FCC Test Report

(PART 24)

Report No.:	RF181005C08-2
FCC ID:	NKRIMQ3
Test Model:	IMQ3-2
Series Model:	IMQ3-0, IMQ3-1, IMQ3-3 (See section 3.1 for more detail)
Received Date:	Oct. 05, 2018
Test Date:	Jan. 04, 2019 ~ Jan. 23, 2019
Issued Date:	Jan. 25, 2019
Applicant:	Wistron NeWeb Corporation
Address:	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
Test Location:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C)
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
RF181005C08-2	Original Release	Jan. 25, 2019

1 Certificate of Conformity

Product:	M2M DATA MODULE
Brand:	WNC
Test Model:	IMQ3-2
Series Model:	IMQ3-0, IMQ3-1, IMQ3-3 (See section 3.1 for more detail)
Sample Status:	Engineering Sample
Applicant:	Wistron NeWeb Corporation
Test Date:	Jan. 04, 2019 ~ Jan. 23, 2019
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 : Lena Wang , **Date:** Jan. 25, 2019

Lena Wang / Specialist

Approved by : , **Date:** Jan. 25, 2019

Dylan Chiou / 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.
2.1046 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 24.238(b)	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238(a)	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 -30.99 dB at 3819.60 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	Expended Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 13, 2018	Dec. 12, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	148	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 23, 2018	Nov. 22, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 19, 2018	Nov. 18, 2019
Preamplifier EMCI	EMC 184045	980116	Nov. 19, 2018	Nov. 18, 2019
Preamplifier EMCI	EMC 012645	980115	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 330H	980112	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8000&3000	140811+170717	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 12, 2018	Oct. 11, 2019
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
LTE Wireless Communication Test Set Keysight	E7515A	MY56030229	Mar. 14, 2018	Mar. 13, 2019
Communications Tester-Wireless Agilent	8960 Series 10	MY53201073	Jun. 28, 2017	Jun. 27, 2019

Radio Communication Analyzer Anritsu	MT8821C	6201502978	Jul. 20, 2018	Jul. 19, 2019
DC Power Supply Agilent	66319D	MY43005576	Oct. 19, 2018	Oct. 18, 2019

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 HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is 7450F-10.

3 General Information

3.1 General Description of EUT

Product	M2M DATA MODULE	
Brand	WNC	
Test Model	IMQ3-2	
Series Model	IMQ3-0, IMQ3-1, IMQ3-3	
Status of EUT	Engineering Sample	
Power Supply Rating	3.8 Vdc	
Modulation Type	GSM/GPRS	GMSK
	EDGE	GMSK, 8PSK
	LTE	QPSK, 16QAM
Frequency Range	GSM/GPRS/EDGE	1850.2 ~ 1909.8 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	219.79 mW
	EDGE	216.27 mW
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	190.11 mW
	LTE Band 2 (Channel Bandwidth: 3 MHz)	201.84 mW
	LTE Band 2 (Channel Bandwidth: 5 MHz)	213.80 mW
	LTE Band 2 (Channel Bandwidth: 10 MHz)	226.99 mW
	LTE Band 2 (Channel Bandwidth: 15 MHz)	239.33 mW
	LTE Band 2 (Channel Bandwidth: 20 MHz)	252.93 mW
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	198.15 mW
	LTE Band 25 (Channel Bandwidth: 3 MHz)	208.93 mW
	LTE Band 25 (Channel Bandwidth: 5 MHz)	220.80 mW
	LTE Band 25 (Channel Bandwidth: 10 MHz)	233.88 mW
	LTE Band 25 (Channel Bandwidth: 15 MHz)	247.17 mW
	LTE Band 25 (Channel Bandwidth: 20 MHz)	260.62 mW
Emission Designator	GSM/GPRS	247KGXW
	EDGE	247KG7W
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1M09G7D
	LTE Band 2 (Channel Bandwidth: 3 MHz)	1M09G7D
	LTE Band 2 (Channel Bandwidth: 5 MHz)	1M09G7D
	LTE Band 2 (Channel Bandwidth: 10 MHz)	1M09G7D
	LTE Band 2 (Channel Bandwidth: 15 MHz)	1M09G7D
	LTE Band 2 (Channel Bandwidth: 20 MHz)	1M10G7D

	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1M09G7D
	LTE Band 25 (Channel Bandwidth: 3 MHz)	1M08G7D
	LTE Band 25 (Channel Bandwidth: 5 MHz)	1M10G7D
	LTE Band 25 (Channel Bandwidth: 10 MHz)	1M09G7D
	LTE Band 25 (Channel Bandwidth: 15 MHz)	1M11G7D
	LTE Band 25 (Channel Bandwidth: 20 MHz)	1M10G7D
Antenna Type	Dipole Antenna with 0.6 dBi gain	
Accessory Device	N/A	
Data Cable Supplied	N/A	

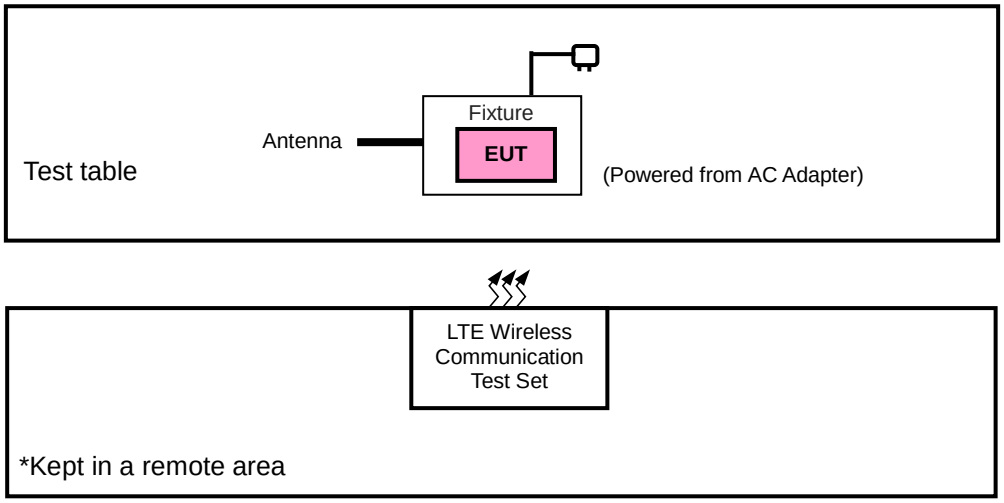
Note:

1. All models are listed as below. Model IMQ3-2 was chosen for final test and present in the report.

Brand	Model	Difference
WNC	IMQ3-2	LTE M1+2G+GPS
	IMQ3-0	LTE M1+GPS
	IMQ3-1	LTE M1+2G
	IMQ3-3	LTE M1

2. 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. In addition to Frequency Stability Measurement, the other tests are tested with Adapter (12 Vdc).

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	LTE Wireless Communication Test Set	Keysight	E7515A	MY56030229	N/A
2.	Adapter	Asian Power Devices Inc.	WA-24Q12FU	N/A	N/A
3.	Antenna	Cortec	AN0727-6706BSM	N/A	N/A
4.	DC Power Supply	Agilent	66319D	MY43005576	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A
2.	N/A
3.	N/A
4.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 1 acted as communication partners to transfer data.
3. Item 2、3 was provided by client.

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	X-plane	X-axis
EDGE	X-plane	X-axis
LTE Band 2	X-plane	X-axis
LTE Band 25	X-plane	X-axis

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

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 / 5 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	5 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	18700 to 19100	18900	20 MHz	QPSK, 16QAM	1 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

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	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	6 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
-	Peak to Average Ratio	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	1 RB / 0 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
						6 RB / 0 RB Offset
			19185	3 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18625 to 19175	18625	5 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19175	5 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18650 to 19150	18650	10 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19150	10 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18675 to 19125	18675	15 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19125	15 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18700 to 19100	18700	20 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19100	20 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
-	Conducted Emission	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK	1 RB / 5 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK	1 RB / 5 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK	1 RB /5 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK	5 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 5 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK	5 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

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 / 5 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
-	Modulation Characteristics	18700 to 19100	26365	20 MHz	QPSK, 16QAM	1 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	6 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	6 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 / 5 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK, 16QAM	1 RB / 5 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
						6 RB / 0 RB Offset
			26675	3 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26065 to 26665	26065	5 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26665	5 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26090 to 26640	26090	10 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26640	10 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26115 to 26615	26115	15 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26615	15 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26140 to 26590	26140	20 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26590	20 MHz	QPSK	1 RB / 5 RB Offset
						6 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 / 5 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK	1 RB / 5 RB Offset
-	Radiated Emission	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 5 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK	1 RB / 5 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	26 deg. C, 58 % RH	12 Vdc	Thomas Wei
Modulation Characteristics	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Frequency Stability	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Occupied Bandwidth	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Band Edge	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Peak to Average Ratio	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Conducted Emission	26 deg. C, 58 % RH	12 Vdc	Getaz Yang
Radiated Emission	25 deg. C, 65 % RH	12 Vdc	Thomas Wei, Jisyong Wang

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

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

FCC 47 CFR Part 2
FCC 47 CFR Part 24
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI/TIA/EIA-603-E 2016
ANSI 63.26-2015

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

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 and VBW is 1 MHz for GSM, GPRS & EDGE, and 10 MHz for LTE mode.

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. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G.

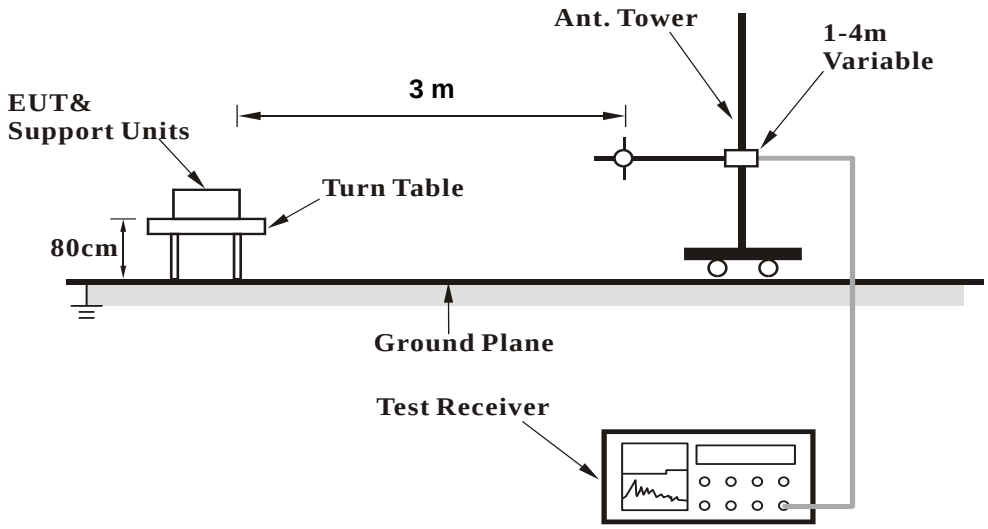
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.

Conducted Power Measurement:

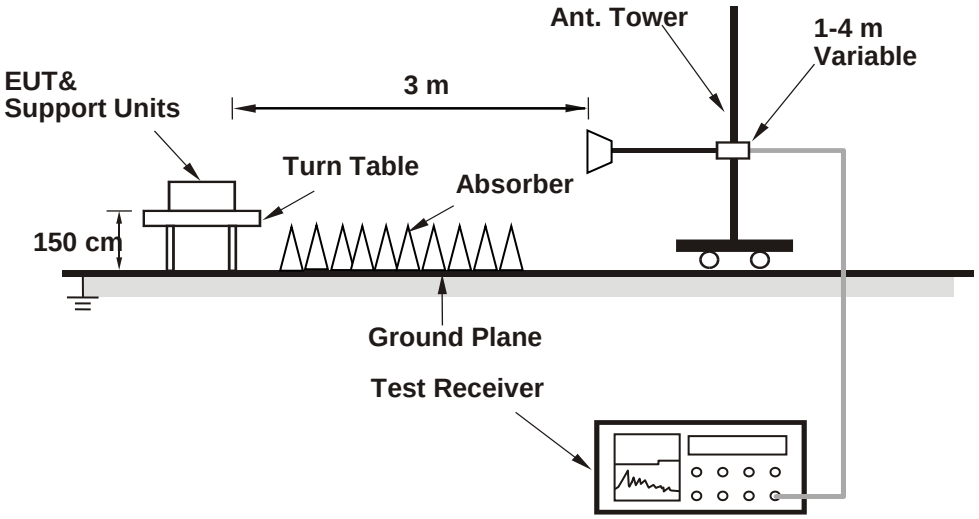
The EUT was set up for the maximum power with GSM, GPRS, EDGE, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

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

Conducted Output Power (dBm)

Band	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GPRS (GMSK, 1Tx-slot)	22.98	22.91	22.94
EDGE (8PSK, 1Tx-slot)	22.91	22.88	22.86

eMTC	Band 2	Region(s):	FCC	Power:	Class 3	23	Tolerance:	2.7

maximum:	23.53

BW(MHz):	1.4

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18607	1850.7	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	23.04
			QPSK	3	3	0	-85	21.79
			QPSK	6	0	0	-85	20.86
			16QAM	1	0	0	-85	21.95
			16QAM	1	5	0	-85	22.14
			16QAM	3	0	0	-85	21.57
			16QAM	5	0	0	-85	21.57
Mid Range	18900	1880	QPSK	1	0	0	-85	22.87
			QPSK	1	5	0	-85	23.27
			QPSK	3	3	0	-85	21.83
			QPSK	6	0	0	-85	20.81
			16QAM	1	0	0	-85	21.99
			16QAM	1	5	0	-85	22.01
			16QAM	3	0	0	-85	21.14
			16QAM	5	0	0	-85	21.09
High Range	19193	1909.3	QPSK	1	0	0	-85	23.16
			QPSK	1	5	0	-85	23.43
			QPSK	3	3	0	-85	22.06
			QPSK	6	0	0	-85	20.89
			16QAM	1	0	0	-85	22.06
			16QAM	1	5	0	-85	22.11
			16QAM	3	0	0	-85	21.41
			16QAM	5	0	0	-85	21.55

BW(MHz):	3

	N_{UL}		Test Configuration Initial of Power	EUT

Test Frequency ID		Frequency of Uplink [MHz]	Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18615	1851.5	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	23.21
			QPSK	1	0	1	-85	23.05
			QPSK	1	5	1	-85	23.05
			QPSK	3	3	0	-85	21.98
			QPSK	3	3	1	-85	22.26
			QPSK	6	0	0	-85	21.06
			QPSK	6	0	1	-85	21.04
			16QAM	1	0	0	-85	22.29
			16QAM	1	5	0	-85	22.3
			16QAM	1	0	1	-85	22.37
			16QAM	1	5	1	-85	22.35
			16QAM	3	0	0	-85	21.26
			16QAM	3	3	1	-85	21.28
			16QAM	5	0	0	-85	21.41
			16QAM	5	0	1	-85	21.47
Mid Range	18900	1880	QPSK	1	0	0	-85	23.06
			QPSK	1	5	0	-85	22.97
			QPSK	1	0	1	-85	22.91
			QPSK	1	5	1	-85	22.92
			QPSK	3	3	0	-85	22.09
			QPSK	3	3	1	-85	22.17
			QPSK	6	0	0	-85	20.99
			QPSK	6	0	1	-85	21.06
			16QAM	1	0	0	-85	22.14
			16QAM	1	5	0	-85	22.17
			16QAM	1	0	1	-85	22.14
			16QAM	1	5	1	-85	22.14
			16QAM	3	0	0	-85	21.27
			16QAM	3	3	1	-85	21.32
			16QAM	5	0	0	-85	21.14
			16QAM	5	0	1	-85	21.31
High Range	19185	1908.5	QPSK	1	0	0	-85	23.13
			QPSK	1	5	0	-85	23.13
			QPSK	1	0	1	-85	23.17
			QPSK	1	5	1	-85	23.14
			QPSK	3	3	0	-85	22.15
			QPSK	3	3	1	-85	22.15
			QPSK	6	0	0	-85	21.18

			QPSK	6	0	1	-85	21.18
			16QAM	1	0	0	-85	22.39
			16QAM	1	5	0	-85	22.42
			16QAM	1	0	1	-85	22.42
			16QAM	1	5	1	-85	22.5
			16QAM	3	0	0	-85	21.36
			16QAM	3	3	1	-85	21.45
			16QAM	5	0	0	-85	21.55
			16QAM	5	0	1	-85	21.67

BW(MHz):	5

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18625	1852.5	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	23.17
			QPSK	1	0	1	-85	23.24
			QPSK	1	5	1	-85	23.15
			QPSK	1	0	3	-85	23.07
			QPSK	1	5	3	-85	23.02
			QPSK	3	0	0	-85	22.13
			QPSK	3	3	3	-85	22.26
			QPSK	6	0	0	-85	22.15
			QPSK	6	0	1	-85	22.12
			QPSK	6	0	3	-85	22.21
			16QAM	1	0	0	-85	23.31
			16QAM	1	5	0	-85	23.25
			16QAM	1	0	1	-85	23.32
			16QAM	1	5	1	-85	23.23
			16QAM	1	0	3	-85	23.23
			16QAM	1	5	3	-85	23.16
			16QAM	3	0	0	-85	22.39
			16QAM	3	3	3	-85	22.42
			16QAM	5	0	0	-85	21.52
			16QAM	5	0	1	-85	21.49
			16QAM	5	0	3	-85	21.48
Mid Range	18900	1880	QPSK	1	0	0	-85	22.98
			QPSK	1	5	0	-85	23.04
			QPSK	1	0	1	-85	22.96
			QPSK	1	5	1	-85	22.98
			QPSK	1	0	3	-85	22.99

			QPSK	1	5	3	-85	22.91
			QPSK	3	0	0	-85	22.07
			QPSK	3	3	3	-85	22.01
			QPSK	6	0	0	-85	21.08
			QPSK	6	0	1	-85	22.12
			QPSK	6	0	3	-85	22.06
			16QAM	1	0	0	-85	23.32
			16QAM	1	5	0	-85	23.21
			16QAM	1	0	1	-85	23.13
			16QAM	1	5	1	-85	23.22
			16QAM	1	0	3	-85	23.25
			16QAM	1	5	3	-85	23.21
			16QAM	3	0	0	-85	22.34
			16QAM	3	3	3	-85	22.26
			16QAM	5	0	0	-85	21.29
			16QAM	5	0	1	-85	21.21
			16QAM	5	0	3	-85	21.27
High Range	19175	1907.5	QPSK	1	0	0	-85	23.15
			QPSK	1	5	0	-85	23.11
			QPSK	1	0	1	-85	23.14
			QPSK	1	5	1	-85	23.15
			QPSK	1	0	3	-85	23.2
			QPSK	1	5	3	-85	23.21
			QPSK	3	0	0	-85	22.14
			QPSK	3	3	3	-85	22.17
			QPSK	6	0	0	-85	22.17
			QPSK	6	0	1	-85	22.16
			QPSK	6	0	3	-85	22.27
			16QAM	1	0	0	-85	23.27
			16QAM	1	5	0	-85	23.31
			16QAM	1	0	1	-85	23.24
			16QAM	1	5	1	-85	23.21
			16QAM	1	0	3	-85	23.38
			16QAM	1	5	3	-85	23.28
			16QAM	3	0	0	-85	22.59
			16QAM	3	3	3	-85	22.55
			16QAM	5	0	0	-85	21.36
			16QAM	5	0	1	-85	21.42
			16QAM	5	0	3	-85	21.41

BW(MHz):	10

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18650	1855	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.98
			QPSK	1	0	3	-85	23.13
			QPSK	1	5	3	-85	23.05
			QPSK	1	0	7	-85	23.01
			QPSK	1	5	7	-85	23.16
			QPSK	4	0	0	-85	23.13
			QPSK	4	2	7	-85	23.03
			QPSK	6	0	0	-85	22.27
			QPSK	6	0	7	-85	22.01
			16QAM	1	0	0	-85	22.82
			16QAM	1	5	0	-85	23.05
			16QAM	1	0	3	-85	23.25
			16QAM	1	5	3	-85	23.26
			16QAM	1	0	7	-85	23.11
			16QAM	1	5	7	-85	23.26
			16QAM	4	2	0	-85	22.27
			16QAM	4	2	7	-85	22.31
			16QAM	5	0	0	-85	22.36
			16QAM	5	0	7	-85	22.27
Mid Range	18900	1880	QPSK	1	0	0	-85	23.21
			QPSK	1	5	0	-85	23.04
			QPSK	1	0	3	-85	22.91
			QPSK	1	5	3	-85	22.94
			QPSK	1	0	7	-85	22.93
			QPSK	1	5	7	-85	23.02
			QPSK	4	0	0	-85	23.21
			QPSK	4	2	7	-85	22.99
			QPSK	6	0	0	-85	22.12
			QPSK	6	0	7	-85	22.01
			16QAM	1	0	0	-85	23.13
			16QAM	1	5	0	-85	23.25
			16QAM	1	0	3	-85	23.29
			16QAM	1	5	3	-85	23.12
			16QAM	1	0	7	-85	23.11
			16QAM	1	5	7	-85	23.27

			16QAM	4	2	0	-85	22.28
			16QAM	4	2	7	-85	22.15
			16QAM	5	0	0	-85	22.29
			16QAM	5	0	7	-85	22.34
High Range	19150	1905	QPSK	1	0	0	-85	23.25
			QPSK	1	5	0	-85	23.21
			QPSK	1	5	7	-85	23.05
			QPSK	1	0	3	-85	23.12
			QPSK	1	5	3	-85	23.36
			QPSK	1	0	7	-85	23.12
			QPSK	4	0	0	-85	23.22
			QPSK	4	2	7	-85	23.18
			QPSK	6	0	0	-85	22.12
			QPSK	6	0	7	-85	22.12
			16QAM	1	0	0	-85	23.27
			16QAM	1	5	0	-85	23.21
			16QAM	1	0	3	-85	23.14
			16QAM	1	5	3	-85	23.41
			16QAM	1	0	7	-85	23.12
			16QAM	1	5	7	-85	23.05
			16QAM	4	2	0	-85	22.35
			16QAM	4	2	7	-85	22.51
			16QAM	5	0	0	-85	22.61
			16QAM	5	0	7	-85	22.56

BW(MHz):	15

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18675	1857.5	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	22.89
			QPSK	1	0	5	-85	23.04
			QPSK	1	5	5	-85	23.01
			QPSK	1	0	11	-85	22.94
			QPSK	1	5	11	-85	23.06
			QPSK	3	0	0	-85	23.04
			QPSK	3	3	11	-85	22.99
			QPSK	6	0	0	-85	23.05
			QPSK	6	0	11	-85	22.78

			16QAM	1	0	0	-85	23.02
			16QAM	1	5	0	-85	23.19
			16QAM	1	0	5	-85	23.23
			16QAM	1	5	5	-85	23.19
			16QAM	1	0	11	-85	23.08
			16QAM	1	5	11	-85	22.64
			16QAM	3	0	0	-85	23.3
			16QAM	3	3	11	-85	23.23
			16QAM	5	0	0	-85	23.25
			16QAM	5	0	11	-85	23.29
Mid Range	18900	1880	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	22.78
			QPSK	1	0	5	-85	22.92
			QPSK	1	5	5	-85	22.98
			QPSK	1	0	11	-85	22.75
			QPSK	1	5	11	-85	22.95
			QPSK	3	0	0	-85	22.95
			QPSK	3	3	11	-85	22.79
			QPSK	6	0	0	-85	23.03
			QPSK	6	0	11	-85	22.94
			16QAM	1	0	0	-85	23.14
			16QAM	1	5	0	-85	22.96
			16QAM	1	0	5	-85	23.1
			16QAM	1	5	5	-85	23.15
			16QAM	1	0	11	-85	23.01
			16QAM	1	5	11	-85	23.22
			16QAM	3	0	0	-85	23.13
			16QAM	3	3	11	-85	23.15
			16QAM	5	0	0	-85	23.14
			16QAM	5	0	11	-85	23.21
High Range	19125	1902.5	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	23.17
			QPSK	1	0	5	-85	22.94
			QPSK	1	5	5	-85	23.03
			QPSK	1	0	11	-85	23.01
			QPSK	1	5	11	-85	23.15
			QPSK	3	0	0	-85	23.16
			QPSK	3	3	11	-85	23.12
			QPSK	6	0	0	-85	23.04
			QPSK	6	0	11	-85	23.11

			16QAM	1	0	0	-85	22.64
			16QAM	1	5	0	-85	23.01
			16QAM	1	0	5	-85	23.13
			16QAM	1	5	5	-85	22.97
			16QAM	1	0	11	-85	23.13
			16QAM	1	5	11	-85	23.02
			16QAM	3	0	0	-85	23.21
			16QAM	3	3	11	-85	23.28
			16QAM	5	0	0	-85	23.32
			16QAM	5	0	11	-85	23.16

BW(MHz):	20

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	18700	1860	QPSK	1	0	0	-85	22.77
			QPSK	1	5	0	-85	23.14
			QPSK	1	0	7	-85	23.05
			QPSK	1	5	7	-85	23.02
			QPSK	1	0	15	-85	22.91
			QPSK	1	5	15	-85	23.03
			QPSK	3	0	0	-85	23.07
			QPSK	3	3	15	-85	22.86
			QPSK	6	0	0	-85	22.96
			QPSK	6	0	15	-85	22.93
			16QAM	1	0	0	-85	23.12
			16QAM	1	5	0	-85	23.16
			16QAM	1	0	7	-85	23.12
			16QAM	1	5	7	-85	23.13
			16QAM	1	0	15	-85	22.89
			16QAM	1	5	15	-85	23.07
			16QAM	3	0	0	-85	23.23
			16QAM	3	3	15	-85	23.22
			16QAM	5	0	0	-85	23.24
			16QAM	5	0	15	-85	23.24
Mid Range	18900	1880	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	22.93
			QPSK	1	0	7	-85	22.79
			QPSK	1	5	7	-85	22.86

			QPSK	1	0	15	-85	23.06
			QPSK	1	5	15	-85	23.13
			QPSK	3	0	0	-85	23.01
			QPSK	3	3	15	-85	23.12
			QPSK	6	0	0	-85	23.01
			QPSK	6	0	15	-85	23.16
			16QAM	1	0	0	-85	23.18
			16QAM	1	5	0	-85	23.27
			16QAM	1	0	7	-85	23.37
			16QAM	1	5	7	-85	23.14
			16QAM	1	0	15	-85	23.12
			16QAM	1	5	15	-85	23.26
			16QAM	3	0	0	-85	23.2
			16QAM	3	3	15	-85	23.14
			16QAM	5	0	0	-85	23.14
			16QAM	5	0	15	-85	23.22
High Range	19100	1900	QPSK	1	0	0	-85	22.81
			QPSK	1	5	0	-85	22.79
			QPSK	1	0	7	-85	22.96
			QPSK	1	5	7	-85	23.04
			QPSK	1	0	15	-85	23.01
			QPSK	1	5	15	-85	23.12
			QPSK	3	0	0	-85	22.87
			QPSK	3	3	15	-85	23.02
			QPSK	6	0	0	-85	22.92
			QPSK	6	0	15	-85	23.04
			16QAM	1	0	0	-85	23.21
			16QAM	1	5	0	-85	23.12
			16QAM	1	0	7	-85	23.53
			16QAM	1	5	7	-85	22.78
			16QAM	1	0	15	-85	22.57
			16QAM	1	5	15	-85	23.13
			16QAM	3	0	0	-85	23.01
			16QAM	3	3	15	-85	23.13
			16QAM	5	0	0	-85	23.15
			16QAM	5	0	15	-85	23.29

eMTC	Band 25	Region(s):	FCC	Power:	Class 3	23	Tolerance:	2.7

maximum:	23.28

BW(MHz):	1.4

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26047	1850.7	QPSK	1	0	0	-85	23.12
			QPSK	1	5	0	-85	23.12
			QPSK	3	3	0	-85	21.81
			QPSK	6	0	0	-85	20.95
			16QAM	1	0	0	-85	21.94
			16QAM	1	5	0	-85	22.03
			16QAM	3	0	0	-85	21.45
			16QAM	5	0	0	-85	21.43
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.84
			QPSK	1	5	0	-85	22.86
			QPSK	3	3	0	-85	21.82
			QPSK	6	0	0	-85	20.73
			16QAM	1	0	0	-85	21.91
			16QAM	1	5	0	-85	21.94
			16QAM	3	0	0	-85	21.32
			16QAM	5	0	0	-85	21.13
High Range	26683	1914.3	QPSK	1	0	0	-85	23.06
			QPSK	1	5	0	-85	23.25
			QPSK	3	3	0	-85	21.89
			QPSK	6	0	0	-85	20.86
			16QAM	1	0	0	-85	21.88
			16QAM	1	5	0	-85	22.08
			16QAM	3	0	0	-85	21.35
			16QAM	5	0	0	-85	21.77

BW(MHz):	3

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26055	1851.5	QPSK	1	0	0	-85	23.09
			QPSK	1	5	0	-85	22.97
			QPSK	1	0	1	-85	22.93
			QPSK	1	5	1	-85	23.04
			QPSK	3	3	0	-85	21.96

			QPSK	3	3	1	-85	22.03
			QPSK	6	0	0	-85	20.98
			QPSK	6	0	1	-85	21.04
			16QAM	1	0	0	-85	22.18
			16QAM	1	5	0	-85	22.25
			16QAM	1	0	1	-85	22.19
			16QAM	1	5	1	-85	22.34
			16QAM	3	0	0	-85	21.21
			16QAM	3	3	1	-85	21.29
			16QAM	5	0	0	-85	21.37
			16QAM	5	0	1	-85	21.48
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.91
			QPSK	1	5	0	-85	22.91
			QPSK	1	0	1	-85	22.92
			QPSK	1	5	1	-85	22.81
			QPSK	3	3	0	-85	21.95
			QPSK	3	3	1	-85	21.94
			QPSK	6	0	0	-85	20.97
			QPSK	6	0	1	-85	20.96
			16QAM	1	0	0	-85	21.99
			16QAM	1	5	0	-85	22
			16QAM	1	0	1	-85	22.01
			16QAM	1	5	1	-85	22
			16QAM	3	0	0	-85	21.41
			16QAM	3	3	1	-85	21.13
			16QAM	5	0	0	-85	21.26
			16QAM	5	0	1	-85	21.43
High Range	26675	1913.5	QPSK	1	0	0	-85	23.16
			QPSK	1	5	0	-85	23.17
			QPSK	1	0	1	-85	23.11
			QPSK	1	5	1	-85	23.11
			QPSK	3	3	0	-85	22.18
			QPSK	3	3	1	-85	22.13
			QPSK	6	0	0	-85	21.11
			QPSK	6	0	1	-85	21.16
			16QAM	1	0	0	-85	22.41
			16QAM	1	5	0	-85	22.42
			16QAM	1	0	1	-85	22.31
			16QAM	1	5	1	-85	22.3
			16QAM	3	0	0	-85	21.37
			16QAM	3	3	1	-85	21.42

			16QAM	5	0	0	-85	21.64
			16QAM	5	0	1	-85	21.55

BW(MHz):	5

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26065	1852.5	QPSK	1	0	0	-85	23.21
			QPSK	1	5	0	-85	23.14
			QPSK	1	0	1	-85	22.97
			QPSK	1	5	1	-85	22.94
			QPSK	1	0	3	-85	23.09
			QPSK	1	5	3	-85	23.02
			QPSK	3	0	0	-85	22.21
			QPSK	3	3	3	-85	22.03
			QPSK	6	0	0	-85	22.27
			QPSK	6	0	1	-85	22.13
			QPSK	6	0	3	-85	22.01
			16QAM	1	0	0	-85	23.21
			16QAM	1	5	0	-85	23.23
			16QAM	1	0	1	-85	22.89
			16QAM	1	5	1	-85	23.1
			16QAM	1	0	3	-85	23.17
			16QAM	1	5	3	-85	23.12
			16QAM	3	0	0	-85	22.46
			16QAM	3	3	3	-85	22.29
			16QAM	5	0	0	-85	21.43
			16QAM	5	0	1	-85	21.37
			16QAM	5	0	3	-85	21.53
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.81
			QPSK	1	5	0	-85	22.78
			QPSK	1	0	1	-85	22.94
			QPSK	1	5	1	-85	22.86
			QPSK	1	0	3	-85	22.49
			QPSK	1	5	3	-85	22.29
			QPSK	3	0	0	-85	21.89
			QPSK	3	3	3	-85	21.54
			QPSK	6	0	0	-85	21.85
			QPSK	6	0	1	-85	21.64
			QPSK	6	0	3	-85	21.75
			16QAM	1	0	0	-85	23.14

			16QAM	1	5	0	-85	23.17
			16QAM	1	0	1	-85	23.01
			16QAM	1	5	1	-85	23.08
			16QAM	1	0	3	-85	22.97
			16QAM	1	5	3	-85	22.78
			16QAM	3	0	0	-85	22.11
			16QAM	3	3	3	-85	21.85
			16QAM	5	0	0	-85	20.88
			16QAM	5	0	1	-85	20.91
			16QAM	5	0	3	-85	20.94
High Range	26665	1912.5	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.97
			QPSK	1	0	1	-85	22.87
			QPSK	1	5	1	-85	22.89
			QPSK	1	0	3	-85	22.97
			QPSK	1	5	3	-85	22.99
			QPSK	3	0	0	-85	22.01
			QPSK	3	3	3	-85	21.97
			QPSK	6	0	0	-85	21.91
			QPSK	6	0	1	-85	21.99
			QPSK	6	0	3	-85	21.91
			16QAM	1	0	0	-85	23.23
			16QAM	1	5	0	-85	23.16
			16QAM	1	0	1	-85	23.02
			16QAM	1	5	1	-85	23.22
			16QAM	1	0	3	-85	23.01
			16QAM	1	5	3	-85	23.13
			16QAM	3	0	0	-85	22.24
			16QAM	3	3	3	-85	22.13
			16QAM	5	0	0	-85	21.25
			16QAM	5	0	1	-85	21.21
			16QAM	5	0	3	-85	21.19

BW(MHz):	10

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26090	1855	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	22.98

			QPSK	1	0	3	-85	22.81
			QPSK	1	5	3	-85	22.72
			QPSK	1	0	7	-85	22.92
			QPSK	1	5	7	-85	22.88
			QPSK	4	0	0	-85	23.01
			QPSK	4	2	7	-85	22.87
			QPSK	6	0	0	-85	21.92
			QPSK	6	0	7	-85	21.91
			16QAM	1	0	0	-85	23.21
			16QAM	1	5	0	-85	22.98
			16QAM	1	0	3	-85	23.16
			16QAM	1	5	3	-85	23.13
			16QAM	1	0	7	-85	23.14
			16QAM	1	5	7	-85	23.18
			16QAM	4	2	0	-85	22.87
			16QAM	4	2	7	-85	21.97
			16QAM	5	0	0	-85	22.14
			16QAM	5	0	7	-85	22.11
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.73
			QPSK	1	5	0	-85	22.77
			QPSK	1	0	3	-85	22.72
			QPSK	1	5	3	-85	22.71
			QPSK	1	0	7	-85	22.53
			QPSK	1	5	7	-85	22.78
			QPSK	4	0	0	-85	22.78
			QPSK	4	2	7	-85	22.68
			QPSK	6	0	0	-85	21.82
			QPSK	6	0	7	-85	21.74
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.12
			16QAM	1	0	3	-85	23.04
			16QAM	1	5	3	-85	23.03
			16QAM	1	0	7	-85	23.01
			16QAM	1	5	7	-85	23.02
			16QAM	4	2	0	-85	21.98
			16QAM	4	2	7	-85	22.01
			16QAM	5	0	0	-85	21.81
			16QAM	5	0	7	-85	21.84
High Range	26640	1910	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	22.86

			QPSK	1	5	7	-85	22.95
			QPSK	1	0	3	-85	22.89
			QPSK	1	5	3	-85	22.88
			QPSK	1	0	7	-85	22.97
			QPSK	4	0	0	-85	22.91
			QPSK	4	2	7	-85	23.01
			QPSK	6	0	0	-85	21.89
			QPSK	6	0	7	-85	22.03
			16QAM	1	0	0	-85	23.21
			16QAM	1	5	0	-85	23.19
			16QAM	1	0	3	-85	23.1
			16QAM	1	5	3	-85	23.18
			16QAM	1	0	7	-85	23.03
			16QAM	1	5	7	-85	23.13
			16QAM	4	2	0	-85	22.14
			16QAM	4	2	7	-85	22.11
			16QAM	5	0	0	-85	22.19
			16QAM	5	0	7	-85	22.29

BW(MHz):	15

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26115	1857.5	QPSK	1	0	0	-85	22.9
			QPSK	1	5	0	-85	22.88
			QPSK	1	0	5	-85	22.75
			QPSK	1	5	5	-85	22.73
			QPSK	1	0	11	-85	22.91
			QPSK	1	5	11	-85	22.99
			QPSK	3	0	0	-85	22.92
			QPSK	3	3	11	-85	22.97
			QPSK	6	0	0	-85	22.87
			QPSK	6	0	11	-85	22.91
			16QAM	1	0	0	-85	23.06
			16QAM	1	5	0	-85	23.17
			16QAM	1	0	5	-85	23.19
			16QAM	1	5	5	-85	23.02
			16QAM	1	0	11	-85	23.04
			16QAM	1	5	11	-85	23.01

			16QAM	3	0	0	-85	23.04
			16QAM	3	3	11	-85	23.17
			16QAM	5	0	0	-85	23.01
			16QAM	5	0	11	-85	23.13
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.83
			QPSK	1	5	0	-85	22.82
			QPSK	1	0	5	-85	22.82
			QPSK	1	5	5	-85	22.73
			QPSK	1	0	11	-85	22.83
			QPSK	1	5	11	-85	22.87
			QPSK	3	0	0	-85	22.82
			QPSK	3	3	11	-85	22.89
			QPSK	6	0	0	-85	22.86
			QPSK	6	0	11	-85	22.88
			16QAM	1	0	0	-85	23.12
			16QAM	1	5	0	-85	23.1
			16QAM	1	0	5	-85	23.12
			16QAM	1	5	5	-85	23.1
			16QAM	1	0	11	-85	23.14
			16QAM	1	5	11	-85	23.11
			16QAM	3	0	0	-85	23.02
			16QAM	3	3	11	-85	23.02
			16QAM	5	0	0	-85	23.14
			16QAM	5	0	11	-85	23.03
High Range	26615	1907.5	QPSK	1	0	0	-85	22.85
			QPSK	1	5	0	-85	22.51
			QPSK	1	0	5	-85	23.01
			QPSK	1	5	5	-85	22.82
			QPSK	1	0	11	-85	23.02
			QPSK	1	5	11	-85	23.08
			QPSK	3	0	0	-85	22.89
			QPSK	3	3	11	-85	23.06
			QPSK	6	0	0	-85	22.82
			QPSK	6	0	11	-85	23.04
			16QAM	1	0	0	-85	23.11
			16QAM	1	5	0	-85	23.18
			16QAM	1	0	5	-85	23.01
			16QAM	1	5	5	-85	23.15
			16QAM	1	0	11	-85	23
			16QAM	1	5	11	-85	22.98
			16QAM	3	0	0	-85	23.07

			16QAM	3	3	11	-85	23.02
			16QAM	5	0	0	-85	23.05
			16QAM	5	0	11	-85	23.09

BW(MHz):	20

Test Frequency ID	N_{UL}	Frequency of Uplink [MHz]	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell power (dBm/15kHz)	power (dBm)
Low Range	26140	1860	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	23.04
			QPSK	1	0	7	-85	23.06
			QPSK	1	5	7	-85	23.08
			QPSK	1	0	15	-85	22.92
			QPSK	1	5	15	-85	22.89
			QPSK	3	0	0	-85	23.03
			QPSK	3	3	15	-85	22.92
			QPSK	6	0	0	-85	22.98
			QPSK	6	0	15	-85	22.94
			16QAM	1	0	0	-85	23.11
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	7	-85	23.18
			16QAM	1	5	7	-85	23.15
			16QAM	1	0	15	-85	23.05
			16QAM	1	5	15	-85	23.07
			16QAM	3	0	0	-85	23.15
			16QAM	3	3	15	-85	23.18
			16QAM	5	0	0	-85	23.14
			16QAM	5	0	15	-85	23.12
Mid Range	26365	1882.5	QPSK	1	0	0	-85	22.87
			QPSK	1	5	0	-85	22.67
			QPSK	1	0	7	-85	22.81
			QPSK	1	5	7	-85	22.75
			QPSK	1	0	15	-85	22.98
			QPSK	1	5	15	-85	23.05
			QPSK	3	0	0	-85	22.83
			QPSK	3	3	15	-85	22.83
			QPSK	6	0	0	-85	22.81
			QPSK	6	0	15	-85	23.04
			16QAM	1	0	0	-85	23.1

			16QAM	1	5	0	-85	23.28
			16QAM	1	0	7	-85	23.12
			16QAM	1	5	7	-85	23.02
			16QAM	1	0	15	-85	22.97
			16QAM	1	5	15	-85	23.02
			16QAM	3	0	0	-85	23.01
			16QAM	3	3	15	-85	23.16
			16QAM	5	0	0	-85	23.13
			16QAM	5	0	15	-85	23.06
High Range	26590	1905	QPSK	1	0	0	-85	22.77
			QPSK	1	5	0	-85	22.67
			QPSK	1	0	7	-85	22.84
			QPSK	1	5	7	-85	22.92
			QPSK	1	0	15	-85	23.02
			QPSK	1	5	15	-85	23.01
			QPSK	3	0	0	-85	22.75
			QPSK	3	3	15	-85	22.89
			QPSK	6	0	0	-85	22.76
			QPSK	6	0	15	-85	22.91
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.03
			16QAM	1	0	7	-85	23.1
			16QAM	1	5	7	-85	23.08
			16QAM	1	0	15	-85	23.07
			16QAM	1	5	15	-85	23.11
			16QAM	3	0	0	-85	23.13
			16QAM	3	3	15	-85	23.05
			16QAM	5	0	0	-85	23.04
			16QAM	5	0	15	-85	23.22

EIRP Power (dBm)

GSM							
Plane	**Channel**	**Frequency (MHz)**	**Reading (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (mW)**	**Polarization (H/V)**
X	512	1850.2	-13.15	36.57	23.42	219.79	H
	661	1880.0	-13.93	37.22	23.29	213.30	
	810	1909.8	-14.03	37.18	23.15	206.54	
	512	1850.2	-18.80	37.65	18.85	76.74	V
	661	1880.0	-18.96	37.58	18.62	72.78	
	810	1909.8	-19.05	37.48	18.43	69.66	

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)**
X	512	1850.2	-13.22	36.57	23.35	216.27	H
	661	1880.0	-14.04	37.22	23.18	207.97	
	810	1909.8	-14.14	37.18	23.04	201.37	
	512	1850.2	-18.96	37.65	18.69	73.96	V
	661	1880.0	-19.11	37.58	18.47	70.31	
	810	1909.8	-19.13	37.48	18.35	68.39	

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)
X	18607	1850.7	-14.17	36.57	22.40	173.78	H
	18900	1880.0	-14.59	37.22	22.63	183.23	
	19193	1909.3	-14.39	37.18	22.79	190.11	
	18607	1850.7	-20.36	37.65	17.29	53.58	V
	18900	1880.0	-20.04	37.58	17.54	56.75	
	19193	1909.3	-19.57	37.48	17.91	61.80	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	18607	1850.7	-15.23	36.57	21.34	136.14	H
	18900	1880.0	-15.65	37.22	21.57	143.55	
	19193	1909.3	-15.45	37.18	21.73	148.94	
	18607	1850.7	-21.42	37.65	16.23	41.98	V
	18900	1880.0	-21.10	37.58	16.48	44.46	
	19193	1909.3	-20.63	37.48	16.85	48.42	

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)
X	18615	1851.5	-13.91	36.57	22.66	184.50	H
	18900	1880.0	-14.33	37.22	22.89	194.54	
	19185	1908.5	-14.13	37.18	23.05	201.84	
	18615	1851.5	-20.10	37.65	17.55	56.89	V
	18900	1880.0	-19.78	37.58	17.80	60.26	
	19185	1908.5	-19.31	37.48	18.17	65.61	
Channel Bandwidth: 3 MHz / 16QAM							
X	18615	1851.5	-14.99	36.57	21.58	143.88	H
	18900	1880.0	-15.41	37.22	21.81	151.71	
	19185	1908.5	-15.21	37.18	21.97	157.40	
	18615	1851.5	-21.18	37.65	16.47	44.36	V
	18900	1880.0	-20.86	37.58	16.72	46.99	
	19185	1908.5	-20.39	37.48	17.09	51.17	

