

FCC Test Report

(PART 27)

Report No.: RF200902C02-7

FCC ID: V65E4830

Test Model: E4830

Series Model: E4830NC

Received Date: Sep. 09, 2020

Test Date: Sep. 12 ~ Sep. 26, 2020

Issued Date: Oct. 27, 2020

Applicant: Kyocera Corporation % Kyocera International, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration /
Designation Number: 427177 / TW0011



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Release Control Record

Issue No.	Description	Date Issued
RF200902C02-7	Original Release	Oct. 27, 2020

1 Certificate of Conformity

Product: Feature Phone

Brand: Kyocera

Test Model: E4830

Series Model: E4830NC

Sample Status: Identical Prototype

Applicant: Kyocera Corporation % Kyocera International, Inc.

Test Date: Sep. 12 ~ Sep. 26, 2020

Standards: FCC Part 27, Subpart C, H, L

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

Prepared by :



Date: Oct. 27, 2020

Gina Liu / Specialist

Approved by :



Date: Oct. 27, 2020

Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (WCDMA)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Equivalent Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -38.87 dB at 91.29 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 4)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -22.42 dB at 10470.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 12)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -41.08 dB at 90.48 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 66)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -18.31 dB at 12390.00 MHz.

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

2.1 Measurement Uncertainty

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

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

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Aug. 24, 2020	Aug. 23, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 24, 2019	Nov. 23, 2020
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 12, 2019	Nov. 11, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 24, 2019	Nov. 23, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2019	Nov. 24, 2020
Preamplifier Agilent	310N	187226	Jun. 17, 2020	Jun. 16, 2021
Preamplifier Agilent	83017A	MY39501357	Jun. 17, 2020	Jun. 16, 2021
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC -SMS-100-SMS-12 0+RFC-SMS-100-S MS-400)	Jun. 17, 2020	Jun. 16, 2021
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC -SMS-100-SMS-24)	Jun. 17, 2020	Jun. 17, 2021
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Communications Tester-Wireless Agilent	8960 Series 10	MY53201073	Jul. 01, 2019	Jun. 30, 2021
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 19, 2019	Aug. 18, 2021
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 09, 2020	Sep. 08, 2021
DC Power Supply Topward	33010D	807748	NA	NA

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

3 General Information

3.1 General Description of EUT

Product	Feature Phone	
Brand	Kyocera	
Test Model	E4830	
Series Model	E4830NC	
Status of EUT	Identical Prototype	
Power Supply Rating	3.8 Vdc (Battery) 5.0 Vdc (adapter or host equipment)	
Modulation Type	WCDMA	QPSK
	LTE	QPSK, 16QAM
Frequency Range	WCDMA	1712.4 ~ 1752.6 MHz
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1779.3 MHz
	LTE Band 66 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1778.5 MHz
	LTE Band 66 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1777.5 MHz
	LTE Band 66 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1775.0 MHz
	LTE Band 66 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1772.5 MHz
	LTE Band 66 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1770.0 MHz
Emission Designator	WCDMA	4M15F9W
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 4 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 4 (Channel Bandwidth: 5 MHz)	4M49D7W
	LTE Band 4 (Channel Bandwidth: 10 MHz)	8M96G7D
	LTE Band 4 (Channel Bandwidth: 15 MHz)	13M4G7D
	LTE Band 4 (Channel Bandwidth: 20 MHz)	17M9D7W
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 12 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 12 (Channel Bandwidth: 5 MHz)	4M49G7D
	LTE Band 12 (Channel Bandwidth: 10 MHz)	8M96D7W
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1M09G7D
	LTE Band 66 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 66 (Channel Bandwidth: 5 MHz)	4M50G7D
	LTE Band 66 (Channel Bandwidth: 10 MHz)	8M95D7W
	LTE Band 66 (Channel Bandwidth: 15 MHz)	13M4G7D

	LTE Band 66 (Channel Bandwidth: 20 MHz)	17M9D7W
Max. ERP Power	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	199.48 mW
	LTE Band 12 (Channel Bandwidth: 3 MHz)	201.33 mW
	LTE Band 12 (Channel Bandwidth: 5 MHz)	203.19 mW
	LTE Band 12 (Channel Bandwidth: 10 MHz)	205.45 mW
Max. EIRP Power	WCDMA	494.88 mW
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	423.16 mW
	LTE Band 4 (Channel Bandwidth: 3 MHz)	427.07 mW
	LTE Band 4 (Channel Bandwidth: 5 MHz)	430.03 mW
	LTE Band 4 (Channel Bandwidth: 10 MHz)	434.01 mW
	LTE Band 4 (Channel Bandwidth: 15 MHz)	437.02 mW
	LTE Band 4 (Channel Bandwidth: 20 MHz)	441.06 mW
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	470.98 mW
	LTE Band 66 (Channel Bandwidth: 3 MHz)	475.34 mW
	LTE Band 66 (Channel Bandwidth: 5 MHz)	478.63 mW
	LTE Band 66 (Channel Bandwidth: 10 MHz)	483.06 mW
	LTE Band 66 (Channel Bandwidth: 15 MHz)	487.53 mW
	LTE Band 66 (Channel Bandwidth: 20 MHz)	490.91 mW
Antenna Type	Monopole Antenna	
Antenna Gain	WCDMA	2.95 dBi
	LTE Band 4	2.95 dBi
	LTE Band 12	-0.93 dBi
	LTE Band 66	2.95 dBi
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

Note:

1. All models are listed as below. (Test Model: E4830)

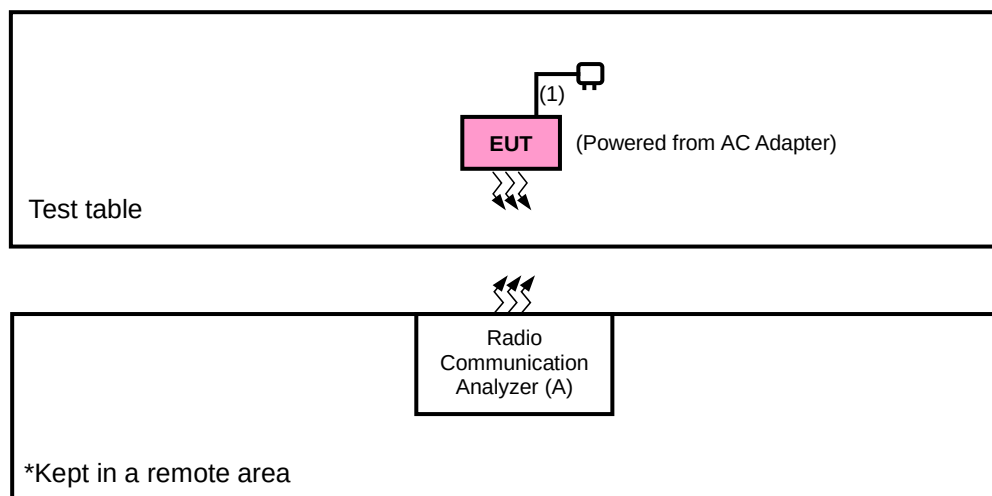
Brand	Model	Difference
Kyocera	E4830	with Camera
	E4830NC	without Camera

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	Kyocera	SCP-47ADT	I/P: 100-240 Vac, 50/60 Hz, 200 mA O/P: 5 Vdc, 1000 mA
Battery	Kyocera	SCP-73LBPS	3.8 Vdc, Min/Typ 1720/1770 mAh
USB Cable	KYOCERA	SCP-26SDC	1.0 meter, Shielded, w/o core

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

3.2 Configuration of System under Test



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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8820C	6201300640	N/A	--

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as communication partner to transfer data.

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.0	Y	0	Accessory of the EUT

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP / EIRP	Radiated Emission
WCDMA	X-plane	X-plane
LTE Band 4	X-plane	X-plane
LTE Band 12	X-plane	X-plane
LTE Band 66	X-plane	X-plane

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
-	Modulation Characteristics	1312 to 1513	1413	WCDMA
-	Frequency Stability	1312 to 1513	1312, 1513	WCDMA
-	Occupied Bandwidth	1312 to 1513	1312, 1413, 1513	WCDMA
-	Band Edge	1312 to 1513	1312, 1513	WCDMA
-	Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA
-	Conducted Emission	1312 to 1513	1312, 1413, 1513	WCDMA
-	Radiated Emission	1312 to 1513	1312, 1413, 1513	WCDMA

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	20050 to 20300	20175	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Frequency Stability	19957 to 20393	19957, 20393	1.4 MHz	QPSK	6 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3 MHz	QPSK	15 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5 MHz	QPSK	25 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10 MHz	QPSK	50 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15 MHz	QPSK	75 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20 MHz	QPSK	100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	19957 to 20393	19957	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20393	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	19965	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20385	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19975 to 20375	19975	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20375	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20000	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20350	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20025 to 20325	20025	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			20325	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20050 to 20300	20050	20 MHz	QPSK	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			20300	20 MHz	QPSK	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
-	Conducted Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	3 RB / 1 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM mode, the other items were performed

under QPSK mode only.

2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	23060 to 23130	23095	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Frequency Stability	23017 to 23173	23017, 23173	1.4 MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3 MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5 MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10 MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
			23173	1.4 MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 0 RB Offset
			23165	3 MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035	5 MHz	QPSK	1 RB / 14 RB Offset
			23155	5 MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 0 RB Offset
			23130	10 MHz	QPSK	50 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 49 RB Offset
			23130	10 MHz	QPSK	50 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 0 RB Offset
			23130	10 MHz	QPSK	1 RB / 0 RB Offset
-	Conducted Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	3 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset

Note:

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

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	132072 to 132572	132322	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Frequency Stability	131979 to 132665	131979, 132665	1.4 MHz	QPSK	6 RB / 0 RB Offset
		131987 to 132657	131987, 132657	3 MHz	QPSK	15 RB / 0 RB Offset
		131997 to 132647	131997, 132647	5 MHz	QPSK	25 RB / 0 RB Offset
		132022 to 132622	132022, 132622	10 MHz	QPSK	50 RB / 0 RB Offset
		132047 to 132597	132047, 132597	15 MHz	QPSK	75 RB / 0 RB Offset
		132072 to 132572	132072, 132572	20 MHz	QPSK	100 RB / 0 RB Offset
-	Occupied Bandwidth	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	131979 to 132665	131979	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			132665	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			132657	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131997 to 132647	131997	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132647	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132022	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132622	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	1 RB / 12 RB Offset
-	Radiated Emission	132022 to 132622	132022, 132322, 132622	10 MHz	QPSK	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 2 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	1 RB / 12 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

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

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee
Modulation Characteristics	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
Frequency Stability	25 deg. C, 65 % RH	3.8Vdc	Wayne Lin
Occupied Bandwidth	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
Band Edge	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
Peak to Average Ratio	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
Conducted Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards and references

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

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

3GPP TS 36.521-1 V16.3.0 (2019-12)

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

Portable stations (hand-held devices) operating in the 746-757 MHz, 776-788 MHz and 805-806 MHz band are limited to 3 watts ERP

Portable stations (hand-held device) operating in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

4.1.2 Test Procedures

EIRP / ERP Measurement:

- All measurements were done at low, middle and high operational frequency range. RBW is 5 MHz 、 10 MHz 、 15 MHz 、 20 MHz for LTE mode, VBW $\geq 3 \times$ RBW.
- 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.
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}$.

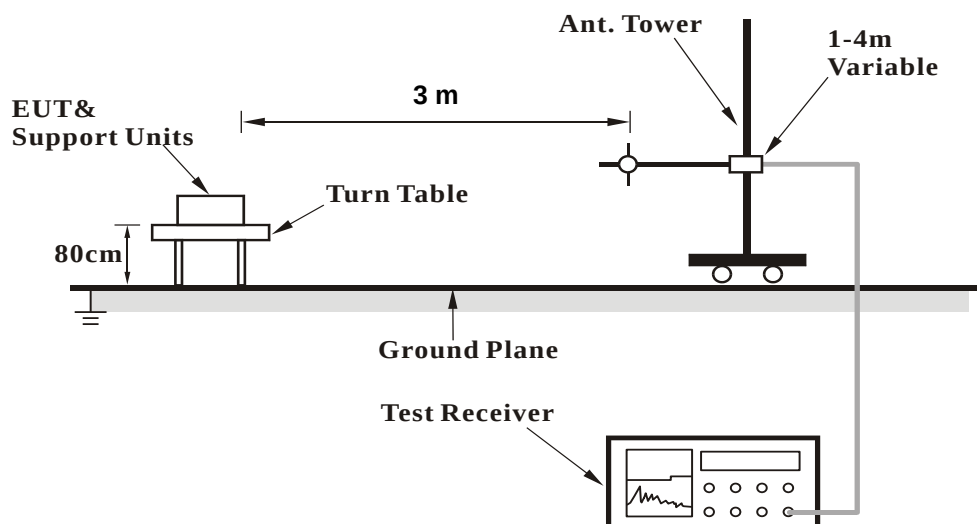
Conducted Power Measurement:

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

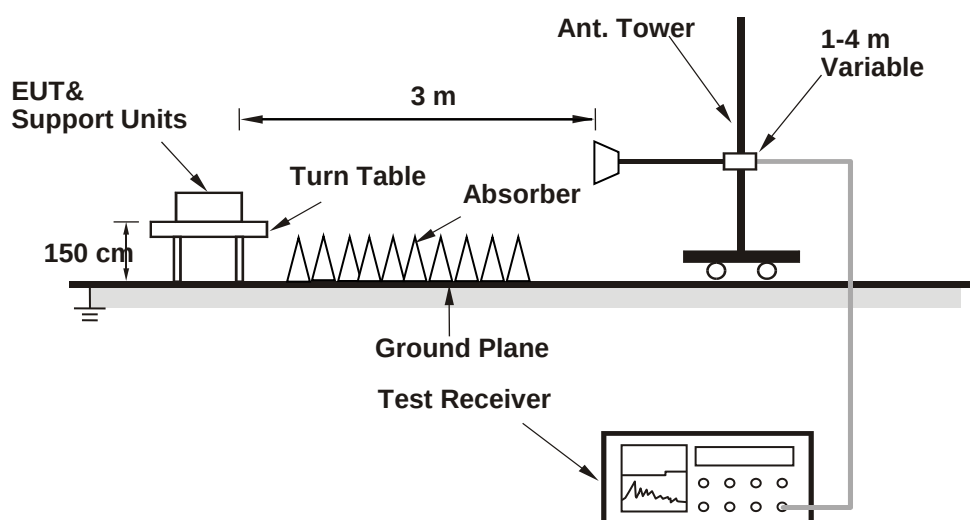
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

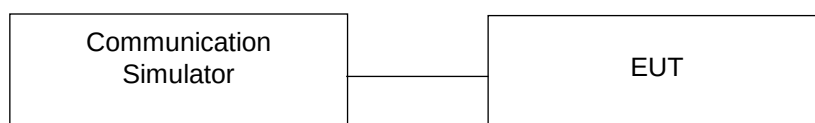


<Radiated Emission above 1 GHz>



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

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.02	24.01	23.99
HSDPA Subtest-1	23.07	23.10	23.05
HSDPA Subtest-2	23.27	23.29	23.28
HSDPA Subtest-3	22.79	22.79	22.79
HSDPA Subtest-4	22.80	22.85	22.83
DC-HSDPA Subtest-1	22.99	23.02	22.93
DC-HSDPA Subtest-2	23.14	23.17	23.12
DC-HSDPA Subtest-3	22.73	22.79	22.70
DC-HSDPA Subtest-4	22.61	22.70	22.62
HSUPA Subtest-1	23.57	23.57	23.47
HSUPA Subtest-2	22.91	22.91	22.82
HSUPA Subtest-3	22.45	22.54	22.45
HSUPA Subtest-4	22.81	22.85	22.79
HSUPA Subtest-5	23.66	23.68	23.63

LTE Band 4															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	23.34	23.55	23.54	0	15M	QPSK	1	0	23.25	23.47	23.53	0
		1	50	23.15	23.36	23.33	0			1	37	23.05	23.31	23.29	0
		1	99	23.00	23.21	23.18	0			1	74	22.92	23.11	23.08	0
		50	0	22.12	22.33	22.30	1			36	0	22.06	22.32	22.23	1
		50	25	22.17	22.38	22.35	1			36	19	22.14	22.29	22.35	1
		50	50	22.15	22.36	22.33	1			36	39	22.07	22.33	22.31	1
	16QAM	100	0	22.21	22.42	22.39	1		75	0	22.20	22.33	22.29	1	
		1	0	22.11	21.98	21.95	1		16QAM	1	0	22.10	21.94	21.92	1
		1	50	22.06	22.11	22.08	1			1	37	21.99	22.06	22.04	1
		1	99	21.92	22.13	22.10	1			1	74	21.93	22.04	22.05	1
		50	0	21.08	21.29	21.26	2			36	0	21.07	21.23	21.21	2
		50	25	21.12	21.33	21.30	2			36	19	21.05	21.29	21.24	2
50	50	21.15	21.36	21.33	2	36	39	21.07		21.30	21.28	2			
100	0	20.93	21.14	21.11	2	75	0	20.93	21.04	21.04	2				
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20000	20175	20350				Channel		19975	20175	20375	
		Frequency (MHz)		1715.0	1732.5	1750.0				Frequency (MHz)		1712.5	1732.5	1752.5	
10M	QPSK	1	0	23.31	23.45	23.54	0	5M	QPSK	1	0	23.31	23.55	23.53	0
		1	24	23.13	23.34	23.24	0			1	12	23.06	23.27	23.28	0
		1	49	22.92	23.14	23.08	0			1	24	22.93	23.20	23.16	0
		25	0	22.06	22.24	22.26	1			12	0	22.05	22.32	22.28	1
		25	12	22.07	22.30	22.34	1			12	6	22.17	22.38	22.32	1
		25	25	22.06	22.27	22.29	1			12	13	22.09	22.29	22.24	1
	16QAM	50	0	22.15	22.41	22.39	1		25	0	22.21	22.33	22.33	1	
		1	0	22.09	21.94	21.91	1		16QAM	1	0	22.06	21.96	21.94	1
		1	24	22.02	22.10	22.04	1			1	12	22.03	22.01	22.01	1
		1	49	21.91	22.13	22.03	1			1	24	21.92	22.09	22.01	1
		25	0	21.04	21.27	21.18	2			12	0	21.08	21.20	21.26	2
		25	12	21.07	21.25	21.25	2			12	6	21.05	21.25	21.27	2
25	25	21.12	21.27	21.30	2	12	13	21.09		21.30	21.23	2			
50	0	20.94	21.11	21.02	2	25	0	21.03	21.09	21.03	2				
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		19965	20175	20385				Channel		19957	20175	20393	
		Frequency (MHz)		1711.5	1732.5	1753.5				Frequency (MHz)		1710.7	1732.5	1754.3	
3M	QPSK	1	0	23.30	23.45	23.45	0	1.4M	QPSK	1	0	23.26	23.47	23.44	0
		1	7	23.10	23.27	23.32	0			1	2	23.02	23.17	23.25	0
		1	14	22.92	23.19	23.10	0			1	5	22.97	23.14	23.08	0
		8	0	22.11	22.26	22.27	1			3	0	23.00	23.09	23.09	0
		8	3	22.11	22.37	22.25	1			3	1	23.00	23.35	23.13	0
		8	7	22.09	22.34	22.33	1			3	3	22.96	23.14	23.10	0
	16QAM	15	0	22.12	22.35	22.33	1		6	0	22.04	22.27	22.27	1	
		1	0	22.07	21.98	21.93	1		16QAM	1	0	21.95	21.92	21.92	1
		1	7	21.99	22.05	21.98	1			1	2	21.97	22.02	21.92	1
		1	14	21.92	22.07	22.03	1			1	5	21.93	21.98	21.91	1
		8	0	20.98	21.29	21.21	2			3	0	21.96	22.23	22.20	1
		8	3	21.02	21.32	21.21	2			3	1	21.98	22.15	22.29	1
8	7	21.12	21.36	21.29	2	3	3	22.04		22.27	22.21	1			
15	0	20.91	21.09	21.04	2	6	0	20.98	21.02	21.05	2				

LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	23.89	23.81	23.95	0	5M	QPSK	1	0	23.83	23.81	23.85	0
		1	24	23.80	23.72	23.86	0			1	12	23.73	23.71	23.83	0
		1	49	23.66	23.58	23.72	0			1	24	23.62	23.51	23.64	0
		25	0	22.77	22.69	22.83	1			12	0	22.77	22.61	22.75	1
		25	12	22.72	22.64	22.78	1			12	6	22.71	22.54	22.78	1
		25	25	22.61	22.53	22.67	1			12	13	22.51	22.52	22.59	1
		50	0	22.63	22.55	22.69	1			25	0	22.57	22.51	22.63	1
	16QAM	1	0	22.75	22.67	22.81	1		16QAM	1	0	22.75	22.58	22.73	1
		1	24	22.36	22.28	22.42	1			1	12	22.31	22.28	22.37	1
		1	49	22.39	22.31	22.45	1			1	24	22.35	22.23	22.35	1
		25	0	21.76	21.68	21.82	2			12	0	21.67	21.59	21.79	2
		25	12	21.68	21.60	21.74	2			12	6	21.65	21.57	21.69	2
		25	25	21.80	21.72	21.86	2			12	13	21.76	21.69	21.76	2
		50	0	21.68	21.60	21.74	2			25	0	21.65	21.56	21.74	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23025	23095	23165				Channel		23017	23095	23173	
		Frequency (MHz)		700.5	707.5	714.5				Frequency (MHz)		699.7	707.5	715.3	
3M	QPSK	1	0	23.82	23.78	23.93	0	1.4M	QPSK	1	0	23.71	23.78	23.92	0
		1	7	23.77	23.62	23.77	0			1	2	23.69	23.56	23.69	0
		1	14	23.58	23.48	23.72	0			1	5	23.60	23.47	23.59	0
		8	0	22.75	22.61	22.78	1			3	0	23.66	23.56	23.74	0
		8	3	22.70	22.59	22.76	1			3	1	23.57	23.50	23.55	0
		8	7	22.59	22.49	22.60	1			3	3	23.40	23.33	23.63	0
		15	0	22.62	22.49	22.66	1			6	0	22.56	22.42	22.63	1
	16QAM	1	0	22.71	22.57	22.74	1		16QAM	1	0	22.64	22.63	22.62	1
		1	7	22.35	22.25	22.38	1			1	2	22.35	22.25	22.21	1
		1	14	22.30	22.30	22.37	1			1	5	22.28	22.21	22.30	1
		8	0	21.71	21.64	21.75	2			3	0	22.60	22.66	22.70	1
		8	3	21.66	21.57	21.73	2			3	1	22.55	22.40	22.55	1
		8	7	21.73	21.68	21.79	2			3	3	22.80	22.61	22.72	1
		15	0	21.63	21.56	21.68	2			6	0	21.54	21.41	21.69	2

LTE Band 66															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572				Channel		132047	132322	132597	
		Frequency (MHz)		1720.0	1745.0	1770.0				Frequency (MHz)		1717.5	1745.0	1772.5	
20M	QPSK	1	0	23.59	23.87	23.74	0	15M	QPSK	1	0	23.56	23.76	23.68	0
		1	50	23.60	23.78	23.65	0			1	37	23.53	23.54	23.50	0
		1	99	23.53	23.71	23.58	0			1	74	23.28	23.62	23.40	0
		50	0	22.64	22.82	22.69	1			36	0	22.52	22.67	22.63	1
		50	25	22.45	22.63	22.50	1			36	19	22.41	22.44	22.35	1
		50	50	22.43	22.61	22.48	1			36	39	22.32	22.52	22.40	1
	16QAM	100	0	22.47	22.65	22.52	1		16QAM	75	0	22.36	22.54	22.38	1
		1	0	22.70	22.88	22.75	1			1	0	22.63	22.70	22.56	1
		1	50	22.71	22.89	22.76	1			1	37	22.56	22.75	22.69	1
		1	99	22.38	22.56	22.43	1			1	74	22.20	22.39	22.30	1
		50	0	21.58	21.76	21.63	2			36	0	21.54	21.56	21.46	2
		50	25	21.38	21.56	21.43	2			36	19	21.22	21.52	21.23	2
10M	QPSK	50	50	21.41	21.59	21.46	2	5M	QPSK	36	39	21.33	21.43	21.37	2
		100	0	21.36	21.54	21.41	2			75	0	21.22	21.39	21.27	2
	16QAM	1	0	23.43	23.71	23.62	0		16QAM	1	0	23.50	23.71	23.59	0
		1	24	23.41	23.70	23.58	0			1	12	23.49	23.70	23.57	0
		1	49	23.44	23.60	23.47	0			1	24	23.42	23.51	23.39	0
		25	0	22.55	22.70	22.62	1			12	0	22.56	22.64	22.65	1
		25	12	22.41	22.48	22.42	1			12	6	22.27	22.53	22.34	1
		25	25	22.31	22.53	22.43	1			12	13	22.25	22.40	22.43	1
3M	QPSK	50	0	22.30	22.43	22.34	1	1.4M	QPSK	25	0	22.36	22.53	22.33	1
		1	0	22.66	22.70	22.62	1		16QAM	1	0	22.56	22.73	22.64	1
		1	24	22.69	22.76	22.68	1			1	12	22.56	22.70	22.57	1
		1	49	22.31	22.55	22.31	1			1	24	22.23	22.40	22.27	1
		25	0	21.45	21.68	21.50	2			12	0	21.37	21.64	21.47	2
		25	12	21.23	21.33	21.26	2			12	6	21.21	21.45	21.32	2
1.4M	QPSK	25	25	21.31	21.43	21.34	2		16QAM	12	13	21.26	21.53	21.29	2
		50	0	21.26	21.32	21.35	2			25	0	21.23	21.37	21.20	2
	16QAM	1	0	23.49	23.80	23.60	0		QPSK	1	0	23.55	23.81	23.50	0
		1	7	23.48	23.60	23.53	0			1	2	23.50	23.67	23.50	0
		1	14	23.46	23.54	23.50	0			1	5	23.39	23.67	23.36	0
		8	0	22.52	22.73	22.53	1			3	0	23.58	23.75	23.50	0
		8	3	22.36	22.51	22.32	1			3	1	23.43	23.46	23.27	0
		8	7	22.36	22.39	22.35	1			3	3	23.32	23.55	23.39	0
3M	QPSK	15	0	22.27	22.45	22.38	1	1.4M	16QAM	6	0	22.30	22.49	22.38	1
		1	0	22.52	22.72	22.60	1			1	0	22.53	22.77	22.69	1
		1	7	22.55	22.74	22.70	1			1	2	22.61	22.86	22.68	1
		1	14	22.28	22.33	22.34	1			1	5	22.25	22.47	22.31	1
		8	0	21.42	21.55	21.42	2			3	0	22.54	22.62	22.48	1
		8	3	21.19	21.44	21.24	2			3	1	22.22	22.47	22.36	1
1.4M	QPSK	8	7	21.26	21.38	21.36	2		16QAM	3	3	22.35	22.53	22.27	1
		15	0	21.19	21.41	21.17	2			6	0	21.23	21.36	21.39	2
	16QAM	1	0	131987	132322	132657			QPSK	1	0	131979	132322	132665	
		1	7	1711.5	1745.5	1778.5				1	2	1710.7	1745.0	1779.3	
		1	14	1711.5	1745.5	1778.5				1	5	1710.7	1745.0	1779.3	
		8	0	131987	132322	132657				3	0	131979	132322	132665	
		8	3	1711.5	1745.5	1778.5				3	1	1710.7	1745.0	1779.3	
		8	7	1711.5	1745.5	1778.5				3	3	1710.7	1745.0	1779.3	

ERP Power (dBm)

LTE Band 12							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23017	699.7	-7.57	32.719	23.00	199.48	H
	23095	707.5	-7.66	32.736	22.93	196.16	
	23173	715.3	-7.64	32.591	22.80	190.59	
	23017	699.7	-8.49	32.69	22.05	160.32	V
	23095	707.5	-8.75	32.81	21.91	155.24	
	23173	715.3	-8.79	32.74	21.80	151.36	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	23017	699.7	-8.57	32.719	22.00	158.45	H
	23095	707.5	-8.66	32.736	21.93	155.81	
	23173	715.3	-8.64	32.591	21.80	151.39	
	23017	699.7	-9.50	32.69	21.04	127.06	V
	23095	707.5	-9.76	32.81	20.90	123.03	
	23173	715.3	-9.80	32.74	20.79	119.95	

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

LTE Band 12							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23025	700.5	-7.53	32.719	23.04	201.33	H
	23095	707.5	-7.62	32.736	22.97	197.97	
	23165	714.5	-7.60	32.591	22.84	192.35	
	23025	700.5	-8.45	32.69	22.09	161.81	V
	23095	707.5	-8.71	32.81	21.95	156.68	
	23165	714.5	-8.75	32.74	21.84	152.76	
Channel Bandwidth: 3 MHz / 16QAM							
X	23025	700.5	-8.54	32.719	22.03	159.55	H
	23095	707.5	-8.62	32.736	21.97	157.25	
	23165	714.5	-8.61	32.591	21.83	152.44	
	23025	700.5	-9.45	32.69	21.09	128.53	V
	23095	707.5	-9.72	32.81	20.94	124.17	
	23165	714.5	-9.75	32.74	20.84	121.34	

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

LTE Band 12							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23035	701.5	-7.49	32.719	23.08	203.19	H
	23095	707.5	-7.58	32.736	23.01	199.80	
	23155	713.5	-7.57	32.591	22.87	193.69	
	23035	701.5	-8.42	32.69	22.12	162.93	V
	23095	707.5	-8.68	32.81	21.98	157.76	
	23155	713.5	-8.71	32.74	21.88	154.17	
Channel Bandwidth: 5 MHz / 16QAM							
X	23035	701.5	-8.50	32.719	22.07	161.03	H
	23095	707.5	-8.58	32.736	22.01	158.71	
	23155	713.5	-8.57	32.591	21.87	153.85	
	23035	701.5	-9.42	32.69	21.12	129.42	V
	23095	707.5	-9.69	32.81	20.97	125.03	
	23155	713.5	-9.73	32.74	20.86	121.90	

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

LTE Band 12							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23060	704.0	-7.45	32.727	23.13	205.45	H
	23095	707.5	-7.54	32.739	23.05	201.79	
	23130	711.0	-7.64	32.728	22.94	196.70	
	23060	704.0	-8.44	32.75	22.16	164.44	V
	23095	707.5	-8.65	32.81	22.01	158.85	
	23130	711.0	-8.78	32.84	21.91	155.24	
Channel Bandwidth: 10 MHz / 16QAM							
X	23060	704.0	-8.45	32.727	22.13	163.19	H
	23095	707.5	-8.55	32.739	22.04	159.92	
	23130	711.0	-8.65	32.728	21.93	155.88	
	23060	704.0	-9.44	32.75	21.16	130.62	V
	23095	707.5	-9.66	32.81	21.00	125.89	
	23130	711.0	-9.78	32.84	20.91	123.31	

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

EIRP Power (dBm)

WCDMA							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	1312	1712.4	-15.54	42.49	26.95	494.88	H
	1413	1732.6	-15.51	42.33	26.82	480.51	
	1513	1752.6	-15.36	42.10	26.74	472.06	
	1312	1712.4	-20.21	42.99	22.78	189.67	V
	1413	1732.6	-20.07	42.74	22.67	184.93	
	1513	1752.6	-19.71	42.21	22.50	177.83	

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

LTE Band 4							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19957	1710.7	-16.22	42.49	26.27	423.16	H
	20175	1732.5	-16.15	42.33	26.18	414.67	
	20393	1754.3	-15.99	42.10	26.11	408.32	
	19957	1710.7	-19.78	42.99	23.21	209.41	V
	20175	1732.5	-19.71	42.74	23.03	200.91	
	20393	1754.3	-19.27	42.21	22.94	196.79	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	19957	1710.7	-17.23	42.49	25.26	335.35	H
	20175	1732.5	-17.16	42.33	25.17	328.62	
	20393	1754.3	-17.00	42.10	25.10	323.59	
	19957	1710.7	-20.78	42.99	22.21	166.34	V
	20175	1732.5	-20.72	42.74	22.02	159.22	
	20393	1754.3	-20.27	42.21	21.94	156.31	

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

LTE Band 4							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19965	1711.5	-16.18	42.49	26.31	427.07	H
	20175	1732.5	-16.11	42.33	26.22	418.50	
	20385	1753.5	-15.96	42.10	26.14	411.15	
	19965	1711.5	-19.74	42.99	23.25	211.35	V
	20175	1732.5	-19.67	42.74	23.07	202.77	
	20385	1753.5	-19.23	42.21	22.98	198.61	
Channel Bandwidth: 3 MHz / 16QAM							
X	19965	1711.5	-17.19	42.49	25.30	338.45	H
	20175	1732.5	-17.11	42.33	25.22	332.43	
	20385	1753.5	-16.96	42.10	25.14	326.59	
	19965	1711.5	-20.74	42.99	22.25	167.88	V
	20175	1732.5	-20.68	42.74	22.06	160.69	
	20385	1753.5	-20.23	42.21	21.98	157.76	

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

LTE Band 4							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19975	1712.5	-16.15	42.49	26.34	430.03	H
	20175	1732.5	-16.08	42.33	26.25	421.41	
	20375	1752.5	-15.93	42.10	26.17	414.00	
	19975	1712.5	-19.70	42.99	23.29	213.30	V
	20175	1732.5	-19.63	42.74	23.11	204.64	
	20375	1752.5	-19.20	42.21	23.01	199.99	
Channel Bandwidth: 5 MHz / 16QAM							
X	19975	1712.5	-17.16	42.49	25.33	340.80	H
	20175	1732.5	-17.08	42.33	25.25	334.73	
	20375	1752.5	-16.93	42.10	25.17	328.85	
	19975	1712.5	-20.71	42.99	22.28	169.04	V
	20175	1732.5	-20.63	42.74	22.11	162.55	
	20375	1752.5	-20.21	42.21	22.00	158.49	

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

LTE Band 4							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20000	1715.0	-16.11	42.49	26.38	434.01	H
	20175	1732.5	-16.04	42.33	26.29	425.30	
	20350	1750.0	-15.89	42.10	26.21	417.83	
	20000	1715.0	-19.67	42.99	23.32	214.78	V
	20175	1732.5	-19.59	42.74	23.15	206.54	
	20350	1750.0	-19.16	42.21	23.05	201.84	
Channel Bandwidth: 10 MHz / 16QAM							
X	20000	1715.0	-17.11	42.49	25.38	344.75	H
	20175	1732.5	-17.04	42.33	25.29	337.83	
	20350	1750.0	-16.89	42.10	25.21	331.89	
	20000	1715.0	-20.68	42.99	22.31	170.22	V
	20175	1732.5	-20.60	42.74	22.14	163.68	
	20350	1750.0	-20.16	42.21	22.05	160.32	

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

LTE Band 4							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20025	1717.5	-16.08	42.49	26.41	437.02	H
	20175	1732.5	-16.00	42.33	26.33	429.24	
	20325	1747.5	-15.85	42.10	26.25	421.70	
	20025	1717.5	-19.64	42.99	23.35	216.27	V
	20175	1732.5	-19.55	42.74	23.19	208.45	
	20325	1747.5	-19.12	42.21	23.09	203.70	
Channel Bandwidth: 15 MHz / 16QAM							
X	20025	1717.5	-17.08	42.49	25.41	347.14	H
	20175	1732.5	-17.01	42.33	25.32	340.17	
	20325	1747.5	-16.85	42.10	25.25	334.97	
	20025	1717.5	-20.64	42.99	22.35	171.79	V
	20175	1732.5	-20.55	42.74	22.19	165.58	
	20325	1747.5	-20.13	42.21	22.08	161.44	

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

LTE Band 4							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20050	1720.0	-16.04	42.49	26.45	441.06	H
	20175	1732.5	-15.96	42.33	26.37	433.21	
	20300	1745.0	-15.82	42.10	26.28	424.62	
	20050	1720.0	-19.60	42.99	23.39	218.27	V
	20175	1732.5	-19.51	42.74	23.23	210.38	
	20300	1745.0	-19.09	42.21	23.12	205.12	
Channel Bandwidth: 20 MHz / 16QAM							
X	20050	1720.0	-17.04	42.49	25.45	350.35	H
	20175	1732.5	-16.96	42.33	25.37	344.11	
	20300	1745.0	-16.82	42.10	25.28	337.29	
	20050	1720.0	-20.61	42.99	22.38	172.98	V
	20175	1732.5	-20.52	42.74	22.22	166.72	
	20300	1745.0	-20.10	42.21	22.11	162.55	

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

LTE Band 66							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131979	1710.7	-9.72	36.45	26.73	470.98	H
	132322	1745.0	-10.18	36.80	26.62	459.09	
	132665	1779.3	-10.45	36.94	26.49	445.96	
	131979	1710.7	-14.74	37.28	22.54	179.35	V
	132322	1745.0	-15.21	37.63	22.42	174.58	
	132665	1779.3	-15.35	37.64	22.29	169.43	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	131979	1710.7	-10.72	36.45	25.73	374.11	H
	132322	1745.0	-11.18	36.80	25.62	364.67	
	132665	1779.3	-11.45	36.94	25.49	354.24	
	131979	1710.7	-15.74	37.28	21.54	142.46	V
	132322	1745.0	-16.22	37.63	21.41	138.36	
	132665	1779.3	-16.35	37.64	21.29	134.59	

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

LTE Band 66							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131987	1711.5	-9.68	36.45	26.77	475.34	H
	132322	1745.0	-10.15	36.80	26.65	462.27	
	132657	1778.5	-10.41	36.94	26.53	450.09	
	131987	1711.5	-14.70	37.28	22.58	181.01	V
	132322	1745.0	-15.17	37.63	22.46	176.20	
	132657	1778.5	-15.31	37.64	22.33	171.00	
Channel Bandwidth: 3 MHz / 16QAM							
X	131987	1711.5	-10.69	36.45	25.76	376.70	H
	132322	1745.0	-11.15	36.80	25.65	367.20	
	132657	1778.5	-11.42	36.94	25.52	356.70	
	131987	1711.5	-15.71	37.28	21.57	143.45	V
	132322	1745.0	-16.17	37.63	21.46	139.96	
	132657	1778.5	-16.32	37.64	21.32	135.52	

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

LTE Band 66							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131997	1712.5	-9.65	36.45	26.80	478.63	H
	132322	1745.0	-10.12	36.80	26.68	465.48	
	132647	1777.5	-10.37	36.94	26.57	454.26	
	131997	1712.5	-14.66	37.28	22.62	182.68	V
	132322	1745.0	-15.14	37.63	22.49	177.42	
	132647	1777.5	-15.28	37.64	22.36	172.19	
Channel Bandwidth: 5 MHz / 16QAM							
X	131997	1712.5	-10.66	36.45	25.79	379.31	H
	132322	1745.0	-11.12	36.80	25.68	369.74	
	132647	1777.5	-11.38	36.94	25.56	360.00	
	131997	1712.5	-15.67	37.28	21.61	144.78	V
	132322	1745.0	-16.14	37.63	21.49	140.93	
	132647	1777.5	-16.28	37.64	21.36	136.77	

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

LTE Band 66							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132022	1715.0	-9.80	36.64	26.84	483.06	H
	132322	1745.0	-10.08	36.80	26.72	469.35	
	132622	1775.0	-10.19	36.80	26.61	458.14	
	132022	1715.0	-14.78	37.44	22.66	184.46	V
	132322	1745.0	-15.10	37.63	22.53	179.02	
	132622	1775.0	-15.24	37.64	22.40	173.58	
Channel Bandwidth: 10 MHz / 16QAM							
X	132022	1715.0	-10.80	36.64	25.84	383.71	H
	132322	1745.0	-11.09	36.80	25.71	371.96	
	132622	1775.0	-11.20	36.80	25.60	363.08	
	132022	1715.0	-15.78	37.44	21.66	146.52	V
	132322	1745.0	-16.11	37.63	21.52	141.87	
	132622	1775.0	-16.25	37.64	21.39	137.56	

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

LTE Band 66							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132047	1717.5	-9.57	36.45	26.88	487.53	H
	132322	1745.0	-10.04	36.80	26.76	474.13	
	132597	1772.5	-10.30	36.94	26.64	461.64	
	132047	1717.5	-14.59	37.28	22.69	185.65	V
	132322	1745.0	-15.07	37.63	22.56	180.30	
	132597	1772.5	-15.20	37.64	22.44	175.39	
Channel Bandwidth: 15 MHz / 16QAM							
X	132047	1717.5	-10.57	36.45	25.88	387.26	H
	132322	1745.0	-11.05	36.80	25.75	375.75	
	132597	1772.5	-11.30	36.94	25.64	366.69	
	132047	1717.5	-15.59	37.28	21.69	147.47	V
	132322	1745.0	-16.08	37.63	21.55	142.89	
	132597	1772.5	-16.21	37.64	21.43	139.00	

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

LTE Band 66							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132072	1720.0	-9.54	36.45	26.91	490.91	H
	132322	1745.0	-10.01	36.80	26.79	477.42	
	132572	1770.0	-10.27	36.94	26.67	464.84	
	132072	1720.0	-14.55	37.28	22.73	187.37	V
	132322	1745.0	-15.03	37.63	22.60	181.97	
	132572	1770.0	-15.16	37.64	22.48	177.01	
Channel Bandwidth: 20 MHz / 16QAM							
X	132072	1720.0	-10.54	36.45	25.91	389.94	H
	132322	1745.0	-11.01	36.80	25.79	379.23	
	132572	1770.0	-11.28	36.94	25.66	368.38	
	132072	1720.0	-15.55	37.28	21.73	148.83	V
	132322	1745.0	-16.03	37.63	21.60	144.54	
	132572	1770.0	-16.16	37.64	21.48	140.60	

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

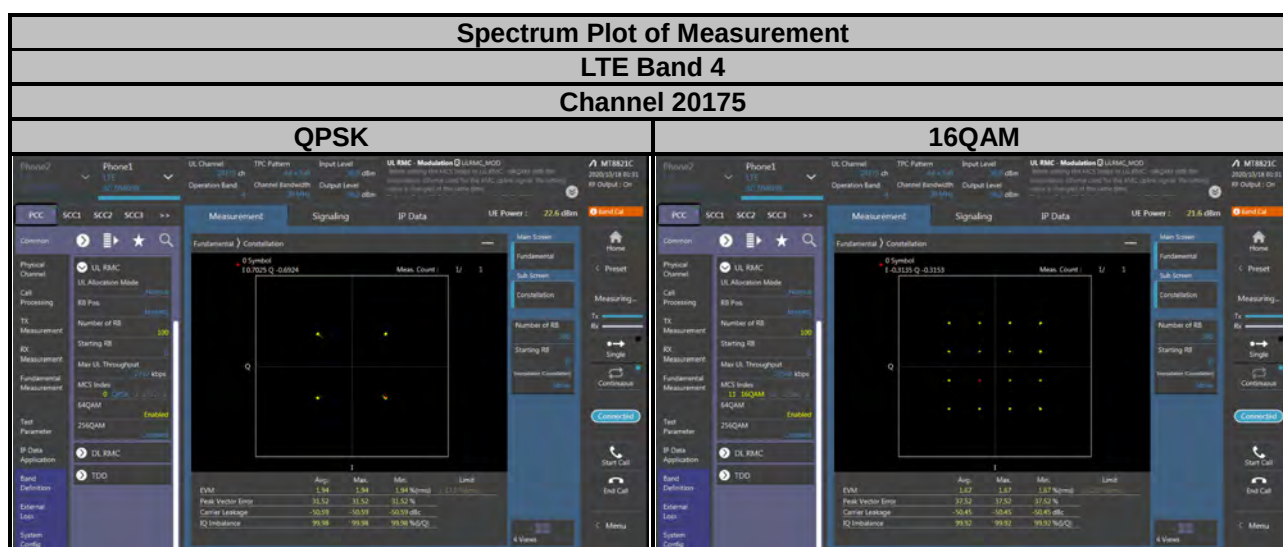
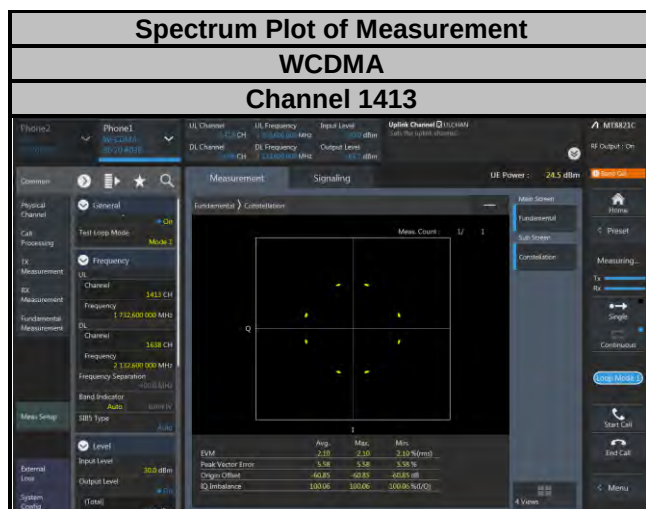
4.2.2 Test Setup



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

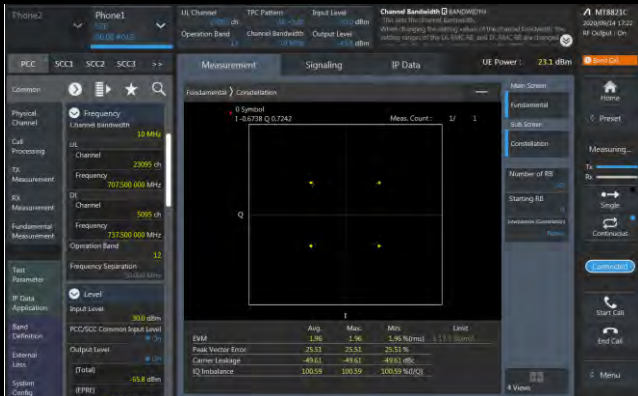


Spectrum Plot of Measurement

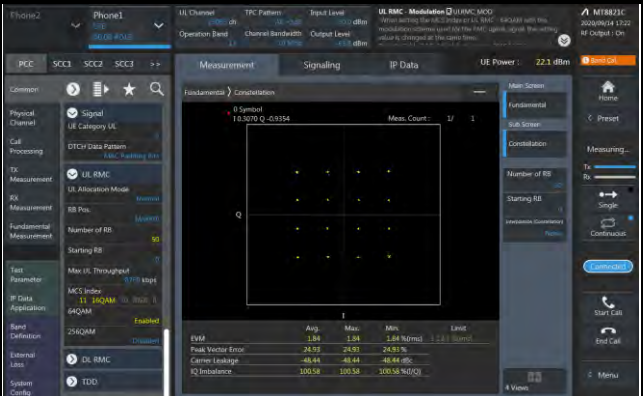
LTE Band 12

Channel 23095

QPSK



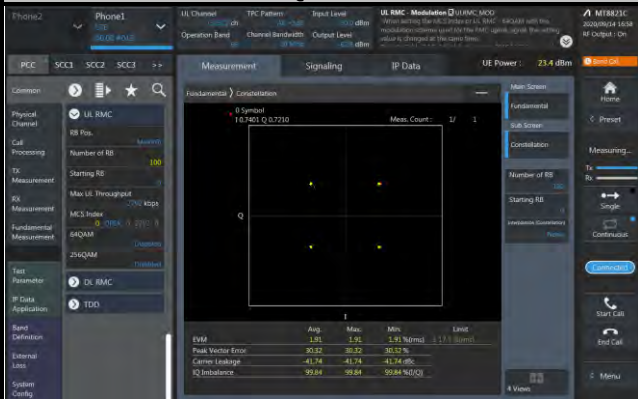
16QAM



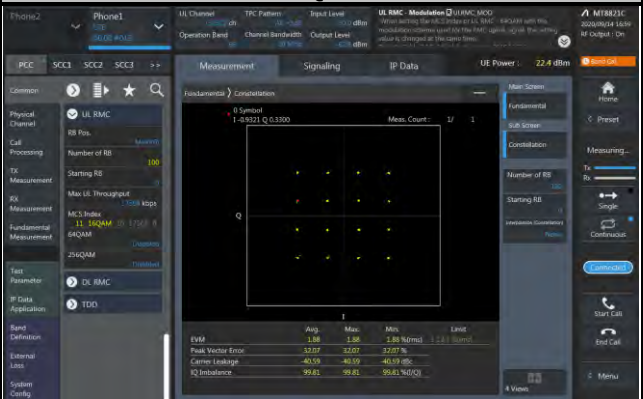
LTE Band 66

Channel 132322

QPSK



16QAM



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

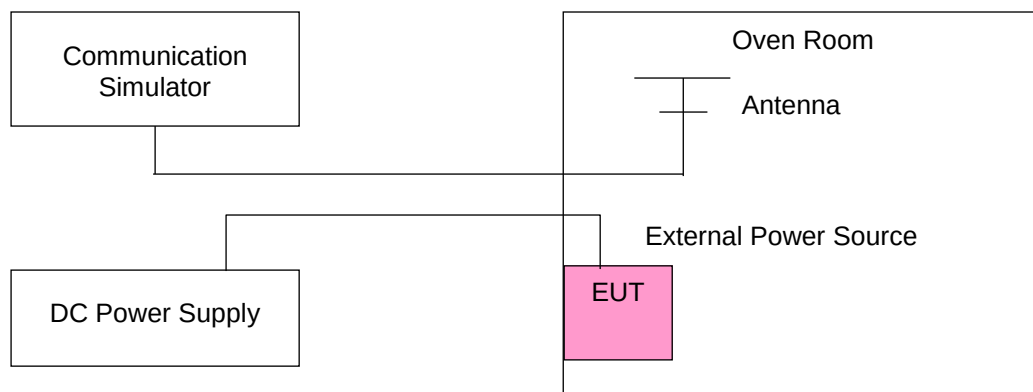
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.3.2 Test Procedure

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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)	WCDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.400003	0.002	1752.600002	0.001
3.6	1712.400002	0.001	1752.600002	0.001
4.35	1712.400001	0.001	1752.600004	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	WCDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1712.400001	0.001	1752.600001	0.001
-10	1712.400003	0.002	1752.600002	0.001
0	1712.400003	0.002	1752.600003	0.002
10	1712.400004	0.002	1752.600004	0.002
20	1712.399999	-0.001	1752.599998	-0.001
30	1712.399999	-0.001	1752.599998	-0.001
40	1712.399999	-0.001	1752.599998	-0.001
50	1712.399997	-0.002	1752.599999	-0.001
60	1712.399998	-0.001	1752.599999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1710.700003	0.001	1754.300003	0.001
3.6	1710.700002	0.001	1754.300002	0.001
4.35	1710.700002	0.001	1754.300003	0.001

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1710.700003	0.002	1754.300003	0.001
-10	1710.700003	0.002	1754.300002	0.001
0	1710.700001	0.001	1754.300004	0.002
10	1710.700001	0.001	1754.300003	0.002
20	1710.699998	-0.001	1754.299996	-0.002
30	1710.699999	-0.001	1754.299998	-0.001
40	1710.699997	-0.002	1754.299998	-0.001
50	1710.699999	-0.001	1754.299997	-0.002
60	1710.699999	-0.001	1754.299996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1711.500003	0.002	1753.500004	0.002
3.6	1711.500003	0.002	1753.500004	0.002
4.35	1711.500003	0.002	1753.500003	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1711.500002	0.001	1753.500002	0.001
-10	1711.500002	0.001	1753.500003	0.001
0	1711.500004	0.002	1753.500002	0.001
10	1711.500003	0.002	1753.500003	0.002
20	1711.499997	-0.002	1753.499997	-0.002
30	1711.499998	-0.001	1753.499998	-0.001
40	1711.499997	-0.002	1753.499998	-0.001
50	1711.499999	-0.001	1753.499997	-0.002
60	1711.499999	-0.001	1753.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.500003	0.001	1752.500002	0.001
3.6	1712.500003	0.002	1752.500004	0.002
4.35	1712.500003	0.002	1752.500003	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1712.500003	0.002	1752.500003	0.001
-10	1712.500002	0.001	1752.500002	0.001
0	1712.500003	0.002	1752.500004	0.002
10	1712.500002	0.001	1752.500003	0.002
20	1712.499999	-0.001	1752.499998	-0.001
30	1712.499999	-0.001	1752.499998	-0.001
40	1712.499997	-0.002	1752.499996	-0.002
50	1712.499997	-0.002	1752.499998	-0.001
60	1712.499997	-0.002	1752.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1715.000002	0.001	1750.000001	0.001
3.6	1715.000003	0.002	1750.000002	0.001
4.35	1715.000002	0.001	1750.000002	0.001

