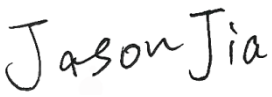
FCC RF Test Report

APPLICANT	:	Xiaomi Communications Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	Redmi
MODEL NAME	:	22041219G
FCC ID	:	2AFZZ1219G
STANDARD	:	47 CFR Part 2, 27O
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	:	Feb. 15, 2022 ~ Mar. 01, 2022

We, Sporton International Inc. (KunShan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (KunShan), the test report shall not be reproduced except in full.



Reviewed by: Jason Jia / Supervisor

Approved by: Alex Wang / Manager

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG211901D	Rev. 01	Initial issue of report	Mar. 17, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
3.5	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(l)(2)	Conducted Spurious Emission (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(l)(2)	Radiated Spurious Emission (5G NR n77, n78)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 34.05 dB at 11376.000 MHz

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Redmi
Model Name	22041219G
FCC ID	2AFZZ1219G
IMEI Code	Conducted : 868424060022301/868424060022319 Radiation : 868424060038661/868424060038679
HW Version	P2
SW Version	MIUI 13
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Rx Frequency	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
SCS	15kHz, 30kHz
Bandwidth	n77, n78(15kHz): 10MHz / 15MHz / 20MHz / 40MHz / 50MHz n77, n78(30kHz): 20MHz / 40MHz / 50MHz / 60MHz / 80MHz / 90MHz / 100MHz
Antenna Gain	**Ant. 2:** 5G NR n77: -2.06 dBi 5G NR n78: -2.43 dBi **Ant. 3:** 5G NR n77: -0.98 dBi 5G NR n78: -1.47 dBi **Ant. 5:** 5G NR n77: -1.49 dBi 5G NR n78: -3.35 dBi **Ant. 6:** 5G NR n77: -0.60 dBi 5G NR n78: -0.63 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM

	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP is shown in the report, 5G NR n77/n78 for Antenna 3.
2. 5G NR Band supports SA and NSA mode. According to the maximum power between SA and NSA mode, SA covers NSA mode for 5G NR n77.
3. 5G NR band n77/n78 support SCS 15kHz and SCS 30kHz. According to the maximum power, SCS 15kHz covers SCS 30kHz for BW 10/15/20/40/50MHz.
4. The device supports HPUE mode for 5G NR SA n77/n78.
5. The EN-DC mode combination could be referred to the product spec.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum EIRP Power and Emission Designator

5G NR n77 (15kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
50	3725.01 ~ 3954.99	0.4236	48M5G7D	0.2917	48M2W7D

5G NR n77 (30kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
100	3750.00 ~ 3930.00	0.4150	96M7G7D	0.2618	96M5W7D

5G NR n78(15kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
50	3725.01 ~ 3774.99	0.3516	48M5G7D	0.2377	48M2W7D

5G NR n78(30kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
100	3750.00	0.3597	96M7G7D	0.2286	96M5W7D

Note:

1. 5G NR Band n77 overlaps the entire frequency range of Band n78. Therefore, the conducted test results provided in this report covers Band n77(20M/40M/50M) as well as Band n78(20M/40M/50M).

2. All modulations have been tested, only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH02-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-KS	AUDIX	E3	6.2009-8-24a

1.9 Applicable Standards

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

- 47 CFR Part 2, 27O
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

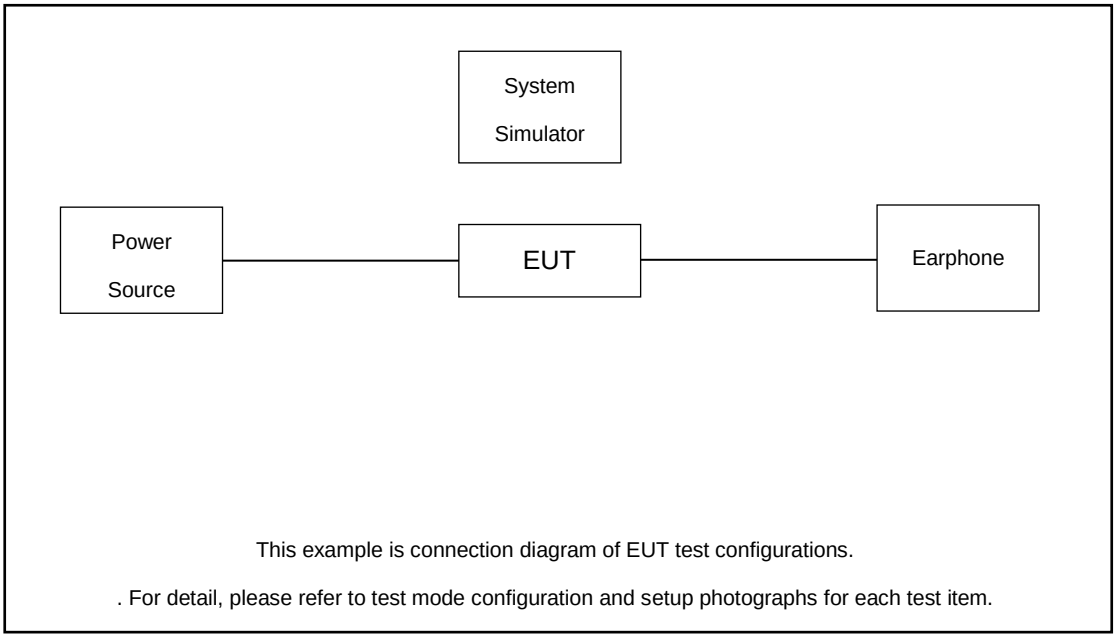
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)									Modulation					RB #		Test Channel		
		5	10	15	20	40	50	60	80-90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n77	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n77	-					v			v	v	v	v	v	v		v		v	
26dB and 99% Bandwidth	n77	-					v			v		v	v				v		v	
Conducted Band Edge	n77	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v		v
Conducted Spurious Emission	n77	-	v	v	v	v	v	v	v	v		v				v		v	v	v
Frequency Stability	n77	-					v			v		v					v		v	
E.R.P / E.I.R.P	n77	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78		v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n77	Worst Case																	v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. Based on engineering evaluation, only the worst modulations test results are shown in the report. 5. 5G NR Band n77 overlaps the entire frequency range of Band n78. Therefore, 5G NR Band n77 covers n78 for RSE testing.																			

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded,1.8m
3.	Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded,1.8m
4.	Earphone	MI	EM023	N/A	Unshielded,1.25m	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 3.49 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 3.49 + 10 = 13.49 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G n77 (15kHz) Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
20	Channel	647333	656000	664667
	Frequency	3709.995	3840	3970.005
15	Channel	647167	656000	664833
	Frequency	3707.505	3840	3972.495
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n77 (30kHz) Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662334
	Frequency	3745.02	3840	3935.01
80	Channel	649334	656000	662668
	Frequency	3740.01	3840	3940.02
60	Channel	648668	656000	663334
	Frequency	3730.02	3840	3950.01
50	Channel	648334	656000	663668
	Frequency	3725.01	3840	3955.02
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
20	Channel	647334	656000	664668
	Frequency	3710.01	3840	3970.02

5G n78(15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
20	Channel	647333	650000	652667
	Frequency	3709.995	3750	3790.005
15	Channel	647167	650000	652833
	Frequency	3707.505	3750	3792.495
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

5G n78(30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel		650000	
	Frequency		3750	
90	Channel	649668	650000	650334
	Frequency	3745.02	3750	3755.01
80	Channel	649334	650000	650668
	Frequency	3740.01	3750	3760.02
60	Channel	648668	650000	651334
	Frequency	3730.02	3750	3770.01
50	Channel	648334	650000	651668
	Frequency	3725.01	3750	3775.02
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
20	Channel	647334	650000	652668
	Frequency	3710.01	3750	3790.02

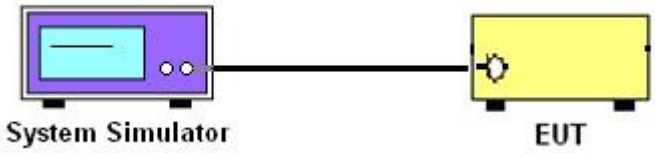
3 Conducted Test Items

3.1 Measuring Instruments

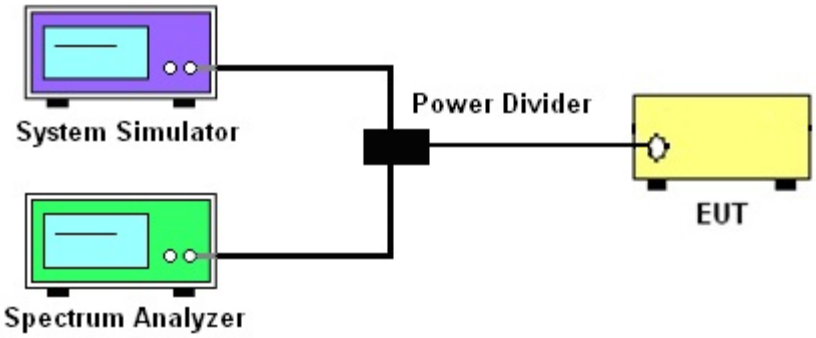
See list of measuring instruments of this test report.

3.2 Test Setup

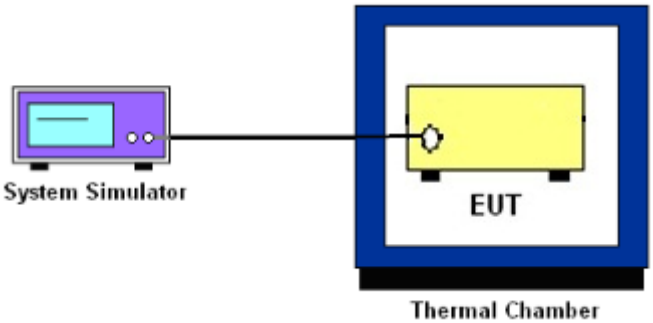
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and EIRP

3.4.1 Description of the Conducted Output Power Measurement and EIRP Measurement

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

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n77, n78.

According to KDB 412172 D01 Power Approach,

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

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.6 (PAPR).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set EUT in maximum power output.
4. Set the RBW = 1MHz, VBW = 3MHz, Detector = Peak, Trace mode = max hold, Set span ≥ 2 × OBW in spectrum analyzer.
5. Set the RBW = 1MHz, VBW = 3MHz, Detector = power averaging, Trace mode = max hold, Set span ≥ 2 × OBW in spectrum analyzer.
6. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission.
7. PAPR (dB) = P_{Pk} (dBm) − P_{Avg} (dBm)
   where
   PAPR peak-to-average power ratio, in dB
   P_{Pk} measured peak power level, in dBm
   P_{Avg} measured average power level, in dBm
8. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

27.53(l)(2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.
   Example:
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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 ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

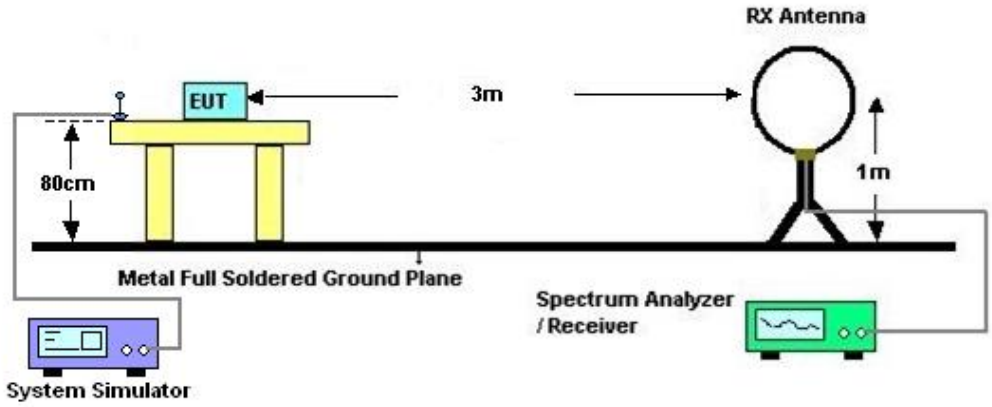
4 Radiated Test Items

4.1 Measuring Instruments

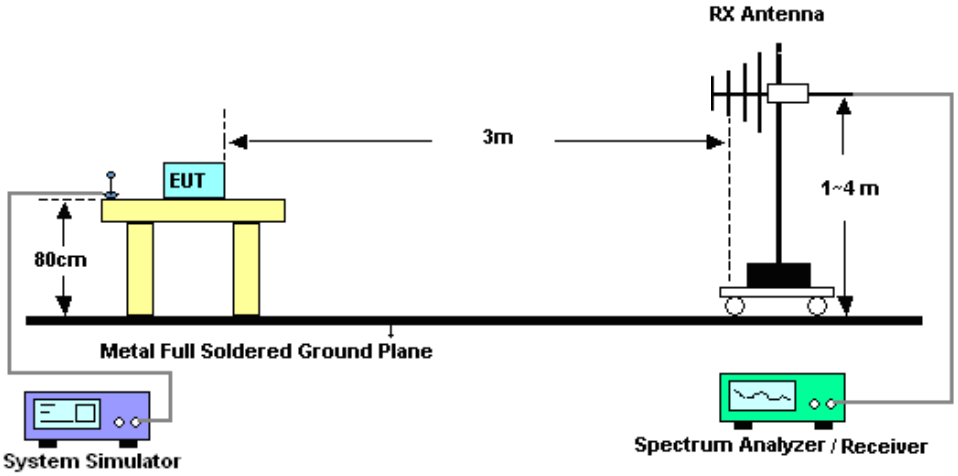
See list of measuring instruments of this test report.

