



## PART 27 MEASUREMENT REPORT

**Applicant Name:**

Samsung Electronics Co., Ltd.  
129, Samsung-ro,  
Yeongtong-gu, Suwon-si  
Gyeonggi-do, 16677, Korea

**Date of Testing:**

06/10/2021 - 07/27/2021

**Test Site/Location:**

PCTEST KOREA Lab. Yongin-si, Gyeonggi-do, Korea

**Test Report Serial No.:**

8K21060701-R1.A3L

**FCC ID:**

**A3LMT6411-41A**

**APPLICANT:**

**Samsung Electronics Co., Ltd.**

**Application Type:**

Certification

**Model:**

MT6411-41A

**EUT Type:**

MMU(MT6411)

**FCC Classification:**

Licensed Non-Broadcast Station Transmitter (TNB)

**FCC Rule Part(s):**

27

**Test Procedure(s):**

ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 662911 D01 v02r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.


I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



Prepared by





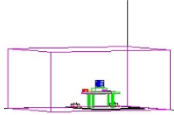
Reviewed by

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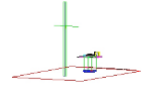
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### FCC Part 27





Mode	FCC Rule Part	Tx Frequency (MHz)	Total Power		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
LTE 3C_20M+20M+20M	27	2496 - 2690	86297.9	79.36	57M7G7D	QPSK
		2496 - 2690	82603.8	79.17	57M8W7D	16QAM
		2496 - 2690	81658.2	79.12	57M6W7D	64QAM
		2496 - 2690	84918.0	79.29	57M8W7D	256QAM
NR 1C_80M	27	2496 - 2690	103514.2	80.15	77M5G7D	QPSK
		2496 - 2690	103514.2	80.15	77M8W7D	16QAM
		2496 - 2690	104712.9	80.20	77M5W7D	64QAM
		2496 - 2690	100000.0	80.00	77M6W7D	256QAM
NR 1C_100M	27	2496 - 2690	106414.3	80.27	97M4G7D	QPSK
		2496 - 2690	100230.5	80.01	97M3W7D	16QAM
		2496 - 2690	103992.0	80.17	97M5W7D	64QAM
		2496 - 2690	99083.2	79.96	97M5W7D	256QAM
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_80M	27	2496 - 2690	159220.9	82.02	138MG7D	QPSK
		2496 - 2690	161064.6	82.07	137MW7D	16QAM
		2496 - 2690	162554.9	82.11	137MW7D	64QAM
		2496 - 2690	160694.1	82.06	137MW7D	256QAM
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_100M	27	2496 - 2690	159220.9	82.02	157MG7D	QPSK
		2496 - 2690	155955.3	81.93	157MW7D	16QAM
		2496 - 2690	154170.0	81.88	157MW7D	64QAM
		2496 - 2690	154170.0	81.88	157MW7D	256QAM

#### EUT Overview

#### Notes:

EIRP levels shown in the table above are over the entire channel, they will appear on the Grant of Authorization. All antenna ports are summed as MIMO output power.

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## 1.0 INTRODUCTION

### 1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.



### 1.2 PCTEST KOREA Test Location

These measurement tests were conducted at the PCTEST KOREA CO., LTD. facility located at (#1407) 13, Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do 16954, Korea.

### 1.3 Test Facility / Accreditations

**Measurements were performed at PCTEST KOREA Lab located in Yongin-si, Gyeonggi, Korea.**

- PCTEST KOREA is an ISO 17025:2005 accredited test facility under the National Institute of Standards and Technology (NIST) with Certificate number 600143-0 for Specific Absorption Rate (SAR), where applicable, and Electromagnetic Compatibility (EMC) testing for IC and Innovation, Science, and Economic Development Canada rules.
- PCTEST KOREA facility is accredited, designated and recognized in accordance with the provision of Radio Wave Act and International Standard ISO/IEC 17025:2017 under the National Radio Research Agency.
  - Designation Number / CABID: KR0169
  - Test Firm Registration Number of FCC: 417945
  - Test Firm Registration Number of IC: 26168

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung MMU(MT6411) FCC ID: A3LMT6411-41A**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

**Test Device Serial No.:** S2105070017

### 2.2 Device Capabilities

This device contains the following capabilities:



The EUT supports the maximum 3 carriers operation of 20 MHz + 20 MHz + 20 MHz at 100 Watts per unit in contiguous spectrum in the LTE mode of Single RAT operation in the frequency range of B41: 2496 to 2690 MHz

The EUT supports the single carrier operations of 80 MHz at 200 Watts per unit, 100 MHz at 200 Watts per unit in contiguous spectrum in the 5G-NR mode of Single RAT operation in the frequency range of n41: 2496 to 2690 MHz.

The EUT supports of the maximum 4 carriers operation of 20 MHz + 20 MHz + 20 MHz in the LTE mode and 80 MHz or 100 MHz in the 5G-NR mode of multi-RAT operation in the frequency range of B41/n41: 2496 to 2690 MHz.

It supports the following modulation schemes: QPSK, 16QAM, 64QAM and 256QAM.

The EUT operates from a -48V DC power supply.

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## 2.3 Test Configuration



The setup is as follows:

- The EUT ("MMU(MT6411)") and a Data Unit (DU) are each powered by -48V DC power supply.
- The DU is connected to a test laptop via an ethernet cable acting as backhaul.
- DU connects to the EUT through a fiber optic cable.
- An RF cable connects the signal analyzer and the EUT Ports for respective measurement.

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests..

The following information is about configurations of carrier frequency and output power per port declared by the manufacturer.

Configuration	RAT	Channel		Carrier Configuration					
				1 <sup>st</sup> Carrier		2 <sup>nd</sup> Carrier		3 <sup>rd</sup> Carrier	
				Fre. (MHz)	BW (MHz)	Fre. (MHz)	BW (MHz)	Fre. (MHz)	BW (MHz)
LTE 3C_20M+20M+20M	LTE	Lowest		2506	20	2526	20	2546	20
		Middle		2560	20	2580	20	2600	20
		Highest		2640	20	2660	20	2680	20
NR 1C_80M	5G NR	Lowest		2536	80	-	-	-	-
		Middle		2593	80	-	-	-	-
		Highest		2650	80	-	-	-	-
NR 1C_100M	5G NR	Lowest		2546	100	-	-	-	-
		Middle		2593	100	-	-	-	-
		Highest		2640	100	-	-	-	-
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_80M_Contiguous	LTE & 5G NR	Lowest	LTE	2506	20	2526	20	2546	20
			NR	2596	80	-	-	-	-
		Middle	LTE	2533	20	2553	20	2573	20
			NR	2623	80				
		Highest	LTE	2560	20	2580	20	2600	20
			NR	2650	80				
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_80M_ Non-contiguous	LTE & 5G NR	Middle	LTE	2506	20	2526	20	2546	20
			NR	2650	80	-	-	-	-
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_100M_ Contiguous	LTE & 5G NR	Lowest	LTE	2506	20	2526	20	2546	20
			NR	2606	100	-	-	-	-
		Middle	LTE	2523	20	2543	20	2563	20
			NR	2623	100				
		Highest	LTE	2540	20	2560	20	2680	20
			NR	2740	100				
Multi-RAT LTE 3C_20M+20M+20M & NR 1C_100M_ Non-contiguous	LTE & 5G NR	Middle	LTE	2506	20	2526	20	2546	20
			NR	2640	100	-	-	-	-

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## 2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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## 3.0 DESCRIPTION OF TESTS

### 3.1 Measurement Procedure

The measurement procedures described in the document titled “American National Standard for Compliance Testing of Transmitter Used in Licensed Radio Service” (ANSI C63.26-2015) and the guidance provided in KDB 971168 D01 v03r01, and KDB 662911 D01 v02r01 were used in the measurement of the EUT.

#### Occupied Bandwidth:

KDB 971168 D01 v03r01 – Section 4.3  
 ANSI C63.26-2015 – Section 5.4.4

#### Conducted Power Measurement and EIRP

KDB 971168 D01 v03r01 – Section 5  
 KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements  
 ANSI C63.26-2015 – Section 5.2.4.4.1  
 ANSI C63.26-2015 – Section 5.2.4.5

#### Peak-to-Average Power Ratio:

KDB 971168 D01 v03r01 – Section 5.7  
 ANSI C63.26-2015 – Section 5.2.3.4

#### Band Edge Emissions at Antenna Terminal

KDB 971168 D01 v03r01 – Section 6  
 KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements  
 a) Absolute Emission Limits  
 iii) Measure and add  $10 \log(N_{ANT})$  dB  
 ANSI C63.26-2015 – Section 5.7

#### Spurious and Harmonic Emissions at Antenna Terminal

KDB 971168 D01 v03r01 – Section 6  
 KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements  
 a) Absolute Emission Limits  
 iii) Measure and add  $10 \log(N_{ANT})$  dB  
 ANSI C63.26-2015 – Section 5.7

#### Radiated unwanted emission



KDB 971168 D01 v03r01 – Section 7  
 ANSI C63.26-2015 – Section 5.8

#### Frequency Stability / Temperature Variation

KDB 971168 D01 v03r01 – Section 9  
 ANSI C63.26-2015 – Section 5.6

### 3.2 Measurement Software

Test item	Name	Version
Conducted Measurement	Node B automation	1.0



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## 4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty ( $\pm$ dB)
Conducted Bench Top Measurements	1.20
Radiated Disturbance (<1GHz)	3.01
Radiated Disturbance (>1GHz)	5.56
Radiated Disturbance (>18GHz)	3.16

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## 5.0 TEST EQUIPMENT CALIBRATION DATA



Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacture	Model	Description	Cal Date	Cal interval	Cal Due	Serial Number
KEYSIGHT	N9020B	MXA Signal Analyzer	06/26/2020	Annual	06/25/2021	MY57431379
Rohde & Schwarz	FSW43	Signal and Spectrum Analyzer	02/22/2021	Annual	02/21/2022	101955
KIKISUI	PWR1201ML	DC POWER SUPPLY	05/25/2021	Annual	05/24/2022	ZL000972
SUKSAN TECHNOLOGY	SE-CT-10	Temperature Chamber	09/17/2020	Annual	09/16/2021	191021
Rohde & Schwarz	TS-SFUNIT-Rx	Shielded Filter Unit	02/19/2021	Annual	02/18/2022	102131
Schwarzbeck	VULB9162	Broadband TRILOG Antenna	07/13/2021	Biennial	07/12/2023	9162-217
Sunol sciences	DRH-118	Horn Antenna	01/12/2021	Biennial	01/11/2023	A060215
Schwarzbeck	BBHA 9170	Horn Antenna	09/02/2020	Biennial	09/01/2022	1037
RF One	RFHB1810SC10	Medium Power Attenuator	03/17/2021	Annual	03/16/2022	RFHB0001 ~ RFHB0034
Centric RF	C411-20	Attenuator	03/17/2021	Annual	03/16/2022	0002
Centric RF	C411-20	Attenuator	03/17/2021	Annual	03/16/2022	0003
WAINWRIGHT	WHW-13000-18000-40000-40CC	High Pass Filter	05/24/2021	Annual	05/23/2022	2

**Table 5-1. Test Equipment**

### Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. All testing was performed before the calibration due date.

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## 6.0 SAMPLE CALCULATIONS

### Emission Designator

#### QPSK Modulation

**Emission Designator = 57M7G7D**

Occupied Bandwidth = 57.7 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

#### QAM Modulation



**Emission Designator = 57M8W7D**

Occupied Bandwidth = 57.8 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

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## 7.0 TEST RESULTS

### 7.1 Summary



Company Name: SAMSUNG Electronics Co., Ltd.  
 FCC ID: A3LMT6411-41A  
 FCC Classification: Licensed Non-Broadcast Station Transmitter (TNB)  
 Mode(s): LTE & 5G NR

FCC Part Section(s)	Test Description	Test Condition	Test Result	Reference
§ 2.1049, § 27.53(m)	Occupied Bandwidth	CONDUCTED	PASS	Section 7.2
§ 2.1046, § 27.50(h)	Conducted Power Measurement and EIRP		PASS	Section 7.3
§ 2.1046, § 27.50(h)	Peak-to-average power ratio		PASS	Section 7.3
§ 2.1051, § 27.53(m)	Band Edge Emissions at Antenna Terminal		PASS	Section 7.5
§ 2.1051, § 27.53(m)	Spurious and Harmonic Emissions at Antenna Terminal		PASS	Section 7.6
§ 2.1053, § 27.53(m)	Radiated unwanted emission	RADIATED	PASS	Section 7.7
§ 2.1055, § 27.54	Frequency Stability	CONDUCTED	PASS	Section 7.8

Table 7-1. Summary of Test Results

#### Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The correction table was used to account for the losses of the cables and attenuators used to test the EUT at all frequencies of interest.
- 3) The analyzer plots were all taken with a correction table loaded into the analyzer.
- 4) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.
- 5) This unit was tested while powered by a -48V DC power source.

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## 7.2 Occupied Bandwidth § 2.1049

### Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 4.2

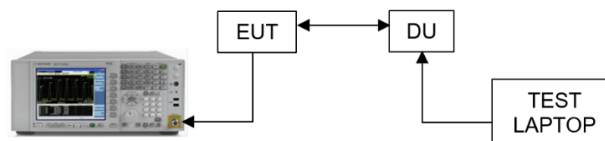
ANSI C63.26-2015 – Section 5.4.3

### Test Setting

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW  $\geq$  3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

### Test Setup



The EUT and measurement equipment were set up as shown in the diagram below.



**Figure 7-1. Test Instrument & Measurement Setup**

### Test Notes

N/A

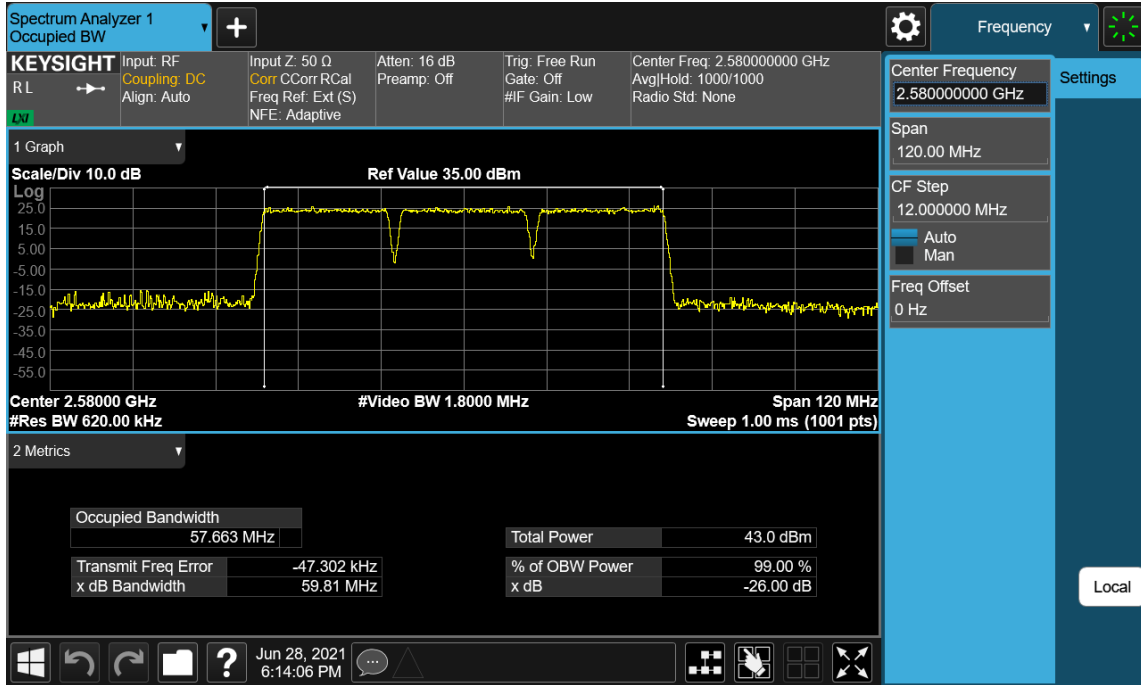
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- LTE 3C\_20M+20M+20M Configuraiton

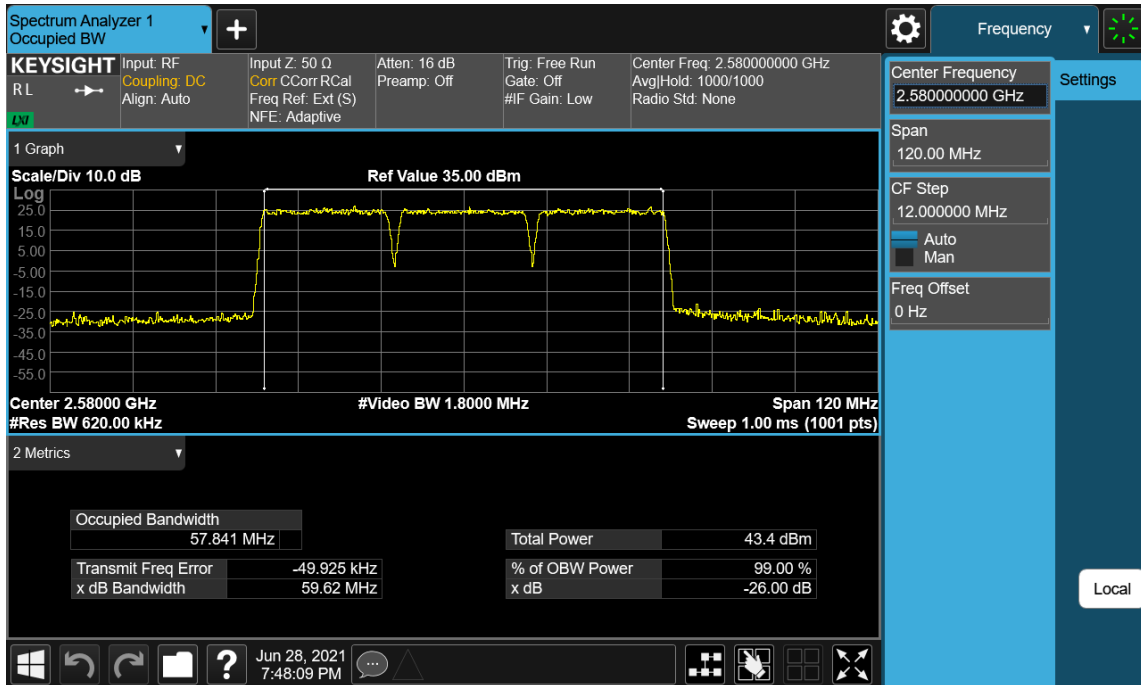
Channel	Port #	OBW (MHz)				Port #	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM		QPSK	16QAM	64QAM	256QAM
Middle	0	57.57	57.58	57.56	57.75	32	57.48	57.84	57.57	57.71
	1	57.55	57.69	57.58	57.70	33	57.55	57.69	57.57	57.73
	2	57.56	57.63	57.54	57.73	34	57.55	57.73	57.59	57.60
	3	57.58	57.64	57.57	57.71	35	57.55	57.72	57.59	57.76
	4	57.57	57.57	57.55	57.70	36	57.47	57.59	57.58	57.69
	5	57.62	57.55	57.55	57.72	37	57.54	57.50	57.54	57.67
	6	57.57	57.68	57.52	57.61	38	57.52	57.66	57.54	57.62
	7	57.54	57.67	57.57	57.73	39	57.50	57.68	57.61	57.65
	8	57.59	57.62	57.56	57.70	40	57.60	57.70	57.57	57.75
	9	57.53	57.77	57.51	57.69	41	57.58	57.70	57.56	57.70
	10	57.57	57.64	57.57	57.74	42	57.55	57.69	57.51	57.60
	11	57.56	57.75	57.56	57.68	43	57.56	57.64	57.56	57.68
	12	57.53	57.66	57.52	57.69	44	57.52	57.70	57.54	57.76
	13	57.55	57.69	57.61	57.67	45	57.52	57.72	57.60	57.67
	14	57.55	57.78	57.55	57.75	46	57.56	57.72	57.51	57.70
	15	57.60	57.69	57.57	57.72	47	57.55	57.59	57.52	57.67
	16	57.54	57.70	57.55	57.75	48	57.49	57.64	57.54	57.72
	17	57.62	57.69	57.58	57.66	49	57.60	57.65	57.57	57.74
	18	57.54	57.58	57.56	57.69	50	57.54	57.81	57.49	57.58
	19	57.59	57.74	57.55	57.61	51	57.55	57.72	57.55	57.65
	20	57.58	57.74	57.56	57.65	52	57.57	57.69	57.57	57.67
	21	57.55	57.76	57.60	57.73	53	57.53	57.73	57.62	57.72
	22	57.61	57.66	57.51	57.65	54	57.59	57.75	57.57	57.50
	23	57.57	57.71	57.57	57.65	55	57.59	57.65	57.55	57.55
	24	57.58	57.72	57.58	57.77	56	57.62	57.65	57.59	57.76
	25	57.51	57.62	57.55	57.66	57	57.57	57.66	57.54	57.65
	26	57.51	57.60	57.54	57.67	58	57.57	57.78	57.54	57.67
	27	57.53	57.61	57.50	57.73	59	57.56	57.76	57.54	57.75
	28	57.55	57.67	57.53	57.71	60	57.50	57.74	57.55	57.76
	29	57.48	57.61	57.61	57.72	61	57.52	57.67	57.57	57.71
	30	57.62	57.61	57.53	57.61	62	57.53	57.73	57.56	57.68
31	57.55	57.75	57.59	57.71	63	57.66	57.64	57.53	57.70	