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1715.000004	0.002	1750.000004	0.002
-10	1715.000004	0.002	1750.000004	0.002
0	1715.000001	0.001	1750.000001	0.001
10	1715.000004	0.002	1750.000002	0.001
20	1714.999996	-0.002	1749.999996	-0.002
30	1714.999999	-0.001	1749.999999	-0.001
40	1714.999998	-0.001	1749.999998	-0.001
50	1714.999999	-0.001	1749.999998	-0.001
60	1714.999997	-0.002	1749.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1717.500001	0.001	1747.500002	0.001
3.6	1717.500004	0.002	1747.500004	0.002
4.35	1717.500002	0.001	1747.500004	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1717.500004	0.002	1747.500003	0.002
-10	1717.500002	0.001	1747.500001	0.001
0	1717.500001	0.001	1747.500001	0.001
10	1717.500002	0.001	1747.500003	0.001
20	1717.499998	-0.001	1747.499999	-0.001
30	1717.499996	-0.002	1747.499996	-0.002
40	1717.499997	-0.002	1747.499998	-0.001
50	1717.499999	-0.001	1747.499998	-0.001
60	1717.499997	-0.002	1747.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1720.000004	0.002	1745.000001	0.001
3.6	1720.000003	0.002	1745.000002	0.001
4.35	1720.000004	0.002	1745.000004	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1720.000001	0.001	1745.000003	0.002
-10	1720.000003	0.002	1745.000003	0.002
0	1720.000004	0.002	1745.000003	0.002
10	1720.000003	0.002	1745.000004	0.002
20	1719.999997	-0.002	1744.999998	-0.001
30	1719.999996	-0.002	1744.999998	-0.001
40	1719.999997	-0.002	1744.999998	-0.001
50	1719.999999	-0.001	1744.999998	-0.001
60	1719.999998	-0.001	1744.999999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	699.700002	0.002	715.300002	0.002
3.6	699.700003	0.004	715.300002	0.003
4.35	699.700004	0.006	715.300002	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	699.700001	0.001	715.300002	0.002
-10	699.700002	0.002	715.300003	0.005
0	699.700004	0.005	715.300001	0.002
10	699.700003	0.004	715.300002	0.003
20	699.699997	-0.004	715.299998	-0.003
30	699.699999	-0.002	715.299999	-0.002
40	699.699998	-0.004	715.299997	-0.004
50	699.699999	-0.001	715.299998	-0.002
60	699.699997	-0.004	715.299999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	700.500002	0.003	714.500002	0.003
3.6	700.500003	0.005	714.500004	0.006
4.35	700.500004	0.005	714.500002	0.003

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	700.500003	0.004	714.500001	0.002
-10	700.500002	0.003	714.500001	0.001
0	700.500004	0.005	714.500002	0.003
10	700.500001	0.001	714.500001	0.002
20	700.499997	-0.004	714.499999	-0.002
30	700.499999	-0.002	714.499999	-0.002
40	700.499997	-0.004	714.499998	-0.003
50	700.499997	-0.004	714.499999	-0.002
60	700.499996	-0.005	714.499997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	701.500001	0.002	713.500003	0.004
3.6	701.500002	0.002	713.500003	0.005
4.35	701.500003	0.004	713.500002	0.003

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	701.500001	0.002	713.500004	0.005
-10	701.500002	0.003	713.500002	0.003
0	701.500004	0.006	713.500004	0.005
10	701.500003	0.004	713.500001	0.002
20	701.499997	-0.004	713.499999	-0.001
30	701.499999	-0.001	713.499997	-0.004
40	701.499997	-0.004	713.499999	-0.002
50	701.499999	-0.002	713.499996	-0.006
60	701.499999	-0.001	713.499999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	704.000001	0.001	711.000003	0.004
3.6	704.000004	0.005	711.000001	0.002
4.35	704.000004	0.006	711.000003	0.004

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	704.000003	0.004	711.000003	0.004
-10	704.000002	0.003	711.000002	0.003
0	704.000004	0.006	711.000003	0.004
10	704.000003	0.004	711.000001	0.002
20	703.999997	-0.004	710.999996	-0.005
30	703.999996	-0.005	710.999997	-0.005
40	703.999999	-0.002	710.999998	-0.003
50	703.999996	-0.006	710.999999	-0.002
60	703.999996	-0.006	710.999997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1710.700002	0.001	1779.300002	0.001
3.6	1710.700002	0.001	1779.300002	0.001
4.35	1710.700002	0.001	1779.300004	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1710.700003	0.002	1779.300002	0.001
-10	1710.700003	0.002	1779.300001	0.001
0	1710.700002	0.001	1779.300003	0.002
10	1710.700004	0.002	1779.300003	0.001
20	1710.699998	-0.001	1779.299996	-0.002
30	1710.699997	-0.002	1779.299997	-0.002
40	1710.699996	-0.002	1779.299998	-0.001
50	1710.699997	-0.002	1779.299999	-0.001
60	1710.699998	-0.001	1779.299999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1711.500002	0.001	1778.500002	0.001
3.6	1711.500001	0.001	1778.500002	0.001
4.35	1711.500002	0.001	1778.500002	0.001

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1711.500002	0.001	1778.500004	0.002
-10	1711.500002	0.001	1778.500003	0.001
0	1711.500003	0.002	1778.500001	0.001
10	1711.500003	0.002	1778.500001	0.001
20	1711.499997	-0.002	1778.499997	-0.002
30	1711.499996	-0.002	1778.499998	-0.001
40	1711.499997	-0.002	1778.499996	-0.002
50	1711.499999	-0.001	1778.499996	-0.002
60	1711.499998	-0.001	1778.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.500002	0.001	1777.500002	0.001
3.6	1712.500001	0.001	1777.500003	0.002
4.35	1712.500002	0.001	1777.500002	0.001

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1712.500003	0.002	1777.500003	0.002
-10	1712.500003	0.002	1777.500002	0.001
0	1712.500003	0.002	1777.500004	0.002
10	1712.500002	0.001	1777.500004	0.002
20	1712.499999	-0.001	1777.499997	-0.002
30	1712.499998	-0.001	1777.499999	-0.001
40	1712.499997	-0.002	1777.499996	-0.002
50	1712.499999	-0.001	1777.499998	-0.001
60	1712.499996	-0.002	1777.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1715.000003	0.002	1775.000004	0.002
3.6	1715.000002	0.001	1775.000003	0.001
4.35	1715.000004	0.002	1775.000002	0.001

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1715.000003	0.002	1775.000002	0.001
-10	1715.000001	0.001	1775.000002	0.001
0	1715.000002	0.001	1775.000003	0.002
10	1715.000002	0.001	1775.000002	0.001
20	1714.999998	-0.001	1774.999996	-0.002
30	1714.999998	-0.001	1774.999996	-0.002
40	1714.999997	-0.002	1774.999997	-0.002
50	1714.999996	-0.002	1774.999998	-0.001
60	1714.999998	-0.001	1774.999996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1717.500003	0.002	1772.500003	0.001
3.6	1717.500001	0.001	1772.500003	0.001
4.35	1717.500003	0.002	1772.500004	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1717.500002	0.001	1772.500003	0.002
-10	1717.500002	0.001	1772.500004	0.002
0	1717.500001	0.001	1772.500002	0.001
10	1717.500004	0.002	1772.500003	0.002
20	1717.499997	-0.002	1772.499998	-0.001
30	1717.499997	-0.002	1772.499998	-0.001
40	1717.499998	-0.001	1772.499996	-0.002
50	1717.499996	-0.002	1772.499999	-0.001
60	1717.499997	-0.002	1772.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1720.000001	0.001	1770.000003	0.001
3.6	1720.000004	0.002	1770.000003	0.002
4.35	1720.000003	0.002	1770.000003	0.002

Note: The applicant defined the normal working voltage is from 3.6 Vdc to 4.35 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1720.000004	0.002	1770.000001	0.001
-10	1720.000003	0.002	1770.000003	0.002
0	1720.000004	0.002	1770.000003	0.001
10	1720.000001	0.001	1770.000003	0.002
20	1719.999997	-0.002	1769.999996	-0.002
30	1719.999997	-0.002	1769.999999	-0.001
40	1719.999998	-0.001	1769.999998	-0.001
50	1719.999998	-0.001	1769.999998	-0.001
60	1719.999999	-0.001	1769.999999	-0.001

4.4 Occupied Bandwidth Measurement

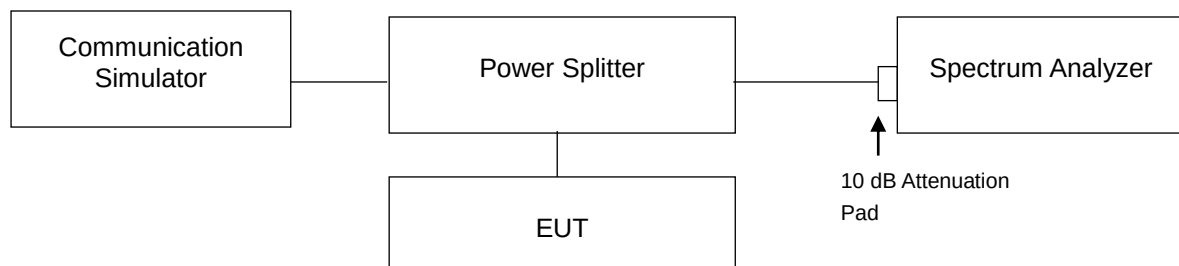
4.4.1 Limits of Occupied Bandwidth Measurement

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.2 Test Procedure

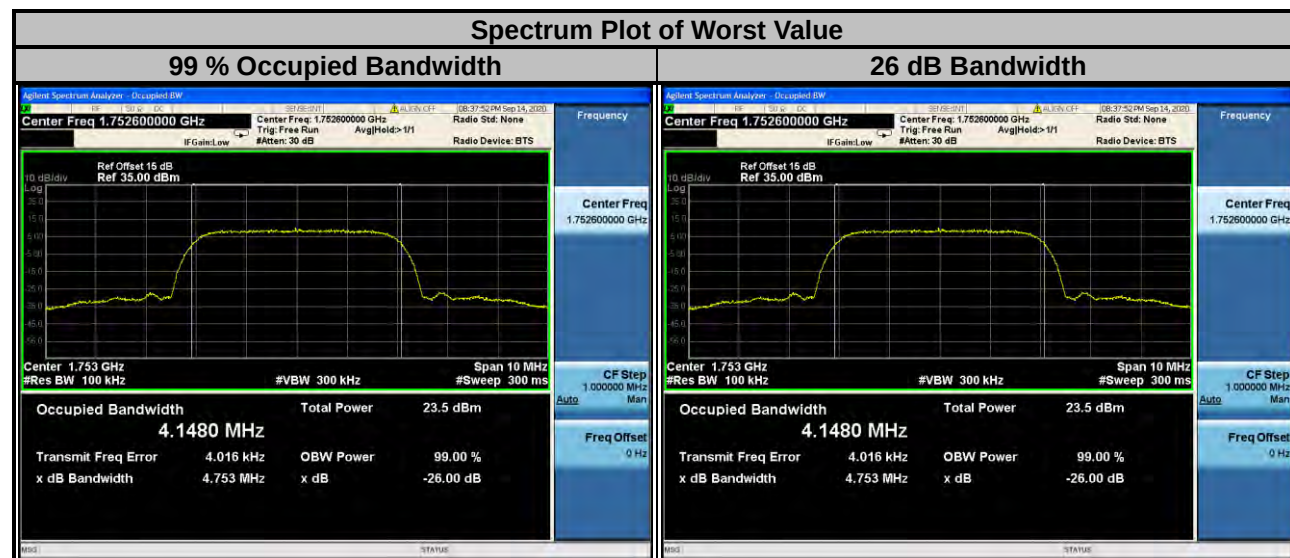
- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.3 Test Setup



4.4.4 Test Result

WCDMA			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1312	1712.4	4.1365	4.707
1413	1732.6	4.1392	4.702
1513	1752.6	4.1480	4.753



LTE Band 4

Channel Bandwidth: 1.4 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19957	1710.7	1.0890	1.0910	1.267	1.282
20175	1732.5	1.0884	1.0908	1.270	1.279
20393	1754.3	1.0897	1.0906	1.294	1.316

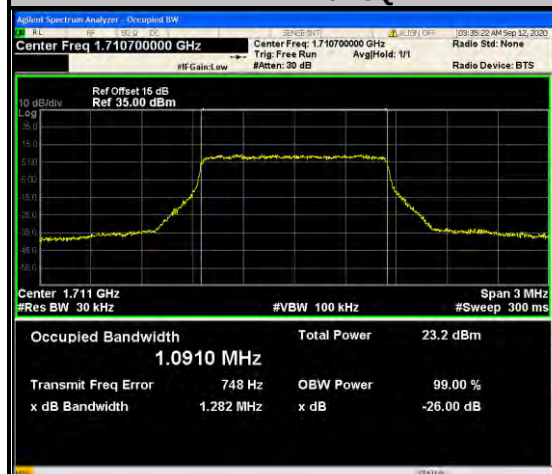
Channel Bandwidth: 3 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19965	1711.5	2.6974	2.6948	2.937	2.924
20175	1732.5	2.6989	2.6969	2.923	2.930
20385	1753.5	2.6986	2.6974	2.964	2.978

Spectrum Plot of Worst Value

99 % Occupied Bandwidth

1.4 MHz / 16QAM

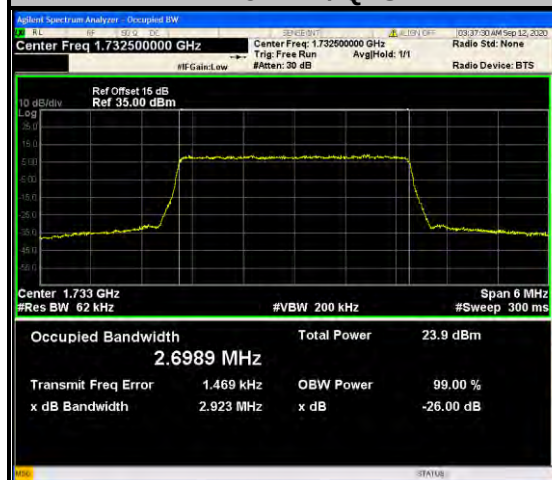


26 dB Bandwidth

1.4 MHz / 16QAM



3 MHz / QPSK



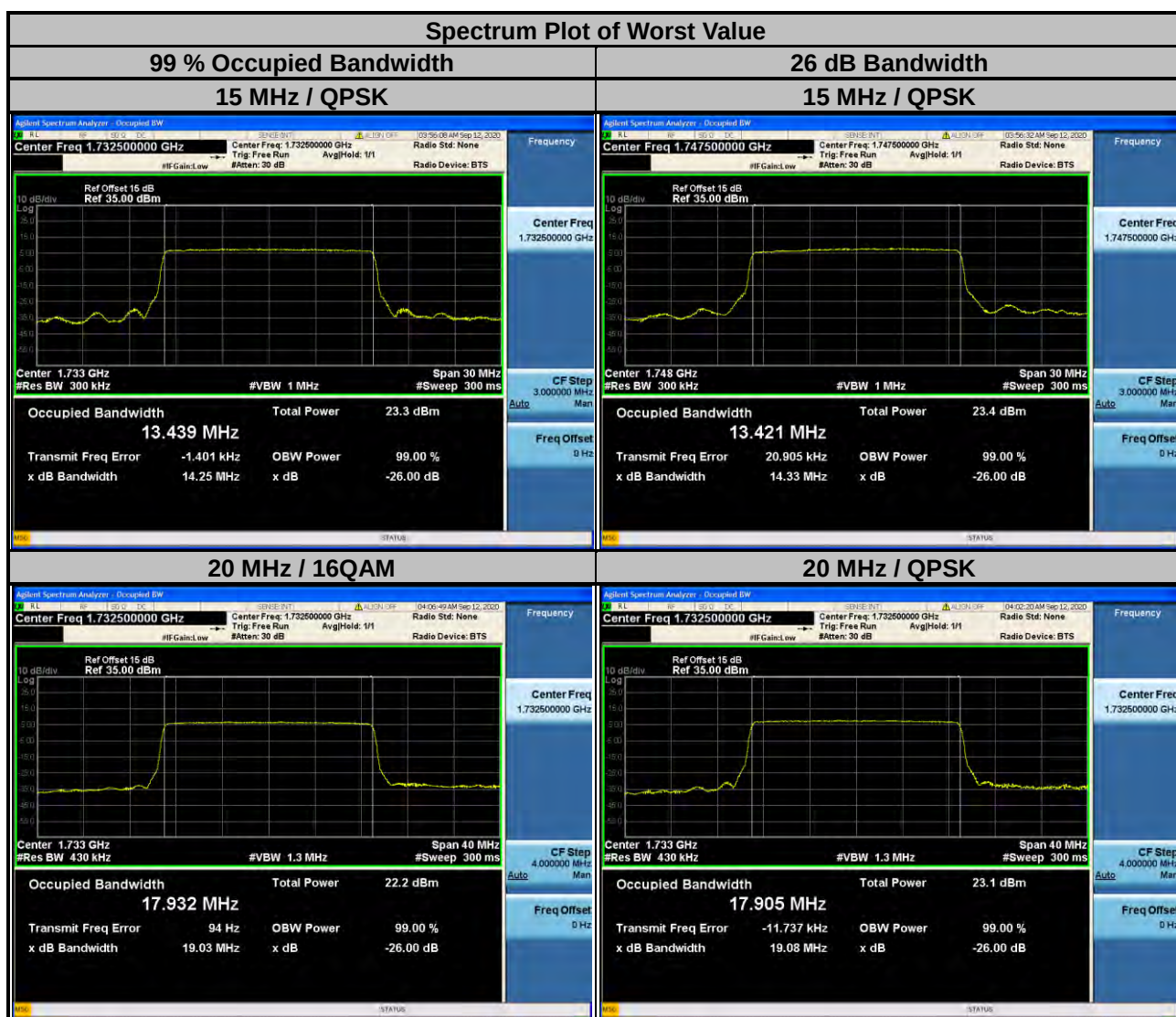
3 MHz / 16QAM



LTE Band 4					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19975	1712.5	4.4863	4.4908	4.840	4.849
20175	1732.5	4.4883	4.4910	4.826	4.833
20375	1752.5	4.4895	4.4906	4.893	4.909
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20000	1715.0	8.9431	8.9407	9.568	9.547
20175	1732.5	8.9581	8.9548	9.577	9.547
20350	1750.0	8.9496	8.9494	9.674	9.611



LTE Band 4					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20025	1717.5	13.407	13.400	14.27	14.25
20175	1732.5	13.439	13.427	14.25	14.25
20325	1747.5	13.42	13.41	14.33	14.29
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20050	1720.0	17.841	17.866	19.02	18.99
20175	1732.5	17.905	17.932	19.08	19.03
20300	1745.0	17.879	17.898	19.06	19.04



LTE Band 12

Channel Bandwidth: 1.4 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23017	699.7	1.0879	1.0903	1.246	1.252
23095	707.5	1.0877	1.0897	1.256	1.253
23173	715.3	1.0874	1.0888	1.242	1.249

Channel Bandwidth: 3 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23025	700.5	2.6991	2.6944	2.906	2.921
23095	707.5	2.6981	2.6950	2.902	2.921
23165	714.5	2.6985	2.6960	2.921	2.922

Spectrum Plot of Worst Value

99 % Occupied Bandwidth

1.4 MHz / 16QAM



26 dB Bandwidth

1.4 MHz / QPSK



3 MHz / QPSK



3 MHz / 16QAM



LTE Band 12

Channel Bandwidth: 5 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23035	701.5	4.4845	4.4861	4.791	4.798
23095	707.5	4.4871	4.4868	4.817	4.814
23155	713.5	4.4850	4.4865	4.822	4.815

Channel Bandwidth: 10 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23060	704.0	8.9472	8.9562	9.510	9.505
23095	707.5	8.9520	8.9531	9.496	9.521
23130	711.0	8.9446	8.9472	9.509	9.506

Spectrum Plot of Worst Value

99 % Occupied Bandwidth

5 MHz / QPSK



26 dB Bandwidth

5 MHz / QPSK



10 MHz / 16QAM



10 MHz / 16QAM



LTE Band 66

Channel Bandwidth: 1.4 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131979	1710.7	1.0905	1.0892	1.253	1.259
132322	1745.0	1.0907	1.0901	1.252	1.251
132665	1779.3	1.0909	1.0885	1.252	1.260

Channel Bandwidth: 3 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131987	1711.5	2.6959	2.6971	2.911	2.919
132322	1745.0	2.6972	2.6951	2.906	2.917
132657	1778.5	2.6967	2.6959	2.916	2.929

Spectrum Plot of Worst Value

99 % Occupied Bandwidth

1.4 MHz / QPSK



26 dB Bandwidth

1.4 MHz / QPSK



3 MHz / QPSK



3 MHz / QPSK



LTE Band 66

Channel Bandwidth: 5 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131997	1712.5	4.4963	4.4897	4.842	4.812
132322	1745.0	4.4906	4.4918	4.818	4.811
132647	1777.5	4.4919	4.4898	4.826	4.820

Channel Bandwidth: 10 MHz

Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132022	1715.0	8.9475	8.9434	9.513	9.503
132322	1745.0	8.9480	8.9523	9.505	9.506
132622	1775.0	8.9477	8.9453	9.499	9.500

Spectrum Plot of Worst Value

99 % Occupied Bandwidth

5 MHz / QPSK



26 dB Bandwidth

5 MHz / QPSK



10 MHz / 16QAM



10 MHz / QPSK



LTE Band 66					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132047	1717.5	13.408	13.398	14.21	14.21
132322	1745.0	13.422	13.412	14.21	14.21
132597	1772.5	13.418	13.410	14.21	14.21
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132072	1720.0	17.849	17.868	18.98	18.97
132322	1745.0	17.880	17.888	18.99	18.97
132572	1770.0	17.895	17.907	19.01	19.01



4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

For operations in the 600 MHz and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

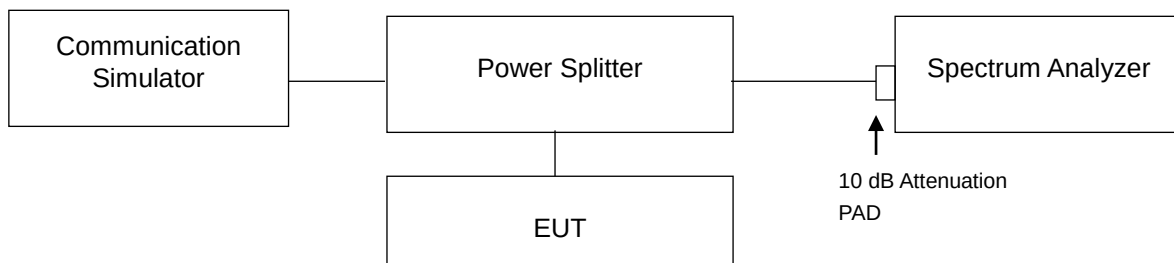
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

On all frequencies between 763-775 MHz and 793-805 MHz, by a factor no less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log (P)$ dB.

4.5.2 Test Setup



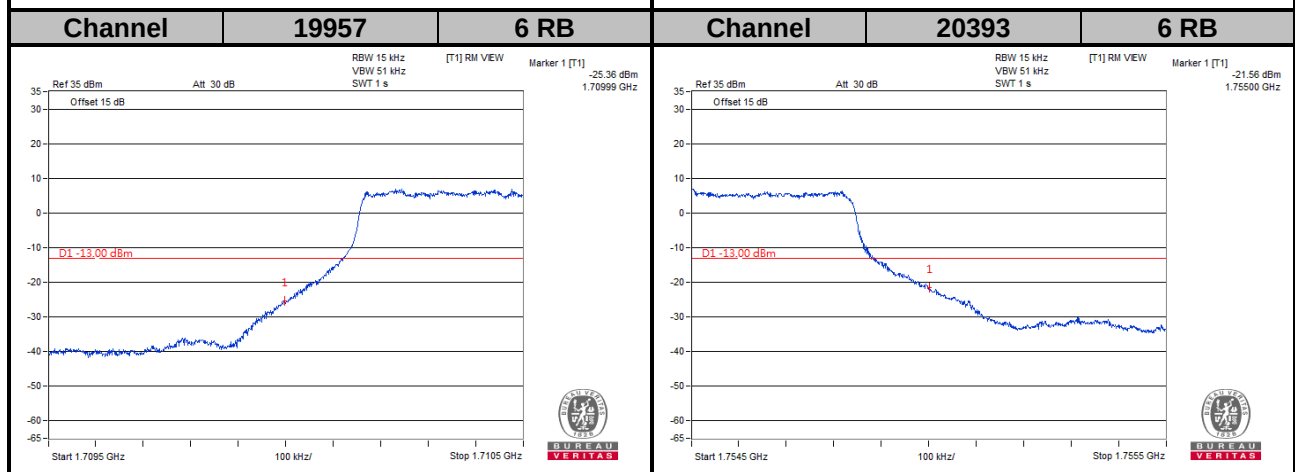
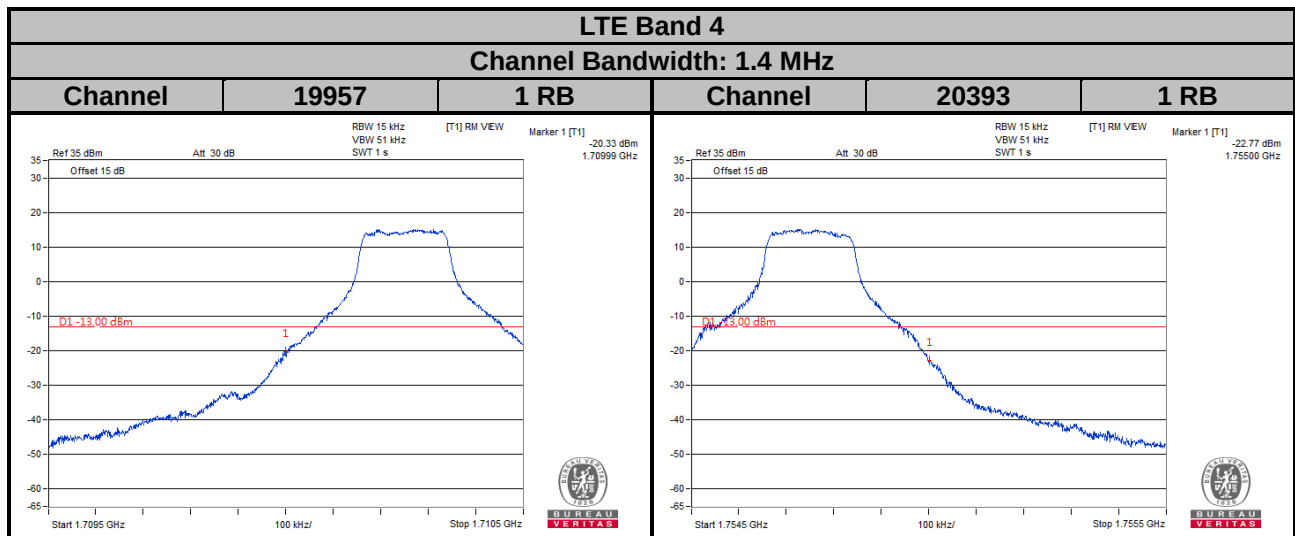
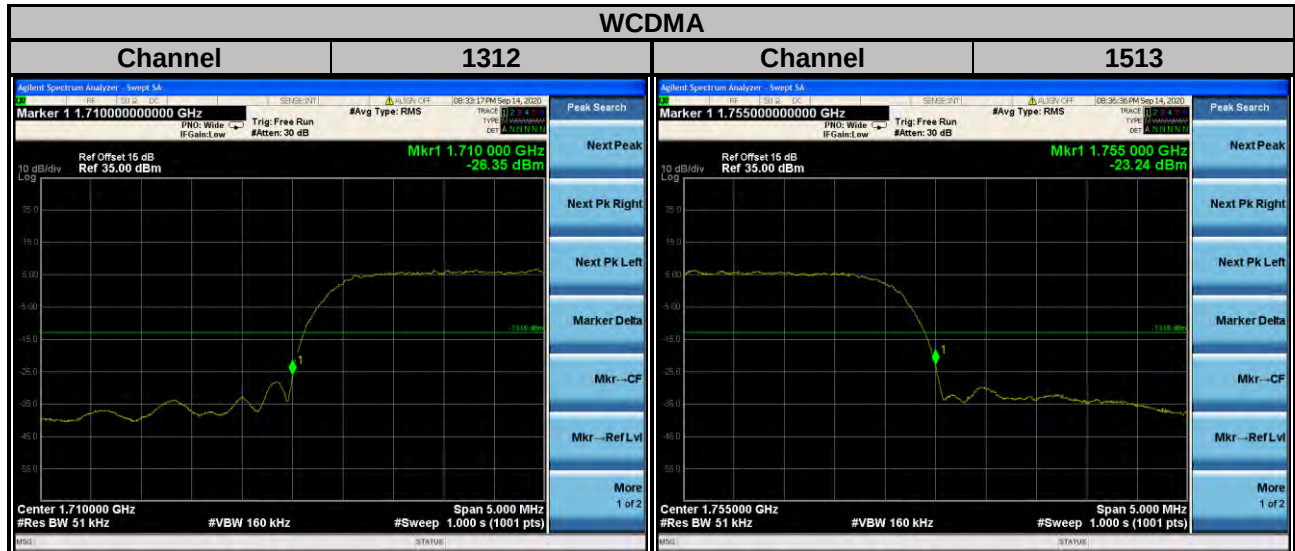
4.5.3 Test Procedures

- a. All measurements were done at low and high operational frequency range.
 - a. The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (WCDMA).
 - b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 15 kHz or 30 kHz and VB of the spectrum is 51 kHz or 100 kHz (LTE Bandwidth 1.4 MHz).
 - c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
 - d. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (LTE Bandwidth 5 MHz).
 - e. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 10 MHz).
 - f. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150 kHz and VB of the spectrum is 470 kHz (LTE Bandwidth 15 MHz).
 - g. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is

200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz).

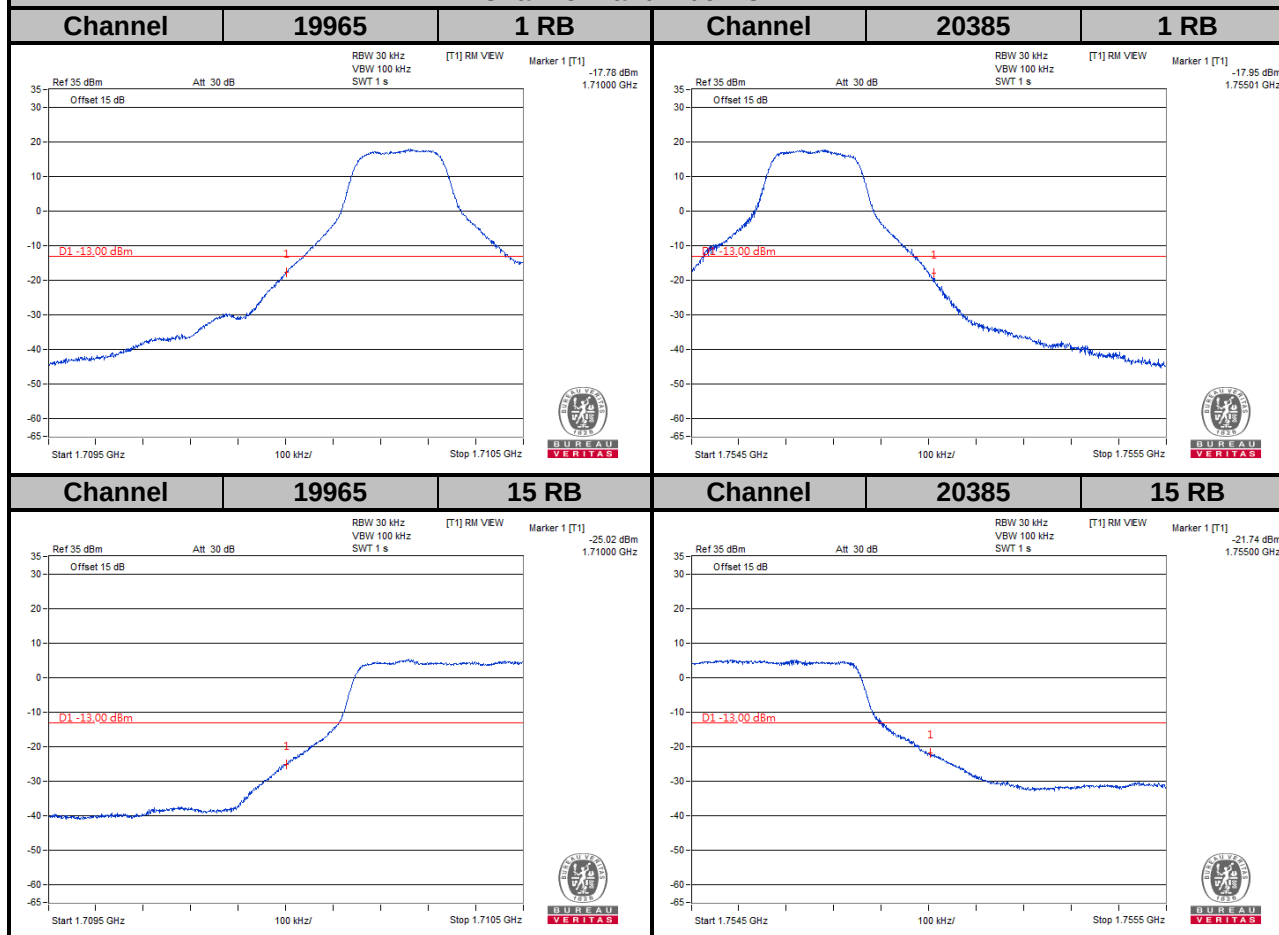
h. Record the max. trace plot into the test report.

