



FCC RF Test Report

Equipment : SmartCell Q700 Access Point
Brand Name : Ruckus
Model No. : Q700-0400
FCC ID : S9GQ7000400
Standard : 47 CFR Part2, 27
Applicant : Ruckus Wireless, Inc.
350 west Java Drive Sunnyvale CA, 94089 U.S.A.
Manufacturer : Ruckus Wireless, Inc.
350 west Java Drive Sunnyvale CA, 94089 U.S.A.

The product sample received on Jun. 20, 2016 and completely tested on Jul. 07, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures give in ANSI/TIA-603-D (2010) and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.


Sam Chen
SPORTON INTERNATIONAL INC.

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FCC ID: S9GQ7000400

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1046	Conducted Output Power	N/A	PASS	-
	27.50(d)	Equivalent Isotropic Radiated Power	1640 W/MHz (62.15 dBm/MHz)	PASS	-
3.2	27.50(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	2.1049	Occupied Bandwidth	N/A	PASS	-
	27.53(g)				
3.4	2.1051	Band Edge Measurement	<43+10log ₁₀ (P[Watts])	PASS	-
	27.53(h)				
3.5	2.1051 27.53(h)	Conducted Emission	<43+10log ₁₀ (P[Watts])	PASS	-
3.6	2.1053 27.53(h)	Field Strength of Spurious Radiation	<43+10log ₁₀ (P[Watts])	PASS	-
3.7	2.1055 27.54	Frequency Stability for Temperature & Voltage	within authorized band	PASS	-

1 General Description

1.1 Product Feature of Equipment Under Test

Items	Description
Power Type	From power adapter or PoE
EUT supports Radios application	LTE

1.2 Product Specification subjective to this standard

Items	Description
Base Station Classes	☐ Macro Cell ☒ Micro Cell ☐ Picocell ☒ Femtocell
TX Frequency	2112.5 MHz ~ 2152.5 MHz
RX Frequency	1712.5 MHz ~ 1752.5 MHz
Maximum Output Power to Antenna	27.35 dBm
99% Occupied Bandwidth	5 MHz: 4.44 MHz 10 MHz: 8.96 MHz 15 MHz: 13.36 MHz 20 MHz: 17.89 MHz
Antenna Information	Antenna Type: Omni Antenna Gain: 6 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Note: The test result of modulation type QPSK was the worst case so only modulation type QPSK was recorded in the test report.

1.3 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	Bandwidth	Maximum ERP/EIRP (dBm/MHz)	Frequency Stability	Emission Designator
Part 27	LTE Band IV	QPSK	5 MHz	28.37	With in the authorized bands of operation	4M44G7D
			10 MHz	24.25		8M96G7D
			15 MHz	22.34		13M4G7D
			20 MHz	21.08		17M9G7D



1.4 Accessories

Accessories			
Power	Brand	Model No.	Rating
Adapter	LEI	MU24-Y120200-A1	INPUT: 100-240Vac, 50/60Hz, 0.7A OUTPUT: 12Vdc, 2A

1.5 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part2, 27
- ANSI/TIA-603-D (2010)
- FCC KDB 971168 D01 v02r02
- FCC KDB 412172 D01 v01r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

1.7 Testing Location

Testing Location				
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL : 886-3-327-3456 FAX : 886-3-327-0973		
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.		
		TEL : 886-3-656-9065 FAX : 886-3-656-9085		
Test Condition		Test Site No.	Test Engineer	Test Environment
RF Conducted		TH01-CB	Gary Chu	23℃ / 67%
Radiated Emission		03CH01-CB	Gary Chu	23℃ / 67%
				Test Date
				Jun. 29, 2016~Jun. 30, 2016
				Jun. 29, 2016~Jul. 07, 2016

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Test Item	Bandwidth (MHz)	Tested Frequency (MHz)	Mode
Conducted Output Power	5, 10, 15, 20	B, M, T	E-TM1
ERP and EIRP	5, 10, 15, 20	B, M, T	E-TM1
Peak-to-Average Ratio	5, 10, 15, 20	B, M, T	E-TM1
99% OBW and 26dB Bandwidth	5, 10, 15, 20	B, M, T	E-TM1
Band Edge	5, 10, 15, 20	B, T	E-TM1
Conducted Spurious Emission	5, 10, 15, 20	B, M, T	E-TM1
Field Strength of Spurious Radiation	5, 10, 15, 20	B, M, T	E-TM1
Frequency Stability	20	M	E-TM1

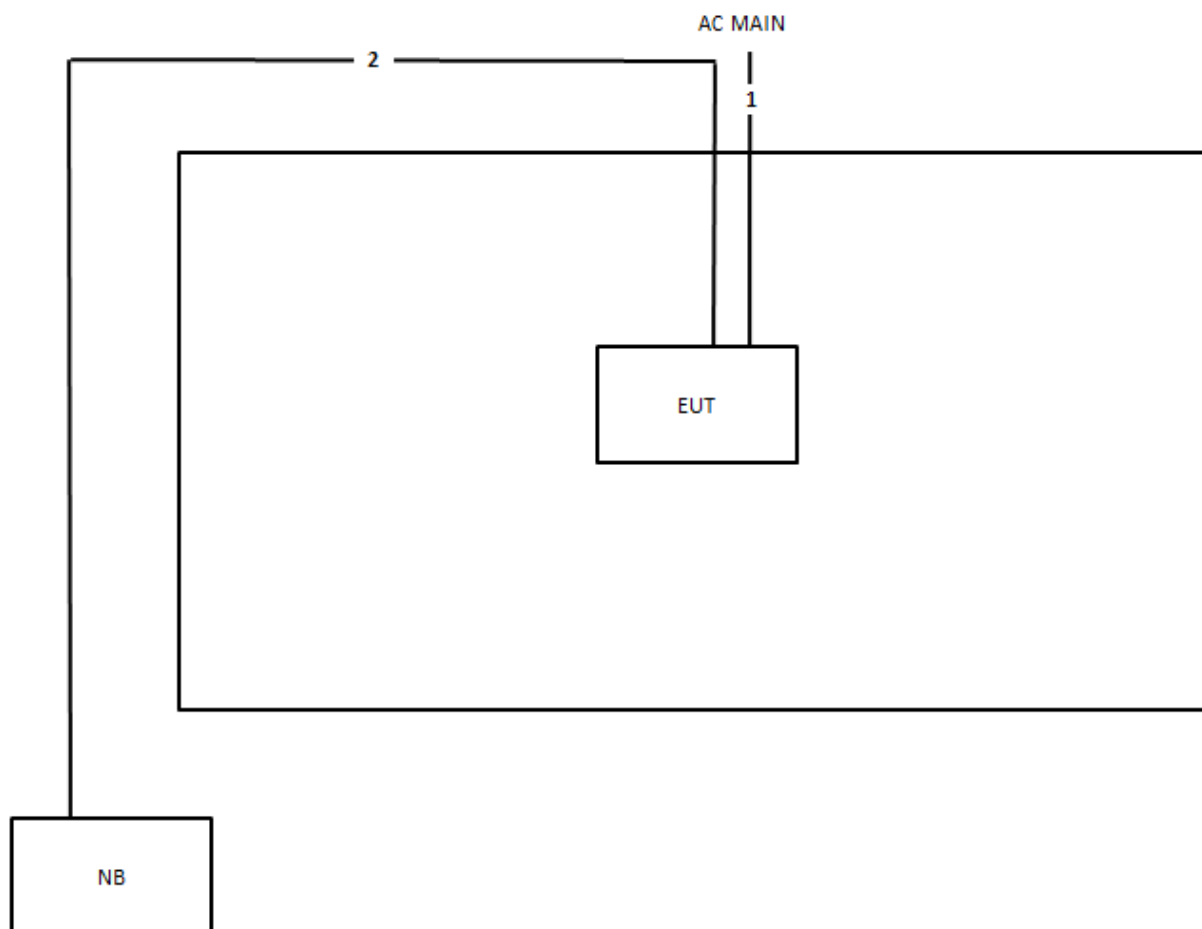
Note:

B: Bottom

M: Middle

T: Top

2.2 Test Setup Diagram



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m

2.3 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 1 dB and a 20dB attenuator.

Example:

$$\begin{aligned}\text{Offset (dB)} &= \text{RF cable loss (dB)} + \text{attenuator factor (dB)} \\ &= 1 + 20 = 21 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 Conducted Output Power and ERP/EIRP Measurement

3.1.1 Description of the Conducted Output Power and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters are limited to 1 Watts (AWS Band). According to FCC KDB 412172 D01 v01r01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

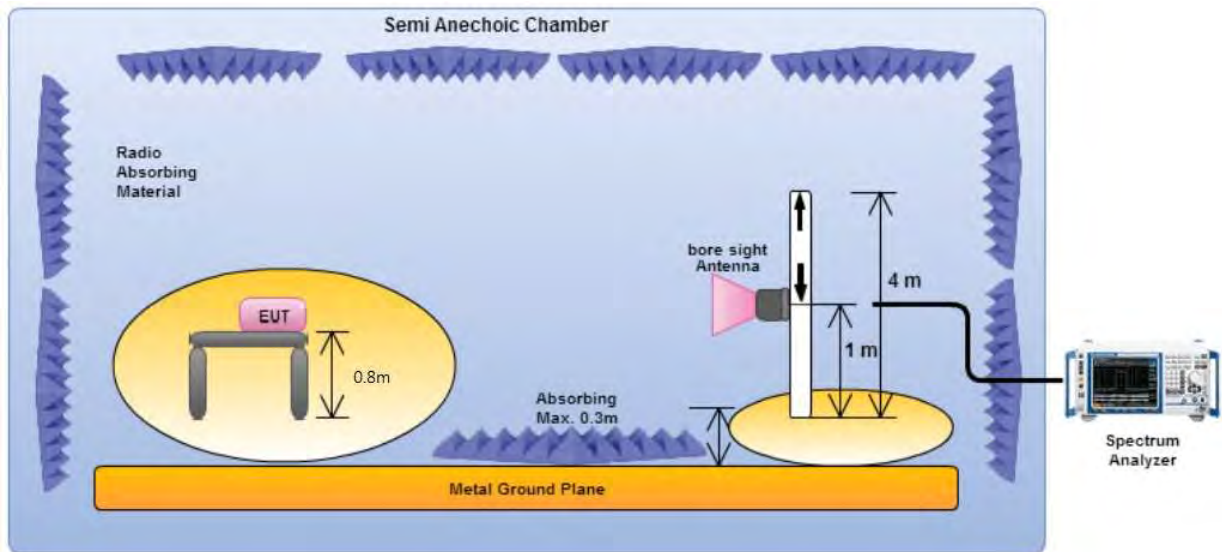
1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for WCDMA and maximum average power for other modulation signal.

3.1.4 Test Setup

Test Setup of Conducted Output Power



Test Setup of ERP/EIRP



3.1.5 Test Result of Conducted Output Power

Item		Conducted Output Power (dBm)		
Band		LTE Band IV		
Bandwidth		5 MHz		
Chain		Chain 0	Chain 1	Total
Frequency (MHz)	2112.5	24.17	24.06	27.13
	2135	24.00	24.10	27.06
	2152.5	24.23	24.44	27.35

Item		Conducted Output Power (dBm)		
Band		LTE Band IV		
Bandwidth		10 MHz		
Chain		Chain 0	Chain 1	Total
Frequency (MHz)	2115	23.82	23.85	26.85
	2135	24.03	24.01	27.03
	2150	24.28	24.13	27.22

Item		Conducted Output Power (dBm)		
Band		LTE Band IV		
Bandwidth		15 MHz		
Chain		Chain 0	Chain 1	Total
Frequency (MHz)	2117.5	23.60	23.73	26.68
	2135	23.86	23.82	26.85
	2147.5	24.09	23.91	27.01

Item		Conducted Output Power (dBm)		
Band		LTE Band IV		
Bandwidth		20 MHz		
Chain		Chain 0	Chain 1	Total
Frequency (MHz)	2120	23.76	23.72	26.75
	2135	24.06	23.92	27.00
	2145	24.09	24.09	27.10

3.1.6 Test Result (Plots) of ERP/EIRP

Band	LTE Band IV	Modulation	QPSK
Configurations	5 MHz / B		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	

1	2112.50	28.37	-33.78	62.15	-17.57	45.94	HORIZONTAL
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Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	

1	2112.50	18.38	-43.77	62.15	-27.56	45.94	VERTICAL
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Band	LTE Band IV	Modulation	QPSK
Configurations	5 MHz / M		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	27.14	-35.01	62.15	-18.77	45.91	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	17.12	-45.03	62.15	-28.79	45.91	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	5 MHz / T		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2152.50	25.04	-37.11	62.15	-20.84	45.88	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2152.50	17.40	-44.75	62.15	-28.48	45.88	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	10 MHz / B		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2115.00	24.25	-37.90	62.15	-21.69	45.94	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2115.00	14.64	-47.51	62.15	-31.30	45.94	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	10 MHz / M		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	24.08	-38.07	62.15	-21.83	45.91	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	13.93	-48.22	62.15	-31.98	45.91	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	10 MHz / T		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2150.00	23.34	-38.81	62.15	-22.55	45.89	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2150.00	13.26	-48.89	62.15	-32.63	45.89	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	15 MHz / B		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2117.50	22.34	-39.81	62.15	-23.59	45.93	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2117.50	12.18	-49.97	62.15	-33.75	45.93	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	15 MHz / M		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	21.93	-40.22	62.15	-23.98	45.91	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	14.93	-47.22	62.15	-30.98	45.91	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	15 MHz / T		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2147.50	20.55	-41.60	62.15	-25.34	45.89	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2147.50	10.23	-51.92	62.15	-34.50	44.73	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	20 MHz / B		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2120.00	20.46	-41.69	62.15	-25.47	45.93	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2120.00	11.89	-50.26	62.15	-32.89	44.78	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	20 MHz / M		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	21.08	-41.07	62.15	-24.83	45.91	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2135.00	12.61	-49.54	62.15	-32.14	44.75	VERTICAL



Band	LTE Band IV	Modulation	QPSK
Configurations	20 MHz / T		

Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2145.00	21.00	-41.15	62.15	-24.89	45.89	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	2145.00	11.89	-50.26	62.15	-32.85	44.74	VERTICAL

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. Set EUT to transmit at maximum output power.
3. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

Item	Peak-to-Average Ratio			
Band	LTE Band IV			
Bandwidth	5 MHz			
Frequency (MHz)	Chain 0	Chain 1	Limit (dB)	Result
2112.5	7.63	7.62	13	Complied
2135	7.74	7.72	13	Complied
2152.5	7.77	7.70	13	Complied

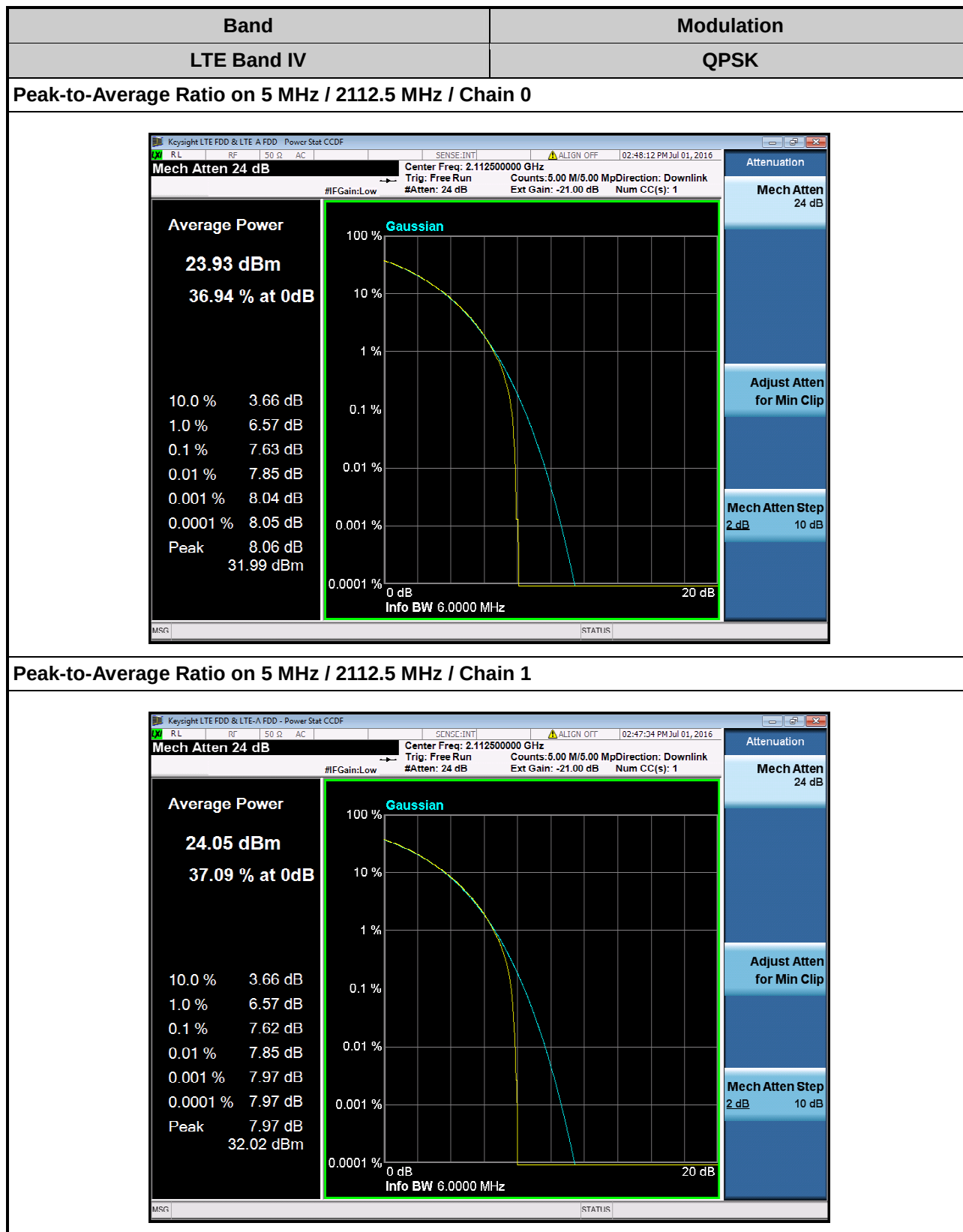
Item	Peak-to-Average Ratio			
Band	LTE Band IV			
Bandwidth	10 MHz			
Frequency (MHz)	Chain 0	Chain 1	Limit (dB)	Result
2112.5	7.25	7.35	13	Complied
2135	7.32	7.39	13	Complied
2152.5	7.32	7.41	13	Complied