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)
X	18625	1852.5	-13.66	36.57	22.91	195.43	H
	18900	1880.0	-14.08	37.22	23.14	206.06	
	19175	1907.5	-13.88	37.18	23.30	213.80	
	18625	1852.5	-19.85	37.65	17.80	60.26	V
	18900	1880.0	-19.53	37.58	18.05	63.83	
	19175	1907.5	-19.06	37.48	18.42	69.50	
Channel Bandwidth: 5 MHz / 16QAM							
X	18625	1852.5	-14.73	36.57	21.84	152.76	H
	18900	1880.0	-15.15	37.22	22.07	161.06	
	19175	1907.5	-14.95	37.18	22.23	167.11	
	18625	1852.5	-20.92	37.65	16.73	47.10	V
	18900	1880.0	-20.60	37.58	16.98	49.89	
	19175	1907.5	-20.13	37.48	17.35	54.33	

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)
X	18650	1855.0	-13.40	36.57	23.17	207.49	H
	18900	1880.0	-13.82	37.22	23.40	218.78	
	19150	1905.0	-13.62	37.18	23.56	226.99	
	18650	1855.0	-19.59	37.65	18.06	63.97	V
	18900	1880.0	-19.27	37.58	18.31	67.76	
	19150	1905.0	-18.80	37.48	18.68	73.79	
Channel Bandwidth: 10 MHz / 16QAM							
X	18650	1855.0	-14.47	36.57	22.10	162.18	H
	18900	1880.0	-14.89	37.22	22.33	171.00	
	19150	1905.0	-14.69	37.18	22.49	177.42	
	18650	1855.0	-20.66	37.65	16.99	50.00	V
	18900	1880.0	-20.34	37.58	17.24	52.97	
	19150	1905.0	-19.87	37.48	17.61	57.68	

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)
X	18675	1857.5	-13.17	36.57	23.40	218.78	H
	18900	1880.0	-13.59	37.22	23.63	230.67	
	19125	1902.5	-13.39	37.18	23.79	239.33	
	18675	1857.5	-19.36	37.65	18.29	67.45	V
	18900	1880.0	-19.04	37.58	18.54	71.45	
	19125	1902.5	-18.57	37.48	18.91	77.80	
Channel Bandwidth: 15 MHz / 16QAM							
X	18675	1857.5	-14.22	36.57	22.35	171.79	H
	18900	1880.0	-14.64	37.22	22.58	181.13	
	19125	1902.5	-14.44	37.18	22.74	187.93	
	18675	1857.5	-20.41	37.65	17.24	52.97	V
	18900	1880.0	-20.09	37.58	17.49	56.10	
	19125	1902.5	-19.62	37.48	17.86	61.09	

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)
X	18700	1860.0	-12.93	36.57	23.64	231.21	H
	18900	1880.0	-13.35	37.22	23.87	243.78	
	19100	1900.0	-13.15	37.18	24.03	252.93	
	18700	1860.0	-19.12	37.65	18.53	71.29	V
	18900	1880.0	-18.80	37.58	18.78	75.51	
	19100	1900.0	-18.33	37.48	19.15	82.22	
Channel Bandwidth: 20 MHz / 16QAM							
X	18700	1860.0	-13.96	36.57	22.61	182.39	H
	18900	1880.0	-14.38	37.22	22.84	192.31	
	19100	1900.0	-14.18	37.18	23.00	199.53	
	18700	1860.0	-20.15	37.65	17.50	56.23	V
	18900	1880.0	-19.83	37.58	17.75	59.57	
	19100	1900.0	-19.36	37.48	18.12	64.86	

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)
X	26047	1850.7	-14.04	36.57	22.53	179.06	H
	26365	1882.5	-14.95	37.22	22.27	168.66	
	26683	1914.3	-16.12	39.09	22.97	198.15	
	26047	1850.7	-24.06	37.65	13.59	22.86	V
	26365	1882.5	-24.42	37.58	13.16	20.70	
	26683	1914.3	-23.86	37.92	14.06	25.47	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	26047	1850.7	-15.16	36.57	21.41	138.36	H
	26365	1882.5	-16.07	37.22	21.15	130.32	
	26683	1914.3	-17.24	39.09	21.85	153.11	
	26047	1850.7	-25.18	37.65	12.47	17.66	V
	26365	1882.5	-25.54	37.58	12.04	16.00	
	26683	1914.3	-24.98	37.92	12.94	19.68	

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)
X	26055	1851.5	-13.81	36.57	22.76	188.80	H
	26365	1882.5	-14.72	37.22	22.50	177.83	
	26675	1913.5	-15.91	39.11	23.20	208.93	
	26055	1851.5	-23.83	37.65	13.82	24.10	V
	26365	1882.5	-24.19	37.58	13.39	21.83	
	26675	1913.5	-23.64	37.93	14.29	26.85	
Channel Bandwidth: 3 MHz / 16QAM							
X	26055	1851.5	-14.90	36.57	21.67	146.89	H
	26365	1882.5	-15.81	37.22	21.41	138.36	
	26675	1913.5	-17.00	39.11	22.11	162.55	
	26055	1851.5	-24.92	37.65	12.73	18.75	V
	26365	1882.5	-25.28	37.58	12.30	16.98	
	26675	1913.5	-24.73	37.93	13.20	20.89	

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)
X	26065	1852.5	-13.57	36.57	23.00	199.53	H
	26365	1882.5	-14.48	37.22	22.74	187.93	
	26665	1912.5	-14.67	38.11	23.44	220.80	
	26065	1852.5	-23.59	37.65	14.06	25.47	V
	26365	1882.5	-23.95	37.58	13.63	23.07	
	26665	1912.5	-23.43	37.96	14.53	28.38	
Channel Bandwidth: 5 MHz / 16QAM							
X	26065	1852.5	-14.64	36.57	21.93	155.96	H
	26365	1882.5	-15.55	37.22	21.67	146.89	
	26665	1912.5	-15.74	38.11	22.37	172.58	
	26065	1852.5	-24.66	37.65	12.99	19.91	V
	26365	1882.5	-25.02	37.58	12.56	18.03	
	26665	1912.5	-24.50	37.96	13.46	22.18	

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)
X	26090	1855.0	-13.32	36.57	23.25	211.35	H
	26365	1882.5	-14.23	37.22	22.99	199.07	
	26640	1910.0	-14.50	38.19	23.69	233.88	
	26090	1855.0	-23.34	37.65	14.31	26.98	V
	26365	1882.5	-23.70	37.58	13.88	24.43	
	26640	1910.0	-23.37	38.15	14.78	30.06	
Channel Bandwidth: 10 MHz / 16QAM							
X	26090	1855.0	-14.37	36.57	22.20	165.96	H
	26365	1882.5	-15.28	37.22	21.94	156.31	
	26640	1910.0	-15.55	38.19	22.64	183.65	
	26090	1855.0	-24.39	37.65	13.26	21.18	V
	26365	1882.5	-24.75	37.58	12.83	19.19	
	26640	1910.0	-24.42	38.15	13.73	23.60	

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)
X	26115	1857.5	-13.08	36.57	23.49	223.36	H
	26365	1882.5	-13.99	37.22	23.23	210.38	
	26615	1907.5	-14.30	38.23	23.93	247.17	
	26115	1857.5	-23.10	37.65	14.55	28.51	V
	26365	1882.5	-23.46	37.58	14.12	25.82	
	26615	1907.5	-23.20	38.22	15.02	31.77	
Channel Bandwidth: 15 MHz / 16QAM							
X	26115	1857.5	-14.11	36.57	22.46	176.20	H
	26365	1882.5	-15.02	37.22	22.20	165.96	
	26615	1907.5	-15.33	38.23	22.90	194.98	
	26115	1857.5	-24.13	37.65	13.52	22.49	V
	26365	1882.5	-24.49	37.58	13.09	20.37	
	26615	1907.5	-24.23	38.22	13.99	25.06	

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)
X	26140	1860.0	-12.85	36.57	23.72	235.50	H
	26365	1882.5	-13.76	37.22	23.46	221.82	
	26590	1905.0	-14.56	38.72	24.16	260.62	
	26140	1860.0	-22.87	37.65	14.78	30.06	V
	26365	1882.5	-23.23	37.58	14.35	27.23	
	26590	1905.0	-22.31	37.56	15.25	33.50	
Channel Bandwidth: 20 MHz / 16QAM							
X	26140	1860.0	-13.87	36.57	22.70	186.21	H
	26365	1882.5	-14.78	37.22	22.44	175.39	
	26590	1905.0	-15.58	38.72	23.14	206.06	
	26140	1860.0	-23.89	37.65	13.76	23.77	V
	26365	1882.5	-24.25	37.58	13.33	21.53	
	26590	1905.0	-23.33	37.56	14.23	26.49	

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

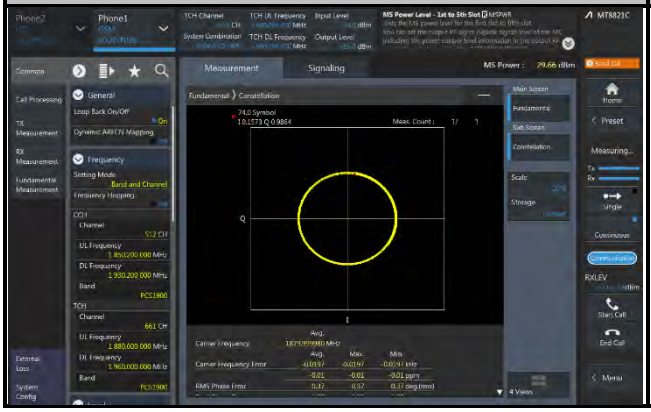
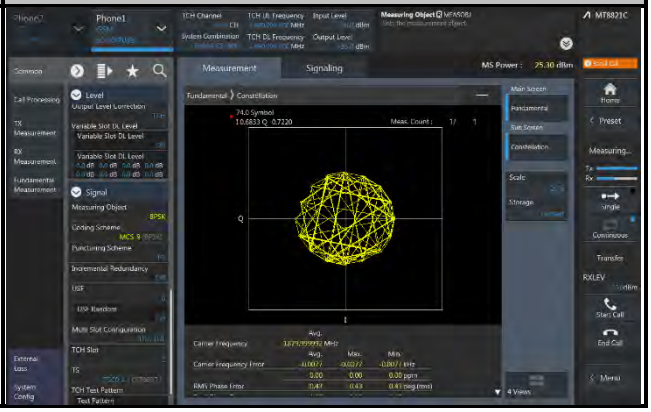
N/A

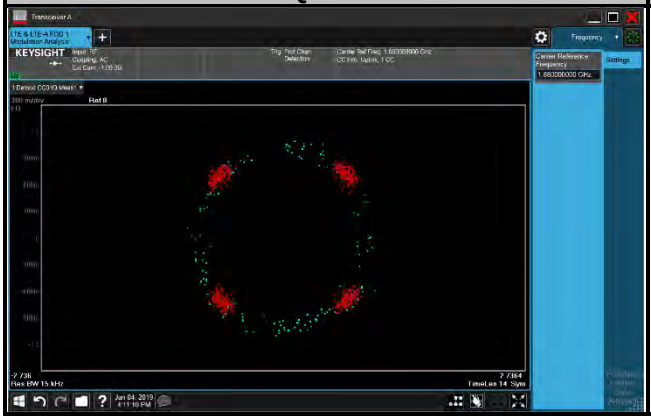
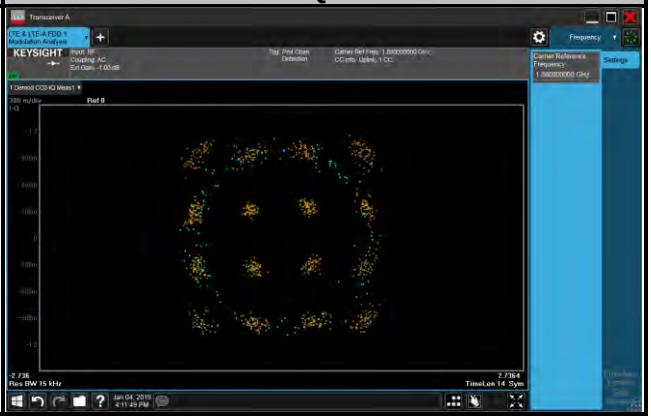
4.2.2 Test Setup

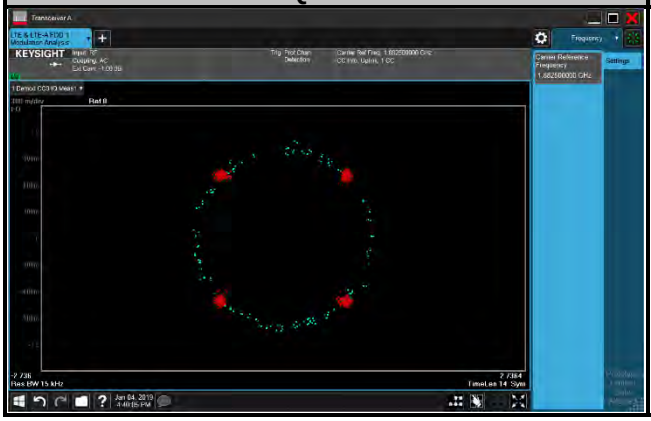
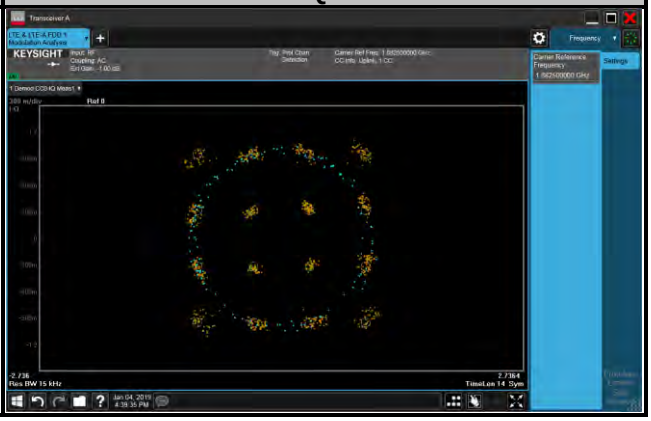
4.2.3 Test Procedure

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
	

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

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

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

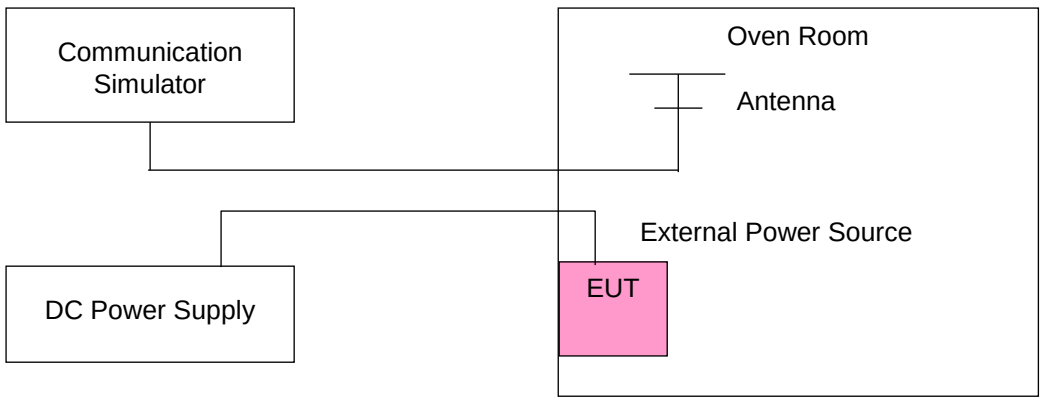
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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)
12	1850.200001	0.001	1909.800002	0.001
10.2	1850.200001	0.001	1909.800002	0.001
13.8	1850.200004	0.002	1909.800001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	GSM			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200003	0.002	1909.800004	0.002
-20	1850.200004	0.002	1909.800003	0.002
-10	1850.200001	0.001	1909.800002	0.001
0	1850.200002	0.001	1909.800001	0.001
10	1850.200004	0.002	1909.800002	0.001
20	1850.200002	0.001	1909.800001	0.001
30	1850.199998	-0.001	1909.799996	-0.002
40	1850.199997	-0.002	1909.799998	-0.001
50	1850.199997	-0.002	1909.799996	-0.002
60	1850.199996	-0.002	1909.799996	-0.002
65	1850.199998	-0.001	1909.799996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1850.200002	0.001	1909.800002	0.001
10.2	1850.200002	0.001	1909.800003	0.002
13.8	1850.200002	0.001	1909.800003	0.002

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200004	0.002	1909.800003	0.002
-20	1850.200003	0.002	1909.800002	0.001
-10	1850.200002	0.001	1909.800002	0.001
0	1850.200003	0.002	1909.800004	0.002
10	1850.200002	0.001	1909.800002	0.001
20	1850.200002	0.001	1909.800003	0.002
30	1850.199997	-0.001	1909.799997	-0.002
40	1850.199997	-0.002	1909.799998	-0.001
50	1850.199996	-0.002	1909.799997	-0.002
60	1850.199998	-0.001	1909.799997	-0.002
65	1850.199998	-0.001	1909.799997	-0.002

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)
12	1850.700002	0.001	1909.300000	0.001
10.2	1850.700003	0.001	1909.300004	0.002
13.8	1850.700002	0.001	1909.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700002	0.001	1909.300002	0.001
-20	1850.700001	0.001	1909.300001	0.001
-10	1850.700004	0.002	1909.300004	0.002
0	1850.700002	0.001	1909.300002	0.001
10	1850.700002	0.001	1909.300001	0.001
20	1850.700002	0.001	1909.300002	0.001
30	1850.699999	-0.001	1909.299997	-0.002
40	1850.699996	-0.002	1909.299997	-0.002
50	1850.699997	-0.002	1909.299997	-0.002
60	1850.699997	-0.002	1909.299998	-0.001
65	1850.699997	-0.002	1909.299998	-0.001

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)
12	1850.700002	0.001	1909.300000	0.001
10.2	1850.700003	0.002	1909.300003	0.001
13.8	1850.700001	0.001	1909.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700002	0.001	1909.300004	0.002
-20	1850.700002	0.001	1909.300004	0.002
-10	1850.700004	0.002	1909.300003	0.002
0	1850.700002	0.001	1909.300004	0.002
10	1850.700004	0.002	1909.300004	0.002
20	1850.700004	0.002	1909.300001	0.001
30	1850.699997	-0.002	1909.299996	-0.002
40	1850.699998	-0.001	1909.299996	-0.002
50	1850.699998	-0.001	1909.299998	-0.001
50	1850.699999	-0.001	1909.299997	-0.002
65	1850.699997	-0.002	1909.299998	-0.001

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)
12	1850.700002	0.001	1909.300000	0.001
10.2	1850.700002	0.001	1909.300004	0.002
13.8	1850.700001	0.001	1909.300003	0.002

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700004	0.002	1909.300002	0.001
-20	1850.700003	0.002	1909.300002	0.001
-10	1850.700003	0.001	1909.300003	0.002
0	1850.700004	0.002	1909.300003	0.001
10	1850.700003	0.002	1909.300001	0.001
20	1850.700003	0.002	1909.300003	0.001
30	1850.699998	-0.001	1909.299999	-0.001
40	1850.699999	-0.001	1909.299998	-0.001
50	1850.699999	-0.001	1909.299997	-0.001
50	1850.699999	-0.001	1909.299997	-0.002
65	1850.699996	-0.002	1909.299997	-0.001

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)
12	1850.700003	0.002	1909.300000	0.001
10.2	1850.700002	0.001	1909.300002	0.001
13.8	1850.700004	0.002	1909.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700004	0.002	1909.300003	0.002
-20	1850.700003	0.002	1909.300003	0.001
-10	1850.700003	0.002	1909.300001	0.001
0	1850.700004	0.002	1909.300002	0.001
10	1850.700003	0.002	1909.300002	0.001
20	1850.700004	0.002	1909.300001	0.001
30	1850.699997	-0.002	1909.299999	-0.001
40	1850.699998	-0.001	1909.299998	-0.001
50	1850.699997	-0.002	1909.299996	-0.002
50	1850.699997	-0.002	1909.299998	-0.001
65	1850.699998	-0.001	1909.299999	-0.001

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)
12	1850.700004	0.002	1909.300000	0.001
10.2	1850.700004	0.002	1909.300001	0.001
13.8	1850.700001	0.001	1909.300003	0.002

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700002	0.001	1909.300003	0.002
-20	1850.700001	0.001	1909.300003	0.002
-10	1850.700002	0.001	1909.300002	0.001
0	1850.700001	0.001	1909.300003	0.001
10	1850.700002	0.001	1909.300004	0.002
20	1850.700003	0.002	1909.300002	0.001
30	1850.699997	-0.002	1909.299998	-0.001
40	1850.699997	-0.002	1909.299997	-0.002
50	1850.699999	-0.001	1909.299997	-0.001
50	1850.699998	-0.001	1909.299996	-0.002
65	1850.699996	-0.002	1909.299998	-0.001

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)
12	1850.700003	0.002	1909.300000	0.001
10.2	1850.700001	0.001	1909.300003	0.002
13.8	1850.700003	0.002	1909.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700004	0.002	1909.300002	0.001
-20	1850.700004	0.002	1909.300002	0.001
-10	1850.700001	0.001	1909.300003	0.001
0	1850.700002	0.001	1909.300001	0.001
10	1850.700004	0.002	1909.300002	0.001
20	1850.700001	0.001	1909.300002	0.001
30	1850.699998	-0.001	1909.299998	-0.001
40	1850.699999	-0.001	1909.299997	-0.001
50	1850.699996	-0.002	1909.299999	-0.001
50	1850.699996	-0.002	1909.299999	-0.001
65	1850.699996	-0.002	1909.299998	-0.001

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)
12	1850.700001	0.001	1914.300003	0.002
10.2	1850.700003	0.001	1914.300001	0.001
13.8	1850.700004	0.002	1914.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700003	0.002	1914.300002	0.001
-20	1850.700004	0.002	1914.300003	0.001
-10	1850.700003	0.001	1914.300001	0.001
0	1850.700002	0.001	1914.300002	0.001
10	1850.700003	0.001	1914.300002	0.001
20	1850.700004	0.002	1914.300001	0.001
30	1850.699997	-0.001	1914.299998	-0.001
40	1850.699999	-0.001	1914.299998	-0.001
50	1850.699997	-0.002	1914.299999	-0.001
60	1850.699998	-0.001	1914.299998	-0.001
65	1850.699999	-0.001	1914.299997	-0.001

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)
12	1850.700001	0.001	1914.300002	0.001
10.2	1850.700002	0.001	1914.300002	0.001
13.8	1850.700003	0.001	1914.300001	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700002	0.001	1914.300001	0.001
-20	1850.700002	0.001	1914.300002	0.001
-10	1850.700003	0.002	1914.300004	0.002
0	1850.700003	0.001	1914.300002	0.001
10	1850.700002	0.001	1914.300004	0.002
20	1850.700004	0.002	1914.300004	0.002
30	1850.699999	-0.001	1914.299996	-0.002
40	1850.699998	-0.001	1914.299998	-0.001
50	1850.699998	-0.001	1914.299996	-0.002
50	1850.699997	-0.002	1914.299999	-0.001
65	1850.699997	-0.002	1914.299997	-0.001

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)
12	1850.700002	0.001	1914.300004	0.002
10.2	1850.700001	0.001	1914.300004	0.002
13.8	1850.700004	0.002	1914.300003	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700004	0.002	1914.300002	0.001
-20	1850.700004	0.002	1914.300002	0.001
-10	1850.700002	0.001	1914.300002	0.001
0	1850.700002	0.001	1914.300003	0.002
10	1850.700003	0.002	1914.300003	0.001
20	1850.700002	0.001	1914.300002	0.001
30	1850.699998	-0.001	1914.299998	-0.001
40	1850.699999	-0.001	1914.299998	-0.001
50	1850.699997	-0.002	1914.299999	-0.001
50	1850.699997	-0.002	1914.299998	-0.001
65	1850.699998	-0.001	1914.299997	-0.002

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)
12	1850.700002	0.001	1914.300002	0.001
10.2	1850.700004	0.002	1914.300002	0.001
13.8	1850.700004	0.002	1914.300004	0.002

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700003	0.002	1914.300003	0.002
-20	1850.700003	0.001	1914.300003	0.002
-10	1850.700004	0.002	1914.300001	0.001
0	1850.700001	0.001	1914.300002	0.001
10	1850.700003	0.002	1914.300002	0.001
20	1850.700002	0.001	1914.300002	0.001
30	1850.699998	-0.001	1914.299998	-0.001
40	1850.699998	-0.001	1914.299997	-0.002
50	1850.699998	-0.001	1914.299997	-0.001
50	1850.699998	-0.001	1914.299998	-0.001
65	1850.699997	-0.002	1914.299997	-0.001

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)
12	1850.700003	0.002	1914.300002	0.001
10.2	1850.700002	0.001	1914.300002	0.001
13.8	1850.700003	0.001	1914.300002	0.001

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 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)
-30	1850.700002	0.001	1914.300001	0.001
-20	1850.700001	0.001	1914.300001	0.001
-10	1850.700002	0.001	1914.300002	0.001
0	1850.700002	0.001	1914.300003	0.002
10	1850.700002	0.001	1914.300004	0.002
20	1850.700002	0.001	1914.300002	0.001
30	1850.699997	-0.002	1914.299997	-0.002
40	1850.699999	-0.001	1914.299999	-0.001
50	1850.699998	-0.001	1914.299997	-0.002
50	1850.699999	-0.001	1914.299997	-0.002
65	1850.699999	-0.001	1914.299997	-0.001

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)
12	3.50	1850.700004	0.002	1914.300002
10.2	2.90	1850.700003	0.002	1914.300003
13.8	3.30	1850.700003	0.002	1914.300003

Note: The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

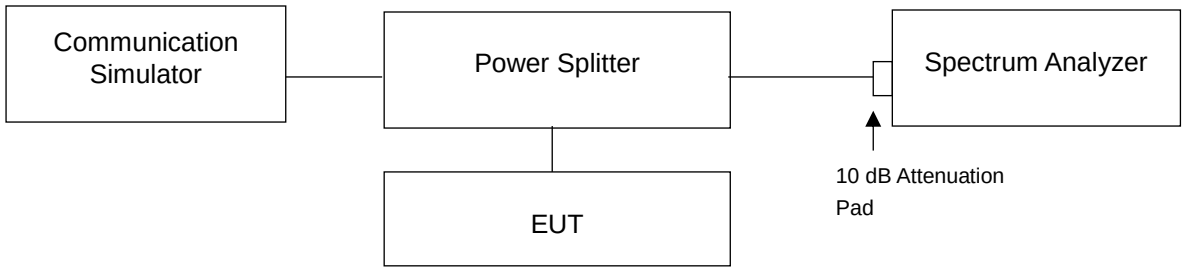
Temp. (℃)	LTE Band 25			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.700003	0.002	1914.300002	0.001
-20	1850.700004	0.002	1914.300001	0.001
-10	1850.700004	0.002	1914.300002	0.001
0	1850.700002	0.001	1914.300002	0.001
10	1850.700004	0.002	1914.300003	0.002
20	1850.700002	0.001	1914.300002	0.001
30	1850.699998	-0.001	1914.299999	-0.001
40	1850.699996	-0.002	1914.299999	-0.001
50	1850.699997	-0.002	1914.299997	-0.002
50	1850.699998	-0.001	1914.299996	-0.002
65	1850.699998	-0.001	1914.299997	-0.001

4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

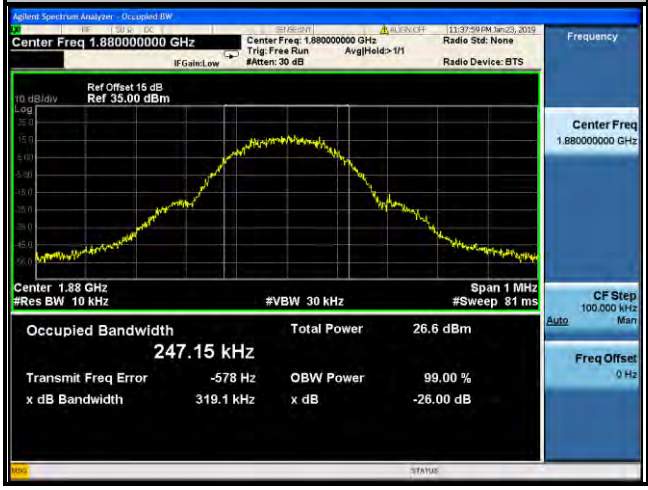
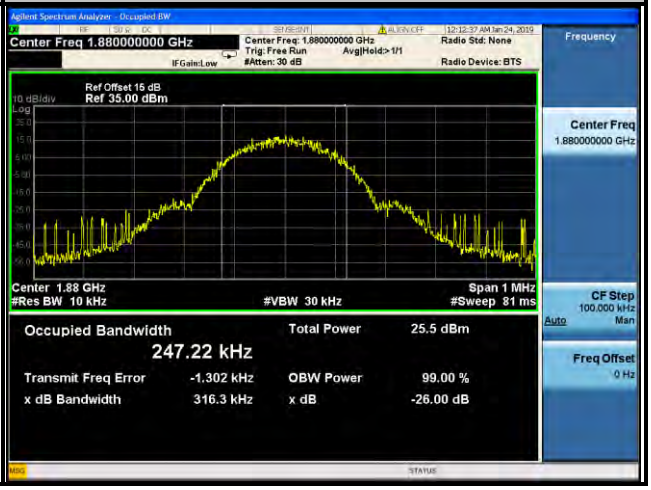
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.2 Test Setup

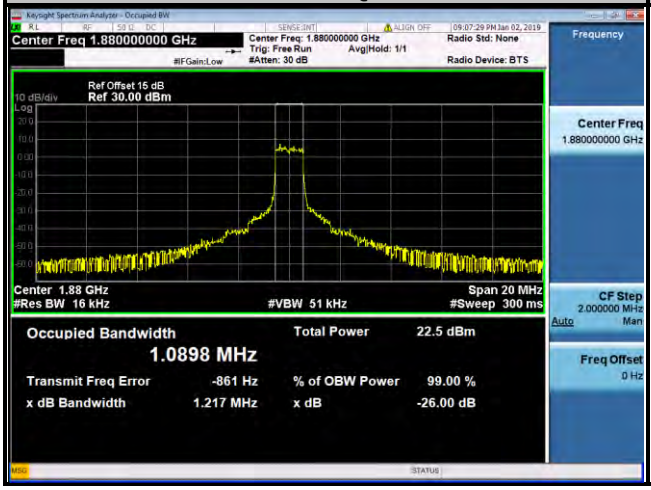
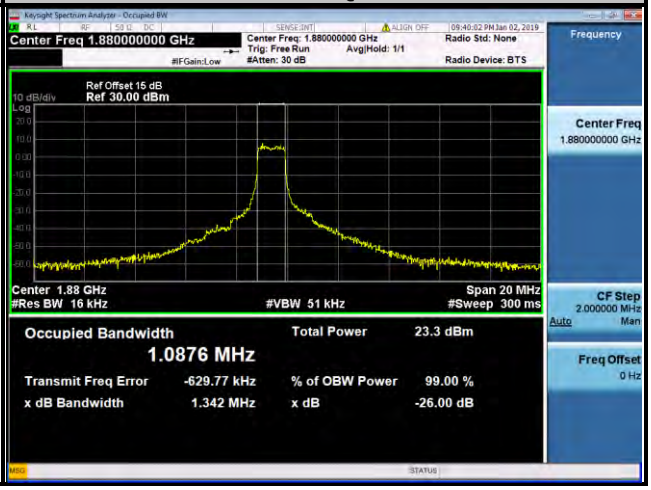


4.4.3 Test Result

Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	
		GSM	EDGE
512	1850.2	245.98	243.37
661	1880.0	247.15	247.22
810	1909.8	245.77	244.79

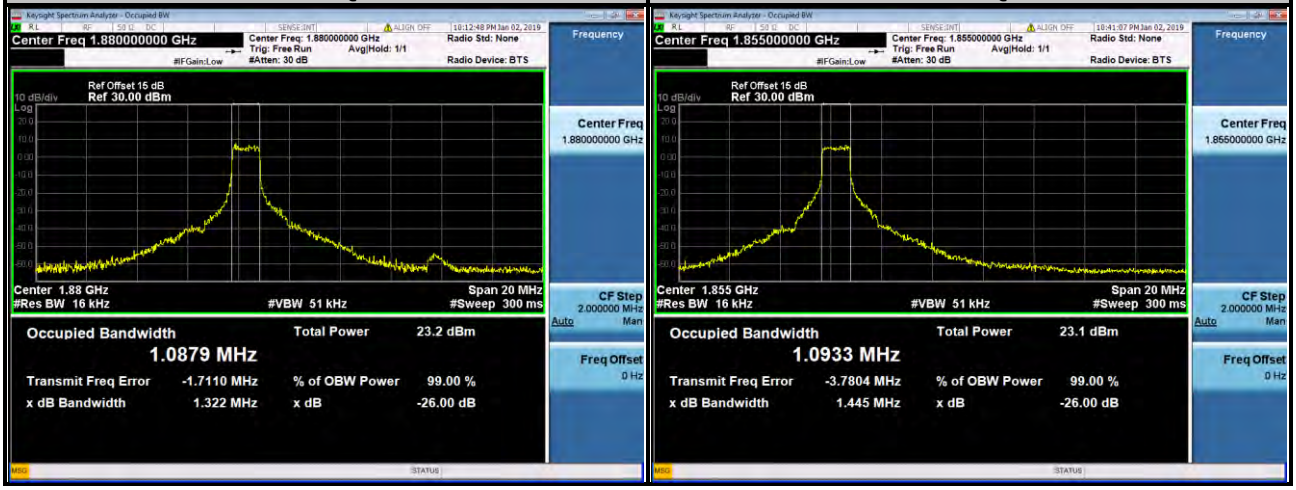
Spectrum Plot of Worst Value	
GSM	EDGE
	

LTE Band 2							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.0884	0.9102	18615	1851.5	1.0858	0.9061
18900	1880.0	1.0898	0.9107	18900	1880.0	1.0876	0.9120
19193	1909.3	1.0870	0.9095	19185	1908.5	1.0867	0.9128

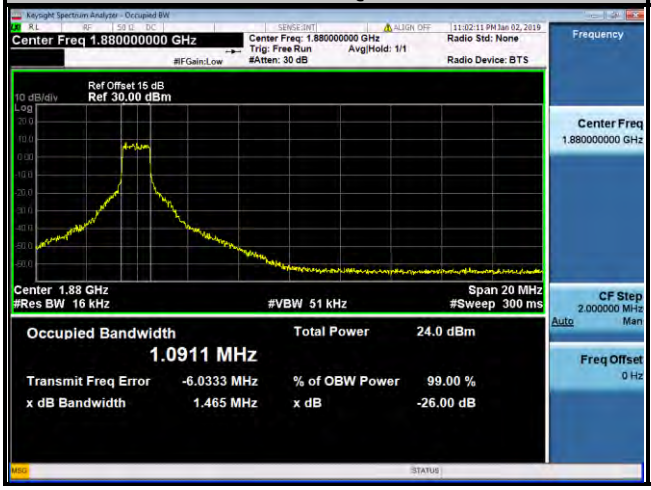
Spectrum Plot of Worst Value	
1.4 MHz / QPSK	3 MHz / QPSK
	

LTE Band 2							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	1.0837	0.9257	18650	1855.0	1.0933	0.9163
18900	1880.0	1.0879	0.9153	18900	1880.0	1.0916	0.9129
19175	1907.5	1.0768	0.9250	19150	1905.0	1.0904	0.9158

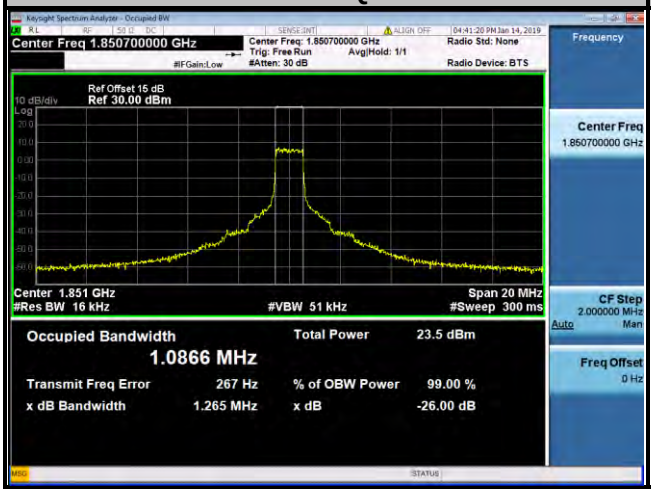
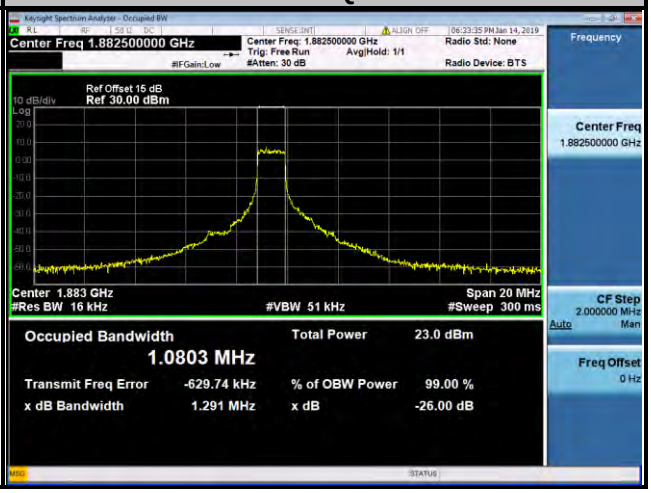
Spectrum Plot of Worst Value	
5 MHz / QPSK	10 MHz / QPSK



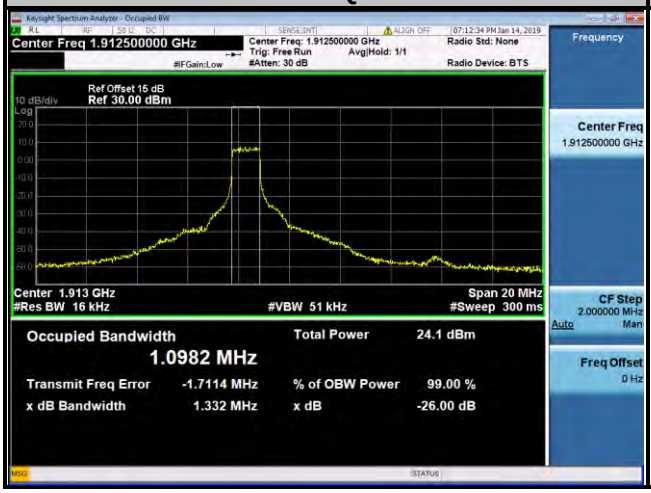
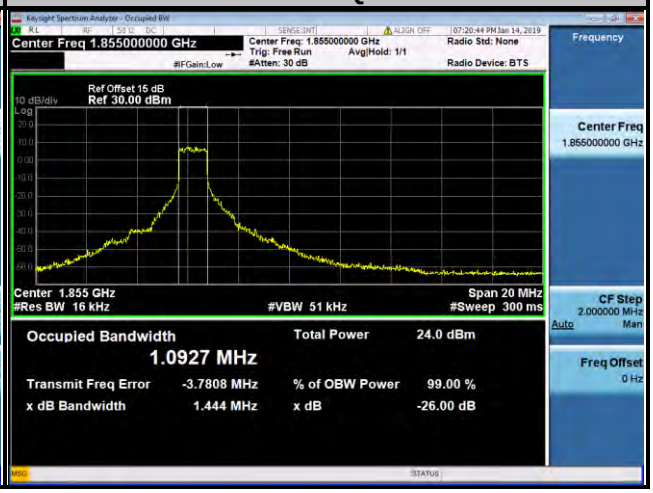
LTE Band 2							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	1.0878	0.9284	18700	1860.0	1.0938	0.9220
18900	1880.0	1.0911	0.9312	18900	1880.0	1.0955	0.9362
19125	1902.5	1.0868	0.9276	19100	1900.0	1.0927	0.9194

Spectrum Plot of Worst Value	
15 MHz / QPSK	20 MHz / QPSK
	

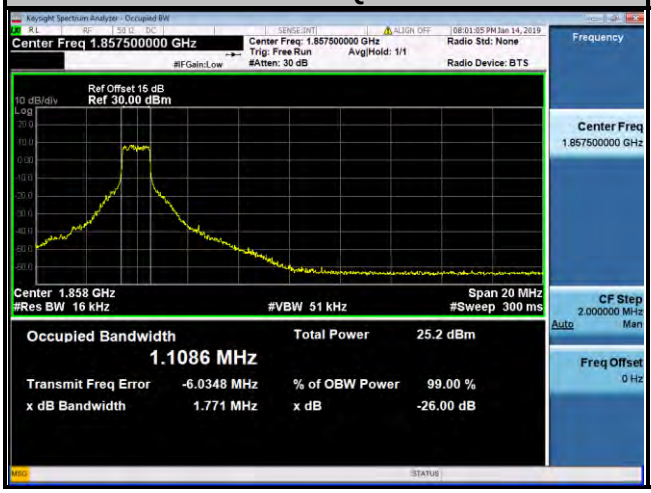
LTE Band 25							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
26047	1850.7	1.0866	0.9136	26055	1851.5	1.0799	0.9216
26365	1882.5	1.0858	0.9088	26365	1882.5	1.0803	0.9229
26683	1914.3	1.0858	0.9125	26675	1913.5	1.0798	0.9164

Spectrum Plot of Worst Value	
1.4 MHz / QPSK	3 MHz / QPSK
	

LTE Band 25							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
26065	1852.5	1.0796	0.9212	26090	1855.0	1.0927	0.9181
26365	1882.5	1.0787	0.9235	26365	1882.5	1.0920	0.9174
26665	1912.5	1.0982	0.9205	26640	1910.0	1.0923	0.9183

Spectrum Plot of Worst Value	
5 MHz / QPSK	10 MHz / QPSK
	

LTE BAND 25							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
26115	1857.5	1.1086	0.9332	26140	1860.0	1.0961	0.9250
26365	1882.5	1.1070	0.9287	26365	1882.5	1.0953	0.9267
26615	1907.5	1.1074	0.9308	26590	1905.0	1.0940	0.9170

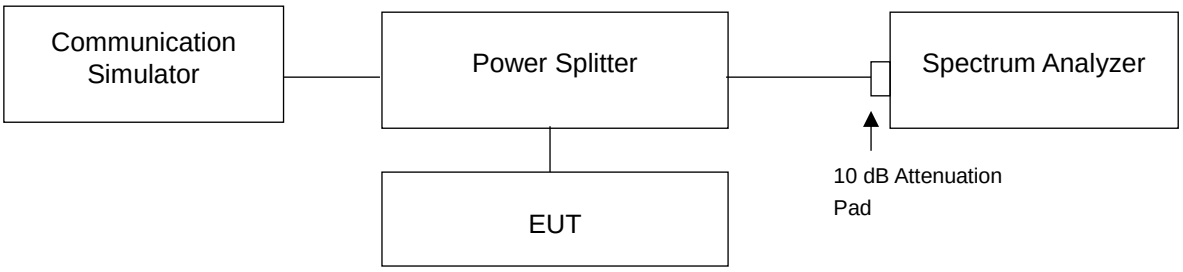
Spectrum Plot of Worst Value	
15 MHz / QPSK	20 MHz / QPSK
	

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.

