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Report No.:2408TW0104-U10
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MEASUREMENT REPORT

FCC ID : HD5-CK67X1N
APPLICANT : Honeywell International Inc
Application Type : Certification
Product : Mobile Computer
Model No. : CK67X1N
Brand Name : Honeywell
FCC Classification : PCS Licensed Transmitter worn on body (PCT)
FCC Rule Part(s) : Part2, Part22 Subpart H, Part24 Subpart E, Part27
Test Procedure(s) : ANSI C63.26 2015
Received Date : August 5, 2024
Test Date : November 8, 2024~January 15, 2025

Tested By : 
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Reviewed By : 
(Paddy Chen)
Approved By : 
(Chenz Ker)



The test results only relate to the tested sample.

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 ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2408TW0104-U10	1.0	Original Report	2025-01-16	

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General Information

Applicant	Honeywell International Inc
Applicant Address	9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Manufacturer	Honeywell International Inc. Honeywell Safety and Productivity Solutions
Manufacturer Address	9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Canada, EU and TELEC Rules.

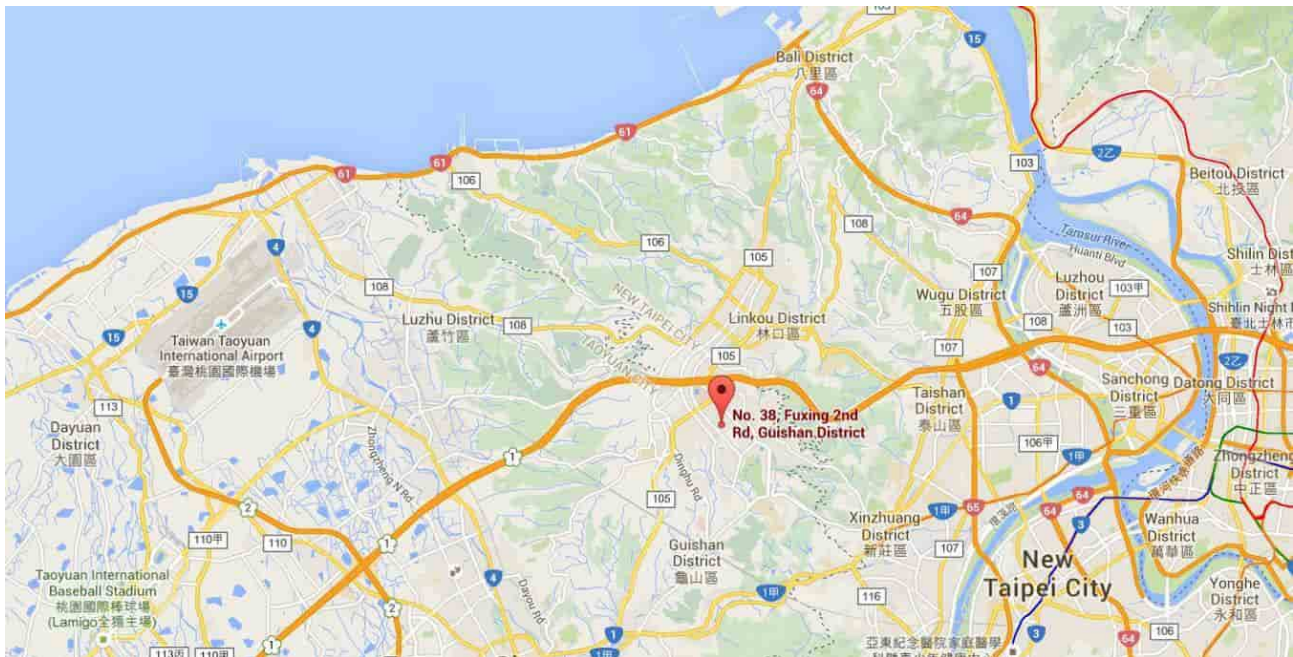
1. INTRODUCTION

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 Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



1.3. Product Information

Product Name	Mobile Computer
Model No.	CK67X1N
Brand Name	Honeywell
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	Main BT/BLE : V5.3 dual mode + 2 nd BLE: V5.3 Single mode
NFC Specification	13.56MHz
WWAN Specification	4G-LTE: Band 2,4,5,7,12,13,14,17,25,26,30,38,41,42,43,48,66,71 5G-NR: n 2,5,7,12,13,14,25,26,30,38,41,48,66,71,77,78
CA Intra-Band	5B; 7C; 38C; 41C; 66B; 66C
EUT Identification No.:	#24295D8051, #24295D80CF (Conducted) #24295D8059 (Radiated)
Operating Temperature Range	-20~50 °C
Supply Voltage Rating	DC 3.6V
Accessory	
Battery	Brand: Honeywell MODEL:CK65-BTSC Rating: 3.6Vdc, 7000mAh, 25.2Wh
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

Note:

- For other features of this EUT, test report will be issued separately.
- This product has 3 scanners, 5 keypads, can refer as below:

Scanner	S0703	S0803FR	S0803	--	--
Keypad	Alpha Numeric	Numeric	Large Numeric	53keys Alpha Numeric	42keys Numeric

- This report selected S0803FR with Alpha Numeric as the main test.
- For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Radio Specification under Testing

E-UTRA Specification	
FDD TX Frequency Range	LTE Band 2: 1850 ~ 1910 MHz; LTE Band 4: 1710 ~ 1755 MHz LTE Band 5: 824 ~ 849 MHz; LTE Band 7: 2500 ~ 2570 MHz LTE Band 12: 699 ~ 716 MHz; LTE Band 13: 777 ~ 787 MHz LTE Band 17: 704 ~ 716 MHz; LTE Band 25: 1850 ~ 1915 MHz LTE Band 26: 814 ~ 849 MHz; LTE Band 30: 2305 ~ 2315 MHz LTE Band 66: 1710 ~ 1780 MHz; LTE Band 71: 663 ~ 698 MHz
FDD RX Frequency Range	LTE Band 2: 1930 ~ 1990 MHz; LTE Band 4: 2110 ~ 2155 MHz LTE Band 5: 869 ~ 894 MHz; LTE Band 7: 2620 ~ 2690 MHz LTE Band 12: 729 ~ 746 MHz; LTE Band 13: 746 ~ 756 MHz LTE Band 17: 734 ~ 746 MHz; LTE Band 25: 1930 ~ 1995 MHz LTE Band 26: 859 ~ 894 MHz; LTE Band 30: 2350 ~ 2360 MHz LTE Band 66: 2110 ~ 2200 MHz; LTE Band 71: 617 ~ 652 MHz
TDD TX & RX Frequency Range	LTE Band 38: 2570 ~ 2620 MHz; LTE Band 41: 2496 ~ 2690 MHz;
HUPE Band (Power Class 2)	Band 41
Support Bandwidth	Band 2, 4, 25, 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz Band 5, 12: 1.4MHz, 3MHz, 5MHz, 10MHz Band 7, 38, 41, 42, 43: 5MHz, 10MHz, 15MHz, 20MHz Band 13: 5MHz, 10MHz Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
Type of Modulation	UL up to 256QAM, DL up to 256QAM

1.4. Description of Available Antennas

Antenna Type			LDS				
Technology	Frequency Range (MHz)		Max Peak Gain (dBi)				
	TX	RX	ANT0	ANT1	ANT2	ANT3	ANT4
LTE Band 2	1850 ~ 1910	1930 ~ 1990	--	1.19	--	--	--
LTE Band 4	1710 ~ 1755	2110 ~ 2155	--	1.19	--	--	--
LTE Band 5	824 ~ 849	869 ~ 894	-3.38	--	--	--	--
LTE Band 7	2500 ~ 2570	2620 ~ 2690	--	1.38	--	--	--
LTE Band 12	699 ~ 716	729 ~ 746	-3.38	--	--	--	--
LTE Band 13	777 ~ 787	746 ~ 756	-3.38	--	--	--	--
LTE Band 17	704 ~ 716	734 ~ 746	-3.38	--	--	--	--
LTE Band 25	1850 ~ 1915	1930 ~ 1995	--	1.19	--	--	--
LTE Band 26	814 ~ 849	859 ~ 894	-3.38	--	--	--	--
LTE Band 30	2305 ~ 2315	2350 ~ 2360	--	-0.56	--	--	--
LTE Band 38	2570 ~ 2620		--	1.38	--	--	--
LTE Band 41	2496 ~ 2690		--	1.38	--	--	--
LTE Band 66	1710 ~ 1780	2110 ~ 2200	--	1.19	--	--	--
LTE Band 71	663 ~ 698	617 ~ 652	-3.58	--	--	--	--

Note

- 1: All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.
- 2: The typical antennas used to calculate the ERP (EIRP).
3. Ant0 support TX functions for LB (617MHz-960MHz).
4. Ant1 support TX functions for MB+HB (1710MHz-2690MHz).

1.5. Test Methodology

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

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r02: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

2. DESCRIPTION OF TEST

2.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result
2.1049	Occupied Bandwidth	Conducted	Pass
2.1055, 22.355, 24.235, 27.54	Frequency Stability		Pass
2.1046, 22.913(a)(5), 24.232(c) 27.50(a)(3) (b)(10) (c)(10) (d)(4) (h)(2)	Transmitter Output Power		Pass
22.913(d), 24.232(d), 27.50(d)(5)	Peak to Average Ratio		Pass
2.1051, 22.917(a), 24.238(a) 27.53(a) (c) (f) (g) (h) (m)	Transmitter unwanted emissions (band-edge)		Pass
2.1051, 22.917(a), 24.238(a) 27.53(a) (c) (f) (g) (h) (m)	Transmitter unwanted emissions (spurious)		
2.1053, 22.917(a), 24.238(a) 27.53(a) (c) (f) (g) (h) (m)	Transmitter Spurious Emissions	Radiated	Pass

Notes:

- 1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 2) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, the Frequency Stability, Transmitter unwanted emissions (band-edge), Transmitter unwanted emissions (spurious), Radiated Spurious Emissions were presented worst-case in the test report.
- 3) For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
- 4) LTE Band 12 (699 ~ 716 MHz) overlaps the entire frequency range of LTE Band 17 (704 ~ 716 MHz). Therefore, test data provided in this report covers Band 17 as well as Band 12.
- 5) LTE Band 25 (1850 ~ 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 ~ 1910 MHz). Therefore, test data provided in this report covers Band 2 as well as Band 25.
- 6) LTE Band 26 (824 ~ 849 MHz) overlaps the entire frequency range of LTE Band 5 (824 ~ 849 MHz). Therefore, test data provided in this report covers Band 5 as well as Band 26.
- 7) LTE Band 41 (2496 ~ 2690 MHz) overlaps the entire frequency range of LTE Band 38 (2570 ~ 2620 MHz). Therefore, test data provided in this report covers Band 38 as well as Band 41.
- 8) LTE Band 66 (1710 ~ 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 ~ 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

Test Items	Bandwidth	Modulation	RB Combination	Test Channel
Occupied Bandwidth	All BW	All Modulation	Full	Low/Middle/High
Frequency Stability	Maximum BW	QPSK	Full	Middle
Transmitter Output Power	All BW	All Modulation	1RB/Half/Full	Low/Middle/High
Peak to Average Ratio	All BW	All Modulation	Full	Middle
Band Edge	All BW	QPSK	1RB/Half/Full	Low/High
Conducted Emissions	All BW	All Modulation	1RB	Low/Middle/High
Radiated Emissions	Minimum BW	QPSK	1RB	Low/Middle/High

Note:

1. All modes of operation and data rates were investigated. The test results shown in the above part represent the worst case emissions.
2. 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, attenuators, and couplers.

2.2. Occupied Bandwidth

According to FCC Part 2.1049

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.

2.3. Frequency Stability / Temperature Variation

According to FCC Part 2.1055, 22.355, 24.235, 27.54

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – For Part 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

2.4. Conducted Output Power Measurement

According to FCC Part 2.1046, 22.913, 24.232, 27.50

According to KDB 412172 D01 Section 1.2 Power Approach

$EIRP = PT + GT - LC = ERP + 2.15 \text{ dB}$, $ERP = EIRP - 2.15 \text{ dB}$

PT = transmitter output power in dBm

GT = gain of the transmitting antenna in dBi

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

Technology	ERP Power Limit	Technology	EIRP Power Limit
LTE Band 5	7W (38.45dBm)	LTE Band 2	2W (33dBm)
LTE Band 12	3W (34.77dBm)	LTE Band 4	1W (30dBm)
LTE Band 13	3W (34.77dBm)	LTE Band 7	2W (33dBm)
LTE Band 17	3W (34.77dBm)	LTE Band 25	2W (33dBm)
LTE Band 26	7W (38.45dBm)	LTE Band 30	250mW (24dBm)
LTE Band 71	3W (34.77dBm)	LTE Band 38	2W (33dBm)
--	--	LTE Band 41	2W (33dBm)
--	--	LTE Band 66	1W (30dBm)

2.5. Peak-Average Ratio

According to FCC Part 22.913, 24.232, 27.50

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

2.6. Spurious and Harmonic Emissions at Antenna Terminal

According to FCC Part 2.1051, 22.917, 24.238, 27.53

For GSM 850/1900, WCDMA B2/B4/B5, LTE B2/B4/B5/B12/B17/B25/B26(824-849MHz)/B66/B71

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

For LTE B13

For operations in the 776-788 MHz band, the FCC limit is $43 + 10 \log(P)$ dB below the transmitter power (P) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power (P), by at least $65 + 10 \log(P)$ dB, for mobile and portable equipment.

For LTE B7/B38/B41

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

For LTE B30

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

- (i) By a factor of not less than: $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log (P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log (P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log (P)$ dB on all frequencies between 2328 and 2337 MHz;
- (ii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log (P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log (P)$ dB below 2288 MHz;
- (iii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log (P)$ dB above 2365 MHz.

2.7. Conducted and Radiated Spurious Emissions

According to FCC Part 2.1051, 2.1053, 22.917, 24.238, 27.53

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

For GSM 850/1900, WCDMA B2/B4/B5, LTE B2/B4/B5/B12/B17/B25/B26(824-849MHz)/B66/B71

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

For LTE B13

For operations in the 776-788 MHz band, the FCC limit is $43 + 10 \log(P)$ dB below the transmitter power (P) in a 100 kHz bandwidth.

For operations in the 775-788 MHz band, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP). The emission limit equal to -40dBm.

For LTE B7/B38/B41

For mobile digital stations, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm.

For LTE B30

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
By a factor of not less than $43 + 10 \log(P)$ dB below 2200 MHz and above 2395 MHz.

3. TEST EQUIPMENT CALIBRATION DATE

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2025/5/7
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00086	1 year	2025/11/5
Broadband Hornantenna	RFSPIN	DRH18-E	MRTTWA00087	1 year	2025/5/20
Broadband Preamplifier	EMC Instruments corporation	EMC118A45SE	MRTTWA00088	1 year	2025/5/14
Breitband Hornantenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2025/3/26
Broadband Amplifier	Schwarzbeck	BBV 9721	MRTTWA00006	1 year	2025/3/21
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2025/3/5
Signal Analyzer	R&S	FSVA3044	MRTTWA00092	1 year	2025/6/20
Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2025/6/14
Cable	Rosnol	K1K50-UP0264-K1K50-4M	MRTTWE00012	1 year	2025/6/14

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2025/9/24
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2025/8/12
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2025/3/12
Wideband Radio Communication Taster	R&S	CMW 500	MRTTWA00084	1 year	2025/10/23
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MRTTWA00089	1 year	2025/5/30

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.

(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz~30MHz: $\pm 3.92\text{dB}$ 30MHz~1GHz: $\pm 4.25\text{dB}$ 1GHz~18GHz: $\pm 4.40\text{dB}$ 18GHz~40GHz: $\pm 4.45\text{dB}$
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 3.3\%$
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.82^\circ\text{C}/ \pm 3\%$
DC Voltage
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.3\%$

Note:

Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.

5. TEST RESULT

5.1. Summary

Maximum Conducted Power and ERP/EIRP Power

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively. (expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

$$\text{ERP} = \text{EIRP} - 2.15$$

LTE Band		Band7	Antenna Gain (dBi)		1.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
5MHz	QPSK	24.67	0.293	0.403	2
	16QAM	23.81	0.240	0.330	2
	64QAM	23.11	0.205	0.281	2
	256QAM	19.82	0.096	0.132	2
10MHz	QPSK	24.82	0.303	0.417	2
	16QAM	24.07	0.255	0.351	2
	64QAM	22.79	0.190	0.261	2
	256QAM	20.39	0.109	0.150	2
15MHz	QPSK	24.56	0.286	0.393	2
	16QAM	23.72	0.236	0.324	2
	64QAM	22.44	0.175	0.241	2
	256QAM	19.95	0.099	0.136	2
20MHz	QPSK	24.57	0.286	0.394	2
	16QAM	23.56	0.227	0.312	2
	64QAM	22.73	0.187	0.258	2
	256QAM	20.17	0.104	0.143	2

LTE Band		Band12	Antenna Gain (dBi)		-3.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum ERP (W)	ERP Limit (W)
1.4MHz	QPSK	24.56	0.286	0.080	3
	16QAM	23.81	0.240	0.067	3
	64QAM	22.63	0.183	0.051	3
	256QAM	19.61	0.091	0.026	3
3MHz	QPSK	24.61	0.289	0.081	3
	16QAM	23.64	0.231	0.065	3
	64QAM	22.60	0.182	0.051	3
	256QAM	19.81	0.096	0.027	3
5MHz	QPSK	24.59	0.288	0.081	3
	16QAM	23.58	0.228	0.064	3
	64QAM	22.55	0.180	0.050	3
	256QAM	19.57	0.091	0.025	3
10MHz	QPSK	24.46	0.279	0.078	3
	16QAM	23.86	0.243	0.068	3
	64QAM	22.78	0.190	0.053	3
	256QAM	19.63	0.092	0.026	3

LTE Band		Band13	Antenna Gain (dBi)		-3.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum ERP (W)	ERP Limit (W)
5MHz	QPSK	24.81	0.303	0.085	3
	16QAM	24.13	0.259	0.072	3
	64QAM	23.08	0.203	0.057	3
	256QAM	20.21	0.105	0.029	3
10MHz	QPSK	24.79	0.301	0.084	3
	16QAM	24.05	0.254	0.071	3
	64QAM	22.72	0.187	0.052	3
	256QAM	19.88	0.097	0.027	3

LTE Band		Band25	Antenna Gain (dBi)		1.19
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
1.4M	QPSK	24.49	0.281	0.370	2
	16QAM	23.63	0.231	0.303	2
	64QAM	22.59	0.182	0.239	2
	256QAM	19.76	0.095	0.124	2
3M	QPSK	24.40	0.275	0.362	2
	16QAM	23.46	0.222	0.292	2
	64QAM	22.68	0.185	0.244	2
	256QAM	19.79	0.095	0.125	2
5M	QPSK	24.58	0.287	0.378	2
	16QAM	24.18	0.262	0.344	2
	64QAM	23.03	0.201	0.264	2
	256QAM	20.16	0.104	0.136	2
10M	QPSK	24.69	0.294	0.387	2
	16QAM	23.65	0.232	0.305	2
	64QAM	22.53	0.179	0.236	2
	256QAM	19.66	0.092	0.122	2
15M	QPSK	24.50	0.282	0.371	2
	16QAM	23.29	0.213	0.281	2
	64QAM	22.40	0.174	0.229	2
	256QAM	19.24	0.084	0.110	2
20M	QPSK	24.23	0.265	0.348	2
	16QAM	23.50	0.224	0.294	2
	64QAM	22.61	0.182	0.240	2
	256QAM	19.35	0.086	0.113	2

LTE Band		Band26	Antenna Gain (dBi)		-3.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum ERP (W)	ERP Limit (W)
1.4M	QPSK	24.40	0.275	0.077	7
	16QAM	23.73	0.236	0.066	7
	64QAM	22.66	0.185	0.052	7
	256QAM	19.69	0.093	0.026	7
3M	QPSK	24.43	0.277	0.078	7
	16QAM	23.59	0.229	0.064	7
	64QAM	22.64	0.184	0.051	7
	256QAM	19.52	0.090	0.025	7
5M	QPSK	24.58	0.287	0.080	7
	16QAM	23.56	0.227	0.064	7
	64QAM	22.52	0.179	0.050	7
	256QAM	19.77	0.095	0.027	7
10M	QPSK	24.45	0.279	0.078	7
	16QAM	23.51	0.224	0.063	7
	64QAM	22.89	0.195	0.054	7
	256QAM	19.82	0.096	0.027	7
15M	QPSK	24.22	0.264	0.074	7
	16QAM	23.33	0.215	0.060	7
	64QAM	22.63	0.183	0.051	7
	256QAM	19.89	0.097	0.027	7

LTE Band		Band30	Antenna Gain (dBi)		-0.56
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
5MHz	QPSK	23.49	0.223	0.196	0.25 (24dBm)
	16QAM	22.79	0.190	0.167	0.25 (24dBm)
	64QAM	21.87	0.154	0.135	0.25 (24dBm)
	256QAM	19.36	0.086	0.076	0.25 (24dBm)
10MHz	QPSK	23.66	0.232	0.204	0.25 (24dBm)
	16QAM	22.87	0.194	0.170	0.25 (24dBm)
	64QAM	22.12	0.163	0.143	0.25 (24dBm)
	256QAM	19.39	0.087	0.076	0.25 (24dBm)

LTE Band		Band38	Antenna Gain (dBi)		1.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
5MHz	QPSK	24.99	0.316	0.434	2
	16QAM	23.97	0.249	0.343	2
	64QAM	22.91	0.195	0.269	2
	256QAM	20.40	0.110	0.151	2
10MHz	QPSK	24.76	0.299	0.411	2
	16QAM	23.92	0.247	0.339	2
	64QAM	22.78	0.190	0.261	2
	256QAM	20.54	0.113	0.156	2
15MHz	QPSK	24.56	0.286	0.393	2
	16QAM	23.63	0.231	0.317	2
	64QAM	22.46	0.176	0.242	2
	256QAM	20.32	0.108	0.148	2
20MHz	QPSK	24.62	0.290	0.398	2
	16QAM	23.64	0.231	0.318	2
	64QAM	22.91	0.195	0.269	2
	256QAM	20.26	0.106	0.146	2

LTE Band		Band41	Antenna Gain (dBi)		1.38
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
5MHz	QPSK	26.70	0.468	0.643	2
	16QAM	25.86	0.385	0.530	2
	64QAM	25.17	0.329	0.452	2
	256QAM	23.14	0.206	0.283	2
10MHz	QPSK	26.93	0.493	0.678	2
	16QAM	26.25	0.422	0.579	2
	64QAM	24.99	0.316	0.434	2
	256QAM	22.76	0.189	0.259	2
15MHz	QPSK	26.81	0.480	0.659	2
	16QAM	25.64	0.366	0.504	2
	64QAM	24.55	0.285	0.392	2
	256QAM	22.73	0.187	0.258	2
20MHz	QPSK	26.80	0.479	0.658	2
	16QAM	25.89	0.388	0.533	2
	64QAM	24.70	0.295	0.406	2
	256QAM	22.93	0.196	0.270	2

LTE Band		Band66	Antenna Gain (dBi)		1.19
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum EIRP (W)	EIRP Limit (W)
1.4M	QPSK	24.86	0.306	0.403	1
	16QAM	23.97	0.249	0.328	1
	64QAM	23.45	0.221	0.291	1
	256QAM	20.39	0.109	0.144	1
3M	QPSK	25.00	0.316	0.416	1
	16QAM	24.46	0.279	0.367	1
	64QAM	23.23	0.210	0.277	1
	256QAM	20.74	0.119	0.156	1
5M	QPSK	25.01	0.317	0.417	1
	16QAM	24.17	0.261	0.344	1
	64QAM	23.09	0.204	0.268	1
	256QAM	20.57	0.114	0.150	1
10M	QPSK	25.02	0.318	0.418	1
	16QAM	24.24	0.265	0.349	1
	64QAM	23.45	0.221	0.291	1
	256QAM	20.25	0.106	0.139	1
15M	QPSK	24.84	0.305	0.401	1
	16QAM	23.99	0.251	0.330	1
	64QAM	22.88	0.194	0.255	1
	256QAM	20.08	0.102	0.134	1
20M	QPSK	24.81	0.303	0.398	1
	16QAM	24.08	0.256	0.337	1
	64QAM	23.32	0.215	0.282	1
	256QAM	20.11	0.103	0.135	1