4.2 Test Setup

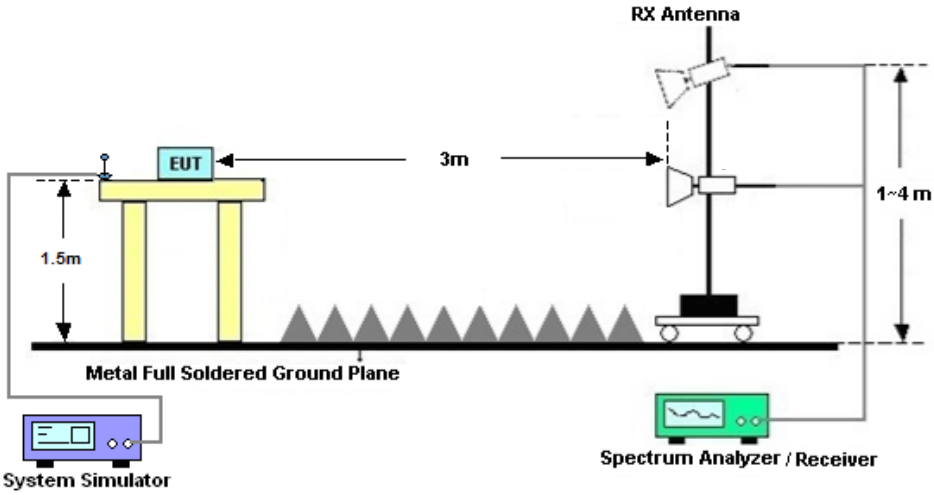
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 14, 2021	Feb. 15, 2022~ Feb. 22, 2022	Oct. 13, 2022	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2021	Feb. 15, 2022~ Feb. 22, 2022	Aug. 25, 2022	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 12, 2021	Feb. 15, 2022~ Feb. 22, 2022	Jul. 11, 2022	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 16, 2021	Mar. 01, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 16, 2021	Mar. 01, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Mar. 01, 2022	Oct. 29, 2022	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 22, 2021	Mar. 01, 2022	Dec. 21, 2022	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct.. 30, 2021	Mar. 01, 2022	Oct. 29, 2022	Radiation (03CH02-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jul. 30, 2021	Mar. 01, 2022	Jul. 29, 2023	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Mar. 01, 2022	Jan. 04, 2023	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Apr. 13, 2021	Mar. 01, 2022	Apr. 12, 2022	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 16, 2021	Mar. 01, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Mar. 01, 2022	Jan. 04, 2023	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Mar. 01, 2022	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Mar. 01, 2022	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Mar. 01, 2022	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.5dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.1dB**

---------- THE END ----------

Appendix A. Test Results of Conducted Test

Test Engineer :	Lex Wu	Temperature :	21~24℃
		Relative Humidity :	45~51%

Conducted Output Power(Average power and EIRP)

5G NR n77 (SCS 15kHz):

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Gain	EIRP		
Channel				648334	656000	663666		L	M	H
Frequency (MHz)				3725.01	3840	3954.99				
50	PI/2 BPSK	1	1	26.82	26.13	26.23	-0.98	0.3837	0.3273	0.3350
50	QPSK	1	1	26.75	26.66	26.22	-0.98	0.3776	0.3698	0.3342
50	QPSK	1	268	26.98	26.82	26.32	-0.98	0.3981	0.3837	0.3420
50	QPSK	135	67	27.25	27.01	26.53	-0.98	0.4236	0.4009	0.3589
50	QPSK	270	0	26.15	26.02	25.43	-0.98	0.3289	0.3192	0.2786
50	16QAM	1	1	25.63	25.57	25.06	-0.98	0.2917	0.2877	0.2559
50	64QAM	1	1	24.44	24.15	23.83	-0.98	0.2218	0.2075	0.1928
50	256QAM	1	1	22.02	21.76	21.35	-0.98	0.1271	0.1197	0.1089
Channel				648000	656000	664000	Gain	EIRP		
Frequency (MHz)				3720	3840	3960				
40	PI/2 BPSK	1	1	25.96	26.18	26.93	-0.98	0.3148	0.3311	0.3936
Channel				647333	656000	664667	Gain	EIRP		
Frequency (MHz)				3709.995	3840	3970.005				
20	PI/2 BPSK	1	1	26.62	26.42	26.52	-0.98	0.3664	0.3499	0.3581
Channel				647167	656000	664833	Gain	EIRP		
Frequency (MHz)				3707.505	3840	3972.495				
15	PI/2 BPSK	1	1	26.50	26.36	26.38	-0.98	0.3565	0.3451	0.3467
Channel				647000	656000	665000	Gain	EIRP		
Frequency (MHz)				3705	3840	3975				
10	PI/2 BPSK	1	1	26.44	26.17	26.13	-0.98	0.3516	0.3304	0.3273

5G NR n77 (SCS 30kHz):

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Gain	EIRP		
Channel				650000	656000	662000		L	M	H
Frequency (MHz)				3750	3840	3930				
100	PI/2 BPSK	1	1	26.22	25.98	25.96	-0.98	0.3342	0.3162	0.3148
100	PI/2 BPSK	1	137	27.13	26.99	27.11	-0.98	0.4121	0.3990	0.4102
100	PI/2 BPSK	1	271	26.23	26.13	26.26	-0.98	0.3350	0.3273	0.3373
100	PI/2 BPSK	135	0	26.44	26.32	26.32	-0.98	0.3516	0.3420	0.3420
100	PI/2 BPSK	135	69	27.11	27.06	27.11	-0.98	0.4102	0.4055	0.4102
100	PI/2 BPSK	135	138	26.44	26.36	24.44	-0.98	0.3516	0.3451	0.2218
100	PI/2 BPSK	270	0	26.47	26.39	26.36	-0.98	0.3540	0.3475	0.3451
100	QPSK	1	1	26.26	25.96	25.96	-0.98	0.3373	0.3148	0.3148
100	QPSK	1	137	27.15	26.92	27.06	-0.98	0.4140	0.3926	0.4055
100	QPSK	1	271	26.22	26.06	26.13	-0.98	0.3342	0.3221	0.3273
100	QPSK	135	0	25.95	25.82	25.82	-0.98	0.3141	0.3048	0.3048
100	QPSK	135	69	27.16	27.03	27.11	-0.98	0.4150	0.4027	0.4102
100	QPSK	135	138	25.96	25.85	25.96	-0.98	0.3148	0.3069	0.3148
100	QPSK	270	0	25.96	25.86	25.89	-0.98	0.3148	0.3076	0.3097
100	16QAM	1	1	25.16	25.03	24.96	-0.98	0.2618	0.2541	0.2500
100	64QAM	1	1	23.76	23.53	23.53	-0.98	0.1897	0.1799	0.1799
100	256QAM	1	1	21.96	21.63	21.72	-0.98	0.1253	0.1161	0.1186
Channel				649668	656000	662334	Gain	EIRP		
Frequency (MHz)				3745.02	3840	3935.01				
90	PI/2 BPSK	1	1	26.25	26.15	26.05	-0.98	0.3365	0.3289	0.3214
Channel				649334	656000	662668	Gain	EIRP		
Frequency (MHz)				3740.01	3840	3940.02				
80	PI/2 BPSK	1	1	26.55	26.33	26.44	-0.98	0.3606	0.3428	0.3516
Channel				648668	656000	663334	Gain	EIRP		
Frequency (MHz)				3730.02	3840	3950.01				
60	PI/2 BPSK	1	1	26.72	26.66	26.69	-0.98	0.3750	0.3698	0.3724
Channel				648334	656000	663668	Gain	EIRP		
Frequency (MHz)				3725.01	3840	3955.02				
50	PI/2 BPSK	1	1	26.82	26.75	26.82	-0.98	0.3837	0.3776	0.3837
Channel				648000	656000	664000	Gain	EIRP		
Frequency (MHz)				3720	3840	3960				
40	PI/2 BPSK	1	1	26.72	26.44	26.63	-0.98	0.3750	0.3516	0.3673
Channel				647334	656000	664668	Gain	EIRP		
Frequency (MHz)				3710.01	3840	3970.02				
20	PI/2 BPSK	1	1	27.05	26.86	26.96	-0.98	0.4046	0.3873	0.3963

5G NR n78 (SCS 15kHz):

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Gain	EIRP		
Channel				648334	650000	651666		L	M	H
Frequency (MHz)				3725.01	3750	3774.99				
50	PI/2 BPSK	1	1	25.36	26.32	26.44	-1.47	0.2449	0.3055	0.3141
50	QPSK	1	1	26.12	26.25	26.35	-1.47	0.2917	0.3006	0.3076
50	QPSK	1	268	26.33	26.44	26.13	-1.47	0.3062	0.3141	0.2924
50	QPSK	135	67	25.76	26.68	26.93	-1.47	0.2685	0.3319	0.3516
50	QPSK	270	0	25.32	25.09	25.44	-1.47	0.2427	0.2301	0.2495
50	16QAM	1	1	24.56	24.86	25.23	-1.47	0.2037	0.2183	0.2377
50	64QAM	1	1	23.32	23.51	24.26	-1.47	0.1531	0.1600	0.1901
50	256QAM	1	1	21.26	21.23	21.62	-1.47	0.0953	0.0946	0.1035
Channel				648000	650000	652000	Gain	EIRP		
Frequency (MHz)				3720	3750	3780				
40	PI/2 BPSK	1	1	26.25	26.36	26.26	-1.47	0.3006	0.3083	0.3013
Channel				647333	650000	652667	Gain	EIRP		
Frequency (MHz)				3709.995	3750	3790.005				
20	PI/2 BPSK	1	1	26.76	26.66	26.62	-1.47	0.3381	0.3304	0.3273
Channel				647167	650000	652833	Gain	EIRP		
Frequency (MHz)				3707.505	3750	3792.495				
15	PI/2 BPSK	1	1	26.44	26.63	26.53	-1.47	0.3141	0.3281	0.3206
Channel				647000	650000	665000	Gain	EIRP		
Frequency (MHz)				3705	3750	3975				
10	PI/2 BPSK	1	1	26.25	26.03	26.05	-1.47	0.3006	0.2858	0.2871

