



TEST REPORT

APPLICANT : Reliance Communications LLC

PRODUCT NAME : Orbic Speed 5G

MODEL NAME : R500L5S6

BRAND NAME : Orbic

FCC ID : 2ABGH-R500L5S6

STANDARD(S) : 47 CFR Part 2
47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27, Subpart F&L&M
47 CFR Part 96

RECEIPT DATE : 2021-03-09

TEST DATE : 2021-03-31 to 2022-07-21

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Change History		
Version	Date	Reason for change
1.0	2022-08-19	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Reliance Communications LLC
Applicant Address:	1560 Fifth Ave BayShore, NY 11706
Manufacturer:	Unimaxcomm
Manufacturer Address:	Room 602, Floor 6th, Building B, Software Park T3,Hi-Tech Park South, Nanshan District, Shenzhen, P.R. China



1.2. Equipment Under Test (EUT) Description

Product Name:	Orbic Speed 5G	
Hardware Version:	V1.2	
Software Version:	ORB500L5S6_V1.0.6_BVT-NA	
IMEI:	352241200010280 352241200010340	
Modulation Type:	QPSK, 16QAM,64QAM	
Operation Band:	Uplink:2A_4A; 2A_5A; 2A_12A; 2A_13A; 2A_66A; 4A_5A; 4A_12A; 4A_13A; 5A_66A; 12A_66A; 13A_66A; 66B; 66C; 48C; 41C	
Frequency Range:	LTE Band 2	Tx: 1850MHz–1910MHz
		Rx: 1930MHz–1990MHz
	LTE Band 4	Tx: 1710 MHz – 1755MHz
		Rx: 2110 MHz – 2155MHz
	LTE Band 5	Tx: 824 MHz – 849 MHz
		Rx: 869 MHz – 894MHz
	LTE Band 12	Tx: 699 MHz – 716 MHz
		Rx: 729 MHz – 746 MHz
	LTE Band 13	Tx: 777 MHz – 787 MHz
		Rx: 746 MHz – 756 MHz
	LTE Band 41	Tx: 2496 MHz– 2690 MHz
		Rx: 2496 MHz– 2690 MHz
	LTE Band 48	Tx: 3550 MHz – 3700 MHz
		Rx: 3550 MHz – 3700 MHz
	LTE Band 66	Tx: 1710 MHz – 1780 MHz
		Rx: 2110 MHz – 2200 MHz
Channel Bandwidth:	LTE Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	LTE Band 12	1.4MHz, 3MHz, 5MHz, 10MHz
	LTE Band 13	5MHz, 10MHz
	LTE Band 41	5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 48	5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 66	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	LTE Band 2	3.8dBi



	LTE Band 4	3.68dBi
	LTE Band 5	-0.10dBi
	LTE Band 12	-0.55dBi
	LTE Band 13	-0.10dBi
	LTE Band 41	2.23dBi
	LTE Band 48	3.15dBi
	LTE Band 66	3.68dBi
Accessory Information:	Battery	
	Brand Name:	Orbic
	Model No.:	BTE-4401
	Serial No.:	N/A
	Capacity:	4400mAh
	Rated Voltage:	3.80V
	Charge Limit:	4.35V
	Manufacturer:	HUIZHOU DXDRAGON INC
	AC Adapter	
	Brand Name:	Orbic
	Model No.:	TPA-23A050200UU01
	Serial No.:	N/A
	Rated Input:	100-240V~0.3A, 50/60Hz
	Rated Output:	5.0V/2.0A
	Manufacturer	Dongguan summer electronics Co., LTD

Note1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note2: This test report is variant from the original report (Report No.: SZ22050178W07, Model: R500L5S6) based on the similarity between before, only Changed the Applicant Address, enable LTE B17 by software. However, there is no other evaluation for LTE B17 due to the band is completely covered by LTE B12 and its power level setting also same as LTE B12. other are the same as before. We evaluated the above changes, which had no impact on the test results. The test results in this report still refer to the test results of the original test report.



1.3. Maximum ERP/EIRP and Emission Designator

Channel bandwidth	Maximum ERP/EIRP (W)		
LTE CA_66B	QPSK	16QAM	64QAM
10+10	0.634	0.378	0.220
LTE CA_66C	QPSK	16QAM	64QAM
20+20	0.614	0.361	0.346
LTE CA_48C	QPSK	16QAM	64QAM
20+20	0.312	/	/
LTE CA_2A-4A	QPSK	16QAM	64QAM
20+20	0.605	/	/
LTE CA_2A-5A	QPSK	16QAM	64QAM
20+10	0.617	/	/
LTE CA_2A-12A	QPSK	16QAM	64QAM
20+10	0.596		
LTE CA_2A-13A	QPSK	16QAM	64QAM
20+10	0.612	/	/
LTE CA_2A-66A	QPSK	16QAM	64QAM
20+20	0.612	/	/
LTE CA_4A-5A	QPSK	16QAM	64QAM
20+10	0.571	/	/
LTE CA_4A-12A	QPSK	16QAM	64QAM
20+10	0.587		
LTE CA_4A-13A	QPSK	16QAM	64QAM
20+10	0.537	/	/
LTE CA_5A-66A	QPSK	16QAM	64QAM
10+20	0.136	/	/
LTE CA_12A-66A	QPSK	16QAM	64QAM
10+20	0.121		
LTE CA_13A-66A	QPSK	16QAM	64QAM
10+20	0.135	/	/
LTE CA_41C	QPSK	16QAM	64QAM
20+20	0.345	0.334	0.324



Channel bandwidth	Emission Designator (99%OBW)		
LTE 66B	QPSK	16QAM	64QAM
5+5	9M34G7D	9M33W7D	9M28D7W
5+10	13M8G7D	13M8W7D	13M8D7W
5+15	18M1G7D	18M1W7D	18M1D7W
10+5	13M9G7D	13M9W7D	13M9D7W
10+10	18M7G7D	18M7W7D	18M7D7W
15+5	18M2G7D	18M2W7D	18M1D7W
LTE 66C	QPSK	16QAM	64QAM
5+20	22M6G7D	22M9W7D	22M7D7W
10+15	23M0G7D	23M0W7D	23M0D7W
10+20	27M5G7D	27M5W7D	27M5D7W
15+10	23M0G7D	23M0W7D	23M0D7W
15+15	28M2G7D	28M2W7D	28M2D7W
15+20	32M4G7D	32M5W7D	32M5D7W
20+5	22M8G7D	22M8W7D	22M8D7W
20+10	27M6G7D	27M6W7D	27M6D7W
20+15	33M4G7D	33M4W7D	33M4D7W
20+20	37M3G7D	37M3W7D	37M3D7W
LTE 48C	QPSK	16QAM	64QAM
5+20	22M8G7D	22M8W7D	22M7D7W
10+20	27M6G7D	27M7W7D	27M6D7W
15+20	32M4G7D	32M7W7D	32M4D7W
20+5	22M8G7D	22M9W7D	22M8D7W
20+10	27M6G7D	27M6W7D	27M7D7W
20+15	32M5G7D	32M6W7D	32M6D7W
20+20	37M5G7D	37M5W7D	37M5D7W
LTE CA_41C	QPSK	16QAM	64QAM
5+20	22M7G7D	22M7W7D	22M7D7W
10+15	23M1G7D	23M1W7D	23M1D7W
10+20	27M6G7D	27M6W7D	27M6D7W
15+10	23M1G7D	23M1W7D	23M1D7W
15+15	28M3G7D	28M2W7D	28M3D7W
15+20	32M6G7D	32M7W7D	32M6D7W
20+5	22M8G7D	22M9W7D	22M9D7W
20+10	28M0G7D	27M7W7D	27M7D7W
20+15	32M6G7D	32M6W7D	32M6D7W
20+20	37M6G7D	37M5W7D	37M6D7W



1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24, Part 27 and Part 96 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	47 CFR Part 96	Citizens Broadband Radio Service



Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
2.1046, 22.913(a)(2), 24.232(c), 27.50(h)(2), 96.41	Transmitter Conducted Output Power and ERP/EIRP	Mar 31, 2021 to May 31, 2022	Chen Haiju Li Hanbin Li Huaijie	PASS	No deviation
2.1049	Occupied Bandwidth	Mar 31, 2021 to May 31, 2022	Chen Haiju	PASS	No deviation
2.1051, 22.917(a), 24.238, 27.53(m)(4), 96.41(e)	Conducted Spurious Emissions	Mar 31, 2021 to Jun 02, 2022	Chen Haiju	PASS	No deviation
2.1051, 22.917(a), 24.238, 27.53(m)(4), 96.41(e)	Band Edge	Mar 31, 2021 to Fed 25, 2022	Chen Haiju	PASS	No deviation
2.1051, 22.917(a), 24.238, 27.53(m)(4), 96.41(e)	Radiated Spurious Emissions	Mar 31, 2021 to Jul 21, 2022	Yang Jie Yi Xiaogang Gao jianrou	PASS	No deviation

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipment. The ref offset 8dB contains two parts that cable loss 5dB and Attenuator 3dB.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.



1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR Part 2, Part 22, Part 27 and Part 96 Requirements

2.1. Transmitter Conducted Output Power And ERP/EIRP

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

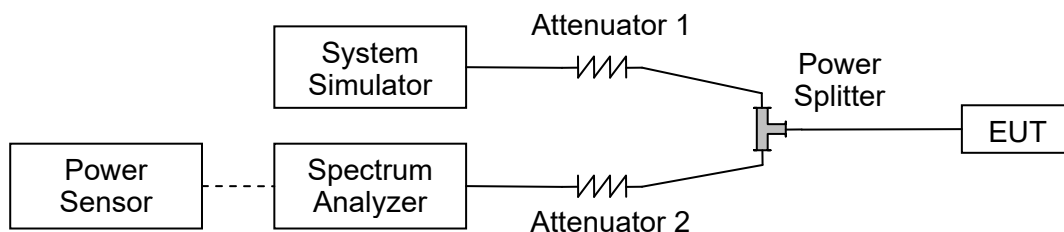
According to FCC section 22.913 (a.2) for LTE Band 5, the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (d)(4) for Band 66, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to FCC section 27.50 (h)(2) for LTE Band 41, Mobile and other user stations. Mobile stations are limited to 2 watts E.I.R.P. All user stations are limited to 2 watts transmitter output power.

According to FCC section 96.41(b) for LTE Band 48, the EIRP of any CBSD and End User Device must not exceed 23 dBm/10MHz.

2.1.1. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established



between the EUT and the SS.