4.5.4 Test Results



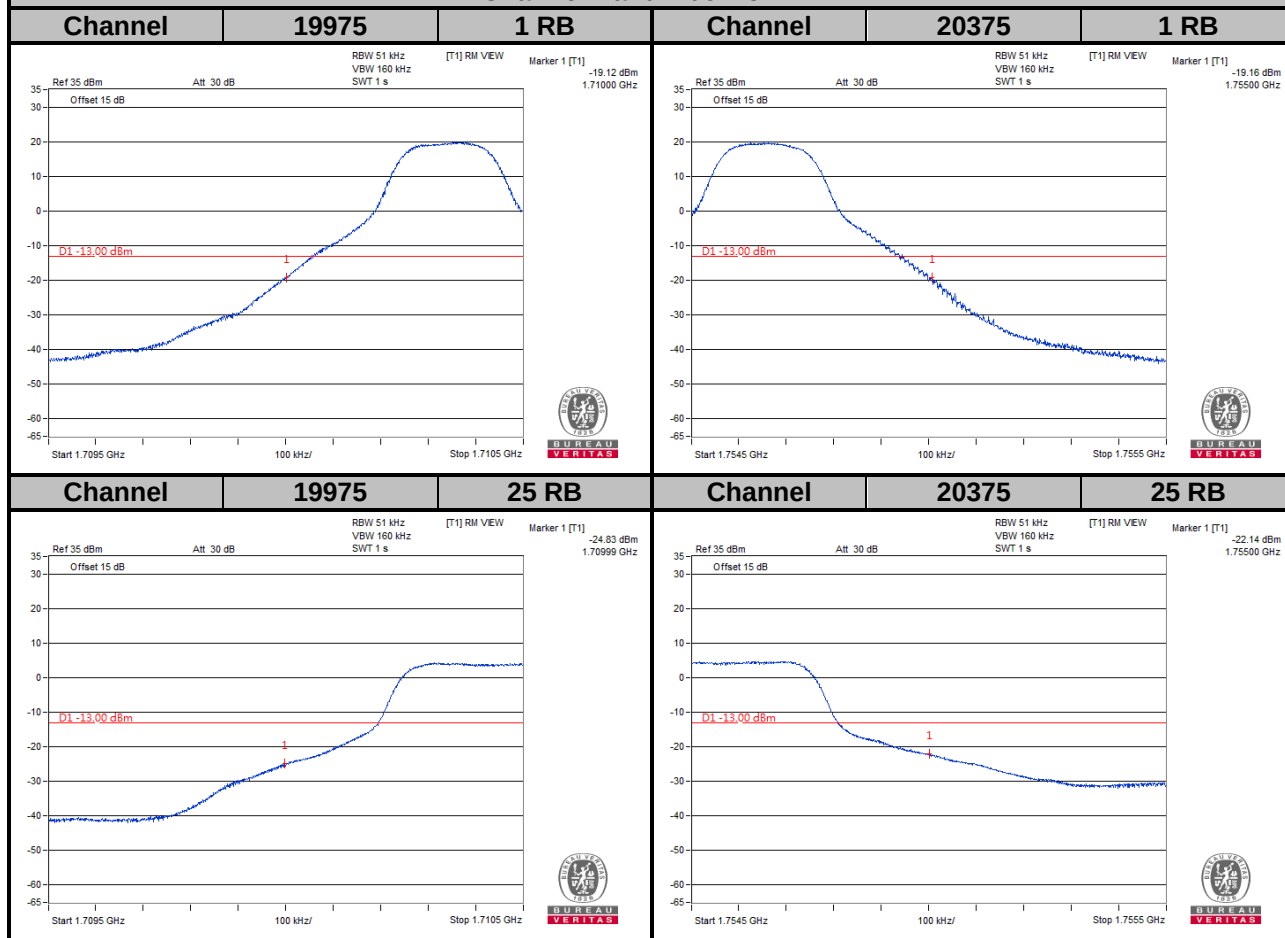
LTE Band 4

Channel Bandwidth: 3 MHz



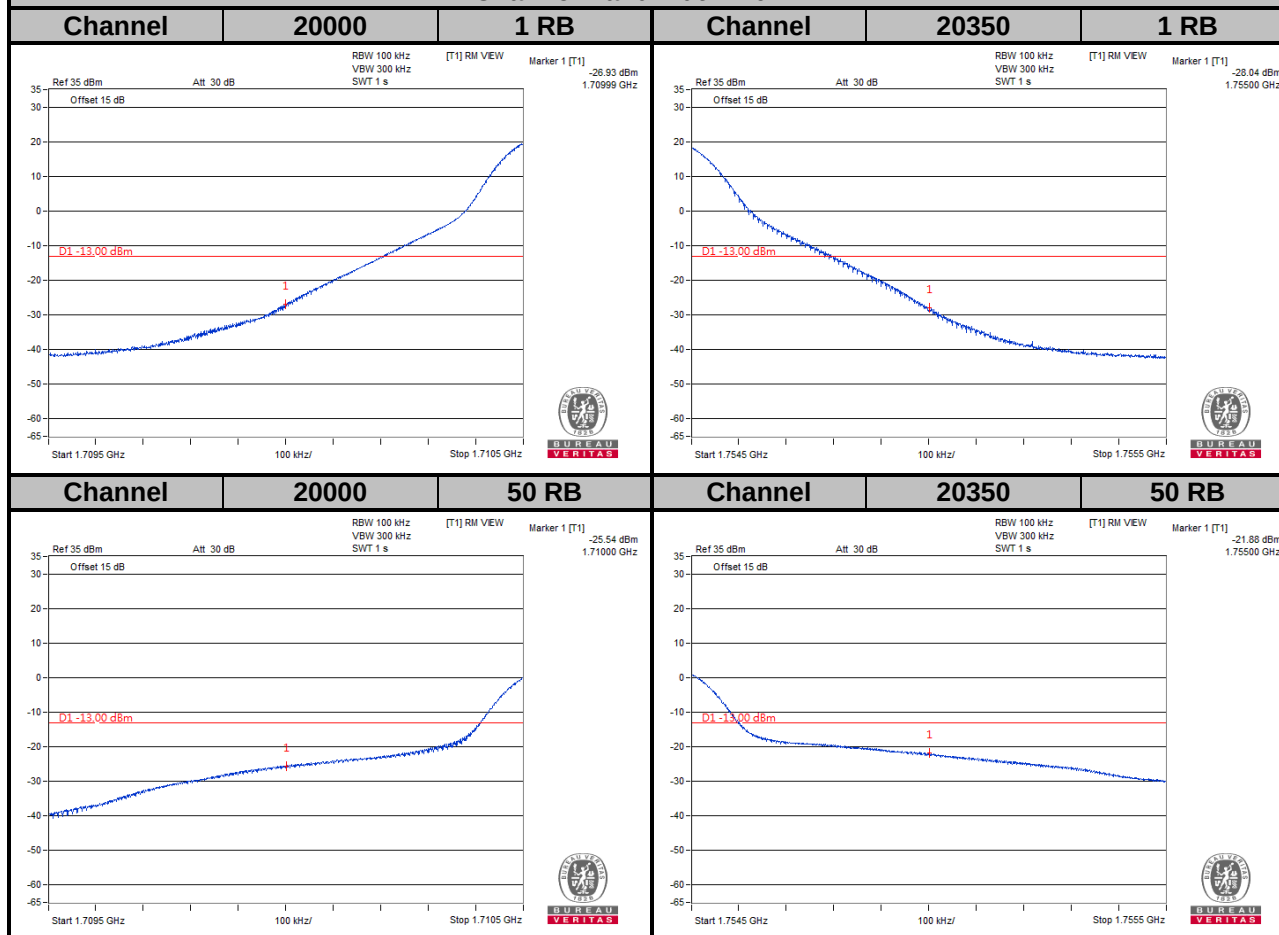
LTE Band 4

Channel Bandwidth: 5 MHz



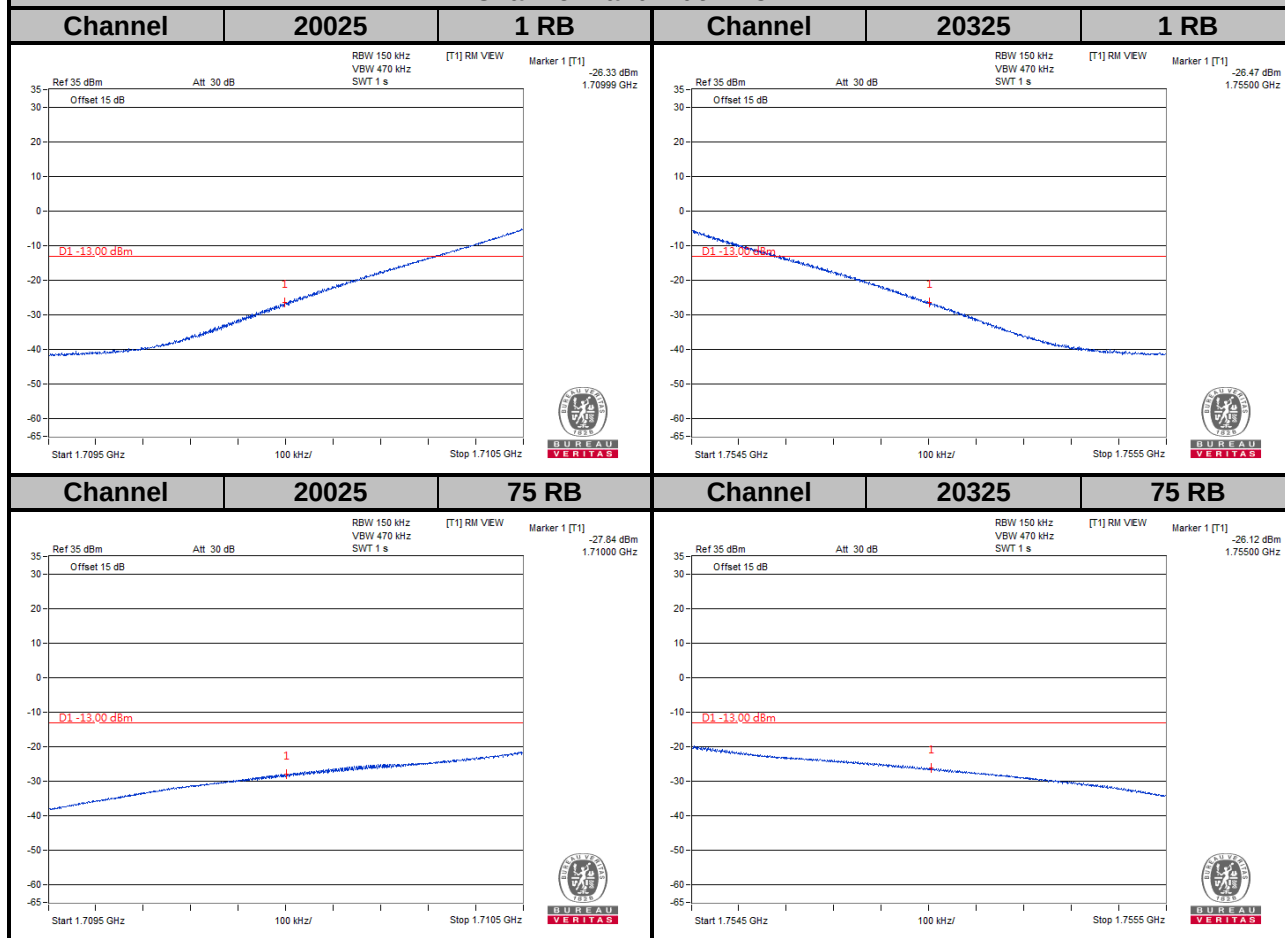
LTE Band 4

Channel Bandwidth: 10 MHz



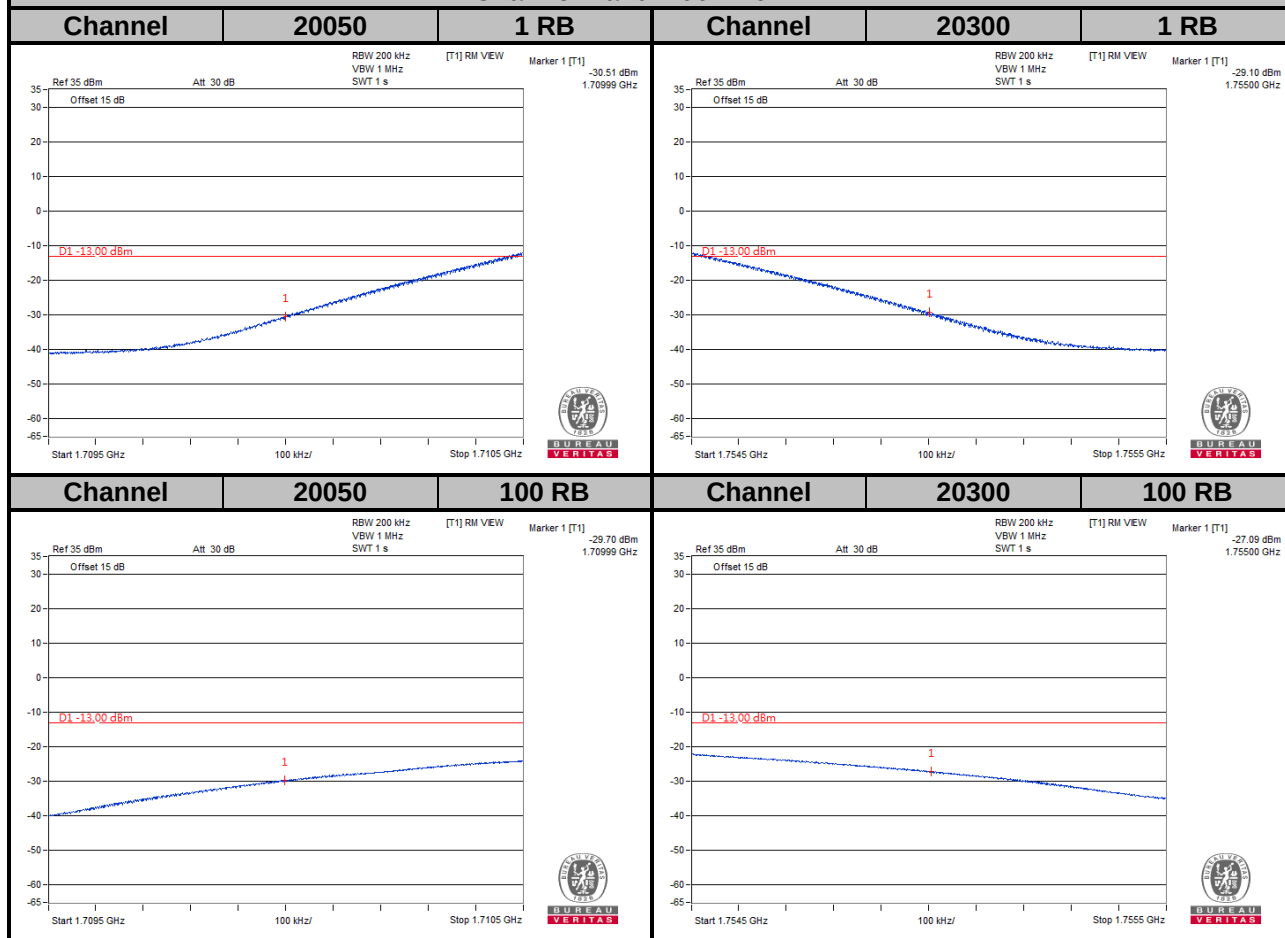
LTE Band 4

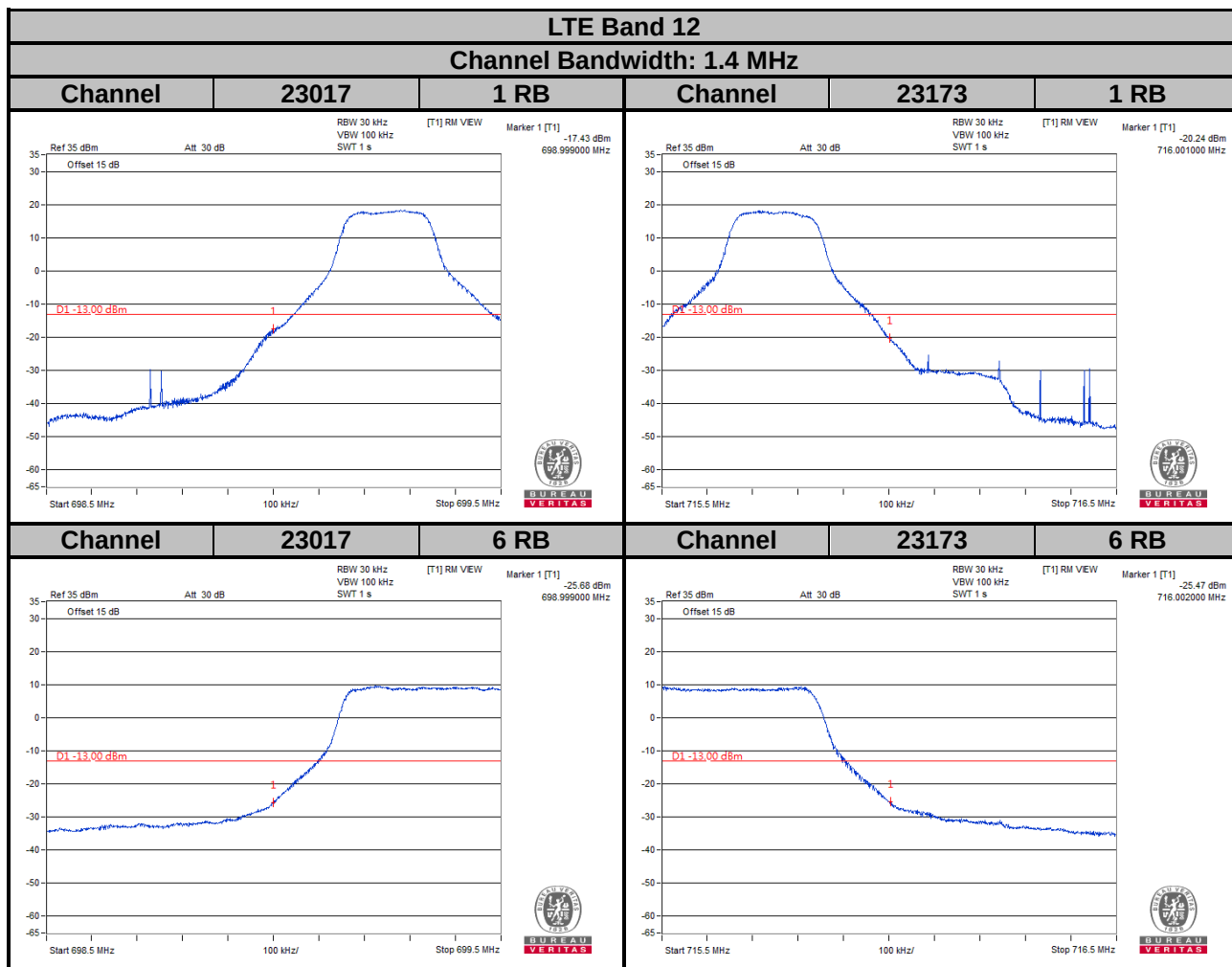
Channel Bandwidth: 15 MHz



LTE Band 4

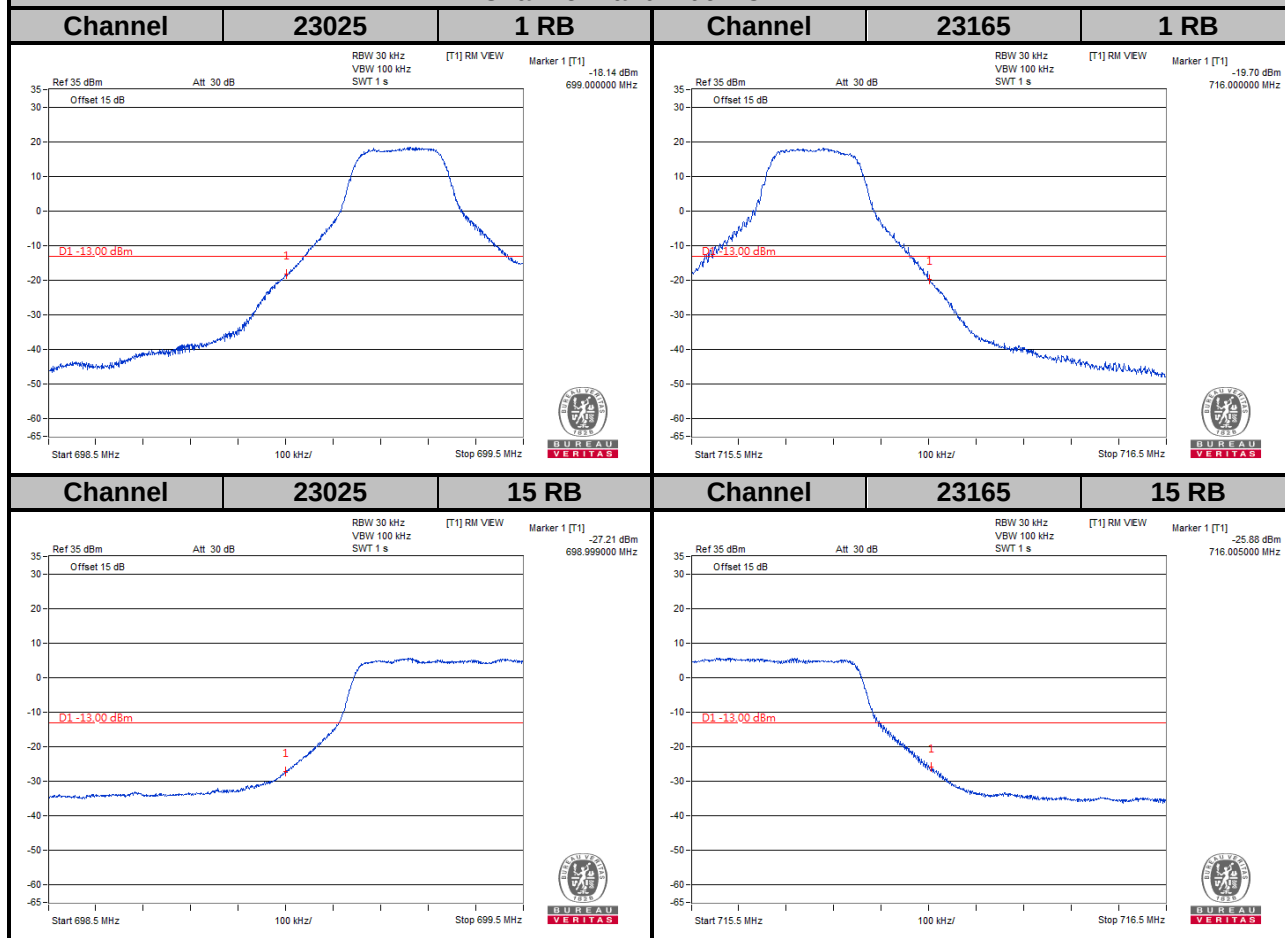
Channel Bandwidth: 20 MHz





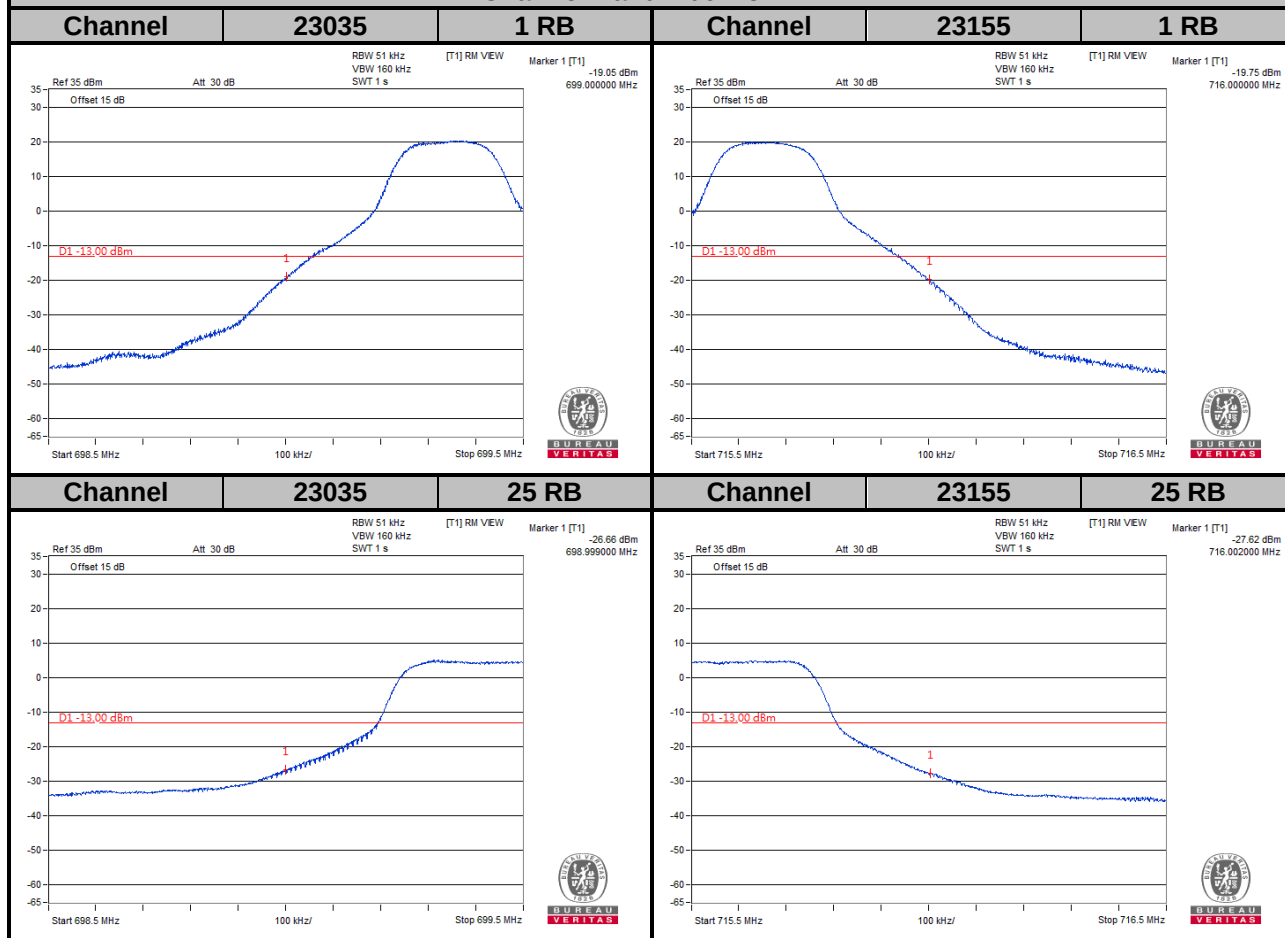
LTE Band 12

Channel Bandwidth: 3 MHz



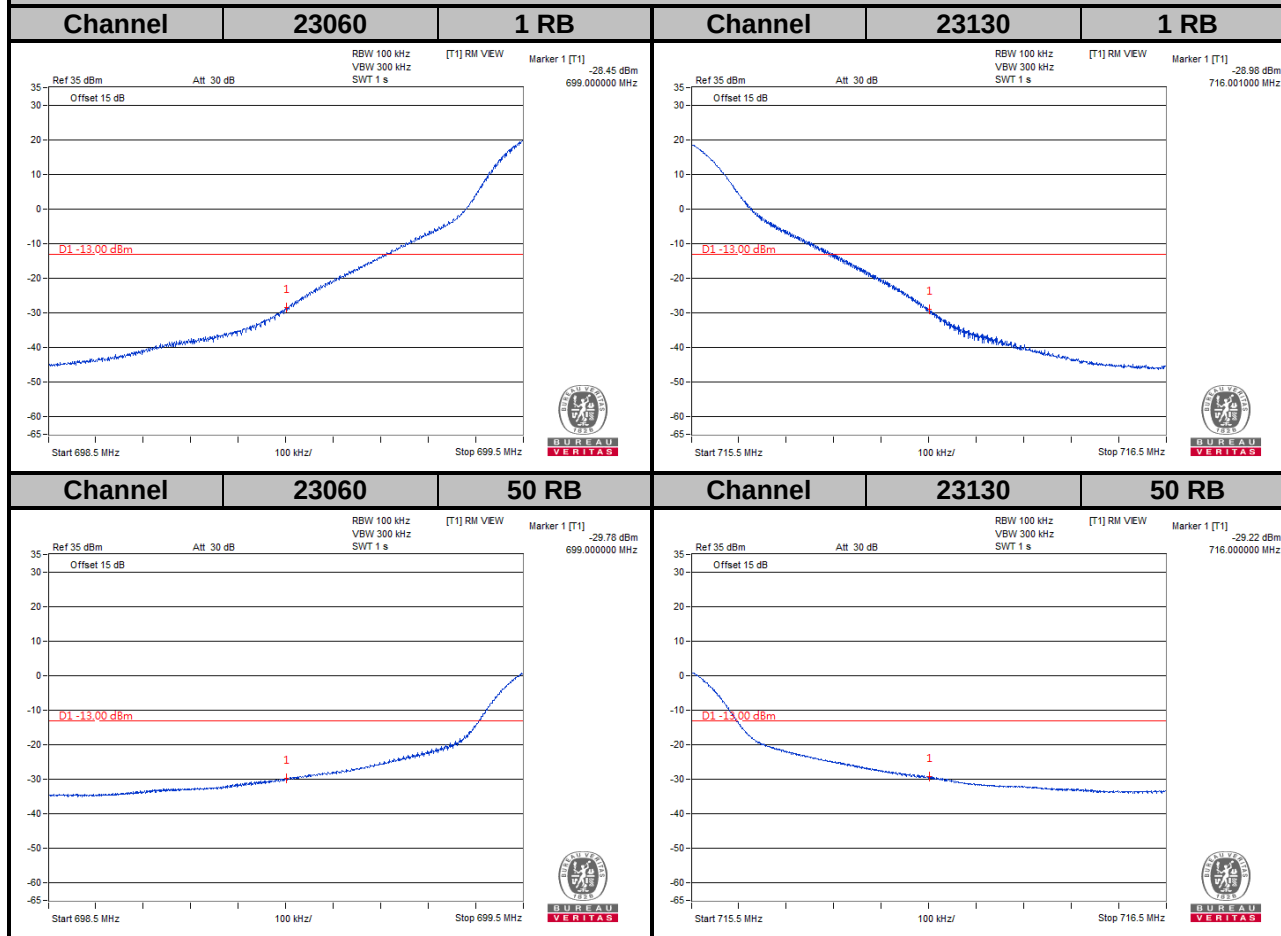
LTE Band 12

Channel Bandwidth: 5 MHz



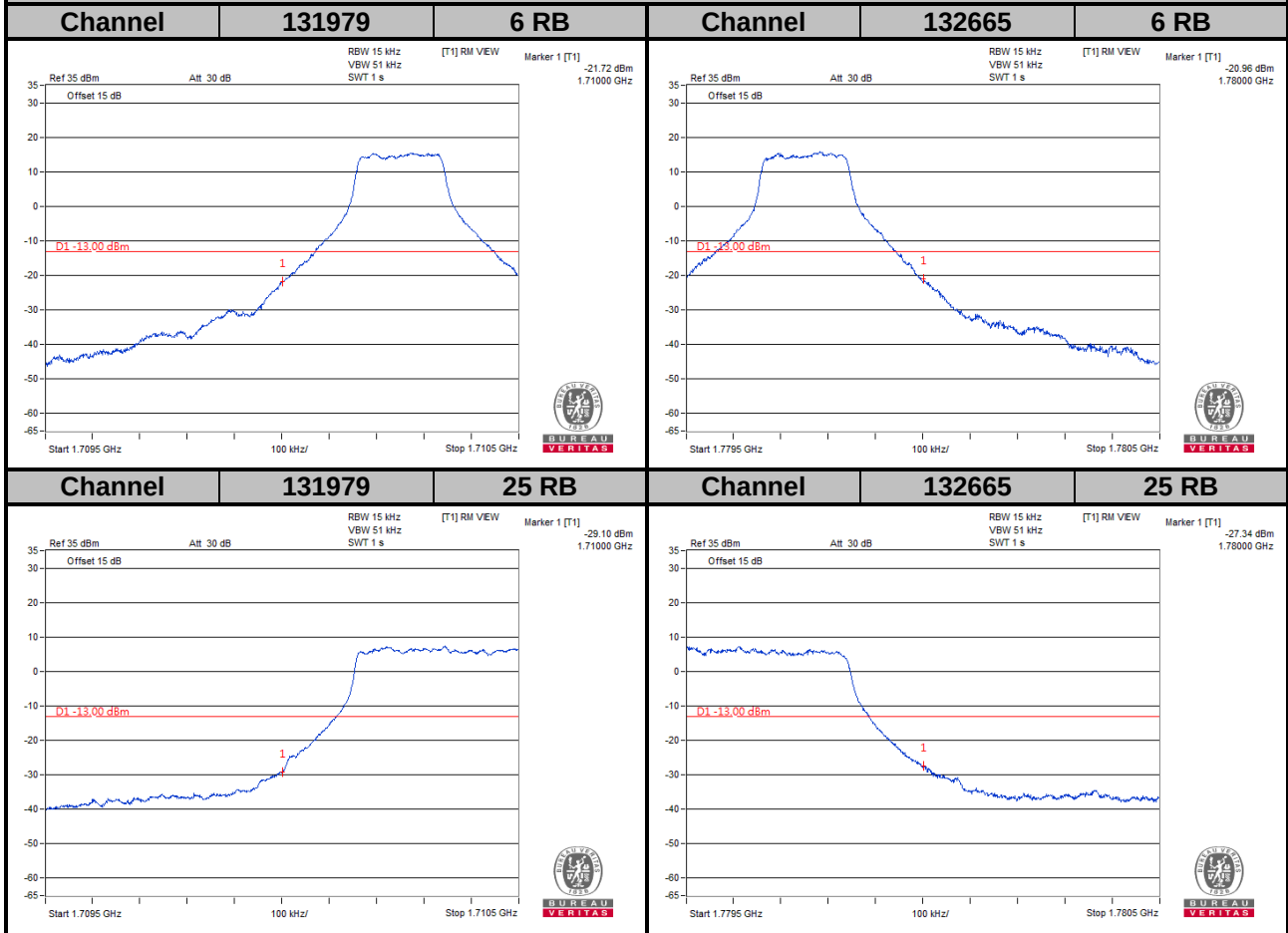
LTE Band 12

Channel Bandwidth: 10 MHz



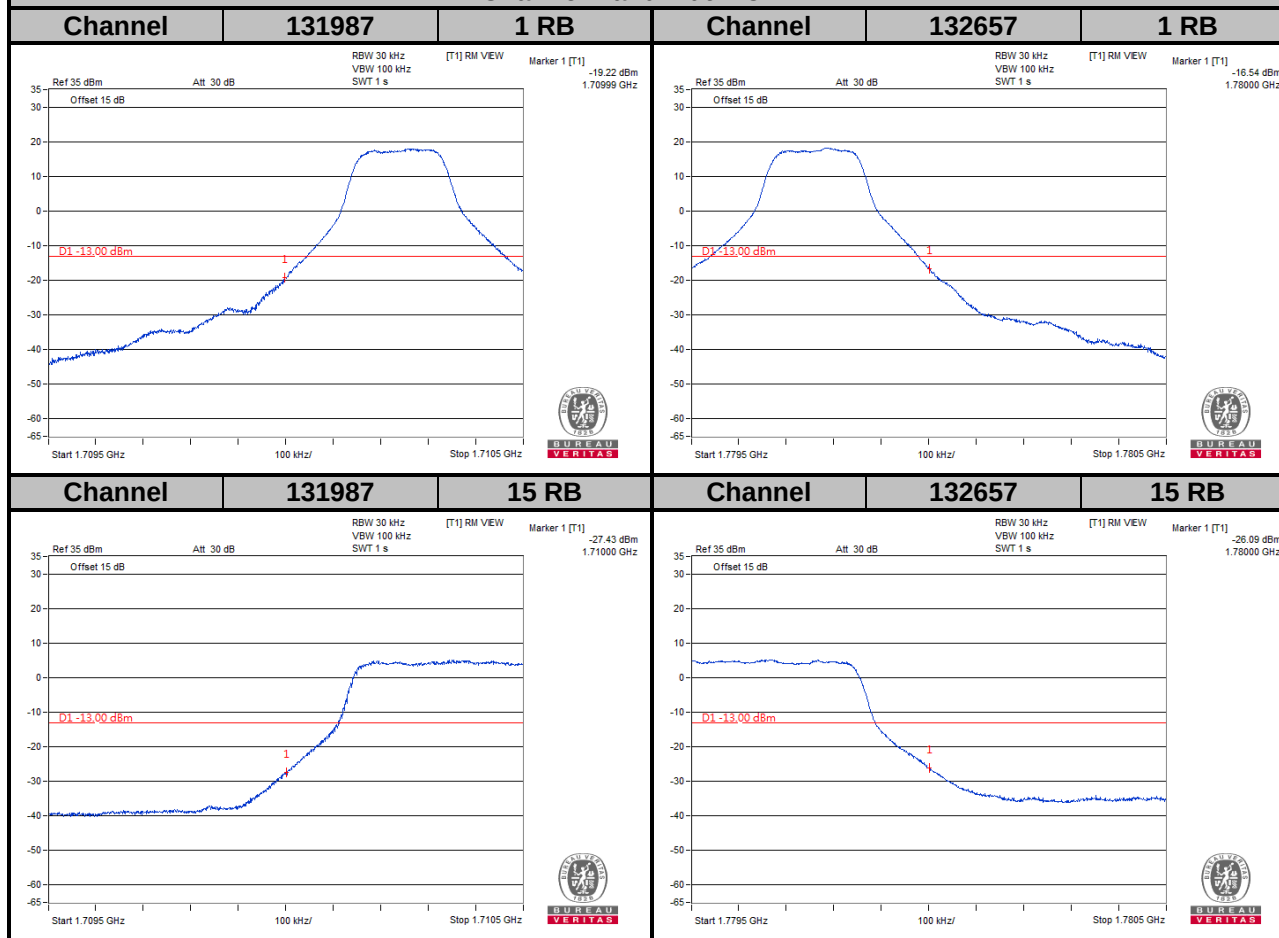
LTE Band 66

Channel Bandwidth: 1.4 MHz



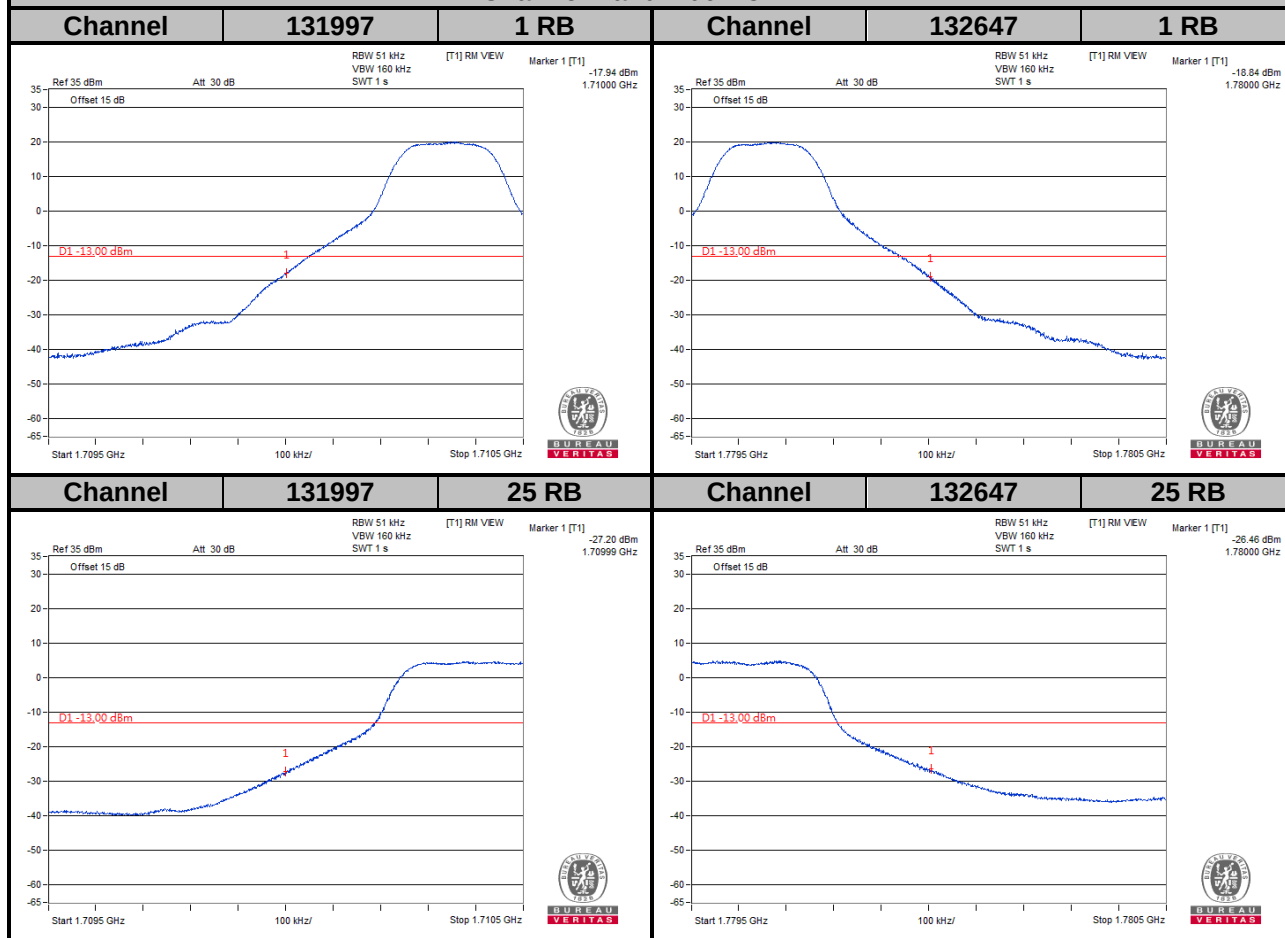
LTE Band 66

Channel Bandwidth: 3 MHz



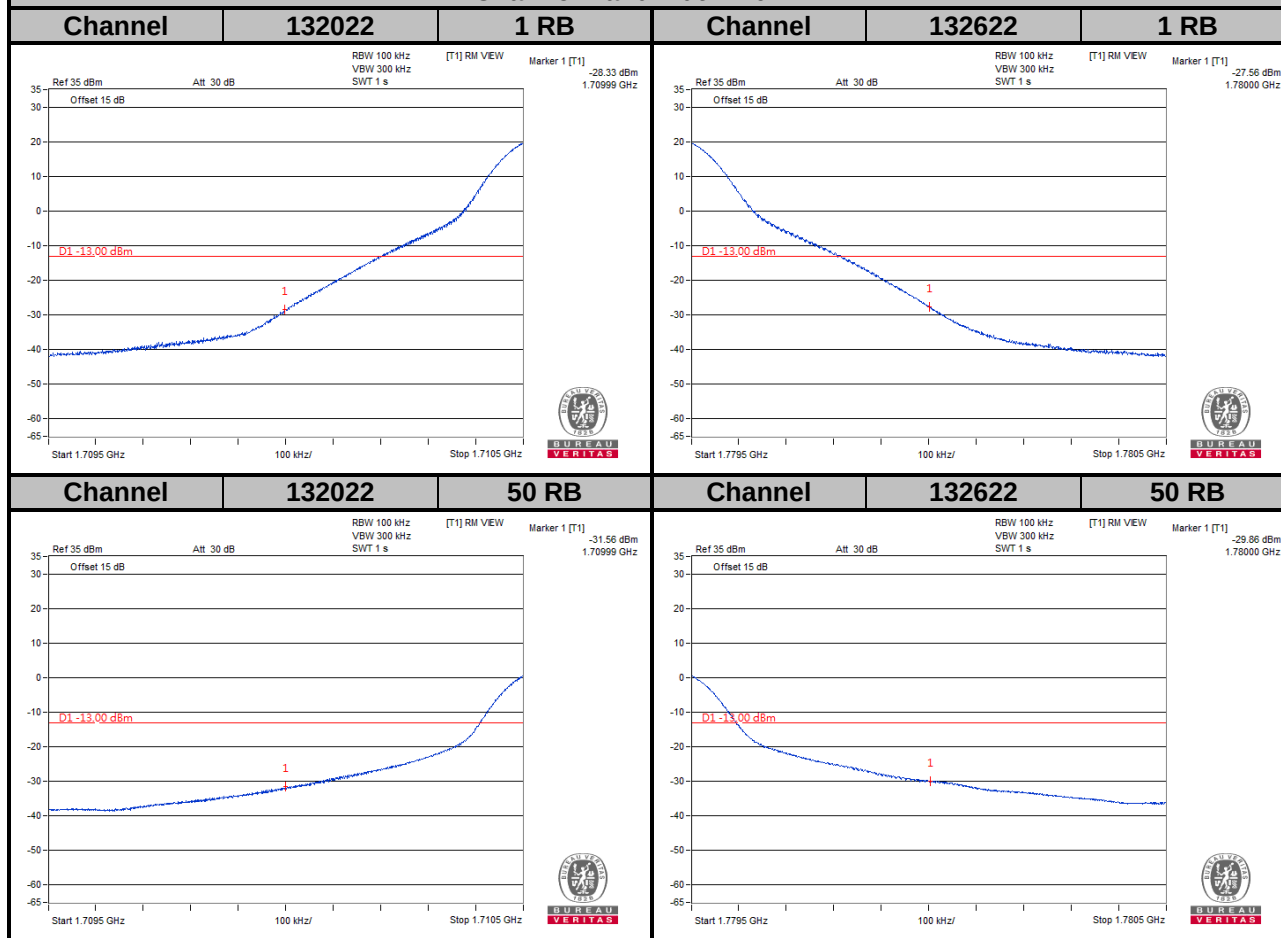
LTE Band 66

Channel Bandwidth: 5 MHz



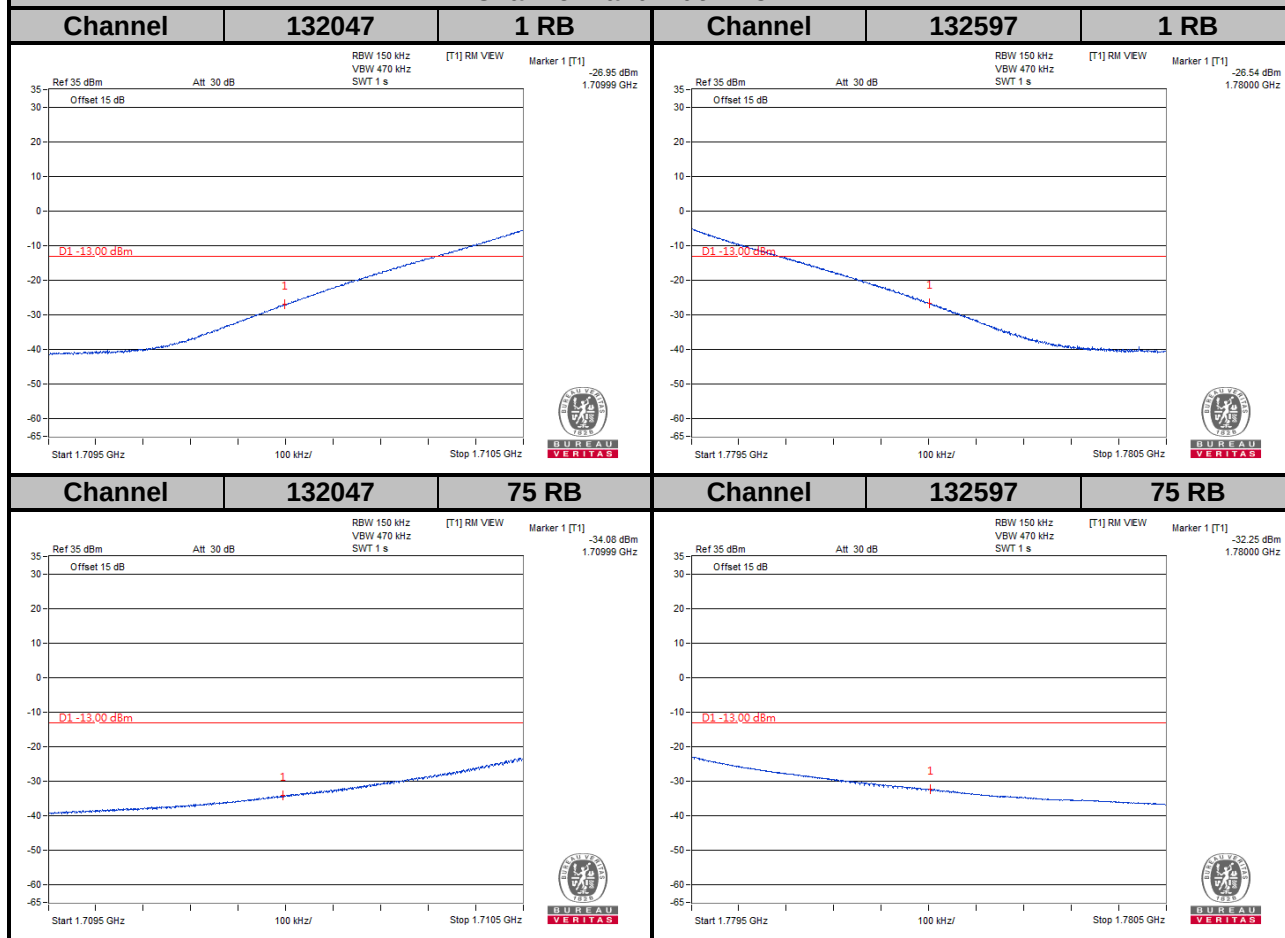
LTE Band 66

Channel Bandwidth: 10 MHz



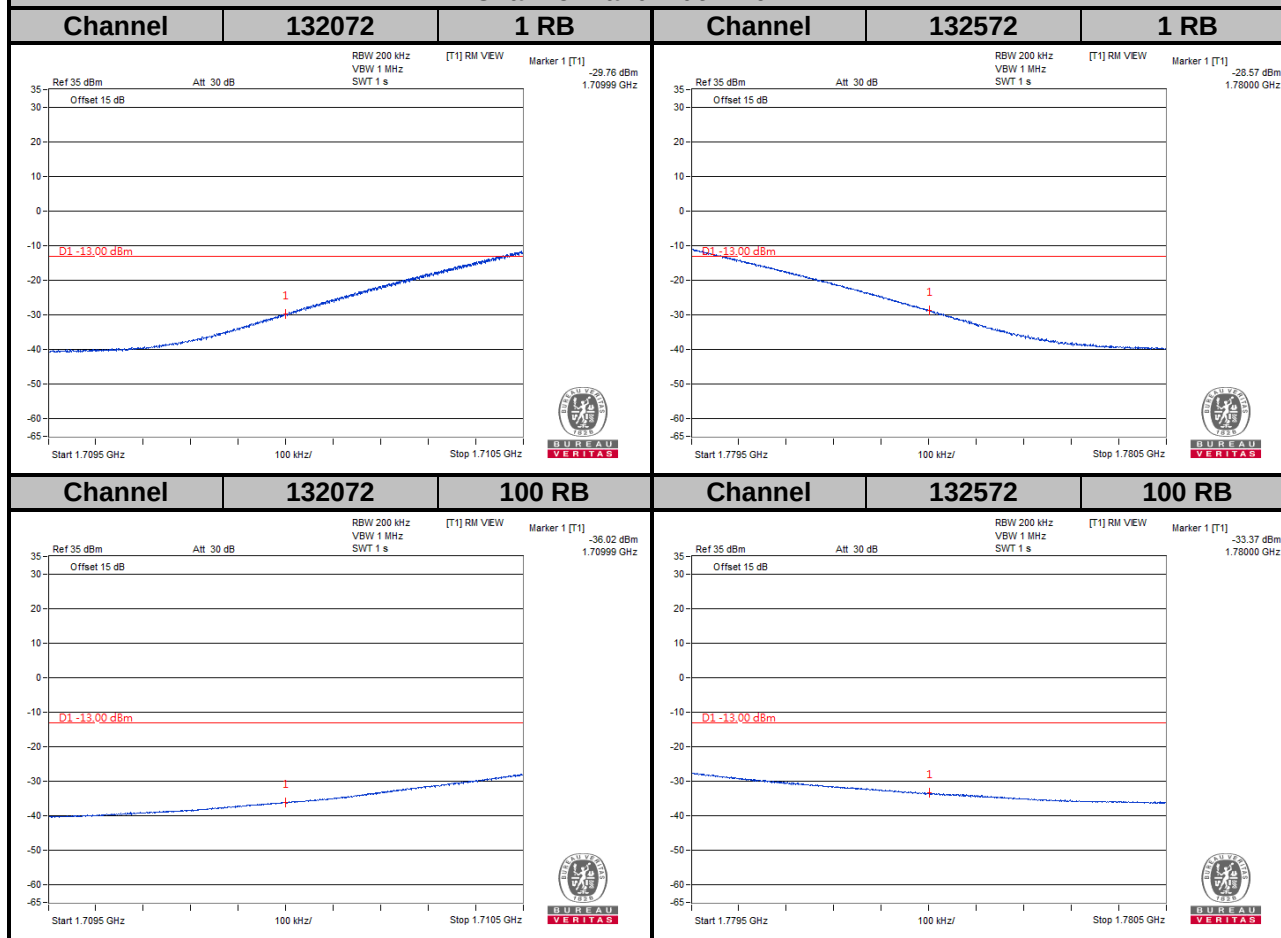
LTE Band 66

Channel Bandwidth: 15 MHz



LTE Band 66

Channel Bandwidth: 20 MHz

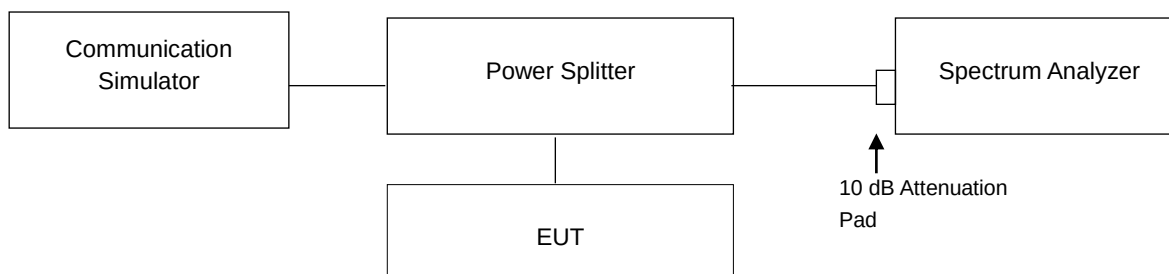


4.6 Peak to Average Ratio

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

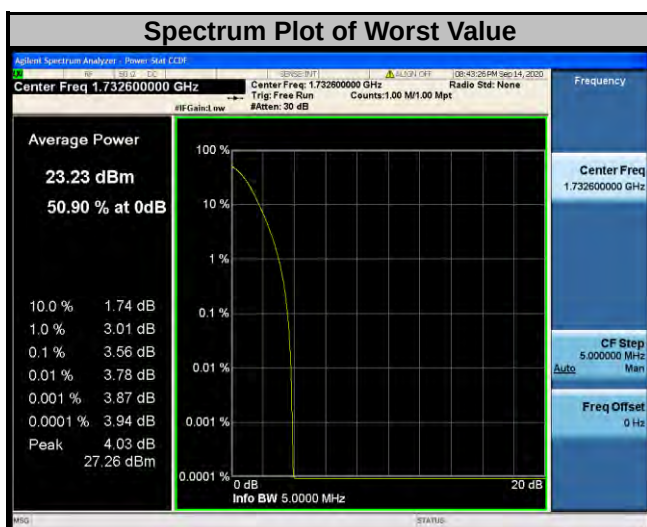


4.6.3 Test Procedures

1. Set resolution/measurement bandwidth $\geq$ 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

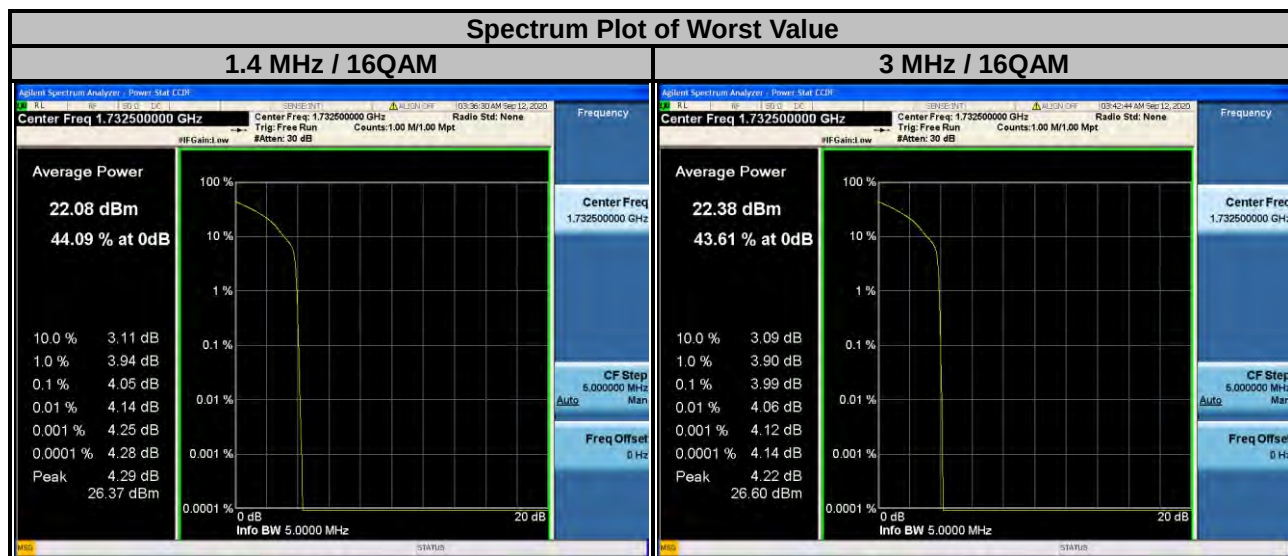
WCDMA		
Channel	Frequency (MHz)	Peak to Average Ratio (dB)
1312	1712.4	2.88
1413	1732.6	3.56
1513	1752.6	2.48



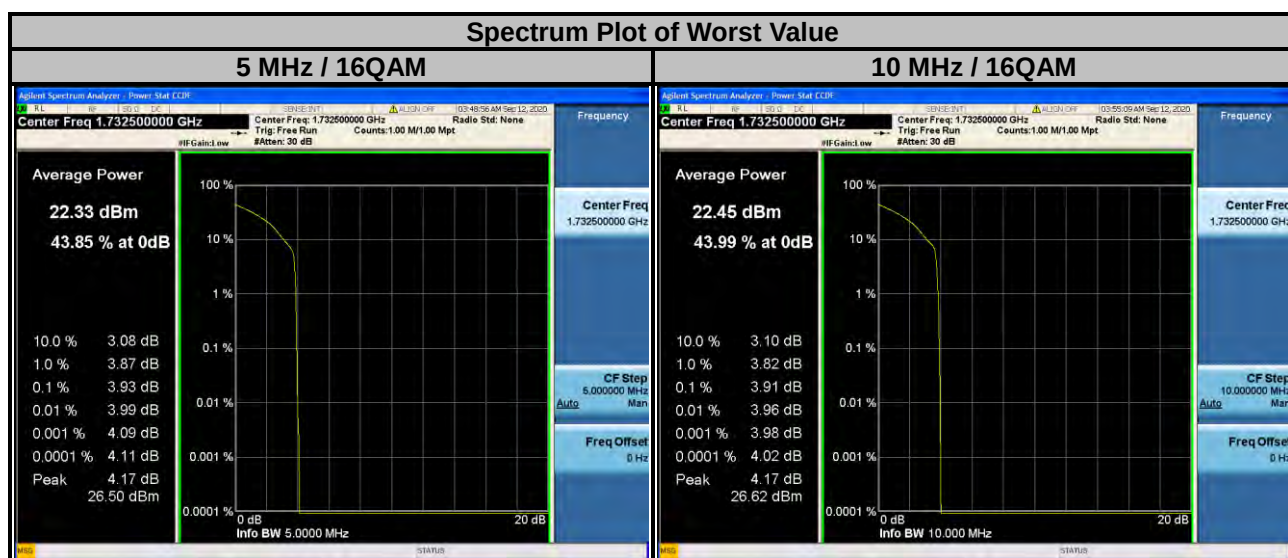
LTE Band 4

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
19957	1710.7	3.18	3.93	19965	1711.5	3.21	3.93
20175	1732.5	3.28	4.05	20175	1732.5	3.28	3.99
20393	1754.3	2.82	3.41	20385	1753.5	2.86	3.42

Spectrum Plot of Worst Value



LTE Band 4							
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
19975	1712.5	3.20	3.89	20000	1715.0	3.12	3.90
20175	1732.5	3.18	3.93	20175	1732.5	3.17	3.91
20375	1752.5	2.82	3.59	20350	1750.0	3.07	3.81



LTE Band 4

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
20025	1717.5	3.07	3.83	20050	1720.0	3.05	3.85
20175	1732.5	3.08	3.87	20175	1732.5	3.07	3.75
20325	1747.5	3.14	3.82	20300	1745.0	3.16	3.87

Spectrum Plot of Worst Value

15 MHz / 16QAM



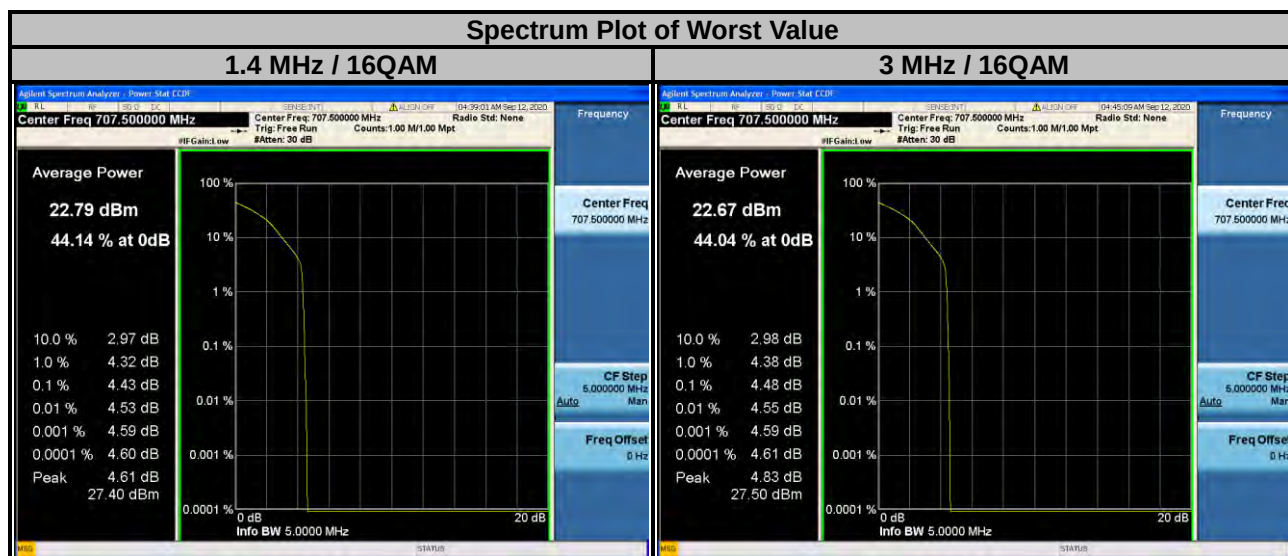
20 MHz / 16QAM



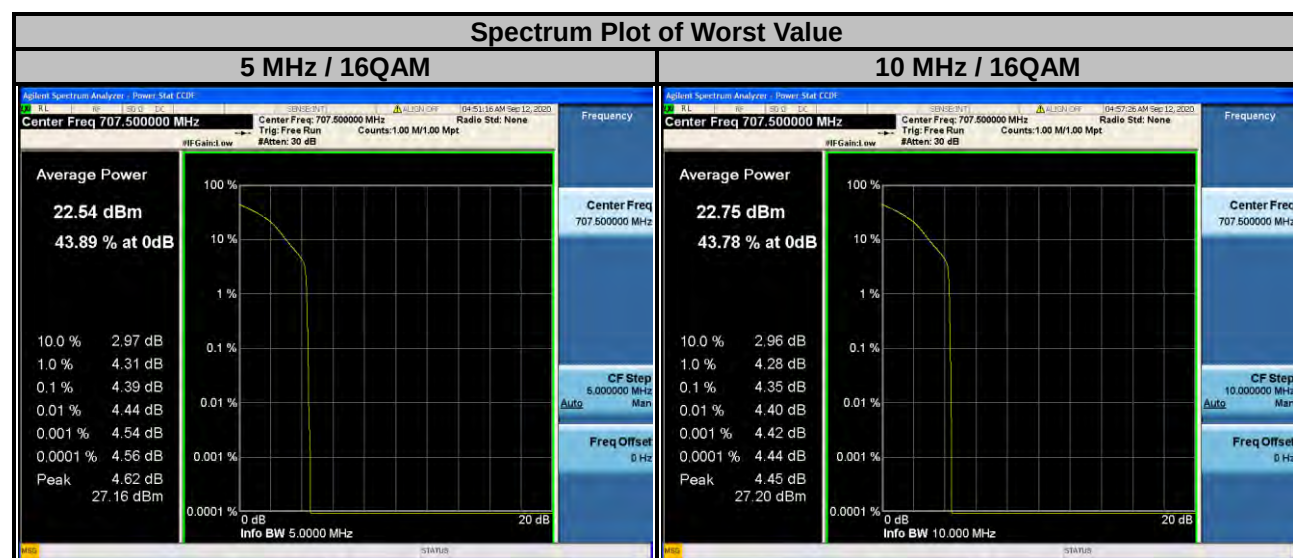
LTE Band 12

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
23017	699.7	3.60	4.41	23025	700.5	3.59	4.42
23095	707.5	3.60	4.43	23095	707.5	3.63	4.48
23173	715.3	3.49	4.41	23165	714.5	3.52	4.43

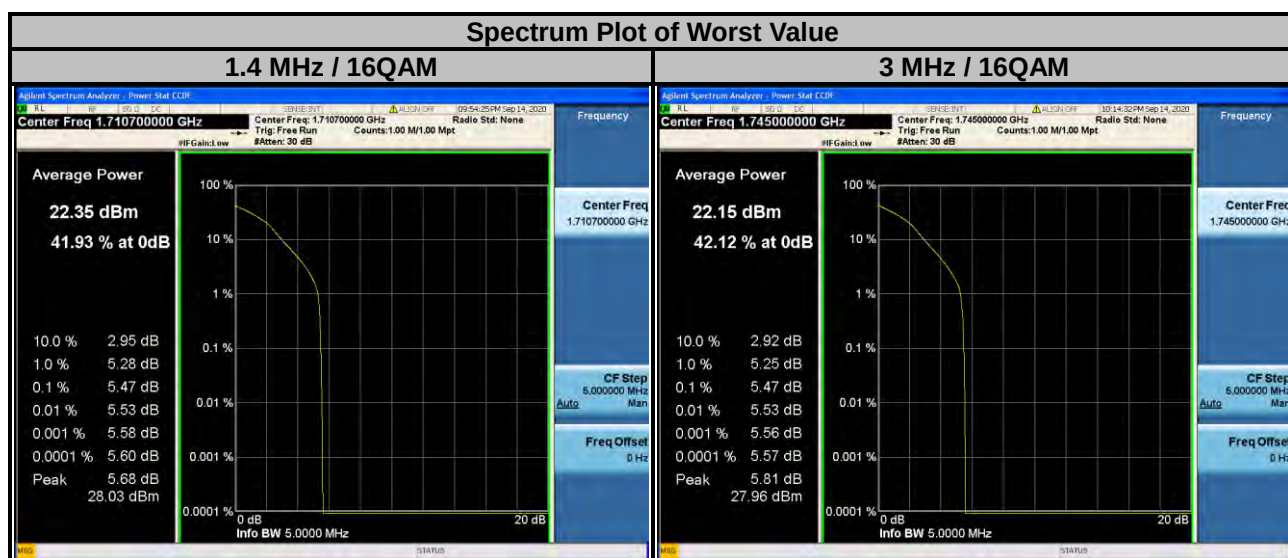
Spectrum Plot of Worst Value



LTE Band 12							
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
23035	701.5	3.53	4.36	23060	704.0	3.55	4.31
23095	707.5	3.55	4.39	23095	707.5	3.58	4.35
23155	713.5	3.53	4.35	23130	711.0	3.55	4.31



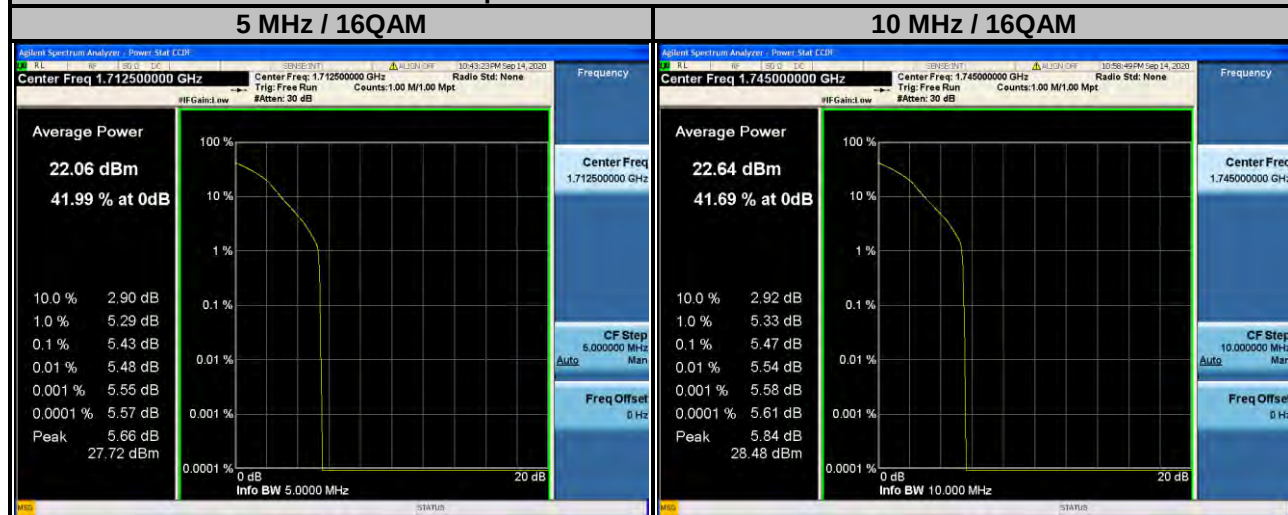
LTE Band 66							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
131979	1710.7	4.49	5.47	131987	1711.5	4.30	5.40
132322	1745.0	4.55	5.46	132322	1745.0	4.49	5.47
132665	1779.3	3.96	4.88	132657	1778.5	4.06	4.95



LTE Band 66

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
131997	1712.5	4.40	5.43	132022	1715.0	4.34	5.37
132322	1745.0	4.55	5.39	132322	1745.0	4.65	5.47
132647	1777.5	4.13	5.01	132622	1775.0	4.31	5.28

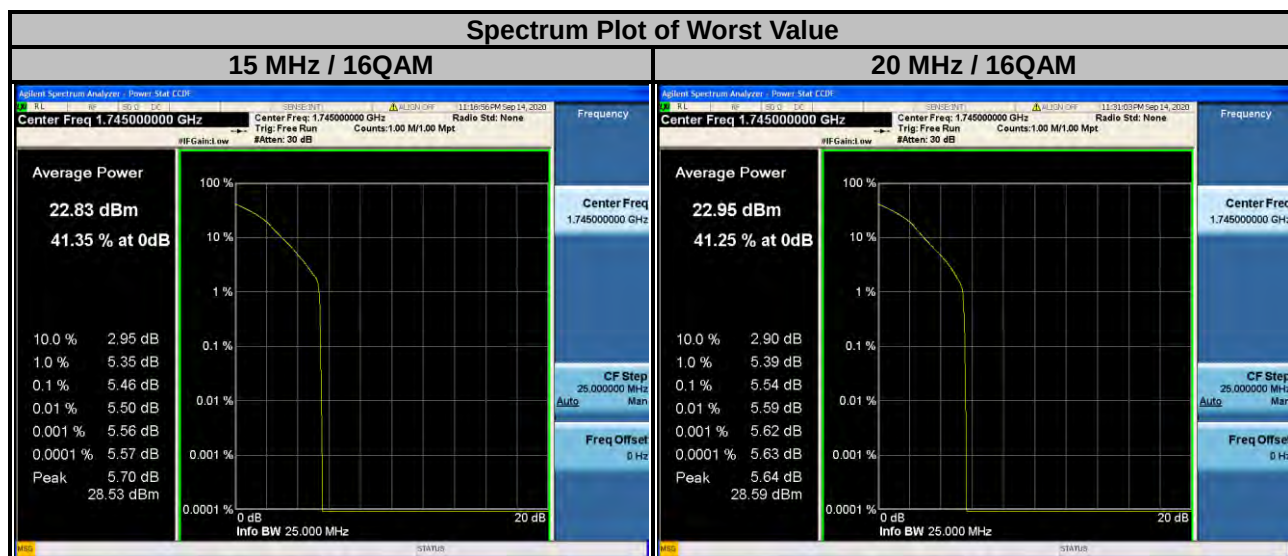
Spectrum Plot of Worst Value



LTE Band 66

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
132047	1717.5	4.33	5.28	132072	1720.0	4.38	5.31
132322	1745.0	4.62	5.46	132322	1745.0	4.68	5.54
132597	1772.5	4.43	5.36	132572	1770.0	4.38	5.23

Spectrum Plot of Worst Value

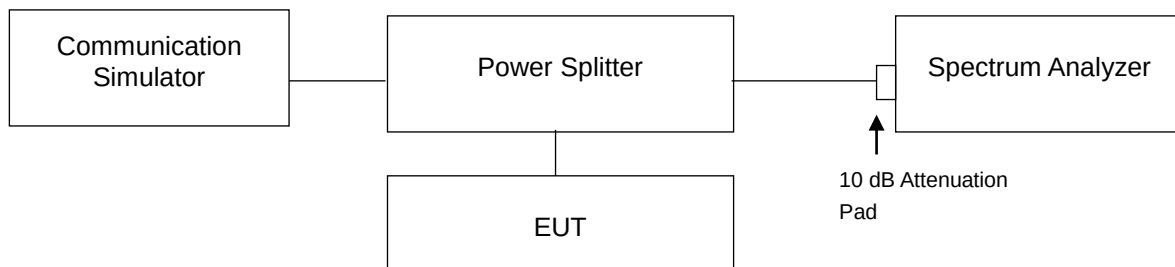


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The limit of emission is equal to -13 dBm.