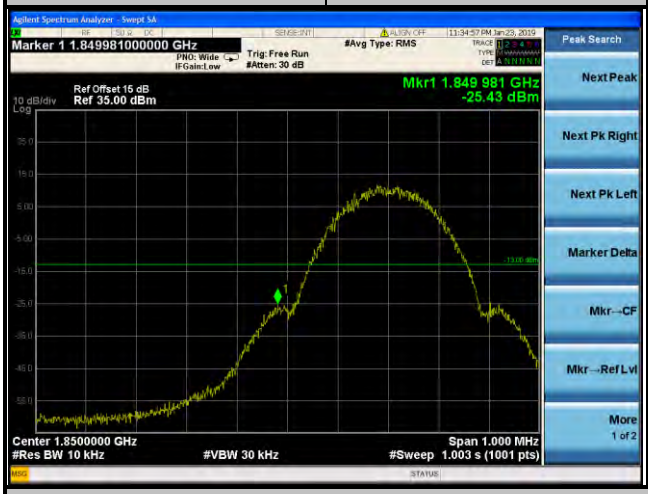
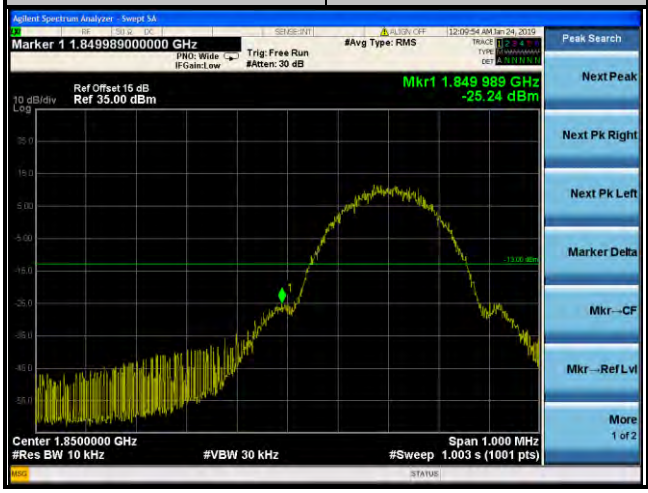
4.5.2 Test Setup

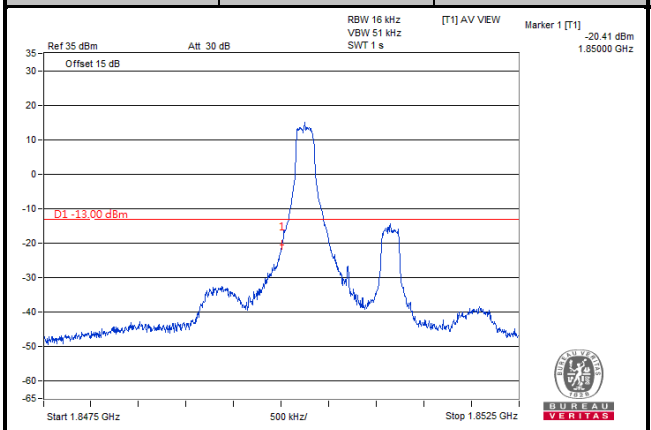
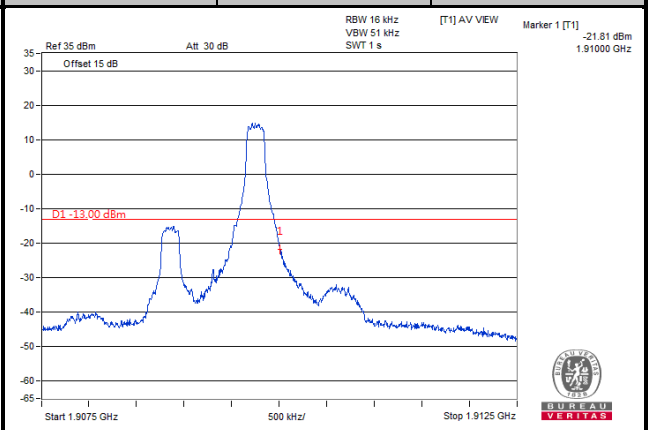
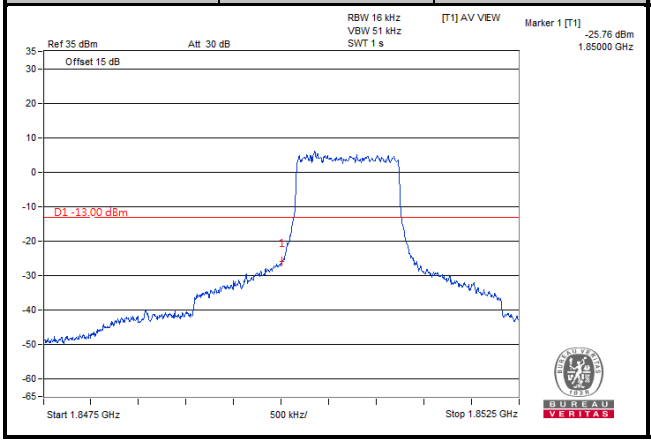
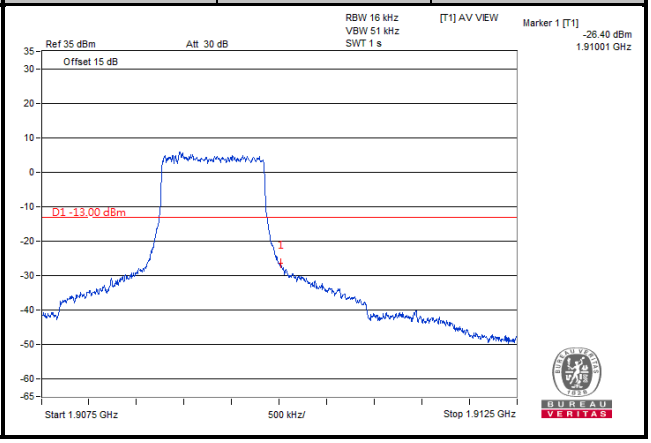


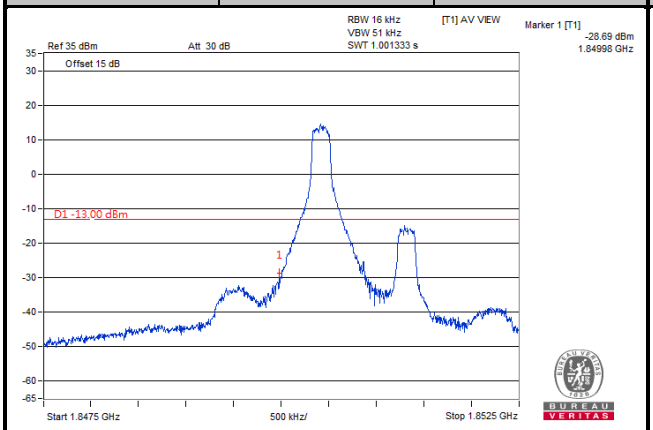
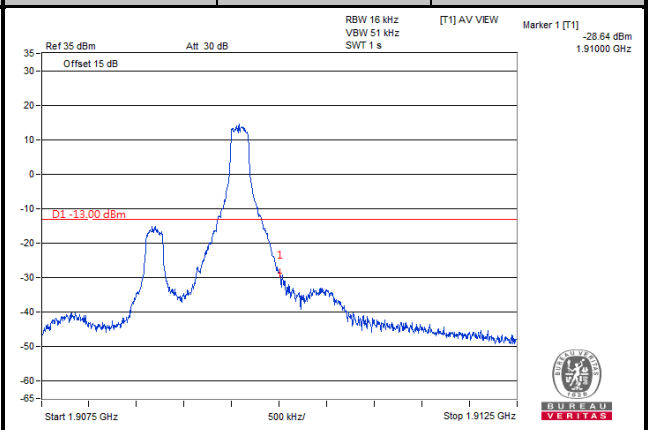
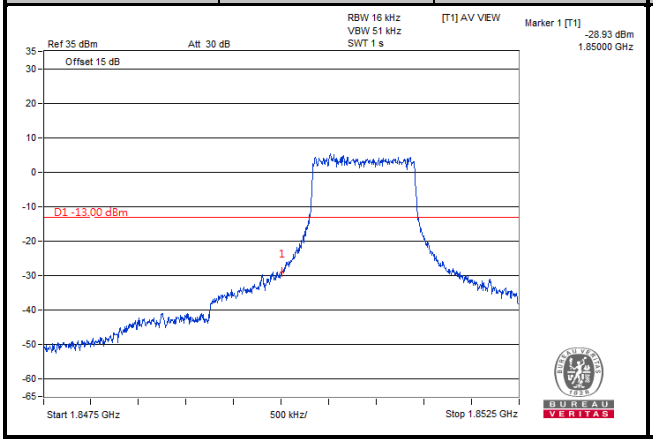
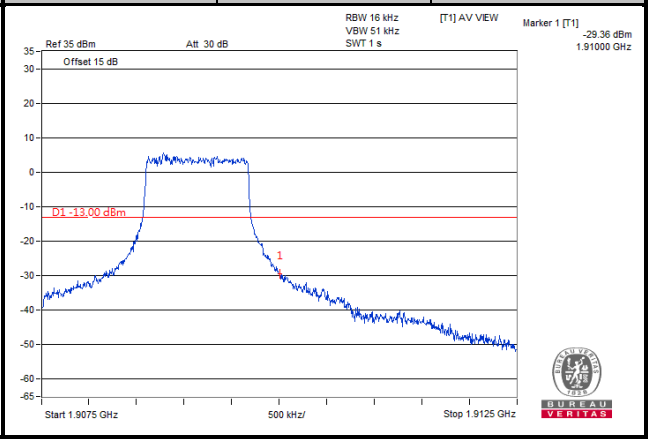
4.5.3 Test Procedures

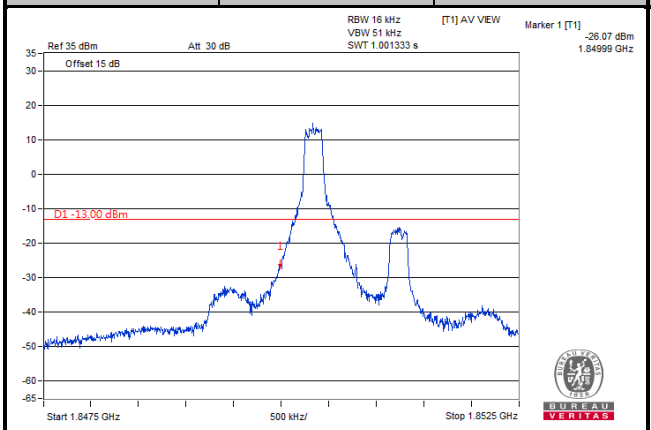
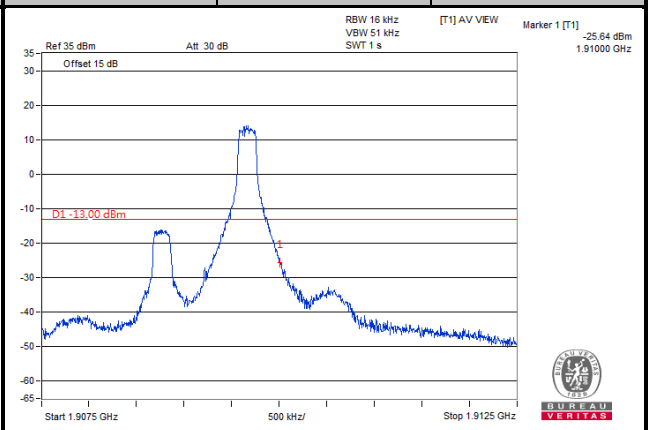
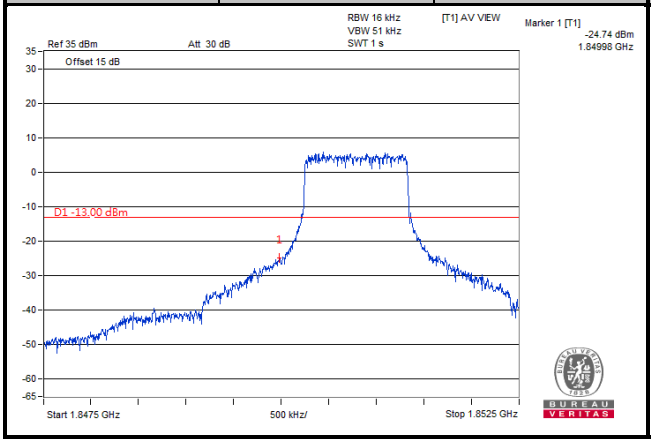
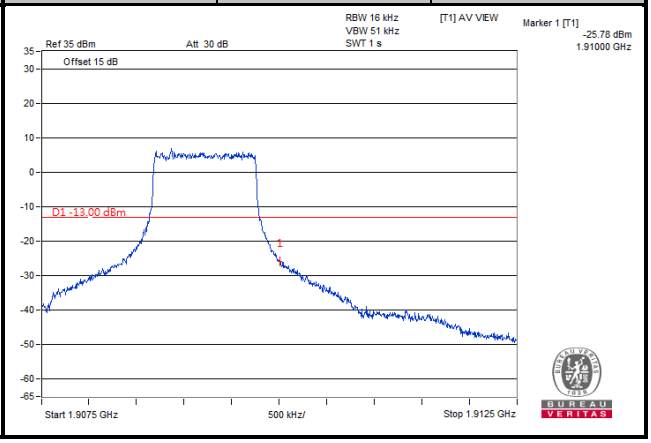
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 10 kHz and VB of the spectrum is 30 kHz (GSM/GPRS/EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 16 kHz and VB of the spectrum is 51 kHz (LTE).
d. Record the max trace plot into the test report.

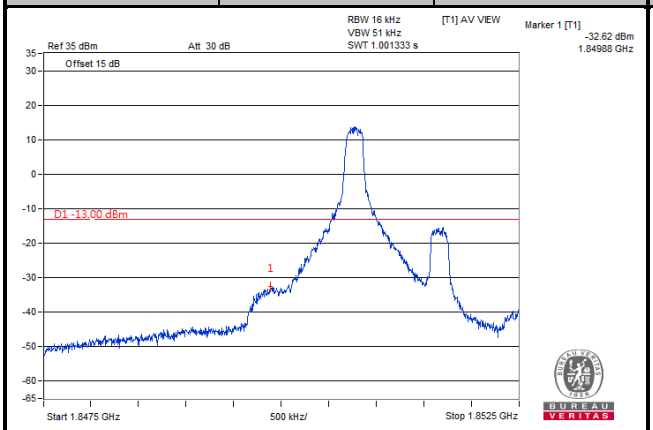
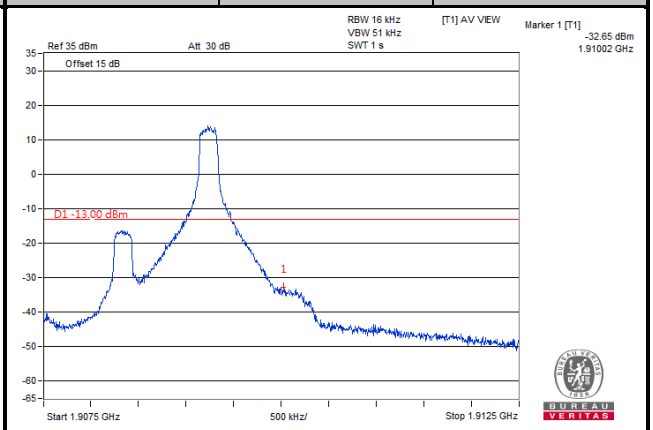
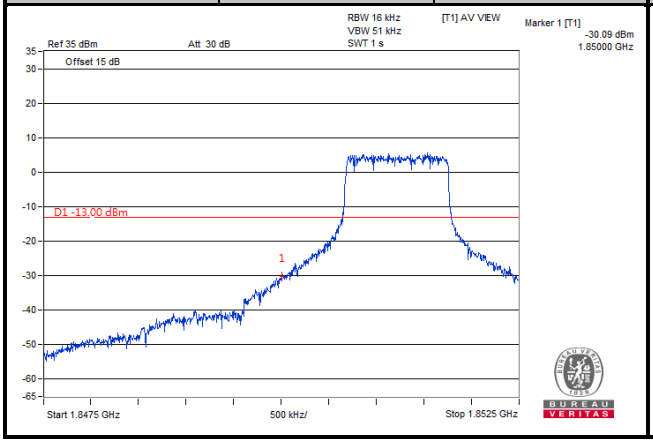
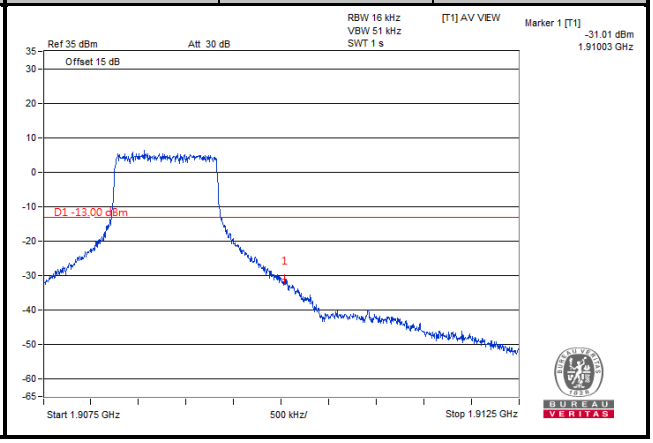
4.5.4 Test Results

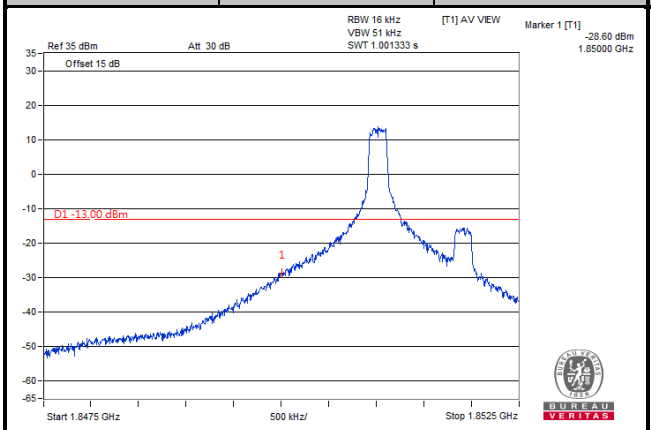
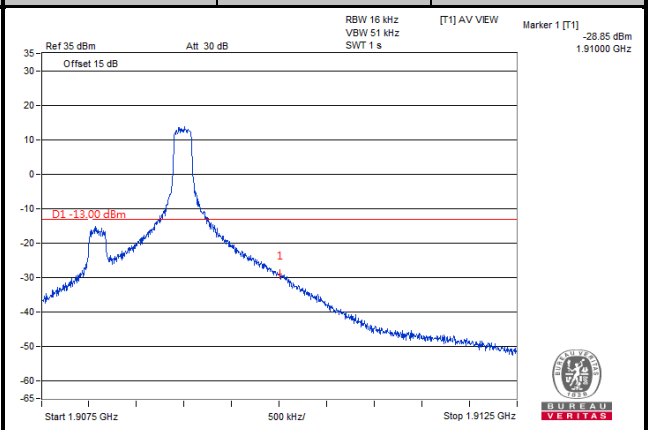
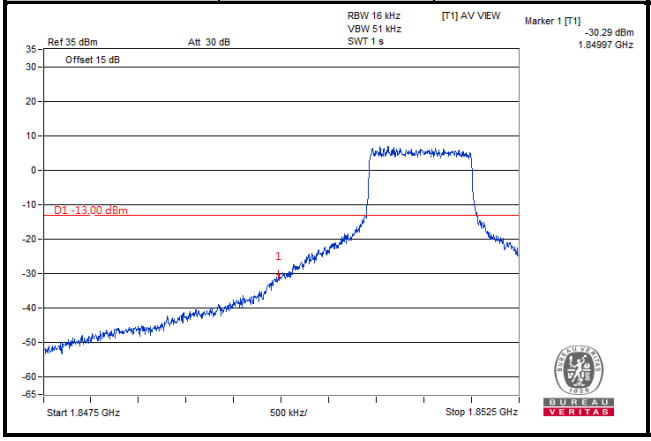
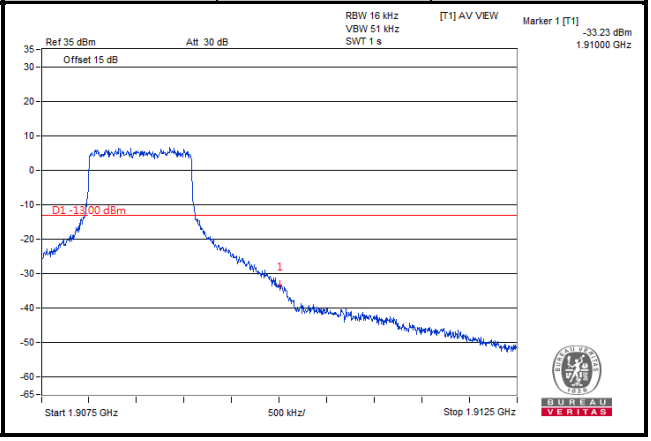
GSM			
Channel	512	Channel	810
			
EDGE			
Channel	512	Channel	810
			

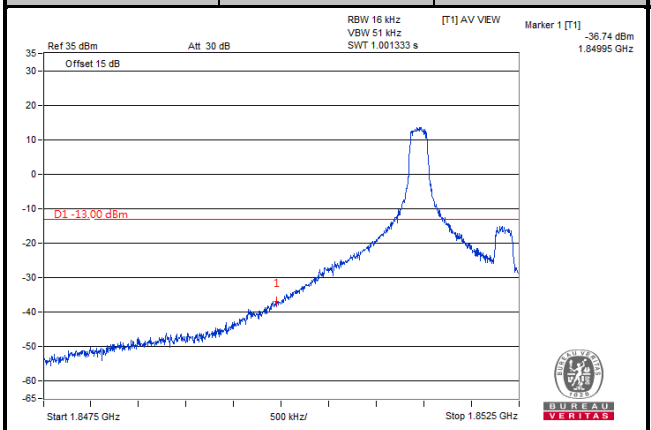
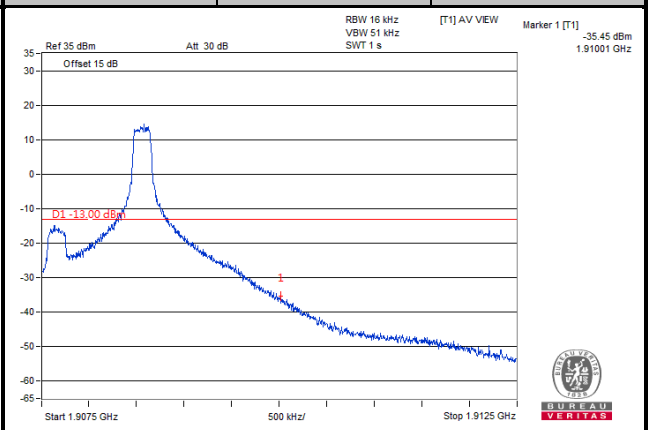
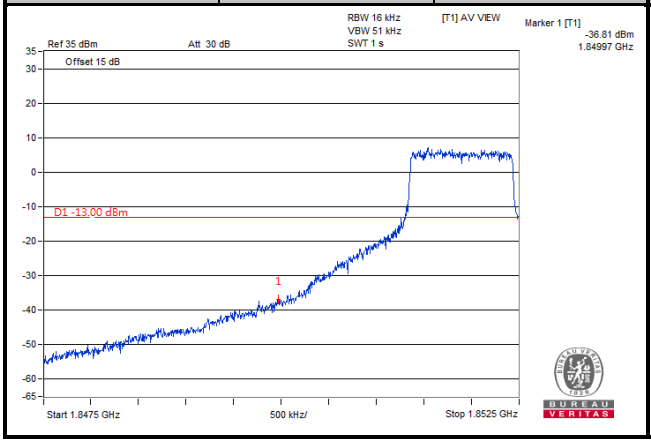
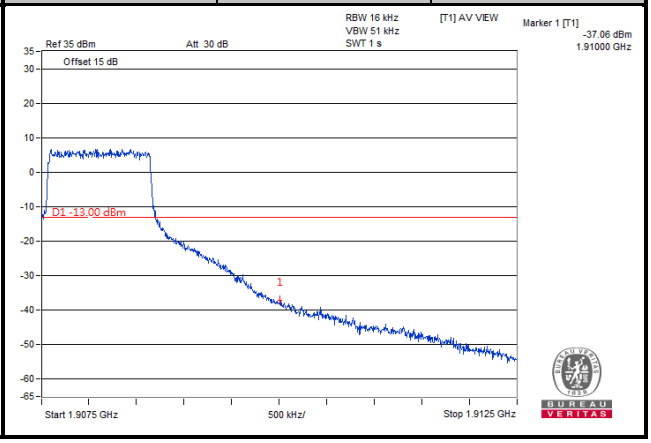
LTE Band 2					
Channel Bandwidth: 1.4 MHz					
Channel	18607	1 RB	Channel	19193	1 RB
					
Channel	18607	6 RB	Channel	19193	6 RB
					

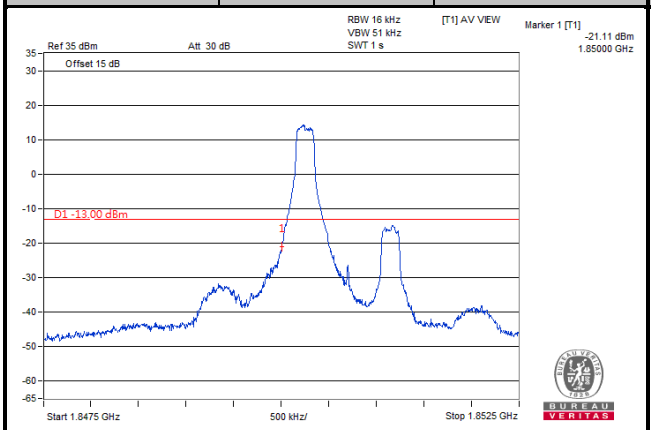
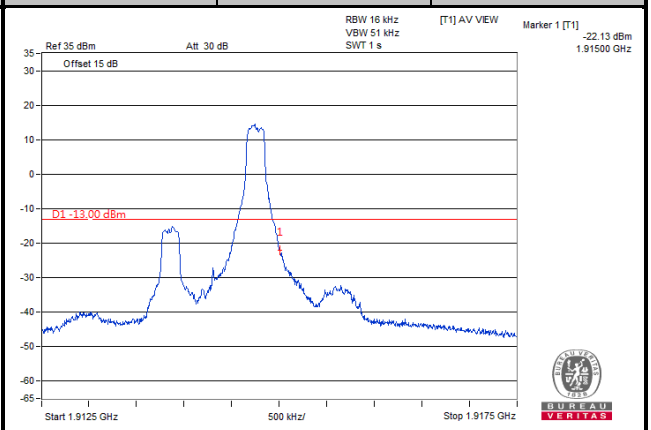
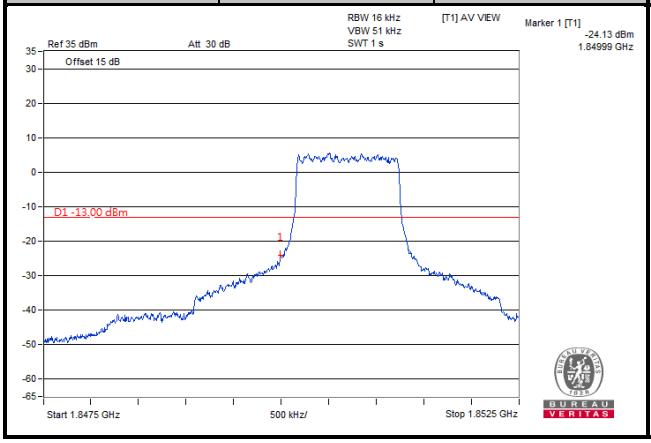
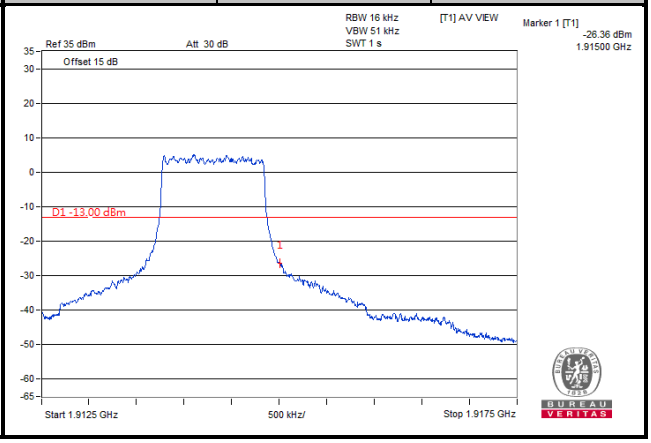
LTE Band 2					
Channel Bandwidth: 3 MHz					
Channel	18615	1 RB	Channel	19185	1 RB
					
Channel	18615	6 RB	Channel	19185	6 RB
					

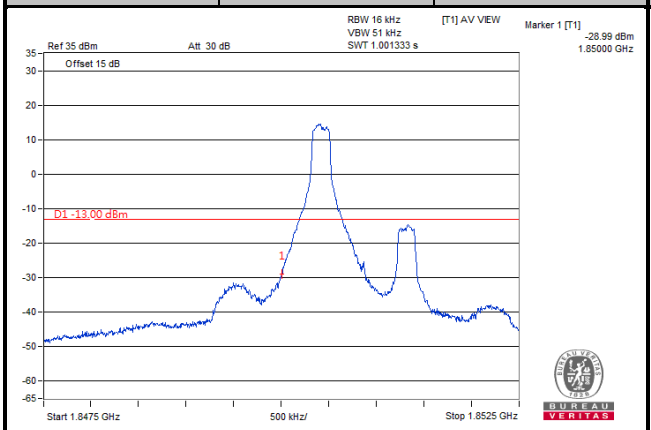
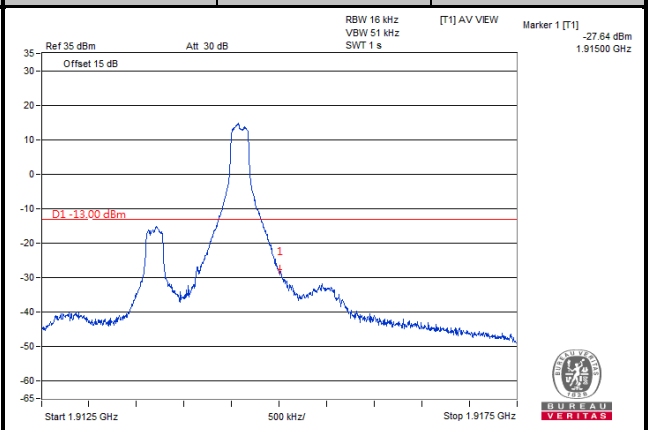
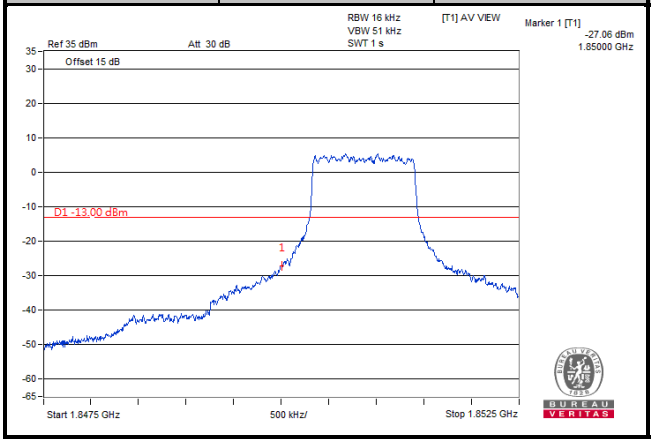
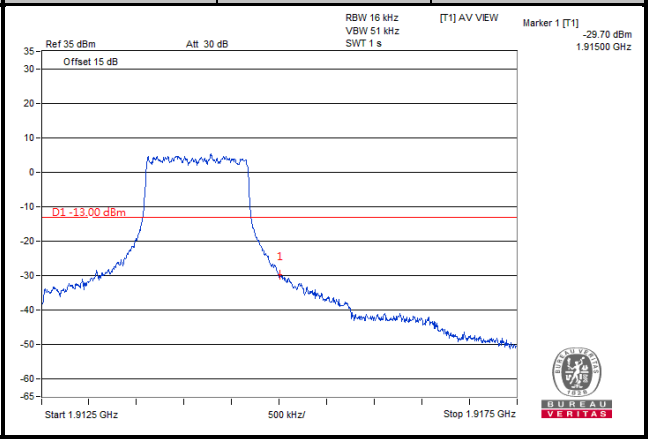
LTE Band 2					
Channel Bandwidth: 5 MHz					
Channel	18625	1 RB	Channel	19175	1 RB
					
Channel	18625	6 RB	Channel	19175	6 RB
					

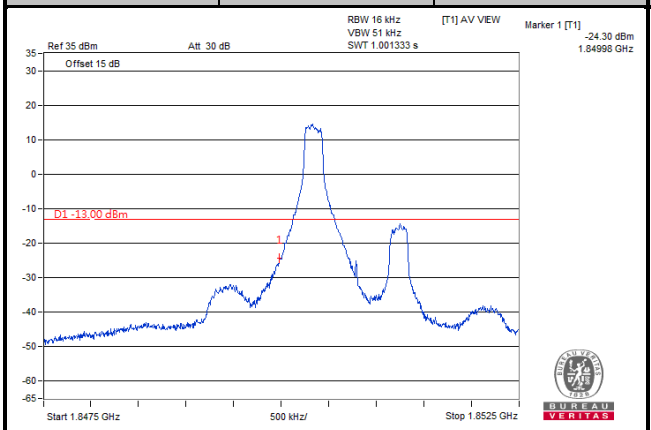
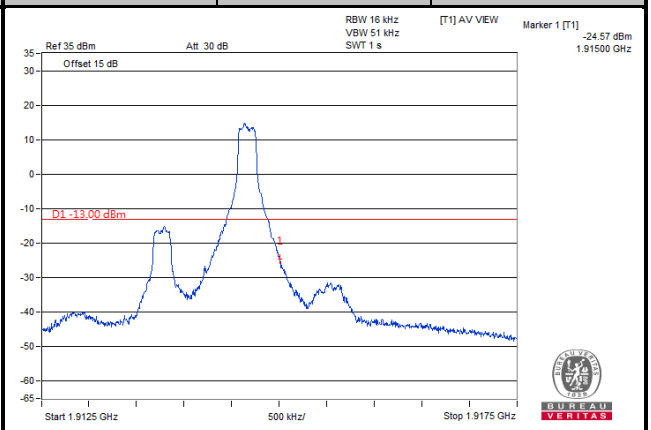
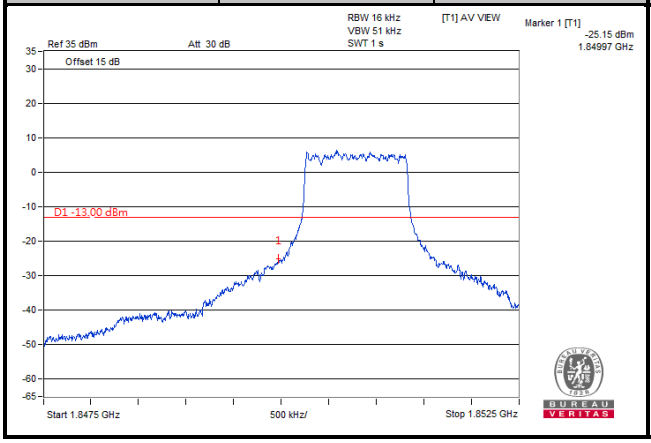
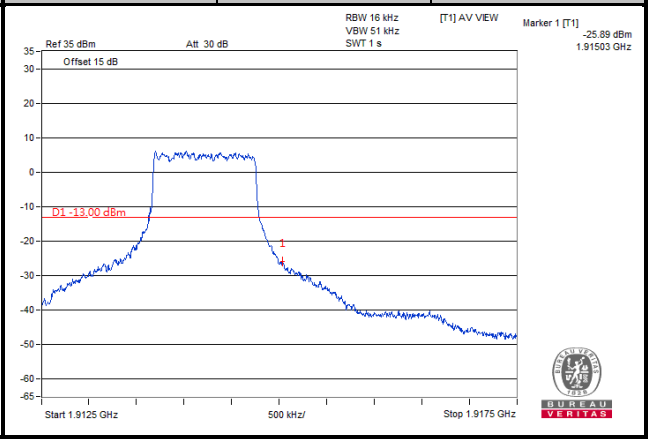
LTE Band 2					
Channel Bandwidth: 10 MHz					
Channel	18650	1 RB	Channel	19150	1 RB
					
Channel	18650	6 RB	Channel	19150	6 RB
					

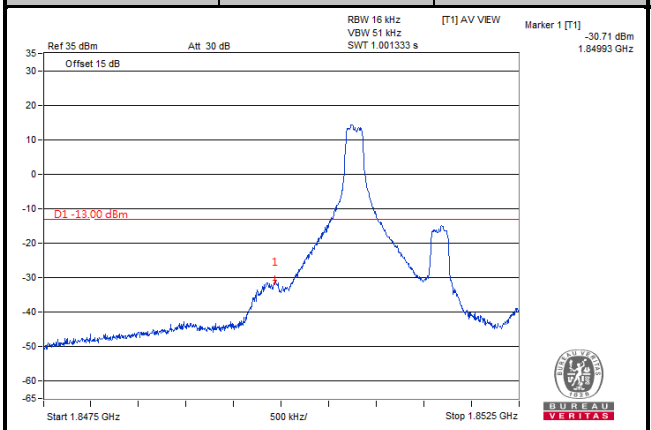
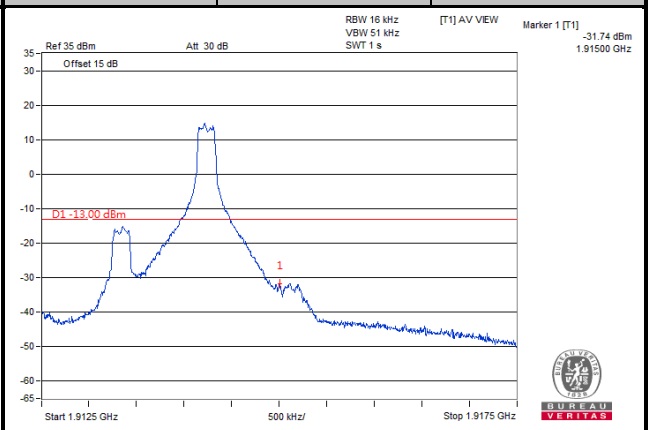
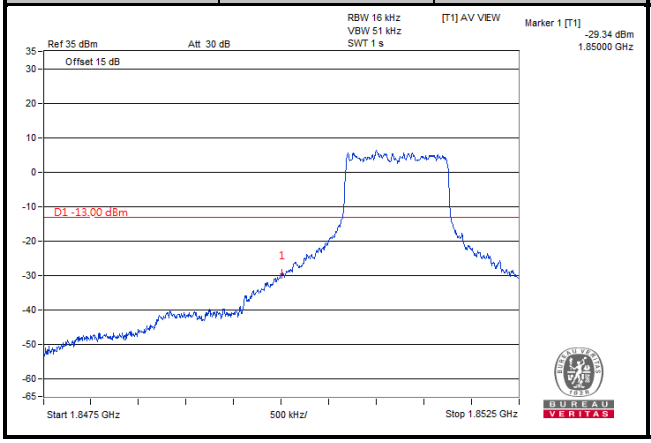
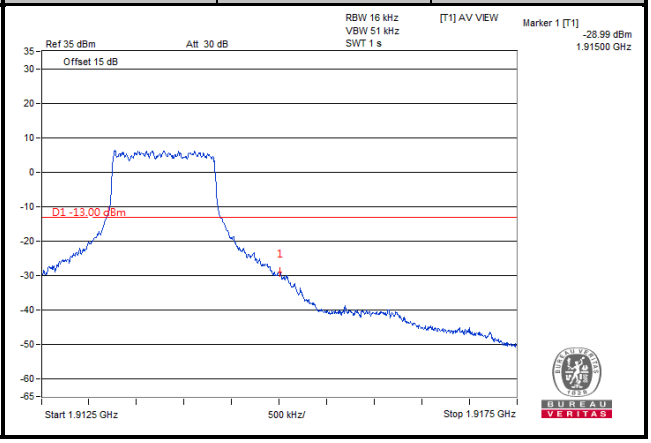
LTE Band 2					
Channel Bandwidth: 15 MHz					
Channel	18675	1 RB	Channel	19125	1 RB
					
Channel	18675	6 RB	Channel	19125	6 RB
					

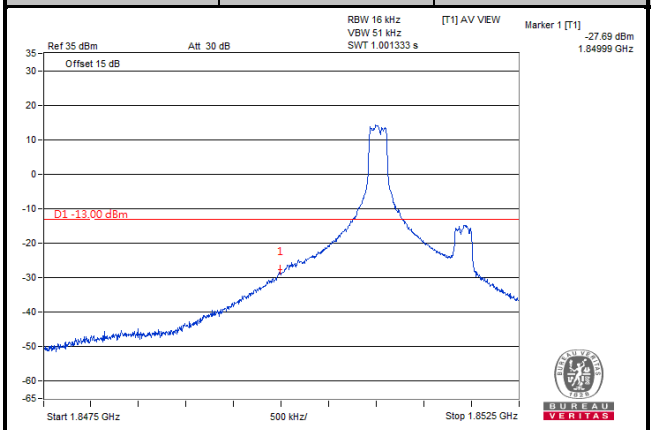
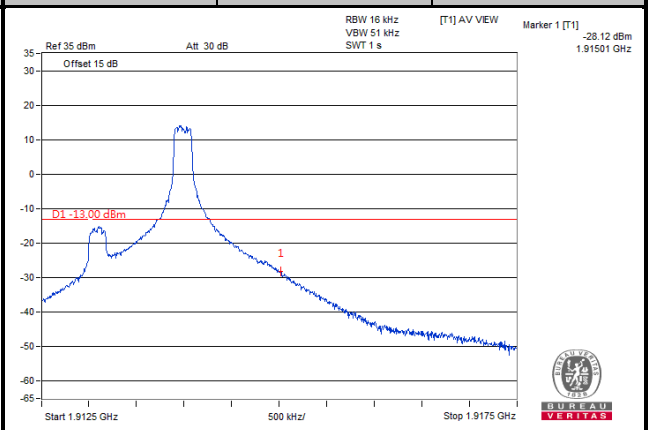
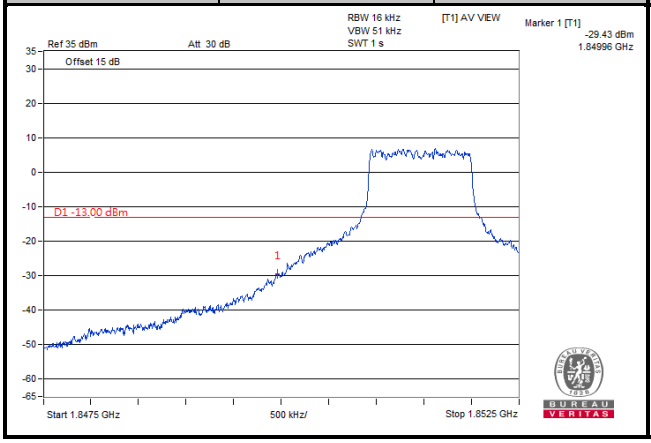
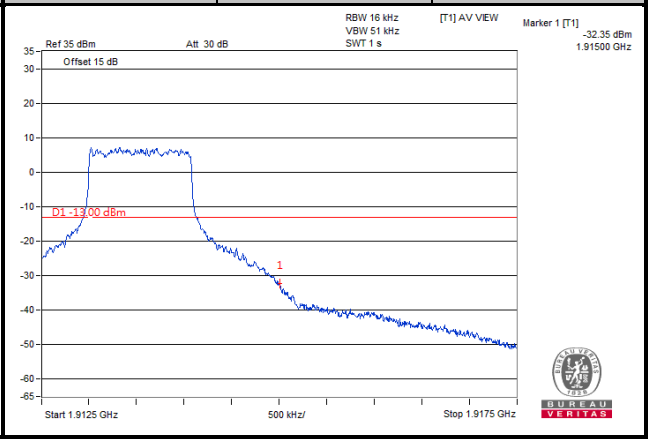
LTE Band 2					
Channel Bandwidth: 20 MHz					
Channel	18700	1 RB	Channel	19100	1 RB
					
