

Partial FCC Test Report

(PART 27)

Report No.: RF180907C14A

FCC ID: QYLEM7511V

Test Model: EM7511

Received Date: Sep. 25, 2018

Test Date: Oct. 12, 2018

Issued Date: Oct. 18, 2018

Applicant: Getac Technology Corporation.

Address: 5F., Building A, No. 209, Sec.1, Nangang Rd., Nangang Dist., Taipei City
11568, Taiwan, R.O.C.

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
(R.O.C)

Test Location: No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City
33383, Taiwan (R.O.C)

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF180907C14A	Original Release	Oct. 18, 2018

1 Certificate of Conformity

Product: Radio Module

Brand: Sierra wireless Inc.

Test Model: EM7511

Sample Status: Identical Prototype

Applicant: Getac Technology Corporation.

Test Date: Oct. 12, 2018

Standards: FCC Part 27, Subpart C, M

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 : Rona Chen, **Date:** Oct. 18, 2018
Rona Chen / Specialist

Approved by : Dylan Chiou, **Date:** Oct. 18, 2018
Dylan Chiou / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(h)(2)	Equivalent Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	N/A	Refer to Note
2.1055 27.54	Frequency Stability	N/A	Refer to Note
2.1049 27.53(m)(6)	Occupied Bandwidth	N/A	Refer to Note
--	Peak to Average Ratio	N/A	Refer to Note
2.1051 27.53(m)	Out-of-Band Emissions Measurements	N/A	Refer to Note
2.1051 27.53(m)	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 27.53(m)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.39 dB at 225.94 MHz.

Note:

This report is a Class II change Partial report. Therefore, only test item of Equivalent Isotropic Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to SPORTON report no.: FG791919B for module (Brand: Sierra wireless Inc., Model: EM7511)

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	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	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer Agilent	N9010A	MY52220314	Nov. 24, 2017	Nov. 23, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 12, 2017	Dec. 11, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 06, 2017	Dec. 05, 2018
Horn Antenna SCHWARZBECK	BBHA 9170	148	Dec. 13, 2017	Dec. 12, 2018
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
MXG Vector signal generator Agilent	N5182B	MY53050430	Oct. 24, 2017	Oct. 23, 2018
Preamplifier EMCI	EMC 184045	980116	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 012645	980115	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 330H	980112	Oct. 13, 2017	Oct. 12, 2018
			Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-800 0&3000	140811+170717	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 20, 2017	Oct. 19, 2018
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 16, 2017	Aug. 15, 2019
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018

- Note:
1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 10.
 3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
 4. The IC Site Registration No. is IC7450F-10.

3 General Information

3.1 General Description of EUT

Product	Radio Module	
Brand	Sierra wireless Inc.	
Test Model	EM7511	
Status of EUT	Identical Prototype	
Power Supply Rating	3.3 Vdc (Host equipment)	
Modulation Type	QPSK, 16QAM, 64QAM	
Frequency Range	LTE Band 7 (Channel Bandwidth: 10+20 MHz)	2505.0 ~ 2550.6 MHz
	LTE Band 7 (Channel Bandwidth: 15+15 MHz)	2507.5 ~ 2547.5 MHz
	LTE Band 7 (Channel Bandwidth: 15+20 MHz)	2507.5 ~ 2545.4 MHz
	LTE Band 7 (Channel Bandwidth: 20+10 MHz)	2510.0 ~ 2545.6 MHz
	LTE Band 7 (Channel Bandwidth: 20+15 MHz)	2510.0 ~ 2542.9 MHz
	LTE Band 7 (Channel Bandwidth: 20+20 MHz)	2510.0 ~ 2540.2 MHz
	LTE Band 41 (Channel Bandwidth: 20+20 MHz)	2506.0 ~ 2660.2 MHz
	LTE Band 41 (Channel Bandwidth: 20+15 MHz)	2506.0 ~ 2662.9 MHz
	LTE Band 41 (Channel Bandwidth: 20+10 MHz)	2506.0 ~ 2665.6 MHz
	LTE Band 41 (Channel Bandwidth: 20+5 MHz)	2506.0 ~ 2668.3 MHz
	LTE Band 41 (Channel Bandwidth: 15+20 MHz)	2503.5 ~ 2665.4 MHz
	LTE Band 41 (Channel Bandwidth: 15+15 MHz)	2503.5 ~ 2667.5 MHz
	LTE Band 41 (Channel Bandwidth: 10+20 MHz)	2501.0 ~ 2670.6 MHz
	LTE Band 41 (Channel Bandwidth: 5+20 MHz)	2498.5 ~ 2675.8 MHz
Max. EIRP Power	LTE Band 7 (Channel Bandwidth: 20+20 MHz)	182.39 mW
	LTE Band 41 (Channel Bandwidth: 20+20 MHz)	137.72 mW
Antenna Type	Refer to Note as below	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

Note:

- The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model
Notebook	Getac	V110

- The antenna is listed as below.

Antenna Type	Brand	Model	Antenna Gain	
			LTE B7	LTE B41
Fixed Internal	Main: M.gear	Main Ant.: 422129000025	Main: -0.60	Main: -0.17
	Aux.: Getac	Aux. Ant.: 421129600001	Aux.: -5.13	Aux.: -5.09

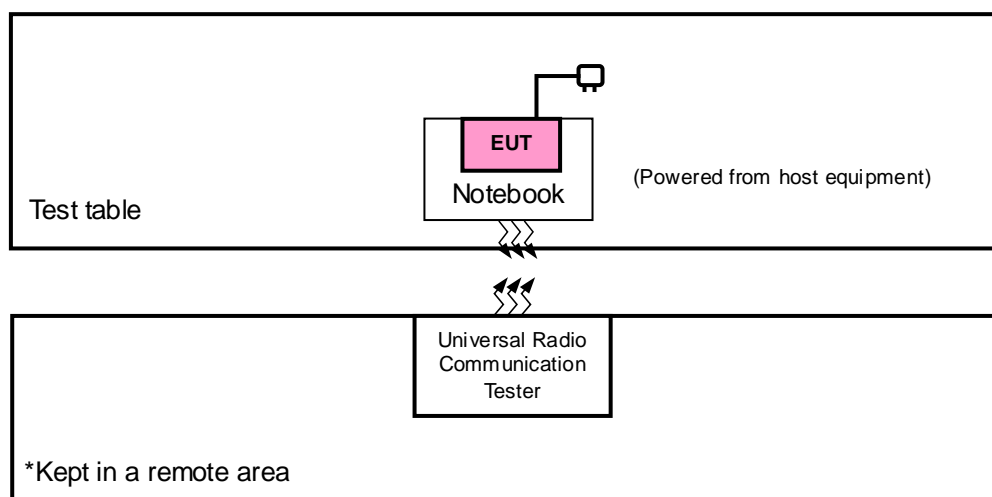
3. The End-product contains following accessory devices.