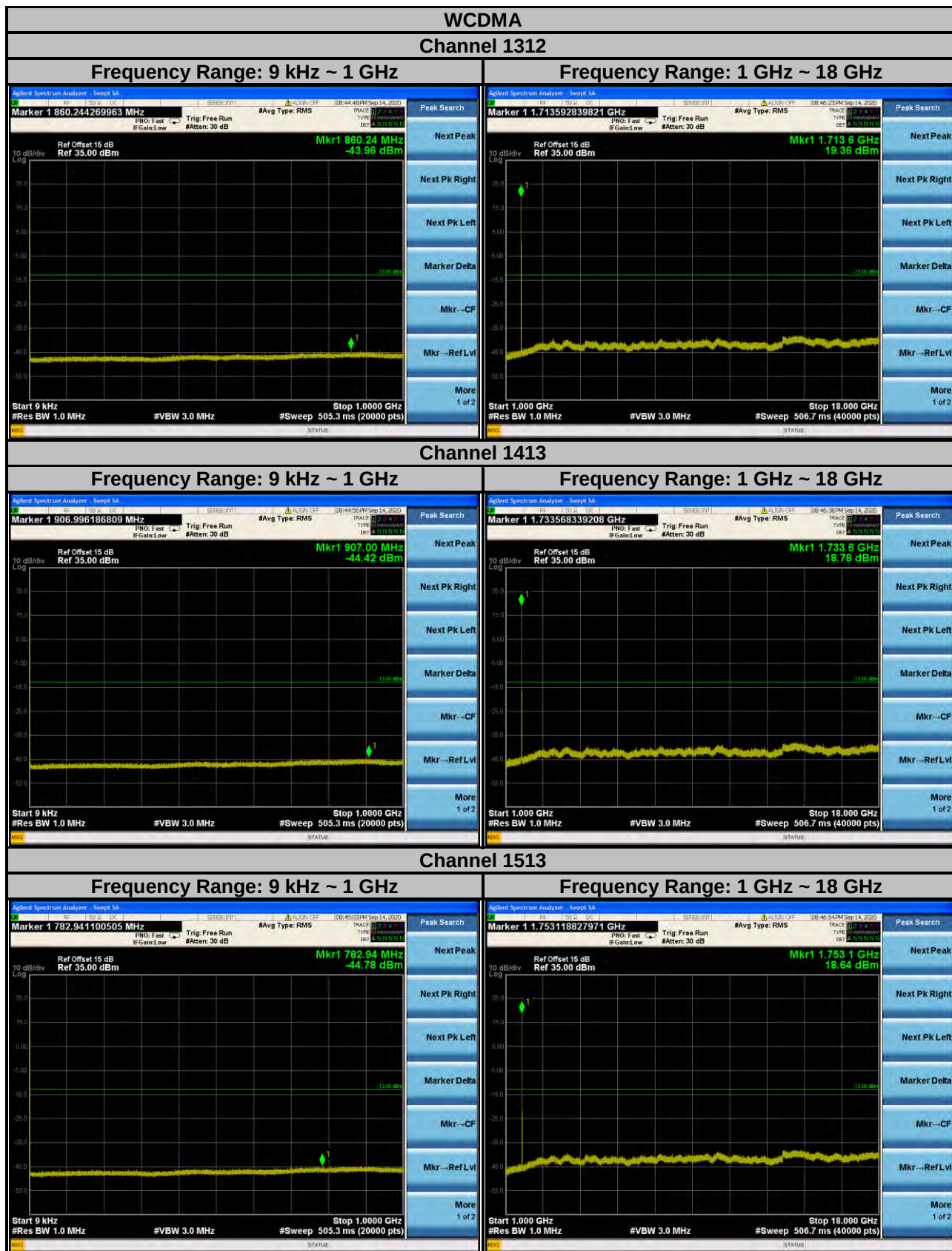
4.7.2 Test Setup



4.7.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.
- Measuring frequency range is from 1 GHz to 8 GHz / 18 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



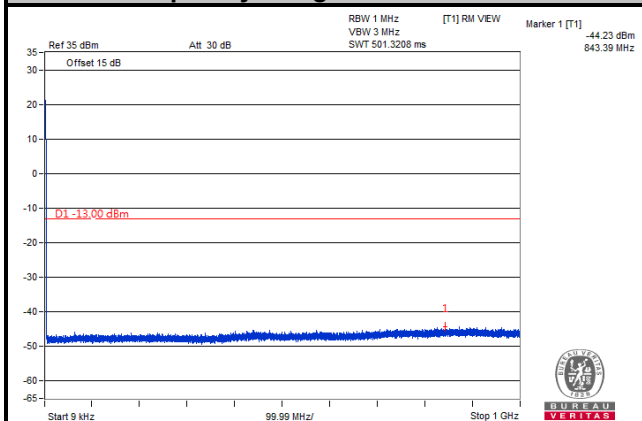
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 4

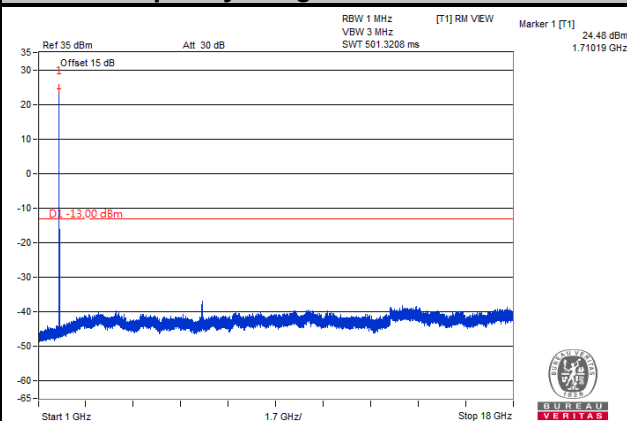
Channel Bandwidth: 1.4 MHz

Channel 19957

Frequency Range: 9 kHz ~ 1 GHz

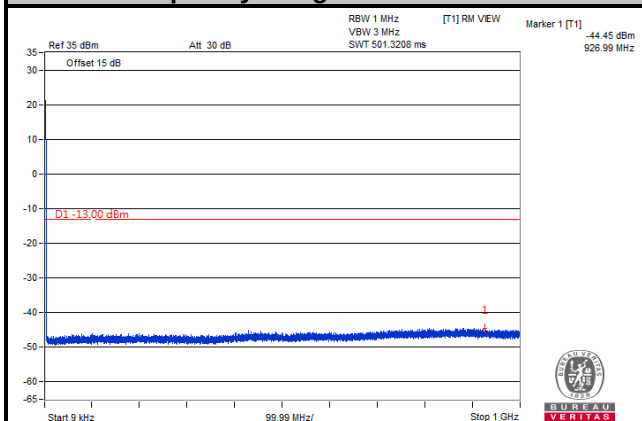


Frequency Range: 1 GHz ~ 18 GHz

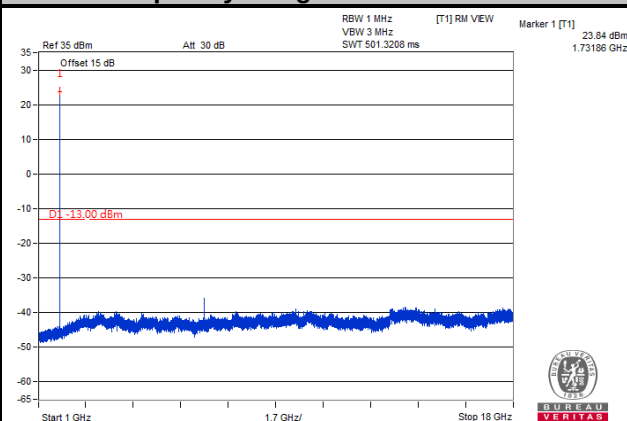


Channel 20175

Frequency Range: 9 kHz ~ 1 GHz

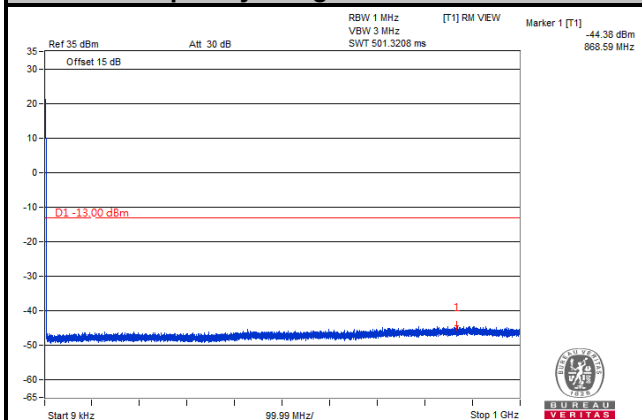


Frequency Range: 1 GHz ~ 18 GHz

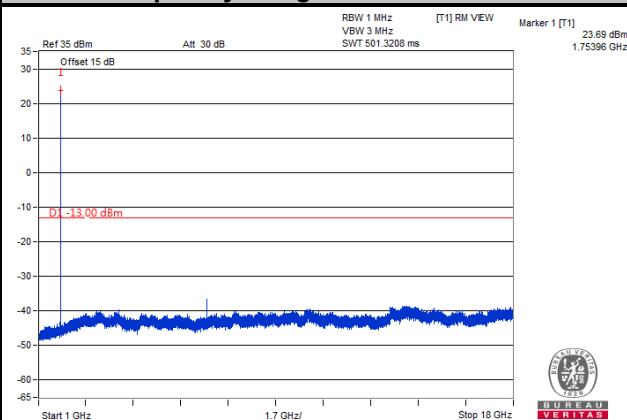


Channel 20393

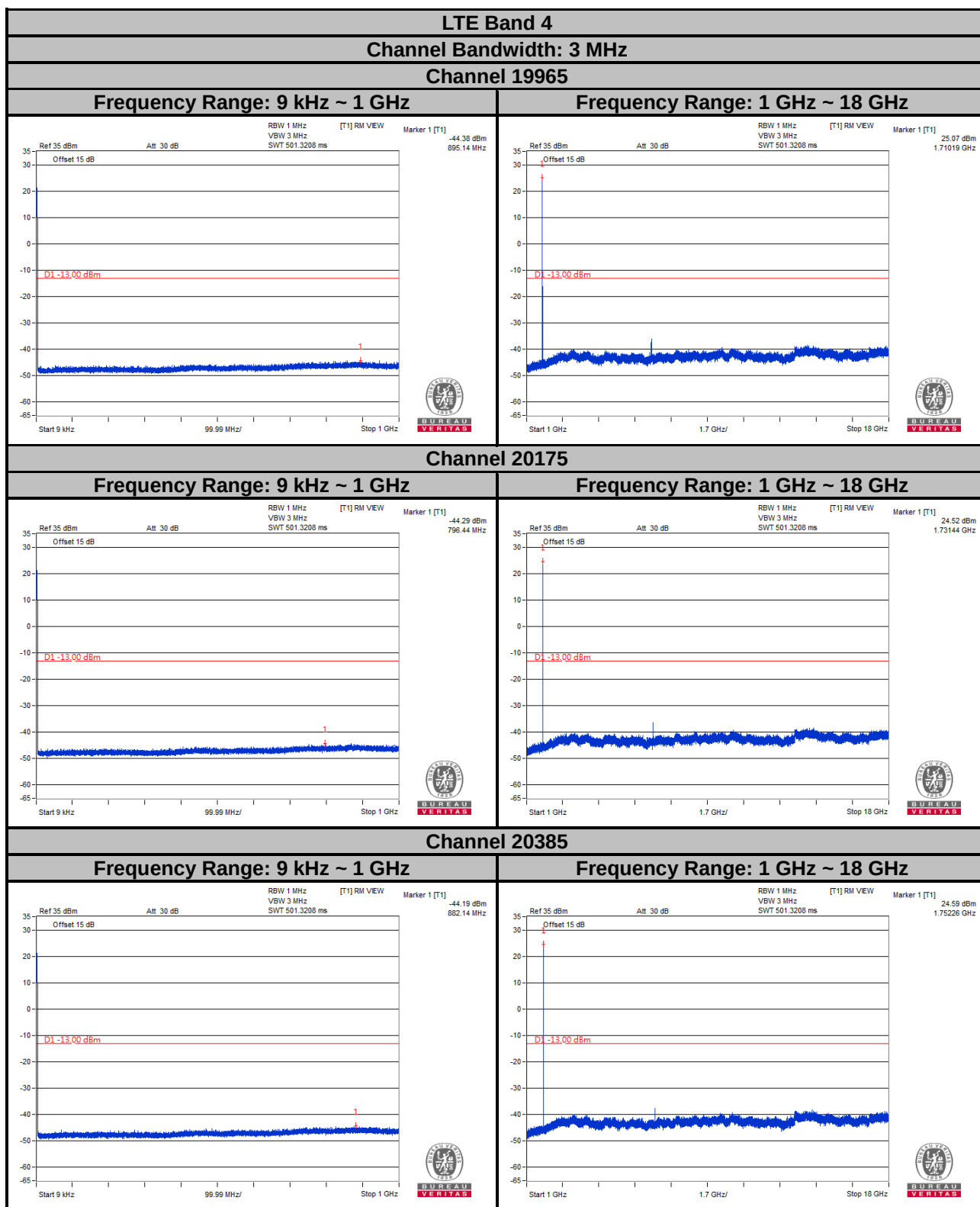
Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



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



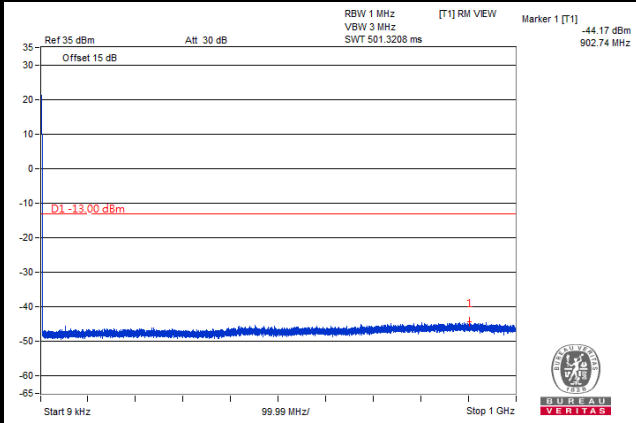
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 4

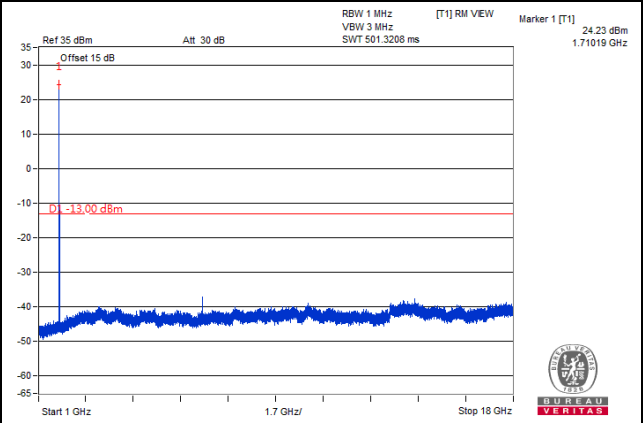
Channel Bandwidth: 5 MHz

Channel 19975

Frequency Range: 9 kHz ~ 1 GHz

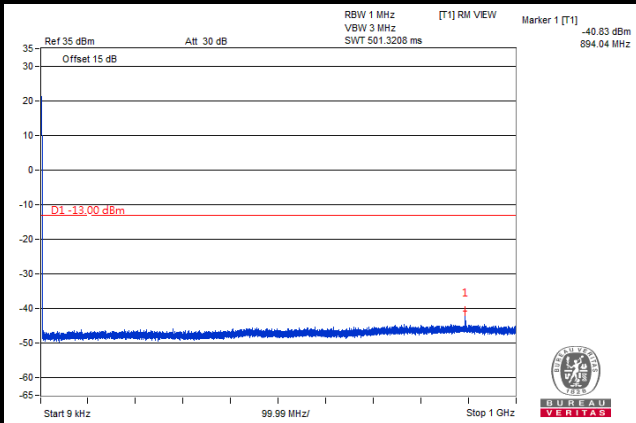


Frequency Range: 1 GHz ~ 18 GHz

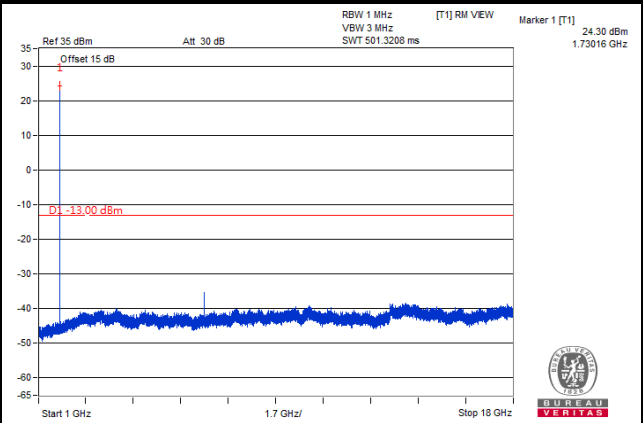


Channel 20175

Frequency Range: 9 kHz ~ 1 GHz

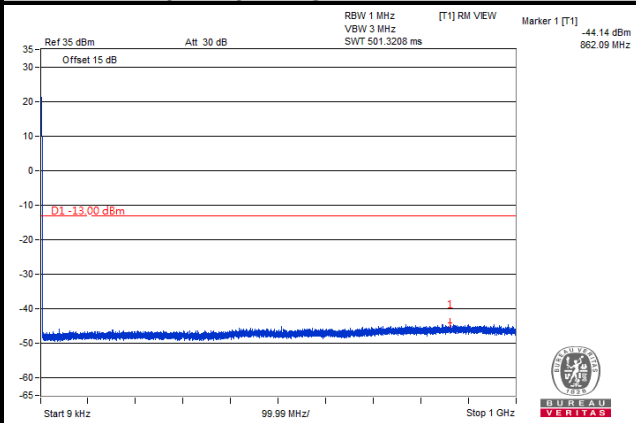


Frequency Range: 1 GHz ~ 18 GHz

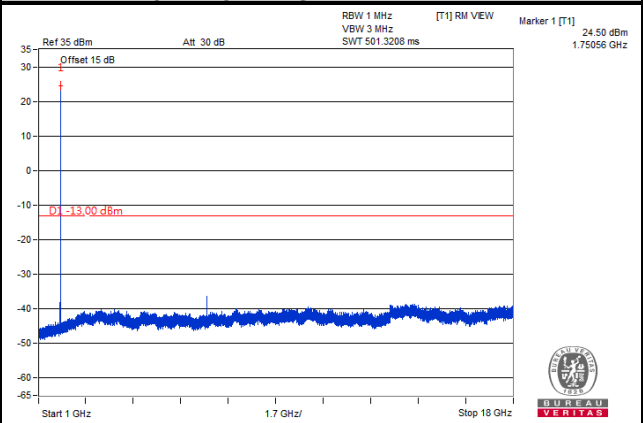


Channel 20375

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



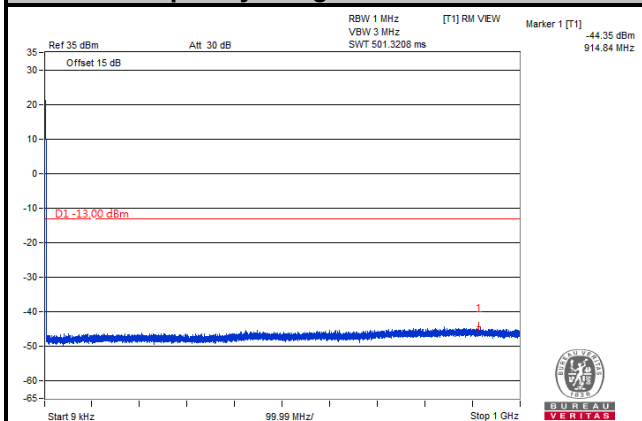
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 4

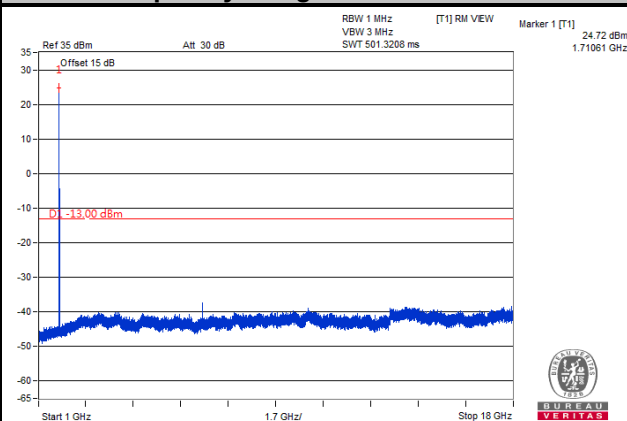
Channel Bandwidth: 10 MHz

Channel 20000

Frequency Range: 9 kHz ~ 1 GHz

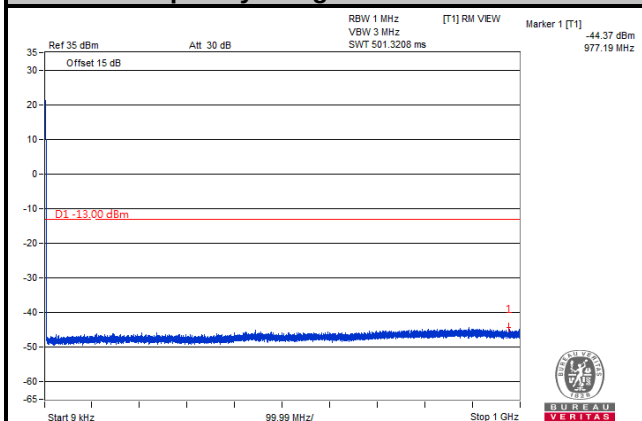


Frequency Range: 1 GHz ~ 18 GHz

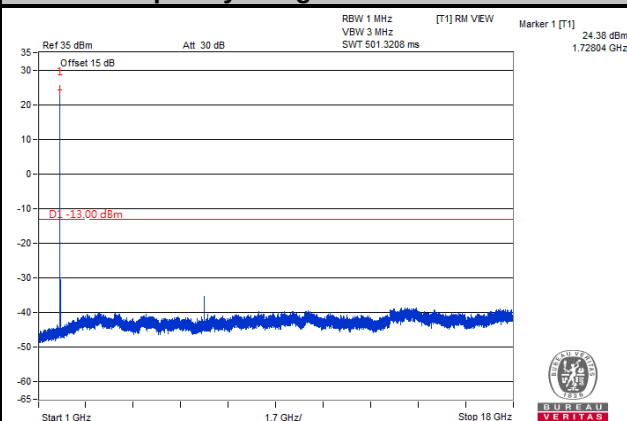


Channel 20175

Frequency Range: 9 kHz ~ 1 GHz

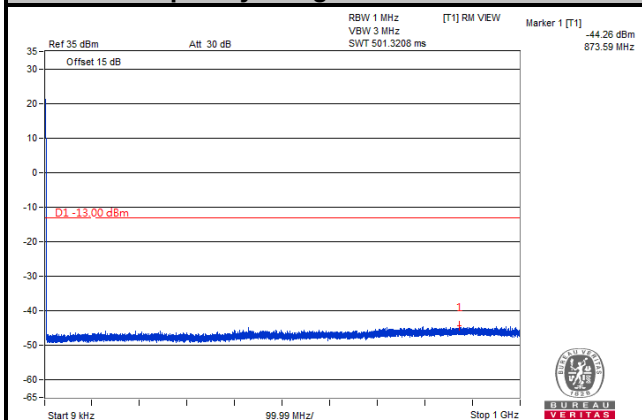


Frequency Range: 1 GHz ~ 18 GHz

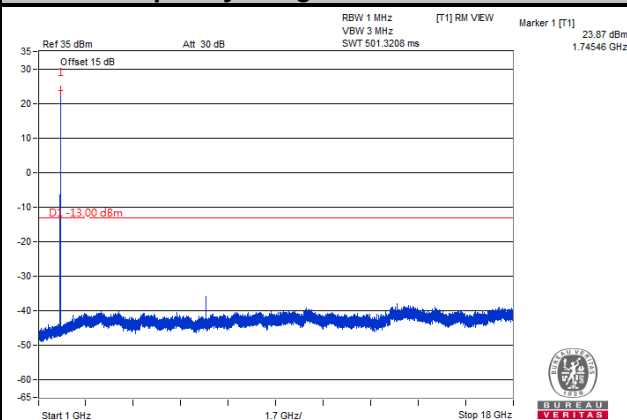


Channel 20350

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



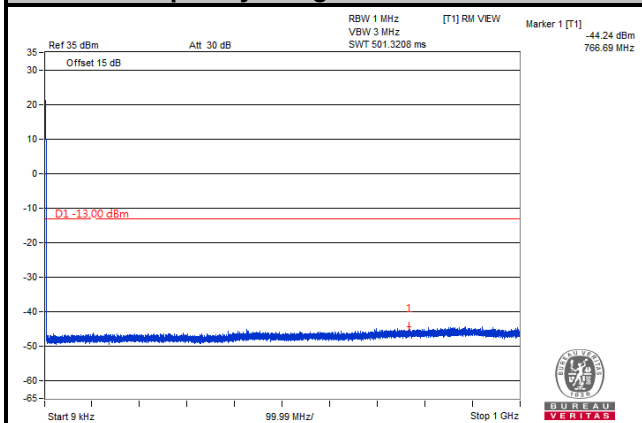
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 4

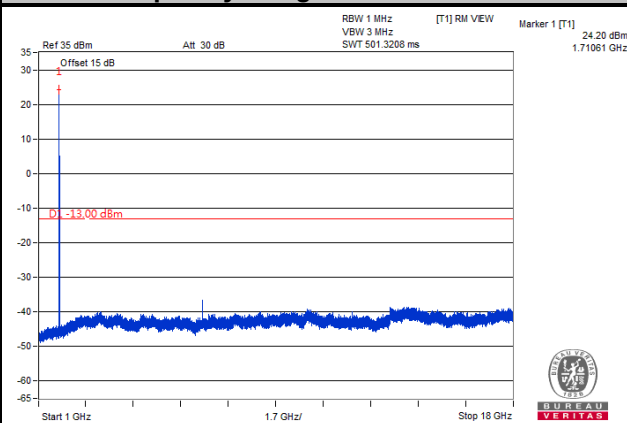
Channel Bandwidth: 15 MHz

Channel 20025

Frequency Range: 9 kHz ~ 1 GHz

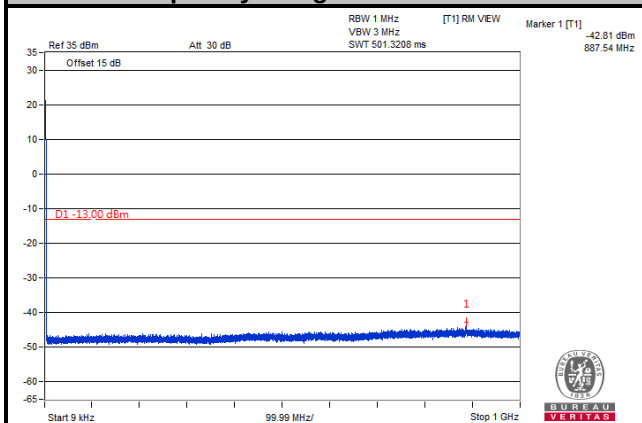


Frequency Range: 1 GHz ~ 18 GHz

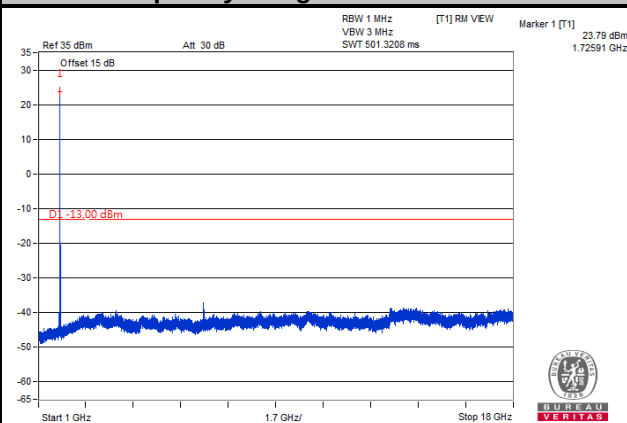


Channel 20175

Frequency Range: 9 kHz ~ 1 GHz

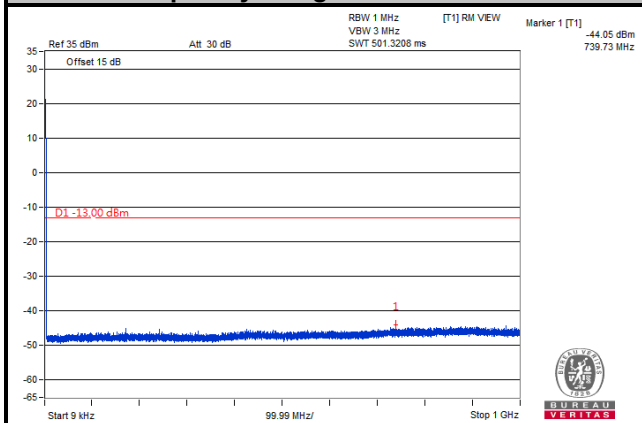


Frequency Range: 1 GHz ~ 18 GHz

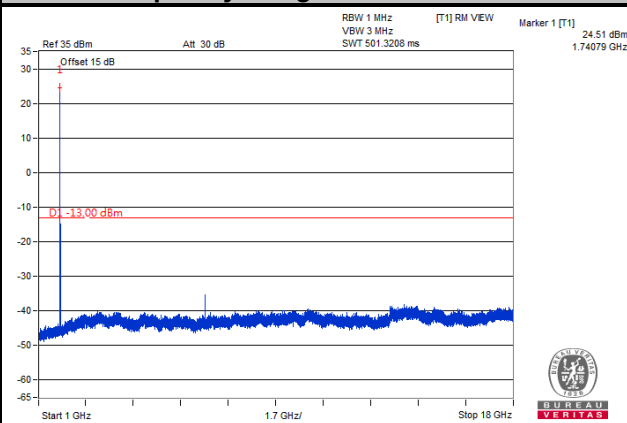


Channel 20325

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



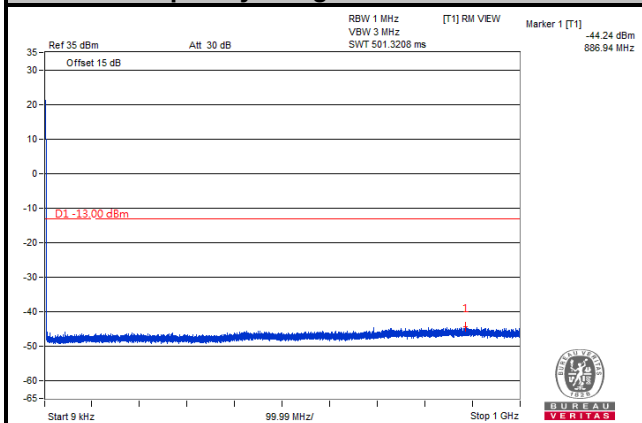
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 4

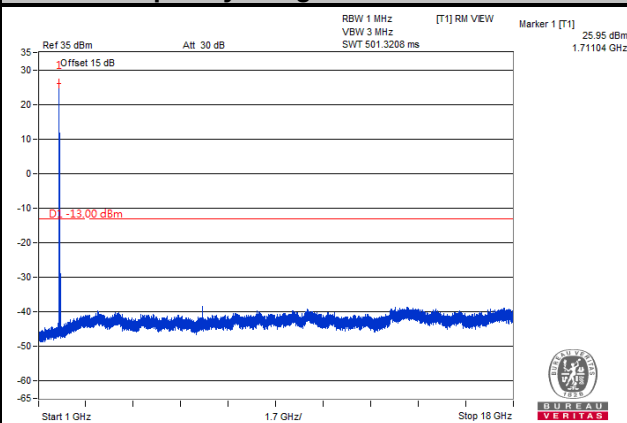
Channel Bandwidth: 20 MHz

Channel 20050

Frequency Range: 9 kHz ~ 1 GHz

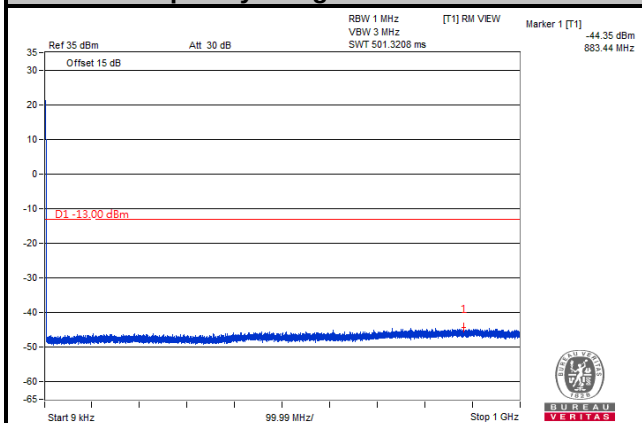


Frequency Range: 1 GHz ~ 18 GHz

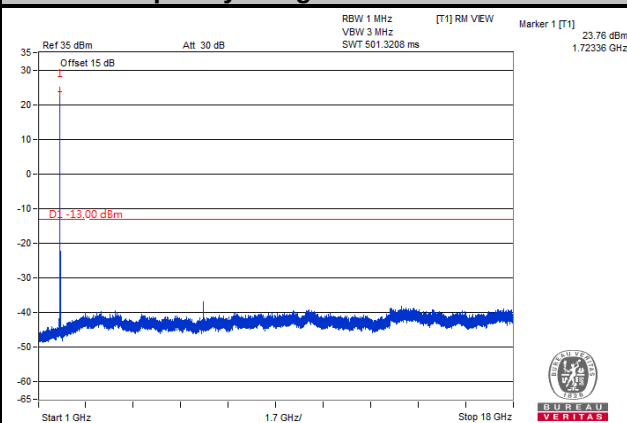


Channel 20175

Frequency Range: 9 kHz ~ 1 GHz

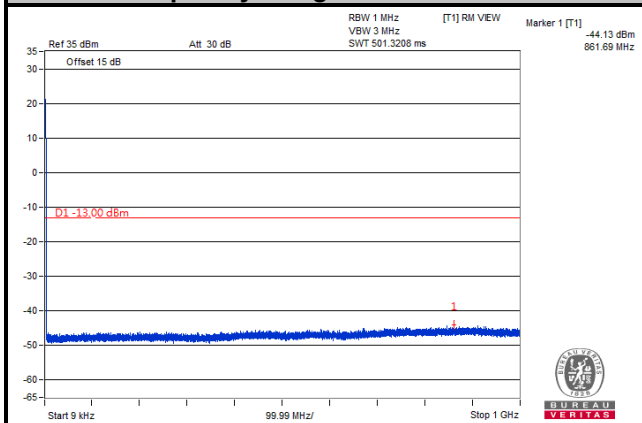


Frequency Range: 1 GHz ~ 18 GHz

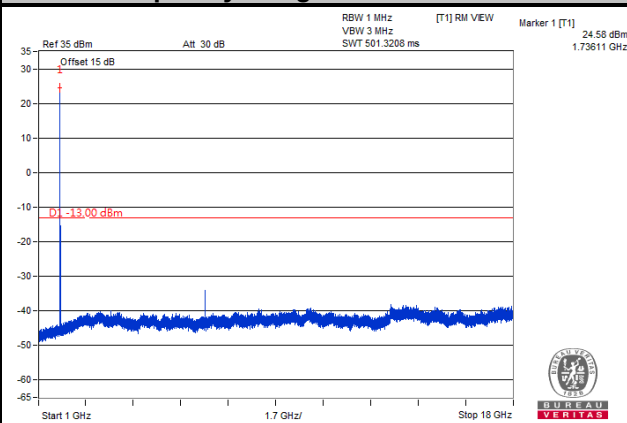


Channel 20300

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



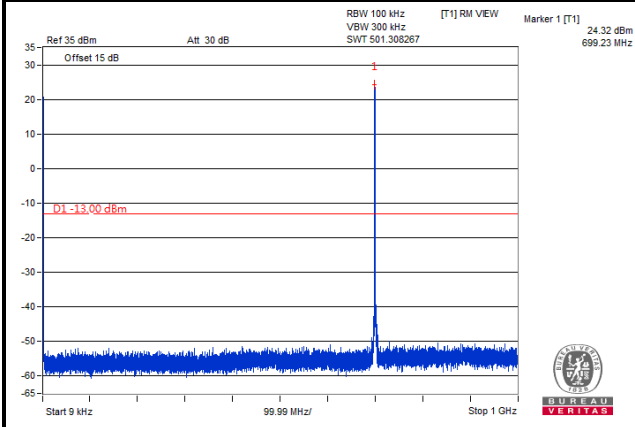
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 12

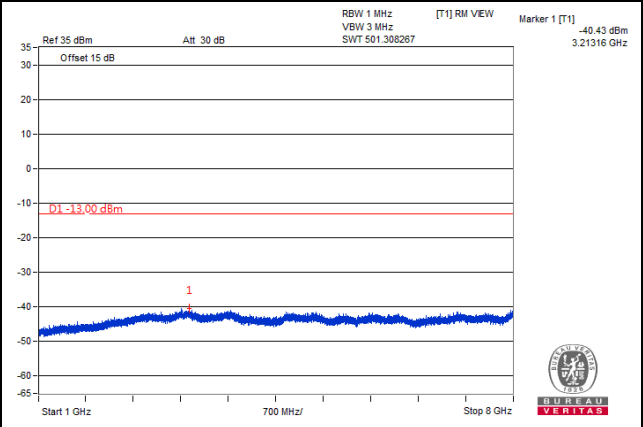
Channel Bandwidth: 1.4 MHz

Channel 23017

Frequency Range: 9 kHz ~ 1 GHz

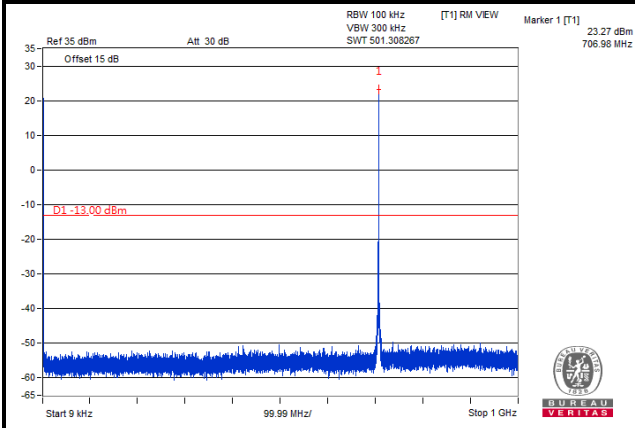


Frequency Range: 1 GHz ~ 8 GHz

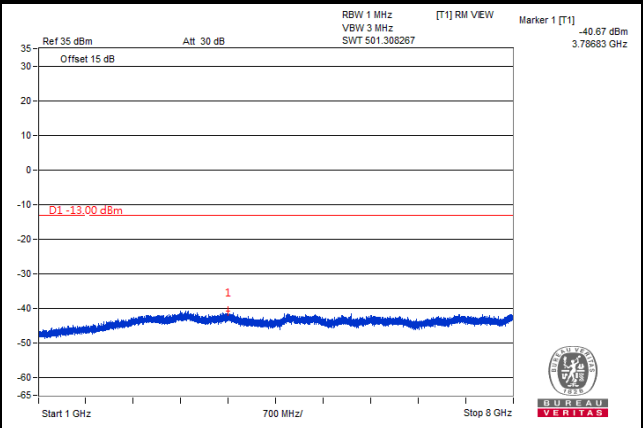


Channel 23095

Frequency Range: 9 kHz ~ 1 GHz

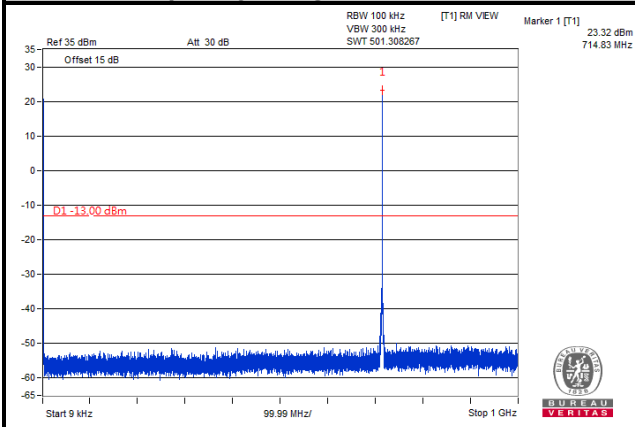


Frequency Range: 1 GHz ~ 8 GHz

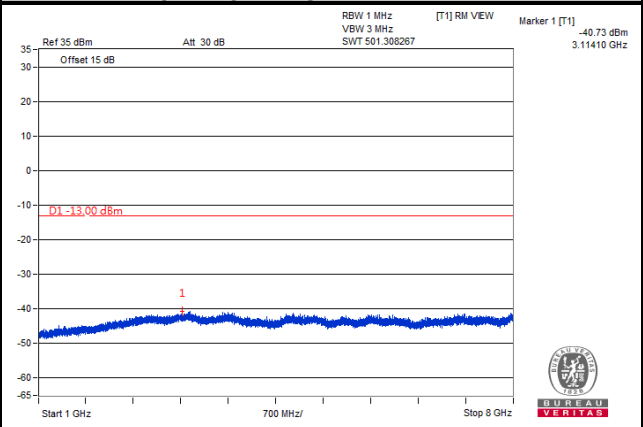


Channel 23173

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 8 GHz



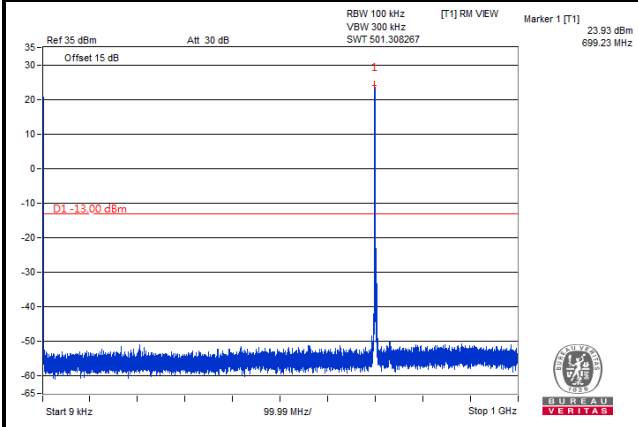
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 12

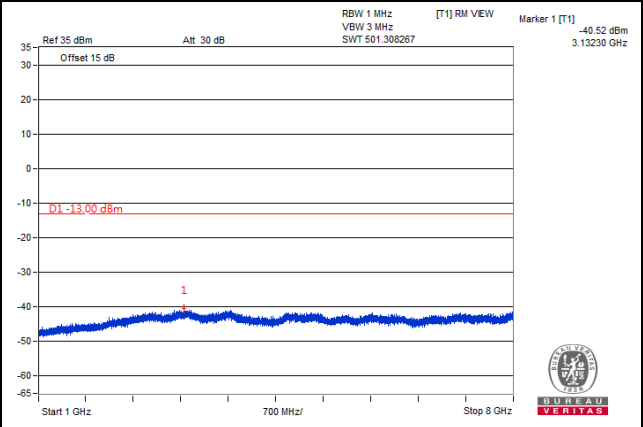
Channel Bandwidth: 3 MHz

Channel 23025

Frequency Range: 9 kHz ~ 1 GHz

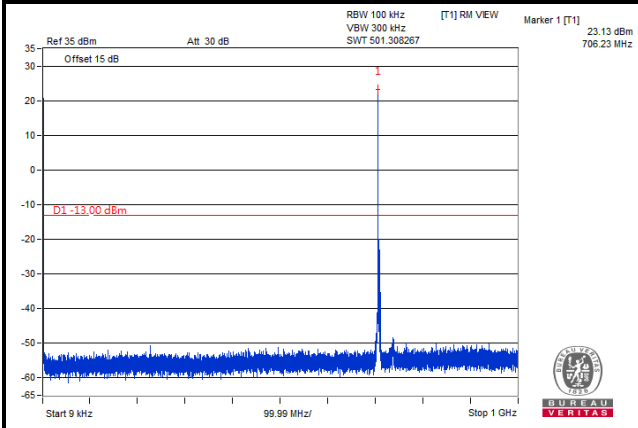


Frequency Range: 1 GHz ~ 8 GHz

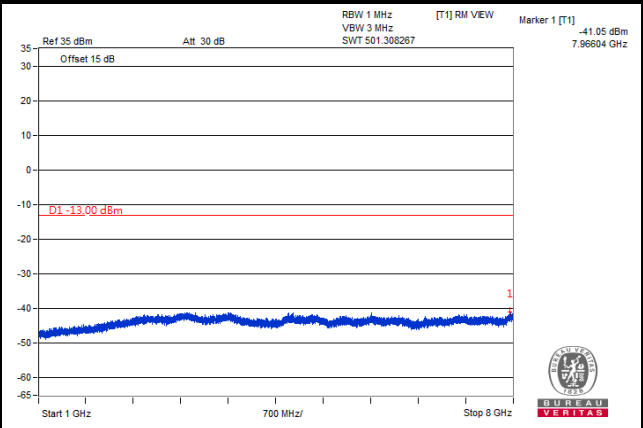


Channel 23095

Frequency Range: 9 kHz ~ 1 GHz

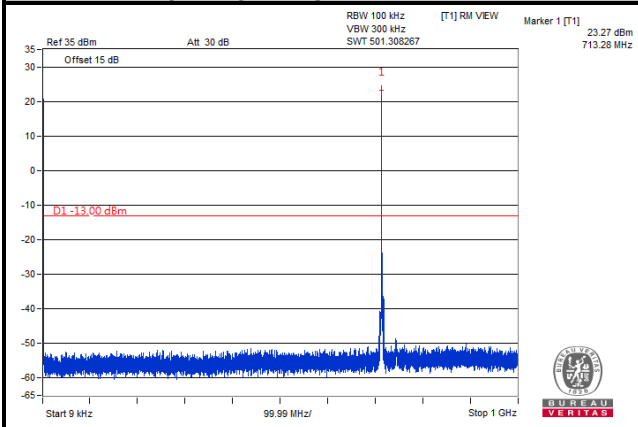


Frequency Range: 1 GHz ~ 8 GHz

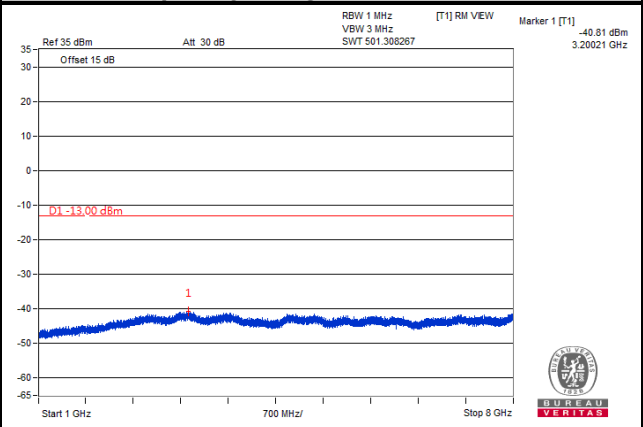


Channel 23165

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 8 GHz



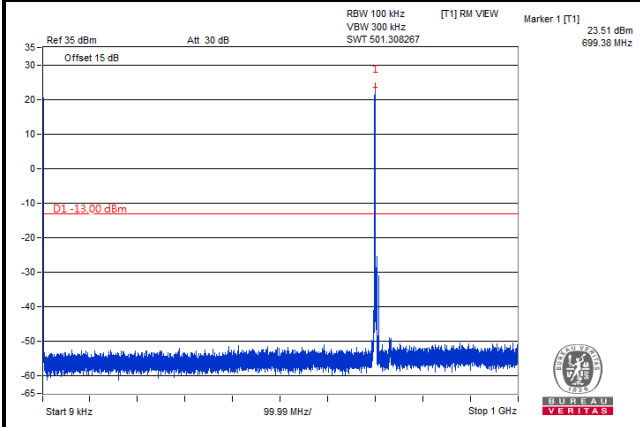
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 12