Table 7-2. Occupied Bandwidth Summary Data  
(LTE 3C\_20M+20M+20M)

FCC ID: A3LMT6411-41A		MEASUREMENT REPORT (Certification)		Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 14 of 201

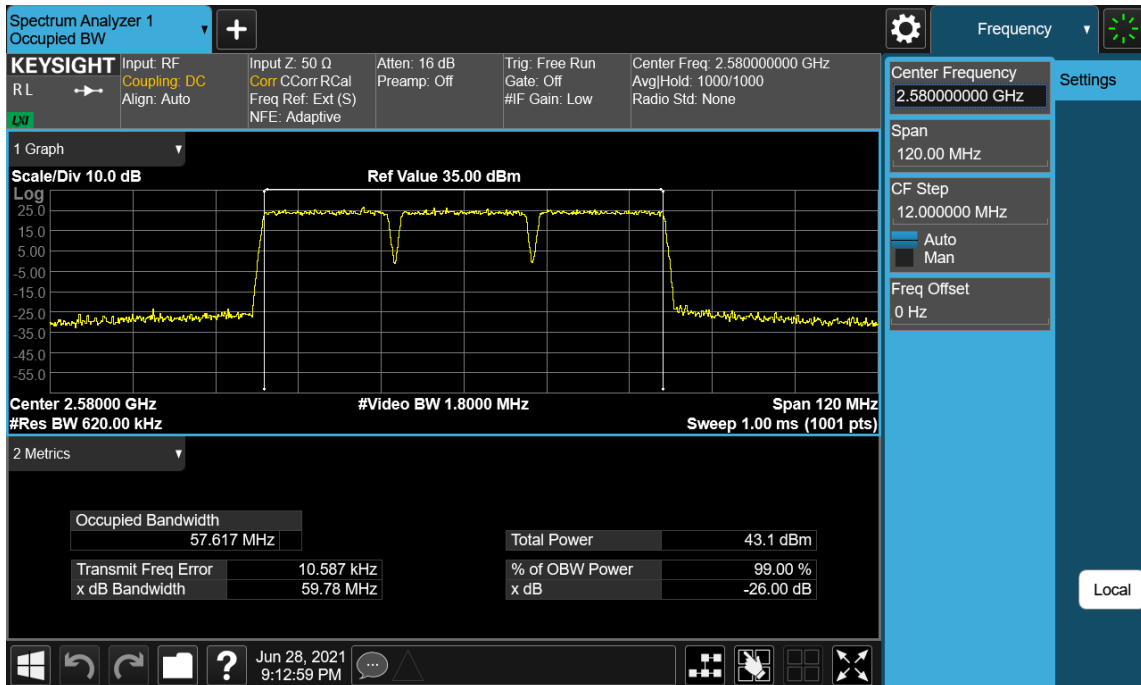


Plot 7-1. Occupied Bandwidth Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_QPSK\_Port 63)

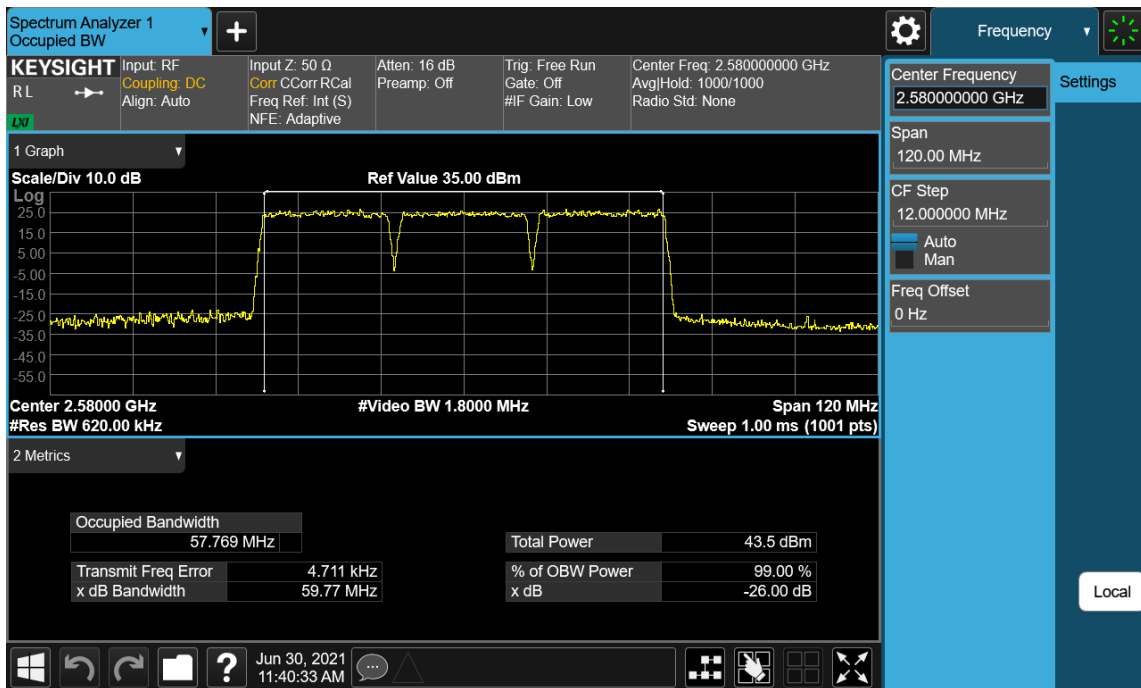


Plot 7-2. Occupied Bandwidth Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_16QAM\_Port 32)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 15 of 201



Plot 7-3. Occupied Bandwidth Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_64QAM\_Port 53)



Plot 7-4. Occupied Bandwidth Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_256QAM\_Port 24)



FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 16 of 201

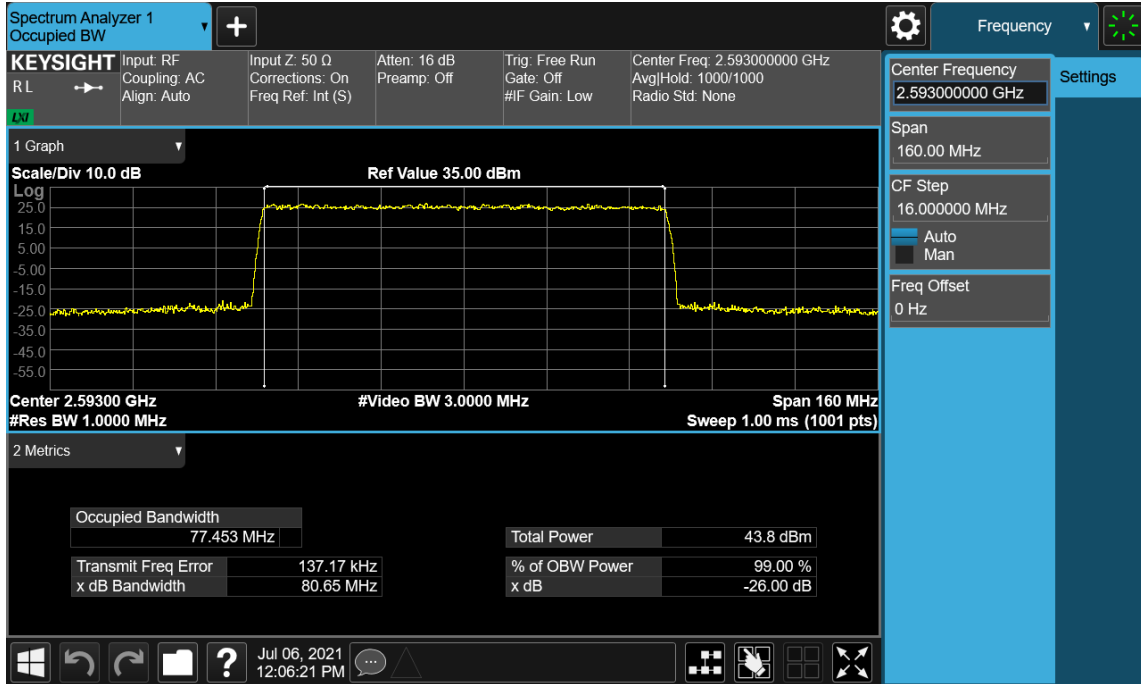


- NR 1C\_80M Configuraiton

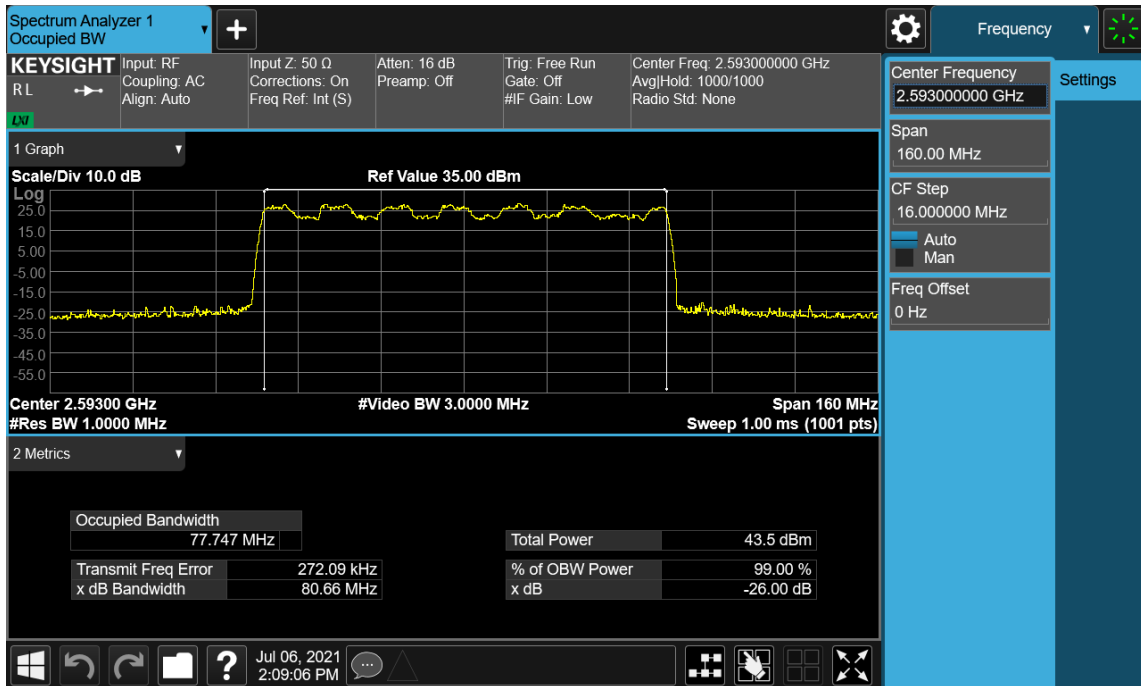
Channel	Port #	OBW (MHz)				Port #	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM		QPSK	16QAM	64QAM	256QAM
Middle	0	77.39	77.69	77.39	77.49	32	77.37	77.71	77.40	77.47
	1	77.36	77.68	77.40	77.39	33	77.39	77.66	77.36	77.46
	2	77.36	77.63	77.41	77.42	34	77.35	77.71	77.43	77.48
	3	77.36	77.67	77.38	77.40	35	77.38	77.73	77.41	77.46
	4	77.37	77.68	77.39	77.50	36	77.36	77.68	77.42	77.50
	5	77.41	77.71	77.43	77.45	37	77.34	77.71	77.38	77.47
	6	77.37	77.67	77.43	77.49	38	77.39	77.66	77.42	77.45
	7	77.32	77.65	77.39	77.44	39	77.33	77.61	77.34	77.38
	8	77.32	77.70	77.38	77.45	40	77.37	77.65	77.42	77.43
	9	77.37	77.72	77.42	77.44	41	77.35	77.65	77.42	77.45
	10	77.41	77.70	77.39	77.52	42	77.39	77.66	77.41	77.46
	11	77.37	77.65	77.39	77.41	43	77.40	77.67	77.39	77.44
	12	77.40	77.68	77.42	77.42	44	77.35	77.65	77.41	77.45
	13	77.34	77.67	77.39	77.45	45	77.31	77.70	77.39	77.46
	14	77.31	77.67	77.41	77.45	46	77.31	77.72	77.42	77.45
	15	77.41	77.71	77.38	77.45	47	77.34	77.67	77.40	77.49
	16	77.33	77.65	77.43	77.47	48	77.44	77.72	77.43	77.45
	17	77.37	77.69	77.41	77.45	49	77.37	77.69	77.41	77.48
	18	77.41	77.74	77.40	77.41	50	77.34	77.69	77.36	77.44
	19	77.35	77.62	77.39	77.50	51	77.36	77.65	77.40	77.54
	20	77.34	77.67	77.45	77.42	52	77.36	77.68	77.41	77.44
	21	77.38	77.62	77.40	77.42	53	77.36	77.60	77.40	77.50
	22	77.41	77.70	77.39	77.56	54	77.40	77.75	77.39	77.48
	23	77.39	77.63	77.38	77.52	55	77.31	77.66	77.40	77.40
	24	77.38	77.67	77.39	77.40	56	77.37	77.71	77.38	77.44
	25	77.34	77.75	77.46	77.48	57	77.36	77.71	77.41	77.45
	26	77.34	77.62	77.41	77.45	58	77.35	77.67	77.40	77.45
	27	77.33	77.66	77.38	77.46	59	77.36	77.71	77.39	77.45
	28	77.34	77.65	77.39	77.42	60	77.35	77.70	77.44	77.48
	29	77.40	77.73	77.40	77.44	61	77.35	77.70	77.43	77.42
	30	77.39	77.65	77.40	77.48	62	77.33	77.70	77.44	77.51
31	77.45	77.69	77.38	77.47	63	77.40	77.68	77.41	77.43	

Table 7-3. Occupied Bandwidth Summary Data (NR 1C\_80M)

FCC ID: A3LMT6411-41A		MEASUREMENT REPORT (Certification)		Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 17 of 201

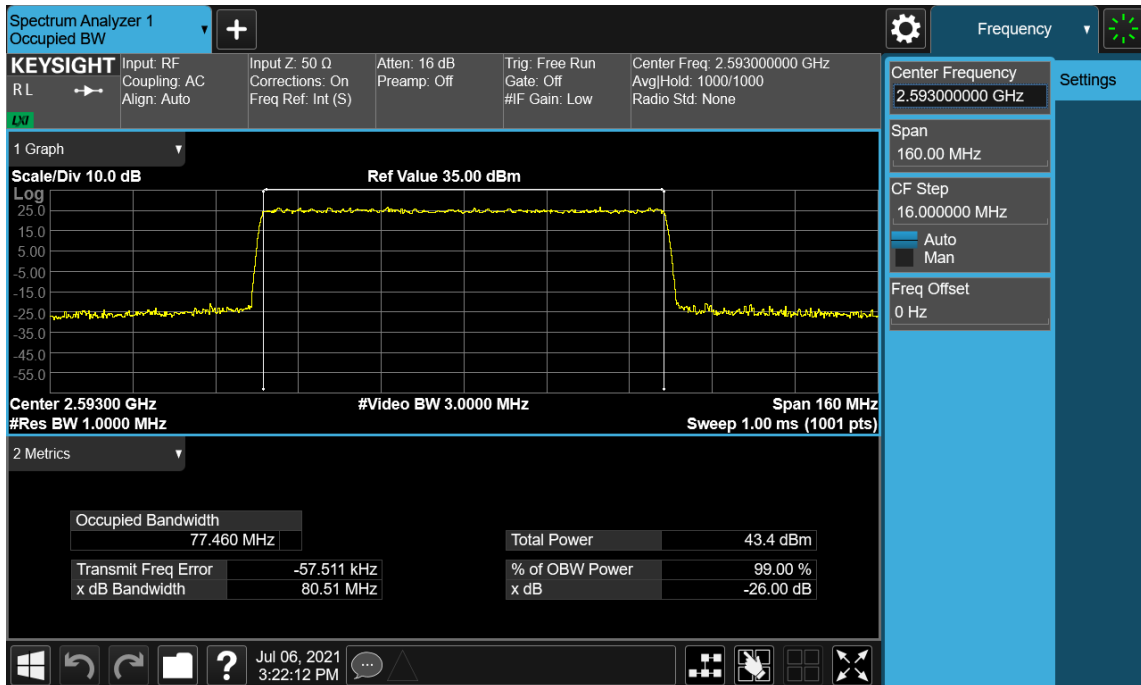


Plot 7-5. Occupied Bandwidth Plot  
(NR 1C\_80M - Middle Channel\_QPSK\_Port 31)

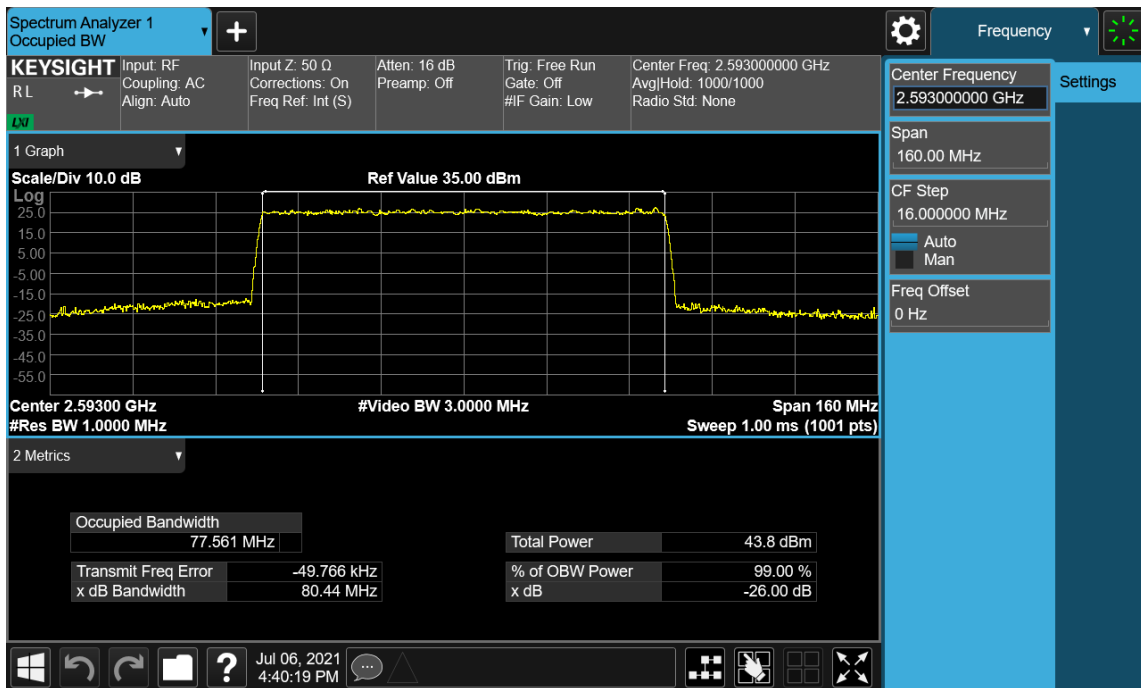


Plot 7-6. Occupied Bandwidth Plot  
(NR 1C\_80M - Middle Channel\_16QAM\_Port 25)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 18 of 201



Plot 7-7. Occupied Bandwidth Plot  
(NR 1C\_80M - Middle Channel\_64QAM\_Port 25)



Plot 7-8. Occupied Bandwidth Plot  
(NR 1C\_80M - Middle Channel\_256QAM\_Port 22)

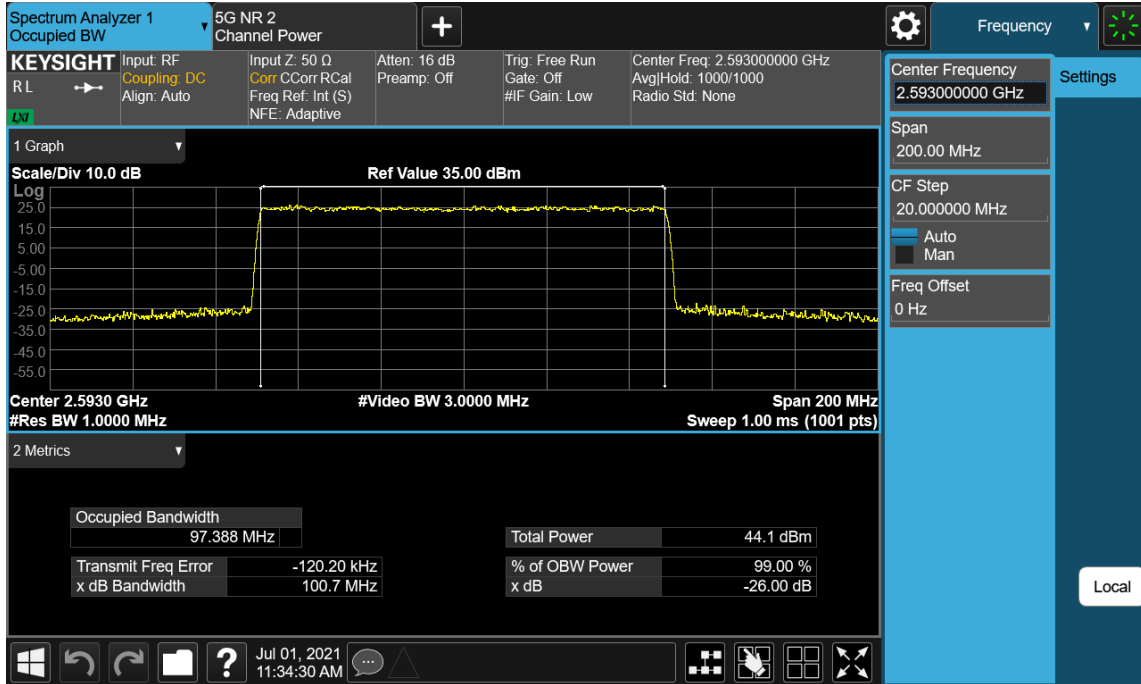
FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 19 of 201