Channel	18700	6 RB	Channel	19100	6 RB
					

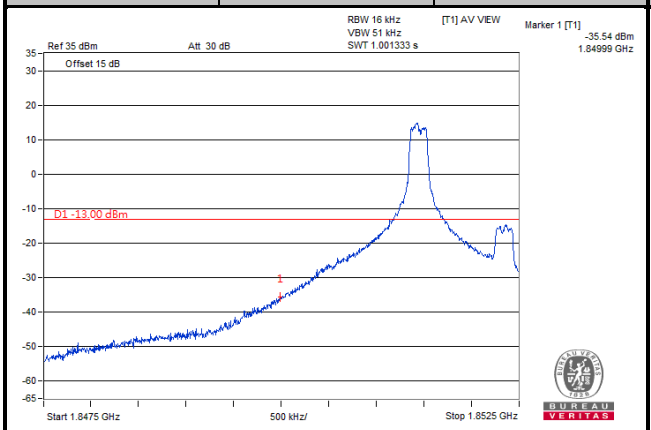
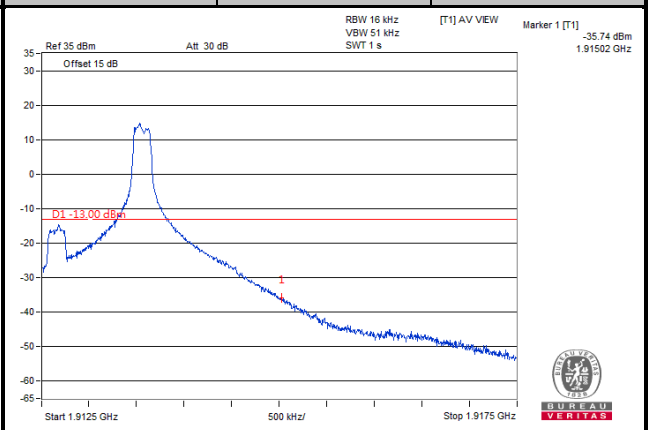
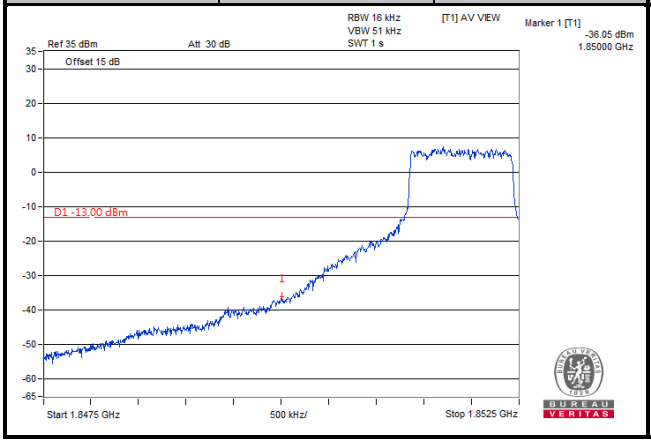
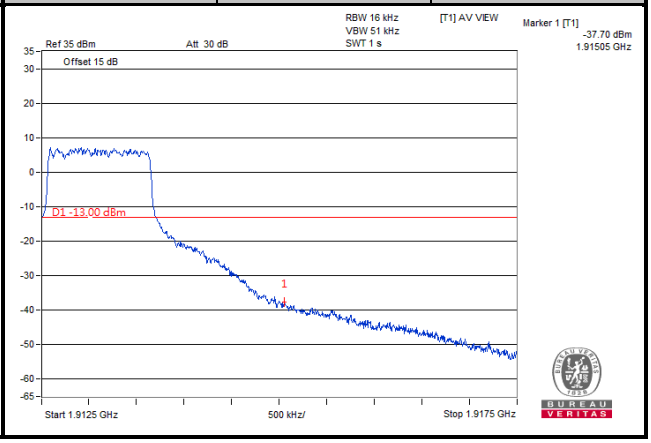
LTE Band 25					
Channel Bandwidth: 1.4 MHz					
Channel	26047	1 RB	Channel	26683	1 RB
					
Channel	26047	6 RB	Channel	26683	6 RB
					

LTE Band 25					
Channel Bandwidth: 3 MHz					
Channel	26055	1 RB	Channel	26675	1 RB
					
Channel	26055	6 RB	Channel	26675	6 RB
					

LTE Band 25					
Channel Bandwidth: 5 MHz					
Channel	26065	1 RB	Channel	26665	1 RB
					
Channel	26065	6 RB	Channel	26665	6 RB
					

LTE Band 25					
Channel Bandwidth: 10 MHz					
Channel	26090	1 RB	Channel	26640	1 RB
					
Channel	26090	6 RB	Channel	26640	6 RB
					

LTE Band 25					
Channel Bandwidth: 15 MHz					
Channel	26115	1 RB	Channel	26615	1 RB
					
Channel	26115	6 RB	Channel	26615	6 RB
					

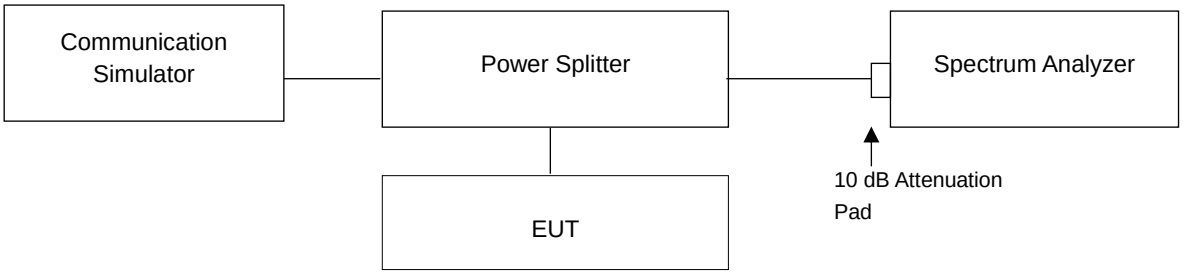
LTE Band 25					
Channel Bandwidth: 20 MHz					
Channel	26140	1 RB	Channel	26590	1 RB
					
Channel	26140	6 RB	Channel	26590	6 RB
					

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

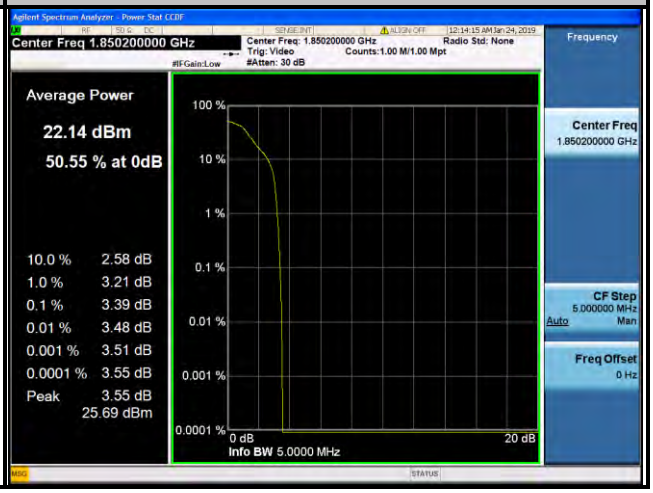


4.6.3 Test Procedures

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

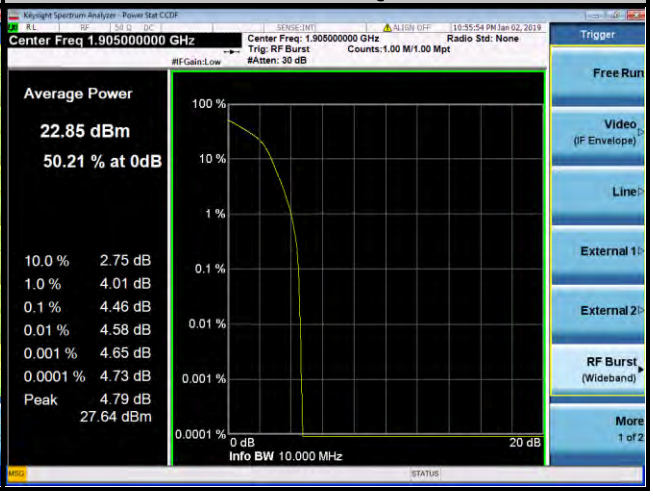
Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		GSM	EDGE
512	1850.2	0.19	3.39
661	1880.0	0.20	3.32
810	1909.8	0.22	3.25

Spectrum Plot of Worst Value	
GSM	EDGE
	

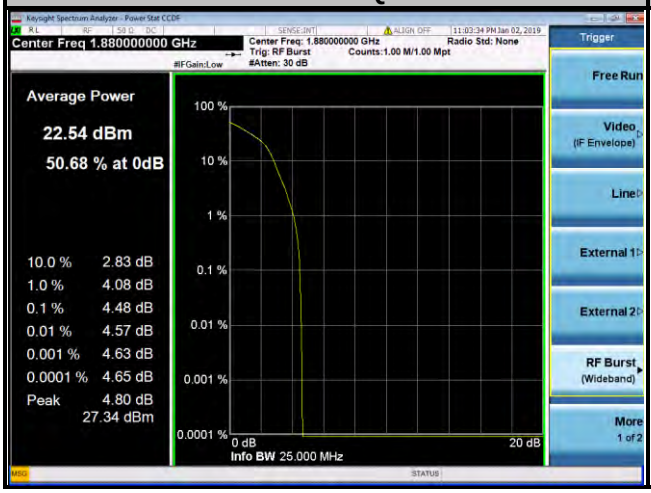
LTE Band 2							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	3.82	4.64	18615	1851.5	3.76	4.59
18900	1880.0	3.91	4.79	18900	1880.0	3.90	4.76
19193	1909.3	3.93	4.77	19185	1908.5	3.88	4.68

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	3.92	4.32	18650	1855.0	3.80	4.26
18900	1880.0	3.97	4.48	18900	1880.0	3.88	4.41
19175	1907.5	3.98	4.47	19150	1905.0	3.94	4.46

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	3.76	4.16	18700	1860.0	3.76	4.17
18900	1880.0	3.80	4.48	18900	1880.0	3.79	4.40
19125	1902.5	3.91	4.28	19100	1900.0	3.87	4.34

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	3.80	4.77	26055	1851.5	3.73	4.63
26365	1882.5	3.93	4.99	26365	1882.5	3.91	4.81
26683	1914.3	3.95	4.85	26675	1913.5	3.85	4.70

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	3.85	4.26	26090	1855.0	3.76	4.21
26365	1882.5	4.01	4.49	26365	1882.5	3.88	4.39
26665	1912.5	4.02	4.54	26640	1910.0	3.91	4.44

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	3.75	4.23	26140	1860.0	3.72	4.17
26365	1882.5	3.91	4.51	26365	1882.5	3.85	4.35
26615	1907.5	3.83	4.54	26590	1905.0	3.90	4.39

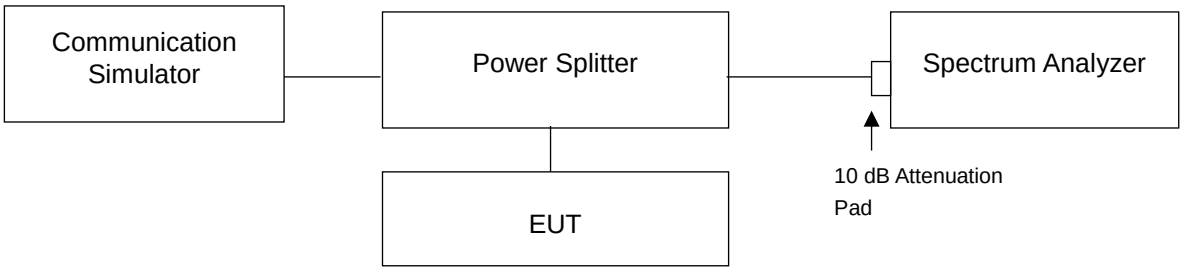
Spectrum Plot of Worst Value	
15 MHz / 16QAM	20 MHz / 16QAM
	

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.

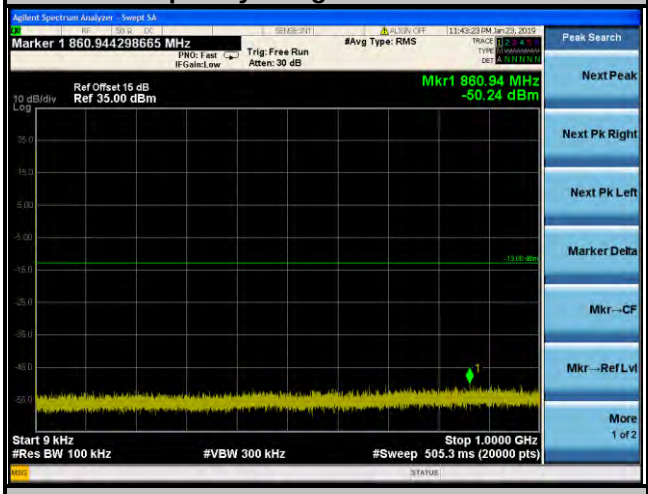
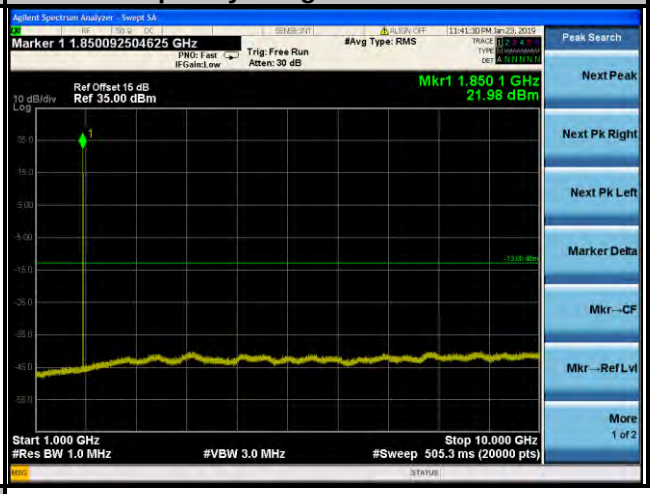
4.7.2 Test Setup



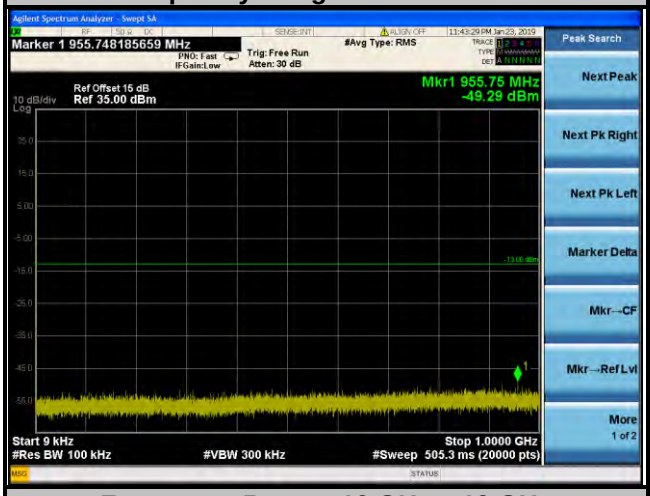
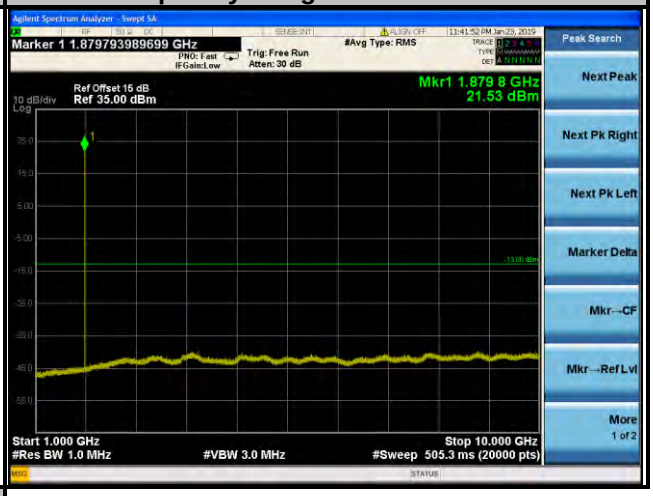
4.7.3 Test Procedure

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 = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.
c. Measuring frequency range is from 1 GHz to 26.5 GHz / 27 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

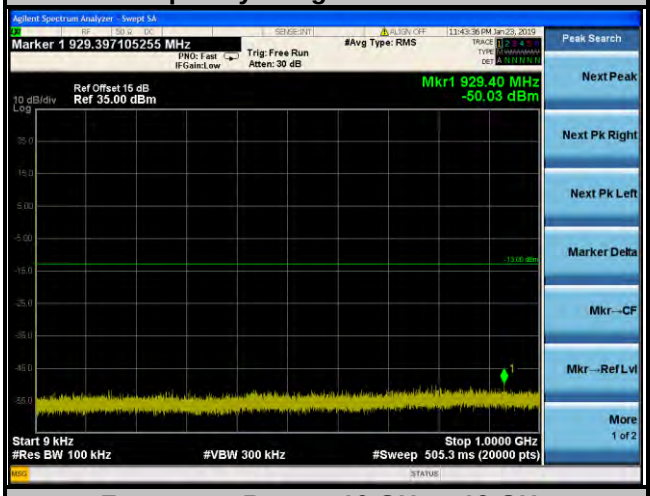
4.7.4 Test Results

GSM	
Channel 512	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

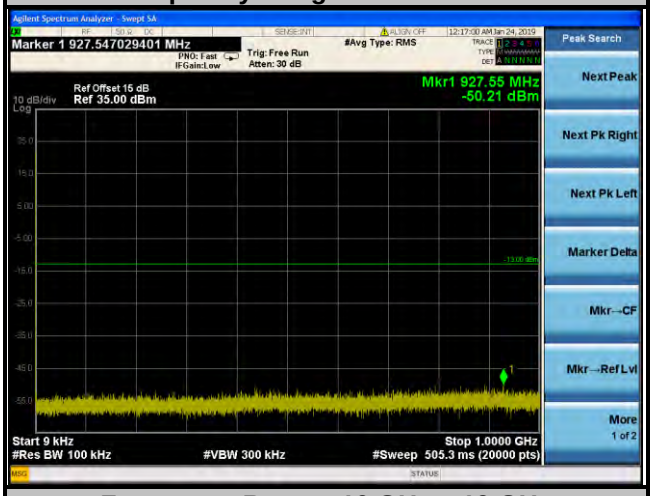
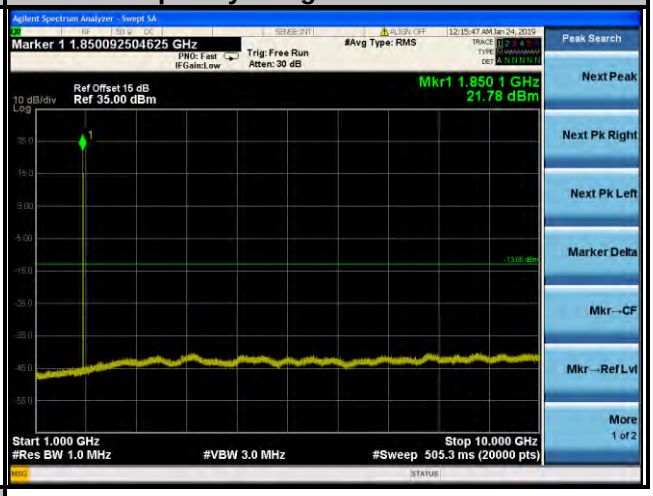
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

GSM	
Channel 661	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

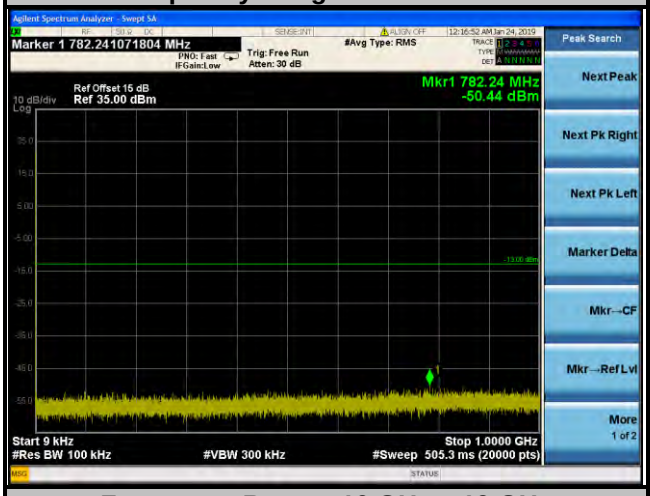
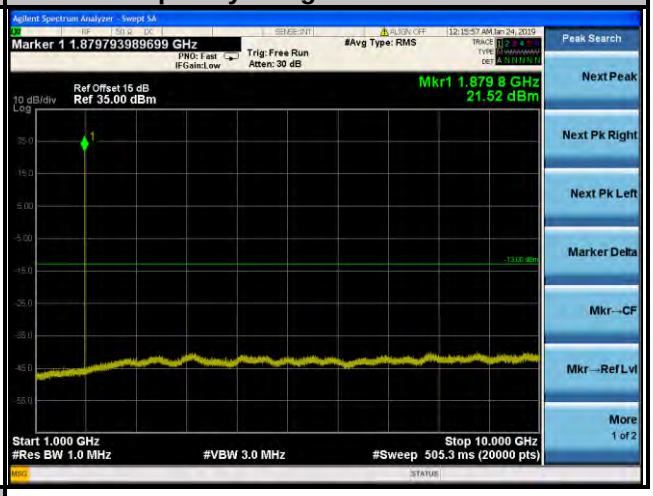
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

GSM	
Channel 810	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

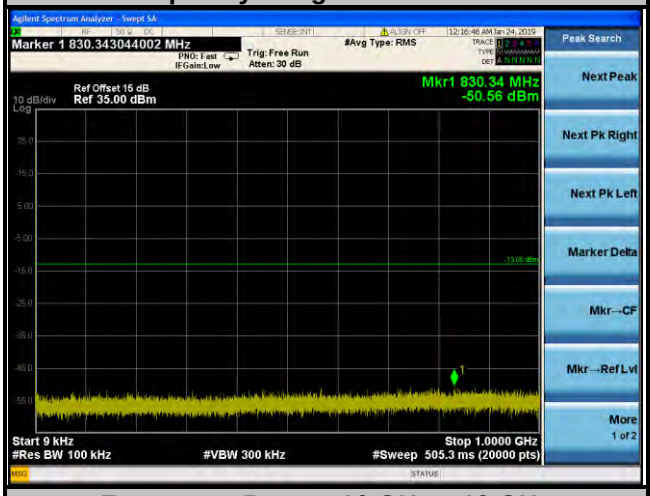
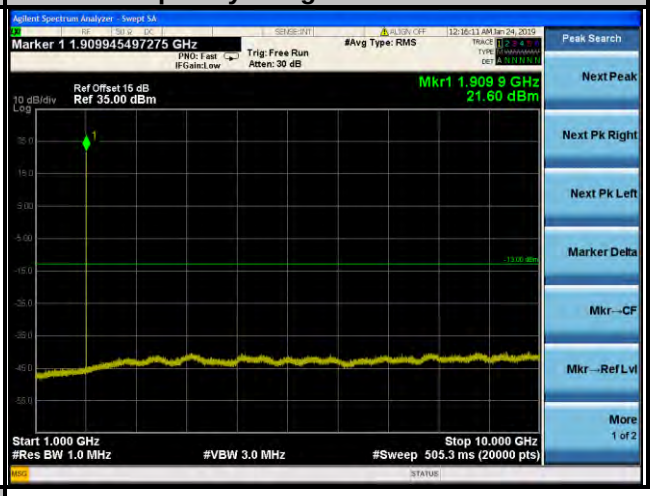
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

EDGE	
Channel 512	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

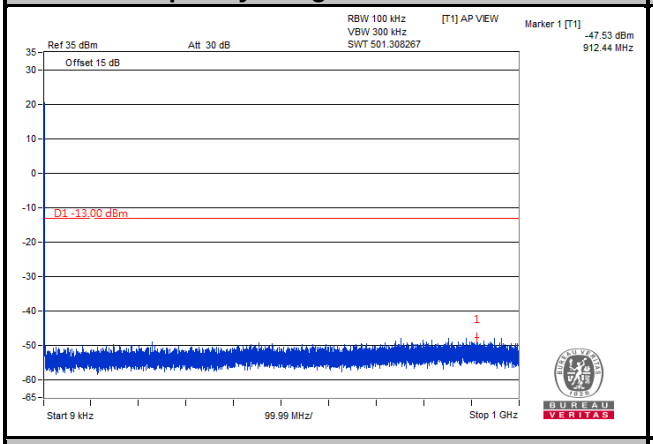
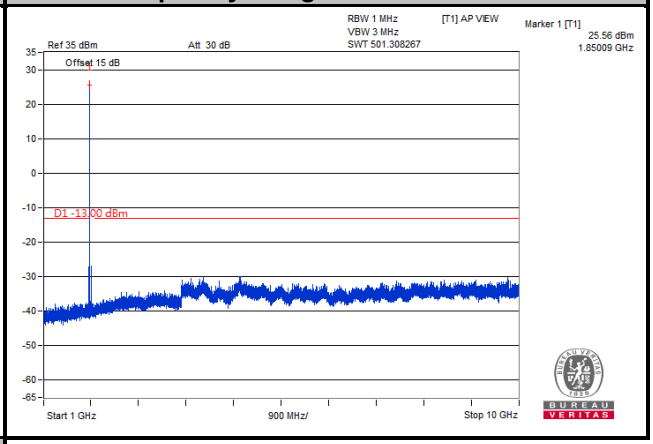
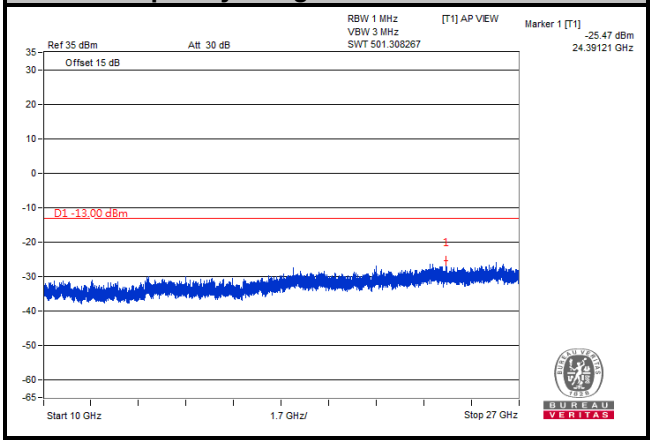
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

EDGE	
Channel 661	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

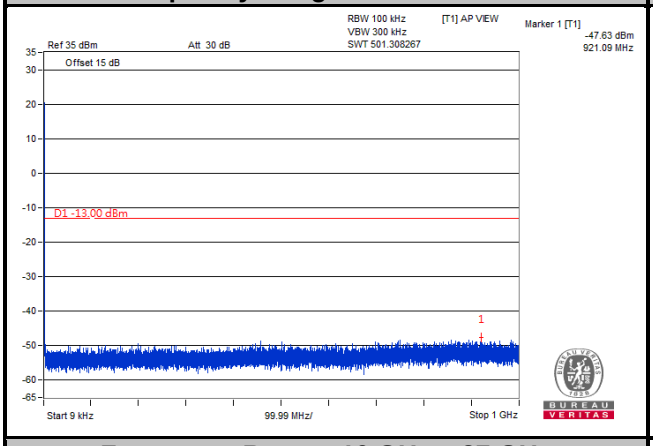
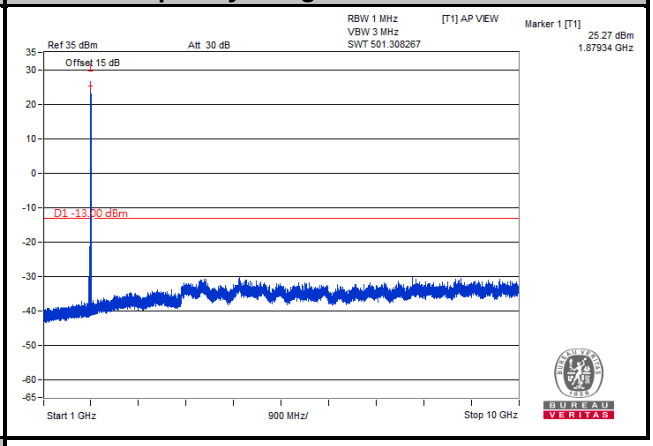
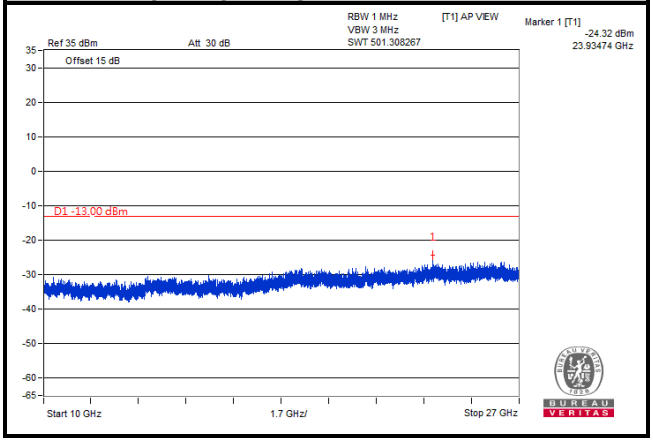
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

EDGE	
Channel 810	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 19 GHz	
	

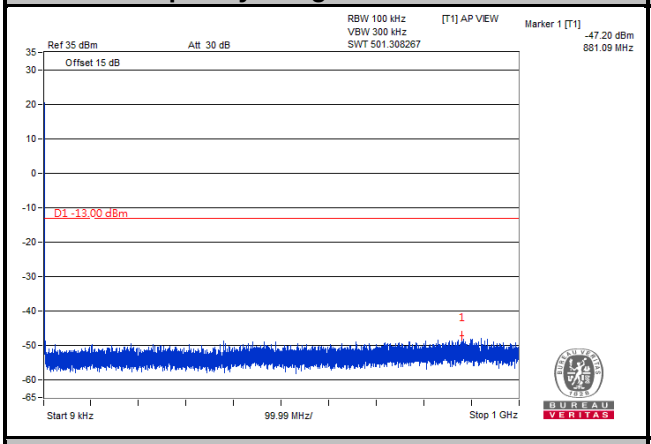
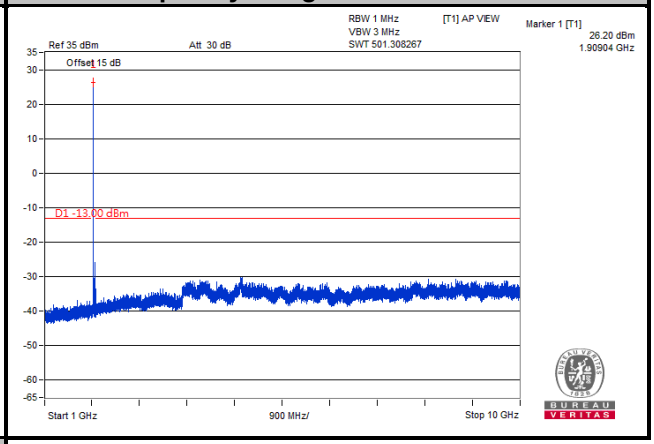
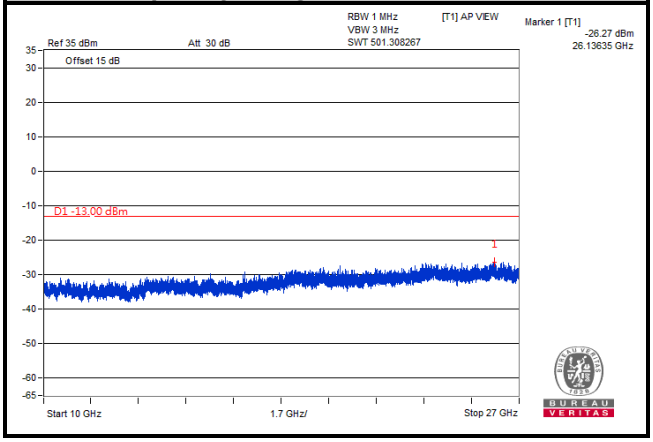
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 1.4 MHz	
Channel 18607	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

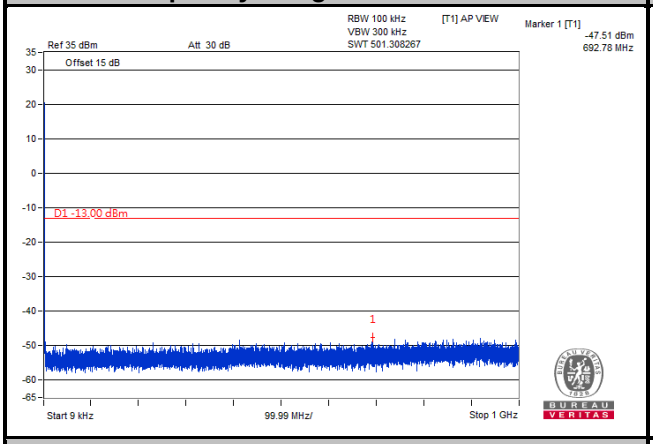
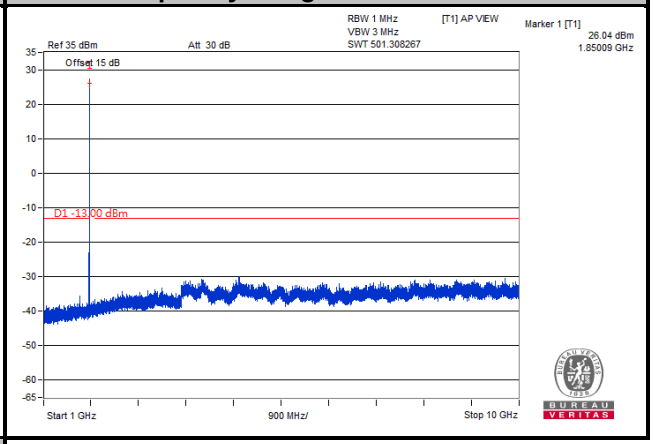
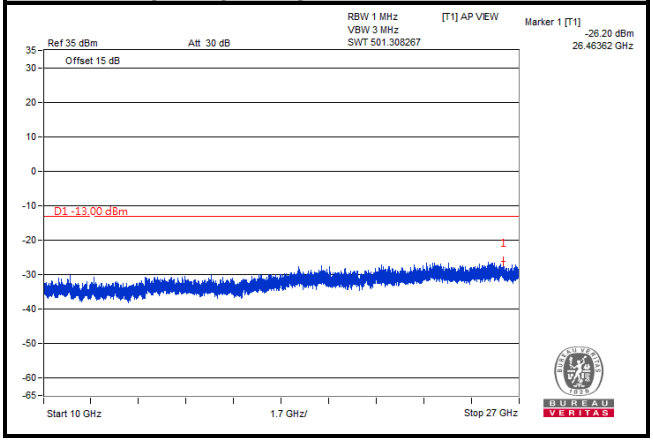
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 1.4 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

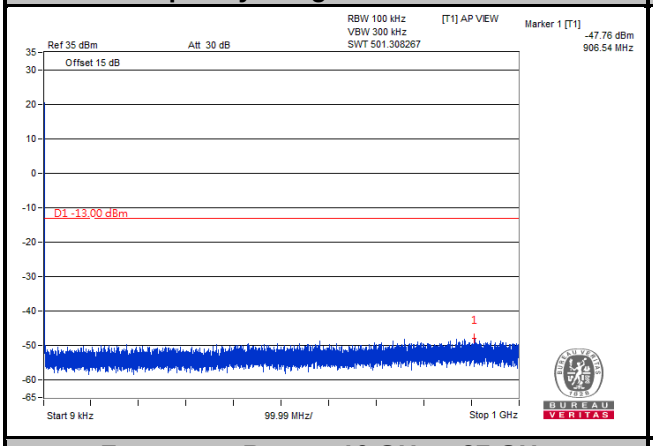
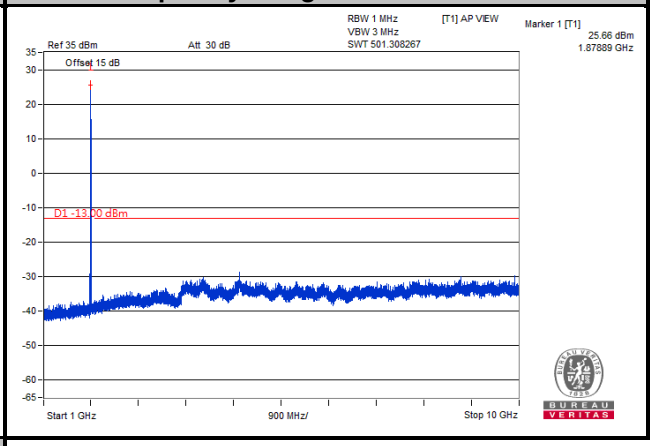
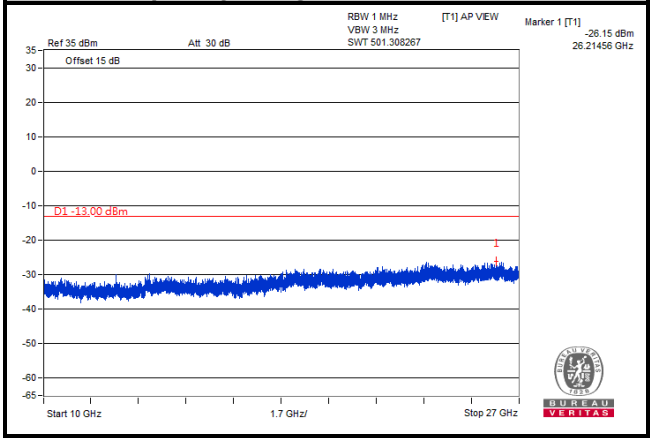
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 1.4 MHz	
Channel 19193	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

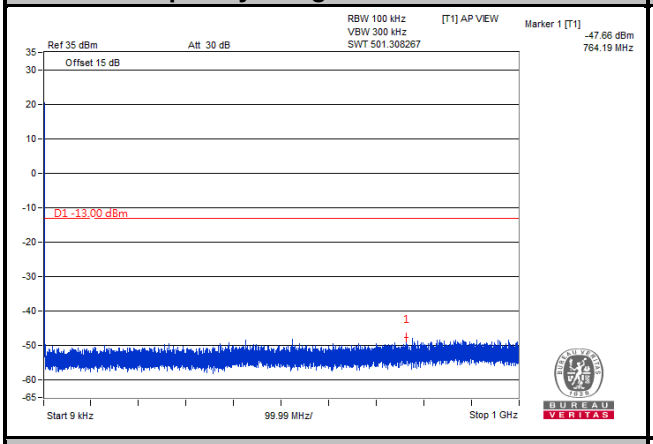
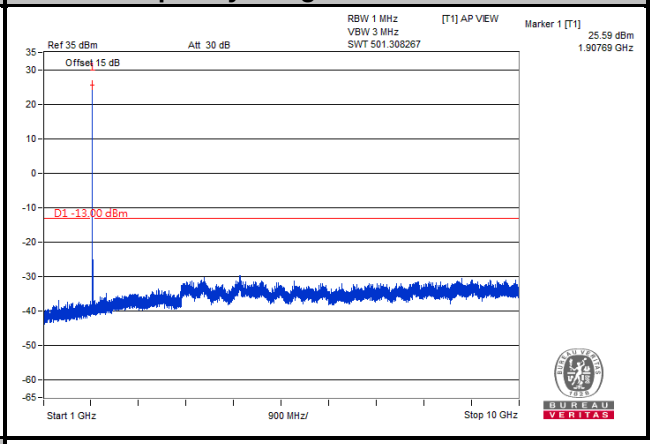
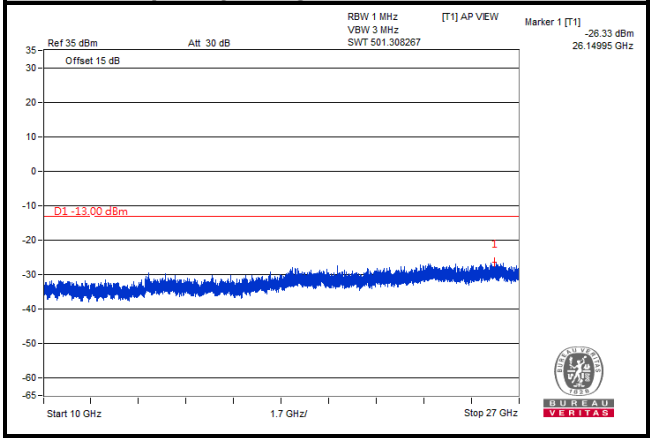
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 3 MHz	
Channel 18615	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

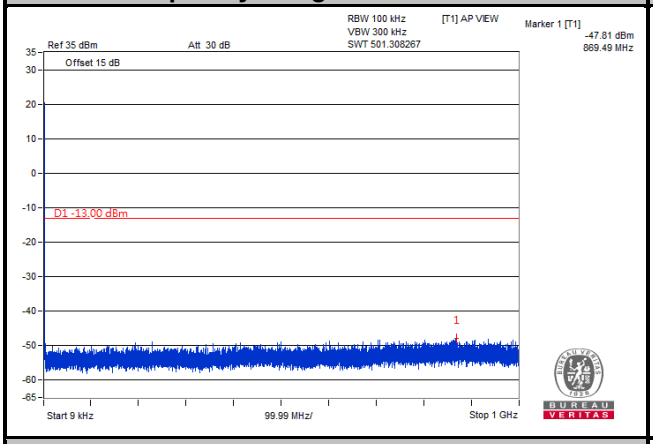
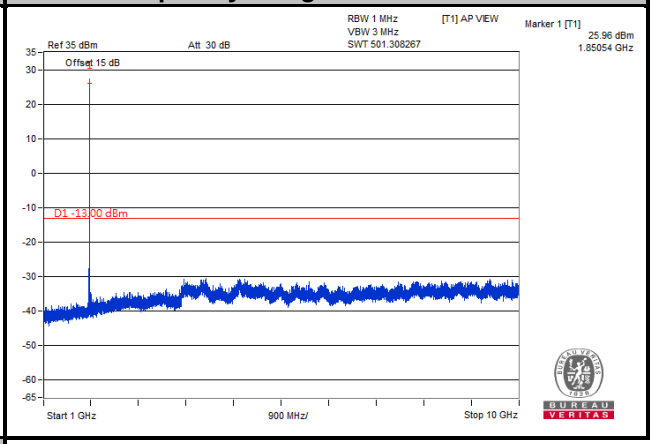
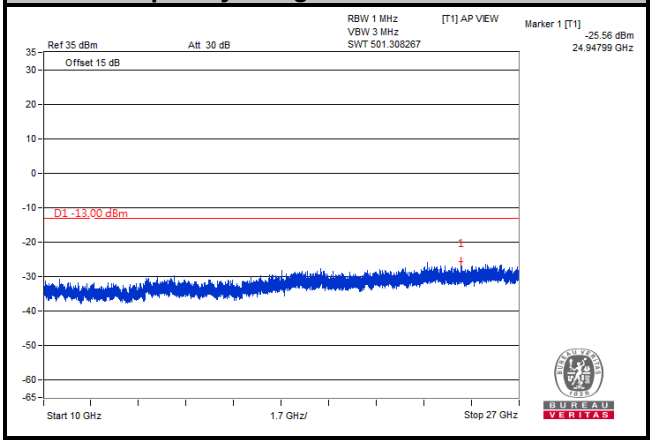
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 3 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

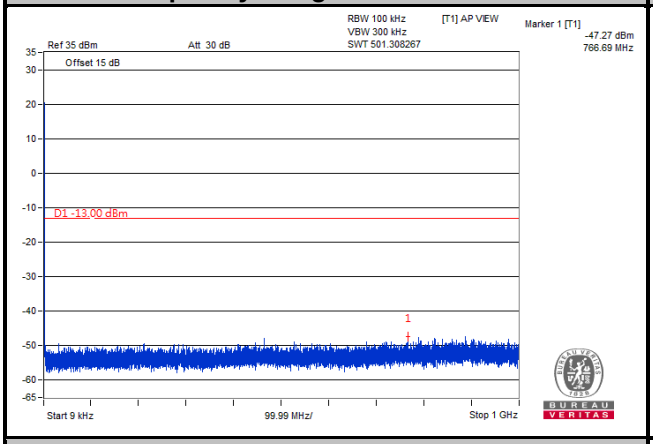
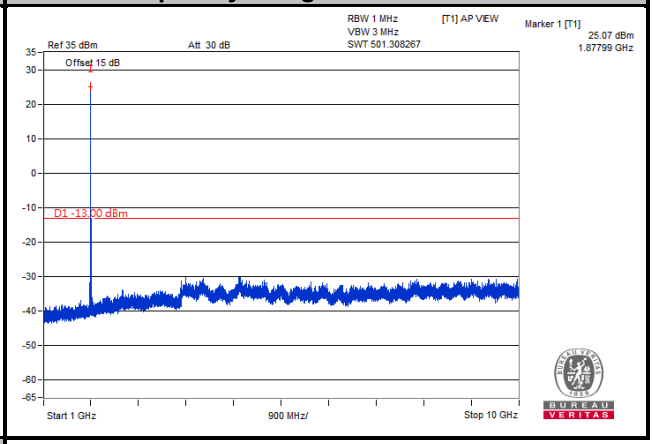
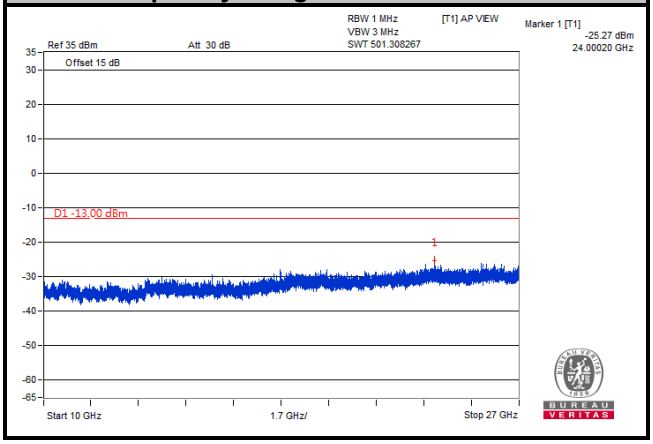
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 3 MHz	
Channel 19185	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