Item	Peak-to-Average Ratio			
Band	LTE Band IV			
Bandwidth	15 MHz			
Frequency (MHz)	Chain 0	Chain 1	Limit (dB)	Result
2112.5	7.79	7.89	13	Complied
2135	7.83	7.87	13	Complied
2152.5	7.80	7.90	13	Complied



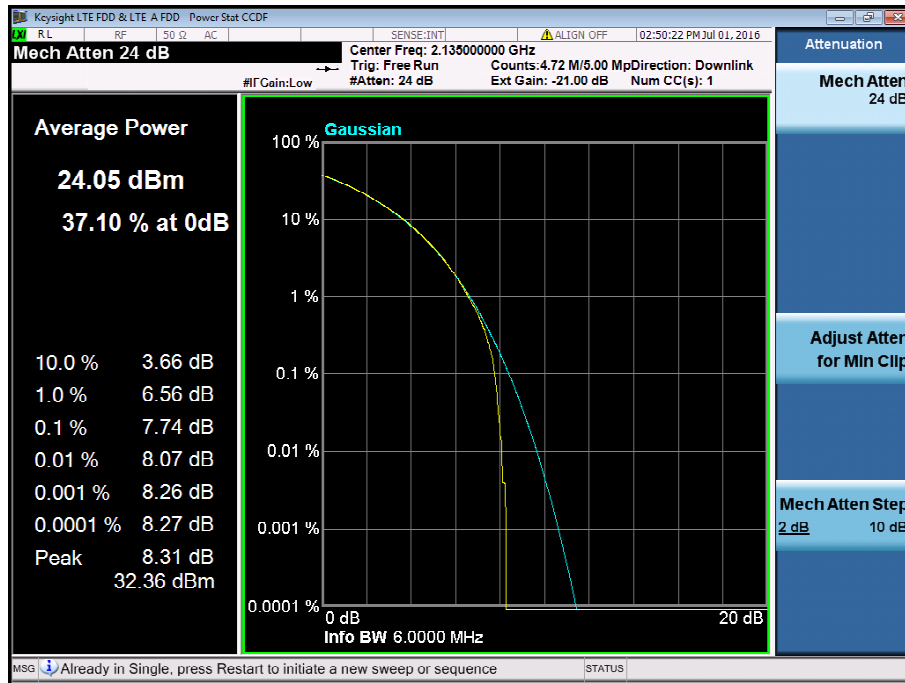
Item	Peak-to-Average Ratio			
Band	LTE Band IV			
Bandwidth	20 MHz			
Frequency (MHz)	Chain 0	Chain 1	Limit (dB)	Result
2112.5	7.19	7.21	13	Complied
2135	7.20	7.21	13	Complied
2152.5	7.17	7.21	13	Complied