LTE Band		Band71	Antenna Gain (dBi)		-3.58
BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Maximum ERP (W)	ERP Limit (W)
5MHz	QPSK	24.58	0.287	0.077	3
	16QAM	23.87	0.244	0.065	3
	64QAM	23.03	0.201	0.054	3
	256QAM	20.13	0.103	0.028	3
10MHz	QPSK	24.37	0.274	0.073	3
	16QAM	23.78	0.239	0.064	3
	64QAM	22.51	0.178	0.048	3
	256QAM	19.66	0.092	0.025	3
15MHz	QPSK	24.23	0.265	0.071	3
	16QAM	23.21	0.209	0.056	3
	64QAM	22.22	0.167	0.045	3
	256QAM	19.36	0.086	0.023	3
20MHz	QPSK	24.16	0.261	0.070	3
	16QAM	23.31	0.214	0.057	3
	64QAM	22.33	0.171	0.046	3
	256QAM	19.38	0.087	0.023	3

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 7	5MHz	4M47G7D	4M47W7D	4M47W7D	4M47W7D
	10MHz	8M96G7D	8M96W7D	8M95W7D	8M95W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M4W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 12	1.4MHz	1M08G7D	1M08W7D	1M08W7D	1M08W7D
	3MHz	2M69G7D	2M69W7D	2M69W7D	2M68W7D
	5MHz	4M47G7D	4M48W7D	4M47W7D	4M48W7D
	10MHz	8M94G7D	8M95W7D	8M95W7D	8M95W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 13	5MHz	4M47G7D	4M47W7D	4M47W7D	4M47W7D
	10MHz	8M93G7D	8M94W7D	8M94W7D	8M93W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 25	1.4MHz	1M08G7D	1M08W7D	1M08W7D	1M08W7D
	3MHz	2M69G7D	2M68W7D	2M69W7D	2M69W7D
	5MHz	4M47G7D	4M47W7D	4M47W7D	4M48W7D
	10MHz	8M96G7D	8M96W7D	8M95W7D	8M95W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M5W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 26	1.4MHz	1M08G7D	1M08W7D	1M08W7D	1M08W7D
	3MHz	2M69G7D	2M69W7D	2M69W7D	2M69W7D
	5MHz	4M47G7D	4M47W7D	4M47W7D	4M47W7D
	10MHz	8M95G7D	8M95W7D	8M95W7D	8M94W7D
	15MHz	13M4G7D	13M5W7D	13M4W7D	13M4W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 30	5MHz	4M47G7D	4M47W7D	4M48W7D	4M47W7D
	10MHz	8M95G7D	8M96W7D	8M95W7D	8M95W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 38	5MHz	4M47G7D	4M47W7D	4M46W7D	4M47W7D
	10MHz	8M95G7D	8M98W7D	8M96W7D	8M94W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M4W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 41	5MHz	4M47G7D	4M49W7D	4M47W7D	4M48W7D
	10MHz	8M95G7D	8M96W7D	8M94W7D	8M96W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M4W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 66	1.4MHz	1M08G7D	1M08W7D	1M09W7D	1M09W7D
	3MHz	2M69G7D	2M69W7D	2M69W7D	2M69W7D
	5MHz	4M47G7D	4M47W7D	4M48W7D	4M48W7D
	10MHz	8M97G7D	8M96W7D	8M96W7D	8M95W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M4W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

LTE Band	BandWidth	Maximum 99% Occupied Bandwidth Designator			
		QPSK	16QAM	64QAM	256QAM
Band 71	5MHz	4M48G7D	4M47W7D	4M47W7D	4M48W7D
	10MHz	8M95G7D	8M96W7D	8M96W7D	8M95W7D
	15MHz	13M4G7D	13M4W7D	13M4W7D	13M4W7D
	20MHz	17M9G7D	17M9W7D	17M9W7D	17M9W7D

5.2. Occupied Bandwidth

5.2.1 Test Limit

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.

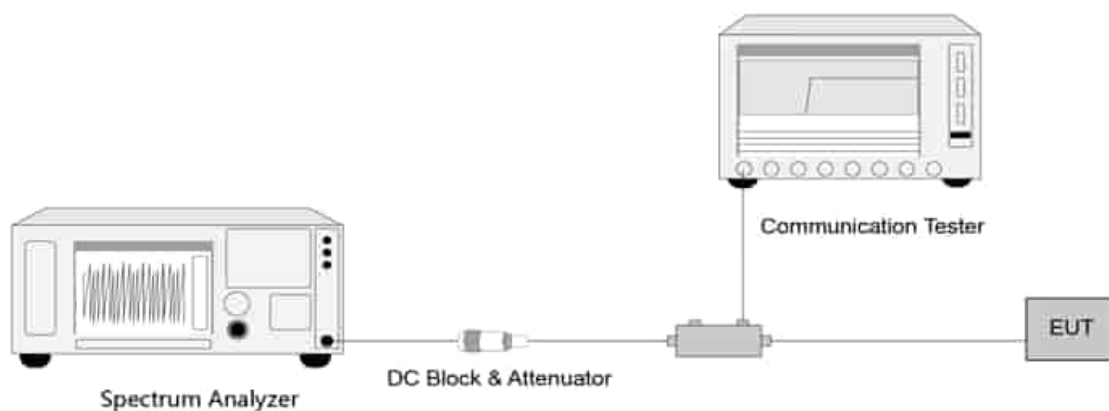
5.2.2 Test Procedure used

ANSI C63.26-2015 - Section 5.4.4

5.2.3 Test Setting

1. Set center frequency to the nominal EUT channel center frequency
2. RBW = The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize
8. Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

5.2.4 Test Setup



5.2.5 Test Result

Refer to Appendix A.1

5.3. Frequency Stability Under Temperature & Voltage Variations

5.3.1 Test Limit

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

5.3.2 Test Procedure

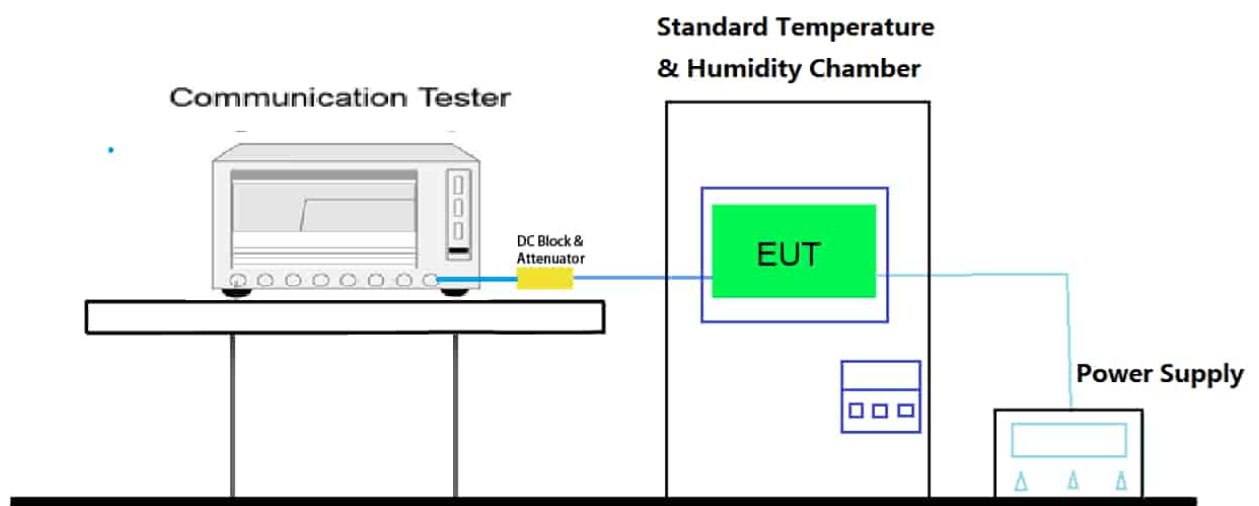
ANSI C63.26-2015 - Section 5.6

5.3.3 Frequency Stability Under Voltage Variations

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum

5.3.4 Test Setup



5.3.5 Test Result

Refer to Appendix A.2

5.4. Transmitter Output Power Measurement

5.4.1 Test Limit

Technology	ERP Power Limit	Technology	EIRP Power Limit
LTE Band 5	7W (38.45dBm)	LTE Band 2	2W (33dBm)
LTE Band 12	3W (34.77dBm)	LTE Band 4	1W (30dBm)
LTE Band 13	3W (34.77dBm)	LTE Band 7	2W (33dBm)
LTE Band 17	3W (34.77dBm)	LTE Band 25	2W (33dBm)
LTE Band 26	7W (38.45dBm)	250mW (24dBm)	250mW (24dBm)
LTE Band 71	3W (34.77dBm)	LTE Band 38	2W (33dBm)
--	--	LTE Band 41	2W (33dBm)
--	--	LTE Band 66	1W (30dBm)

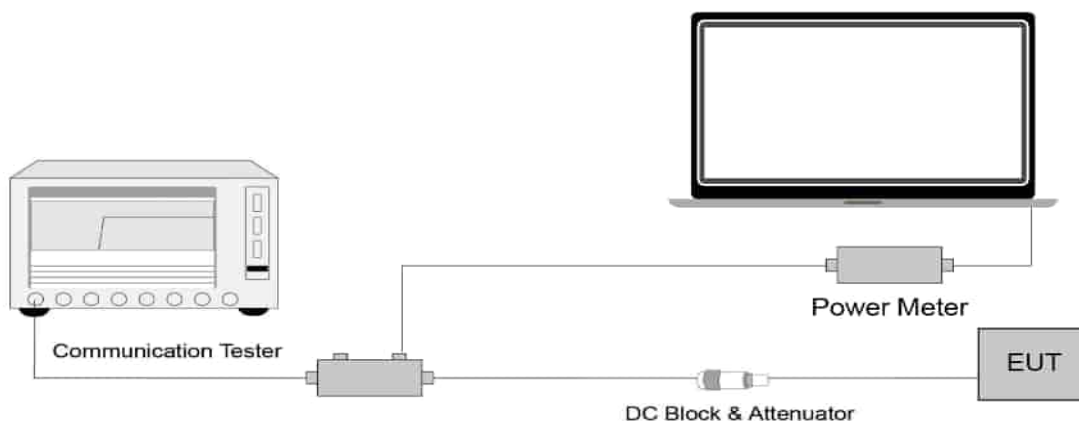
5.4.2 Test Procedure

ANSI C63.26-2015 - Section 5.2.4.2

5.4.3 Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

5.4.4 Test Setup



5.4.5 Test Result

Refer to Appendix A.3

5.5. Peak-Average Ratio

5.5.1 Test Limit

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure.

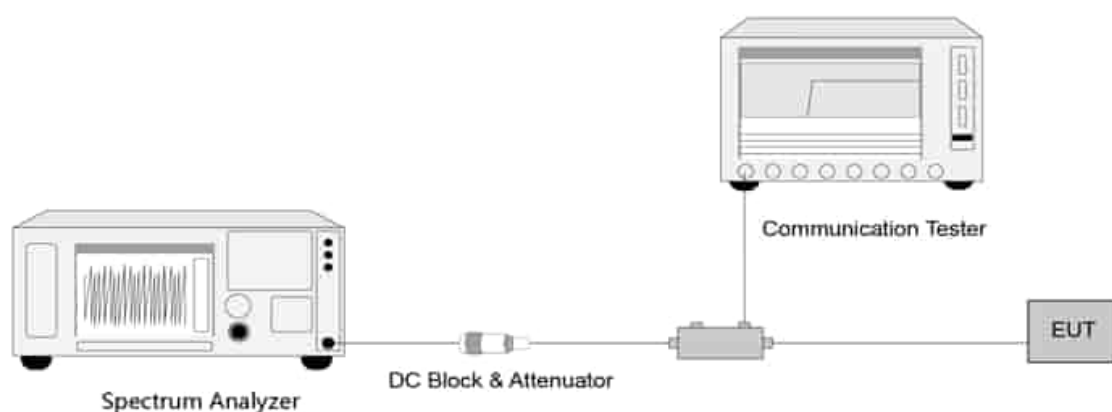
5.5.2 Test Procedure

ANSI C63.26-2015 - Section 5.2.3.4 (CCDF).

5.5.3 Test Setting

1. Set the resolution / measurement bandwidth $\geq$ signal's occupied bandwidth
2. Set the number of counts to a value that stabilizes the measured CCDF curve
3. Record the maximum PARR level associated with a probability of 0.1%

5.5.4 Test Setup



5.5.5 Test Result

Refer to Appendix A.4

5.6. Transmitter unwanted emissions (band-edge) Measurement

5.6.1 Test Limit

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

For LTE B13

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power (P), by at least $65 + 10 \log(P)$ dB, for mobile and portable equipment.

For LTE B7/B38/B41

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

For LTE B30

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

- (i) By a factor of not less than: $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log(P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log(P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log(P)$ dB on all frequencies between 2328 and 2337 MHz;

- (ii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log (P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log (P)$ dB below 2288 MHz;
- (iii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log (P)$ dB above 2365 MHz.

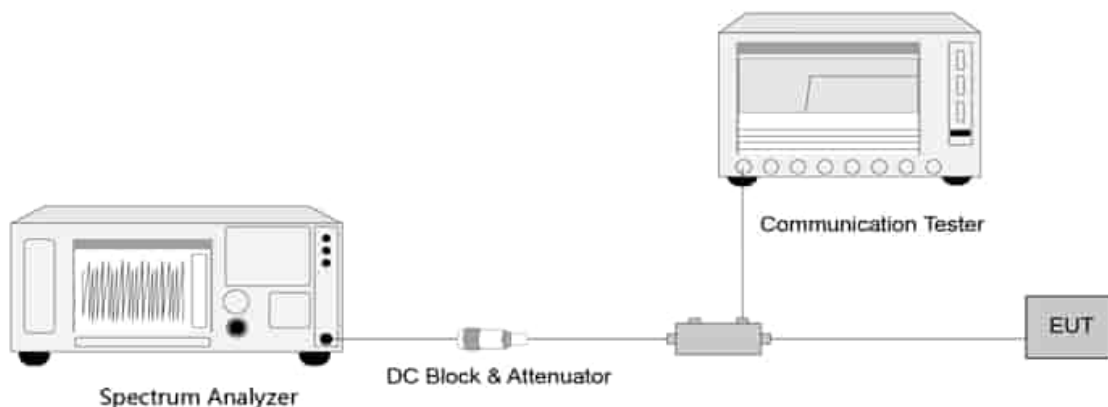
5.6.2 Test Procedure

ANSI C63.26-2015 - Section 5.7.

5.6.3 Test Setting

In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

5.6.4 Test Setup



5.6.4 Test Result

Refer to Appendix A.5

5.7. Transmitter unwanted emissions (spurious) Measurement

5.7.1 Test Limit

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

For LTE B7/B38/B41

For mobile digital stations, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm.

For LTE B30

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
By a factor of not less than $43 + 10 \log(P)$ dB below 2200 MHz and above 2395 MHz.
The emission limit equal to -40dBm.

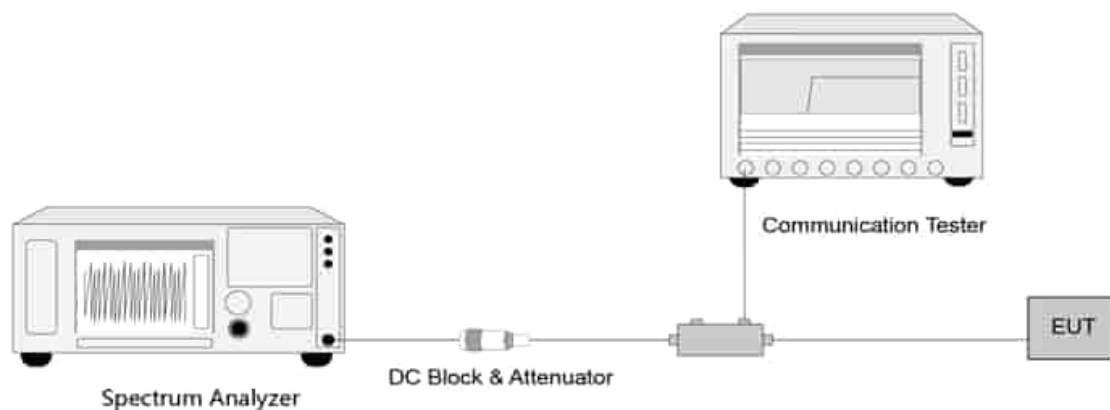
5.7.2 Test Procedure

ANSI C63.26-2015 - Section 5.7

5.7.3 Test Setting

1. Set the analyzer frequency to low, Mid or high channel.
2. RBW = specified resolution bandwidth of 100 kHz is at or below 1GHz and 1MHz is above 1GHz
3. VBW $\geq 3 \times$ RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.
7. Use the peak marker function to determine the maximum amplitude level.

5.7.4 Test Setup



5.7.5 Test Result

Refer to Appendix A.6

5.8. Radiated Spurious Emissions Measurement

5.8.1 Test Limit

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

For LTE B13

For operations in the 775-788 MHz band, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP). The emission limit equal to -40dBm.

For LTE B7/B38/B41

For mobile digital stations, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm.

For LTE B30

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
(iii) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log(P)$ dB above 2365 MHz. The emission limit equal to -40dBm.

5.8.2 Test Procedure

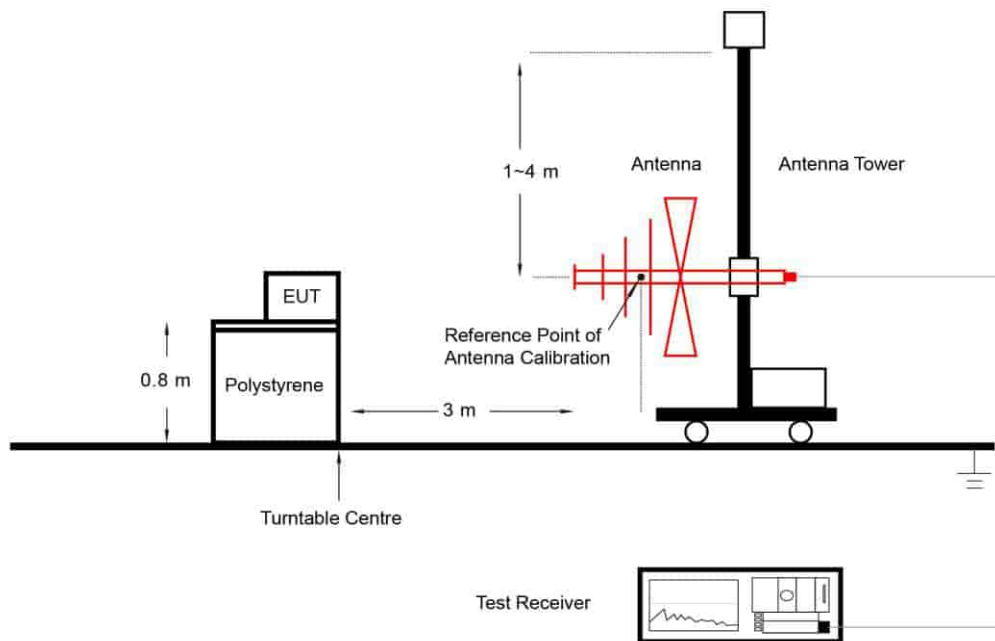
ANSI C63.26-2015 - Section 5.7

5.8.3 Test Setting

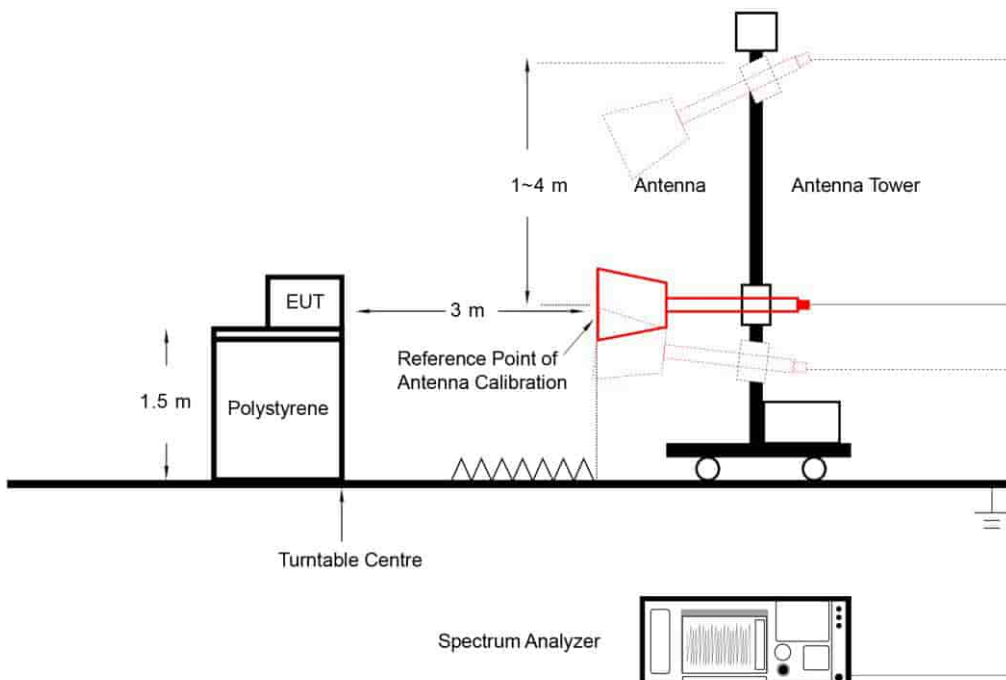
1. RBW = 120kHz or 1MHz
2. VBW $\geq 3 \times$ RBW
3. Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (transmission symbol period)
4. Detector = CISPR quasi-peak / average detector (Below 1 GHz, compliance with the limits shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth. Above 1 GHz, compliance with the limits shall be demonstrated using a linear average detector with a minimum resolution bandwidth of 1 MHz.)
5. The trace was allowed to stabilize

5.8.4 Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.8.5 Test Result

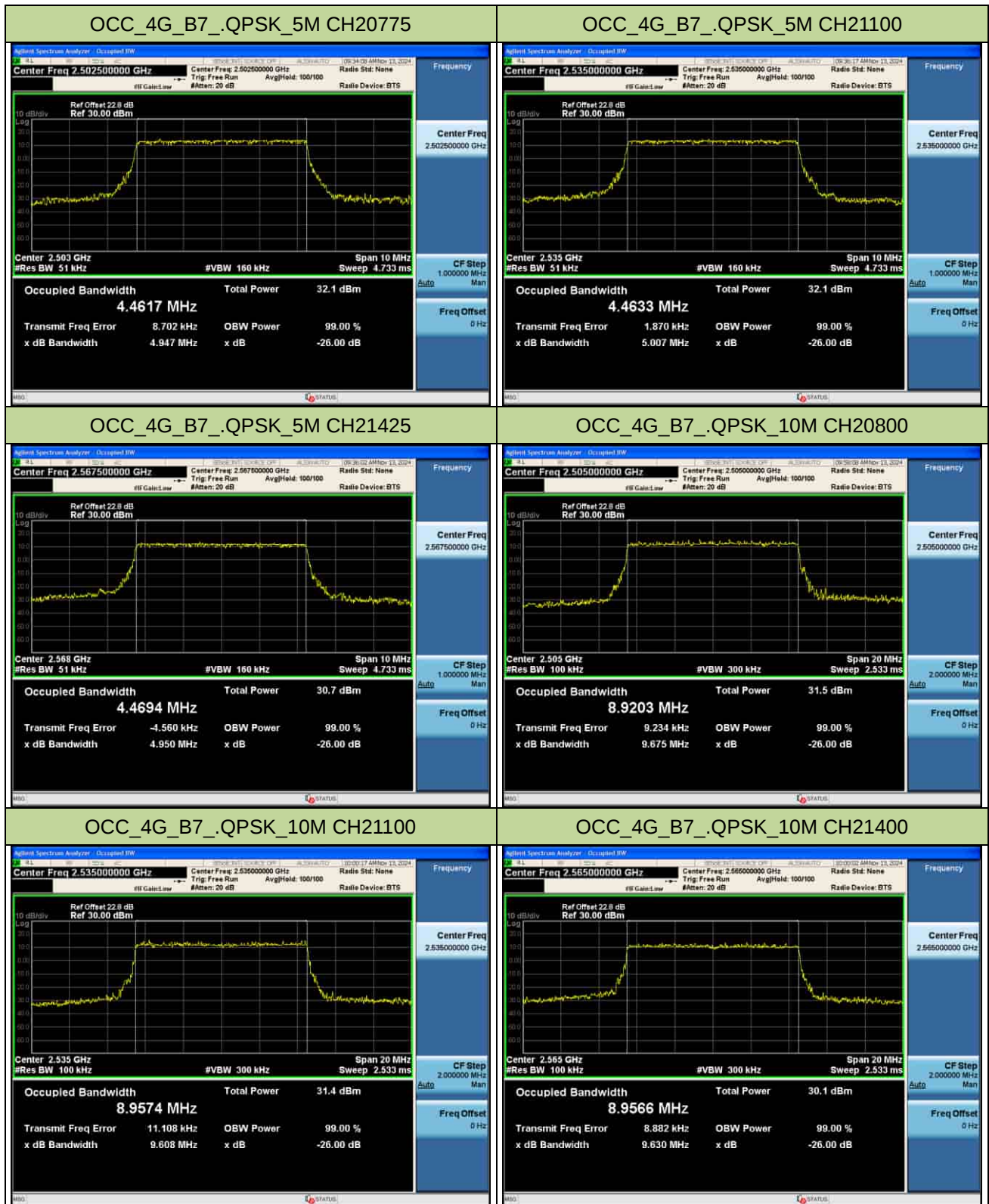
Refer to Appendix A.7.