- NR 1C\_100M Configuraiton

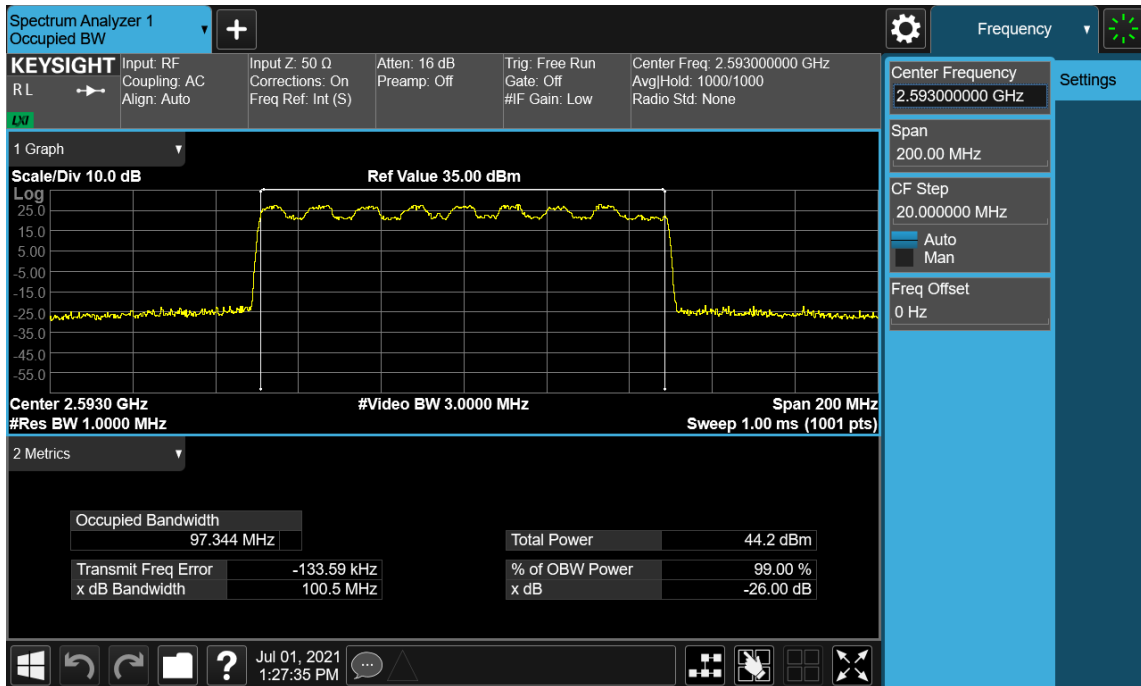
Channel	Port #	OBW (MHz)				Port #	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM		QPSK	16QAM	64QAM	256QAM
Middle	0	97.22	97.24	97.45	97.41	32.00	97.33	97.26	97.45	97.39
	1	97.18	97.28	97.43	97.43	33.00	97.28	97.28	97.45	97.47
	2	97.33	97.30	97.47	97.37	34.00	97.37	97.32	97.48	97.39
	3	97.27	97.30	97.50	97.42	35.00	97.38	97.16	97.45	97.37
	4	97.31	97.29	97.49	97.39	36.00	97.34	97.27	97.40	97.42
	5	97.30	97.28	97.47	97.41	37.00	97.36	97.26	97.47	97.40
	6	97.24	97.21	97.49	97.39	38.00	97.32	97.27	97.46	97.42
	7	97.33	97.27	97.45	97.43	39.00	97.34	97.25	97.48	97.41
	8	97.24	97.20	97.51	97.38	40.00	97.37	97.27	97.46	97.41
	9	97.36	97.23	97.49	97.43	41.00	97.34	97.25	97.49	97.34
	10	97.33	97.29	97.49	97.50	42.00	97.28	97.26	97.50	97.42
	11	97.28	97.23	97.51	97.41	43.00	97.38	97.23	97.44	97.43
	12	97.37	97.31	97.51	97.46	44.00	97.35	97.21	97.48	97.35
	13	97.36	97.28	97.49	97.42	45.00	97.31	97.28	97.47	97.41
	14	97.23	97.21	97.48	97.37	46.00	97.34	97.32	97.45	97.45
	15	97.32	97.29	97.48	97.39	47.00	97.29	97.26	97.49	97.39
	16	97.37	97.26	97.42	97.45	48.00	97.33	97.28	97.45	97.42
	17	97.30	97.32	97.40	97.31	49.00	97.29	97.23	97.49	97.43
	18	97.33	97.21	97.41	97.42	50.00	97.37	97.25	97.37	97.39
	19	97.39	97.19	97.41	97.44	51.00	97.34	97.29	97.52	97.38
	20	97.35	97.28	97.51	97.34	52.00	97.32	97.26	97.48	97.43
	21	97.29	97.26	97.43	97.44	53.00	97.30	97.25	97.51	97.45
	22	97.30	97.27	97.48	97.39	54.00	97.23	97.24	97.47	97.42
	23	97.35	97.27	97.48	97.38	55.00	97.32	97.21	97.41	97.34
	24	97.34	97.27	97.49	97.37	56.00	97.28	97.28	97.46	97.38
	25	97.24	97.25	97.51	97.42	57.00	97.37	97.18	97.48	97.42
	26	97.30	97.30	97.42	97.41	58.00	97.32	97.28	97.39	97.36
	27	97.39	97.23	97.48	97.39	59.00	97.35	97.25	97.42	97.40
	28	97.38	97.24	97.51	97.42	60.00	97.32	97.25	97.47	97.39
	29	97.36	97.28	97.41	97.44	61.00	97.34	97.24	97.44	97.42
	30	97.30	97.34	97.42	97.43	62.00	97.34	97.28	97.46	97.44
31	97.32	97.26	97.52	97.41	63.00	97.36	97.26	97.43	97.42	

Table 7-4. Occupied Bandwidth Summary Data  
(NR 1C\_100M)

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 20 of 201	

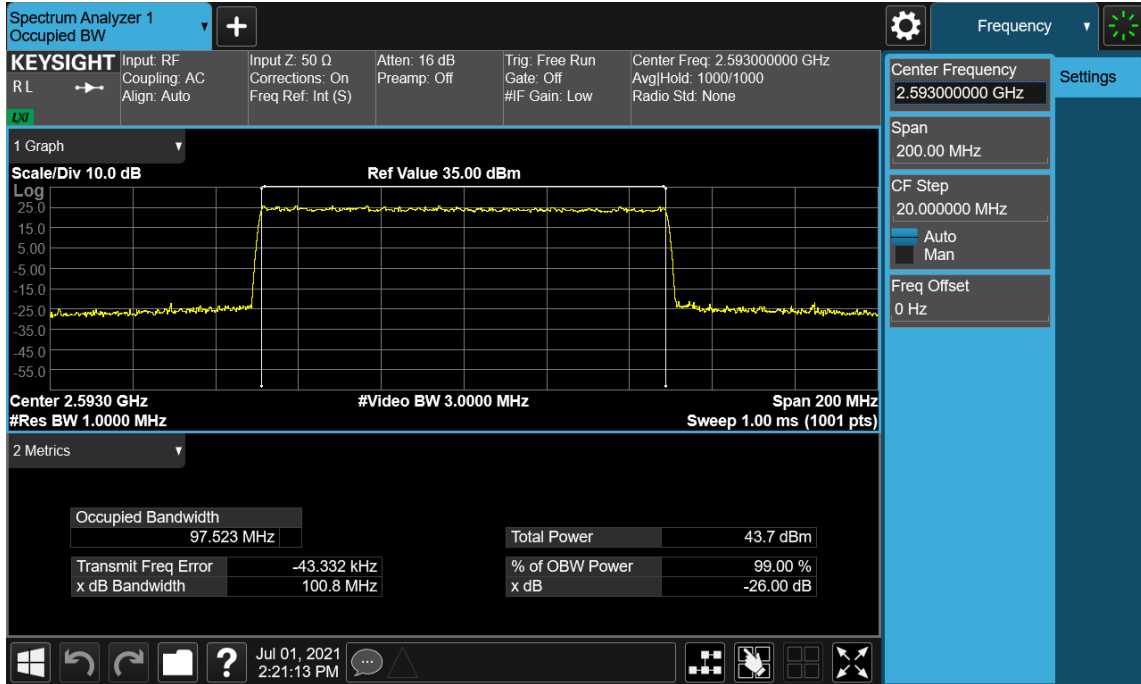


Plot 7-9. Occupied Bandwidth Plot  
(NR 1C\_100M - Middle Channel\_QPSK\_Port 27)

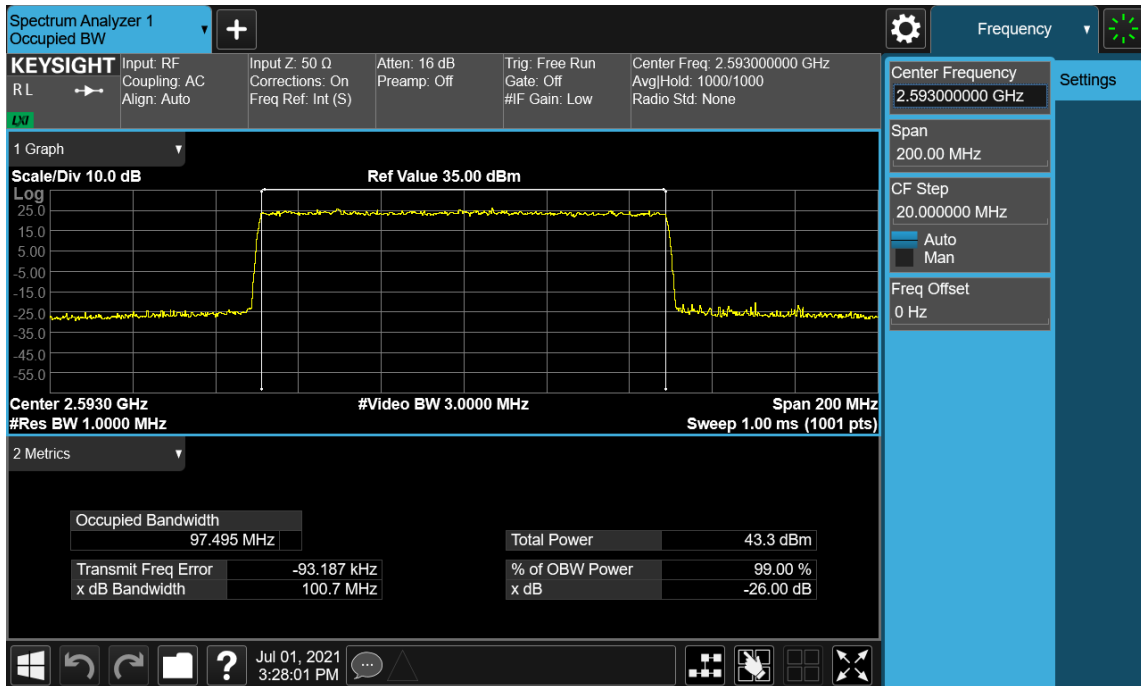


Plot 7-10. Occupied Bandwidth Plot  
(NR 1C\_100M - Middle Channel\_16QAM\_Port 30)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 21 of 201



Plot 7-11. Occupied Bandwidth Plot  
(NR 1C\_100M - Middle Channel\_64QAM\_Port 31)



Plot 7-12. Occupied Bandwidth Plot  
(NR 1C\_100M - Middle Channel\_256QAM\_Port 10)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 22 of 201

**- Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M Configuraiton**

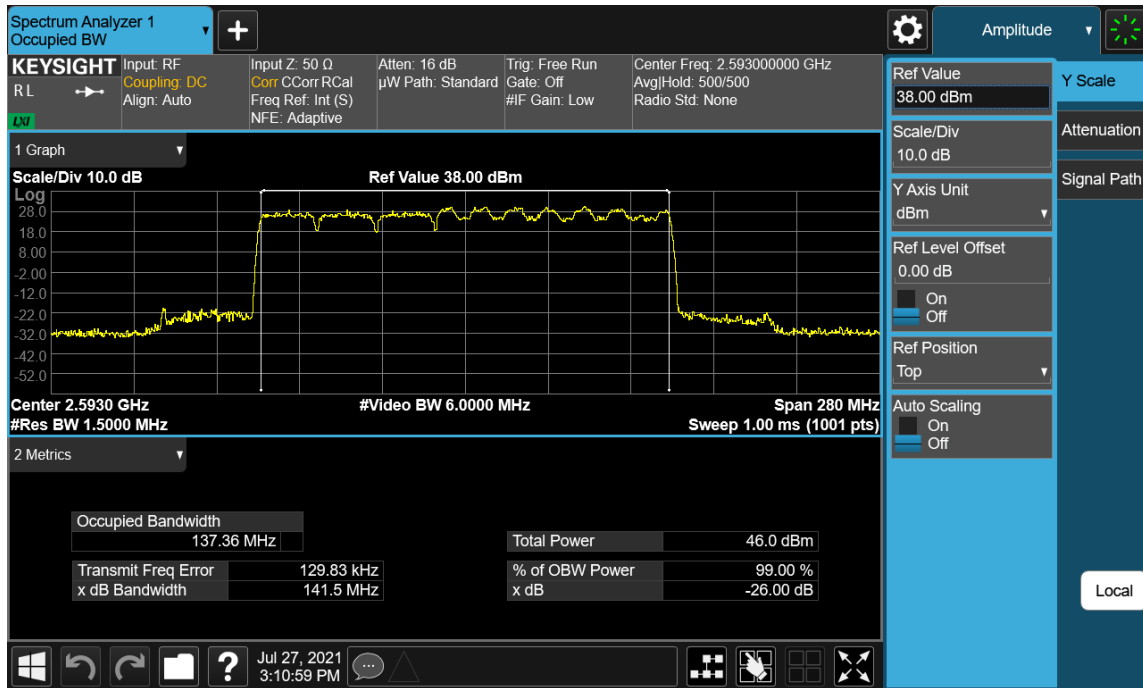
Port #	OBW (MHz)				Port #	OBW (MHz)			
	QPSK	16QAM	64QAM	256QAM		QPSK	16QAM	64QAM	256QAM
0	137.56	137.04	136.73	136.60	32	137.63	136.93	136.66	136.76
1	137.79	137.08	136.87	136.72	33	137.64	137.20	136.77	136.48
2	137.81	137.00	136.76	136.94	34	137.56	137.21	136.68	136.78
3	137.73	137.25	136.86	136.66	35	137.67	137.07	136.72	136.82
4	137.88	137.28	136.63	136.78	36	137.74	137.21	136.69	136.86
5	137.67	137.06	136.74	136.64	37	137.65	137.36	136.91	136.80
6	137.64	137.13	136.71	136.76	38	137.58	137.09	136.64	136.65
7	137.75	137.23	136.84	136.74	39	137.51	137.07	136.67	136.65
8	137.64	137.28	136.73	136.65	40	137.61	136.98	136.75	136.75
9	137.65	137.02	136.75	136.86	41	137.69	137.19	136.75	136.69
10	137.72	137.24	136.74	136.80	42	137.66	137.29	136.78	136.67
11	137.67	137.16	136.86	136.67	43	137.82	137.05	136.98	136.69
12	137.67	137.06	136.68	136.97	44	137.65	137.23	136.64	136.68
13	137.63	137.15	136.59	136.83	45	137.74	137.02	136.75	136.80
14	137.65	137.07	136.75	136.77	46	137.77	137.13	136.71	136.65
15	137.58	137.23	136.81	136.75	47	137.74	137.18	136.80	136.68
16	137.72	137.27	136.82	136.65	48	137.70	137.14	136.70	136.82
17	137.70	137.15	136.93	136.63	49	137.75	137.18	136.70	136.77
18	137.64	137.14	136.81	136.59	50	137.60	137.03	136.77	136.63
19	137.56	137.04	136.58	136.81	51	137.53	137.15	136.74	136.50
20	137.69	137.01	136.78	136.77	52	137.60	137.25	136.75	136.78
21	137.64	137.27	136.87	136.91	53	137.68	136.92	136.73	136.55
22	137.74	136.95	136.64	136.53	54	137.75	137.08	136.83	136.59
23	137.55	137.29	136.64	136.69	55	137.55	137.19	136.88	136.79
24	137.55	137.31	136.68	136.66	56	137.68	137.20	136.83	136.66
25	137.72	137.25	136.86	136.73	57	137.56	137.14	136.70	136.56
26	137.64	136.95	136.71	136.63	58	137.69	137.08	136.73	136.67
27	137.56	137.20	136.82	136.84	59	137.63	137.16	136.63	136.56
28	137.64	137.02	136.80	136.88	60	137.58	137.06	136.63	136.69
29	137.58	137.11	136.77	136.64	61	137.57	137.22	136.85	136.92
30	137.64	137.12	136.75	136.65	62	137.74	136.94	136.82	136.80
31	137.69	137.12	136.82	136.68	63	137.66	137.18	136.64	136.73

**Table 7-5. Occupied Bandwidth Summary Data  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M)**



FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 23 of 201	



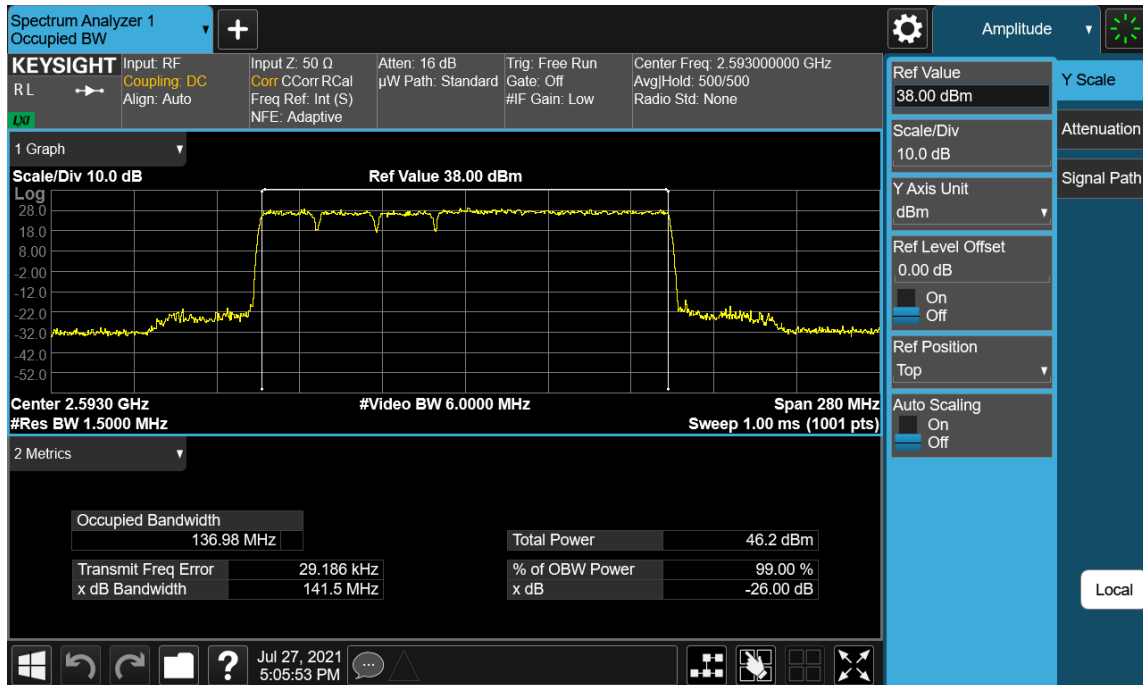
Plot 7-13. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M - QPSK\_Port 4)



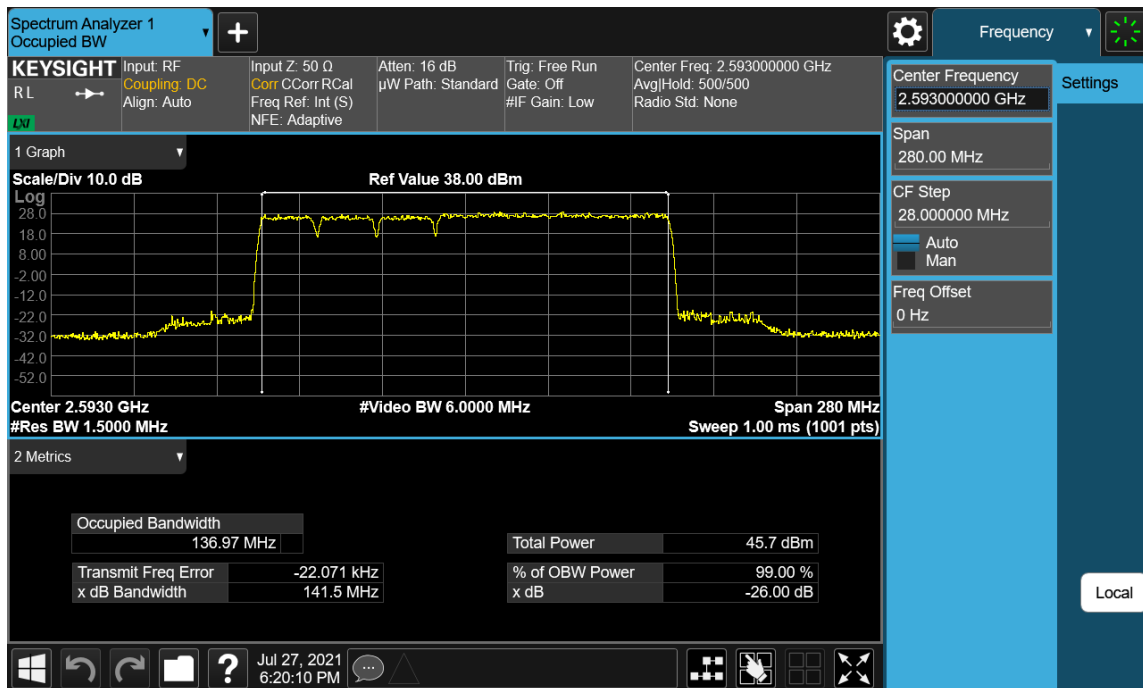
Plot 7-14. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M - 16QAM\_Port 37)