3.2.6 Test Result (Plots) of Peak-to-Average Ratio

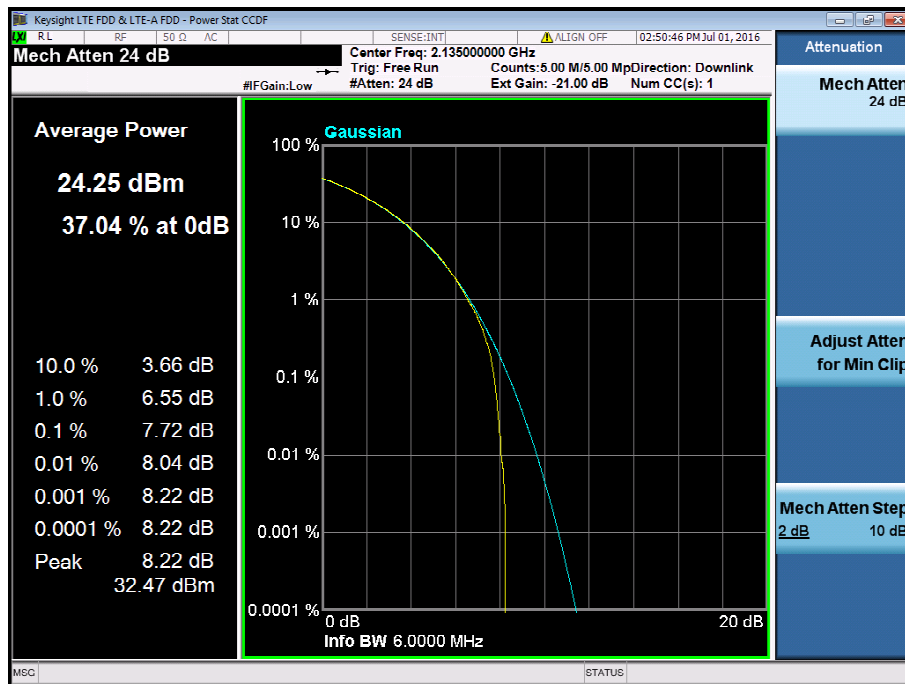




Peak-to-Average Ratio on 5 MHz / 2135 MHz / Chain 0

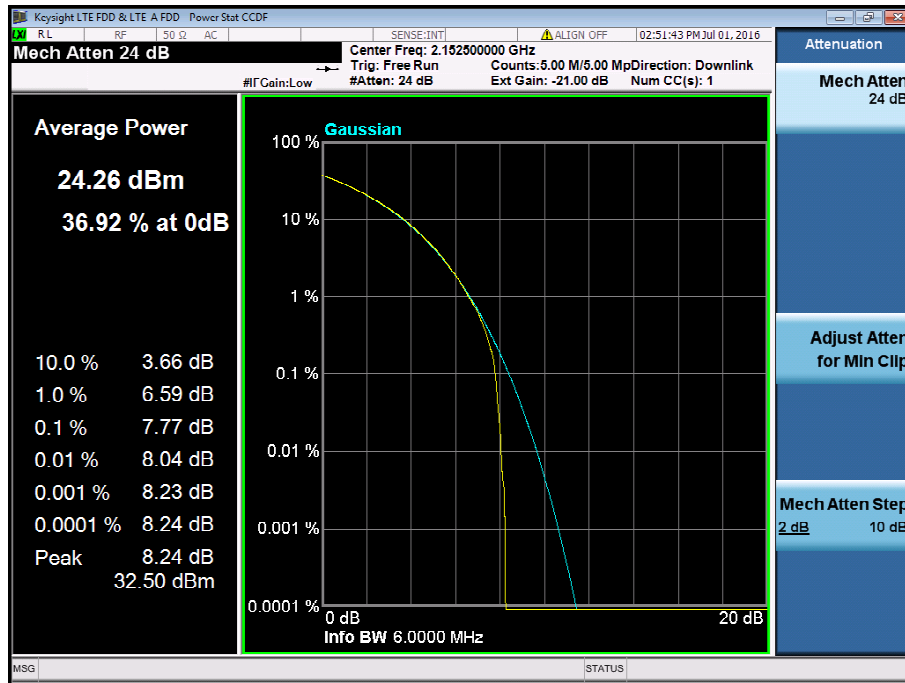


Peak-to-Average Ratio on 5 MHz / 2135 MHz / Chain 1

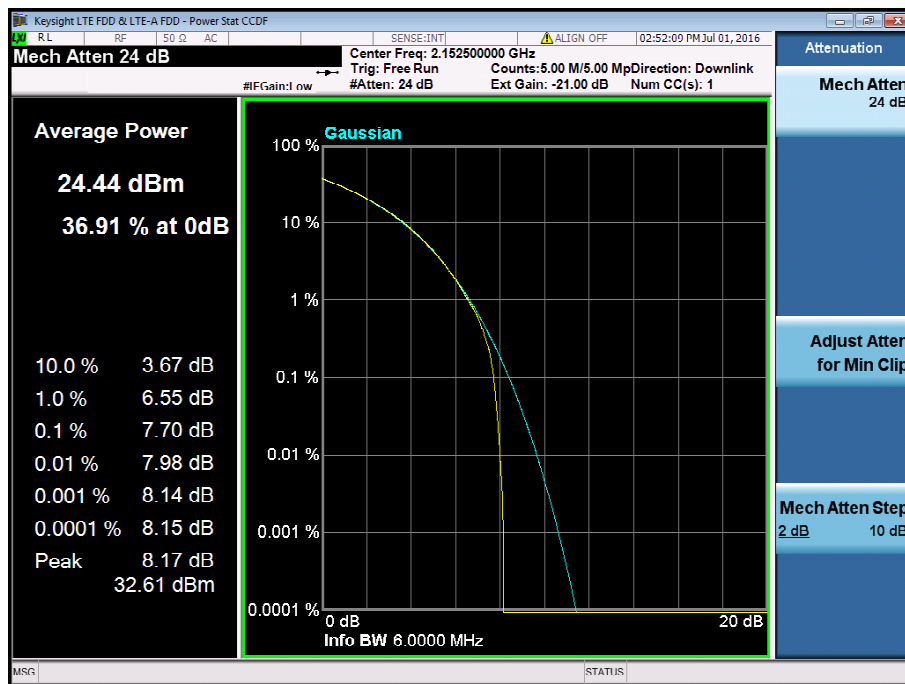




Peak-to-Average Ratio on 5 MHz / 2152.5 MHz / Chain 0

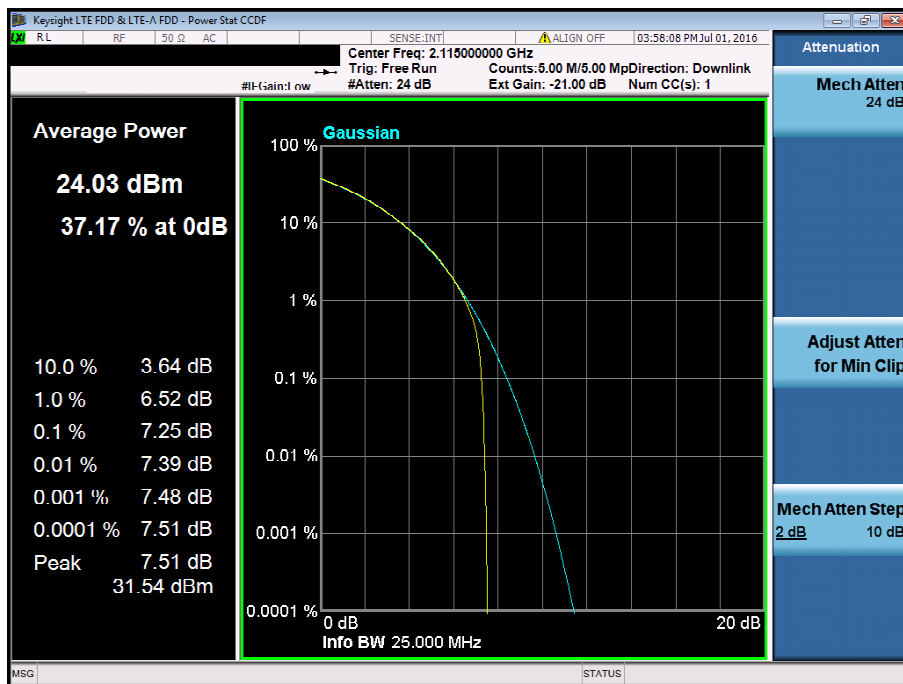


Peak-to-Average Ratio on 5 MHz / 2152.5 MHz / Chain 1

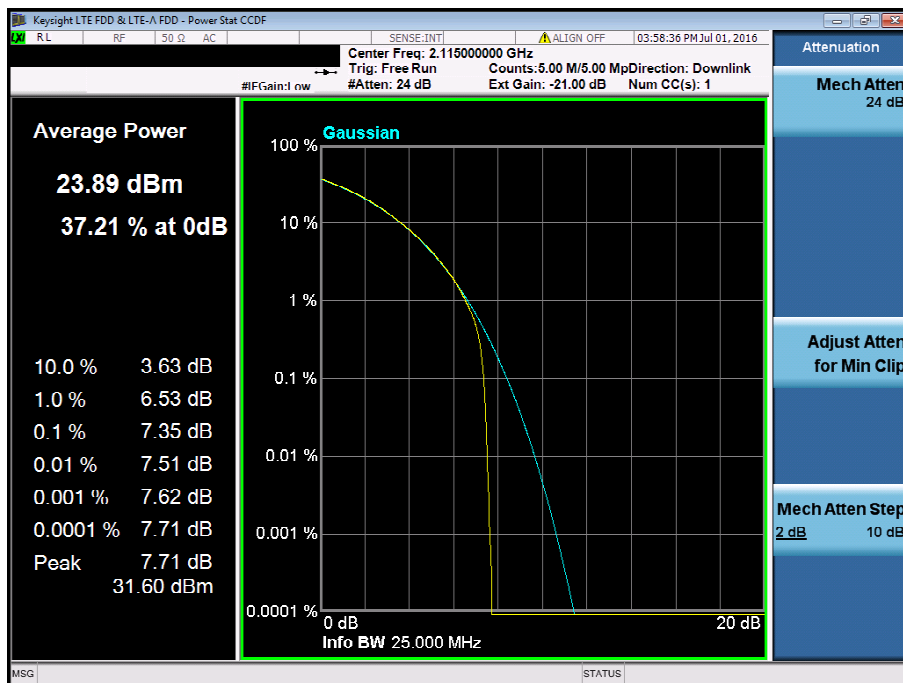




Peak-to-Average Ratio on 10 MHz / 2112.5 MHz / Chain 0

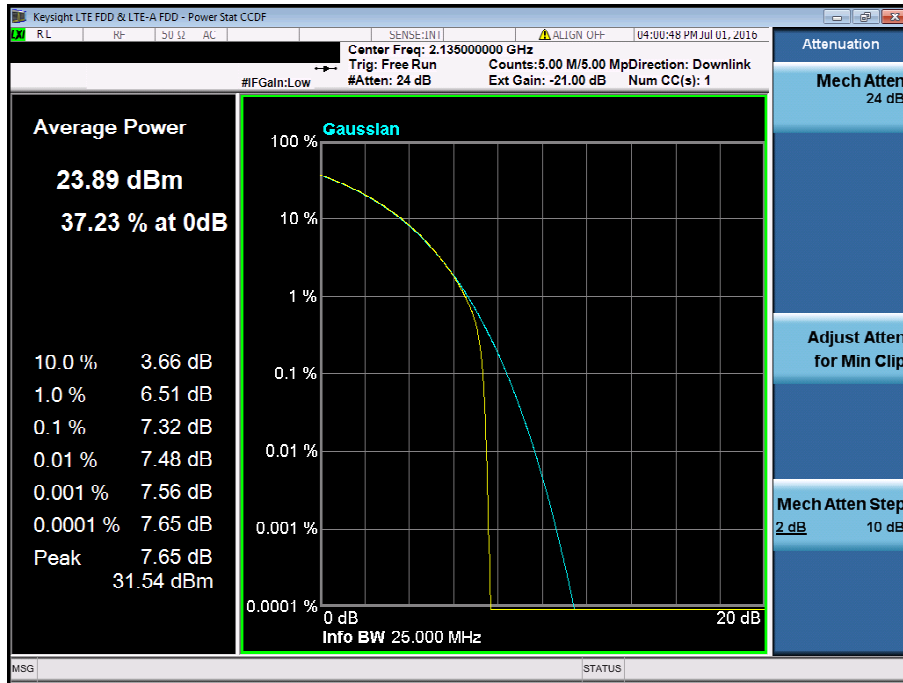


Peak-to-Average Ratio on 10 MHz / 2112.5 MHz / Chain 1

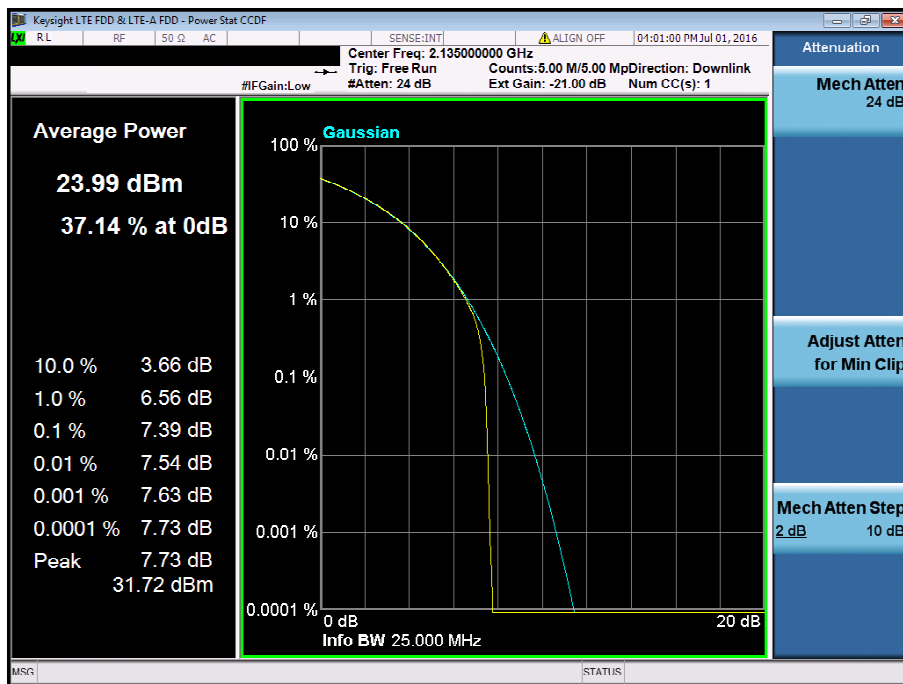




Peak-to-Average Ratio on 10 MHz / 2135 MHz / Chain 0

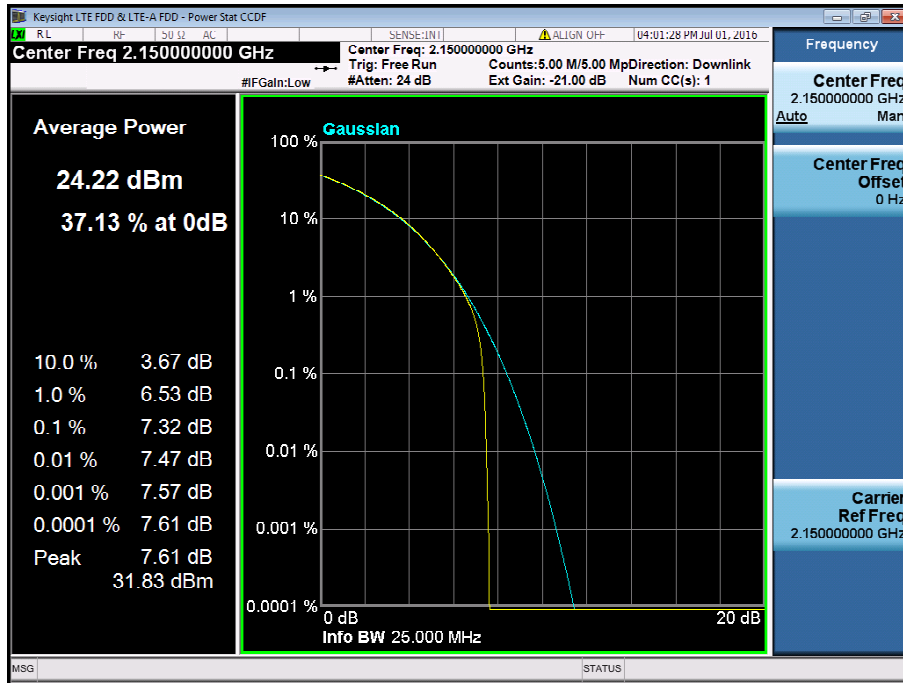


Peak-to-Average Ratio on 10 MHz / 2135 MHz / Chain 1

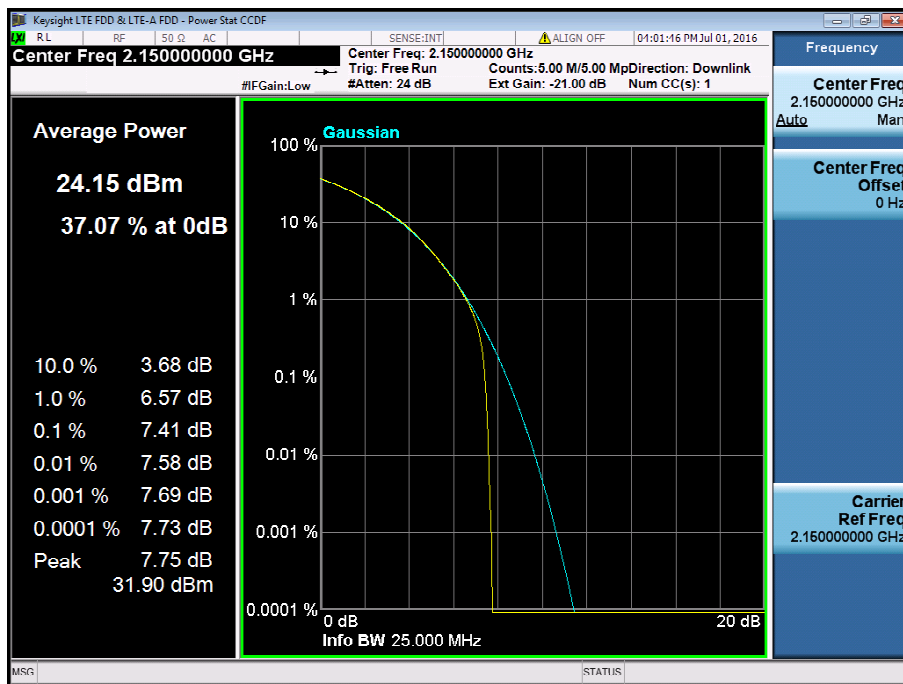




Peak-to-Average Ratio on 10 MHz / 2152.5 MHz / Chain 0

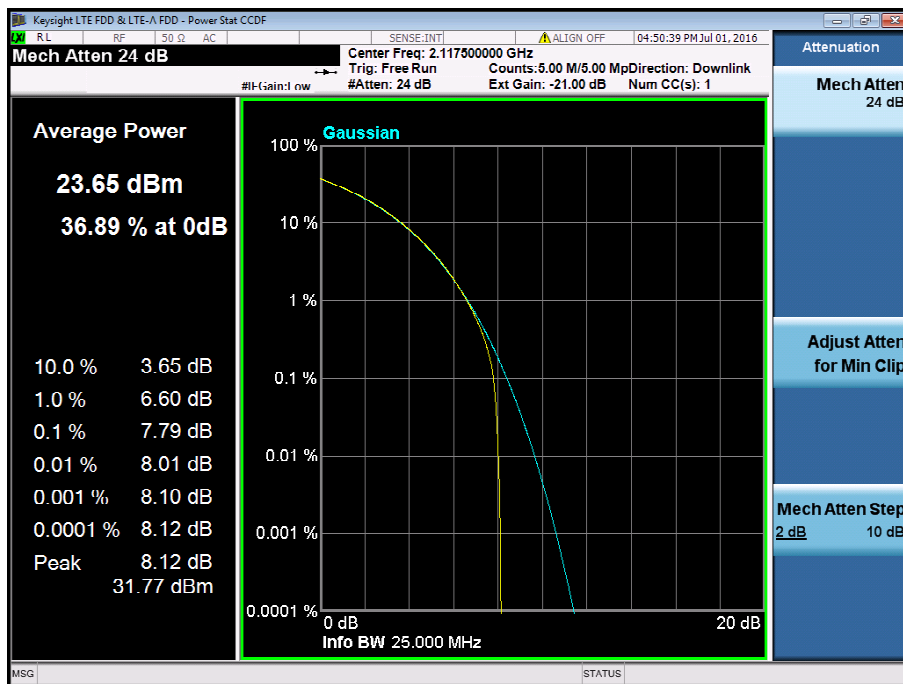


Peak-to-Average Ratio on 10 MHz / 2152.5 MHz / Chain 1

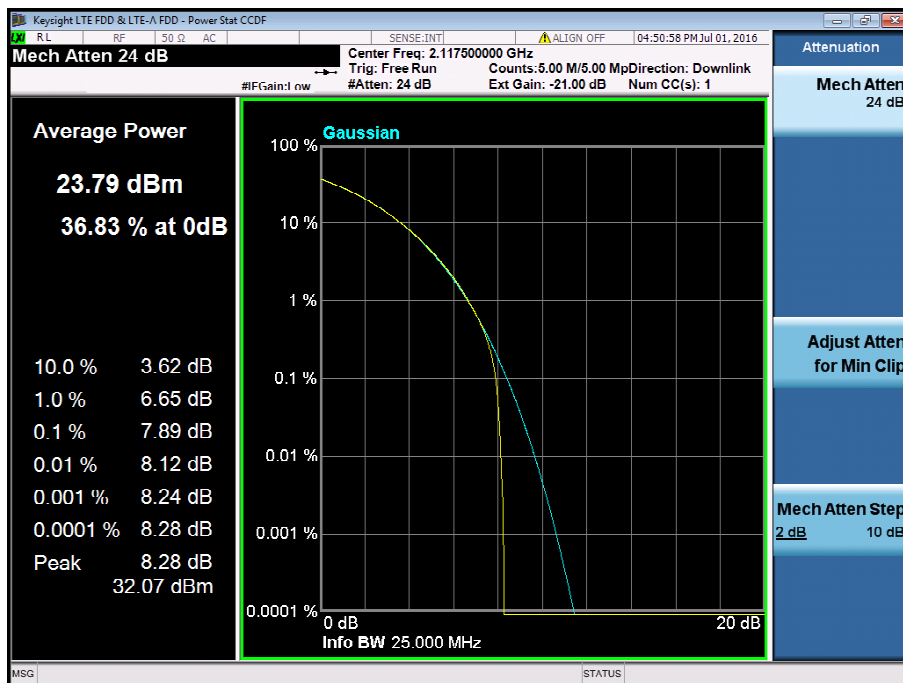




Peak-to-Average Ratio on 15 MHz / 2112.5 MHz / Chain 0

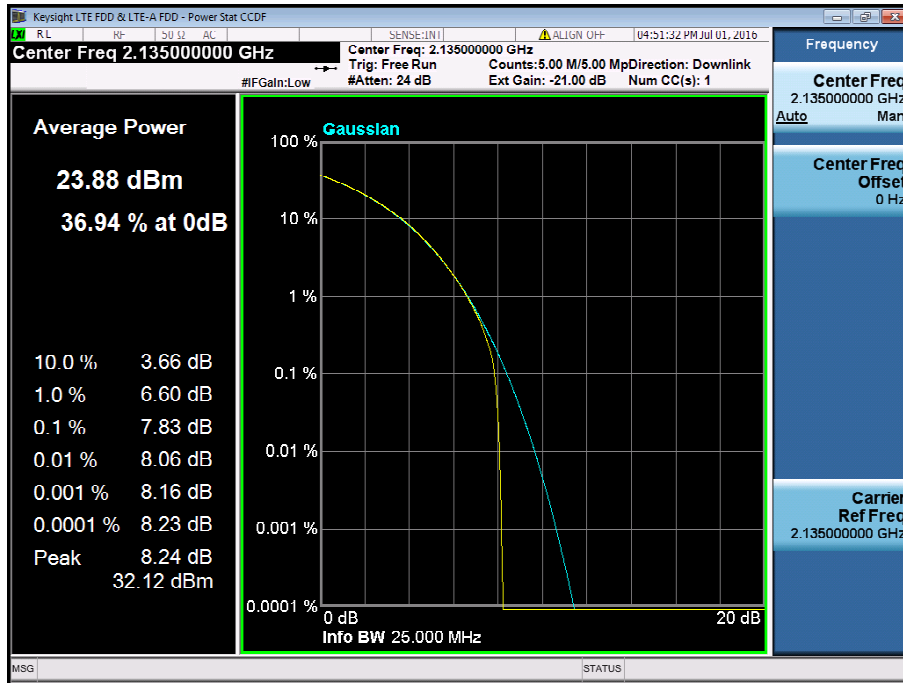


Peak-to-Average Ratio on 15 MHz / 2112.5 MHz / Chain 1

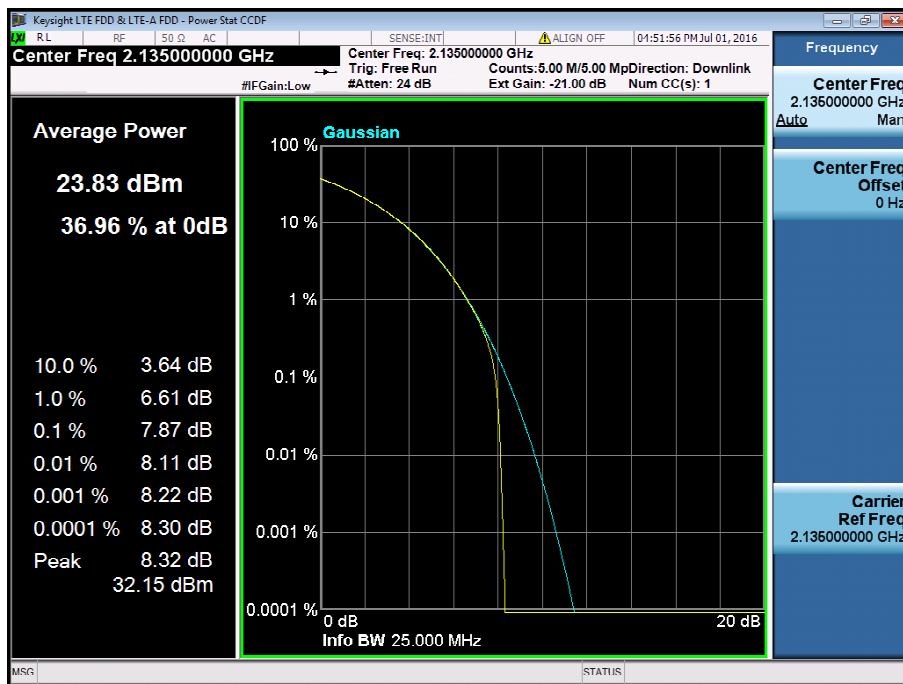




