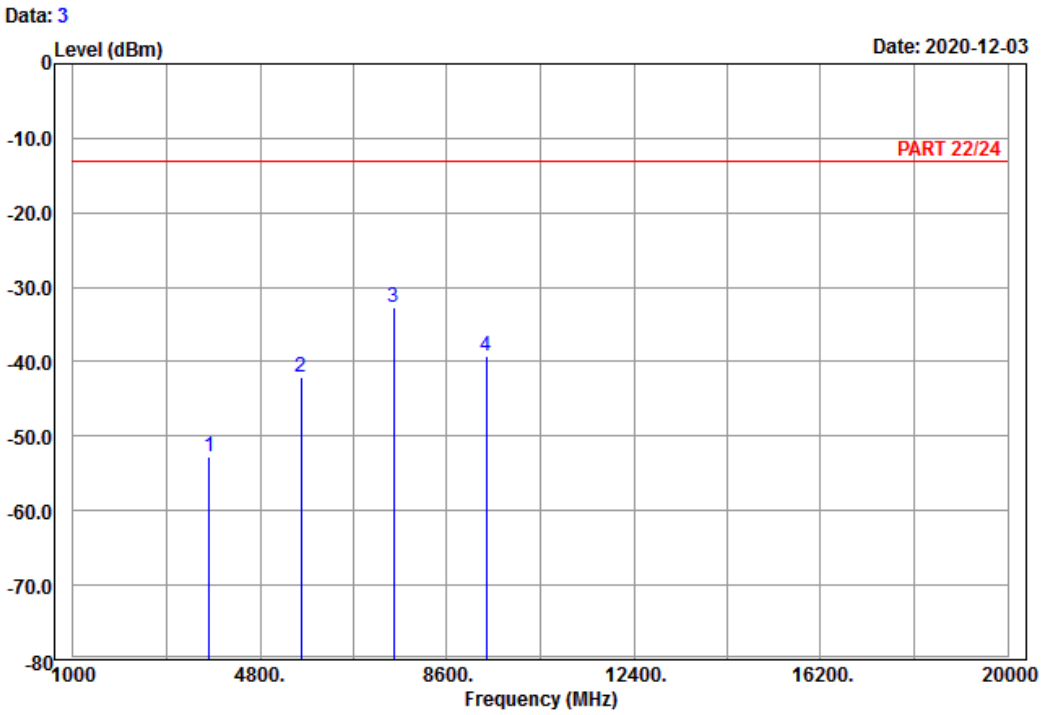


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3701.40	-51.41	-67.29	15.88	-13.00	-38.41	Peak
2	5552.10	-43.48	-63.82	20.34	-13.00	-30.48	Peak
3 pp	7402.80	-40.01	-62.29	22.28	-13.00	-27.01	Peak
4	9253.50	-40.42	-66.02	25.60	-13.00	-27.42	Peak

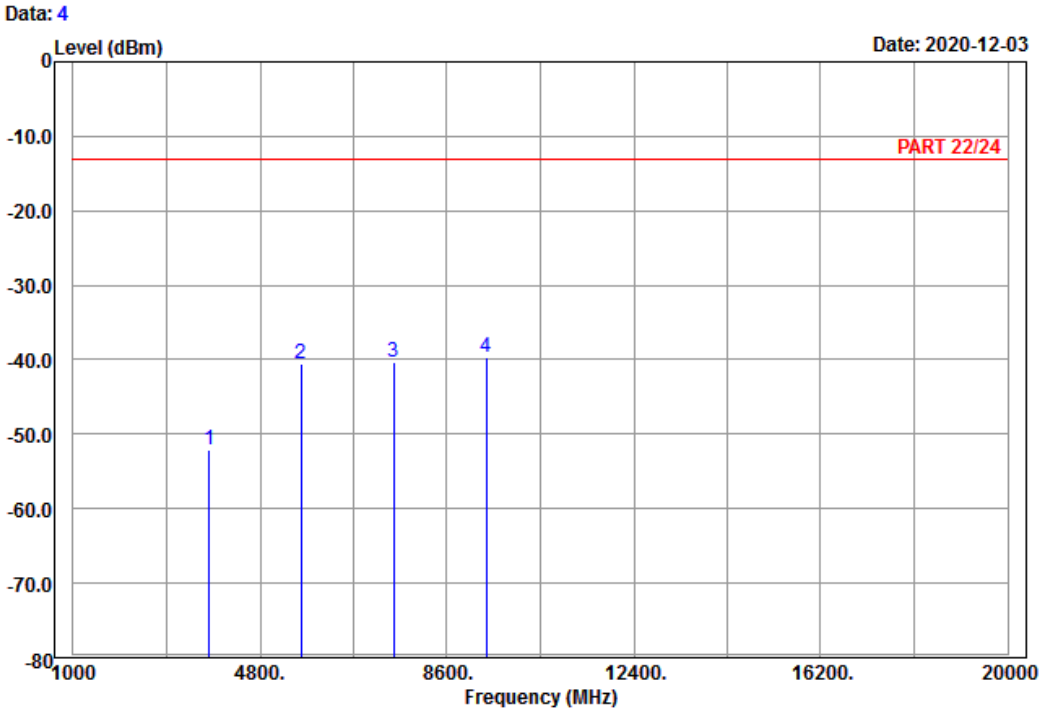
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.65	-68.79	16.14	-13.00	-39.65	Peak
2	5640.00	-42.10	-62.57	20.47	-13.00	-29.10	Peak
3 pp	7520.00	-32.80	-55.48	22.68	-13.00	-19.80	Peak
4	9400.00	-39.20	-64.97	25.77	-13.00	-26.20	Peak

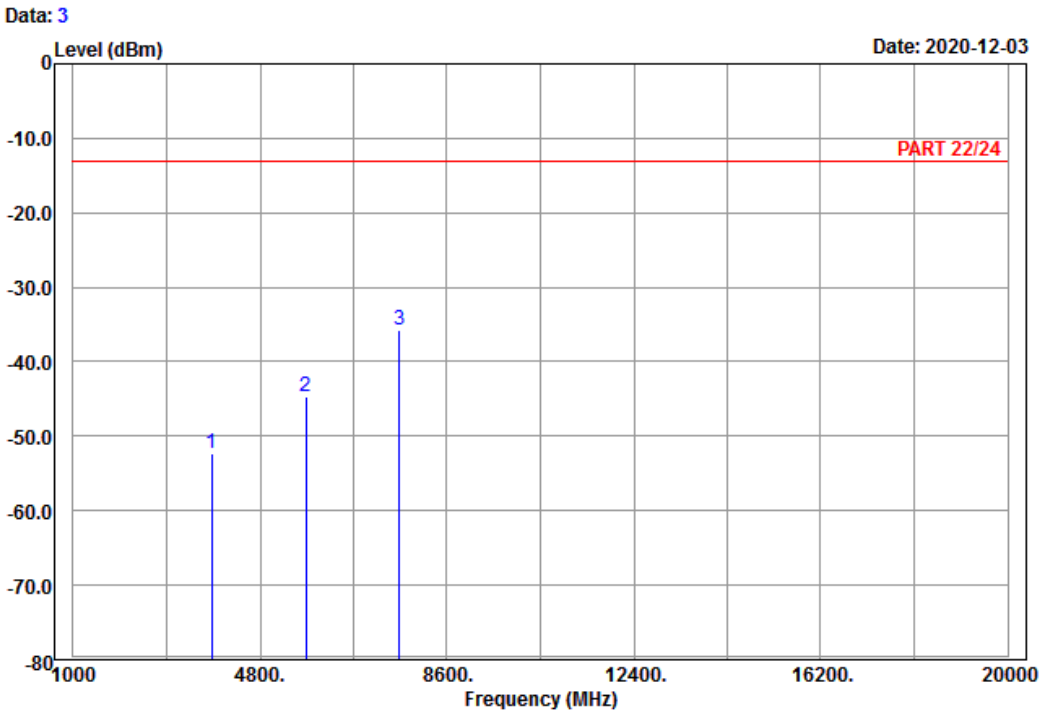


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.02	-68.16	16.14	-13.00	-39.02	Peak
2	5640.00	-40.46	-60.93	20.47	-13.00	-27.46	Peak
3	7520.00	-40.30	-62.98	22.68	-13.00	-27.30	Peak
4 pp	9400.00	-39.77	-65.54	25.77	-13.00	-26.77	Peak

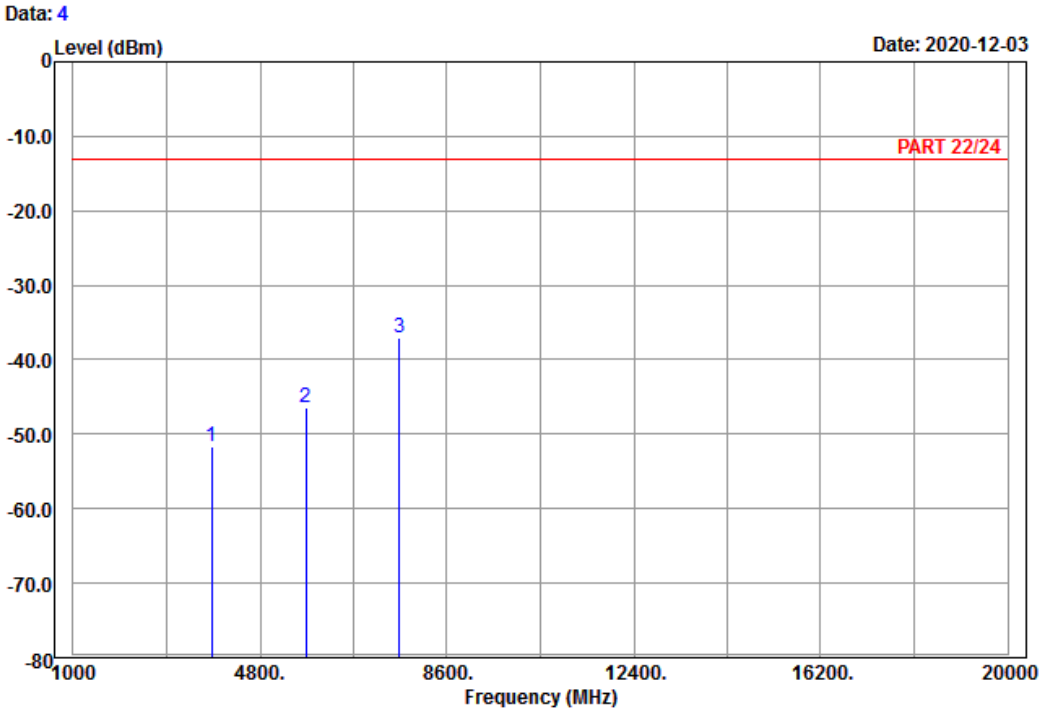
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3818.60	-52.26	-68.76	16.50	-13.00	-39.26	Peak
2	5727.90	-44.69	-65.03	20.34	-13.00	-31.69	Peak
3 pp	7637.20	-35.78	-58.84	23.06	-13.00	-22.78	Peak