Product	Brand	Model	Description
Adapter	Chicony	A12-065N2A	I/P: 100-240 Vac, 50/60 Hz, 1.7 A O/P: 19 Vdc, 3.42 A 1.8m DC cable with 1 core attached
Li-Ion Battery	Getac	BP3S1P2100-S	11.1 Vdc, 2100 mA
BT/WLAN Module	Intel	8265NGW	-
WWAN Module	Sierra	EM7511	-
GPS	GlobalSat	MC1010	-
LCD Panel	New IPS KD	KD116N11-30NP-A9	11.6" inch
CPU	Intel	Kabylake	i7-7600U VPRO
DDR	Transcend	-	8GB *2
SSD	Lite-on	-	256GB *1
Barcode	Symbol Technologies Inc.	SE-4710	-

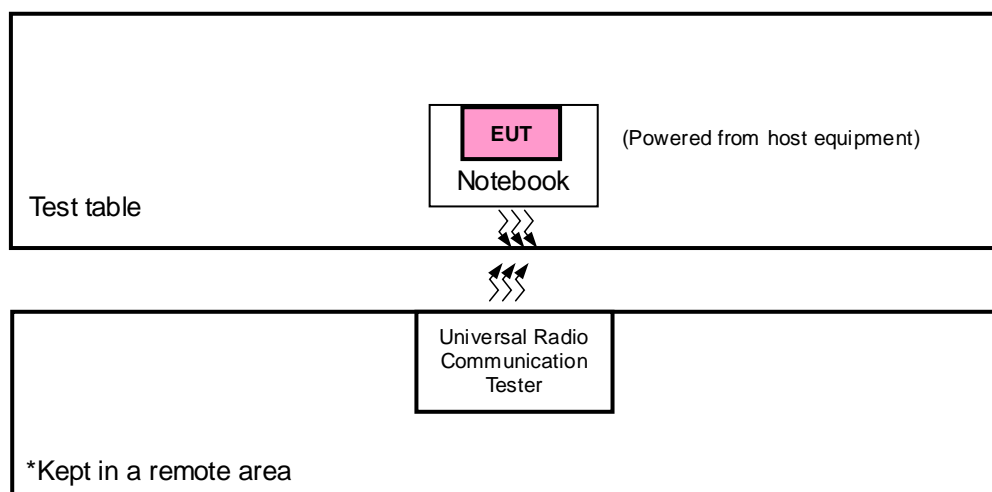
4. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test

<Radiated Emission Test>



<E.I.R.P. Test>



3.2.1 Description of Support Units

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

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Notebook	Getac	V110	N/A	N/A

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

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 was provided by client.

3.3 Test Mode Applicability and Tested Channel Detail

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

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

Band	EIRP	Radiated Emission
LTE Band 7	NB	NB
LTE Band 41	NB	NB

CALTE Band 7

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	20850 to 21048	20850+21048	20+20 MHz	QPSK	1 RB / 0 RB Offset
		21100 to 21298	21100+21298			
		21152 to 21350	21152 + 21350			
-	Radiated Emission Below 1GHz	20850 to 21048	20850+21048	20+20 MHz	QPSK	1 RB / 0 RB Offset
		21100 to 21298	21100+21298			
		21152 to 21350	21152 + 21350			
-	Radiated Emission Above 1GHz	20850 to 21048	20850+21048	20+20 MHz	QPSK	1 RB / 0 RB Offset
		21100 to 21298	21100+21298			
		21152 to 21350	21152 + 21350			

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

CALTE Band 41

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	39750 to 39948	39750 + 39948	20+20 MHz	QPSK	1 RB / 0 RB Offset
		40620 to 40818	40620 + 40818			
		41292 to 41490	41292 + 41490			
-	Radiated Emission Below 1GHz	39750 to 39948	39750 + 39948	20+20 MHz	QPSK	1 RB / 0 RB Offset
		40620 to 40818	40620 + 40818			
		41292 to 41490	41292 + 41490			
-	Radiated Emission Above 1GHz	39750 to 39948	39750 + 39948	20+20 MHz	QPSK	1 RB / 0 RB Offset
		40620 to 40818	40620 + 40818			
		41292 to 41490	41292 + 41490			

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

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “Mobile stations are limited to 2.0 watts EIRP. All other user stations are limited to 2 watts transmitter output power” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

4.1.2 Test Procedures

EIRP Measurement:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G.
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$

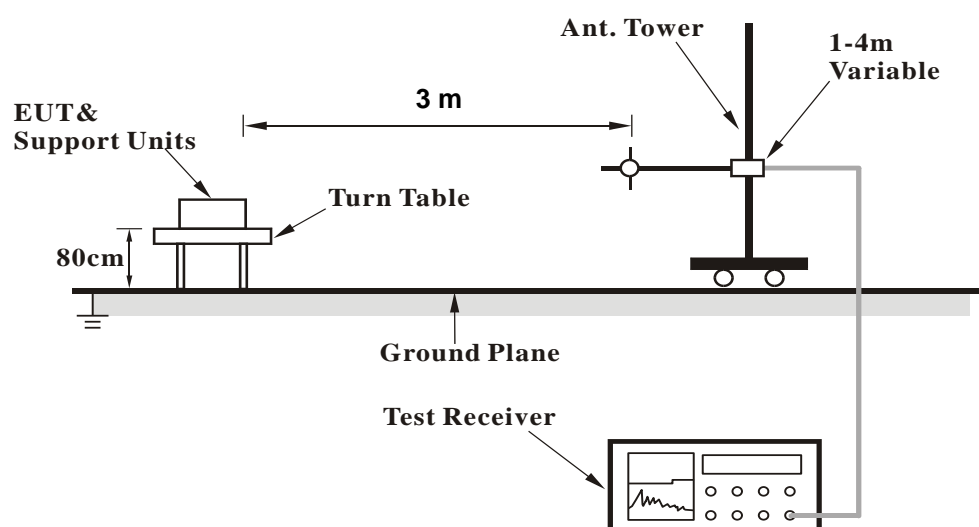
Conducted Power Measurement:

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

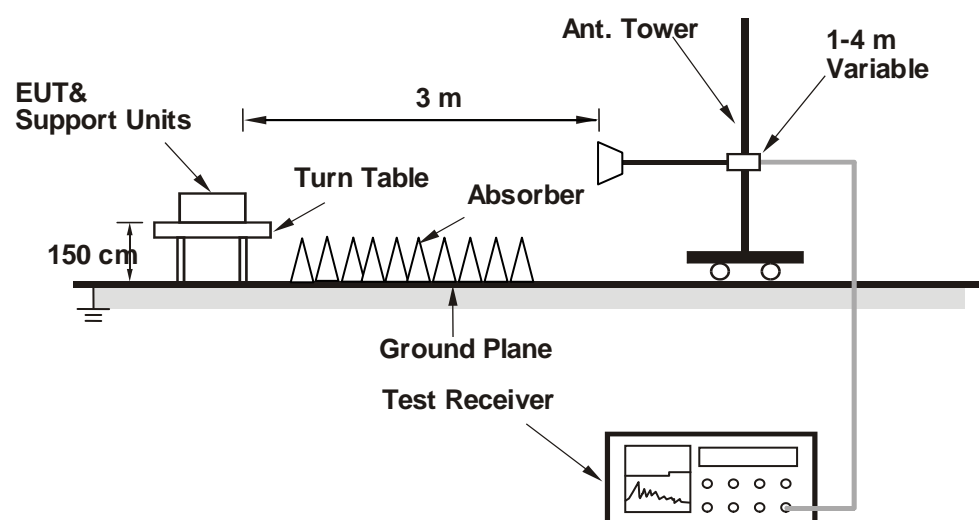
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

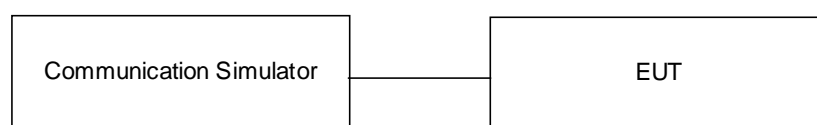


<Radiated Emission above 1 GHz>



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)

CALTE Band 7															
PCC							SCC							Power	
Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Freq. (MHz)	Single Carrier Tx Power (dBm)	Tx Power with DL-CA Active (dBm)
7	20	QPSK	1	0	20850	2510	7	20	QPSK	1	99	21048	2529.8	16.62	14.90
			1	99						1	0			16.45	16.42
7	20	QPSK	1	0	21100	2535	7	20	QPSK	1	99	21298	2554.8	16.59	15.01
			1	99						1	0			16.42	16.36
7	20	QPSK	1	0	21152	2540.2	7	20	QPSK	1	99	21350	2560	16.71	15.08
			1	99						1	0			16.54	16.39

CALTE Band 41															
PCC							SCC							Power	
Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Freq. (MHz)	Single Carrier Tx Power (dBm)	Tx Power with DL-CA Active (dBm)
41	20	QPSK	1	0	39750	2506	41	20	QPSK	1	99	39948	2525.8	18.41	14.91
			1	99						1	0			18.29	18.27
41	20	QPSK	1	0	40185	2549.5	41	20	QPSK	1	99	40383	2569.3	18.39	15.15
			1	99						1	0			18.27	18.22
41	20	QPSK	1	0	40620	2593	41	20	QPSK	1	99	40818	2612.8	18.38	14.76
			1	99						1	0			18.26	18.23
41	20	QPSK	1	0	41055	2636.5	41	20	QPSK	1	99	41253	2656.3	18.29	14.61
			1	99						1	0			18.17	18.06
41	20	QPSK	1	0	41292	2660.2	41	20	QPSK	1	99	41490	2680	18.88	14.47
			1	99						1	0			18.76	18.37

EIRP Power (dBm)

CA LTE Band 7							
Channel Bandwidth: 20 + 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
NB	20850+21048	2519.9	-25.69	43.66	17.97	62.70	H
	21100+21298	2544.9	-25.62	43.66	18.04	63.72	
	21350+21152	2550.1	-25.98	43.66	17.68	58.65	
	20850+21048	2519.9	-21.85	44.30	22.61	182.39	V
	21100+21298	2544.9	-21.85	44.30	22.55	179.89	
	21350+21152	2550.1	-21.85	44.30	22.36	172.19	

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

LTE Band 41							
Channel Bandwidth: 20 + 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
NB	39750+39948	2515.9	-17.52	38.71	21.19	131.52	H
	40620+40818	2602.9	-17.48	38.71	21.23	132.74	
	41292+41490	2670.1	-17.32	38.71	21.39	137.72	
	39750+39948	2515.9	-21.63	38.76	17.13	51.64	V
	40620+40818	2602.9	-21.03	38.76	17.73	59.29	
	41292+41490	2670.1	-20.59	38.76	18.17	65.61	

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

4.2 Radiated Emission Measurement

4.2.1 Limits of Radiated Emission Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log (P)$ dB. The limit of emission is equal to -25 dBm.