Peak-to-Average Ratio on 15 MHz / 2135 MHz / Chain 0

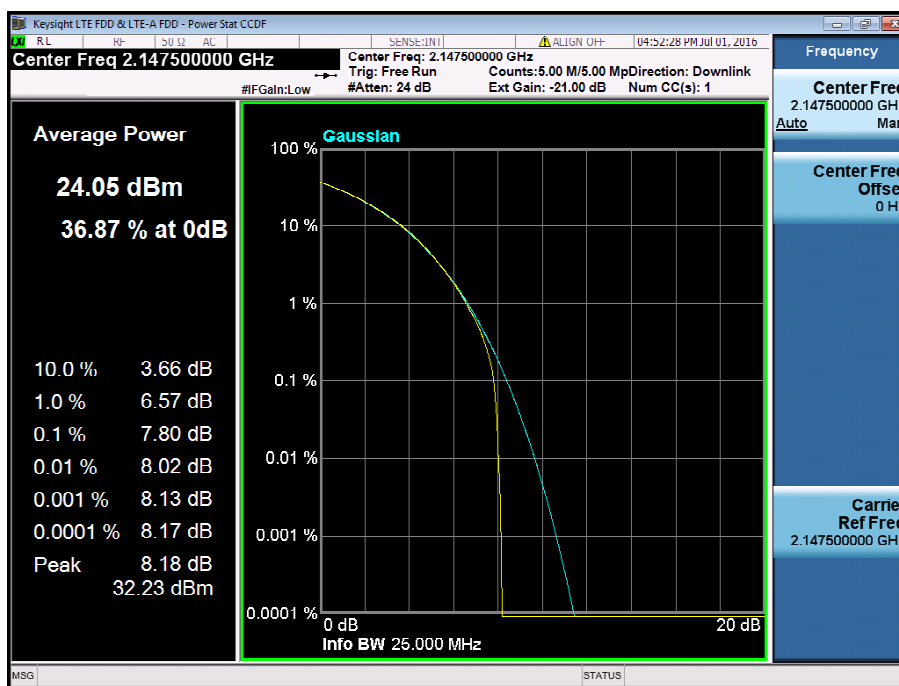


Peak-to-Average Ratio on 15 MHz / 2135 MHz / Chain 1

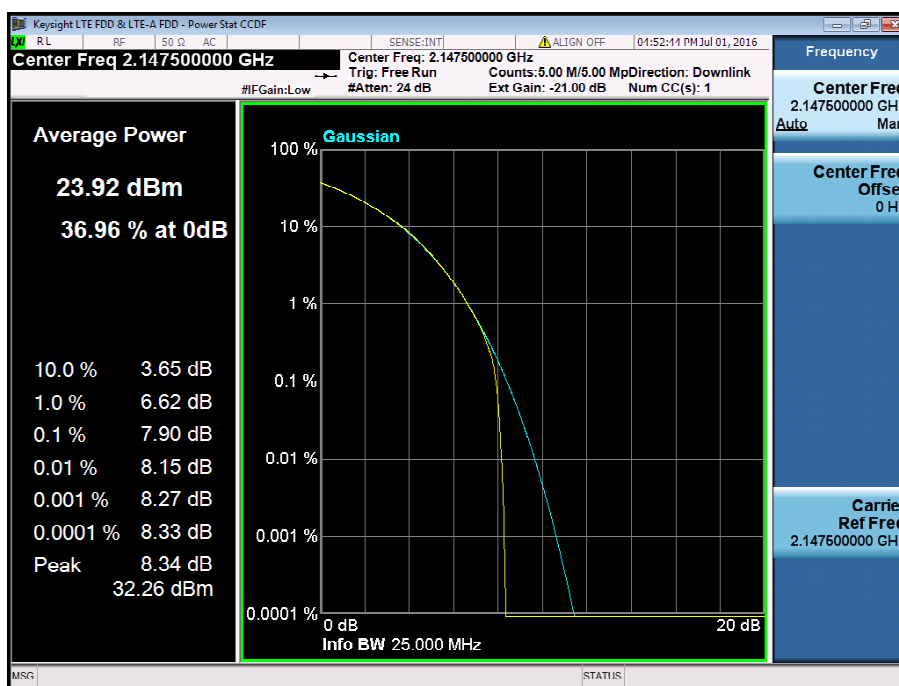




Peak-to-Average Ratio on 15 MHz / 2152.5 MHz / Chain 0

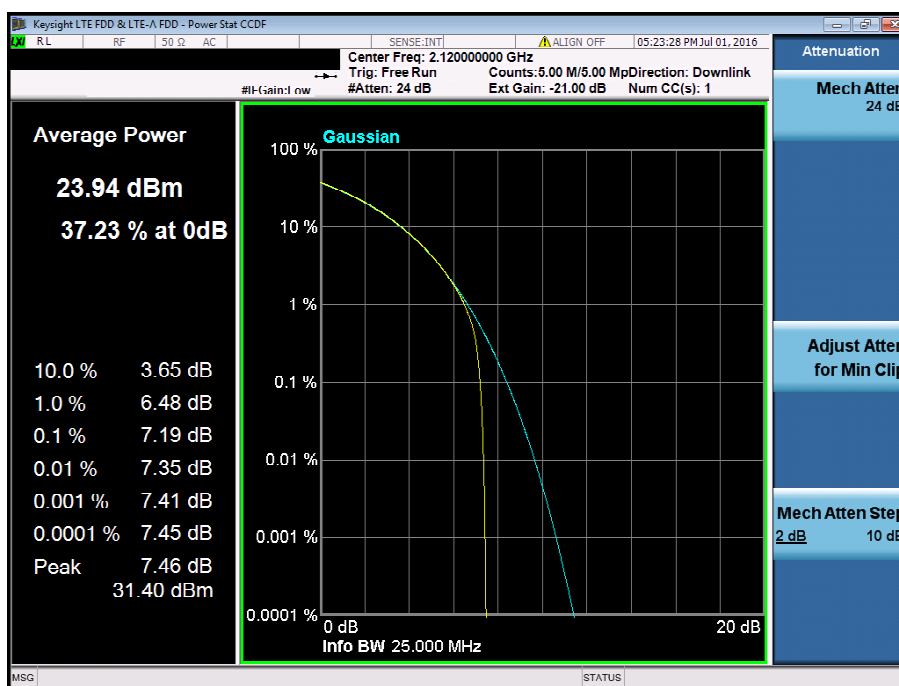


Peak-to-Average Ratio on 15 MHz / 2152.5 MHz / Chain 1

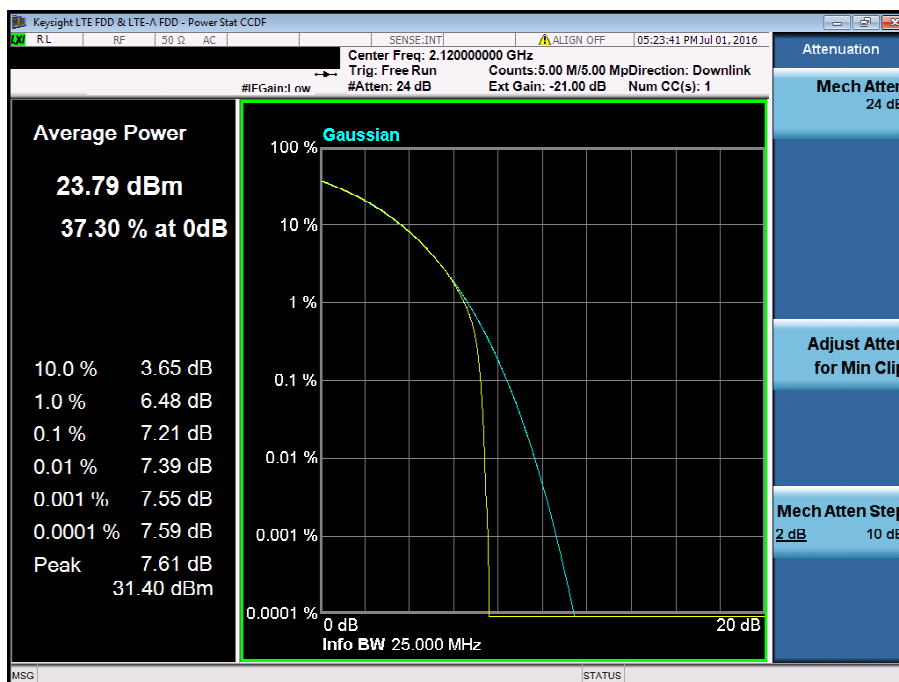




Peak-to-Average Ratio on 20 MHz / 2112.5 MHz / Chain 0

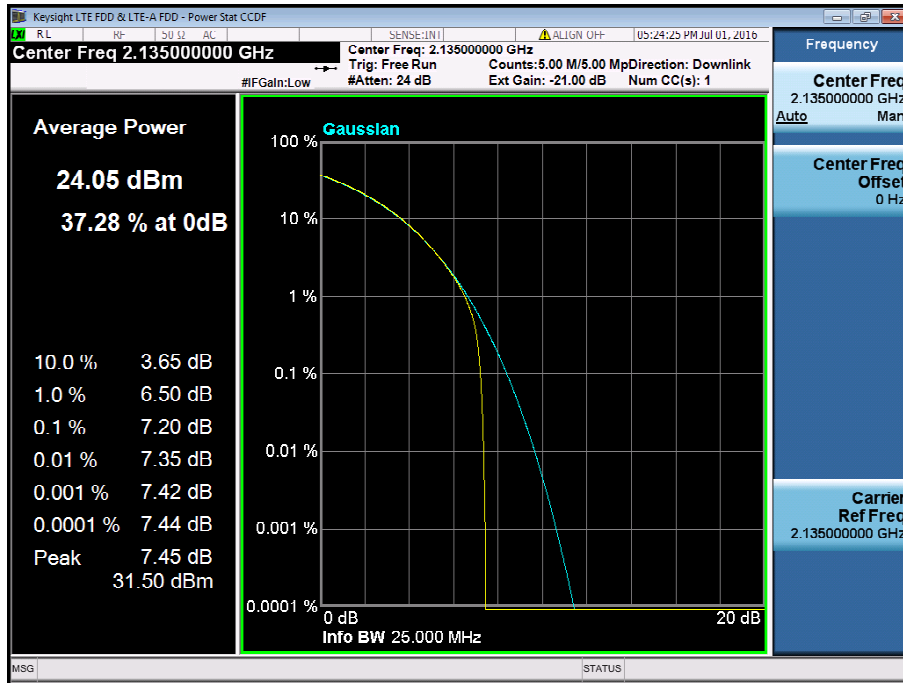


Peak-to-Average Ratio on 20 MHz / 2112.5 MHz / Chain 1

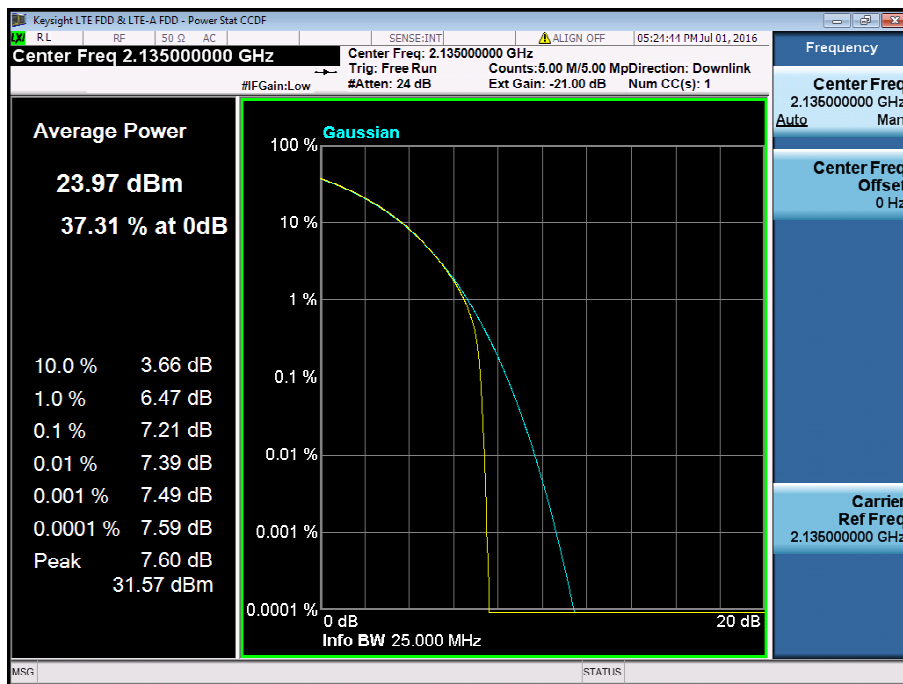




Peak-to-Average Ratio on 20 MHz / 2135 MHz / Chain 0

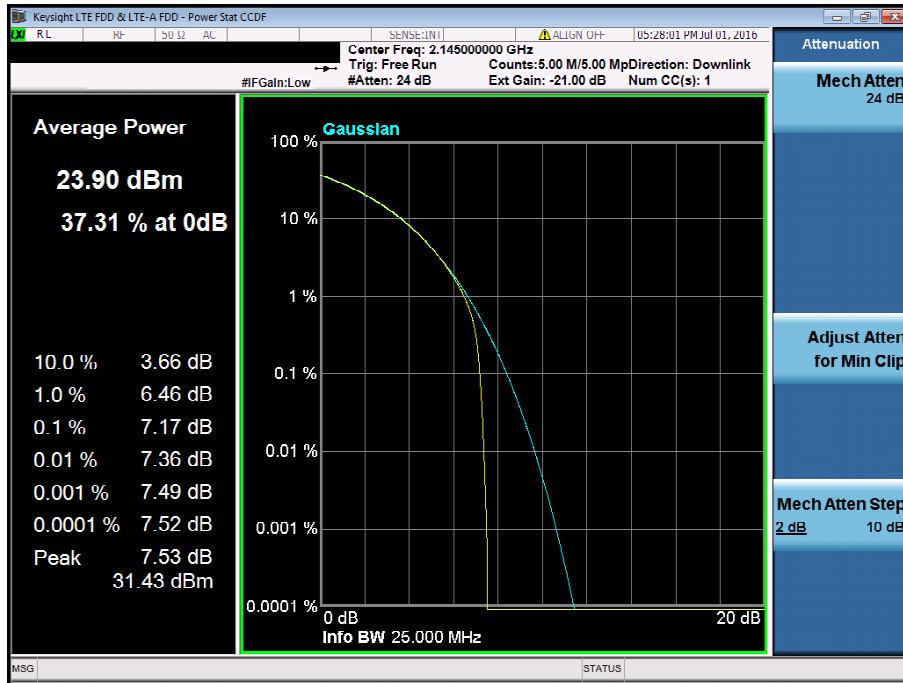


Peak-to-Average Ratio on 20 MHz / 2135 MHz / Chain 1

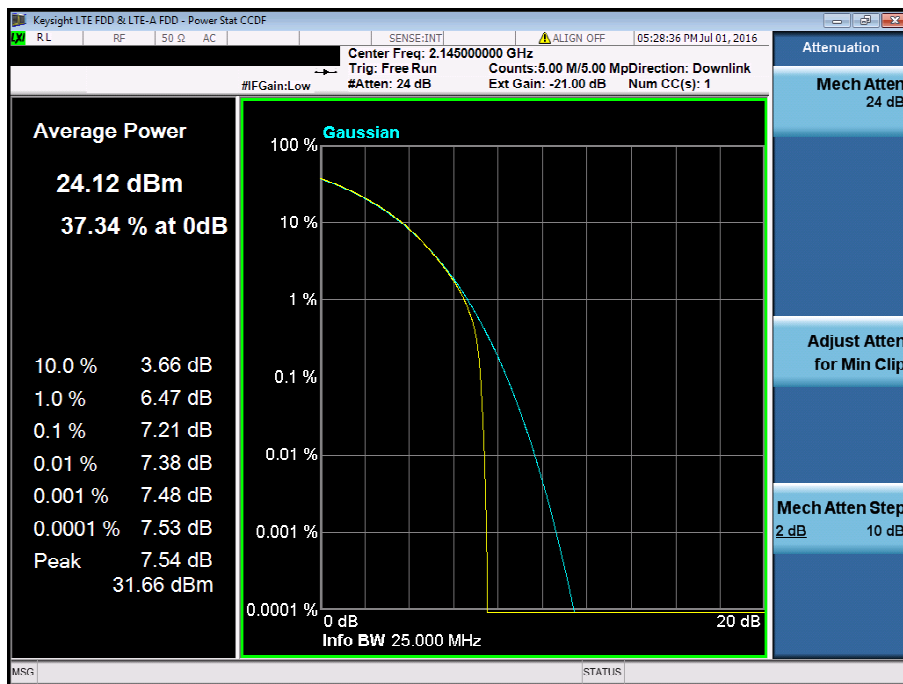




Peak-to-Average Ratio on 20 MHz / 2152.5 MHz / Chain 0



Peak-to-Average Ratio on 20 MHz / 2152.5 MHz / Chain 1



3.3 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.3.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

The 99% occupied bandwidth is 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 transmitted power.

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold.
5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.