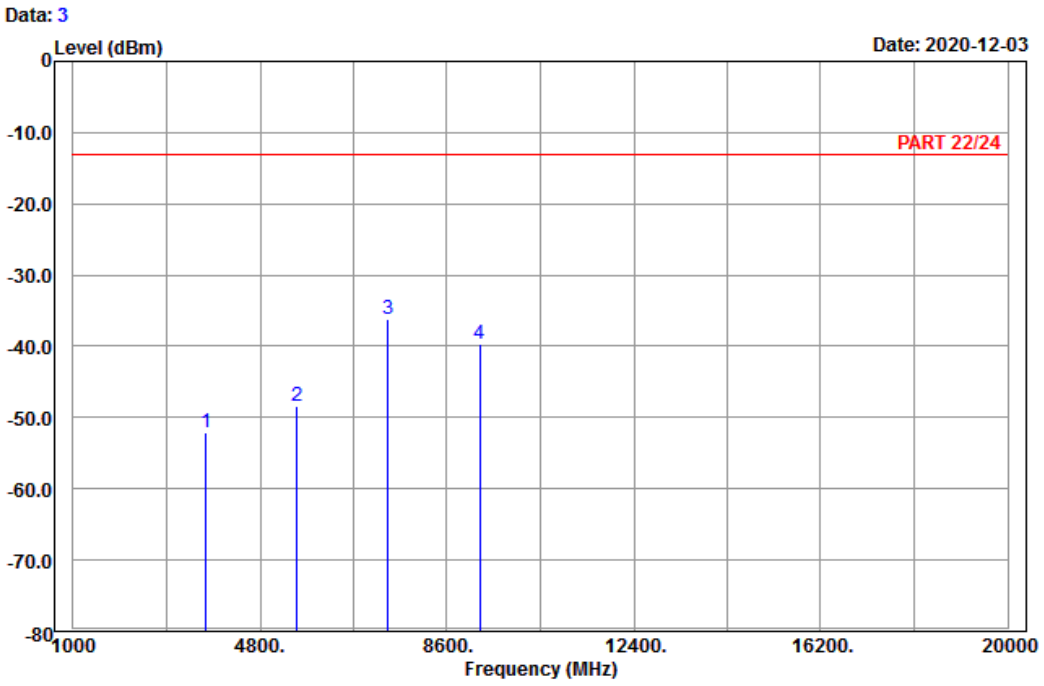


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3818.60	-51.57	-68.07	16.50	-13.00	-38.57	Peak
2	5727.90	-46.45	-66.79	20.34	-13.00	-33.45	Peak
3 pp	7637.20	-37.08	-60.14	23.06	-13.00	-24.08	Peak

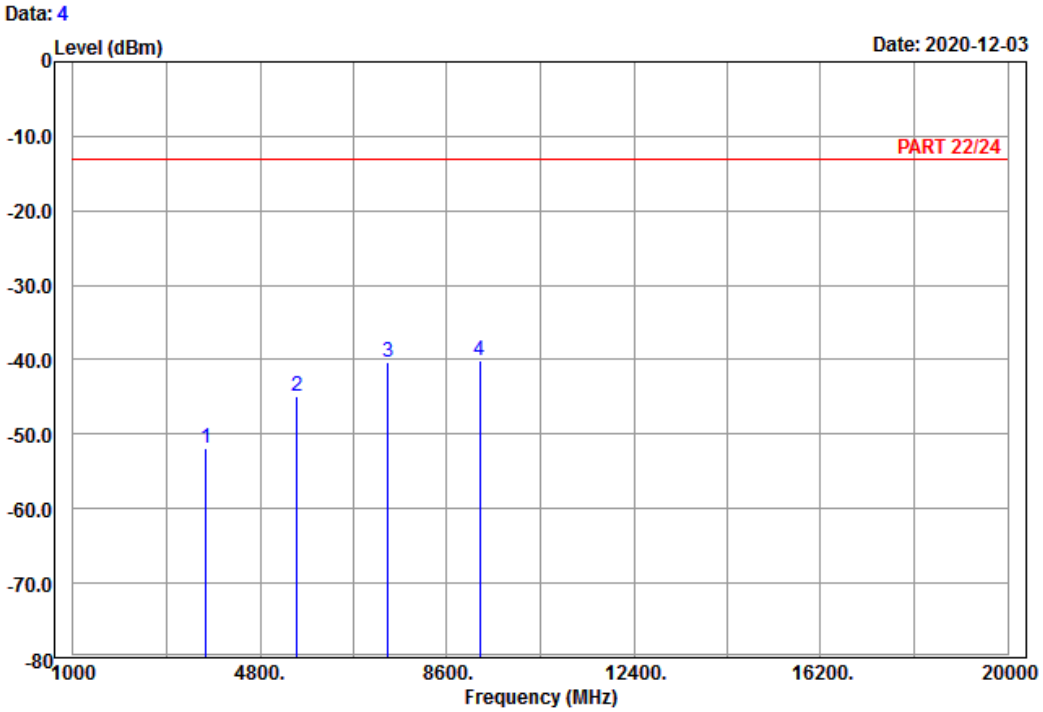
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3705.00	-52.02	-67.90	15.88	-13.00	-39.02	Peak
2	5557.50	-48.40	-68.74	20.34	-13.00	-35.40	Peak
3 pp	7410.00	-36.20	-58.48	22.28	-13.00	-23.20	Peak
4	9262.50	-39.57	-65.17	25.60	-13.00	-26.57	Peak

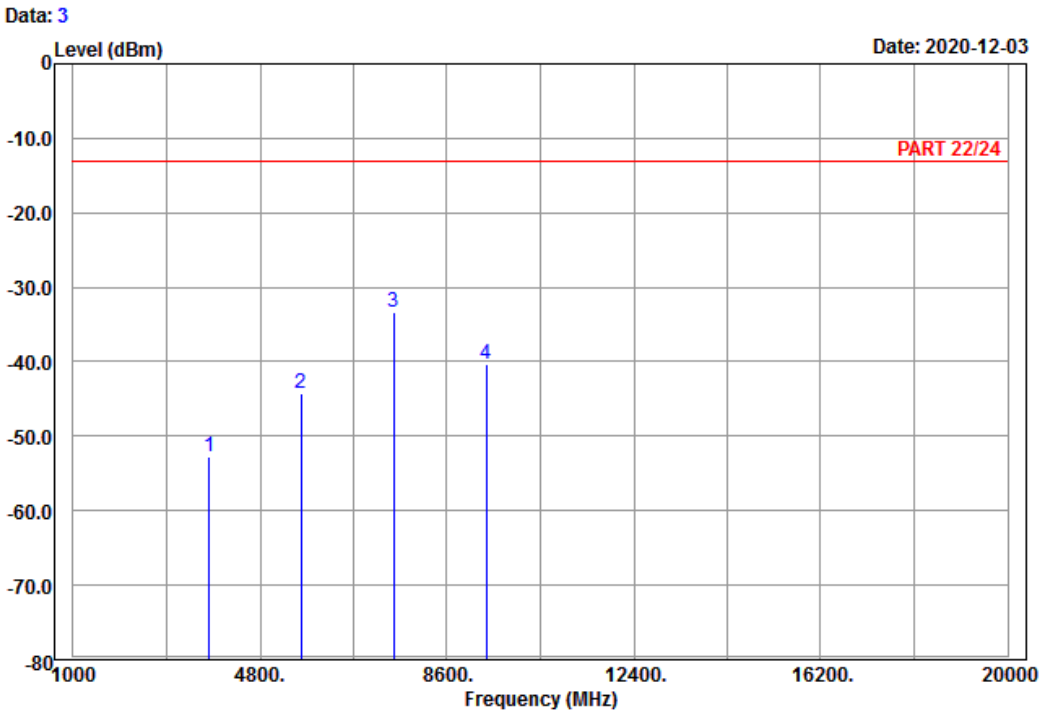


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3705.00	-51.93	-67.81	15.88	-13.00	-38.93	Peak
2	5557.50	-44.98	-65.32	20.34	-13.00	-31.98	Peak
3	7410.00	-40.41	-62.69	22.28	-13.00	-27.41	Peak
4 pp	9262.50	-40.08	-65.68	25.60	-13.00	-27.08	Peak

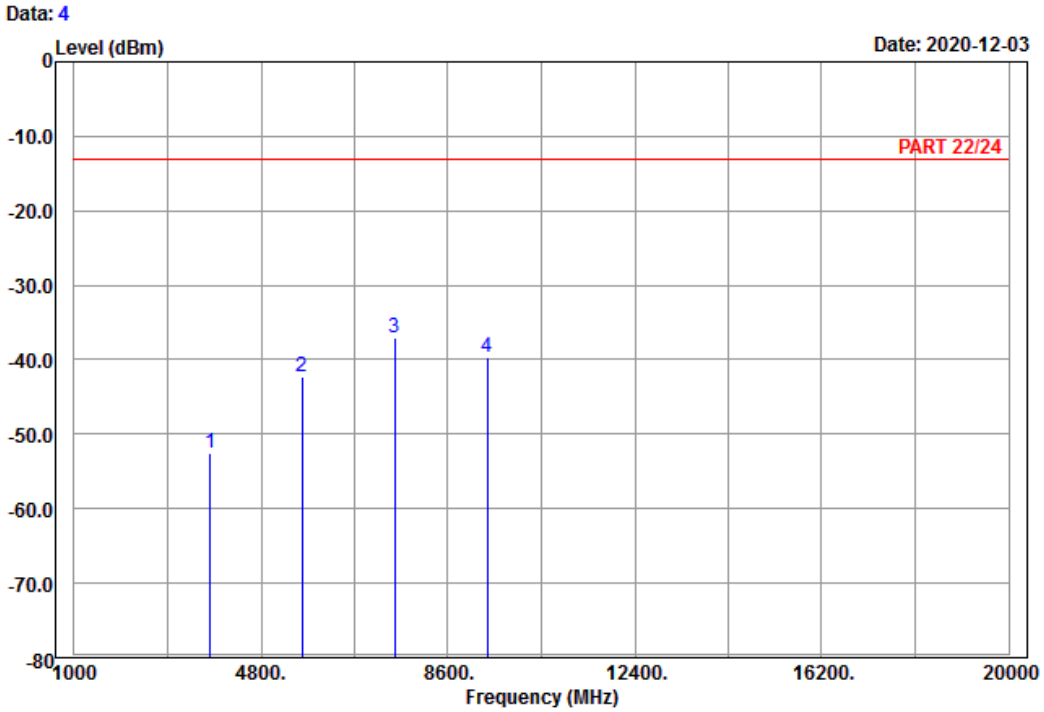
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.81	-68.95	16.14	-13.00	-39.81	Peak
2	5640.00	-44.17	-64.64	20.47	-13.00	-31.17	Peak
3 pp	7520.00	-33.26	-55.94	22.68	-13.00	-20.26	Peak
4	9400.00	-40.31	-66.08	25.77	-13.00	-27.31	Peak

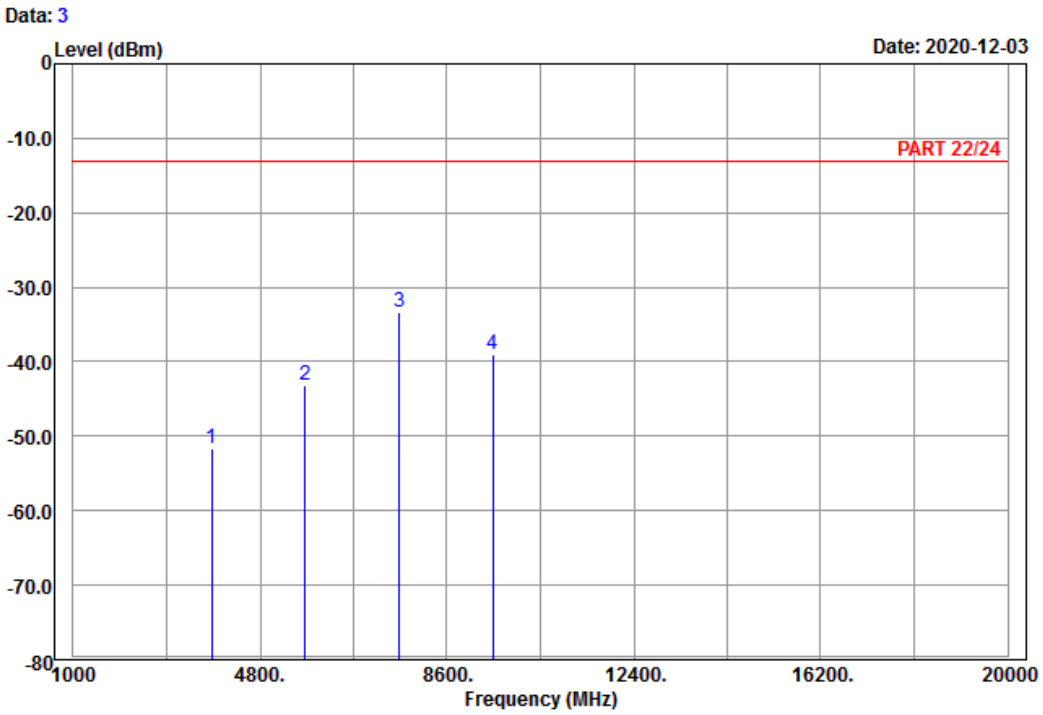


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3760.00	-52.51	-68.65	16.14	-13.00	-39.51	Peak
2	5640.00	-42.34	-62.81	20.47	-13.00	-29.34	Peak
3 pp	7520.00	-37.00	-59.68	22.68	-13.00	-24.00	Peak
4	9400.00	-39.57	-65.34	25.77	-13.00	-26.57	Peak