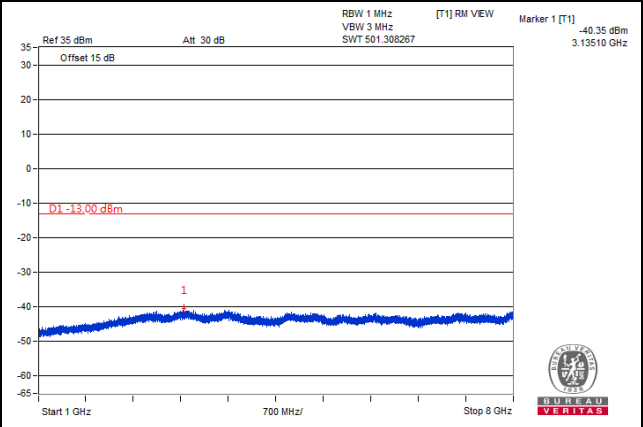
Channel Bandwidth: 5 MHz

Channel 23035

Frequency Range: 9 kHz ~ 1 GHz

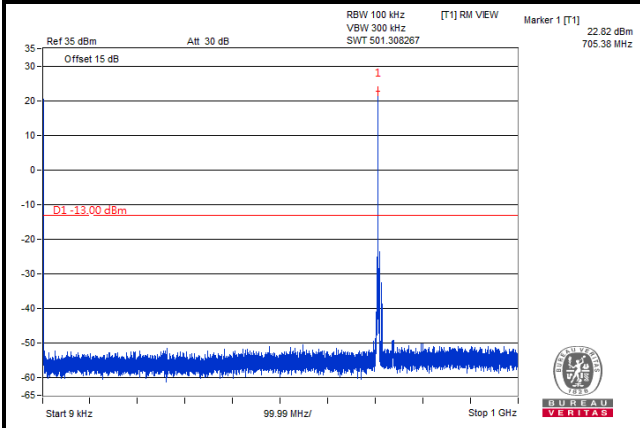


Frequency Range: 1 GHz ~ 8 GHz

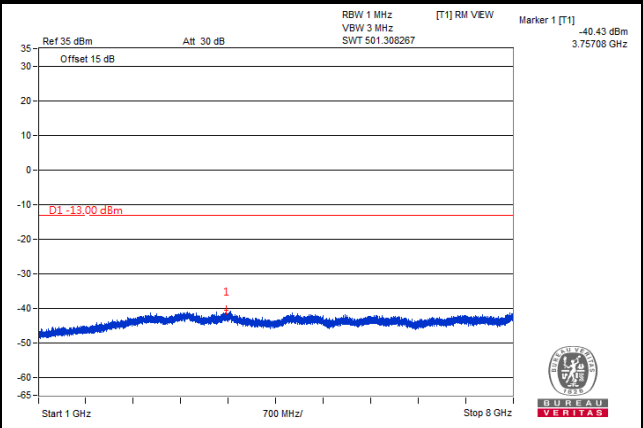


Channel 23095

Frequency Range: 9 kHz ~ 1 GHz

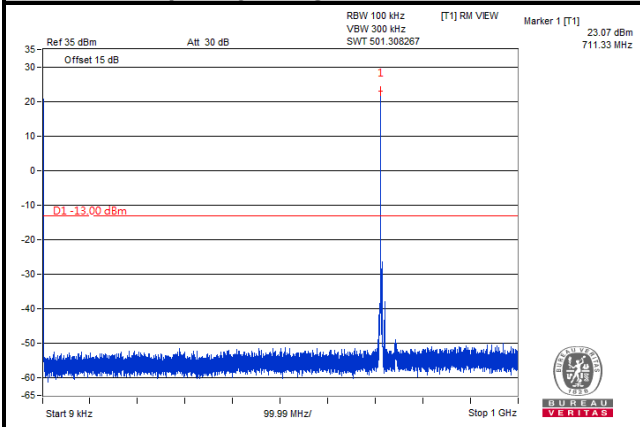


Frequency Range: 1 GHz ~ 8 GHz

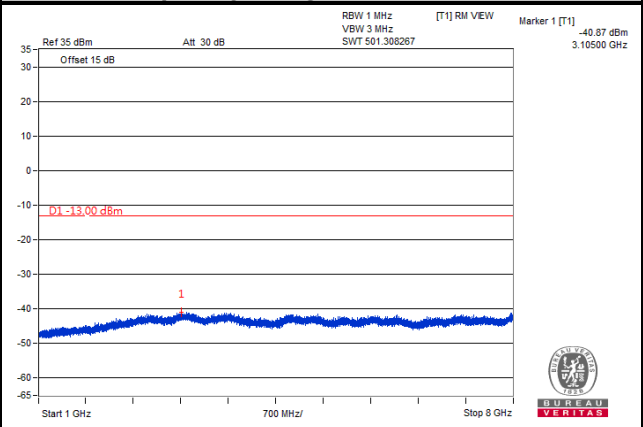


Channel 23155

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 8 GHz



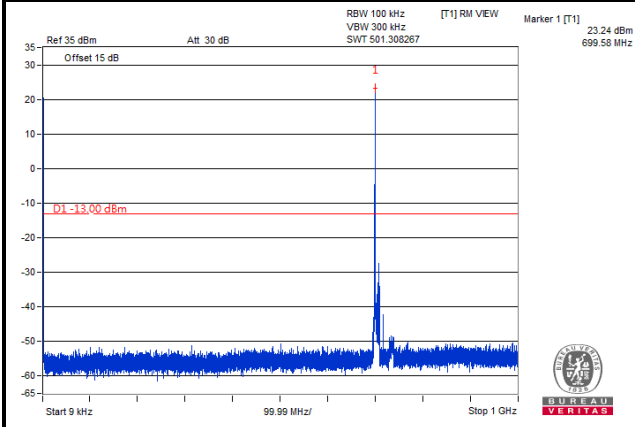
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 12

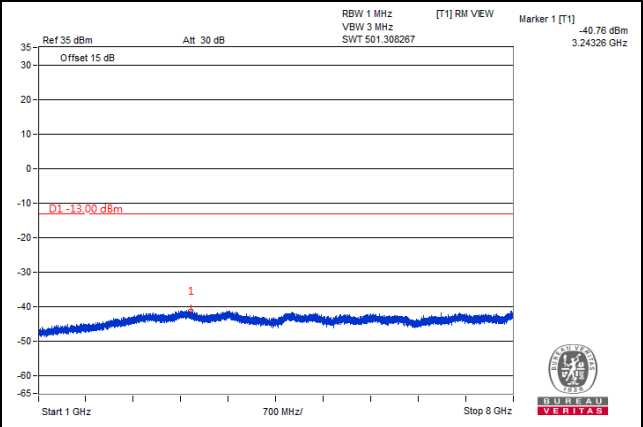
Channel Bandwidth: 10 MHz

Channel 23060

Frequency Range: 9 kHz ~ 1 GHz

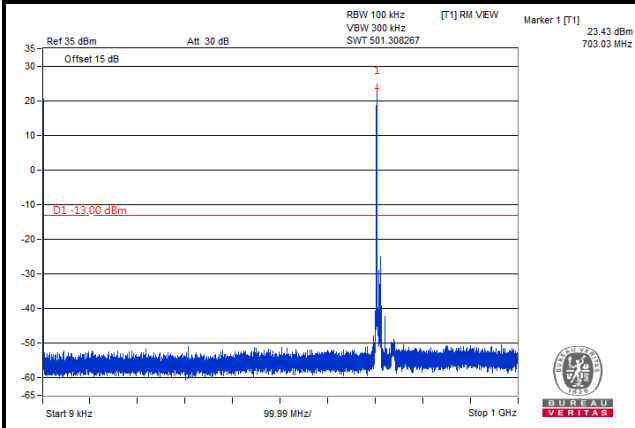


Frequency Range: 1 GHz ~ 8 GHz

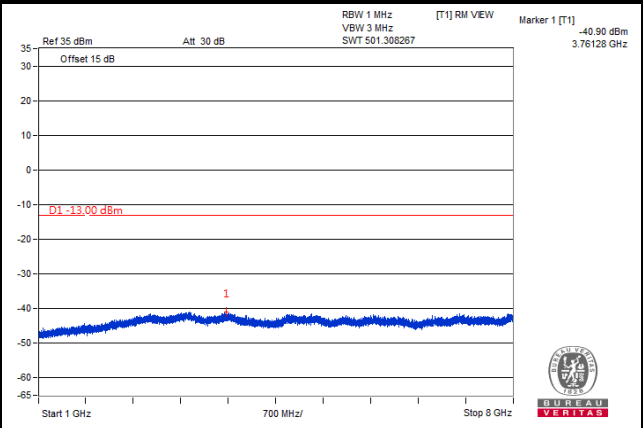


Channel 23095

Frequency Range: 9 kHz ~ 1 GHz

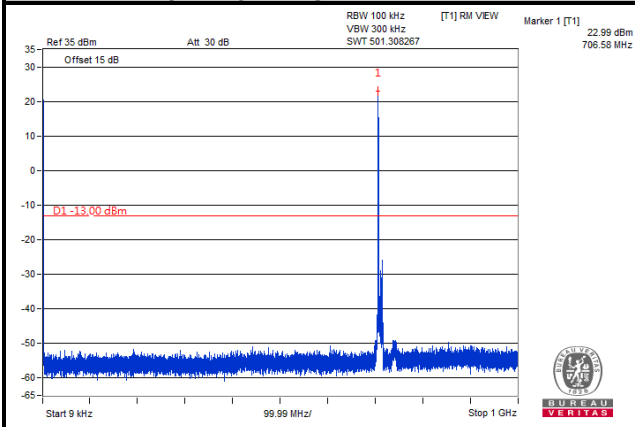


Frequency Range: 1 GHz ~ 8 GHz

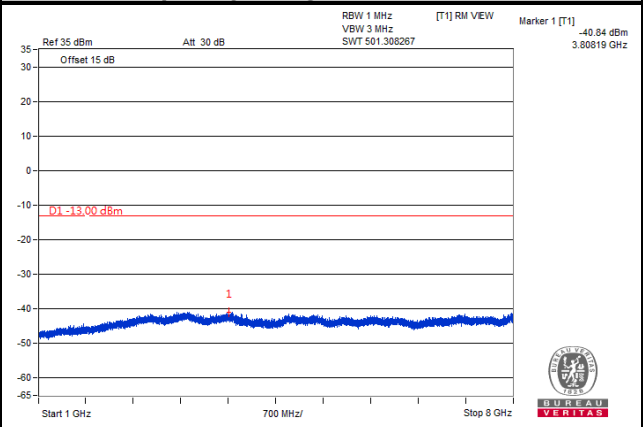


Channel 23130

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 8 GHz



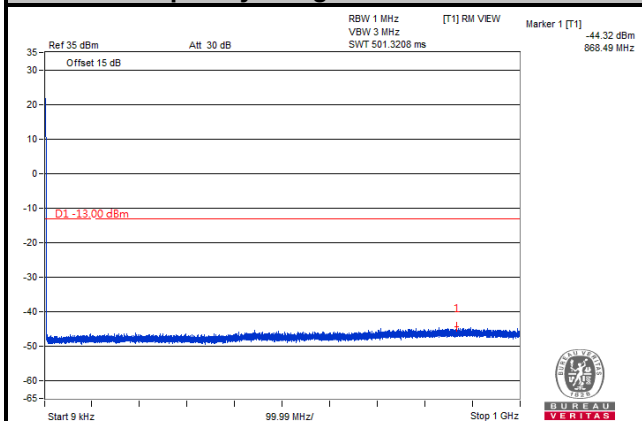
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 66

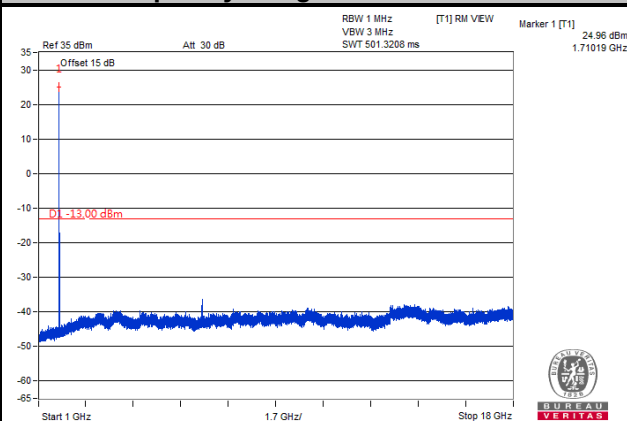
Channel Bandwidth: 1.4 MHz

Channel 131979

Frequency Range: 9 kHz ~ 1 GHz

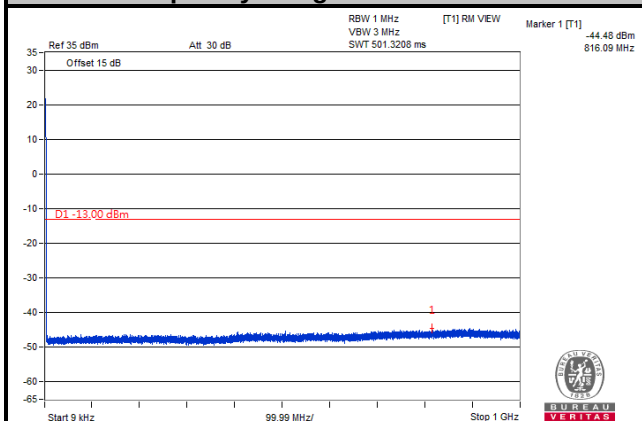


Frequency Range: 1 GHz ~ 18 GHz

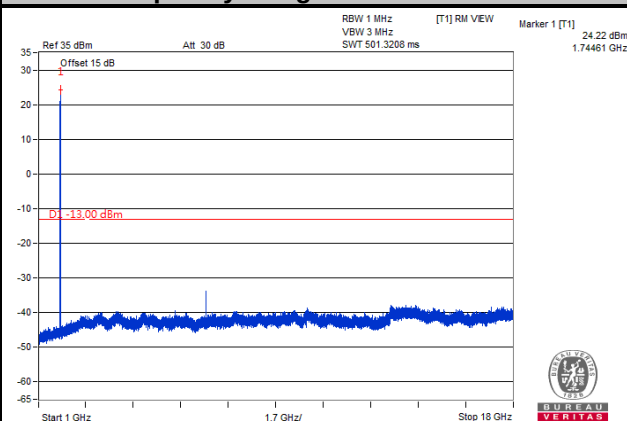


Channel 132322

Frequency Range: 9 kHz ~ 1 GHz

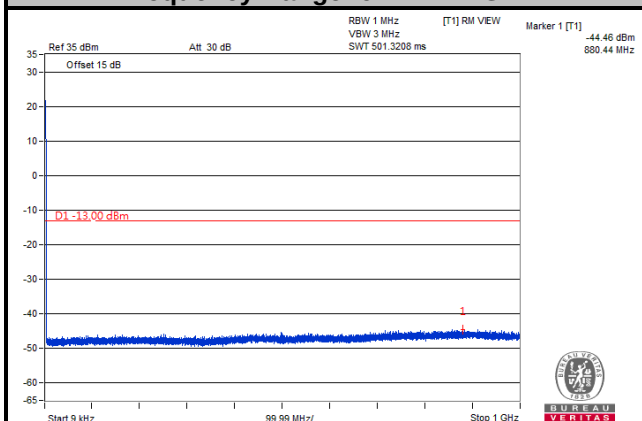


Frequency Range: 1 GHz ~ 18 GHz

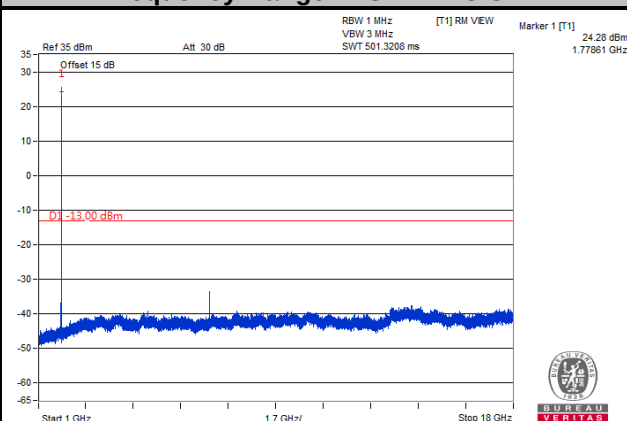


Channel 132665

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



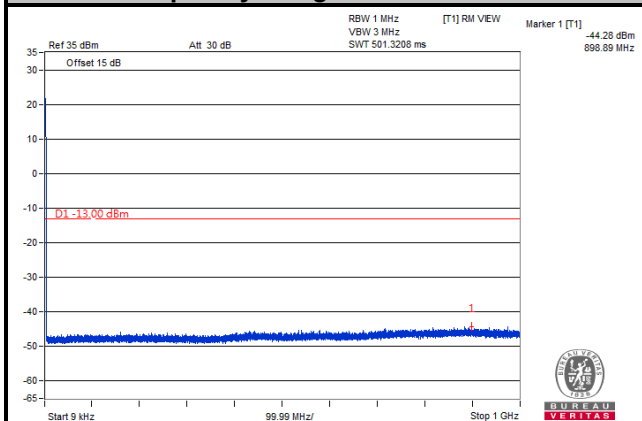
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 66

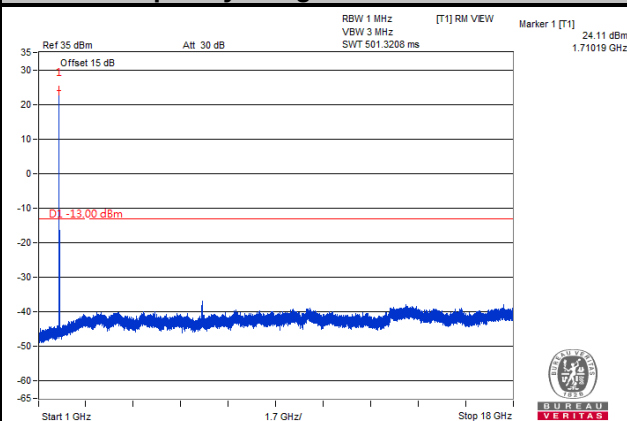
Channel Bandwidth: 3 MHz

Channel 131987

Frequency Range: 9 kHz ~ 1 GHz

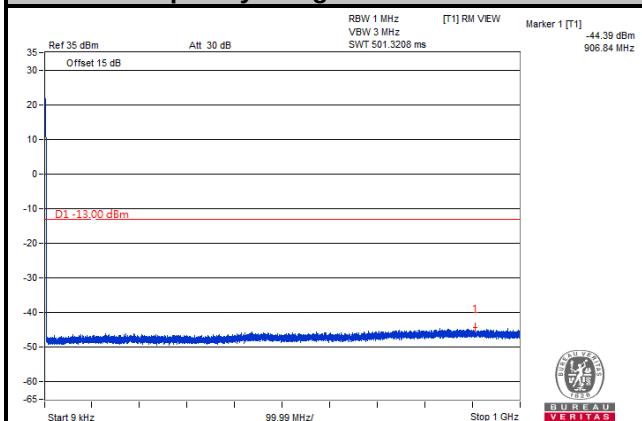


Frequency Range: 1 GHz ~ 18 GHz

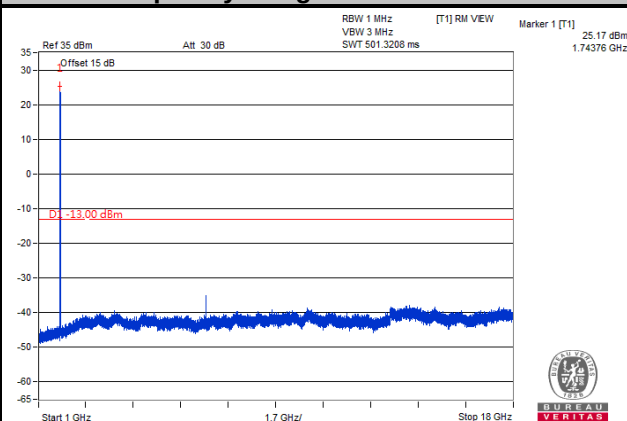


Channel 132322

Frequency Range: 9 kHz ~ 1 GHz

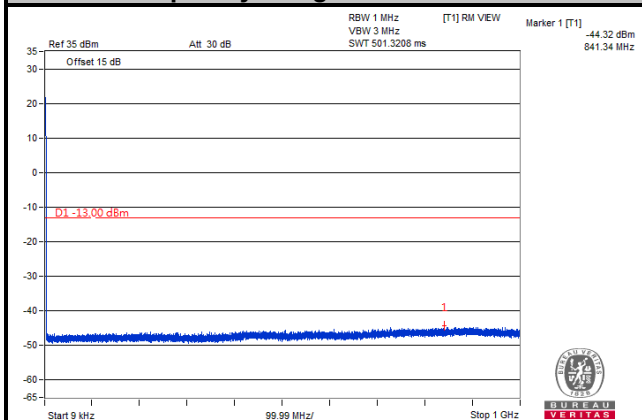


Frequency Range: 1 GHz ~ 18 GHz

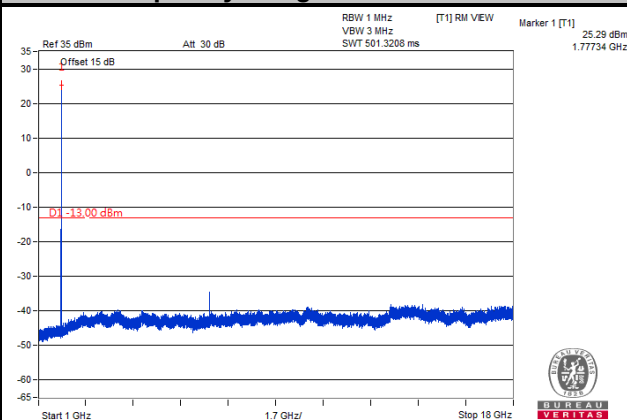


Channel 132657

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



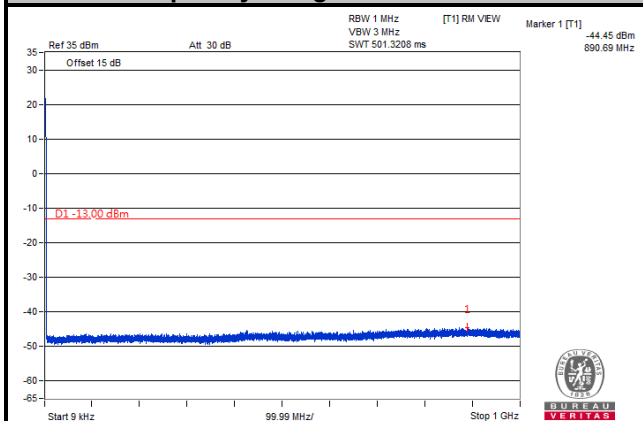
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 66

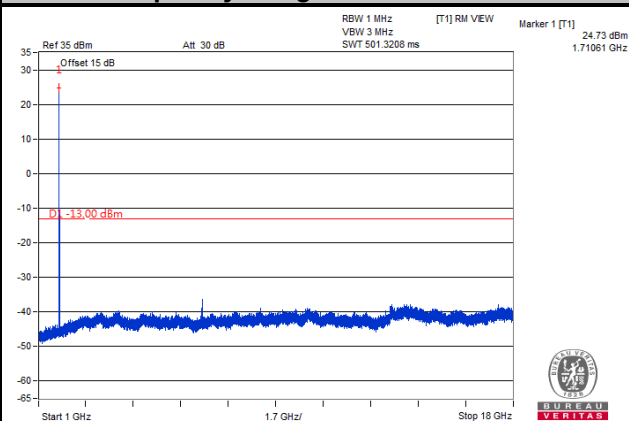
Channel Bandwidth: 5 MHz

Channel 131997

Frequency Range: 9 kHz ~ 1 GHz

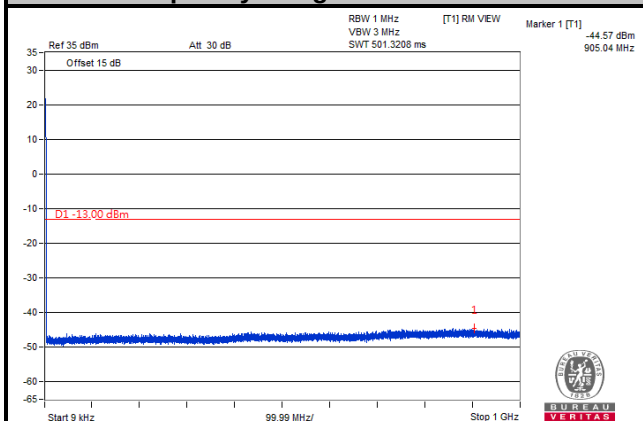


Frequency Range: 1 GHz ~ 18 GHz

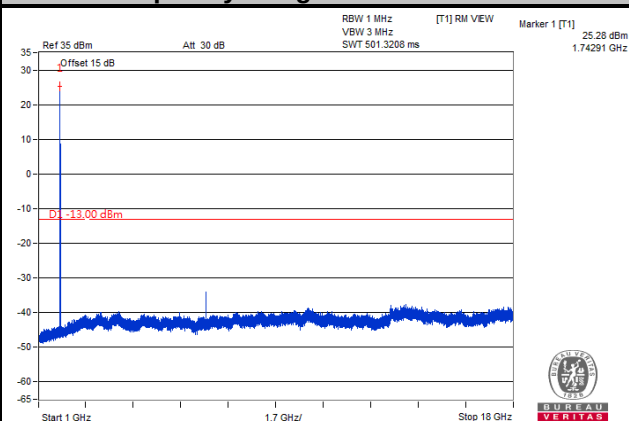


Channel 132322

Frequency Range: 9 kHz ~ 1 GHz

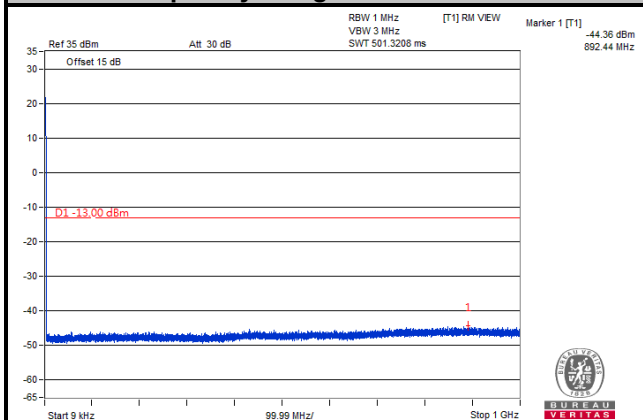


Frequency Range: 1 GHz ~ 18 GHz

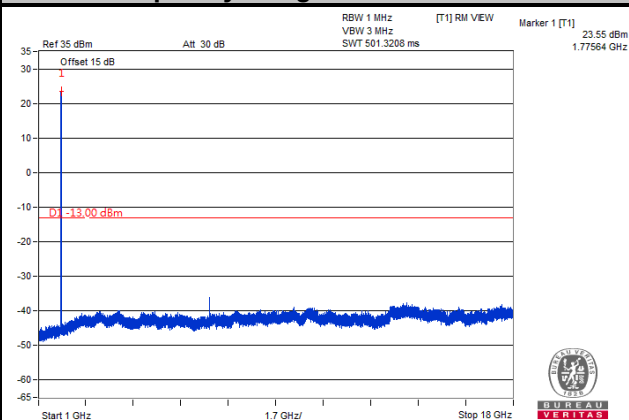


Channel 132647

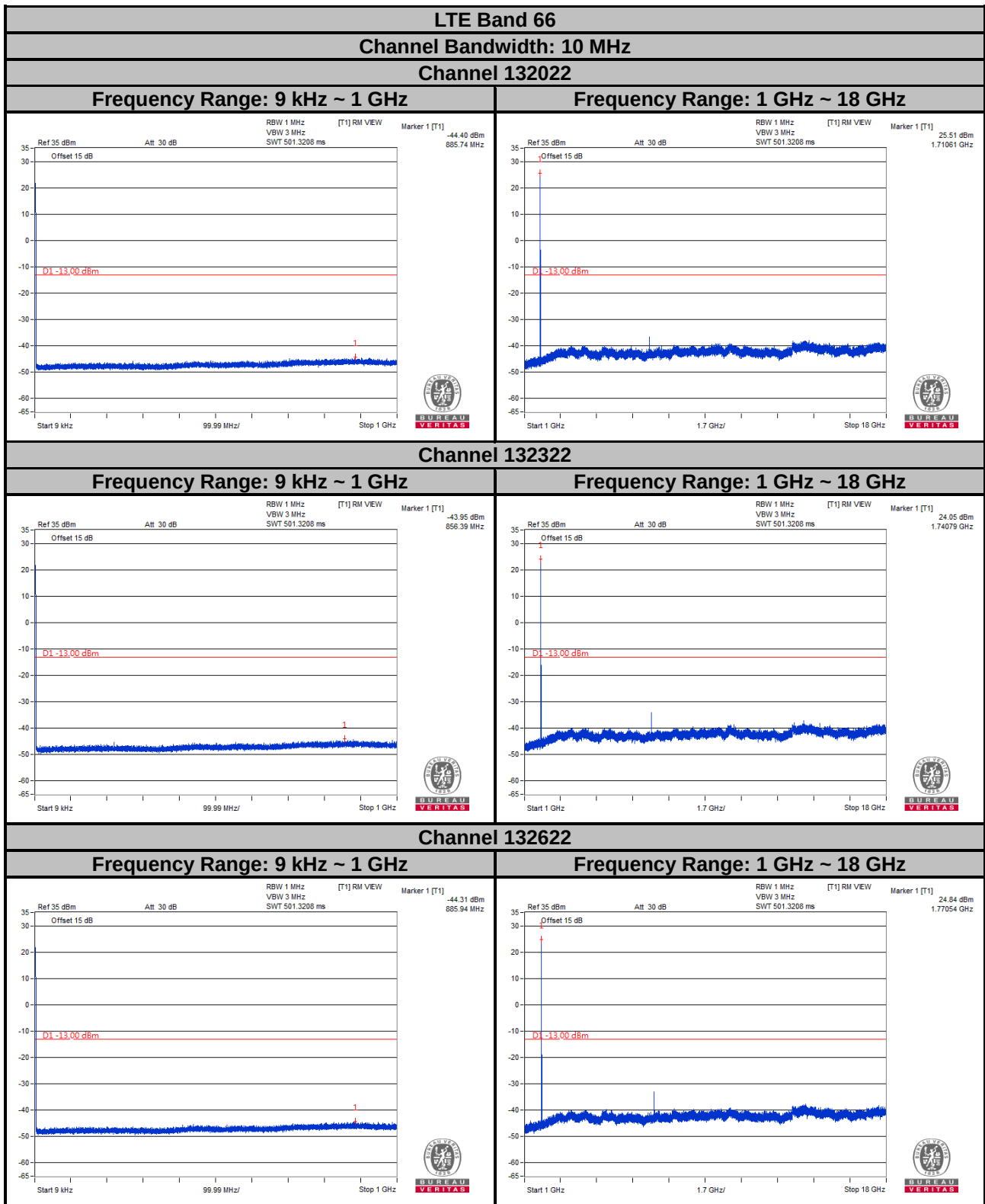
Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



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



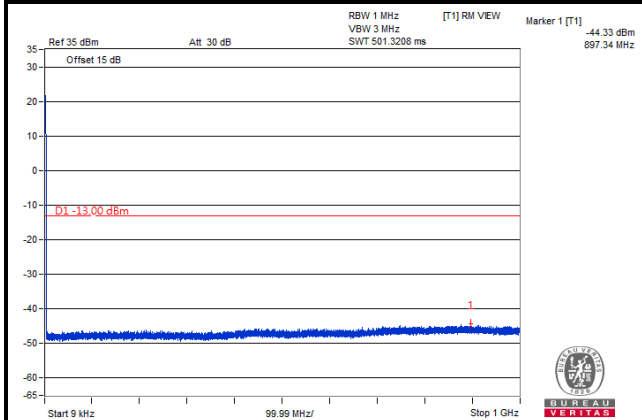
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 66

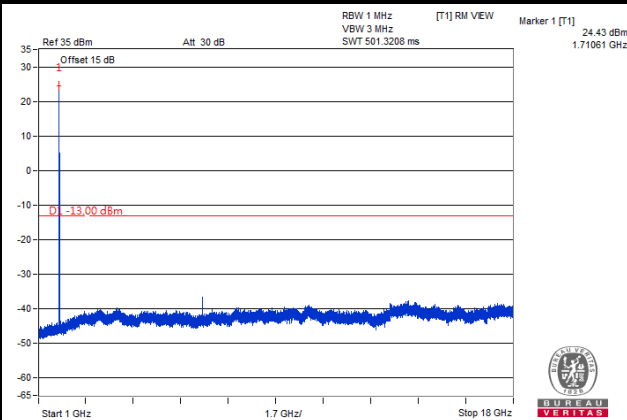
Channel Bandwidth: 15 MHz

Channel 132047

Frequency Range: 9 kHz ~ 1 GHz

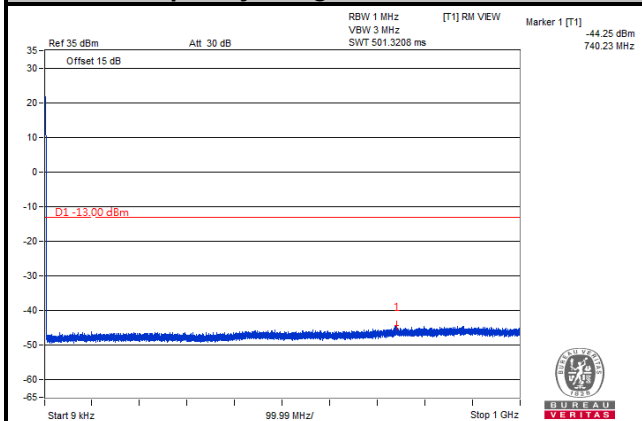


Frequency Range: 1 GHz ~ 18 GHz

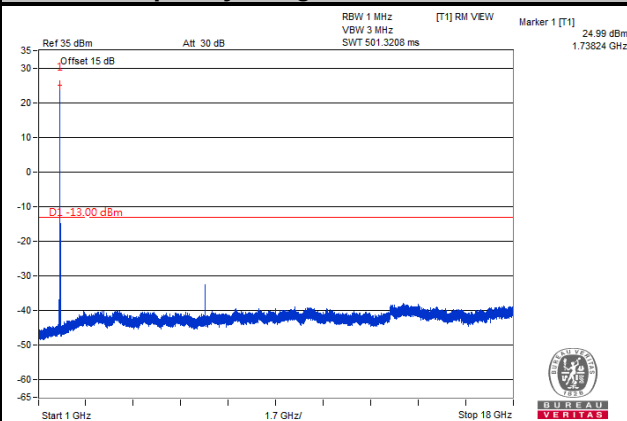


Channel 132322

Frequency Range: 9 kHz ~ 1 GHz

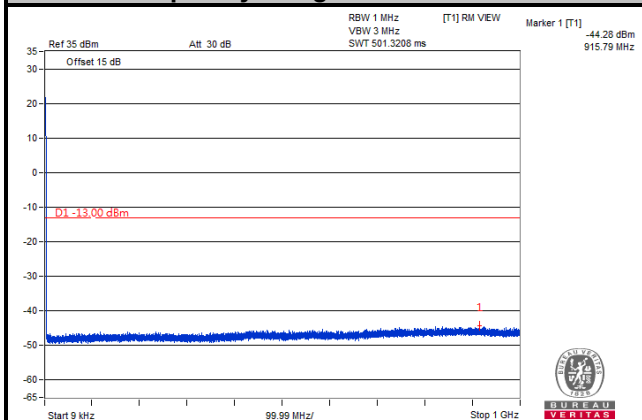


Frequency Range: 1 GHz ~ 18 GHz

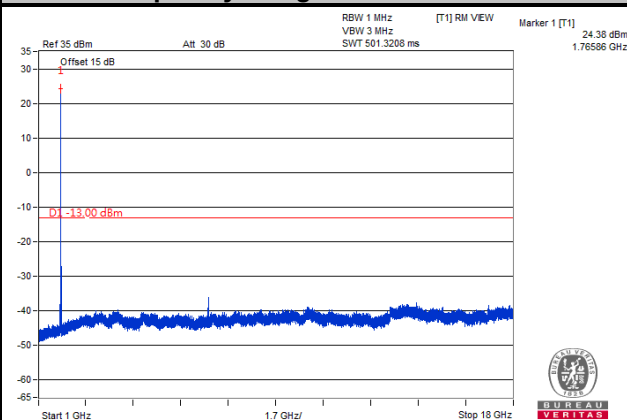


Channel 132597

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



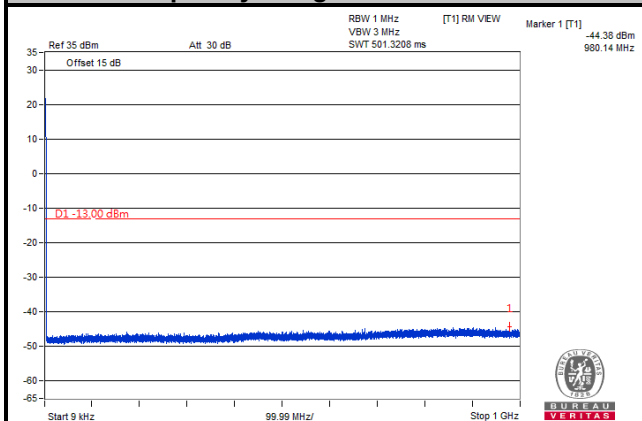
Note: The signal over the limit at 9 kHz is from the spectrum analyzer.

LTE Band 66

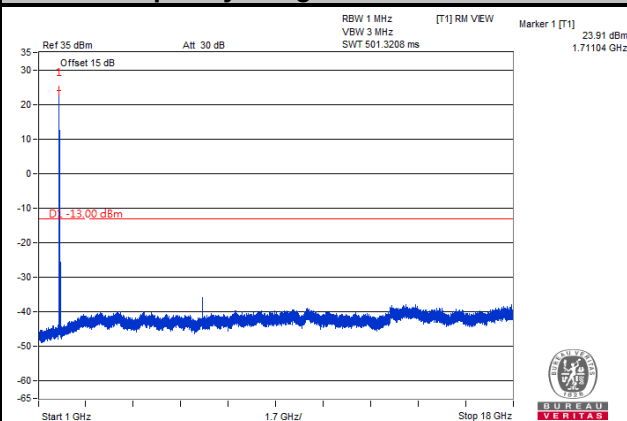
Channel Bandwidth: 20 MHz

Channel 132072

Frequency Range: 9 kHz ~ 1 GHz

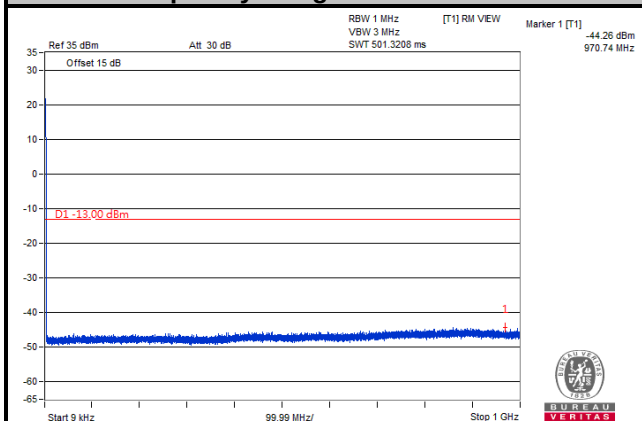


Frequency Range: 1 GHz ~ 18 GHz

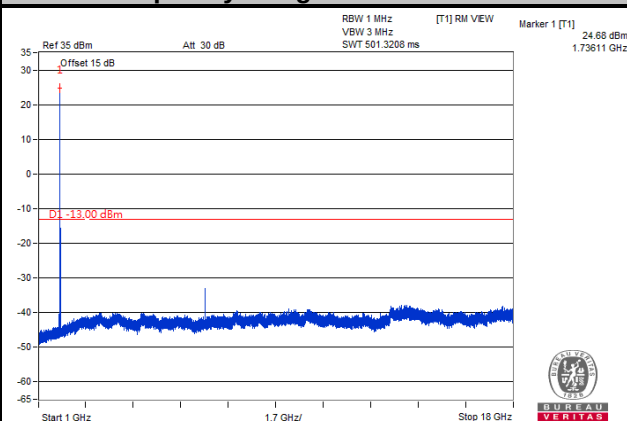


Channel 132322

Frequency Range: 9 kHz ~ 1 GHz

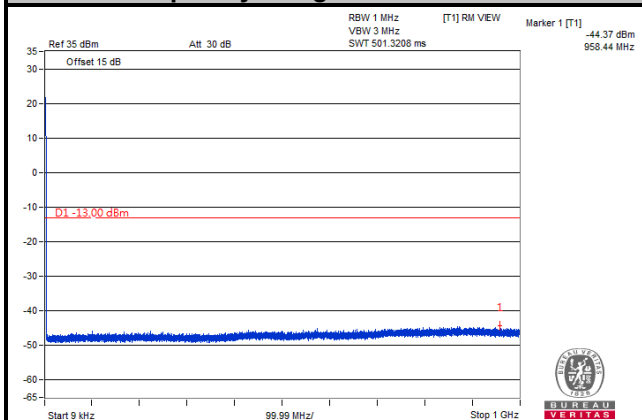


Frequency Range: 1 GHz ~ 18 GHz

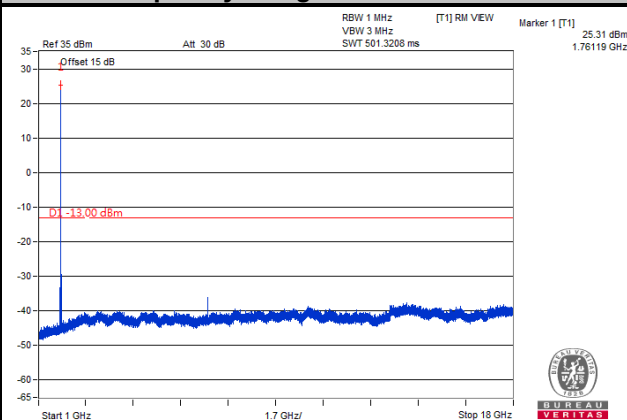


Channel 132572

Frequency Range: 9 kHz ~ 1 GHz



Frequency Range: 1 GHz ~ 18 GHz



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

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

- a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The limit of emission 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. ion horn.
- c. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}$.

Note:

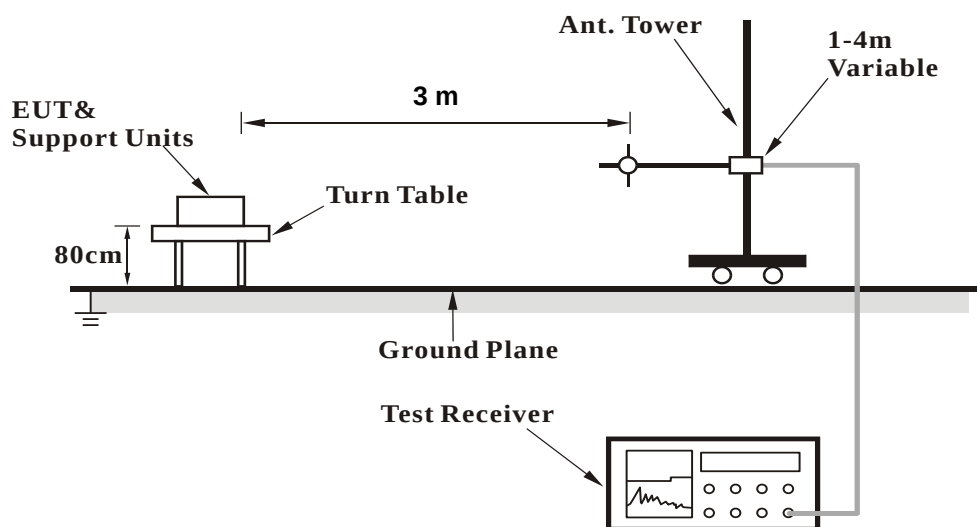
1. The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

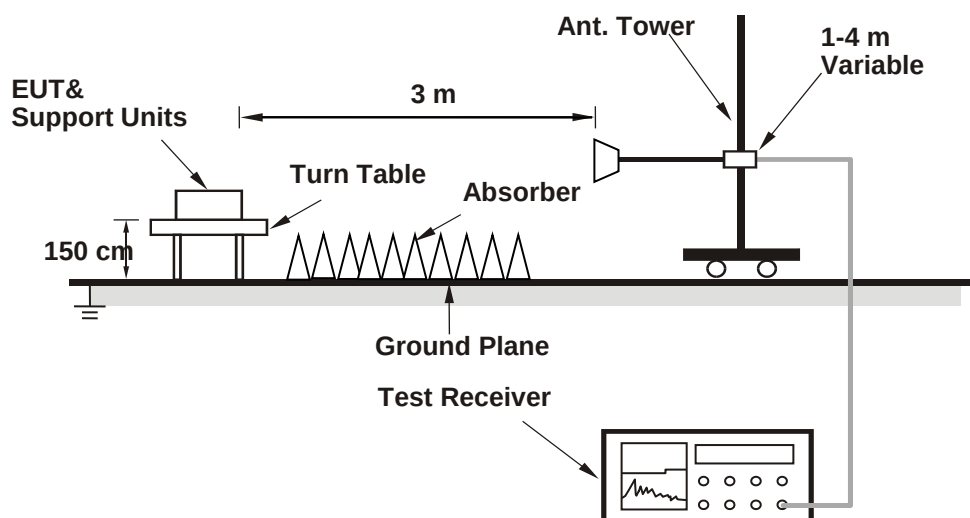
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

4.8.5 Test Results

WCDMA:

Low Channel

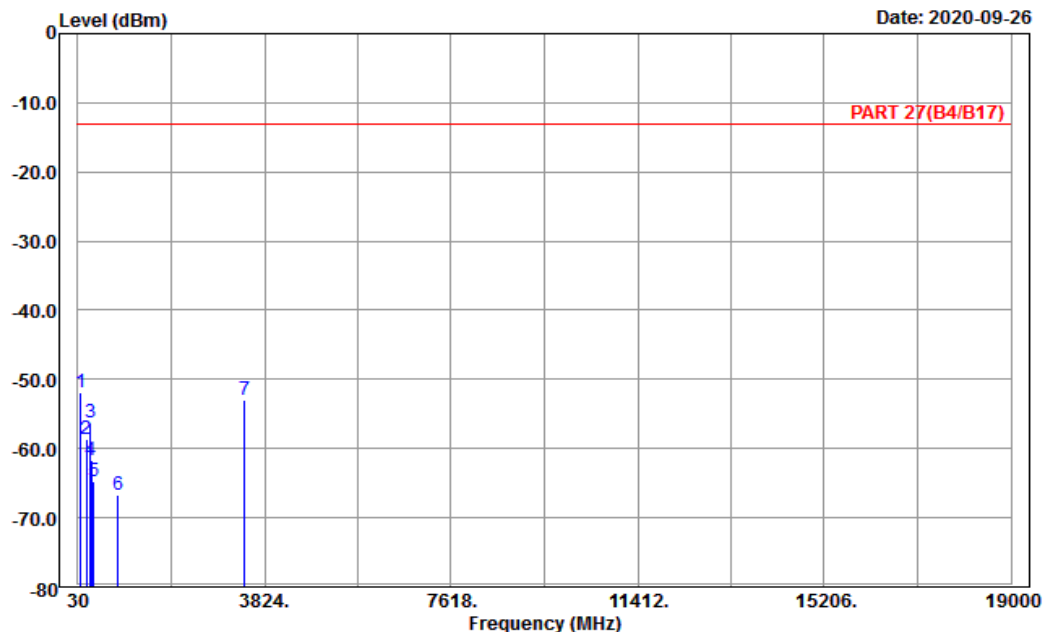


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Data: 7

Date: 2020-09-26



Site : 966 chamber 1

Condition: PART 27(B4/B17) Horizontal

Remark : Band IV_Link_L-Ch

Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	91.29	-51.87	-41.25	-10.62	-13.00	-38.87	Peak
2	197.40	-58.70	-52.61	-6.09	-13.00	-45.70	Peak
3	293.25	-56.34	-50.44	-5.90	-13.00	-43.34	Peak
4	306.30	-61.75	-55.87	-5.88	-13.00	-48.75	Peak
5	359.50	-64.84	-59.98	-4.86	-13.00	-51.84	Peak
6	853.70	-66.75	-68.31	1.56	-13.00	-53.75	Peak
7	3424.80	-52.89	-67.26	14.37	-13.00	-39.89	Peak

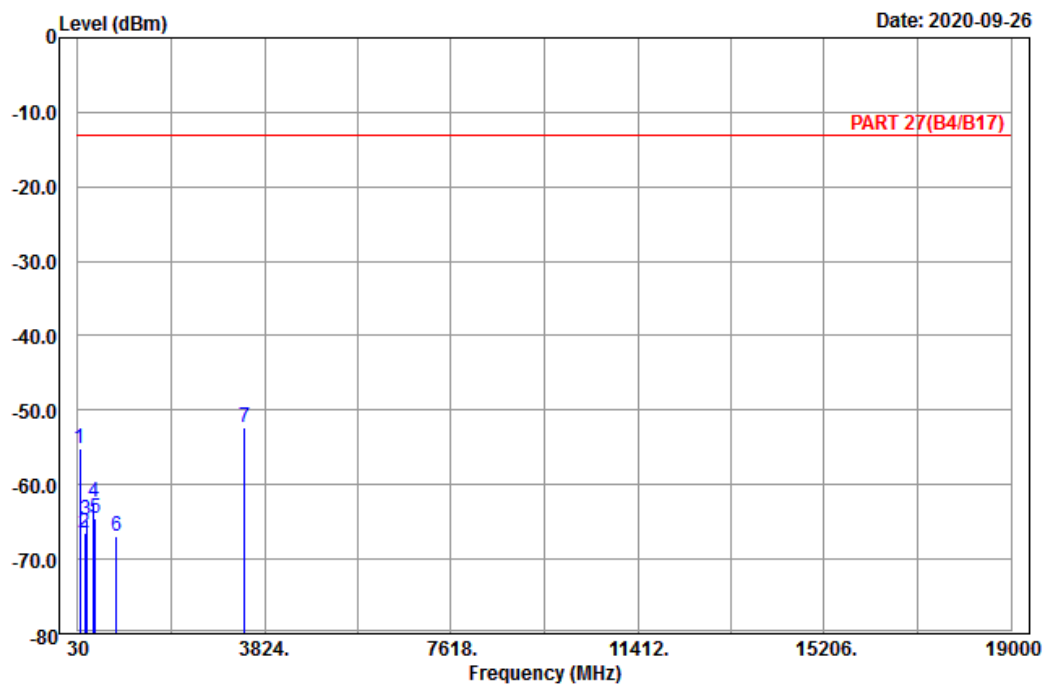


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Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : Band IV_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	77.52	-55.16	-43.14	-12.02	-13.00	-42.16	Peak
2	170.67	-66.49	-59.89	-6.60	-13.00	-53.49	Peak
3	201.99	-64.79	-58.63	-6.16	-13.00	-51.79	Peak
4	354.60	-62.33	-57.21	-5.12	-13.00	-49.33	Peak
5	390.30	-64.57	-61.31	-3.26	-13.00	-51.57	Peak
6	813.80	-66.98	-68.84	1.86	-13.00	-53.98	Peak
7 pp	3424.80	-52.38	-66.75	14.37	-13.00	-39.38	Peak