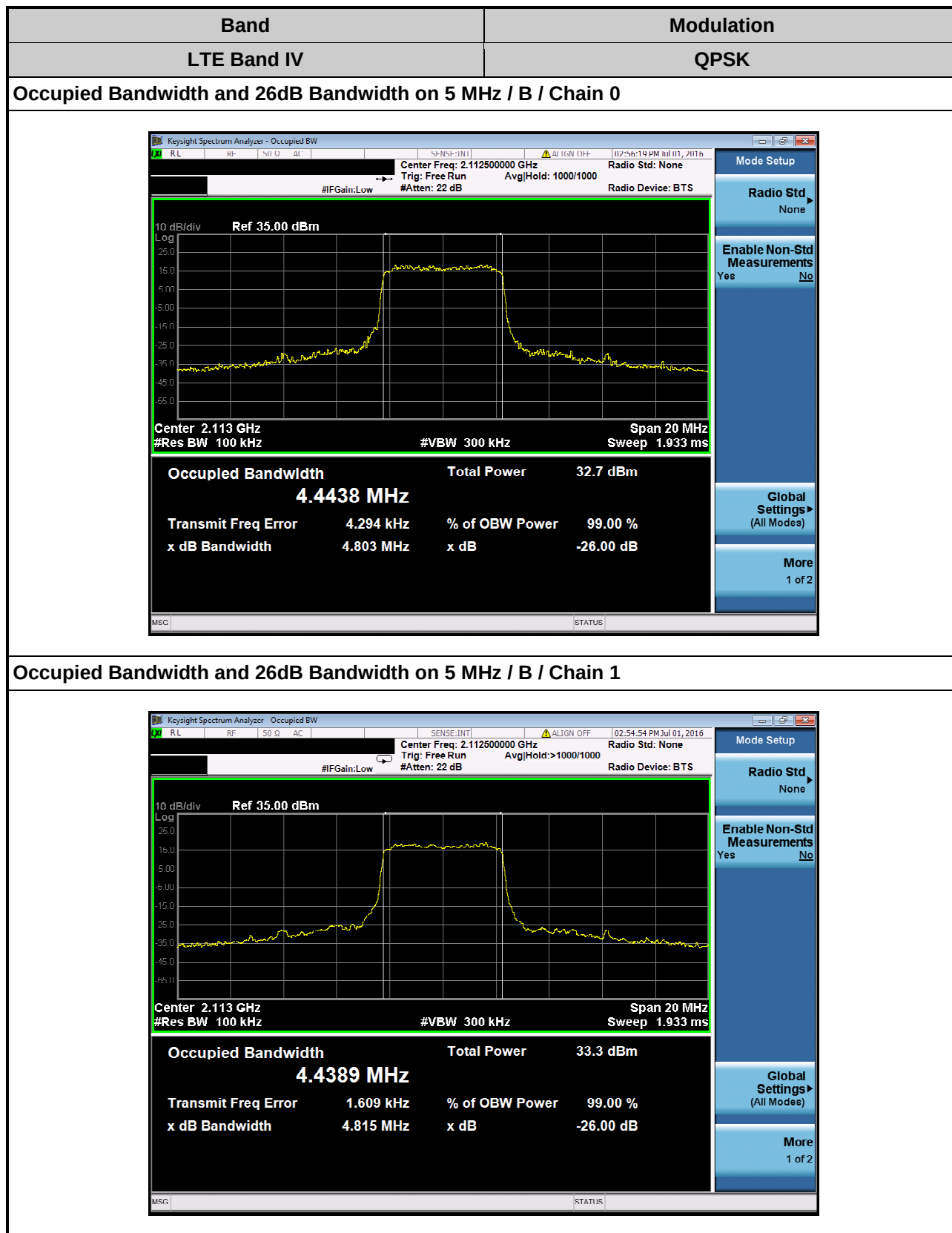
3.3.4 Test Setup



3.3.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

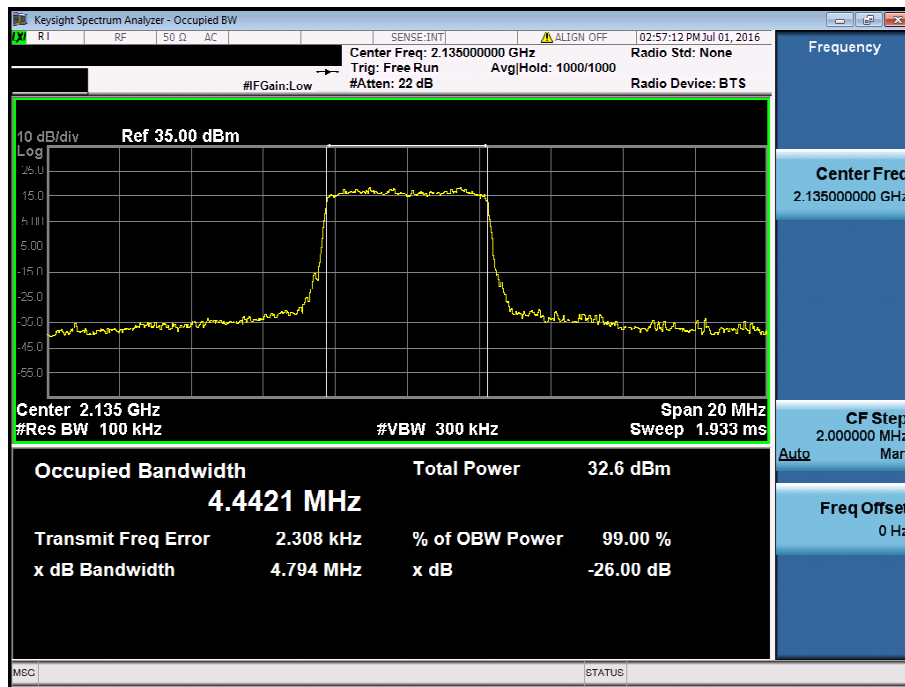
Item		99% Occupied Bandwidth and 26dB Bandwidth											
Band		LTE Band IV											
Frequency (MHz)		B				M				T			
Chain		Chain 0		Chain 1		Chain 0		Chain 1		Chain 0		Chain 1	
Test Item		99%	26dB	99%	26dB	99%	26dB	99%	26dB	99%	26dB	99%	26dB
		OBW	BW	OBW	BW	OBW	BW	OBW	BW	OBW	BW	OBW	BW
Bandwidth	5 MHz	4.44	4.80	4.43	4.81	4.44	4.79	4.44	4.81	4.43	4.80	4.44	4.80
	10 MHz	8.95	9.64	8.96	9.69	8.96	9.67	8.96	9.70	8.95	9.69	8.95	9.69
	15 MHz	13.35	14.29	13.35	14.35	13.34	14.33	13.36	14.36	13.35	14.31	13.33	14.31
	20 MHz	17.89	19.19	17.87	19.17	17.89	19.21	17.89	19.10	17.89	19.14	17.88	19.15
Note:		B : Bottom channel , M : Middle channel , T : Top channel											

3.3.6 Test Result (Plots) of Occupied Bandwidth and 26dB Bandwidth

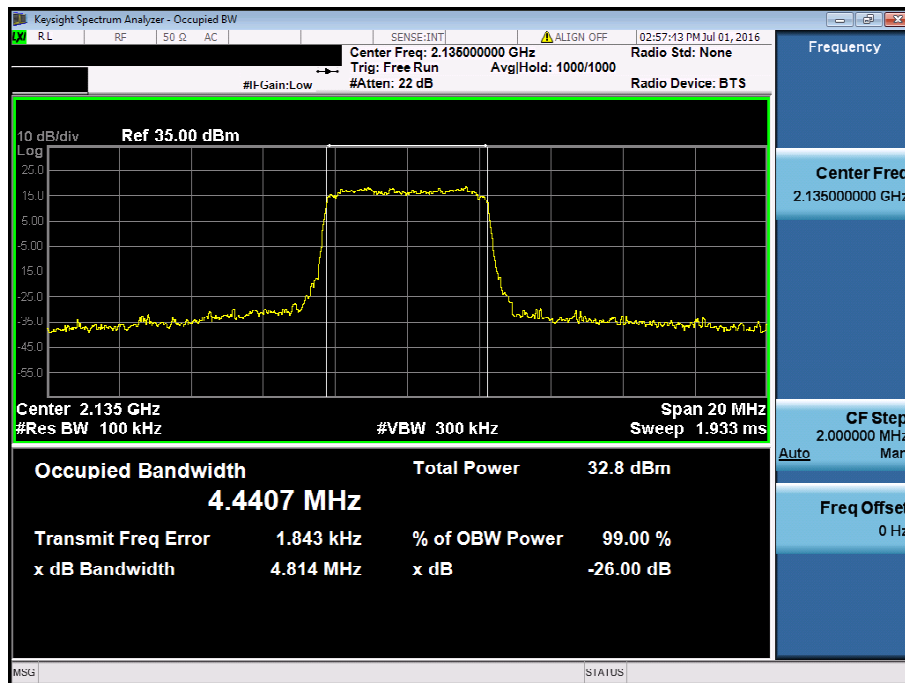




Occupied Bandwidth and 26dB Bandwidth on 5 MHz / M / Chain 0

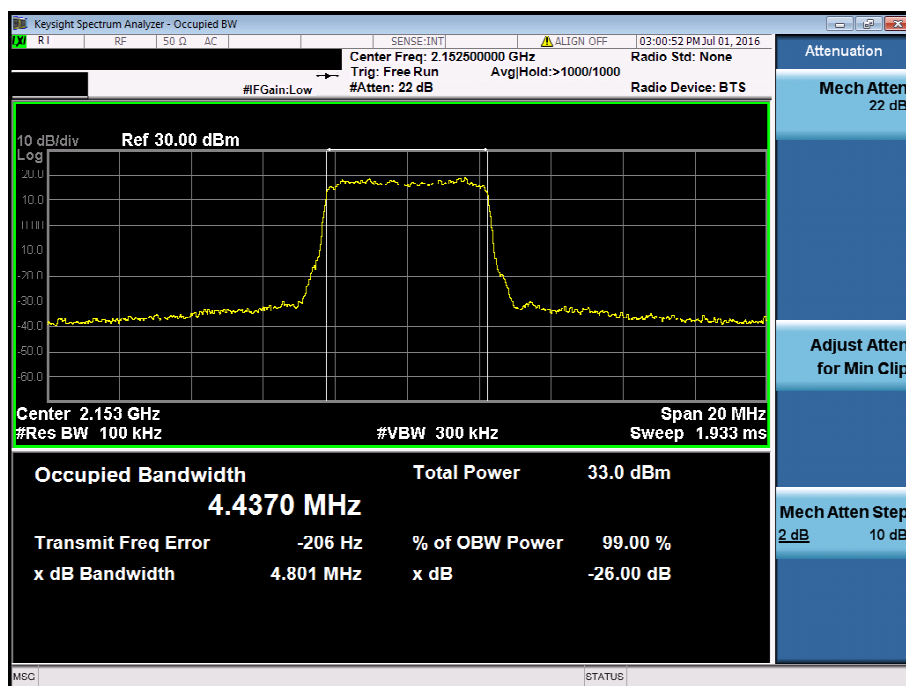


Occupied Bandwidth and 26dB Bandwidth on 5 MHz / M / Chain 1

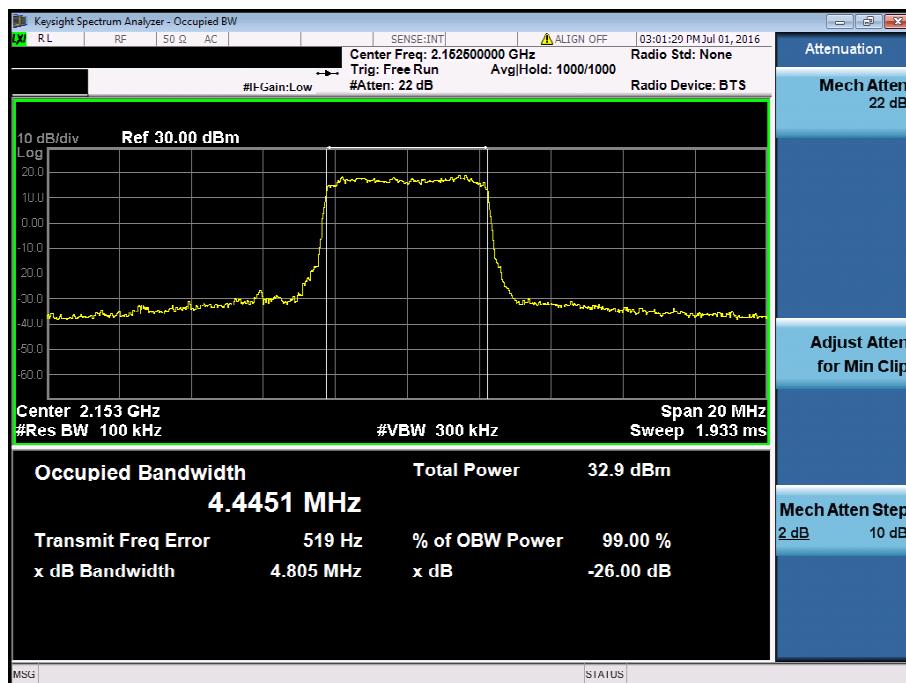




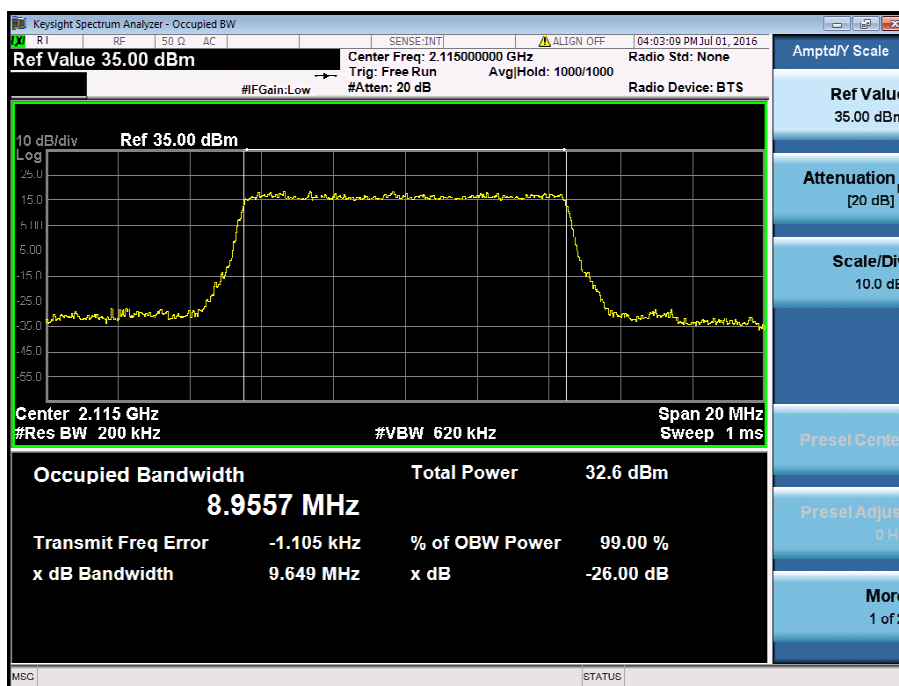
Occupied Bandwidth and 26dB Bandwidth on 5 MHz / T / Chain 0



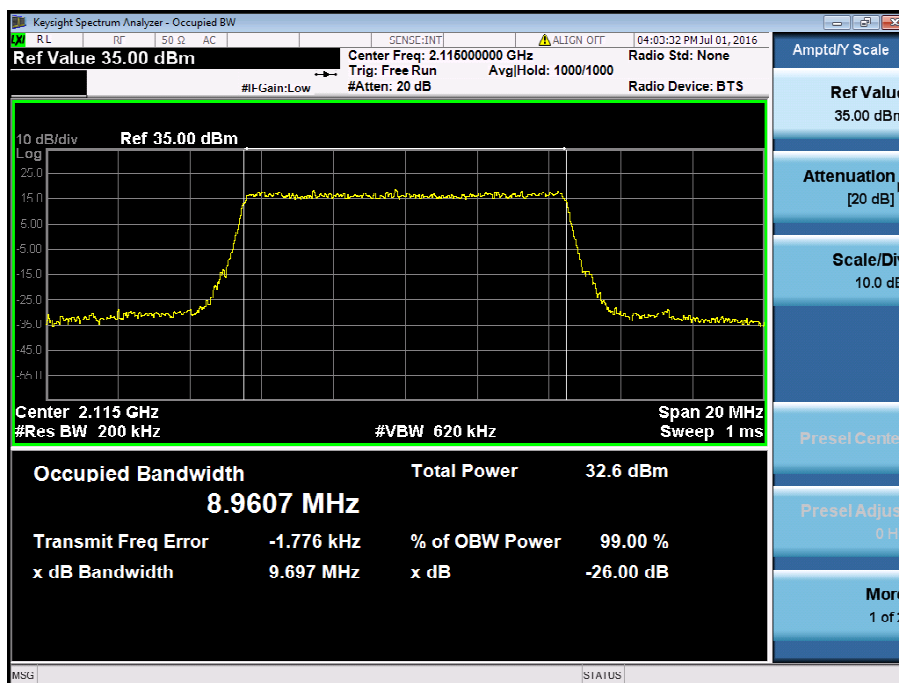
Occupied Bandwidth and 26dB Bandwidth on 5 MHz / T / Chain 1