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 24 of 201





Plot 7-15. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M - 64QAM\_Port 43)



Plot 7-16. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_80M - 256QAM\_Port 12)

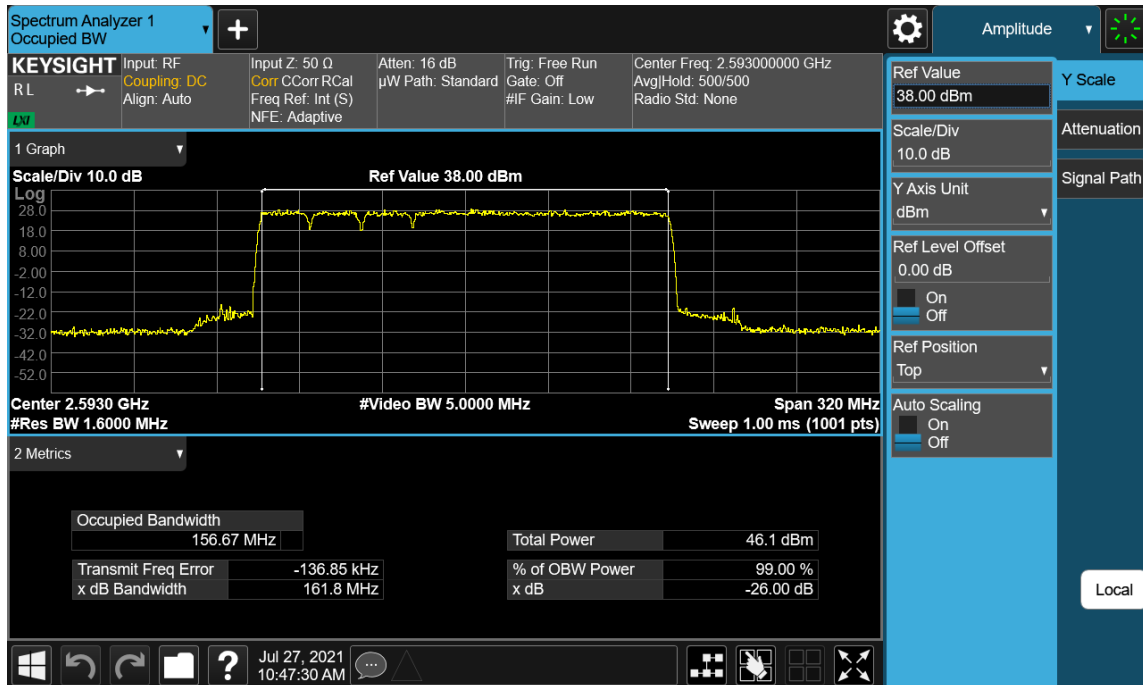
FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 25 of 201

**- Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M Configuraiton**

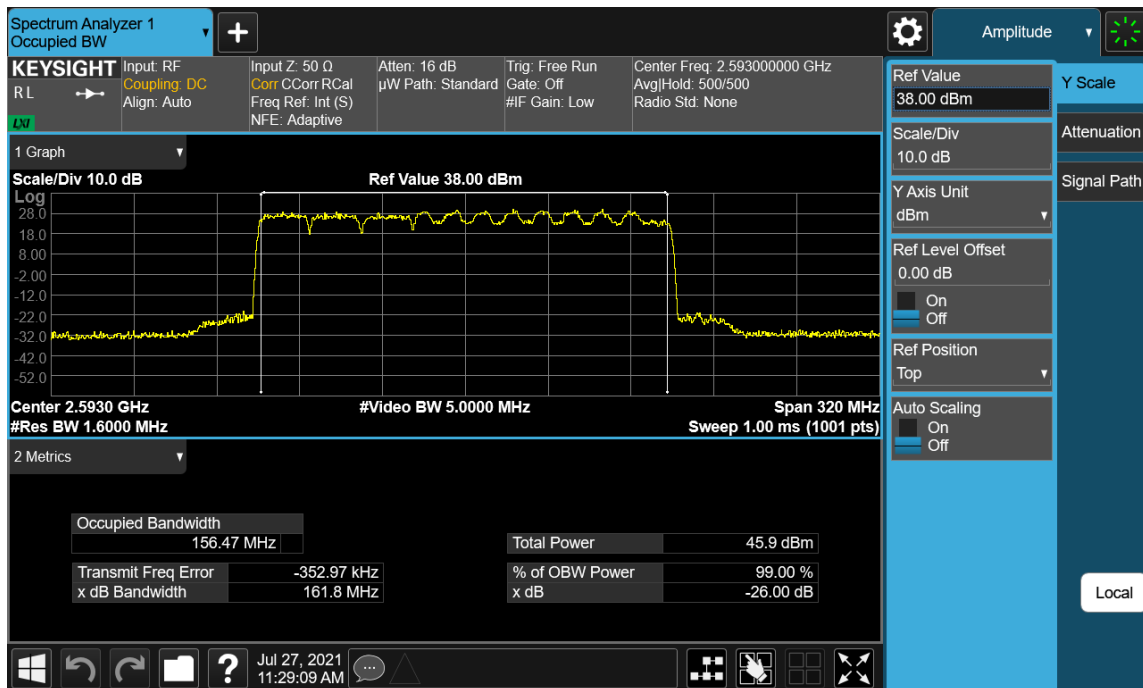
Port #	OBW (MHz)				Port #	OBW (MHz)			
	QPSK	16QAM	64QAM	256QAM		QPSK	16QAM	64QAM	256QAM
0	156.49	156.34	156.79	156.45	32	156.60	156.18	156.64	156.57
1	156.53	156.17	156.72	156.78	33	156.52	156.24	156.70	156.56
2	156.61	156.17	156.68	156.69	34	156.56	156.25	156.62	156.64
3	156.42	156.31	156.71	156.62	35	156.62	156.11	156.72	156.60
4	156.45	156.33	156.75	156.54	36	156.60	156.39	156.73	156.61
5	156.37	156.26	156.70	156.64	37	156.39	156.22	156.79	156.55
6	156.55	156.40	156.84	156.66	38	156.50	156.19	156.72	156.57
7	156.48	156.08	156.65	156.56	39	156.32	156.22	156.64	156.71
8	156.52	156.40	156.72	156.51	40	156.57	156.12	156.78	156.57
9	156.41	156.06	156.82	156.56	41	156.47	156.26	156.72	156.59
10	156.60	156.19	156.80	156.77	42	156.31	156.36	156.81	156.69
11	156.52	156.20	156.71	156.59	43	156.48	156.03	156.59	156.66
12	156.60	156.29	156.63	156.81	44	156.48	156.18	156.75	156.54
13	156.54	156.34	156.67	156.66	45	156.52	156.32	156.65	156.64
14	156.51	156.31	156.77	156.57	46	156.56	156.24	156.78	156.58
15	156.52	156.39	156.74	156.72	47	156.14	155.98	156.76	156.36
16	156.52	156.31	156.84	156.63	48	156.41	156.24	156.74	156.59
17	156.61	156.08	156.73	156.50	49	156.54	156.24	156.69	156.48
18	156.49	156.21	156.74	156.62	50	156.43	156.16	156.75	156.65
19	156.39	156.31	156.79	156.65	51	156.43	156.22	156.72	156.58
20	156.41	156.26	156.73	156.71	52	156.52	156.35	156.70	156.52
21	156.35	156.39	156.69	156.84	53	156.46	156.42	156.73	156.87
22	156.50	156.29	156.71	156.78	54	156.48	156.31	156.77	156.80
23	156.66	156.47	156.84	156.63	55	156.61	156.23	156.79	156.64
24	156.51	156.28	156.78	156.74	56	156.53	156.12	156.66	156.69
25	156.39	156.23	156.86	156.56	57	156.44	156.29	156.69	156.79
26	156.55	156.20	156.74	156.65	58	156.41	156.15	156.94	156.62
27	156.52	156.23	156.72	156.64	59	156.60	156.38	156.68	156.64
28	156.61	156.21	156.75	156.59	60	156.62	156.05	156.80	156.80
29	156.34	156.08	156.69	156.56	61	156.34	156.01	156.70	156.45
30	156.43	156.23	156.72	156.59	62	156.46	156.11	156.75	156.70
31	156.50	156.17	156.79	156.71	63	156.67	156.40	156.77	156.61

**Table 7-6. Occupied Bandwidth Summary Data  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
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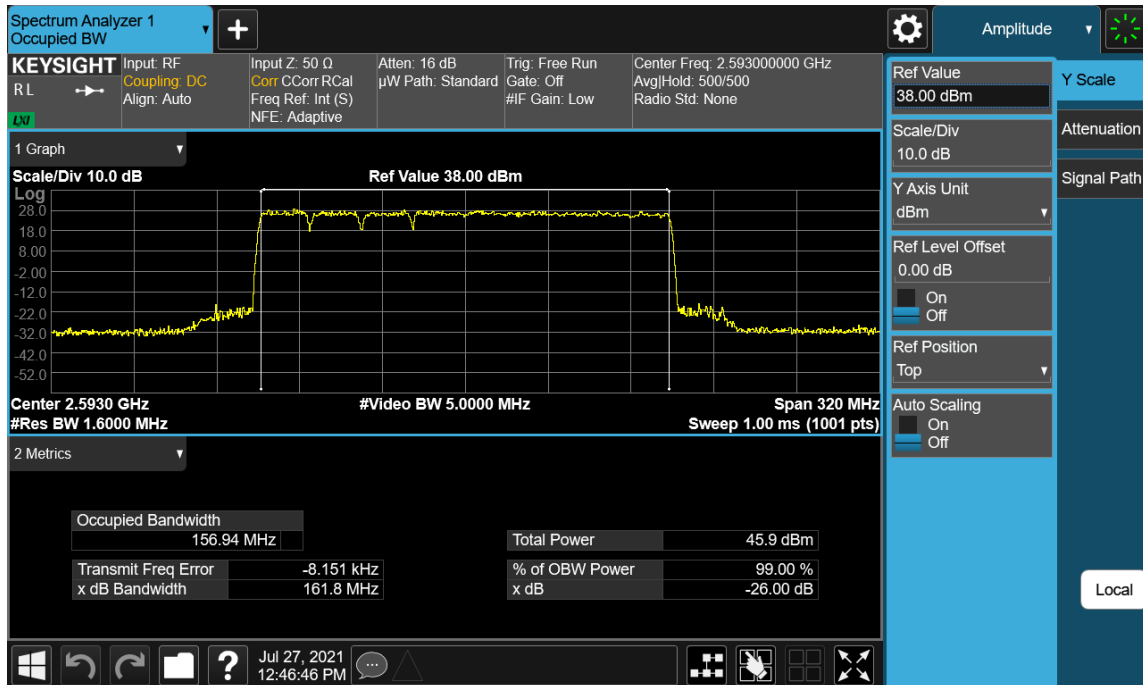


Plot 7-17. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M - QPSK\_Port 63)

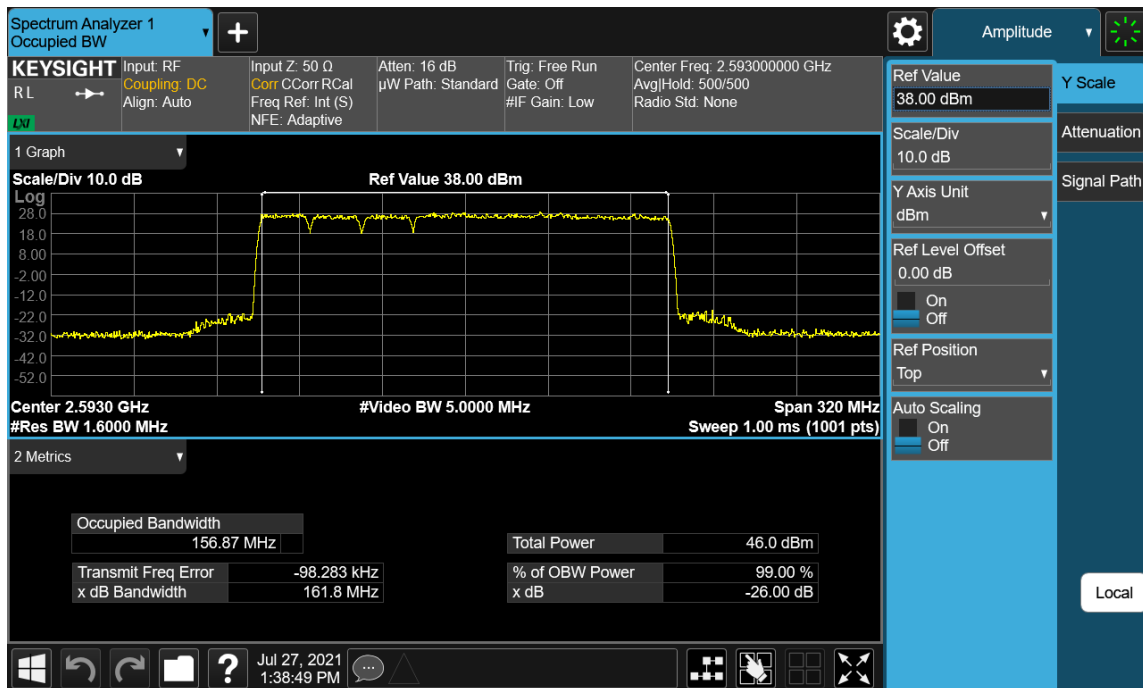


Plot 7-18. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M - 16QAM\_Port 23)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 27 of 201



Plot 7-19. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M - 64QAM\_Port 58)



Plot 7-20. Occupied Bandwidth Plot  
(Multi-RAT LTE 3C\_20M+20M+20M & NR 1C\_100M - 256QAM\_Port 53)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 28 of 201

## 7.3 Conducted Power Measurement and EIRP

**§ 2.1046, § 27.50**

### Test Overview

A transmitter port of EUT is connected to the input of a signal analyzer. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

### Test Procedures Used



KDB 971168 D01 v03r01 – Section 5

KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements

ANSI C63.26-2015 – Section 5.2.4.4.1

### Test Setting

1. Conducted power measurements are performed using the signal analyzer’s “channel power mode” measurement capability for signals with continuous operation.
2. Set span to  $2 \times$  to  $3 \times$  the OBW.
3. Set RBW = 1 – 5% of the expected OBW
4. Set VBW  $\geq 3 \times$  RBW.
5. Set number of measurement points in sweep  $\geq 2 \times$  span / RBW.
6. Sweep time: auto-couple.
7. Detector = power averaging (rms).
8. Set sweep trigger to “free run.”.
9. The integration bandwidth was set equal to transmission bandwidth i.e. 20MHz for 1CC and 40MHz for 2CC measurements.
10. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.
11. Compute the power by integrating the spectrum across the OBW of the signal using the instrument’s band or channel power measurement function, with the band/channel limits set equal to the OBW band edges.

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## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

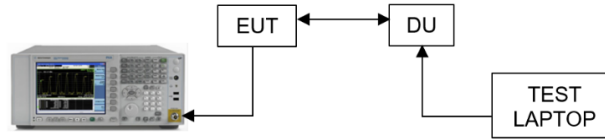


Figure 7-2. Test Instrument & Measurement Setup

## Test Notes

1. The port with highest power i.e. worst case port per modulation has been highlighted in the following power tables.
2. Periodic trigger was used with gating ON. Gate sweep time, Gate delay and gate length were set according to capture ON time of the transmission.
3. MIMO calculations are done considering output channel power for all ports and respective are calculated.
4. Consider the following factors for MIMO Output Power:
  - a) Conducted power for each port is measured in dBm.
  - b) Powers are summed up in linear using the measure-and-sum technique defined in KDB 662911 D01 v02r01-Section D.
  - c) Conducted power per port (dBm) is converted to a linear value (mW). A summation of linear powers for all ports gives us the total MIMO conducted power in milliWatts (mW). We convert this back to logarithmic scale (dBm).
5. Antenna Gains (dBi) are provided by the client.
6. Sample MIMO Calculation:  
Let us assume the following numbers:



Factors		Value	Unit
Total MIMO Conducted Power (linear sum)		114263.52	mW
Total MIMO Conducted Power (dBm)	$= 10 * \log(114263.52) =$	50.58	dBm
Antenna Gain	Max. 27.2 dBi (25.0 dBi $\pm$ 2.2dB)	27.2	dBi
MIMO EIRP =	Total MIMO Conducted Power + Antenna Gain	77.78	dBm
FCC EIRP Limit		87.10	dBm
Margin = MIMO EIRP - FCC EIRP Limit	$= 77.78 - 87.10 =$	-9.32	dB

7. Limit Calculation:  
 $EIRP = 33 \text{ dBW} + 10\log(X/Y) \text{ dBW} + 10\log(360/\text{Beamwidth}) \text{ dBW} = 33 \text{ dBW} + 10\log(60/6) \text{ dBW} + 10\log(360/14) = 57.10 \text{ dBW}$   
 $EIRP_{\text{dBm}} = \text{dBW} + 30 = 57.10 \text{ dBW} + 30 = 87.1 \text{ dBm}$

X is the actual channel width in MHz i.e. LTE 3C 20 MHz + 20 MHz + 20 MHz = 60 MHz

Y is 6 in MBS or 5.5 MHz in LBS and USB (set 6 as the worst case)

Beamwidth = Max. 14° (Horizontal in Minimum Half Power Beamwidth: 12°  $\pm$  2°)

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- LTE 3C\_20M+20M+20M Configuraiton

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Low	0	32.17	32.38	32.33	32.45
	1	32.55	32.69	32.73	32.80
	2	32.81	32.90	32.92	32.85
	3	32.44	32.55	32.58	32.53
	4	32.52	32.51	32.53	32.52
	5	32.56	32.60	32.59	32.72
	6	32.89	32.98	33.00	32.95
	7	32.81	32.81	32.78	32.92
	8	32.51	32.46	32.52	32.61
	9	32.33	32.46	32.43	32.50
	10	32.89	32.80	32.92	32.87
	11	32.53	32.49	32.52	32.60
	12	32.74	32.87	32.85	32.84
	13	32.41	32.52	32.44	32.55
	14	32.78	32.93	32.86	32.81
	15	32.63	32.61	32.68	32.64
	16	32.85	32.71	32.92	32.89
	17	32.83	32.60	32.68	32.74
	18	33.12	32.93	33.08	33.11
	19	32.35	32.26	32.26	32.35
	20	32.91	32.65	32.74	32.80
	21	32.35	32.15	32.17	32.30
	22	32.40	32.31	32.44	32.34
	23	32.64	32.40	32.45	32.49
	24	32.71	32.54	32.58	32.54
	25	32.96	32.79	32.78	32.83
	26	32.74	32.67	32.56	32.59
	27	32.59	32.45	32.47	32.53
	28	32.90	32.78	32.73	32.76
	29	32.32	32.21	32.15	32.21
	30	32.43	32.42	32.42	32.37
31	32.72	32.58	32.56	32.52	

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<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 31 of 201	


Low	32	32.29	32.21	32.21	32.18
	33	32.64	32.60	32.55	32.51
	34	32.87	32.76	32.76	32.78
	35	32.96	32.87	32.87	32.88
	36	32.73	32.63	32.51	32.62
	37	32.59	32.44	32.42	32.54
	38	32.74	32.67	32.62	32.64
	39	32.80	32.69	32.65	32.77
	40	32.80	32.60	32.61	32.72
	41	32.76	32.66	32.56	32.66
	42	32.82	32.59	32.59	32.60
	43	33.14	33.04	33.00	33.07
	44	32.88	32.64	32.70	32.65
	45	32.75	32.63	32.58	32.66
	46	32.97	32.91	32.92	32.86
	47	33.01	32.95	32.91	32.91
	48	32.99	33.00	32.95	32.98
	49	32.76	32.65	32.90	32.67
	50	32.76	32.68	32.60	32.58
	51	32.60	32.46	32.43	32.47
	52	33.04	32.91	32.90	32.84
	53	32.82	32.68	32.73	32.74
	54	32.93	32.76	32.79	32.81
	55	32.98	32.86	32.79	32.91
	56	33.05	32.95	32.97	32.96
	57	32.78	32.60	32.58	32.69
	58	32.60	32.46	32.51	32.43
	59	33.07	32.91	32.92	32.91
	60	32.54	32.42	32.54	32.50
	61	32.92	32.78	32.87	32.81
	62	33.01	32.88	32.88	32.88
	63	32.83	32.65	32.69	32.68
	Total MIMO Conducted Power (mW)		120202.65	117924.22	118200.89
Total MIMO Conducted Power (dBm)		50.80	50.72	50.73	50.75
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		<b>78.00</b>	77.92	77.93	77.95
EIRP Limit (dBm)		87.10	87.10	87.10	87.10
Margin (dB)		-9.10	-9.18	-9.17	-9.15