4.2.2 Test Procedure

- 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.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}.$

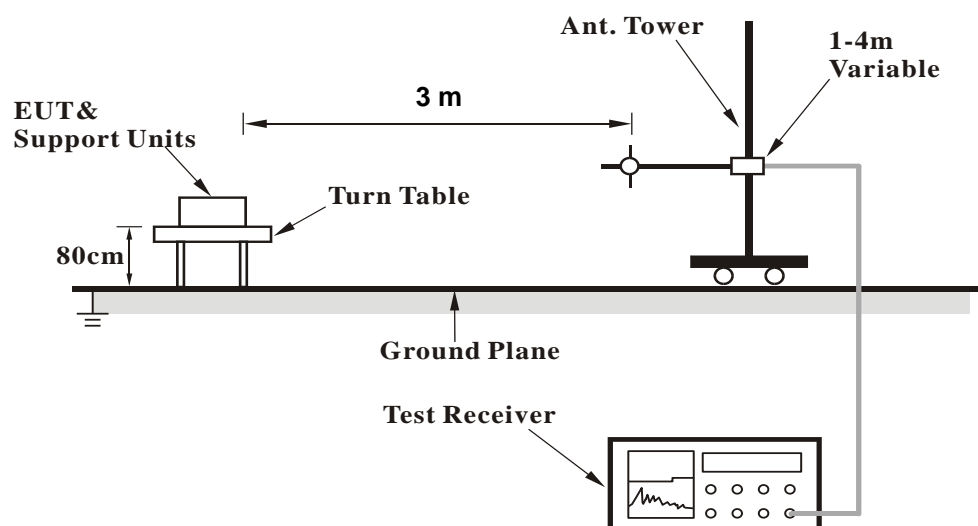
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.2.3 Deviation from Test Standard

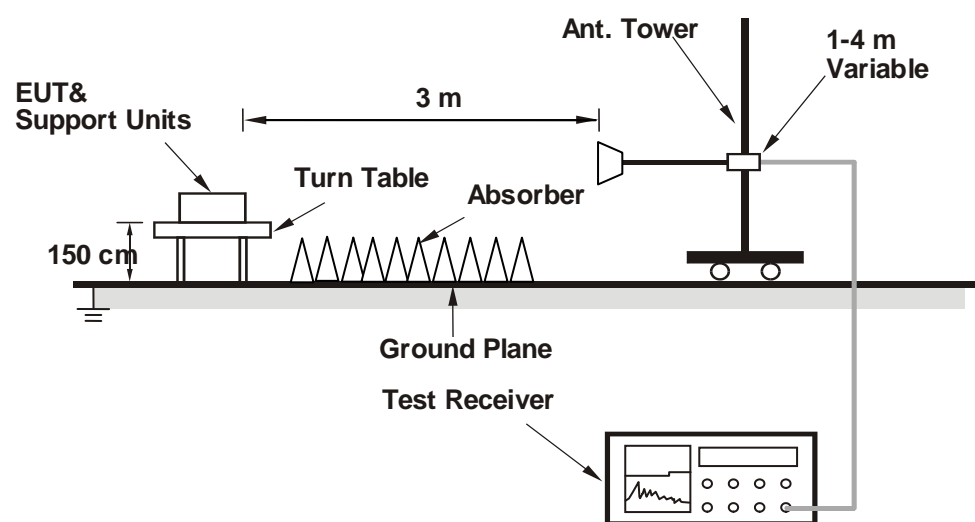
No deviation.

4.2.4 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).

4.2.5 Test Results

CALTE Band 7

Channel Bandwidth: 20 + 20 MHz / QPSK

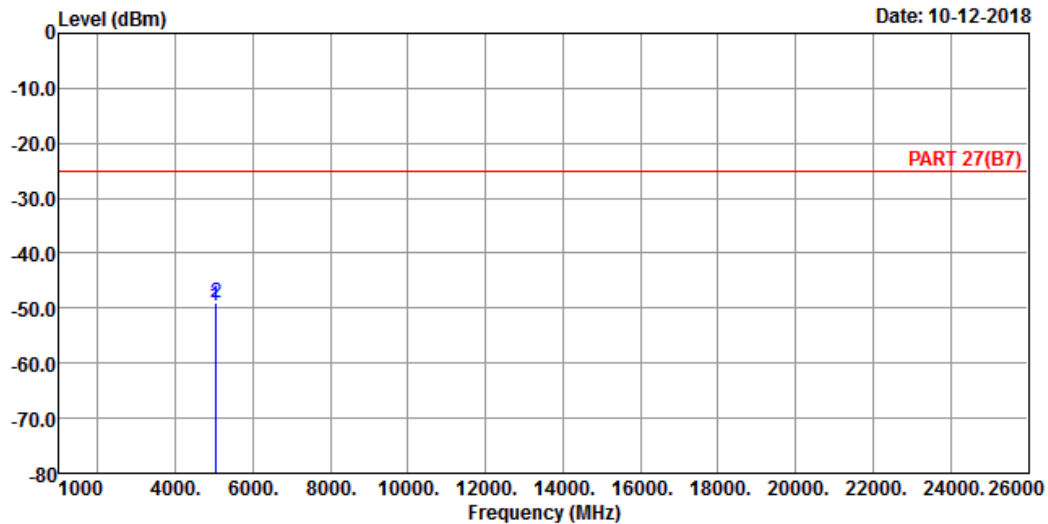
Ch 20850 + Ch 21048



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5
 Condition: PART 27(B7) HORIZONTAL
 Remark : LTE Band 7 QPSK_40M_CH20850+CH21048
 Tested by: Jisyoung Wang

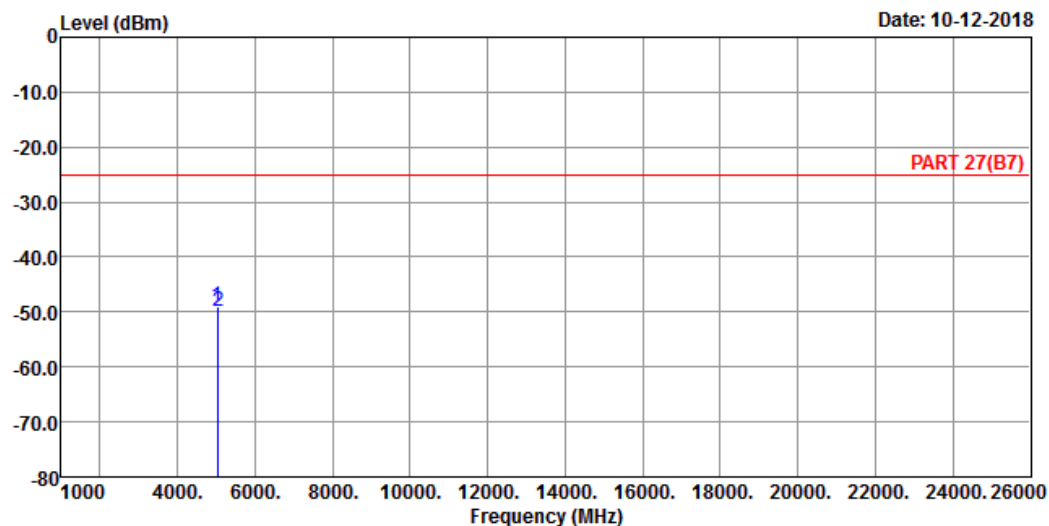
		Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor Remark
	MHz	dBm	dBm	dBm	dB	dB
1	5020.00	-49.52	-47.20	-25.00	-24.52	-2.32 Peak
2 pp	5039.80	-49.13	-46.96	-25.00	-24.13	-2.17 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART 27(B7) VERTICAL