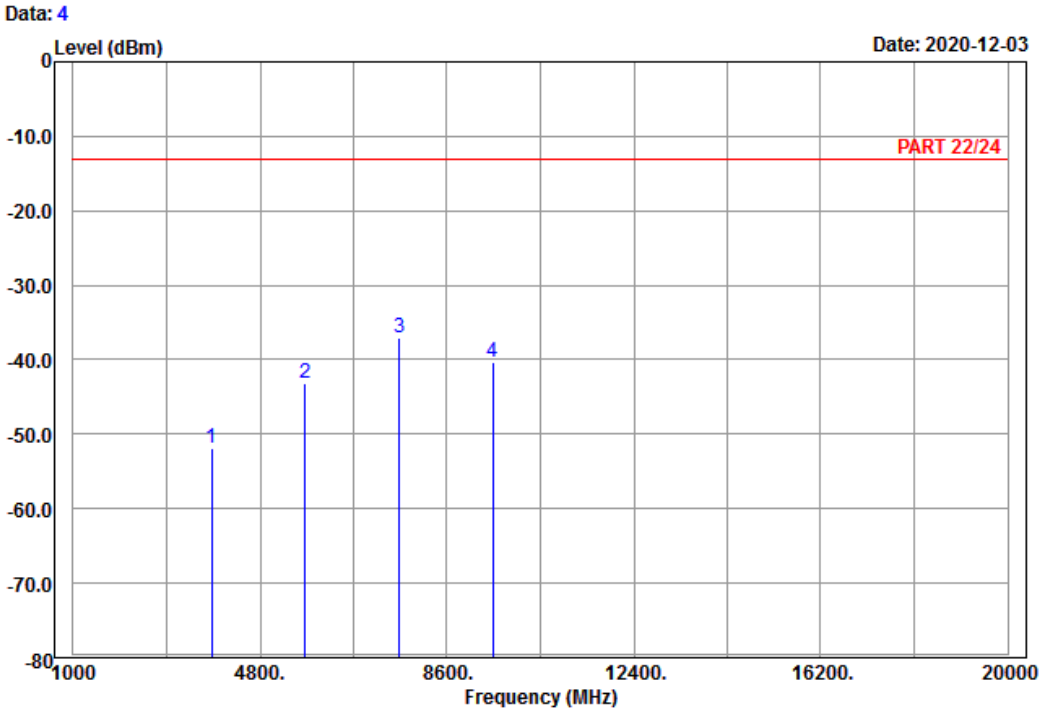
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3815.00	-51.68	-68.09	16.41	-13.00	-38.68	Peak
2	5722.50	-43.09	-63.36	20.27	-13.00	-30.09	Peak
3 pp	7630.00	-33.25	-56.27	23.02	-13.00	-20.25	Peak
4	9537.50	-38.93	-64.97	26.04	-13.00	-25.93	Peak

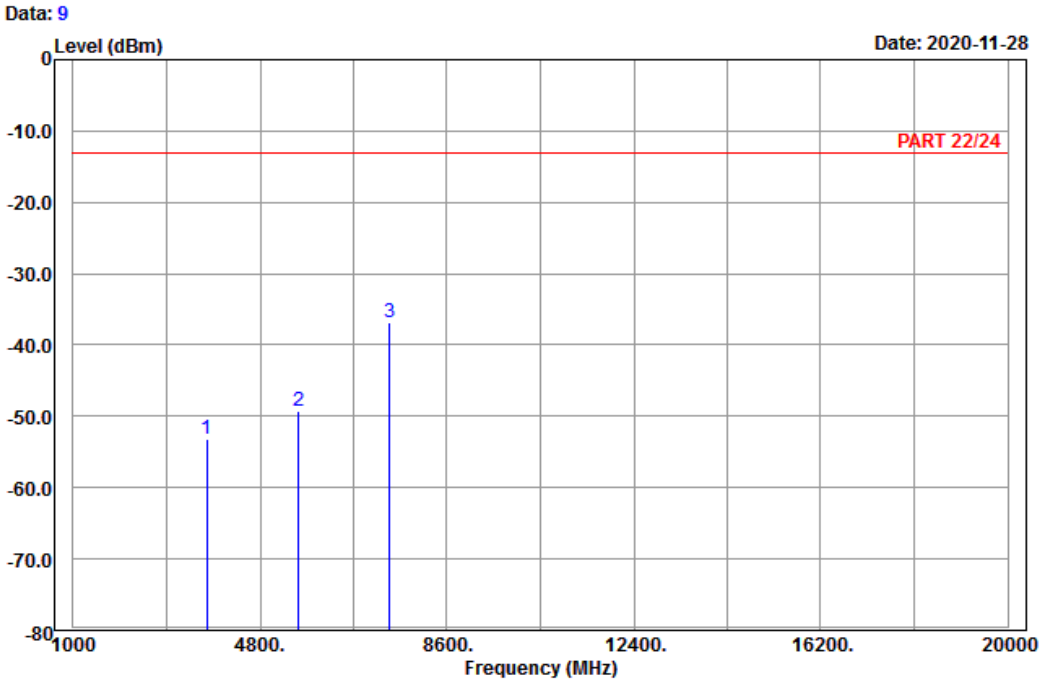


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3815.00	-51.85	-68.26	16.41	-13.00	-38.85	Peak
2	5722.50	-43.14	-63.41	20.27	-13.00	-30.14	Peak
3 pp	7630.00	-37.13	-60.15	23.02	-13.00	-24.13	Peak
4	9537.50	-40.27	-66.31	26.04	-13.00	-27.27	Peak

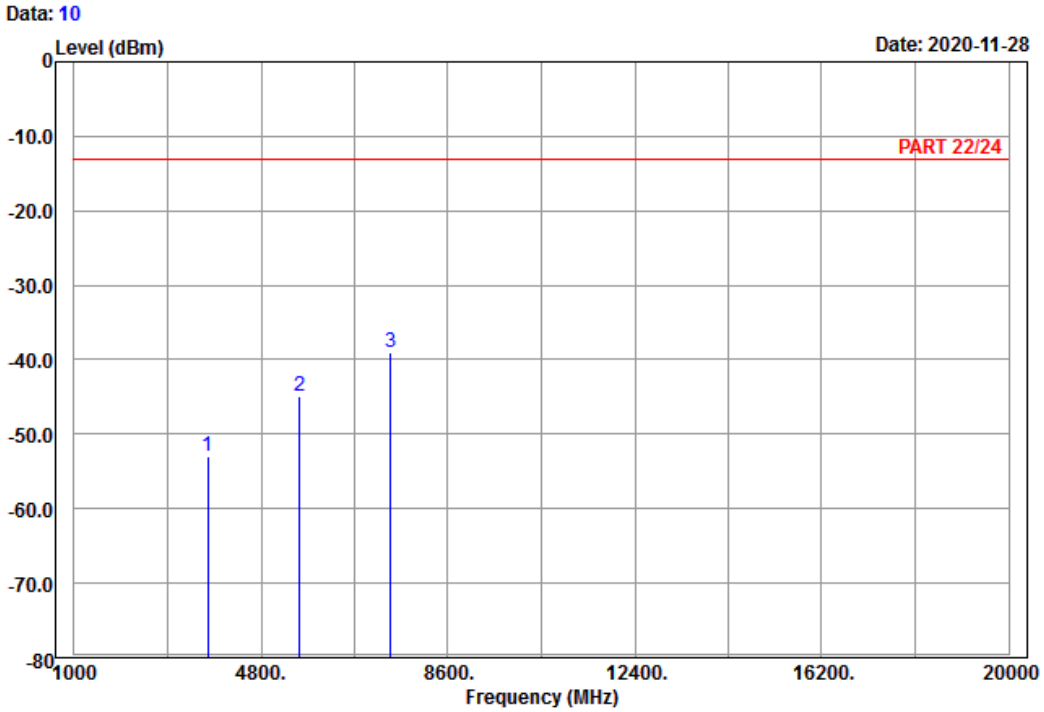
Channel Bandwidth: 20 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3720.00	-53.12	-69.09	15.97	-13.00	-40.12	Peak
2	5580.00	-49.36	-69.73	20.37	-13.00	-36.36	Peak
3 pp	7440.00	-36.94	-59.19	22.25	-13.00	-23.94	Peak

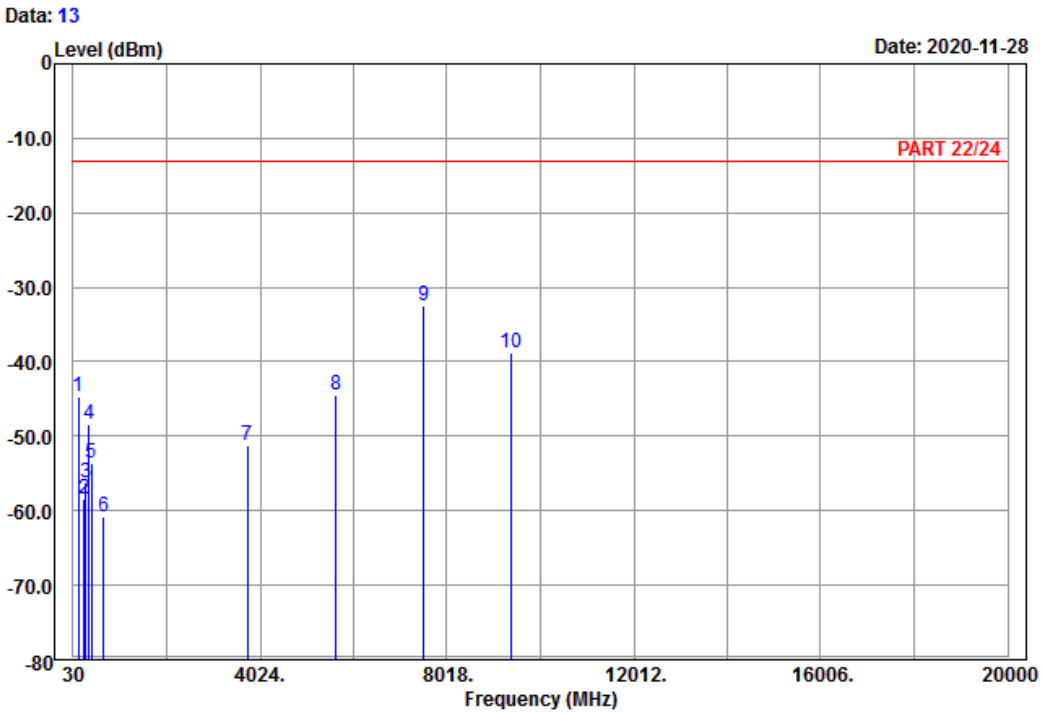


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3720.00	-53.01	-68.98	15.97	-13.00	-40.01	Peak
2	5580.00	-44.94	-65.31	20.37	-13.00	-31.94	Peak
3 pp	7440.00	-39.11	-61.36	22.25	-13.00	-26.11	Peak