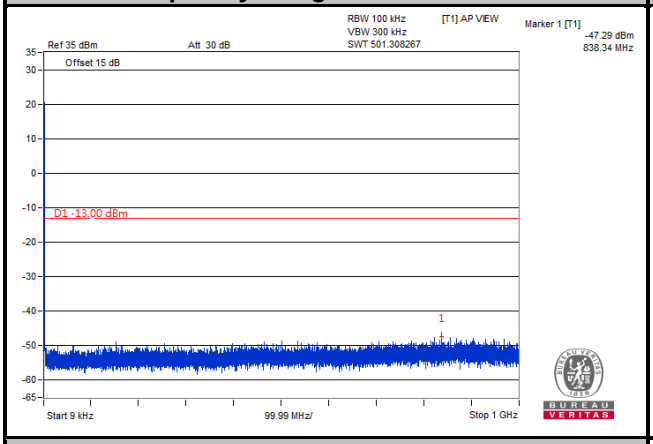
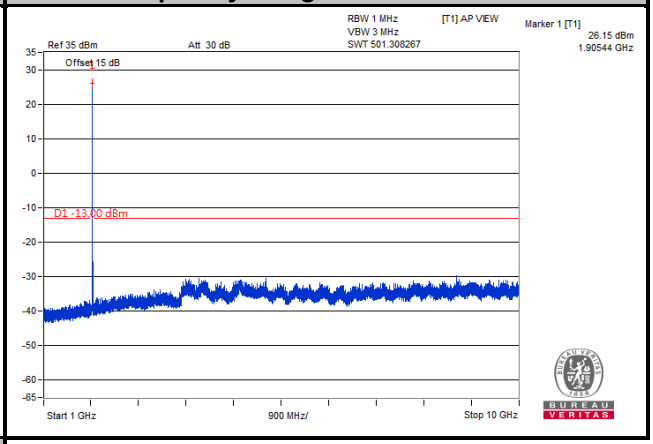
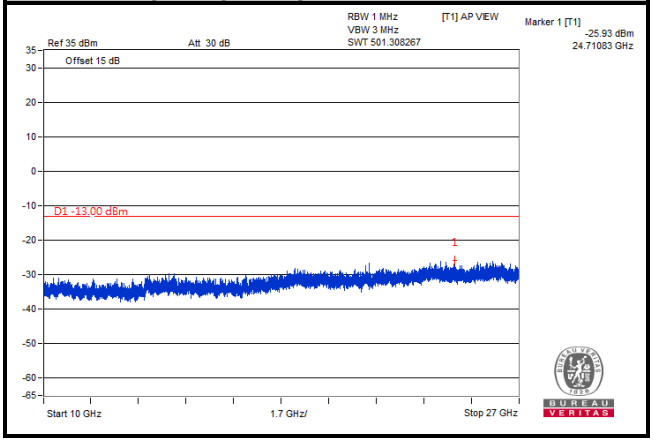
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 5 MHz	
Channel 18625	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

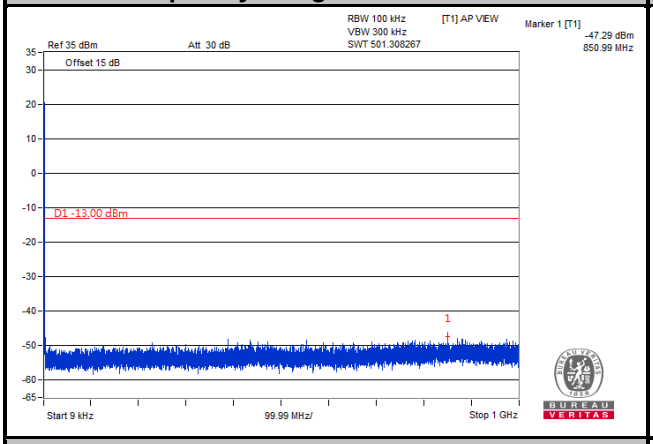
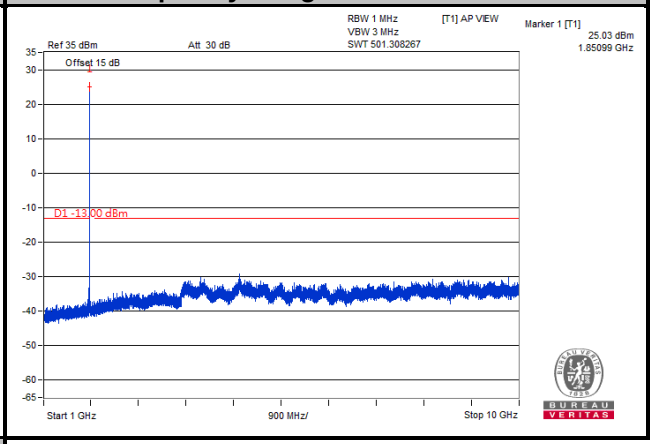
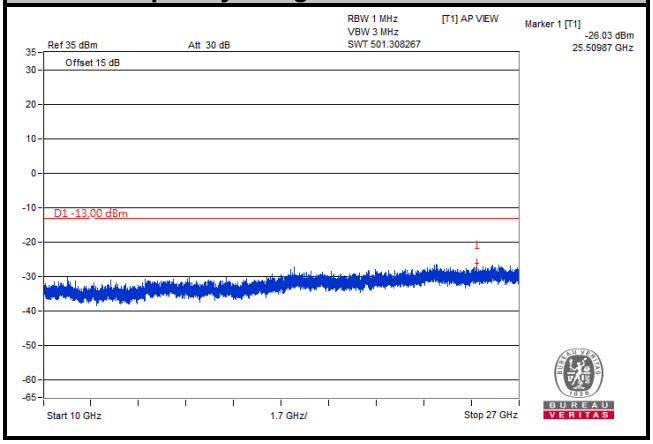
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 5 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

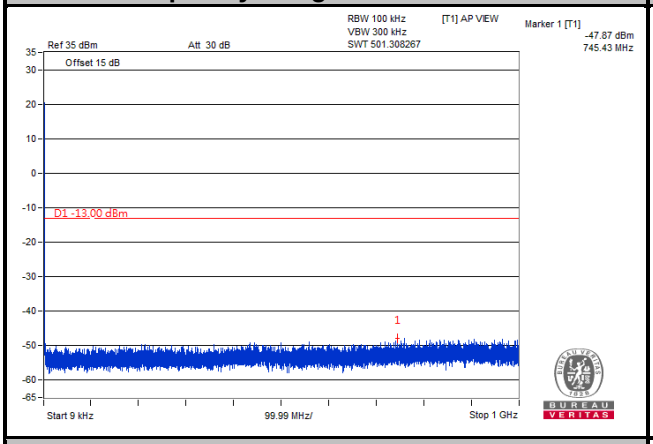
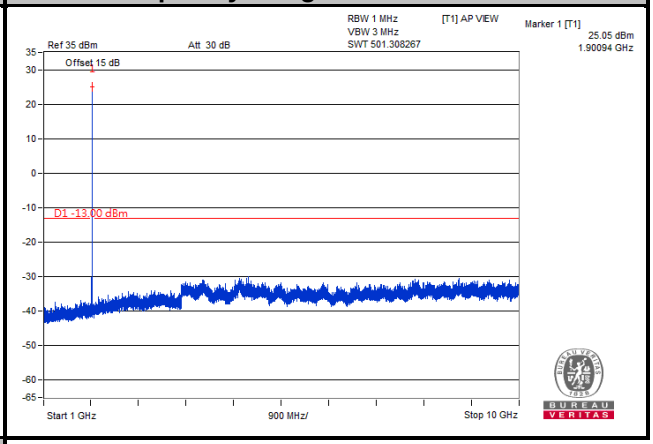
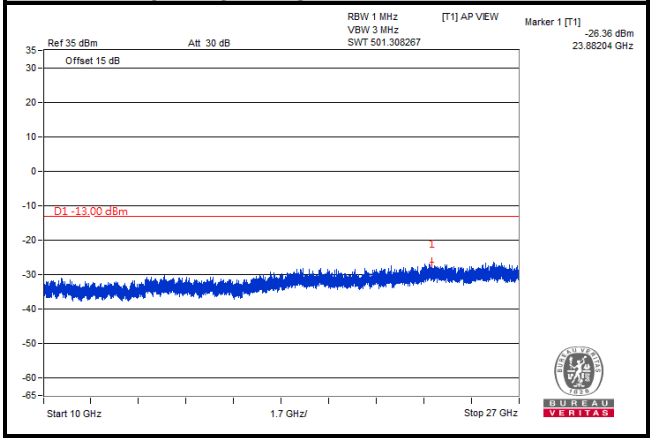
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

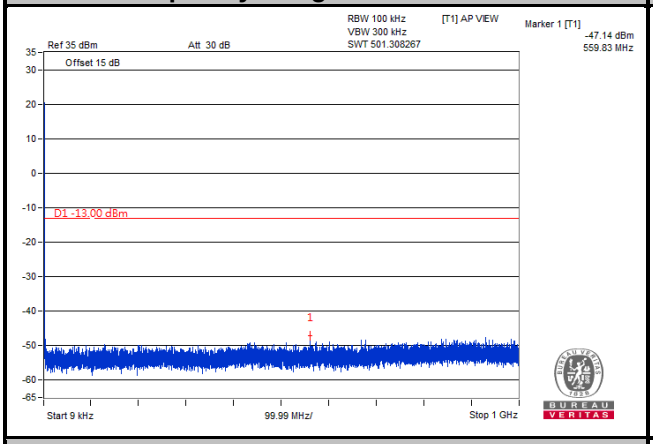
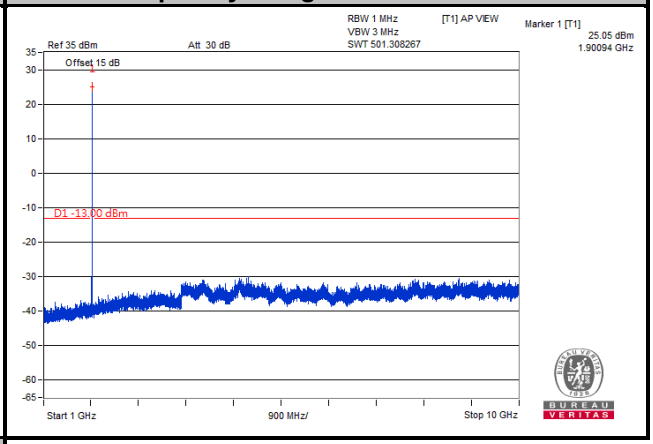
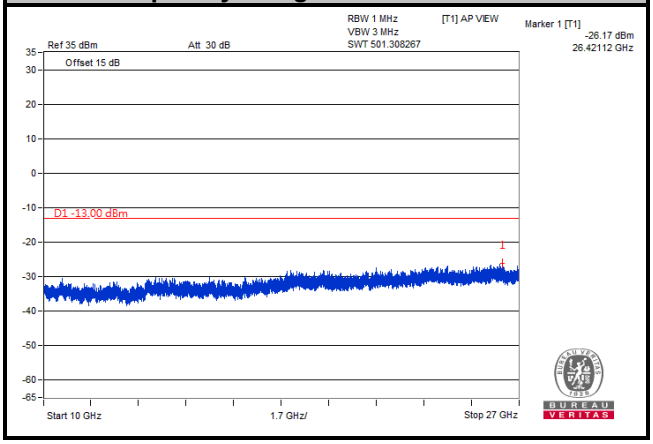
LTE Band 2	
Channel Bandwidth: 5 MHz	
Channel 19175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

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

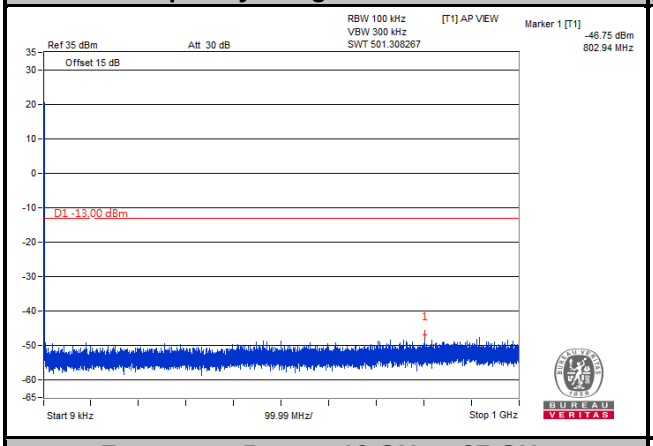
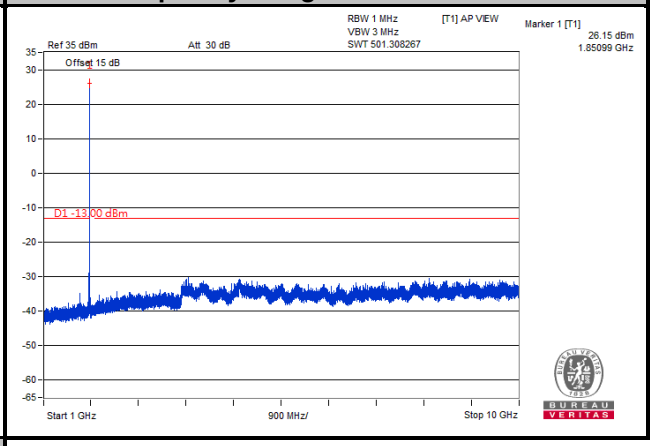
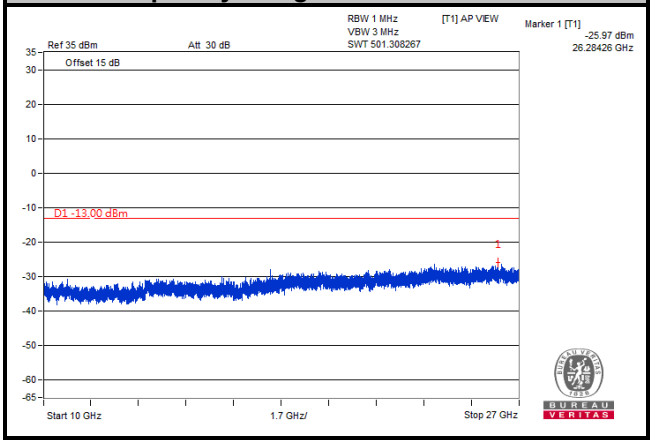
LTE Band 2	
Channel Bandwidth: 10 MHz	
Channel 18650	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

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

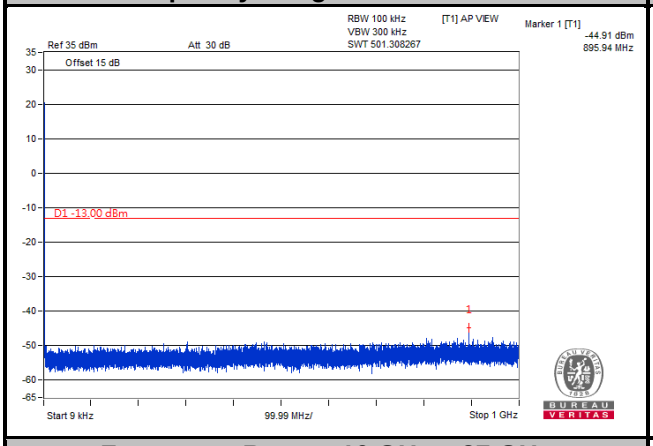
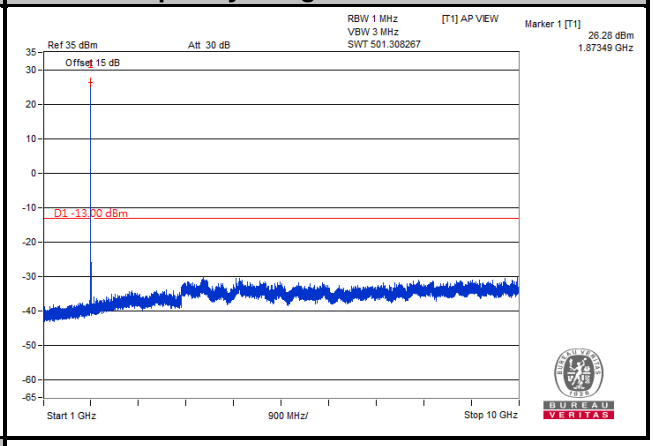
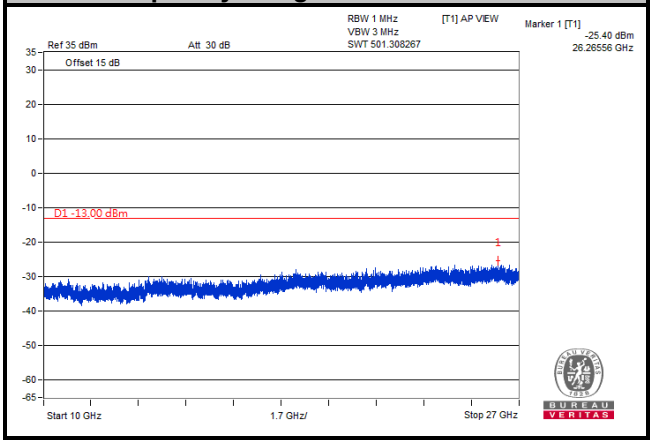
LTE Band 2	
Channel Bandwidth: 10 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

LTE Band 2	
Channel Bandwidth: 10 MHz	
Channel 19150	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

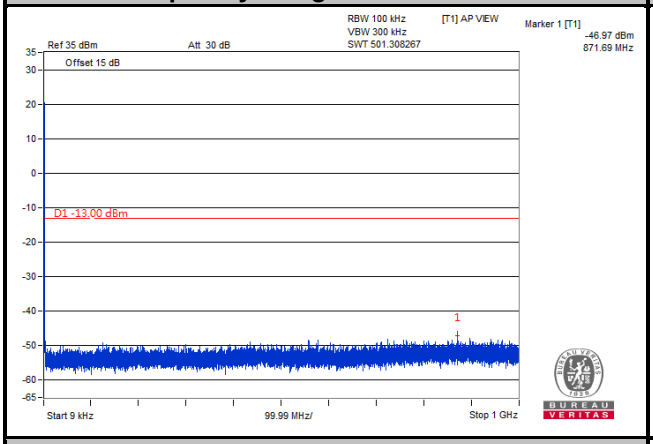
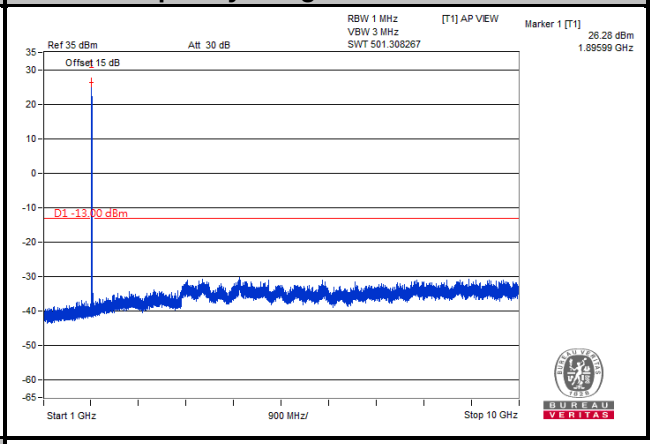
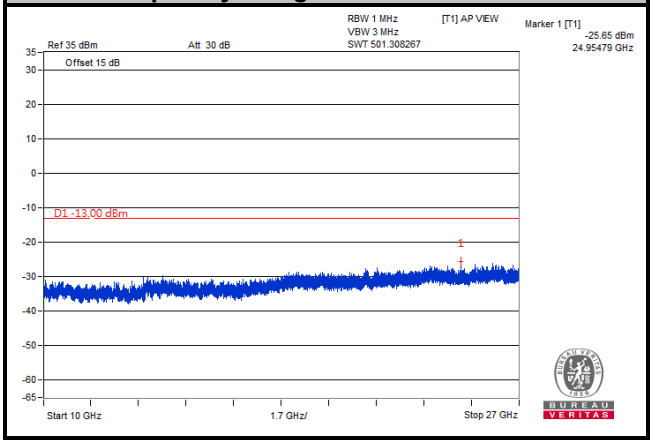
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 15 MHz	
Channel 18675	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

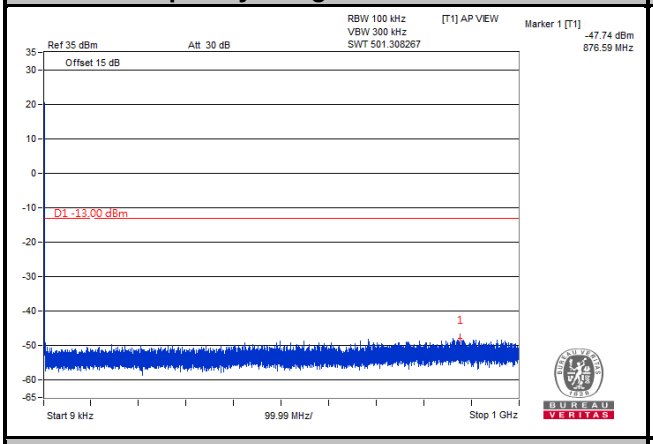
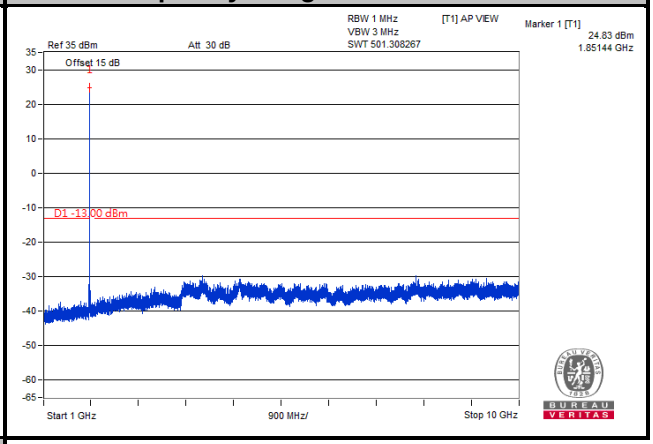
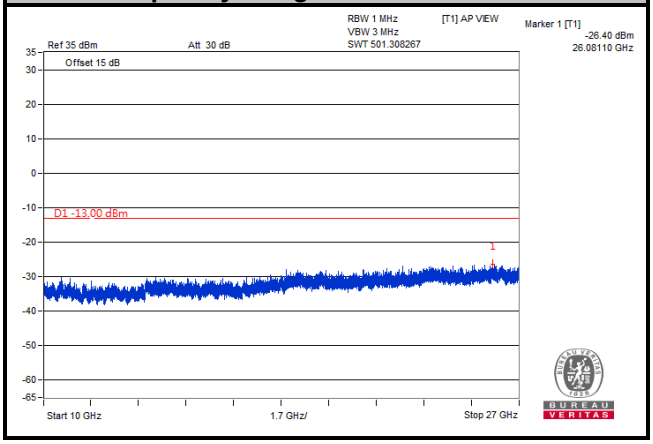
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 15 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

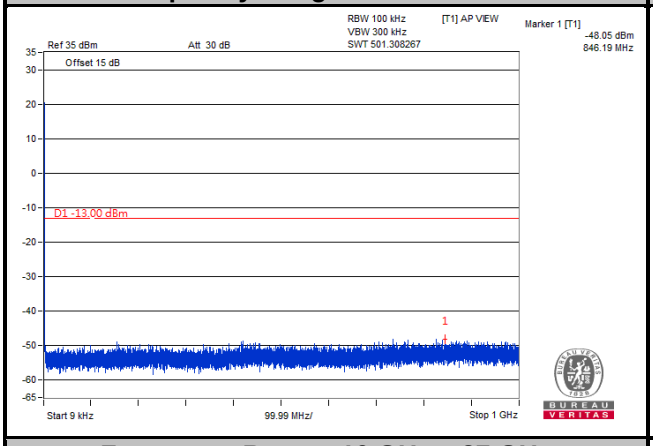
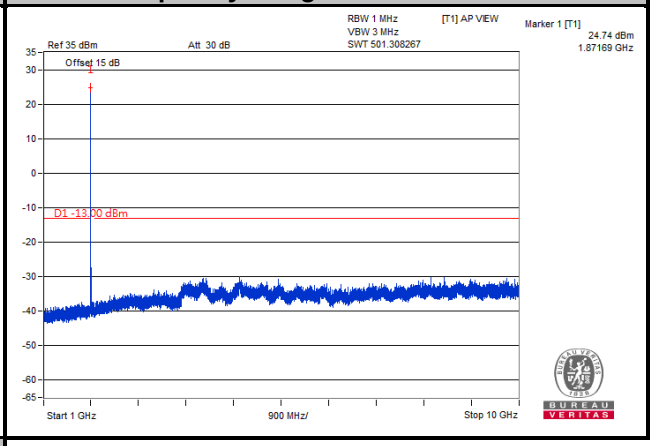
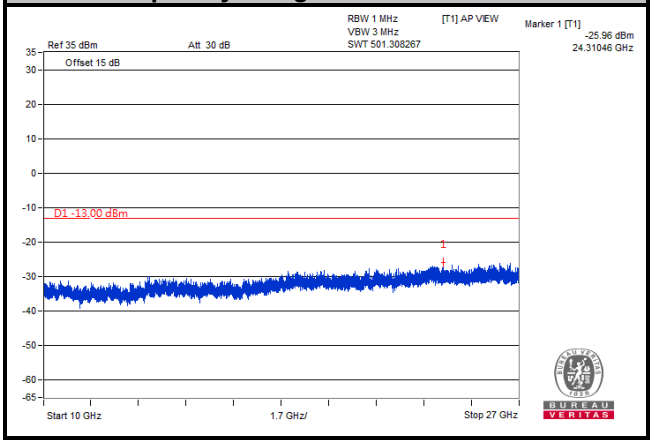
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 15 MHz	
Channel 19125	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

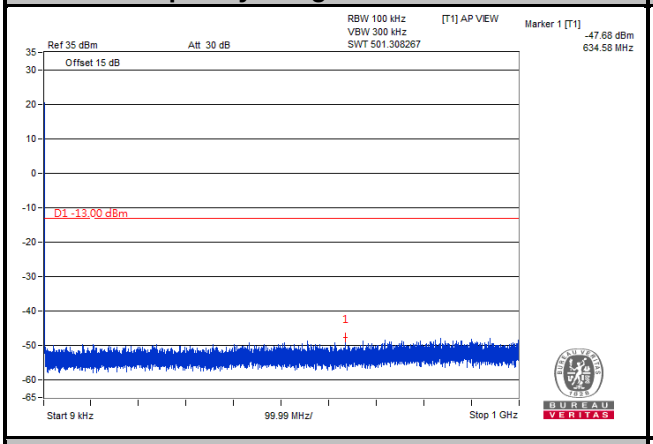
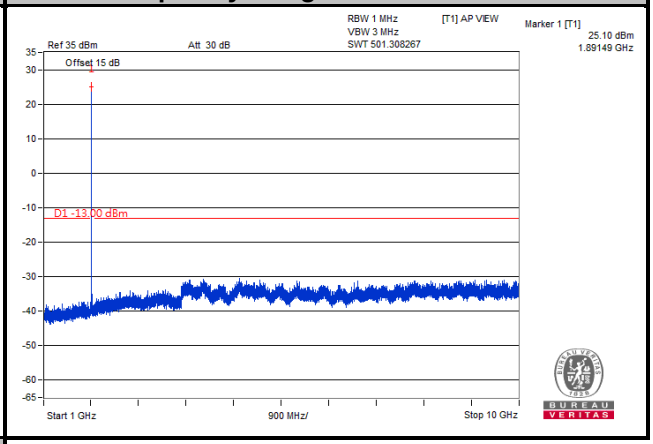
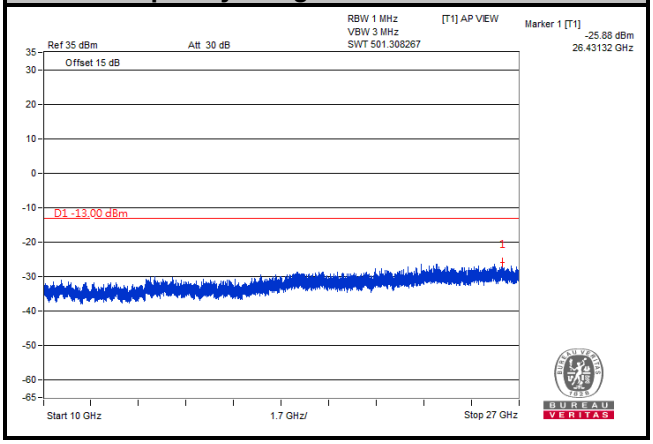
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 20 MHz	
Channel 18700	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

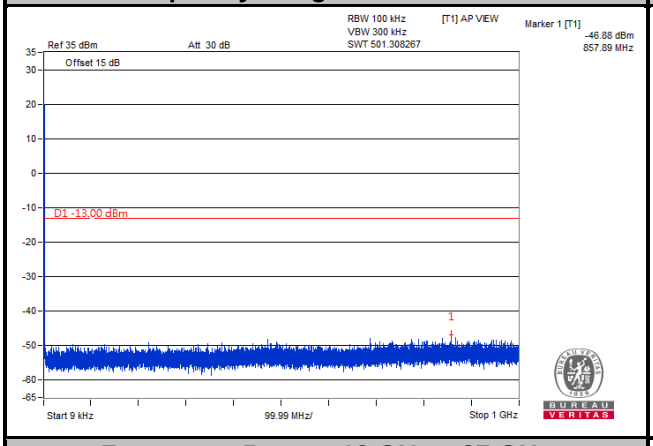
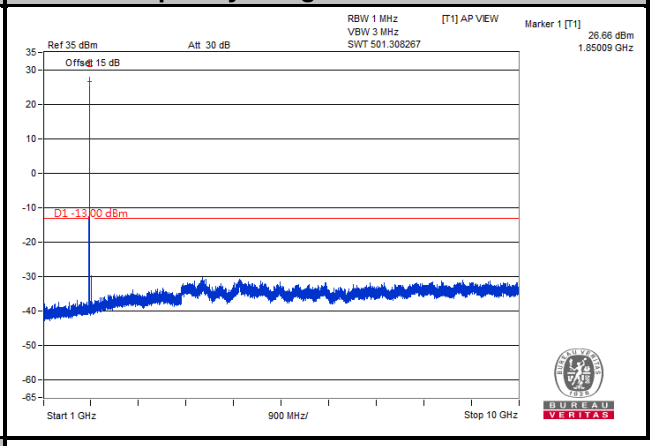
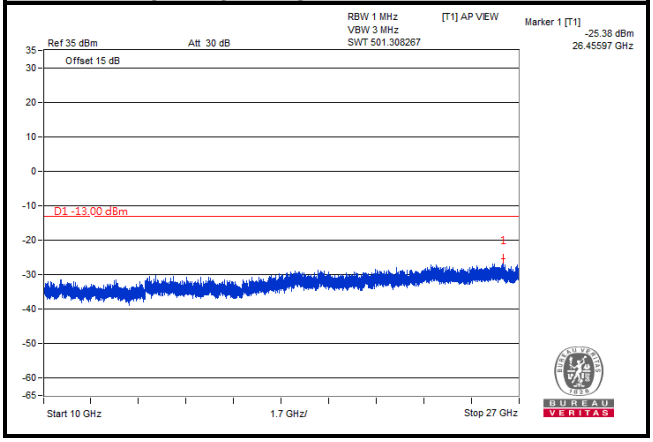
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 20 MHz	
Channel 18900	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

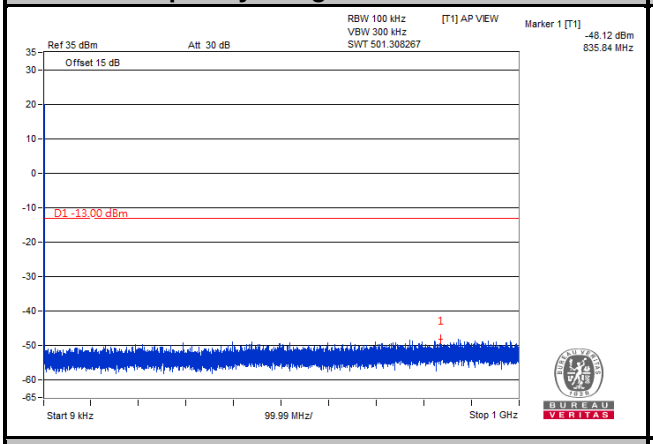
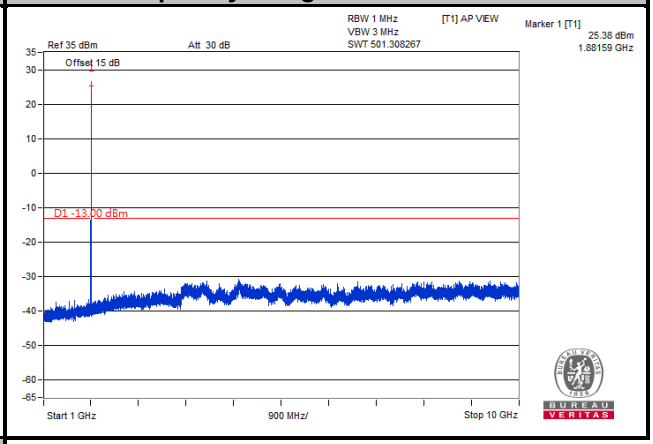
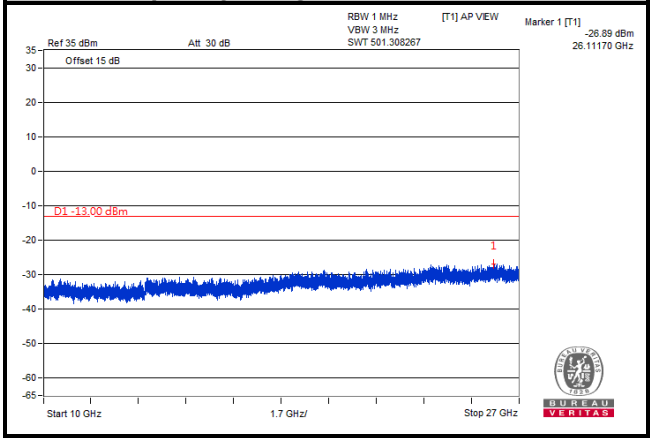
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 2	
Channel Bandwidth: 20 MHz	
Channel 19100	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

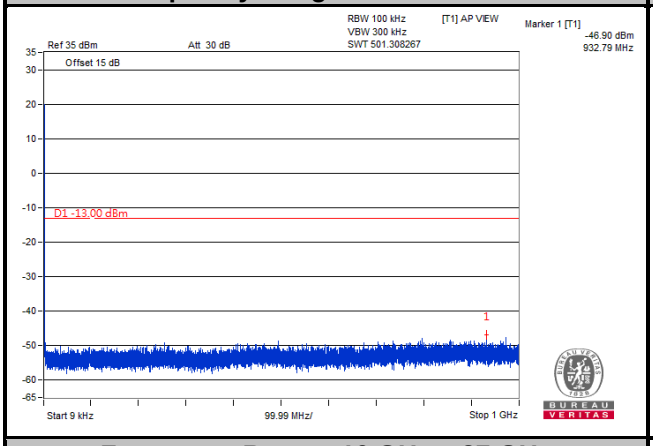
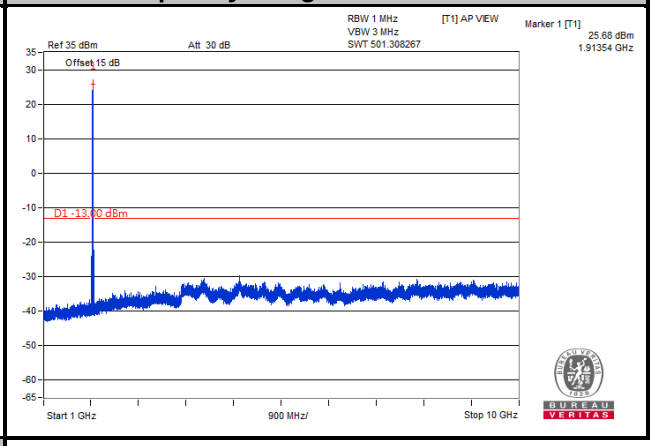
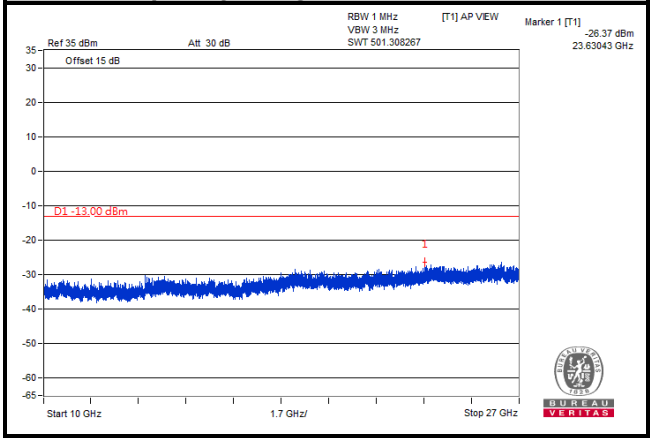
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 1.4 MHz	
Channel 26047	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

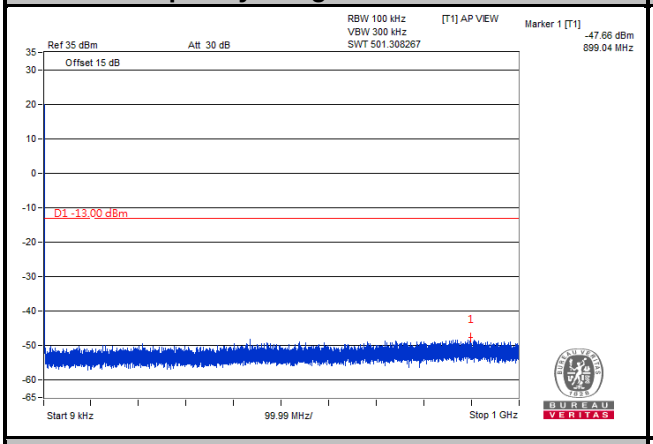
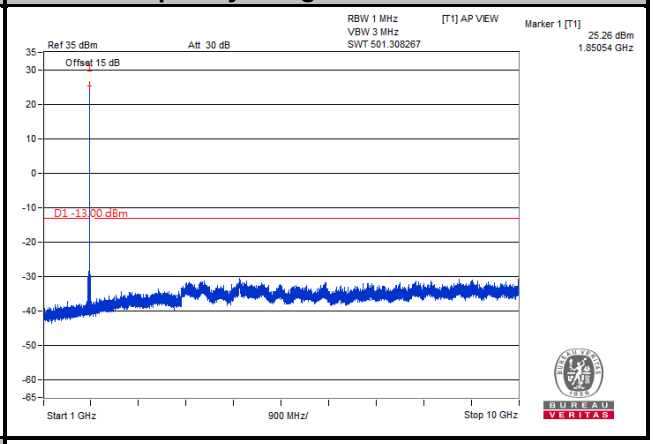
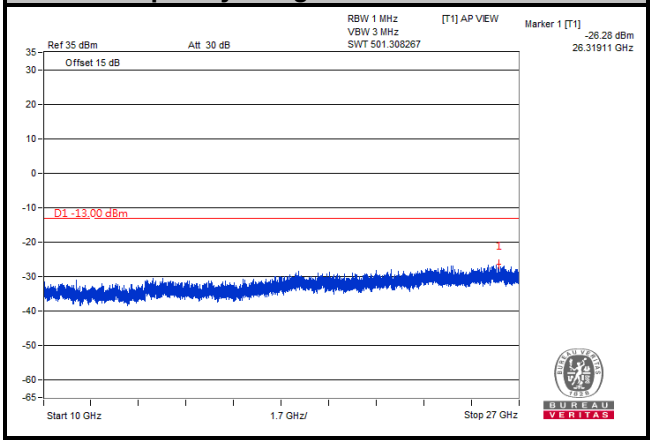
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 1.4 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

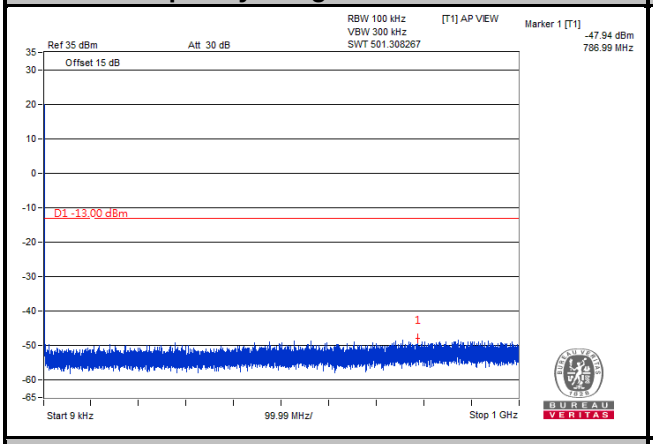
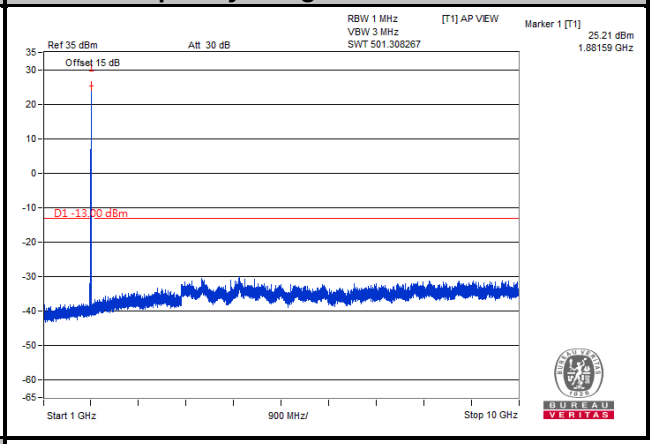
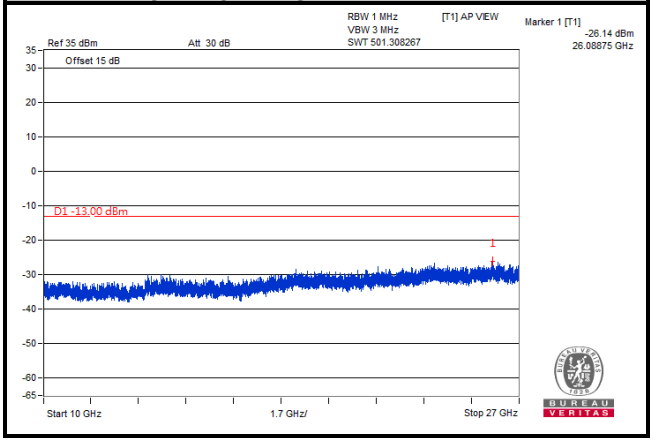
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 1.4 MHz	
Channel 26683	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

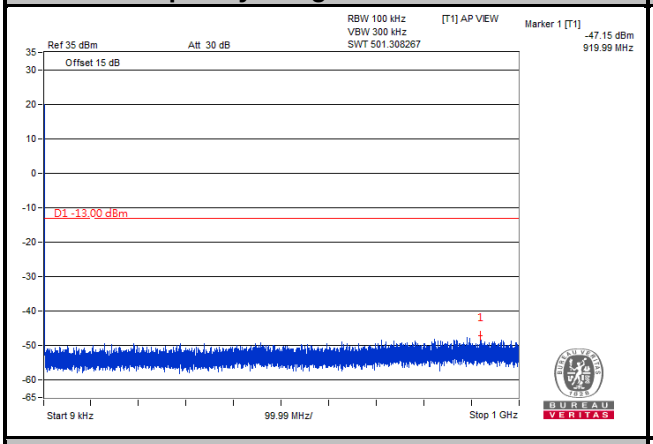
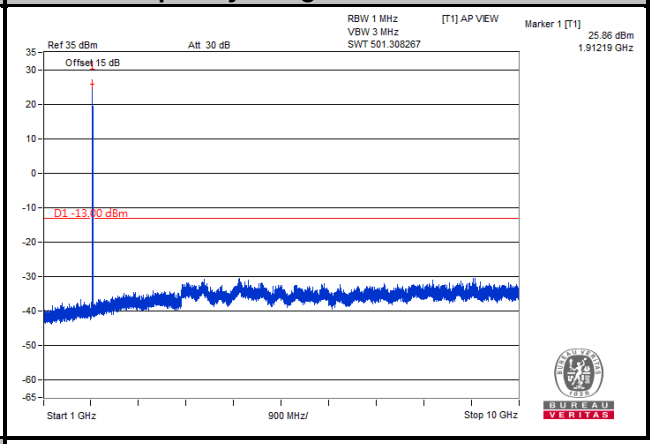
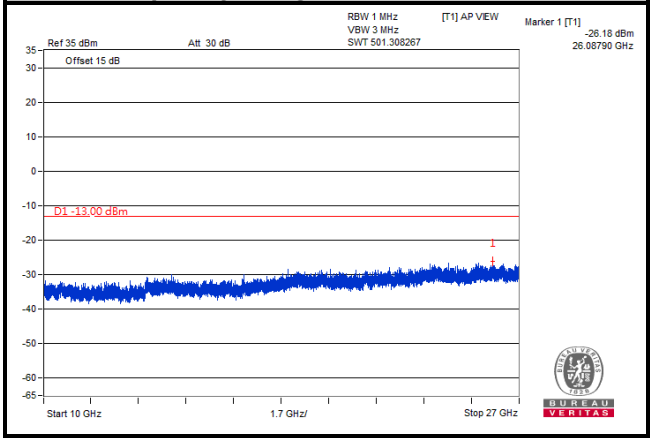
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 3 MHz	
Channel 26055	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