Remark : LTE Band 7 QPSK_40M_CH20850+CH21048

Tested by: Jisyong Wang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 5020.00	-49.11	-46.79	-25.00	-24.11	-2.32	Peak
2	5039.80	-50.01	-47.84	-25.00	-25.01	-2.17	Peak

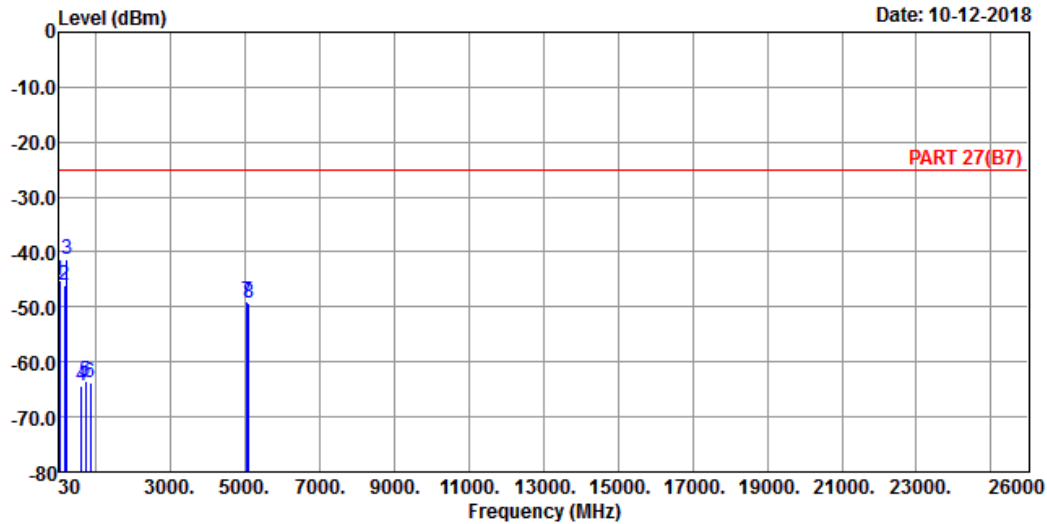
Ch 21100 + Ch 21298



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 Chamber 5

Condition: PART 27(B7) HORIZONTAL

Remark : LTE Band 7 QPSK_40M_CH21100+CH21298

Tested by: Jisyoung Wang

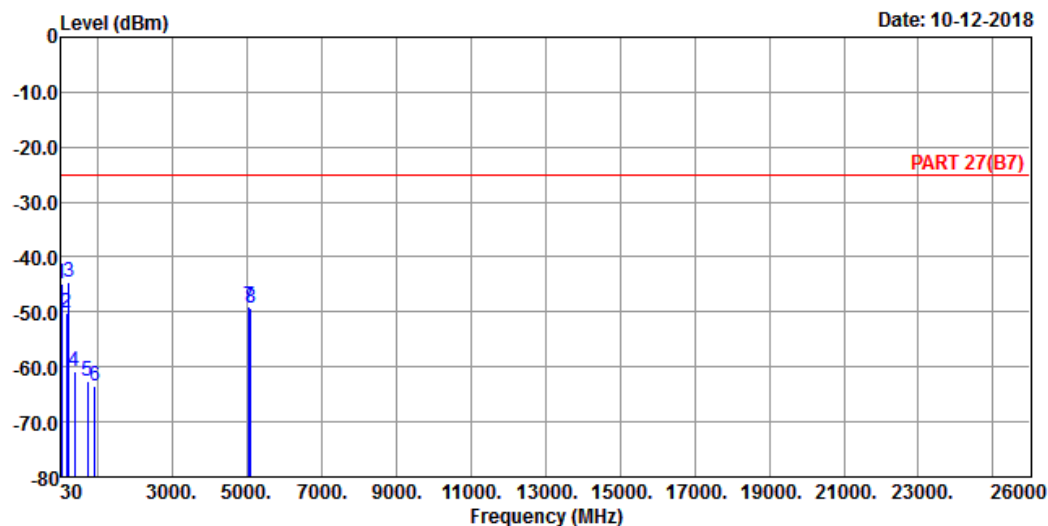
			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	44.55	-45.08	-43.09	-25.00	-20.08	-1.99	Peak
2	162.89	-46.02	-40.97	-25.00	-21.02	-5.05	Peak
3 pp	225.94	-41.39	-34.42	-25.00	-16.39	-6.97	Peak
4	622.67	-64.42	-63.61	-25.00	-39.42	-0.81	Peak
5	733.25	-63.56	-64.11	-25.00	-38.56	0.55	Peak
6	865.17	-63.89	-64.27	-25.00	-38.89	0.38	Peak
7	5070.00	-49.12	-47.25	-25.00	-24.12	-1.87	Peak
8	5109.60	-49.21	-47.63	-25.00	-24.21	-1.58	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8



Site : 966 Chamber 5

Condition: PART 27(B7) VERTICAL

Remark : LTE Band 7 QPSK_40M_CH21100+CH21298

Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	43.58	-45.01	-43.54	-25.00	-20.01	-1.47	Peak
2	174.53	-50.14	-43.76	-25.00	-25.14	-6.38	Peak
3 pp	229.82	-44.43	-37.62	-25.00	-19.43	-6.81	Peak
4	389.87	-60.69	-54.69	-25.00	-35.69	-6.00	Peak
5	737.13	-62.50	-63.13	-25.00	-37.50	0.63	Peak
6	932.10	-63.59	-64.96	-25.00	-38.59	1.37	Peak
7	5070.00	-49.01	-47.14	-25.00	-24.01	-1.87	Peak
8	5109.60	-49.16	-47.58	-25.00	-24.16	-1.58	Peak