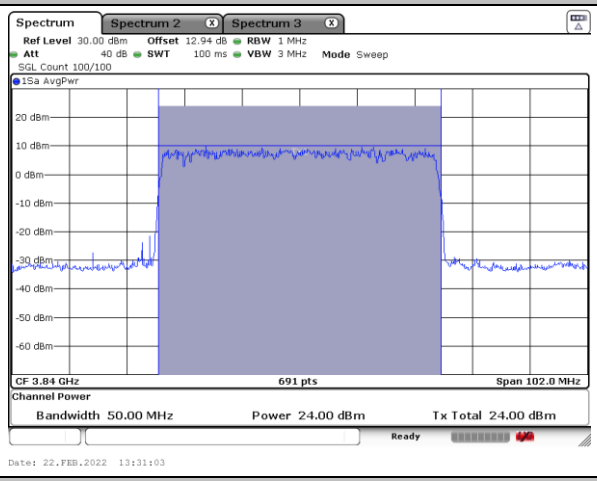
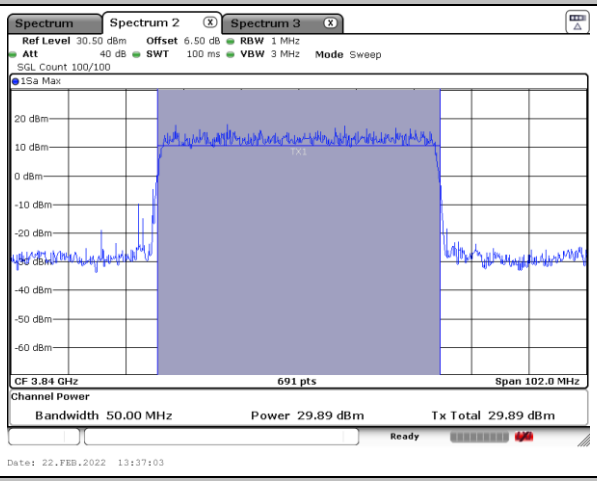
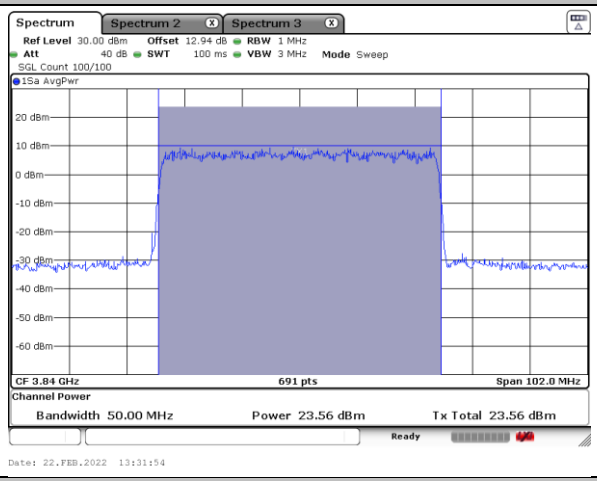
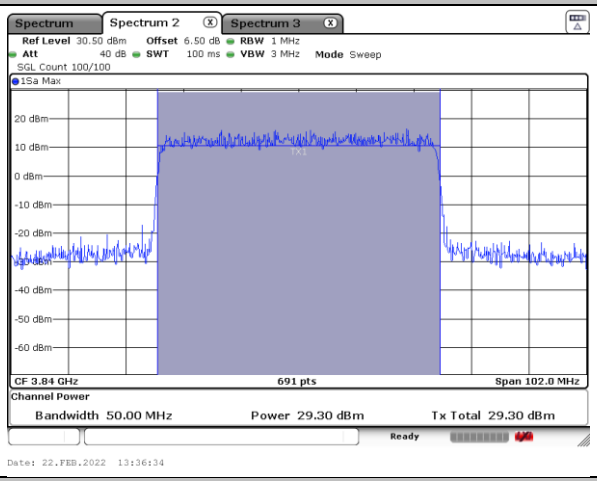
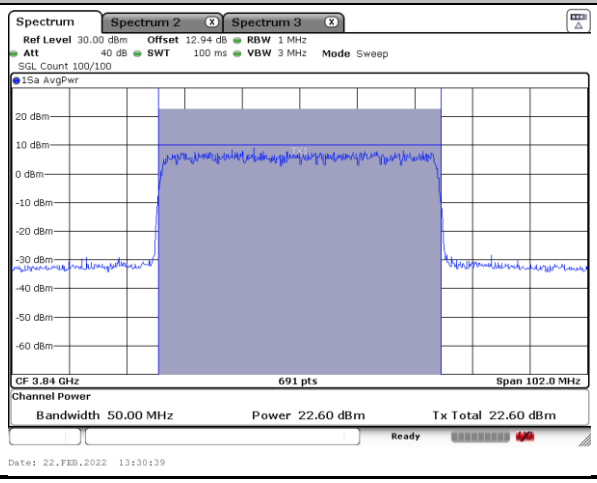
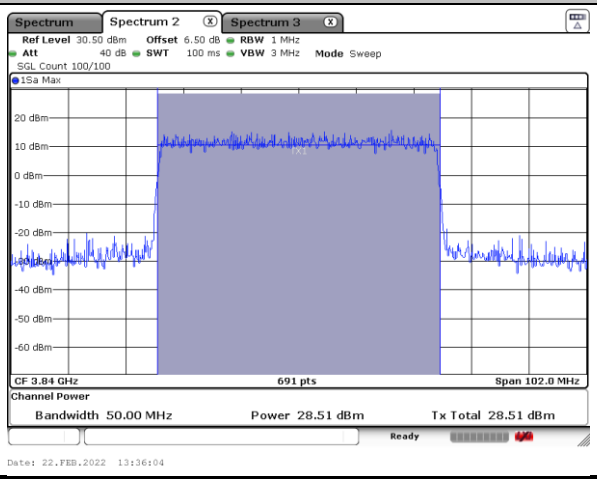
5G NR n78 (SCS 30kHz):

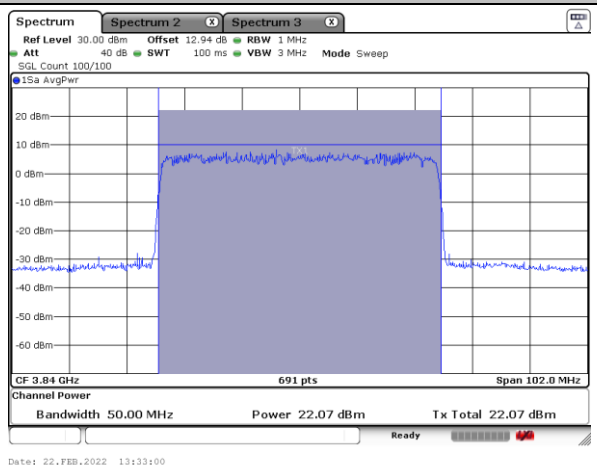
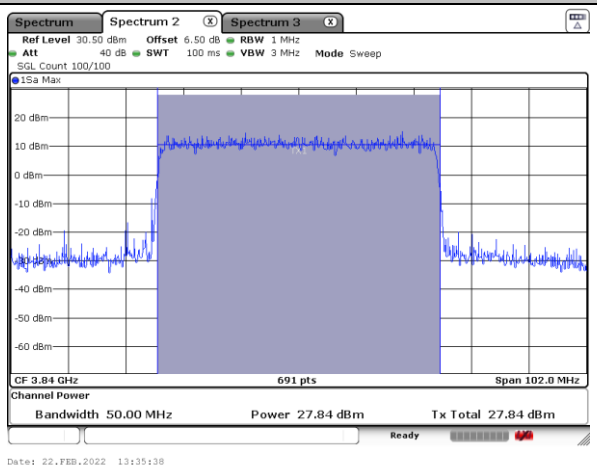
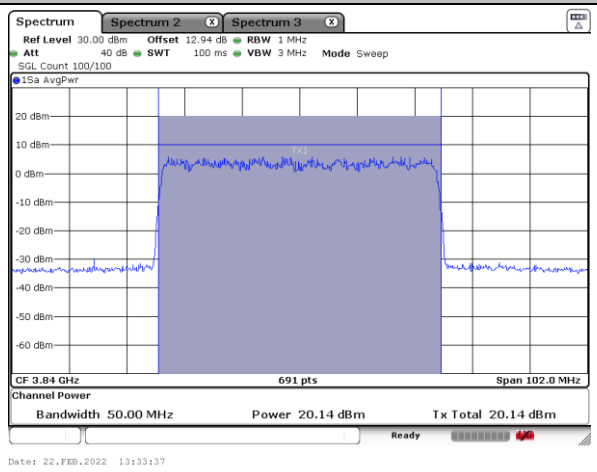
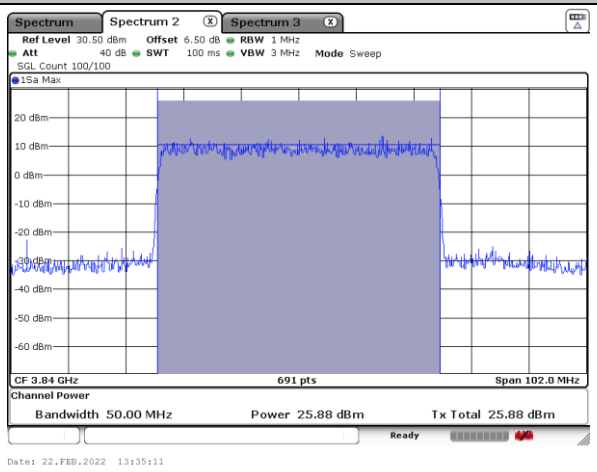
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Gain	EIRP		
Channel					650000			L	M	H
Frequency (MHz)					3750					
100	PI/2 BPSK	1	1		26.03		-1.47		0.2858	
100	PI/2 BPSK	1	137		26.99		-1.47		0.3565	
100	PI/2 BPSK	1	271		26.13		-1.47		0.2924	
100	PI/2 BPSK	135	0		26.33		-1.47		0.3062	
100	PI/2 BPSK	135	69		27.03		-1.47		0.3597	
100	PI/2 BPSK	135	138		26.33		-1.47		0.3062	
100	PI/2 BPSK	270	0		26.38		-1.47		0.3097	
100	QPSK	1	1		26.16		-1.47		0.2944	
100	QPSK	1	137		27.03		-1.47		0.3597	
100	QPSK	1	271		26.16		-1.47		0.2944	
100	QPSK	135	0		25.83		-1.47		0.2729	
100	QPSK	135	69		27.03		-1.47		0.3597	
100	QPSK	135	138		25.86		-1.47		0.2748	
100	QPSK	270	0		25.92		-1.47		0.2786	
100	16QAM	1	1		25.06		-1.47		0.2286	
100	64QAM	1	1		23.65		-1.47		0.1652	
100	256QAM	1	1		21.73		-1.47		0.1062	
Channel				649668	650000	650334	Gain	EIRP		
Frequency (MHz)				3745.02	3750	3755.01				
90	PI/2 BPSK	1	1	26.13	26.33	26.26	-1.47	0.2924	0.3062	0.3013
Channel				649334	650000	650668	Gain	EIRP		
Frequency (MHz)				3740.01	3750	3760.02				
80	PI/2 BPSK	1	1	26.39	26.46	26.48	-1.47	0.3105	0.3155	0.3170
Channel				648668	650000	651334	Gain	EIRP		
Frequency (MHz)				3730.02	3750	3770.01				
60	PI/2 BPSK	1	1	26.67	26.65	26.52	-1.47	0.3311	0.3296	0.3199
Channel				648334	650000	651668	Gain	EIRP		
Frequency (MHz)				3725.01	3750	3775.02				
50	PI/2 BPSK	1	1	26.68	26.75	26.56	-1.47	0.3319	0.3373	0.3228
Channel				648000	650000	652000	Gain	EIRP		
Frequency (MHz)				3720	3750	3780				
40	PI/2 BPSK	1	1	26.52	26.46	26.53	-1.47	0.3199	0.3155	0.3206
Channel				647334	650000	652668	Gain	EIRP		
Frequency (MHz)				3710.01	3750	3790.02				
20	PI/2 BPSK	1	1	26.92	26.82	26.83	-1.47	0.3508	0.3428	0.3436

FR1 n77 (SCS 15kHz)

