FCC Test Report

Report No.:	RF190115C29
FCC ID:	2AD8UAHBC01
Test Model:	AHBC
Received Date:	Jan. 15, 2019
Test Date:	Jan. 29 ~ Mar. 05, 2019
Issued Date:	Mar. 07, 2019
Applicant:	Nokia Solutions and Networks, OY
Address:	2000 W. Lucent Lane, Naperville, IL 60563, USA
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
RF190115C29	Original release	Mar. 07, 2019

1 Certificate of Conformity

Product:	AirScale Micro Remote Radio Head
Brand:	Nokia
Test Model:	AHBC
Sample Status:	Engineering sample
Applicant:	Nokia Solutions and Networks, OY
Test Date:	Jan. 29 ~ Mar. 05, 2019
Standards:	FCC Part 90, Subpart R, I

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 : Celine Chou , **Date:** Mar. 07, 2019

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Mar. 07, 2019

Bruce Chen / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 90 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 90.542 (a) (3)	Effective Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 90.539 (d)	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth (*)	Pass	Meet the requirement of limit.
90.210 (n) & (b)	Emission Masks	Pass	Meet the requirement of limit.
2.1051 90.543 (e) (1) & (3)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 90.543 (c)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 90.543 (c)& (f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.90dB at 1586.00MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 11, 2018	Apr. 10, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna EMCI	HLA 6121	45745	Jun. 14, 2018	Jun. 13, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018	Aug. 07, 2019
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 22, 2018	Feb. 21, 2019
			Feb. 19, 2019	Feb. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018	Aug. 07, 2019
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018	Jul. 30, 2019
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 04, 2018	Jun. 03, 2019
Digital Multimeter Fluke	87-III	70360742	Jun. 29, 2018	Jun. 28, 2019
DC Power Supply Topward	6603D	700637	NA	NA
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Radio Communication Analyzer	MT8821C	6261786083	Dec. 21, 2018	Dec. 20, 2019

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is 7450F-9.

3 General Information

3.1 General Description of EUT

Product	AirScale Micro Remote Radio Head		
Brand	Nokia		
Test Model	AHBC		
Status of EUT	Engineering sample		
Power Supply Rating	I/P: 100-240Vac, 50/60Hz, 3A MAX O/P: -54Vdc, 3A MAX		
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM		
Operating Frequency	LTE Band 14	Channel Bandwidth 5MHz	760.5MHz ~ 765.5MHz
		Channel Bandwidth 10MHz	763MHz
		Channel Bandwidth 5MHz + 5MHz	763MHz
Max. ERP Power	LTE Band 14	Channel Bandwidth 5MHz	318419.752mW (55.03dBm)
		Channel Bandwidth 10MHz	289067.988mW (54.61dBm)
		Channel Bandwidth 5MHz + 5MHz	316956.746mW (55.01dBm)
Emission Designator	LTE Band 14	Channel Bandwidth 5MHz	QPSK: 4M49G7D
			16QAM: 4M49D7W
			64QAM: 4M49D7W
			256QAM: 4M49D7W
		Channel Bandwidth 10MHz	QPSK: 8M95G7D
			16QAM: 8M95D7W
			64QAM: 8M95D7W
			256QAM: 8M95D7W
		Channel Bandwidth 5MHz + 5MHz	QPSK: 9M48G7D
			16QAM: 9M48D7W
			64QAM: 9M44D7W
			256QAM: 9M48D7W
Antenna Gain	8dBi		
S/N	EA185112411		
HW Version	X11		
SW Version	FDD-LTE 19		
Accessory Device	Refer to Note as below		
Cable Supplied	NA		

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

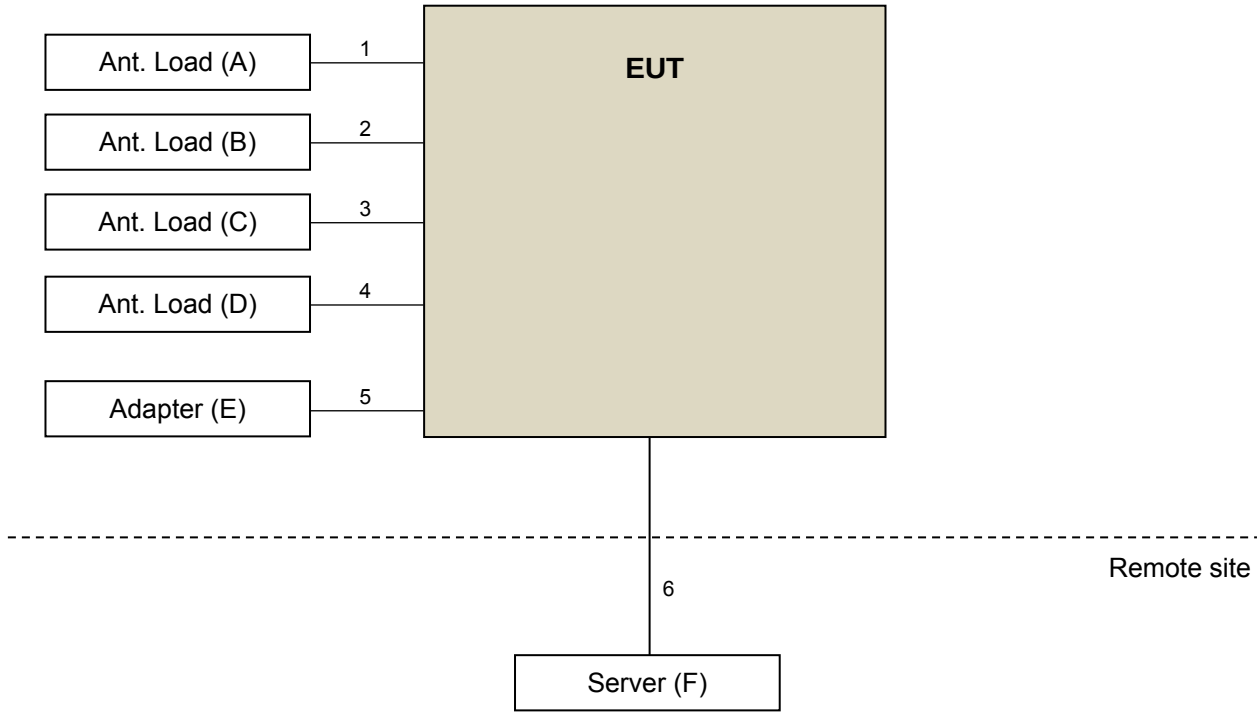
Modulation Mode	TX Function
QPSK, 16QAM, 64QAM, 256QAM	1TX
QPSK, 16QAM, 64QAM, 256QAM	2TX
QPSK, 16QAM, 64QAM, 256QAM	3TX
QPSK, 16QAM, 64QAM, 256QAM	4TX

2. The EUT contains following accessory devices.

AC PSU (Optional)	
Brand	Nokia
Model	APAB
Sales Item	474130A.102
S/N	U7174800066
Remark	SUPLET/S818A160-220S54W
Input Power	100-240Vac, 50/60Hz, 3A MAX
Output Power	-54Vdc, 3A MAX

3. The antenna gain for reference only, the test was done with 50ohm terminator on antenna port.

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.	Ant. Load	NA	NA	NA	NA	Provided by manufacturer
B.	Ant. Load	NA	NA	NA	NA	Provided by manufacturer
C.	Ant. Load	NA	NA	NA	NA	Provided by manufacturer
D.	Ant. Load	NA	NA	NA	NA	Provided by manufacturer
E.	Adapter	NA	NA	NA	NA	Provided by manufacturer
F.	Server	NA	NA	NA	NA	Provided by manufacturer

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Ant. Cable	1	1	Y	0	-
2.	Ant. Cable	1	1	Y	0	-
3.	Ant. Cable	1	1	Y	0	-
4.	Ant. Cable	1	1	Y	0	-
5.	DC Cable	1	0.55	N	0	Provided by manufacturer
6.	Fiber Cable	2	10	N	0	-

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 on X-plane. Following channel(s) was (were) selected for the final test as listed below:

Single Mode

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
-	Modulation Characteristics	5305 to 5355	5330(763.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
-	Frequency Stability	5305 to 5355	5305(760.5MHz), 5355(765.5MHz)	5MHz	QPSK	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK	Full RB
-	Occupied Bandwidth	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
-	Emission Mask	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK	Full RB
-	Band Edge	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK	Full RB
-	Conducted Emission	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK	Full RB
-	Radiated Emission below 1GHz	5330	5330(763.0MHz)	10MHz	QPSK	Full RB
-	Radiated Emission above 1GHz	5305 to 5355	5305(760.5MHz), 5330(763.0MHz), 5355(765.5MHz)	5MHz	QPSK	Full RB
		5330	5330(763.0MHz)	10MHz	QPSK	Full RB

Note: The conducted output power for QPSK, 16QAM, 64QAM and 256QAM measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation Characteristics, Emission Bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

2-Carriers Mode

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
-	Emission Bandwidth	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
-	Band Edge	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK	Full RB
-	Conducted Emission	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK	Full RB
-	Radiated Emission below 1GHz	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK	Full RB
-	Radiated Emission above 1GHz	5330	5330(763.0MHz)	5MHz + 5MHz	QPSK	Full RB

Note: The conducted output power for QPSK, 16QAM, 64QAM and 256QAM measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Emission Bandwidth test item had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Modulation characteristics	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Frequency Stability	24deg. C, 64%RH	-54Vdc	James Yang
Occupied Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Emission Mask	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Band Edge	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Radiated Emission	22deg. C, 68%RH	120Vac, 60Hz	Greg Lin

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 90

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

Fixed and base stations transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section.

4.1.2 Test Procedures

The EUT was set up for the maximum power with 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

4.1.4 Test Results

Conducted Output Power (dBm)

1TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 0	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 1	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 2	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Chain 3	36.81	36.85	36.90	36.92	36.89	36.88	37.09	36.88	36.87	37.05	36.88	36.88

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 0	36.80	36.77	36.75	36.75
	Chain 1	36.76	36.74	36.74	36.69
	Chain 2	36.65	36.66	36.68	36.71
	Chain 3	36.68	36.71	36.61	36.68

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 0	37.16	37.13	37.15	37.11
	Chain 1	37.12	37.05	37.09	37.13
	Chain 2	37.13	37.08	37.03	37.1
	Chain 3	37.08	37.05	37.06	37.1

2TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 1	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 2	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Total Power	40.19	40.01	39.96	40.17	40.00	40.02	40.18	40.00	39.96	40.15	40.01	39.98

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 1	36.8	36.77	36.75	36.75
	Chain 2	36.76	36.74	36.74	36.69
	Total Power	39.79	39.77	39.76	39.73

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 1	37.16	37.13	37.15	37.11
	Chain 2	37.12	37.05	37.09	37.13
	Total Power	40.15	40.10	40.13	40.13

Note: The 2TX MIMO power was select worst 2 chain total calculation

3TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 1	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 2	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 3	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Total Power	41.91	41.72	41.66	41.90	41.77	41.73	41.93	41.73	41.73	41.90	41.76	41.75

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 1	36.8	36.77	36.75	36.75
	Chain 2	36.76	36.74	36.74	36.69
	Chain 3	36.65	36.66	36.68	36.71
	Total Power	41.51	41.49	41.49	41.49

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 1	37.16	37.13	37.15	37.11
	Chain 2	37.12	37.05	37.09	37.13
	Chain 3	37.13	37.08	37.03	37.1
	Total Power	41.91	41.86	41.86	41.88

Note: The 3TX MIMO power was select worst 3 chain total calculation

4TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 0	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 1	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 2	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Chain 3	36.81	36.85	36.90	36.92	36.89	36.88	37.09	36.88	36.87	37.05	36.88	36.88
	Total Power	43.08	42.95	42.91	43.10	42.99	42.96	43.16	42.96	42.96	43.13	42.98	42.98

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 0	36.8	36.77	36.75	36.75
	Chain 1	36.76	36.74	36.74	36.69
	Chain 2	36.65	36.66	36.68	36.71
	Chain 3	36.68	36.71	36.61	36.68
	Total Power	42.74	42.74	42.72	42.73

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 0	37.16	37.13	37.15	37.11
	Chain 1	37.12	37.05	37.09	37.13
	Chain 2	37.13	37.08	37.03	37.1
	Chain 3	37.08	37.05	37.06	37.1
	Total Power	43.14	43.10	43.10	43.13

ERP Power (dBm)

1TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 0	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 1	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 2	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Chain 3	36.81	36.85	36.90	36.92	36.89	36.88	37.09	36.88	36.87	37.05	36.88	36.88
	Antenna gain	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	ERP Chain 0	43.11	42.79	42.76	43.06	42.82	42.88	43.04	42.85	42.77	43.05	42.82	42.84
	ERP Chain 1	42.95	42.91	42.83	42.96	42.86	42.84	43.00	42.83	42.82	42.92	42.87	42.79
	ERP Chain 2	42.90	42.70	42.61	42.93	42.87	42.70	42.99	42.74	42.84	42.98	42.83	42.86
	ERP Chain 3	42.66	42.70	42.75	42.77	42.74	42.73	42.94	42.73	42.72	42.90	42.73	42.73

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 0	36.80	36.77	36.75	36.75
	Chain 1	36.76	36.74	36.74	36.69
	Chain 2	36.65	36.66	36.68	36.71
	Chain 3	36.68	36.71	36.61	36.68
	Antenna gain	8.00	8.00	8.00	8.00
	ERP Chain 0	42.65	42.62	42.60	42.60
	ERP Chain 1	42.61	42.59	42.59	42.54
	ERP Chain 2	42.50	42.51	42.53	42.56
	ERP Chain 3	42.53	42.56	42.46	42.53

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0	763.0	763.0	763.0
		MHz	MHz	MHz	MHz
2-Carriers / 5M+5M	Chain 0	37.16	37.13	37.15	37.11
	Chain 1	37.12	37.05	37.09	37.13
	Chain 2	37.13	37.08	37.03	37.10
	Chain 3	37.08	37.05	37.06	37.10
	Antenna gain	8.00	8.00	8.00	8.00
	ERP Chain 0	43.01	42.98	43.00	42.96
	ERP Chain 1	42.97	42.90	42.94	42.98
	ERP Chain 2	42.98	42.93	42.88	42.95
	ERP Chain 3	42.93	42.90	42.91	42.95

Note: ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) – 2.15.

2TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 1	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 2	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Total Power	40.19	40.01	39.96	40.17	40.00	40.02	40.18	40.00	39.96	40.15	40.01	39.98
	Directional Gain	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01
	ERP	49.05	48.87	48.82	49.03	48.86	48.88	49.04	48.86	48.82	49.01	48.87	48.84

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 1	36.80	36.77	36.75	36.75
	Chain 2	36.76	36.74	36.74	36.69
	Total Power	39.79	39.77	39.76	39.73
	Directional Gain	11.01	11.01	11.01	11.01
	ERP	48.65	48.63	48.62	48.59

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 1	37.16	37.13	37.15	37.11
	Chain 2	37.12	37.05	37.09	37.13
	Total Power	40.15	40.10	40.13	40.13
	Directional Gain	11.01	11.01	11.01	11.01
	ERP	49.01	48.96	48.99	48.99

Note:

1. ERP (dBm) = Conducted Output Power (dBm) + Directional Gain (dBi) – 2.15.
2. The 2TX MIMO power was select worst 2 chain total calculation

3TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 1	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 2	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 3	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Total Power	41.91	41.72	41.66	41.90	41.77	41.73	41.93	41.73	41.73	41.90	41.76	41.75
	Directional Gain	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77
	ERP	52.53	52.34	52.28	52.52	52.39	52.35	52.55	52.35	52.35	52.52	52.38	52.37

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 1	36.80	36.77	36.75	36.75
	Chain 2	36.76	36.74	36.74	36.69
	Chain 3	36.65	36.66	36.68	36.71
	Total Power	41.51	41.49	41.49	41.49
	Directional Gain	12.77	12.77	12.77	12.77
	ERP	52.13	52.11	52.11	52.11

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 1	37.16	37.13	37.15	37.11
	Chain 2	37.12	37.05	37.09	37.13
	Chain 3	37.13	37.08	37.03	37.1
	Total Power	41.91	41.86	41.86	41.88
	Directional Gain	12.77	12.77	12.77	12.77
	ERP	52.53	52.48	52.48	52.50

Note:

1. ERP (dBm) = Conducted Output Power (dBm) + Directional Gain (dBi) – 2.15.
2. The 3TX MIMO power was select worst 3 chain total calculation

4TX

Band / BW	Ant	QPSK			16QAM			64QAM			256QAM		
		Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
		5305	5330	5355	5305	5330	5355	5305	5330	5355	5305	5330	5355
		760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz	760.5 MHz	763.0 MHz	765.5 MHz
14 / 5M	Chain 0	37.26	36.94	36.91	37.21	36.97	37.03	37.19	37.00	36.92	37.20	36.97	36.99
	Chain 1	37.10	37.06	36.98	37.11	37.01	36.99	37.15	36.98	36.97	37.07	37.02	36.94
	Chain 2	37.05	36.85	36.76	37.08	37.02	36.85	37.14	36.89	36.99	37.13	36.98	37.01
	Chain 3	36.81	36.85	36.90	36.92	36.89	36.88	37.09	36.88	36.87	37.05	36.88	36.88
	Total Power	43.08	42.95	42.91	43.10	42.99	42.96	43.16	42.96	42.96	43.13	42.98	42.98
	Directional Gain	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02	14.02
	ERP	54.95	54.82	54.78	54.97	54.86	54.83	55.03	54.83	54.83	55.00	54.85	54.85

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
14 / 10M	Chain 0	36.8	36.77	36.75	36.75
	Chain 1	36.76	36.74	36.74	36.69
	Chain 2	36.65	36.66	36.68	36.71
	Chain 3	36.68	36.71	36.61	36.68
	Total Power	42.74	42.74	42.72	42.73
	Directional Gain	14.02	14.02	14.02	14.02
	ERP	54.61	54.61	54.59	54.60

Band / BW	Ant	QPSK	16QAM	64QAM	256QAM
		Mid CH	Mid CH	Mid CH	Mid CH
		5330	5330	5330	5330
		763.0 MHz	763.0 MHz	763.0 MHz	763.0 MHz
2-Carriers / 5M+5M	Chain 0	37.16	37.13	37.15	37.11
	Chain 1	37.12	37.05	37.09	37.13
	Chain 2	37.13	37.08	37.03	37.1
	Chain 3	37.08	37.05	37.06	37.1
	Total Power	43.14	43.10	43.10	43.13
	Directional Gain	14.02	14.02	14.02	14.02
	ERP	55.01	54.97	54.97	55.00

Note: ERP (dBm) = Conducted Output Power (dBm) + Directional Gain (dBi) – 2.15.

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

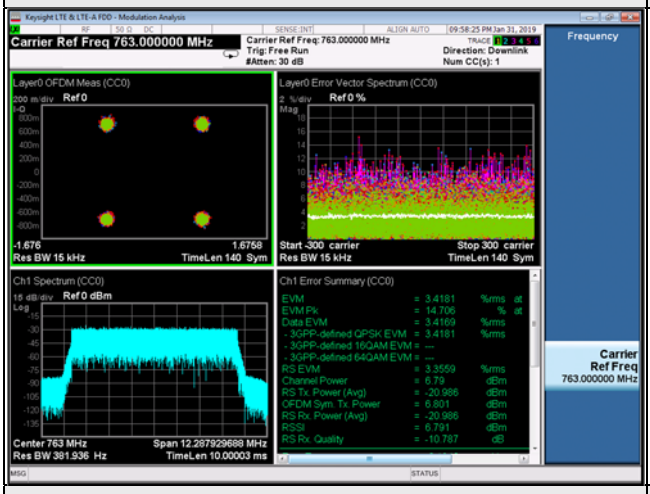
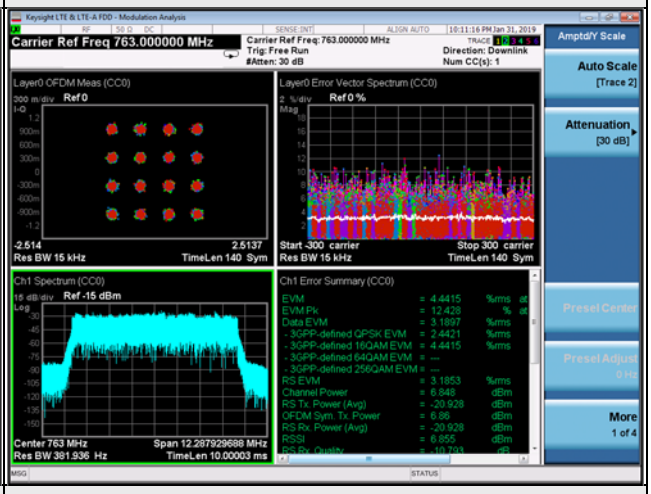
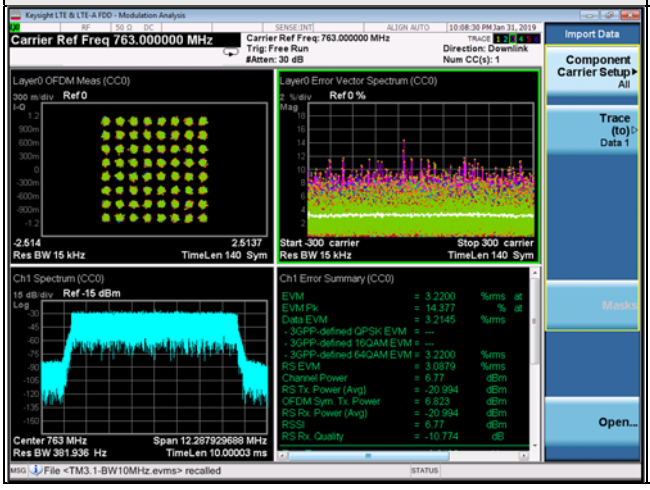
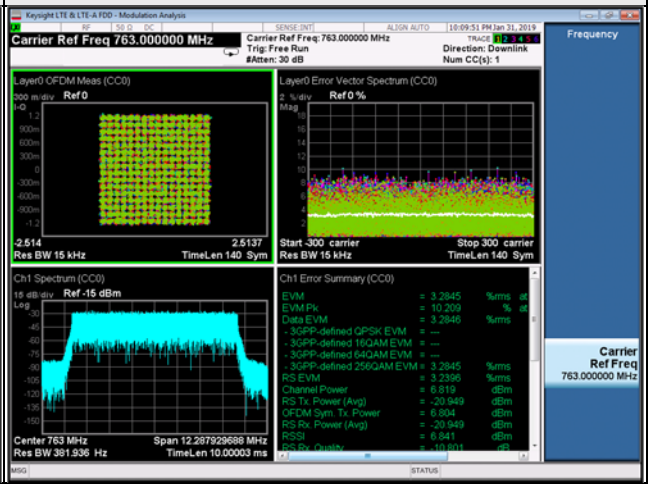
N/A

4.2.2 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.