2.1.2. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

ERP (dBm) = EIPR (dBm) - 2.15

2.1.3. Result

Conducted Output Power

LTE CA_41C								
Combination:20MHz+20MHz(100RB+100RB)								
PCC Channel (3GPP)	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
39750	39948	QPSK	1	0	100	0	1	23.02
40521	40719	QPSK	1	0	100	0	1	23.15
41292	41490	QPSK	1	0	100	0	1	23.09

LTE CA_48C								
Combination:20MHz+20MHz(100RB+100RB)								
PCC Channel (3GPP)	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
55340	55538	QPSK	1	0	0	0	1	23.11
55891	56089	QPSK	1	0	0	0	1	23.19
56442	56640	QPSK	1	0	0	0	1	23.24

LTE CA_66B								
Combination:10MHz+10MHz(50RB+50RB)								
PCC Channel (3GPP)	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132022	132121	QPSK	1	0	0	0	1	23.80
132373	132472	QPSK	1	0	0	0	1	24.34
132523	132622	QPSK	1	0	0	0	1	24.32



132022	132121	16QAM	1	0	0	0	1	23.62
132373	132472	16QAM	1	0	0	0	1	23.97
132523	132622	16QAM	1	0	0	0	1	24.28
132022	132121	64QAM	1	0	0	0	1	21.54
132373	132472	64QAM	1	0	0	0	1	21.9
132523	132622	64QAM	1	0	0	0	1	21.93
132022	132121	QPSK	50	0	0	0	1	22.79
132373	132472	QPSK	50	0	0	0	1	23.28
132523	132622	QPSK	50	0	0	0	1	23.17

LTE CA_66C								
Combination:20MHz+20MHz(100RB+100RB)								
PCC Channel (3GPP)	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132072	132270	QPSK	1	0	0	0	1	23.78
132323	132521	QPSK	1	0	0	0	1	24.17
132374	132572	QPSK	1	0	0	0	1	24.20
132072	132270	16QAM	1	0	0	0	1	23.62
132323	132521	16QAM	1	0	0	0	1	23.94
132374	132572	16QAM	1	0	0	0	1	24.07
132072	132270	64QAM	1	0	0	0	1	23.38
132323	132521	64QAM	1	0	0	0	1	23.84
132374	132572	64QAM	1	0	0	0	1	23.89
132072	132270	QPSK	50	0	0	0	1	22.88
132323	132521	QPSK	50	0	0	0	1	23.24
132374	132572	QPSK	50	0	0	0	1	23.28



Configure	CA Configuration	PCC				
		Band	BW (MHz)	UL Channel	UL Fre. (MHz)	UL Mode (Modulation/RB/Offset)
Inter-band	CA_2A-4A	2	20	19100	1900	QPSK/1#0
	CA_2A-5A	2	20	19100	1900	QPSK/1#0
	CA_2A-12A	2	20	19100	1900	QPSK/1#0
	CA_2A-13A	2	20	19100	1900	QPSK/1#0
	CA_2A-66A	2	20	19100	1900	QPSK/1#0
	CA_4A-5A	4	20	20175	1732.5	QPSK/1#0
	CA_4A-12A	4	20	20175	1732.5	QPSK/1#0
	CA_4A-13A	4	20	20175	1732.5	QPSK/1#0
	CA_5A-66A	5	20	20525	836.5	QPSK/1#0
	CA_12A-66A	12	10	23095	707.5	QPSK/1#0
	CA_13A-66A	13	10	23230	782	QPSK/1#0

SCC				
Band	BW (MHz)	UL Channel	UL Fre. (MHz)	Measured Power(dBm)
4	20	20175	1732.5	24.02
5	10	20525	836.5	24.10
12	10	23095	707.5	23.95
13	10	23230	782	24.07
66	20	132322	1745	24.07
5	20	20525	836.5	23.89
12	10	23095	707.5	24.01
13	10	23230	782	23.62
66	20	132322	1745	23.57
66	20	132322	1745	23.51
66	20	132322	1745	23.54



Effective Radiated Power and Effective Isotropic Radiated Power

LTE CA_66B									
Combination:10MHz+10MHz(50RB+50RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
25.30	0.339	QPSK	1	0	0	0	1	27.48	0.560
25.84	0.384	QPSK	1	0	0	0	1	28.02	0.634
25.82	0.382	QPSK	1	0	0	0	1	28.00	0.631
25.12	0.325	16QAM	1	0	0	0	1	27.30	0.537
25.47	0.352	16QAM	1	0	0	0	1	27.65	0.582
25.78	0.378	16QAM	1	0	0	0	1	27.96	0.625
23.04	0.201	64QAM	1	0	0	0	1	25.22	0.333
23.40	0.219	64QAM	1	0	0	0	1	25.58	0.361
23.43	0.220	64QAM	1	0	0	0	1	25.61	0.364
24.29	0.269	QPSK	50	0	0	0	1	26.47	0.444
24.78	0.301	QPSK	50	0	0	0	1	26.96	0.497
24.67	0.293	QPSK	50	0	0	0	1	26.85	0.484

LTE CA_66C									
Combination:20MHz+20MHz(100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
132072	132270	QPSK	1	0	0	0	1	27.46	0.557
132323	132521	QPSK	1	0	0	0	1	27.85	0.610
132374	132572	QPSK	1	0	0	0	1	27.88	0.614
132072	132270	16QAM	1	0	0	0	1	27.30	0.537
132323	132521	16QAM	1	0	0	0	1	27.62	0.578
132374	132572	16QAM	1	0	0	0	1	27.75	0.596
132072	132270	64QAM	1	0	0	0	1	27.06	0.508
132323	132521	64QAM	1	0	0	0	1	27.52	0.565
132374	132572	64QAM	1	0	0	0	1	27.57	0.571
132072	132270	QPSK	50	0	0	0	1	26.56	0.453
132323	132521	QPSK	50	0	0	0	1	26.92	0.492
132374	132572	QPSK	50	0	0	0	1	26.96	0.497



LTE CA_48C									
Combination:20MHz+20MHz(100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
55340	55538	QPSK	1	0	0	0	1	24.81	0.303
55891	56089	QPSK	1	0	0	0	1	24.89	0.308
56442	56640	QPSK	1	0	0	0	1	24.94	0.312

LTE CA_41C									
Combination:20MHz+20MHz(100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
39750	39948	QPSK	1	0	100	0	1	25.25	0.335
40521	40719	QPSK	1	0	100	0	1	25.38	0.345
41292	41490	QPSK	1	0	100	0	1	25.32	0.340



Configure	CA Configuration	PCC				
		Band	BW (MHz)	UL Channel	UL Fre. (MHz)	UL Mode (Modulation/RB/Offset)
Inter-band	CA_2A-4A	2	20	19100	1900	QPSK/1#0
	CA_2A-5A	2	20	19100	1900	QPSK/1#0
	CA_2A-12A	2	20	19100	1900	QPSK/1#0
	CA_2A-13A	2	20	19100	1900	QPSK/1#0
	CA_2A-66A	2	20	19100	1900	QPSK/1#0
	CA_4A-5A	4	20	20175	1732.5	QPSK/1#0
	CA_4A-12A	4	20	20175	1732.5	QPSK/1#0
	CA_4A-13A	4	20	20175	1732.5	QPSK/1#0
	CA_5A-66A	5	20	20525	836.5	QPSK/1#0
	CA_13A-66A	13	10	23230	782	QPSK/1#0

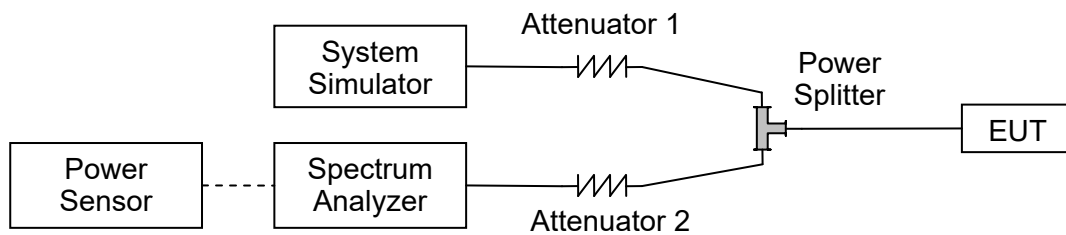
SCC					
Band	BW (MHz)	UL Channel	UL Fre. (MHz)	Measured Power(dBm)	Measured EIRP/ERP(W)
4	20	20175	1732.5	27.82	0.605
5	10	20525	836.5	27.90	0.617
12	10	23095	707.5	27.75	0.596
13	10	23230	782	27.87	0.612
66	20	132322	1745	27.87	0.612
5	10	20525	836.5	27.57	0.571
12	10	23095	707.5	27.69	0.587
13	10	23230	782	27.30	0.537
66	20	132322	1745	21.32	0.136
66	20	132322	1745	20.81	0.121
66	20	132322	1745	21.29	0.135

2.2. Occupied Bandwidth

2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth 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. Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

2.2.4. Test Result



LTE Band 66C				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5+20	Low	QPSK	22.486	23.26
	Low	16QAM	22.580	23.30
	Low	64QAM	22.595	23.28
	Mid	QPSK	22.566	23.24
	Mid	16QAM	22.891	23.29
	Mid	64QAM	22.555	23.21
	High	QPSK	22.593	23.27
	High	16QAM	22.689	23.28
	High	64QAM	22.674	23.31
10+15	Low	QPSK	22.966	23.62
	Low	16QAM	22.953	23.62
	Low	64QAM	22.955	23.59
	Mid	QPSK	22.860	23.62
	Mid	16QAM	22.952	23.54
	Mid	64QAM	22.951	23.71
	High	QPSK	22.943	23.64
	High	16QAM	23.023	23.82
	High	64QAM	22.999	23.64
10+20	Low	QPSK	27.514	28.38
	Low	16QAM	27.435	28.33
	Low	64QAM	27.280	28.28
	Mid	QPSK	27.436	28.29
	Mid	16QAM	27.535	28.34
	Mid	64QAM	27.372	28.30
	High	QPSK	27.488	28.34
	High	16QAM	27.526	28.33
	High	64QAM	27.530	28.29
15+10	Low	QPSK	22.951	23.79
	Low	16QAM	22.961	23.79
	Low	64QAM	22.957	23.76
	Mid	QPSK	22.899	23.84
	Mid	16QAM	22.987	23.92
	Mid	64QAM	23.020	23.72
	High	QPSK	23.025	23.78
	High	16QAM	23.037	23.83
	High	64QAM	23.045	23.93
15+15	Low	QPSK	28.134	28.95



	Low	16QAM	28.194	28.99
	Low	64QAM	28.189	28.93
	Mid	QPSK	28.092	28.94
	Mid	16QAM	28.182	28.98
	Mid	64QAM	27.972	28.99
	High	QPSK	28.175	28.99
	High	16QAM	28.209	28.99
	High	64QAM	28.116	29.06
15+20	Low	QPSK	32.416	33.25
	Low	16QAM	32.452	33.28
	Low	64QAM	32.464	33.27
	Mid	QPSK	32.281	33.34
	Mid	16QAM	32.391	33.39
	Mid	64QAM	32.339	33.36
	High	QPSK	32.387	33.35
	High	16QAM	32.473	33.24
20+5	High	64QAM	32.452	33.55
	Low	QPSK	22.739	23.44
	Low	16QAM	22.748	23.42
	Low	64QAM	22.739	23.48
	Mid	QPSK	22.740	23.37
	Mid	16QAM	22.750	23.49
	Mid	64QAM	22.736	23.38
	High	QPSK	22.766	23.42
20+10	High	16QAM	22.797	23.56
	High	64QAM	22.785	23.50
	Low	QPSK	27.603	28.51
	Low	16QAM	27.572	28.59
	Low	64QAM	27.606	28.53
	Mid	QPSK	27.591	28.49
	Mid	16QAM	27.590	28.39
	Mid	64QAM	27.501	28.46
20+15	High	QPSK	27.604	28.66
	High	16QAM	27.611	28.49
	High	64QAM	27.598	28.54
	Low	QPSK	32.467	33.46
	Low	16QAM	32.474	33.40
	Low	64QAM	33.426	33.44
	Mid	QPSK	33.431	33.37



	Mid	16QAM	33.422	33.36
	Mid	64QAM	33.400	33.24
	High	QPSK	32.475	33.34
	High	16QAM	32.540	33.31
	High	64QAM	32.432	33.32
20+20	Low	QPSK	37.347	38.29
	Low	16QAM	37.337	38.43
	Low	64QAM	37.283	38.29
	Mid	QPSK	37.293	38.36
	Mid	16QAM	37.214	38.28
	Mid	64QAM	37.263	38.27
	High	QPSK	37.330	38.29
	High	16QAM	37.274	38.35
	High	64QAM	37.284	38.35