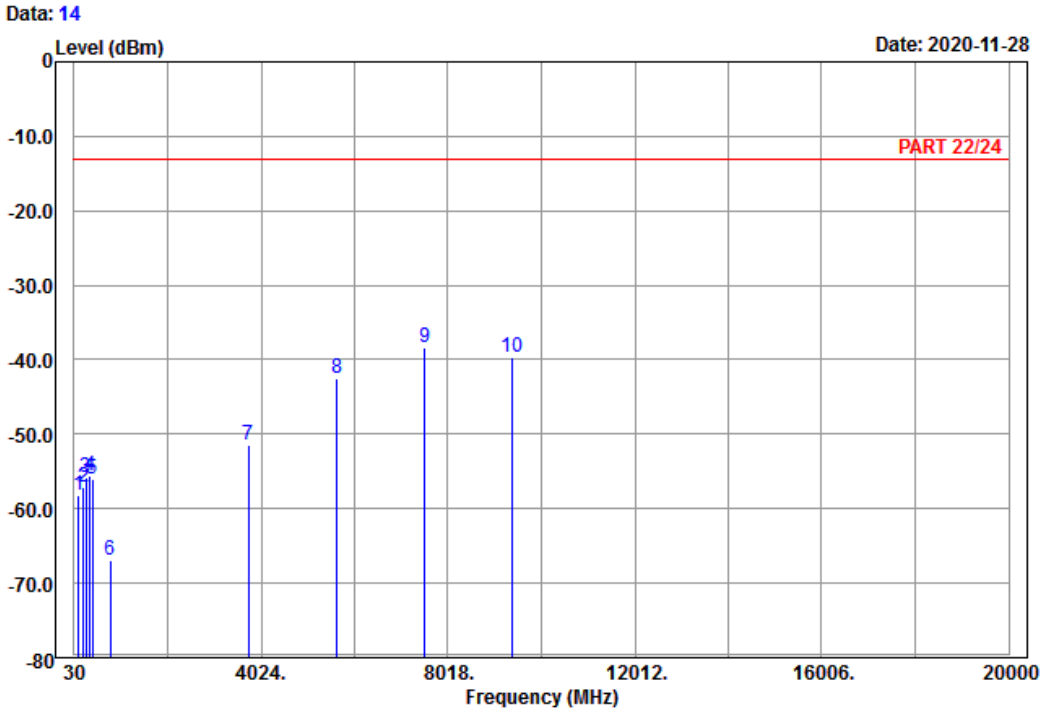
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

		Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
		MHz	dBm	dBm	dB	dBm	dB	
1		137.73	-44.73	-37.05	-7.68	-13.00	-31.73	Peak
2		265.44	-58.37	-52.72	-5.65	-13.00	-45.37	Peak
3		299.19	-56.28	-50.32	-5.96	-13.00	-43.28	Peak
4		368.60	-48.38	-43.98	-4.40	-13.00	-35.38	Peak
5		426.00	-53.53	-50.22	-3.31	-13.00	-40.53	Peak
6		683.60	-60.76	-60.46	-0.30	-13.00	-47.76	Peak
7		3760.00	-51.22	-67.36	16.14	-13.00	-38.22	Peak
8		5640.00	-44.56	-65.03	20.47	-13.00	-31.56	Peak
9	pp	7520.00	-32.52	-55.20	22.68	-13.00	-19.52	Peak
10		9400.00	-38.89	-64.66	25.77	-13.00	-25.89	Peak

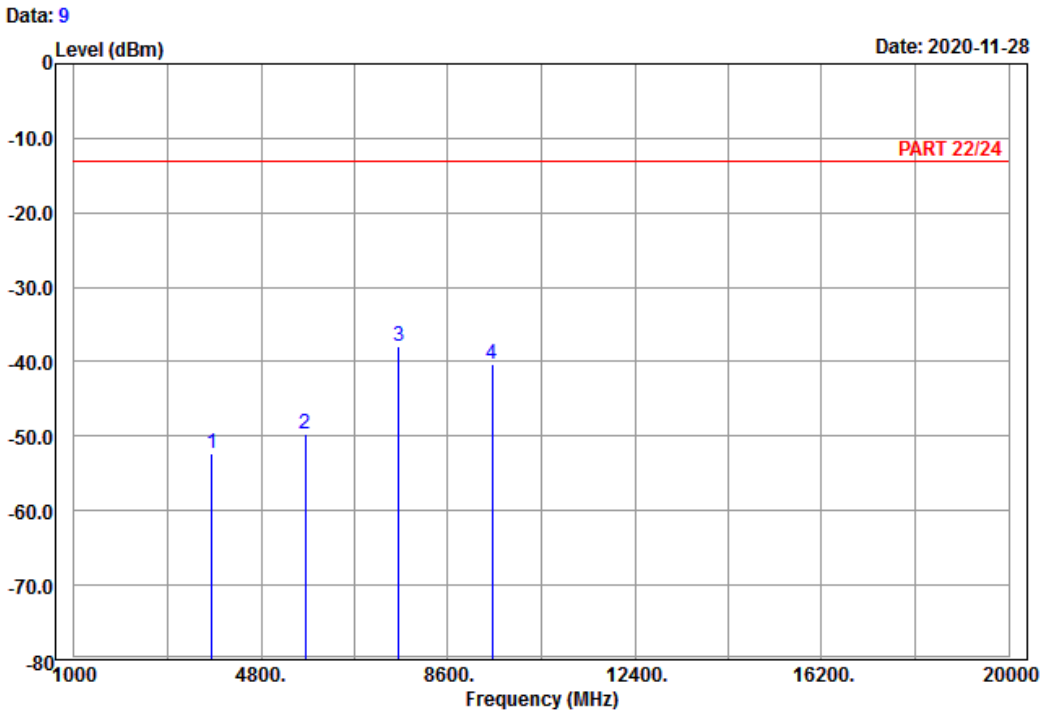


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_M-Ch
Tested by: Charles Hsiao

		Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
		MHz	dBm	dBm	dB	dBm	dB	
1		126.66	-58.10	-50.27	-7.83	-13.00	-45.10	Peak
2		237.09	-57.21	-51.52	-5.69	-13.00	-44.21	Peak
3		277.86	-55.72	-49.96	-5.76	-13.00	-42.72	Peak
4		374.90	-55.58	-51.55	-4.03	-13.00	-42.58	Peak
5		419.70	-56.06	-52.87	-3.19	-13.00	-43.06	Peak
6		809.60	-66.97	-68.87	1.90	-13.00	-53.97	Peak
7		3760.00	-51.45	-67.59	16.14	-13.00	-38.45	Peak
8		5640.00	-42.46	-62.93	20.47	-13.00	-29.46	Peak
9	pp	7520.00	-38.33	-61.01	22.68	-13.00	-25.33	Peak
10		9400.00	-39.74	-65.51	25.77	-13.00	-26.74	Peak

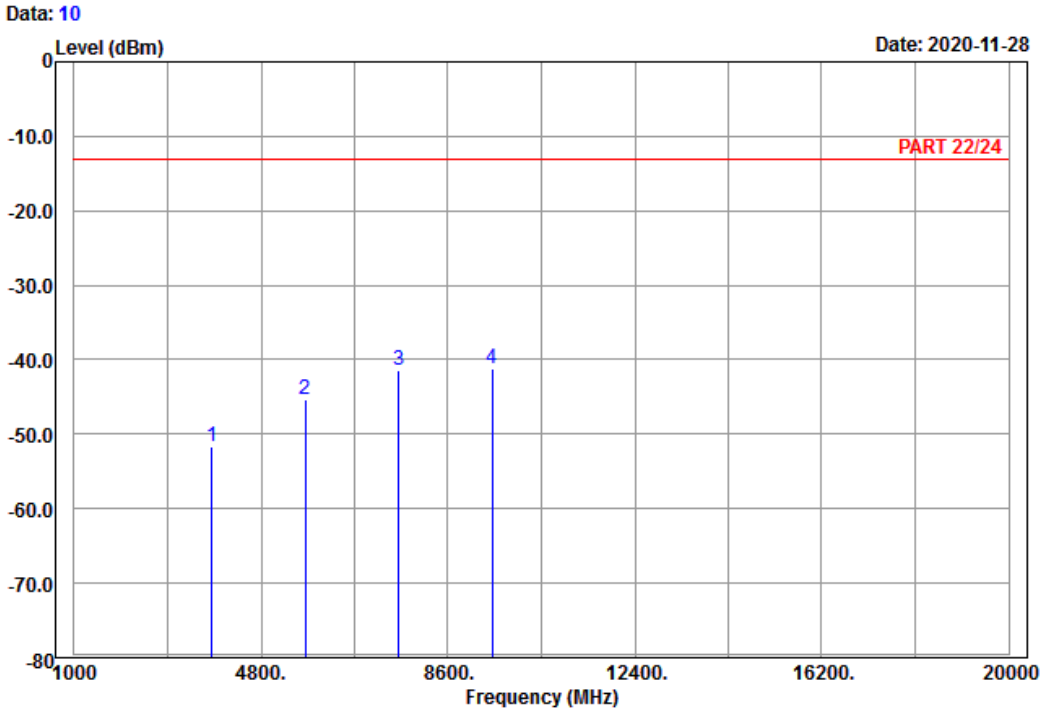
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3800.00	-52.37	-68.78	16.41	-13.00	-39.37	Peak
2	5700.00	-49.64	-69.85	20.21	-13.00	-36.64	Peak
3 pp	7600.00	-37.97	-60.96	22.99	-13.00	-24.97	Peak
4	9500.00	-40.42	-66.44	26.02	-13.00	-27.42	Peak

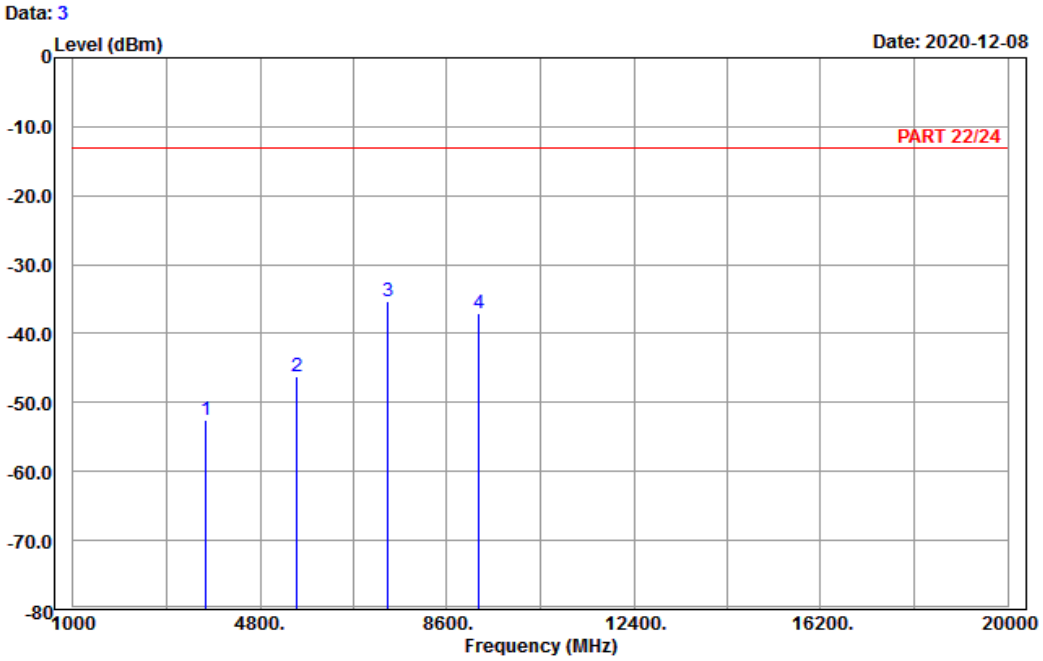


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3800.00	-51.74	-68.15	16.41	-13.00	-38.74	Peak
2	5700.00	-45.30	-65.51	20.21	-13.00	-32.30	Peak
3	7600.00	-41.52	-64.51	22.99	-13.00	-28.52	Peak
4 pp	9500.00	-41.15	-67.17	26.02	-13.00	-28.15	Peak