4.2.3 Test Setup

4.2.4 Test Results

LTE Band 14	
Spectrum Plot of Measurement Value	
Channel: 5330 / Frequency (MHz): 763.0MHz	
Channel Bandwidth: 10MHz / QPSK	Channel Bandwidth: 10MHz / 16QAM
	
Channel Bandwidth: 10MHz / 64QAM	Channel Bandwidth: 10MHz / 256QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

The frequency stability of base transmitters operating in the wideband segment must be 1 ppm or better. According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT -30℃ ~ 50℃.

4.3.2 Test Procedure

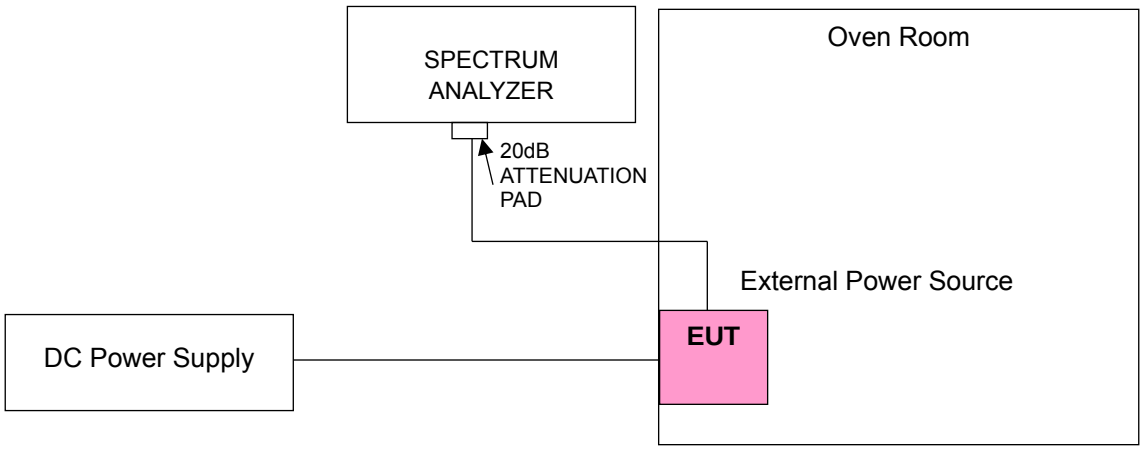
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 14			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-62.1	760.500003	0.004	765.500002	0.002
-54.0	760.500003	0.004	765.500004	0.005
-45.9	760.500002	0.003	765.500002	0.003

Note: The applicant defined the normal working voltage is from -45.9Vdc to -62.1Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 14			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	760.500002	0.003	765.500003	0.003
-20	760.500001	0.001	765.500004	0.005
-10	760.500002	0.002	765.500001	0.001
0	760.500003	0.003	765.500001	0.001
10	760.500003	0.004	765.500002	0.003
20	760.499996	-0.005	765.499997	-0.004
30	760.499996	-0.005	765.499997	-0.004
40	760.499999	-0.002	765.499997	-0.004
50	760.499999	-0.002	765.499997	-0.004
60	760.499998	-0.002	765.499997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 14	
	Channel Bandwidth: 10 MHz	
	CH 5330	
	Frequency (MHz)	Frequency Error (ppm)
-62.1	763.000002	0.002
-54.0	763.000003	0.003
-45.9	763.000004	0.005

Note: The applicant defined the normal working voltage is from -45.9Vdc to -62.1Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 14	
	Channel Bandwidth: 10 MHz	
	CH 5330	
	Frequency (MHz)	Frequency Error (ppm)
-30	763.000003	0.004
-20	763.000002	0.003
-10	763.000004	0.005
0	763.000004	0.005
10	763.000004	0.005
20	762.999998	-0.003
30	762.999997	-0.004
40	762.999998	-0.002
50	762.999999	-0.001
60	762.999997	-0.004

4.4 Occupied Bandwidth Measurement

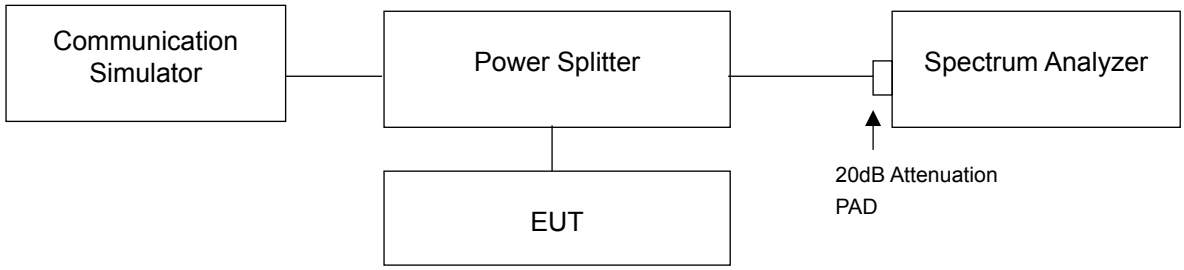
4.4.1 Limits of Occupied Bandwidth Measurement

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 EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range, RB of the spectrum is 1% of occupied bnadwidth and VB of the spectrum is 3 times RBW. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.3 Test Setup



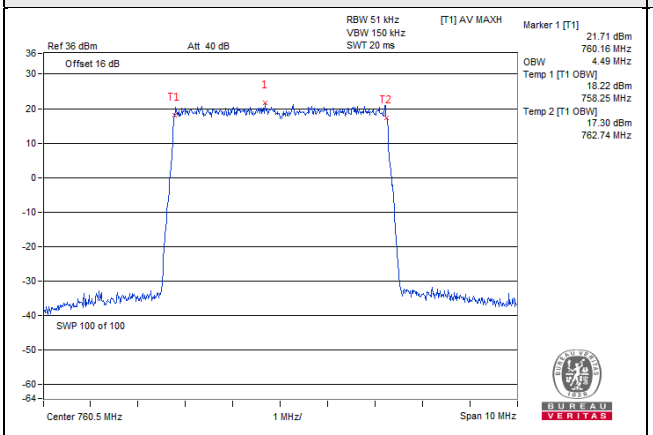
4.4.4 Test Result

Single Mode

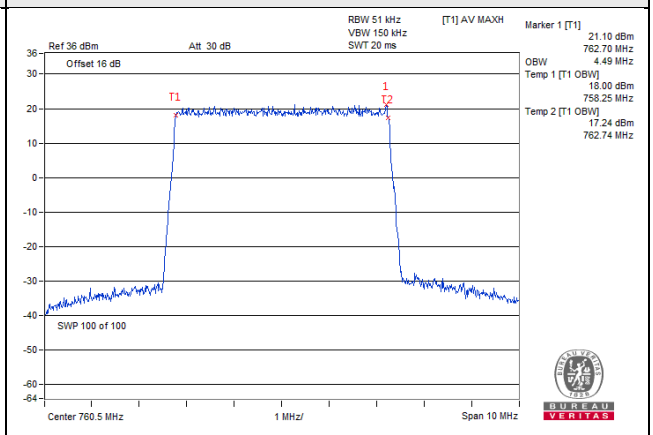
Channel Bandwidth 5MHz									
Occupied Bandwidth (MHz)									
Channel	Frequency (MHz)	QPSK				16QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5305	760.5	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
5330	763.0	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
5355	765.5	4.47	4.49	4.49	4.49	4.47	4.47	4.47	4.47
Channel	Frequency (MHz)	64QAM				256QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5305	760.5	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
5330	763.0	4.49	4.47	4.49	4.49	4.49	4.49	4.49	4.49
5355	765.5	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47

Spectrum Plot of Worst Value

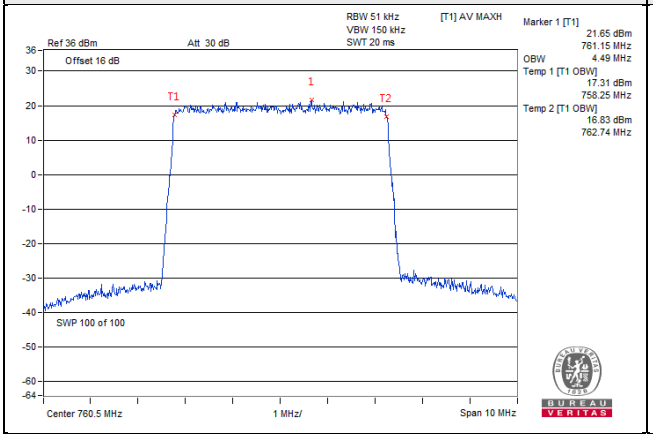
QPSK



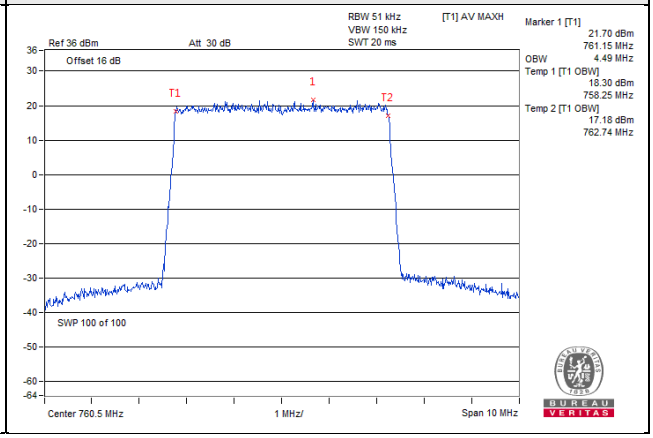
16QAM



64QAM



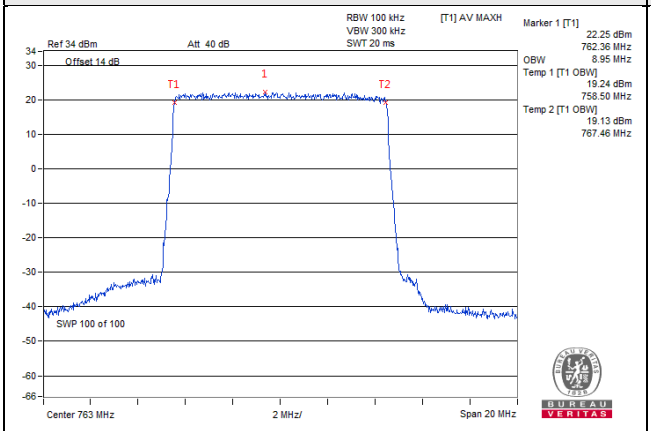
256QAM



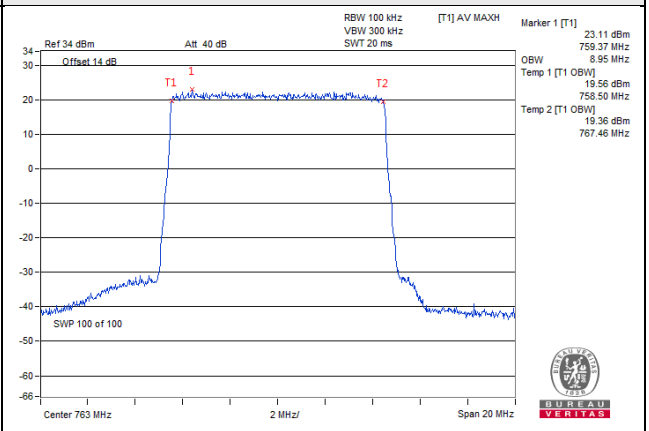
Channel Bandwidth: 10MHz									
Occupied Bandwidth (MHz)									
Channel	Frequency (MHz)	QPSK				16QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5330	763.0	8.95	8.92	8.95	8.95	8.95	8.95	8.95	8.95
Channel	Frequency (MHz)	64QAM				256QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5330	763.0	8.95	8.95	8.95	8.95	8.95	8.95	8.95	8.95

Spectrum Plot of Worst Value

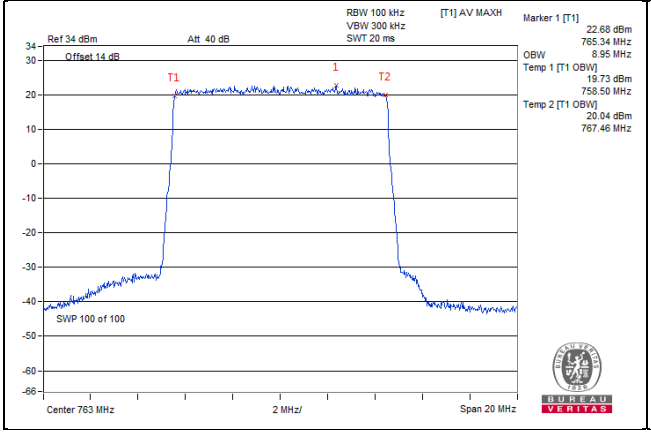
QPSK



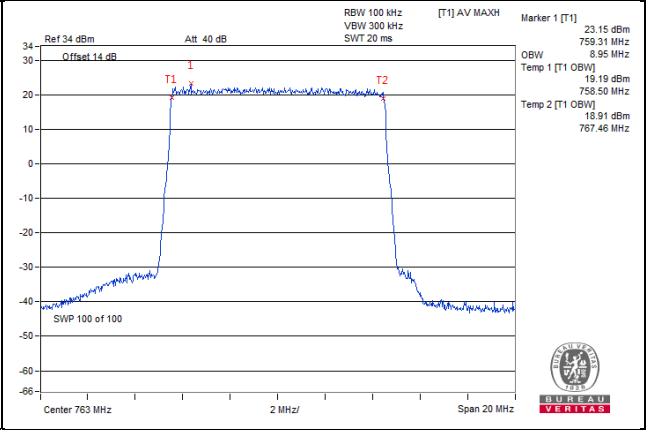
16QAM



64QAM



256QAM

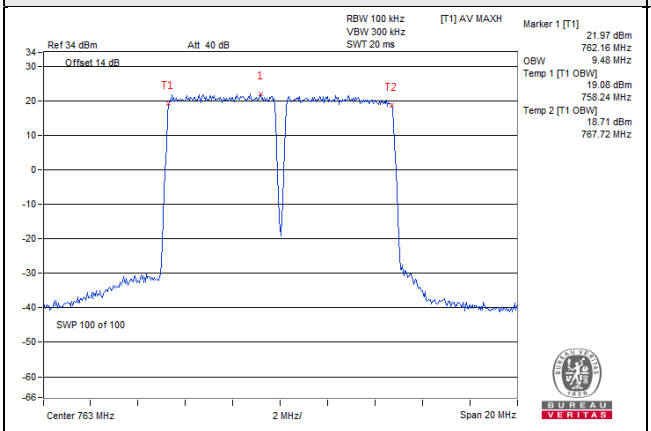


2-Carriers Mode

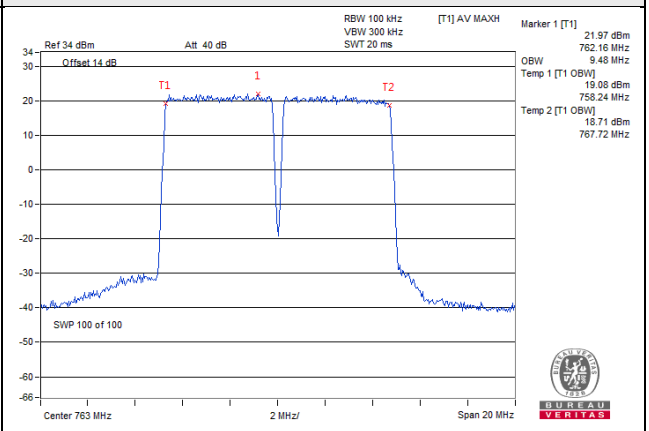
Channel Bandwidth: 5MHz + 5MHz									
Occupied Bandwidth (MHz)									
Channel	Frequency (MHz)	QPSK				16QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5330	763.0	9.48	9.44	9.44	9.44	9.44	9.44	9.48	9.44
Channel	Frequency (MHz)	64QAM				256QAM			
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
5330	763.0	9.44	9.44	9.44	9.44	9.44	9.48	9.44	9.48

Spectrum Plot of Worst Value

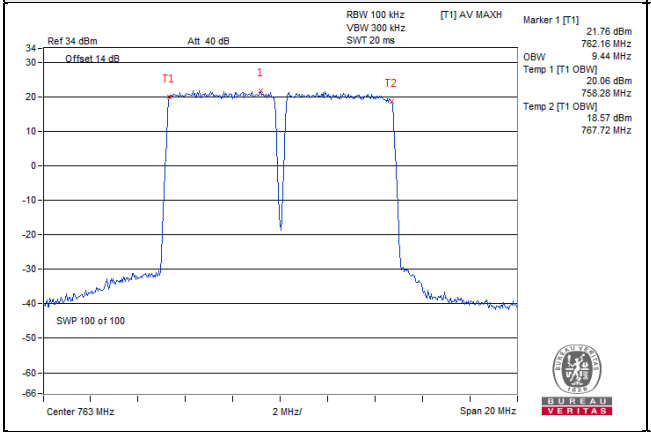
QPSK



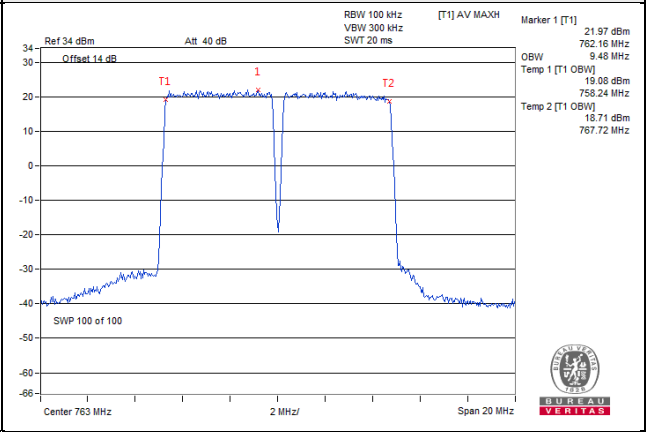
16QAM



64QAM



256QAM



4.5 Emission Mask Measurement

4.5.1 Limits of Emission Mask Measurement

Per 90.210(n), Emission mask shall comply with 90.210(b)

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

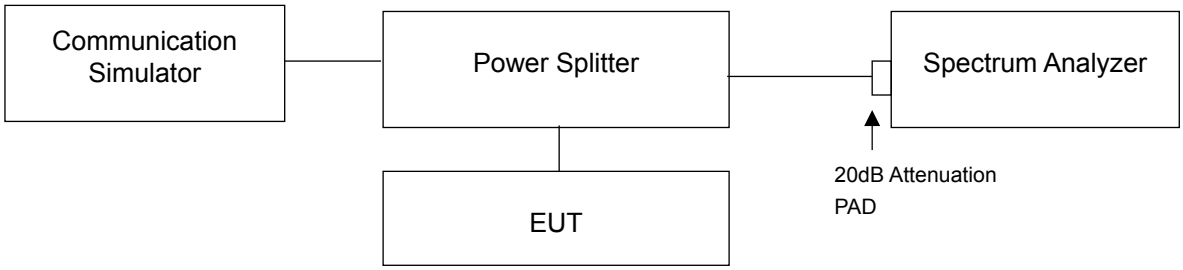
(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB

4.5.2 Test Procedures

a. The measurement used the power splitter via EUT RF power connector between signal generator and spectrum analyzer.

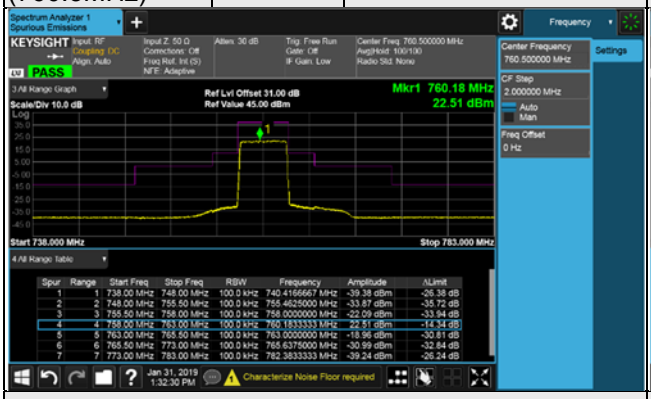
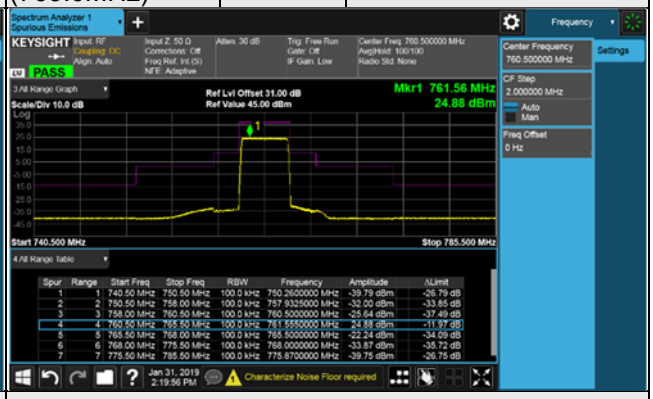
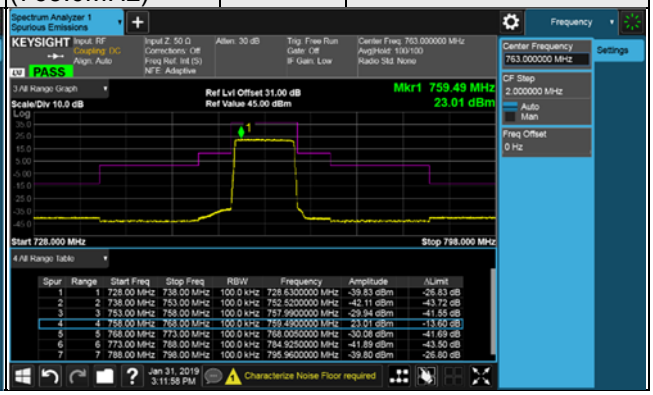
b. Record the test plot.