LTE Band 66B				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5+5	Low	QPSK	9.338	11.83
	Low	16QAM	9.334	11.83
	Low	64QAM	9.278	11.52
	Mid	QPSK	9.192	9.65
	Mid	16QAM	9.198	9.69
	Mid	64QAM	9.205	9.64
	High	QPSK	9.245	9.70
	High	16QAM	9.183	9.60
	High	64QAM	9.207	9.62
5+10	Low	QPSK	13.790	14.31
	Low	16QAM	13.807	14.32
	Low	64QAM	13.845	14.42
	Mid	QPSK	13.776	14.32
	Mid	16QAM	13.789	14.36
	Mid	64QAM	13.797	14.42
	High	QPSK	13.776	14.37
	High	16QAM	13.798	14.30
	High	64QAM	13.835	14.35
5+15	Low	QPSK	18.083	18.67
	Low	16QAM	18.090	18.74
	Low	64QAM	18.054	18.64
	Mid	QPSK	18.080	18.64
	Mid	16QAM	18.060	18.61
	Mid	64QAM	18.102	18.62
	High	QPSK	18.050	18.69
	High	16QAM	18.127	18.74
	High	64QAM	18.103	18.64
10+5	Low	QPSK	13.863	14.39
	Low	16QAM	13.861	14.45
	Low	64QAM	13.861	14.41
	Mid	QPSK	13.836	14.44
	Mid	16QAM	13.835	14.36
	Mid	64QAM	13.836	14.34
	High	QPSK	13.860	14.45
	High	16QAM	13.883	14.38
	High	64QAM	13.839	14.43
10+10	Low	QPSK	18.667	19.41



	Low	16QAM	18.743	19.37
	Low	64QAM	18.745	19.49
	Mid	QPSK	18.629	19.32
	Mid	16QAM	18.745	19.44
	Mid	64QAM	18.686	19.37
	High	QPSK	18.742	19.33
	High	16QAM	18.701	19.36
	High	64QAM	18.744	19.42
15+5	Low	QPSK	18.136	19.76
	Low	16QAM	18.142	19.67
	Low	64QAM	18.139	19.75
	Mid	QPSK	18.188	18.94
	Mid	16QAM	18.160	18.85
	Mid	64QAM	18.130	18.86
	High	QPSK	18.188	18.94
	High	16QAM	18.160	18.85
High	64QAM	18.130	18.86	



LTE Band 48C				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5M+20MHz	Low	QPSK	22.64	23.46
	Low	16QAM	22.49	23.46
	Low	64QAM	22.59	23.41
	Mid	QPSK	22.59	23.46
	Mid	16QAM	22.75	23.49
	Mid	64QAM	22.65	23.48
	High	QPSK	22.68	23.47
	High	16QAM	22.63	23.48
	High	64QAM	22.57	23.44
10M+20MHz	Low	QPSK	27.50	28.49
	Low	16QAM	27.59	28.47
	Low	64QAM	27.38	28.50
	Mid	QPSK	27.48	28.63
	Mid	16QAM	27.38	28.51
	Mid	64QAM	27.57	28.47
	High	QPSK	27.60	28.50
	High	16QAM	27.69	28.64
	High	64QAM	27.53	28.54
15M+20MHz	Low	QPSK	32.41	33.55
	Low	16QAM	32.53	33.59
	Low	64QAM	32.42	33.62
	Mid	QPSK	32.21	33.59
	Mid	16QAM	32.67	33.62
	Mid	64QAM	32.22	33.55
	High	QPSK	32.40	33.61
	High	16QAM	32.49	33.58
	High	64QAM	32.39	33.50
20M+5MHz	Low	QPSK	27.76	23.559
	Low	16QAM	22.85	23.59
	Low	64QAM	22.72	23.52
	Mid	QPSK	22.76	23.54
	Mid	16QAM	22.78	23.66
	Mid	64QAM	22.74	23.53
	High	QPSK	22.70	23.58
	High	16QAM	22.75	23.56
	High	64QAM	22.82	23.55
20M+10MHz	Low	QPSK	27.59	28.55



	Low	16QAM	27.56	28.57
	Low	64QAM	27.68	28.55
	Mid	QPSK	27.57	28.63
	Mid	16QAM	27.52	28.56
	Mid	64QAM	27.57	28.61
	High	QPSK	27.60	28.56
	High	16QAM	27.60	28.65
	High	64QAM	27.58	28.59
20M+15MHz	Low	QPSK	32.51	33.63
	Low	16QAM	32.55	33.65
	Low	64QAM	32.45	33.57
	Mid	QPSK	32.41	33.69
	Mid	16QAM	32.50	33.67
	Mid	64QAM	32.43	33.66
	High	QPSK	32.35	33.62
	High	16QAM	32.52	33.57
High	64QAM	32.64	33.63	
20M+20MHz	Low	QPSK	37.48	38.71
	Low	16QAM	37.25	38.69
	Low	64QAM	37.30	38.57
	Mid	QPSK	37.42	38.73
	Mid	16QAM	37.23	38.74
	Mid	64QAM	37.47	38.78
	High	QPSK	37.37	38.73
	High	16QAM	37.45	38.70
High	64QAM	37.35	38.66	



LTE CA 41C				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5M+20MHz	Low	QPSK	22.73	23.60
	Low	16QAM	22.61	23.49
	Low	64QAM	22.69	23.60
	Mid	QPSK	22.57	23.61
	Mid	16QAM	22.73	23.61
	Mid	64QAM	22.61	23.68
	High	QPSK	22.71	23.64
	High	16QAM	22.70	23.54
	High	64QAM	22.65	23.58
10M+15MHz	Low	QPSK	23.08	24.05
	Low	16QAM	23.05	24.02
	Low	64QAM	23.03	24.03
	Mid	QPSK	22.96	24.04
	Mid	16QAM	22.98	24.01
	Mid	64QAM	23.00	23.99
	High	QPSK	23.01	24.21
	High	16QAM	22.99	24.17
	High	64QAM	23.11	24.08
10M+20MHz	Low	QPSK	27.58	28.69
	Low	16QAM	27.59	28.67
	Low	64QAM	27.60	28.74
	Mid	QPSK	27.57	28.59
	Mid	16QAM	27.54	28.75
	Mid	64QAM	27.51	28.76
	High	QPSK	27.63	28.70
	High	16QAM	27.52	28.66
	High	64QAM	27.57	28.63
15M+10MHz	Low	QPSK	23.06	24.26
	Low	16QAM	23.05	24.15
	Low	64QAM	23.14	24.31
	Mid	QPSK	23.06	24.23
	Mid	16QAM	23.08	24.16
	Mid	64QAM	23.10	24.21
	High	QPSK	23.13	26.51
	High	16QAM	23.10	24.10
	High	64QAM	23.05	24.03
15M+15MHz	Low	QPSK	28.30	29.33



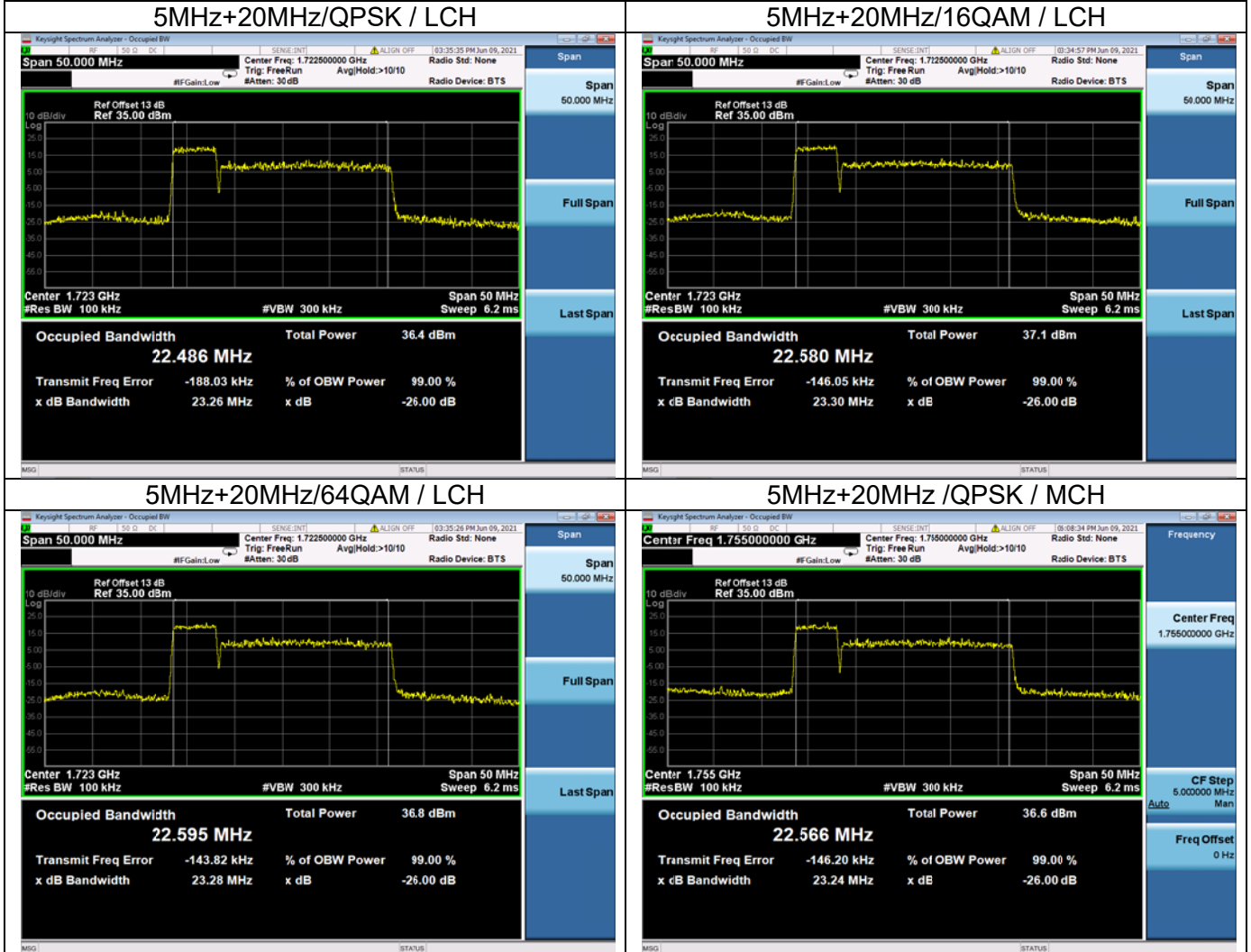
	Low	16QAM	28.24	29.68
	Low	64QAM	28.32	29.59
	Mid	QPSK	28.24	29.48
	Mid	16QAM	28.22	29.41
	Mid	64QAM	28.19	29.36
	High	QPSK	28.33	35.39
	High	16QAM	28.18	29.46
	High	64QAM	28.30	29.54
15M+20MHz	Low	QPSK	32.56	33.96
	Low	16QAM	32.68	34.05
	Low	64QAM	32.55	34.00
	Mid	QPSK	32.45	33.98
	Mid	16QAM	32.48	33.83
	Mid	64QAM	32.50	33.91
	High	QPSK	32.48	33.91
	High	16QAM	32.48	33.94
20M+5MHz	Low	QPSK	22.82	23.84
	Low	16QAM	22.88	23.77
	Low	64QAM	22.84	23.77
	Mid	QPSK	22.78	23.80
	Mid	16QAM	22.79	23.81
	Mid	64QAM	22.75	23.74
	High	QPSK	22.84	23.74
	High	16QAM	22.89	23.90
20M+10MHz	Low	QPSK	27.74	29.07
	Low	16QAM	27.65	28.91
	Low	64QAM	27.72	28.96
	Mid	QPSK	27.66	29.05
	Mid	16QAM	27.68	29.04
	Mid	64QAM	27.64	29.03
	High	QPSK	27.95	28.76
	High	16QAM	27.70	28.82
20M+15MHz	High	64QAM	27.68	28.88
	Low	QPSK	32.63	34.01
	Low	16QAM	32.56	34.11
	Low	64QAM	32.57	36.70
	Mid	QPSK	32.55	33.94