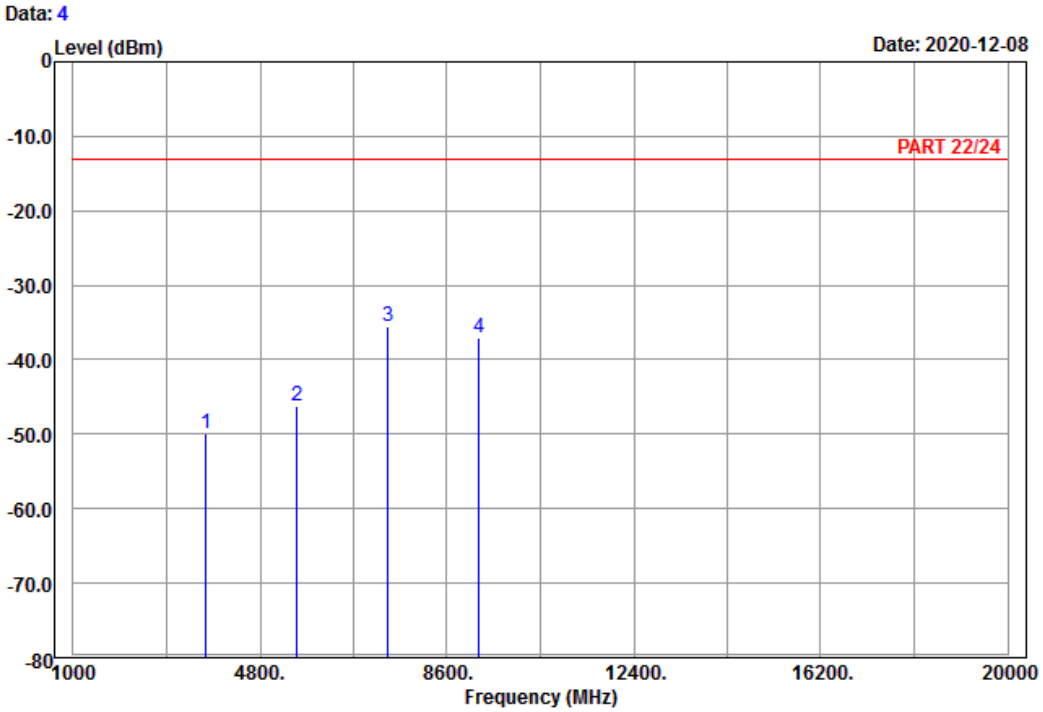
LTE Band 25
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3701.40	-52.53	-68.41	15.88	-13.00	-39.53	Peak
2	5552.10	-46.10	-66.44	20.34	-13.00	-33.10	Peak
3 pp	7402.80	-35.41	-57.69	22.28	-13.00	-22.41	Peak
4	9253.50	-37.09	-62.69	25.60	-13.00	-24.09	Peak

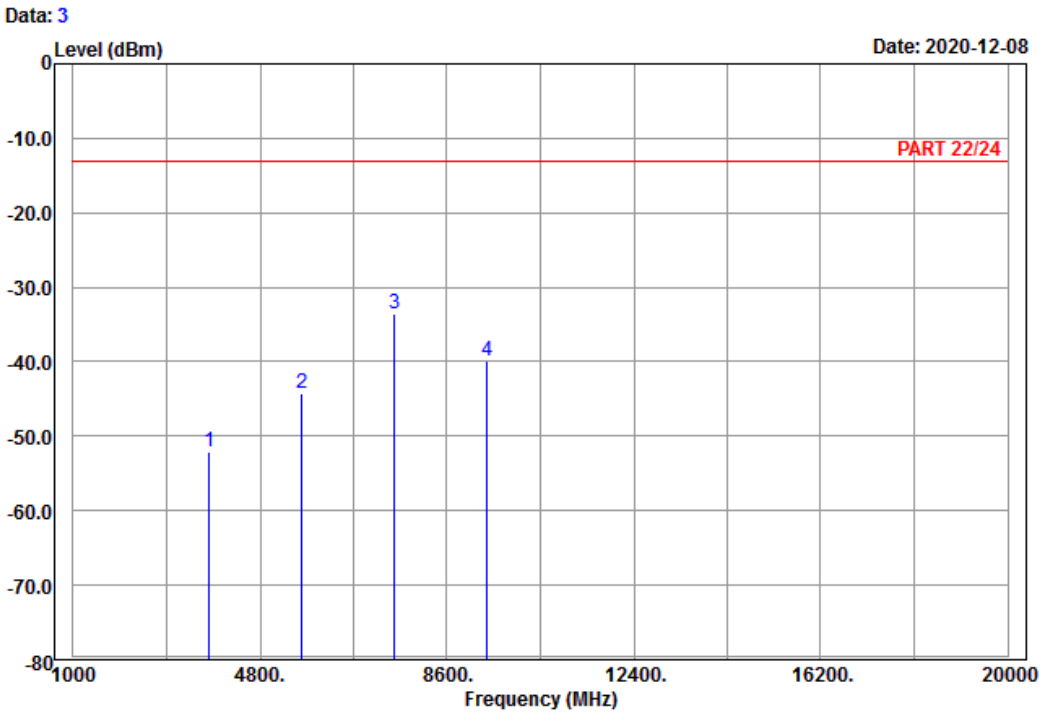


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3701.40	-49.84	-65.72	15.88	-13.00	-36.84	Peak
2	5552.10	-46.11	-66.45	20.34	-13.00	-33.11	Peak
3 pp	7402.80	-35.46	-57.74	22.28	-13.00	-22.46	Peak
4	9253.50	-37.16	-62.76	25.60	-13.00	-24.16	Peak

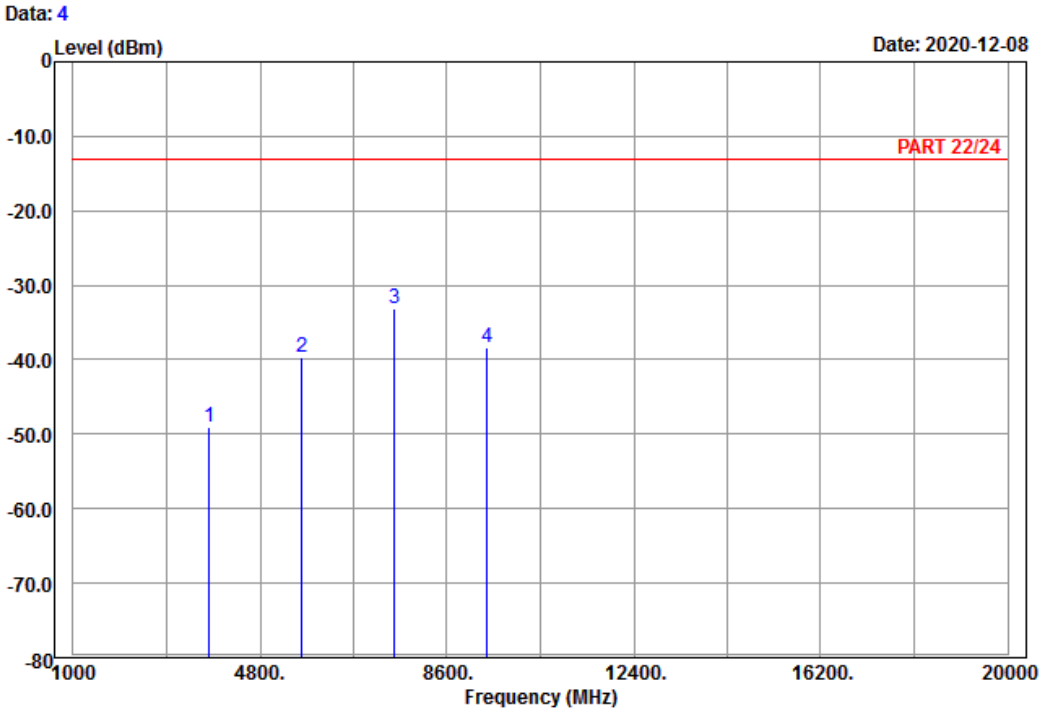
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3765.00	-52.14	-68.37	16.23	-13.00	-39.14	Peak
2	5647.50	-44.34	-64.81	20.47	-13.00	-31.34	Peak
3 pp	7530.00	-33.67	-56.52	22.85	-13.00	-20.67	Peak
4	9412.50	-39.89	-65.66	25.77	-13.00	-26.89	Peak

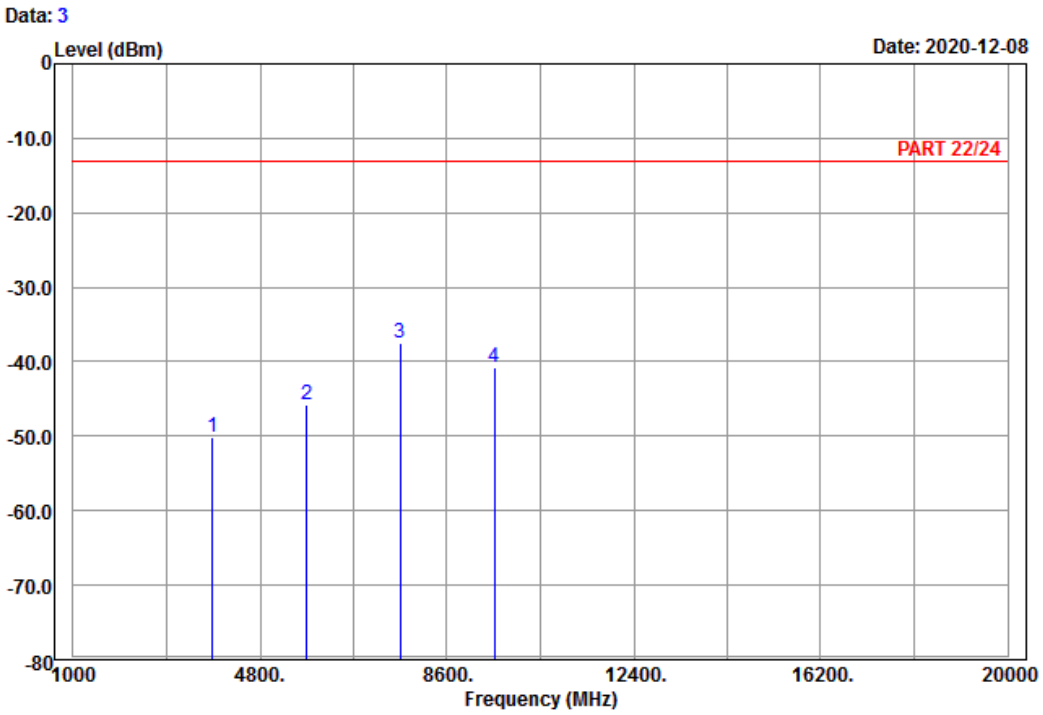


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3765.00	-49.14	-65.37	16.23	-13.00	-36.14	Peak
2	5647.50	-39.67	-60.14	20.47	-13.00	-26.67	Peak
3 pp	7530.00	-33.18	-56.03	22.85	-13.00	-20.18	Peak
4	9412.50	-38.43	-64.20	25.77	-13.00	-25.43	Peak