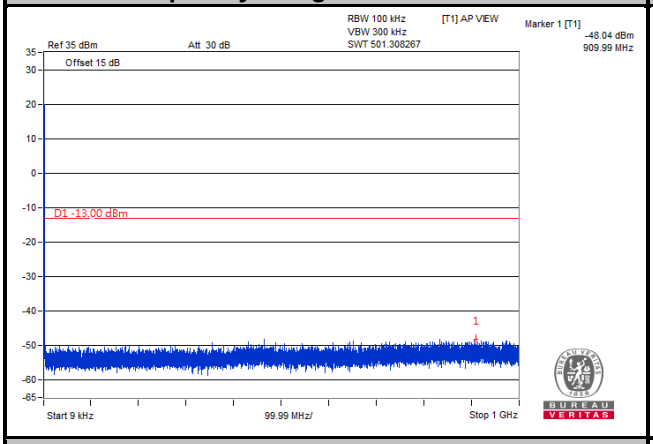
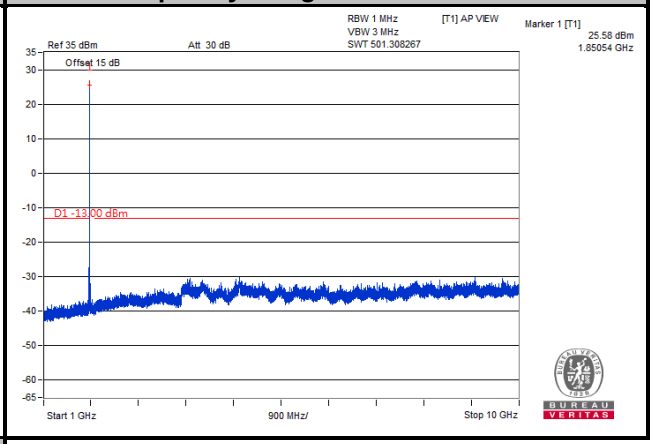
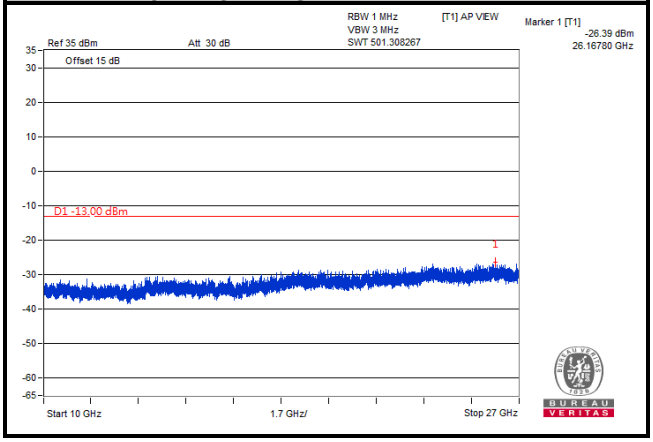
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 3 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

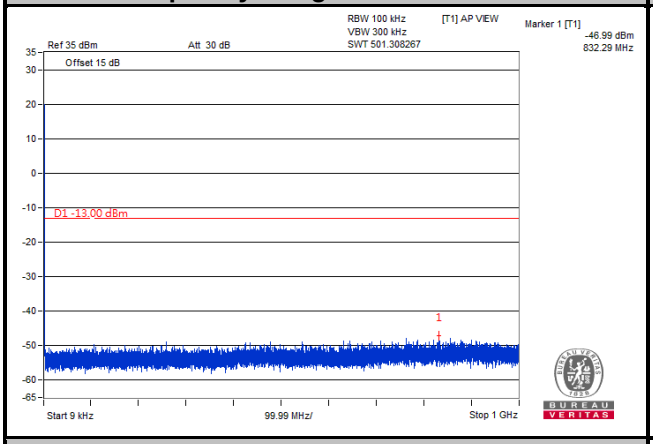
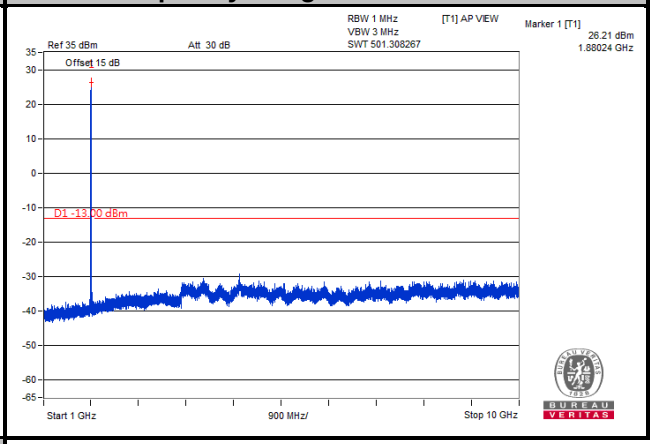
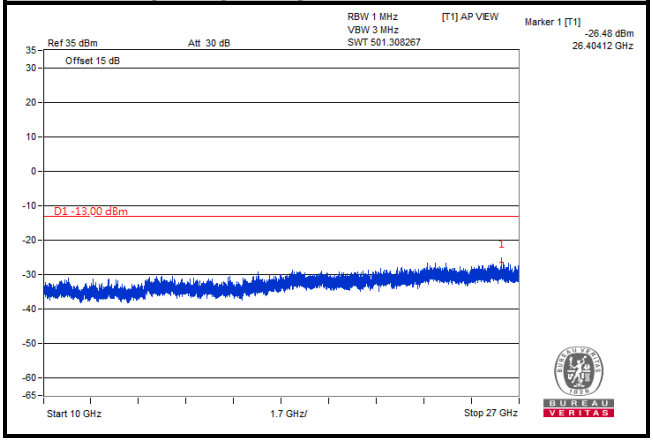
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 3 MHz	
Channel 26675	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

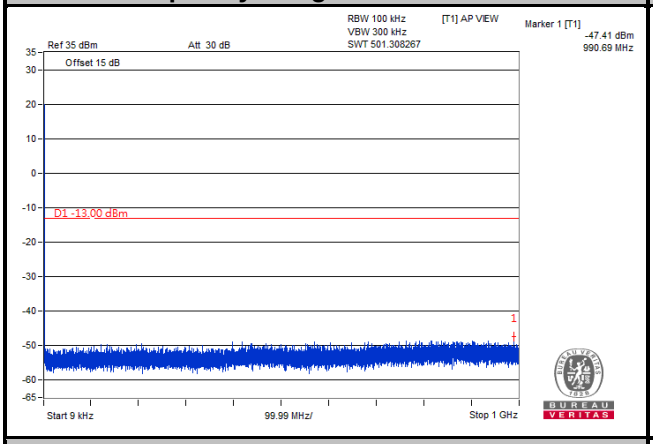
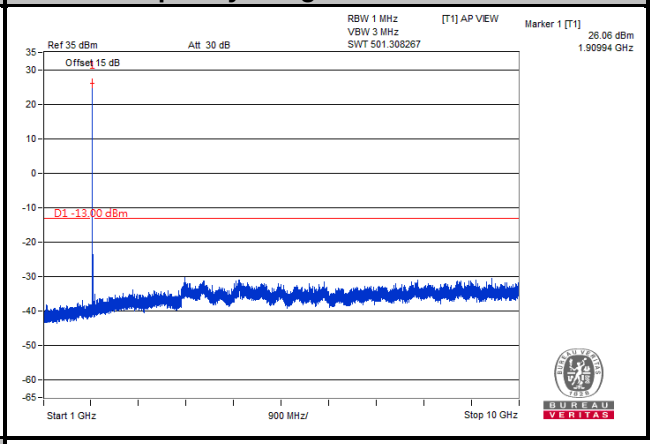
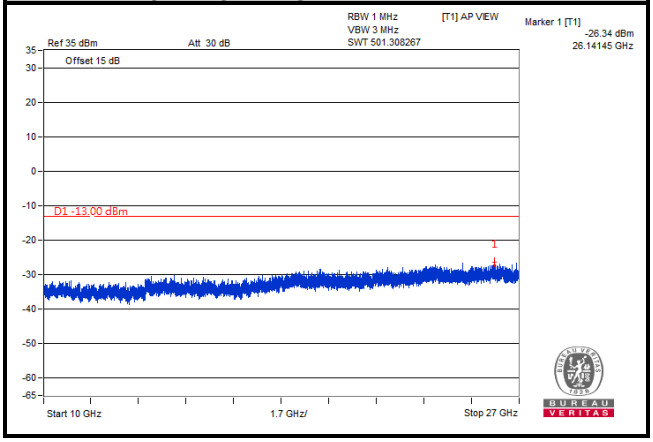
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 5 MHz	
Channel 26065	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

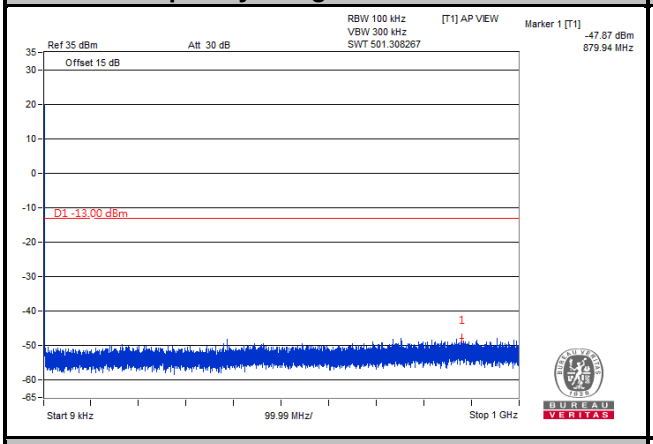
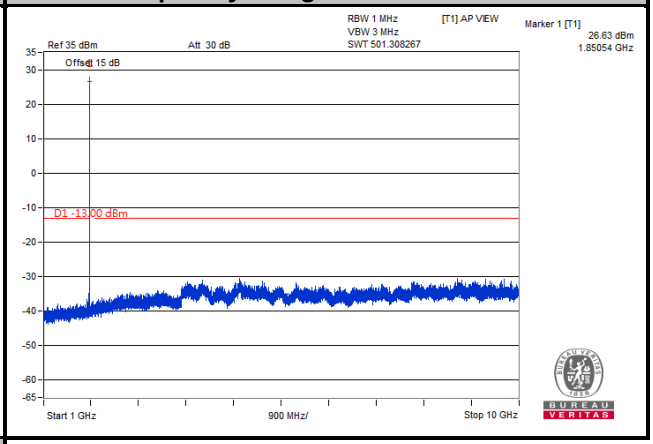
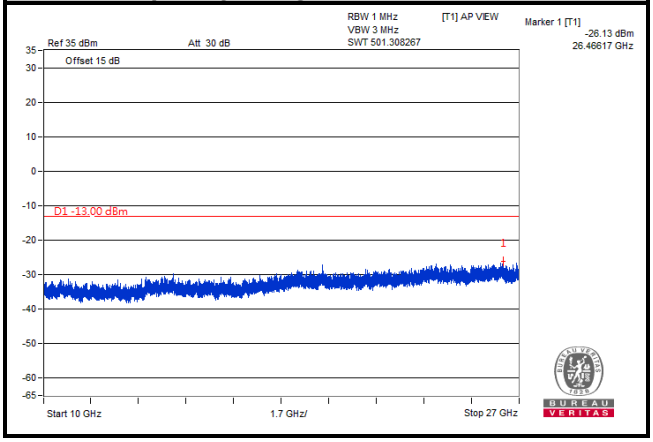
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 5 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

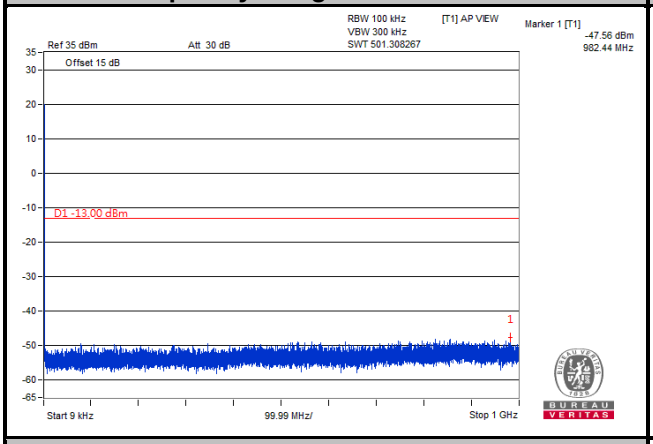
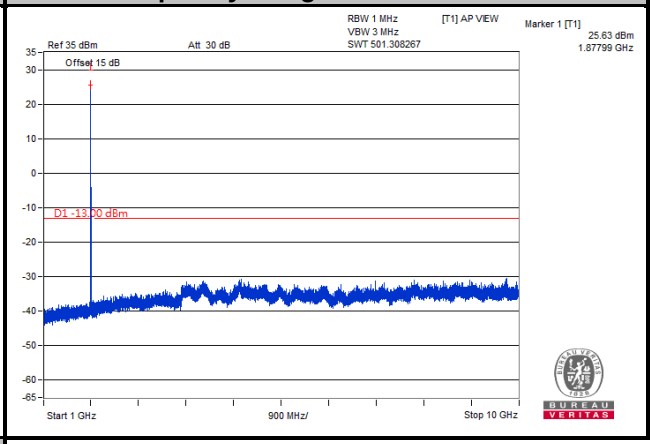
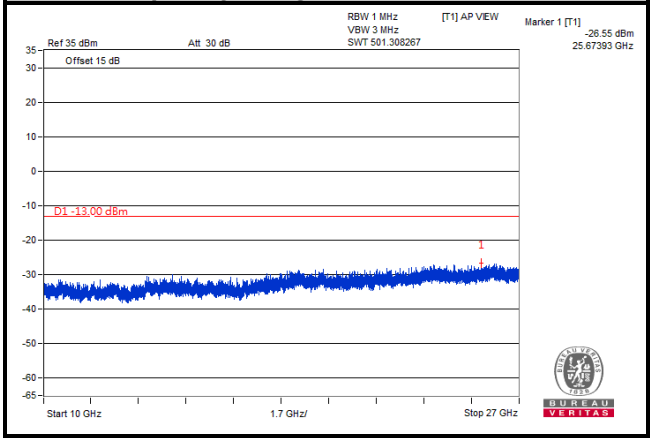
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 5 MHz	
Channel 26665	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

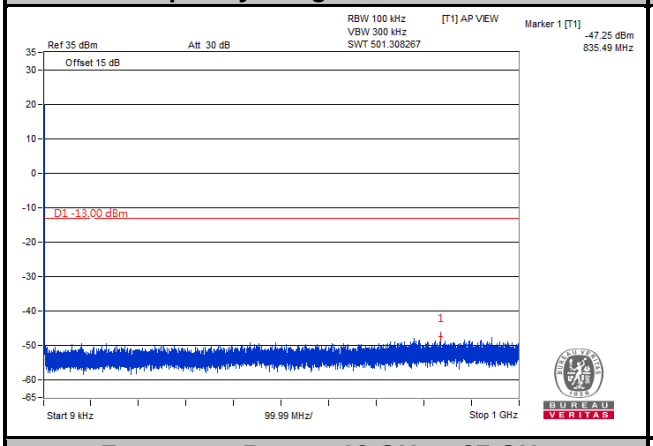
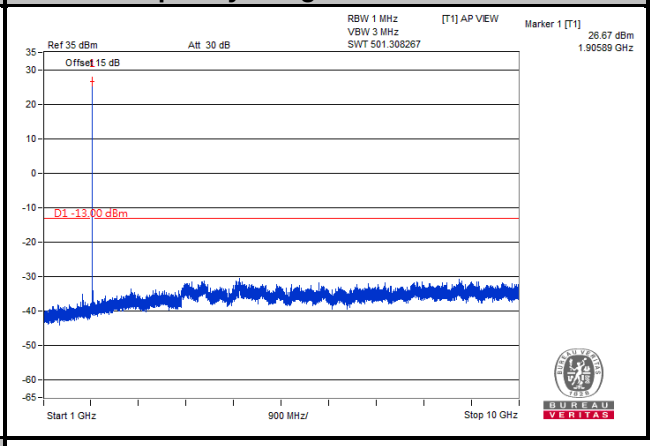
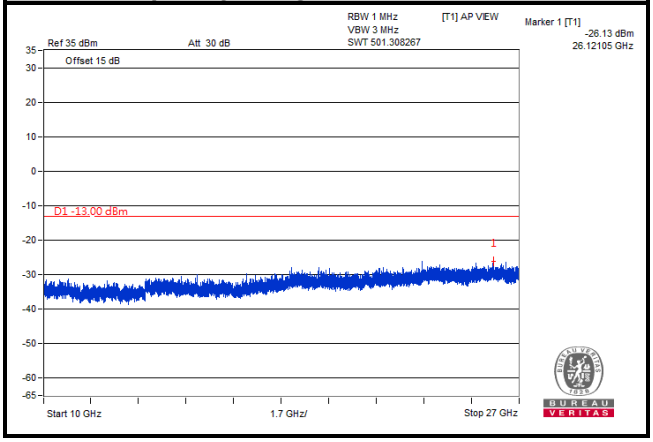
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 10 MHz	
Channel 26090	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

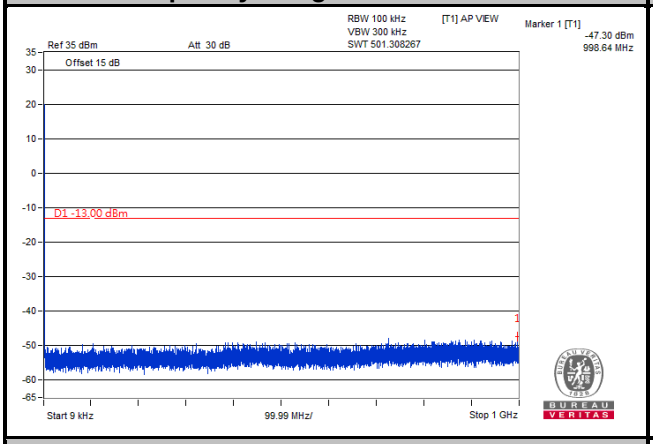
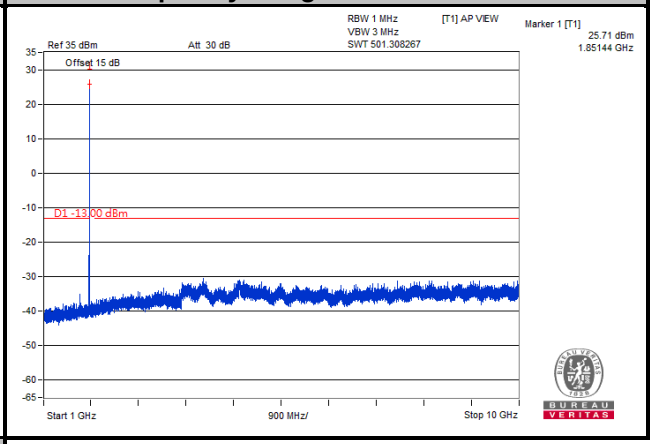
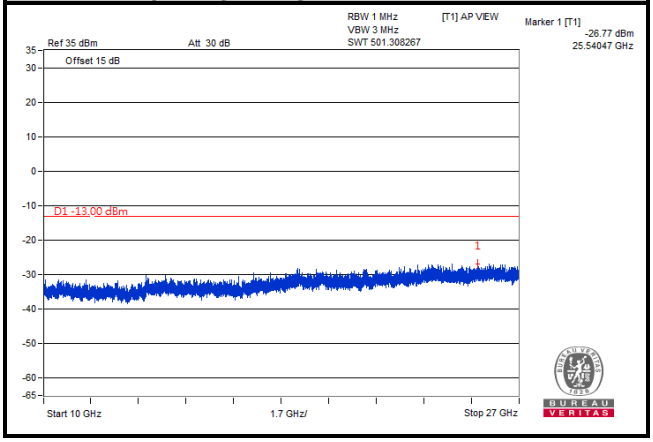
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 10 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

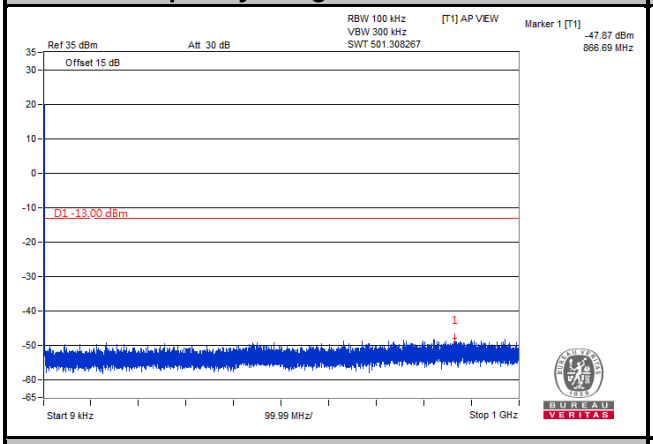
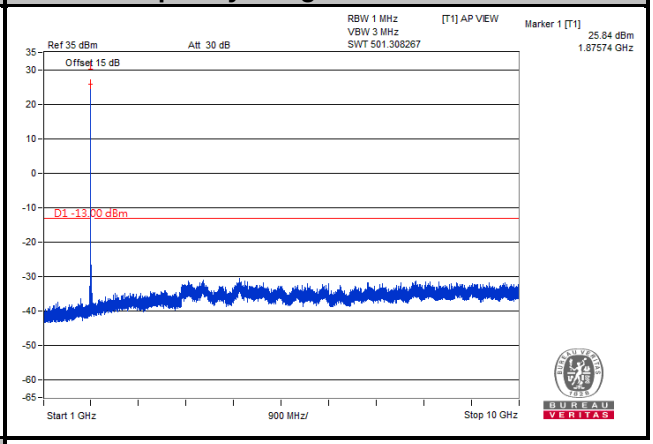
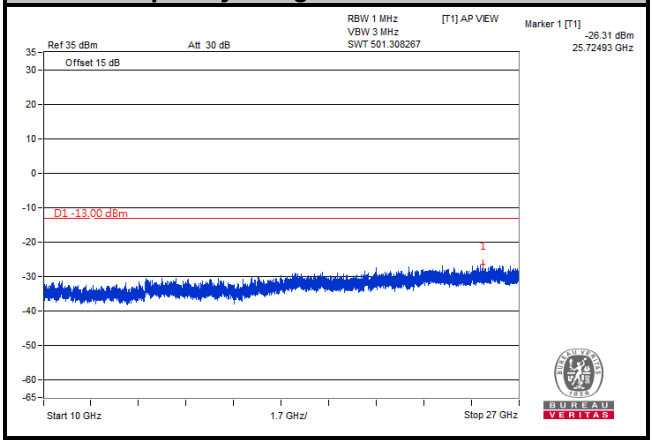
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 10 MHz	
Channel 26640	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

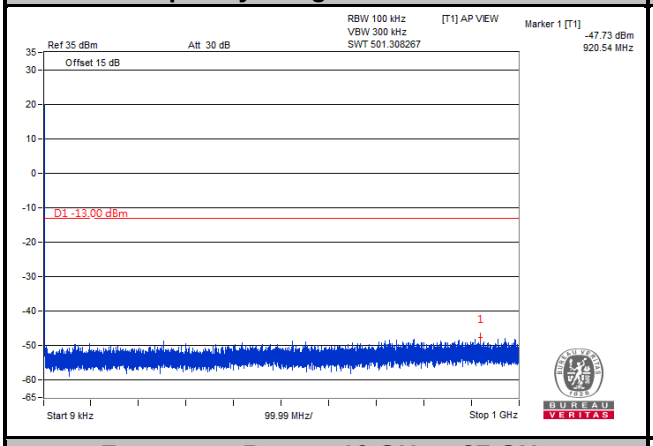
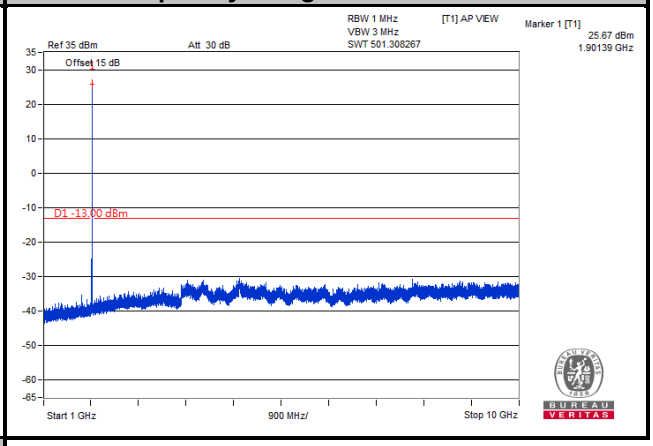
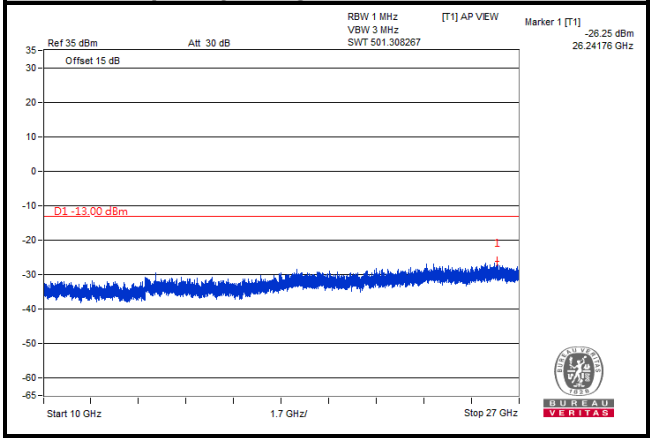
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 15 MHz	
Channel 26115	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

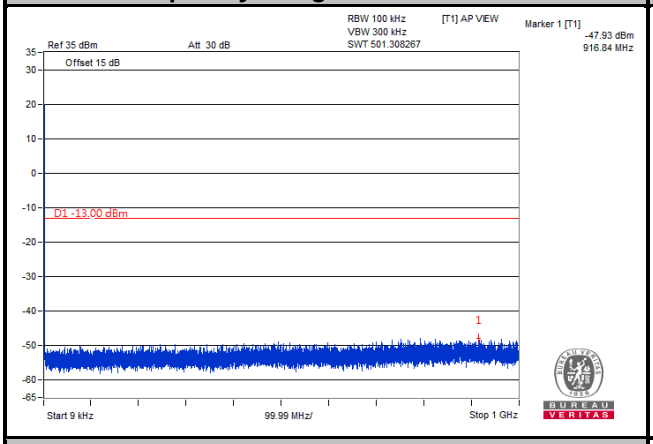
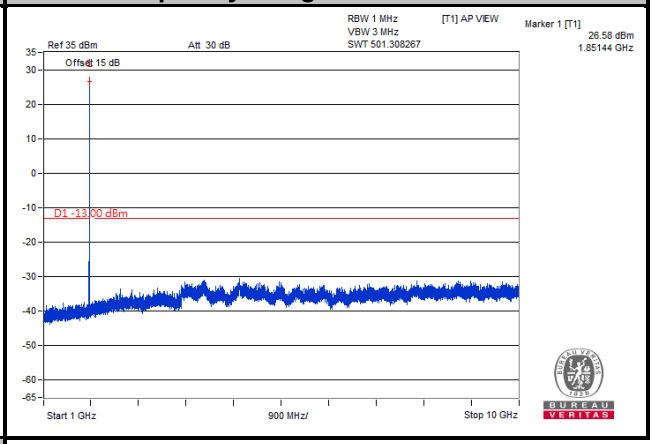
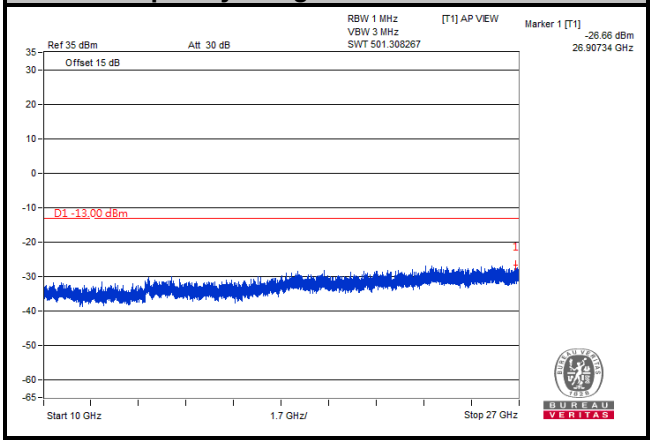
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 15 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

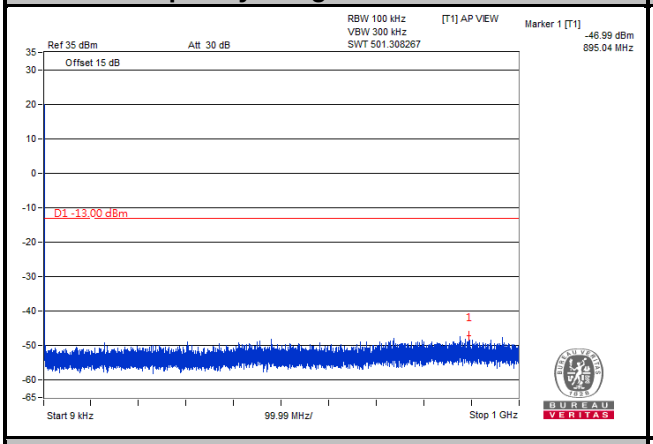
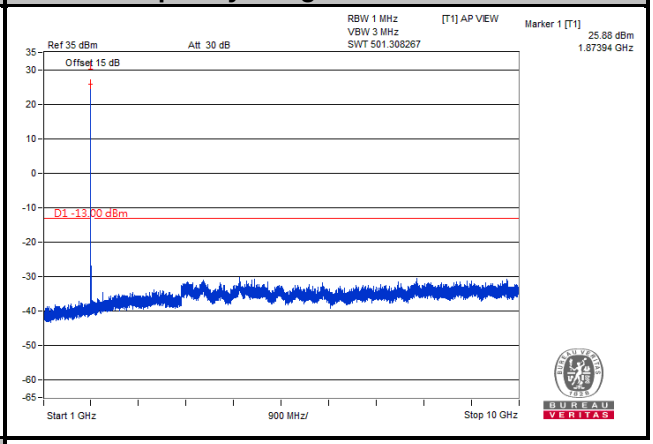
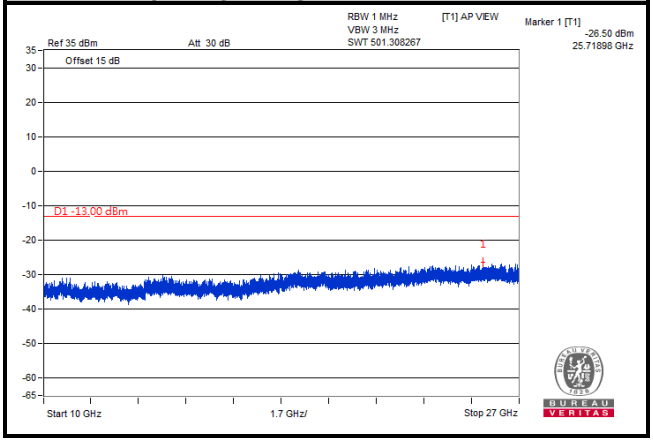
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 15 MHz	
Channel 26615	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

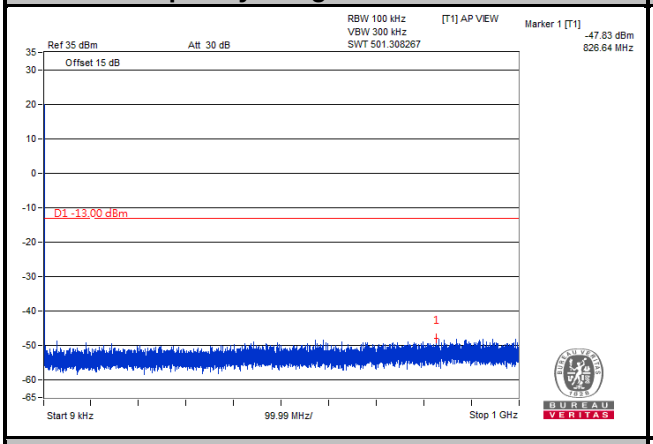
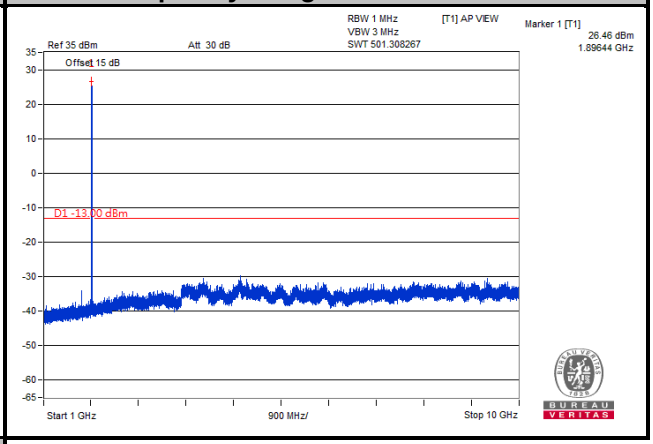
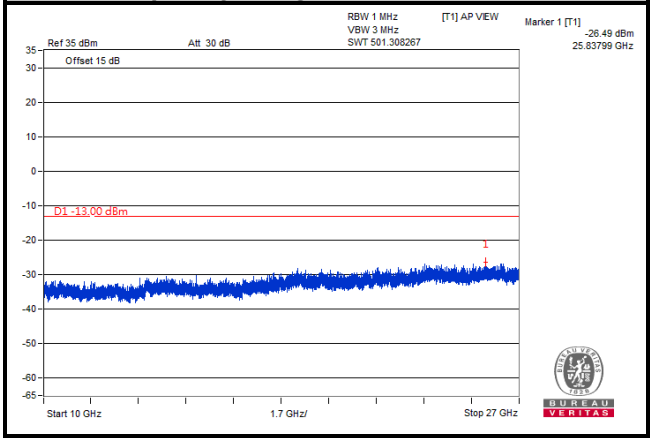
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 25	
Channel Bandwidth: 20 MHz	
Channel 26140	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

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

LTE Band 25	
Channel Bandwidth: 20 MHz	
Channel 26365	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 GHz	
	

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

LTE Band 25	
Channel Bandwidth: 20 MHz	
Channel 26590	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 10 GHz
	
Frequency Range: 10 GHz ~ 27 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. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G.
c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
d. 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.

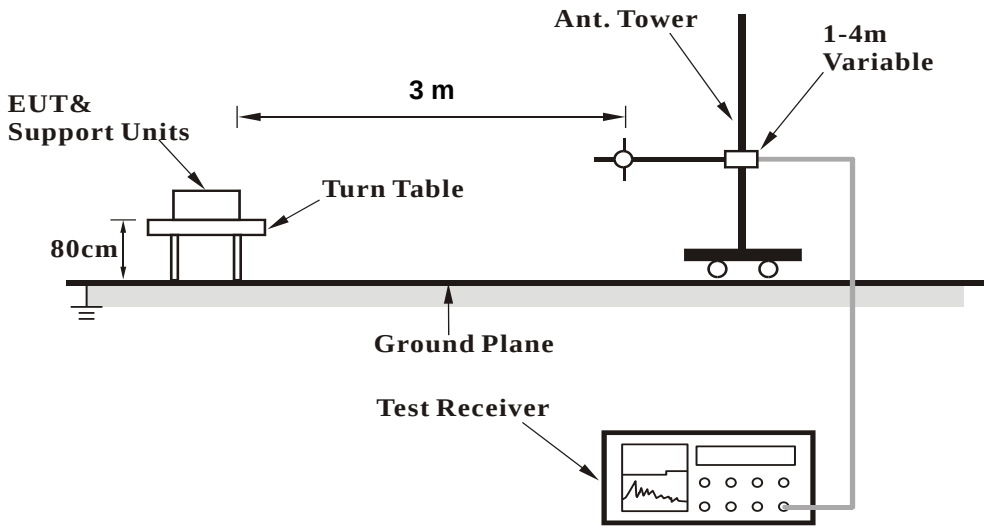
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

4.8.3 Deviation from Test Standard

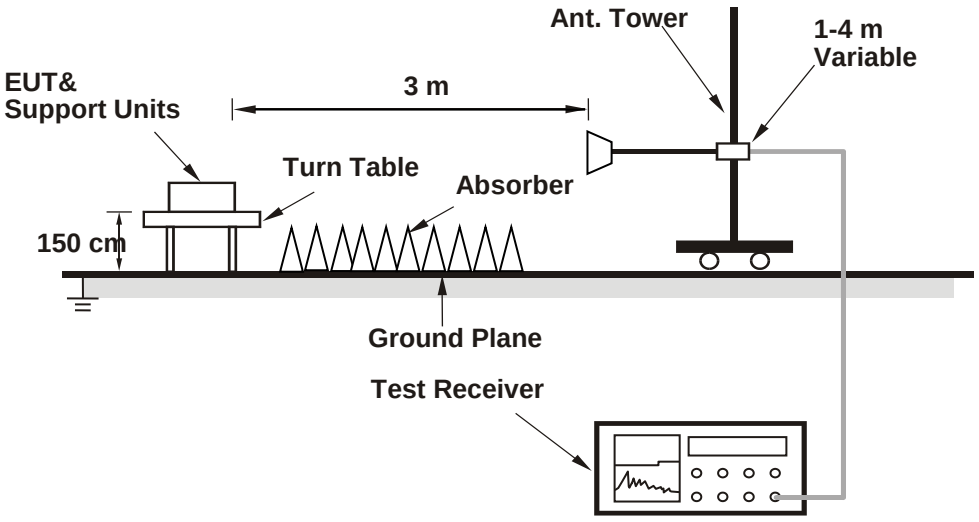
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>

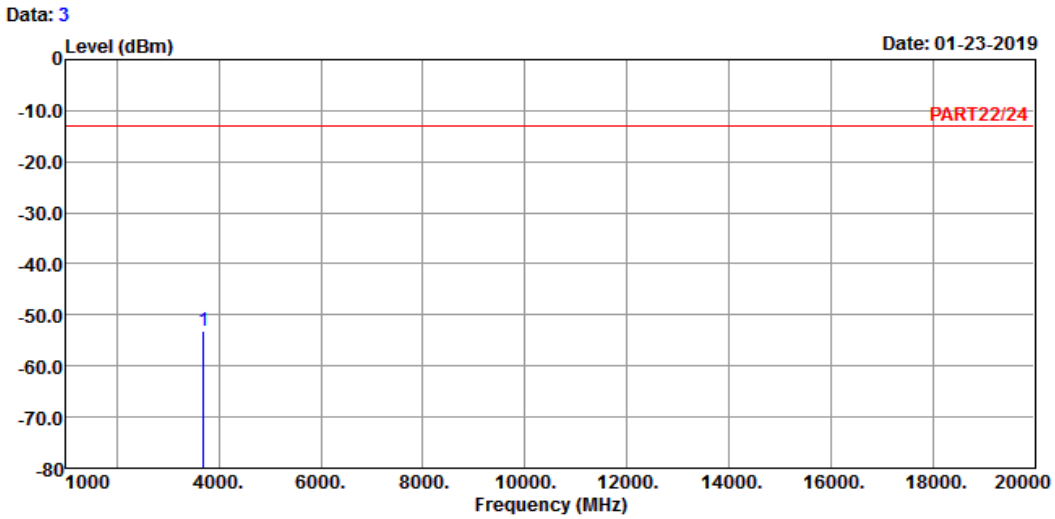


For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

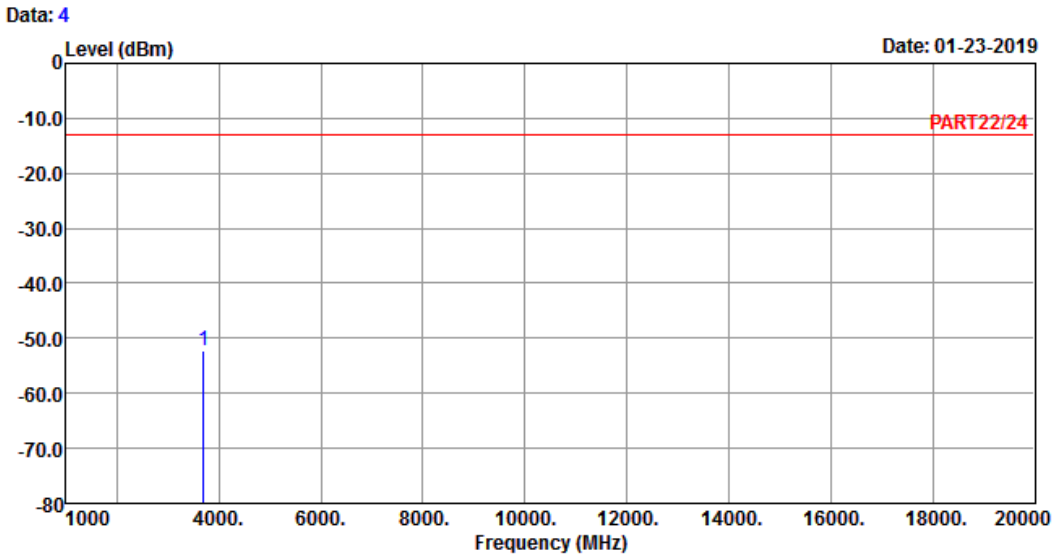
GSM:

Low Channel



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 1900 Link_L-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3700.40	-52.99	-44.82	-13.00	-39.99	-8.17	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 1900 Link_L-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3700.40	-52.23	-44.06	-13.00	-39.23	-8.17	Peak

Middle Channel

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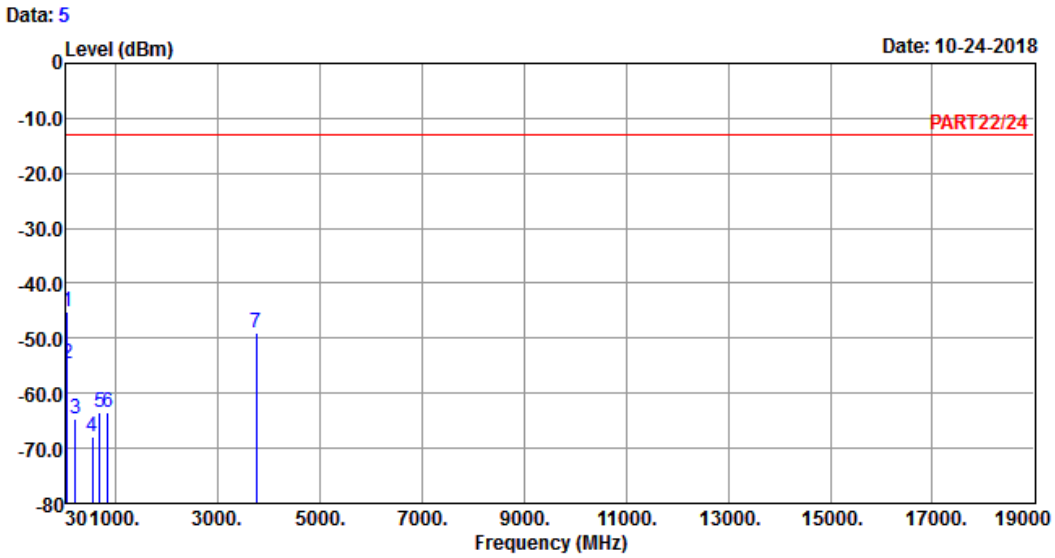
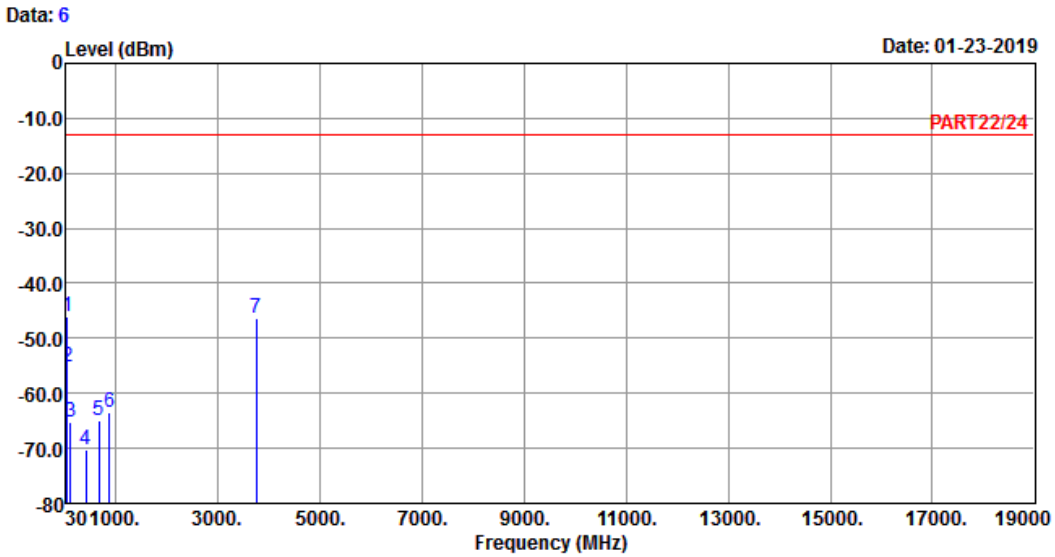


Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 1900 Link_M-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-45.29	-43.82	-13.00	-32.29	-1.47	Peak
2	52.31	-54.56	-49.02	-13.00	-41.56	-5.54	Peak
3	216.24	-64.68	-57.32	-13.00	-51.68	-7.36	Peak
4	541.19	-68.03	-64.87	-13.00	-55.03	-3.16	Peak
5	682.81	-63.60	-63.23	-13.00	-50.60	-0.37	Peak
6	838.98	-63.38	-63.77	-13.00	-50.38	0.39	Peak
7	3760.00	-48.95	-40.89	-13.00	-35.95	-8.06	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 1900 Link_M-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	44.55	-46.10	-44.11	-13.00	-33.10	-1.99	Peak
2	52.31	-55.10	-49.56	-13.00	-42.10	-5.54	Peak
3	112.45	-65.14	-54.94	-13.00	-52.14	-10.20	Peak
4	413.15	-70.34	-64.50	-13.00	-57.34	-5.84	Peak
5	676.99	-64.80	-64.34	-13.00	-51.80	-0.46	Peak
6	883.60	-63.37	-63.85	-13.00	-50.37	0.48	Peak
7	3760.00	-46.25	-38.19	-13.00	-33.25	-8.06	Peak

High Channel

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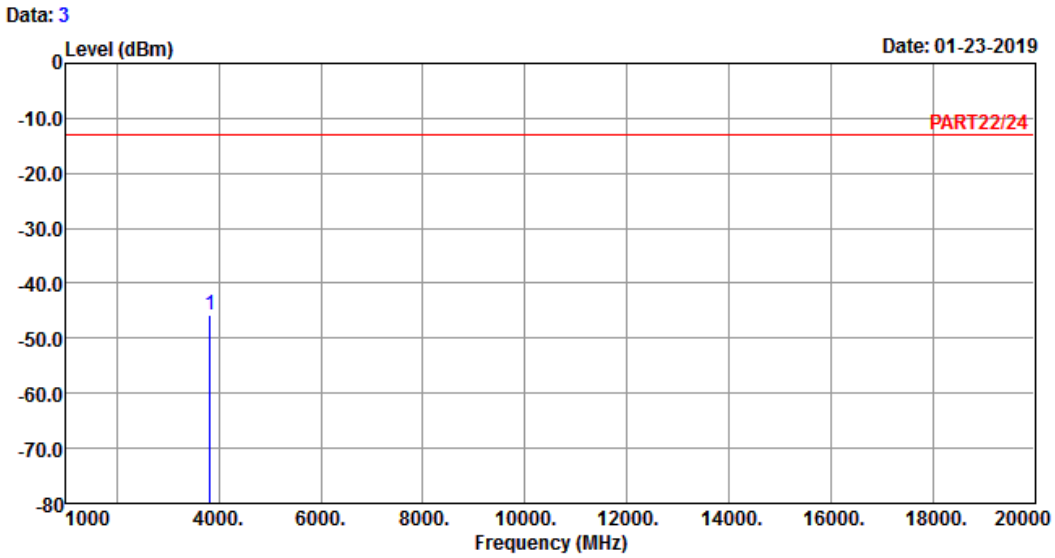
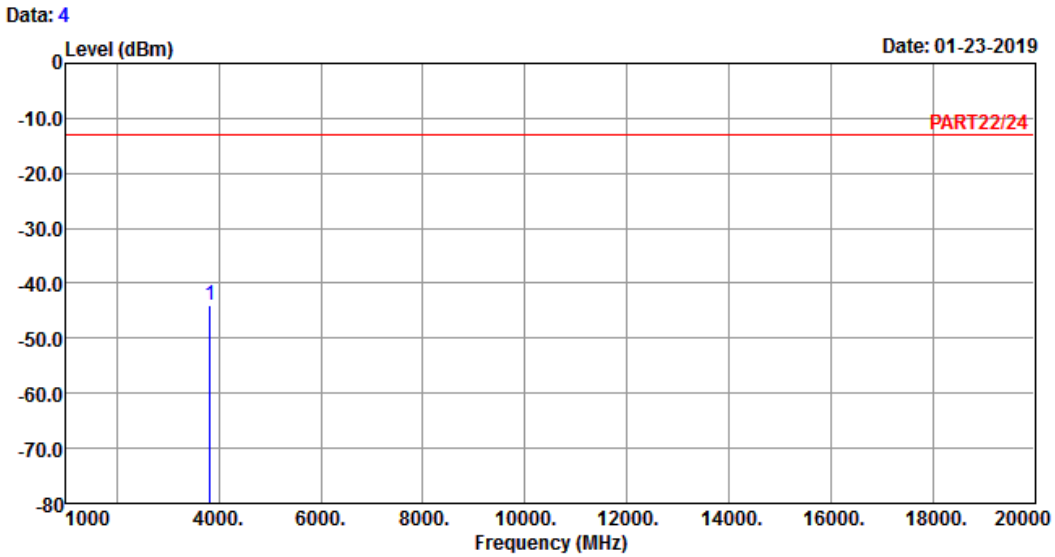


Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 1900 Link_H-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3819.60	-45.62	-37.94	-13.00	-32.62	-7.68	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 1900 Link_H-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3819.60	-43.99	-36.31	-13.00	-30.99	-7.68	Peak

EDGE:

Low Channel

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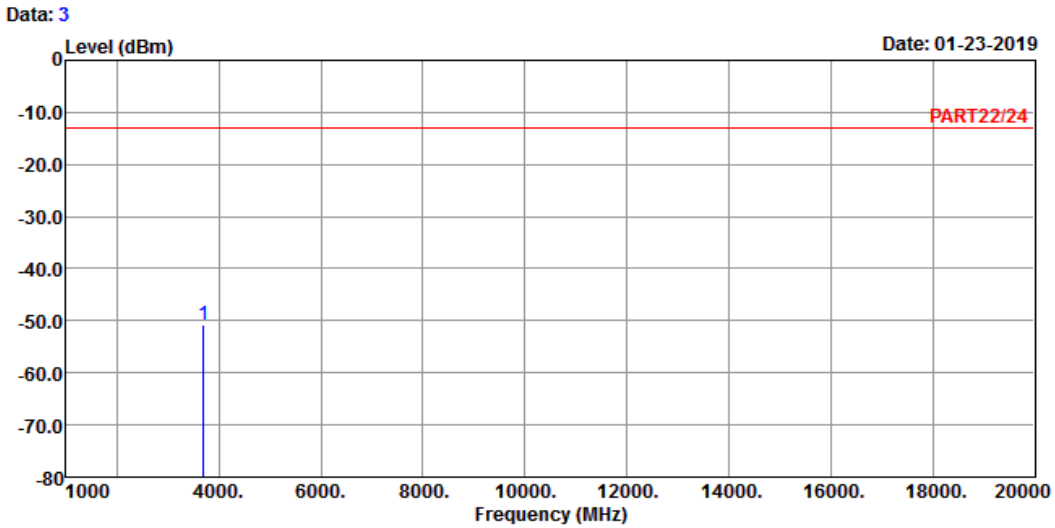
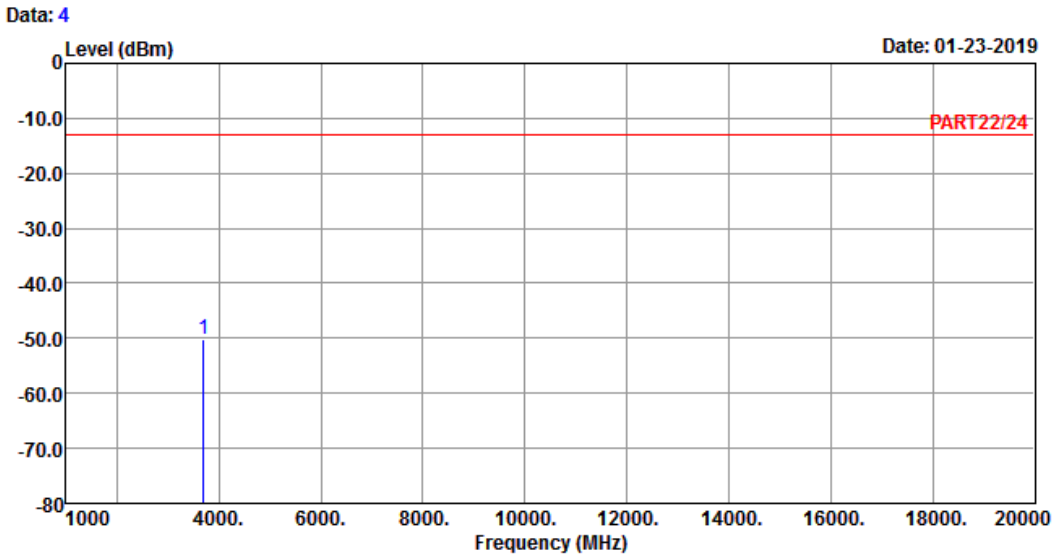



```
Site      : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark    : EDGE 1900 Link_L-CH
Tested by: Jisyong Wang
```

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3700.40	-50.85	-42.68	-13.00	-37.85	-8.17	Peak

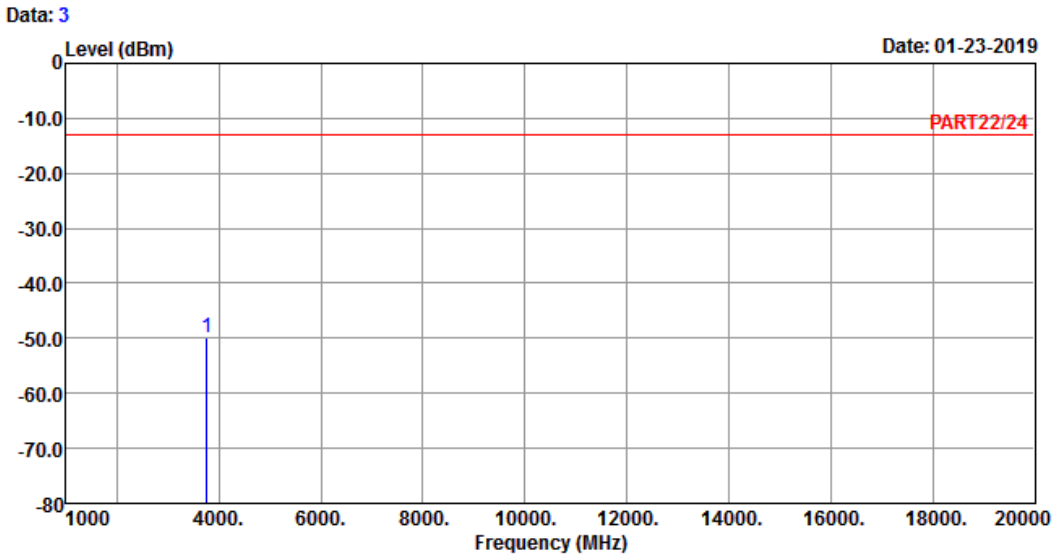


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 1900 Link_L-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3700.40	-50.23	-42.06	-13.00	-37.23	-8.17	Peak

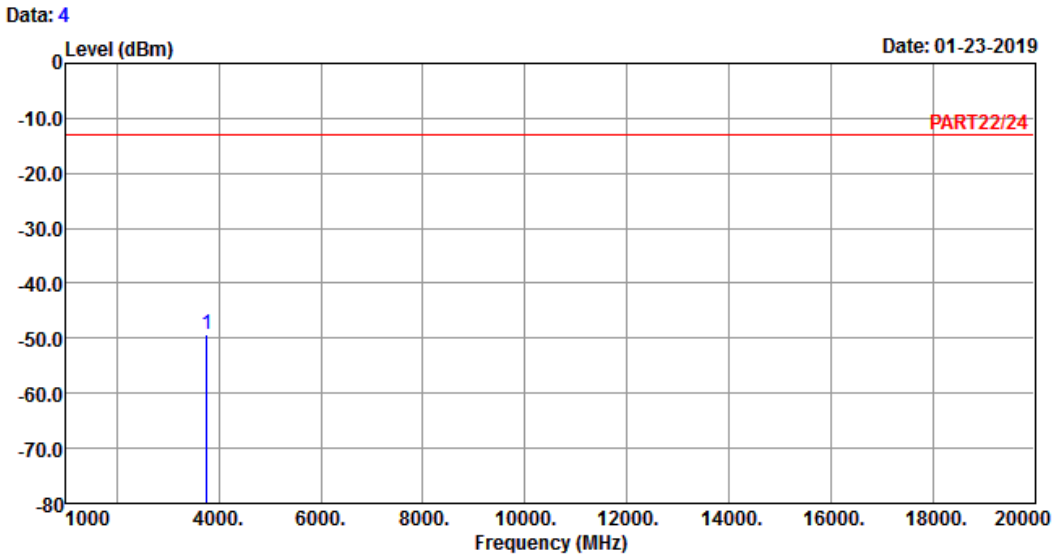
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : EDGE 1900 Link_M-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-49.85	-41.79	-13.00	-36.85	-8.06	Peak

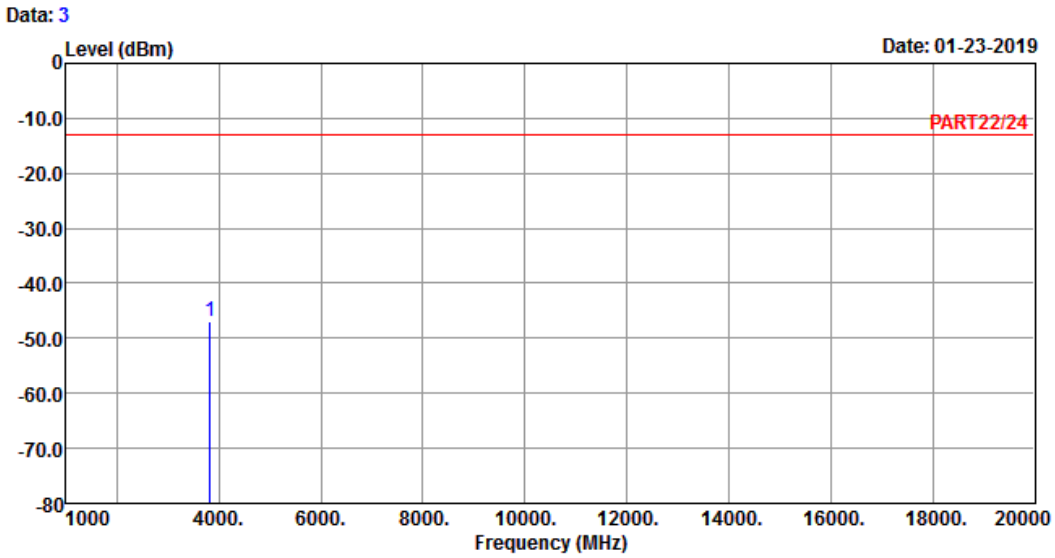


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 1900 Link_M-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-49.25	-41.19	-13.00	-36.25	-8.06	Peak

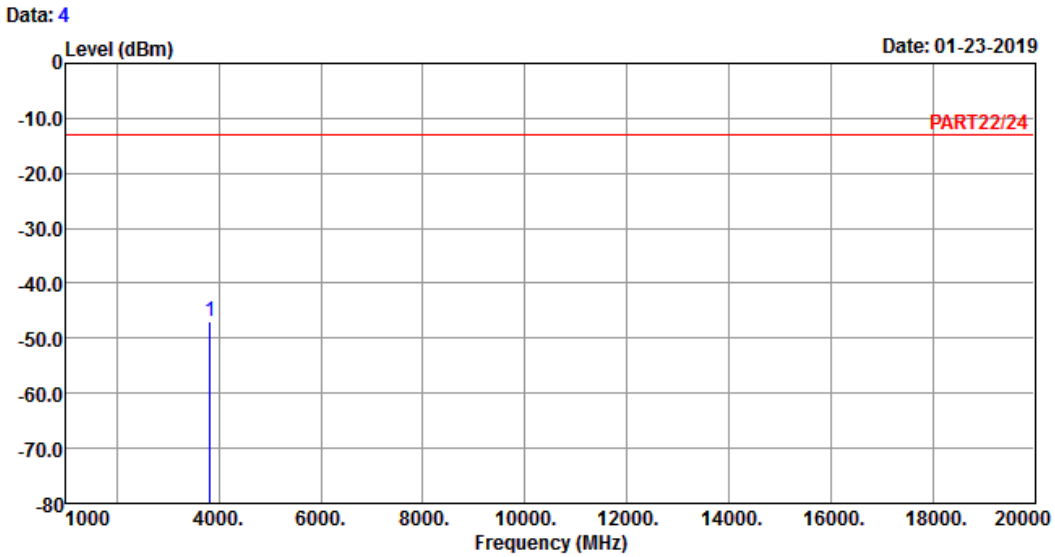
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : EDGE 1900 Link_H-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3819.60	-46.85	-39.17	-13.00	-33.85	-7.68	Peak

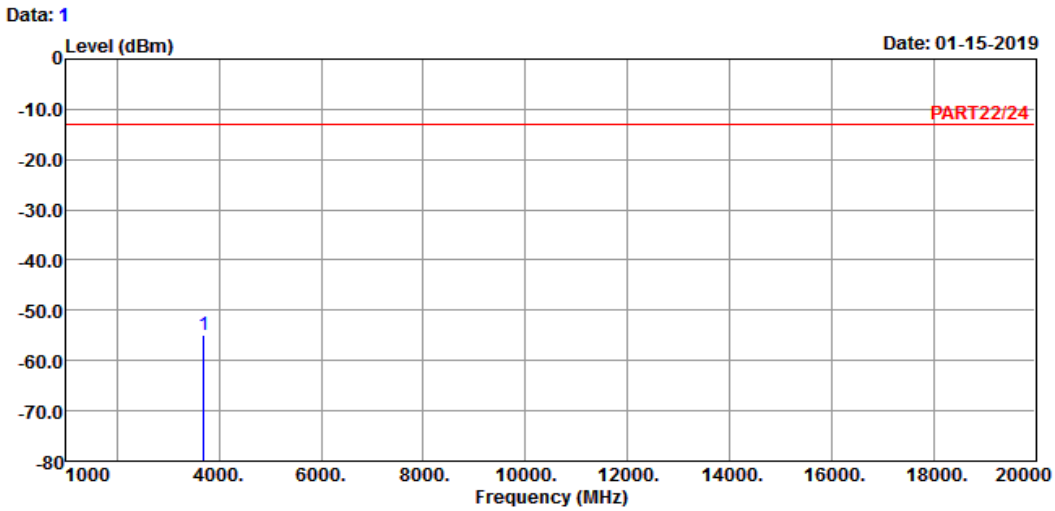


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 1900 Link_H-CH
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3819.60	-46.92	-39.24	-13.00	-33.92	-7.68	Peak

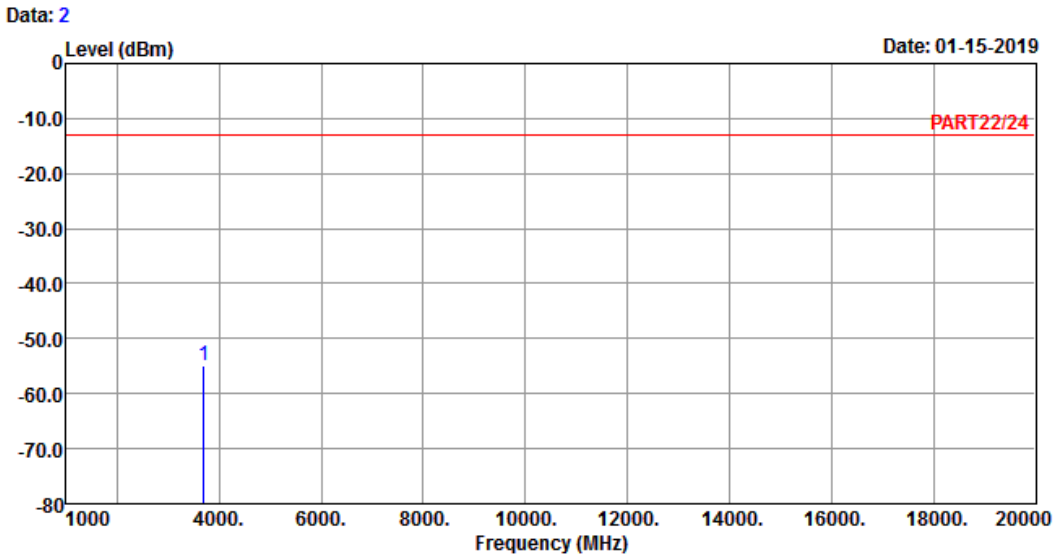
LTE Band 2
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3701.40	-54.91	-47.98	-13.00	-41.91	-6.93	Peak

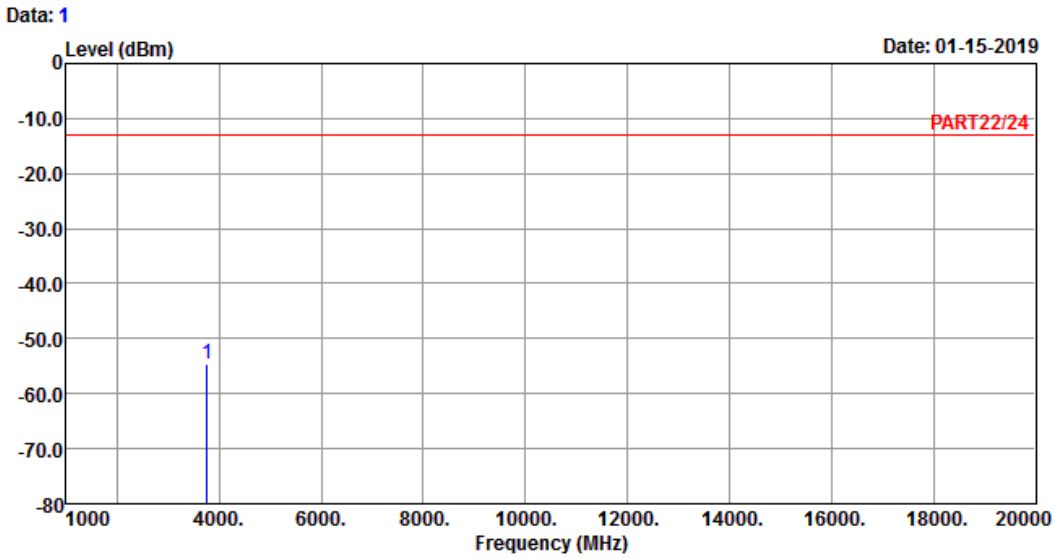


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3701.40	-54.90	-47.97	-13.00	-41.90	-6.93	Peak

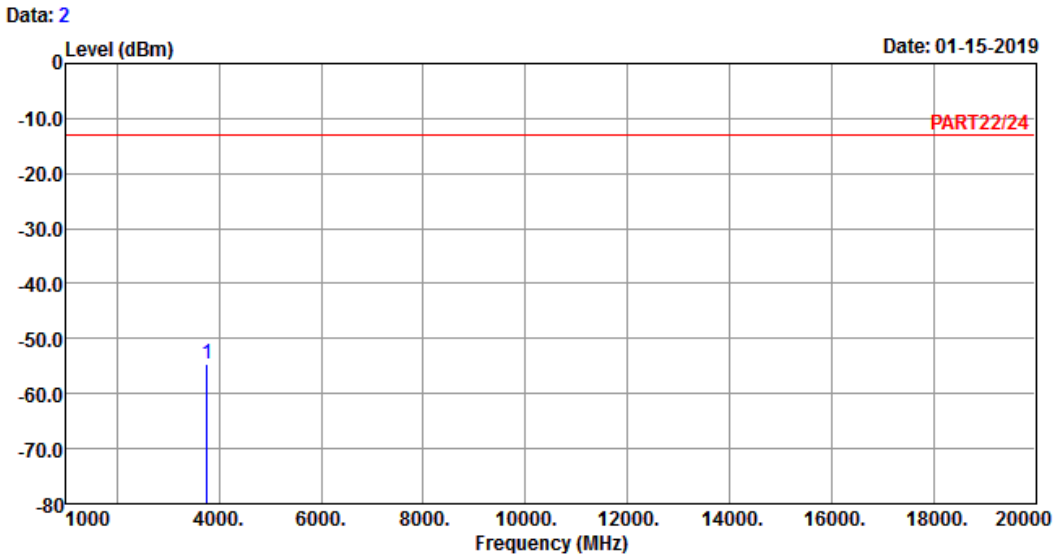
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-54.47	-47.82	-13.00	-41.47	-6.65	Peak

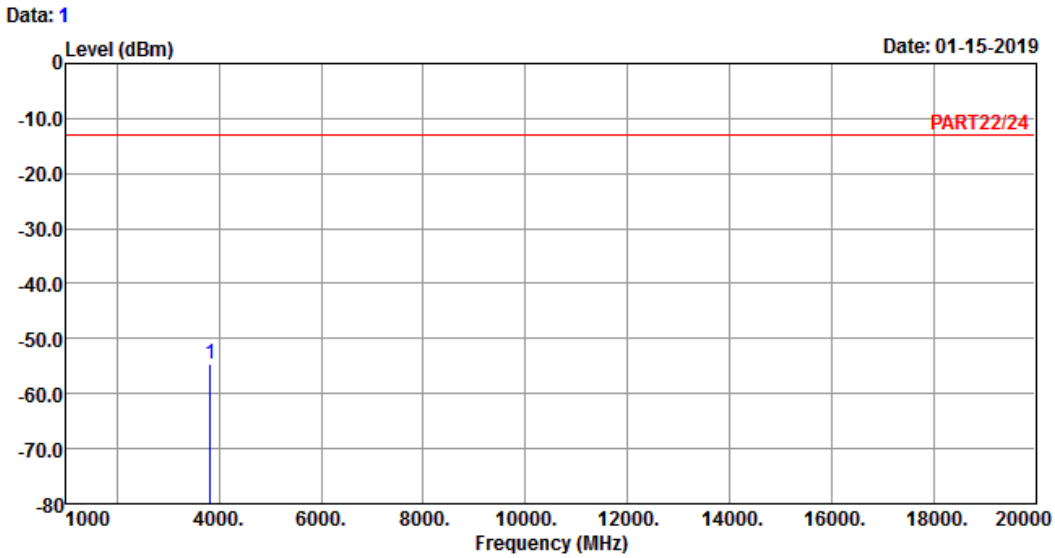


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-54.65	-48.00	-13.00	-41.65	-6.65	Peak

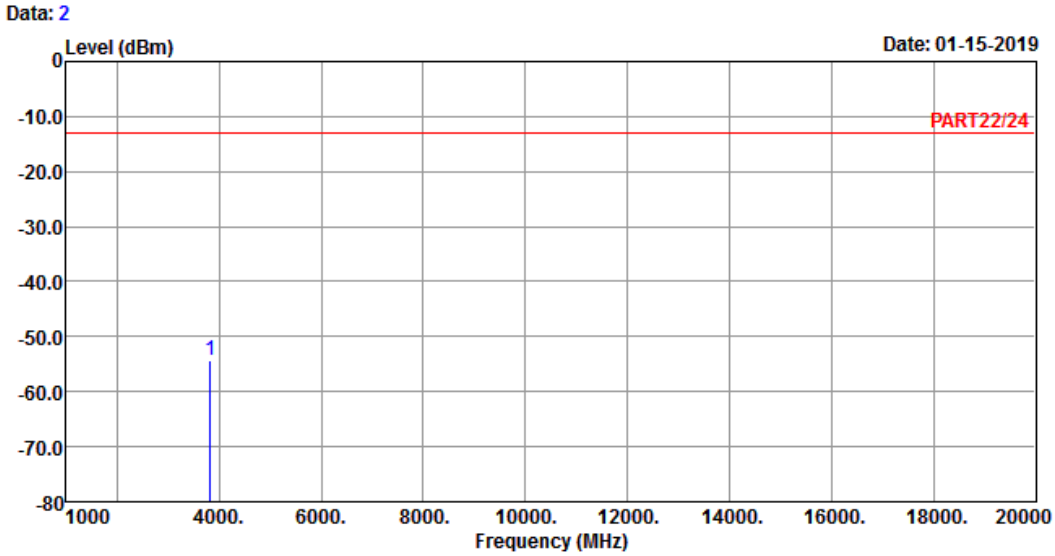
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3818.60	-54.53	-48.13	-13.00	-41.53	-6.40	Peak

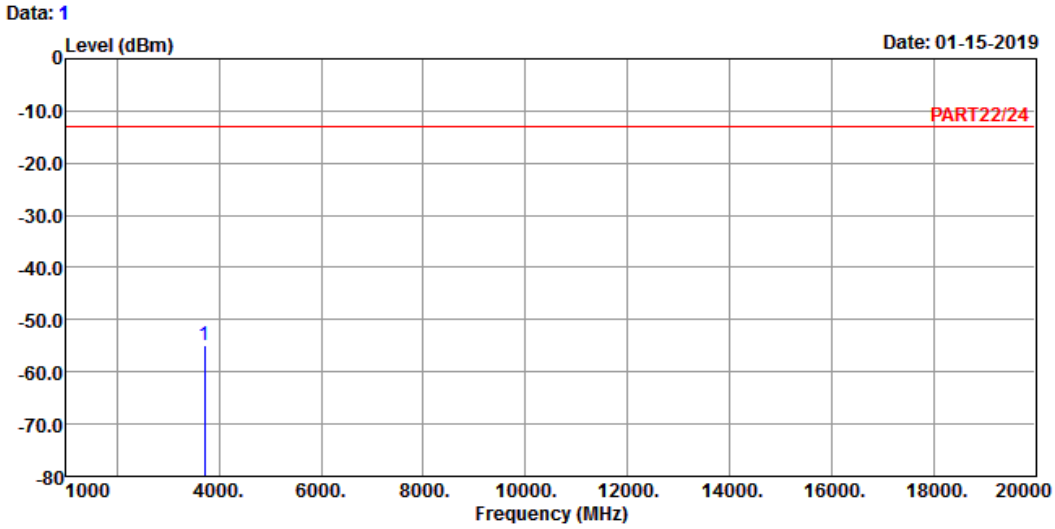


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3818.60	-54.42	-48.02	-13.00	-41.42	-6.40	Peak

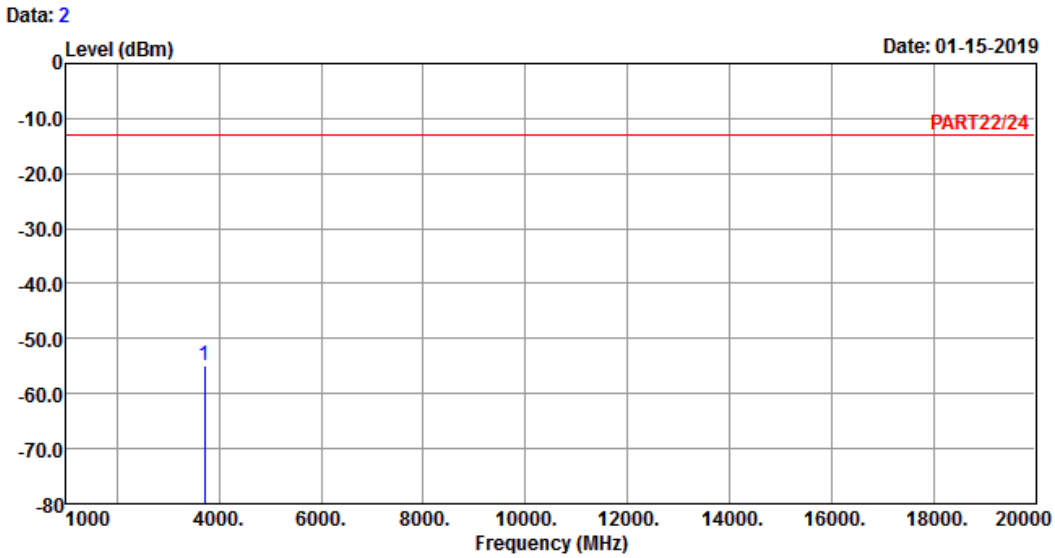
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3705.00	-54.83	-47.90	-13.00	-41.83	-6.93	Peak

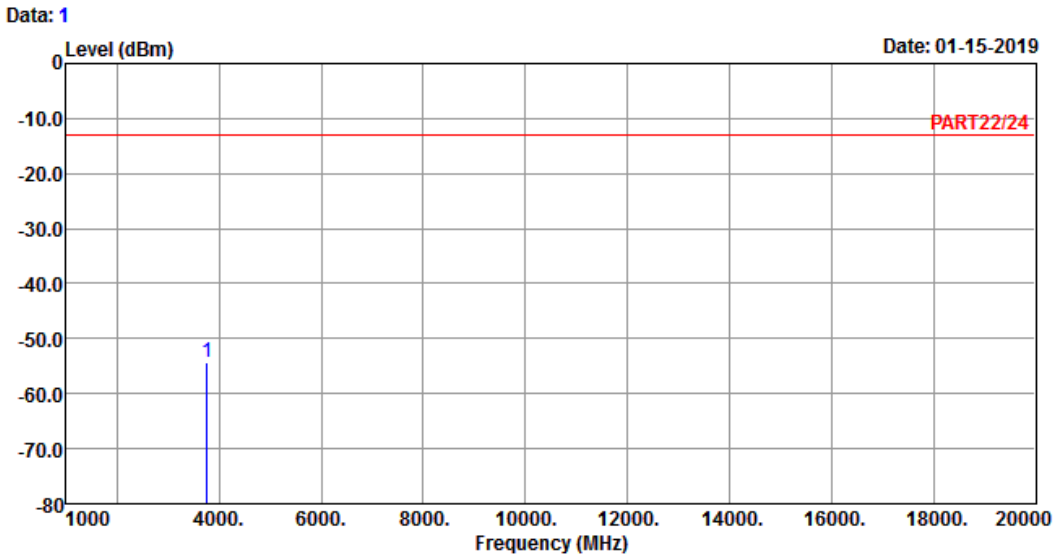


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3705.00	-54.99	-48.06	-13.00	-41.99	-6.93	Peak

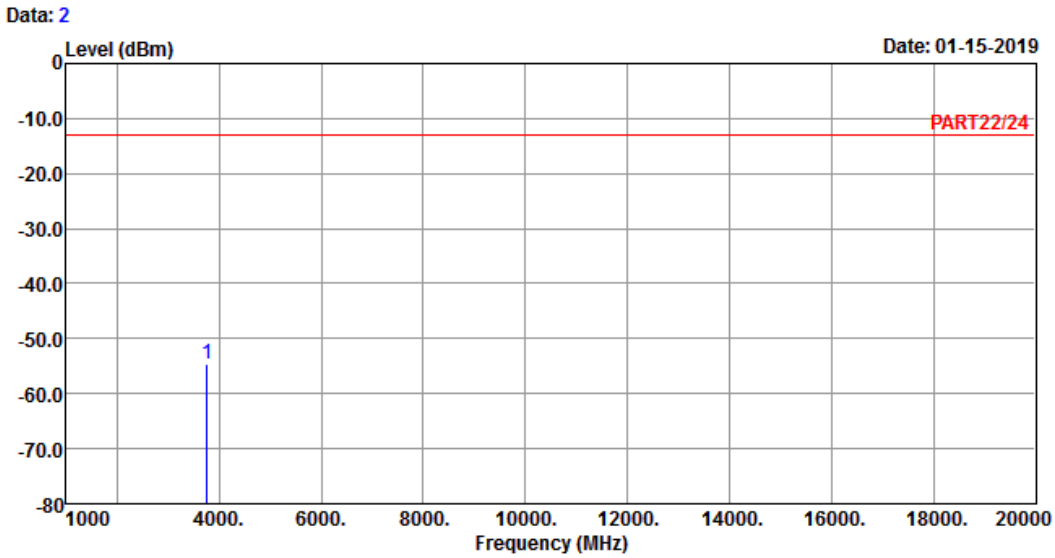
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-54.38	-47.73	-13.00	-41.38	-6.65	Peak

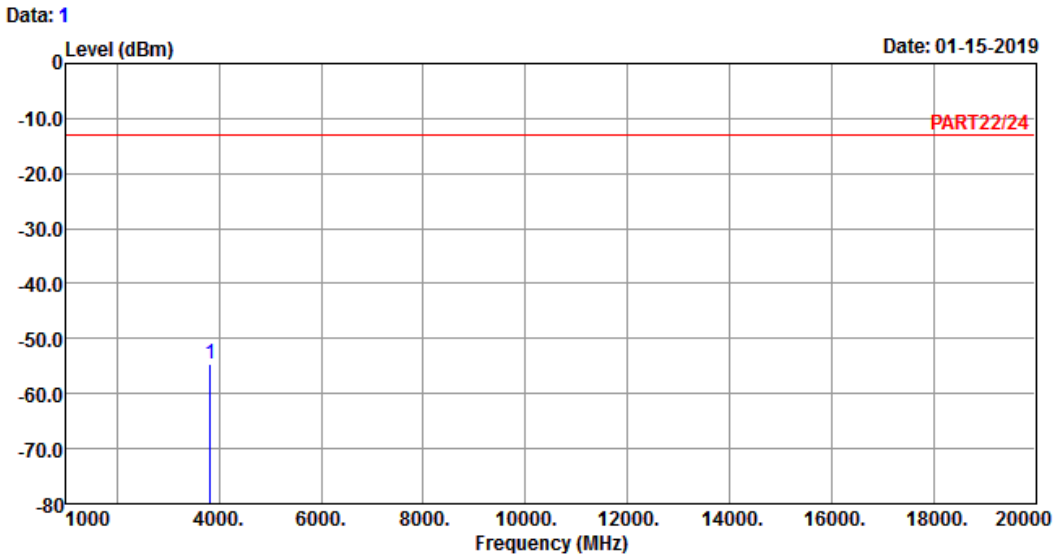


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3760.00	-54.49	-47.84	-13.00	-41.49	-6.65	Peak

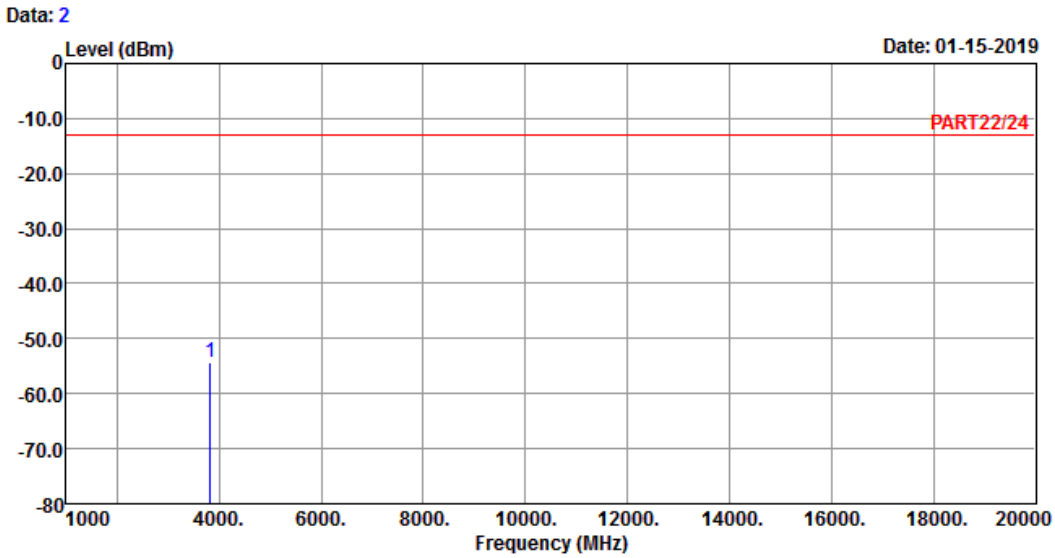
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3815.00	-54.49	-48.09	-13.00	-41.49	-6.40	Peak

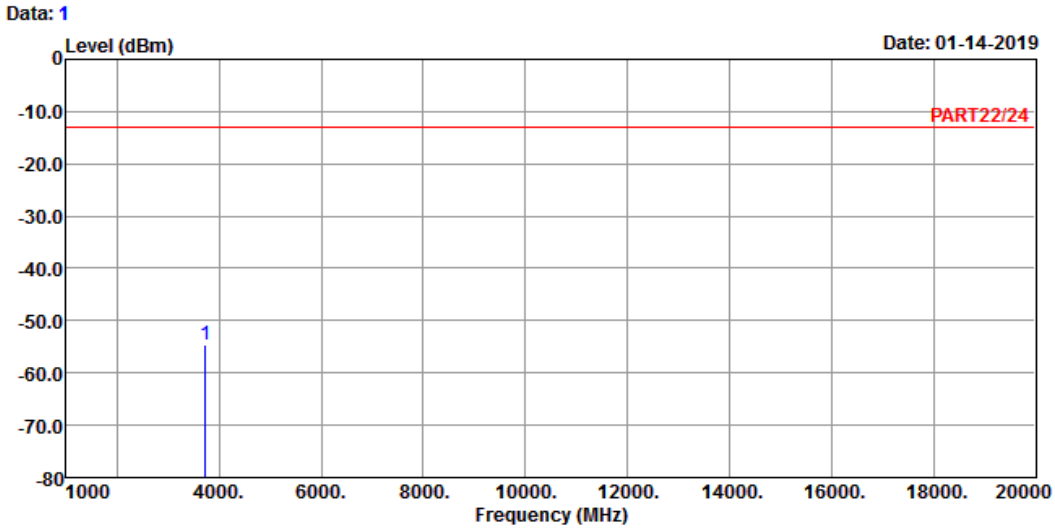


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_5M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3815.00	-54.31	-47.91	-13.00	-41.31	-6.40	Peak

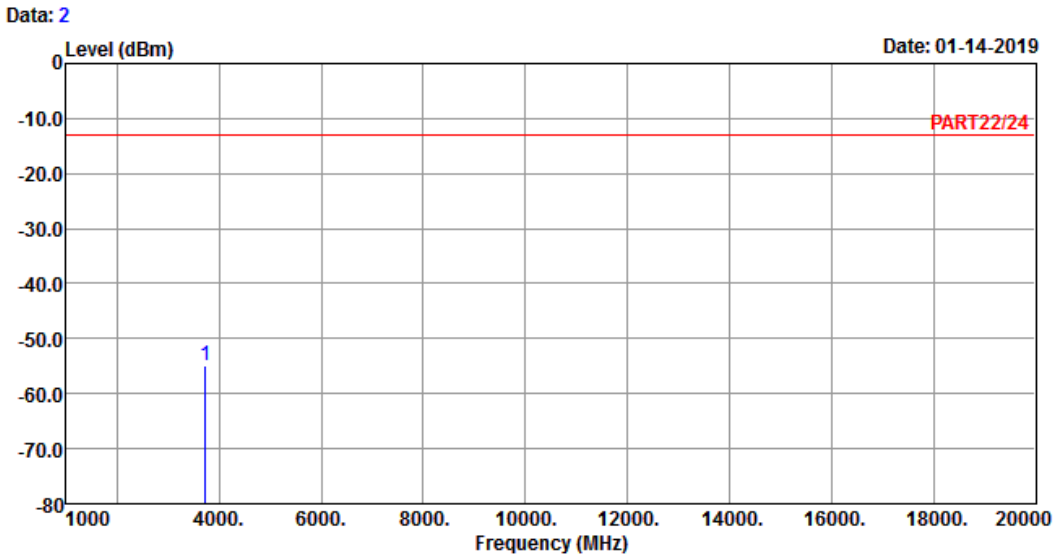
Channel Bandwidth: 20 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3720.00	-54.64	-47.82	-13.00	-41.64	-6.82	Peak