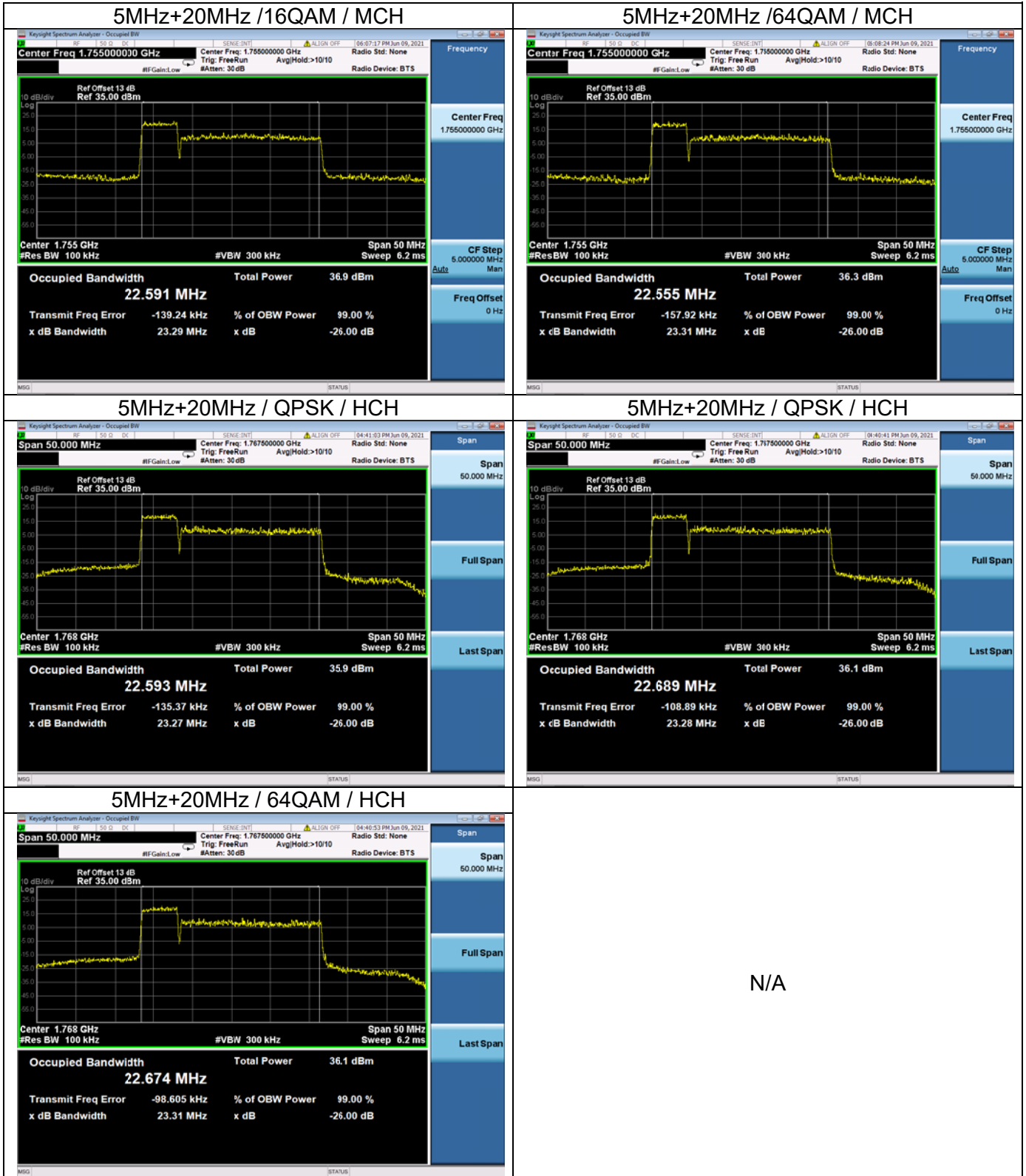


	Mid	16QAM	32.53	33.93
	Mid	64QAM	32.46	33.96
	High	QPSK	32.54	36.53
	High	16QAM	32.53	34.02
	High	64QAM	32.47	33.87
20M+20MHz	Low	QPSK	37.50	39.15
	Low	16QAM	37.48	39.08
	Low	64QAM	37.46	39.08
	Mid	QPSK	37.39	39.14
	Mid	16QAM	37.31	39.04
	Mid	64QAM	37.45	39.11
	High	QPSK	37.58	62.22
	High	16QAM	37.52	55.84
	High	64QAM	37.60	60.11