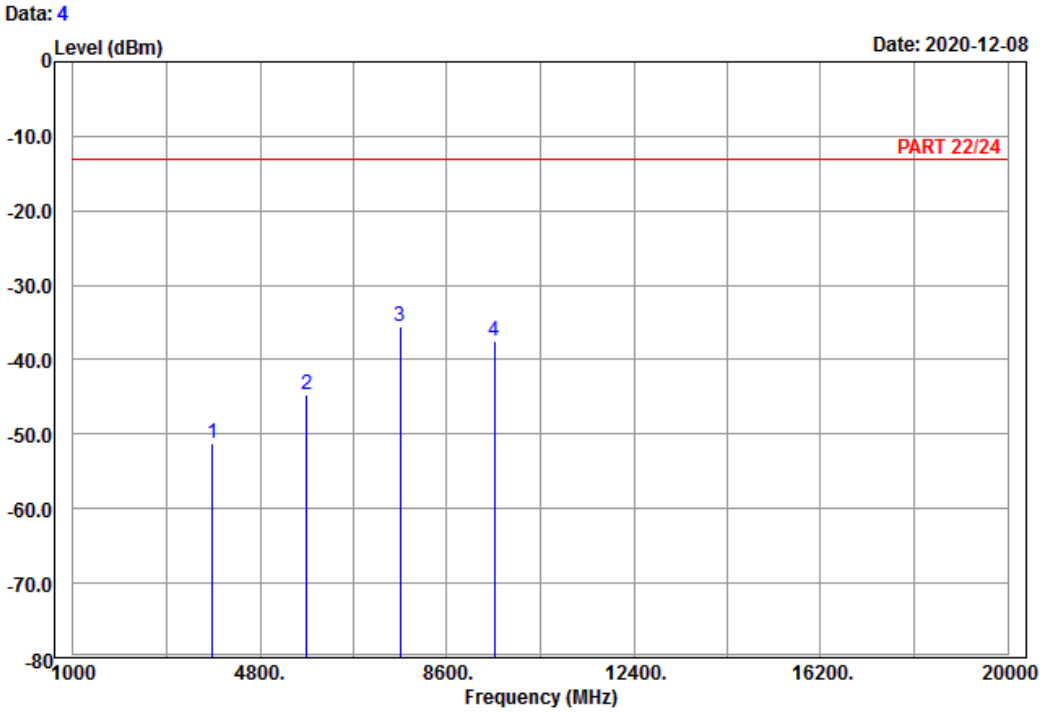
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3828.60	-50.13	-66.63	16.50	-13.00	-37.13	Peak
2	5742.90	-45.67	-66.01	20.34	-13.00	-32.67	Peak
3 pp	7657.20	-37.56	-60.65	23.09	-13.00	-24.56	Peak
4	9571.50	-40.80	-66.85	26.05	-13.00	-27.80	Peak

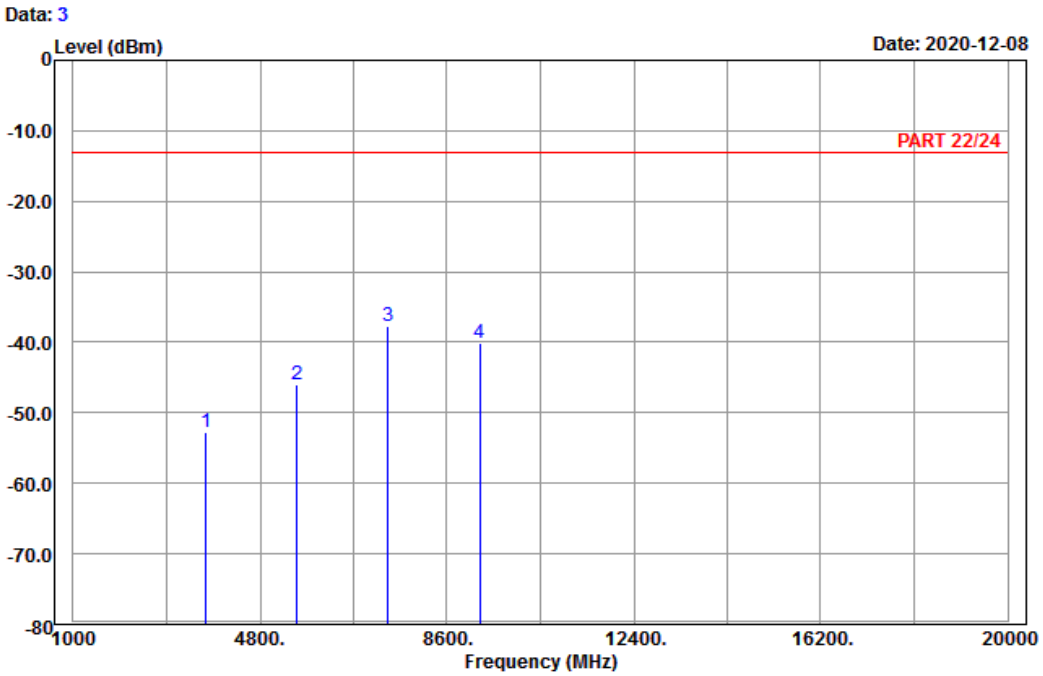


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3828.60	-51.25	-67.75	16.50	-13.00	-38.25	Peak
2	5742.90	-44.71	-65.05	20.34	-13.00	-31.71	Peak
3 pp	7657.20	-35.44	-58.53	23.09	-13.00	-22.44	Peak
4	9571.50	-37.60	-63.65	26.05	-13.00	-24.60	Peak

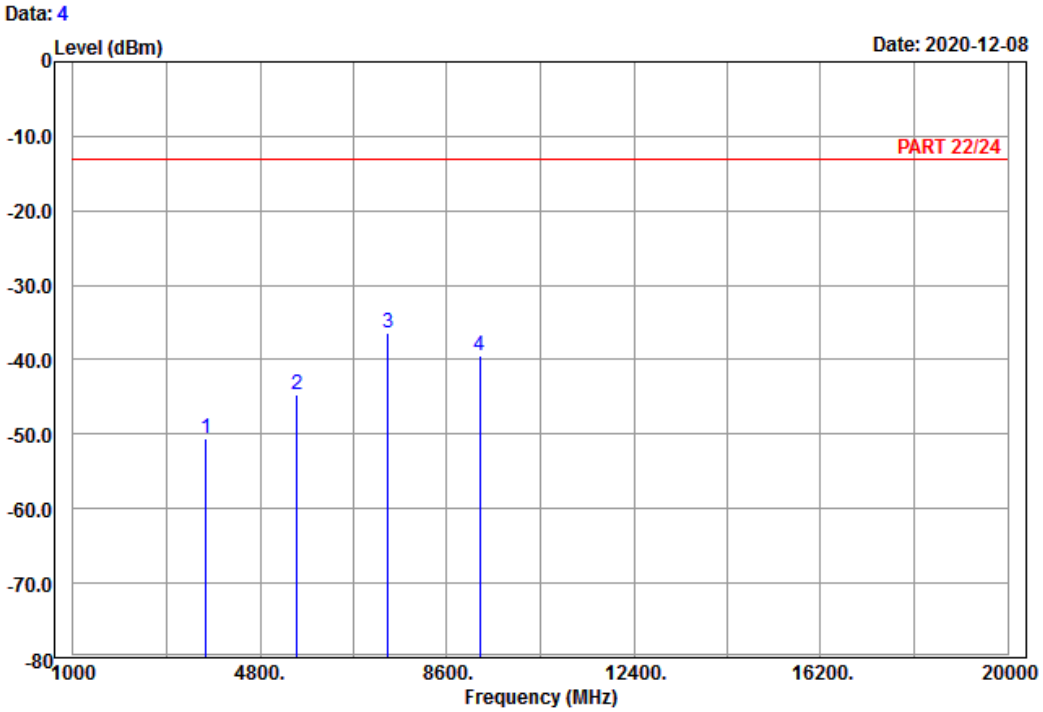
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3705.00	-52.66	-68.54	15.88	-13.00	-39.66	Peak
2	5557.50	-45.92	-66.26	20.34	-13.00	-32.92	Peak
3 pp	7410.00	-37.81	-60.09	22.28	-13.00	-24.81	Peak
4	9262.50	-40.21	-65.81	25.60	-13.00	-27.21	Peak

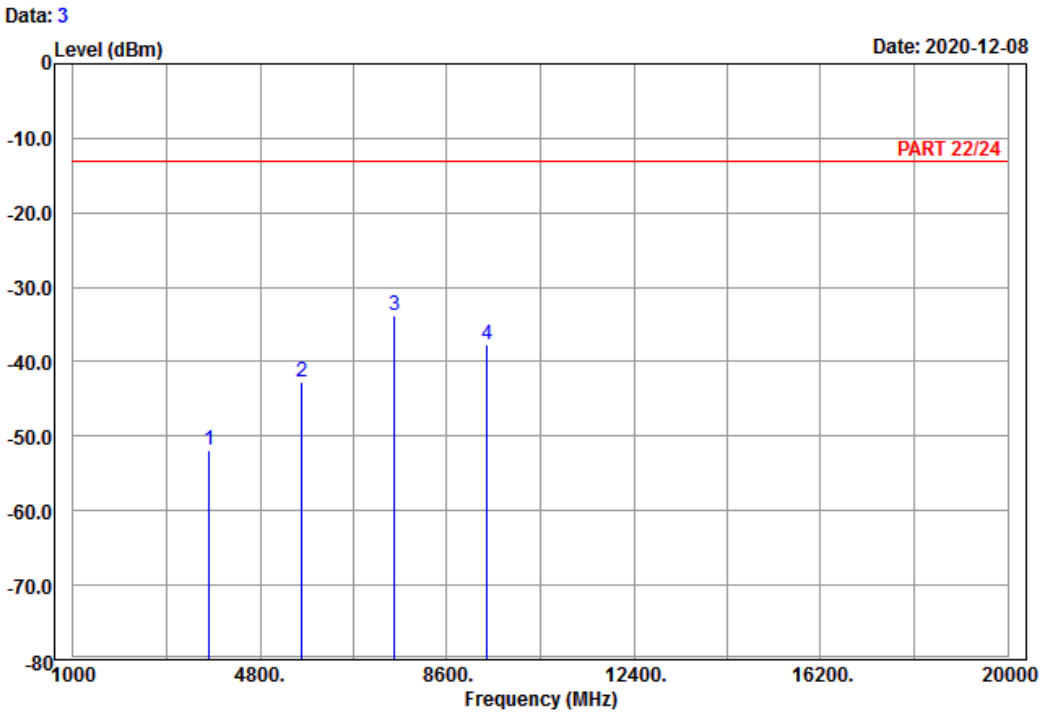


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3705.00	-50.51	-66.39	15.88	-13.00	-37.51	Peak
2	5557.50	-44.79	-65.13	20.34	-13.00	-31.79	Peak
3 pp	7410.00	-36.43	-58.71	22.28	-13.00	-23.43	Peak
4	9262.50	-39.41	-65.01	25.60	-13.00	-26.41	Peak

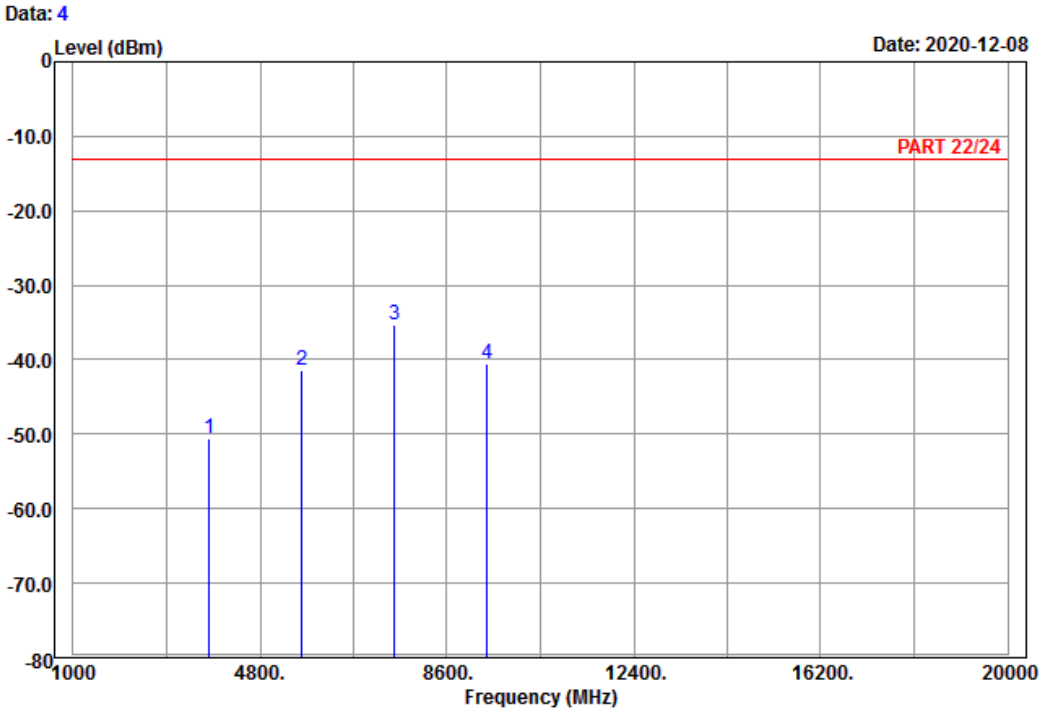
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3765.00	-51.85	-68.08	16.23	-13.00	-38.85	Peak
2	5647.50	-42.78	-63.25	20.47	-13.00	-29.78	Peak
3 pp	7530.00	-33.80	-56.65	22.85	-13.00	-20.80	Peak
4	9412.50	-37.78	-63.55	25.77	-13.00	-24.78	Peak