Occupied Bandwidth and 26dB Bandwidth on 10 MHz / B / Chain 0

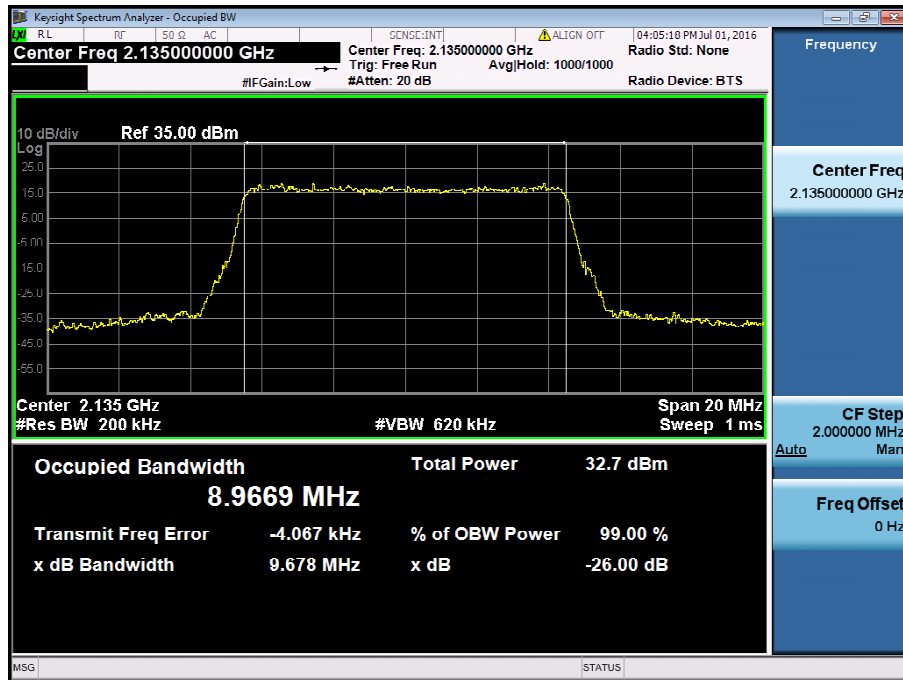


Occupied Bandwidth and 26dB Bandwidth on 10 MHz / B / Chain 1

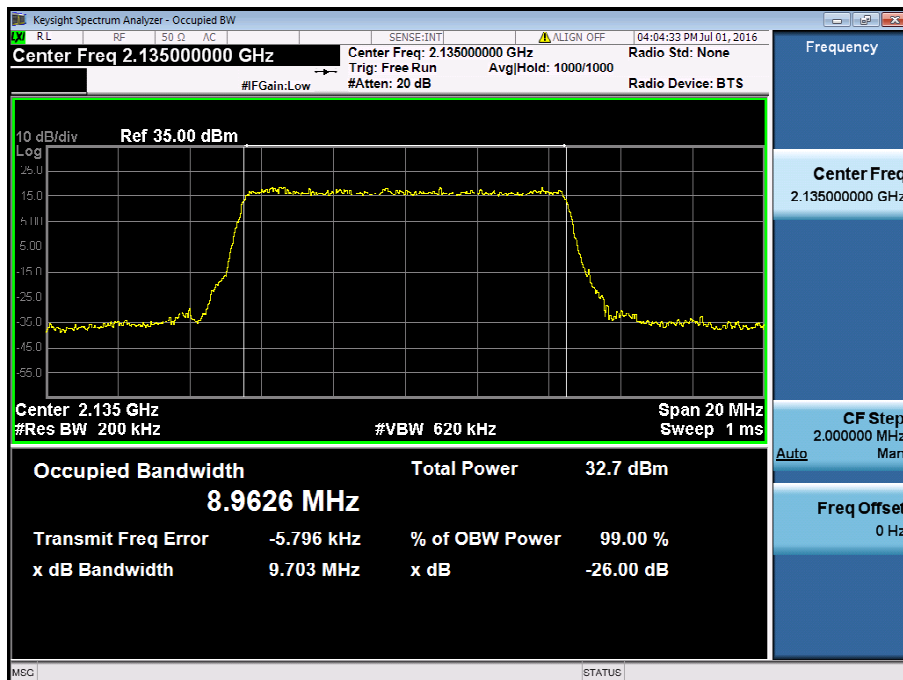




Occupied Bandwidth and 26dB Bandwidth on 10 MHz / M / Chain 0

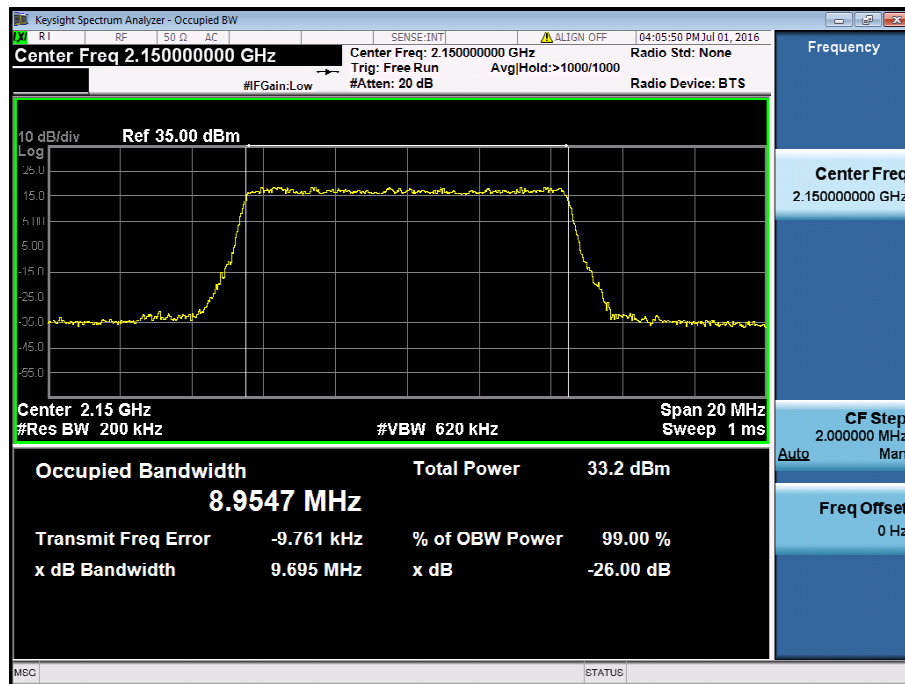


Occupied Bandwidth and 26dB Bandwidth on 10 MHz / M / Chain 1

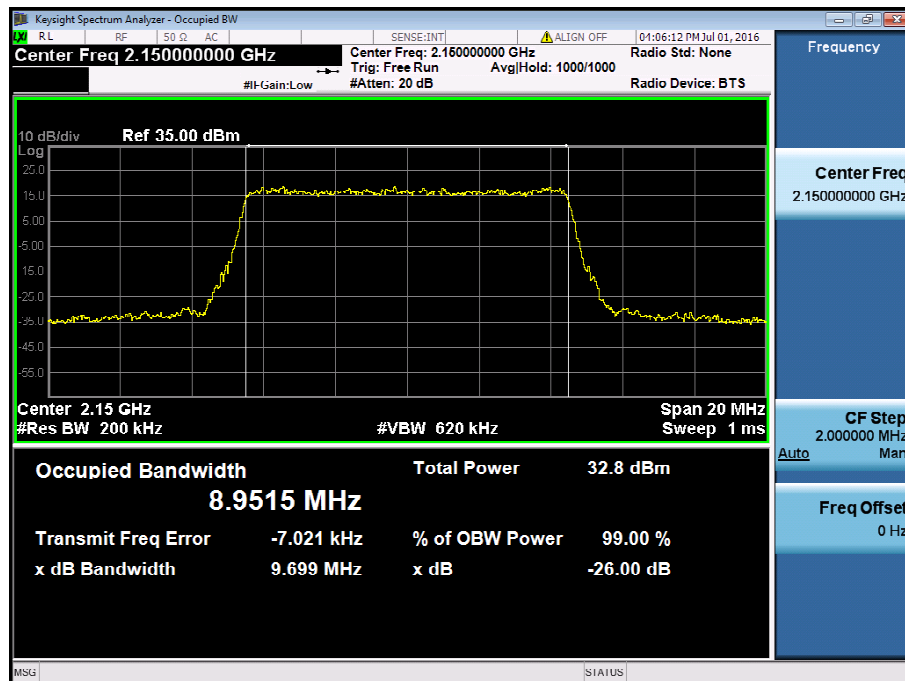




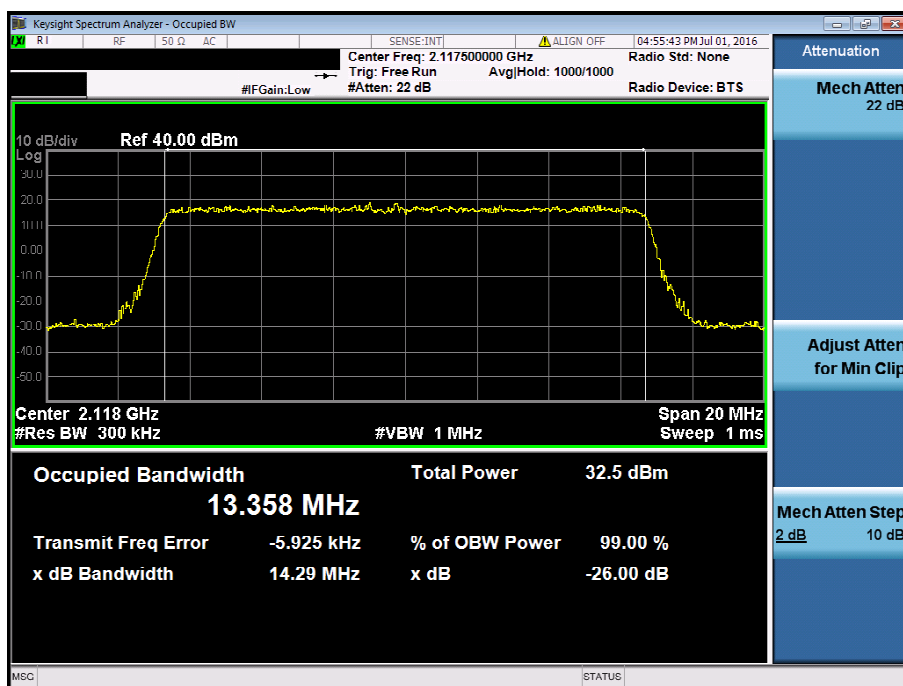
Occupied Bandwidth and 26dB Bandwidth on 10 MHz / T / Chain 0



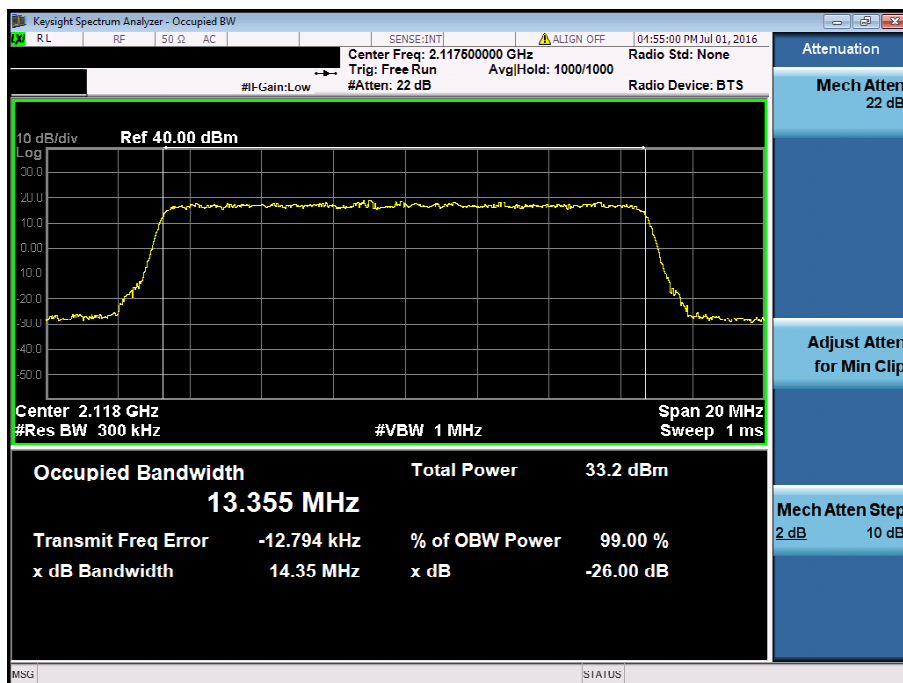
Occupied Bandwidth and 26dB Bandwidth on 10 MHz / T / Chain 1