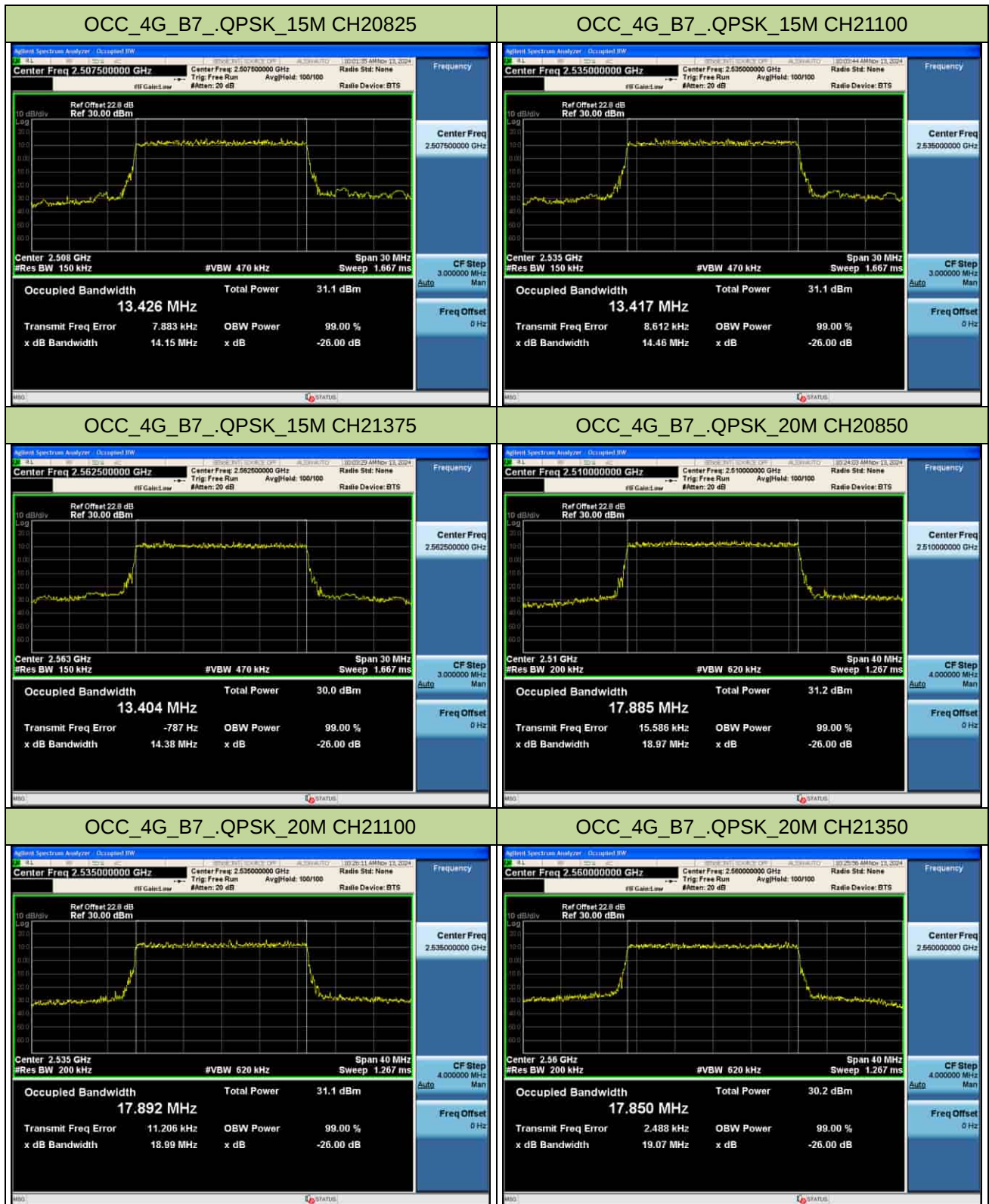
Appendix A : TEST RESULT DATA

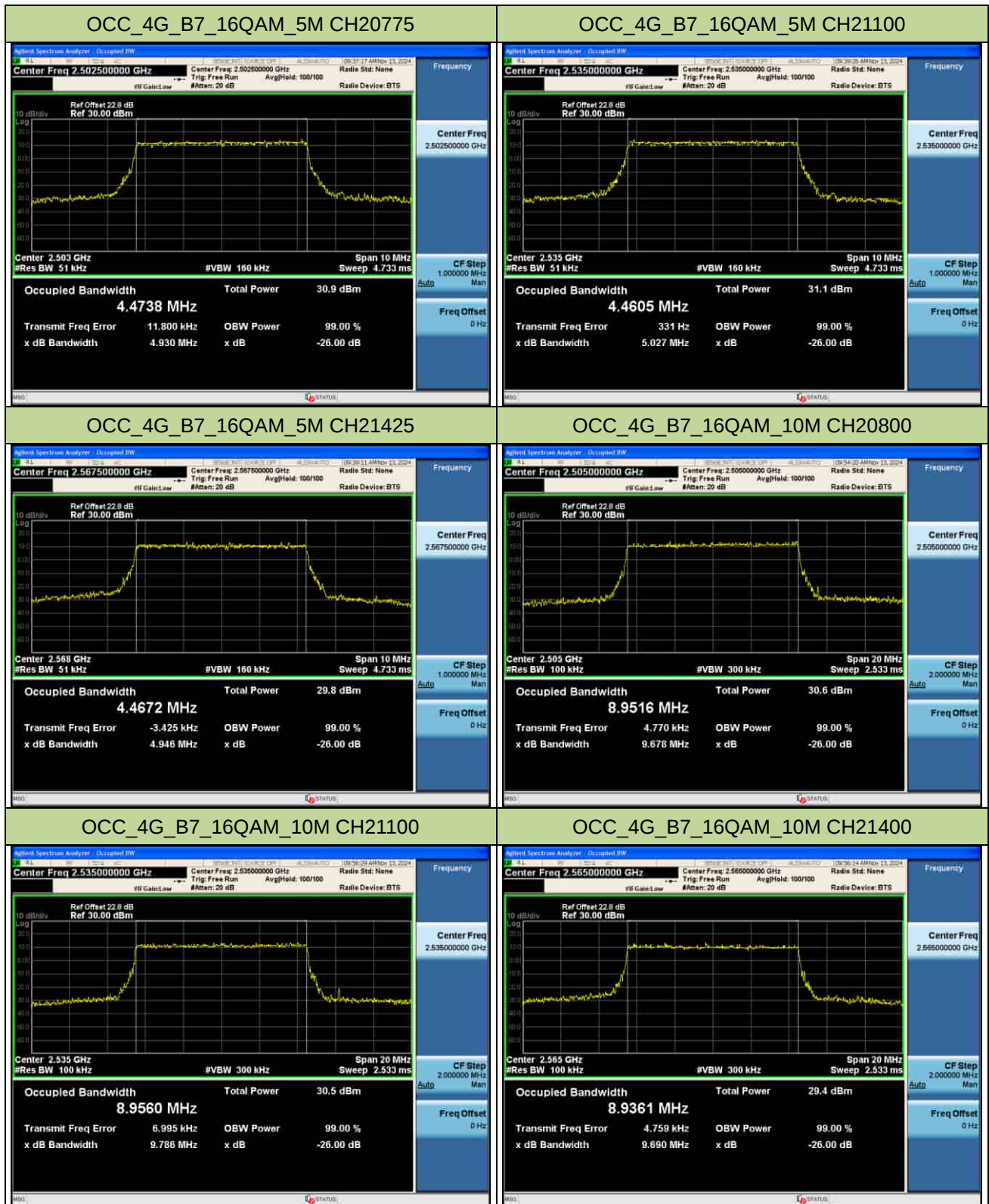
A1. Occupied Bandwidth Test Result

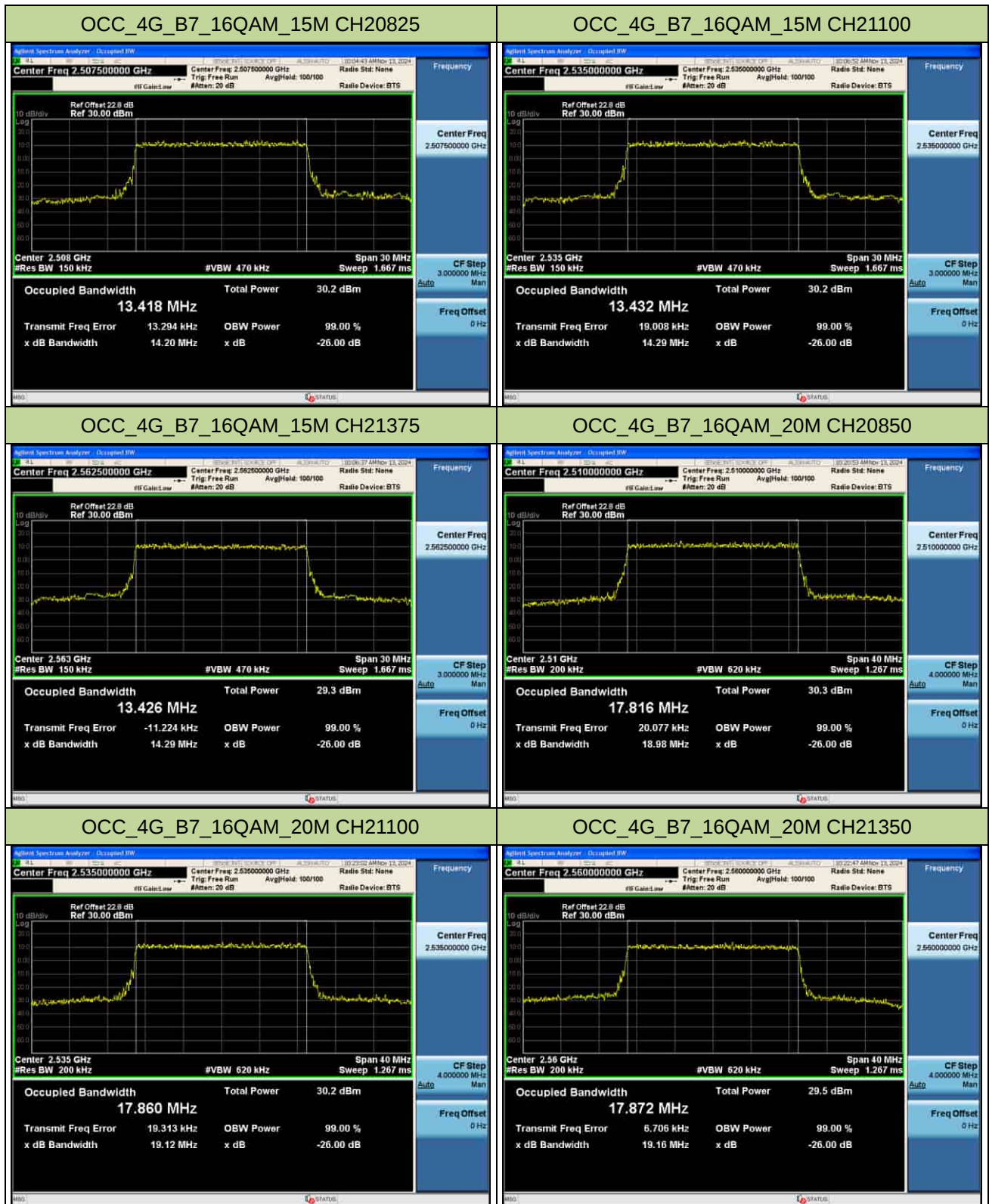
A1.1 LTE Band 7

LTE Band 7										
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26 dB bandwidth (MHz)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5M	20775	2502.5	4.4617	4.4738	4.4665	4.4625	4.947	4.930	5.009	4.949
5M	21100	2535	4.4633	4.4605	4.4677	4.4651	5.007	5.027	5.055	4.945
5M	21425	2567.5	4.4694	4.4672	4.4597	4.4688	4.950	4.946	4.967	5.016
10M	20800	2505	8.9203	8.9516	8.9484	8.9442	9.675	9.678	9.719	9.750
10M	21100	2535	8.9574	8.9560	8.9393	8.9449	9.608	9.786	9.724	9.676
10M	21400	2565	8.9566	8.9361	8.9415	8.9504	9.630	9.690	9.702	9.582
15M	20825	2507.5	13.426	13.418	13.409	13.394	14.15	14.20	14.38	14.19
15M	21100	2535	13.417	13.432	13.436	13.424	14.46	14.29	14.35	14.50
15M	21375	2562.5	13.404	13.426	13.398	13.385	14.38	14.29	14.44	14.51
20M	20850	2510	17.885	17.816	17.858	17.836	18.97	18.98	18.96	19.15
20M	21100	2535	17.892	17.860	17.892	17.922	18.99	19.12	18.96	19.33
20M	21350	2560	17.850	17.872	17.835	17.861	19.07	19.16	19.13	19.20