Peak-to-Average Ratio

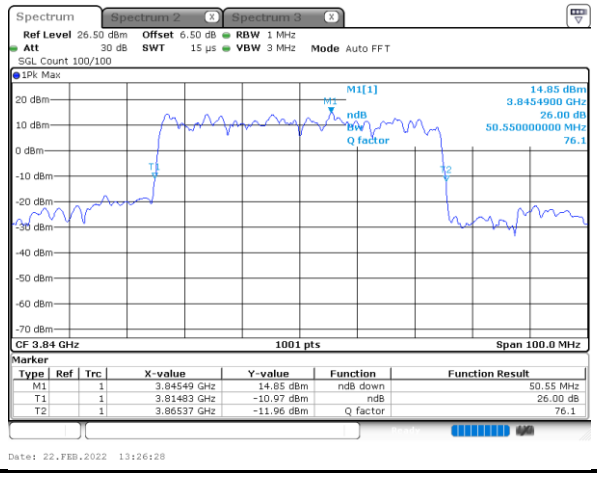
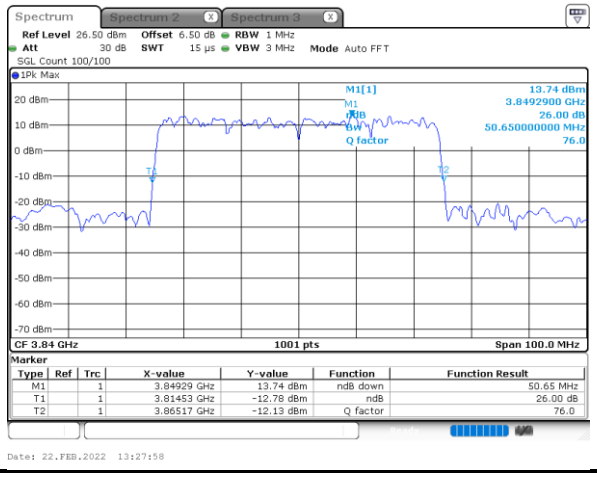
Mode	FR1 n77 / DFT-S OFDM				
Mod.	50M				Limit: 13dB
RB Size	BPSK	QPSK	16QAM	64QAM	Result
Middle CH	5.89	5.74	5.91	5.77	PASS
RB Size	256QAM				
Middle CH	5.74				

BPSK-A	BPSK-P
	
QPSK-A	**QPSK-P**
	
16QAM-A	**16QAM-P**
	

64QAM-A	64QAM-P
	
256QAM-A	**256QAM-P**
	

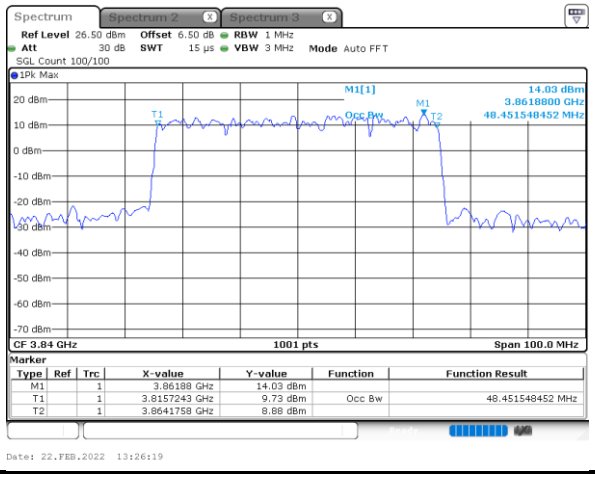
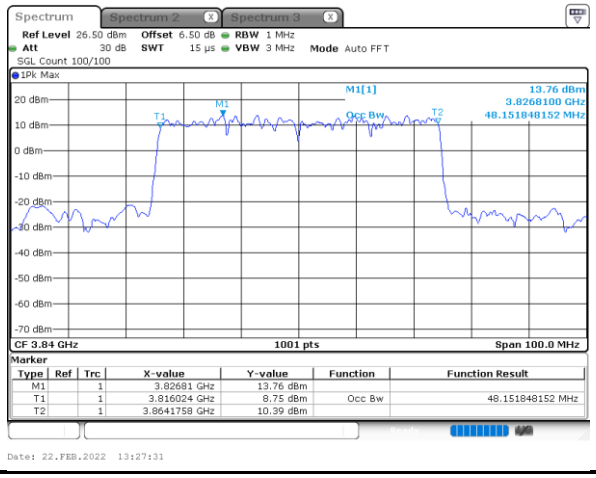
26dB Bandwidth

Mode	FR1 n77 : 50MHz / DFT-S OFDM	
BW	DFT	
Mod.	QPSK	16QAM
Middle CH	50.55	50.65

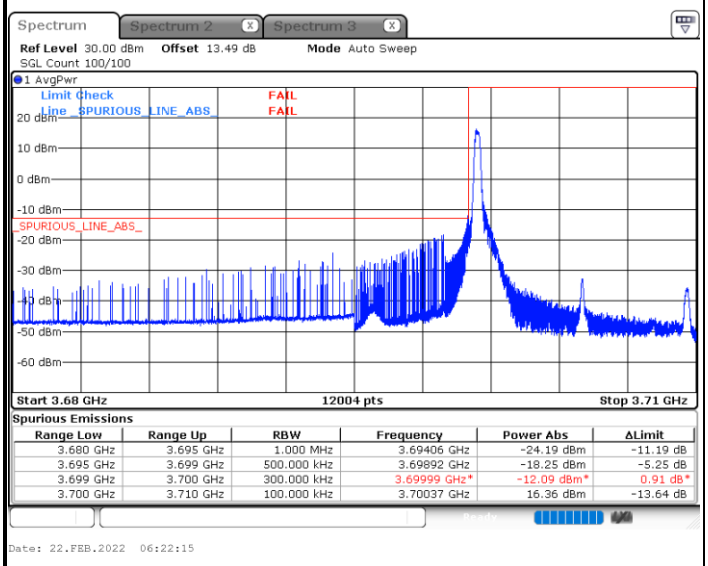
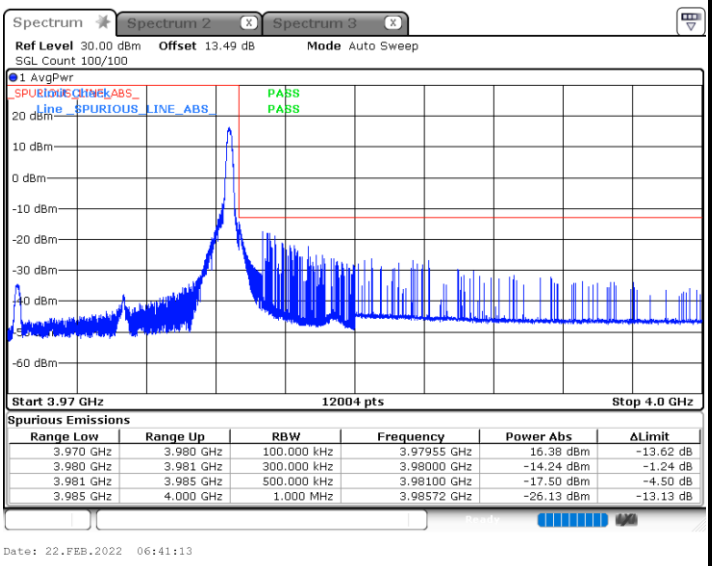
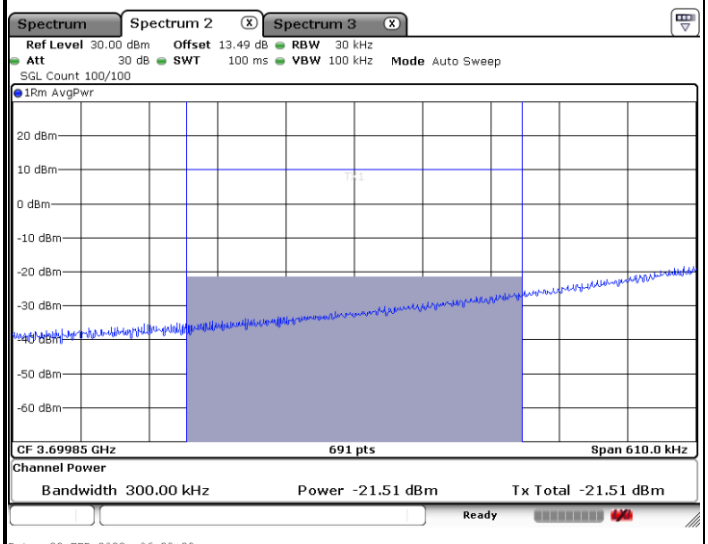
DFT	
QPSK	16QAM
	

Occupied Bandwidth

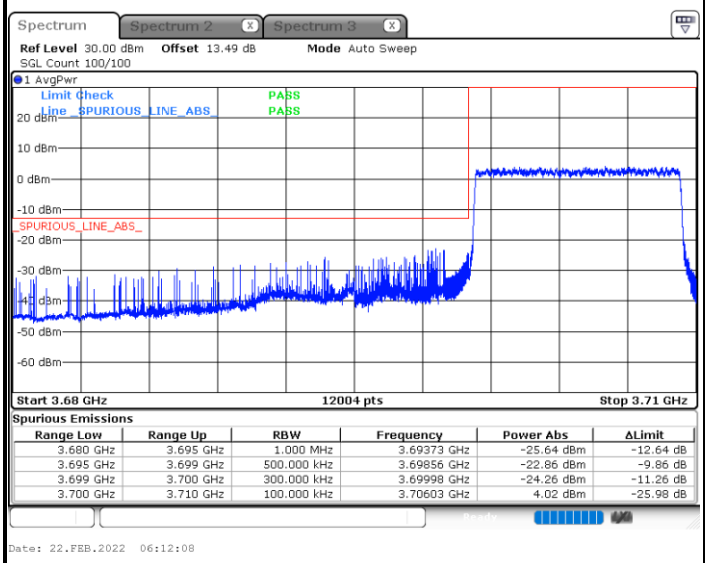
Mode	FR1 n77: 50MHz / DFT-S OFDM	
BW	DFT	
Mod.	QPSK	16QAM
Middle CH	48.45	48.15

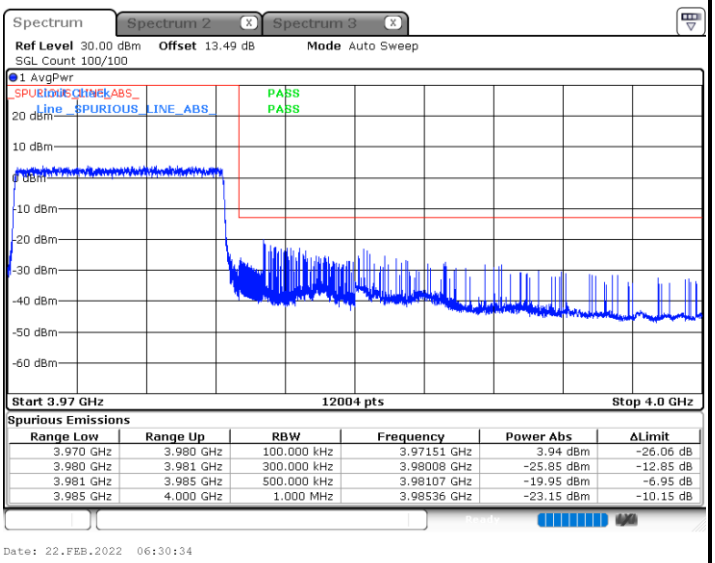
DFT	
QPSK	16QAM
	

Conducted Band Edge

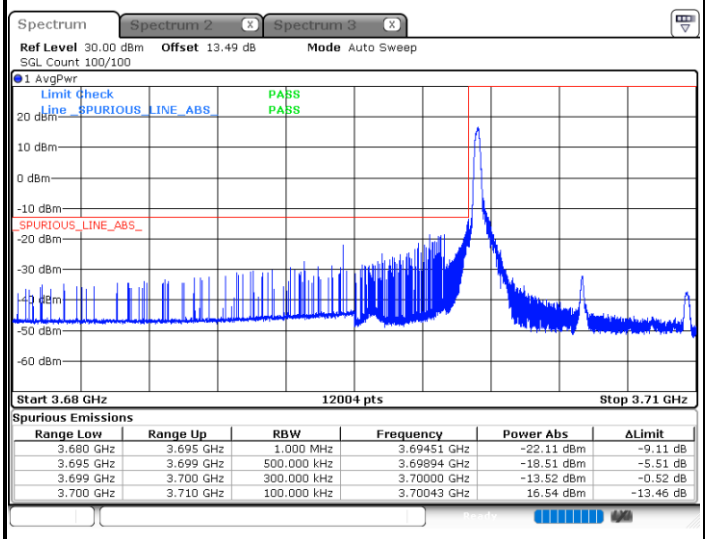
FR1 n77/ 10MHz / DFT-S OFDM / PI/2 BPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**
	