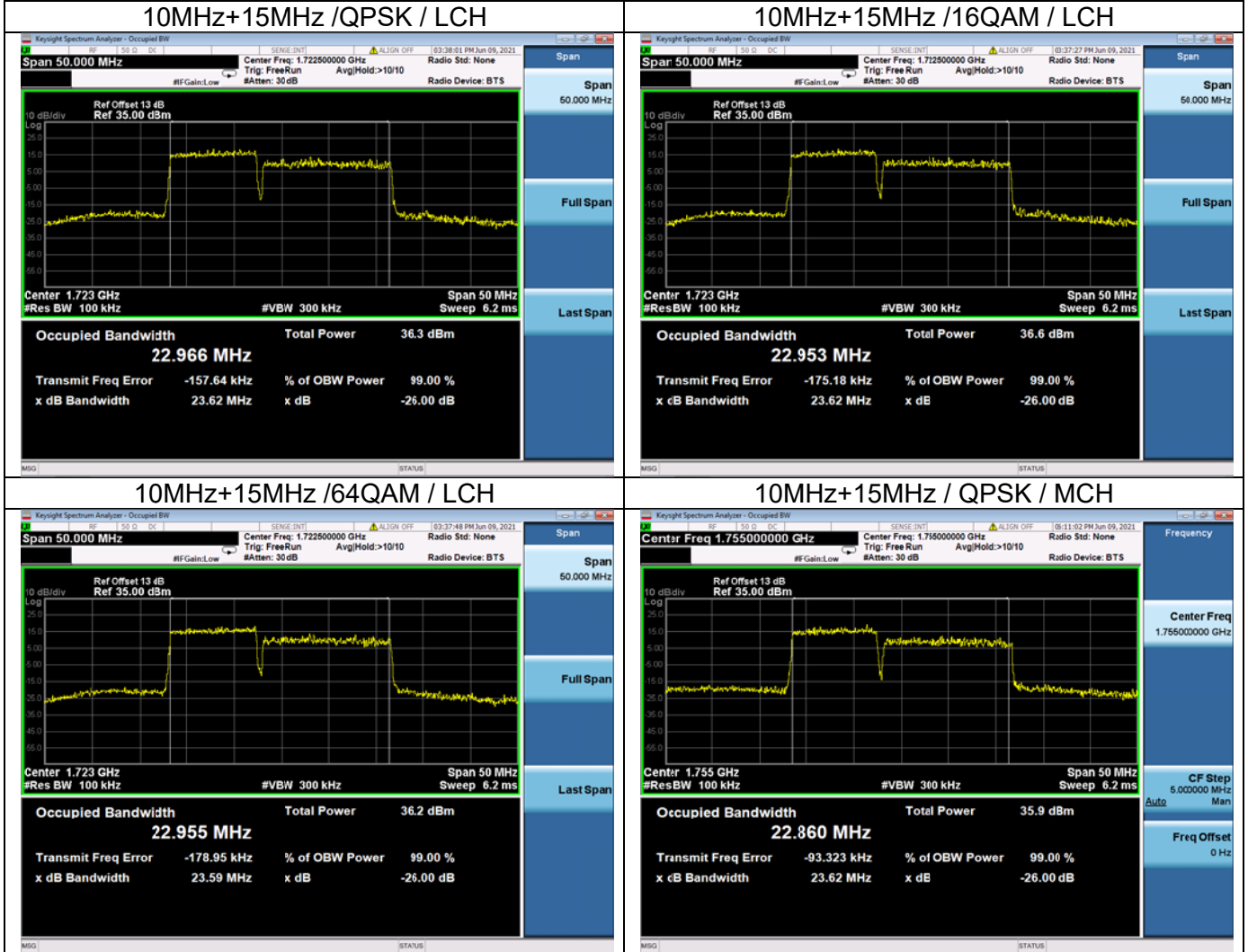
LTE Band 66C

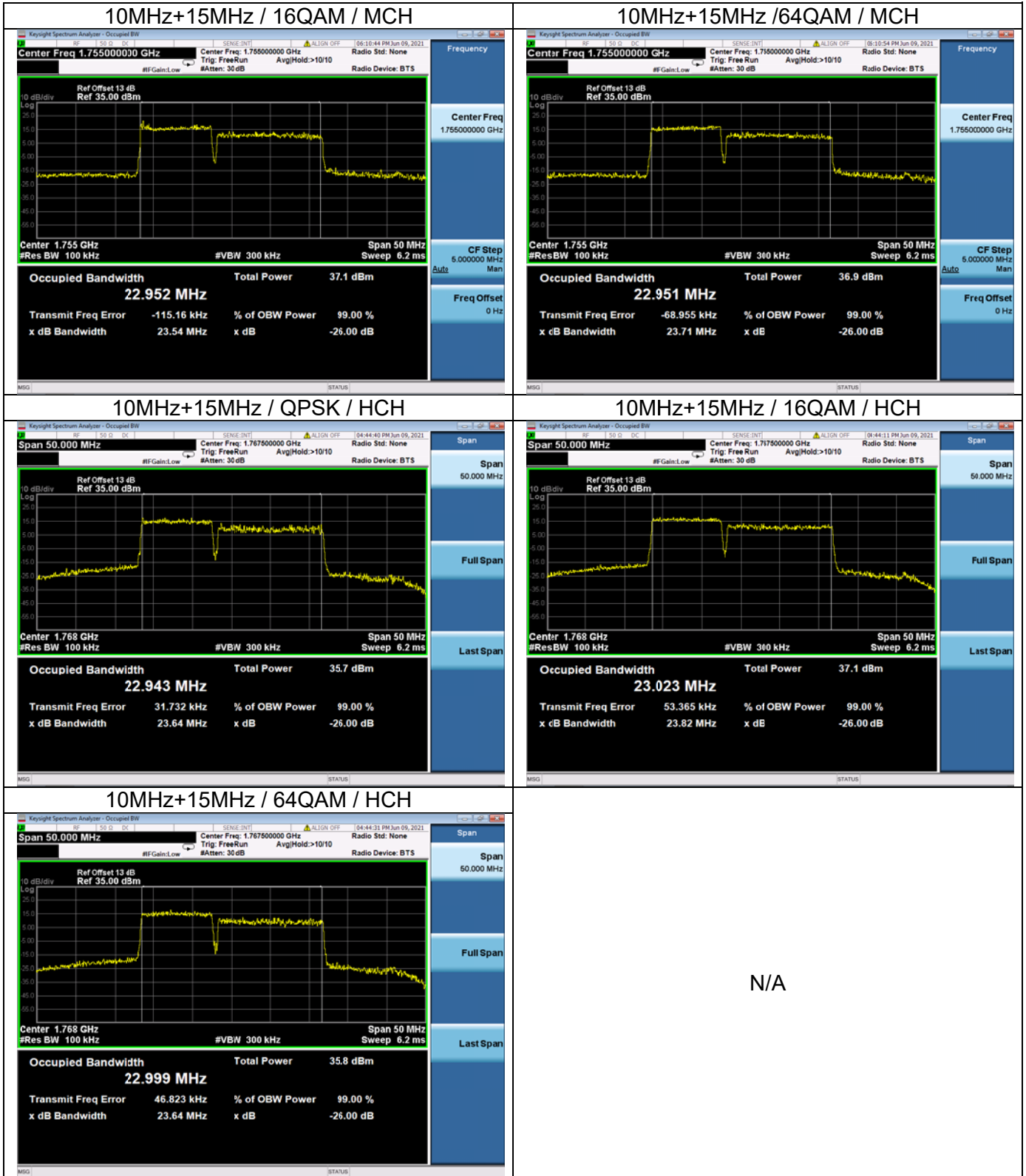






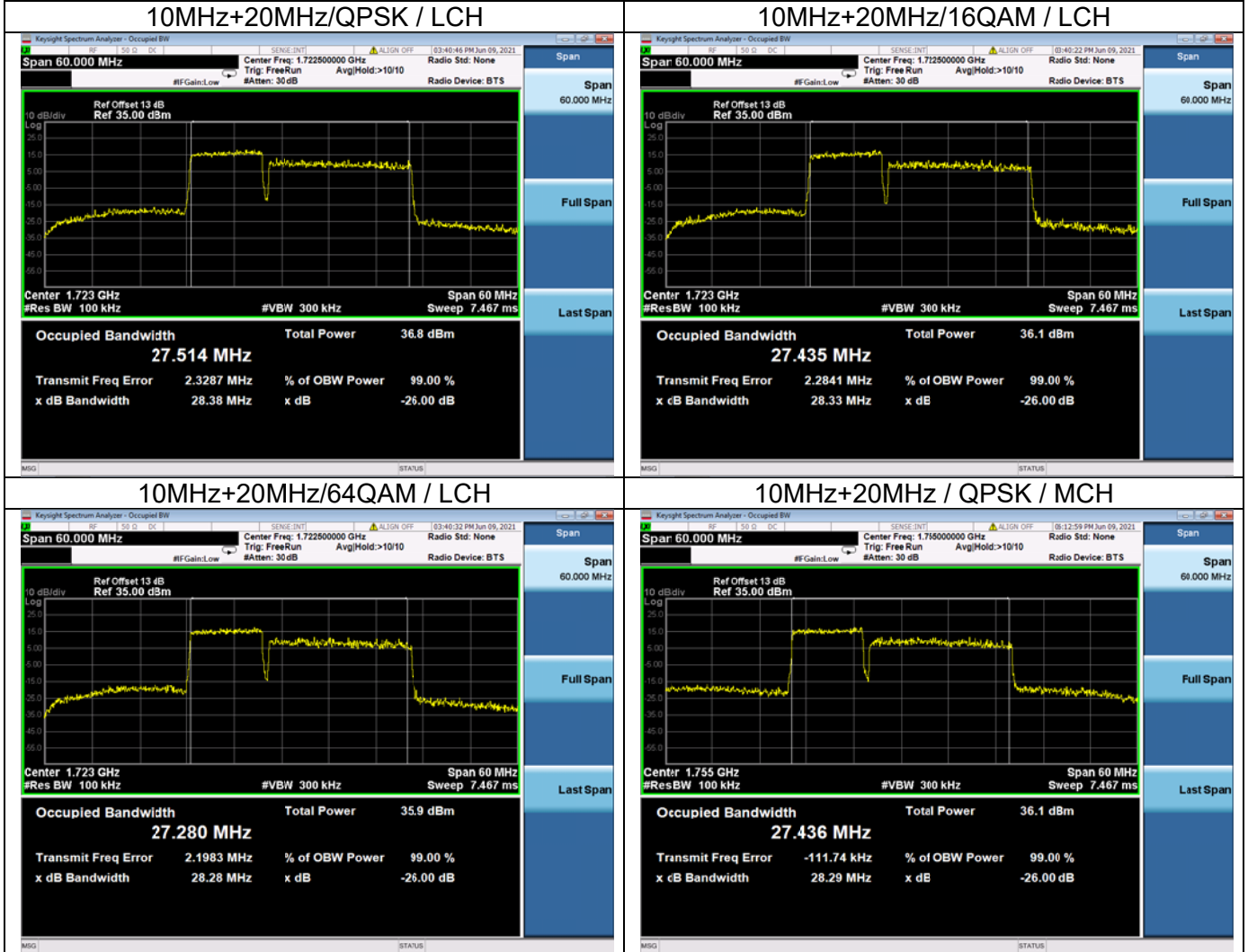
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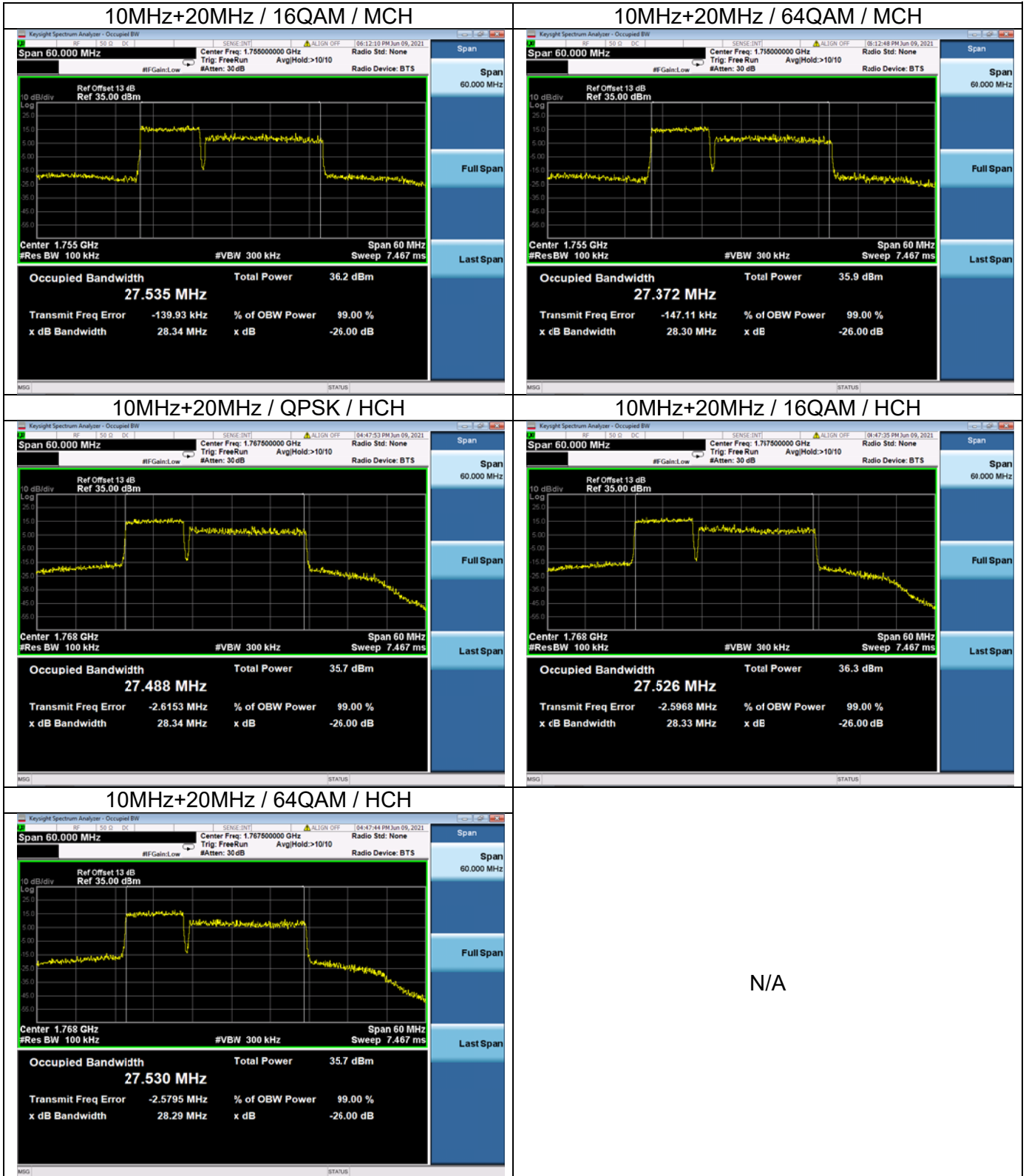