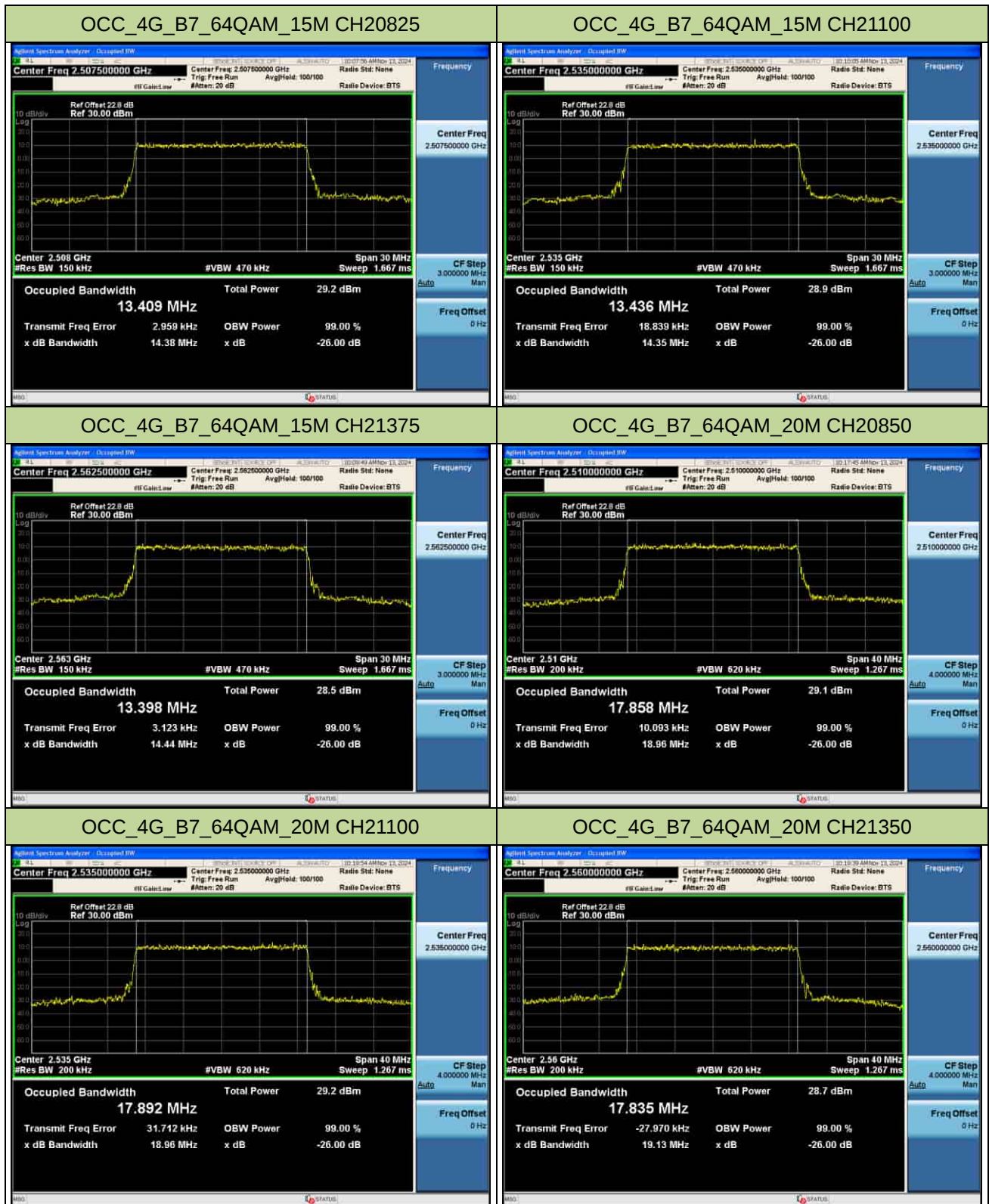


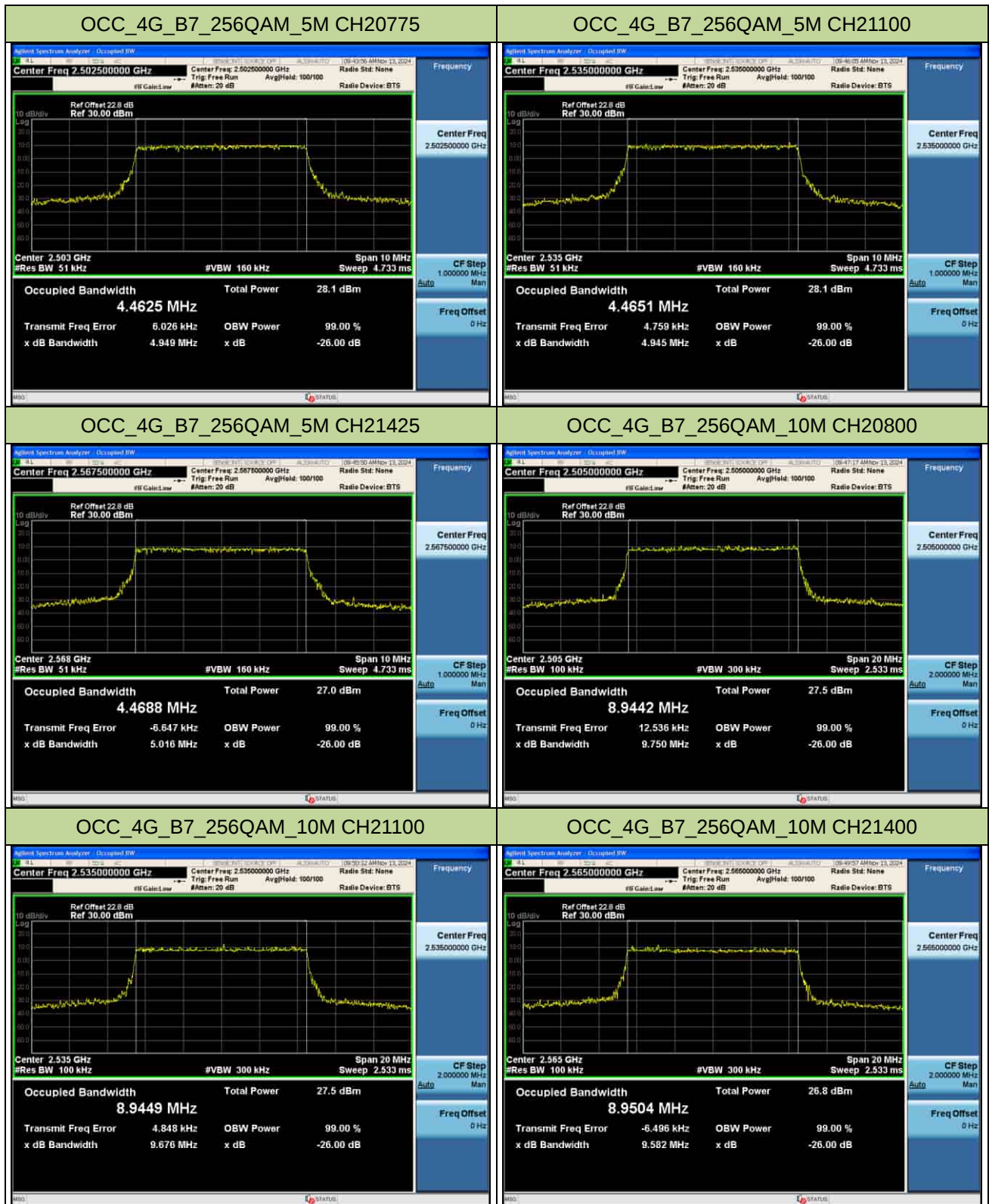


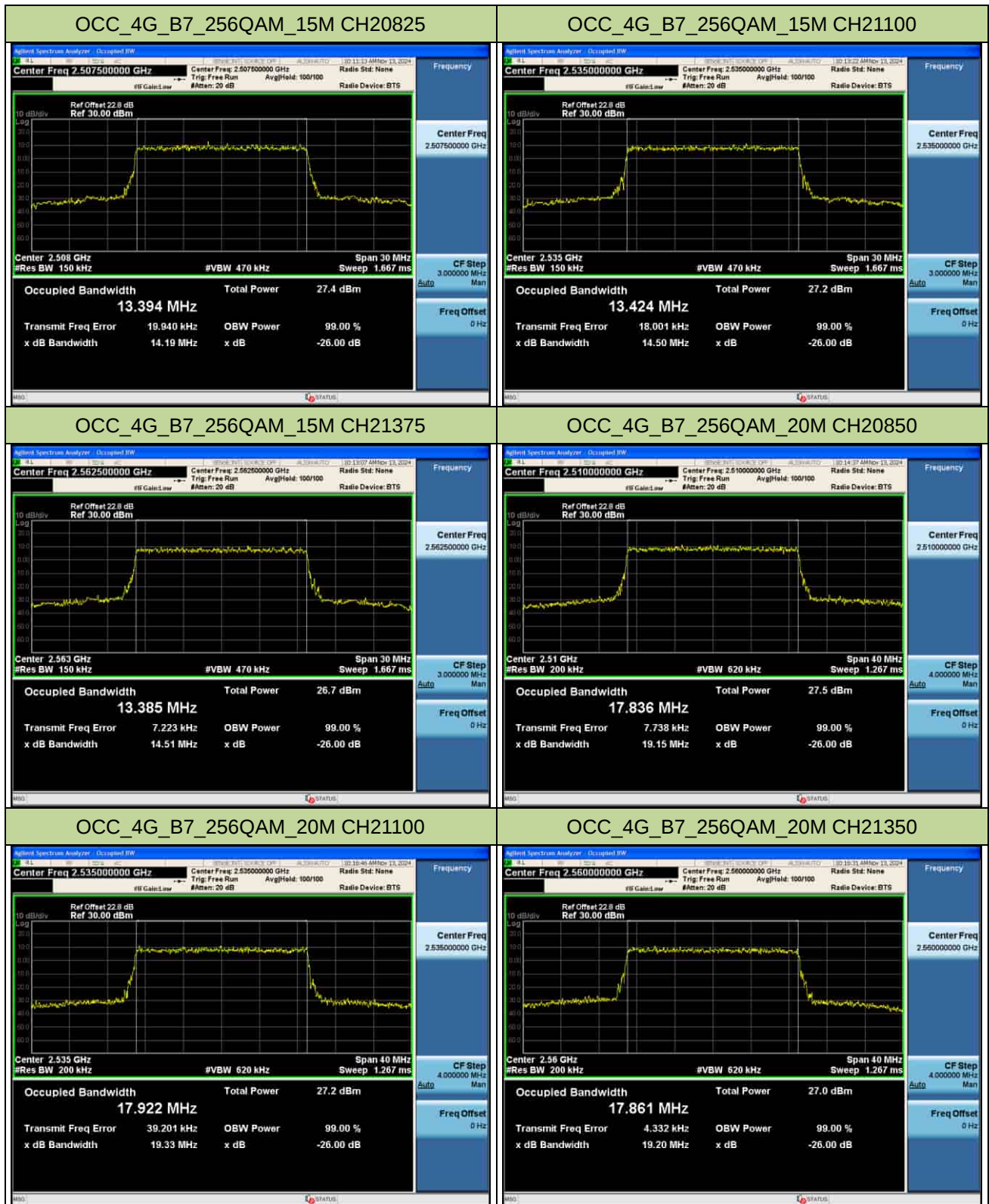






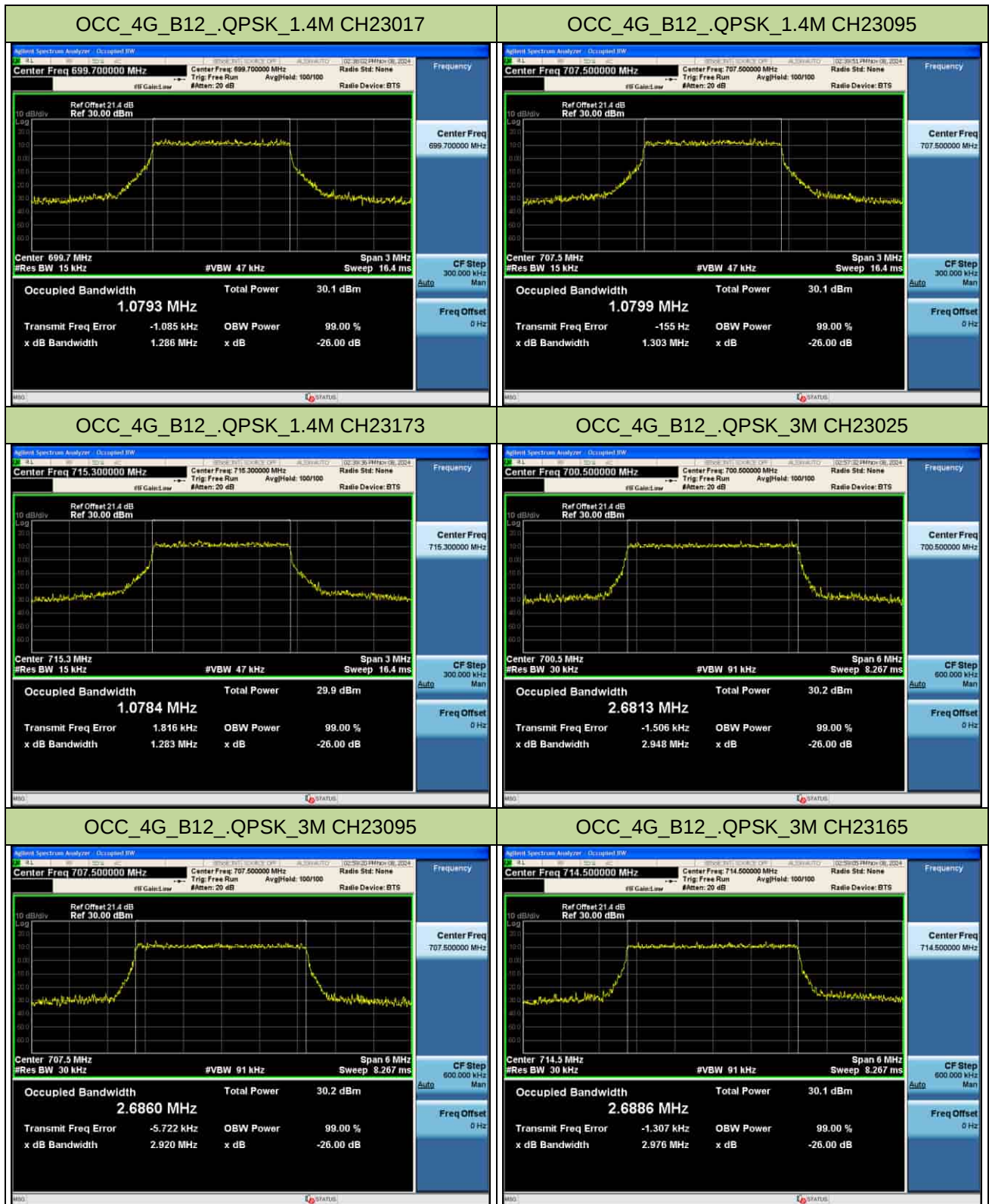


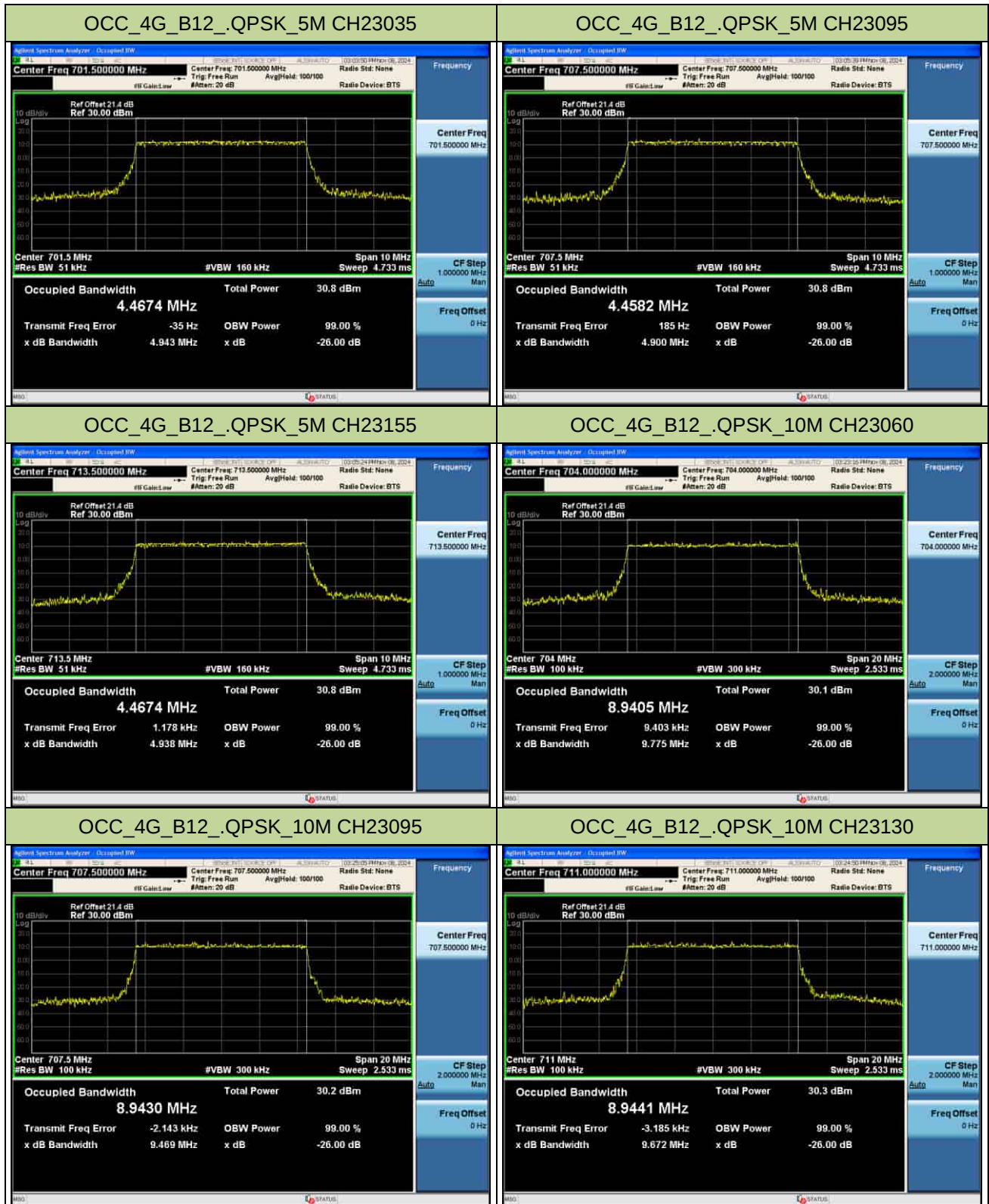


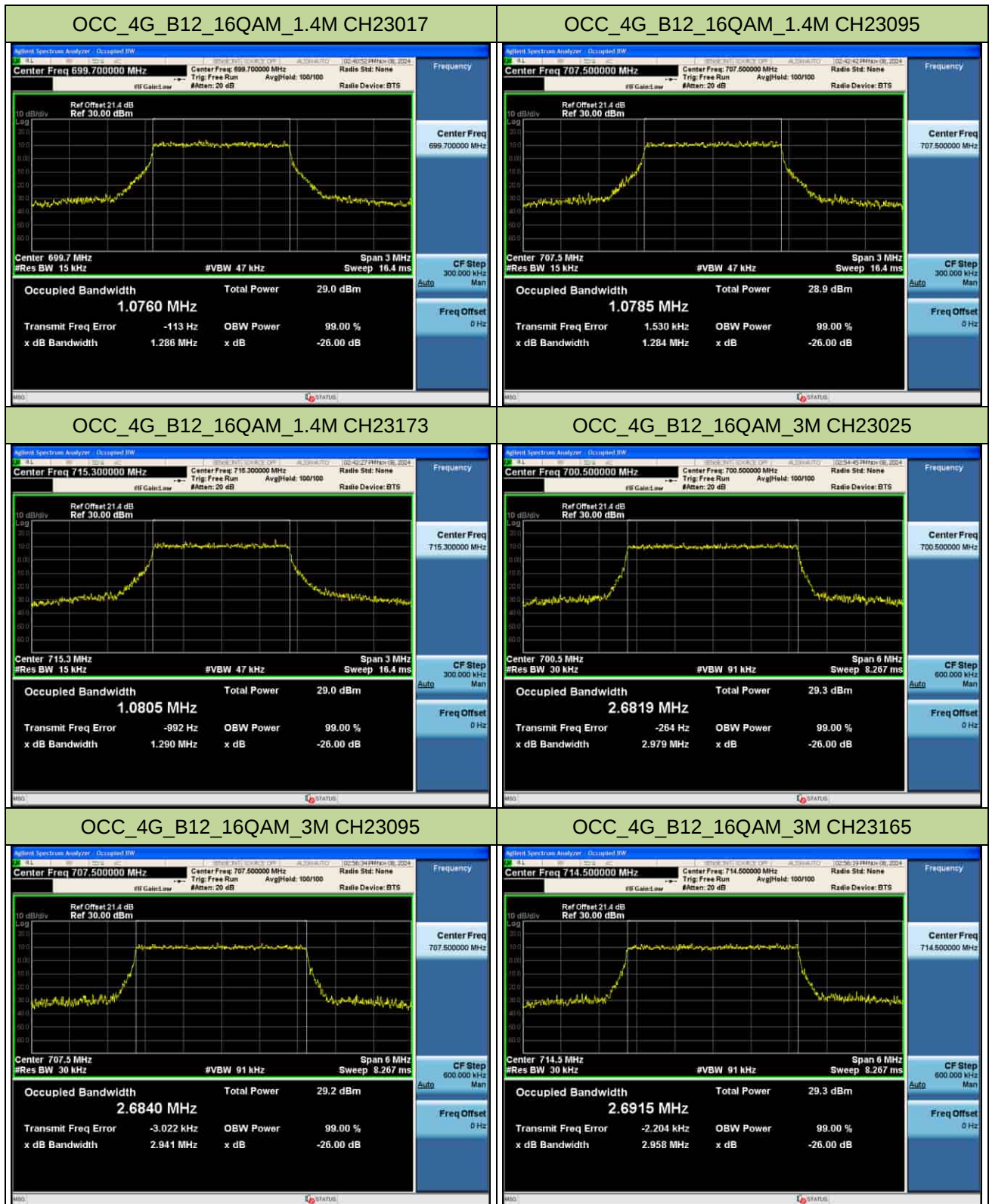


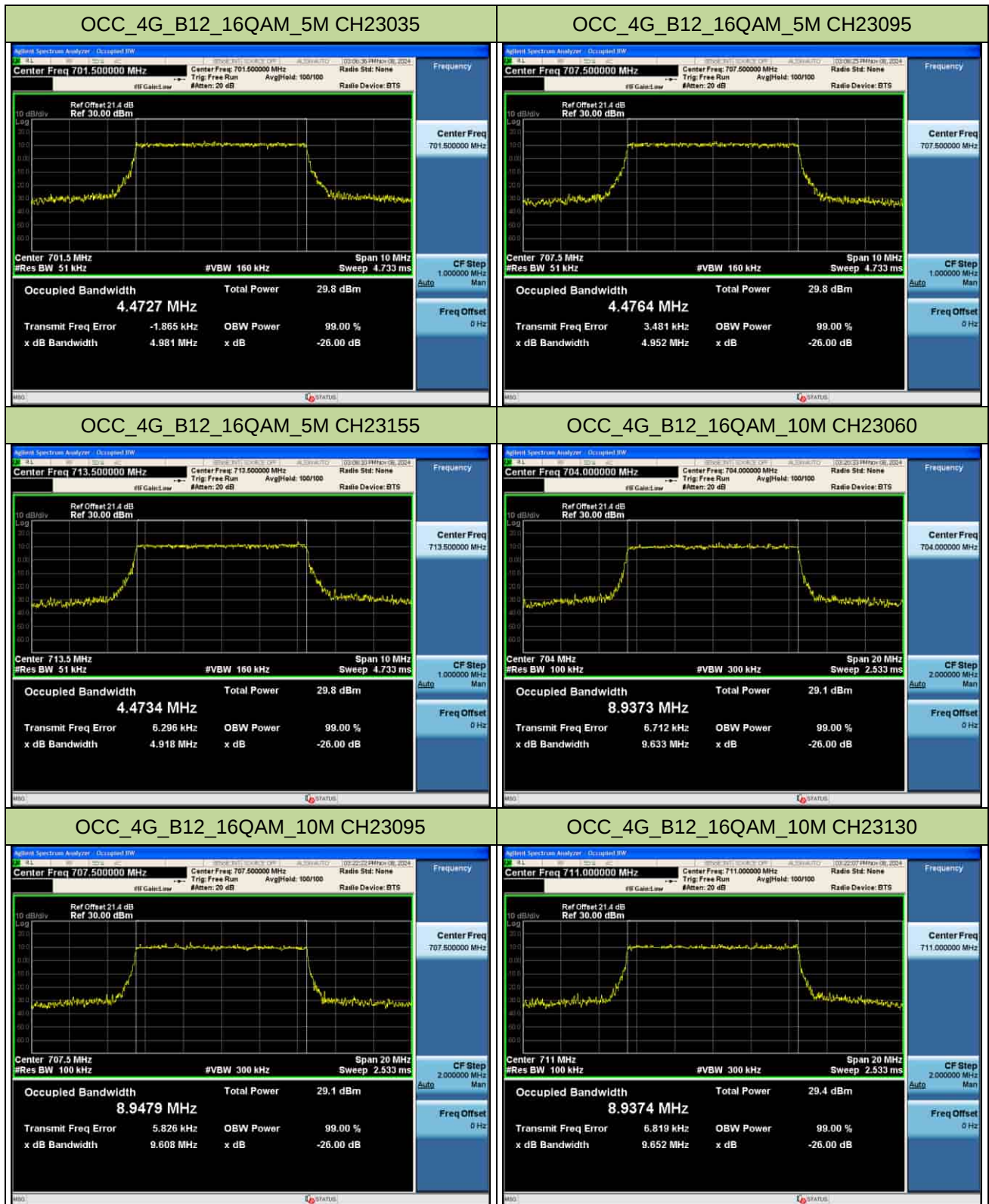
A1.2 LTE Band 12 (Cover Band 17)

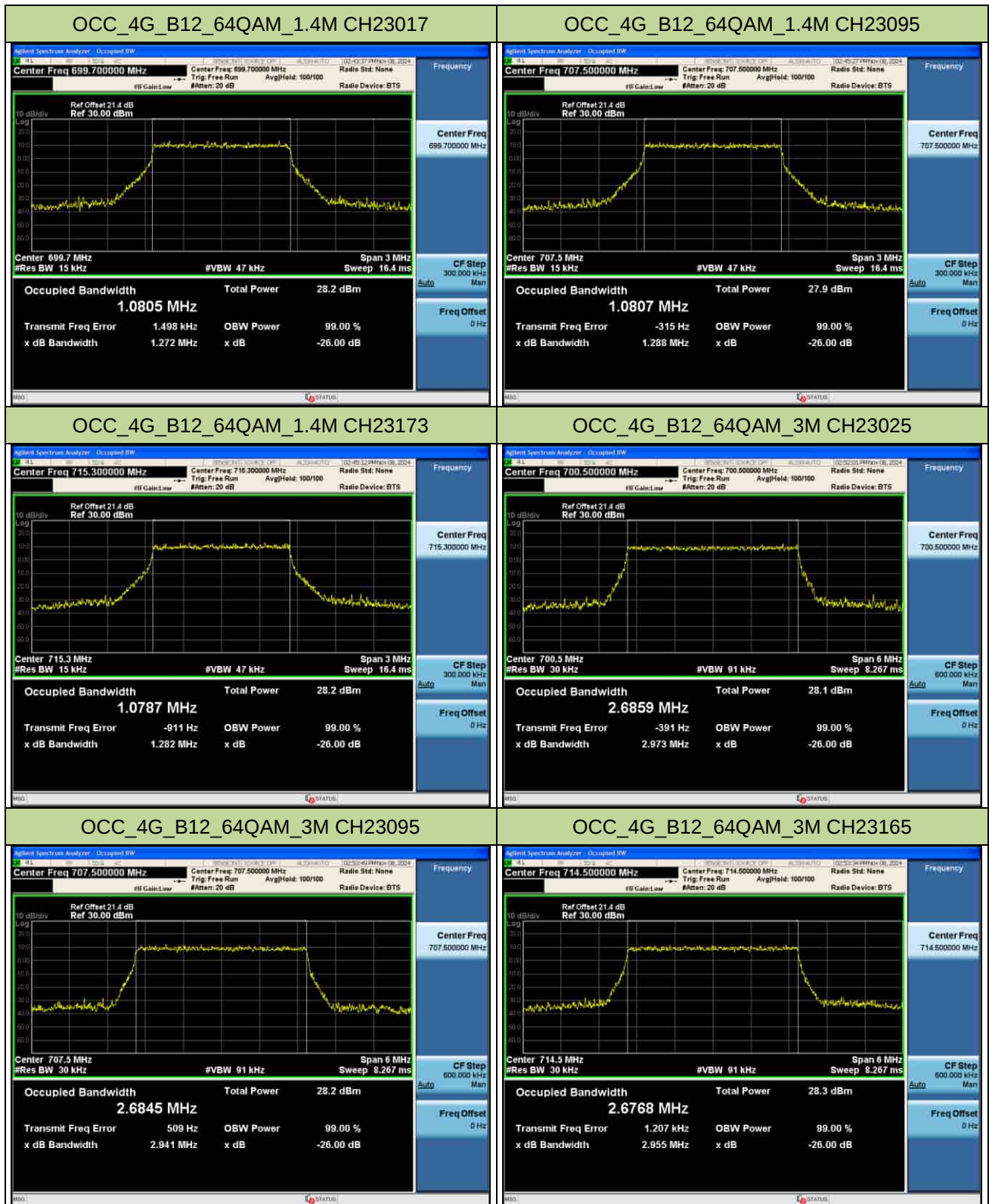
LTE Band 12										
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26 dB bandwidth (MHz)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4M	23017	699.7	1.0793	1.0760	1.0805	1.0821	1.286	1.286	1.272	1.281
1.4M	23095	707.5	1.0799	1.0785	1.0807	1.0777	1.303	1.284	1.288	1.269
1.4M	23173	715.3	1.0784	1.0805	1.0787	1.0798	1.283	1.290	1.282	1.285
3M	23025	700.5	2.6813	2.6819	2.6859	2.6823	2.948	2.979	2.973	2.942
3M	23095	707.5	2.6860	2.6840	2.6845	2.6843	2.920	2.941	2.941	2.940
3M	23165	714.5	2.6886	2.6915	2.6768	2.6848	2.976	2.958	2.955	2.937
5M	23035	701.5	4.4674	4.4727	4.4732	4.4813	4.943	4.981	4.968	5.002
5M	23095	707.5	4.4582	4.4764	4.4632	4.4633	4.900	4.952	4.956	4.976
5M	23155	713.5	4.4674	4.4734	4.4713	4.4813	4.938	4.918	4.932	4.967
10M	23060	704	8.9405	8.9373	8.9545	8.9504	9.775	9.633	9.687	9.748
10M	23095	707.5	8.9430	8.9479	8.9305	8.9328	9.469	9.608	9.680	9.594
10M	23130	711	8.9441	8.9374	8.9550	8.9379	9.672	9.652	9.706	9.706