	

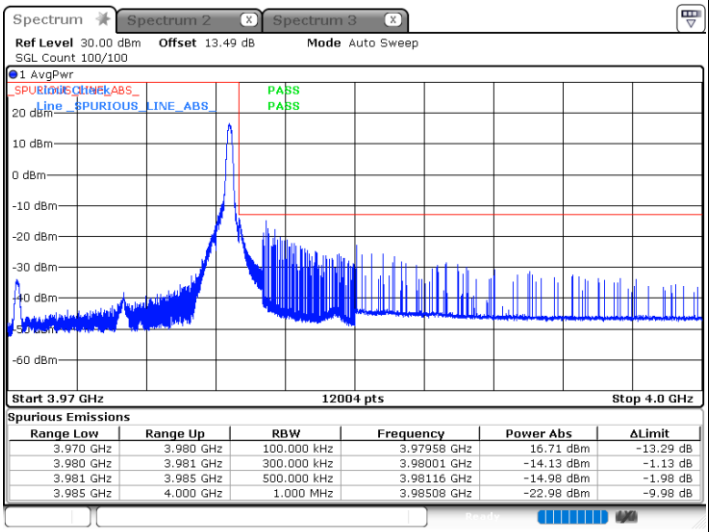
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

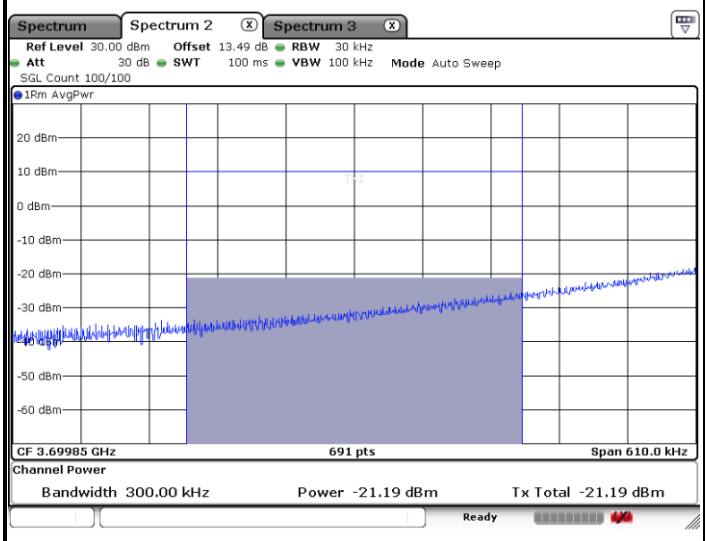




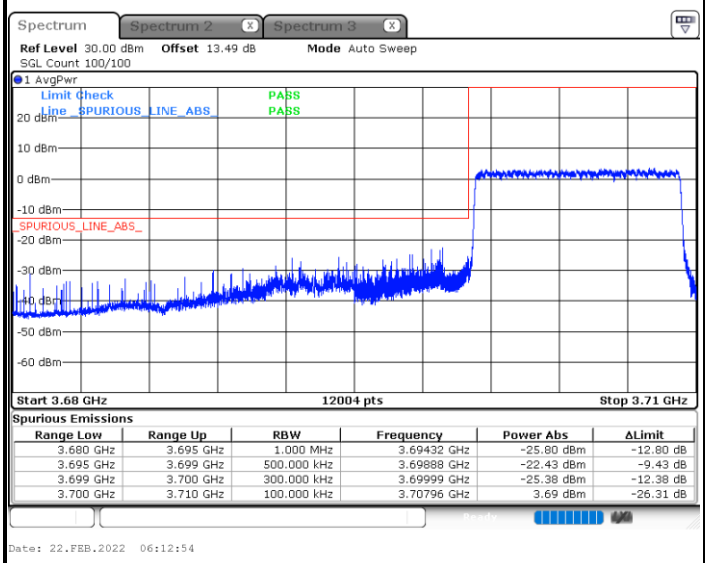
FR1 n77 / 10MHz / DFT-S OFDM / QPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

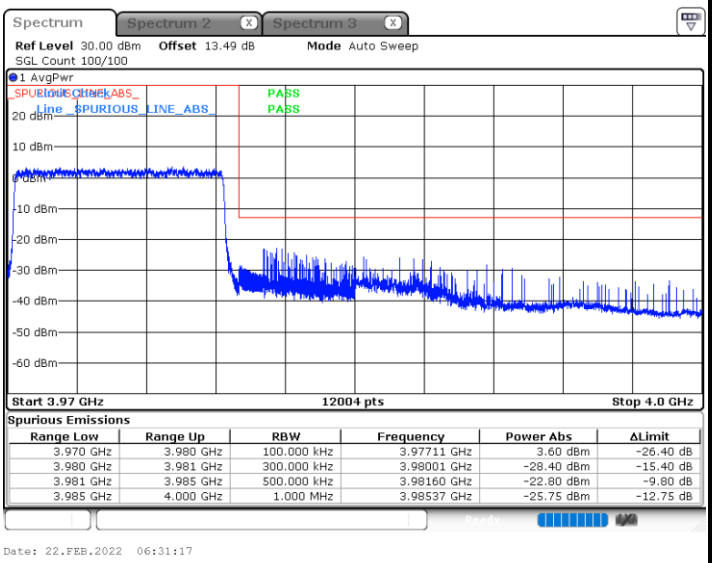




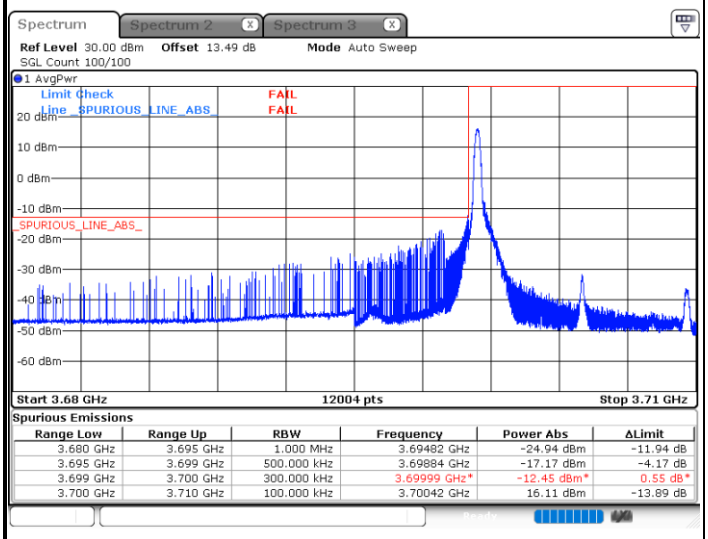


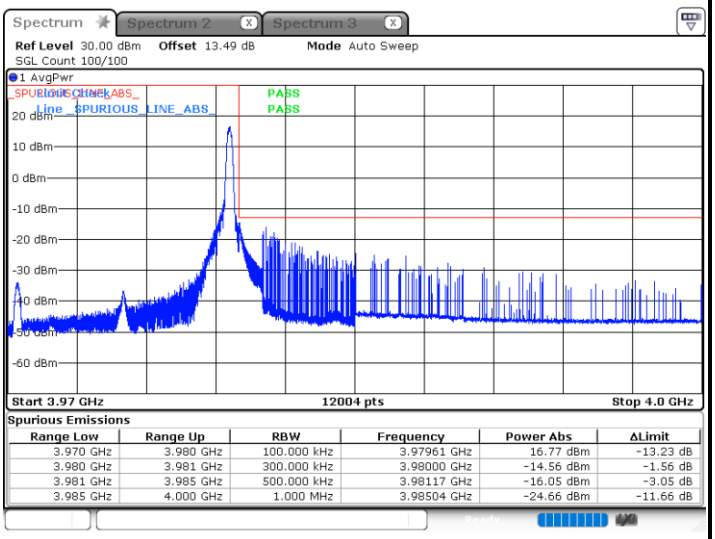
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

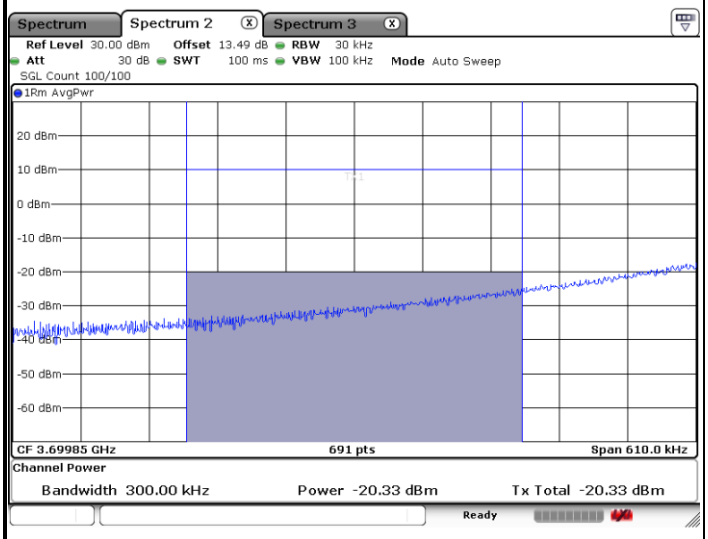




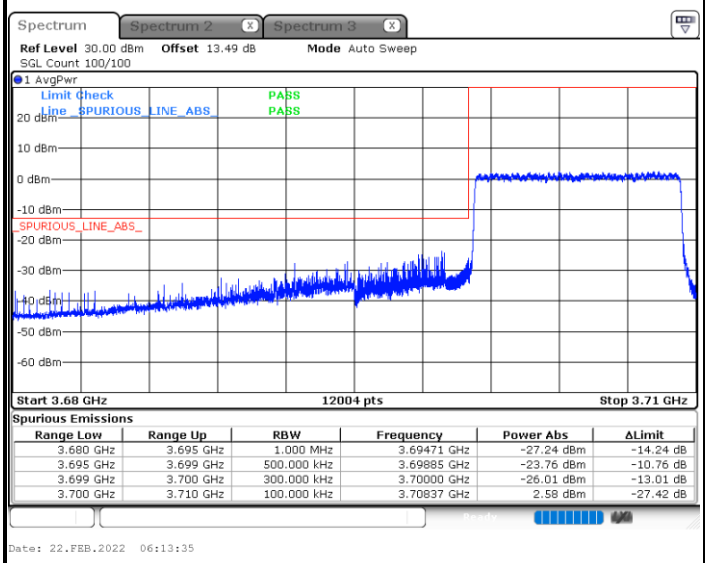
FR1 n77 / 10MHz / DFT-S OFDM / 16Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