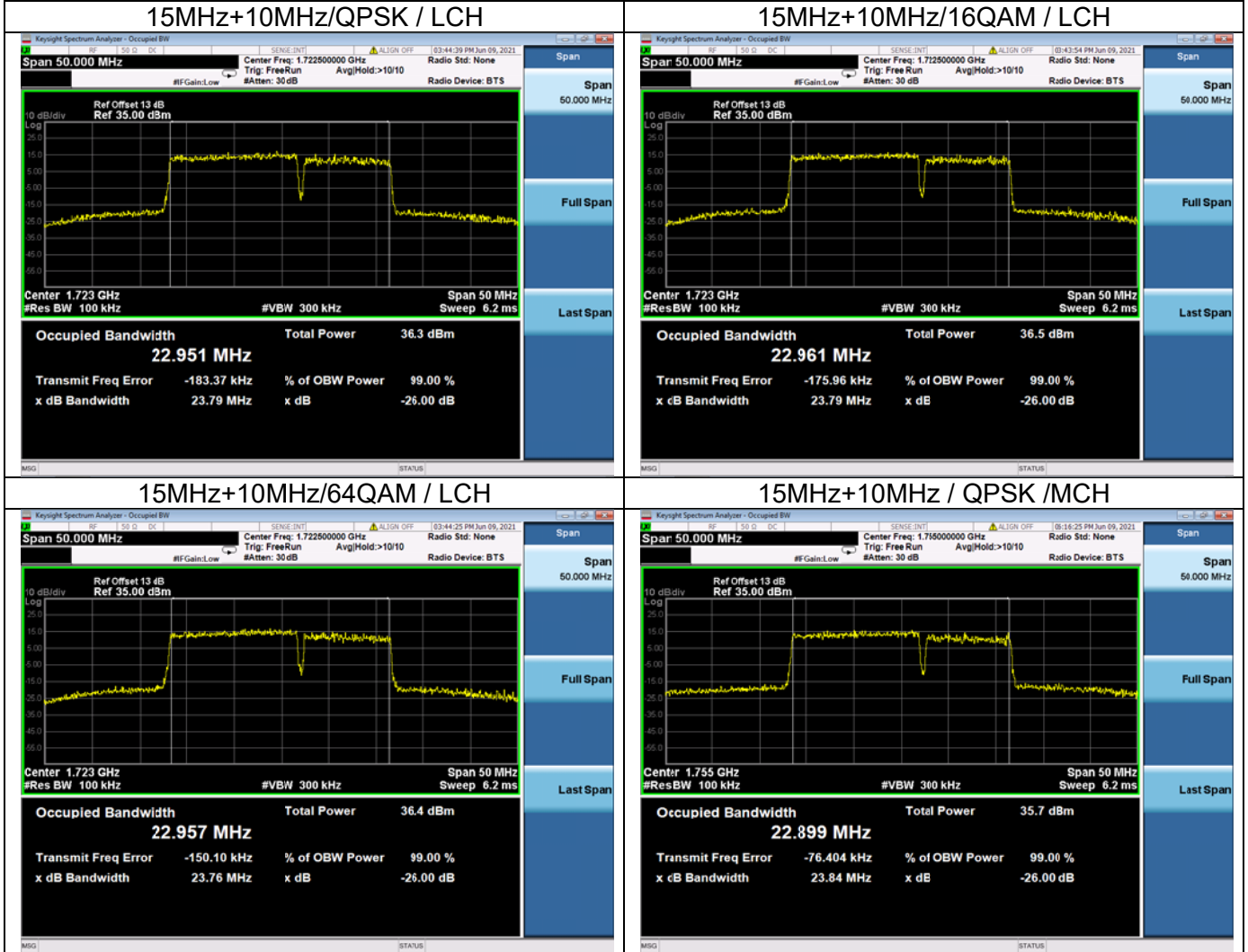
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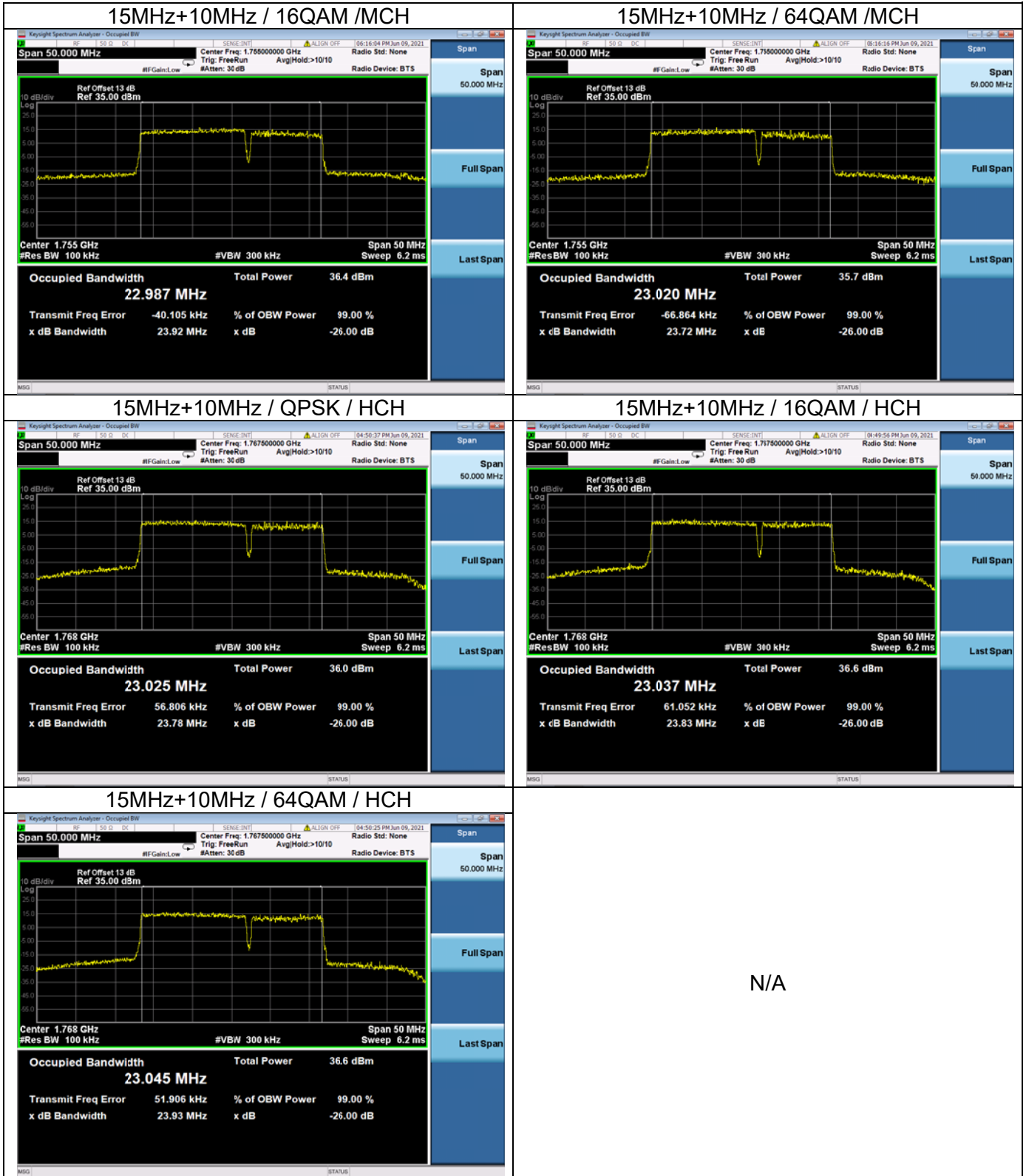






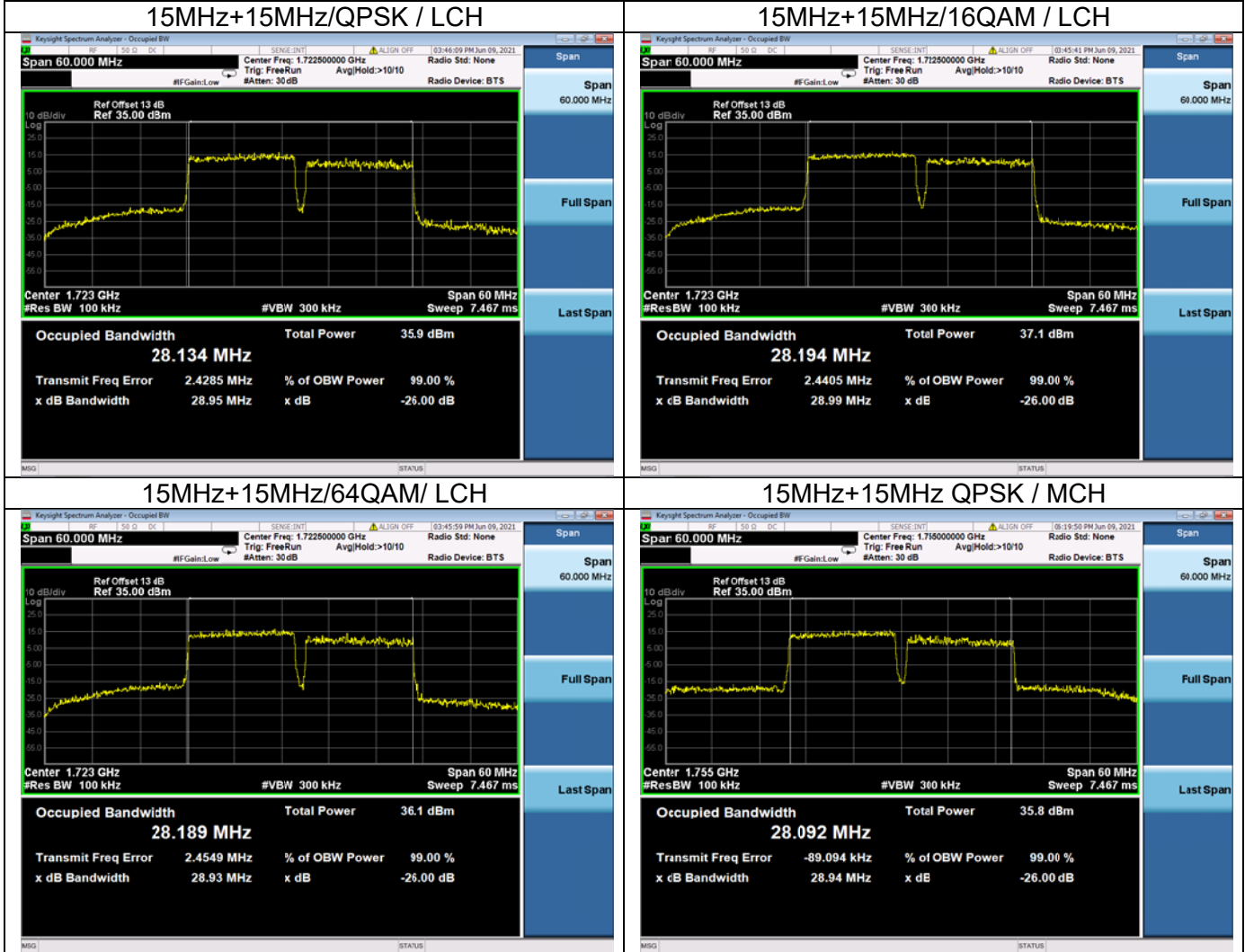
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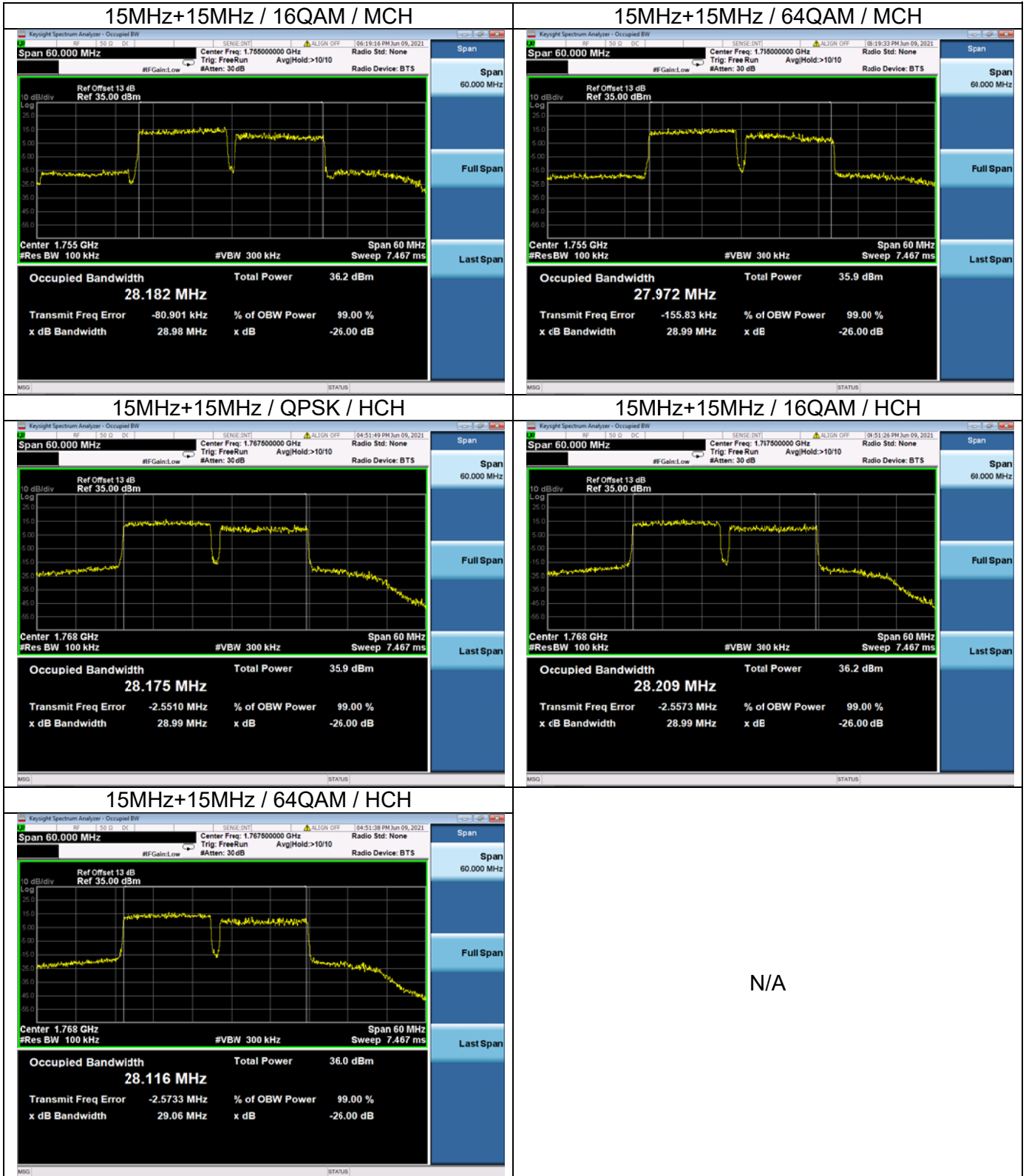