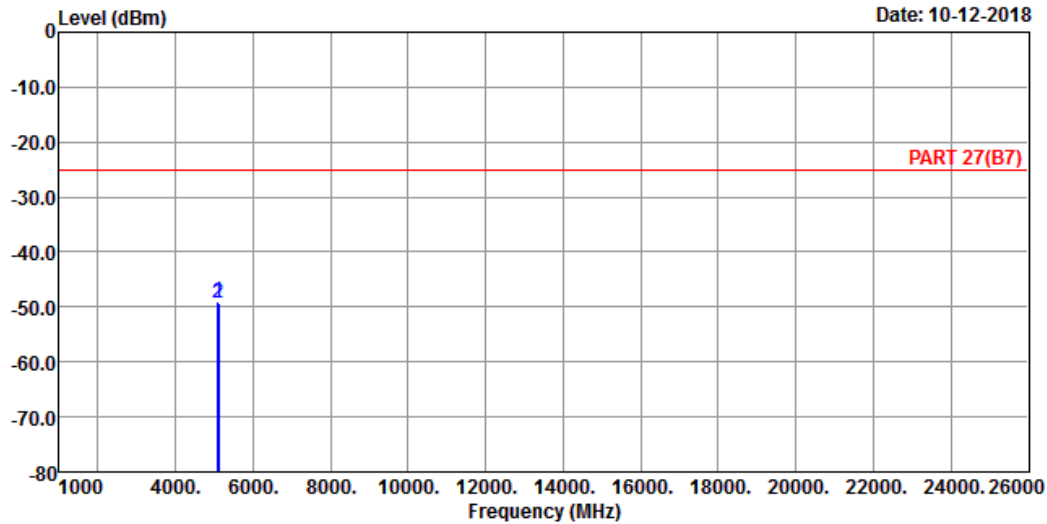
Ch 21152 + Ch 21350



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remark : LTE Band 7 QPSK_40M_CH21152+CH21350
Tested by: Jisyong Wang

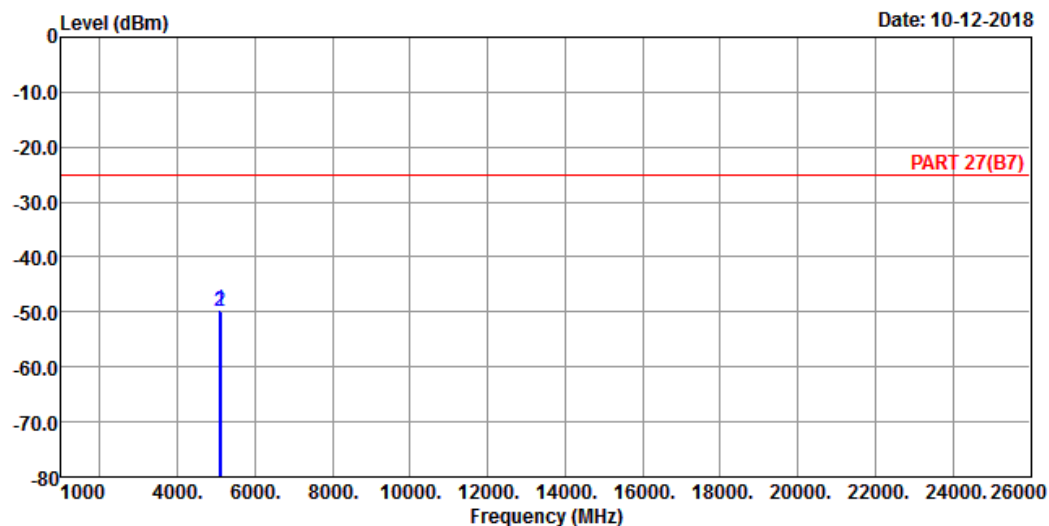
			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5080.40	-49.01	-47.28	-25.00	-24.01	-1.73	Peak
2	5120.00	-49.27	-47.61	-25.00	-24.27	-1.66	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART 27(B7) VERTICAL

Remark : LTE Band 7 QPSK_40M_CH21152+CH21350

Tested by: Jisyong Wang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 5080.40	-49.62	-47.89	-25.00	-24.62	-1.73	Peak
2	5120.00	-49.99	-48.33	-25.00	-24.99	-1.66	Peak