4.5.3 Test Setup

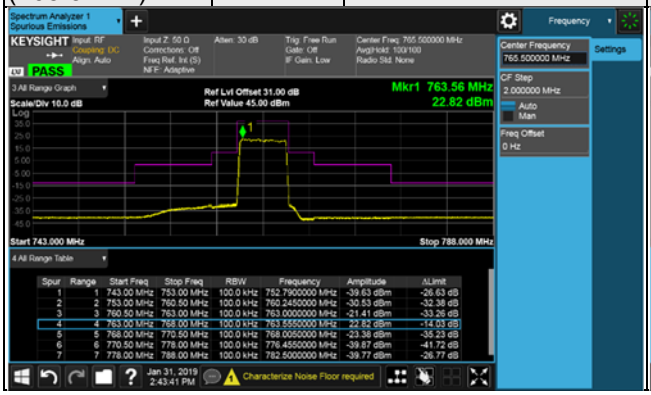
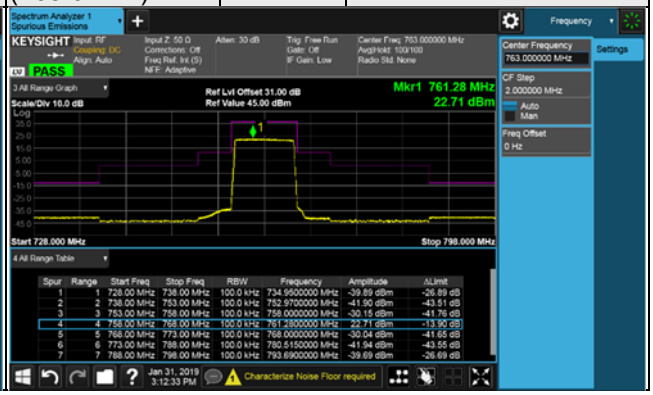


4.5.4 Test Results

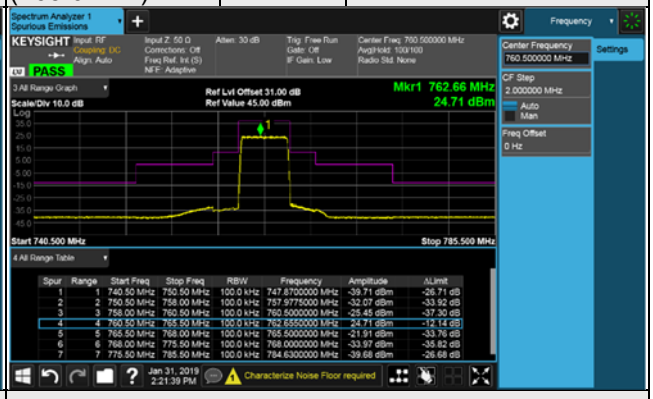
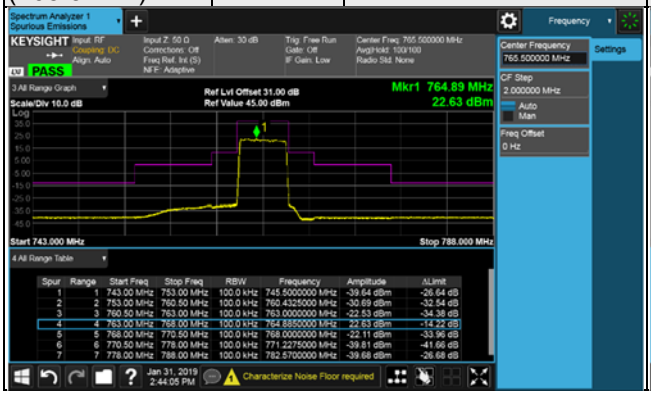
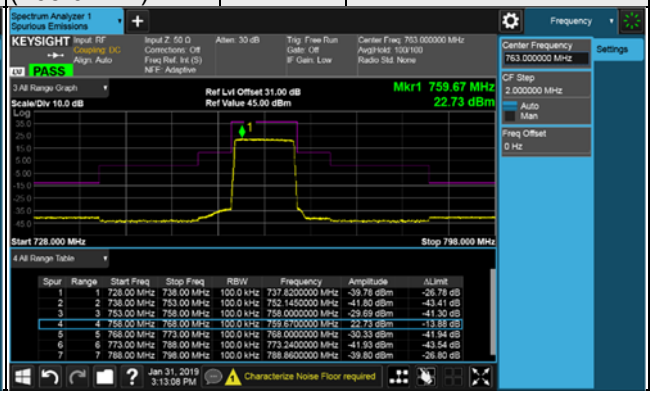
Single Mode (Chain 0)

Channel Bandwidth: 5MHz			Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					
Channel Bandwidth: 5MHz			Channel Bandwidth: 10MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					

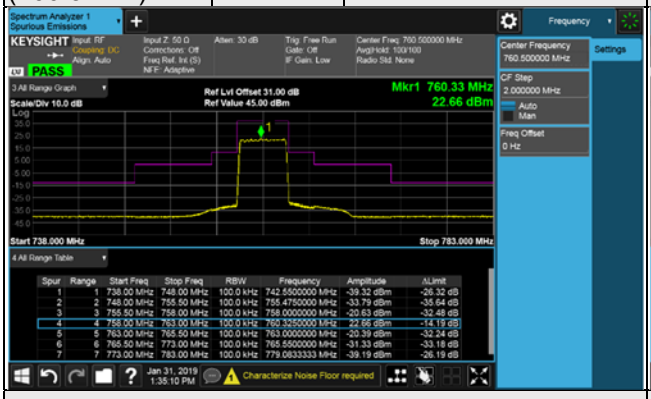
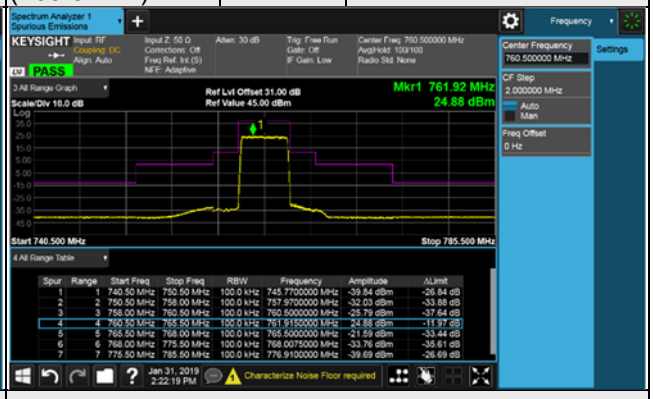
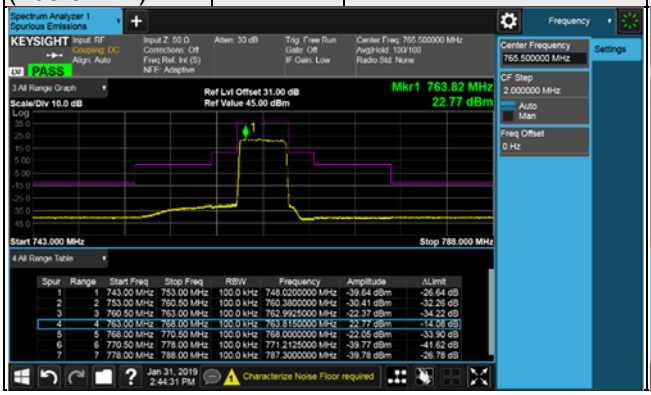
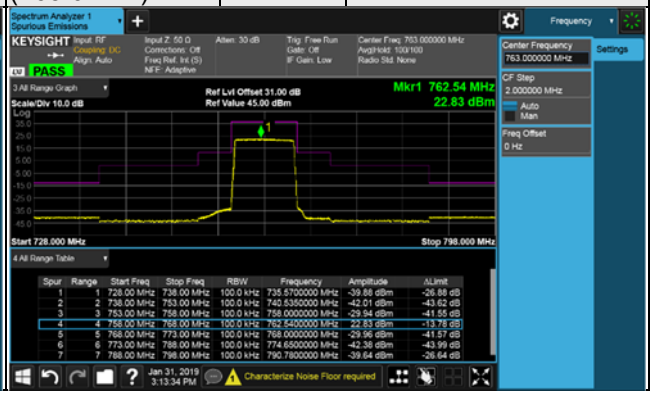
Single Mode (Chain 1)

Channel Bandwidth: 5MHz			Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					
Channel Bandwidth: 5MHz			Channel Bandwidth: 10MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					

Single Mode (Chain 2)

Channel Bandwidth: 5MHz			Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					
Channel Bandwidth: 5MHz			Channel Bandwidth: 10MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					

Single Mode (Chain 3)

Channel Bandwidth: 5MHz			Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					
Channel Bandwidth: 5MHz			Channel Bandwidth: 10MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB	Channel 5330 (763.0MHz)	QPSK	Full RB
					

2-Carriers Mode (Chain 0)

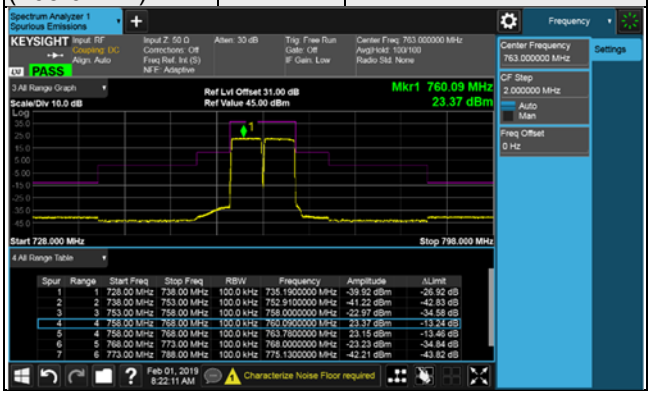
Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB

2-Carriers Mode (Chain 1)

Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB

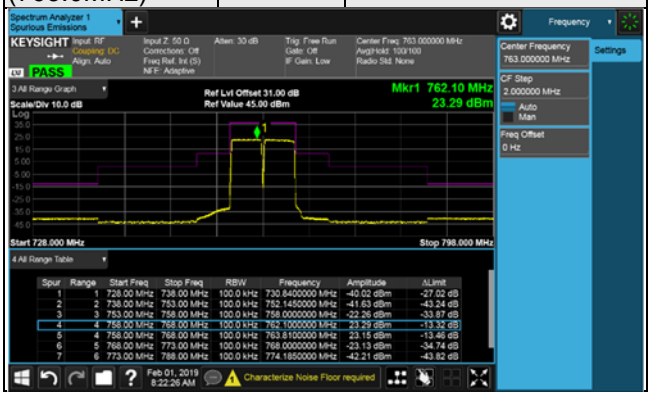
2-Carriers Mode (Chain 2)

Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



2-Carriers Mode (Chain 3)

Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



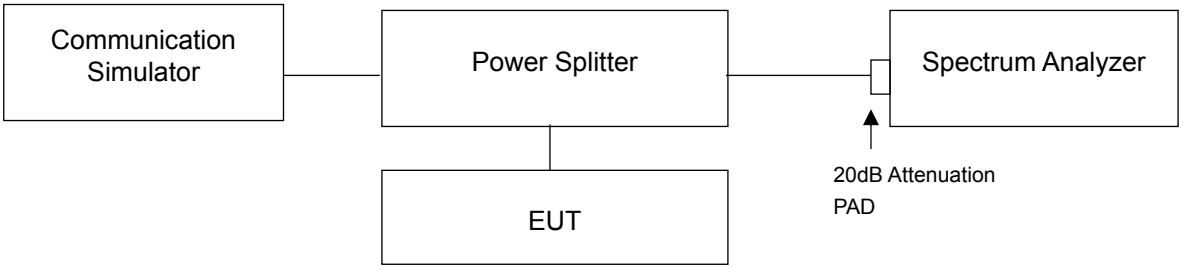
4.6 Band Edge Measurement

4.6.1 Limits of Band Edge Measurement

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

4.6.2 Test Setup



4.6.3 Test Procedures

a. All measurements were done at low, middle and high operational frequency range.

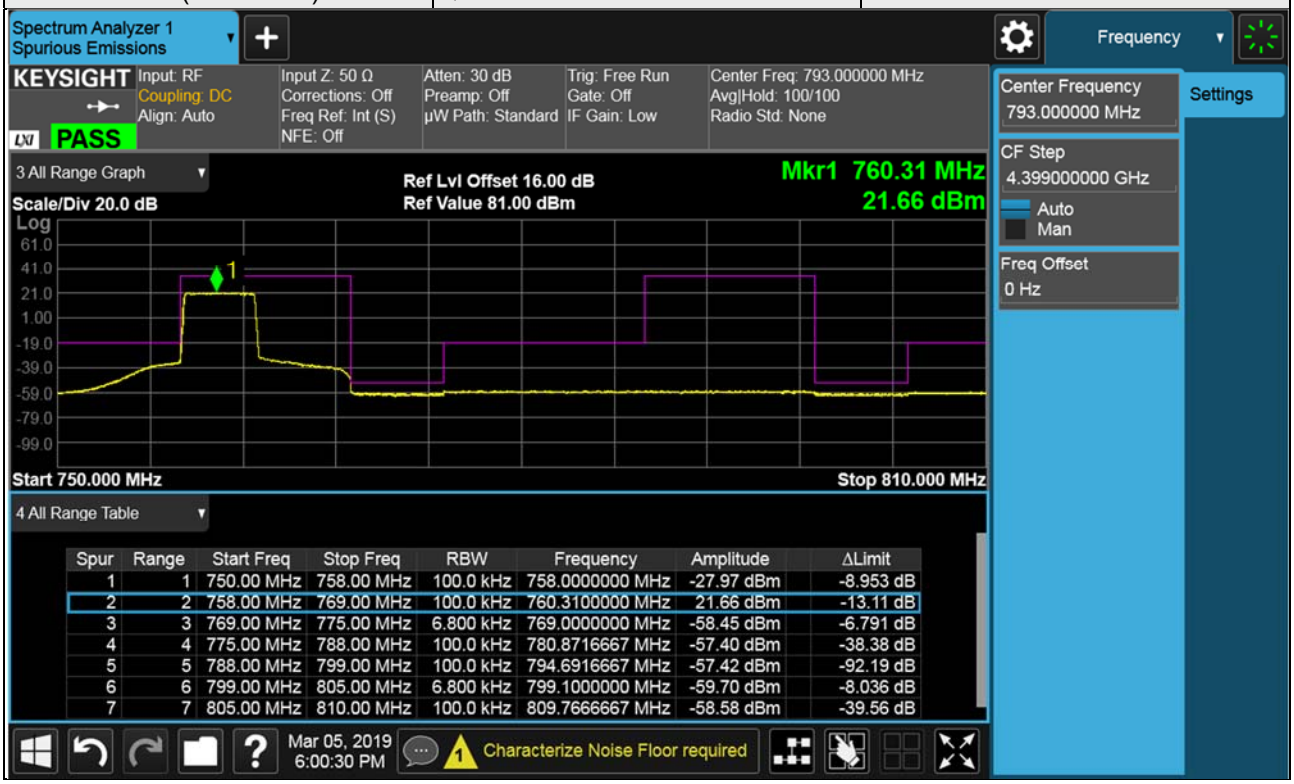
b. The band edge measurement used the power splitter via EUT RF power connector between signal generator and spectrum analyzer. This splitter loss, attenuator loss and cable loss are the worst loss 21 dB in the transmitted path track.

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

4.6.4 Test Results

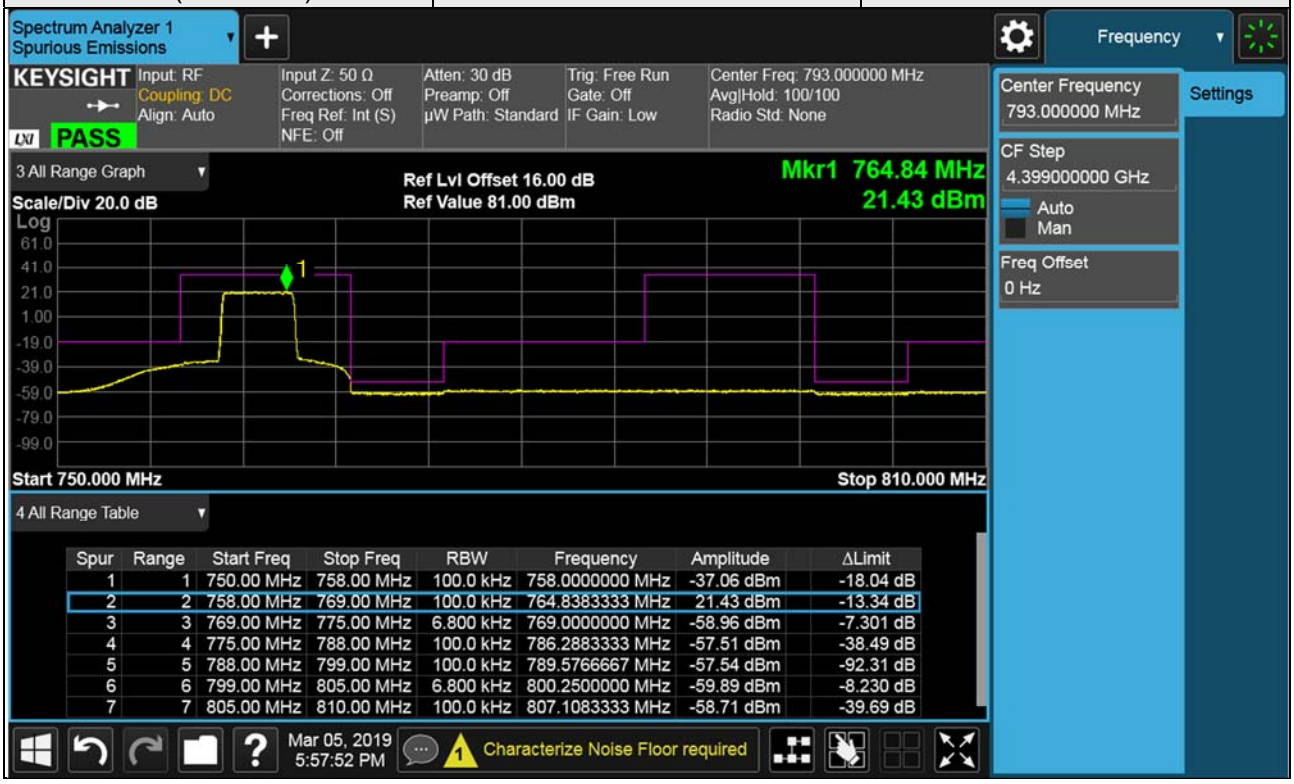
Single Mode (Chain 0)

Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB



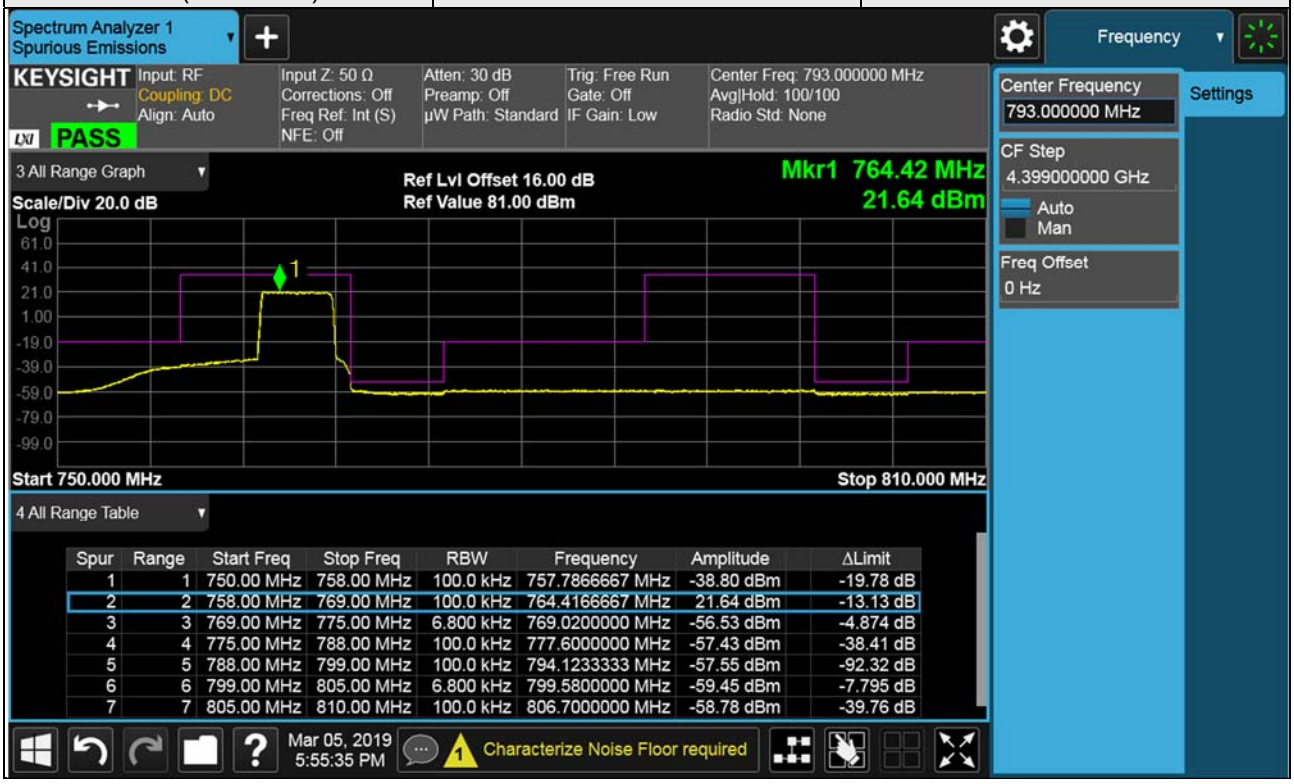
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-27.97	-19.02	-8.95
769-775	-58.45	-51.65	-6.80
775-788	-57.40	-19.02	-38.38
799-805	-59.70	-51.65	-8.05
805-810	-58.58	-19.02	-39.56

Channel Bandwidth: 5MHz		
Channel 5330(763.0MHz)	QPSK	Full RB



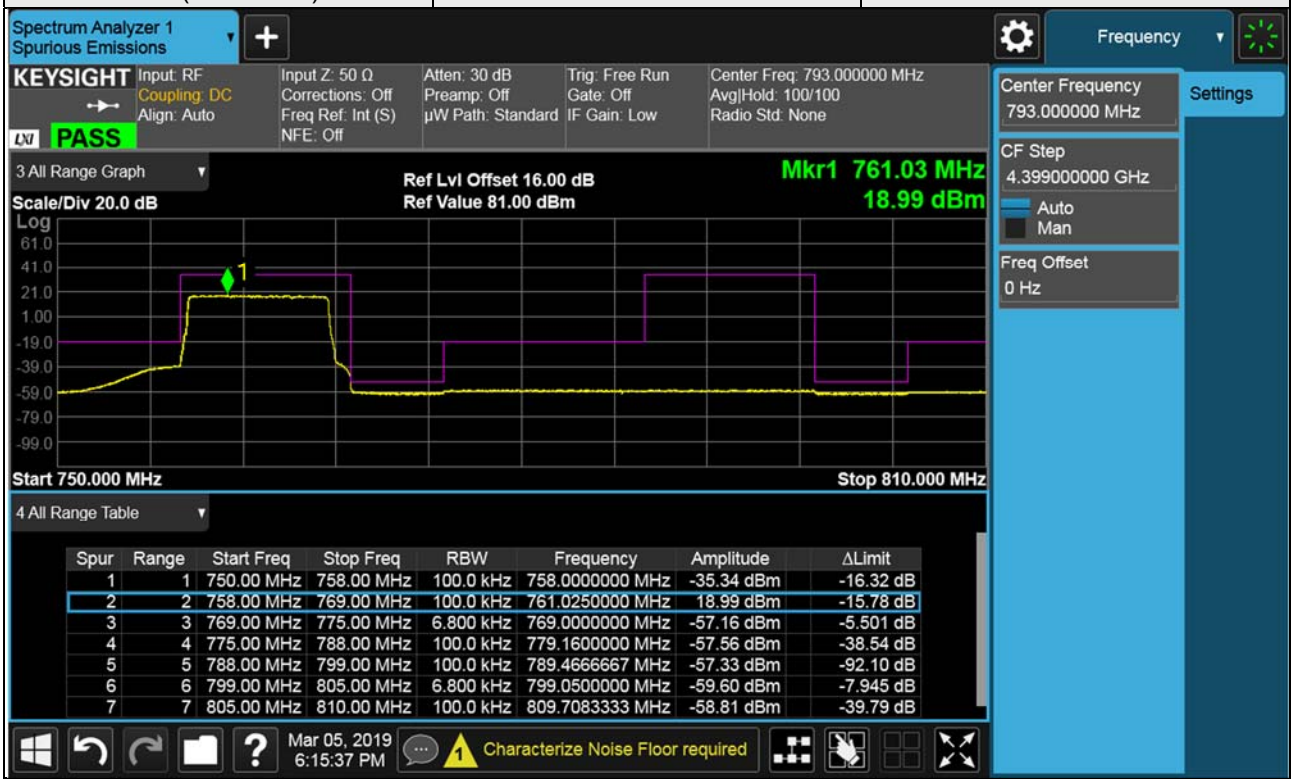
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-37.06	-19.02	-18.04
769-775	-58.96	-51.65	-7.31
775-788	-57.51	-19.02	-38.49
799-805	-59.89	-51.65	-8.24
805-810	-58.71	-19.02	-39.69