Middle Channel

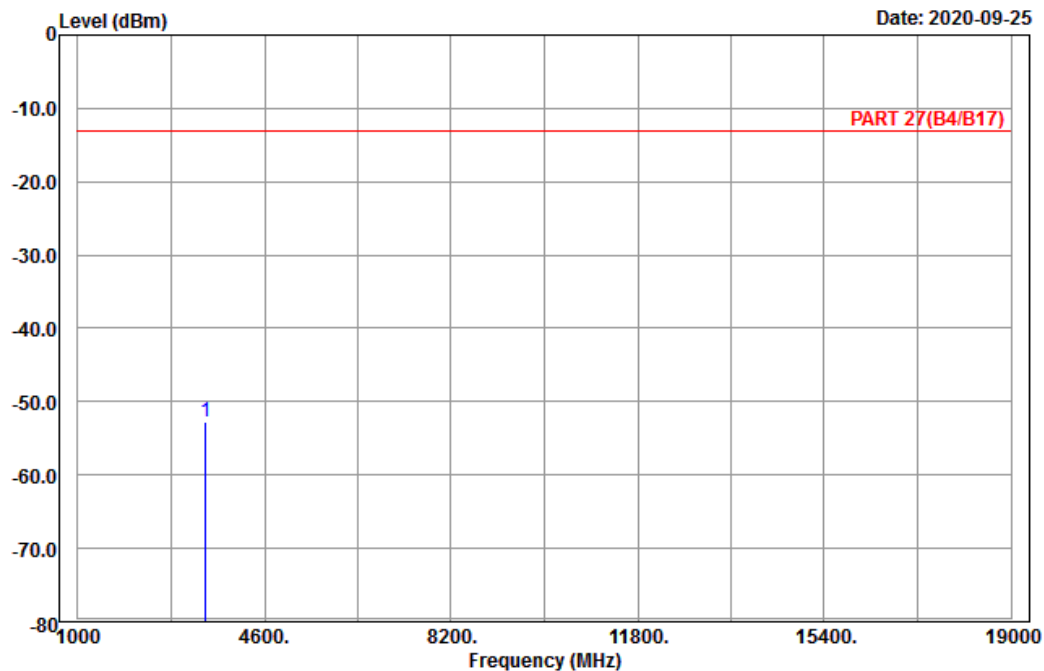


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Date: 2020-09-25



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : Band IV_Link_M-Ch
Tested by: Karl Lee

Freq	Level	Read	Limit	Over	
MHz	dBm	Level	Line	Limit	Remark
		dBm	dB	dBm	dB
1 pp 3465.20	-52.84	-67.18	14.34	-13.00	-39.84 Peak

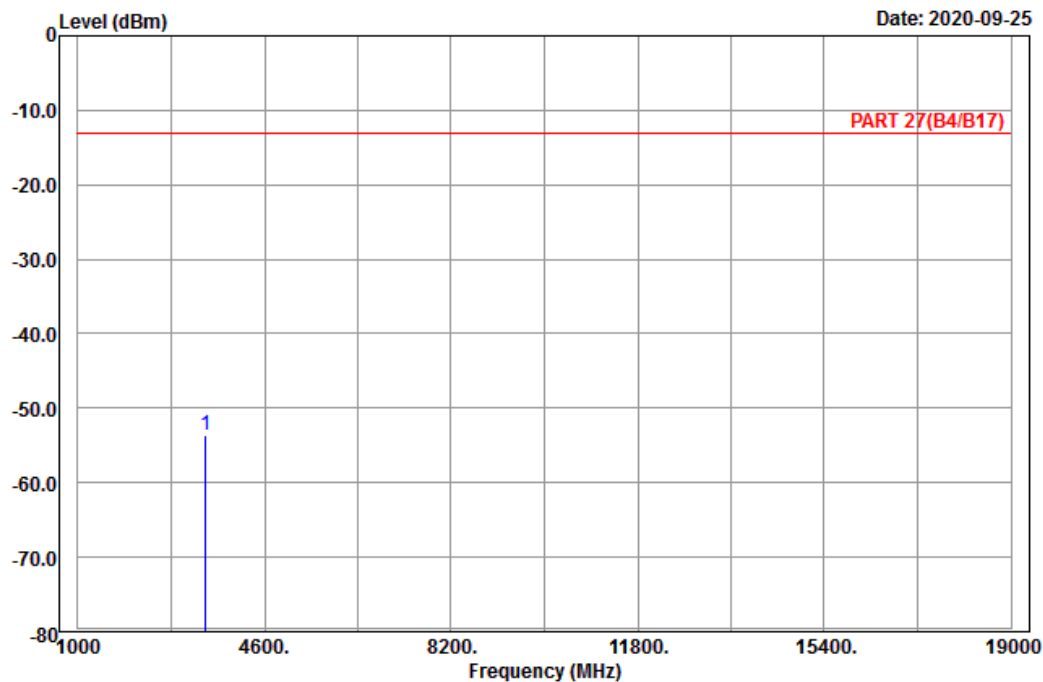


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Data: 10

Date: 2020-09-25



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : Band IV_Link_M-Ch
Tested by: Karl Lee

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 3465.20	-53.69	-68.03	14.34	-13.00	-40.69 Peak

High Channel

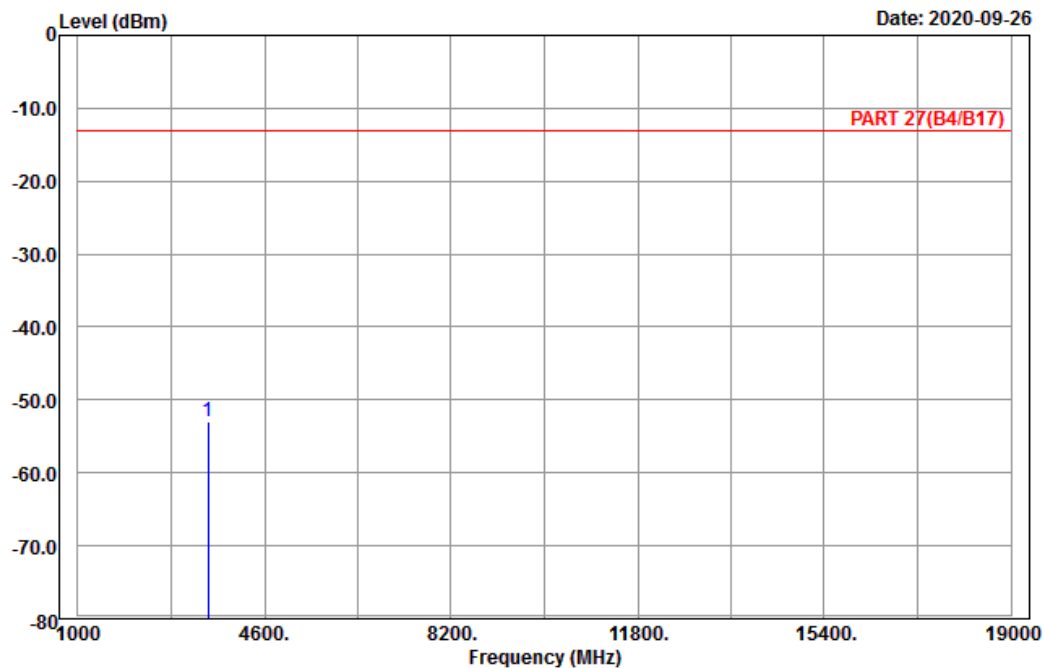


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Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : Band IV_Link_H-Ch
Tested by: Karl Lee

Freq	Level	Read	Limit	Over	
MHz	dBm	Level	Factor	Line	Limit
		dBm	dB	dBm	dB

1 pp 3505.20 -53.01 -67.29 14.28 -13.00 -40.01 Peak

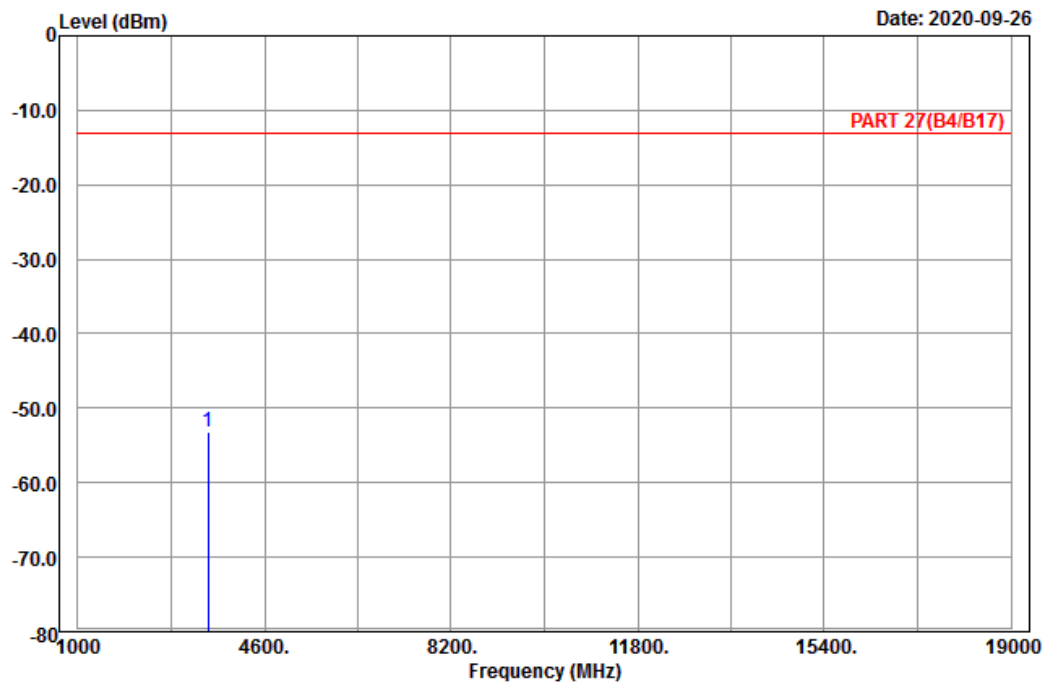


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Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : Band IV_Link_H-Ch
Tested by: Karl Lee

		Read		Limit	Over	
Freq	Level	Level	Factor	Line	Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 3505.20	-53.16	-67.44	14.28	-13.00	-40.16	Peak

LTE Band 4
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

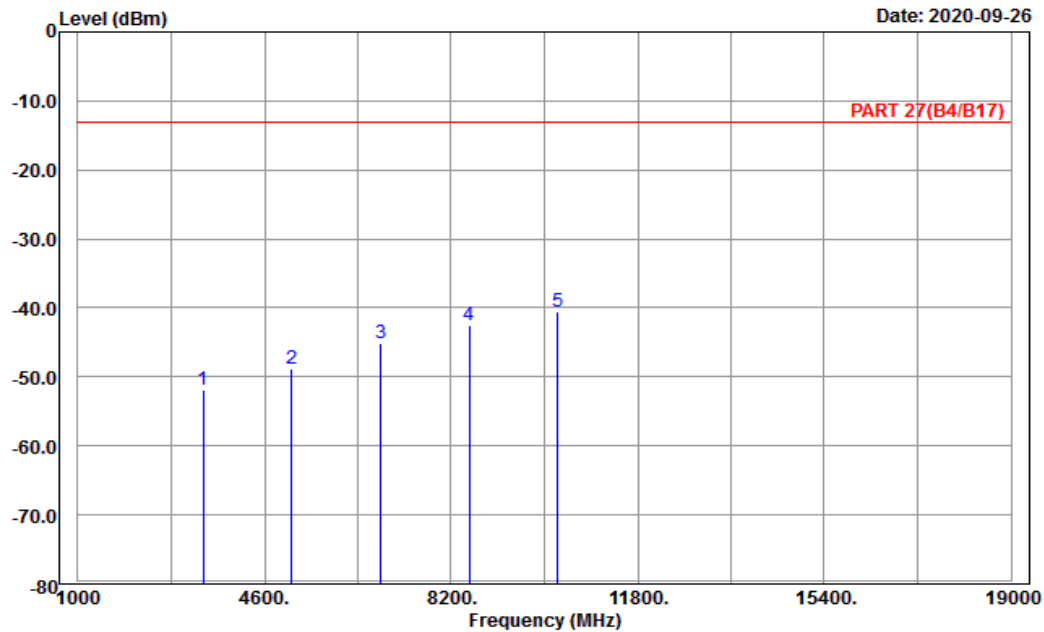


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Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3421.40	-51.78	-66.15	14.37	-13.00	-38.78	Peak
2	5132.10	-48.75	-68.56	19.81	-13.00	-35.75	Peak
3	6842.80	-45.12	-67.84	22.72	-13.00	-32.12	Peak
4	8553.50	-42.56	-66.60	24.04	-13.00	-29.56	Peak
5 pp	10264.20	-40.44	-67.03	26.59	-13.00	-27.44	Peak

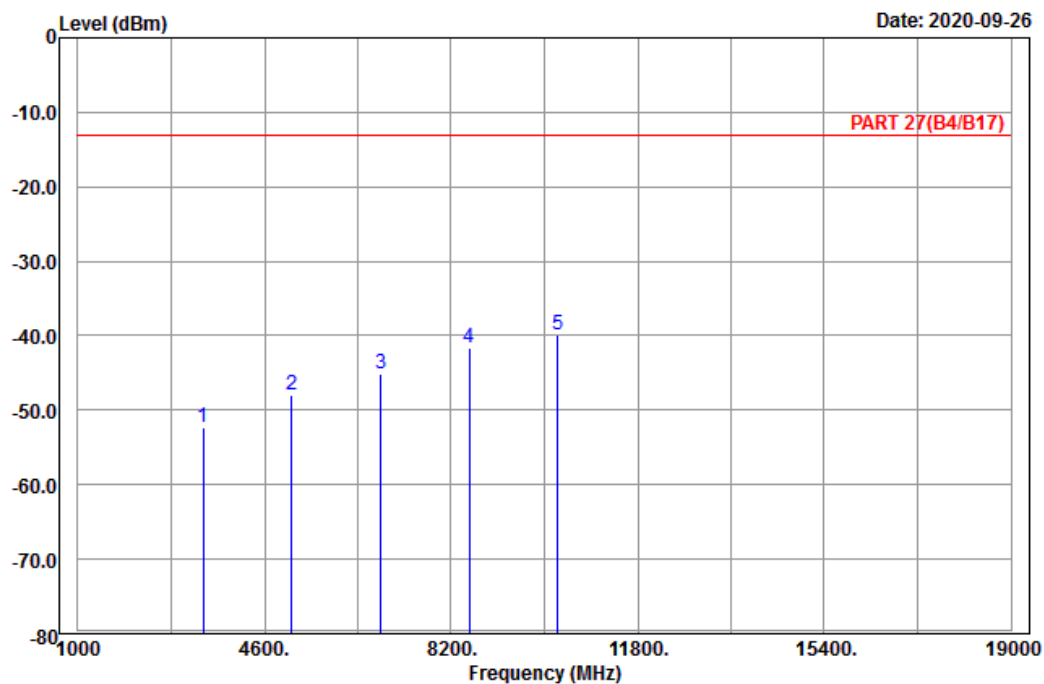


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Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3421.40	-52.32	-66.69	14.37	-13.00	-39.32	Peak
2	5132.10	-48.04	-67.85	19.81	-13.00	-35.04	Peak
3	6842.80	-45.15	-67.87	22.72	-13.00	-32.15	Peak
4	8553.50	-41.68	-65.72	24.04	-13.00	-28.68	Peak
5	10264.20	-39.79	-66.38	26.59	-13.00	-26.79	Peak

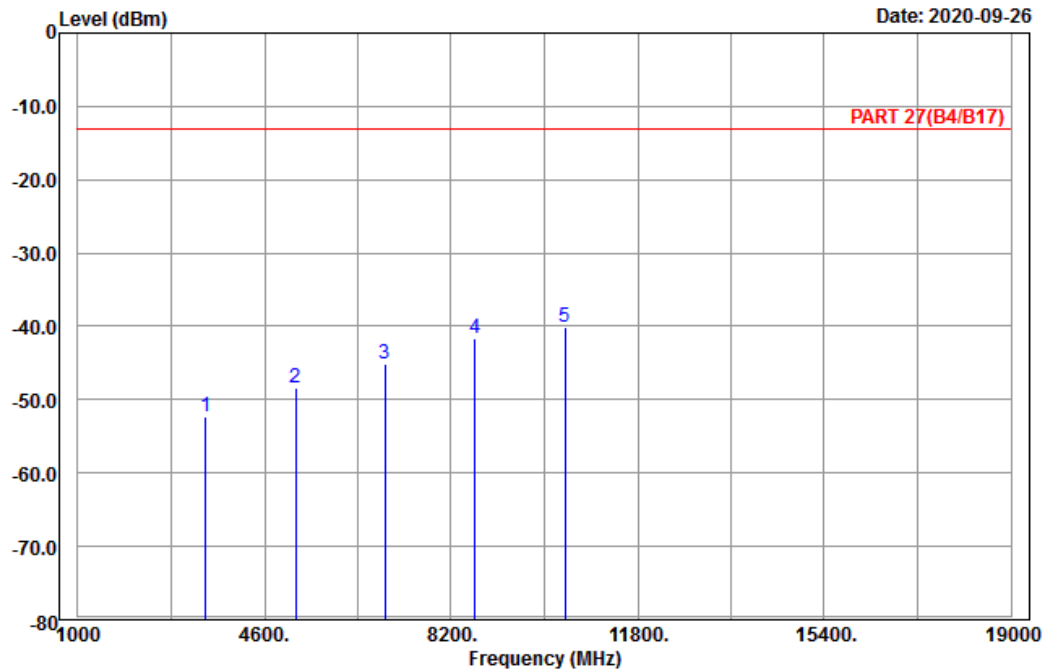
Middle Channel



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Data: 7



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-52.37	-66.71	14.34	-13.00	-39.37	Peak
2	5197.50	-48.49	-68.61	20.12	-13.00	-35.49	Peak
3	6930.00	-45.08	-67.95	22.87	-13.00	-32.08	Peak
4	8662.50	-41.62	-65.83	24.21	-13.00	-28.62	Peak
5 pp	10395.00	-40.00	-66.76	26.76	-13.00	-27.00	Peak

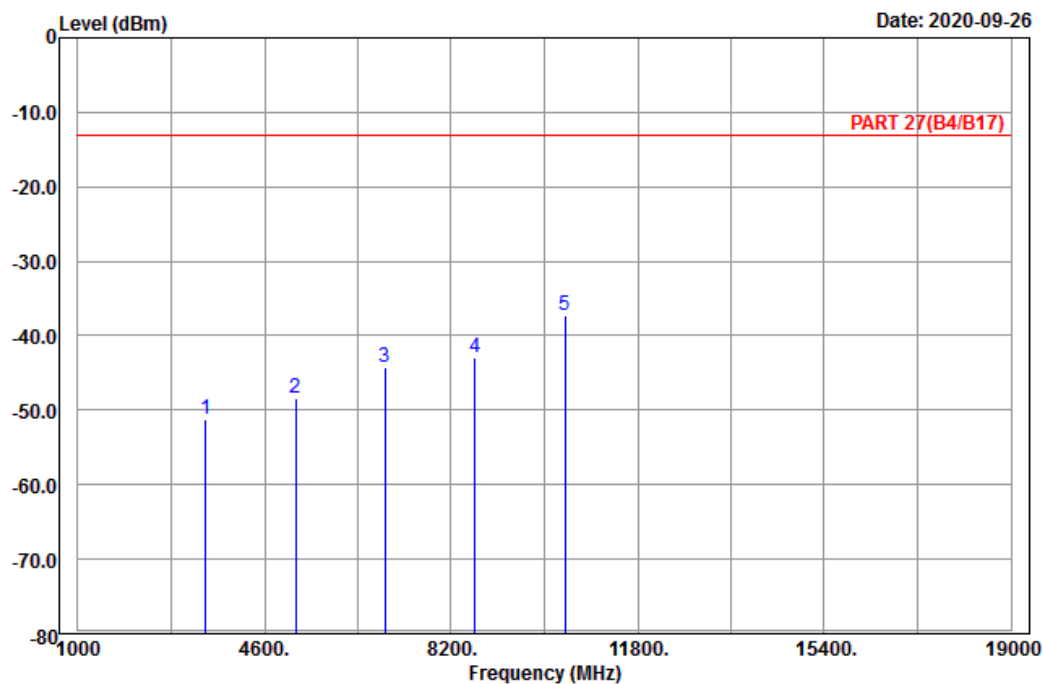


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Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-51.28	-65.62	14.34	-13.00	-38.28	Peak
2	5197.50	-48.30	-68.42	20.12	-13.00	-35.30	Peak
3	6930.00	-44.34	-67.21	22.87	-13.00	-31.34	Peak
4	8662.50	-42.87	-67.08	24.21	-13.00	-29.87	Peak
5	10395.00	-37.34	-64.10	26.76	-13.00	-24.34	Peak

High Channel

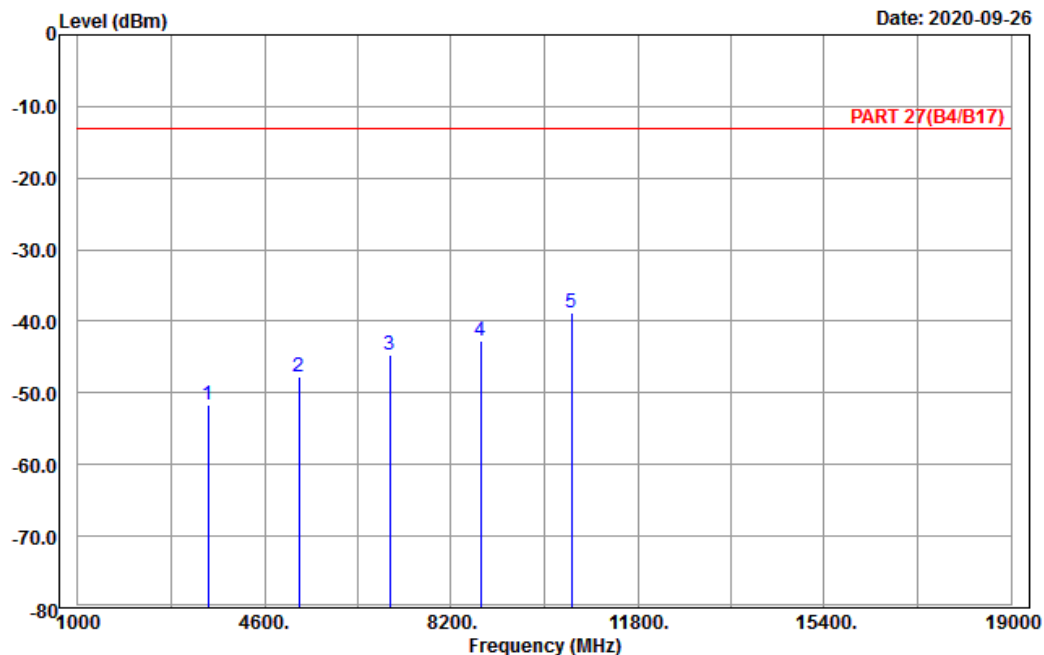


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Data: 7

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_H-Ch
Tested by: Charles Hsiao

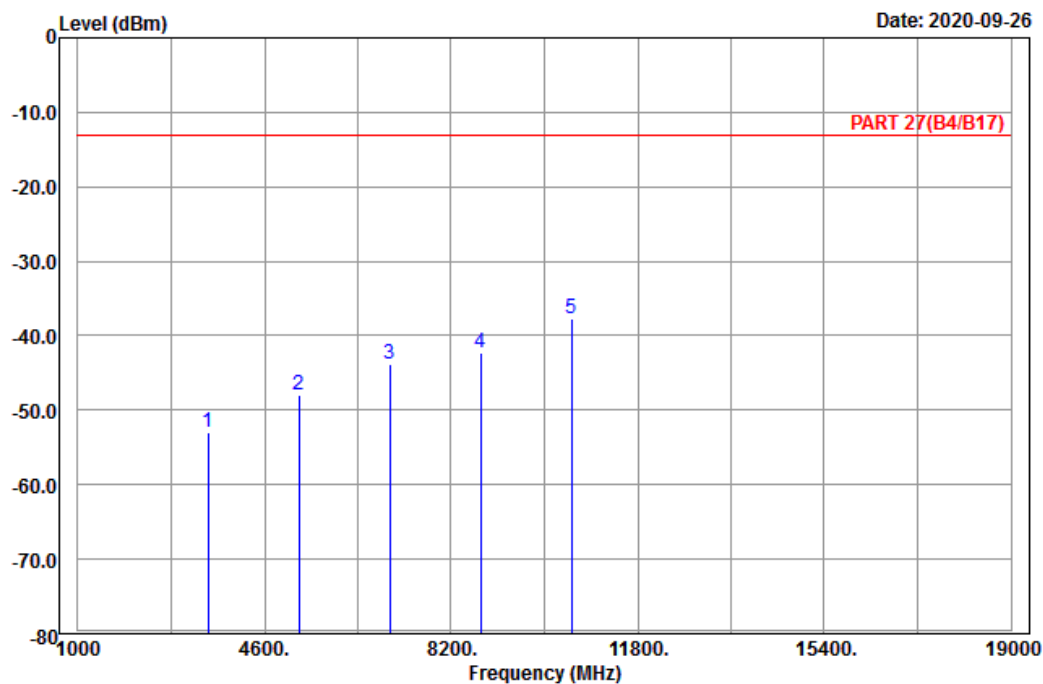
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3508.60	-51.59	-65.87	14.28	-13.00	-38.59	Peak
2	5262.90	-47.72	-67.92	20.20	-13.00	-34.72	Peak
3	7017.20	-44.64	-67.25	22.61	-13.00	-31.64	Peak
4	8771.50	-42.64	-67.20	24.56	-13.00	-29.64	Peak
5 pp	10525.80	-38.81	-65.46	26.65	-13.00	-25.81	Peak



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Data: 8



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3508.60	-52.97	-67.25	14.28	-13.00	-39.97	Peak
2	5262.90	-47.92	-68.12	20.20	-13.00	-34.92	Peak
3	7017.20	-43.76	-66.37	22.61	-13.00	-30.76	Peak
4	8771.50	-42.31	-66.87	24.56	-13.00	-29.31	Peak
5 pp	10525.80	-37.75	-64.40	26.65	-13.00	-24.75	Peak

Channel Bandwidth: 5 MHz / QPSK
Low Channel

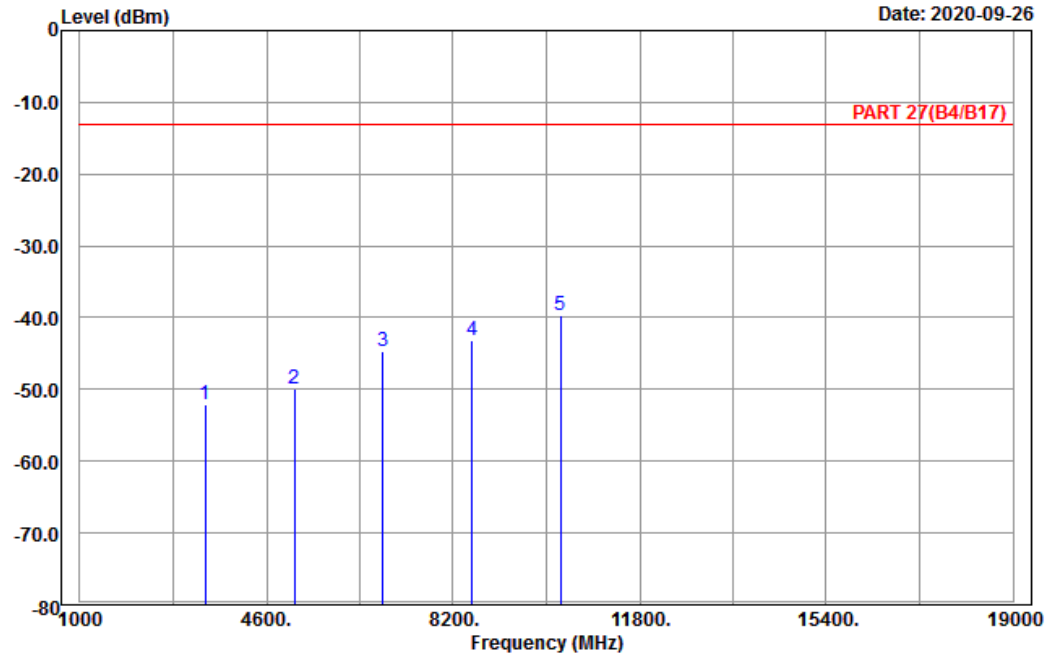


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Data: 7

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3425.00	-52.13	-66.50	14.37	-13.00	-39.13	Peak
2	5137.50	-49.84	-69.65	19.81	-13.00	-36.84	Peak
3	6850.00	-44.77	-67.49	22.72	-13.00	-31.77	Peak
4	8562.50	-43.20	-67.24	24.04	-13.00	-30.20	Peak
5 pp	10275.00	-39.58	-66.17	26.59	-13.00	-26.58	Peak

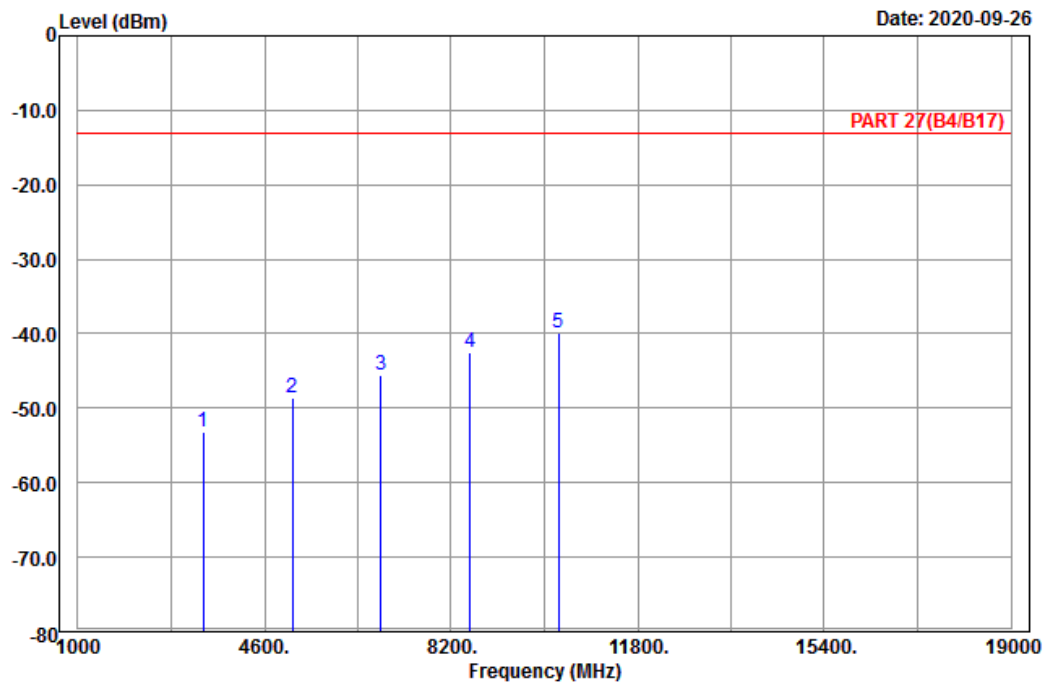


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Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3425.00	-53.25	-67.62	14.37	-13.00	-40.25	Peak
2	5137.50	-48.66	-68.47	19.81	-13.00	-35.66	Peak
3	6850.00	-45.55	-68.27	22.72	-13.00	-32.55	Peak
4	8562.50	-42.58	-66.62	24.04	-13.00	-29.58	Peak
5	10275.00	-39.98	-66.57	26.59	-13.00	-26.98	Peak

Middle Channel

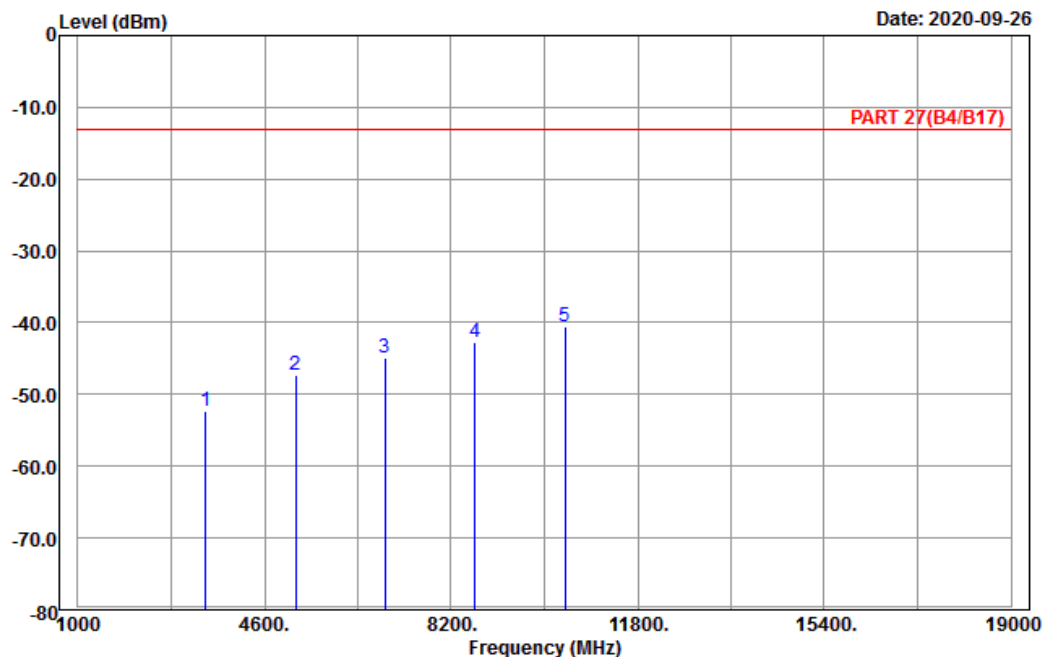


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Data: 3

Date: 2020-09-26



Site : 966 chamber 1

Condition: PART 27(B4/B17) Horizontal

Remark : LTE_Band 4_Link_M-Ch

Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-52.25	-66.59	14.34	-13.00	-39.25	Peak
2	5197.50	-47.40	-67.52	20.12	-13.00	-34.40	Peak
3	6930.00	-44.88	-67.75	22.87	-13.00	-31.88	Peak
4	8662.50	-42.77	-66.98	24.21	-13.00	-29.77	Peak
5 pp	10395.00	-40.50	-67.26	26.76	-13.00	-27.50	Peak

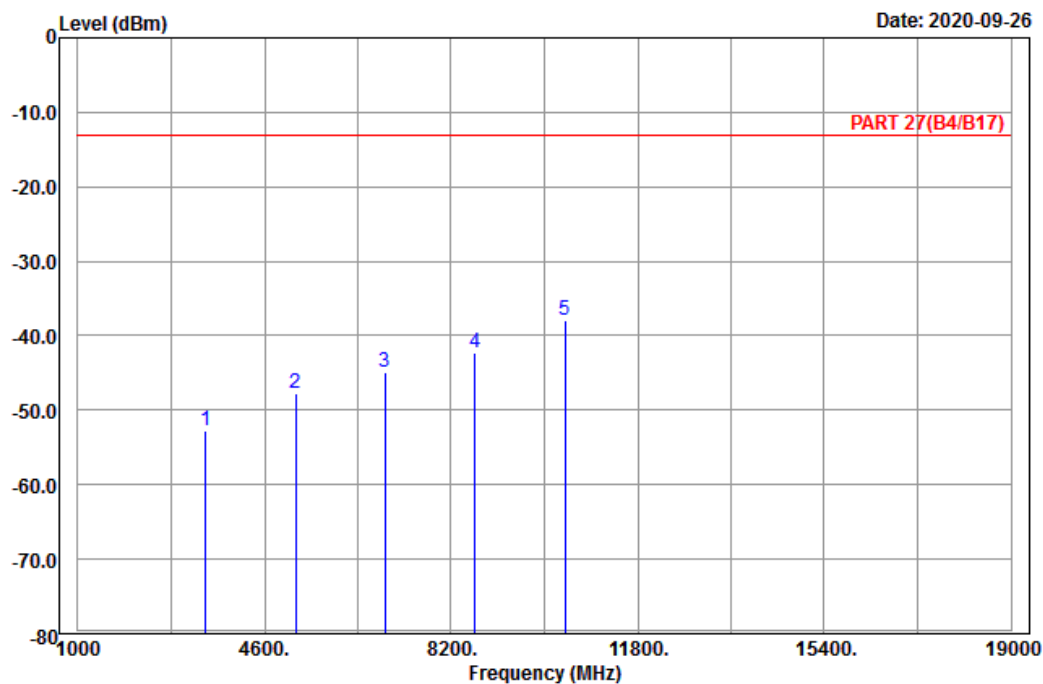


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-52.73	-67.07	14.34	-13.00	-39.73	Peak
2	5197.50	-47.84	-67.96	20.12	-13.00	-34.84	Peak
3	6930.00	-44.91	-67.78	22.87	-13.00	-31.91	Peak
4	8662.50	-42.35	-66.56	24.21	-13.00	-29.35	Peak
5	10395.00	-37.90	-64.66	26.76	-13.00	-24.90	Peak

High Channel

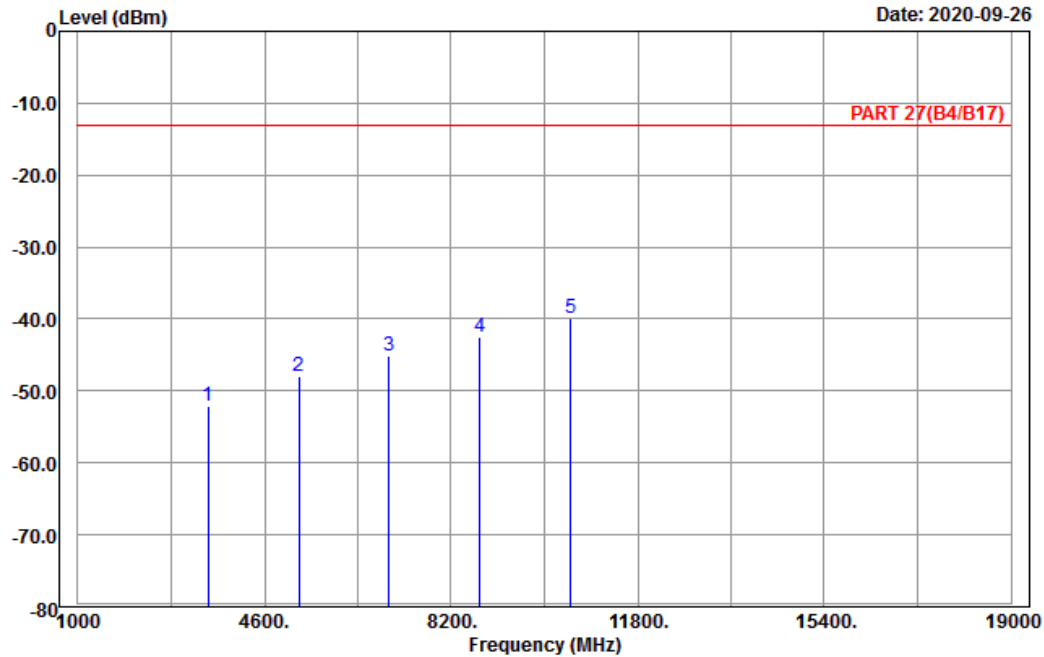


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1

Condition: PART 27(B4/B17) Horizontal

Remark : LTE_Band 4_Link_H-Ch

Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3505.00	-52.02	-66.30	14.28	-13.00	-39.02	Peak
2	5257.50	-47.86	-68.06	20.20	-13.00	-34.86	Peak
3	7010.00	-45.17	-67.78	22.61	-13.00	-32.17	Peak
4	8762.50	-42.53	-67.03	24.50	-13.00	-29.53	Peak
5 pp	10515.00	-39.97	-66.62	26.65	-13.00	-26.97	Peak

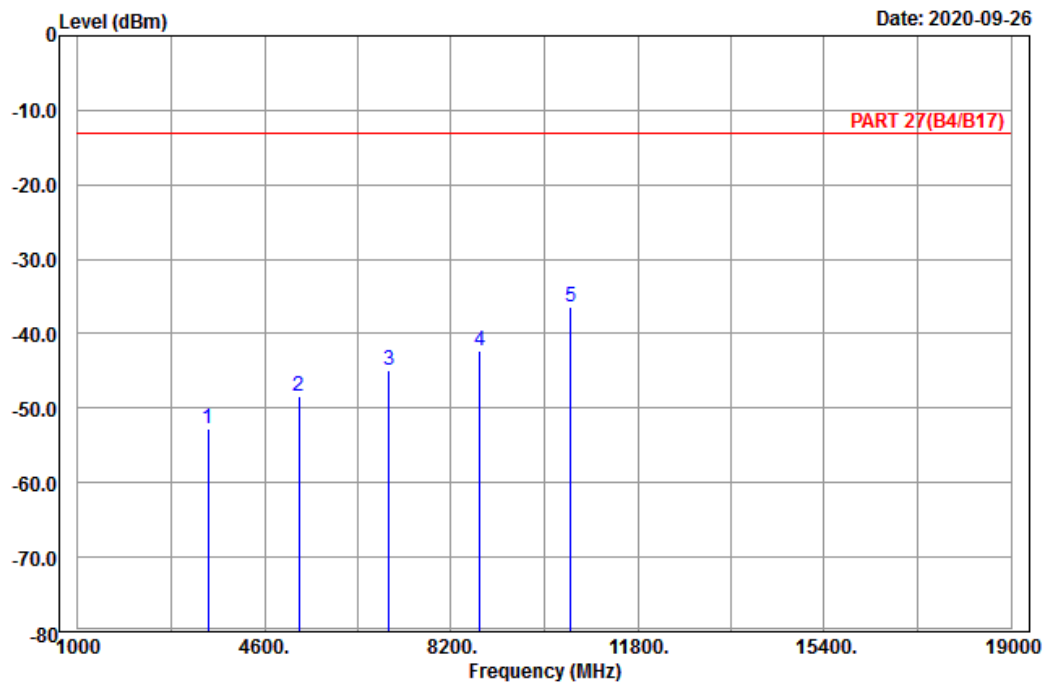


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3505.00	-52.82	-67.10	14.28	-13.00	-39.82	Peak
2	5257.50	-48.43	-68.63	20.20	-13.00	-35.43	Peak
3	7010.00	-44.84	-67.45	22.61	-13.00	-31.84	Peak
4	8762.50	-42.34	-66.84	24.50	-13.00	-29.34	Peak
5 pp	10515.00	-36.30	-62.95	26.65	-13.00	-23.30	Peak

Channel Bandwidth: 20 MHz / QPSK
Low Channel

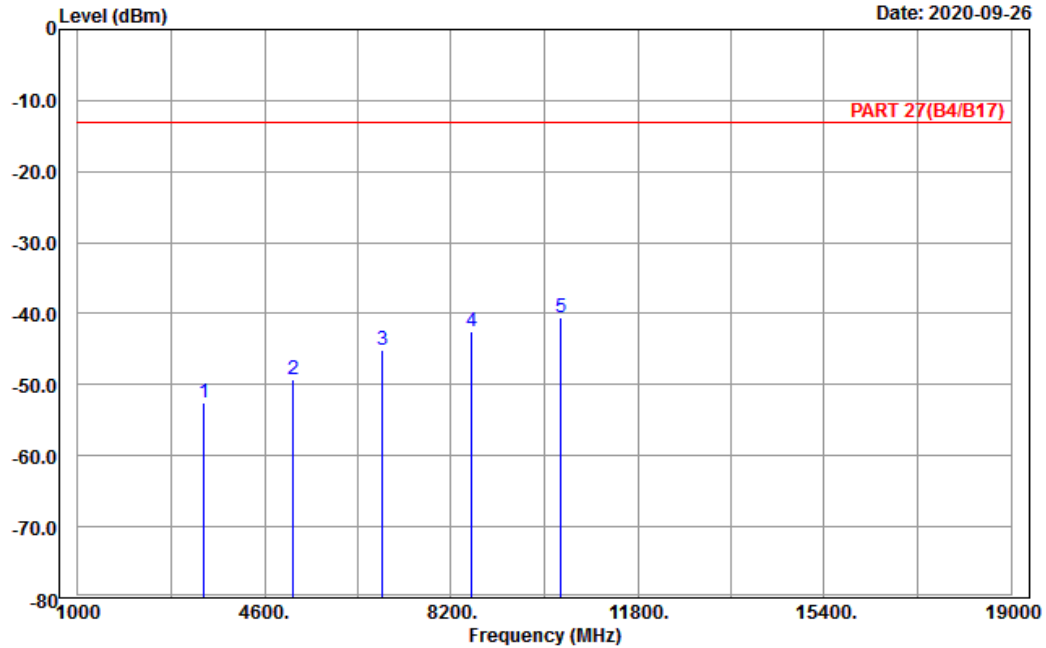


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3440.00	-52.64	-66.99	14.35	-13.00	-39.64	Peak
2	5160.00	-49.17	-69.09	19.92	-13.00	-36.17	Peak
3	6880.00	-45.16	-67.96	22.80	-13.00	-32.16	Peak
4	8600.00	-42.52	-66.62	24.10	-13.00	-29.52	Peak
5 pp	10320.00	-40.53	-67.20	26.67	-13.00	-27.53	Peak

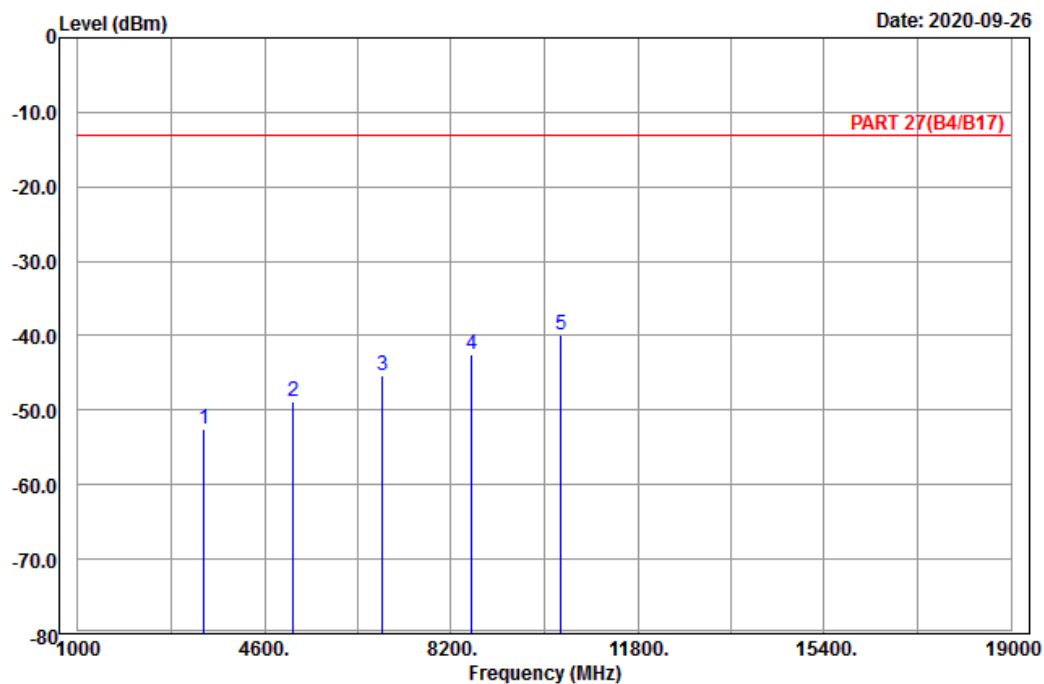


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3440.00	-52.45	-66.80	14.35	-13.00	-39.45	Peak
2	5160.00	-48.90	-68.82	19.92	-13.00	-35.90	Peak
3	6880.00	-45.35	-68.15	22.80	-13.00	-32.35	Peak
4	8600.00	-42.50	-66.60	24.10	-13.00	-29.50	Peak
5 pp	10320.00	-39.80	-66.47	26.67	-13.00	-26.80	Peak

Middle Channel

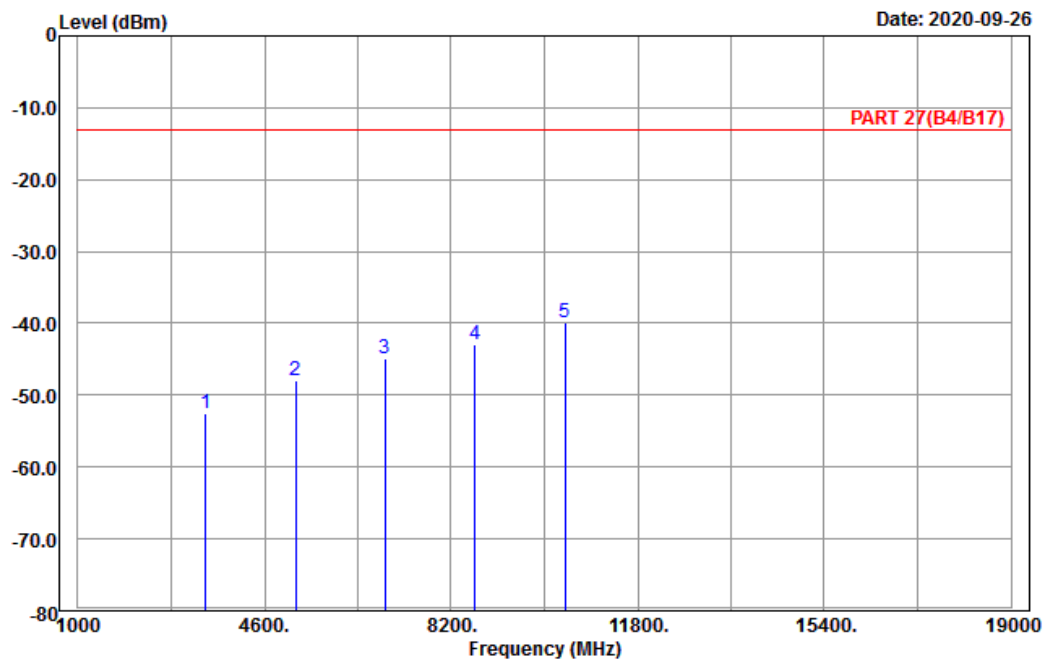


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1

Condition: PART 27(B4/B17) Horizontal

Remark : LTE_Band 4_Link_M-Ch

Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-52.53	-66.87	14.34	-13.00	-39.53	Peak
2	5197.50	-48.05	-68.17	20.12	-13.00	-35.05	Peak
3	6930.00	-44.95	-67.82	22.87	-13.00	-31.95	Peak
4	8662.50	-42.90	-67.11	24.21	-13.00	-29.90	Peak
5 pp	10395.00	-39.79	-66.55	26.76	-13.00	-26.79	Peak

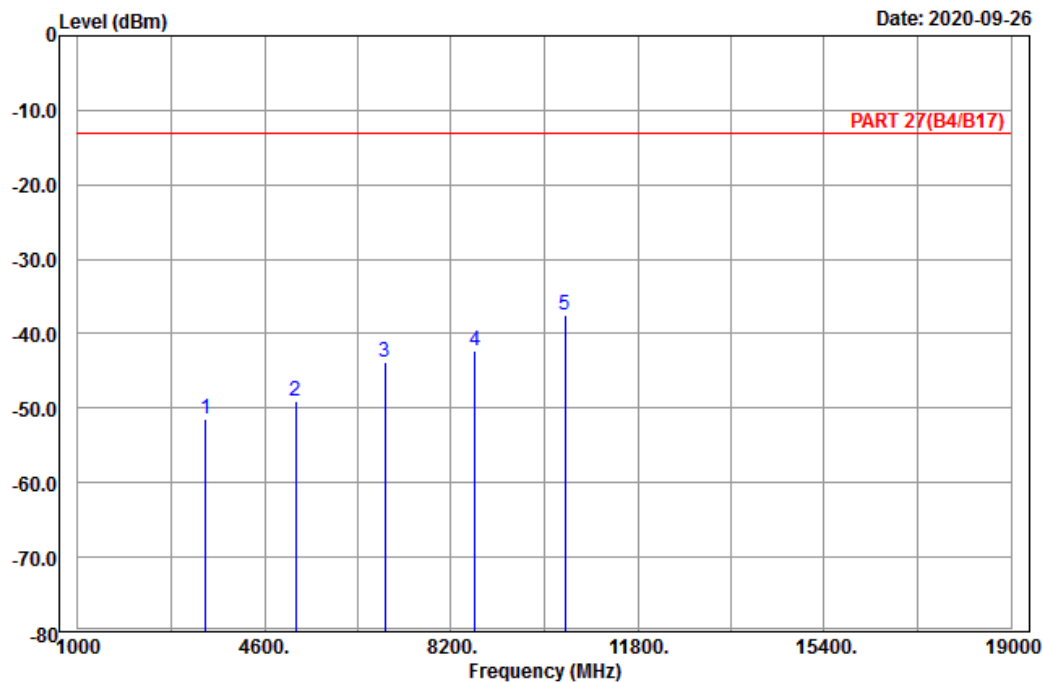


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3465.00	-51.37	-65.71	14.34	-13.00	-38.37	Peak
2	5197.50	-49.08	-69.20	20.12	-13.00	-36.08	Peak
3	6930.00	-43.85	-66.72	22.87	-13.00	-30.85	Peak
4	8662.50	-42.21	-66.42	24.21	-13.00	-29.21	Peak
5	10395.00	-37.48	-64.24	26.76	-13.00	-24.48	Peak