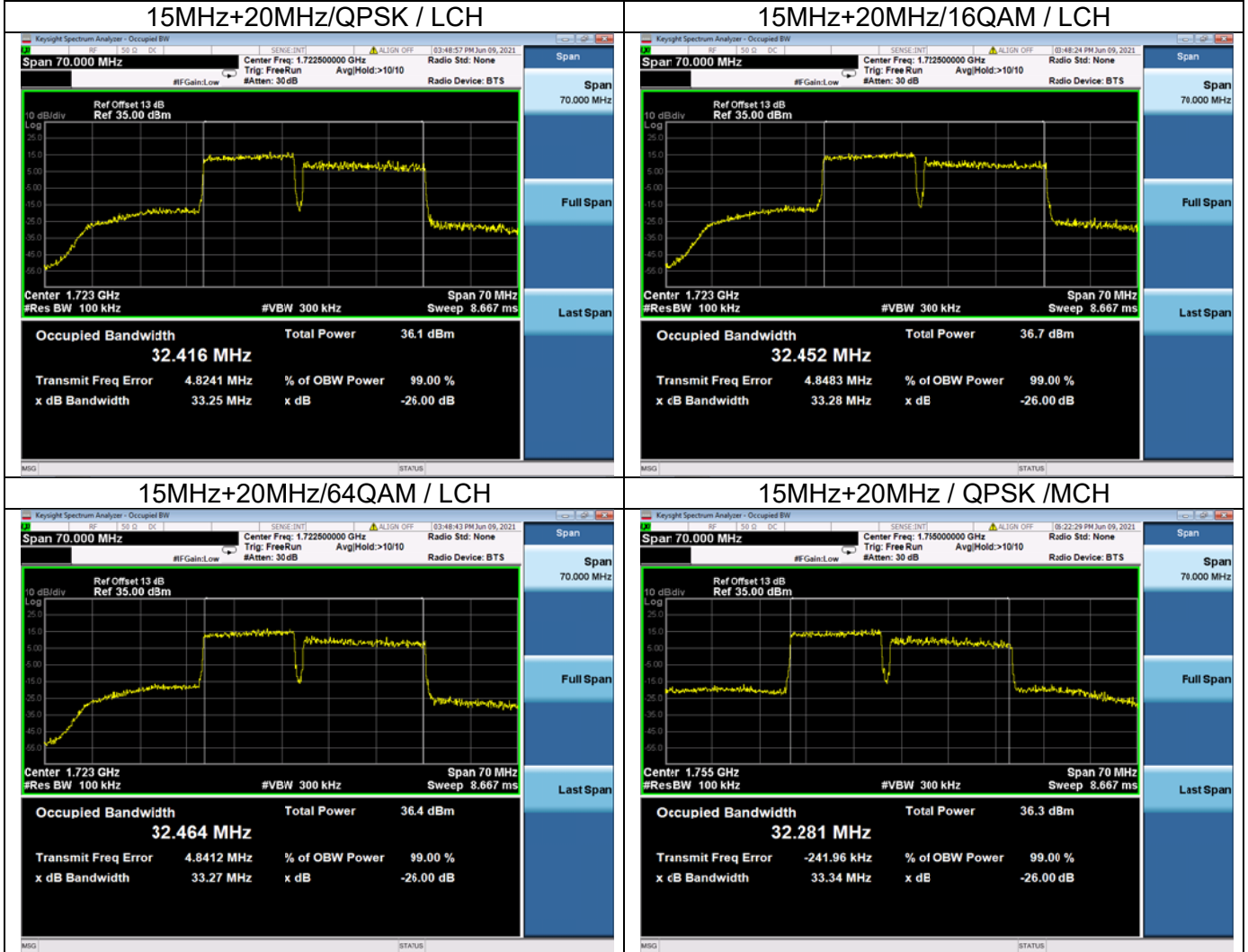
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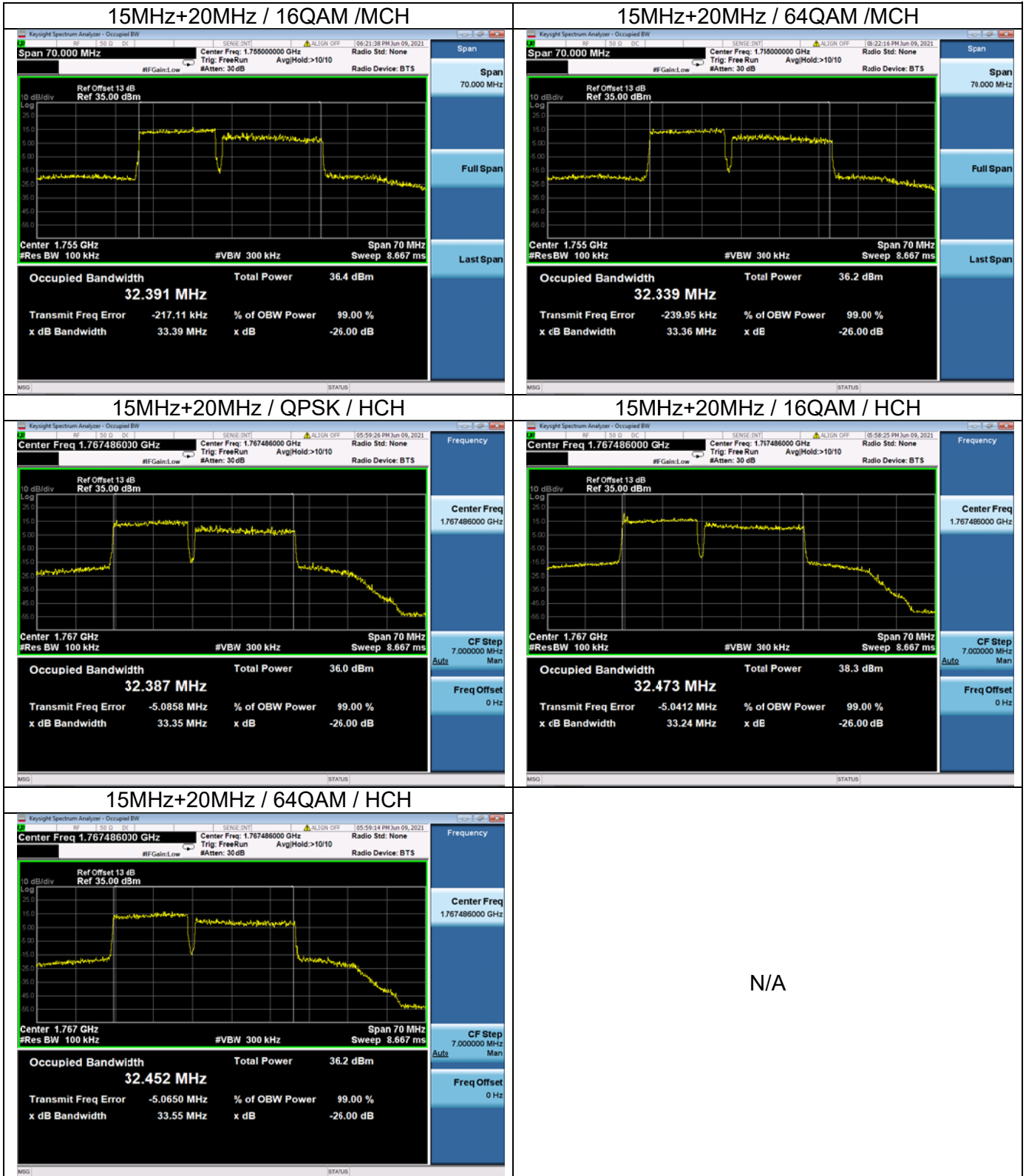