**Table 7-7. MIMO Power Summary Data  
(LTE 3C\_20M+20M+20M - Low Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
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Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Middle	0	34.11	33.84	33.77	33.94
	1	34.04	33.85	33.89	33.94
	2	34.03	33.77	33.78	33.94
	3	34.06	33.83	33.80	33.94
	4	33.97	33.74	33.75	33.86
	5	34.06	33.89	33.86	33.99
	6	34.00	33.80	33.71	33.90
	7	33.99	33.77	33.80	34.01
	8	33.68	33.53	33.50	33.58
	9	34.11	33.92	33.96	34.04
	10	34.05	33.81	33.83	33.95
	11	33.96	33.75	33.66	33.80
	12	33.91	33.68	33.72	33.76
	13	33.93	33.67	33.72	33.81
	14	34.01	33.88	33.81	33.94
	15	33.94	33.79	33.75	33.92
	16	34.04	33.90	33.81	34.00
	17	34.08	33.83	33.82	34.00
	18	34.06	33.88	33.89	34.03
	19	33.91	33.71	33.69	33.80
	20	34.16	33.87	33.85	34.02
	21	33.83	33.57	33.55	33.72
	22	34.12	33.86	33.93	34.08
	23	33.75	33.59	33.51	33.70
	24	34.08	33.87	33.89	34.04
	25	33.80	33.68	33.63	33.77
	26	34.07	33.89	33.77	33.98
	27	34.12	33.89	33.89	34.09
	28	34.03	33.83	33.87	33.97
	29	34.04	33.82	33.83	34.00
	30	34.17	33.90	33.94	34.09
31	34.05	33.88	33.80	34.01	

FCC ID: A3LMT6411-41A	 <b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 33 of 201	

Middle	32	33.97	33.79	33.74	33.93
	33	34.03	33.87	33.76	33.96
	34	34.05	33.86	33.81	33.99
	35	34.15	33.98	33.93	34.14
	36	34.25	34.09	34.04	34.17
	37	34.19	33.96	33.95	34.09
	38	34.02	33.81	33.81	33.97
	39	34.36	34.19	34.15	34.32
	40	34.02	33.79	33.79	33.90
	41	34.19	33.95	33.93	34.11
	42	33.87	33.75	33.65	33.90
	43	34.40	34.23	34.23	34.42
	44	34.25	34.08	33.99	34.18
	45	33.99	33.83	33.78	33.90
	46	34.41	34.26	34.12	34.32
	47	34.65	34.50	34.38	34.51
	48	34.16	33.99	33.89	34.09
	49	34.19	33.96	33.91	34.11
	50	34.39	34.26	34.20	34.36
	51	34.14	33.92	33.85	34.07
	52	34.20	34.03	33.93	34.13
	53	34.22	33.99	33.96	34.08
	54	34.38	34.22	34.13	34.36
	55	33.95	33.85	33.70	33.96
	56	34.39	34.20	34.07	34.22
	57	34.20	34.03	33.90	34.11
	58	34.05	33.91	33.83	34.06
	59	34.24	34.05	33.91	34.10
	60	33.99	33.86	33.69	33.90
	61	34.17	34.04	33.92	34.12
	62	34.15	33.96	33.88	34.08
	63	34.21	34.02	33.84	34.10
	Total MIMO Conducted Power (mW)		164385.24	157296.79	155549.66
Total MIMO Conducted Power (dBm)		52.16	51.97	51.92	52.09
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		<b>79.36</b>	79.17	79.12	79.29
EIRP Limit (dBm)		87.10	87.10	87.10	87.10
Margin (dB)		-7.74	-7.93	-7.98	-7.81

**Table 7-8. MIMO Power Summary Data  
(LTE 3C\_20M+20M+20M - Middle Channel)**



FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 34 of 201	

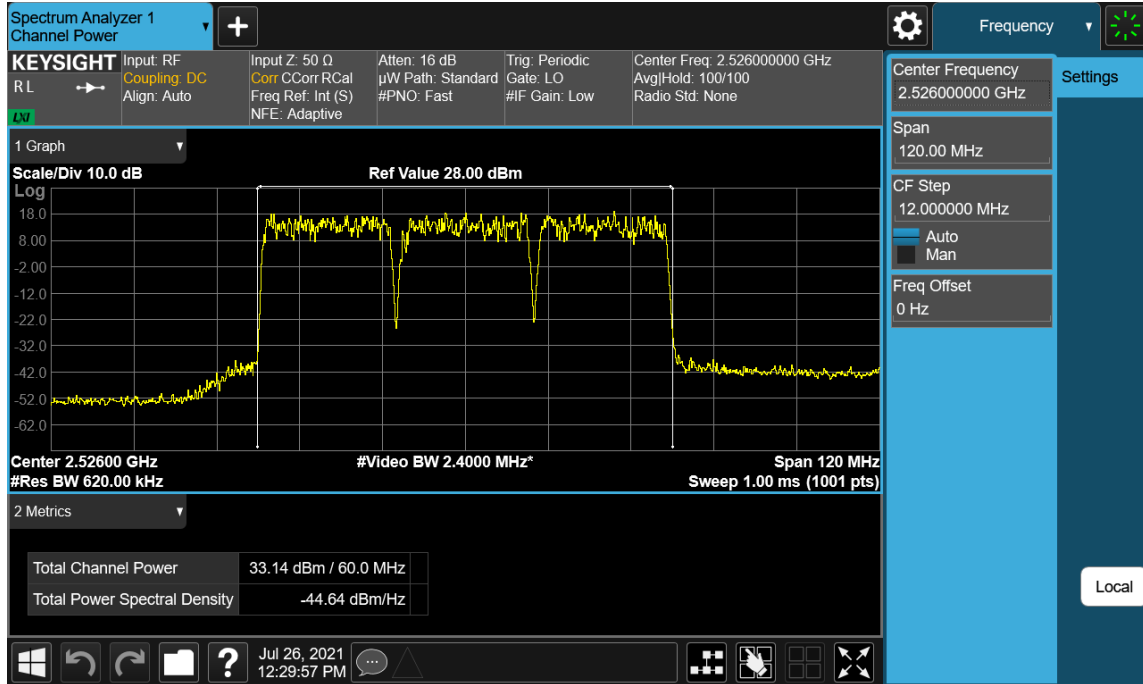
Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
High	0	32.59	32.34	32.27	32.40
	1	32.51	32.32	32.19	32.32
	2	32.59	32.41	32.30	32.39
	3	32.66	32.36	32.28	32.39
	4	32.72	32.47	32.41	32.47
	5	32.64	32.29	32.29	32.33
	6	32.23	32.03	31.99	32.01
	7	32.56	32.39	32.34	32.43
	8	32.50	32.28	32.20	32.34
	9	32.55	32.24	32.20	32.30
	10	32.55	32.32	32.25	32.31
	11	32.70	32.43	32.38	32.45
	12	32.70	32.36	32.40	32.48
	13	32.92	32.67	32.59	32.65
	14	32.57	32.33	32.32	32.41
	15	32.33	32.03	32.02	32.05
	16	32.49	32.26	32.17	32.34
	17	32.93	32.59	32.56	32.70
	18	32.70	32.39	32.38	32.49
	19	32.81	32.49	32.46	32.62
	20	33.01	32.69	32.62	32.82
	21	32.47	32.09	32.09	32.30
	22	32.70	32.46	32.36	32.54
	23	32.69	32.34	32.29	32.51
	24	32.84	32.49	32.49	32.61
	25	32.67	32.34	32.23	32.41
	26	32.71	32.37	32.27	32.37
	27	32.72	32.41	32.34	32.46
	28	32.76	32.41	32.44	32.54
	29	32.85	32.59	32.51	32.66
	30	32.67	32.29	32.26	32.37
31	32.68	32.31	32.26	32.36	

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 35 of 201	

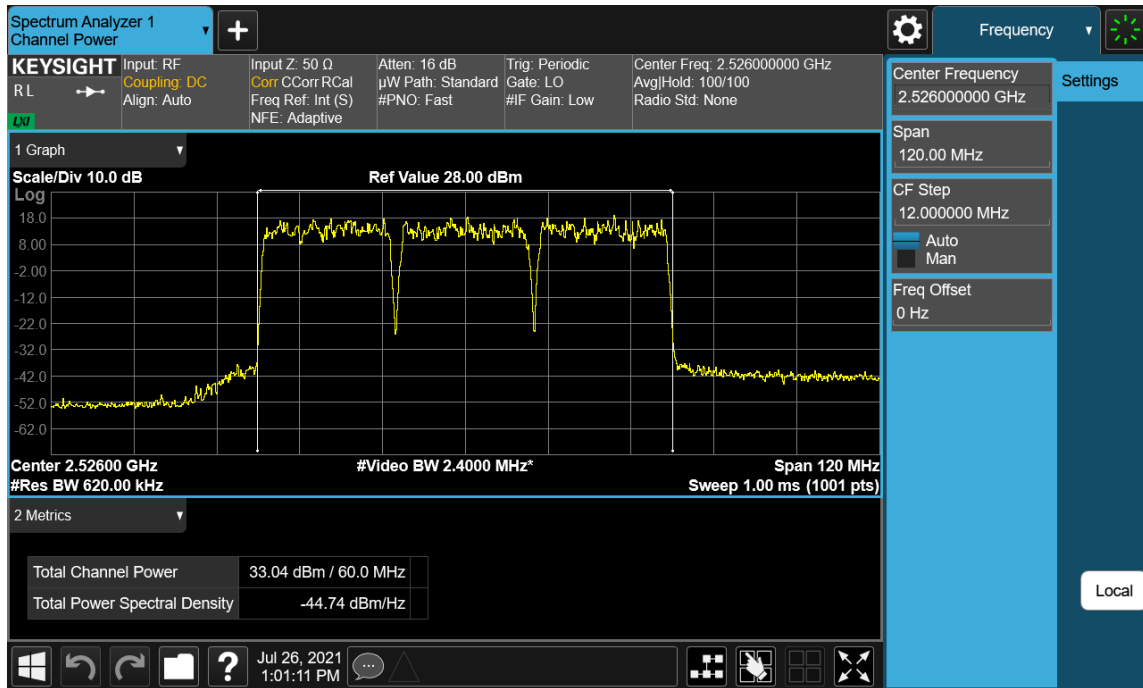
High	32	32.84	32.52	32.45	32.61
	33	32.97	32.68	32.62	32.73
	34	32.89	32.54	32.45	32.54
	35	32.70	32.41	32.33	32.45
	36	33.17	32.88	32.79	32.97
	37	32.72	32.36	32.32	32.46
	38	32.61	32.29	32.28	32.33
	39	33.12	32.87	32.77	32.90
	40	32.89	32.50	32.47	32.60
	41	32.41	32.25	32.15	32.31
	42	32.89	32.51	32.42	32.62
	43	32.64	32.34	32.25	32.46
	44	32.71	32.47	32.37	32.53
	45	32.65	32.38	32.26	32.47
	46	32.78	32.49	32.45	32.57
	47	32.84	32.61	32.59	32.68
	48	32.83	32.61	32.54	32.68
	49	32.90	32.74	32.59	32.76
	50	32.49	32.21	32.09	32.29
	51	32.87	32.66	32.55	32.69
	52	32.68	32.42	32.36	32.54
	53	32.58	32.37	32.28	32.50
	54	32.88	32.72	32.59	32.79
	55	32.67	32.46	32.37	32.57
	56	33.01	32.67	32.59	32.79
	57	32.35	32.14	32.05	32.28
	58	32.67	32.46	32.33	32.55
	59	32.84	32.67	32.56	32.66
	60	32.69	32.42	32.34	32.48
	61	32.90	32.71	32.51	32.80
	62	32.71	32.51	32.37	32.60
	63	32.98	32.73	32.65	32.88
	Total MIMO Conducted Power (mW)		119752.14	112440.03	110627.23
Total MIMO Conducted Power (dBm)		50.78	50.51	50.44	50.58
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		<b>77.98</b>	77.71	77.64	77.78
EIRP Limit (dBm)		87.10	87.10	87.10	87.10
Margin (dB)		-9.12	-9.39	-9.46	-9.32

**Table 7-9. MIMO Power Summary Data  
(LTE 3C\_20M+20M+20M - High Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 36 of 201	

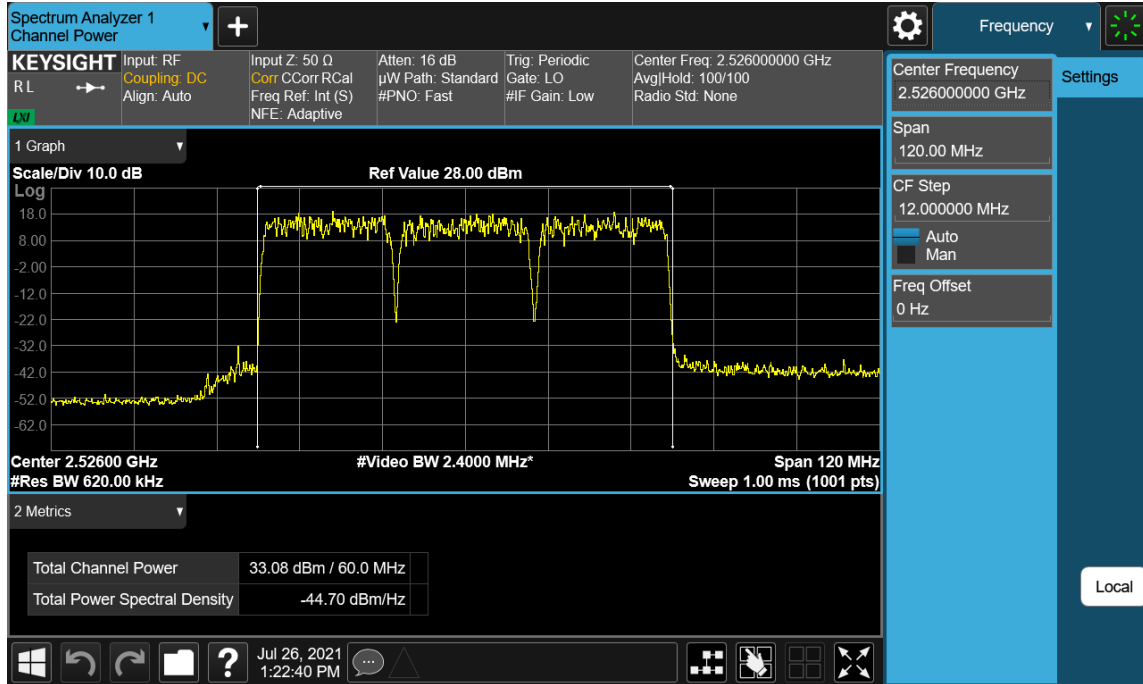


Plot 7-21. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Low Channel\_QPSK, Port 43)

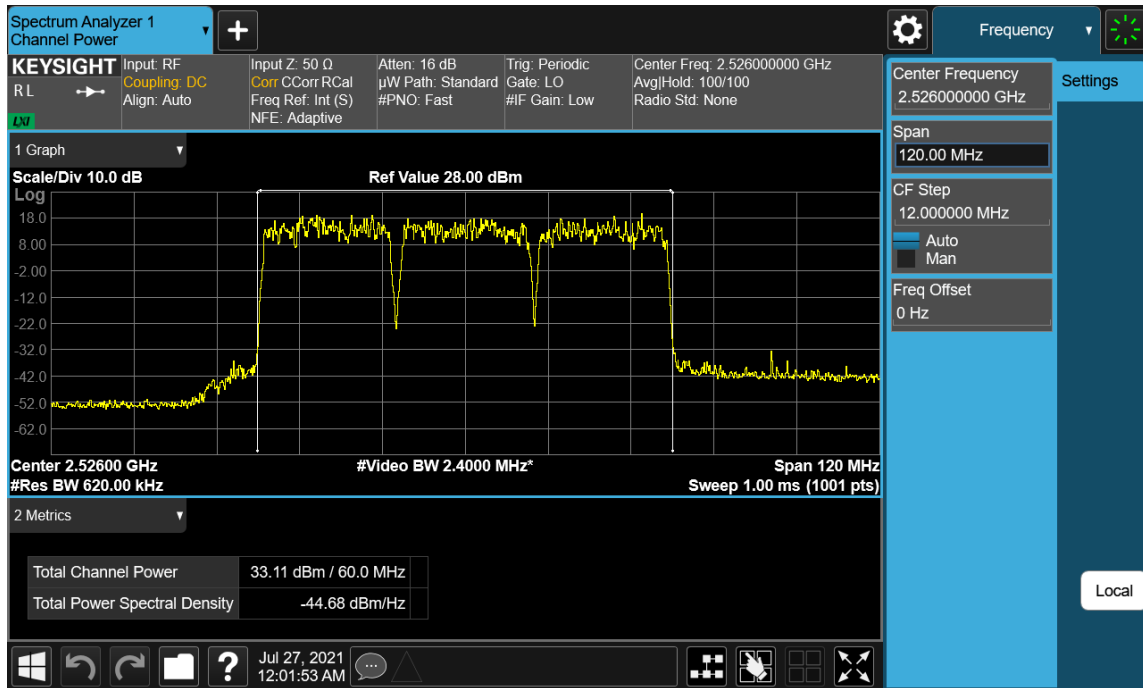


Plot 7-22. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Low Channel\_16QAM, Port 43)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 37 of 201

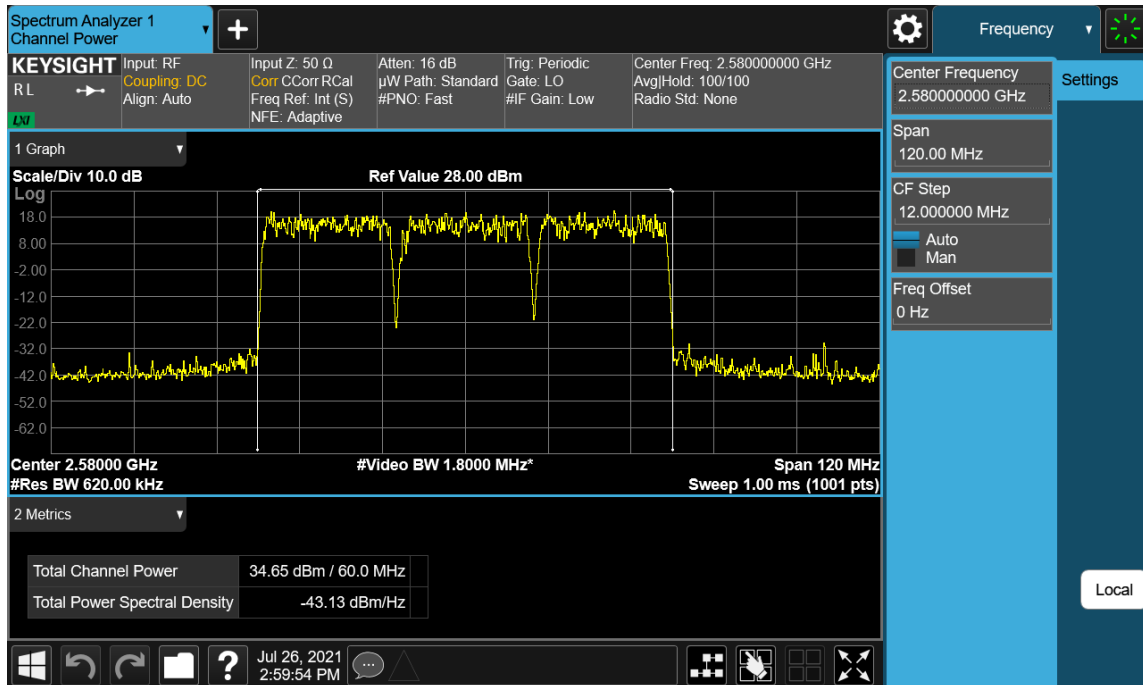


Plot 7-23. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Low Channel\_64QAM, Port 18)

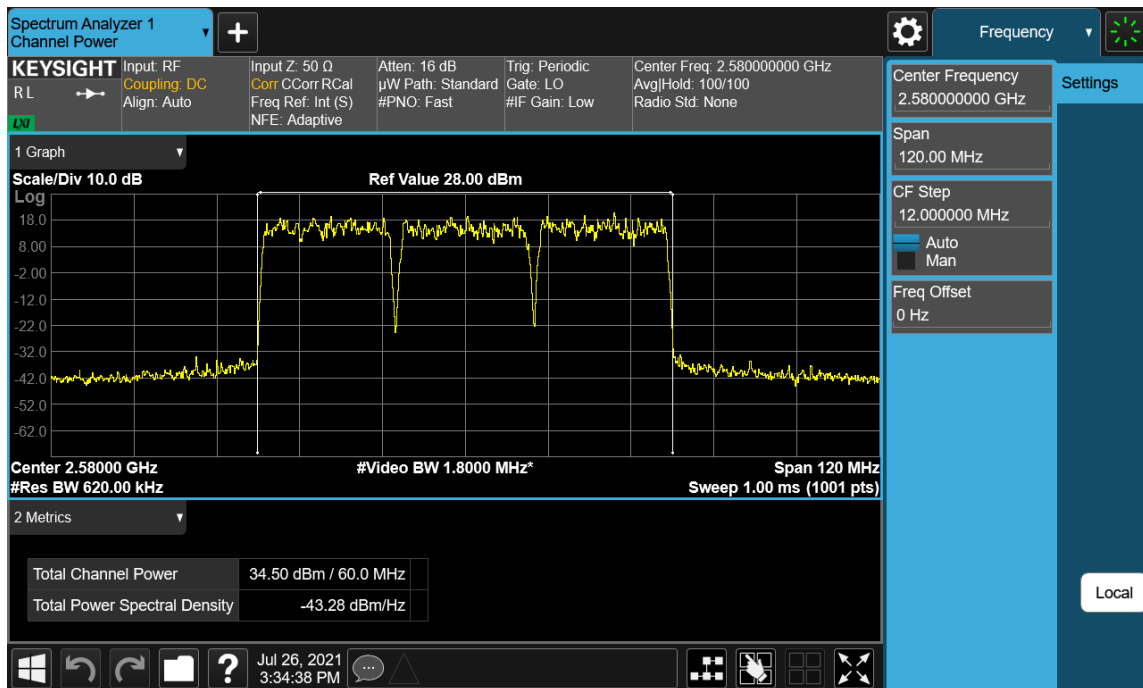


Plot 7-24. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Low Channel\_256QAM, Port 18)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 38 of 201