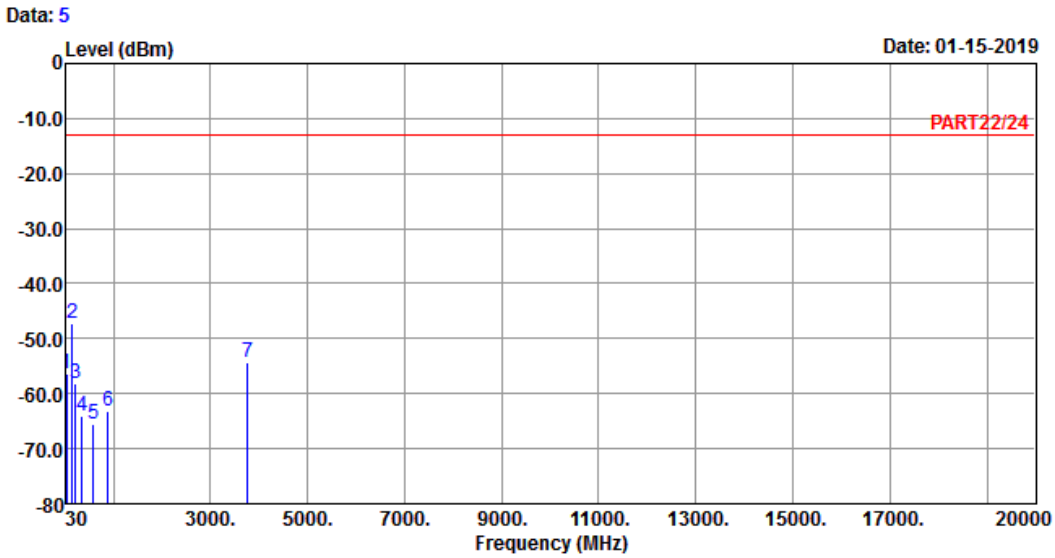


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3720.00	-54.82	-48.00	-13.00	-41.82	-6.82	Peak

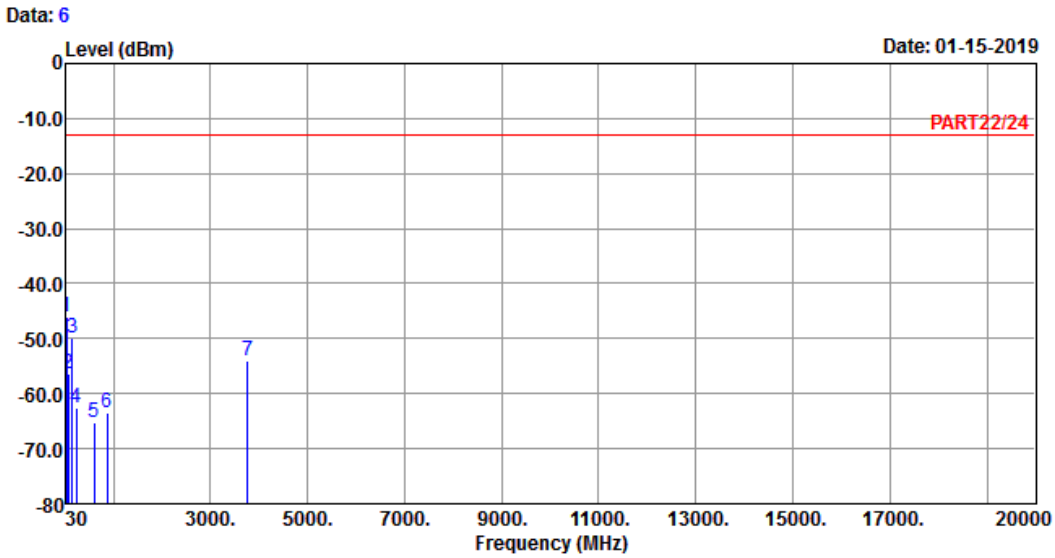
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	42.61	-56.36	-55.42	-13.00	-43.36	-0.94	Peak
2 pp	148.34	-47.26	-39.49	-13.00	-34.26	-7.77	Peak
3	213.33	-58.12	-50.65	-13.00	-45.12	-7.47	Peak
4	345.25	-64.07	-57.76	-13.00	-51.07	-6.31	Peak
5	586.78	-65.65	-64.33	-13.00	-52.65	-1.32	Peak
6	888.45	-63.17	-63.68	-13.00	-50.17	0.51	Peak
7	3760.00	-54.20	-47.55	-13.00	-41.20	-6.65	Peak

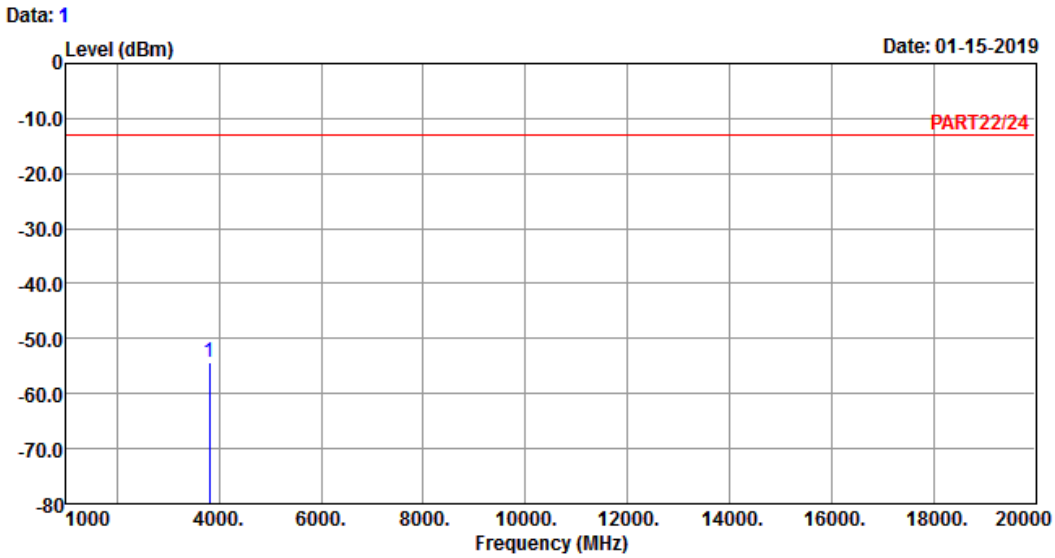


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	42.61	-46.19	-45.25	-13.00	-33.19	-0.94	Peak
2	68.80	-56.50	-48.18	-13.00	-43.50	-8.32	Peak
3	145.43	-49.94	-41.87	-13.00	-36.94	-8.07	Peak
4	227.88	-62.60	-55.71	-13.00	-49.60	-6.89	Peak
5	609.09	-65.38	-64.60	-13.00	-52.38	-0.78	Peak
6	877.78	-63.45	-63.90	-13.00	-50.45	0.45	Peak
7	3760.00	-54.06	-47.41	-13.00	-41.06	-6.65	Peak

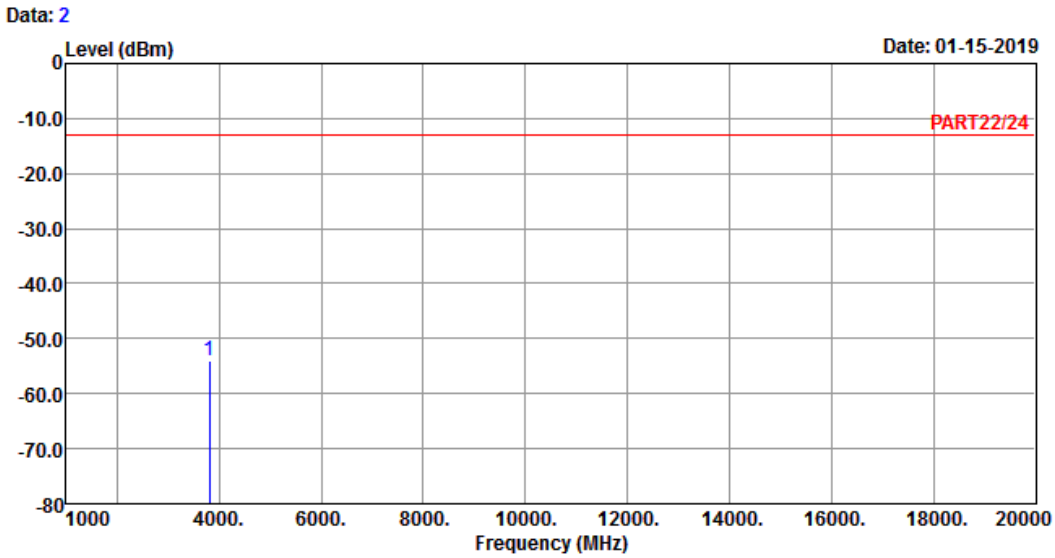
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_20M Link_H-CH
Tested by: Thomas Wei

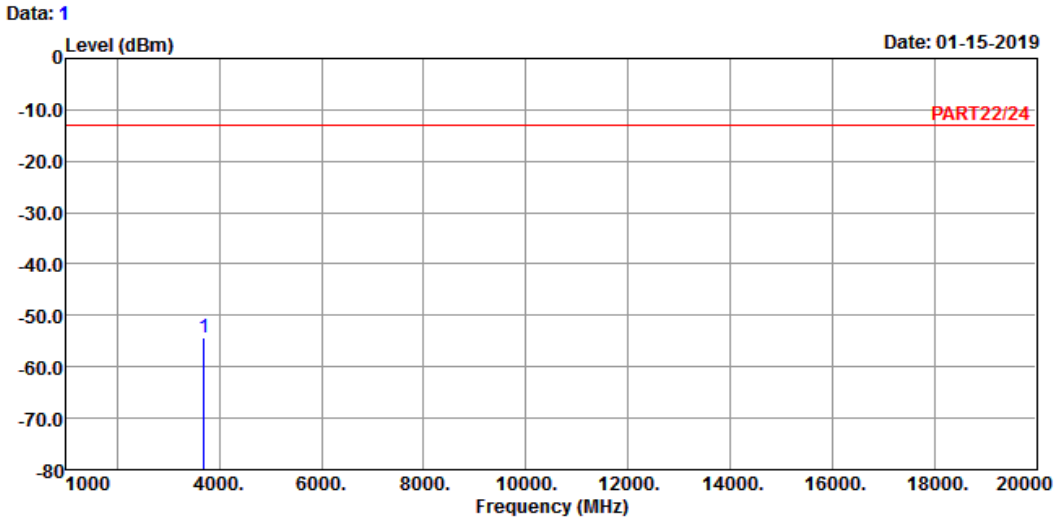
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3800.00	-54.43	-48.00	-13.00	-41.43	-6.43	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_20M Link_H-CH
Tested by: Thomas Wei

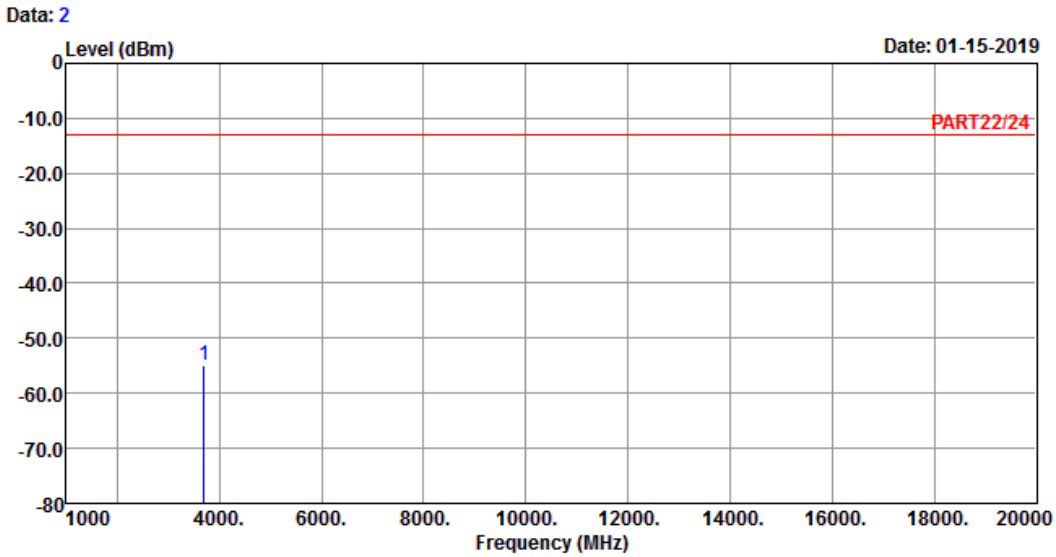
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3800.00	-54.09	-47.66	-13.00	-41.09	-6.43	Peak

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



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3701.40	-54.38	-47.45	-13.00	-41.38	-6.93	Peak

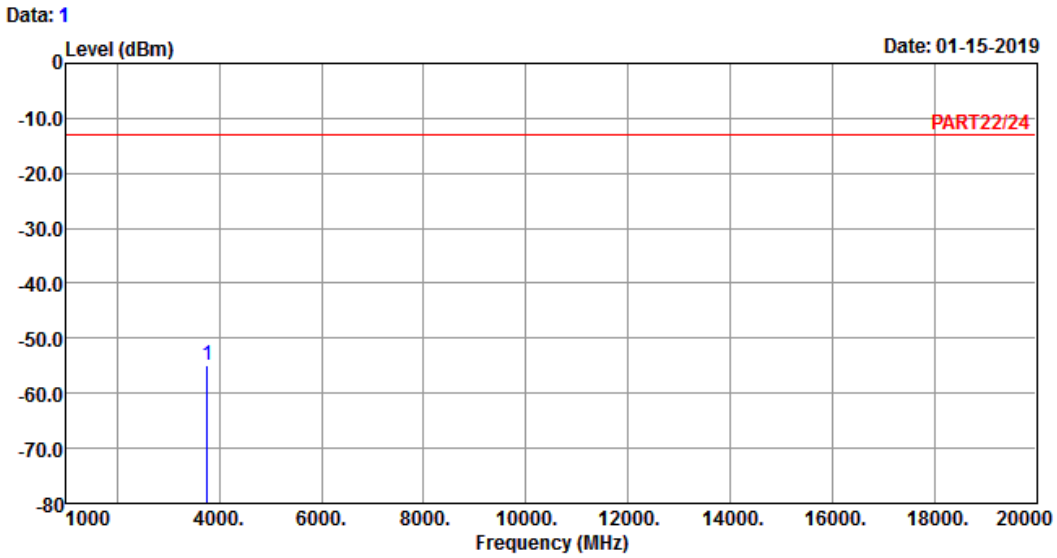


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3701.40	-54.78	-47.85	-13.00	-41.78	-6.93	Peak

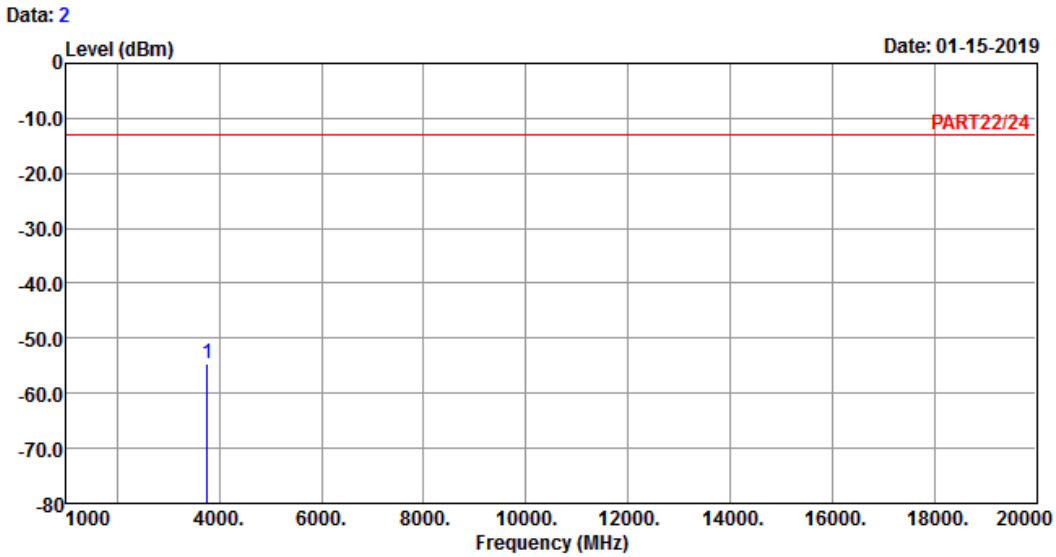
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.94	-48.34	-13.00	-41.94	-6.60	Peak

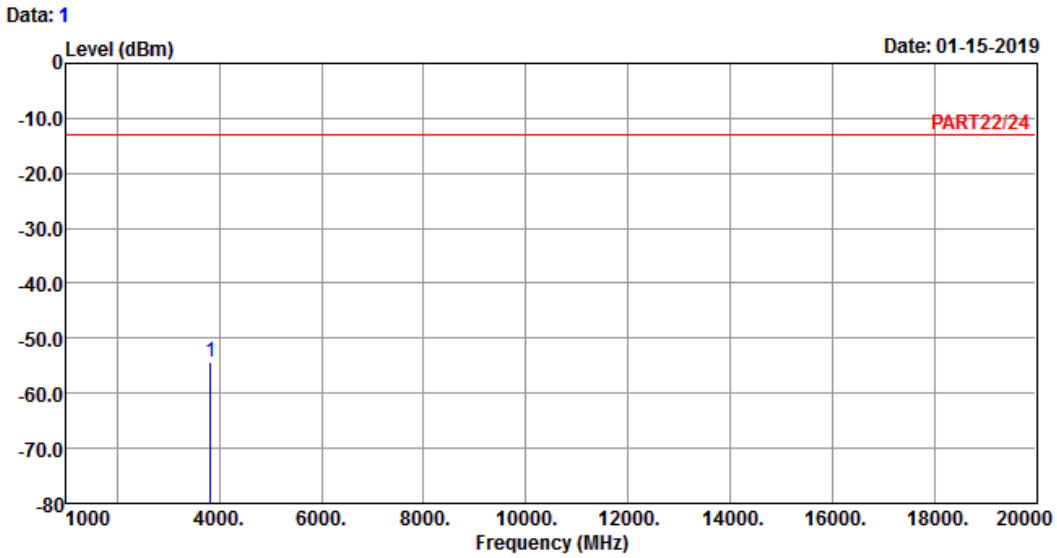


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.74	-48.14	-13.00	-41.74	-6.60	Peak

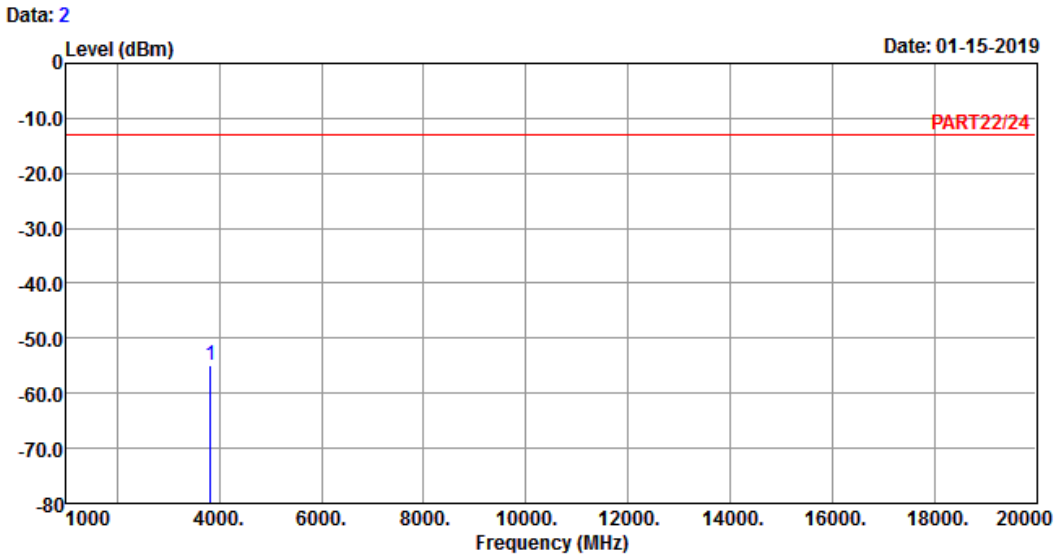
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3828.60	-54.45	-48.08	-13.00	-41.45	-6.37	Peak

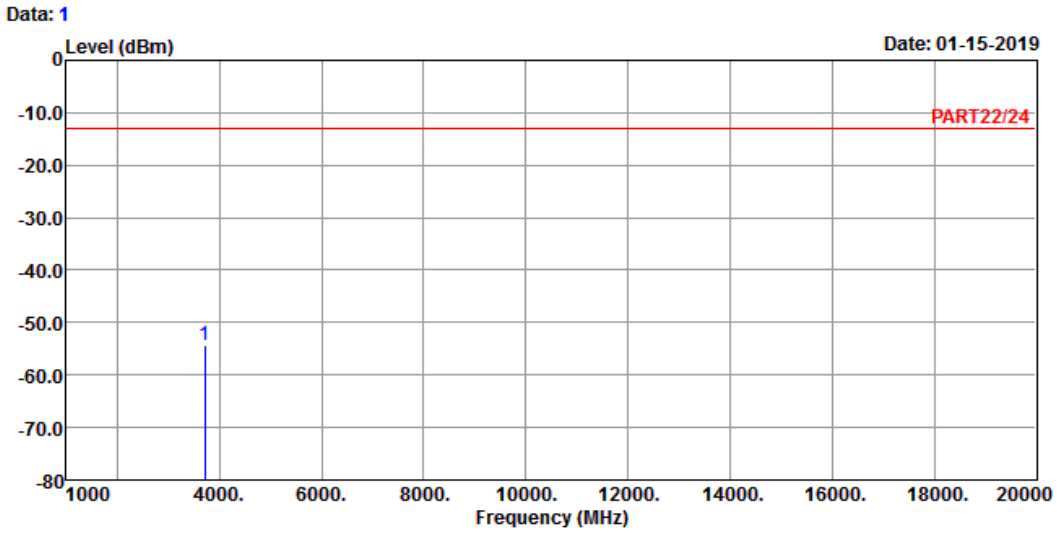


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3828.60	-54.87	-48.50	-13.00	-41.87	-6.37	Peak

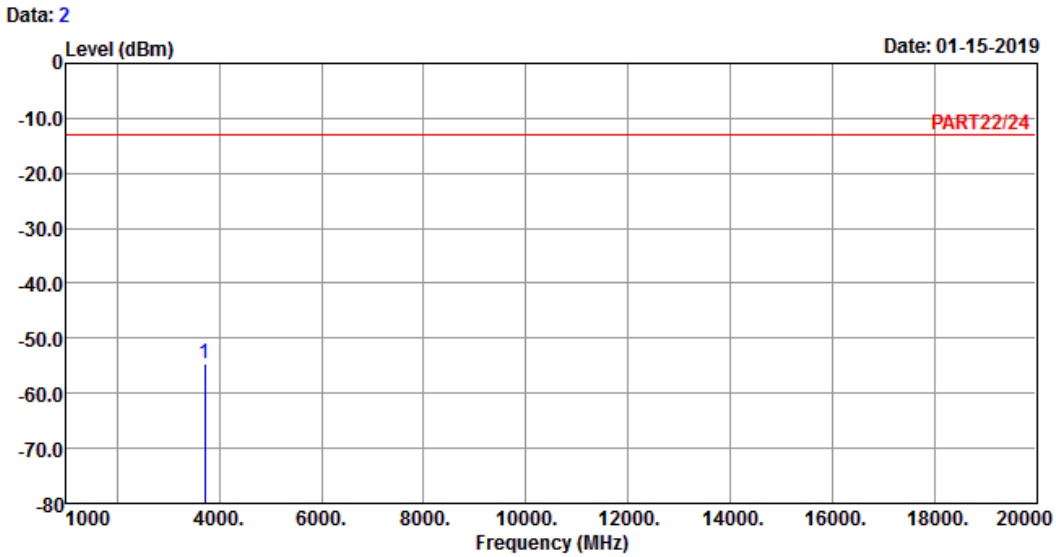
Channel Bandwidth: 5 MHz / QPSK
Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3705.00	-54.22	-47.29	-13.00	-41.22	-6.93	Peak

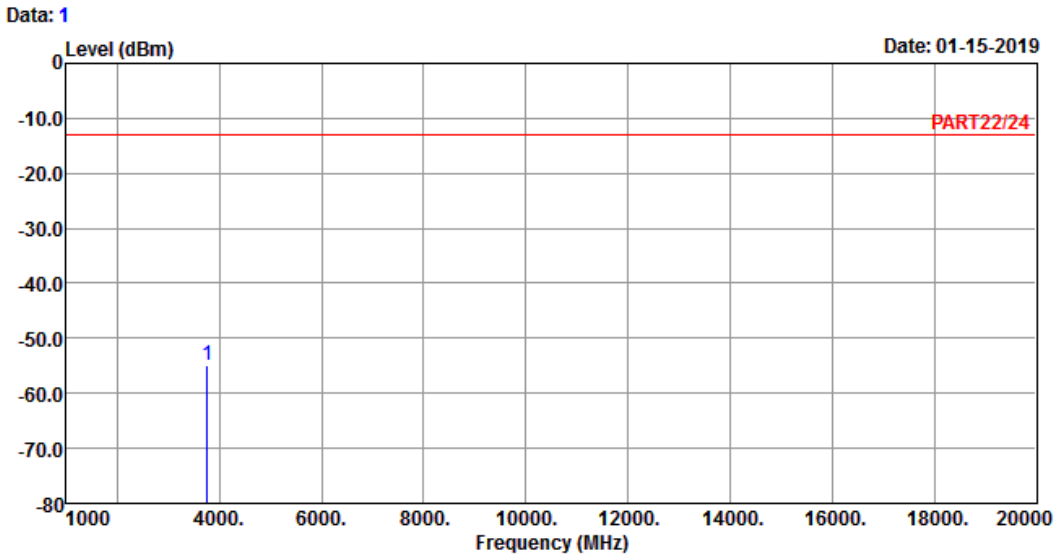


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_5M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3705.00	-54.62	-47.69	-13.00	-41.62	-6.93	Peak

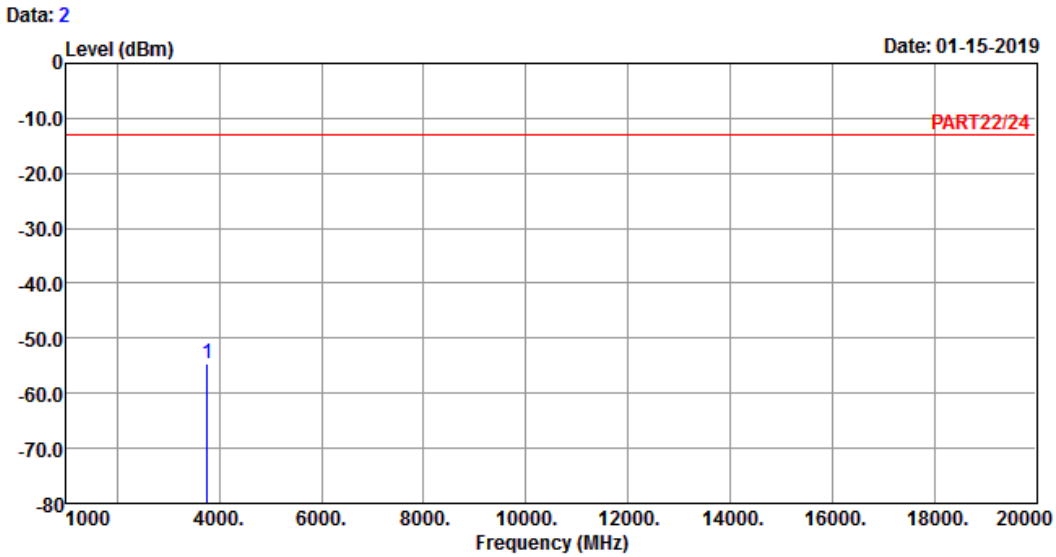
Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.83	-48.23	-13.00	-41.83	-6.60	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_5M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.71	-48.11	-13.00	-41.71	-6.60	Peak

High Channel

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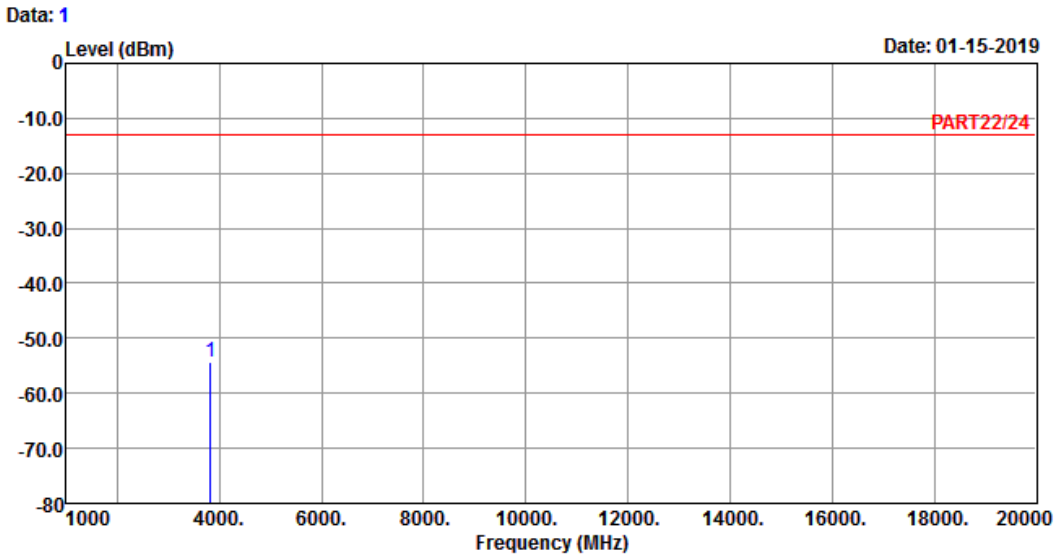
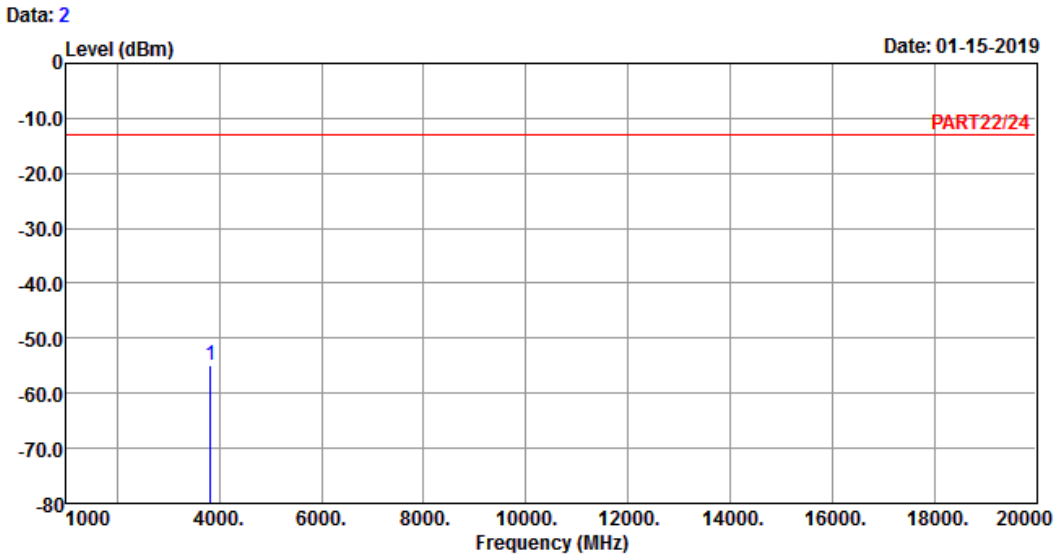


Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_5M Link_H-CH
Tested by: Thomas Wei

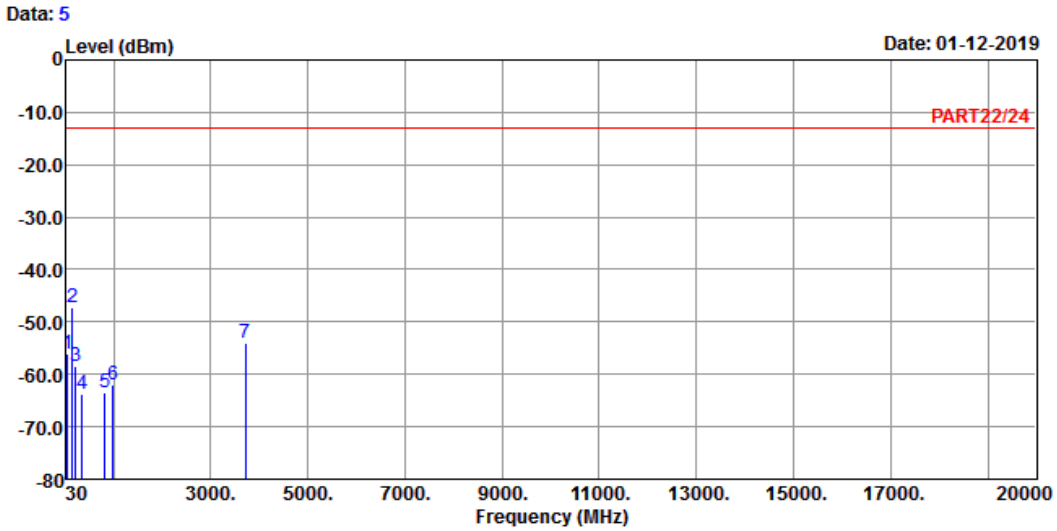
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3825.00	-54.23	-47.86	-13.00	-41.23	-6.37	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_5M Link_H-CH
Tested by: Thomas Wei

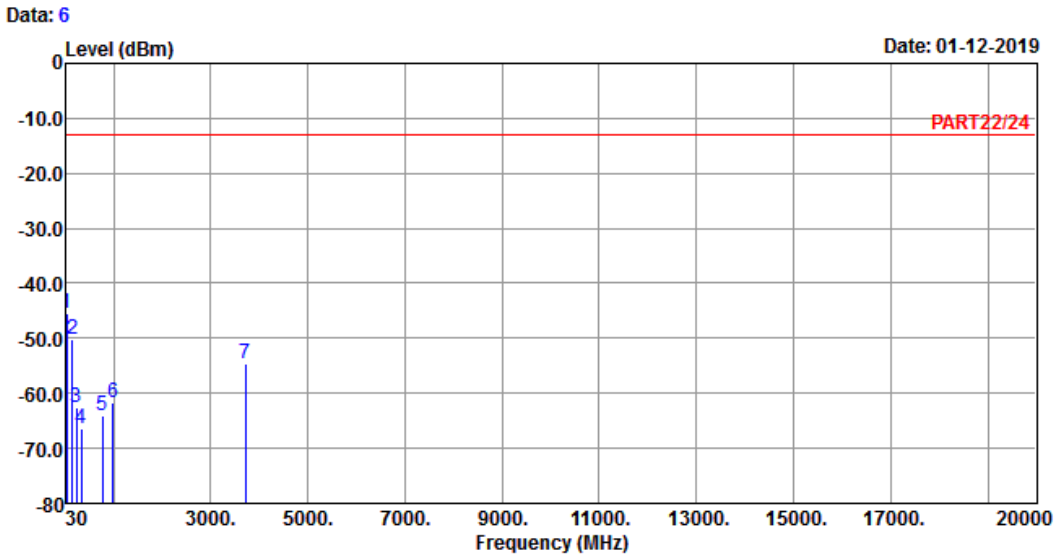
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3825.00	-54.78	-48.41	-13.00	-41.78	-6.37	Peak

Channel Bandwidth: 20 MHz / QPSK
Low Channel



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 2 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	43.58	-56.14	-54.67	-13.00	-43.14	-1.47	Peak
2 pp	148.34	-47.27	-39.50	-13.00	-34.27	-7.77	Peak
3	212.36	-58.33	-50.82	-13.00	-45.33	-7.51	Peak
4	345.25	-63.77	-57.46	-13.00	-50.77	-6.31	Peak
5	820.55	-63.54	-64.09	-13.00	-50.54	0.55	Peak
6	986.42	-61.92	-65.02	-13.00	-48.92	3.10	Peak
7	3720.00	-53.96	-47.14	-13.00	-40.96	-6.82	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 2 QPSK_20M Link_L-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	42.61	-45.38	-44.44	-13.00	-32.38	-0.94	Peak
2	147.37	-50.32	-42.45	-13.00	-37.32	-7.87	Peak
3	229.82	-62.58	-55.77	-13.00	-49.58	-6.81	Peak
4	344.28	-66.46	-60.13	-13.00	-53.46	-6.33	Peak
5	764.29	-64.12	-64.96	-13.00	-51.12	0.84	Peak
6	983.51	-61.59	-64.59	-13.00	-48.59	3.00	Peak
7	3720.00	-54.51	-47.69	-13.00	-41.51	-6.82	Peak

Middle Channel

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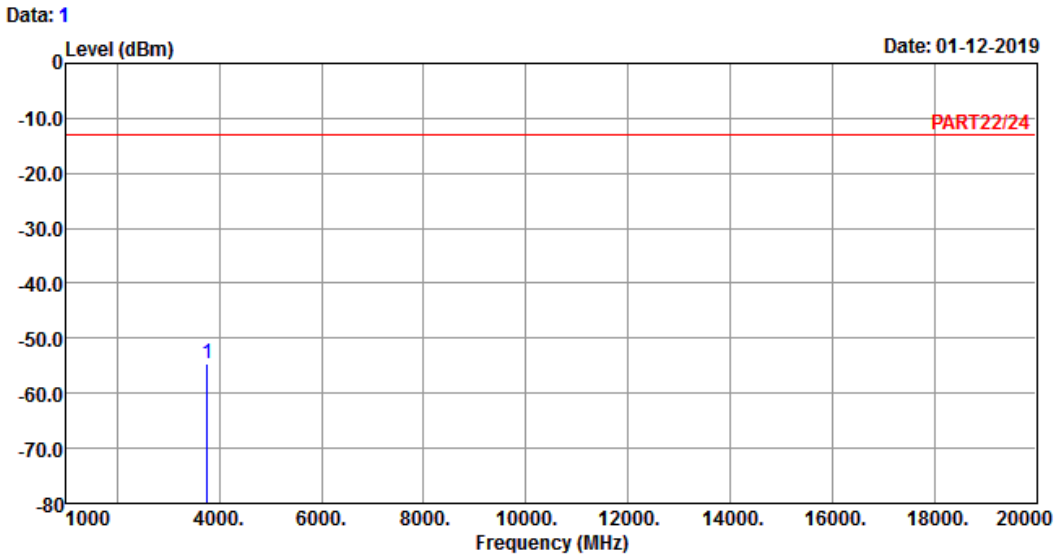
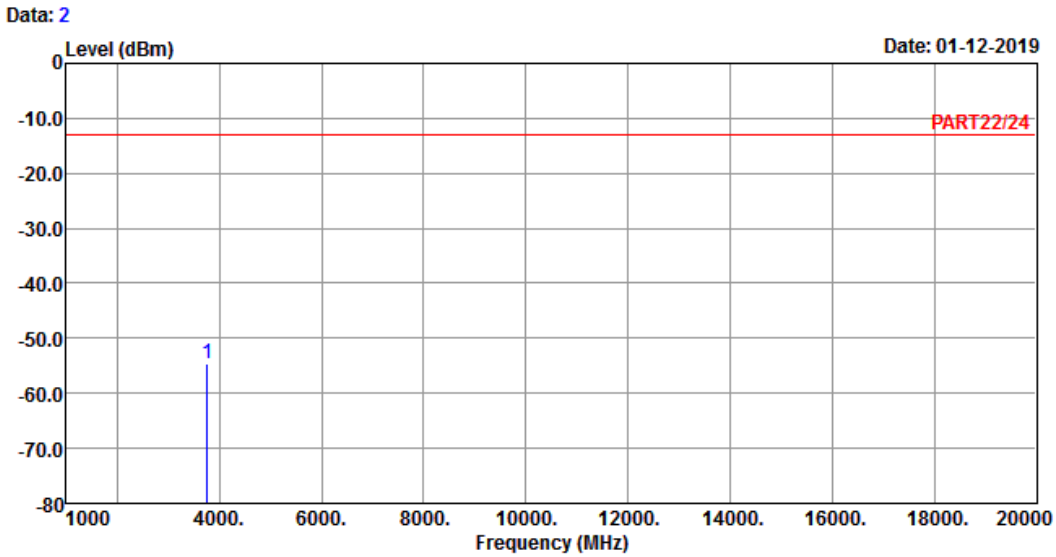


Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.63	-48.03	-13.00	-41.63	-6.60	Peak

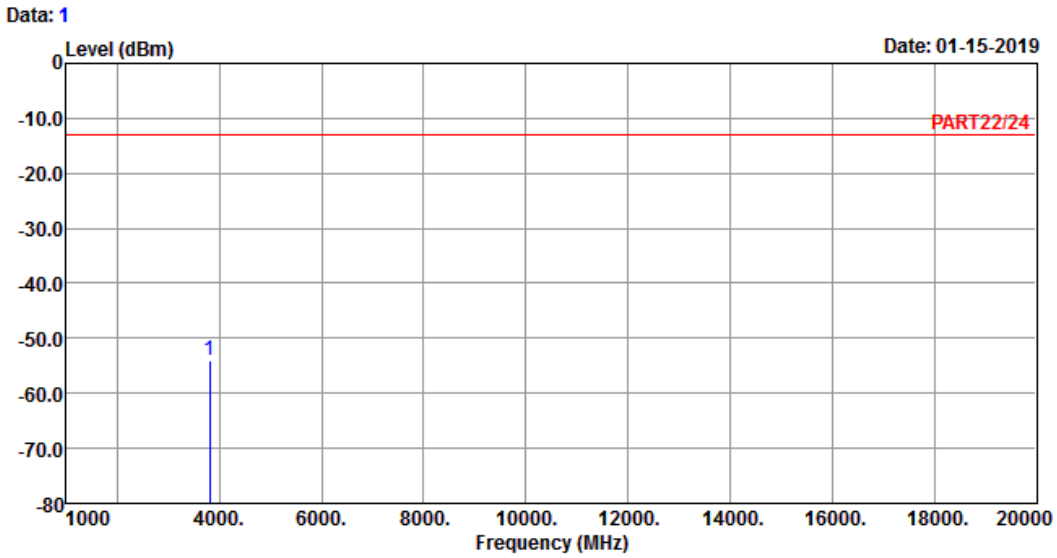


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_20M Link_M-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3765.00	-54.51	-47.91	-13.00	-41.51	-6.60	Peak

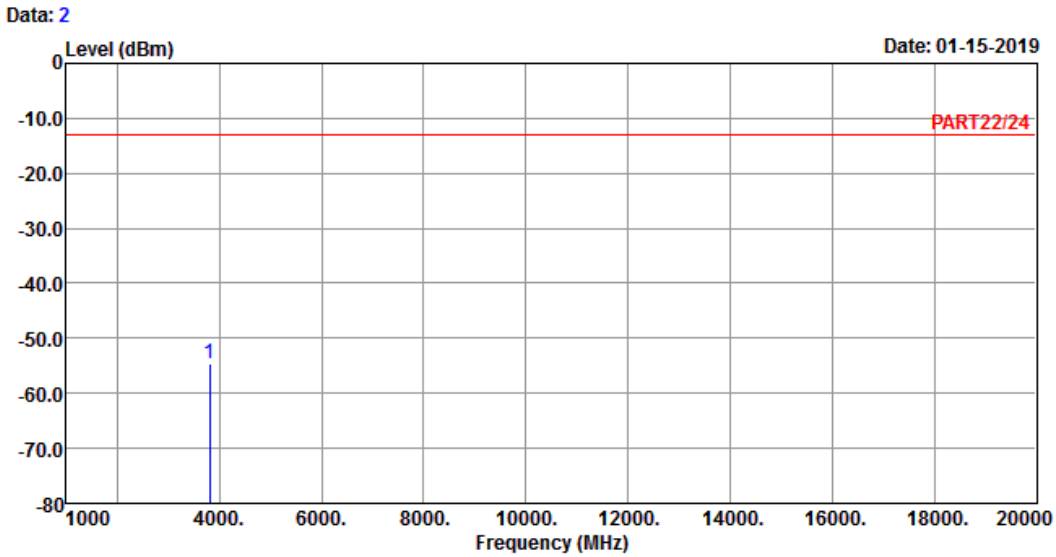
High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 25 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3810.00	-54.07	-47.67	-13.00	-41.07	-6.40	Peak



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 25 QPSK_20M Link_H-CH
Tested by: Thomas Wei

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3810.00	-54.60	-48.20	-13.00	-41.60	-6.40	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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