Channel Bandwidth: 5MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-38.80	-19.02	-19.78
769-775	-56.53	-51.65	-4.88
775-788	-57.43	-19.02	-38.41
799-805	-59.45	-51.65	-7.80
805-810	-58.78	-19.02	-39.76

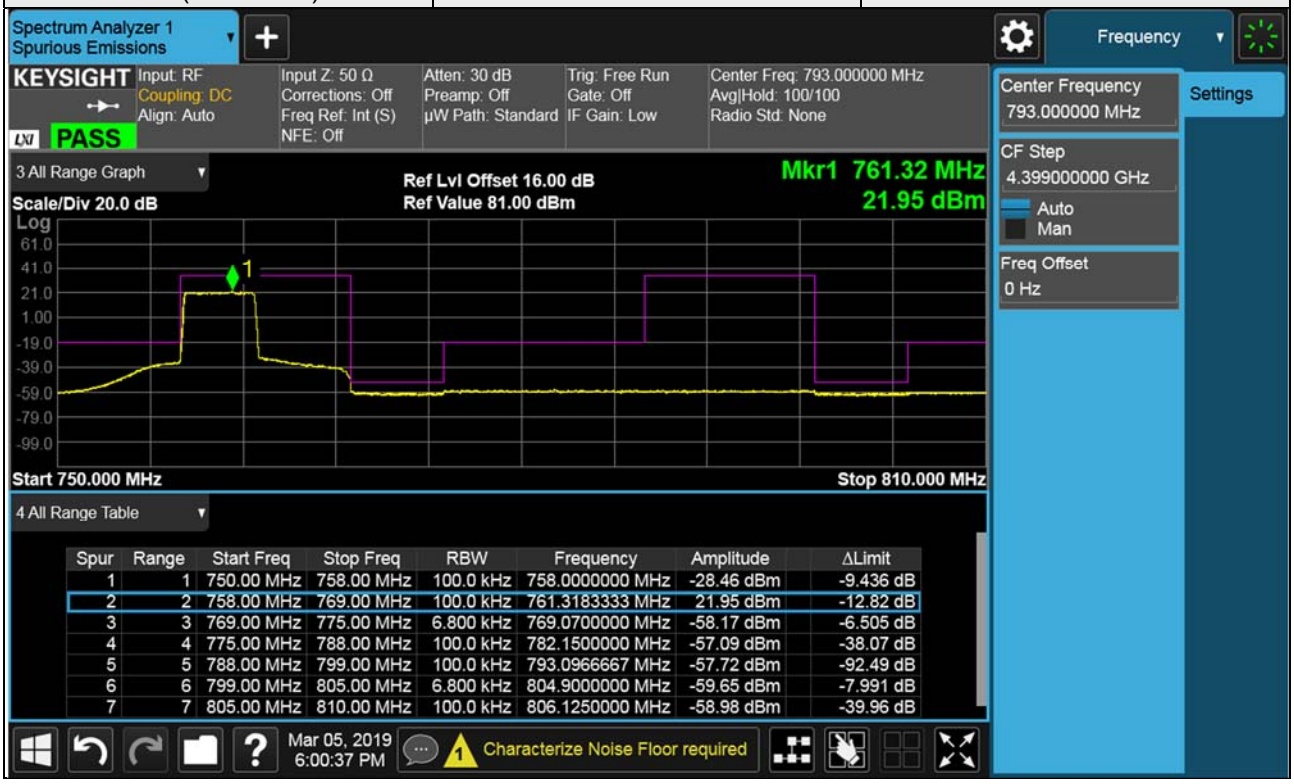
Channel Bandwidth: 10MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-35.34	-19.02	-16.32
769-775	-57.16	-51.65	-5.51
775-788	-57.56	-19.02	-38.54
799-805	-59.60	-51.65	-7.95
805-810	-58.81	-19.02	-39.79

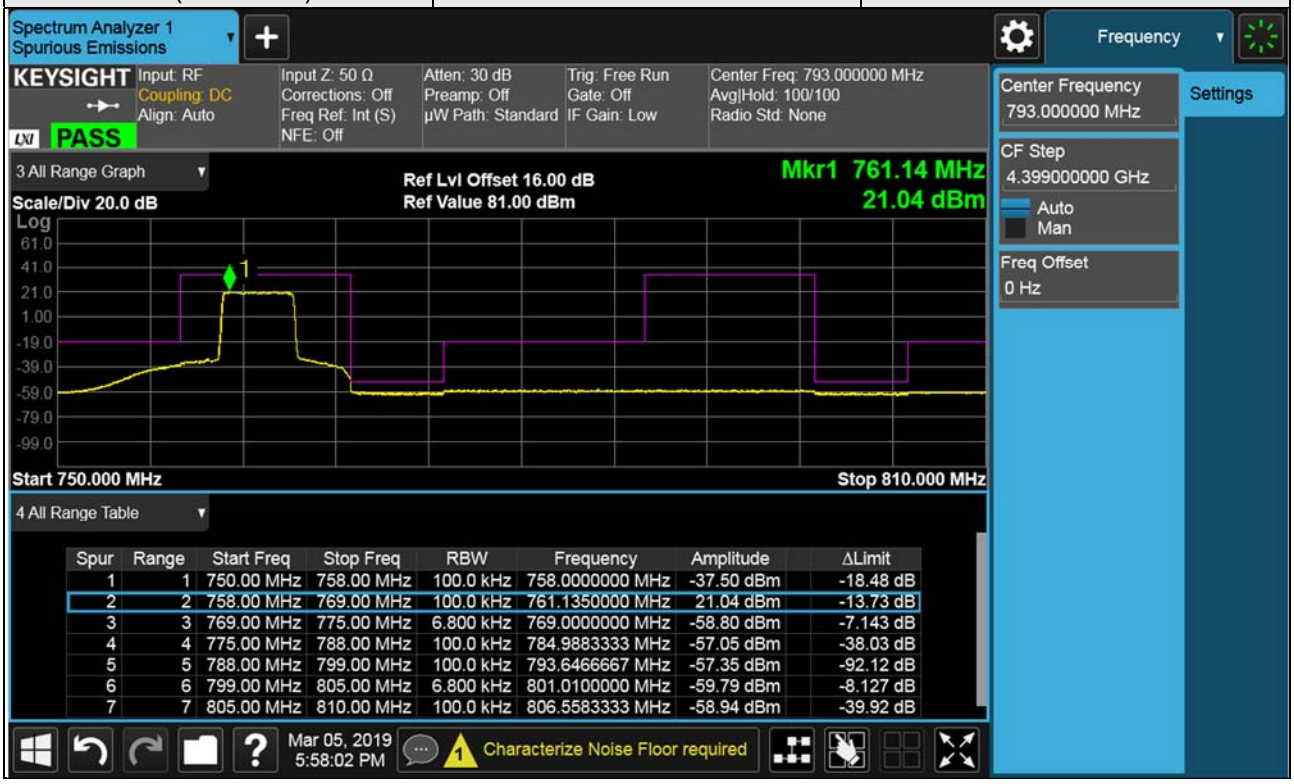
Single Mode (Chain 1)

Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB



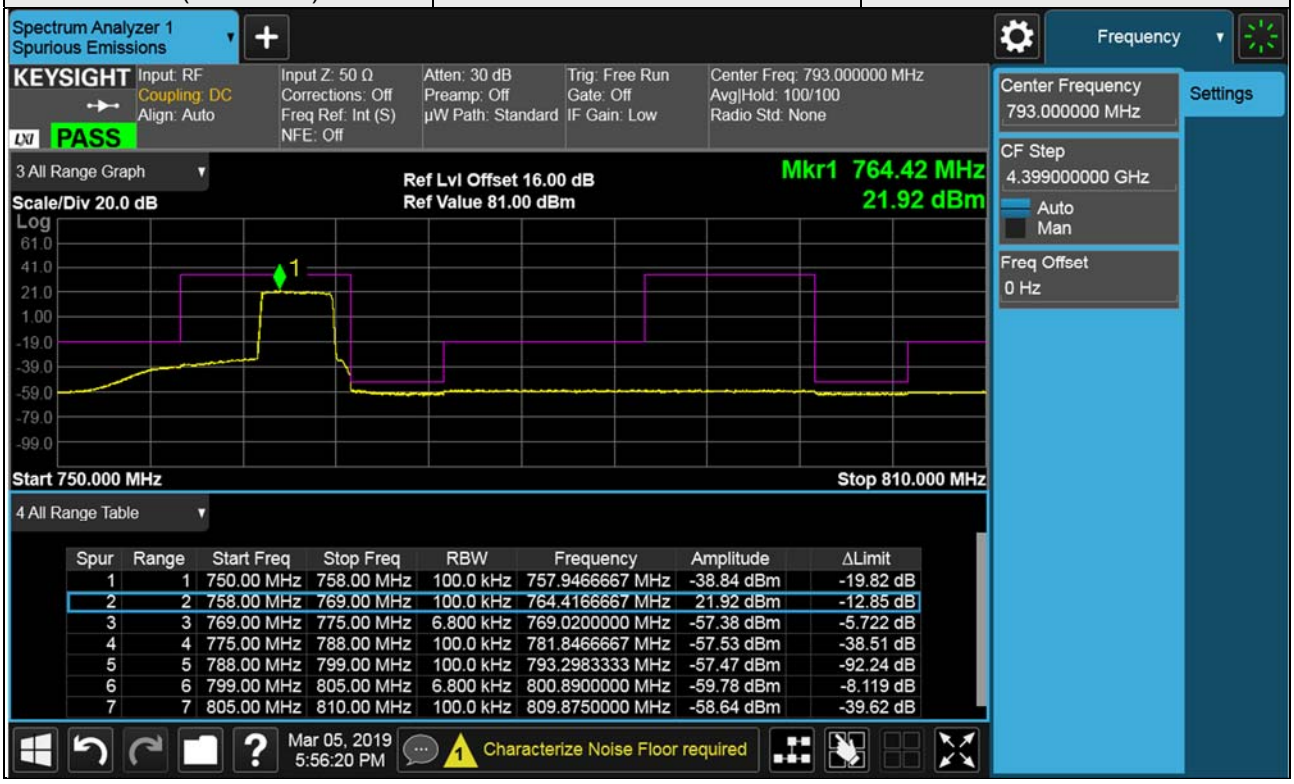
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-28.46	-19.02	-9.44
769-775	-58.17	-51.65	-6.52
775-788	-57.09	-19.02	-38.07
799-805	-59.65	-51.65	-8.00
805-810	-58.98	-19.02	-39.96

Channel Bandwidth: 5MHz		
Channel 5330(763.0MHz)	QPSK	Full RB



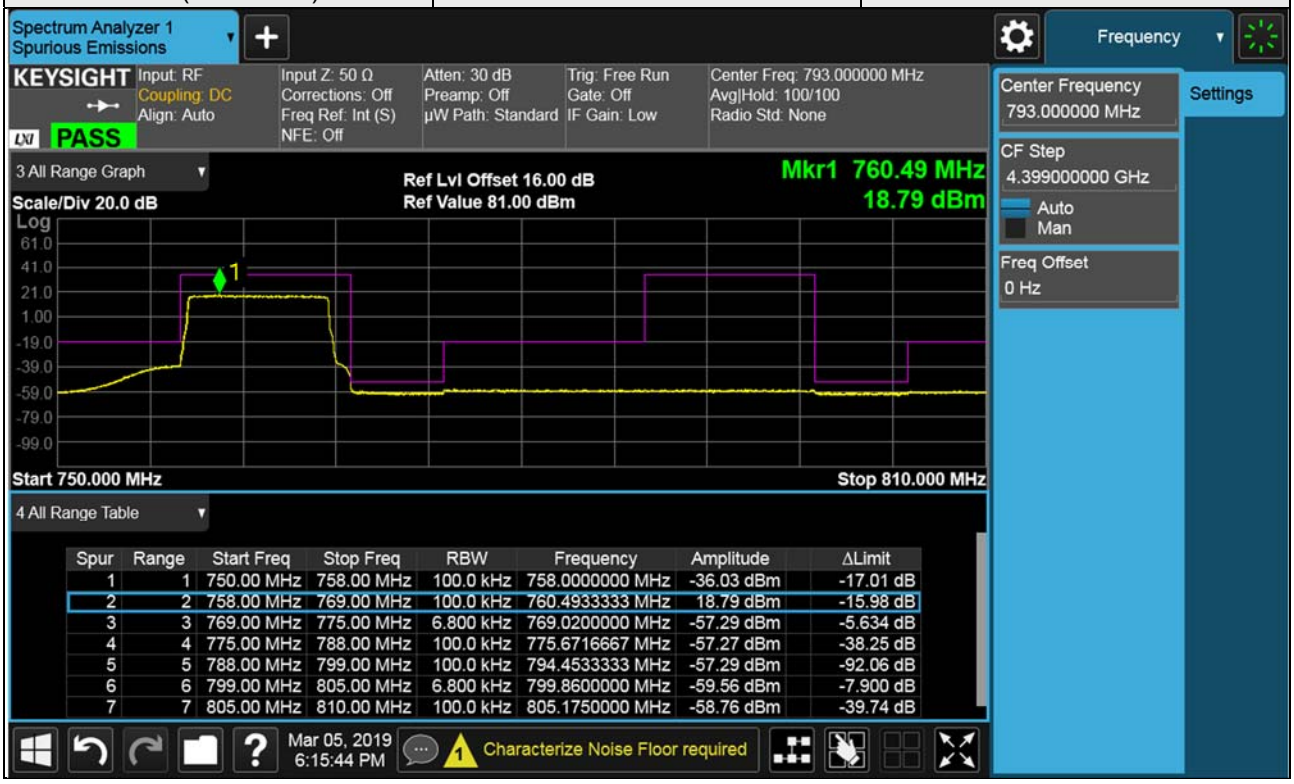
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-37.50	-19.02	-18.48
769-775	-58.80	-51.65	-7.15
775-788	-57.05	-19.02	-38.03
799-805	-59.79	-51.65	-8.14
805-810	-58.94	-19.02	-39.92

Channel Bandwidth: 5MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-38.84	-19.02	-19.82
769-775	-57.38	-51.65	-5.73
775-788	-57.53	-19.02	-38.51
799-805	-59.78	-51.65	-8.13
805-810	-58.64	-19.02	-39.62

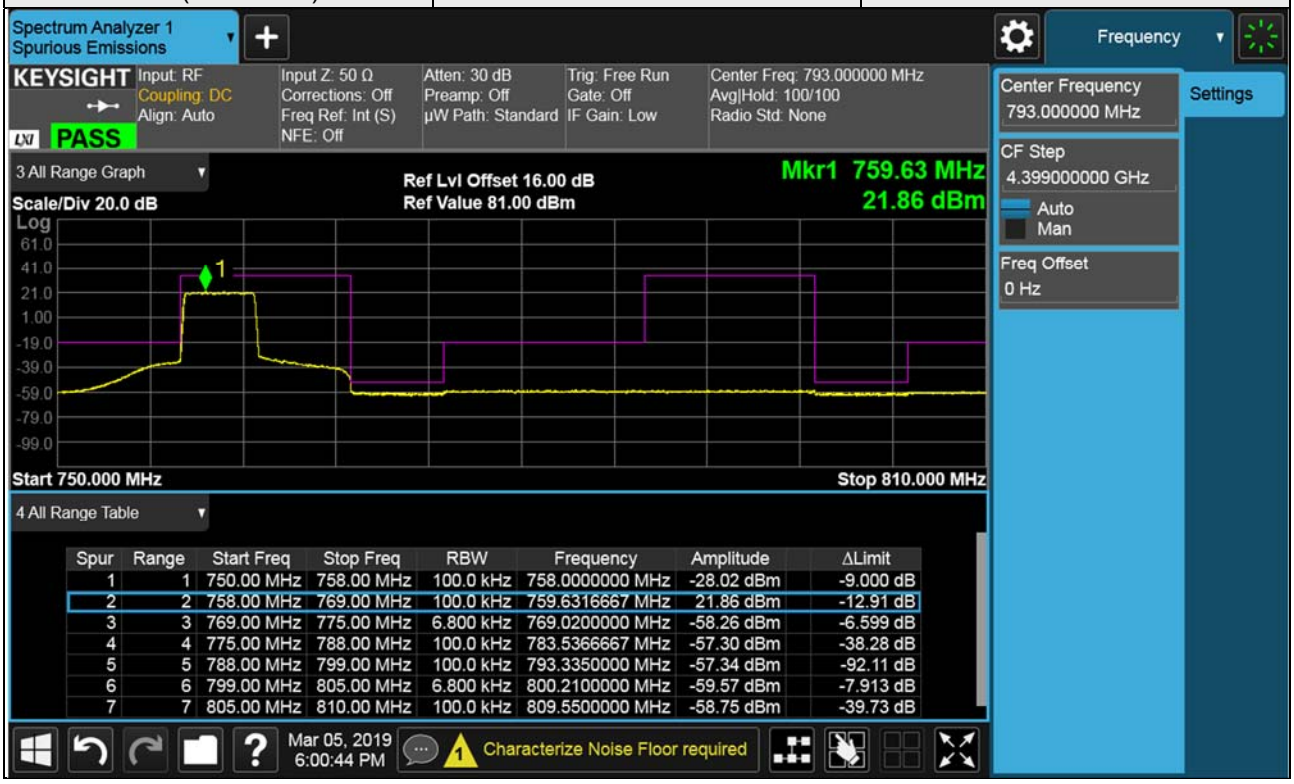
Channel Bandwidth: 10MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-36.03	-19.02	-17.01
769-775	-57.29	-51.65	-5.64
775-788	-57.27	-19.02	-38.25
799-805	-59.56	-51.65	-7.91
805-810	-58.76	-19.02	-39.74

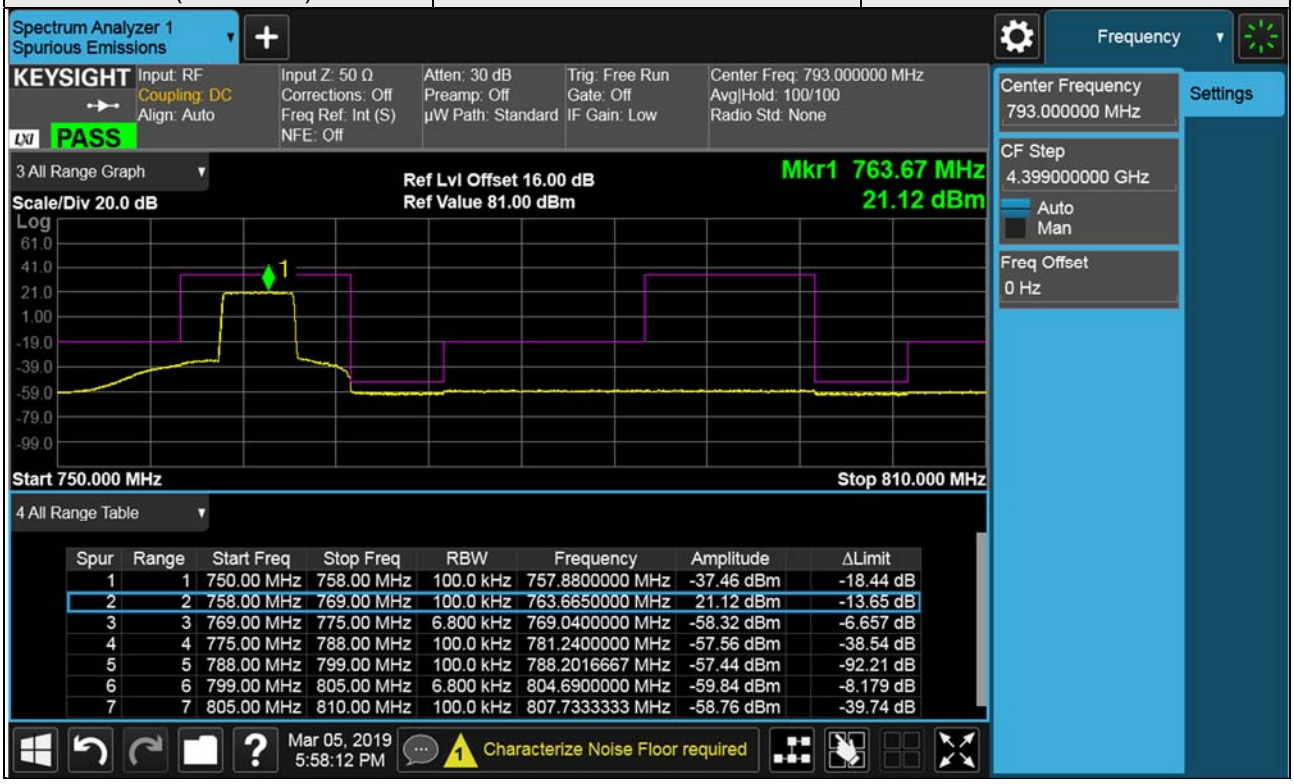
Single Mode (Chain 2)

Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB



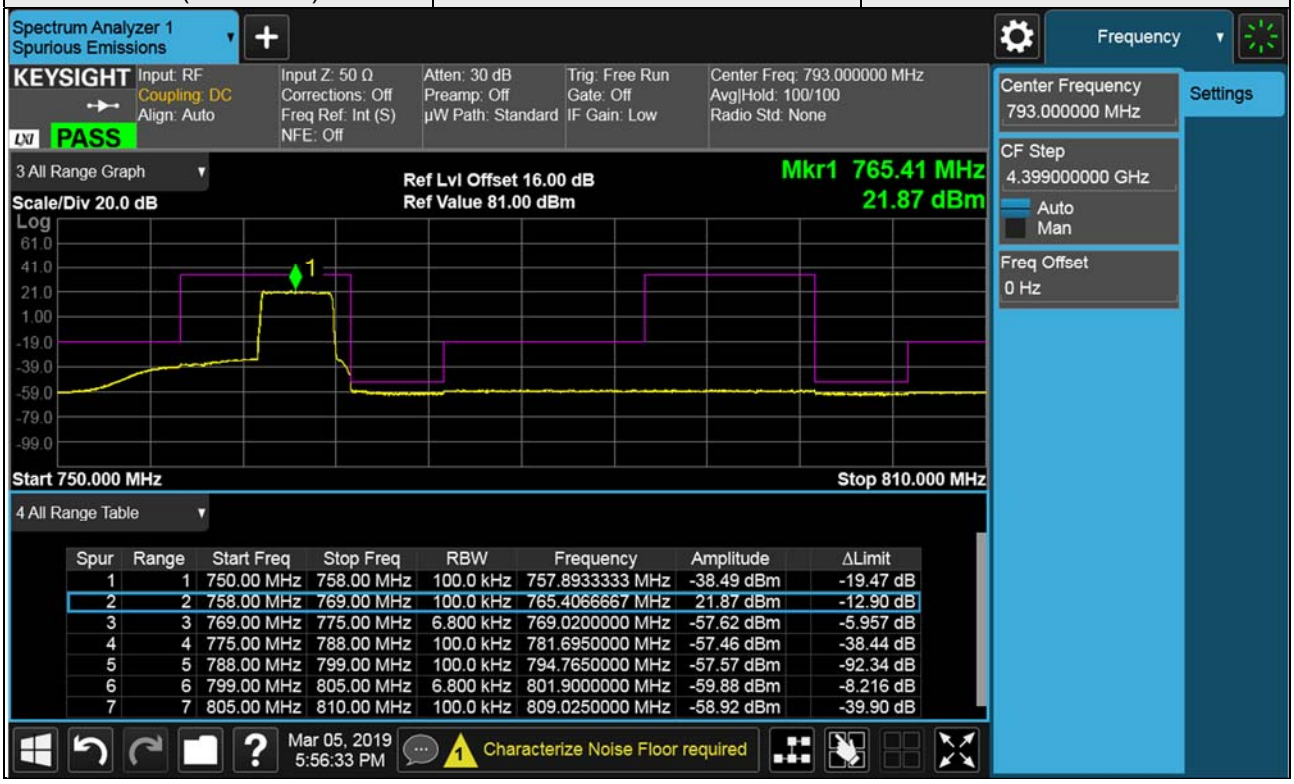
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-28.02	-19.02	-9.00
769-775	-58.26	-51.65	-6.61
775-788	-57.30	-19.02	-38.28
799-805	-59.57	-51.65	-7.92
805-810	-58.75	-19.02	-39.73

Channel Bandwidth: 5MHz		
Channel 5330(763.0MHz)	QPSK	Full RB



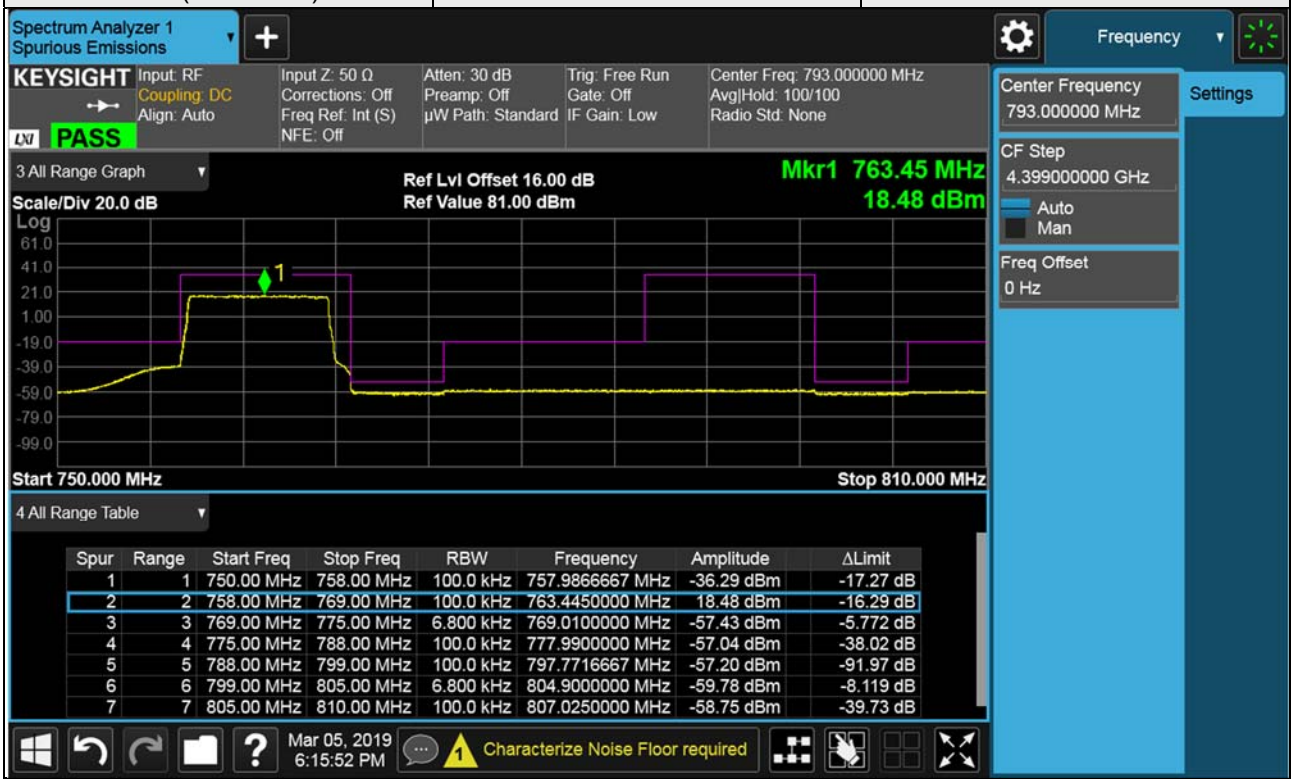
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-37.46	-19.02	-18.44
769-775	-58.32	-51.65	-6.67
775-788	-57.56	-19.02	-38.54
799-805	-59.84	-51.65	-8.19
805-810	-58.76	-19.02	-39.74

Channel Bandwidth: 5MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-38.49	-19.02	-19.47
769-775	-57.62	-51.65	-5.97
775-788	-57.46	-19.02	-38.44
799-805	-59.88	-51.65	-8.23
805-810	-58.92	-19.02	-39.90

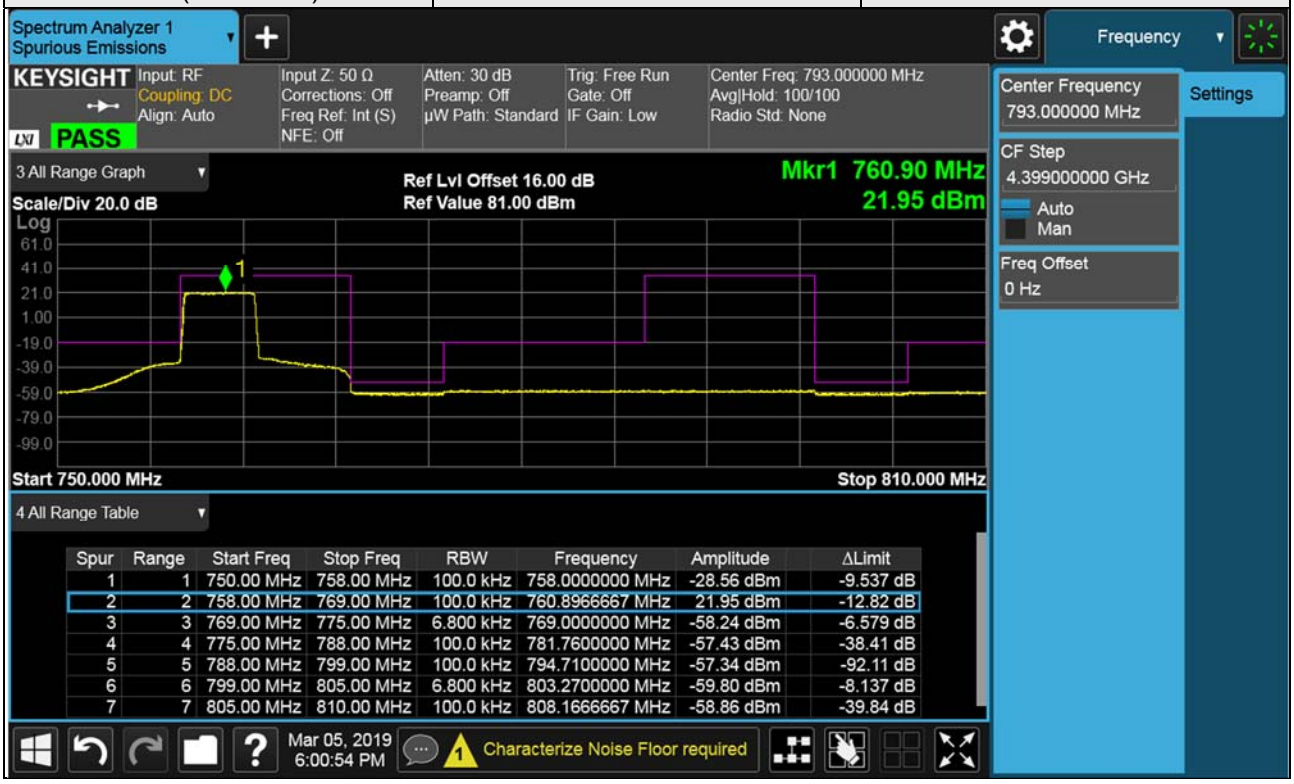
Channel Bandwidth: 10MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-36.29	-19.02	-17.27
769-775	-57.43	-51.65	-5.78
775-788	-57.04	-19.02	-38.02
799-805	-59.78	-51.65	-8.13
805-810	-58.75	-19.02	-39.73

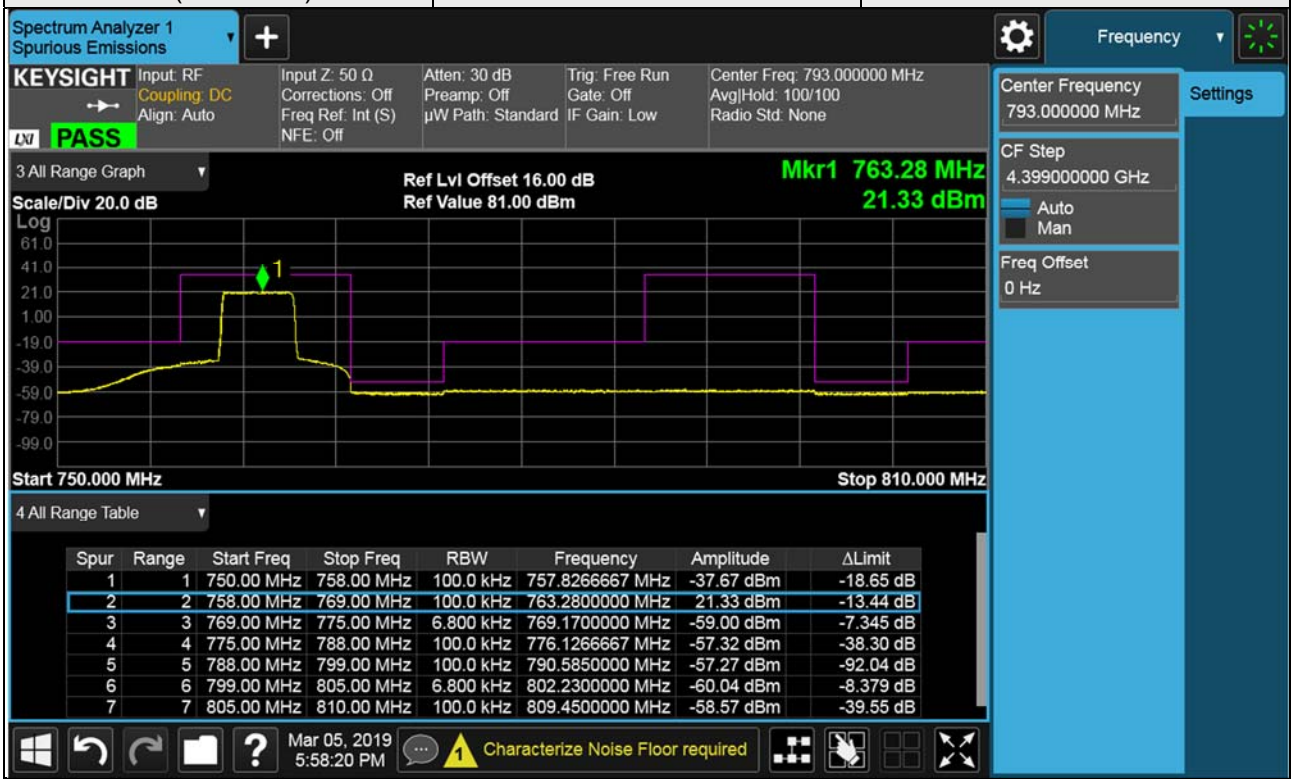
Single Mode (Chain 3)

Channel Bandwidth: 5MHz		
Channel 5305 (760.5MHz)	QPSK	Full RB



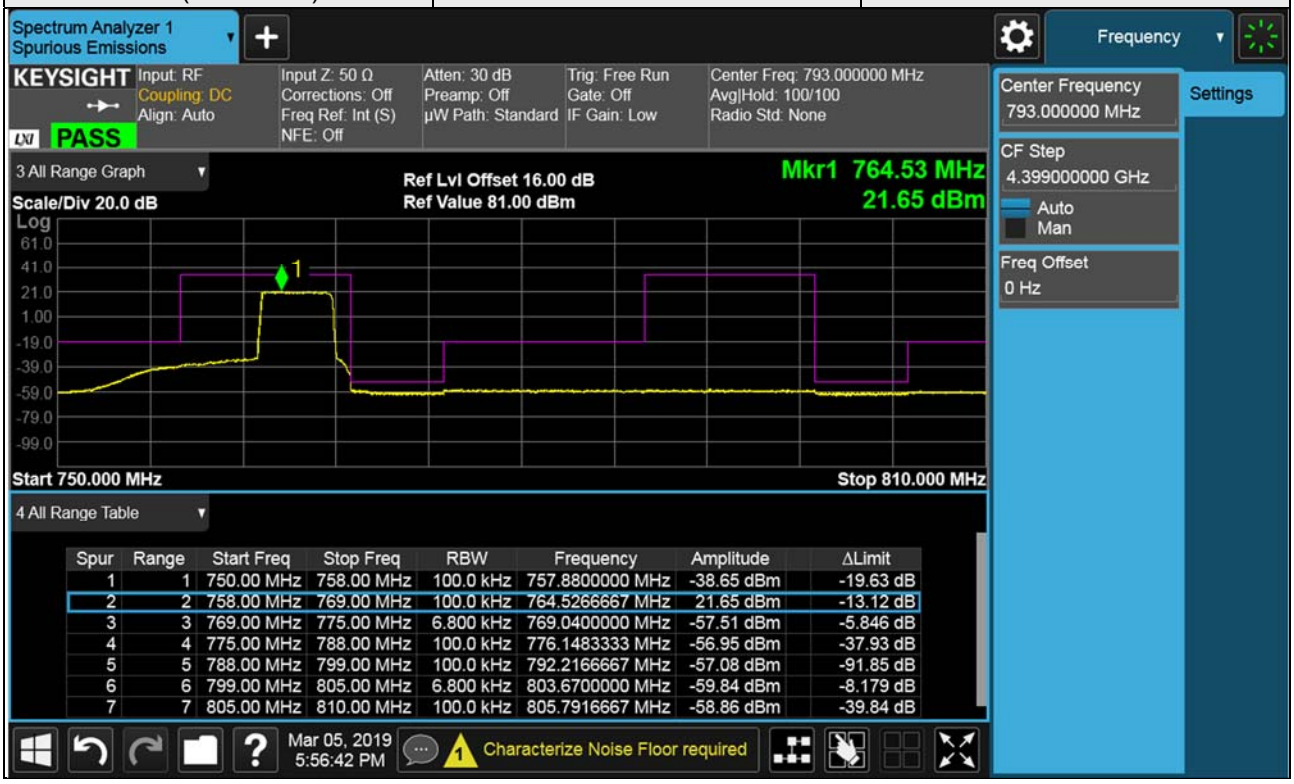
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-28.56	-19.02	-9.54
769-775	-58.24	-51.65	-6.59
775-788	-57.43	-19.02	-38.41
799-805	-59.80	-51.65	-8.15
805-810	-58.86	-19.02	-39.84

Channel Bandwidth: 5MHz		
Channel 5330(763.0MHz)	QPSK	Full RB



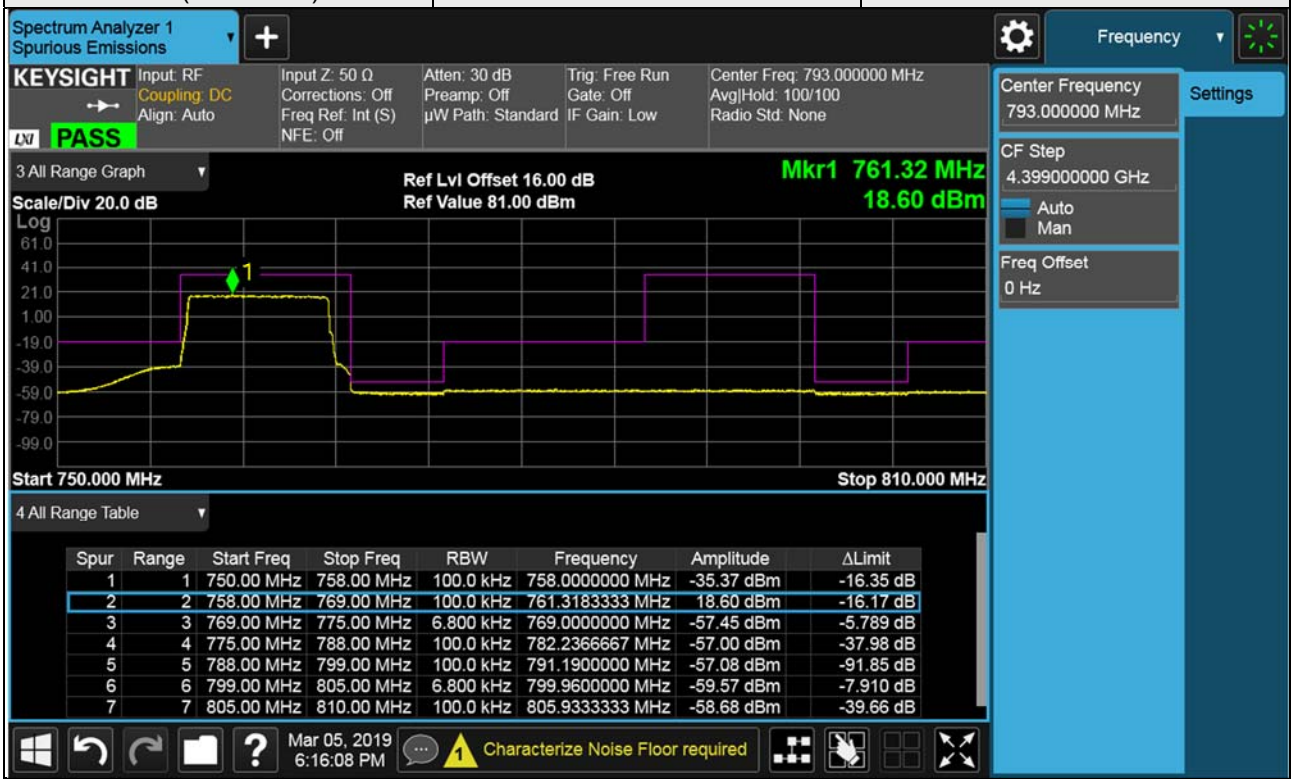
Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-37.67	-19.02	-18.65
769-775	-59.00	-51.65	-7.35
775-788	-57.32	-19.02	-38.30
799-805	-60.04	-51.65	-8.39
805-810	-58.57	-19.02	-39.55

Channel Bandwidth: 5MHz		
Channel 5355 (765.5MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-38.65	-19.02	-19.63
769-775	-57.51	-51.65	-5.86
775-788	-56.95	-19.02	-37.93
799-805	-59.84	-51.65	-8.19
805-810	-58.86	-19.02	-39.84

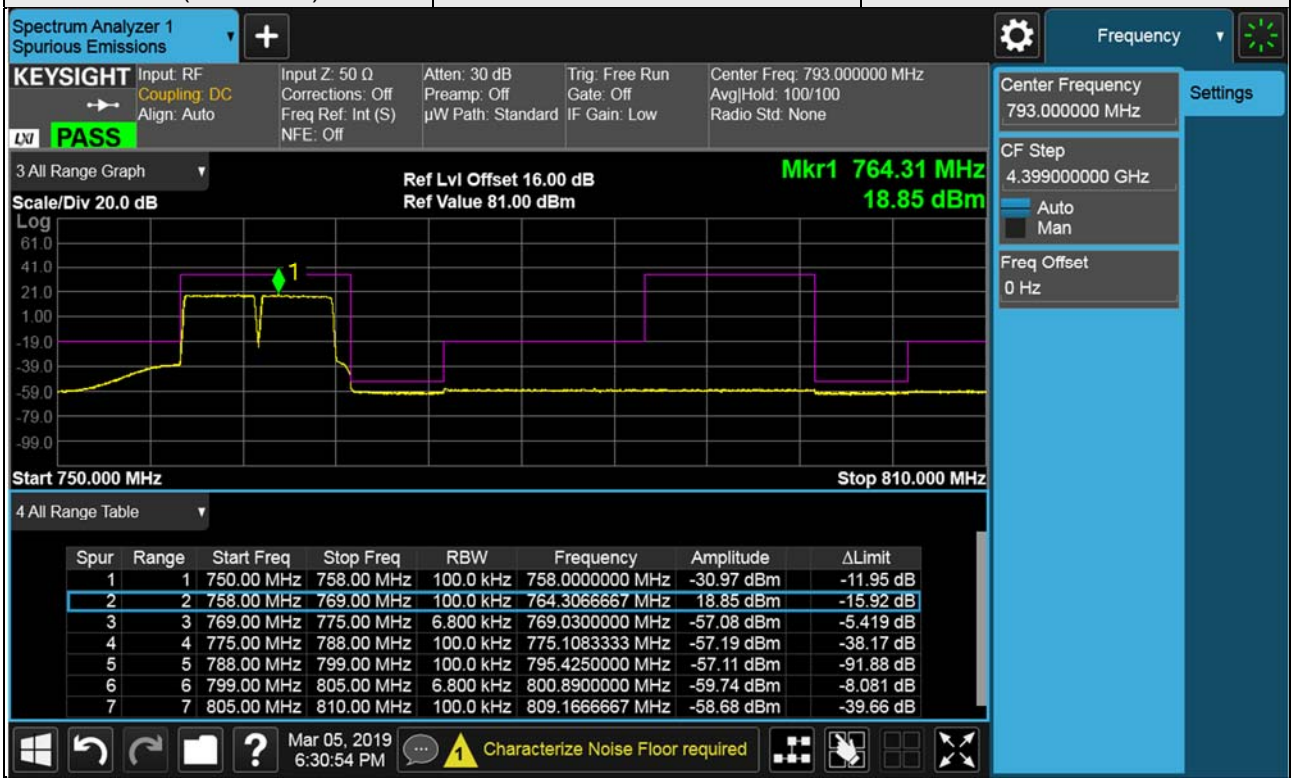
Channel Bandwidth: 10MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-35.57	-19.02	-16.55
769-775	-57.45	-51.65	-5.80
775-788	-57.00	-19.02	-37.98
799-805	-59.57	-51.65	-7.92
805-810	-58.68	-19.02	-39.66