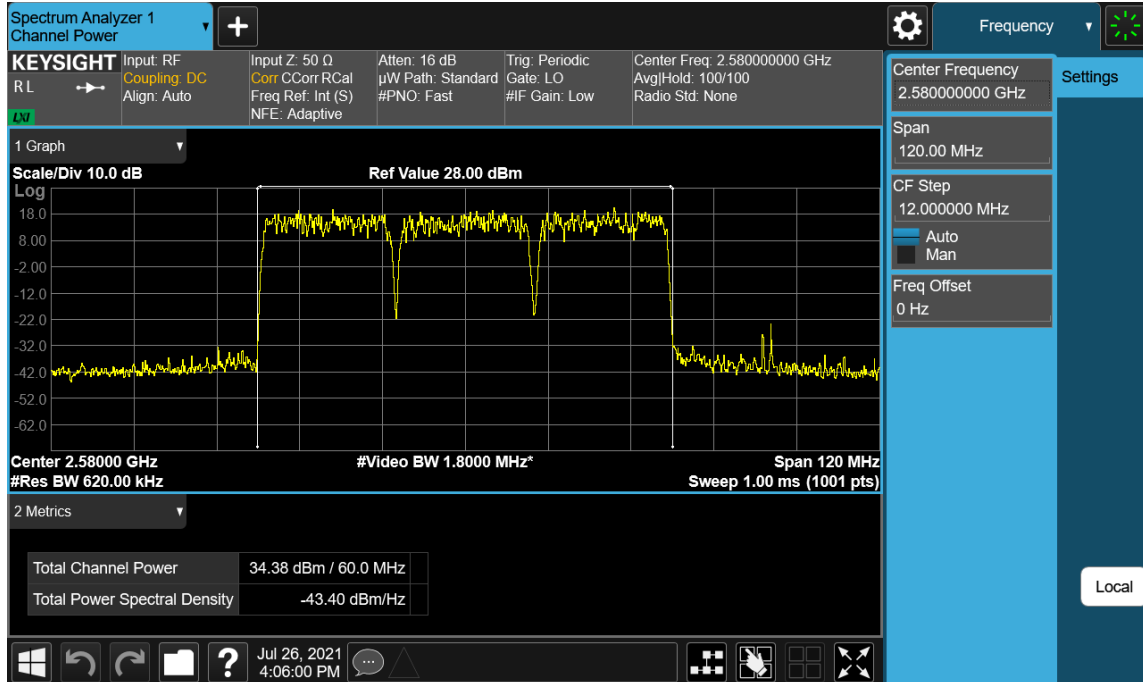


Plot 7-25. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_QPSK, Port 47)

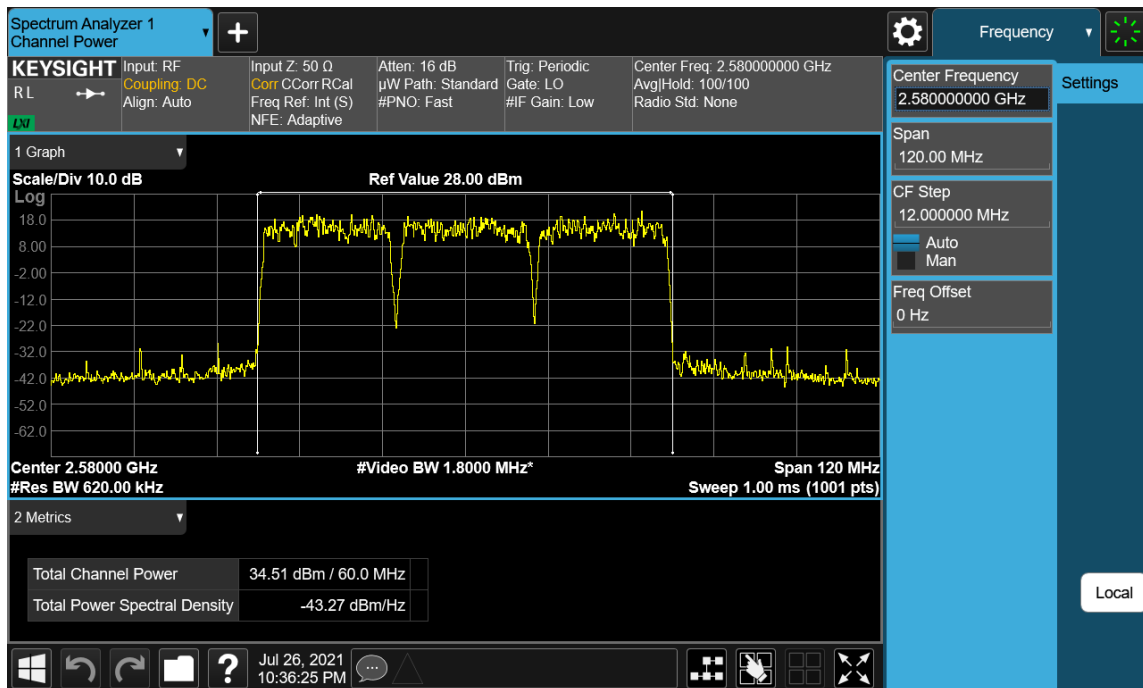


Plot 7-26. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_16QAM, Port 47)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 39 of 201



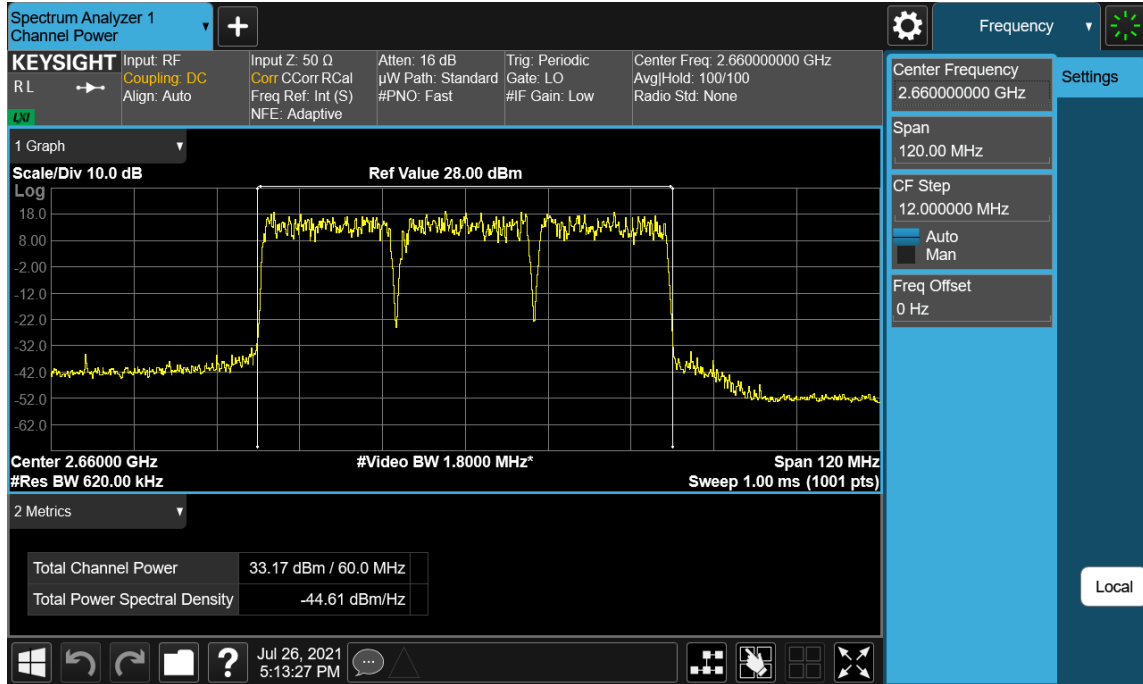
Plot 7-27. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_64QAM, Port 47)



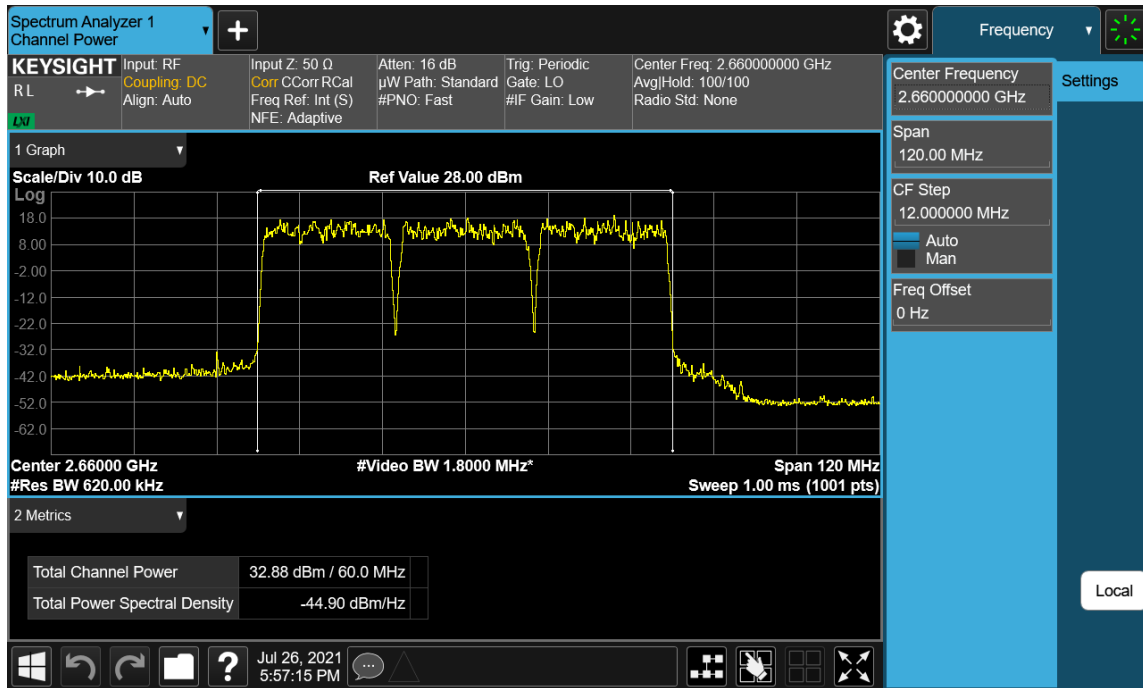
Plot 7-28. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - Middle Channel\_256QAM, Port 47)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 40 of 201



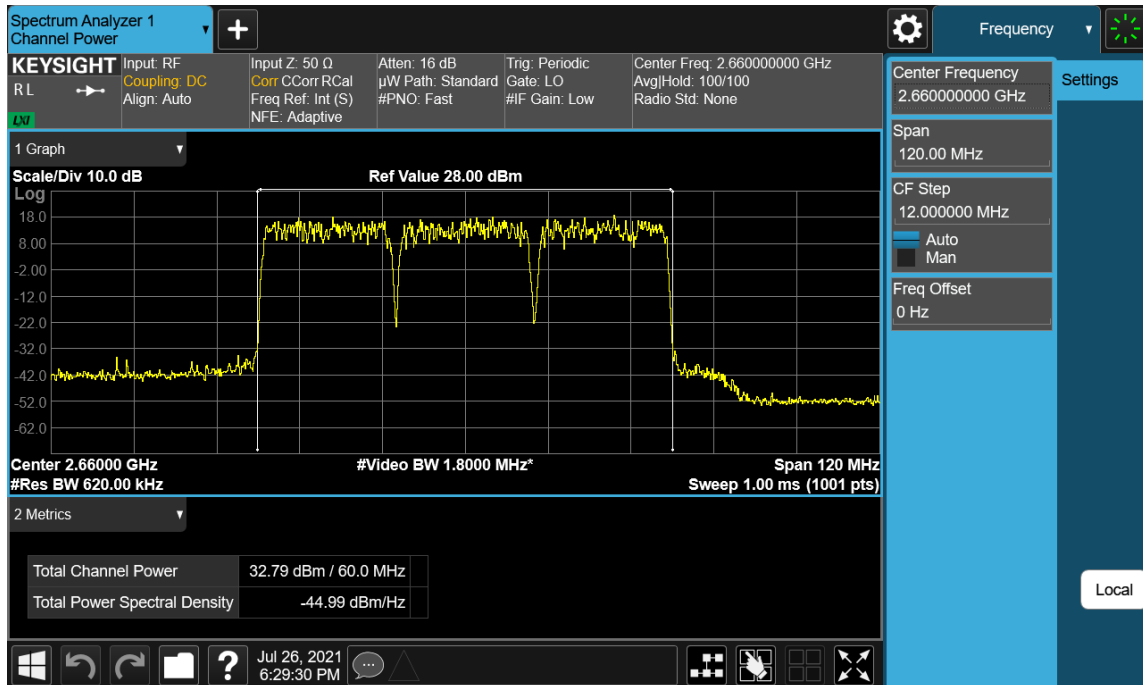


Plot 7-29. Conducted Average Output Power Plot (LTE 3C\_20M+20M+20M - High Channel\_QPSK, Port 36)

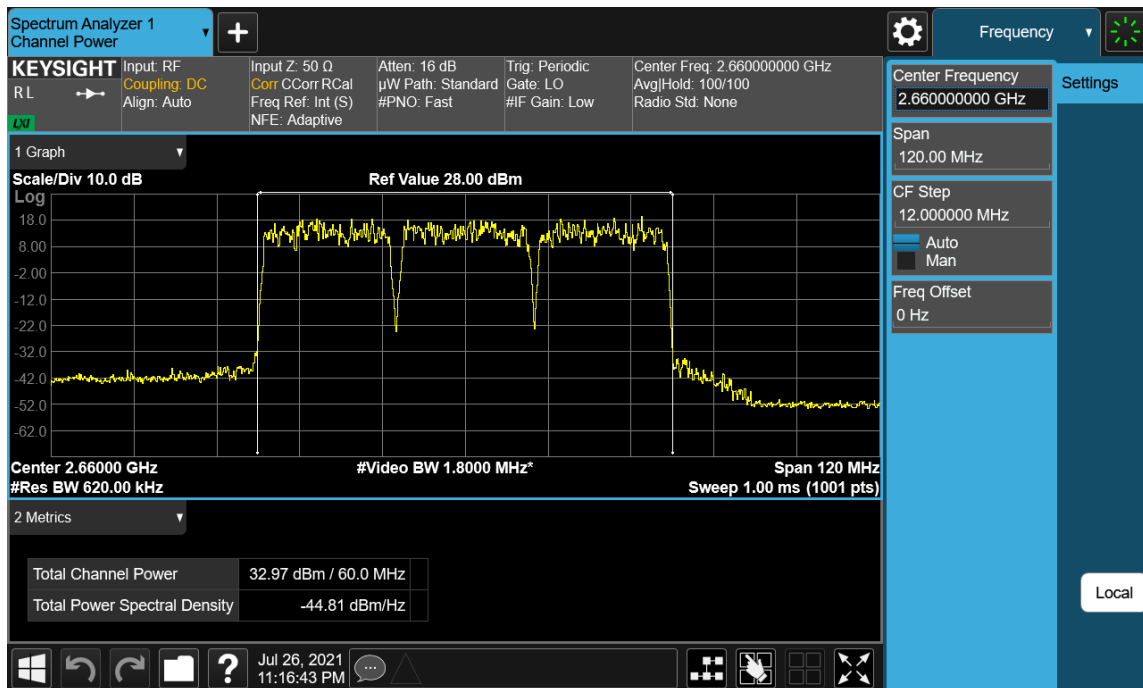


Plot 7-30. Conducted Average Output Power Plot (LTE 3C\_20M+20M+20M - High Channel\_16QAM, Port 36)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 41 of 201



Plot 7-31. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - High Channel\_64QAM, Port 36)





Plot 7-32. Conducted Average Output Power Plot  
(LTE 3C\_20M+20M+20M - High Channel\_256QAM, Port 36)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 42 of 201



- NR 1C\_80M Configuraiton

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Low	0	34.44	34.47	34.50	34.32
	1	34.40	34.42	34.43	34.26
	2	34.30	34.29	34.39	34.22
	3	34.26	34.26	34.34	34.12
	4	34.39	34.36	34.45	34.33
	5	34.42	34.38	34.45	34.32
	6	35.06	35.11	35.17	35.03
	7	34.66	34.65	34.70	34.56
	8	34.65	34.63	34.72	34.43
	9	34.40	34.37	34.44	34.15
	10	35.03	35.02	35.18	34.93
	11	34.12	34.18	34.22	33.91
	12	34.64	34.61	34.75	34.40
	13	34.33	34.32	34.39	34.13
	14	34.73	34.79	34.84	34.59
	15	34.65	34.71	34.75	34.49
	16	34.73	34.71	34.74	34.28
	17	34.53	34.51	34.57	34.36
	18	34.53	34.53	34.59	34.31
	19	33.90	33.98	34.00	33.79
	20	34.64	34.63	34.69	34.42
	21	34.58	34.58	34.64	34.42
	22	34.17	34.14	34.27	34.01
	23	34.53	34.53	34.54	34.31
	24	34.44	34.46	34.51	34.33
	25	34.79	34.63	34.68	34.61
	26	34.97	34.97	34.97	34.85
	27	34.52	34.41	34.52	34.35
	28	34.45	34.38	34.38	34.27
	29	34.27	34.22	34.27	34.10
	30	34.33	34.30	34.36	34.18
	31	34.80	34.65	34.78	34.61



FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 43 of 201	

Low	32	34.08	33.97	34.10	33.93
	33	34.32	34.22	34.34	34.18
	34	34.55	34.53	34.56	34.38
	35	34.85	34.76	34.83	34.70
	36	34.27	34.19	34.26	34.13
	37	34.64	34.66	34.68	34.50
	38	34.29	34.31	34.37	34.21
	39	34.61	34.54	34.62	34.46
	40	34.55	34.35	34.47	34.32
	41	34.84	34.74	34.87	34.73
	42	34.50	34.51	34.52	34.39
	43	35.16	35.16	35.27	35.03
	44	34.80	34.79	34.95	34.66
	45	34.40	34.50	34.52	34.27
	46	34.72	34.83	34.86	34.63
	47	35.23	35.24	35.38	35.03
	48	34.84	34.86	34.93	34.71
	49	34.29	34.36	34.48	34.20
	50	34.78	34.83	34.83	34.64
	51	34.17	34.21	34.28	34.05
	52	34.49	34.55	34.62	34.42
	53	34.54	34.60	34.62	34.43
	54	34.89	34.92	35.00	34.72
	55	34.55	34.64	34.73	34.44
	56	34.66	34.66	34.70	34.54
	57	34.60	34.50	34.59	34.45
	58	34.37	34.33	34.41	34.25
	59	34.64	34.54	34.68	34.48
	60	34.40	34.30	34.38	34.23
	61	34.53	34.53	34.57	34.42
	62	34.71	34.74	34.78	34.62
	63	34.39	34.30	34.36	34.20
	Total MIMO Conducted Power (mW)		182867.42	182262.37	185197.55
Total MIMO Conducted Power (dBm)		52.62	52.61	52.68	52.47
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		79.82	79.81	<b>79.88</b>	79.67
EIRP Limit (dBm)		88.35	88.35	88.35	88.35
Margin (dB)		-8.53	-8.54	-8.47	-8.68

**Table 7-10. MIMO Power Summary Data  
(NR 1C\_80M - Low Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 44 of 201	

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Middle	0	34.98	34.98	34.97	34.72
	1	34.88	34.94	34.94	34.75
	2	34.79	34.84	34.88	34.62
	3	34.75	34.77	34.82	34.55
	4	34.87	34.85	34.91	34.65
	5	35.03	35.03	35.08	34.82
	6	34.84	34.78	34.85	34.59
	7	34.55	34.55	34.60	34.38
	8	34.23	34.22	34.31	34.07
	9	35.20	35.15	35.19	34.89
	10	34.52	34.52	34.54	34.36
	11	34.81	34.85	34.88	34.62
	12	34.69	34.72	34.71	34.49
	13	34.75	34.71	34.74	34.51
	14	34.69	34.69	34.78	34.45
	15	34.64	34.65	34.68	34.46
	16	34.64	34.69	34.68	34.53
	17	35.24	35.24	35.22	35.08
	18	34.79	34.86	34.86	34.71
	19	34.78	34.77	34.80	34.64
	20	34.68	34.74	34.72	34.53
	21	34.63	34.63	34.64	34.49
	22	34.91	34.97	34.95	34.79
	23	34.41	34.52	34.46	34.30
	24	34.94	34.92	35.00	34.82
	25	34.59	34.51	34.59	34.42
	26	34.73	34.71	34.80	34.60
	27	35.07	34.96	35.04	34.85
	28	34.56	34.47	34.61	34.37
	29	35.05	34.94	35.06	34.87
	30	35.15	35.05	35.22	34.94
31	34.93	34.81	34.90	34.73	



FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 45 of 201	

Middle	32	35.02	34.93	35.10	34.81
	33	34.87	34.84	34.92	34.71
	34	34.83	34.79	34.92	34.66
	35	34.88	34.81	34.94	34.72
	36	35.10	34.97	35.15	34.93
	37	34.93	34.91	34.93	34.72
	38	34.86	34.83	34.90	34.74
	39	34.89	34.92	34.99	34.82
	40	34.72	34.70	34.67	34.53
	41	34.86	34.83	34.93	34.71
	42	34.45	34.41	34.46	34.30
	43	35.15	35.13	35.24	35.05
	44	34.98	35.10	35.12	34.94
	45	34.80	34.82	34.92	34.65
	46	35.22	35.36	35.38	35.10
	47	35.39	35.53	35.54	35.35
	48	34.91	34.89	34.91	34.68
	49	34.99	35.02	34.99	34.76
	50	35.58	35.66	35.66	35.38
	51	34.84	34.93	34.99	34.67
	52	34.96	35.05	35.10	34.83
	53	35.17	35.20	35.30	35.04
	54	35.30	35.36	35.38	35.22
	55	34.69	34.77	34.79	34.55
	56	35.02	35.06	35.10	34.98
	57	34.97	34.92	34.97	34.79
	58	35.06	35.09	35.13	35.03
	59	35.07	35.08	35.13	35.05
	60	34.83	34.84	34.84	34.79
	61	34.94	34.98	35.05	34.92
	62	34.73	34.65	34.81	34.58
	63	35.00	35.01	35.06	34.89
Total MIMO Conducted Power (mW)		197167.88	197276.21	199644.41	190350.05
Total MIMO Conducted Power (dBm)		52.95	52.95	53.00	52.80
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		80.15	80.15	<b>80.20</b>	80.00
EIRP Limit (dBm)		88.35	88.35	88.35	88.35
Margin (dB)		-8.20	-8.20	-8.15	-8.35

**Table 7-11. MIMO Power Summary Data  
(NR 1C\_80M - Middle Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 46 of 201	

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
High	0	34.65	34.55	34.67	34.49
	1	34.56	34.52	34.58	34.35
	2	34.68	34.63	34.63	34.47
	3	34.91	34.80	34.87	34.72
	4	34.65	34.61	34.63	34.49
	5	34.82	34.73	34.76	34.56
	6	34.26	34.17	34.18	34.05
	7	34.76	34.69	34.71	34.54
	8	34.58	34.65	34.61	34.37
	9	34.19	34.17	34.17	34.04
	10	34.53	34.58	34.54	34.33
	11	34.48	34.51	34.49	34.31
	12	34.47	34.43	34.46	34.19
	13	34.92	35.00	34.94	34.74
	14	34.81	34.89	34.84	34.59
	15	34.38	34.42	34.44	34.16
	16	34.63	34.70	34.68	34.46
	17	34.76	34.83	34.81	34.57
	18	34.77	34.86	34.77	34.57
	19	34.60	34.63	34.61	34.37
	20	34.90	34.95	34.88	34.74
	21	34.46	34.53	34.37	34.19
	22	34.63	34.70	34.72	34.41
	23	34.56	34.63	34.57	34.31
	24	34.71	34.77	34.76	34.55
	25	34.70	34.70	34.72	34.52
	26	34.61	34.56	34.60	34.39
	27	34.61	34.61	34.58	34.43
	28	34.77	34.76	34.71	34.59
	29	34.76	34.74	34.68	34.56
	30	34.82	34.78	34.76	34.60
31	34.96	34.92	34.89	34.74	

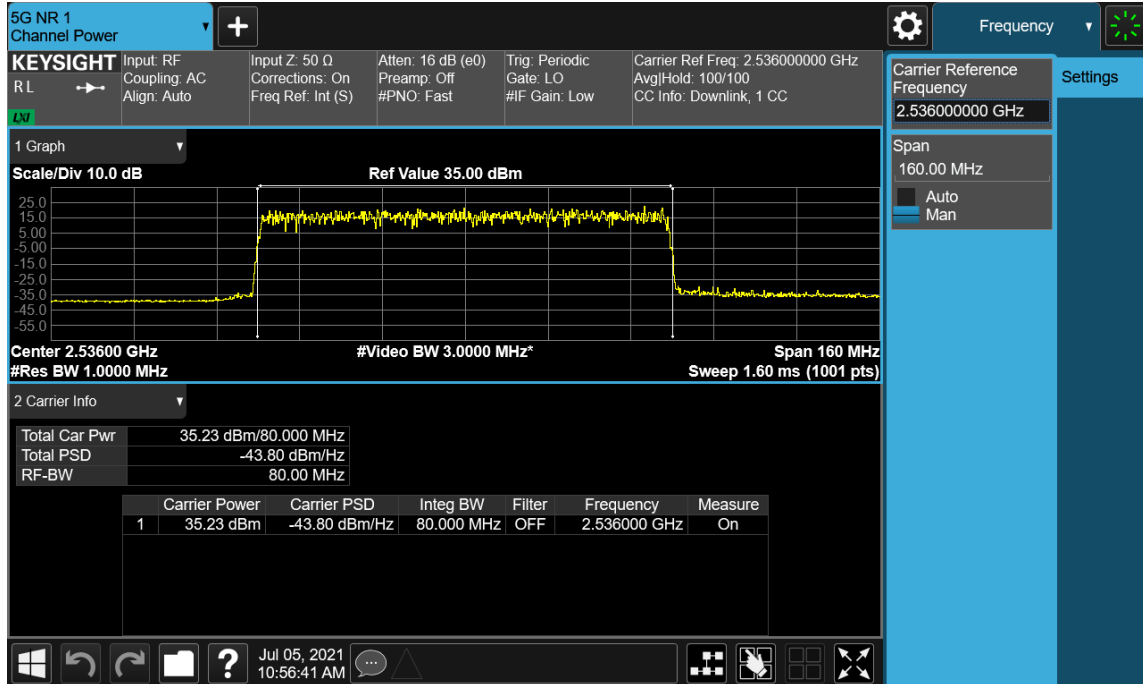
FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 47 of 201	

High	32	34.70	34.70	34.72	34.53
	33	35.09	35.05	35.06	34.88
	34	34.83	34.79	34.81	34.66
	35	34.71	34.70	34.70	34.53
	36	35.29	35.30	35.29	35.11
	37	34.44	34.48	34.45	34.32
	38	34.53	34.47	34.51	34.33
	39	35.16	35.08	35.11	34.89
	40	34.93	35.10	34.98	34.75
	41	34.50	34.54	34.55	34.27
	42	34.78	34.85	34.76	34.57
	43	34.68	34.84	34.82	34.54
	44	34.68	34.79	34.81	34.53
	45	34.68	34.83	34.81	34.47
	46	34.69	34.75	34.73	34.55
	47	34.87	35.00	34.97	34.65
	48	34.75	34.84	34.85	34.56
	49	34.87	34.97	34.87	34.63
	50	34.54	34.69	34.63	34.38
	51	34.73	34.86	34.82	34.56
	52	34.60	34.71	34.67	34.42
	53	34.44	34.52	34.49	34.24
	54	34.91	34.94	34.92	34.65
	55	34.86	34.92	34.89	34.64
	56	34.83	34.87	34.86	34.66
	57	34.38	34.38	34.38	34.25
	58	34.78	34.81	34.79	34.60
	59	34.85	34.81	34.80	34.61
	60	34.48	34.44	34.46	34.30
	61	34.83	34.81	34.84	34.69
	62	34.81	34.76	34.77	34.55
	63	34.95	34.94	34.95	34.75
	Total MIMO Conducted Power (mW)		189260.86	190296.52	189693.02
Total MIMO Conducted Power (dBm)		52.77	52.79	52.78	52.57
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		79.97	<b>79.99</b>	79.98	79.77
EIRP Limit (dBm)		88.35	88.35	88.35	88.35
Margin (dB)		-8.38	-8.36	-8.37	-8.58

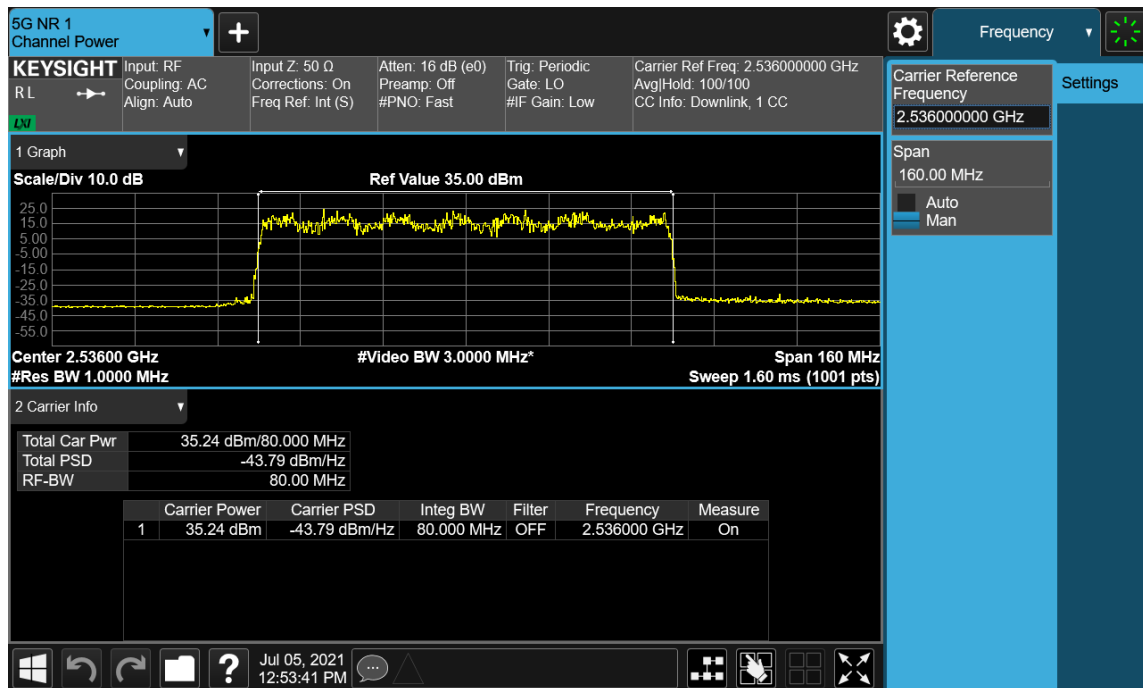
**Table 7-12. MIMO Power Summary Data  
(NR 1C\_80M - High Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 48 of 201	



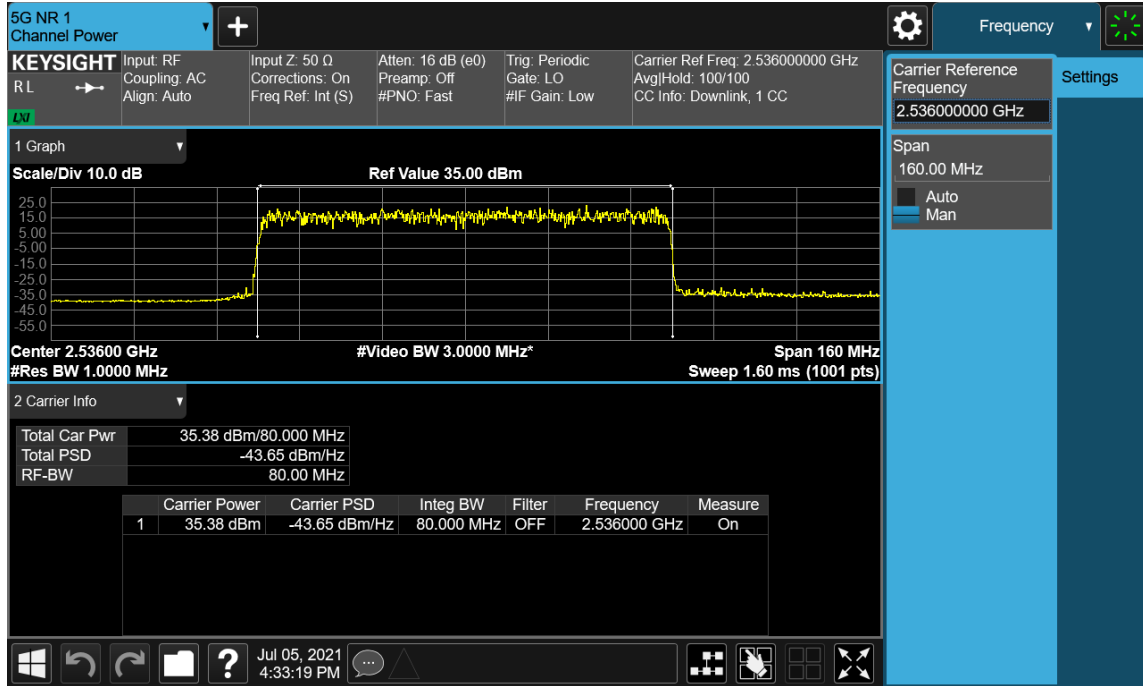


Plot 7-33. Conducted Average Output Power Plot (NR 1C\_80M - Low Channel\_QPSK, Port 47)



Plot 7-34. Conducted Average Output Power Plot (NR 1C\_80M - Low Channel\_16QAM, Port 47)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 49 of 201

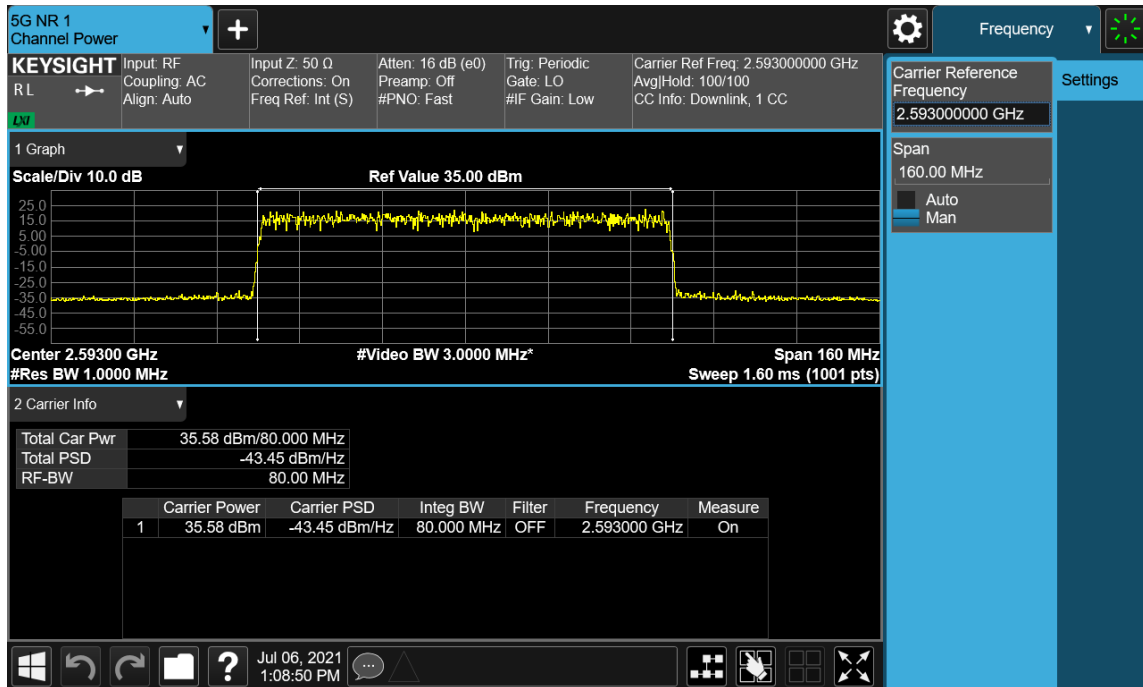


Plot 7-35. Conducted Average Output Power Plot (NR 1C\_80M - Low Channel\_64QAM, Port 47)

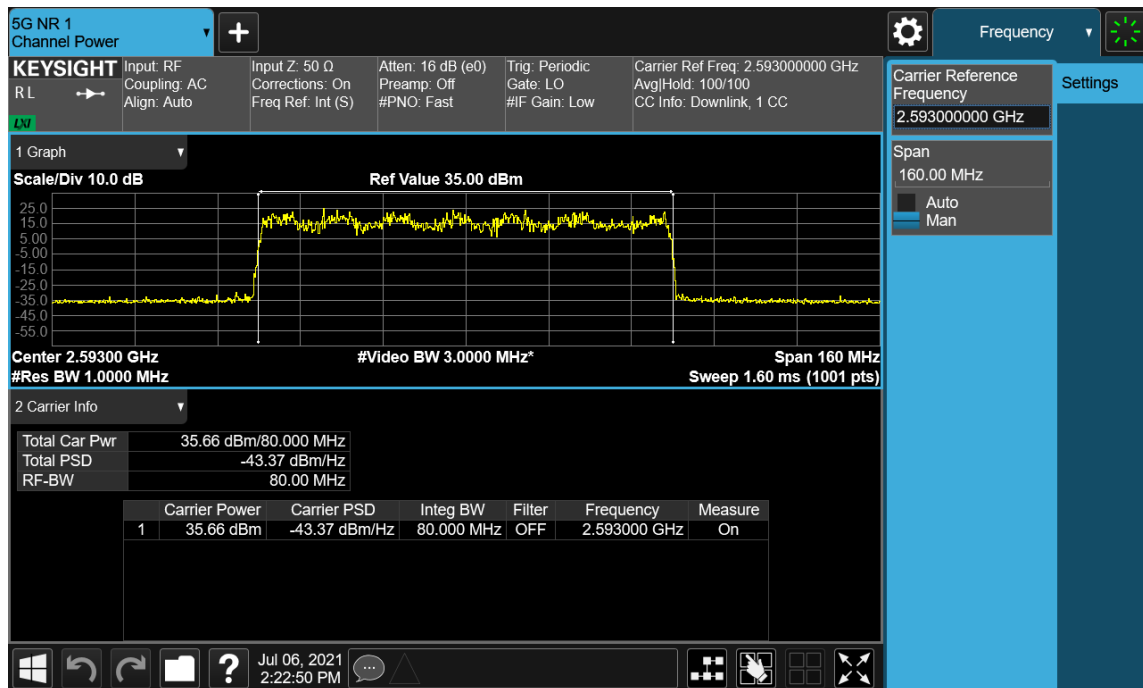


Plot 7-36. Conducted Average Output Power Plot (NR 1C\_80M - Low Channel\_256QAM, Port 47)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 50 of 201

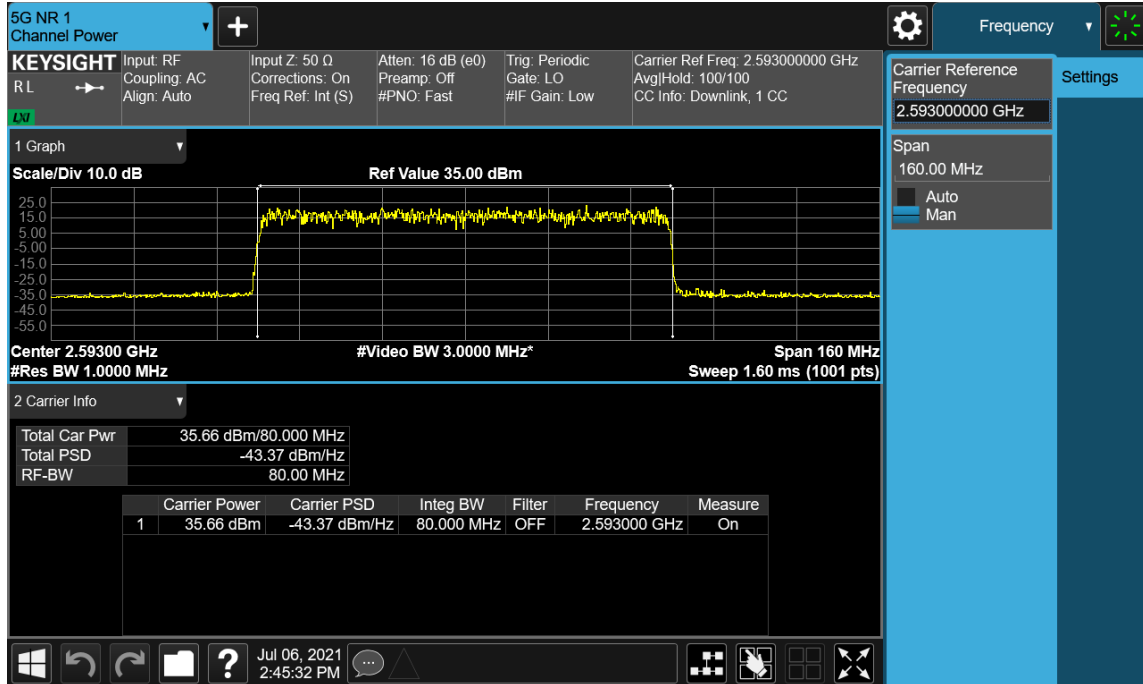


Plot 7-37. Conducted Average Output Power Plot (NR 1C\_80M - Middle Channel\_QPSK, Port 50)