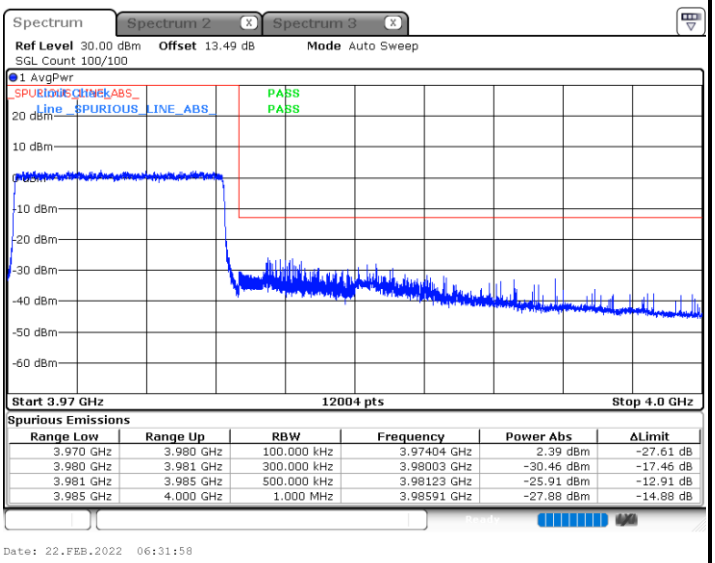




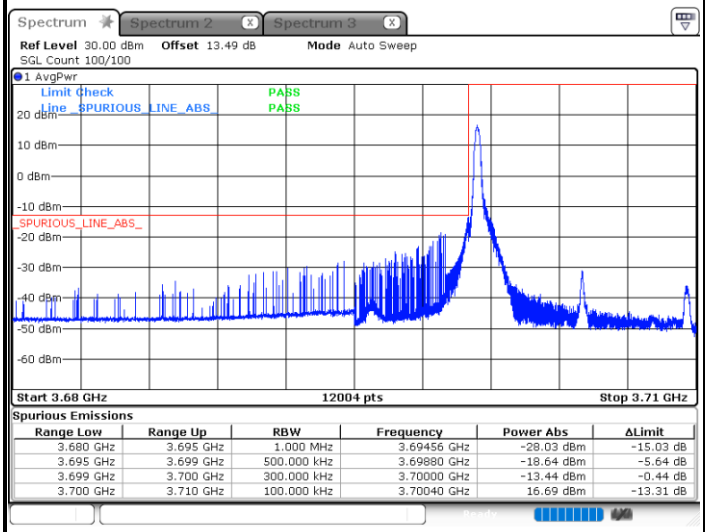


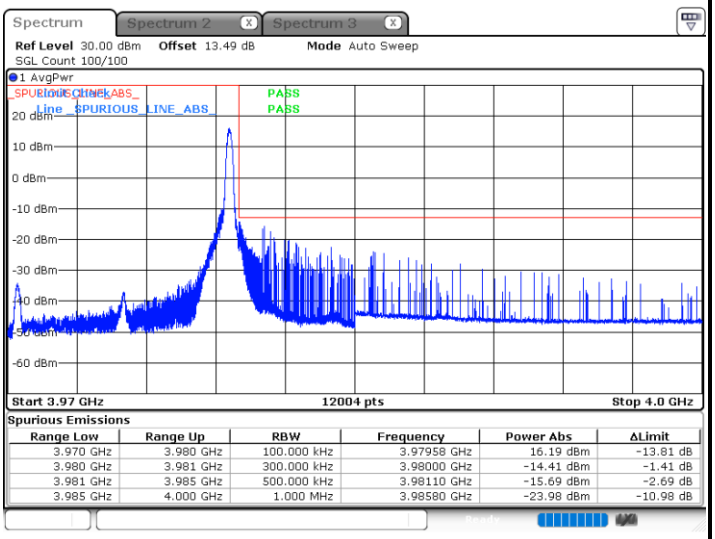
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

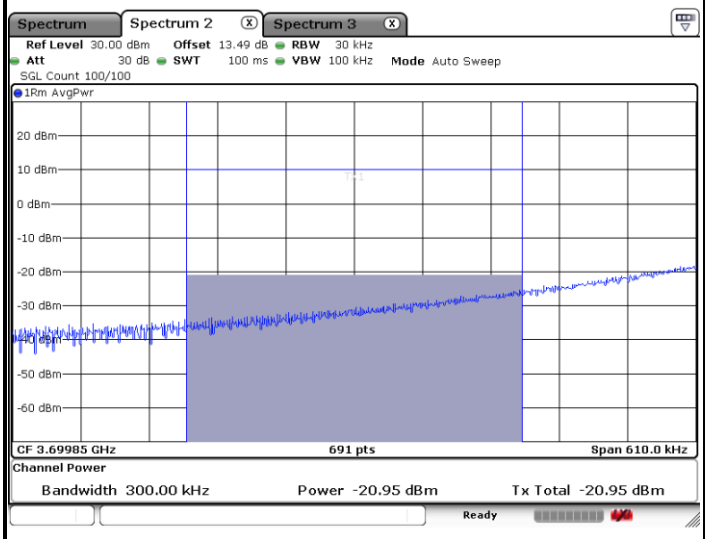




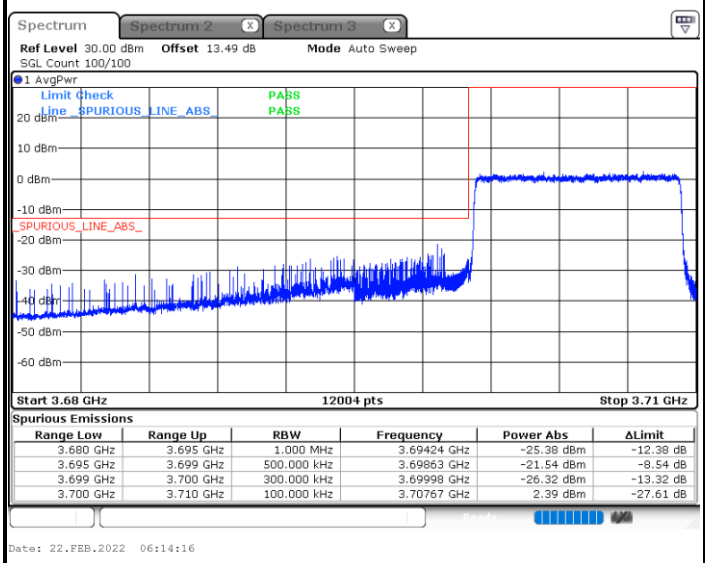
FR1 n77 / 10MHz / DFT-S OFDM / 64Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RB24**







Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69424 GHz	-25.38 dBm	-12.38 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69863 GHz	-21.54 dBm	-8.54 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69998 GHz	-26.32 dBm	-13.32 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70767 GHz	2.39 dBm	-27.61 dB

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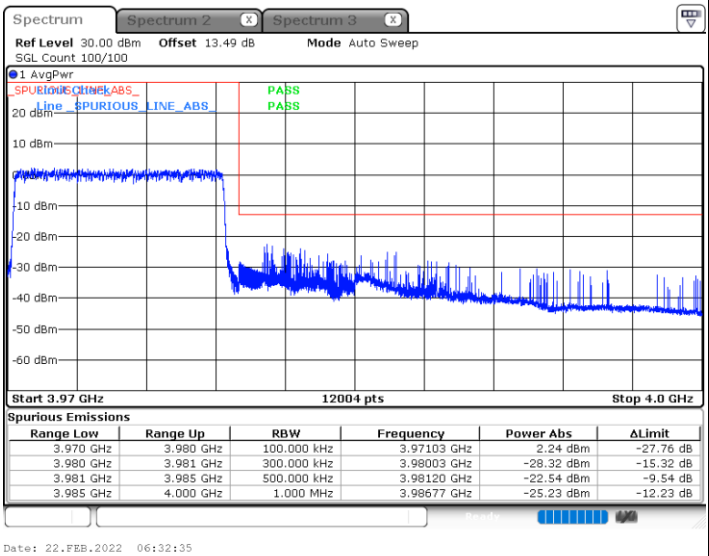


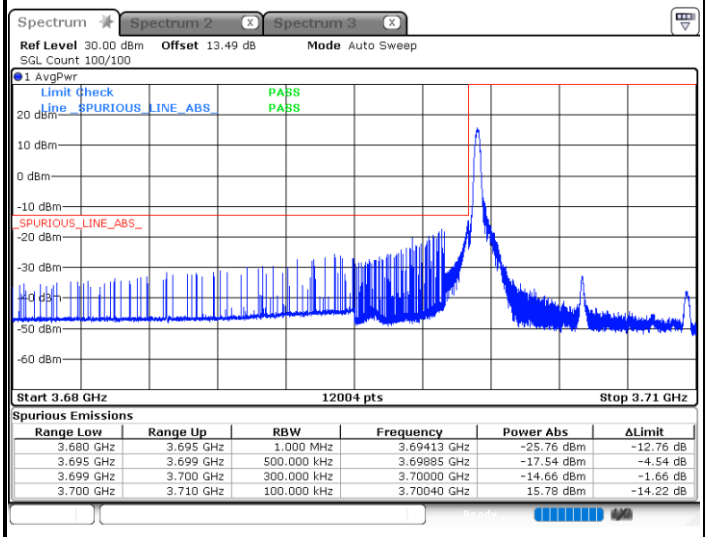
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97103 GHz	2.24 dBm	-27.76 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98003 GHz	-28.32 dBm	-15.32 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98120 GHz	-22.54 dBm	-9.54 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98677 GHz	-25.23 dBm	-12.23 dB

Date: 22.FEB.2022 06:32:35

FR1 n77 / 10MHz / DFT-S OFDM / 256Q

Lowest Band Edge / 1RB0

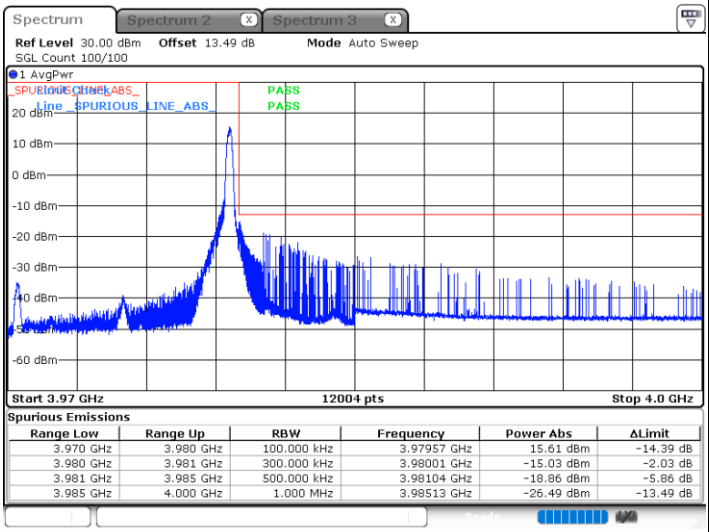


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69413 GHz	-25.76 dBm	-12.76 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69885 GHz	-17.54 dBm	-4.54 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.70000 GHz	-14.66 dBm	-1.66 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70040 GHz	15.78 dBm	-14.22 dB

Date: 22.FEB.2022 06:18:07

Highest Band Edge / 1RB24



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97957 GHz	15.61 dBm	-14.39 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-15.03 dBm	-2.03 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98104 GHz	-18.86 dBm	-5.86 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98513 GHz	-26.49 dBm	-13.49 dB

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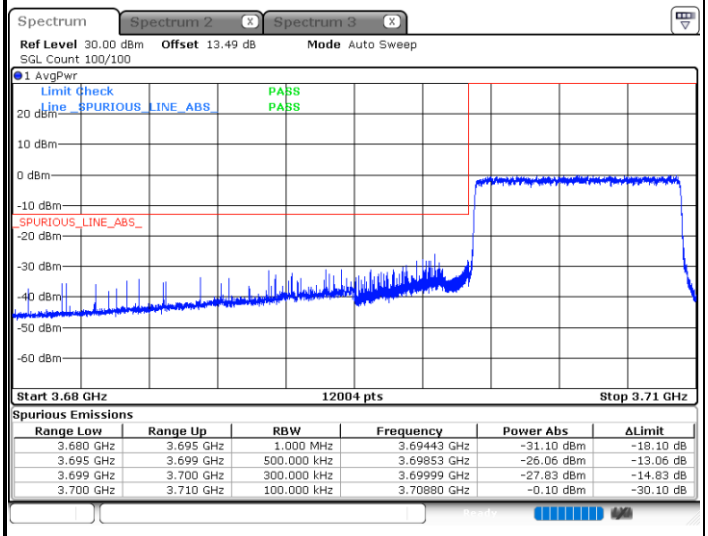
Lowest Band Edge / Full RB

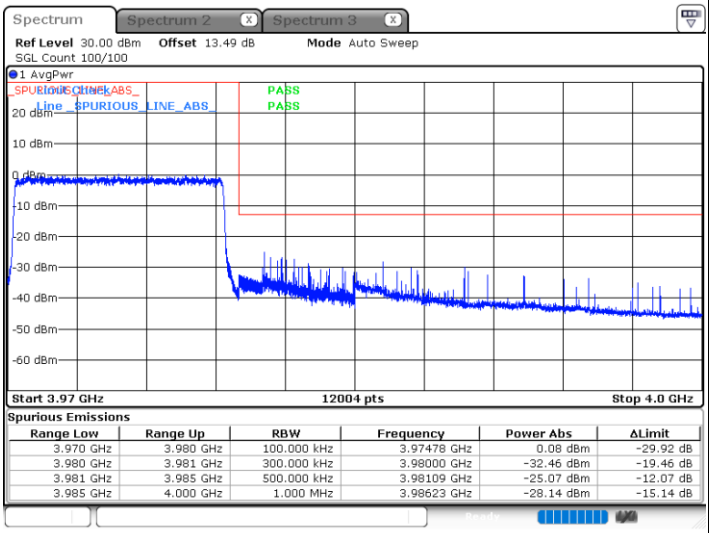


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69443 GHz	-31.10 dBm	-18.10 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69853 GHz	-26.06 dBm	-13.06 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-27.83 dBm	-14.83 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70080 GHz	-0.10 dBm	-30.10 dB