2-Carriers Mode (Chain 0)

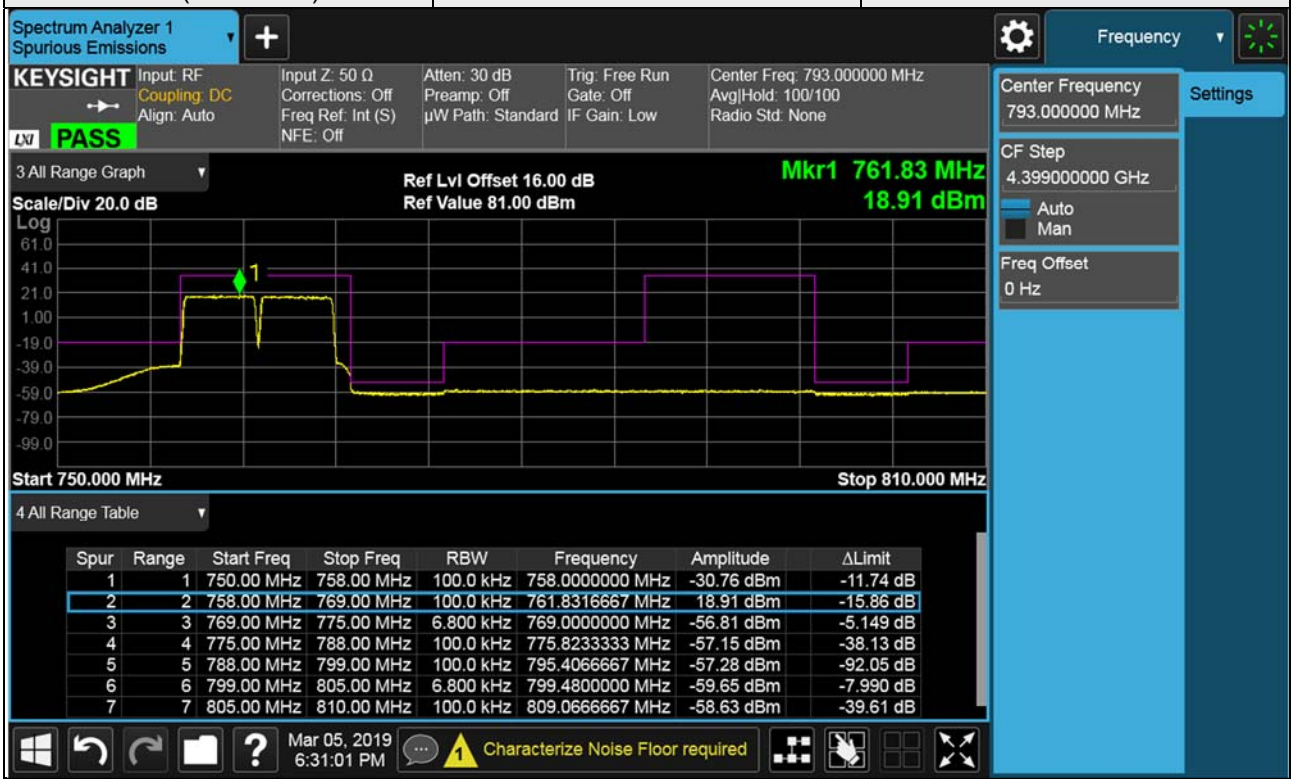
Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-30.97	-19.02	-11.95
769-775	-57.08	-51.65	-5.43
775-788	-57.19	-19.02	-38.17
799-805	-59.74	-51.65	-8.09
805-810	-58.68	-19.02	-39.66

2-Carriers Mode (Chain 1)

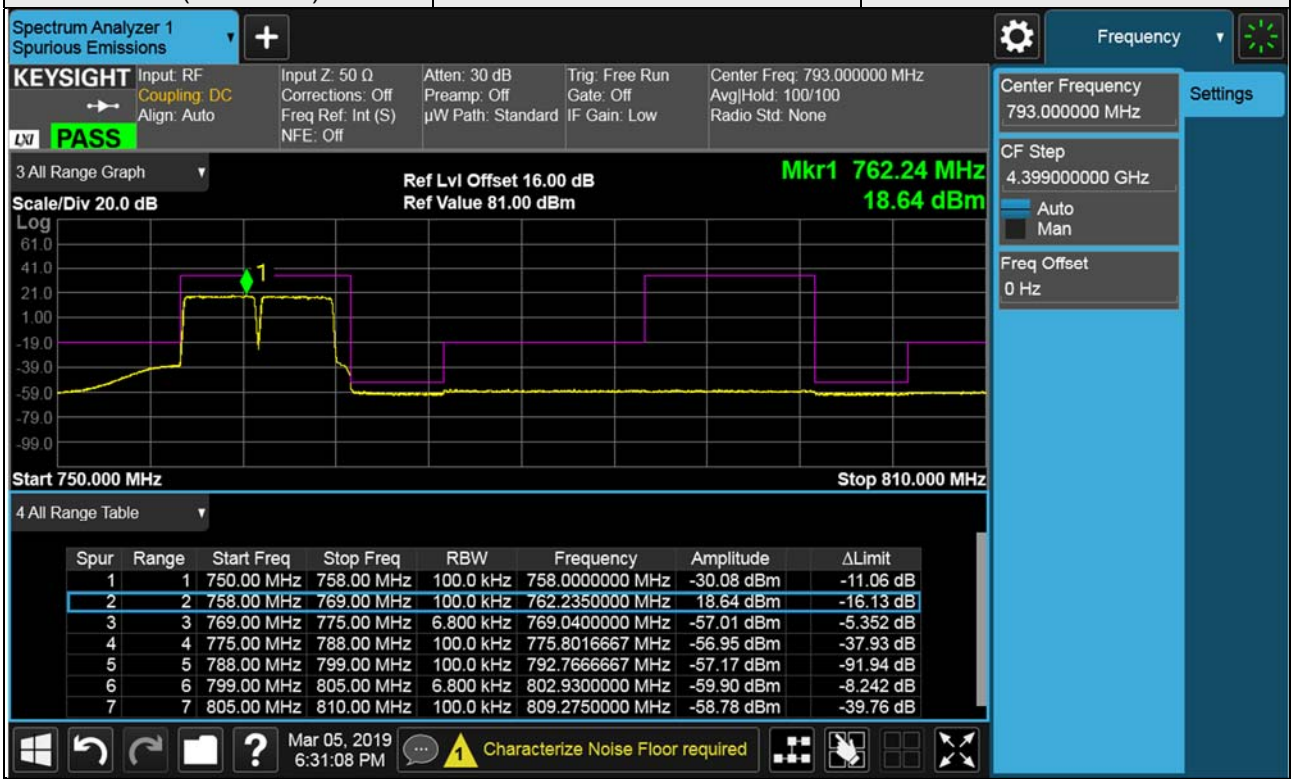
Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-30.76	-19.02	-11.74
769-775	-56.81	-51.65	-5.16
775-788	-57.15	-19.02	-38.13
799-805	-59.65	-51.65	-8.00
805-810	-58.63	-19.02	-39.61

2-Carriers Mode (Chain 2)

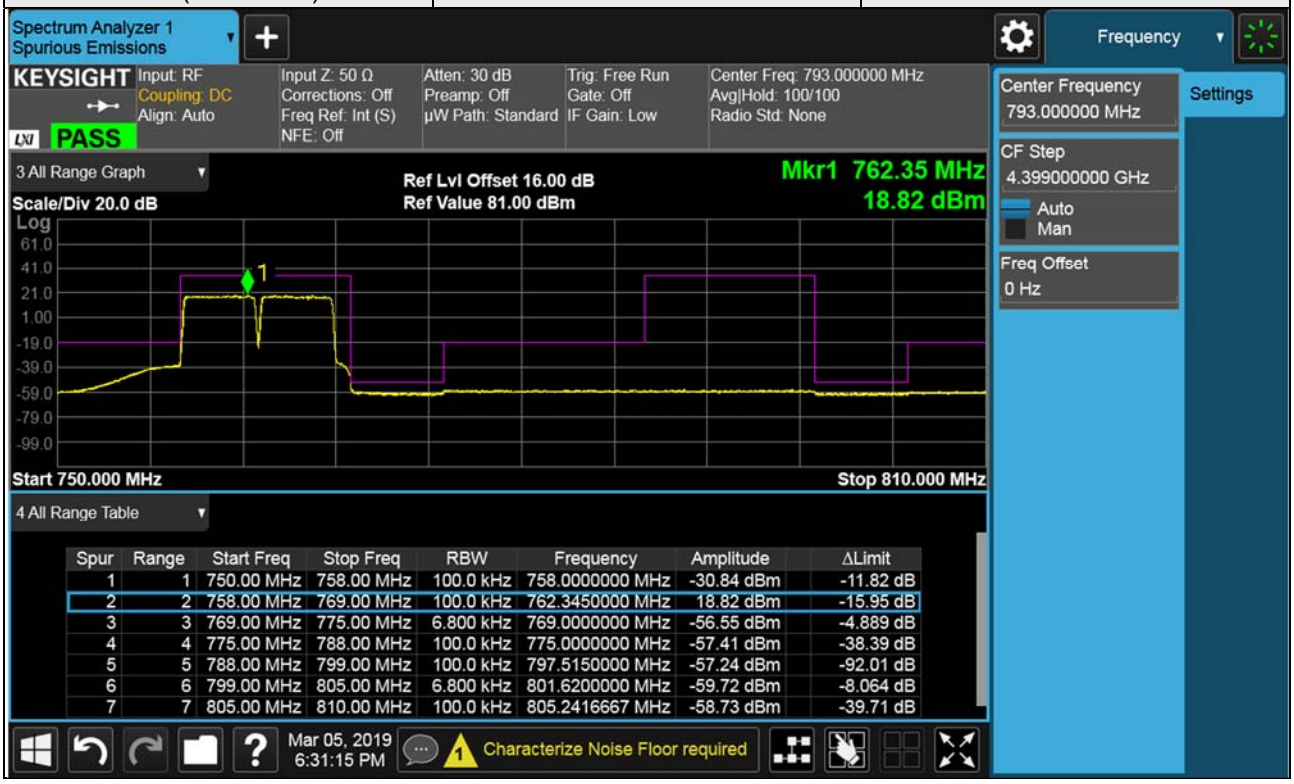
Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-30.08	-19.02	-11.06
769-775	-57.01	-51.65	-5.36
775-788	-56.95	-19.02	-37.93
799-805	-59.90	-51.65	-8.25
805-810	-58.78	-19.02	-39.76

2-Carriers Mode (Chain 3)

Channel Bandwidth: 5MHz + 5MHz		
Channel 5330 (763.0MHz)	QPSK	Full RB



Frequency (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dBm)
750-758	-30.84	-19.02	-11.82
769-775	-56.55	-51.65	-4.90
775-788	-57.41	-19.02	-38.39
799-805	-59.72	-51.65	-8.07
805-810	-58.73	-19.02	-39.71

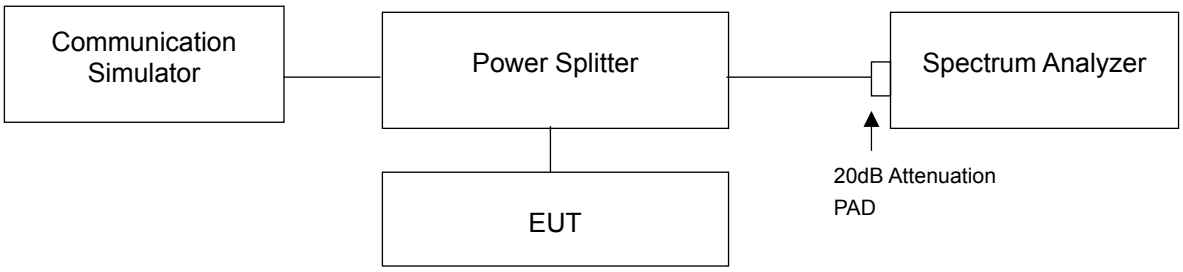
4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

Reference ANCI 63.26 section 6.4.4. , Limit = 43 + 10log (P) - 10 log (N_{out}) dB, where N_{out} is the number of outputs, Limit = -13 - 10 log (4) = -19.02.

4.7.2 Test Setup

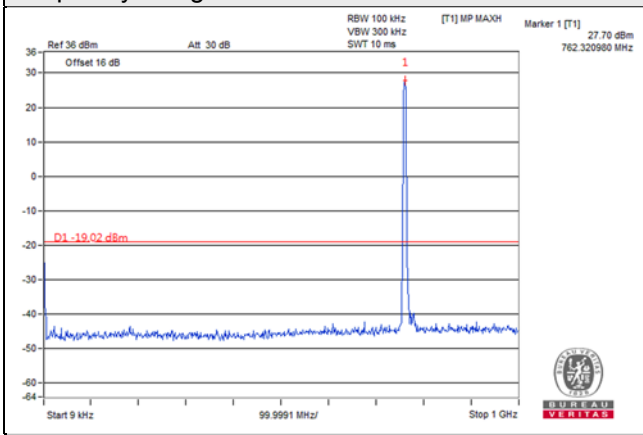
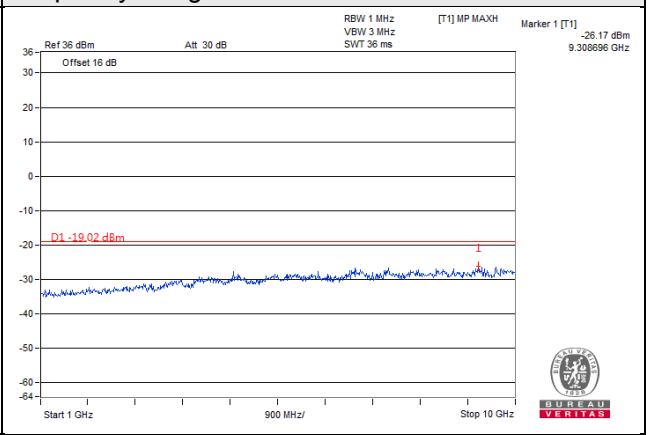
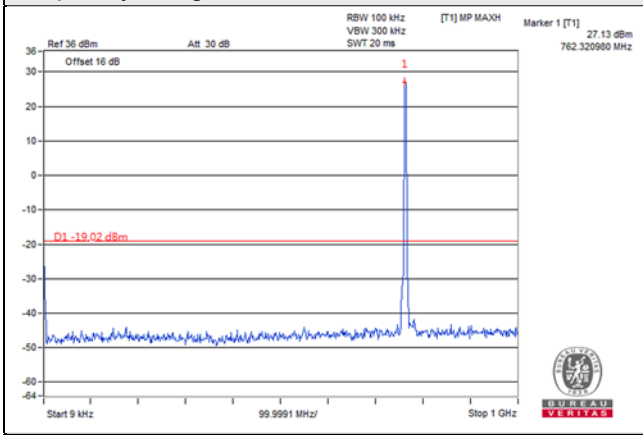
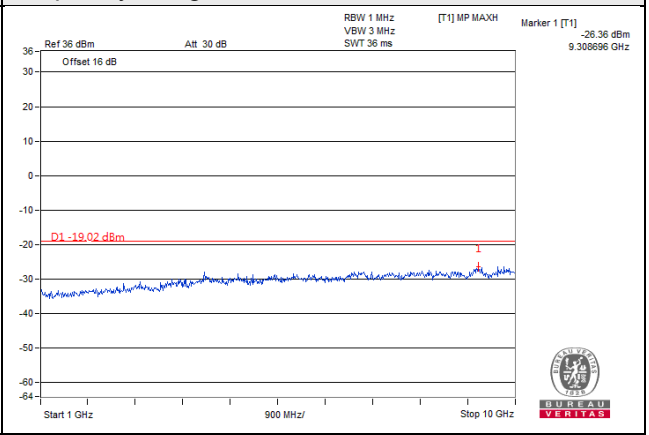
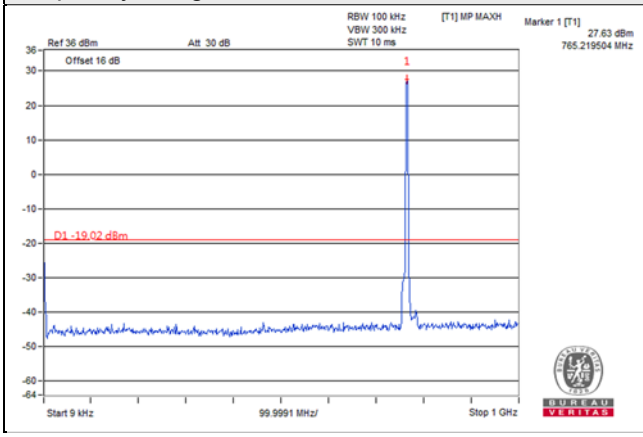
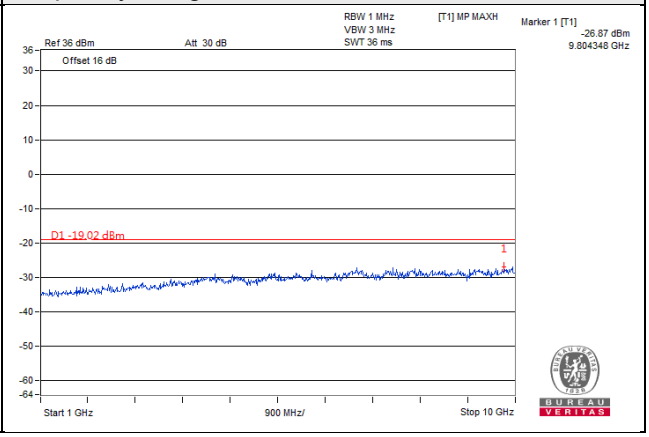


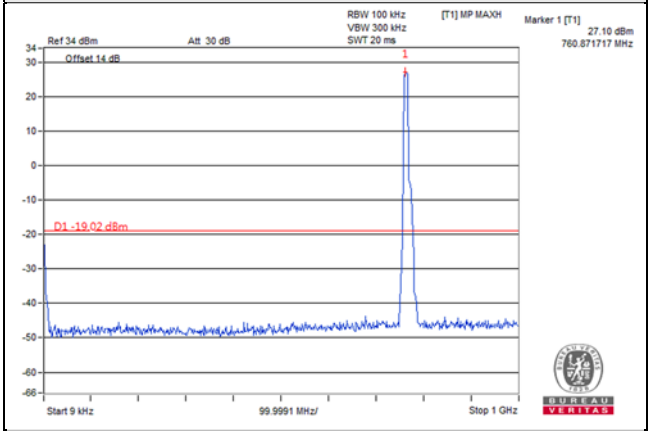
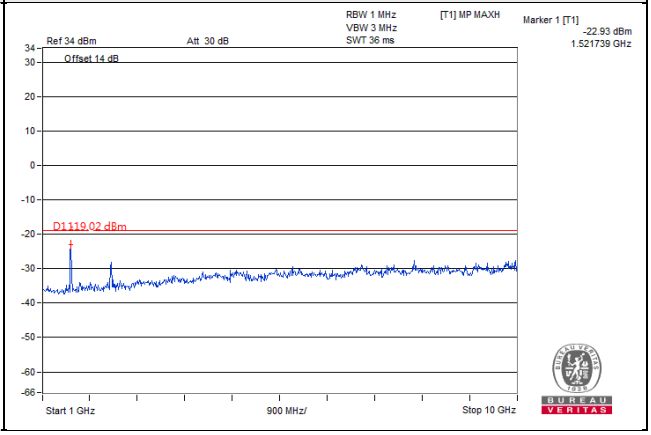
4.7.3 Test Procedure

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

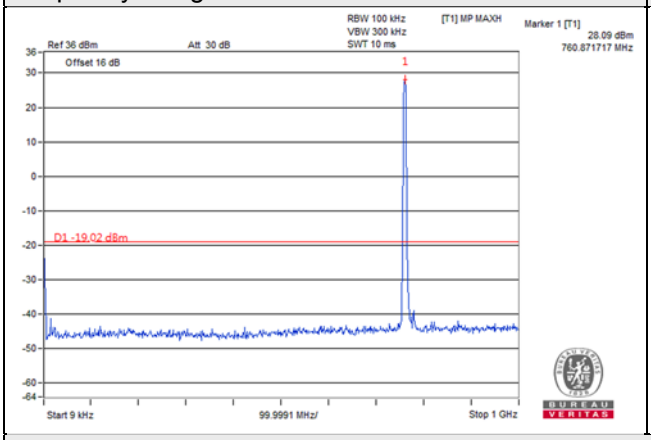
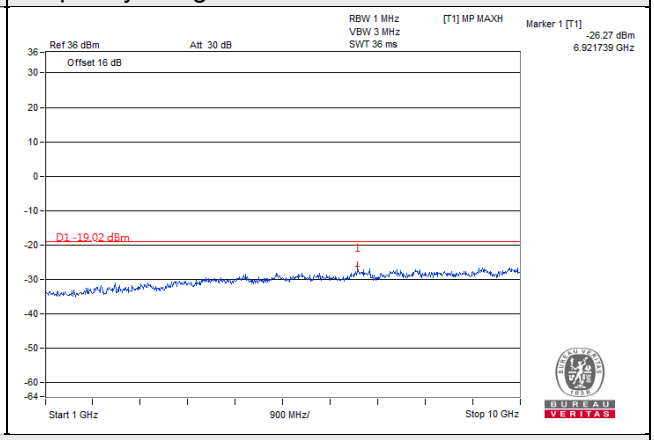
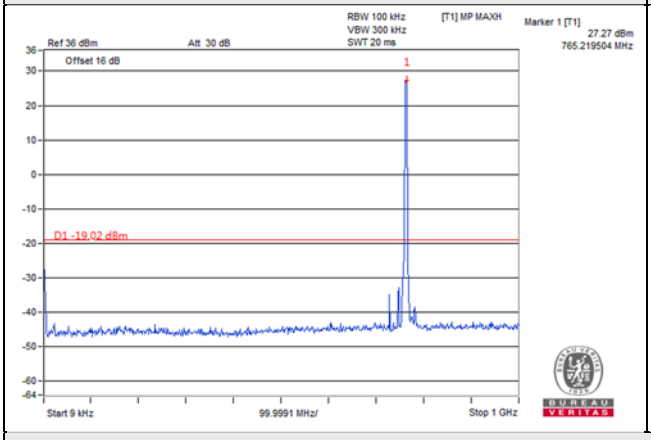
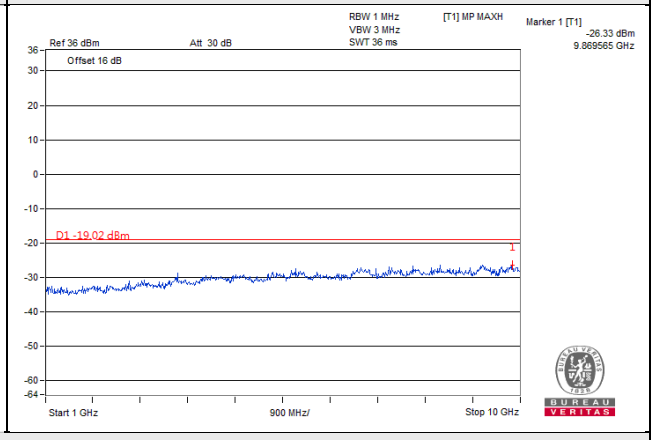
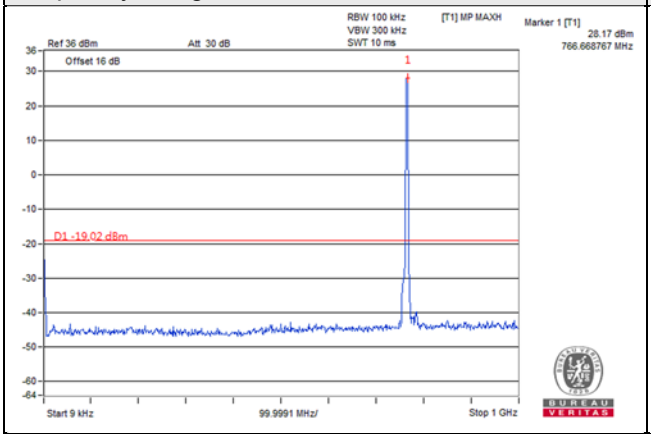
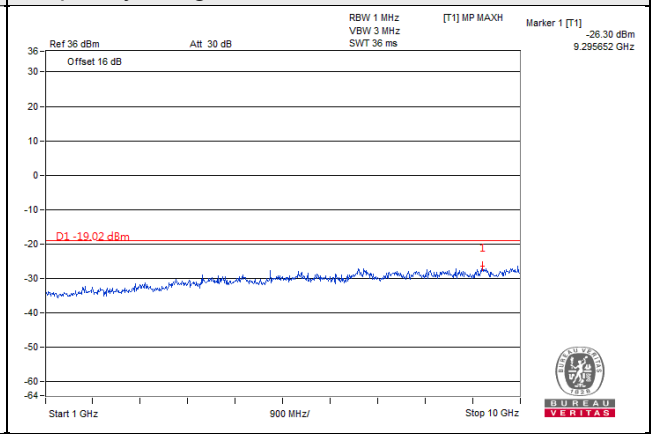
4.7.4 Test Results