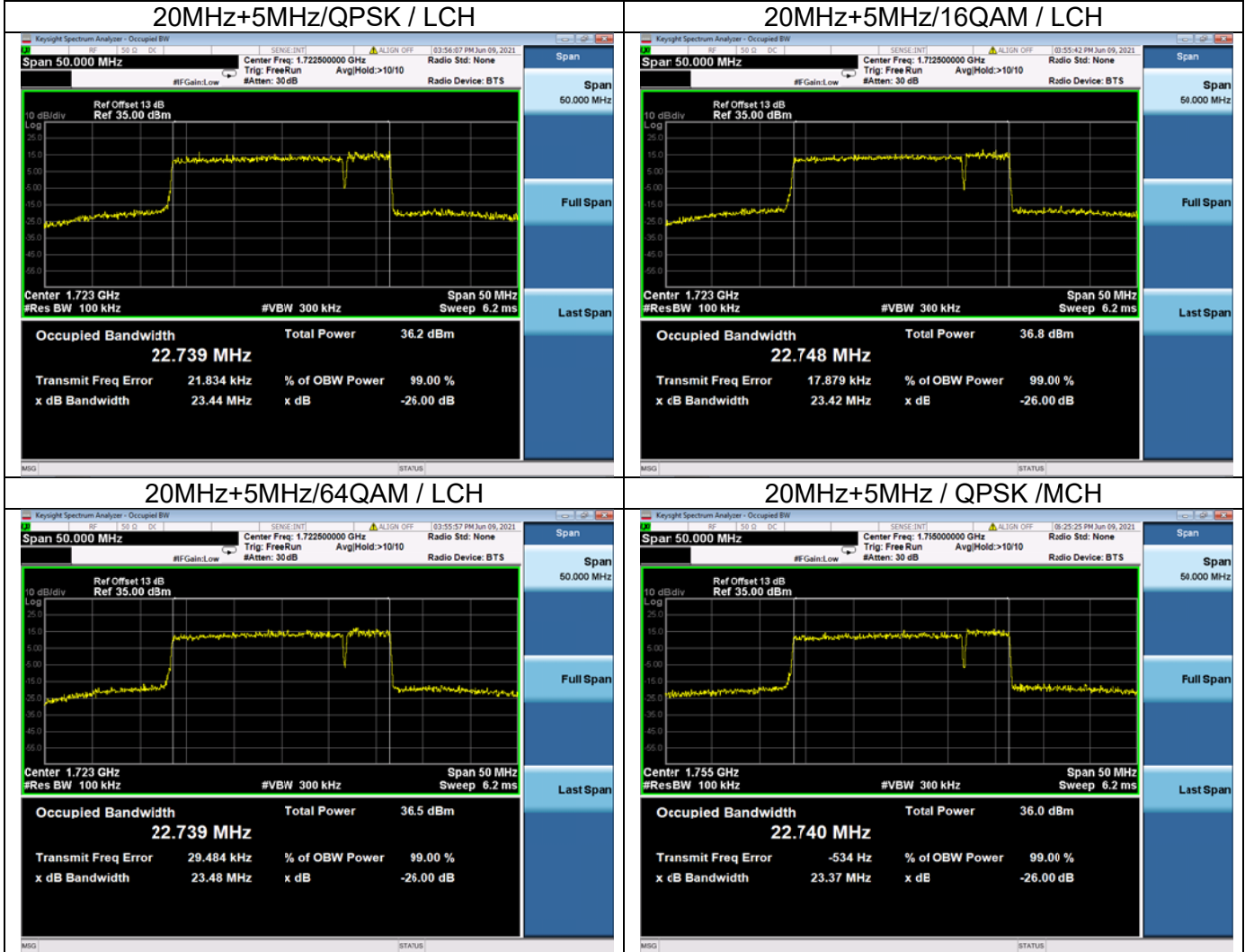
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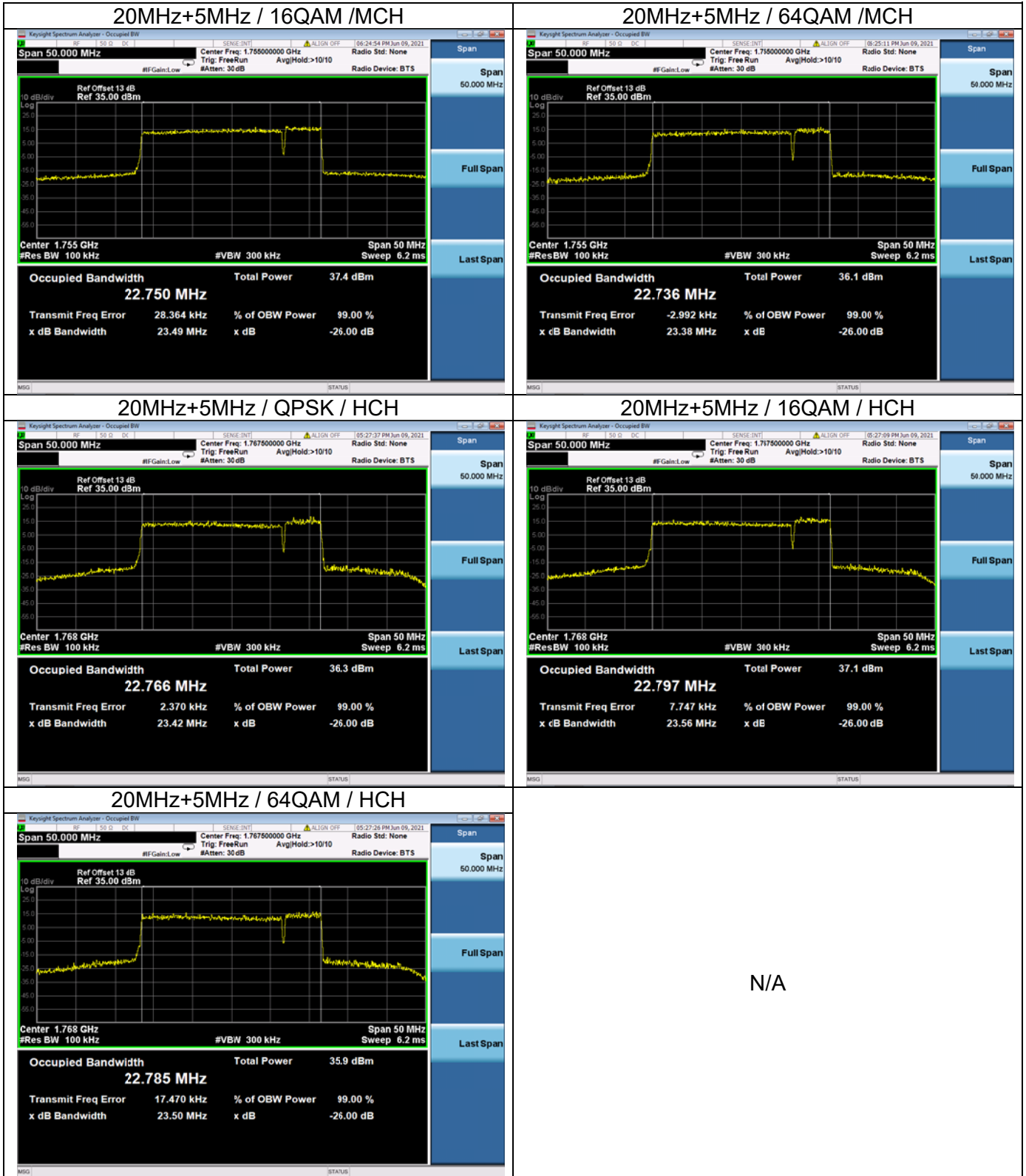






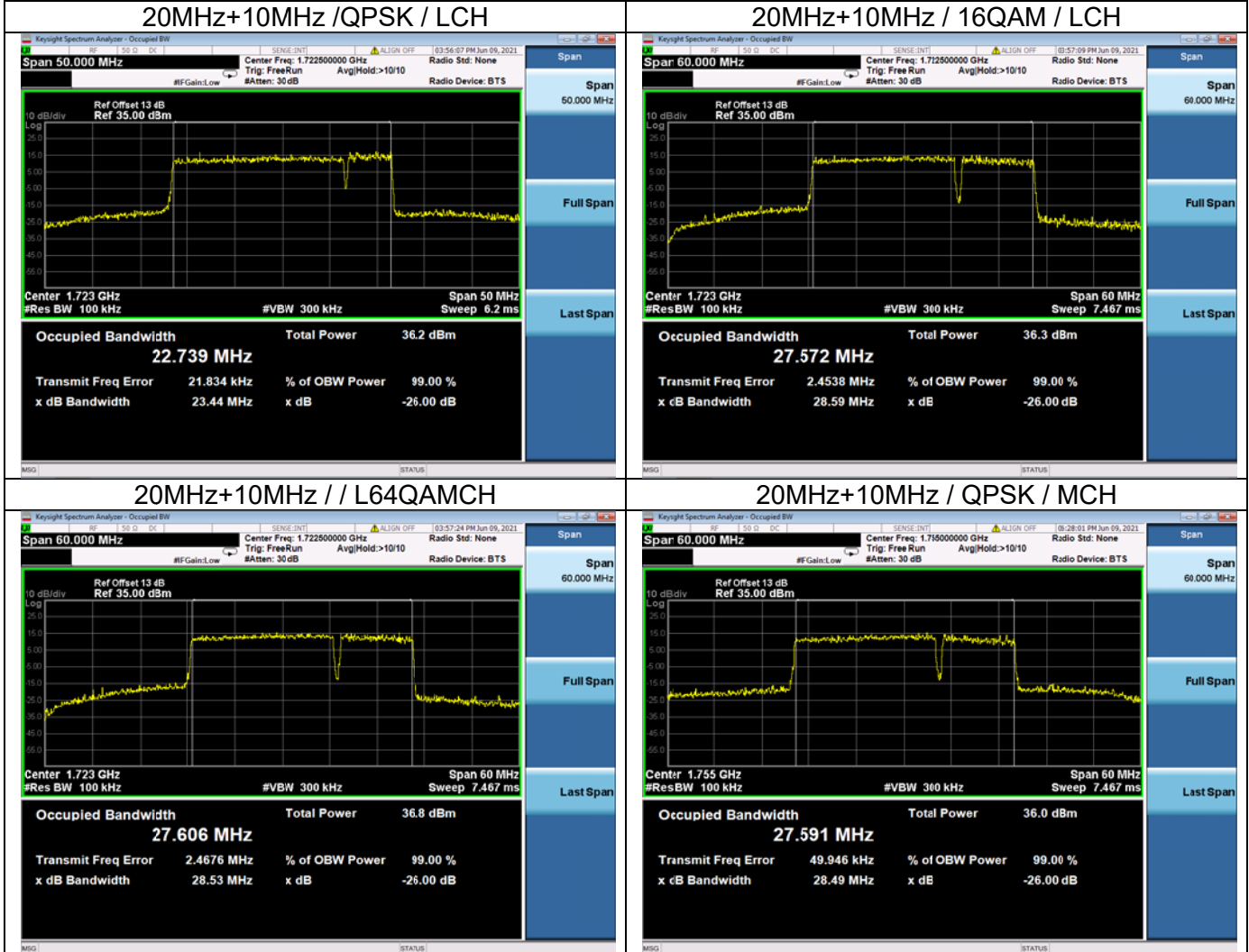
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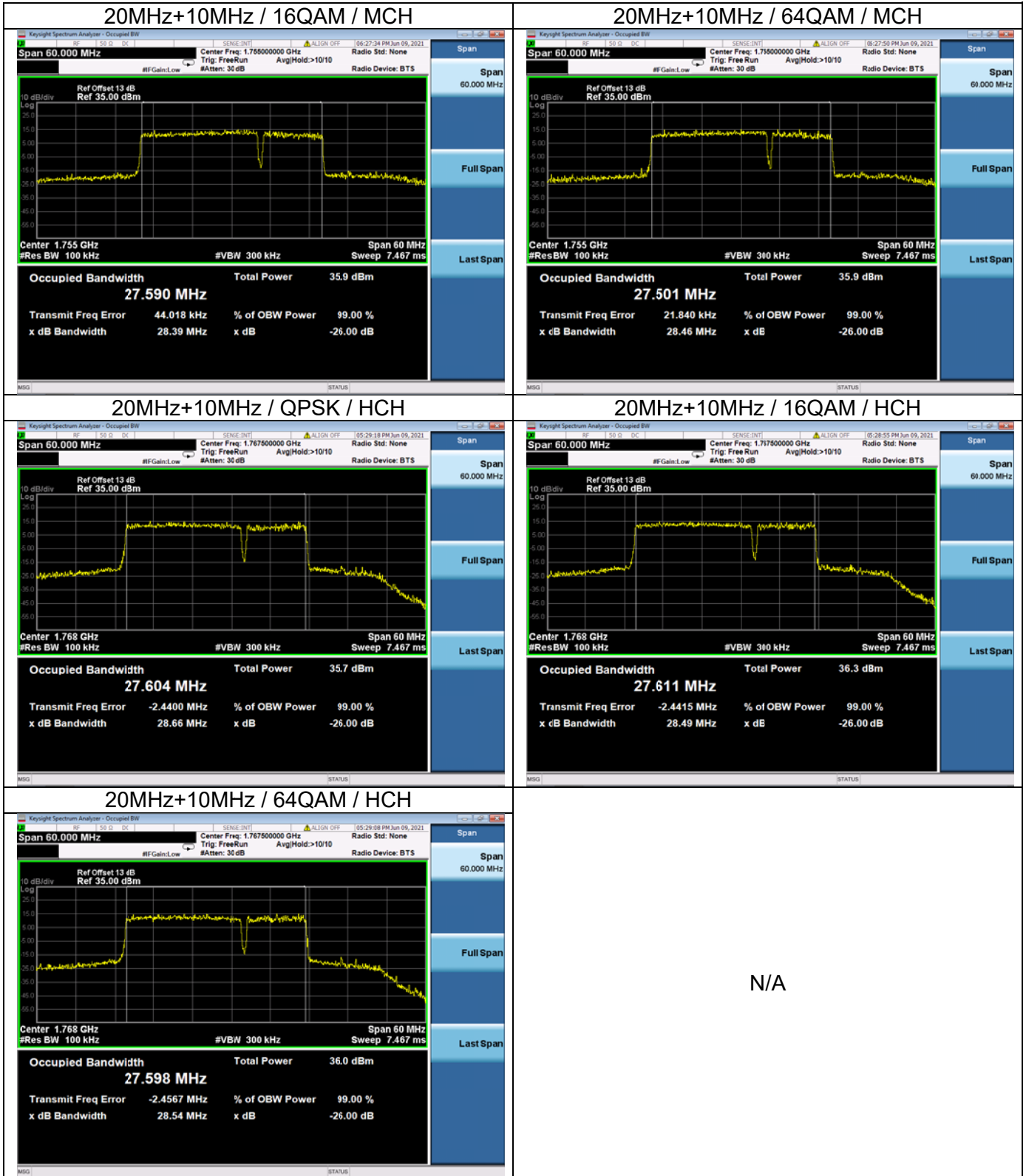






LTE Band 66C







LTE Band 66C