Occupied Bandwidth and 26dB Bandwidth on 15 MHz / B / Chain 0

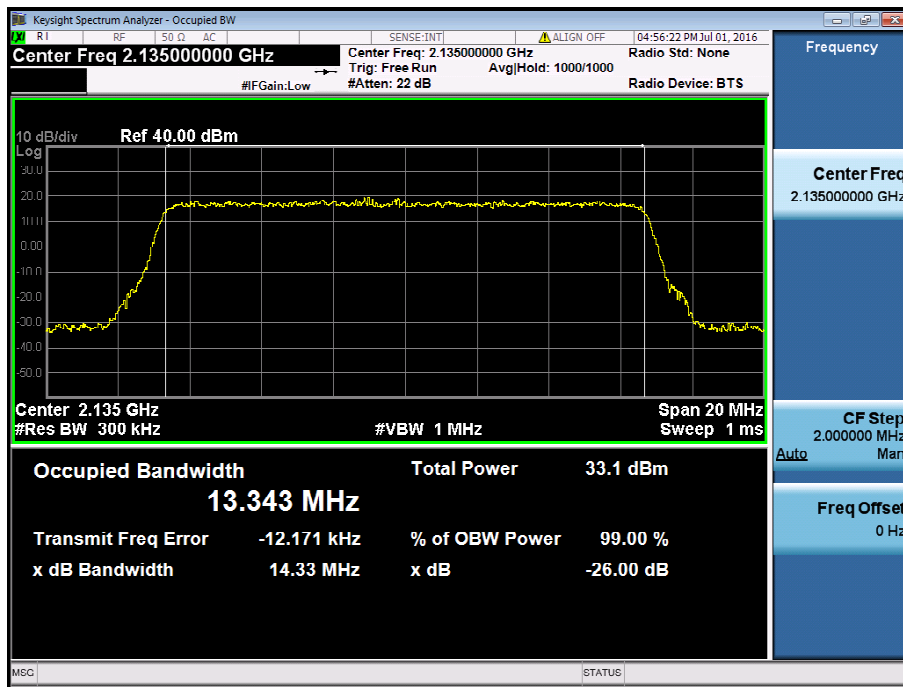


Occupied Bandwidth and 26dB Bandwidth on 15 MHz / B / Chain 1

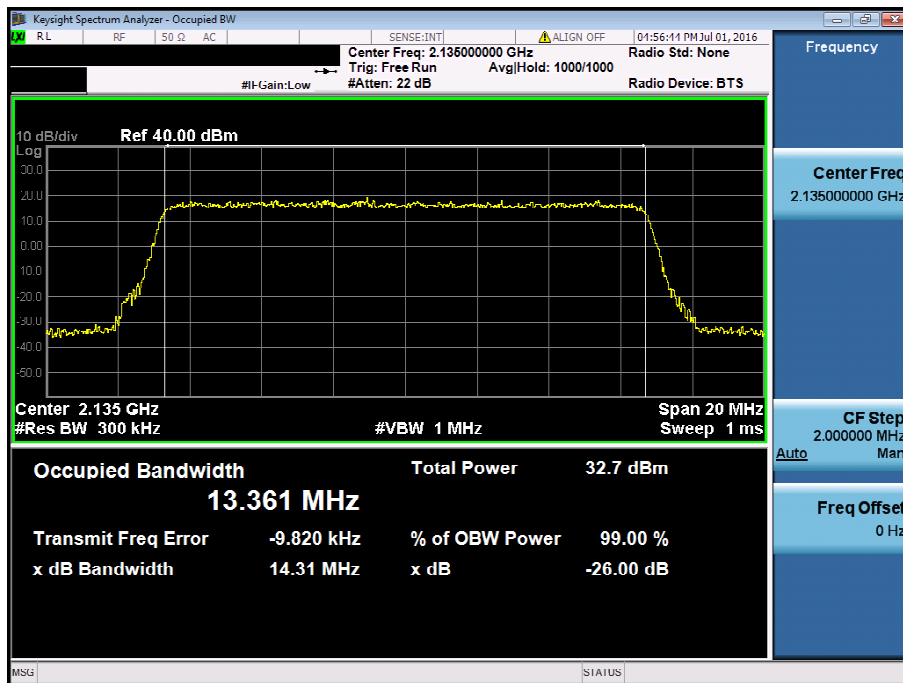




Occupied Bandwidth and 26dB Bandwidth on 15 MHz / M / Chain 0

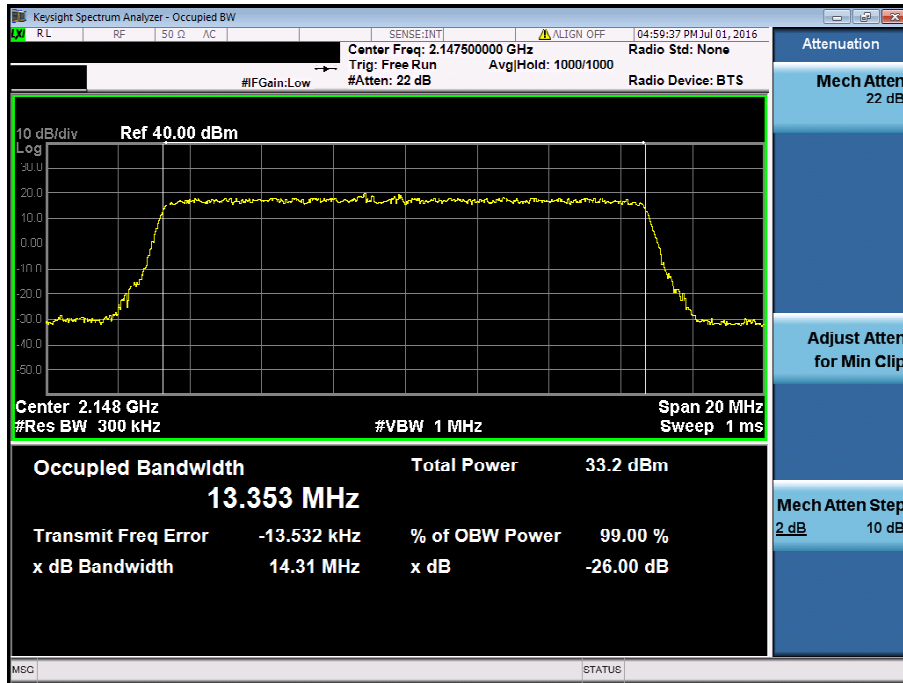


Occupied Bandwidth and 26dB Bandwidth on 15 MHz / M / Chain 1

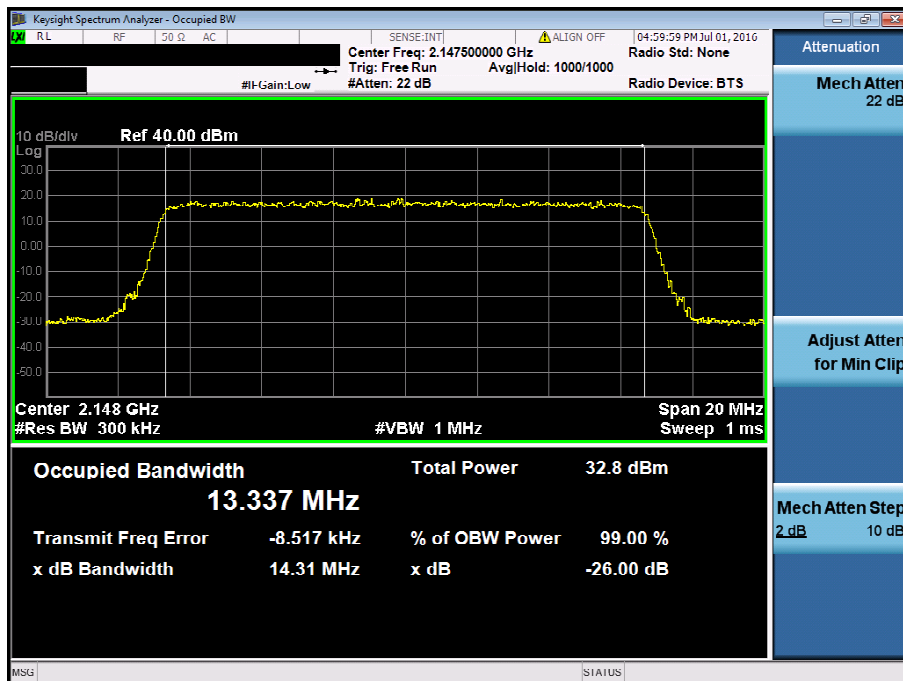




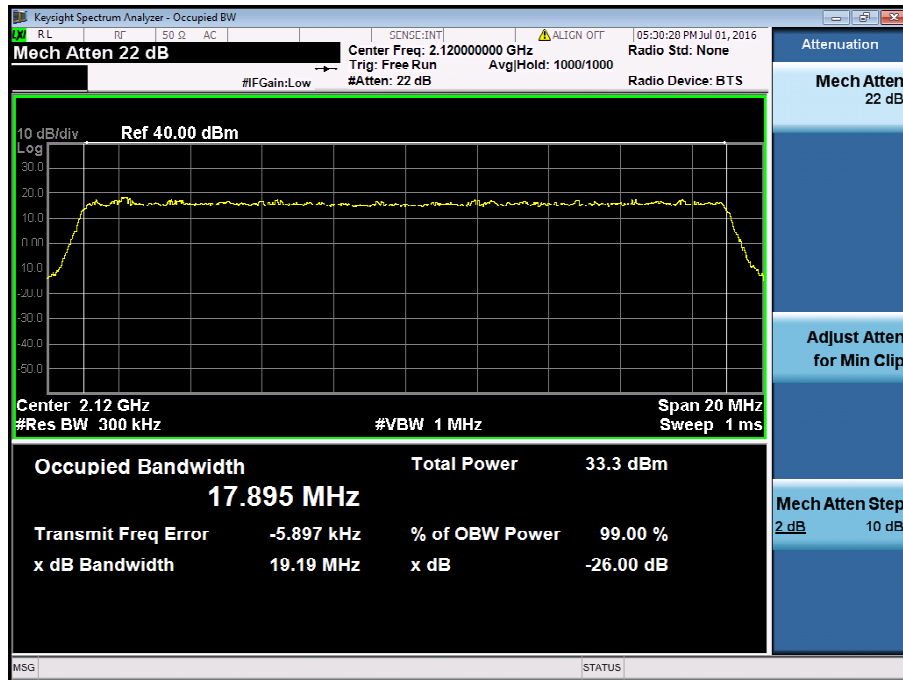
Occupied Bandwidth and 26dB Bandwidth on 15 MHz / T / Chain 0



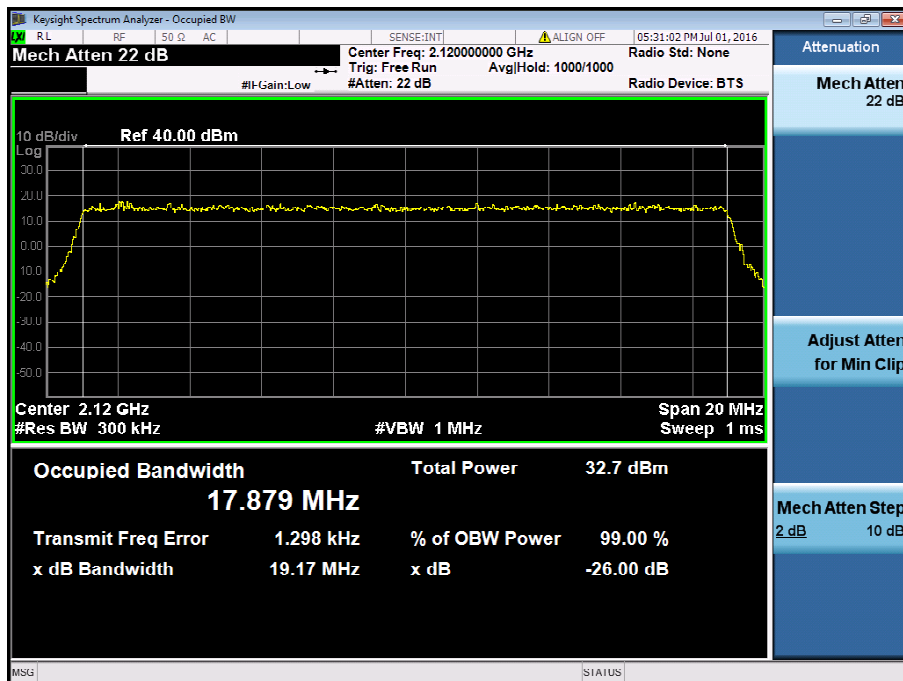
Occupied Bandwidth and 26dB Bandwidth on 15 MHz / T / Chain 1



Occupied Bandwidth and 26dB Bandwidth on 20 MHz / B / Chain 0

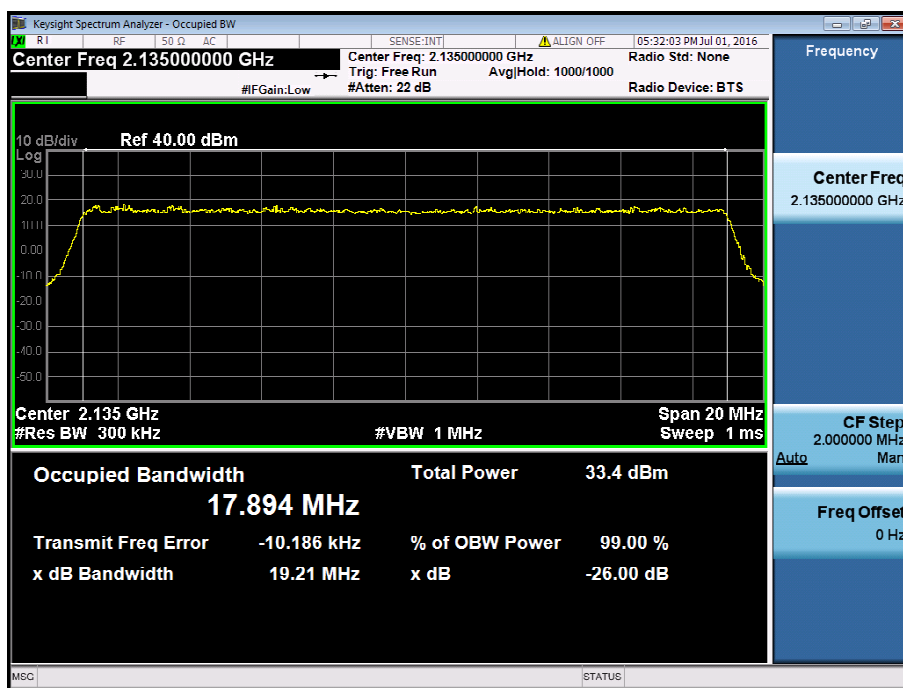


Occupied Bandwidth and 26dB Bandwidth on 20 MHz / B / Chain 1

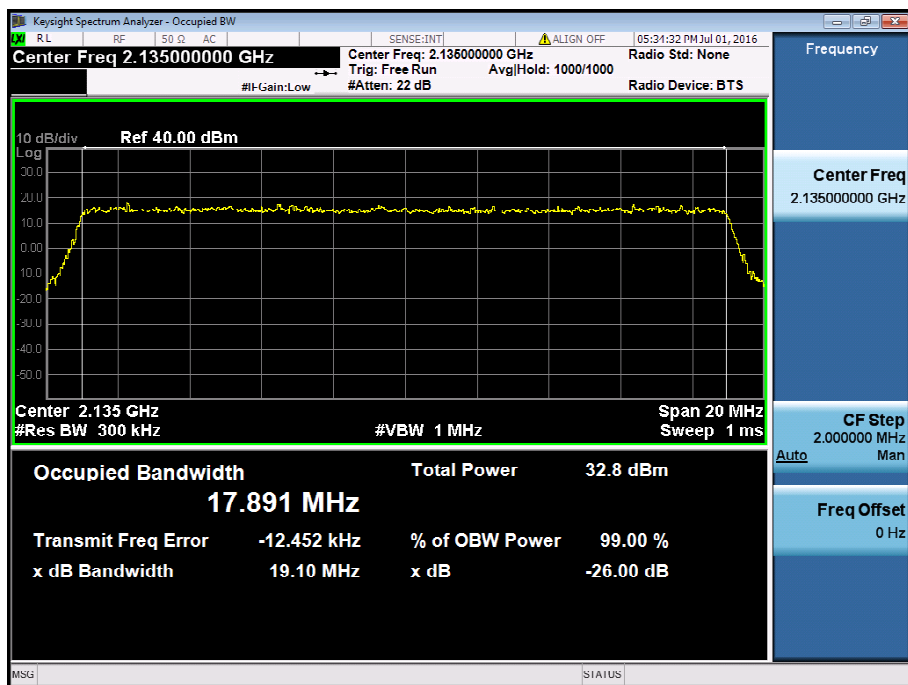




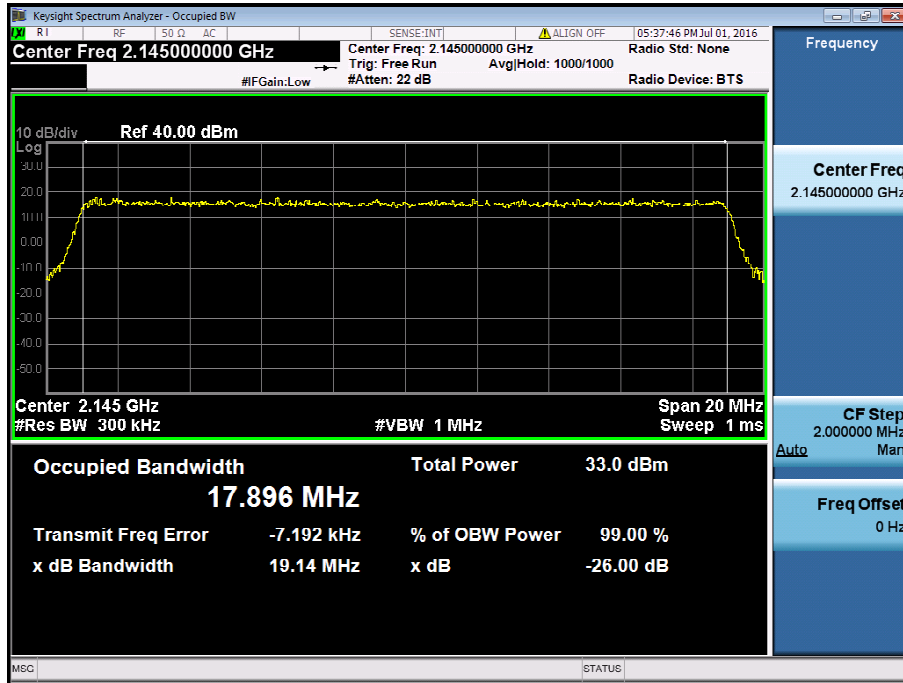
Occupied Bandwidth and 26dB Bandwidth on 20 MHz / M / Chain 0



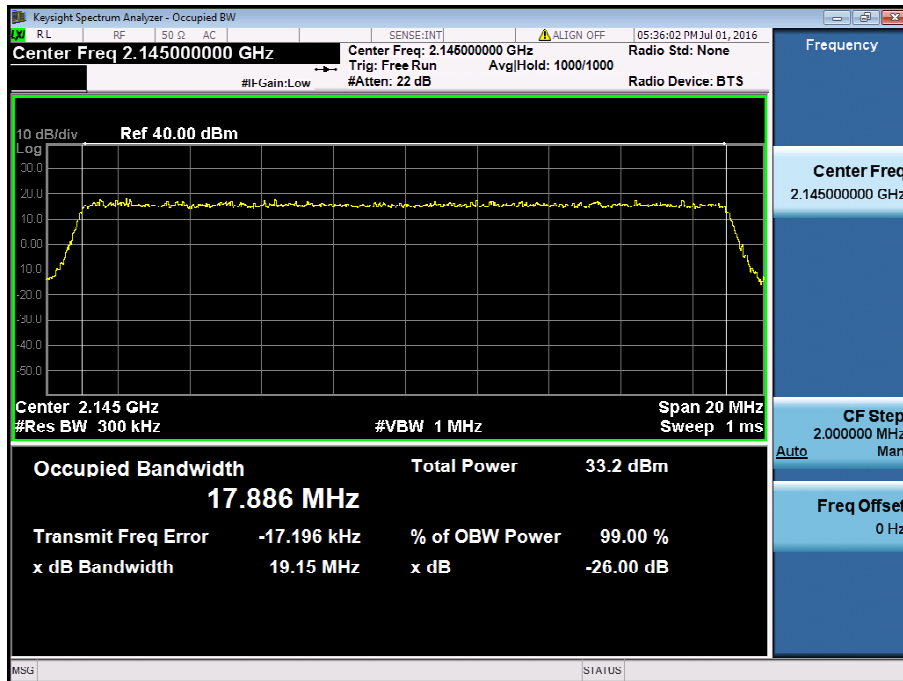
Occupied Bandwidth and 26dB Bandwidth on 20 MHz / M / Chain 1



Occupied Bandwidth and 26dB Bandwidth on 20 MHz / T / Chain 0



Occupied Bandwidth and 26dB Bandwidth on 20 MHz / T / Chain 1



3.4 Band Edge Measurement

3.4.1 Description of Band Edge Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

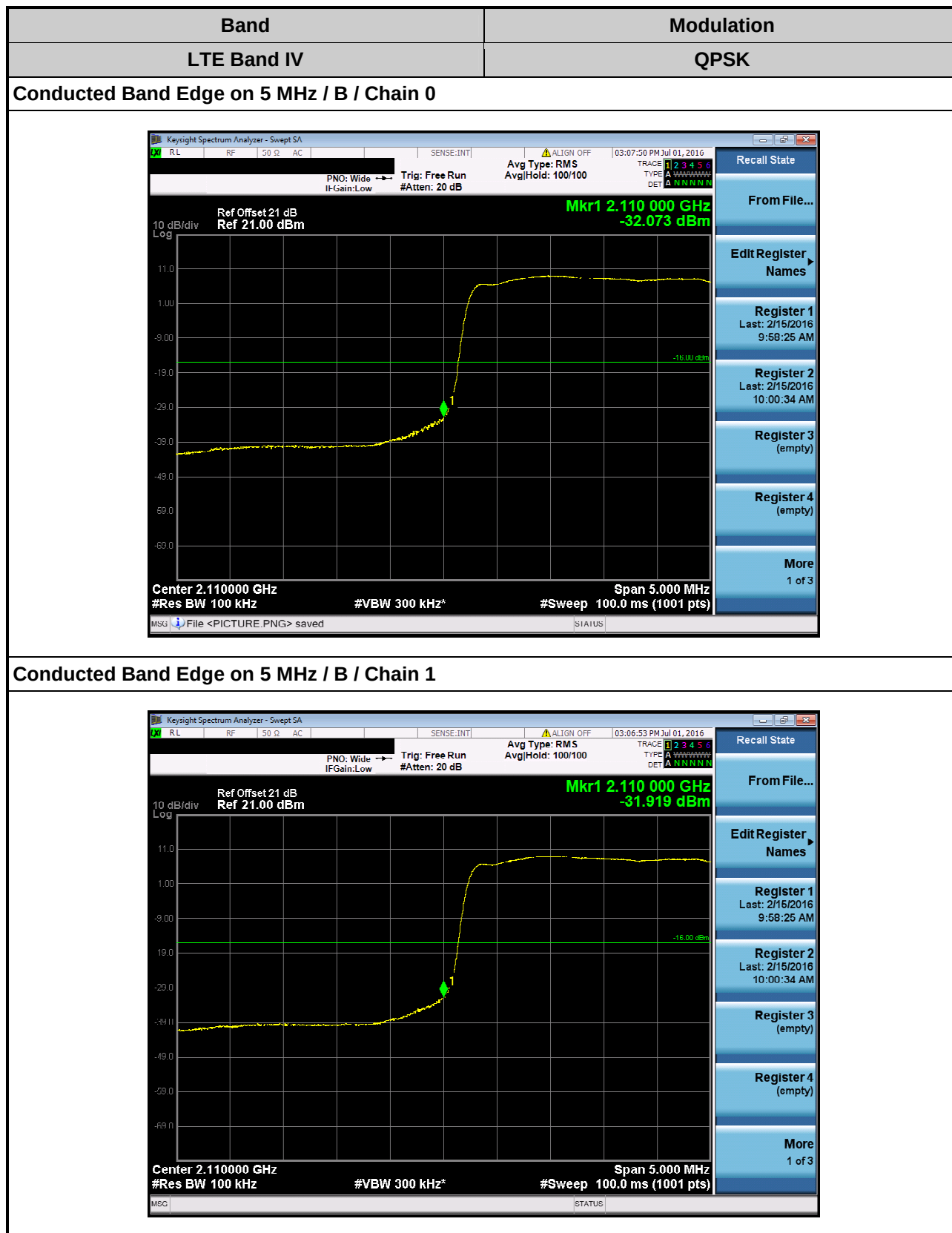
1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13\text{dBm}$.