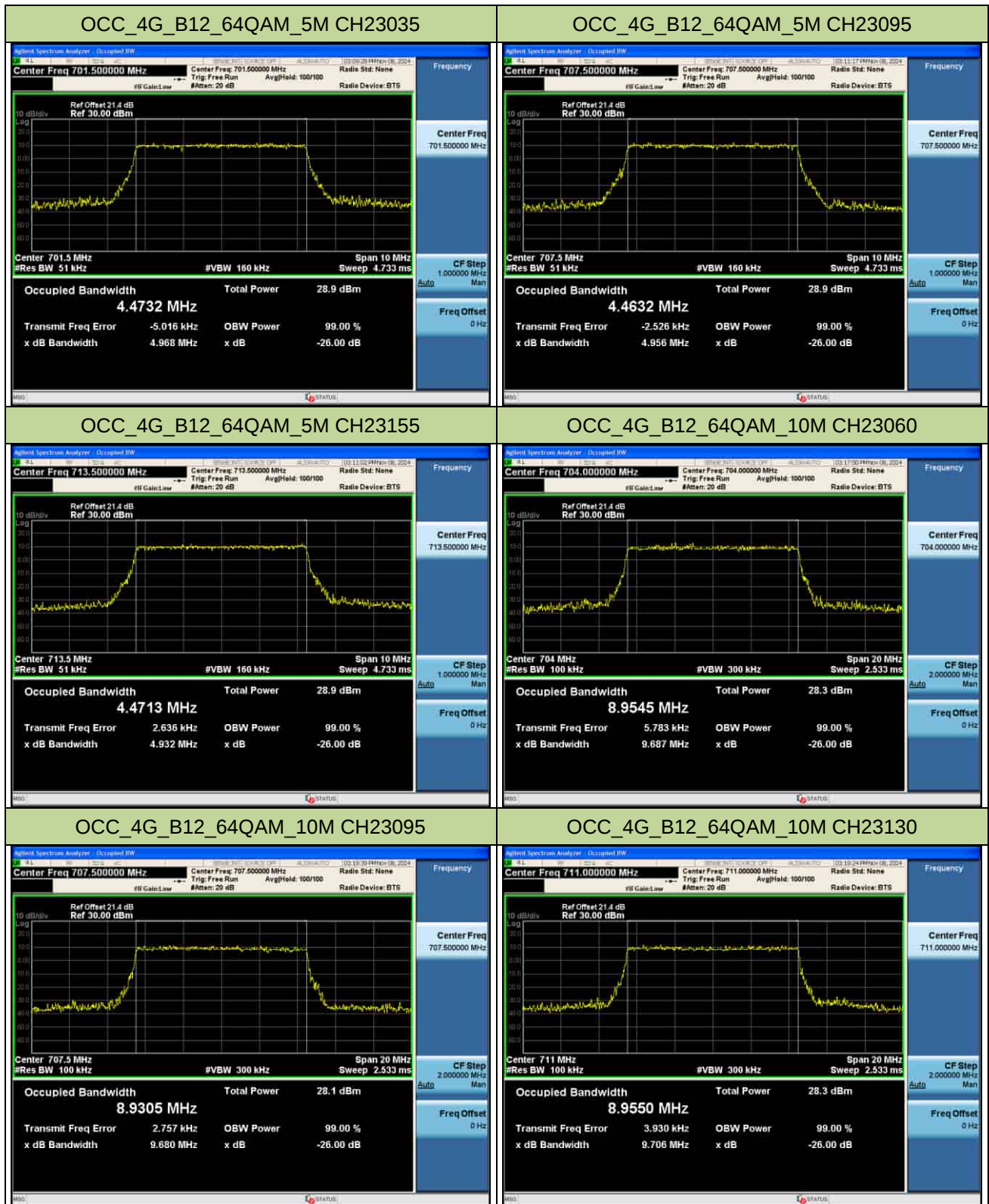


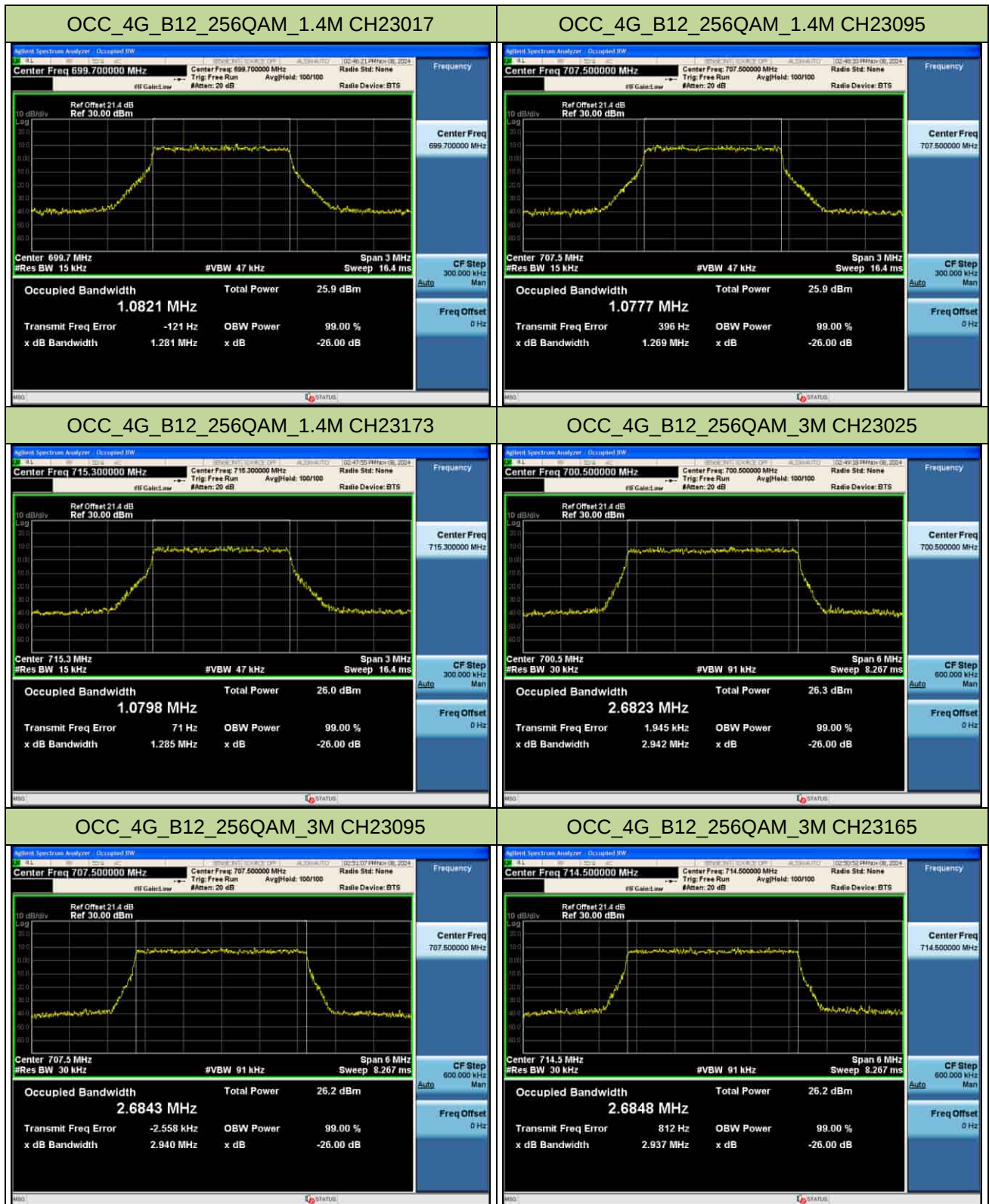


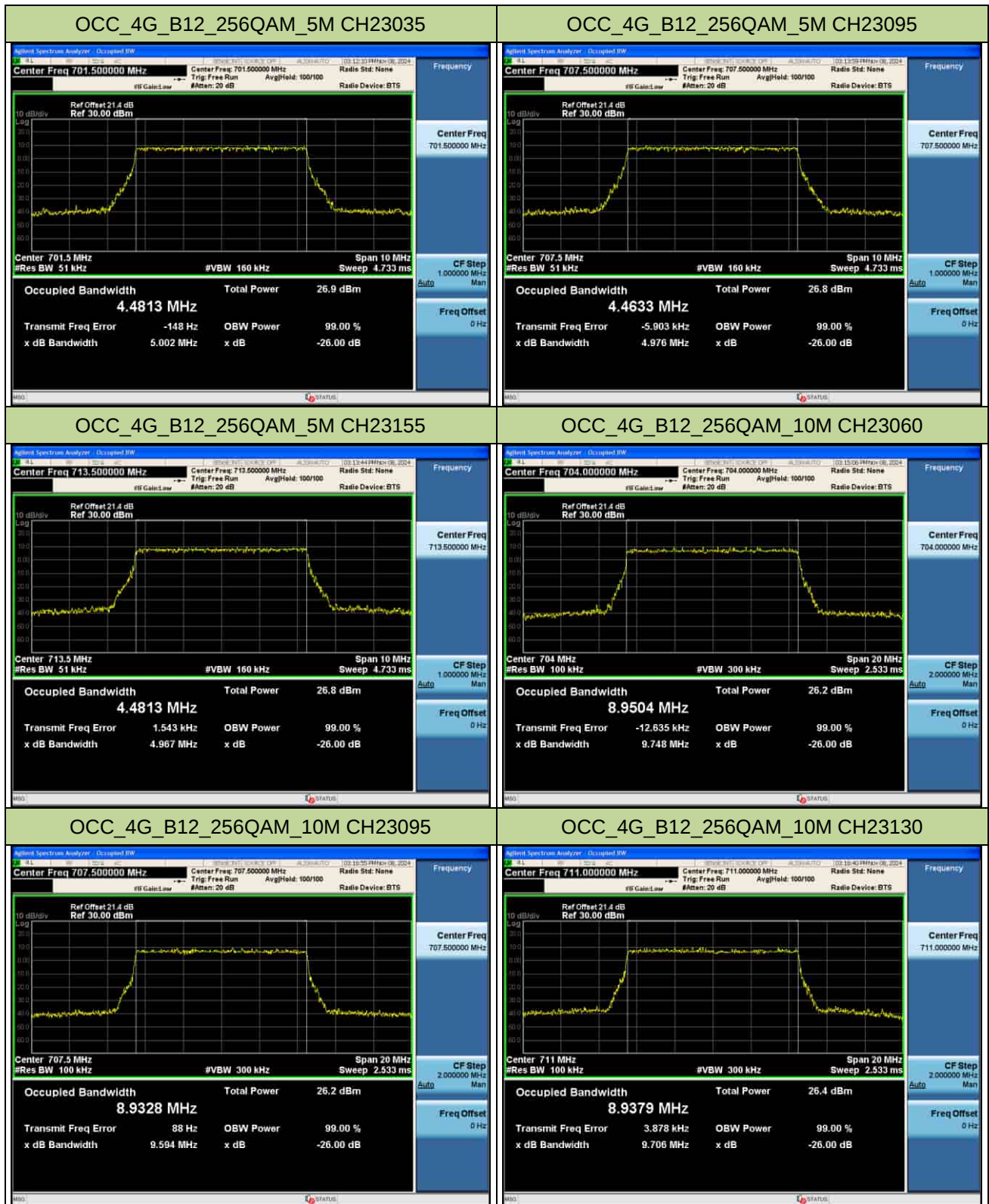






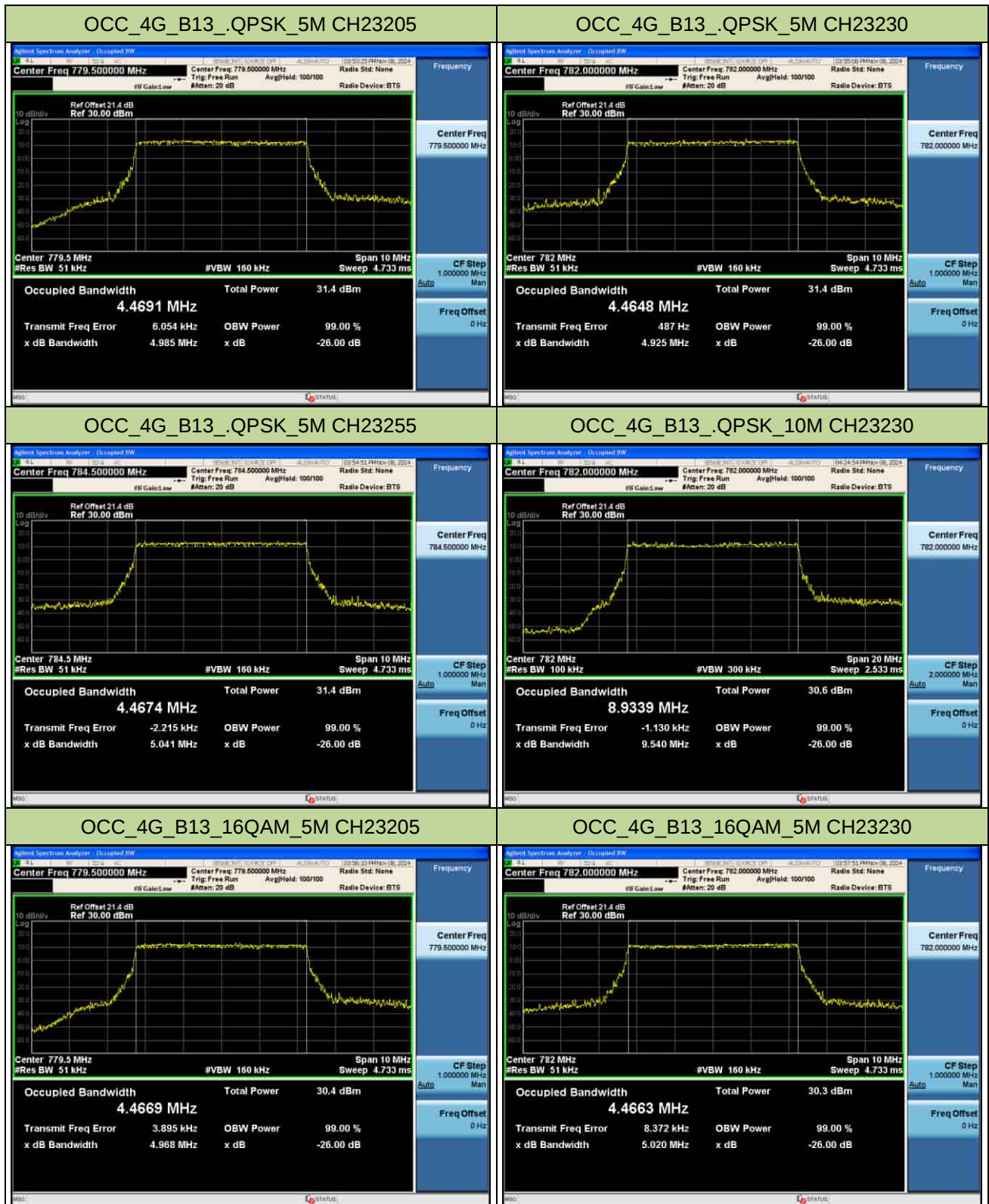


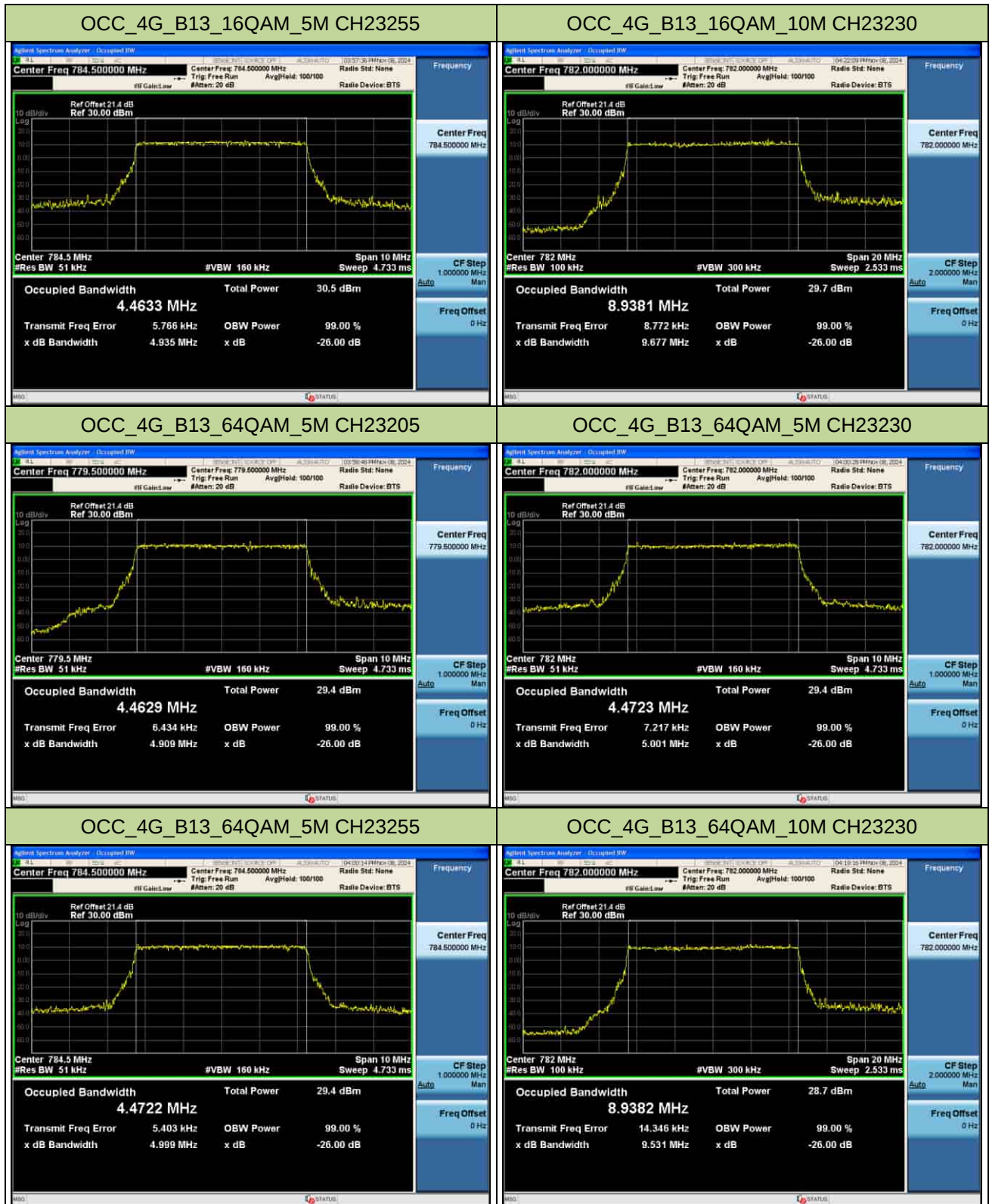


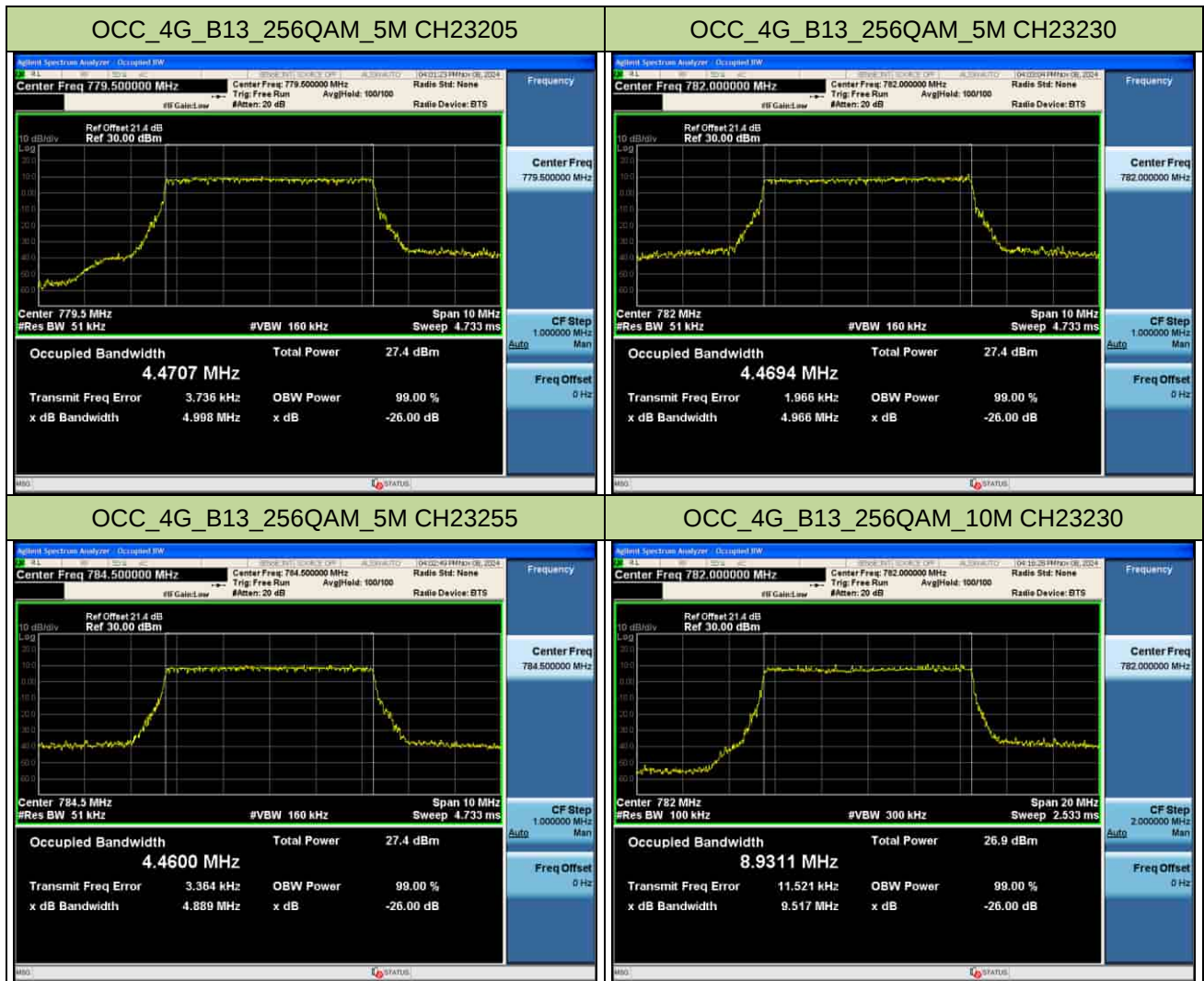


A1.3 LTE Band 13

LTE Band 13										
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26 dB bandwidth (MHz)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5M	23205	779.5	4.4691	4.4669	4.4629	4.4707	4.985	4.968	4.909	4.998
5M	23230	782	4.4648	4.4663	4.4723	4.4694	4.925	5.020	5.001	4.966
5M	23255	784.5	4.4674	4.4633	4.4722	4.4600	5.041	4.935	4.999	4.889
10M	--	--	--	--	--	--	--	--	--	--
10M	23230	782	8.9339	8.9381	8.9382	8.9311	9.540	9.677	9.531	9.517
10M	--	--	--	--	--	--	--	--	--	--