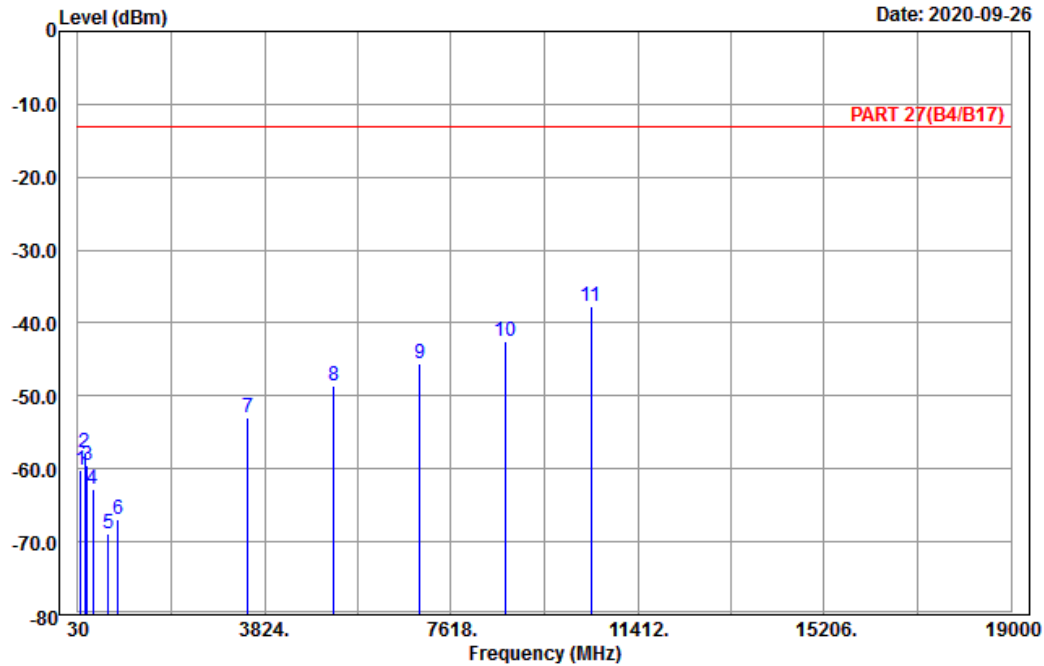
High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 chamber 1
 Condition: PART 27(B4/B17) Horizontal
 Remark : LTE_Band 4_Link_H-Ch
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	91.02	-60.20	-49.58	-10.62	-13.00	-47.20	Peak
2	176.07	-57.73	-51.74	-5.99	-13.00	-44.73	Peak
3	214.14	-59.53	-53.54	-5.99	-13.00	-46.53	Peak
4	342.00	-62.73	-57.26	-5.47	-13.00	-49.73	Peak
5	654.90	-68.92	-68.76	-0.16	-13.00	-55.92	Peak
6	840.40	-67.00	-68.56	1.56	-13.00	-54.00	Peak
7	3490.00	-52.91	-67.22	14.31	-13.00	-39.91	Peak
8	5235.00	-48.69	-68.85	20.16	-13.00	-35.69	Peak
9	6980.00	-45.50	-68.19	22.69	-13.00	-32.50	Peak
10	8725.00	-42.49	-66.88	24.39	-13.00	-29.49	Peak
11 pp	10470.00	-37.77	-64.43	26.66	-13.00	-24.77	Peak

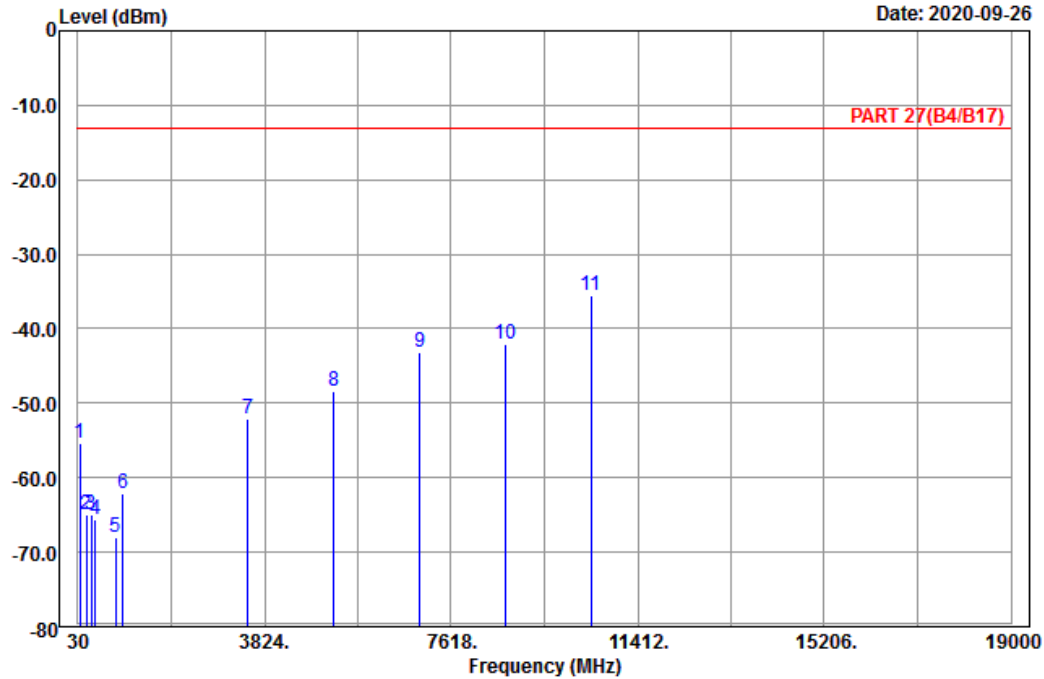


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	76.71	-55.31	-43.21	-12.10	-13.00	-42.31	Peak
2	202.80	-64.88	-58.74	-6.14	-13.00	-51.88	Peak
3	298.92	-65.05	-59.10	-5.95	-13.00	-52.05	Peak
4	391.00	-65.56	-62.35	-3.21	-13.00	-52.56	Peak
5	792.10	-67.95	-69.45	1.50	-13.00	-54.95	Peak
6	945.40	-62.22	-67.15	4.93	-13.00	-49.22	Peak
7	3490.00	-52.12	-66.43	14.31	-13.00	-39.12	Peak
8	5235.00	-48.33	-68.49	20.16	-13.00	-35.33	Peak
9	6980.00	-43.23	-65.92	22.69	-13.00	-30.23	Peak
10	8725.00	-42.04	-66.43	24.39	-13.00	-29.04	Peak
11 pp	10470.00	-35.42	-62.08	26.66	-13.00	-22.42	Peak

LTE Band 12
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel

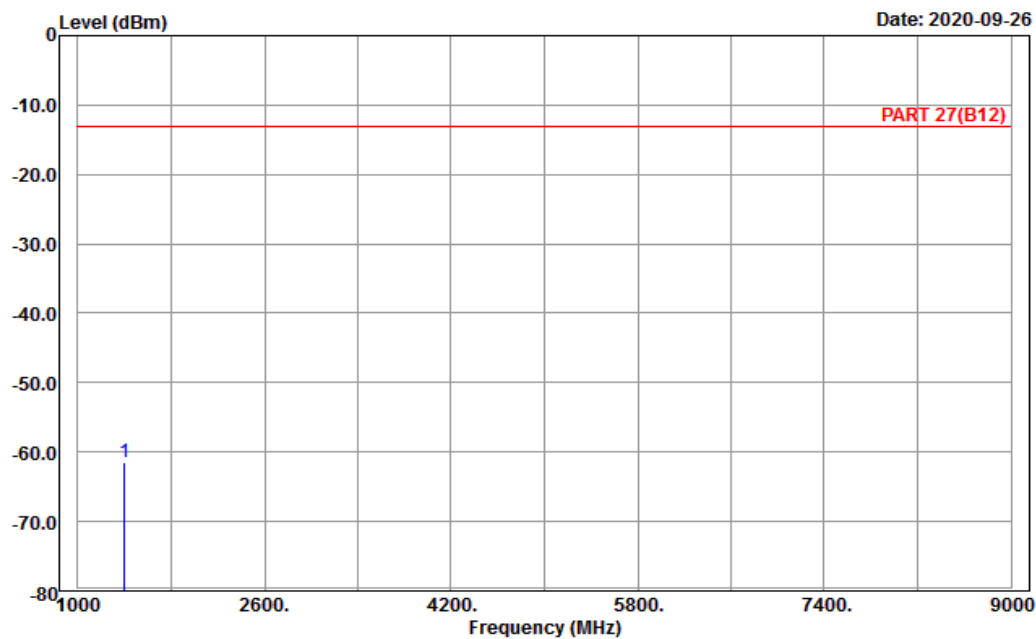


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

Freq	Level	Read	Factor	Limit	Over	Remark
		Level		Line	Limit	
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1399.40	-61.50	-67.60	6.10	-13.00	-48.50	Peak

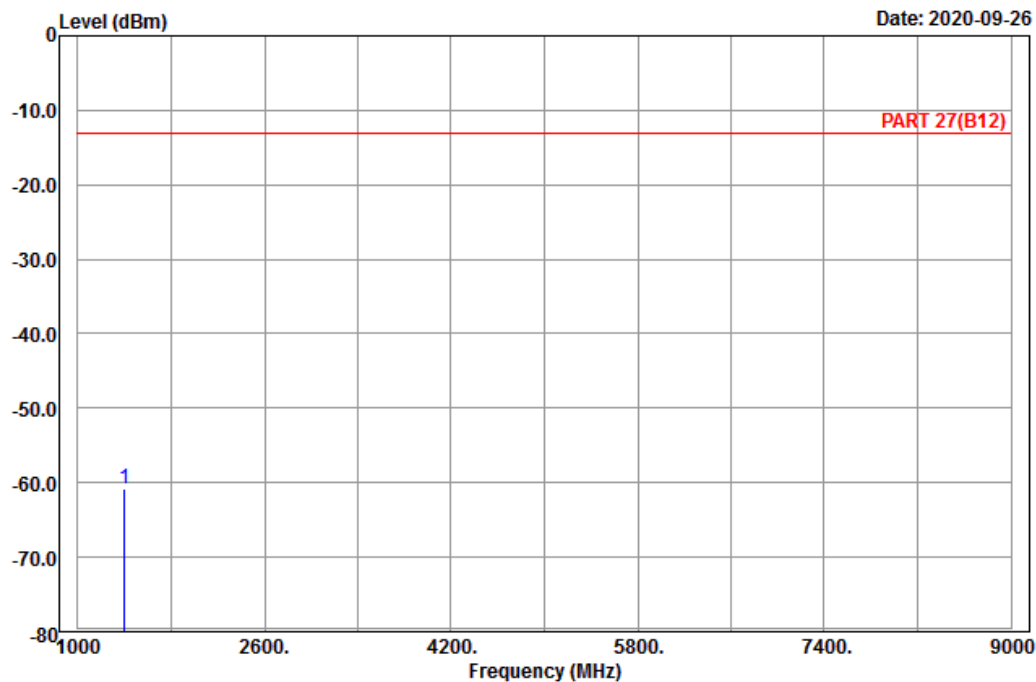


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1399.40	-60.86	-66.96	6.10	-13.00	-47.86 Peak

Middle Channel

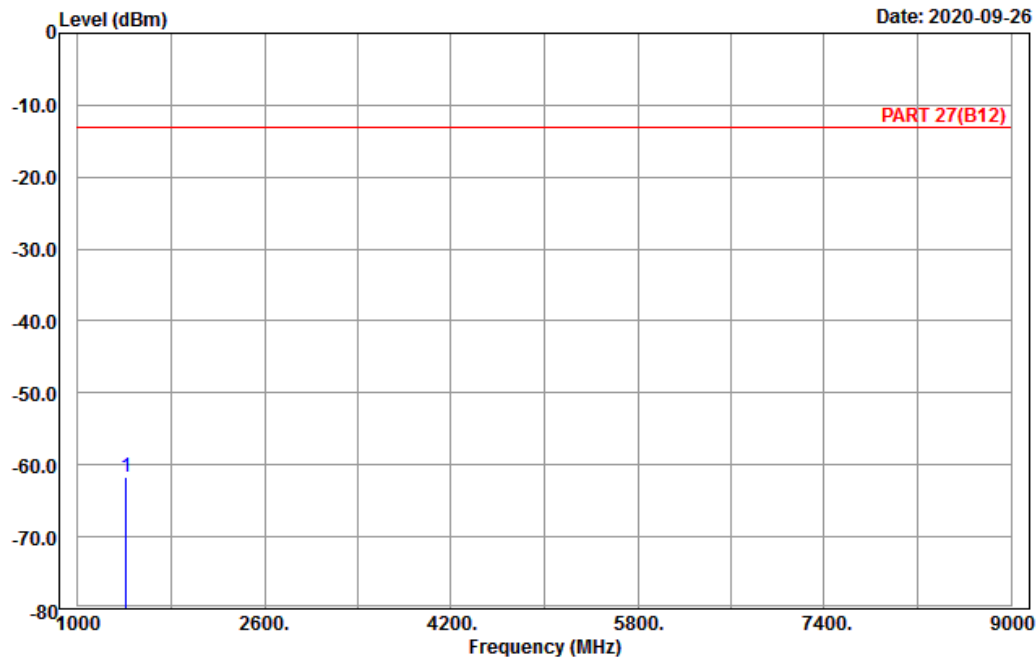


Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1415.00	-61.74	-68.10	6.36	-13.00	-48.74	Peak

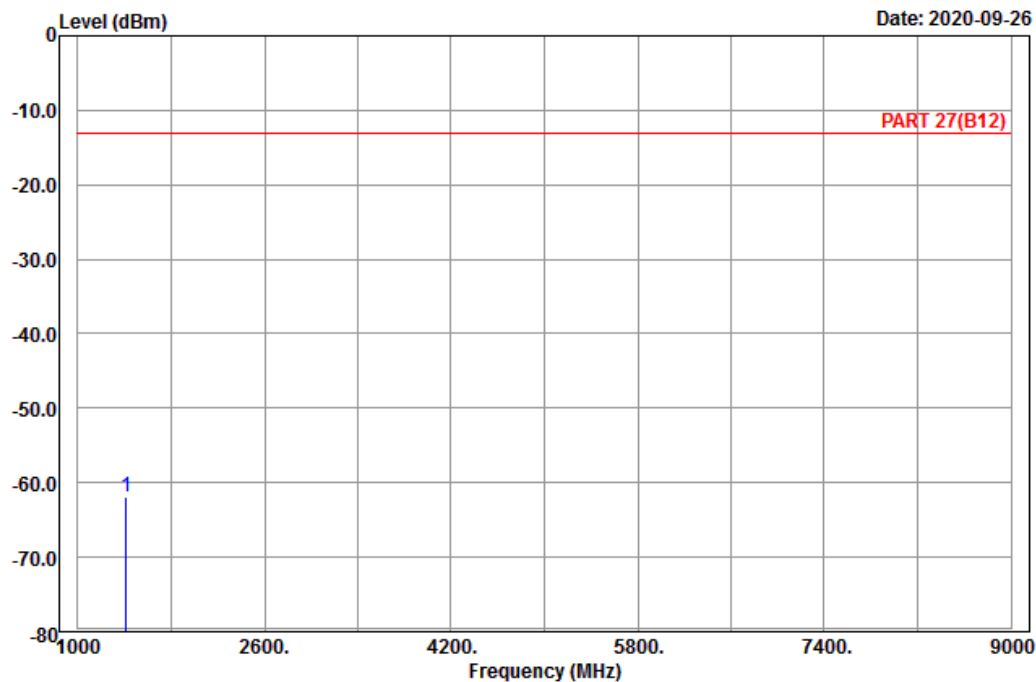


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_M-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1415.00	-61.90	-68.26	6.36	-13.00	-48.90 Peak

High Channel

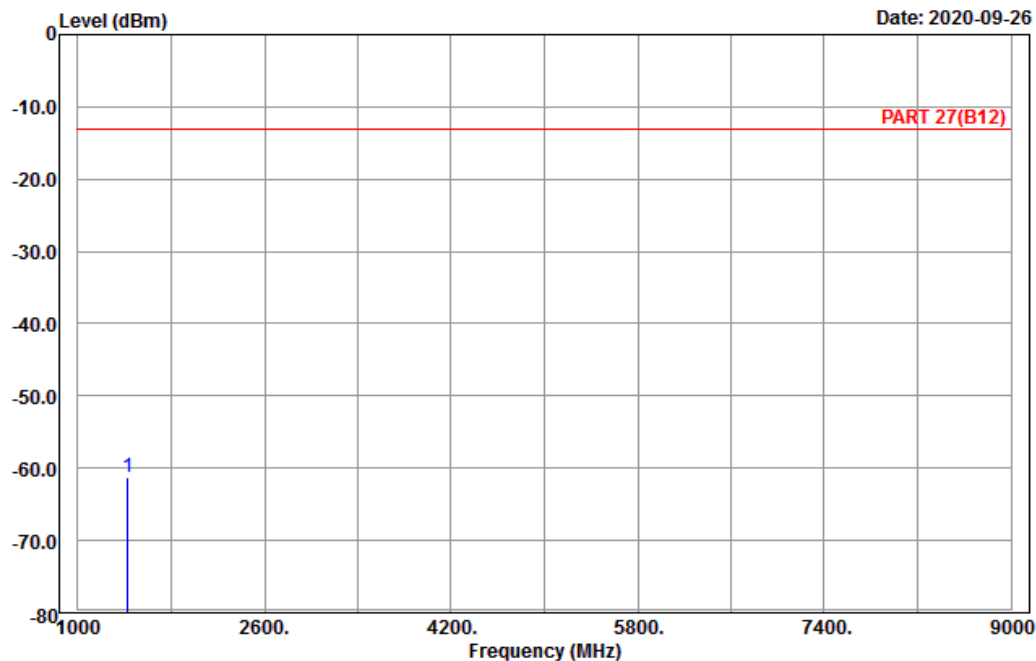


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

		Read		Limit	Over	
Freq	Level	Level	Factor	Line	Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1430.60	-61.16	-67.40	6.24	-13.00	-48.16	Peak

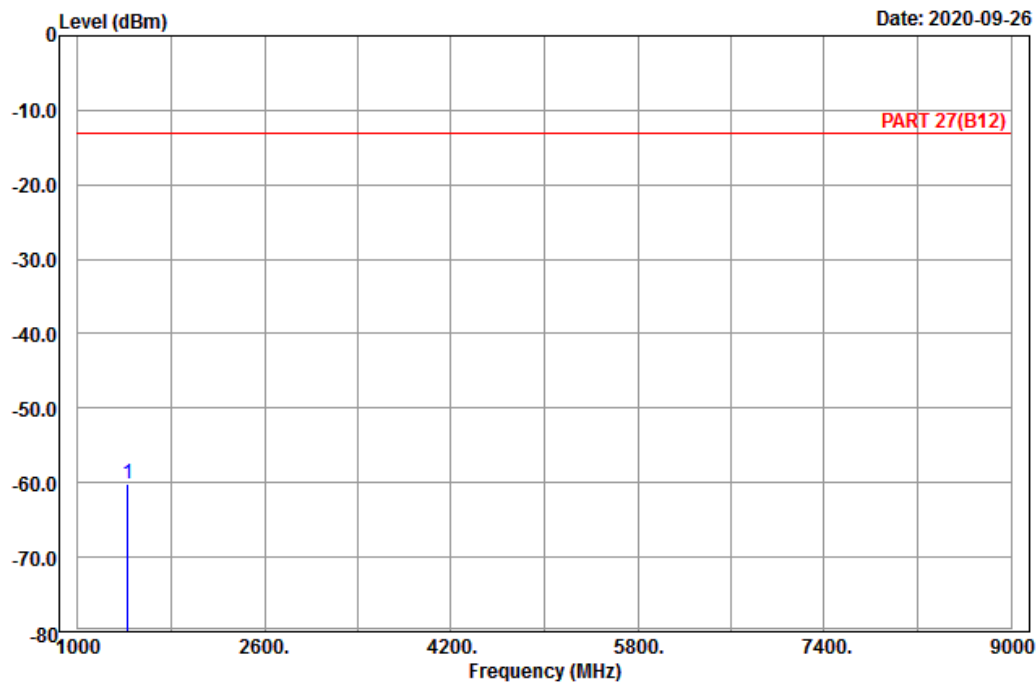


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1430.60	-60.15	-66.39	6.24	-13.00	-47.15 Peak

Channel Bandwidth: 5 MHz / QPSK
Low Channel

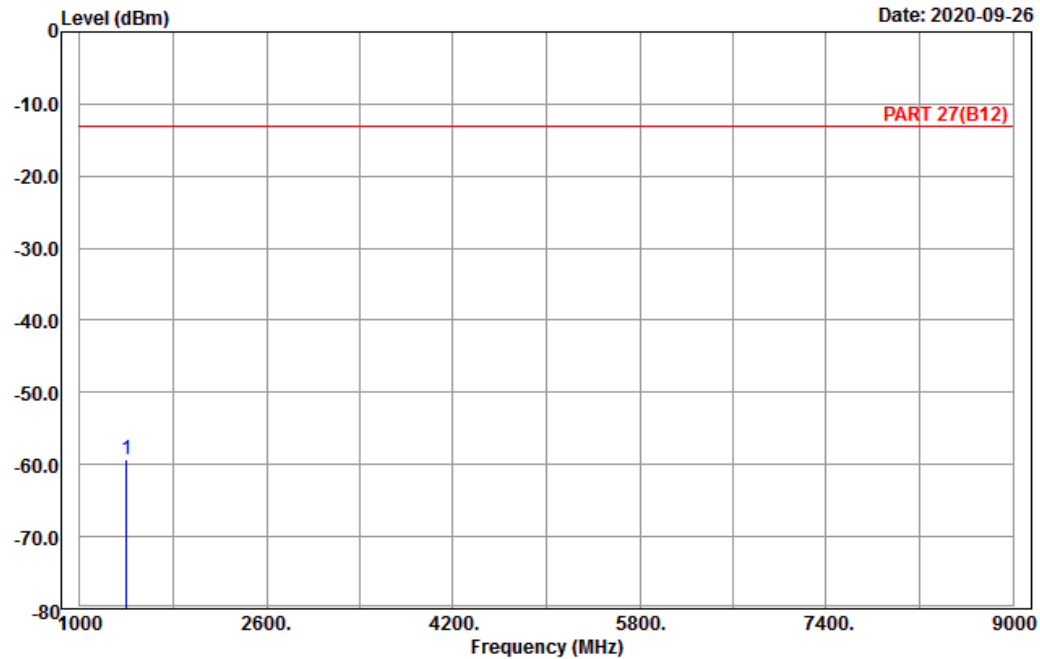


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1403.00	-59.34	-65.44	6.10	-13.00	-46.34	Peak

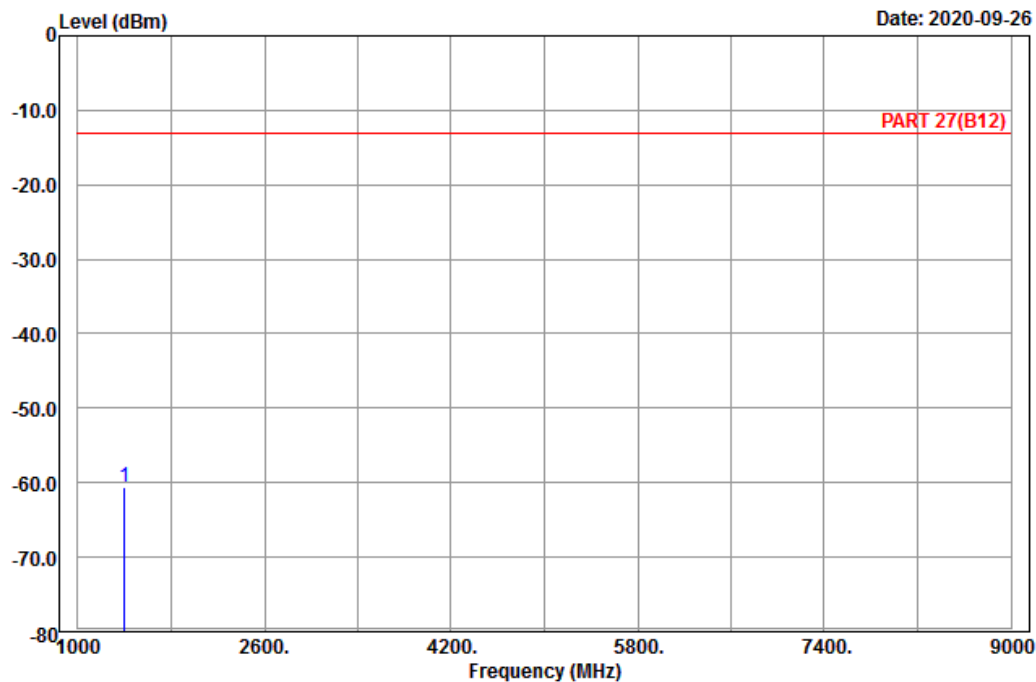


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1403.00	-60.65	-66.75	6.10	-13.00	-47.65 Peak

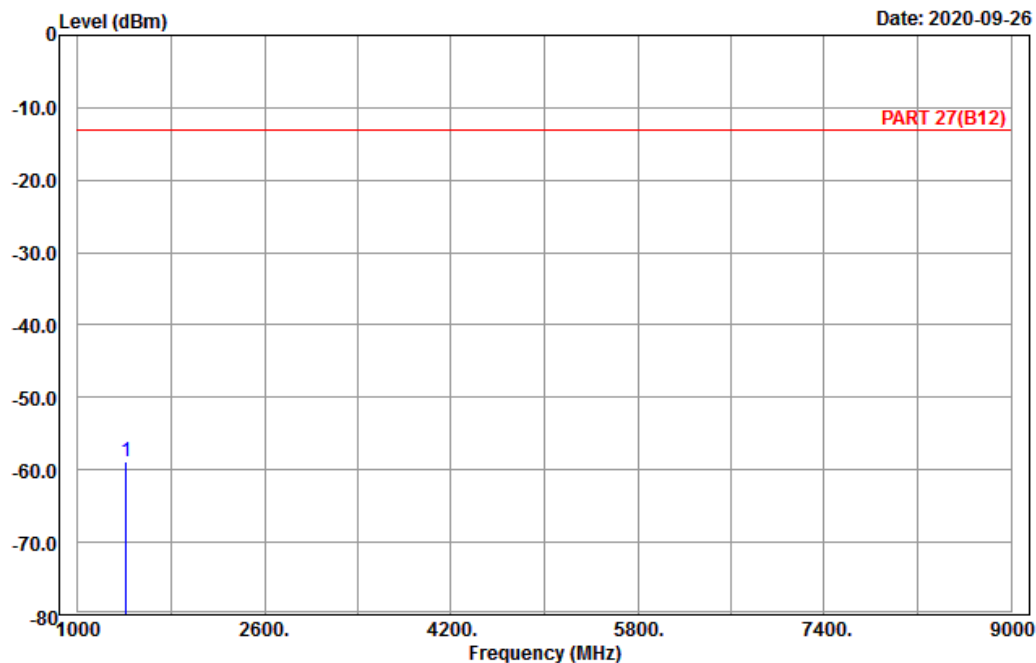
Middle Channel



Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

A D T

Data: 3



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_M-Ch
Tested by: Charles Hsiao

		Read		Limit	Over	
Freq	Level	Level	Factor	Line	Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1415.00	-58.90	-65.26	6.36	-13.00	-45.90	Peak

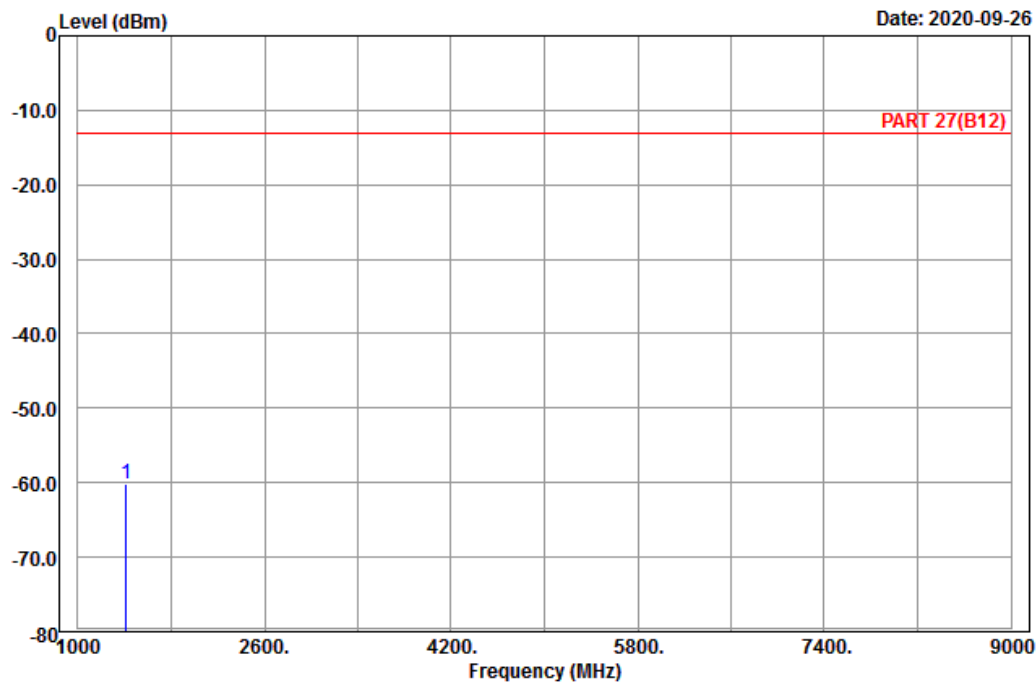


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_M-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1415.00	-60.21	-66.57	6.36	-13.00	-47.21 Peak

High Channel

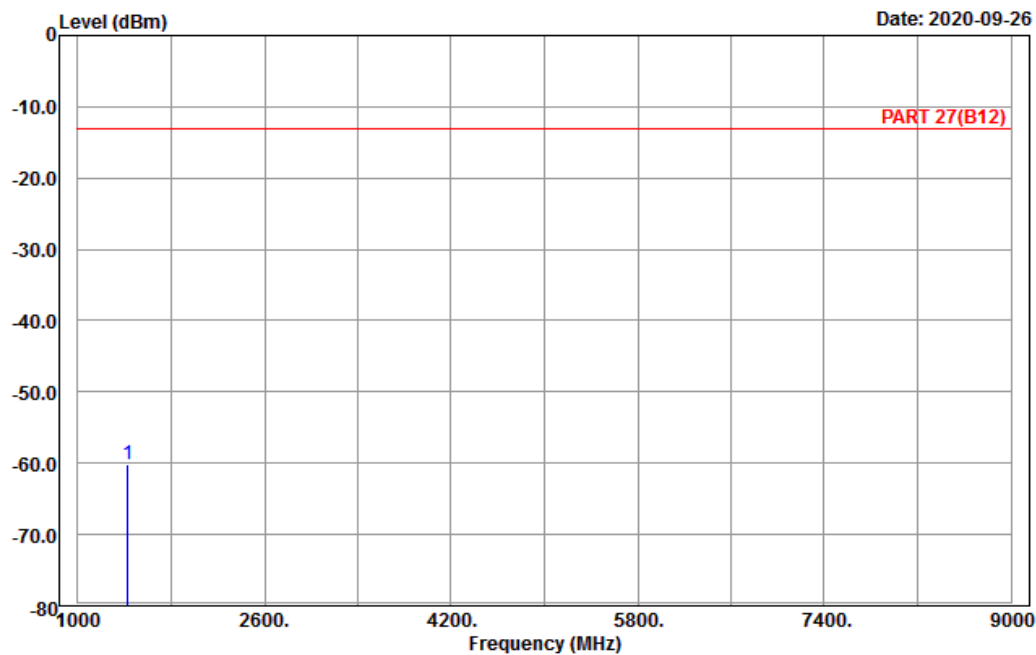


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1427.00	-60.08	-66.32	6.24	-13.00	-47.08	Peak

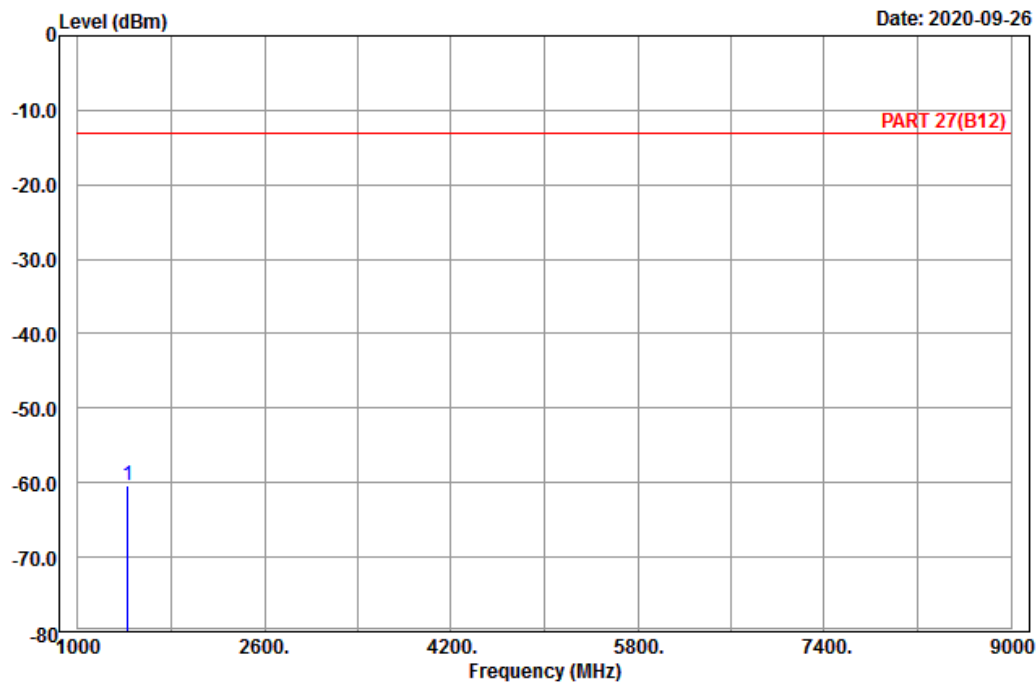


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

		Read		Limit	Over	
Freq	Level	Level	Factor	Line	Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1427.00	-60.28	-66.52	6.24	-13.00	-47.28	Peak

Channel Bandwidth: 10 MHz / QPSK

Low Channel

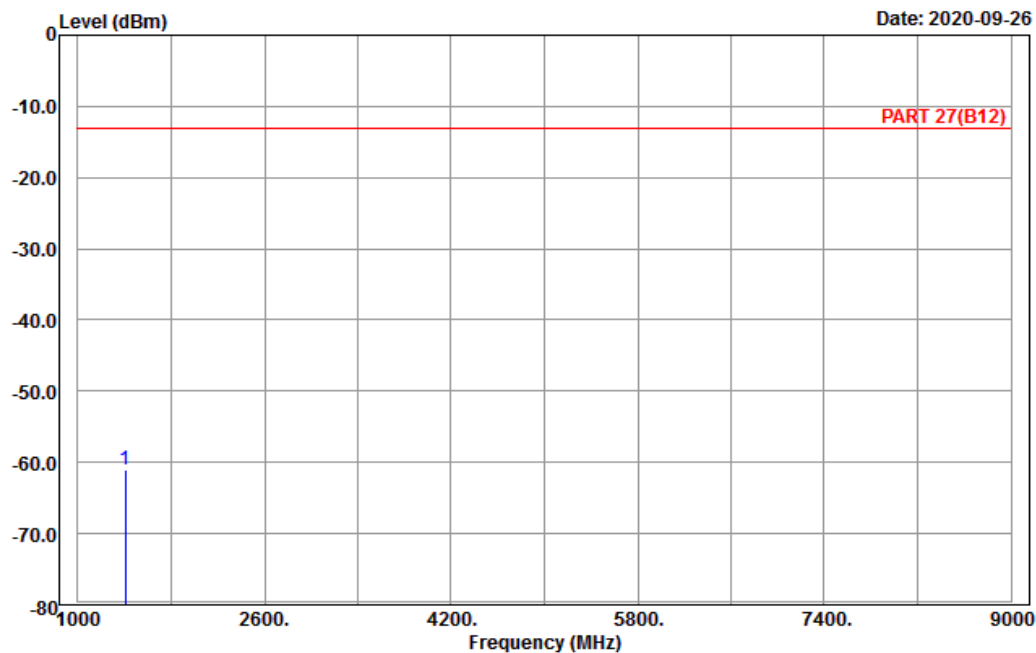


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

		Read		Limit	Over	
Freq	Level	Level	Factor	Line	Limit	Remark
MHz	dBm	dBm	dB	dBm	dB	
1 pp 1408.00	-61.12	-67.48	6.36	-13.00	-48.12	Peak

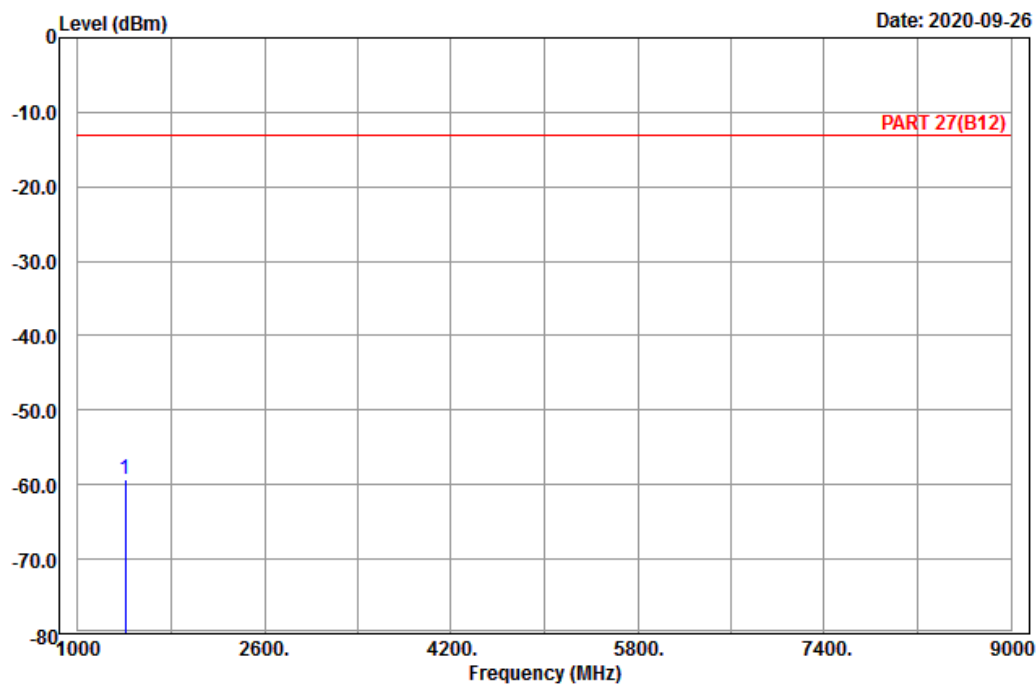


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_L-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit Remark
MHz	dBm	dBm	dB	dBm	dB
1 pp 1408.00	-59.33	-65.69	6.36	-13.00	-46.33 Peak

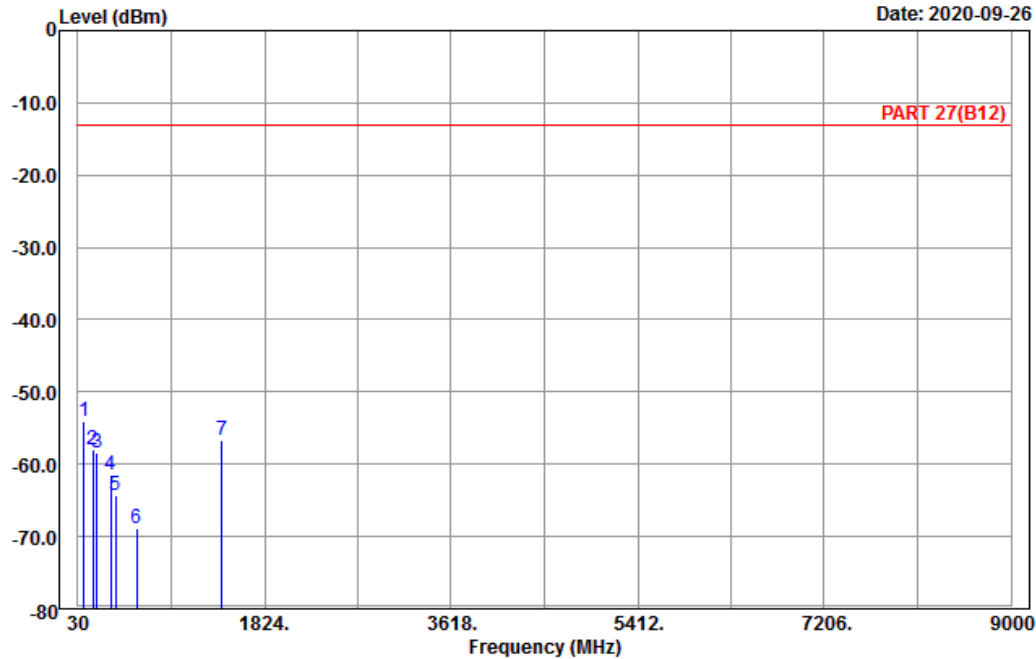
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 chamber 1
 Condition: PART 27(B12) Horizontal
 Remark : LTE_Band 12_Link_M-Ch
 Tested by: Charles Hsiao

		Read		Limit	Over	
	Freq	Level	Level	Factor	Line	Limit
	MHz	dBm	dBm	dB	dBm	dB
1 pp	90.48	-54.08	-43.41	-10.67	-13.00	-41.08
2	177.96	-58.03	-52.25	-5.78	-13.00	-45.03
3	212.25	-58.48	-52.47	-6.01	-13.00	-45.48
4	348.30	-61.55	-56.15	-5.40	-13.00	-48.55
5	391.70	-64.35	-61.20	-3.15	-13.00	-51.35
6	596.80	-68.85	-69.12	0.27	-13.00	-55.85
7	1415.00	-56.68	-63.04	6.36	-13.00	-43.68

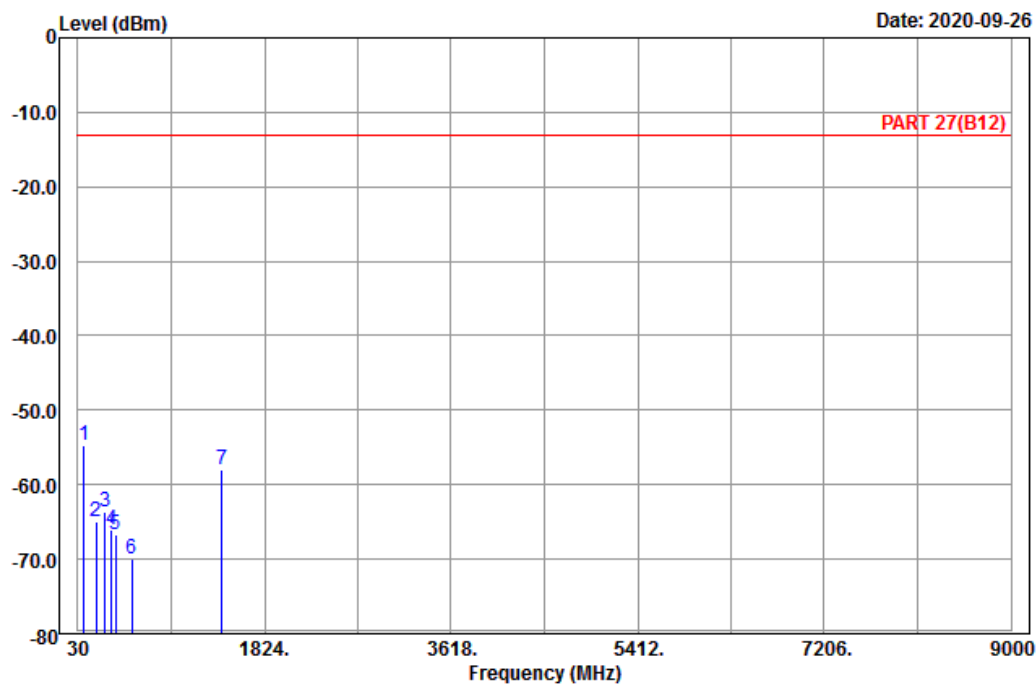


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	91.02	-54.70	-44.08	-10.62	-13.00	-41.70	Peak
2	203.07	-65.02	-58.88	-6.14	-13.00	-52.02	Peak
3	291.90	-63.57	-57.68	-5.89	-13.00	-50.57	Peak
4	354.60	-66.05	-60.93	-5.12	-13.00	-53.05	Peak
5	391.00	-66.77	-63.56	-3.21	-13.00	-53.77	Peak
6	552.00	-70.06	-68.48	-1.58	-13.00	-57.06	Peak
7	1415.00	-57.90	-64.26	6.36	-13.00	-44.90	Peak

High Channel

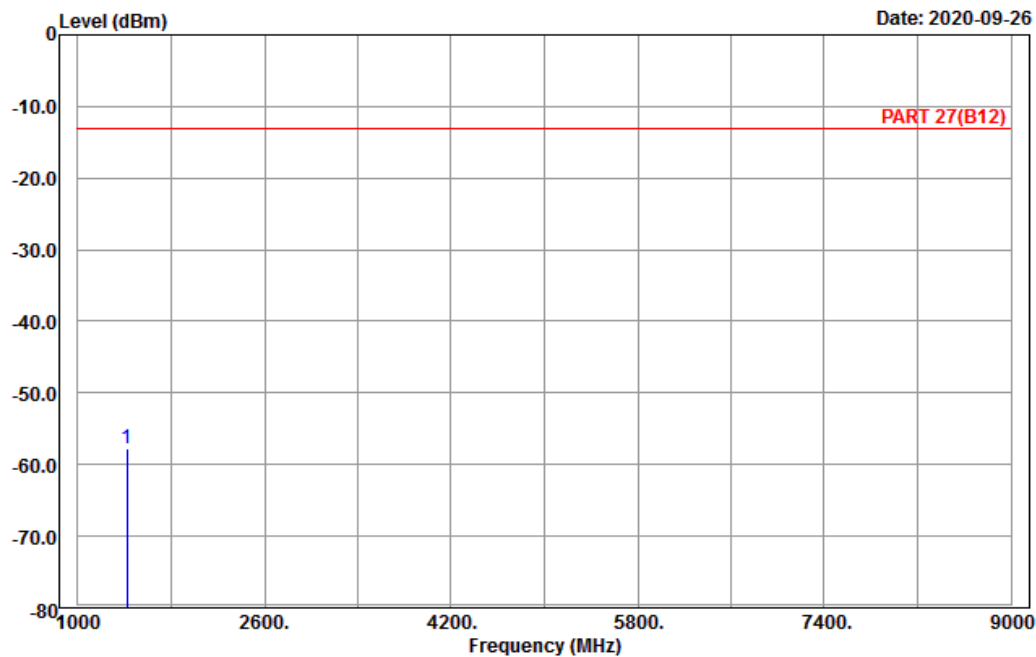


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Horizontal
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

		Read	Limit	Over	
Freq	Level	Level	Factor	Line	Limit
MHz	dBm	dBm	dB	dBm	dB
1 pp 1422.00	-57.86	-64.22	6.36	-13.00	-44.86
					Peak

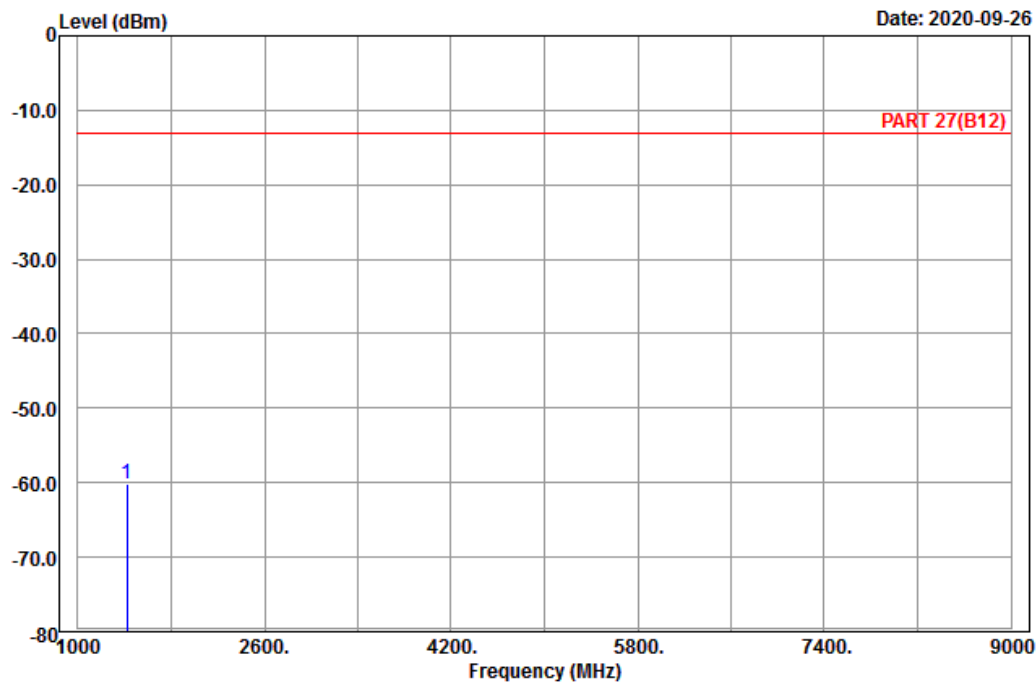


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 27(B12) Vertical
Remark : LTE_Band 12_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1 pp	1422.00	-60.26	-66.62	6.36	-13.00	-47.26	Peak