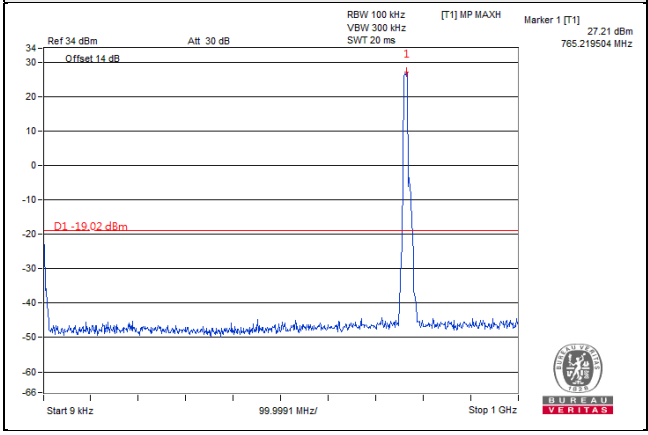
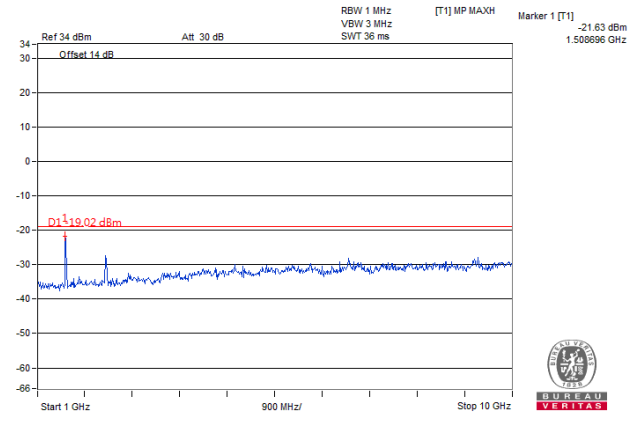
Single Mode (Chain 0)

Channel Band width: 5MHz	
Channel 5305 (760.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5355 (765.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

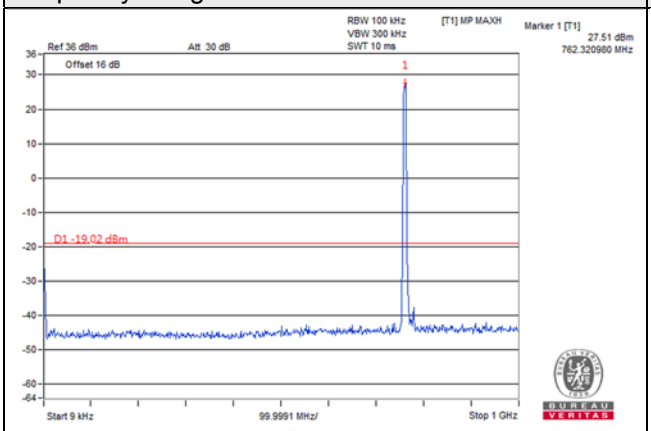
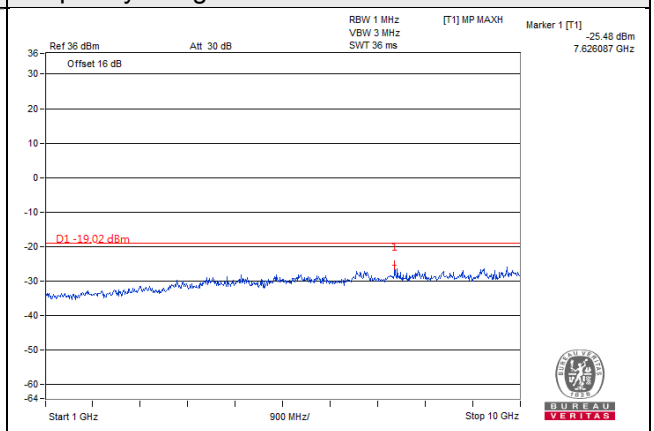
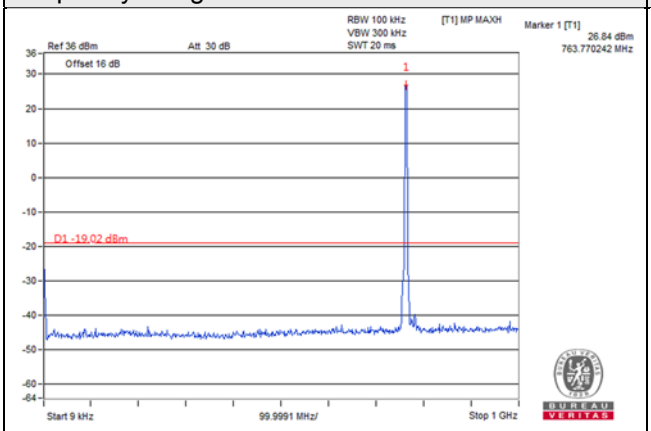
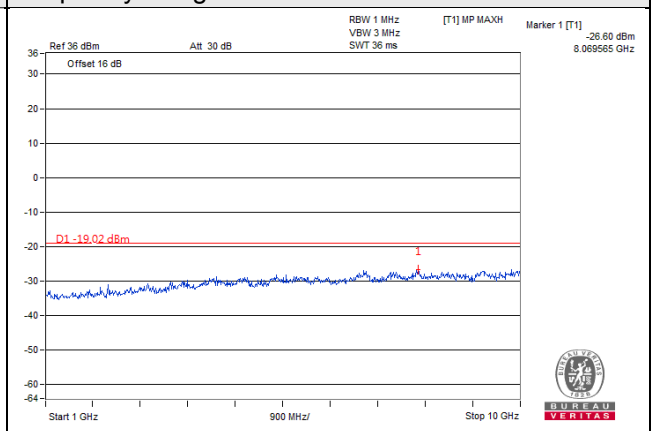
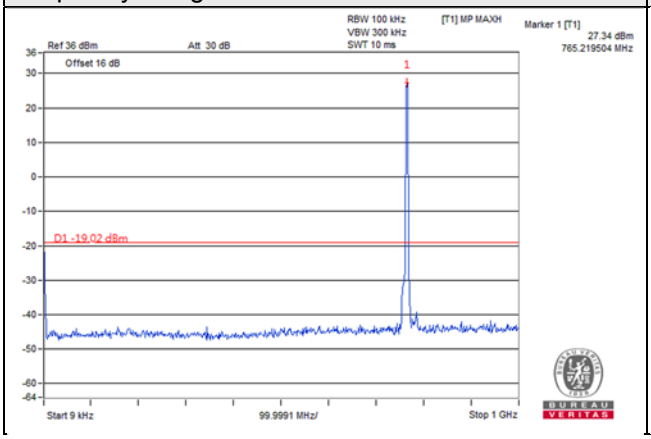
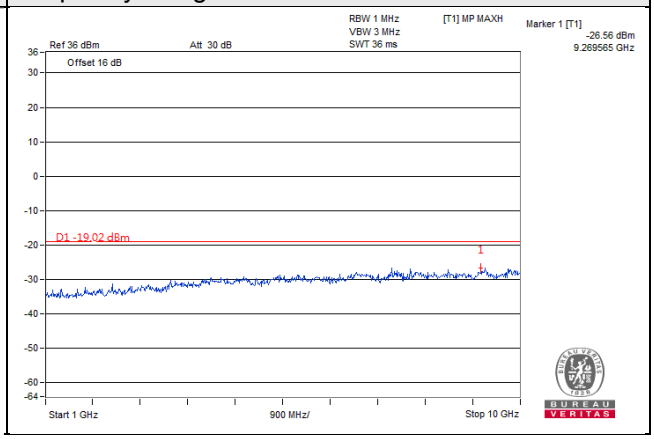
Channel Band width: 10MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

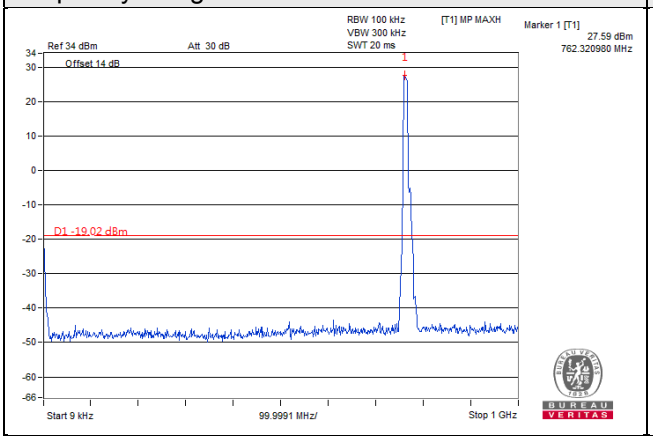
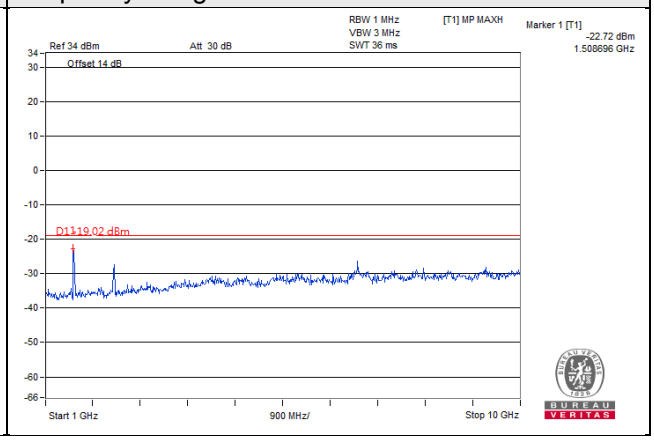
Single Mode (Chain 1)

Channel Band width: 5MHz	
Channel 5305 (760.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5355 (765.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

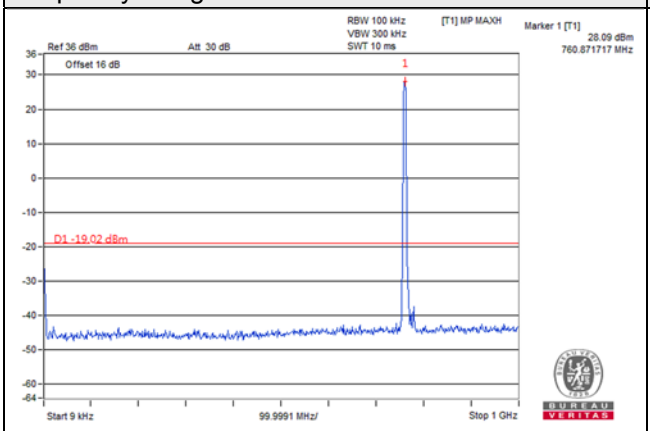
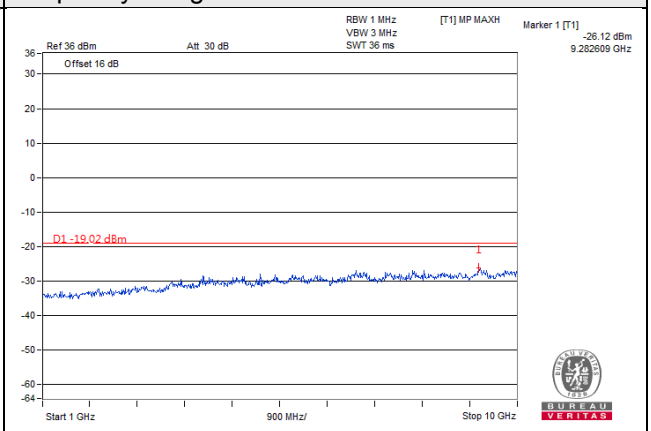
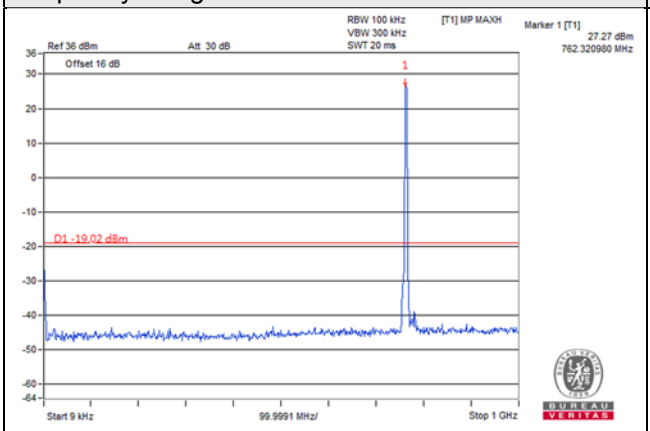
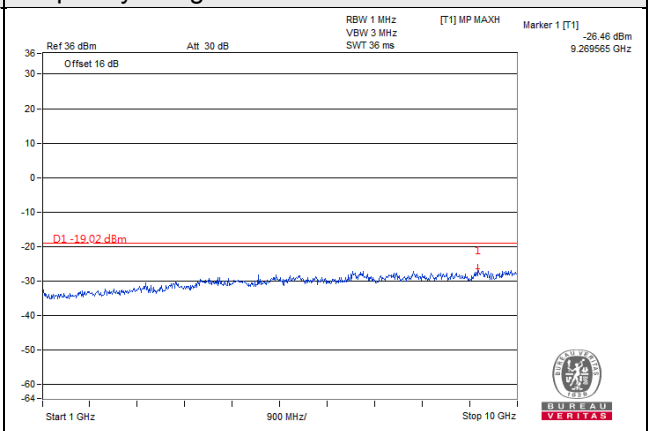
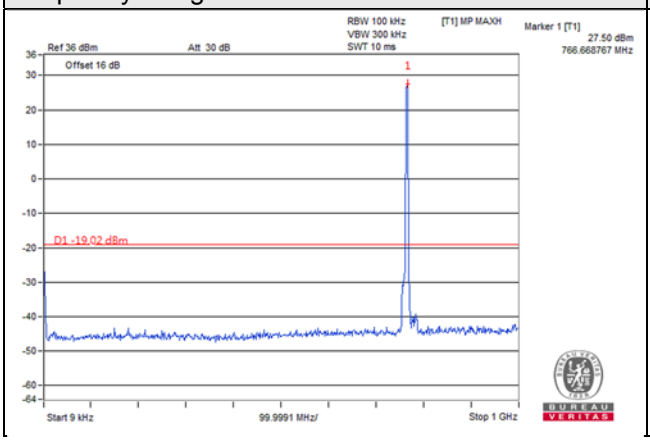
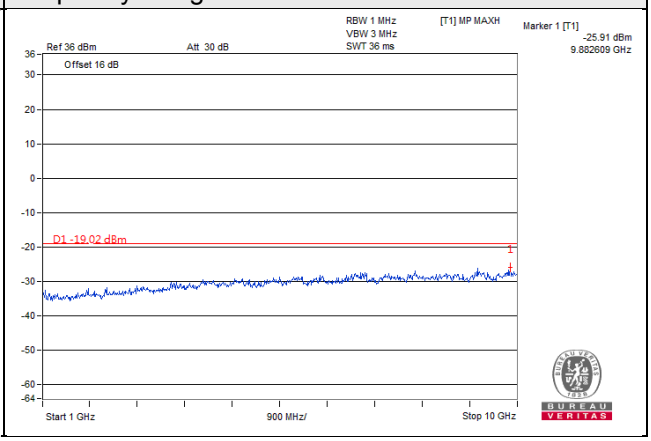
Channel Band width: 10MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

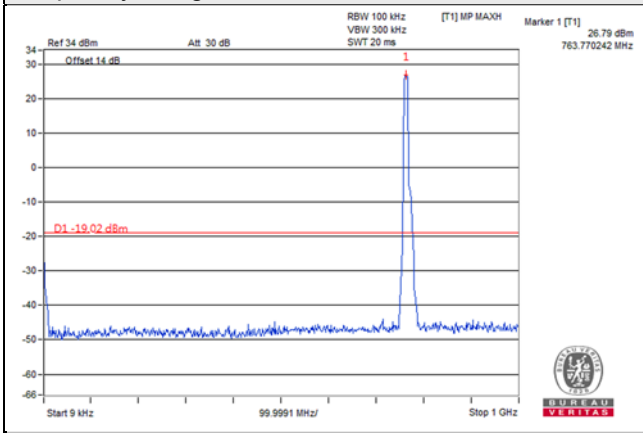
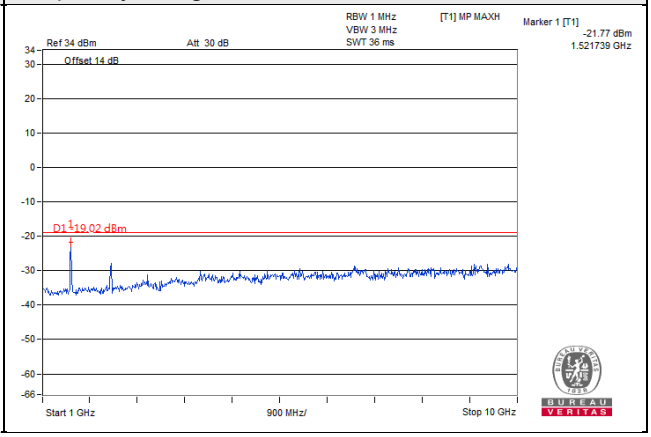
Single Mode (Chain 2)

Channel Band width: 5MHz	
Channel 5305 (760.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5355 (765.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

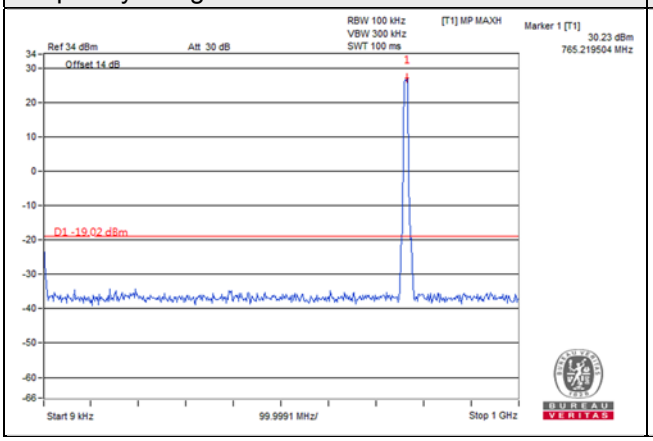
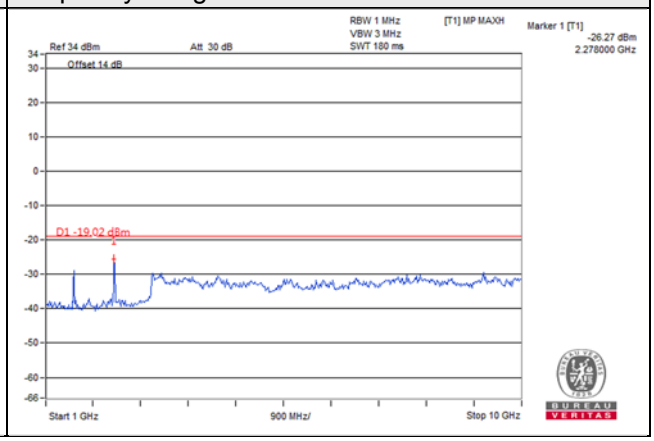
Channel Band width: 10MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

Single Mode (Chain 3)

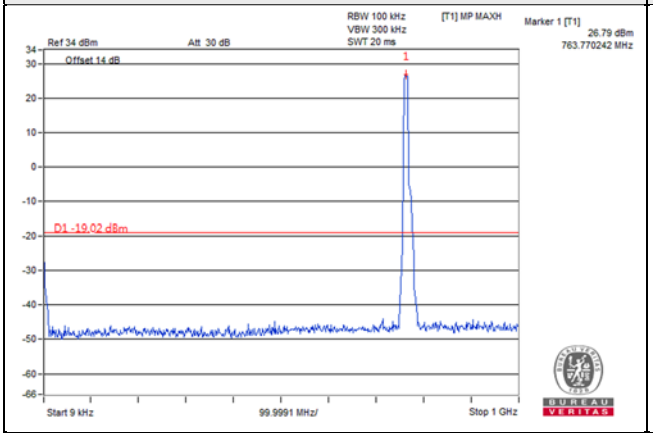
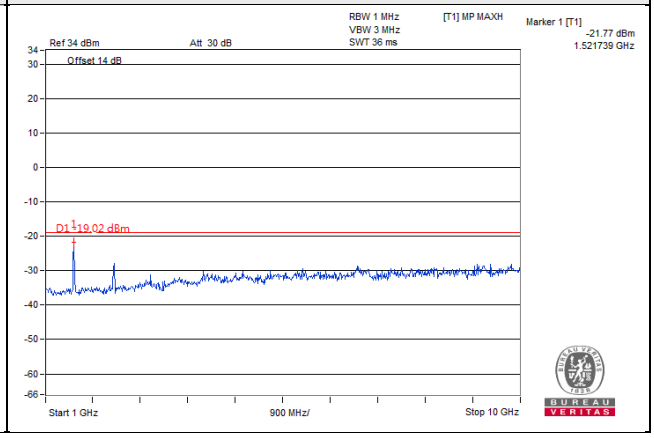
Channel Band width: 5MHz	
Channel 5305 (760.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Channel 5355 (765.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