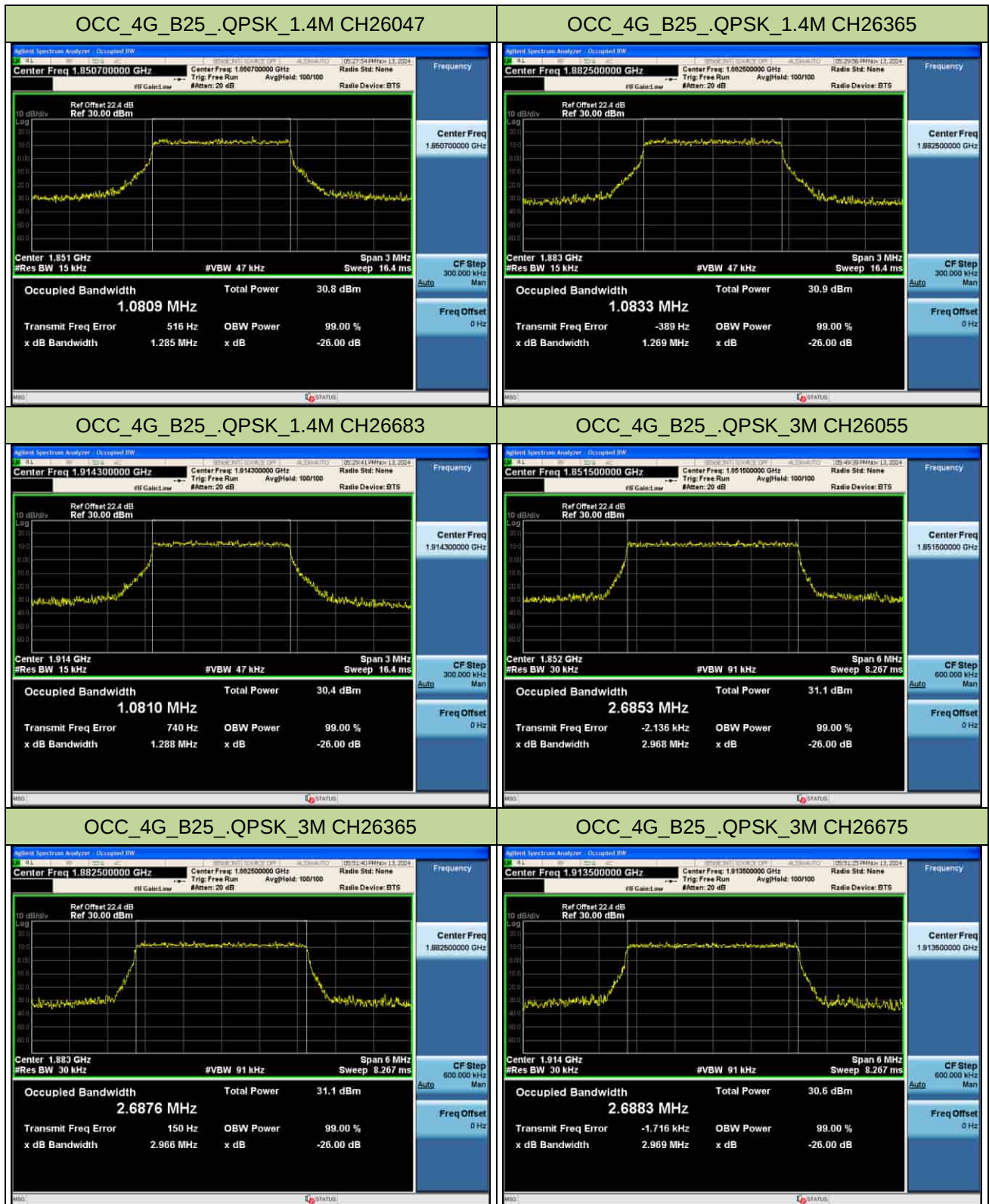


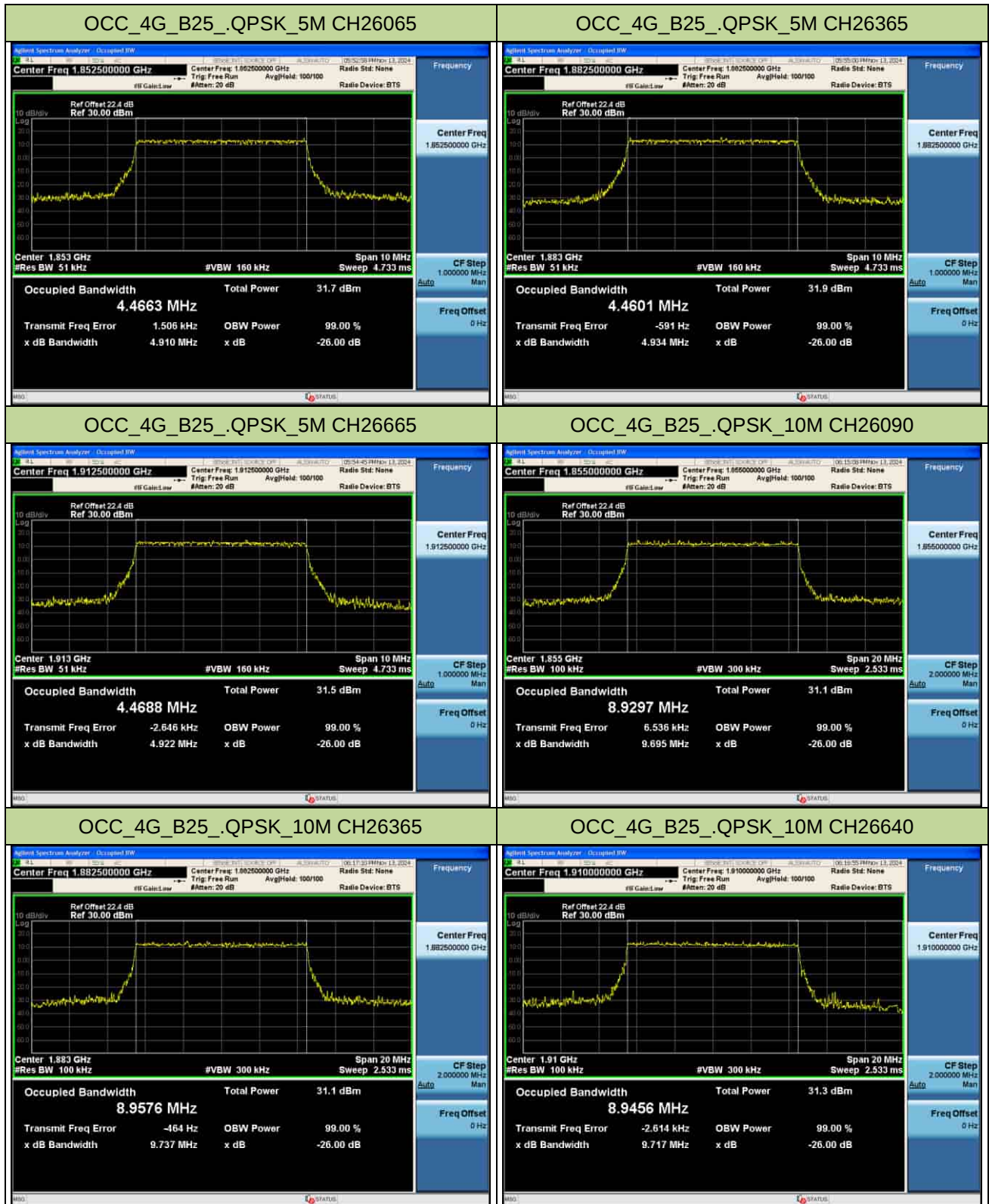


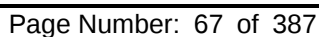


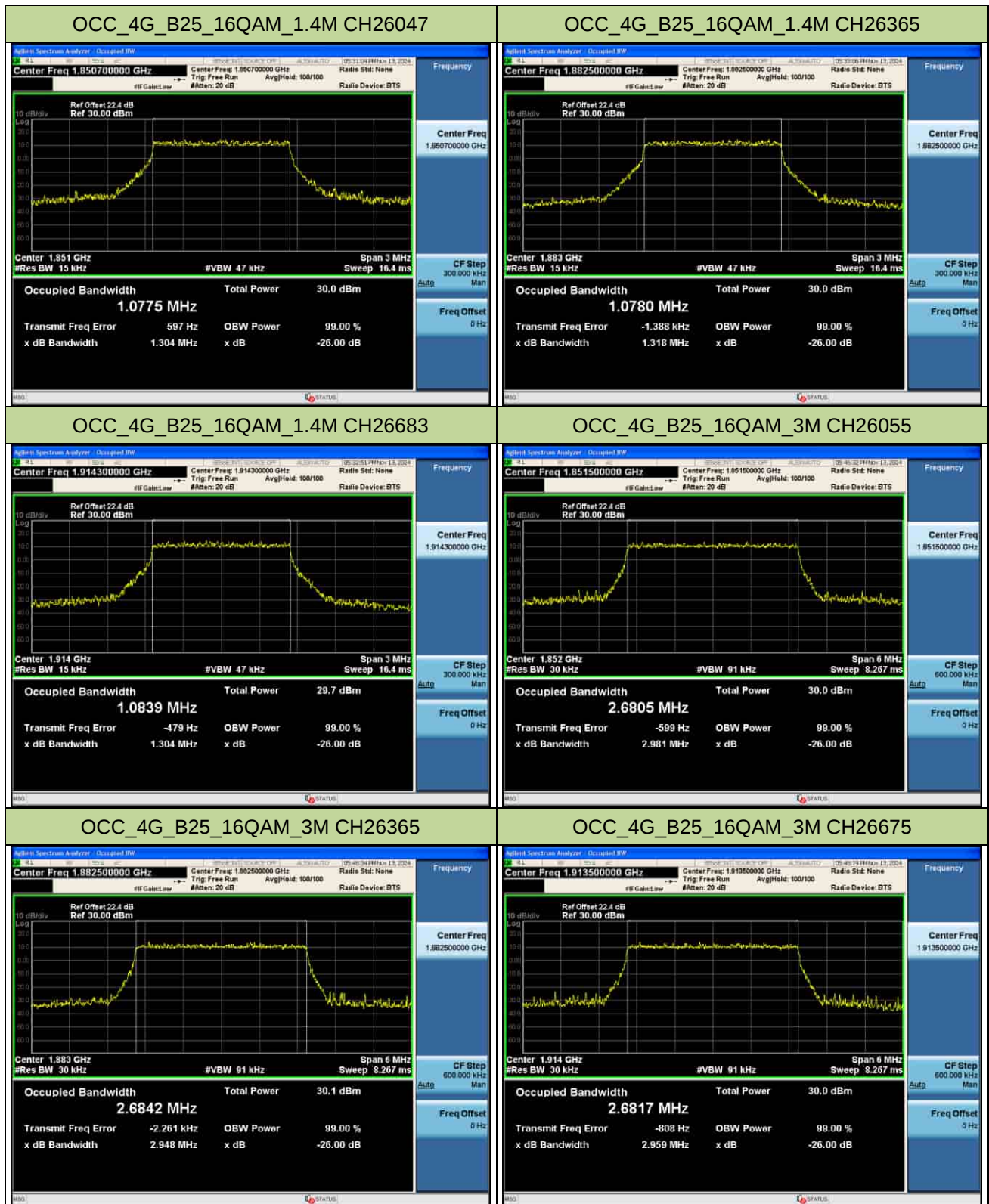
A1.4 LTE Band 25 (Cover Band 2)

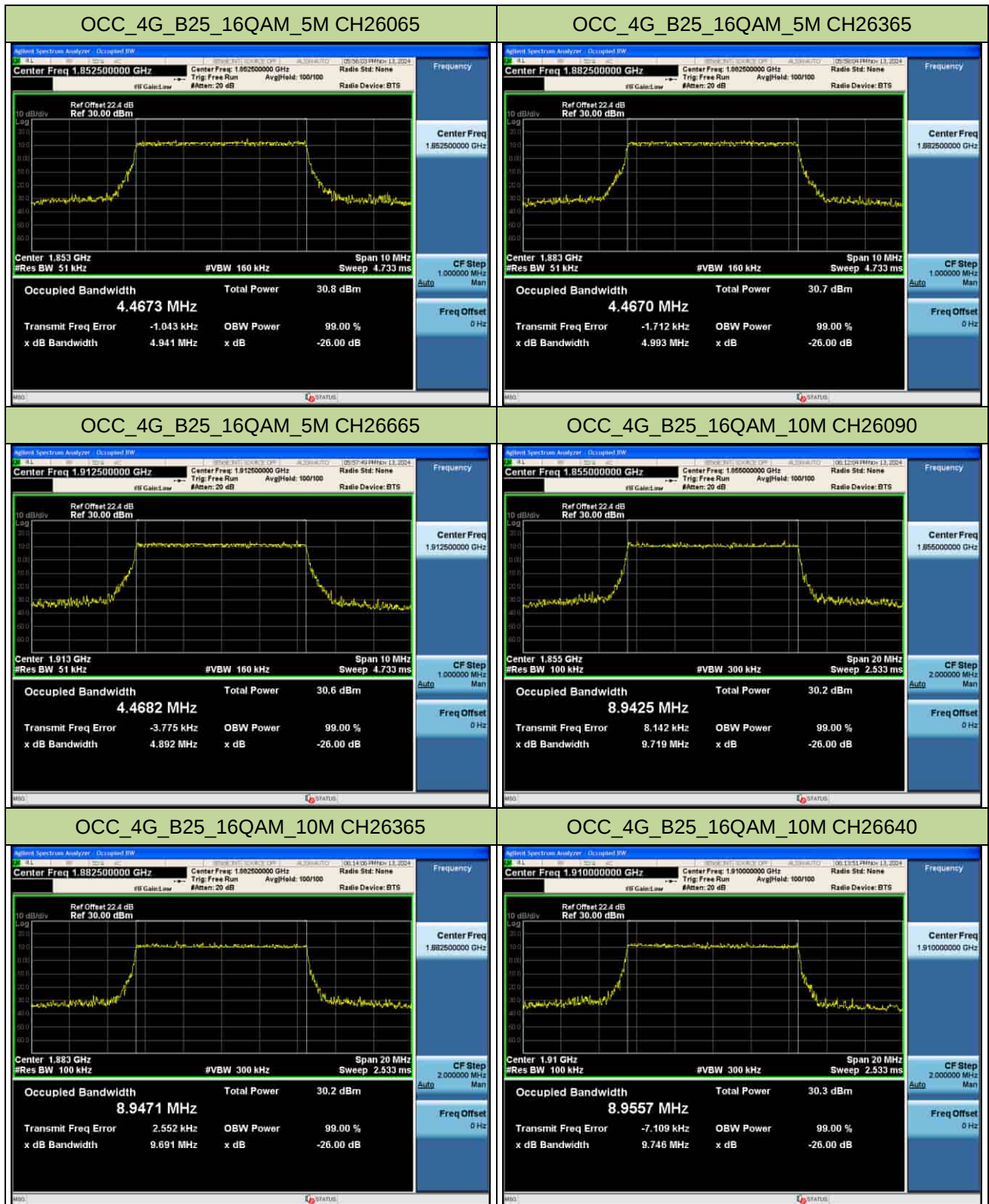
LTE Band 25										
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26 dB bandwidth (MHz)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4M	26047	1850.7	1.0809	1.0775	1.0803	1.0800	1.285	1.304	1.294	1.300
1.4M	26365	1882.5	1.0833	1.0780	1.0777	1.0805	1.269	1.318	1.276	1.289
1.4M	26683	1914.3	1.0810	1.0839	1.0820	1.0820	1.288	1.304	1.288	1.298
3M	26055	1851.5	2.6853	2.6805	2.6860	2.6904	2.968	2.981	2.985	2.958
3M	26365	1882.5	2.6876	2.6842	2.6879	2.6795	2.966	2.948	2.979	2.951
3M	26675	1913.5	2.6883	2.6817	2.6876	2.6842	2.969	2.959	2.930	2.958
5M	26065	1852.5	4.4663	4.4673	4.4711	4.4797	4.910	4.941	5.082	4.906
5M	26365	1882.5	4.4601	4.4670	4.4668	4.4562	4.934	4.993	4.967	5.054
5M	26665	1912.5	4.4688	4.4682	4.4590	4.4615	4.922	4.892	5.009	5.001
10M	26090	1855	8.9297	8.9425	8.9171	8.9432	9.695	9.719	9.868	9.684
10M	26365	1882.5	8.9576	8.9471	8.9497	8.9465	9.737	9.691	9.621	9.819
10M	26640	1910	8.9456	8.9557	8.9522	8.9414	9.717	9.746	9.809	9.682
15M	26115	1857.5	13.431	13.423	13.418	13.458	14.47	14.41	14.41	14.40
15M	26365	1882.5	13.423	13.424	13.398	13.436	14.43	14.46	14.45	14.46
15M	26615	1905	13.402	13.419	13.406	13.419	14.24	14.38	14.43	14.32
20M	26140	1860	17.846	17.931	17.924	17.892	18.96	19.21	19.30	19.19
20M	26365	1882.5	17.877	17.865	17.878	17.867	19.01	19.16	19.18	18.79
20M	26590	1905	17.828	17.903	17.864	17.836	19.21	19.29	18.98	19.10