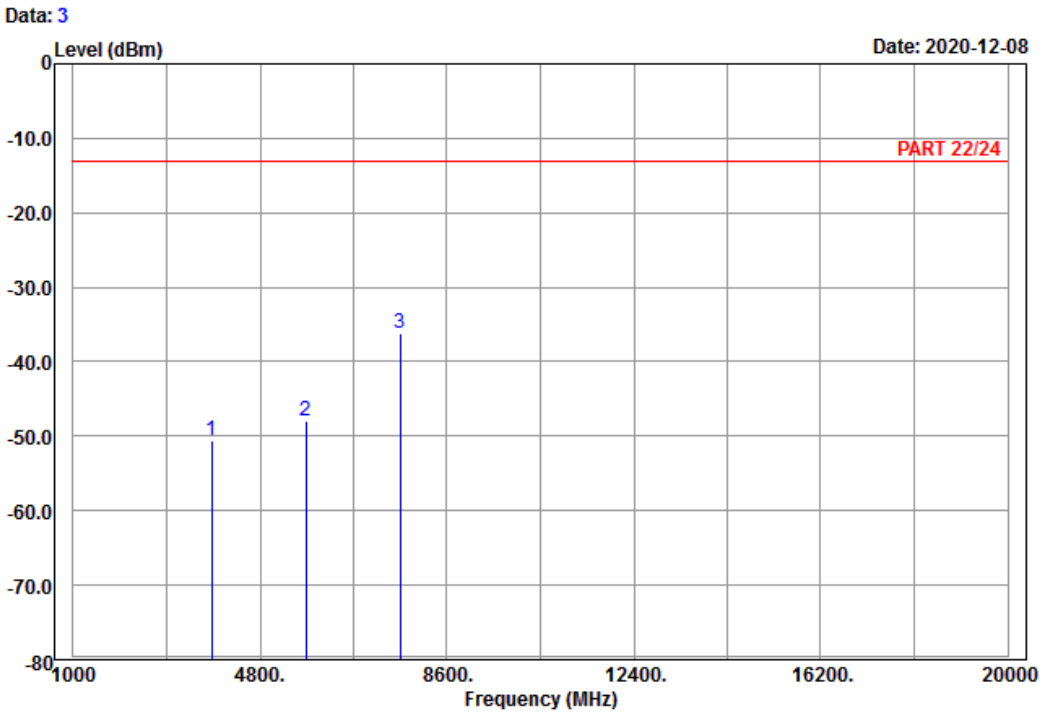


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3765.00	-50.49	-66.72	16.23	-13.00	-37.49	Peak
2	5647.50	-41.49	-61.96	20.47	-13.00	-28.49	Peak
3 pp	7530.00	-35.34	-58.19	22.85	-13.00	-22.34	Peak
4	9412.50	-40.59	-66.36	25.77	-13.00	-27.59	Peak

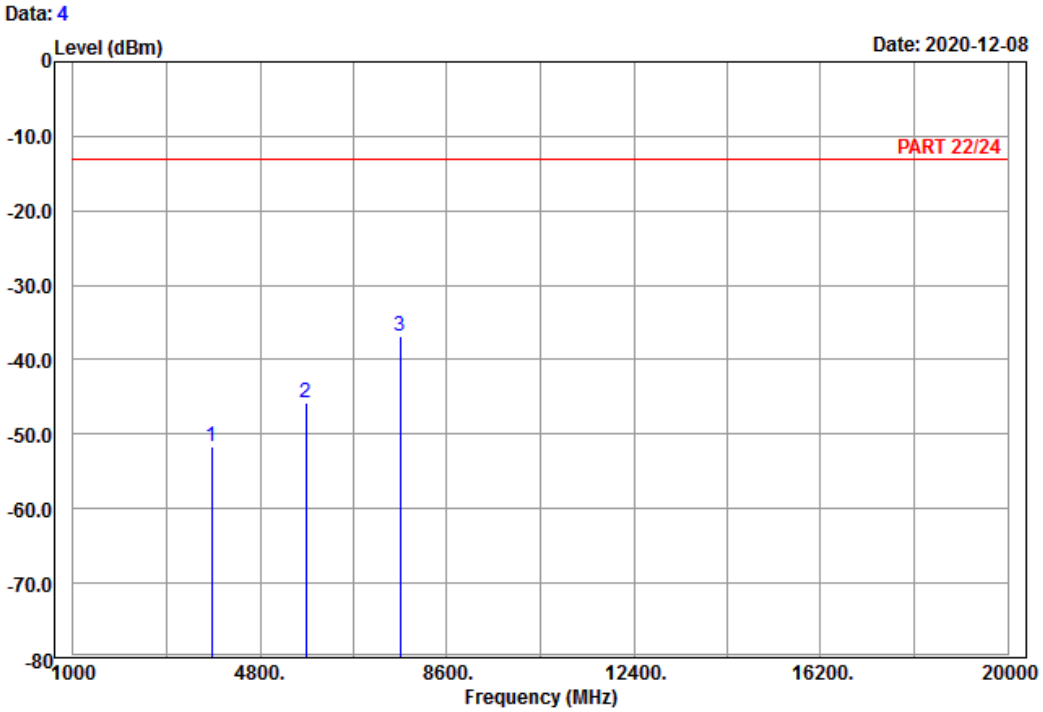
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3825.00	-50.57	-67.07	16.50	-13.00	-37.57	Peak
2	5737.50	-48.03	-68.37	20.34	-13.00	-35.03	Peak
3 pp	7650.00	-36.09	-59.15	23.06	-13.00	-23.09	Peak

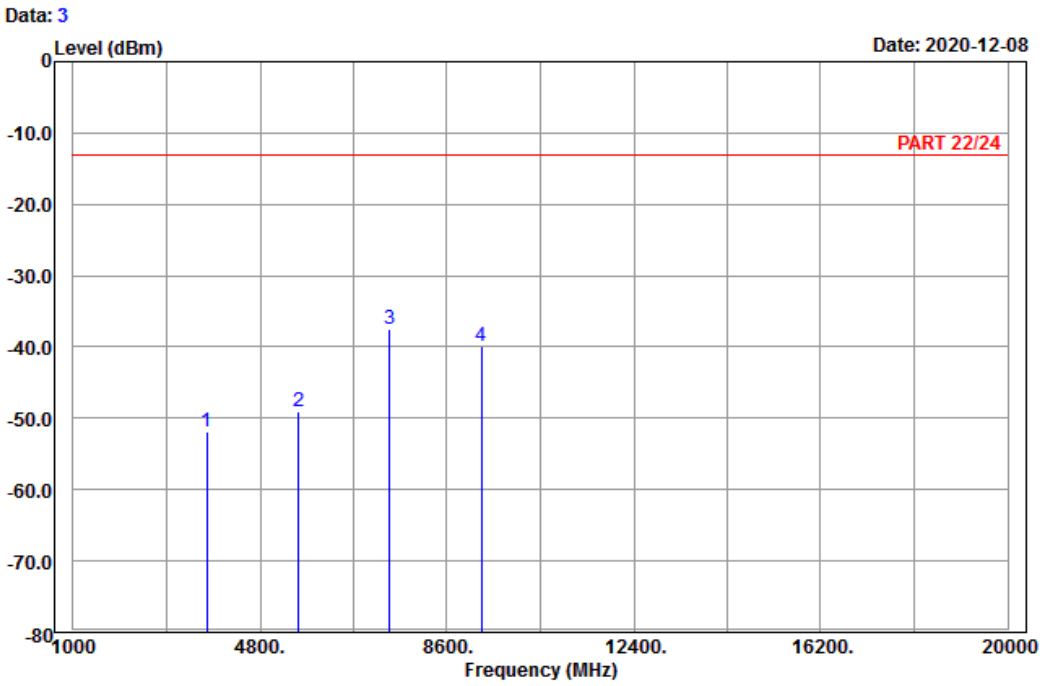


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3825.00	-51.68	-68.18	16.50	-13.00	-38.68	Peak
2	5737.50	-45.76	-66.10	20.34	-13.00	-32.76	Peak
3 pp	7650.00	-36.75	-59.81	23.06	-13.00	-23.75	Peak

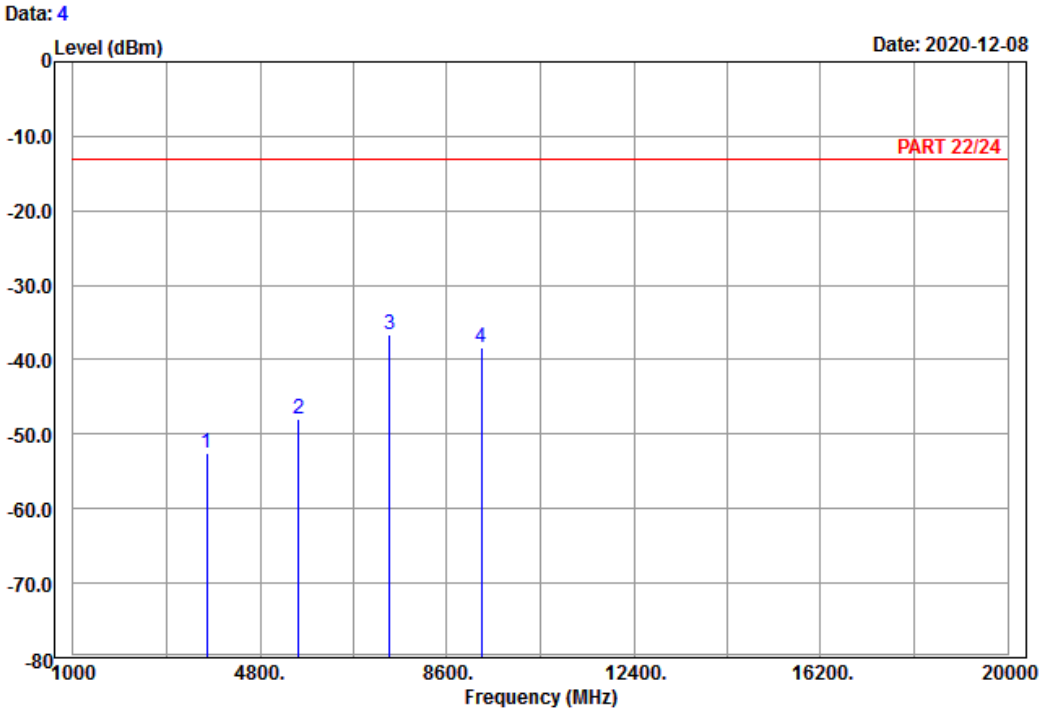
Channel Bandwidth: 20 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3720.00	-51.82	-67.79	15.97	-13.00	-38.82	Peak
2	5580.00	-49.05	-69.42	20.37	-13.00	-36.05	Peak
3 pp	7440.00	-37.52	-59.77	22.25	-13.00	-24.52	Peak
4	9300.00	-39.95	-65.59	25.64	-13.00	-26.95	Peak