Date: 22.FEB.2022 06:14:56

Highest Band Edge / Full RB



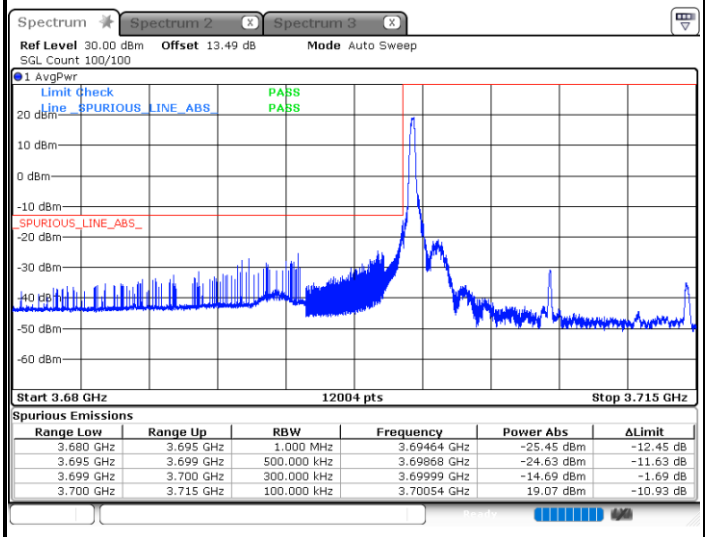
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97478 GHz	0.08 dBm	-29.92 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-32.46 dBm	-19.46 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98109 GHz	-25.07 dBm	-12.07 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98623 GHz	-28.14 dBm	-15.14 dB

Date: 22.FEB.2022 06:33:19

FR1 n77 / 15MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

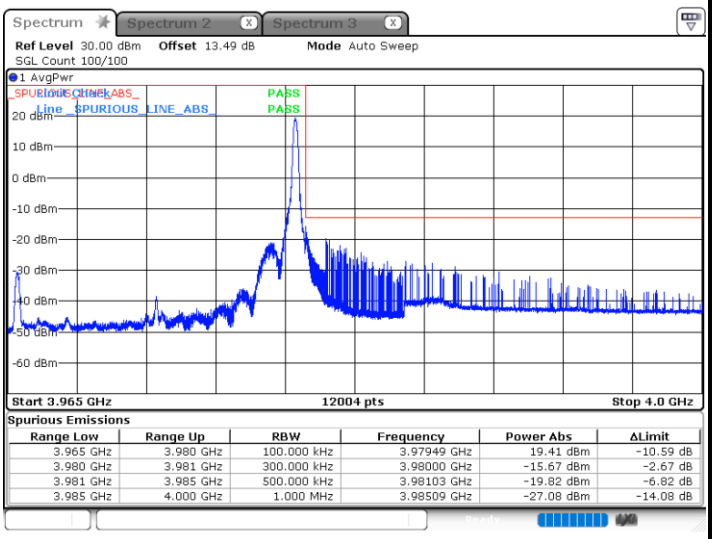


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69464 GHz	-25.45 dBm	-12.45 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69868 GHz	-24.63 dBm	-11.63 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-14.69 dBm	-1.69 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70054 GHz	19.07 dBm	-10.93 dB

Date: 22.FEB.2022 09:30:06

Highest Band Edge / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97949 GHz	19.41 dBm	-10.59 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-15.67 dBm	-2.67 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98103 GHz	-19.82 dBm	-6.82 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98509 GHz	-27.08 dBm	-14.08 dB

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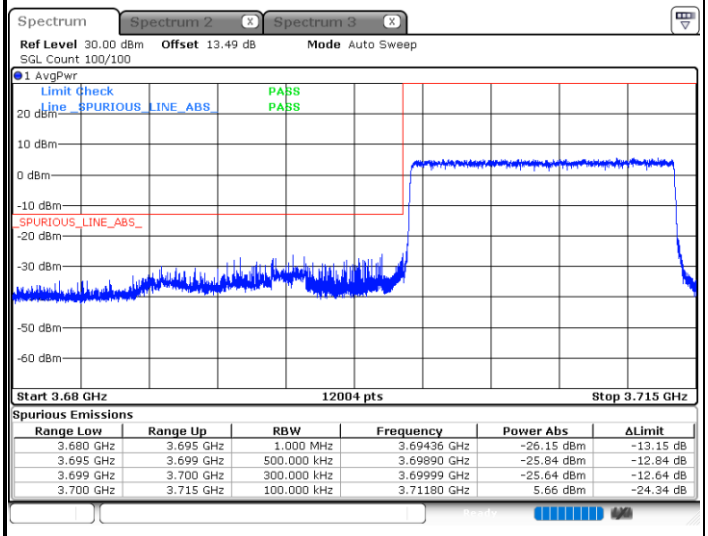
Lowest Band Edge / Full RB

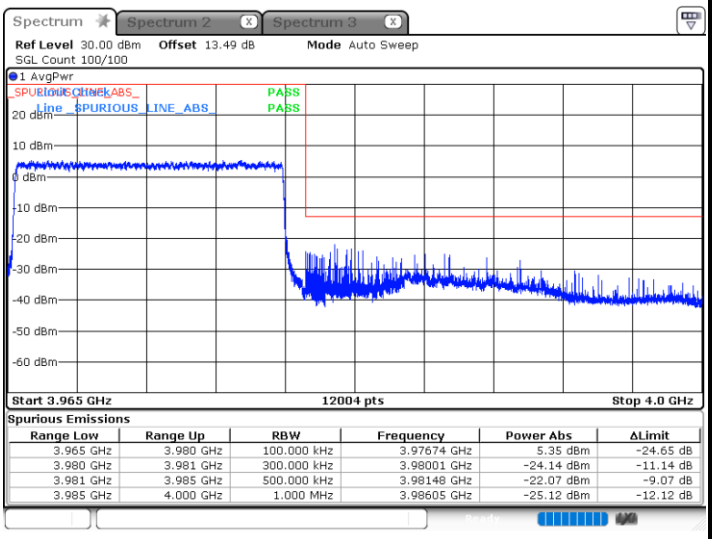


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69436 GHz	-26.15 dBm	-13.15 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69890 GHz	-25.84 dBm	-12.84 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-25.64 dBm	-12.64 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.71180 GHz	5.66 dBm	-24.34 dB

Date: 22.FEB.2022 09:37:33

Highest Band Edge / Full RB



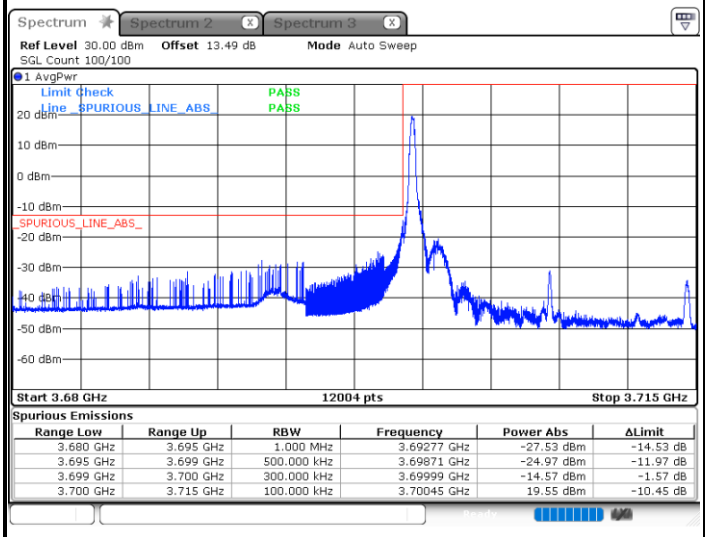
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97674 GHz	5.35 dBm	-24.65 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-24.14 dBm	-11.14 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98148 GHz	-22.07 dBm	-9.07 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98605 GHz	-25.12 dBm	-12.12 dB

Date: 22.FEB.2022 09:38:31

FR1 n77 / 15MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

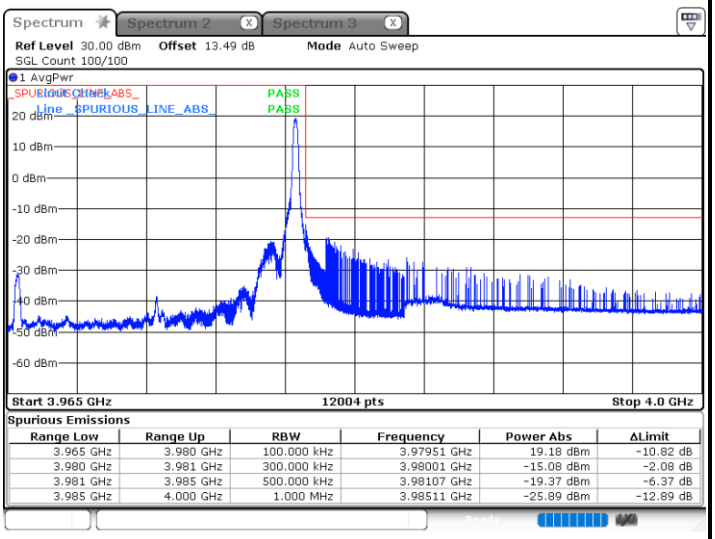


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69277 GHz	-27.53 dBm	-14.53 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69871 GHz	-24.97 dBm	-11.97 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-14.57 dBm	-1.57 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70045 GHz	19.55 dBm	-10.45 dB

Date: 22.FEB.2022 09:28:33

Highest Band Edge / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97951 GHz	19.18 dBm	-10.82 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-15.08 dBm	-2.08 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98107 GHz	-19.37 dBm	-6.37 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98511 GHz	-25.89 dBm	-12.89 dB

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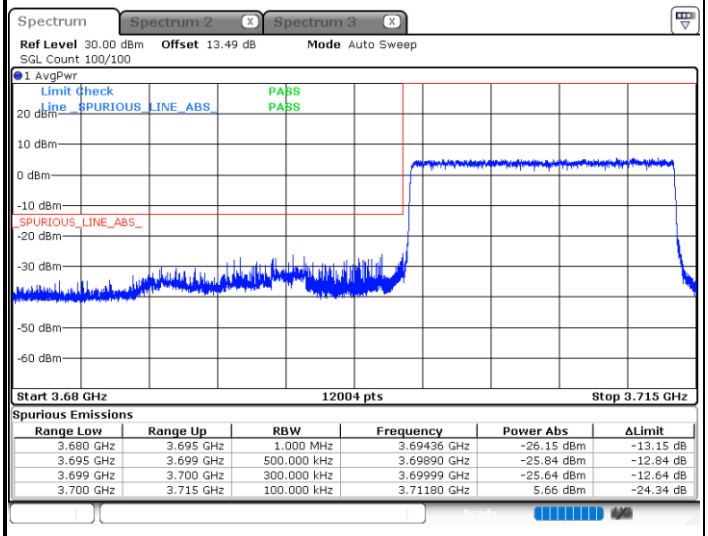
Lowest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69436 GHz	-26.15 dBm	-13.15 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69890 GHz	-25.84 dBm	-12.84 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-25.64 dBm	-12.64 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.71180 GHz	5.66 dBm	-24.34 dB