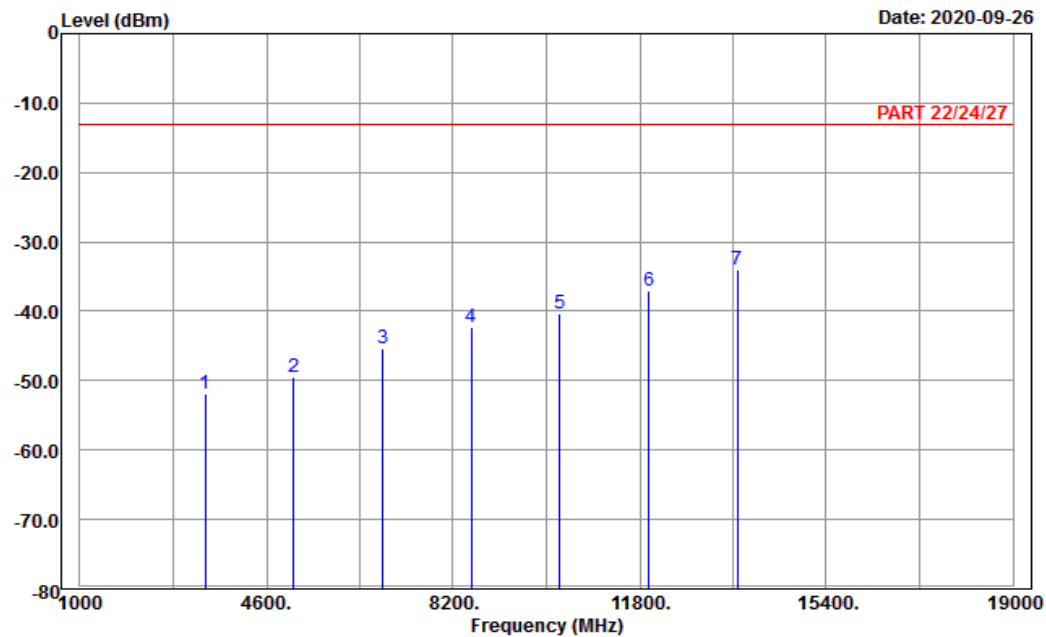
LTE Band 66:
Channel Bandwidth: 1.4 MHz / QPSK
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 chamber 1
Condition: PART 22/24/27 Horizontal
Remark : LTE_Band 66_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read		Limit	Over	
	MHz	dBm	Level	Factor	Line	Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3421.40	-51.86	-66.23	14.37	-13.00	-38.86	Peak
2	5132.10	-49.55	-69.36	19.81	-13.00	-36.55	Peak
3	6842.80	-45.35	-68.07	22.72	-13.00	-32.35	Peak
4	8553.50	-42.30	-66.34	24.04	-13.00	-29.30	Peak
5	10264.20	-40.31	-66.90	26.59	-13.00	-27.31	Peak
6	11974.90	-37.13	-65.83	28.70	-13.00	-24.13	Peak
7 pp	13685.60	-34.01	-65.19	31.18	-13.00	-21.01	Peak

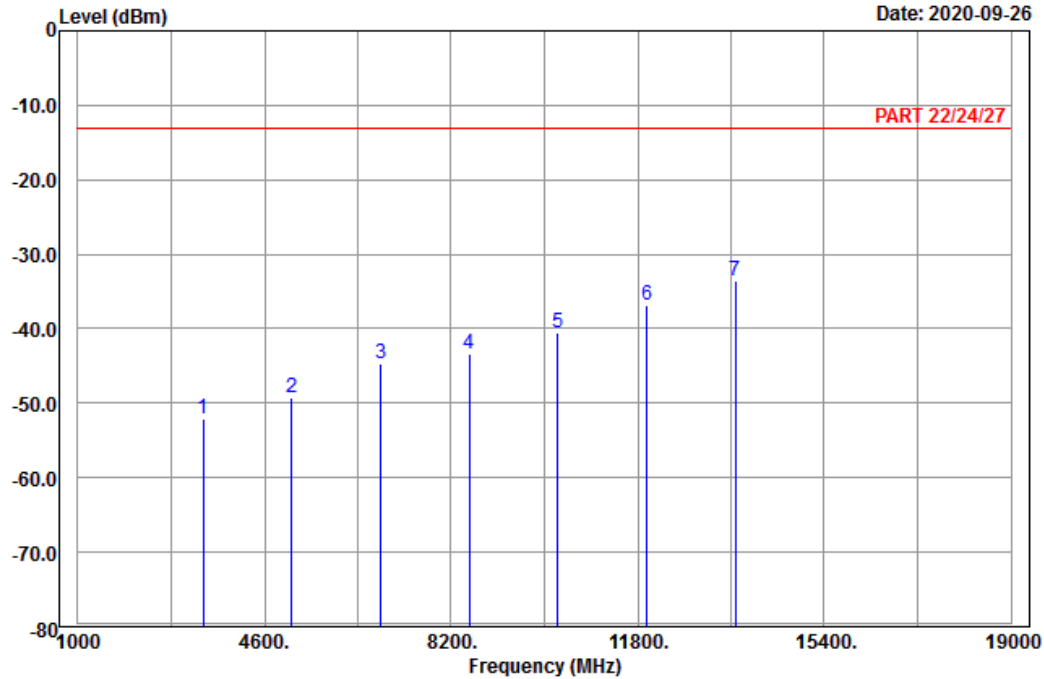


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3421.40	-52.07	-66.44	14.37	-13.00	-39.07	Peak
2	5132.10	-49.35	-69.16	19.81	-13.00	-36.35	Peak
3	6842.80	-44.74	-67.46	22.72	-13.00	-31.74	Peak
4	8553.50	-43.35	-67.39	24.04	-13.00	-30.35	Peak
5	10264.20	-40.47	-67.06	26.59	-13.00	-27.47	Peak
6	11974.90	-36.77	-65.47	28.70	-13.00	-23.77	Peak
7 pp	13685.60	-33.51	-64.69	31.18	-13.00	-20.51	Peak

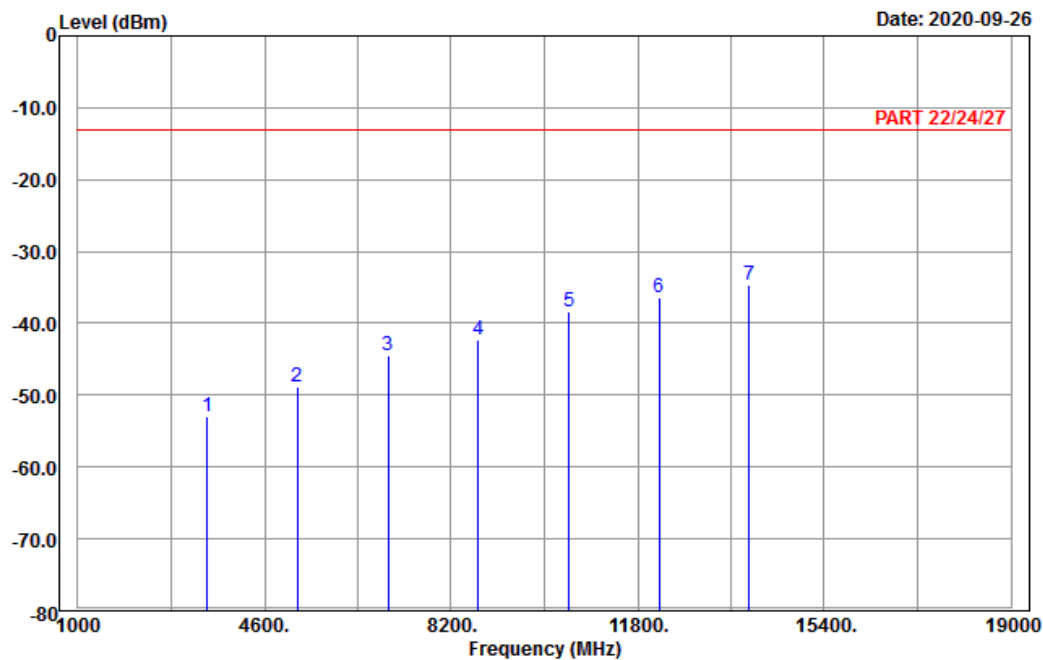
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 chamber 1
 Condition: PART 22/24/27 Horizontal
 Remark : LTE_Band 66_Link_M-Ch
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-52.93	-67.24	14.31	-13.00	-39.93	Peak
2	5235.00	-48.84	-69.00	20.16	-13.00	-35.84	Peak
3	6980.00	-44.44	-67.13	22.69	-13.00	-31.44	Peak
4	8725.00	-42.22	-66.61	24.39	-13.00	-29.22	Peak
5	10470.00	-38.27	-64.93	26.66	-13.00	-25.27	Peak
6	12215.00	-36.37	-65.86	29.49	-13.00	-23.37	Peak
7 pp	13960.00	-34.72	-65.40	30.68	-13.00	-21.72	Peak

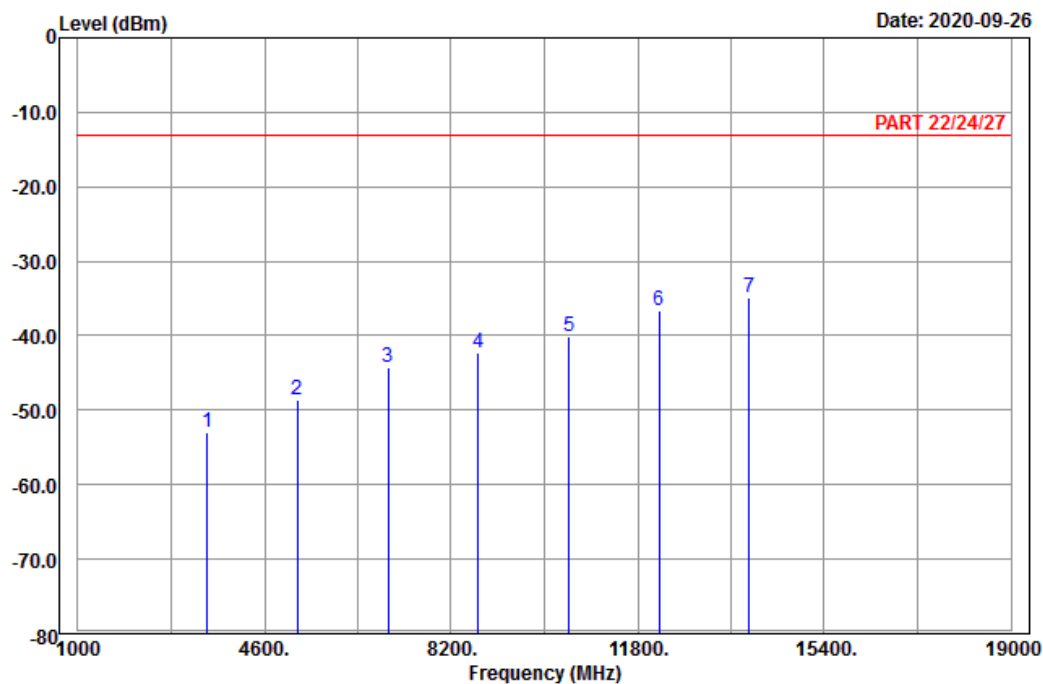


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-52.94	-67.25	14.31	-13.00	-39.94	Peak
2	5235.00	-48.64	-68.80	20.16	-13.00	-35.64	Peak
3	6980.00	-44.27	-66.96	22.69	-13.00	-31.27	Peak
4	8725.00	-42.27	-66.66	24.39	-13.00	-29.27	Peak
5	10470.00	-40.20	-66.86	26.66	-13.00	-27.20	Peak
6	12215.00	-36.70	-66.19	29.49	-13.00	-23.70	Peak
7 pp	13960.00	-34.88	-65.56	30.68	-13.00	-21.88	Peak

High Channel

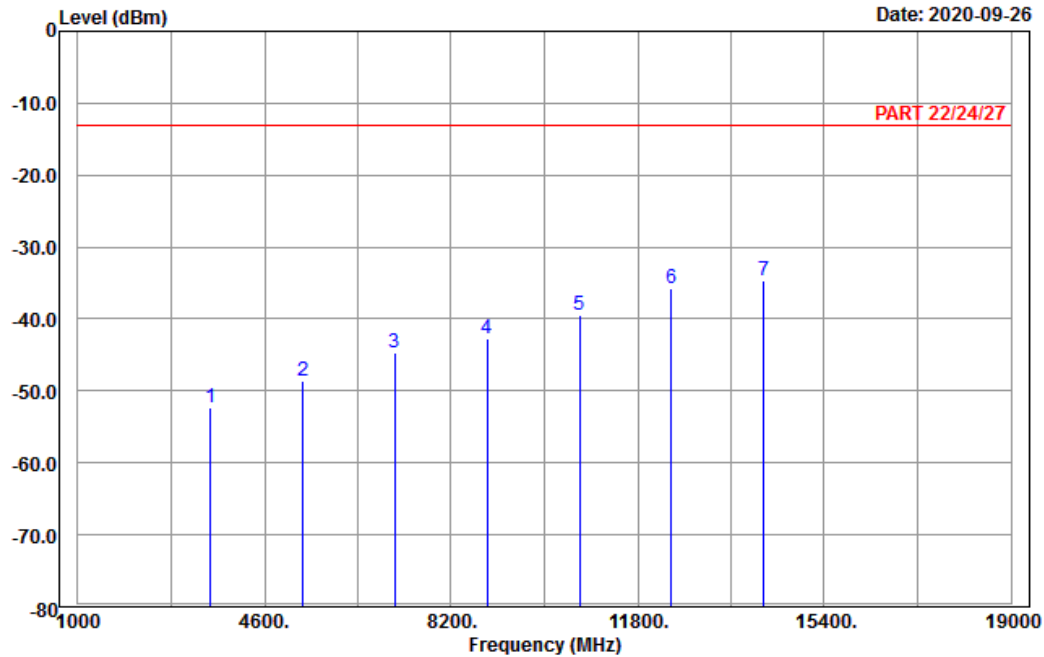


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7

Date: 2020-09-26



Site : 966 chamber 1
 Condition: PART 22/24/27 Horizontal
 Remark : LTE_Band 66_Link_H-Ch
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3558.60	-52.23	-67.42	15.19	-13.00	-39.23	Peak
2	5337.90	-48.54	-68.82	20.28	-13.00	-35.54	Peak
3	7117.20	-44.66	-67.17	22.51	-13.00	-31.66	Peak
4	8896.50	-42.69	-67.66	24.97	-13.00	-29.69	Peak
5	10675.80	-39.40	-66.40	27.00	-13.00	-26.40	Peak
6	12455.10	-35.83	-65.60	29.77	-13.00	-22.83	Peak
7 pp	14234.40	-34.76	-65.79	31.03	-13.00	-21.76	Peak

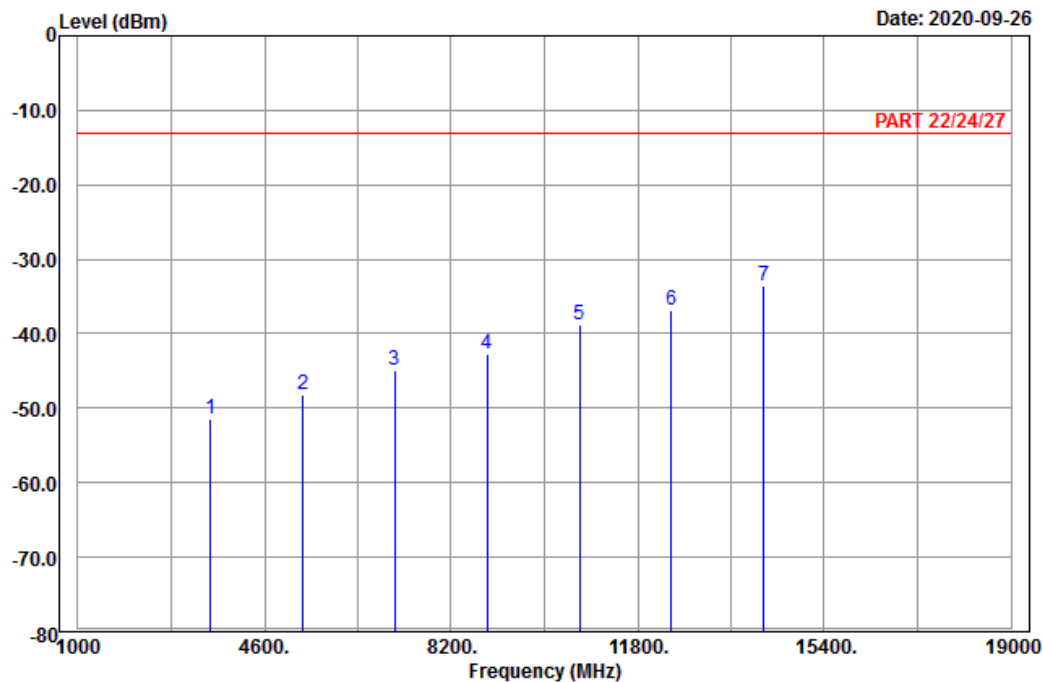


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3558.60	-51.38	-66.57	15.19	-13.00	-38.38	Peak
2	5337.90	-48.26	-68.54	20.28	-13.00	-35.26	Peak
3	7117.20	-44.87	-67.38	22.51	-13.00	-31.87	Peak
4	8896.50	-42.78	-67.75	24.97	-13.00	-29.78	Peak
5	10675.80	-38.89	-65.89	27.00	-13.00	-25.89	Peak
6	12455.10	-36.84	-66.61	29.77	-13.00	-23.84	Peak
7 pp	14234.40	-33.62	-64.65	31.03	-13.00	-20.62	Peak

Channel Bandwidth: 5 MHz / QPSK

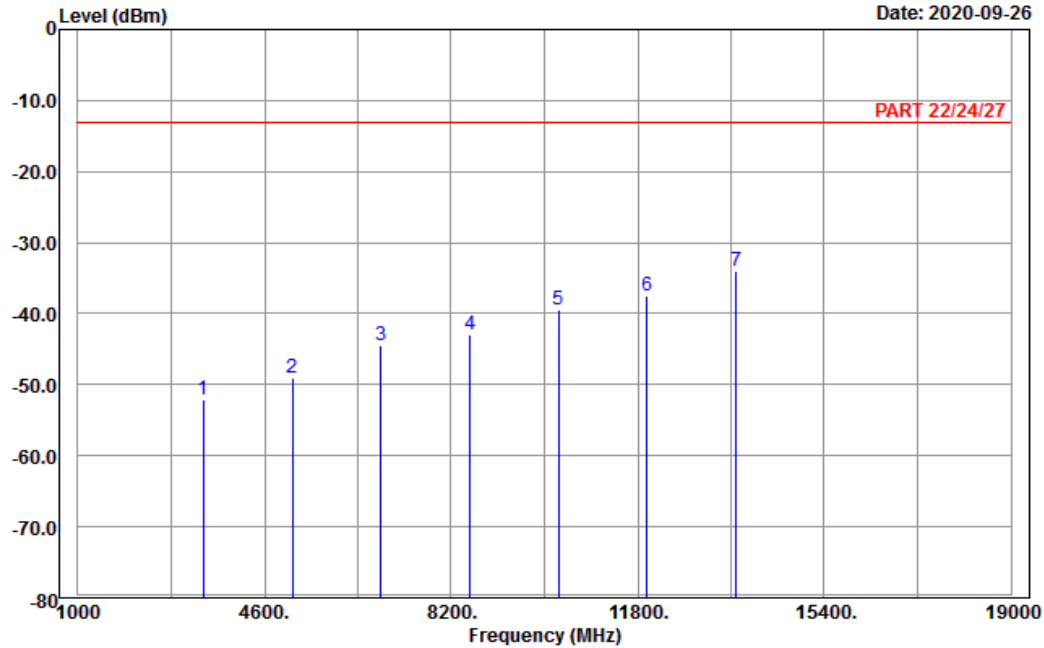
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 chamber 1

Condition: PART 22/24/27 Horizontal

Remark : LTE_Band 66_Link_L-Ch

Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3425.00	-52.06	-66.43	14.37	-13.00	-39.06	Peak
2	5137.50	-48.95	-68.76	19.81	-13.00	-35.95	Peak
3	6850.00	-44.57	-67.29	22.72	-13.00	-31.57	Peak
4	8562.50	-43.01	-67.05	24.04	-13.00	-30.01	Peak
5	10275.00	-39.41	-66.00	26.59	-13.00	-26.41	Peak
6	11987.50	-37.51	-66.21	28.70	-13.00	-24.51	Peak
7 pp	13700.00	-33.95	-65.11	31.16	-13.00	-20.95	Peak

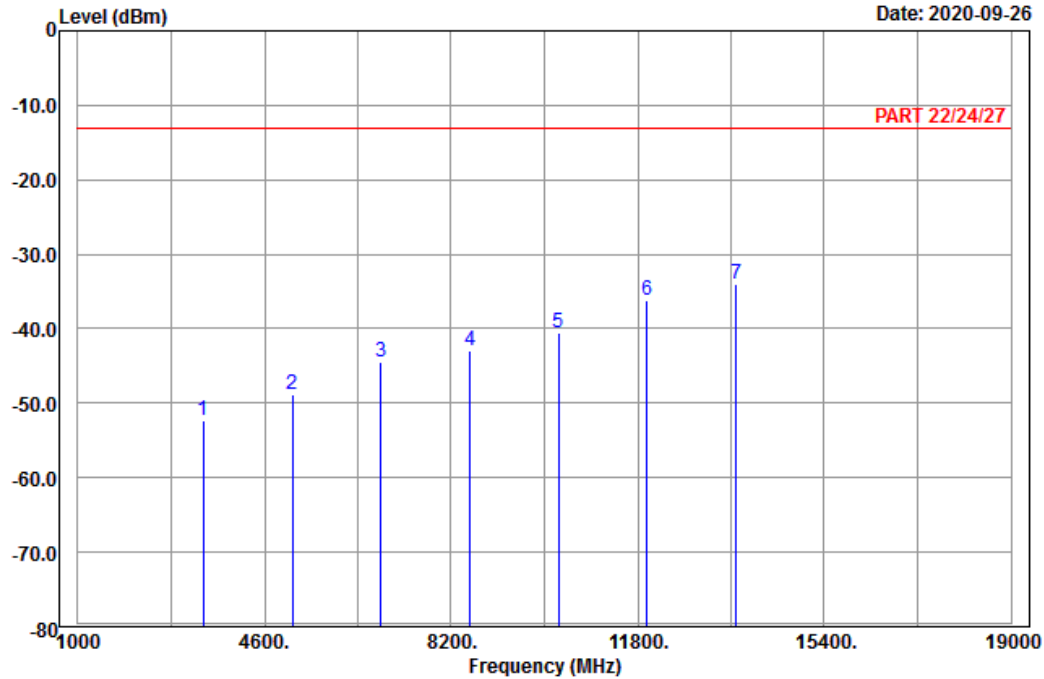


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3425.00	-52.39	-66.76	14.37	-13.00	-39.39	Peak
2	5137.50	-48.74	-68.55	19.81	-13.00	-35.74	Peak
3	6850.00	-44.50	-67.22	22.72	-13.00	-31.50	Peak
4	8562.50	-43.04	-67.08	24.04	-13.00	-30.04	Peak
5	10275.00	-40.48	-67.07	26.59	-13.00	-27.48	Peak
6	11987.50	-36.29	-64.99	28.70	-13.00	-23.29	Peak
7 pp	13700.00	-33.91	-65.07	31.16	-13.00	-20.91	Peak

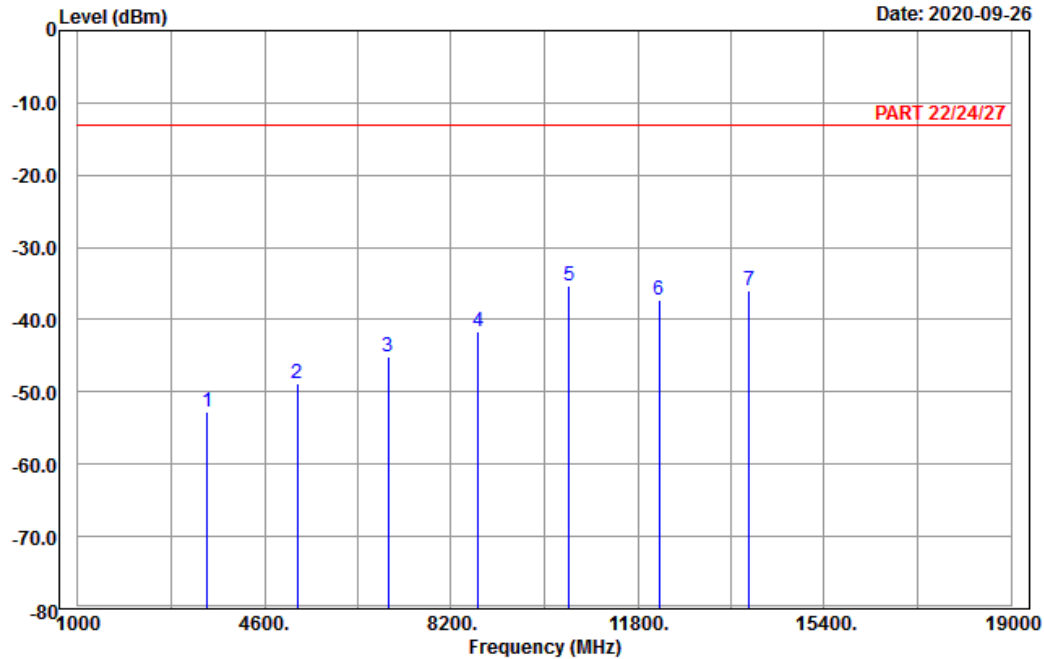
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 chamber 1
Condition: PART 22/24/27 Horizontal
Remark : LTE_Band 66_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-52.85	-67.16	14.31	-13.00	-39.85	Peak
2	5235.00	-48.78	-68.94	20.16	-13.00	-35.78	Peak
3	6980.00	-45.09	-67.78	22.69	-13.00	-32.09	Peak
4	8725.00	-41.67	-66.06	24.39	-13.00	-28.67	Peak
5 pp	10470.00	-35.38	-62.04	26.66	-13.00	-22.38	Peak
6	12215.00	-37.30	-66.79	29.49	-13.00	-24.30	Peak
7	13960.00	-35.87	-66.55	30.68	-13.00	-22.87	Peak

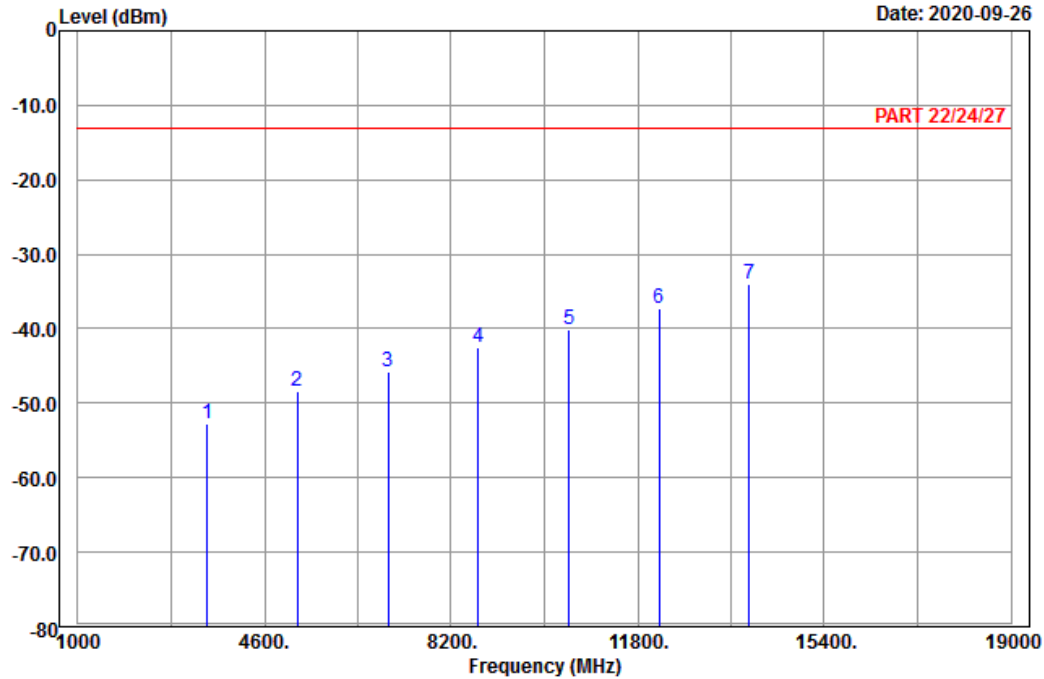


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-52.64	-66.95	14.31	-13.00	-39.64	Peak
2	5235.00	-48.38	-68.54	20.16	-13.00	-35.38	Peak
3	6980.00	-45.85	-68.54	22.69	-13.00	-32.85	Peak
4	8725.00	-42.41	-66.80	24.39	-13.00	-29.41	Peak
5	10470.00	-40.15	-66.81	26.66	-13.00	-27.15	Peak
6	12215.00	-37.28	-66.77	29.49	-13.00	-24.28	Peak
7 pp	13960.00	-33.90	-64.58	30.68	-13.00	-20.90	Peak

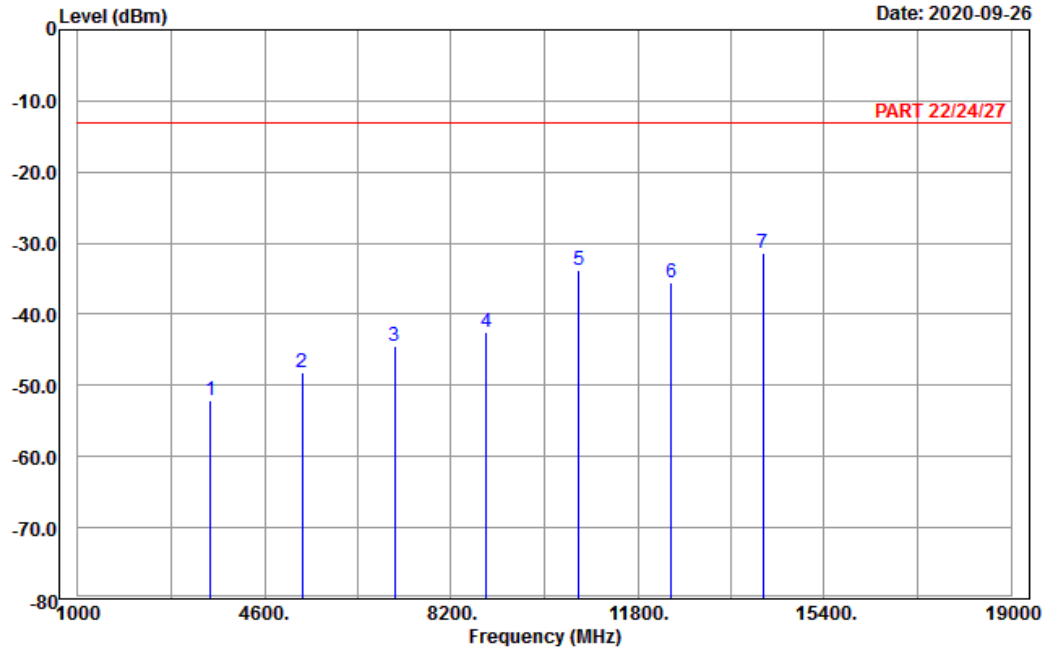
High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 chamber 1
Condition: PART 22/24/27 Horizontal
Remark : LTE_Band 66_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3555.00	-52.21	-67.40	15.19	-13.00	-39.21	Peak
2	5332.50	-48.21	-68.49	20.28	-13.00	-35.21	Peak
3	7110.00	-44.57	-67.10	22.53	-13.00	-31.57	Peak
4	8887.50	-42.58	-67.49	24.91	-13.00	-29.58	Peak
5	10665.00	-33.79	-60.75	26.96	-13.00	-20.79	Peak
6	12442.50	-35.50	-65.27	29.77	-13.00	-22.50	Peak
7 pp	14220.00	-31.47	-62.47	31.00	-13.00	-18.47	Peak

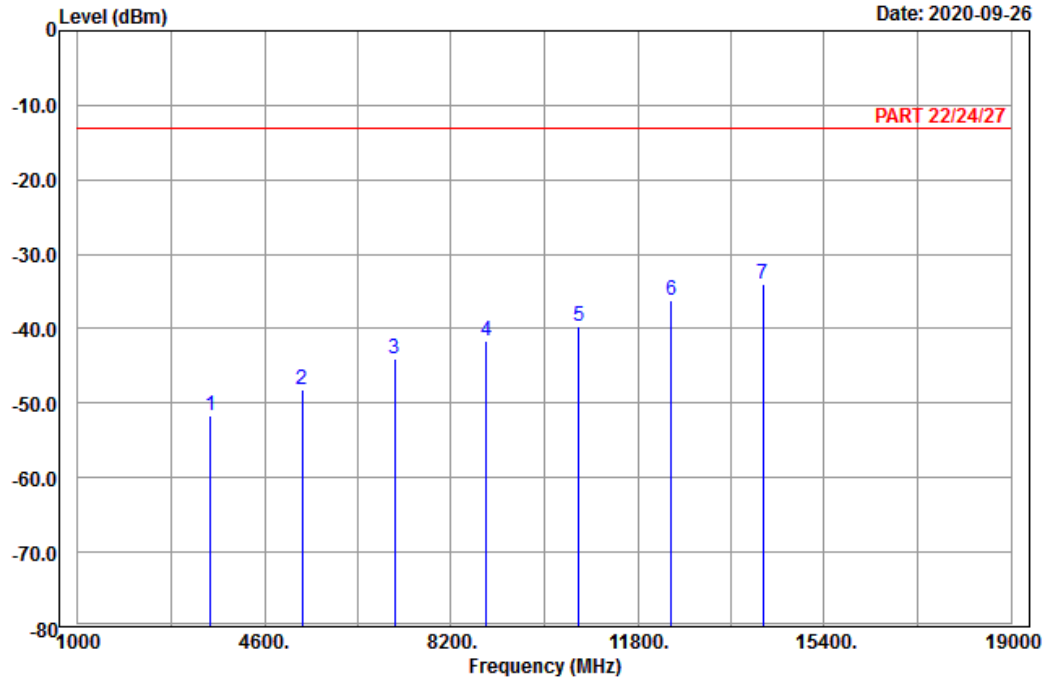


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3555.00	-51.61	-66.80	15.19	-13.00	-38.61	Peak
2	5332.50	-48.19	-68.47	20.28	-13.00	-35.19	Peak
3	7110.00	-44.06	-66.59	22.53	-13.00	-31.06	Peak
4	8887.50	-41.60	-66.51	24.91	-13.00	-28.60	Peak
5	10665.00	-39.66	-66.62	26.96	-13.00	-26.66	Peak
6	12442.50	-36.08	-65.85	29.77	-13.00	-23.08	Peak
7 pp	14220.00	-34.02	-65.02	31.00	-13.00	-21.02	Peak

Channel Bandwidth: 20 MHz / QPSK
Low Channel

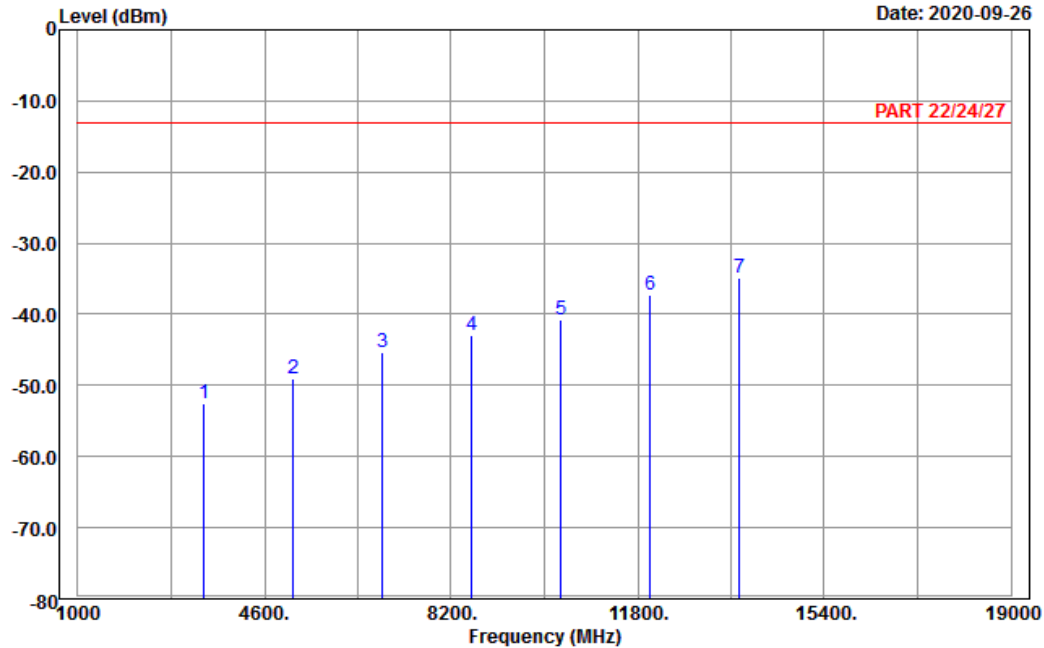


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Horizontal
Remark : LTE_Band 66_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3440.00	-52.58	-66.93	14.35	-13.00	-39.58	Peak
2	5160.00	-49.03	-68.95	19.92	-13.00	-36.03	Peak
3	6880.00	-45.41	-68.21	22.80	-13.00	-32.41	Peak
4	8600.00	-42.85	-66.95	24.10	-13.00	-29.85	Peak
5	10320.00	-40.80	-67.47	26.67	-13.00	-27.80	Peak
6	12040.00	-37.23	-66.15	28.92	-13.00	-24.23	Peak
7 pp	13760.00	-34.78	-65.86	31.08	-13.00	-21.78	Peak

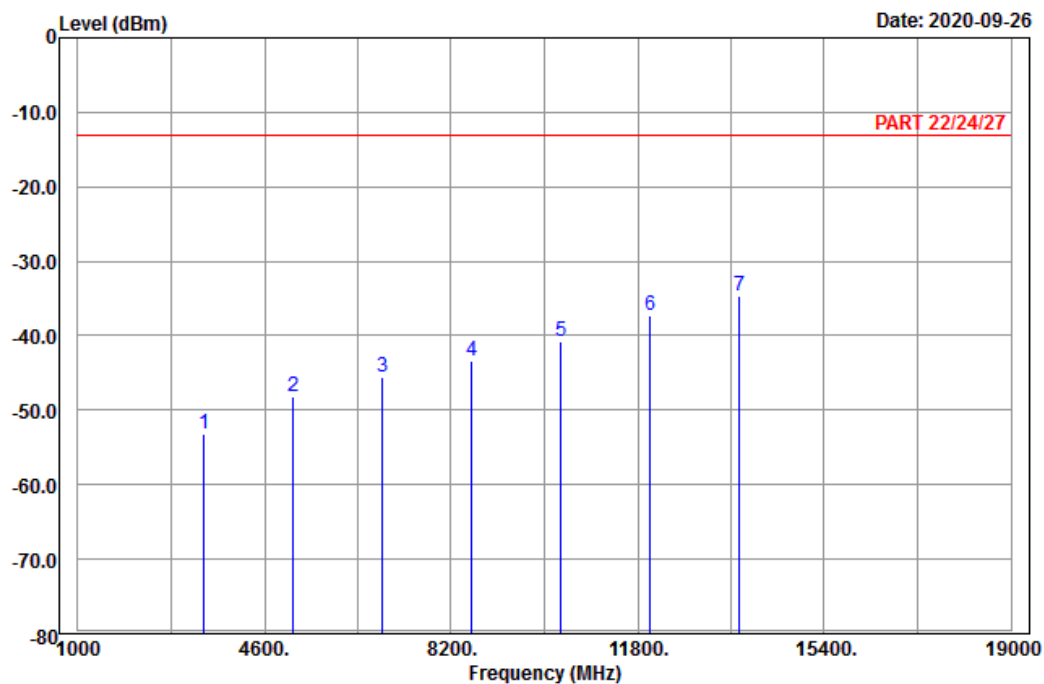


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_L-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3440.00	-53.15	-67.50	14.35	-13.00	-40.15	Peak
2	5160.00	-48.28	-68.20	19.92	-13.00	-35.28	Peak
3	6880.00	-45.54	-68.34	22.80	-13.00	-32.54	Peak
4	8600.00	-43.37	-67.47	24.10	-13.00	-30.37	Peak
5	10320.00	-40.70	-67.37	26.67	-13.00	-27.70	Peak
6	12040.00	-37.17	-66.09	28.92	-13.00	-24.17	Peak
7 pp	13760.00	-34.59	-65.67	31.08	-13.00	-21.59	Peak

Middle Channel

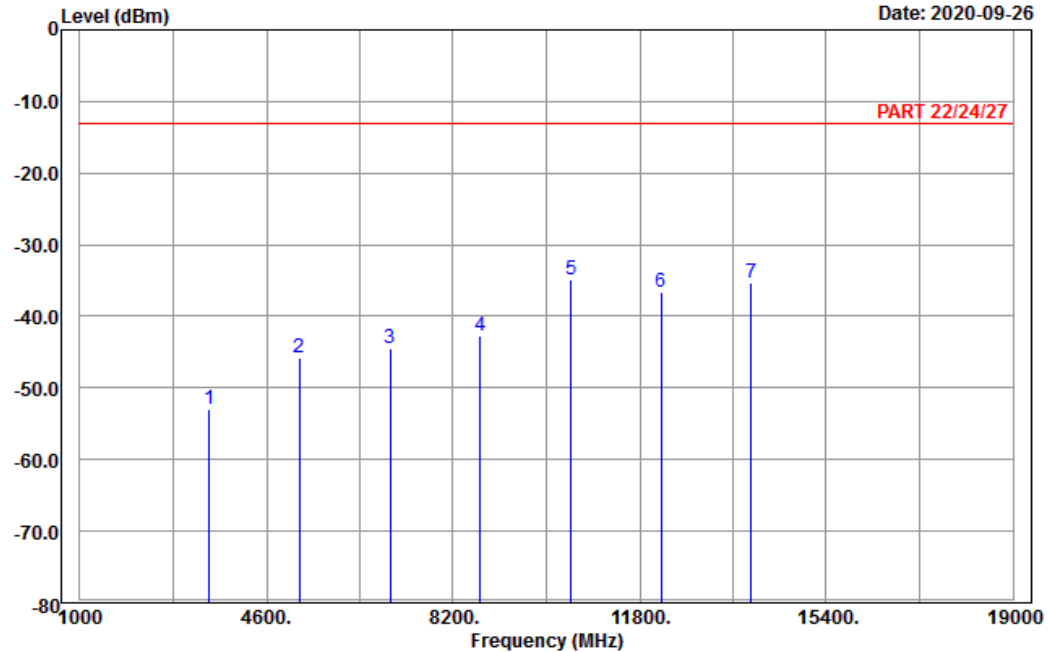


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7

Date: 2020-09-26



Site : 966 chamber 1

Condition: PART 22/24/27 Horizontal

Remark : LTE_Band 66_Link_M-Ch

Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-53.05	-67.36	14.31	-13.00	-40.05	Peak
2	5235.00	-45.71	-65.87	20.16	-13.00	-32.71	Peak
3	6980.00	-44.48	-67.17	22.69	-13.00	-31.48	Peak
4	8725.00	-42.63	-67.02	24.39	-13.00	-29.63	Peak
5 pp	10470.00	-34.85	-61.51	26.66	-13.00	-21.85	Peak
6	12215.00	-36.58	-66.07	29.49	-13.00	-23.58	Peak
7	13960.00	-35.22	-65.90	30.68	-13.00	-22.22	Peak

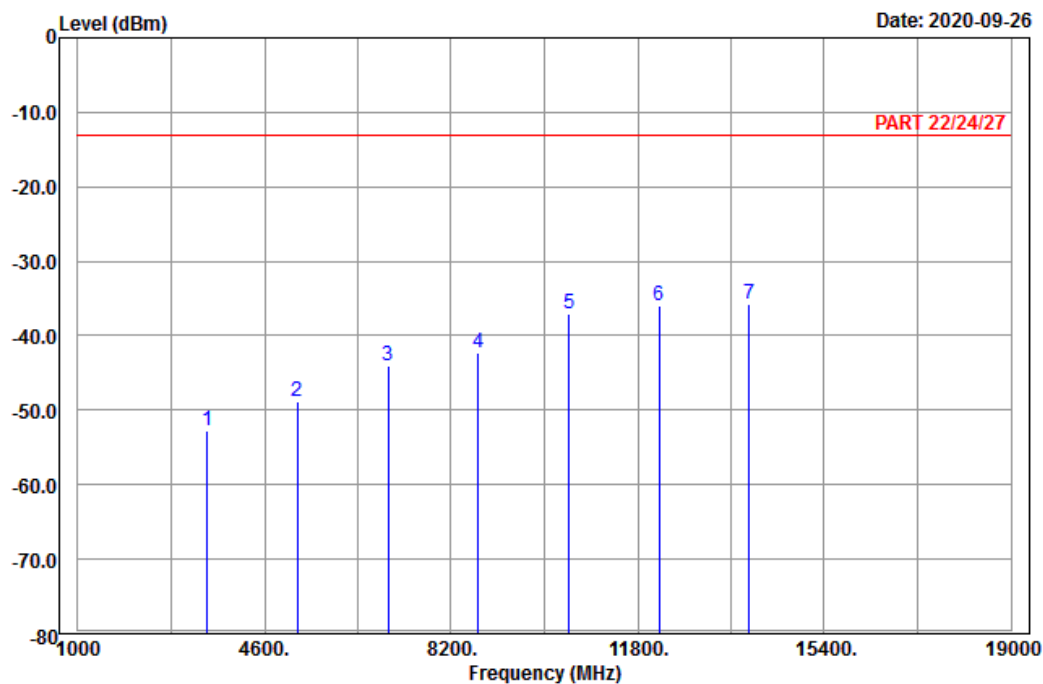


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_M-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	3490.00	-52.66	-66.97	14.31	-13.00	-39.66	Peak
2	5235.00	-48.84	-69.00	20.16	-13.00	-35.84	Peak
3	6980.00	-44.05	-66.74	22.69	-13.00	-31.05	Peak
4	8725.00	-42.29	-66.68	24.39	-13.00	-29.29	Peak
5	10470.00	-37.02	-63.68	26.66	-13.00	-24.02	Peak
6	12215.00	-35.99	-65.48	29.49	-13.00	-22.99	Peak
7 pp	13960.00	-35.75	-66.43	30.68	-13.00	-22.75	Peak

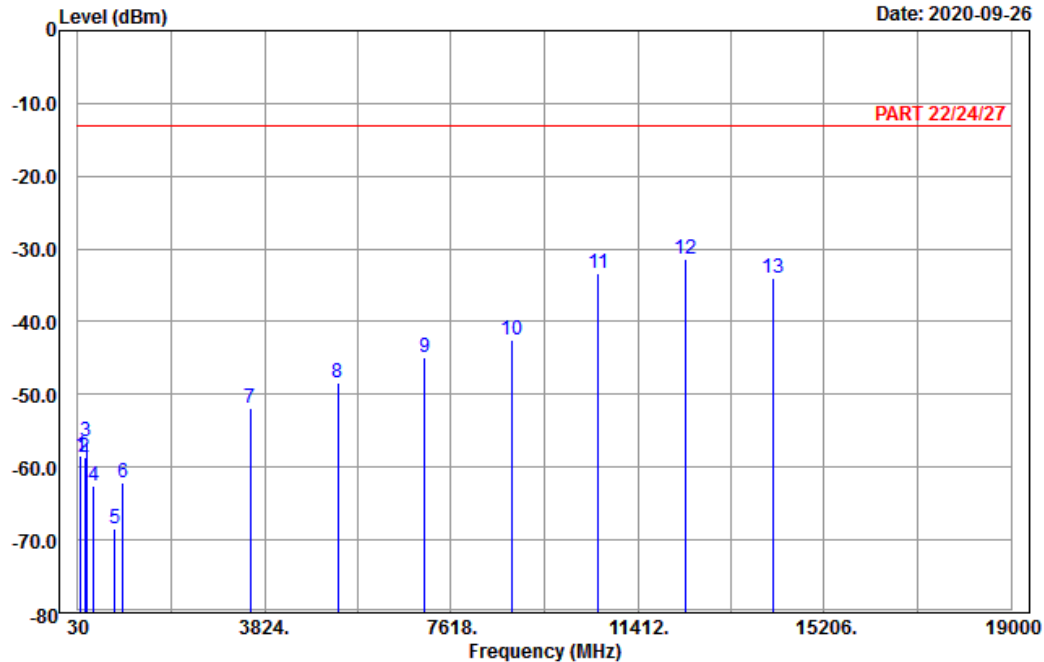
High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 chamber 1
 Condition: PART 22/24/27 Horizontal
 Remark : LTE_Band 66_Link_H-Ch
 Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	90.75	-58.51	-47.89	-10.62	-13.00	-45.51	Peak
2	170.94	-58.71	-52.11	-6.60	-13.00	-45.71	Peak
3	210.63	-56.42	-50.38	-6.04	-13.00	-43.42	Peak
4	348.30	-62.57	-57.17	-5.40	-13.00	-49.57	Peak
5	774.60	-68.40	-68.75	0.35	-13.00	-55.40	Peak
6	937.70	-62.22	-66.80	4.58	-13.00	-49.22	Peak
7	3540.00	-51.88	-66.77	14.89	-13.00	-38.88	Peak
8	5310.00	-48.39	-68.63	20.24	-13.00	-35.39	Peak
9	7080.00	-44.96	-67.50	22.54	-13.00	-31.96	Peak
10	8850.00	-42.60	-67.40	24.80	-13.00	-29.60	Peak
11	10620.00	-33.36	-60.21	26.85	-13.00	-20.36	Peak
12 pp	12390.00	-31.31	-61.02	29.71	-13.00	-18.31	Peak
13	14160.00	-34.02	-64.92	30.90	-13.00	-21.02	Peak

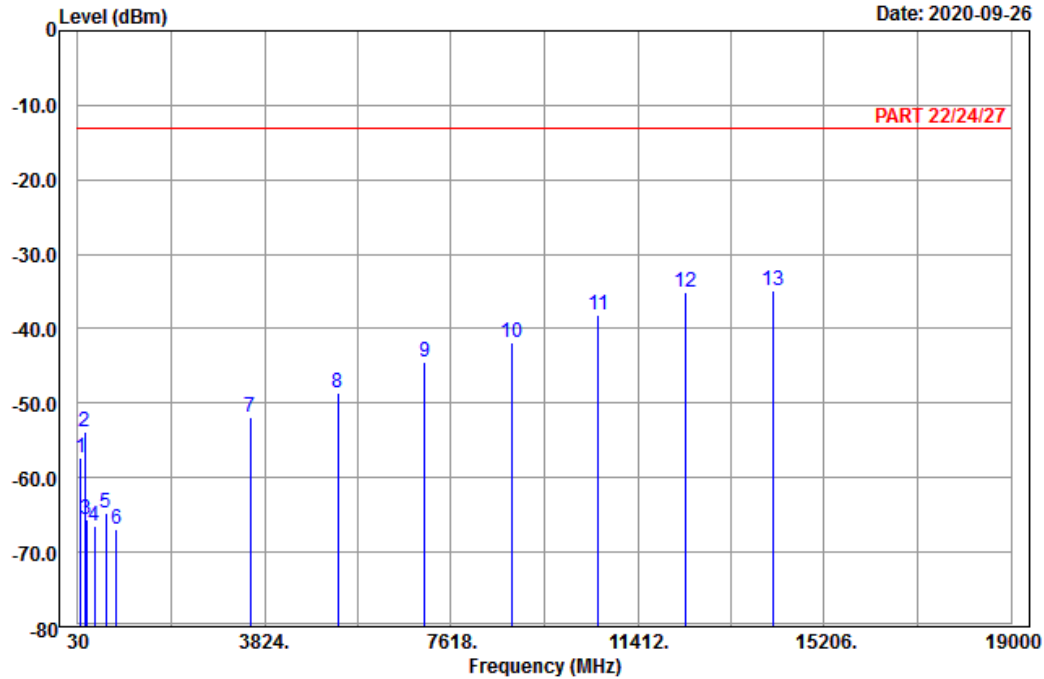


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2020-09-26



Site : 966 chamber 1
Condition: PART 22/24/27 Vertical
Remark : LTE_Band 66_Link_H-Ch
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBm	dBm	dB	dBm	dB	
1	91.56	-57.40	-46.78	-10.62	-13.00	-44.40	Peak
2	169.05	-53.94	-47.14	-6.80	-13.00	-40.94	Peak
3	207.66	-65.60	-59.52	-6.08	-13.00	-52.60	Peak
4	360.90	-66.47	-61.66	-4.81	-13.00	-53.47	Peak
5	603.10	-64.75	-65.14	0.39	-13.00	-51.75	Peak
6	818.70	-66.98	-68.78	1.80	-13.00	-53.98	Peak
7	3540.00	-51.97	-66.86	14.89	-13.00	-38.97	Peak
8	5310.00	-48.67	-68.91	20.24	-13.00	-35.67	Peak
9	7080.00	-44.51	-67.05	22.54	-13.00	-31.51	Peak
10	8850.00	-41.78	-66.58	24.80	-13.00	-28.78	Peak
11	10620.00	-38.18	-65.03	26.85	-13.00	-25.18	Peak
12	12390.00	-35.14	-64.85	29.71	-13.00	-22.14	Peak
13 pp	14160.00	-34.81	-65.71	30.90	-13.00	-21.81	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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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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