3.4.4 Test Setup

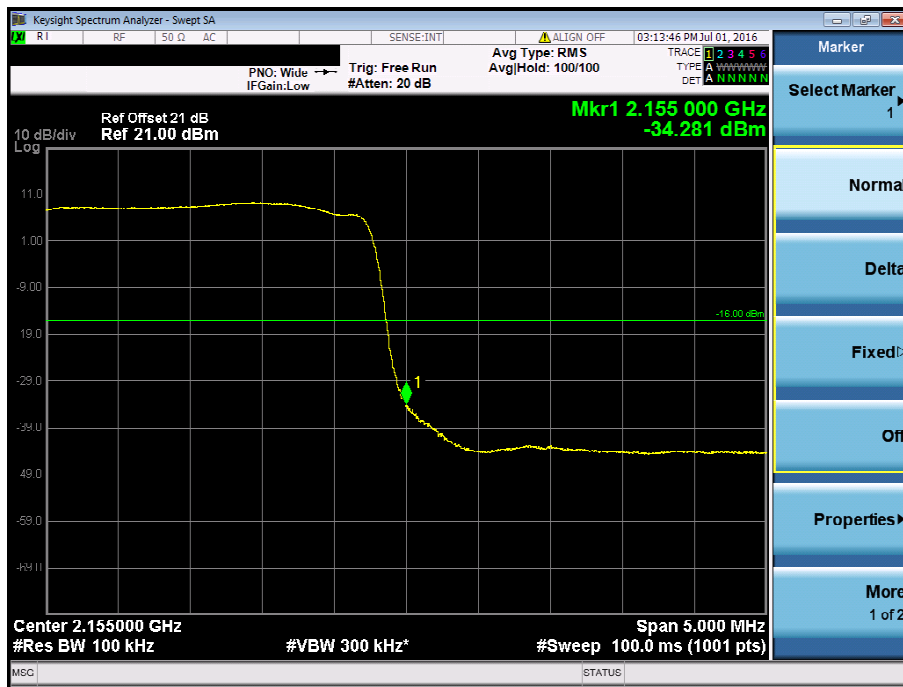




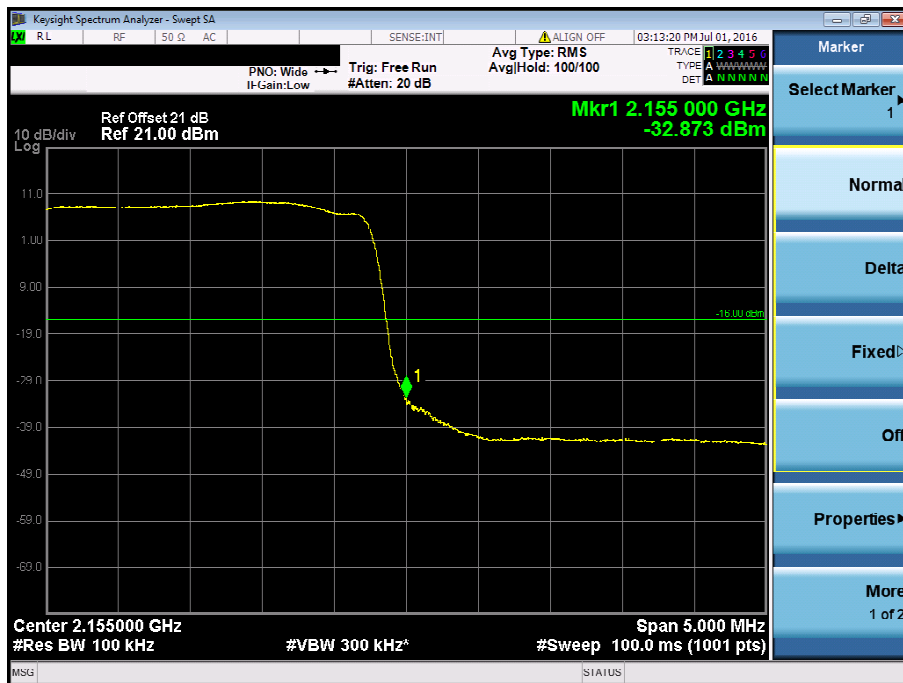
3.4.5 Test Result (Plots) of Conducted Band Edge



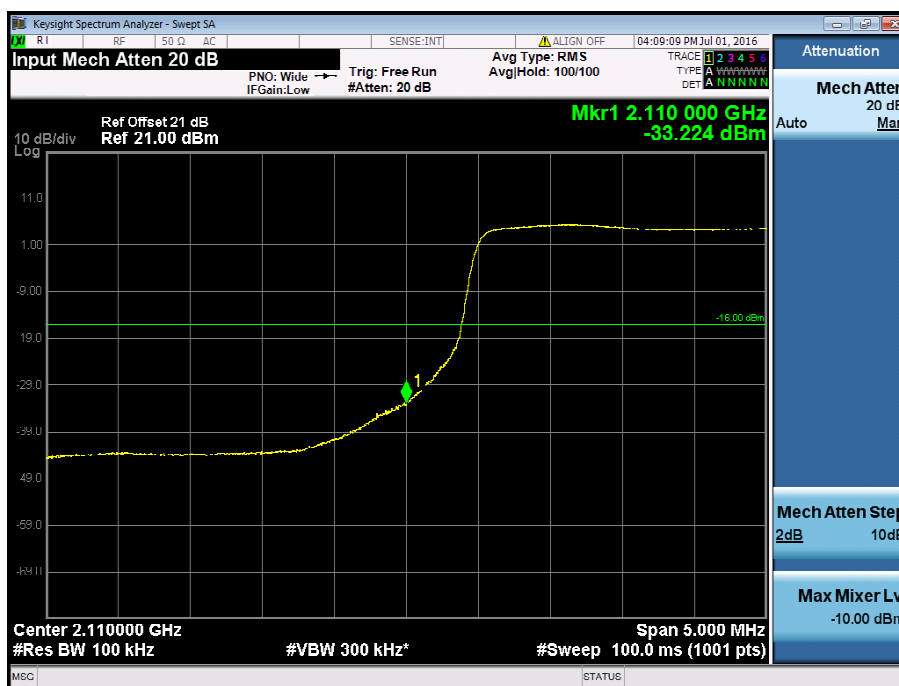
Conducted Band Edge on 5 MHz / T / Chain 0



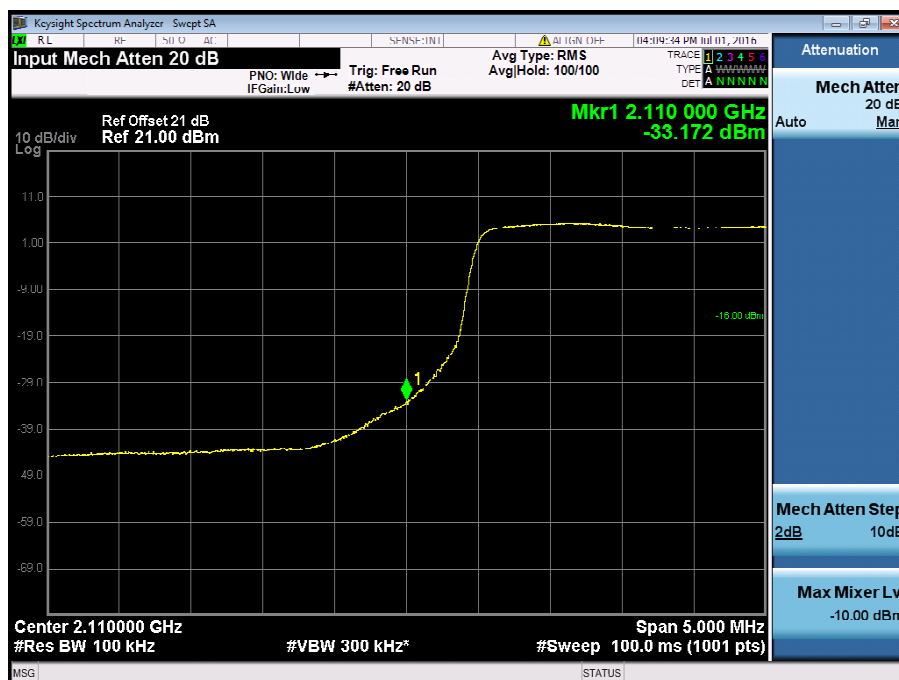
Conducted Band Edge on 5 MHz / T / Chain 1



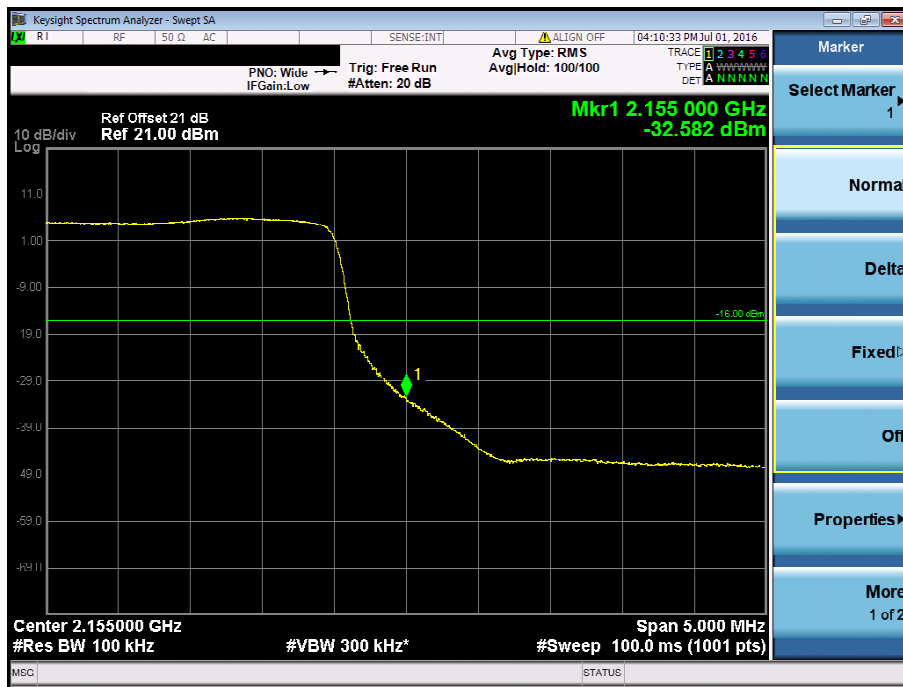
Conducted Band Edge on 10 MHz / B / Chain 0



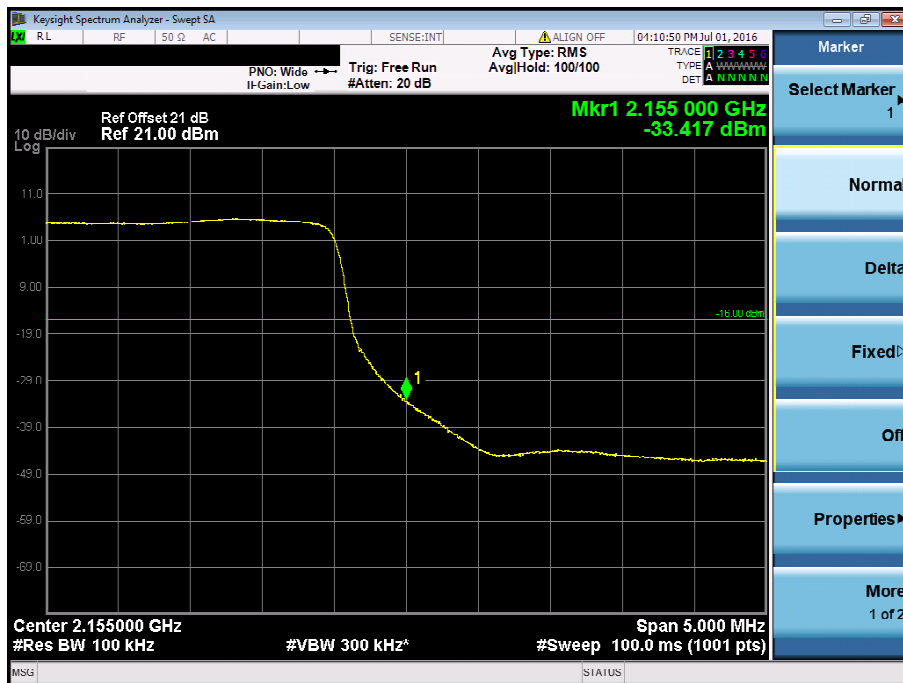
Conducted Band Edge on 10 MHz / B / Chain 1



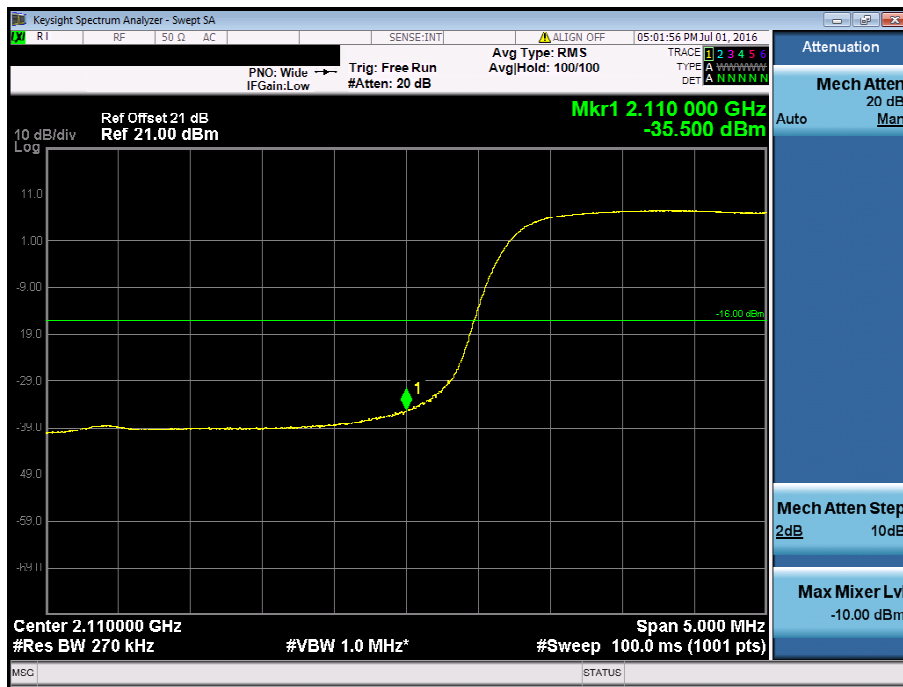
Conducted Band Edge on 10 MHz / T / Chain 0



Conducted Band Edge on 10 MHz / T / Chain 1



Conducted Band Edge on 15 MHz / B / Chain 0



Conducted Band Edge on 15 MHz / B / Chain 1