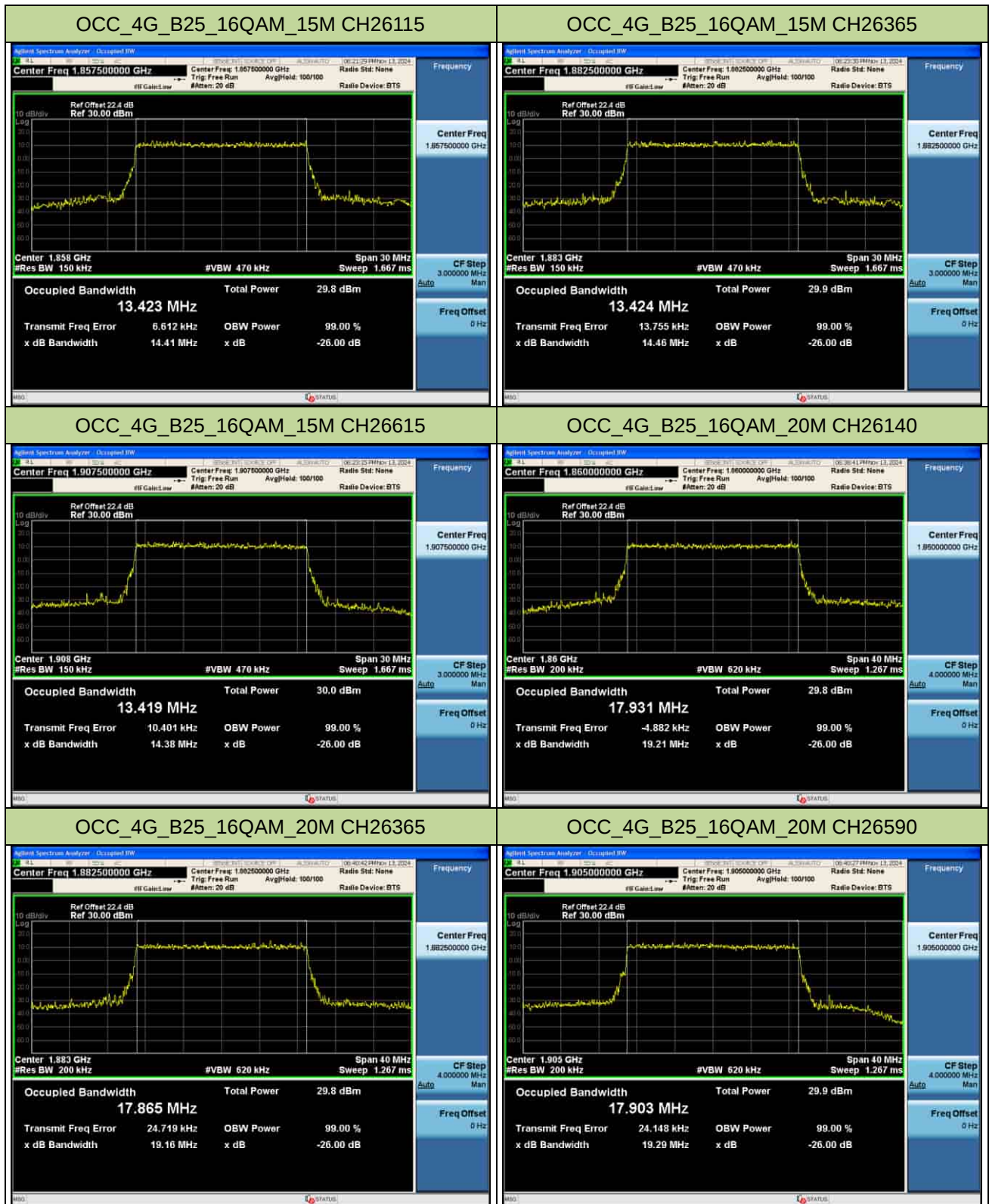


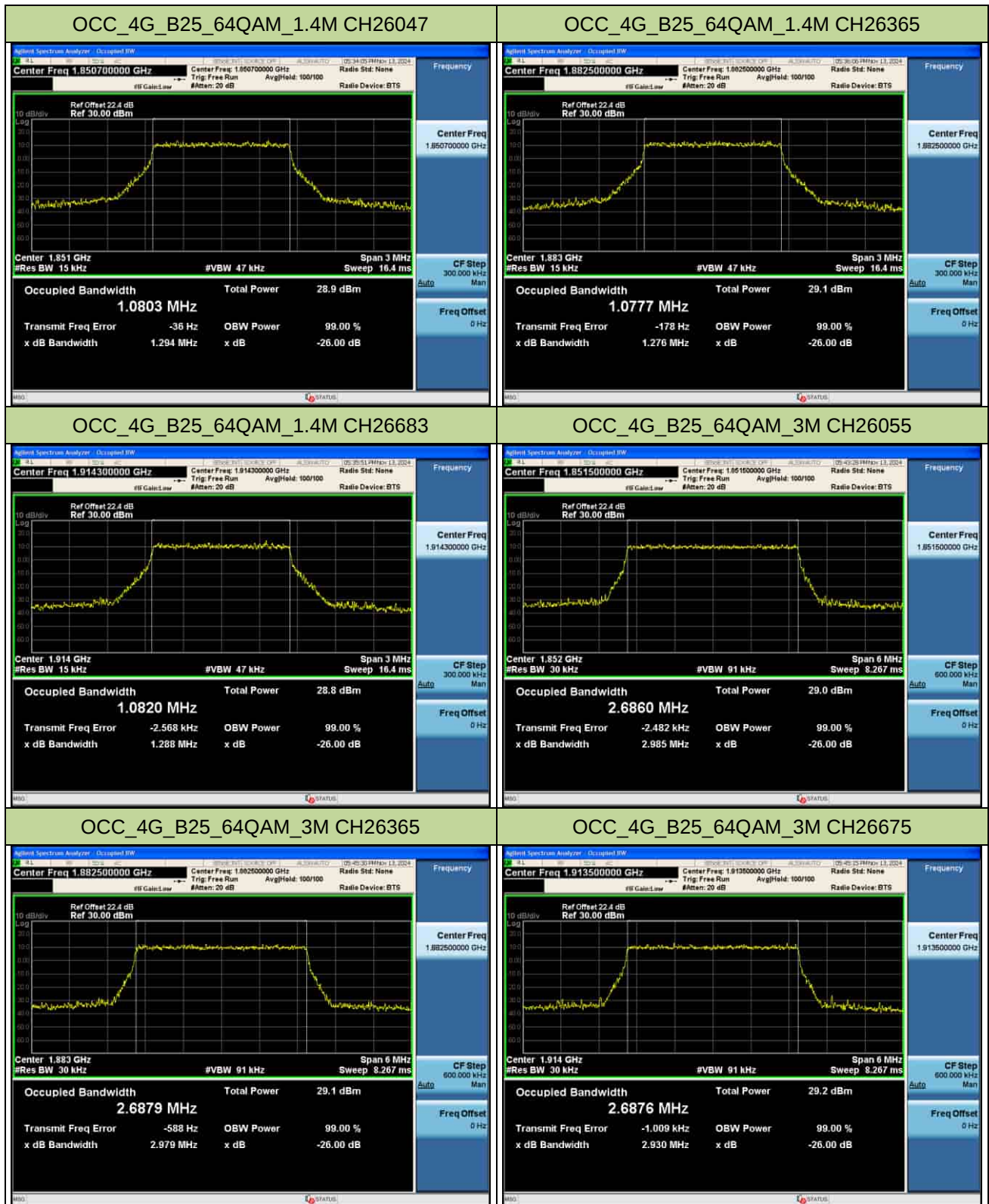


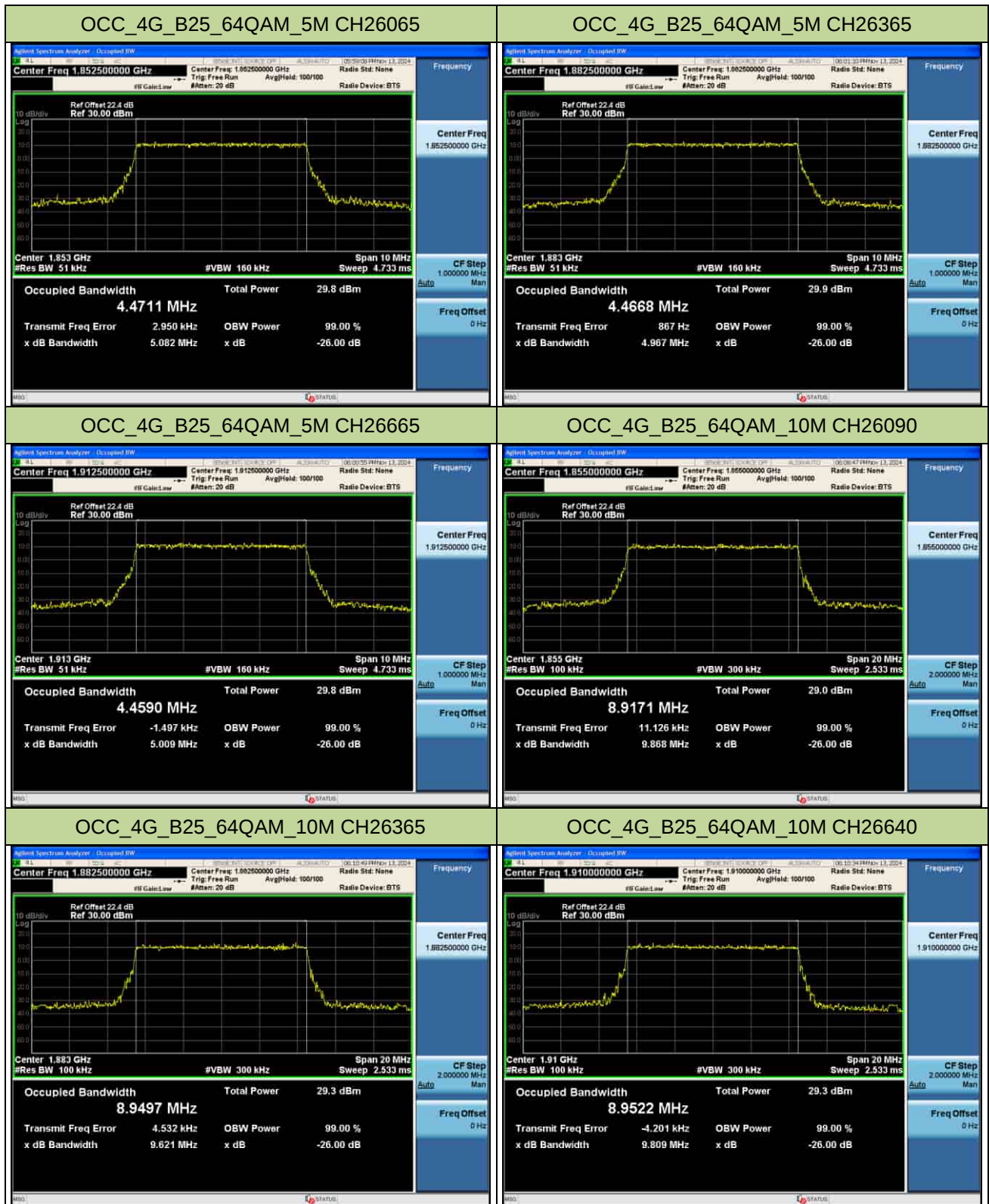


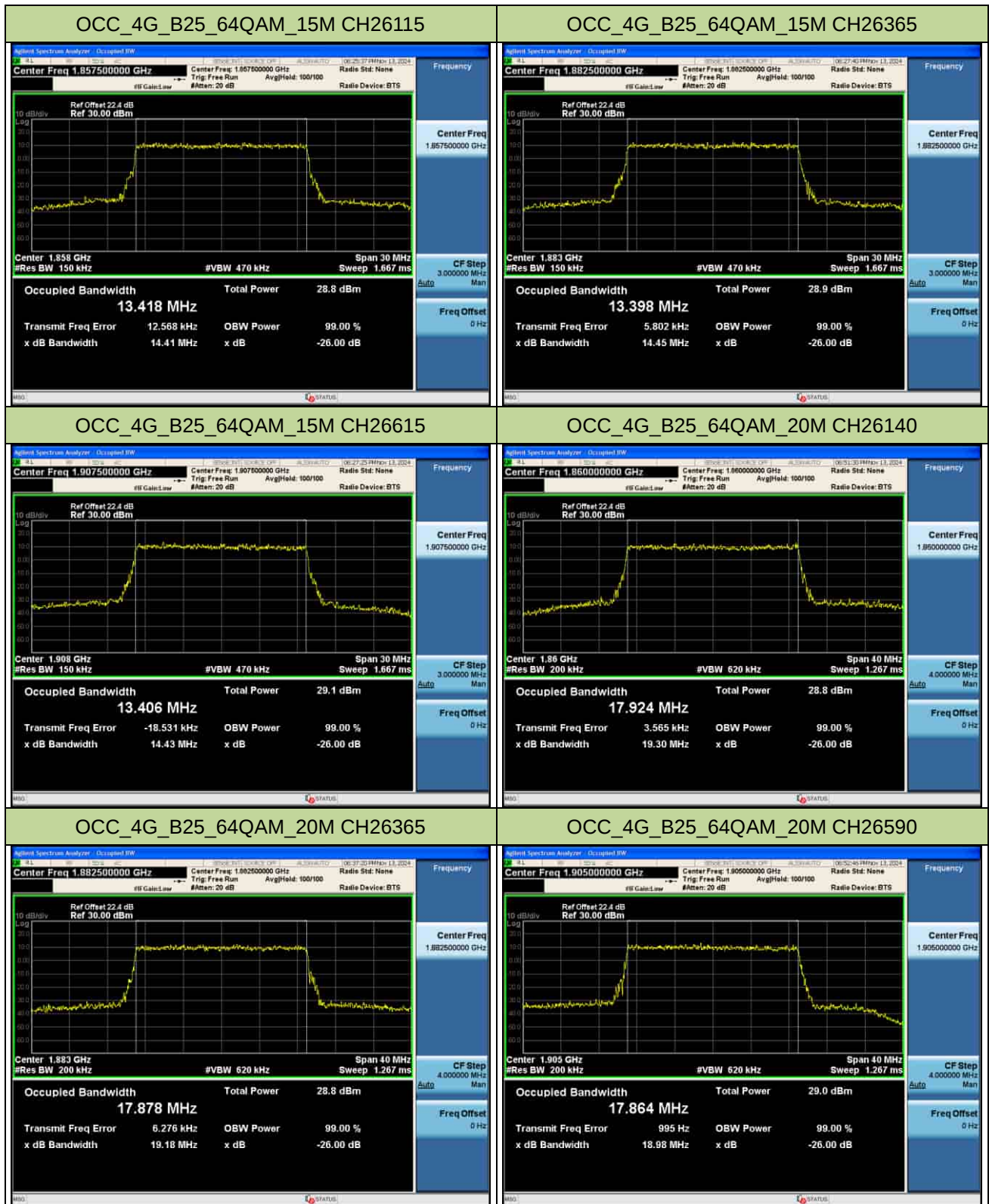


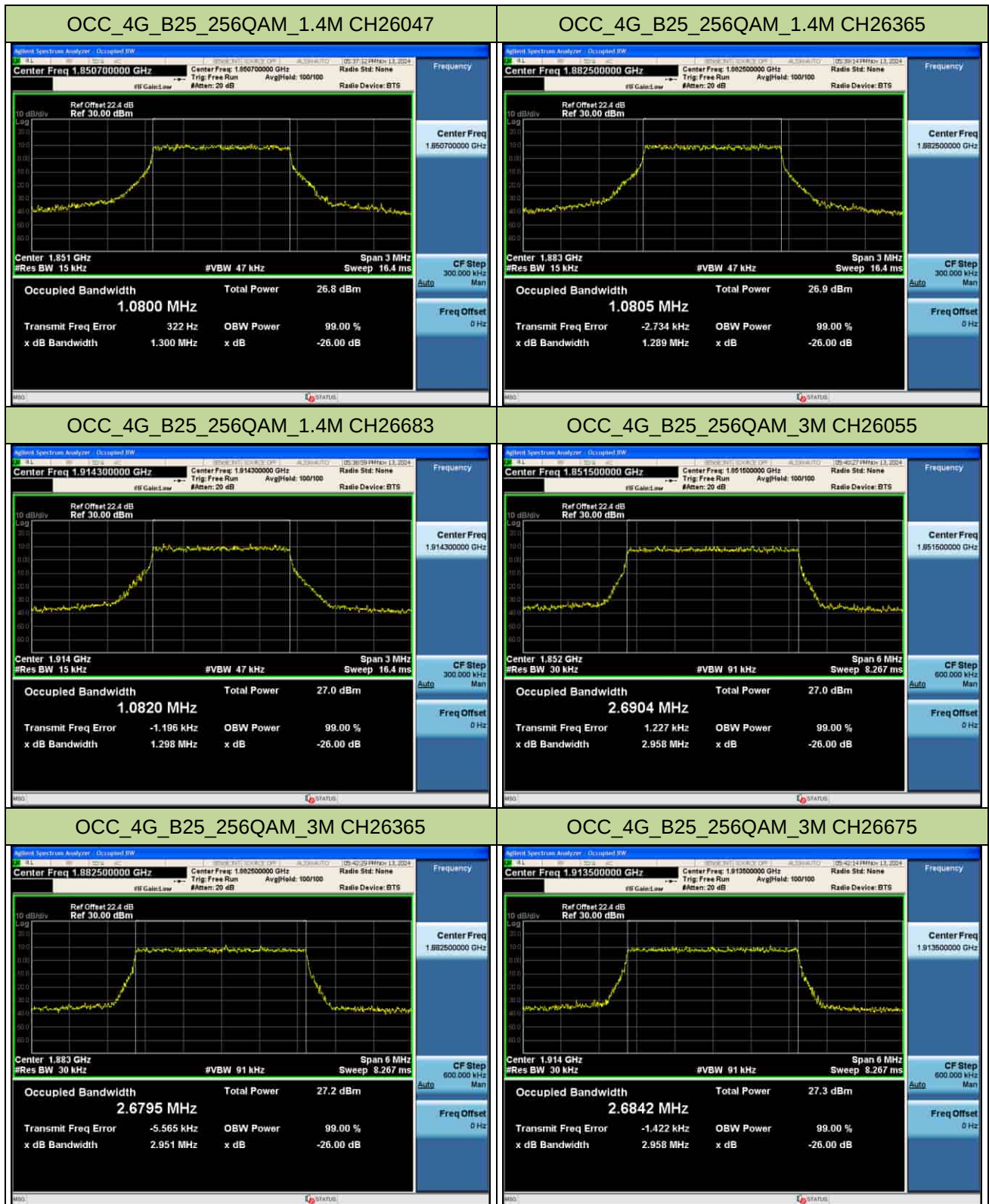


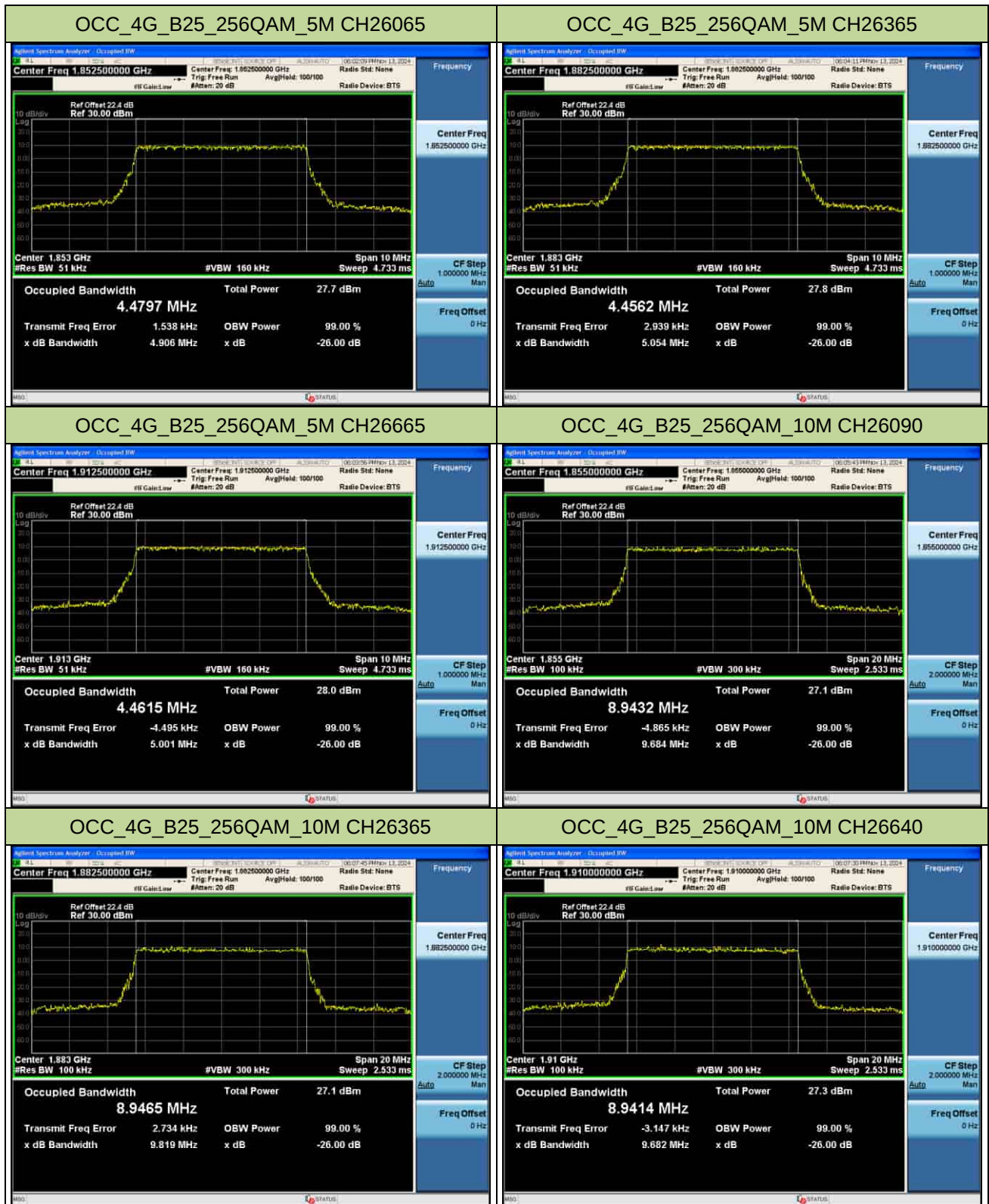


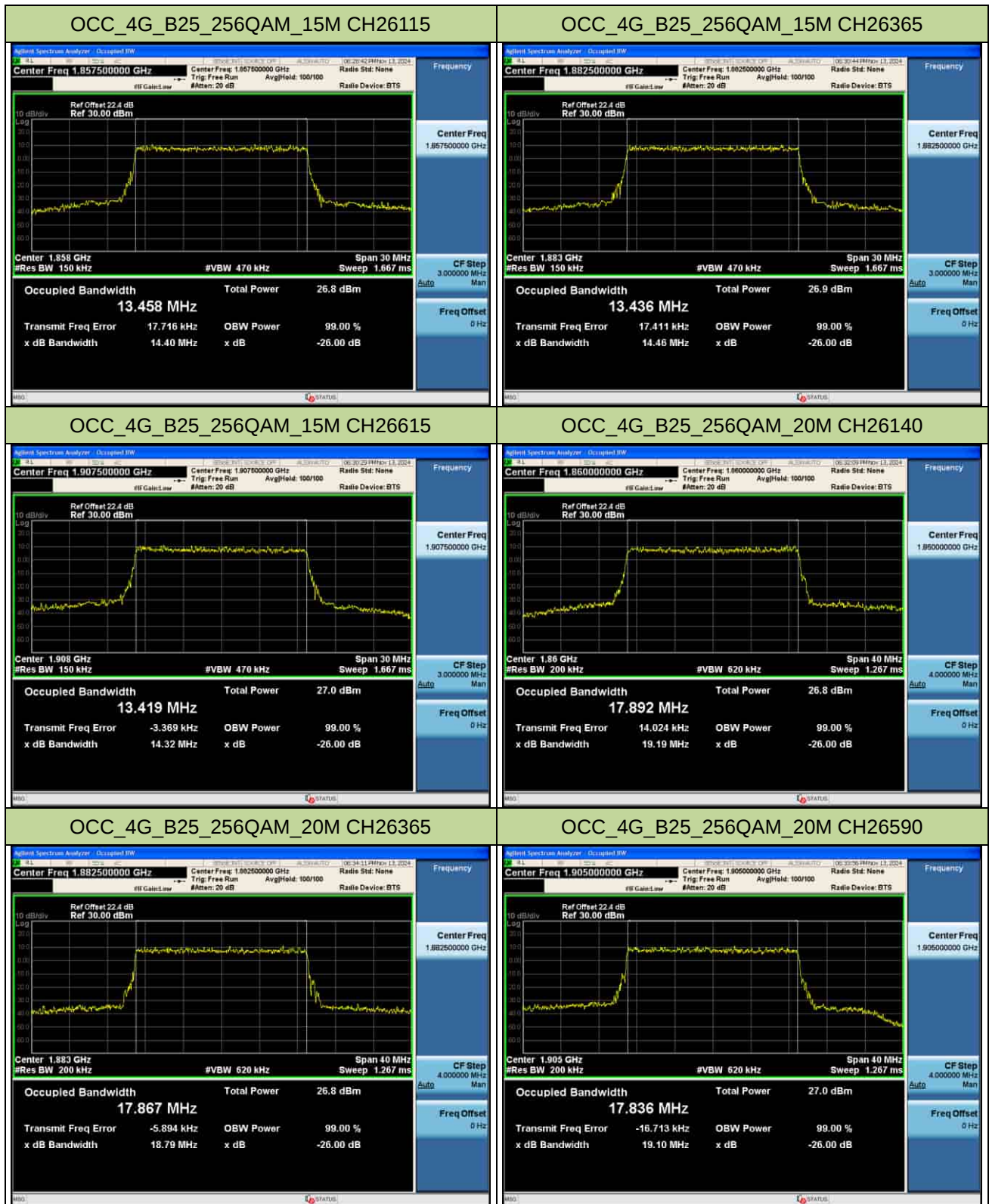








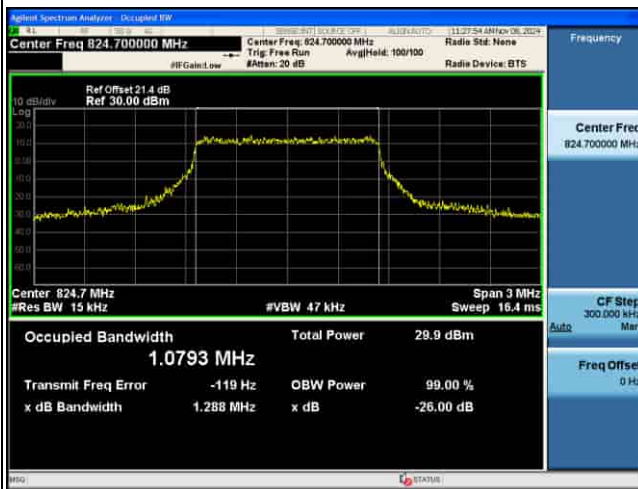




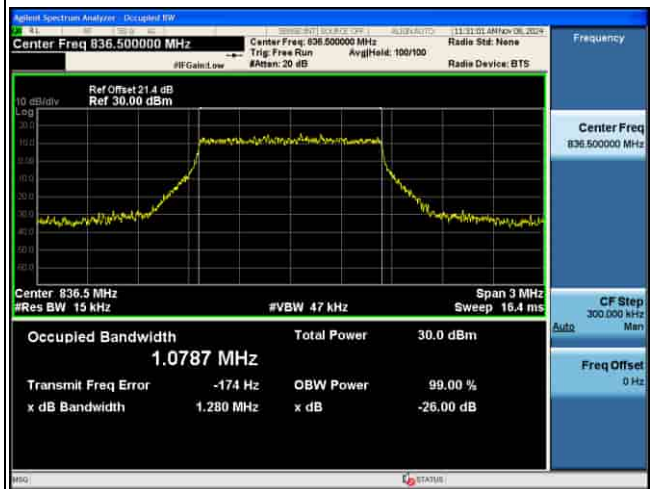
A1.5 LTE Band 26 (Cover Band 5)

LTE Band 26										
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				26 dB bandwidth (MHz)			
			QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1.4M	26797	824.7	1.0793	1.0819	1.0817	1.0808	1.288	1.267	1.301	1.229
1.4M	26915	836.5	1.0787	1.0806	1.0798	1.0804	1.280	1.284	1.271	1.258
1.4M	27033	848.3	1.0809	1.0811	1.0781	1.0765	1.270	1.292	1.284	1.283
3M	26805	825.5	2.6855	2.6886	2.6888	2.6804	2.999	2.993	2.925	2.971
3M	26915	836.5	2.6818	2.6801	2.6817	2.6863	2.961	2.964	2.983	2.980
3M	27025	847.5	2.6820	2.6848	2.6796	2.6805	2.988	2.938	2.962	2.970
5M	26815	826.5	4.4630	4.4646	4.4527	4.4571	4.977	4.967	5.012	4.971
5M	26915	836.5	4.4593	4.4735	4.4593	4.4673	4.992	4.901	4.950	4.929
5M	27015	846.5	4.4715	4.4697	4.4746	4.4620	4.945	4.991	4.941	4.958
10M	26840	829	8.9451	8.9378	8.9442	8.9397	9.624	9.699	9.636	9.750
10M	26915	836.5	8.9485	8.9467	8.9493	8.9370	9.649	9.697	9.665	9.647
10M	27015	844	8.9310	8.9232	8.9306	8.9261	9.590	9.671	9.705	9.733
15M	26865	831.5	13.413	13.414	13.421	13.424	14.26	14.42	14.36	14.36
15M	26915	836.5	13.445	13.459	13.427	13.425	14.43	14.54	14.57	14.46
15M	26965	841.5	13.399	13.398	13.417	13.402	14.43	14.37	14.39	14.24