LTE Band 41

Channel Bandwidth: 20 + 20 MHz / QPSK

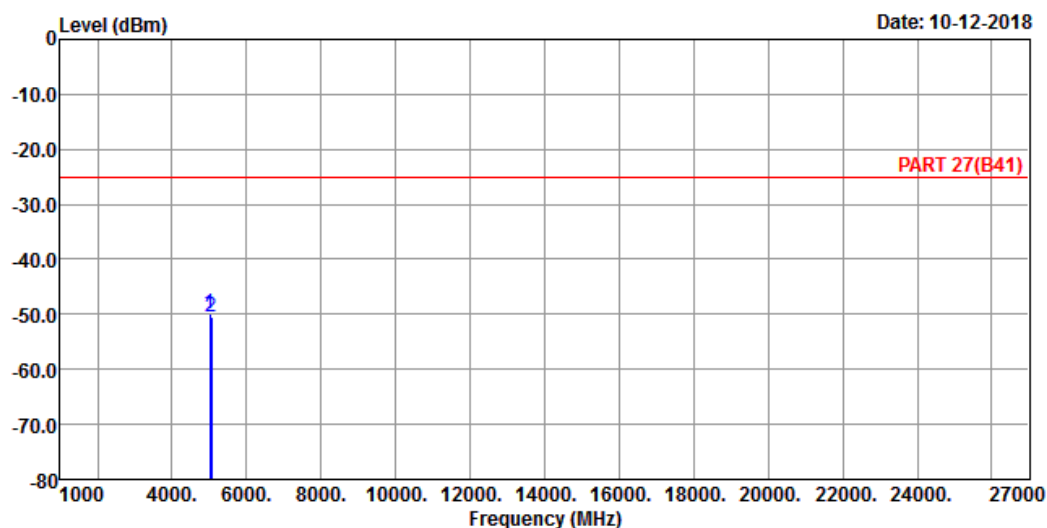
Ch 39750 + Ch 39948



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART 27(B41) HORIZONTAL

Remak : LTE Band 41 QPSK_40M_CH39750+CH39948

Tested by: Jisyong Wang

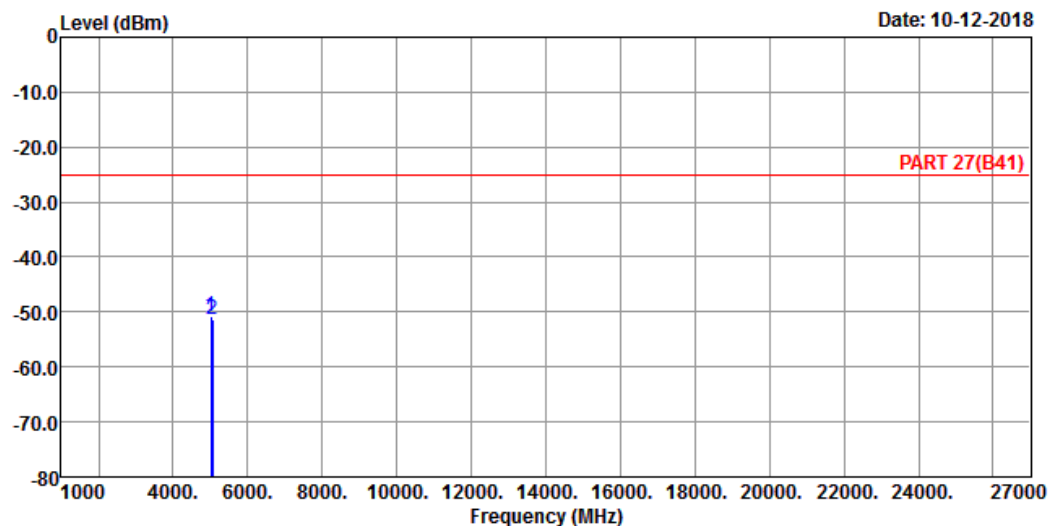
			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp	5012.00	-49.97	-46.74	-25.00	-24.97	-3.23 Peak
2		5051.60	-50.47	-47.32	-25.00	-25.47	-3.15 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART 27(B41) VERTICAL

Remak : LTE Band 41 QPSK_40M_CH39750+CH39948

Tested by: Jisyong Wang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp	5012.00	-50.74	-47.51	-25.00	-25.74	-3.23 Peak
2		5051.60	-51.29	-48.14	-25.00	-26.29	-3.15 Peak

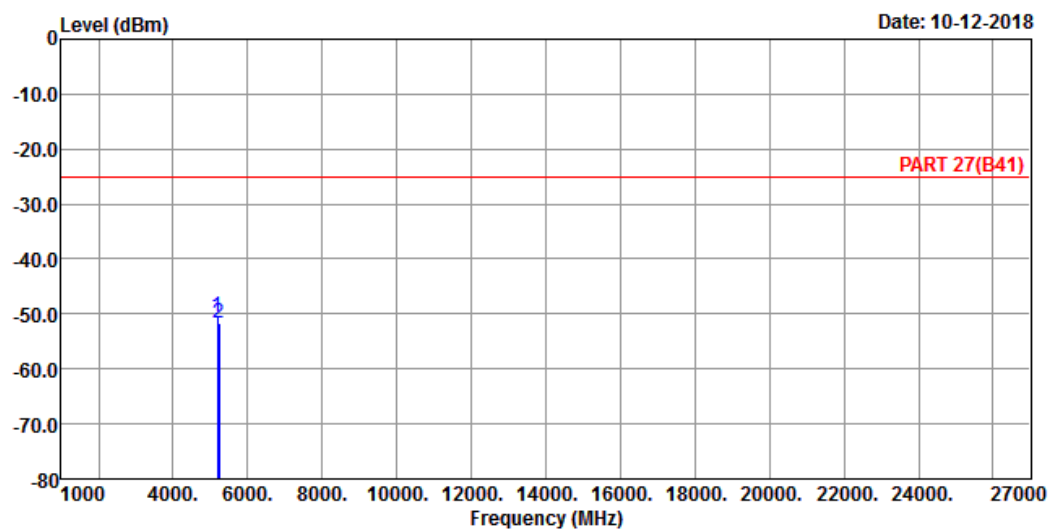
Ch 40620 + Ch 40818



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART 27(B41) HORIZONTAL

Remak : LTE Band 41 QPSK_40M_CH40620+CH40818

Tested by: Jisyong Wang

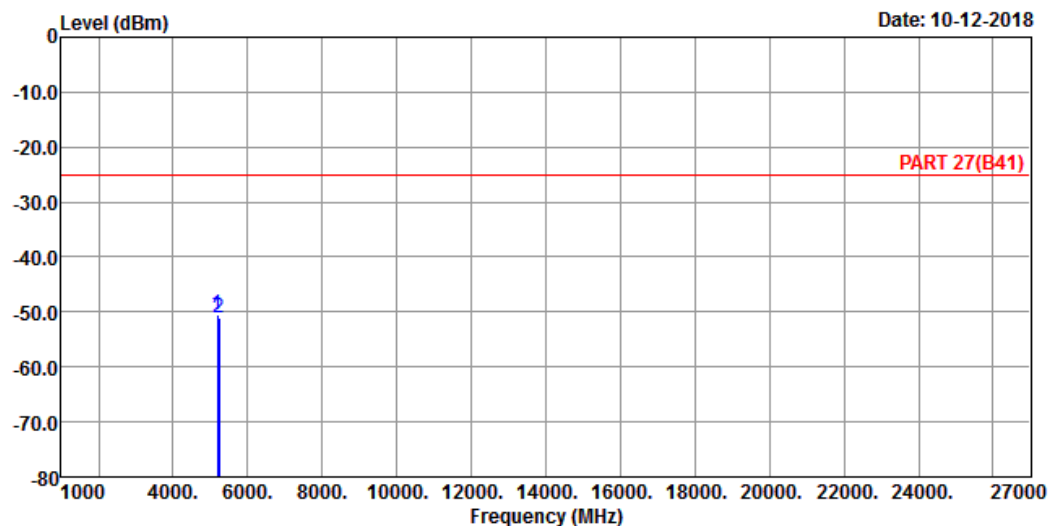
			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	5186.00	-50.34	-47.48	-25.00	-25.34	-2.86	Peak
2	5225.60	-51.52	-48.85	-25.00	-26.52	-2.67	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5