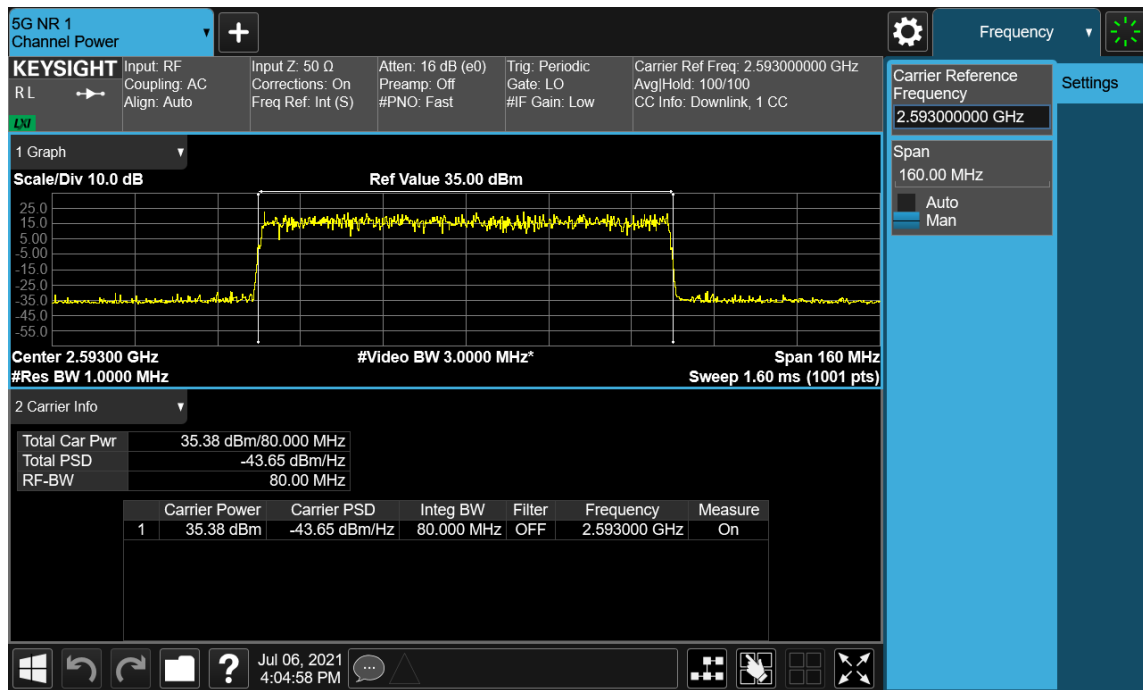


Plot 7-38. Conducted Average Output Power Plot (NR 1C\_80M - Middle Channel\_16QAM, Port 50)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 51 of 201

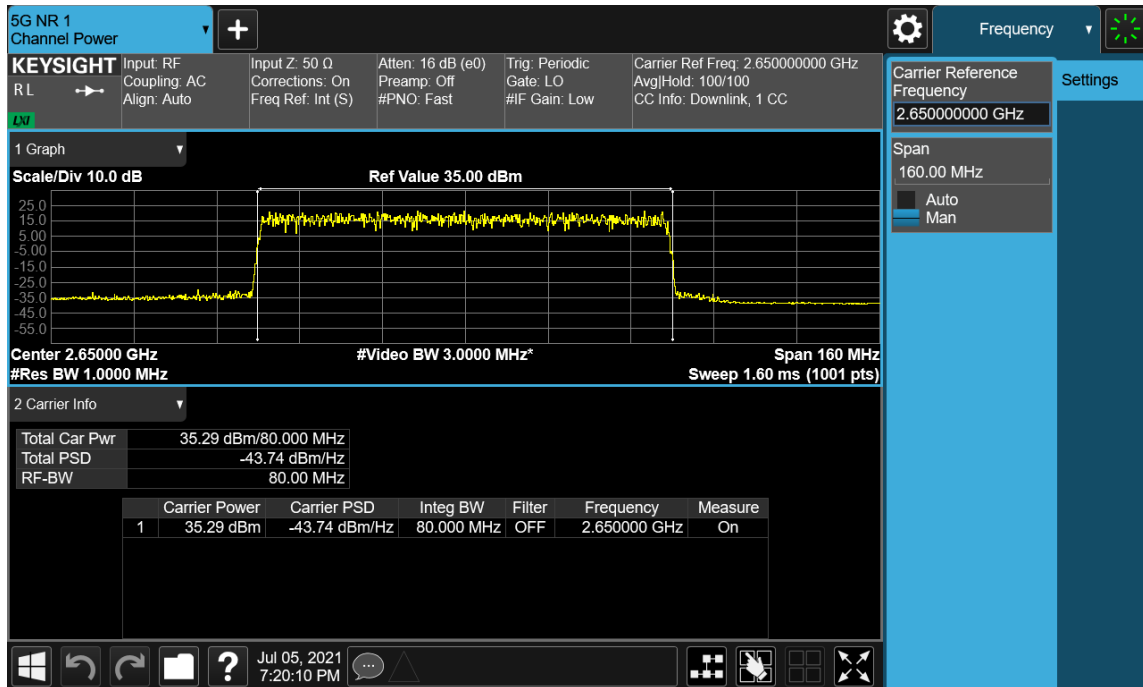


Plot 7-39. Conducted Average Output Power Plot (NR 1C\_80M - Middle Channel\_64QAM, Port 50)

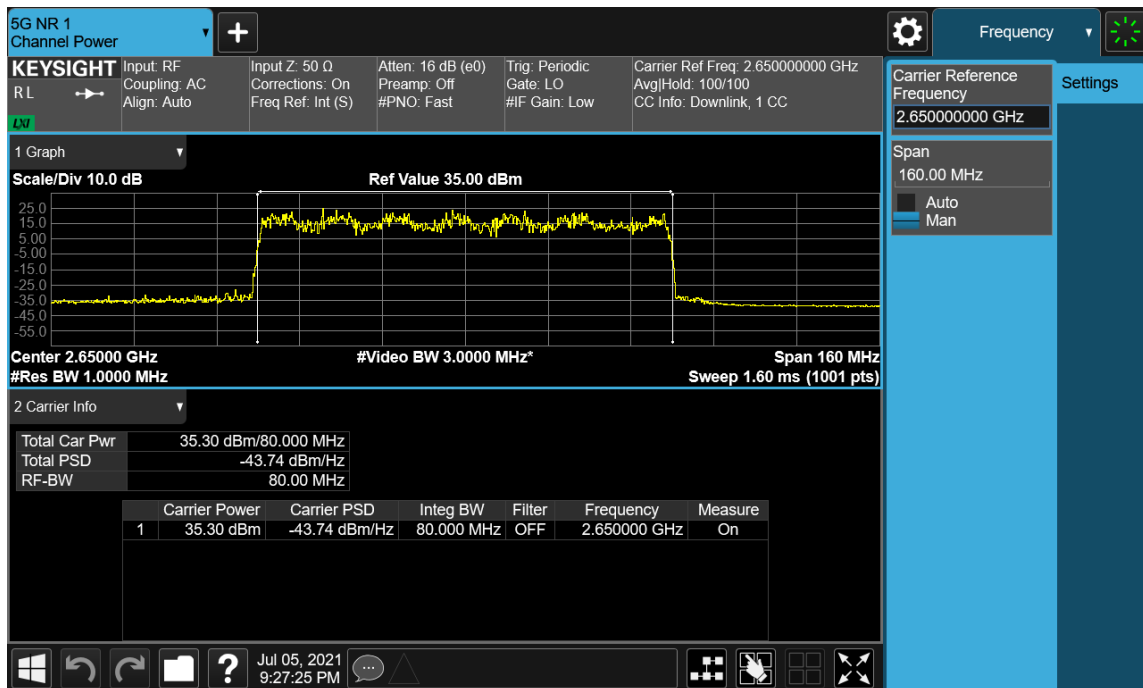


Plot 7-40. Conducted Average Output Power Plot (NR 1C\_80M - Middle Channel\_256QAM, Port 50)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 8K21060701-R1.A3L	Test Dates: 06/10/2021-07/27/2021	EUT Type: MMU(MT6411)		Page 52 of 201

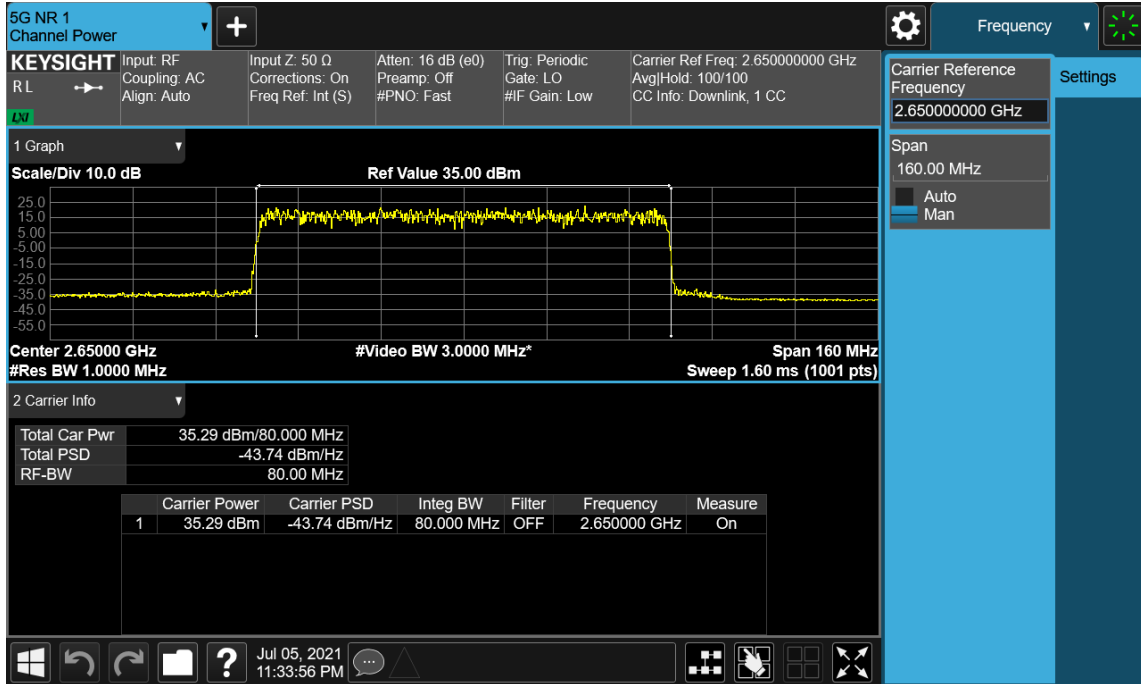


Plot 7-41. Conducted Average Output Power Plot (NR 1C\_80M - High Channel\_QPSK, Port 36)



Plot 7-42. Conducted Average Output Power Plot (NR 1C\_80M - High Channel\_16QAM, Port 36)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 53 of 201



Plot 7-43. Conducted Average Output Power Plot (NR 1C\_80M - High Channel\_64QAM, Port 36)





Plot 7-44. Conducted Average Output Power Plot (NR 1C\_80M - High Channel\_256QAM, Port 36)

FCC ID: A3LMT6411-41A	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)	<b>SAMSUNG</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 54 of 201

- NR 1C\_100M Configuraiton

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Low	0	34.86	34.65	34.75	34.64
	1	34.83	34.71	34.76	34.61
	2	34.71	34.49	34.66	34.53
	3	34.94	34.69	34.85	34.72
	4	34.67	34.53	34.69	34.53
	5	34.97	34.78	34.89	34.59
	6	34.85	34.65	34.75	34.47
	7	34.87	34.75	34.85	34.70
	8	34.87	34.63	34.78	34.57
	9	34.92	34.73	34.84	34.68
	10	35.18	35.03	35.08	35.02
	11	34.58	34.40	34.46	34.32
	12	34.83	34.62	34.68	34.55
	13	34.54	34.34	34.42	34.35
	14	35.11	35.02	35.09	34.83
	15	34.99	34.82	34.87	34.75
	16	35.07	34.95	35.01	35.00
	17	34.73	34.59	34.72	34.58
	18	35.03	34.86	35.01	34.91
	19	34.98	34.81	34.97	34.85
	20	34.94	34.77	34.88	34.82
	21	34.70	34.56	34.58	34.50
	22	34.88	34.74	34.77	34.69
	23	34.65	34.52	34.63	34.49
	24	34.49	34.59	34.77	34.58
	25	34.99	34.79	34.99	34.77
	26	34.92	34.70	34.88	34.80
	27	34.82	34.59	34.77	34.54
	28	34.91	34.57	34.79	34.65
	29	34.62	34.38	34.59	34.44
	30	34.88	34.59	34.83	34.57
	31	35.12	34.83	35.09	34.83

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 55 of 201	



Low	32	34.46	34.24	34.41	34.21
	33	34.70	34.46	34.62	34.53
	34	35.00	34.69	34.90	34.72
	35	35.20	34.94	35.05	34.95
	36	34.88	34.51	34.78	34.63
	37	34.91	34.58	34.80	34.65
	38	34.85	34.53	34.84	34.63
	39	35.20	34.92	35.17	34.91
	40	34.75	34.60	34.72	34.64
	41	35.23	35.08	35.10	34.98
	42	34.87	34.74	34.89	34.66
	43	35.53	35.37	35.44	35.44
	44	35.19	35.03	35.04	34.90
	45	34.78	34.61	34.65	34.56
	46	35.21	35.02	35.15	35.01
	47	35.43	35.17	35.24	35.15
	48	34.51	34.81	34.93	34.71
	49	34.94	34.70	34.85	34.62
	50	35.28	35.02	35.10	34.96
	51	34.74	34.53	34.62	34.43
	52	34.97	34.75	34.87	34.62
	53	34.91	34.73	34.81	34.67
	54	35.25	35.05	35.10	34.93
	55	34.88	34.74	34.78	34.62
	56	35.21	35.08	35.16	34.96
	57	34.98	34.68	34.91	34.73
	58	34.82	34.68	34.73	34.62
	59	34.94	34.77	34.86	34.62
	60	34.68	34.50	34.63	34.37
	61	34.96	34.76	34.86	34.63
	62	35.06	34.88	34.96	34.85
	63	34.82	34.66	34.76	34.56
	Total MIMO Conducted Power (mW)		198735.30	190269.08	195736.76
Total MIMO Conducted Power (dBm)		52.98	52.79	52.92	52.76
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		<b>80.18</b>	79.99	80.12	79.96
EIRP Limit (dBm)		89.32	89.32	89.32	89.32
Margin (dB)		-9.14	-9.33	-9.20	-9.36

**Table 7-13. MIMO Power Summary Data  
(NR 1C\_100M - Low Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 56 of 201	





Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
Middle	0	35.08	34.83	34.95	34.73
	1	34.99	34.80	34.94	34.73
	2	34.97	34.67	34.85	34.61
	3	34.86	34.64	34.81	34.58
	4	34.94	34.72	34.87	34.65
	5	35.09	34.89	35.06	34.84
	6	34.85	34.62	34.71	34.58
	7	34.65	34.56	34.52	34.33
	8	34.32	34.04	34.32	33.98
	9	35.27	34.89	35.20	34.90
	10	34.59	34.35	34.55	34.31
	11	34.98	34.66	34.81	34.59
	12	34.78	34.54	34.67	34.44
	13	34.85	34.67	34.72	34.54
	14	34.82	34.71	34.67	34.43
	15	34.74	34.46	34.67	34.44
	16	34.84	34.48	34.69	34.48
	17	35.35	35.02	35.31	34.98
	18	34.97	34.62	34.92	34.59
	19	34.91	34.53	34.85	34.58
	20	34.79	34.52	34.70	34.49
	21	34.77	34.53	34.69	34.44
	22	35.04	34.82	34.95	34.70
	23	34.55	34.30	34.47	34.25
	24	35.00	34.82	34.93	34.73
	25	34.64	34.44	34.60	34.41
	26	34.81	34.60	34.70	34.50
	27	35.14	34.96	35.05	34.86
	28	34.64	34.53	34.55	34.36
	29	35.14	34.93	35.01	34.83
	30	35.20	35.07	35.16	34.98
31	34.96	34.83	34.93	34.77	

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 57 of 201	

Middle	32	35.09	34.82	35.03	34.81
	33	34.99	34.74	34.97	34.71
	34	34.94	34.72	34.88	34.71
	35	34.96	34.69	34.90	34.74
	36	35.18	34.94	35.15	34.91
	37	35.07	34.82	34.97	34.72
	38	34.94	34.70	34.87	34.71
	39	35.05	34.89	34.98	34.84
	40	34.87	34.60	34.72	34.52
	41	34.99	34.81	34.84	34.63
	42	34.52	34.31	34.42	34.21
	43	35.36	35.15	35.22	34.95
	44	35.14	34.92	35.00	34.78
	45	34.99	34.68	34.83	34.67
	46	35.42	35.12	35.31	35.06
	47	35.40	35.29	35.46	35.27
	48	35.04	34.62	34.89	34.70
	49	35.14	34.74	35.03	34.79
	50	35.62	35.44	35.65	35.41
	51	35.01	34.71	34.06	34.68
	52	35.16	34.78	35.02	34.82
	53	35.37	35.08	35.29	35.04
	54	35.47	35.15	35.35	35.21
	55	34.88	34.52	34.77	34.53
	56	35.22	34.87	35.11	34.94
	57	35.12	34.75	35.04	34.77
	58	35.23	34.99	35.24	34.93
	59	35.25	34.90	35.10	34.91
	60	34.97	34.61	34.87	34.63
	61	35.11	34.81	35.02	34.82
	62	34.90	34.54	34.81	34.56
	63	35.20	34.88	35.10	34.90
Total MIMO Conducted Power (mW)		202792.63	191111.68	198258.20	188996.65
Total MIMO Conducted Power (dBm)		53.07	52.81	52.97	52.76
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		<b>80.27</b>	80.01	80.17	79.96
EIRP Limit (dBm)		89.32	89.32	89.32	89.32
Margin (dB)		-9.05	-9.31	-9.15	-9.36

**Table 7-14. MIMO Power Summary Data  
(NR 1C\_100M - Middle Channel)**



FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>			<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 58 of 201	

Channel	Port #	Conducted Average Output Power (dBm)			
		QPSK	16QAM	64QAM	256QAM
High	0	34.72	34.55	34.68	34.47
	1	34.58	34.47	34.54	34.36
	2	34.53	34.45	34.16	34.33
	3	34.83	34.63	34.76	34.52
	4	34.64	34.58	34.56	34.33
	5	34.87	34.81	34.79	34.64
	6	34.76	34.69	34.67	34.52
	7	34.57	34.53	34.53	34.31
	8	34.43	34.38	34.61	34.20
	9	34.42	34.42	34.52	34.28
	10	34.60	34.55	34.75	34.36
	11	34.49	34.40	34.48	34.24
	12	34.50	34.39	34.79	34.28
	13	34.75	34.63	34.81	34.56
	14	34.42	34.29	34.54	34.17
	15	34.35	34.23	34.39	34.12
	16	34.33	34.21	33.94	34.18
	17	34.77	34.60	34.82	34.54
	18	34.74	34.59	34.72	34.44
	19	34.70	34.55	34.69	34.42
	20	34.86	34.82	34.96	34.67
	21	34.61	34.50	34.68	34.39
	22	34.79	34.68	34.86	34.58
	23	34.47	34.36	34.49	34.23
	24	34.58	34.56	34.52	34.33
	25	34.52	34.43	34.47	34.25
	26	34.73	34.68	34.82	34.52
	27	34.65	34.60	34.55	34.43
	28	34.68	34.64	34.63	34.42
	29	34.87	34.73	34.78	34.55
	30	34.81	34.69	34.86	34.55
31	34.77	34.72	34.75	34.56	

FCC ID: A3LMT6411-41A	 <b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (Certification)		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)		Page 59 of 201

High	32	34.66	34.65	34.65	34.46
	33	34.98	34.96	35.00	34.84
	34	34.73	34.64	34.61	34.54
	35	34.61	34.57	34.55	34.39
	36	35.19	35.07	35.15	34.93
	37	34.72	34.59	34.67	34.51
	38	34.44	34.35	34.46	34.26
	39	35.17	35.01	35.23	34.96
	40	34.93	34.76	35.14	34.76
	41	34.59	34.37	34.69	34.33
	42	34.68	34.58	34.79	34.46
	43	34.71	34.55	34.80	34.49
	44	34.67	34.60	34.86	34.49
	45	34.49	34.34	34.56	34.30
	46	34.80	34.68	34.84	34.54
	47	34.83	34.74	34.94	34.64
	48	34.72	34.67	34.81	34.53
	49	34.66	34.51	34.71	34.46
	50	34.49	34.40	34.57	34.34
	51	34.74	34.60	34.86	34.50
	52	34.41	34.30	34.47	34.22
	53	34.55	34.50	34.59	34.37
	54	34.99	34.88	35.09	34.74
	55	34.50	34.37	34.58	34.33
	56	34.94	34.86	35.10	34.75
	57	35.30	35.16	35.37	35.03
	58	34.74	34.61	34.90	34.58
	59	34.76	34.70	34.91	34.59
	60	34.49	34.36	34.75	34.29
	61	34.84	34.78	34.93	34.71
	62	34.64	34.59	34.99	34.51
	63	35.11	34.94	35.18	34.96
	Total MIMO Conducted Power (mW)		188823.74	184537.98	190587.37
Total MIMO Conducted Power (dBm)		52.76	52.66	52.80	52.54
Antenna Gain (dBi)		27.20	27.20	27.20	27.20
MIMO EIRP (dBm)		79.96	79.86	<b>80.00</b>	79.74
EIRP Limit (dBm)		89.32	89.32	89.32	89.32
Margin (dB)		-9.36	-9.46	-9.32	-9.58

**Table 7-15. MIMO Power Summary Data  
(NR 1C\_100M - High Channel)**

FCC ID: A3LMT6411-41A		<b>MEASUREMENT REPORT (Certification)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21060701-R1.A3L	<b>Test Dates:</b> 06/10/2021-07/27/2021	<b>EUT Type:</b> MMU(MT6411)	Page 60 of 201	