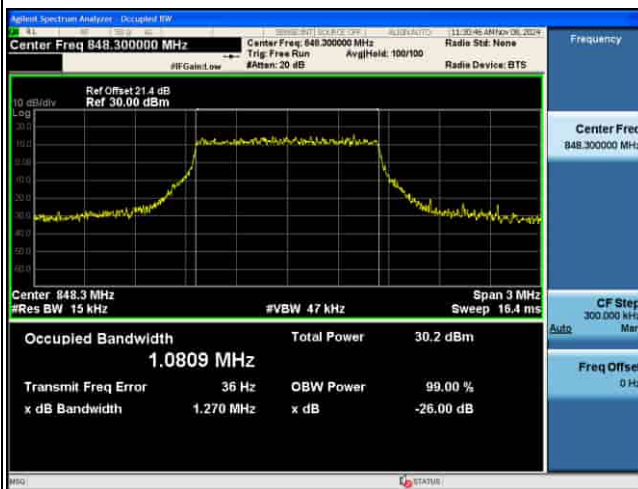
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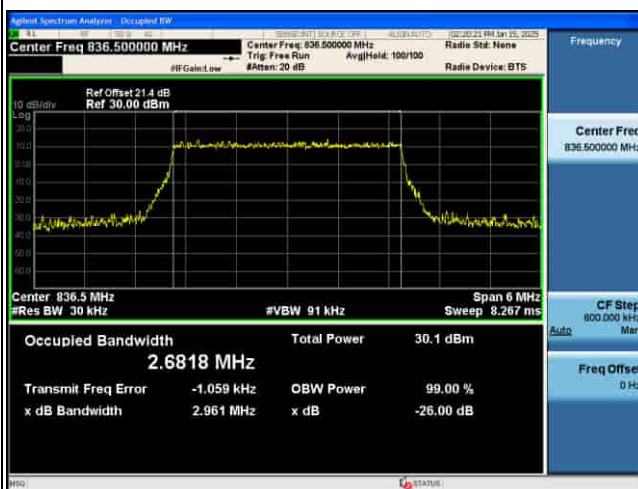
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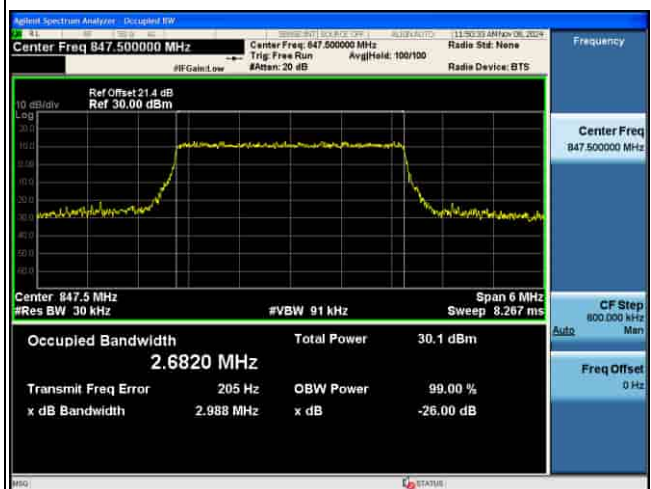
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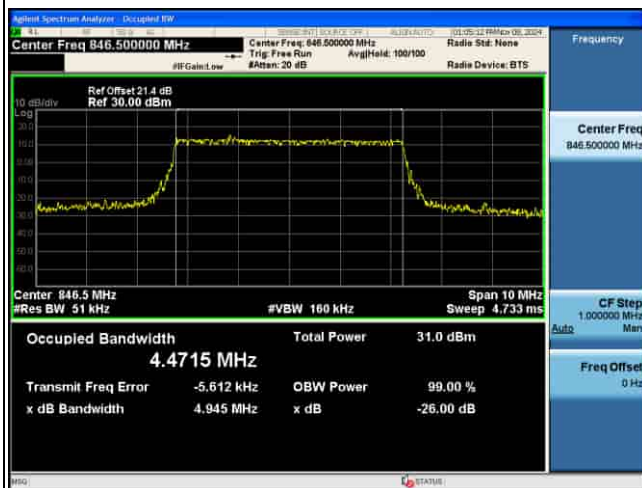
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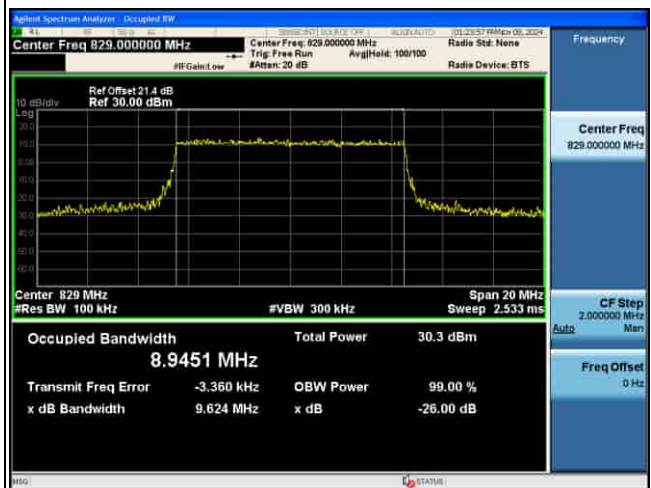
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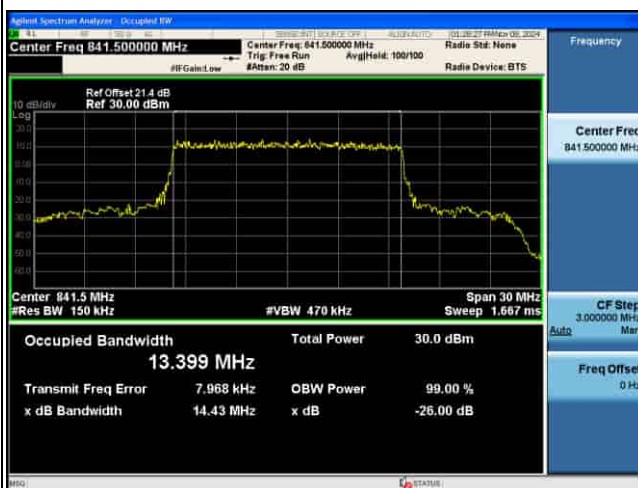
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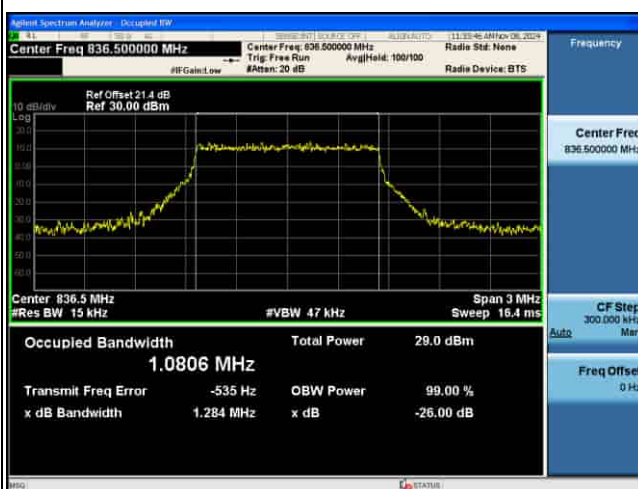
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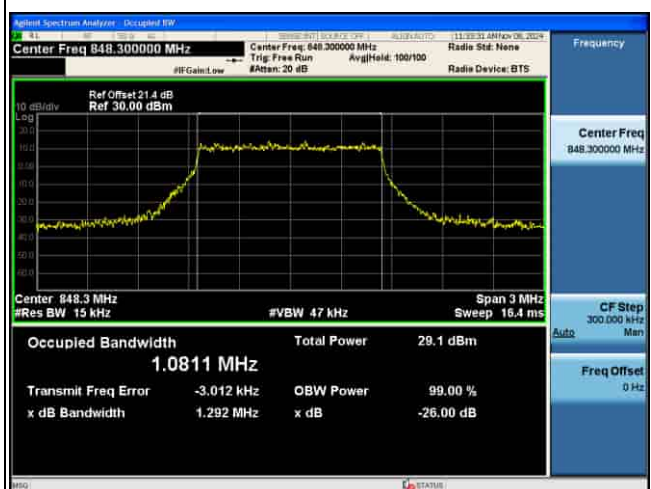
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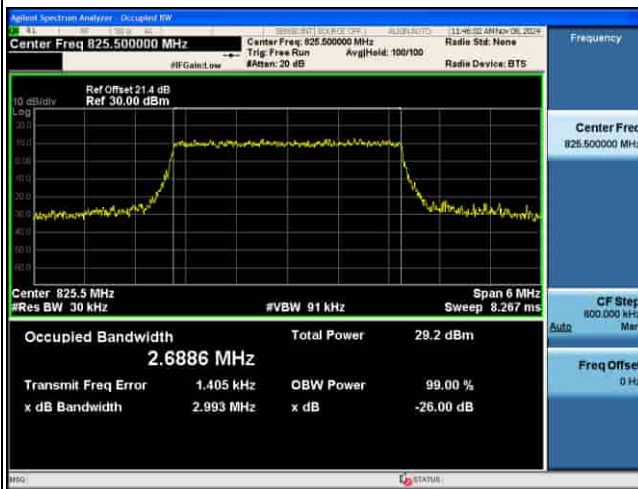
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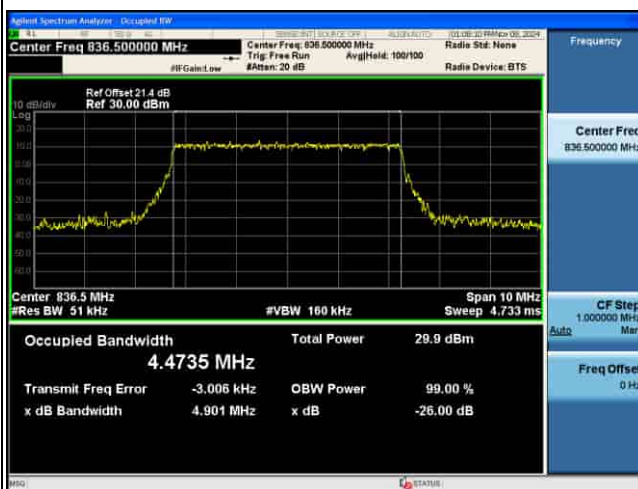
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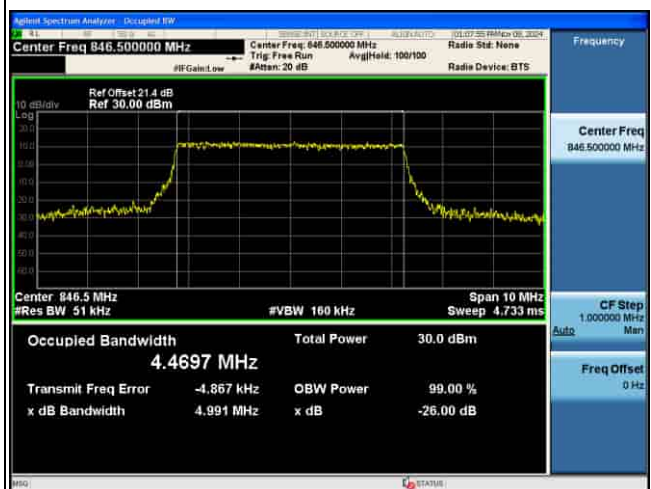
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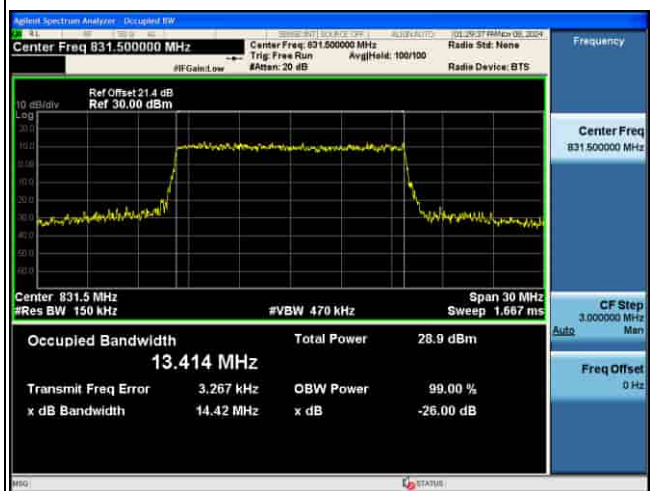
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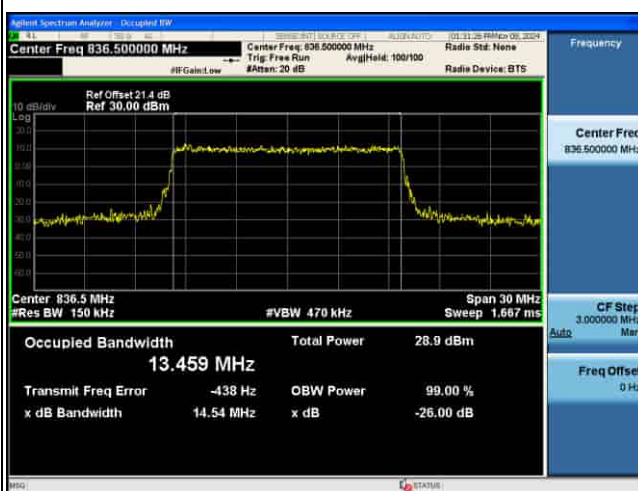
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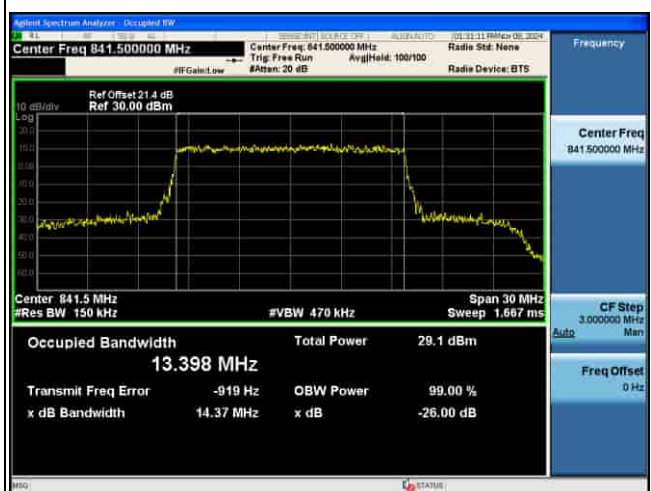
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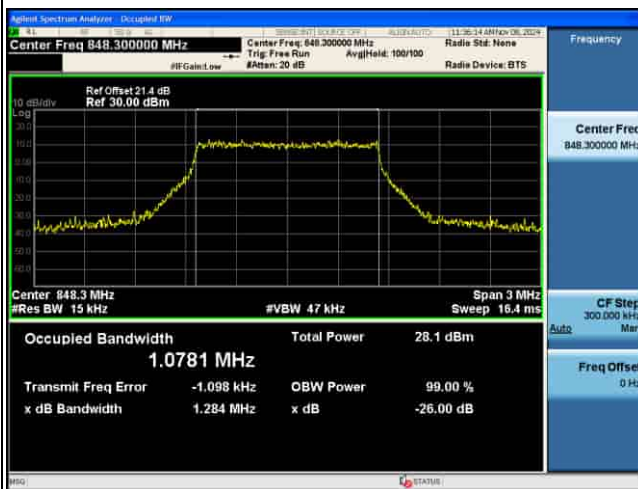
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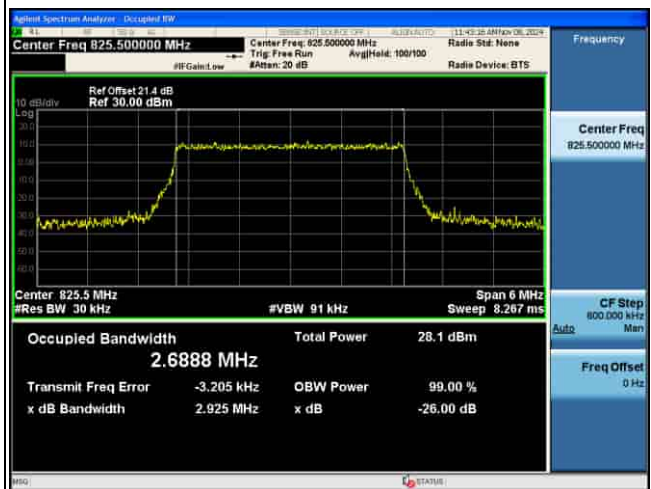
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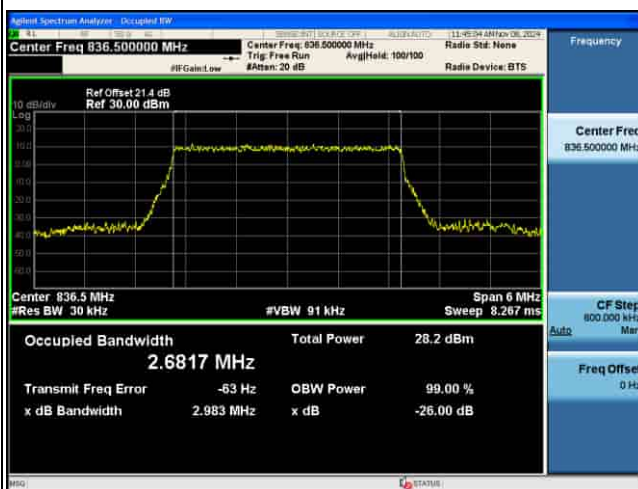
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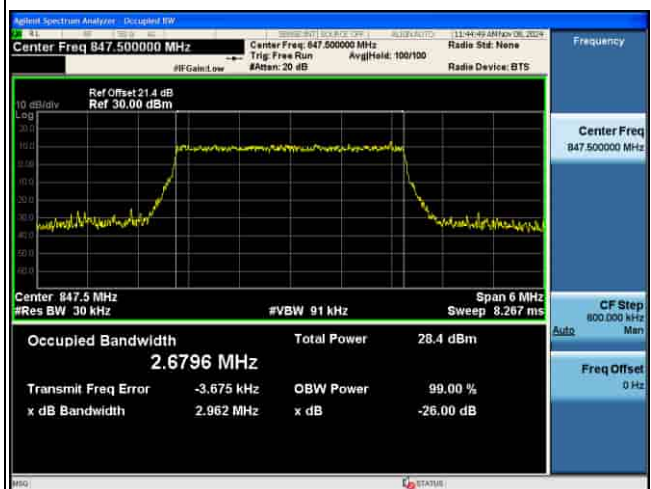
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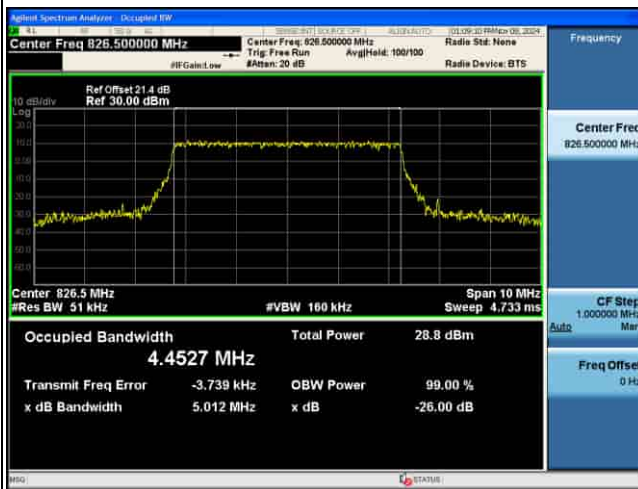
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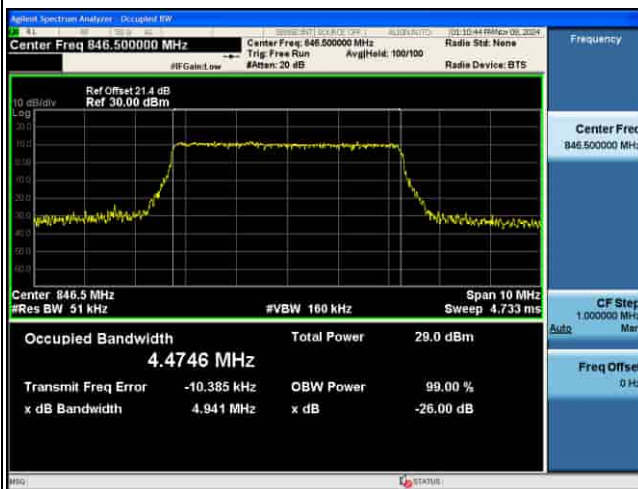
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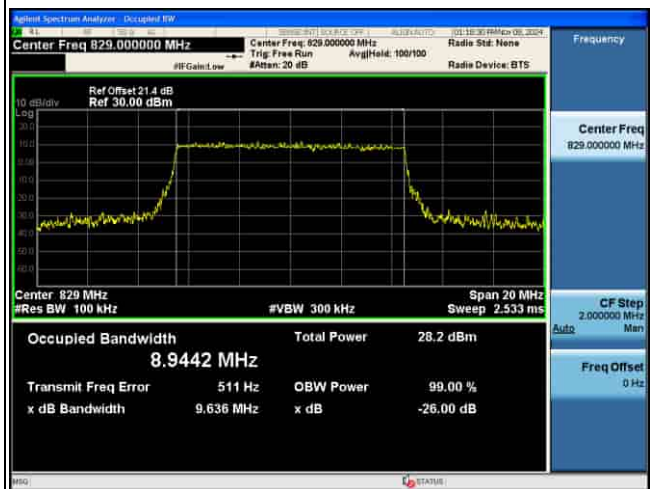
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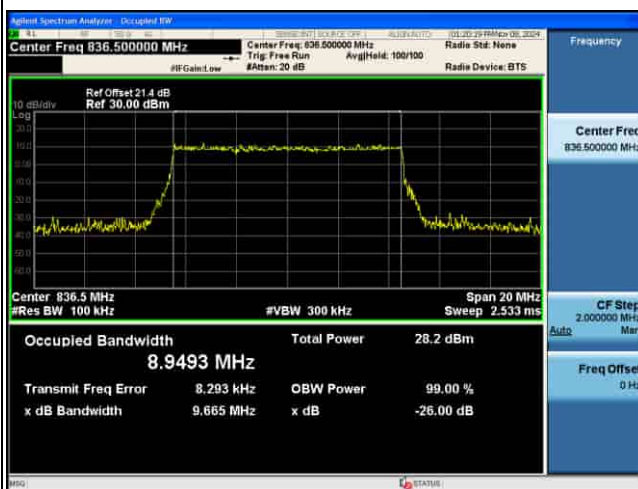
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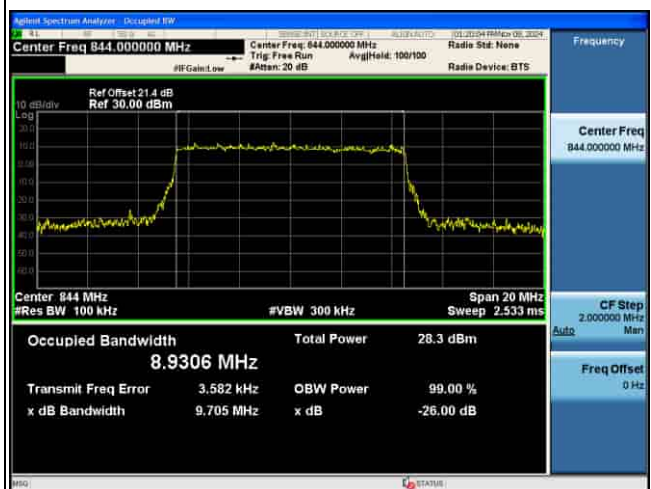
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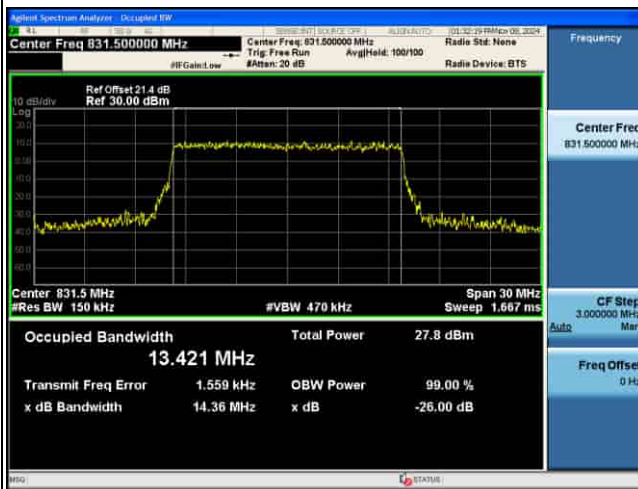
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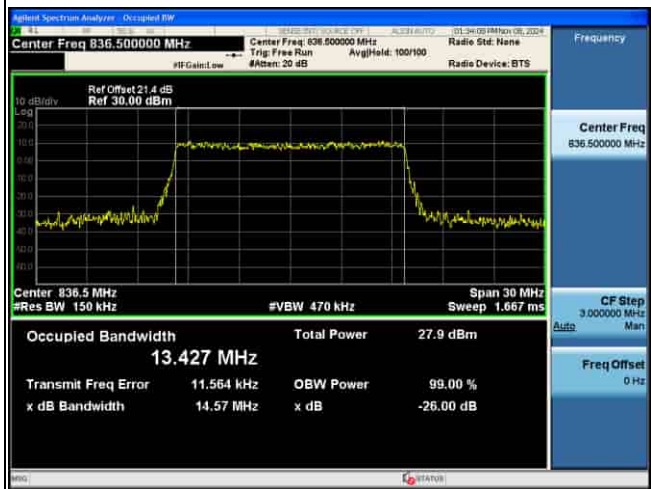
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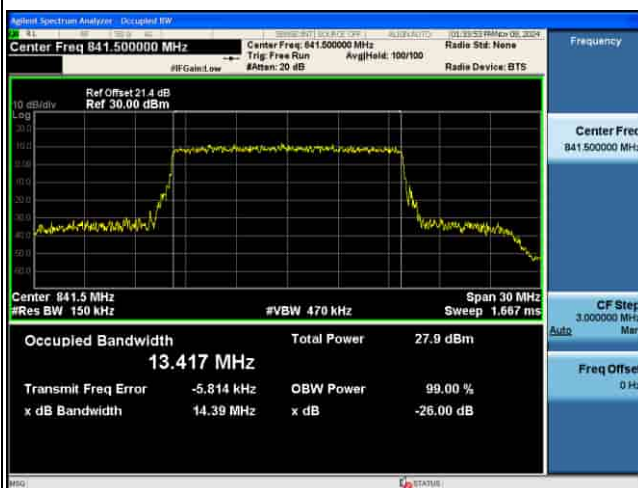
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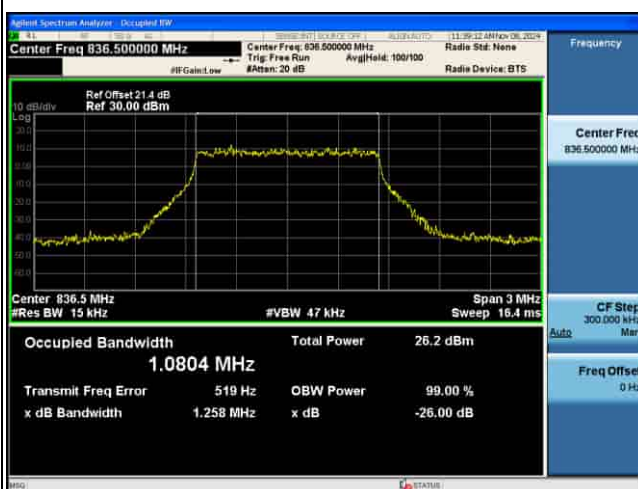
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