Condition: PART 27(B41) VERTICAL

Remak : LTE Band 41 QPSK_40M_CH40620+CH40818

Tested by: Jisyong Wang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	pp 5186.00	-50.56	-47.70	-25.00	-25.56	-2.86	Peak
2	5225.60	-51.19	-48.52	-25.00	-26.19	-2.67	Peak

Ch 41292 + Ch 41490

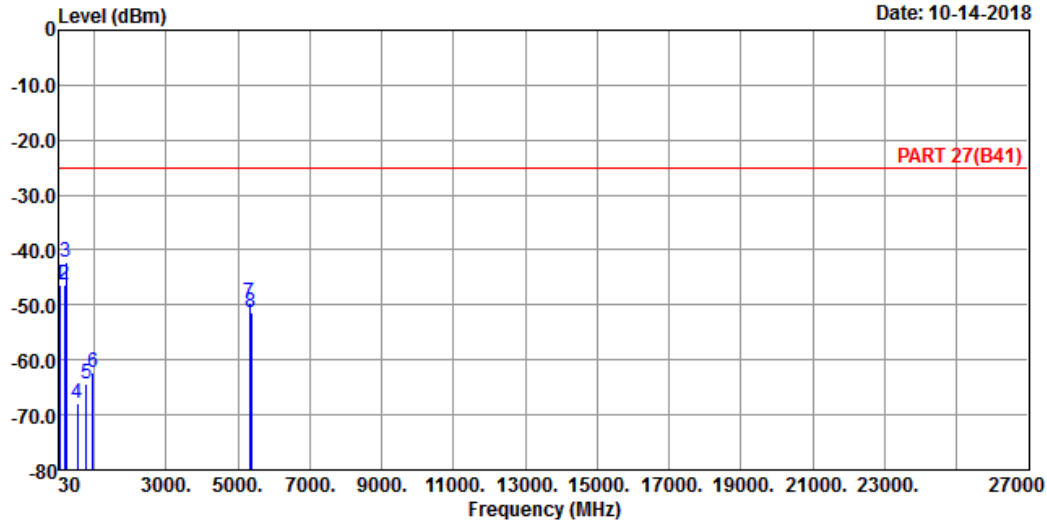


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7

Date: 10-14-2018



Site : 966 Chamber 5

Condition: PART 27(B41) HORIZONTAL

Remak : LTE Band 41 QPSK_40M_CH41292+CH41490

Tested by: Jisyoung Wang

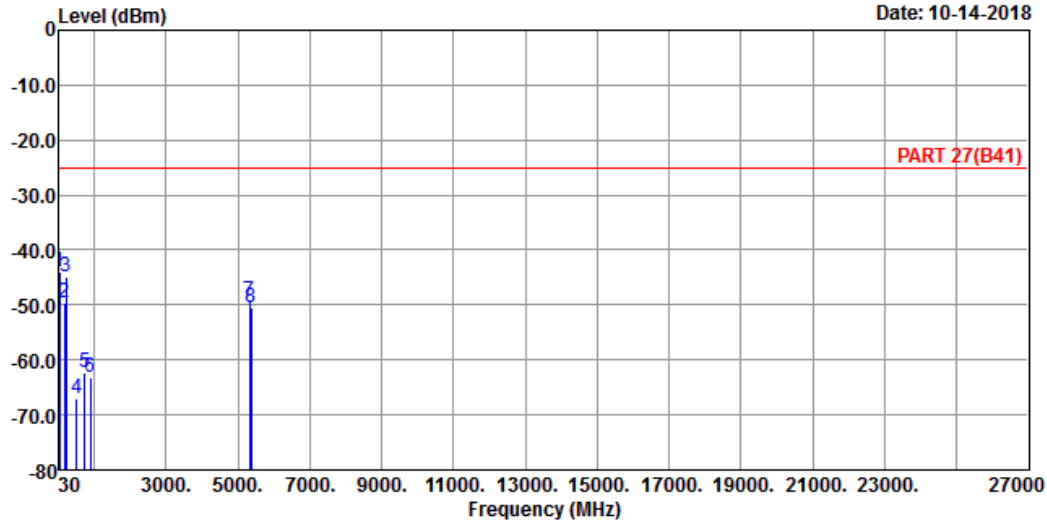
			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	45.52	-46.43	-43.93	-25.00	-21.43	-2.50	Peak
2	161.92	-46.27	-41.29	-25.00	-21.27	-4.98	Peak
3 pp	227.88	-42.18	-35.29	-25.00	-17.18	-6.89	Peak
4	539.25	-67.80	-64.57	-25.00	-42.80	-3.23	Peak
5	790.48	-64.27	-65.03	-25.00	-39.27	0.76	Peak
6	968.96	-62.16	-64.64	-25.00	-37.16	2.48	Peak
7	5320.40	-49.58	-47.39	-25.00	-24.58	-2.19	Peak
8	5360.00	-51.23	-49.23	-25.00	-26.23	-2.00	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8



Site : 966 Chamber 5
Condition: PART 27(B41) VERTICAL
Remak : LTE Band 41 QPSK_40M_CH41292+CH41490
Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	43.58	-43.84	-42.37	-25.00	-18.84	-1.47	Peak
2	171.62	-49.61	-43.74	-25.00	-24.61	-5.87	Peak
3	227.88	-44.91	-38.02	-25.00	-19.91	-6.89	Peak
4	504.33	-66.94	-62.47	-25.00	-41.94	-4.47	Peak
5	738.10	-62.31	-62.96	-25.00	-37.31	0.65	Peak
6	888.45	-63.20	-63.71	-25.00	-38.20	0.51	Peak
7	5320.40	-49.29	-47.10	-25.00	-24.29	-2.19	Peak
8	5360.00	-50.60	-48.60	-25.00	-25.60	-2.00	Peak

5 Pictures of Test Arrangements

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

Appendix – Information on 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:

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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