Channel Band width: 10MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

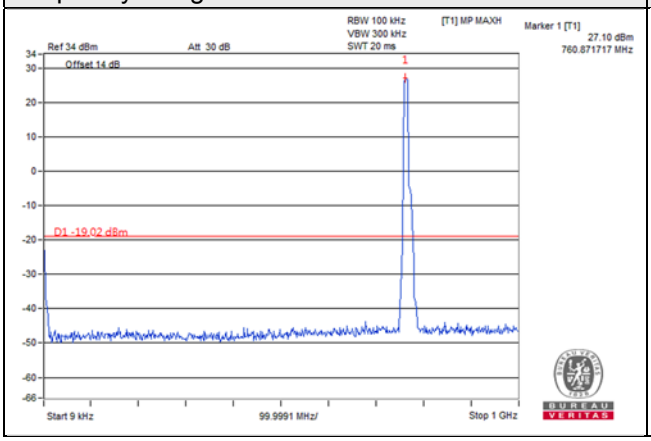
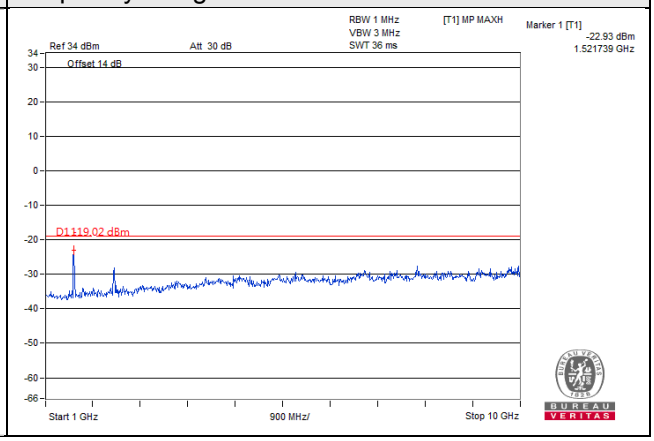
2-Carriers Mode (Chain 0)

Channel Band width: 5MHz + 5MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

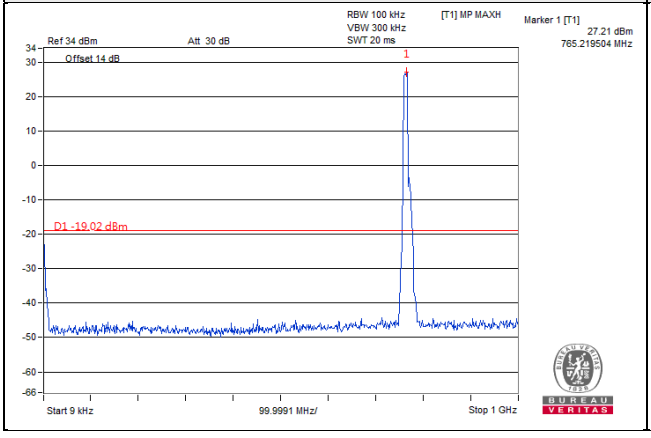
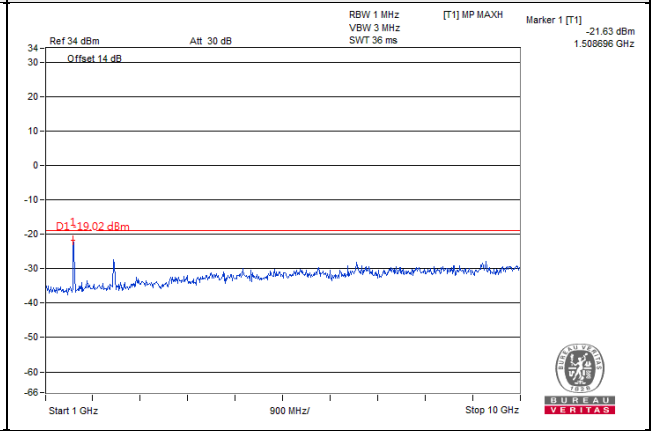
2-Carriers Mode (Chain 1)

Channel Band width: 5MHz + 5MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

2-Carriers Mode (Chain 2)

Channel Band width: 5MHz + 5MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

2-Carriers Mode (Chain 3)

Channel Band width: 5MHz + 5MHz	
Channel 5330 (763.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measuremen

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

Note: Emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals.
{The limits is adjusted to -40dBm (-70dBW)}

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 0.8m 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 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

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

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

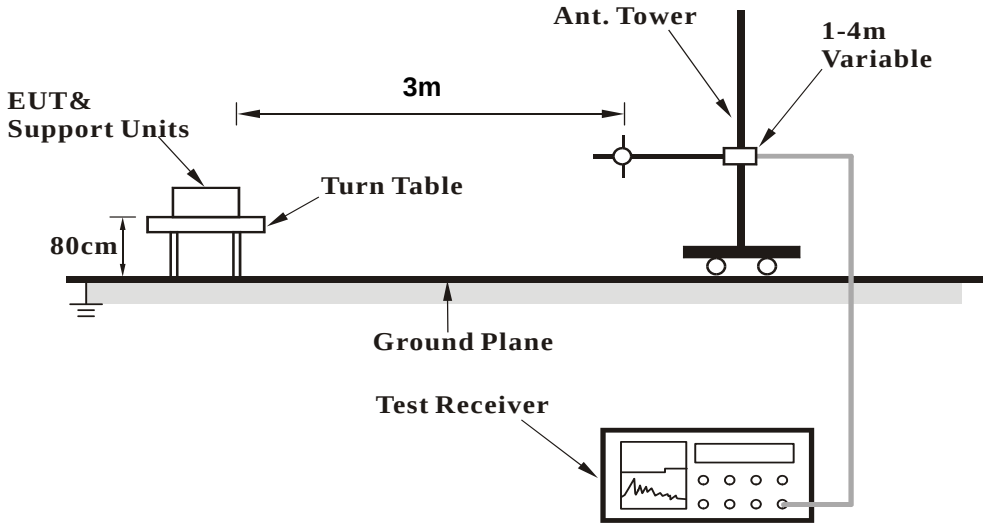
Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.8.3 Deviation from Test Standard

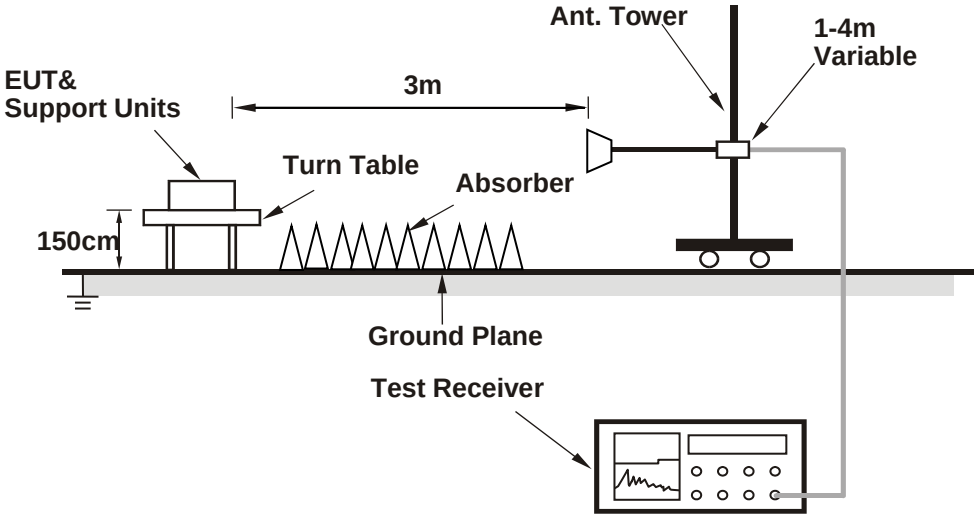
No deviation.

4.8.4 Test Setup

For Radiated Emission below or equal 1GHz



For Radiated Emission above 1GHz



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

4.8.5 Test Results

Below 1GHz

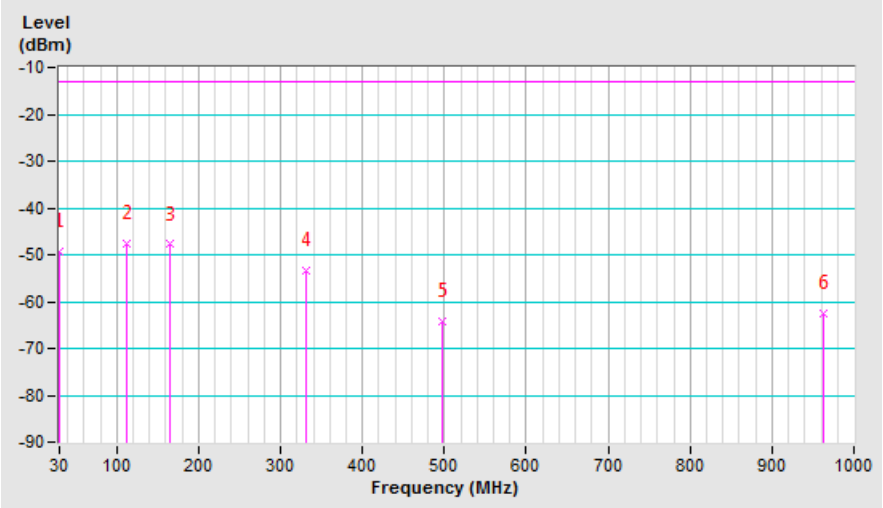
Channel Bandwidth: 5MHz

Mode	TX channel 5305 (760.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-51.10	-29.80	-19.40	-49.20	-13.00	-36.20
2	112.45	-37.90	-45.10	-2.50	-47.60	-13.00	-34.60
3	164.83	-39.30	-44.90	-2.90	-47.80	-13.00	-34.80
4	331.67	-47.20	-57.30	4.00	-53.30	-13.00	-40.30
5	496.57	-61.90	-68.10	3.80	-64.30	-13.00	-51.30
6	962.17	-68.80	-66.20	3.70	-62.50	-13.00	-49.50

Remarks:

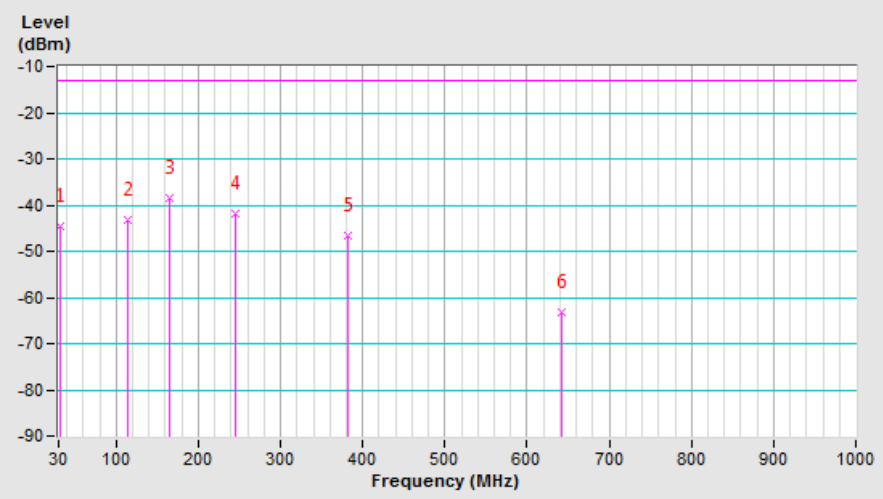
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 5305 (760.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-31.80	-26.80	-17.70	-44.50	-13.00	-31.50
2	113.42	-33.70	-40.50	-2.70	-43.20	-13.00	-30.20
3	164.83	-33.20	-35.70	-2.90	-38.60	-13.00	-25.60
4	245.34	-38.60	-40.40	-1.60	-42.00	-13.00	-29.00
5	382.11	-43.80	-50.00	3.50	-46.50	-13.00	-33.50
6	642.07	-66.20	-66.80	3.60	-63.20	-13.00	-50.20

Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

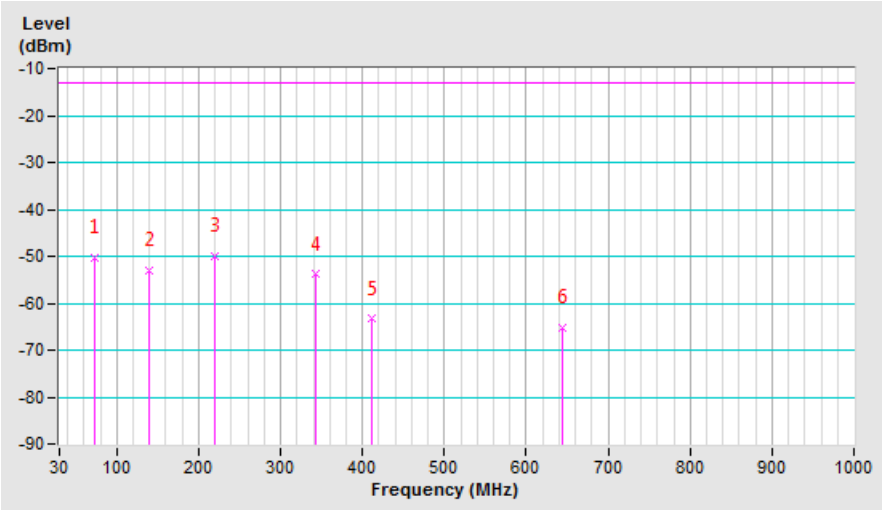


Channel Bandwidth: 10MHz

Mode	TX channel 5330 (763.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	73.65	-42.20	-50.30	0.10	-50.20	-13.00	-37.20
2	138.64	-44.90	-49.80	-3.20	-53.00	-13.00	-40.00
3	220.12	-39.90	-48.20	-1.90	-50.10	-13.00	-37.10
4	342.34	-48.20	-57.80	3.90	-53.90	-13.00	-40.90
5	412.18	-61.10	-66.70	3.30	-63.40	-13.00	-50.40
6	644.98	-65.20	-69.00	3.70	-65.30	-13.00	-52.30

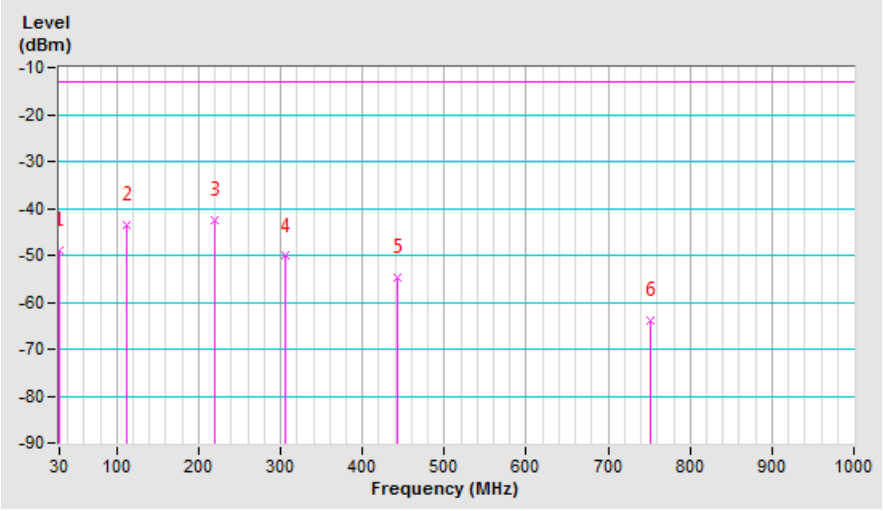
Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 5330 (763.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-37.00	-29.60	-19.40	-49.00	-13.00	-36.00
2	112.45	-33.80	-40.90	-2.50	-43.40	-13.00	-30.40
3	219.15	-36.40	-40.40	-2.00	-42.40	-13.00	-29.40
4	305.48	-48.20	-54.00	3.80	-50.20	-13.00	-37.20
5	443.22	-52.20	-58.10	3.50	-54.60	-13.00	-41.60
6	750.71	-68.80	-67.70	3.70	-64.00	-13.00	-51.00

Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Above 1GHz

Channel Bandwidth: 5MHz

Mode	TX channel 5305 (760.5MHz)	Frequency Range	1 ~ 10GHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1521.00	-60.00	-52.50	1.40	-51.10	-13.00	-38.10
2	1581.00	-70.00	-62.20	1.20	-61.00	-40.00	-21.00
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1521.00	-59.80	-53.20	1.40	-51.80	-13.00	-38.80
2	1581.00	-69.00	-62.00	1.20	-60.80	-40.00	-20.80

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 5330 (763.0MHz)	Frequency Range	1 ~ 10GHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.30	-52.80	1.40	-51.40	-13.00	-38.40
2	1586.00	-70.50	-62.60	1.10	-61.50	-40.00	-21.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.20	-53.60	1.40	-52.20	-13.00	-39.20
2	1586.00	-69.20	-62.00	1.10	-60.90	-40.00	-20.90

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 5355 (765.5MHz)	Frequency Range	1 ~ 10GHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1531.00	-60.50	-52.90	1.30	-51.60	-13.00	-38.60
2	1591.00	-71.20	-63.20	1.10	-62.10	-40.00	-22.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1531.00	-60.20	-53.50	1.30	-52.20	-13.00	-39.20
2	1591.00	-69.30	-62.20	1.10	-61.10	-40.00	-21.10

Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Channel Bandwidth: 10MHz

Mode	TX channel 5330 (763.0MHz)	Frequency Range	1 ~ 10GHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.50	-52.90	1.40	-51.50	-13.00	-38.50
2	1586.00	-69.80	-61.80	1.10	-60.70	-40.00	-20.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.50	-53.90	1.40	-52.50	-13.00	-39.50
2	**1586.00**	**-68.20**	**-61.00**	**1.10**	**-59.90**	**-40.00**	**-19.90**

Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

2-Carriers Mode

Below 1GHz

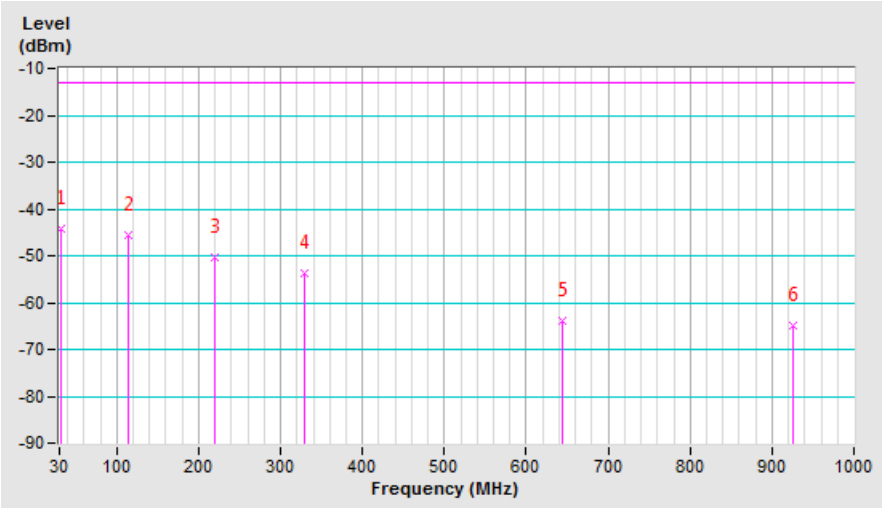
Channel Bandwidth: 5MHz + 5MHz

Mode	TX channel 5330 (763.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-45.20	-26.50	-17.70	-44.20	-13.00	-31.20
2	113.42	-35.80	-42.90	-2.70	-45.60	-13.00	-32.60
3	220.12	-40.00	-48.30	-1.90	-50.20	-13.00	-37.20
4	328.76	-47.70	-57.70	4.10	-53.60	-13.00	-40.60
5	644.01	-64.00	-67.70	3.70	-64.00	-13.00	-51.00
6	925.31	-70.80	-68.50	3.70	-64.80	-13.00	-51.80

Remarks:

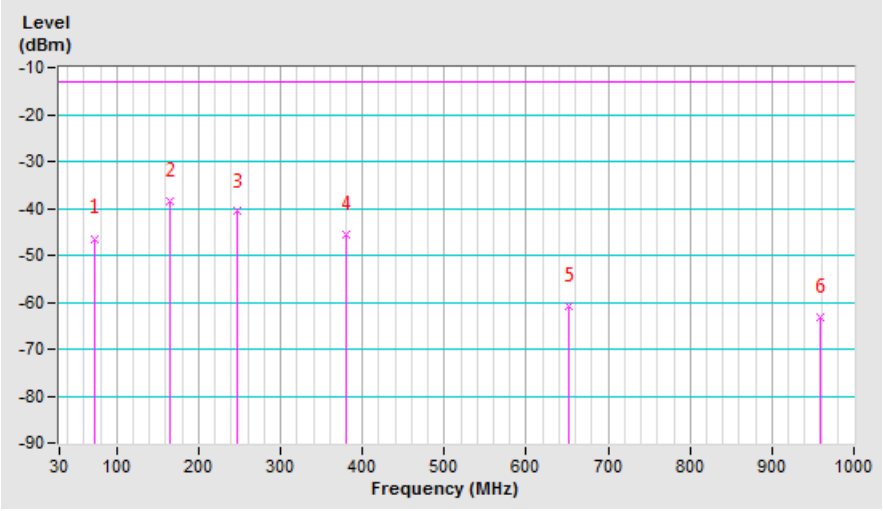
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 5330 (763.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	73.65	-38.60	-46.50	0.10	-46.40	-13.00	-33.40
2	165.80	-33.10	-35.60	-3.00	-38.60	-13.00	-25.60
3	246.31	-37.60	-39.10	-1.60	-40.70	-13.00	-27.70
4	379.20	-43.10	-49.30	3.60	-45.70	-13.00	-32.70
5	651.77	-64.20	-64.40	3.60	-60.80	-13.00	-47.80
6	958.29	-70.40	-67.00	3.80	-63.20	-13.00	-50.20

Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Above 1GHz

Channel Bandwidth: 5MHz + 5MHz

Mode	TX channel 5330 (763.0MHz)	Frequency Range	1 ~ 10GHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.20	-52.60	1.40	-51.20	-13.00	-38.20
2	1581.00	-69.20	-61.40	1.20	-60.20	-40.00	-20.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1526.00	-60.30	-53.80	1.40	-52.40	-13.00	-39.40
2	1581.00	-68.70	-61.60	1.20	-60.40	-40.00	-20.40

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

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 and approved 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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