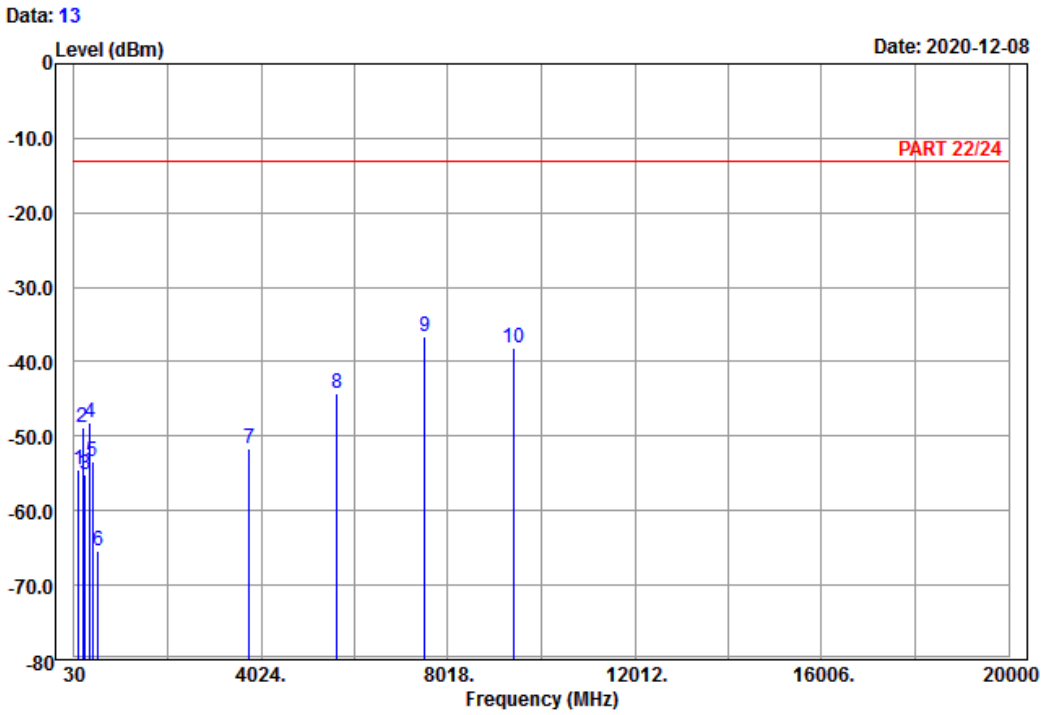


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3720.00	-52.50	-68.47	15.97	-13.00	-39.50	Peak
2	5580.00	-48.00	-68.37	20.37	-13.00	-35.00	Peak
3 pp	7440.00	-36.56	-58.81	22.25	-13.00	-23.56	Peak
4	9300.00	-38.37	-64.01	25.64	-13.00	-25.37	Peak

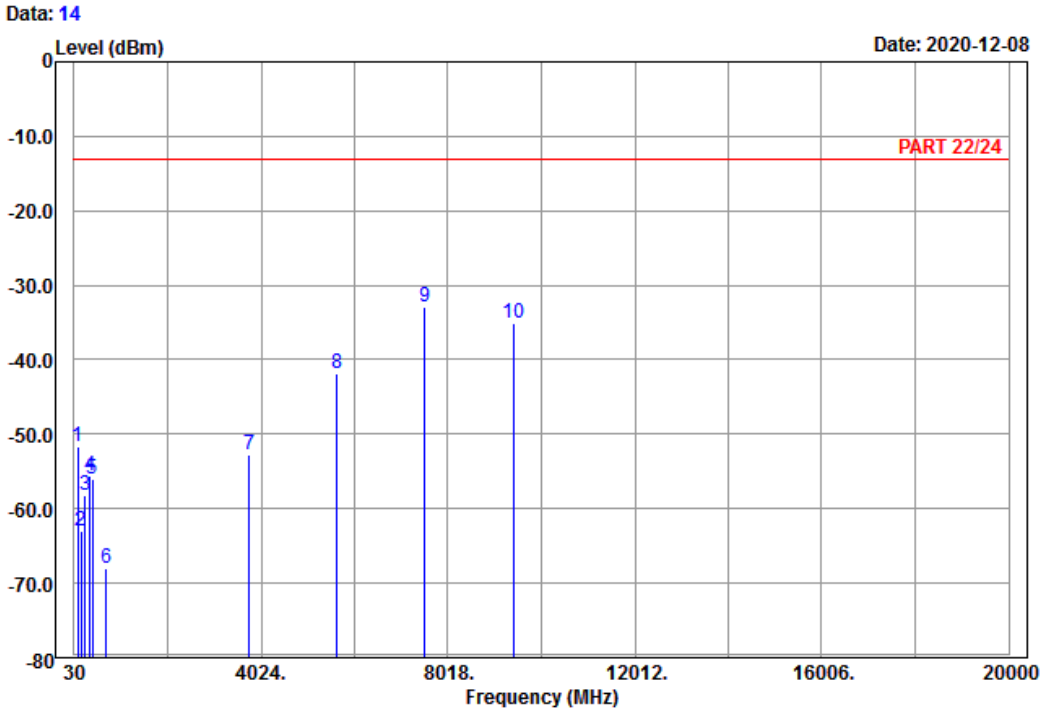
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	126.39	-54.48	-46.59	-7.89	-13.00	-41.48	Peak
2	209.55	-48.89	-42.84	-6.05	-13.00	-35.89	Peak
3	268.95	-55.19	-49.51	-5.68	-13.00	-42.19	Peak
4	368.60	-48.11	-43.71	-4.40	-13.00	-35.11	Peak
5	416.90	-53.43	-50.31	-3.12	-13.00	-40.43	Peak
6	543.60	-65.30	-63.14	-2.16	-13.00	-52.30	Peak
7	3765.00	-51.72	-67.95	16.23	-13.00	-38.72	Peak
8	5647.50	-44.21	-64.68	20.47	-13.00	-31.21	Peak
9 pp	7530.00	-36.55	-59.40	22.85	-13.00	-23.55	Peak
10	9412.50	-38.07	-63.84	25.77	-13.00	-25.07	Peak

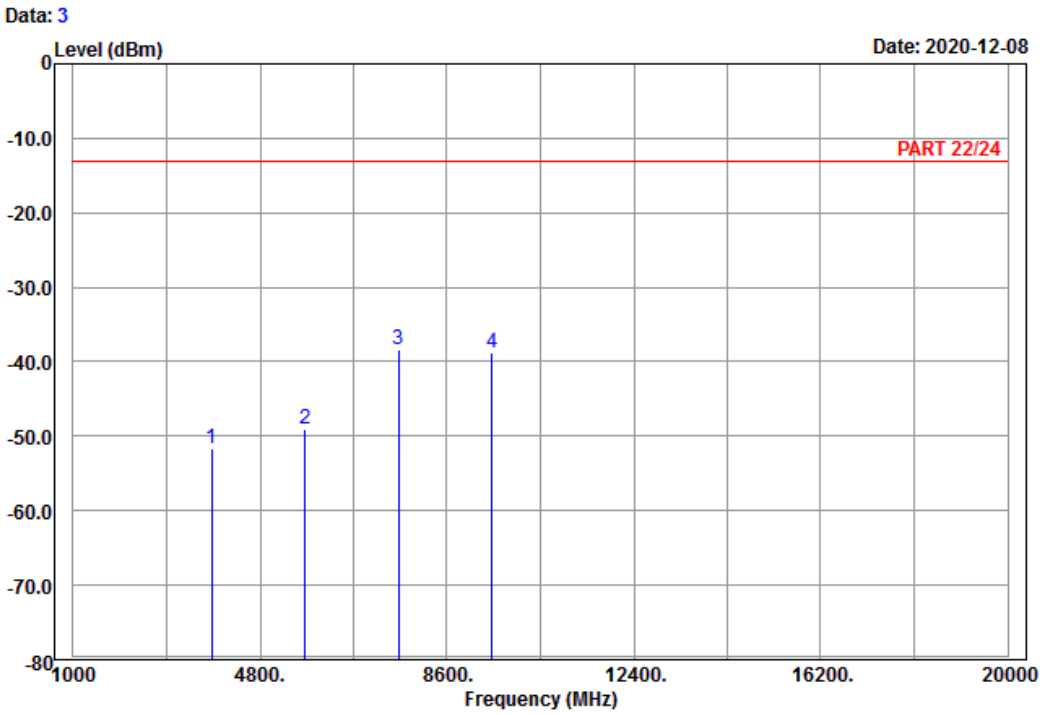


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_M-Ch
Tested by: Charles Hsiao

		Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
		MHz	dBm	dBm	dB	dBm	dB	
1		109.65	-51.64	-42.69	-8.95	-13.00	-38.64	Peak
2		174.45	-63.06	-56.87	-6.19	-13.00	-50.06	Peak
3		268.95	-58.18	-52.50	-5.68	-13.00	-45.18	Peak
4		374.90	-55.66	-51.63	-4.03	-13.00	-42.66	Peak
5		419.70	-56.11	-52.92	-3.19	-13.00	-43.11	Peak
6		707.40	-68.11	-67.60	-0.51	-13.00	-55.11	Peak
7		3765.00	-52.65	-68.88	16.23	-13.00	-39.65	Peak
8		5647.50	-41.90	-62.37	20.47	-13.00	-28.90	Peak
9	pp	7530.00	-33.00	-55.85	22.85	-13.00	-20.00	Peak
10		9412.50	-35.18	-60.95	25.77	-13.00	-22.18	Peak

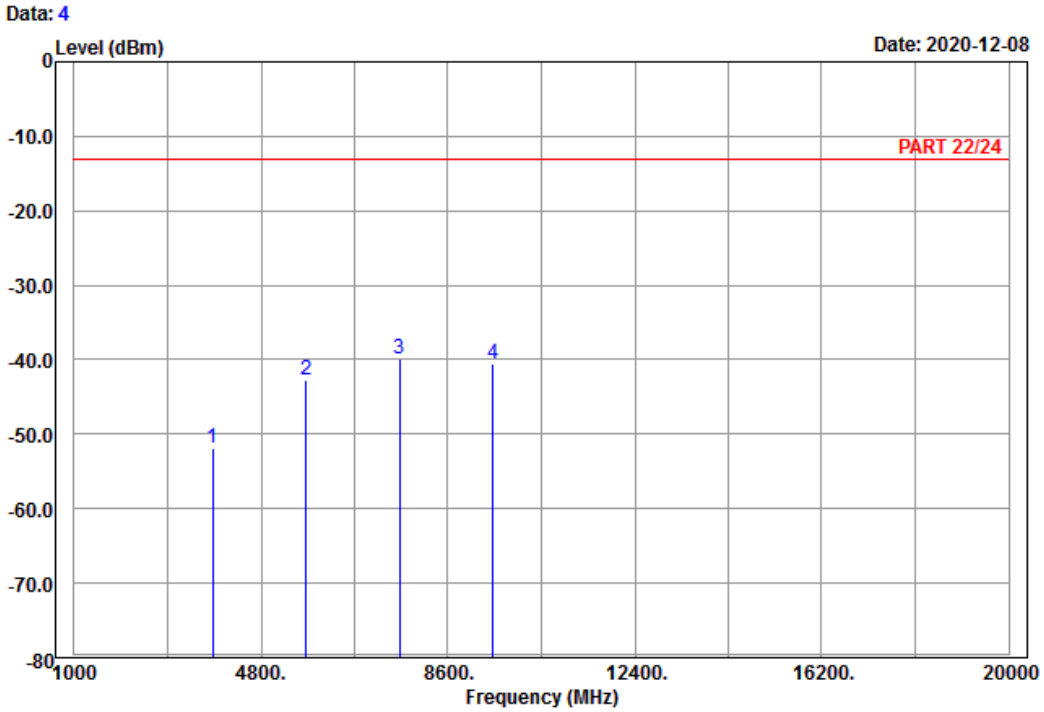
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3810.00	-51.57	-67.98	16.41	-13.00	-38.57	Peak
2	5715.00	-49.11	-69.38	20.27	-13.00	-36.11	Peak
3 pp	7620.00	-38.28	-61.30	23.02	-13.00	-25.28	Peak
4	9525.00	-38.78	-64.82	26.04	-13.00	-25.78	Peak



Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3810.00	-51.88	-68.29	16.41	-13.00	-38.88	Peak
2	5715.00	-42.77	-63.04	20.27	-13.00	-29.77	Peak
3 pp	7620.00	-39.97	-62.99	23.02	-13.00	-26.97	Peak
4	9525.00	-40.47	-66.51	26.04	-13.00	-27.47	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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