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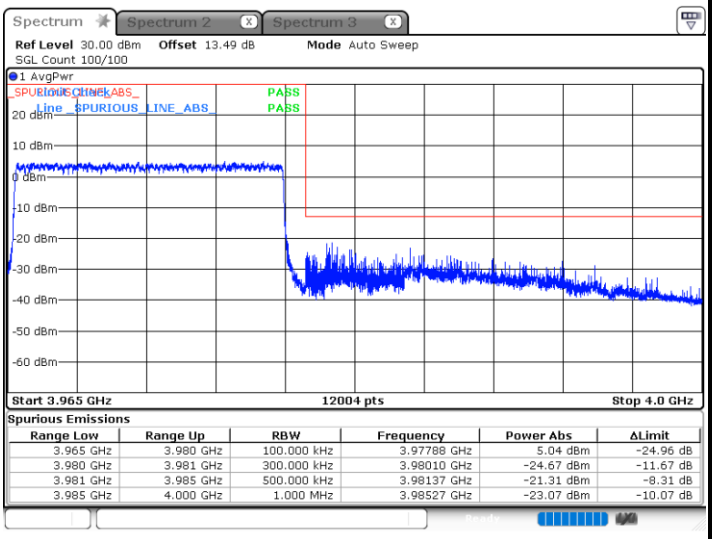
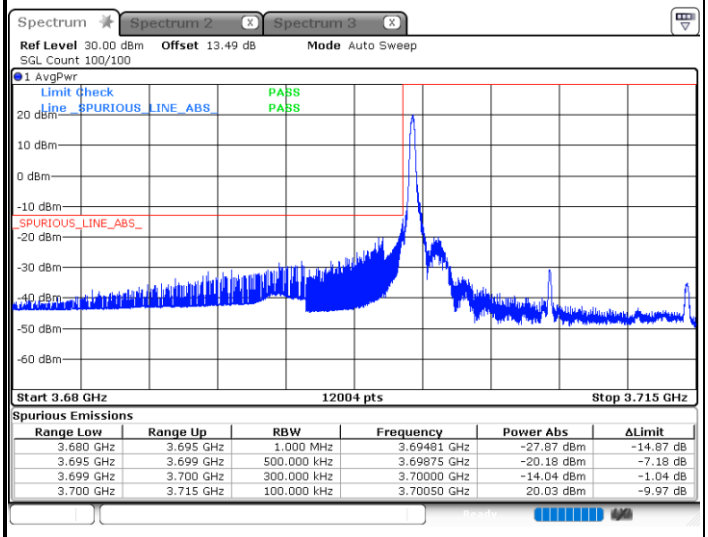
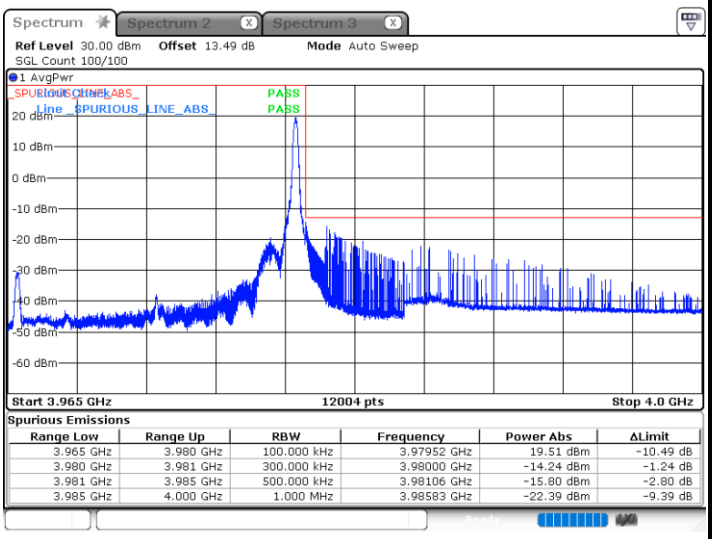
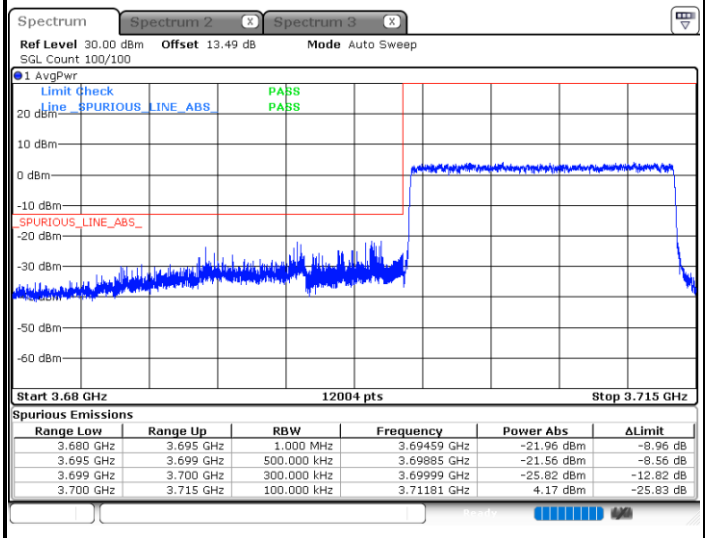
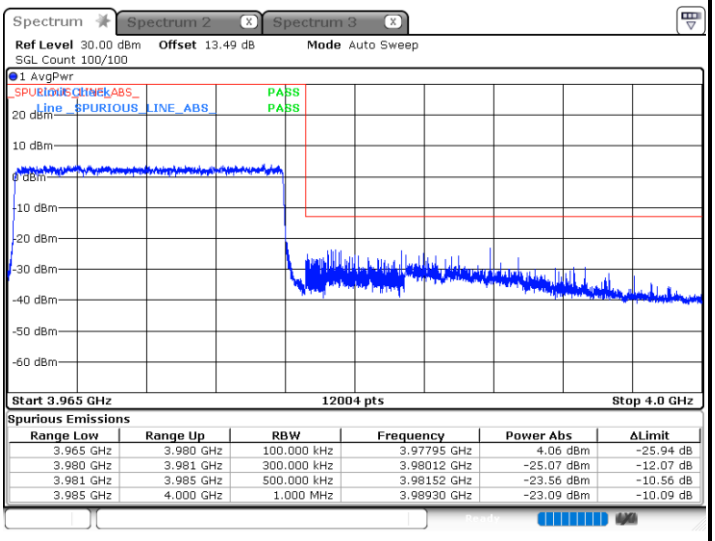
Highest Band Edge / Full RB



Spurious Emissions

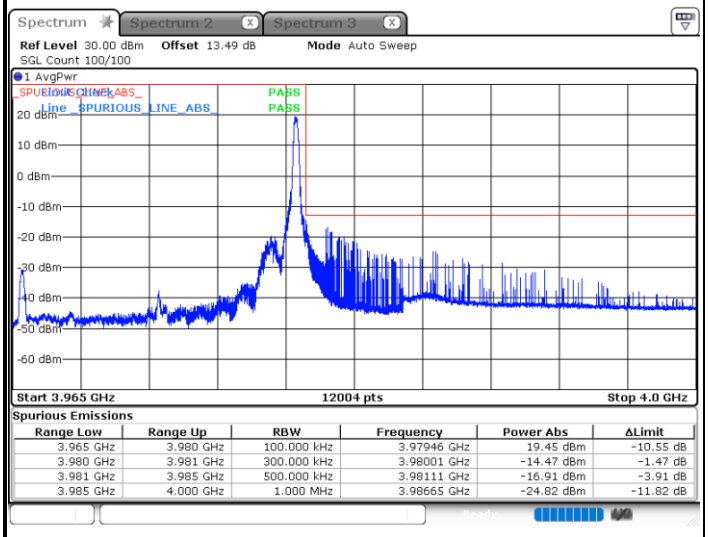
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97788 GHz	5.04 dBm	-24.96 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98010 GHz	-24.67 dBm	-11.67 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98137 GHz	-21.31 dBm	-8.31 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98527 GHz	-23.07 dBm	-10.07 dB

Date: 22.FEB.2022 09:40:20

FR1 n77 / 15MHz / DFT-S OFDM / 16Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

FR1 n77 / 15MHz / DFT-S OFDM / 64Q

Lowest Band Edge / 1RB0

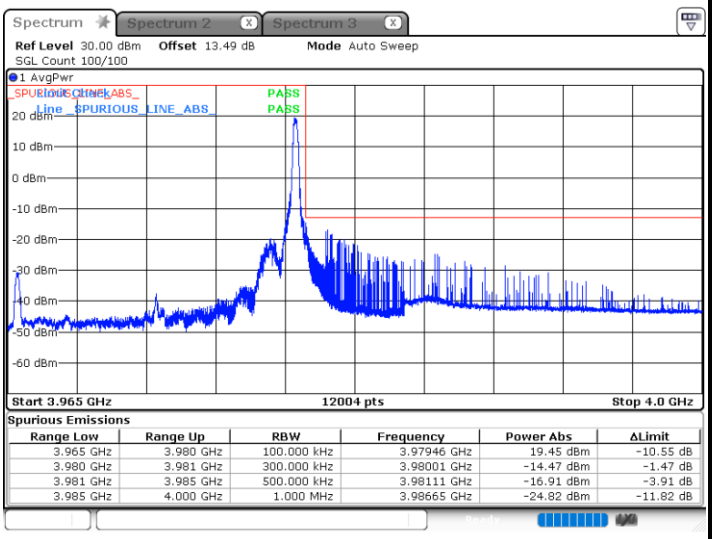


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97946 GHz	19.45 dBm	-10.55 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-14.47 dBm	-1.47 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98111 GHz	-16.91 dBm	-3.91 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98665 GHz	-24.82 dBm	-11.82 dB

Date: 22.FEB.2022 09:48:39

Highest Band Edge / 1RBmax

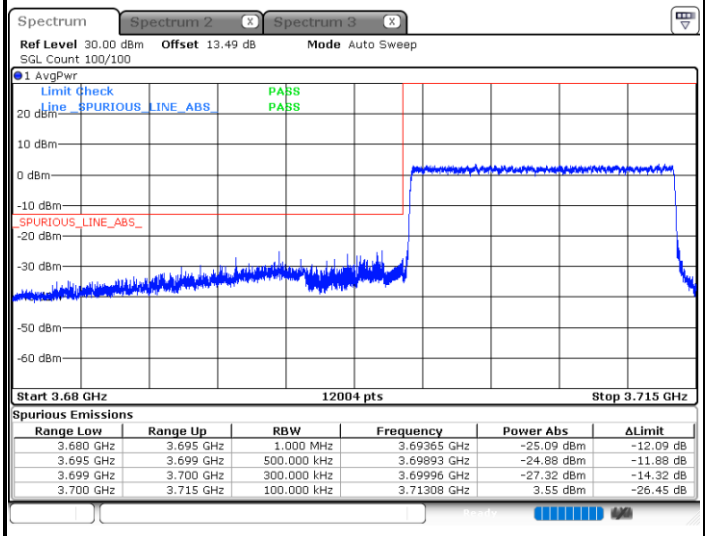


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97946 GHz	19.45 dBm	-10.55 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-14.47 dBm	-1.47 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98111 GHz	-16.91 dBm	-3.91 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98665 GHz	-24.82 dBm	-11.82 dB

Date: 22.FEB.2022 09:48:39

Lowest Band Edge / Full RB

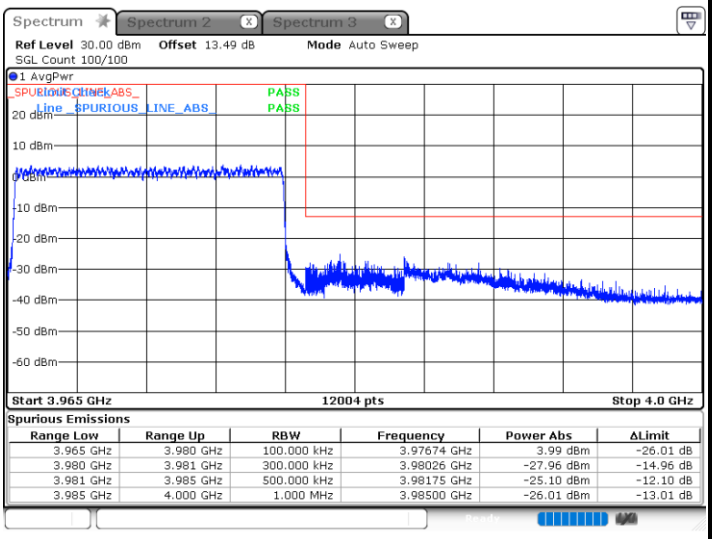


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69365 GHz	-25.09 dBm	-12.09 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69893 GHz	-24.88 dBm	-11.88 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69996 GHz	-27.32 dBm	-14.32 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.71308 GHz	3.55 dBm	-26.45 dB

Date: 22.FEB.2022 09:35:30

Highest Band Edge / Full RB



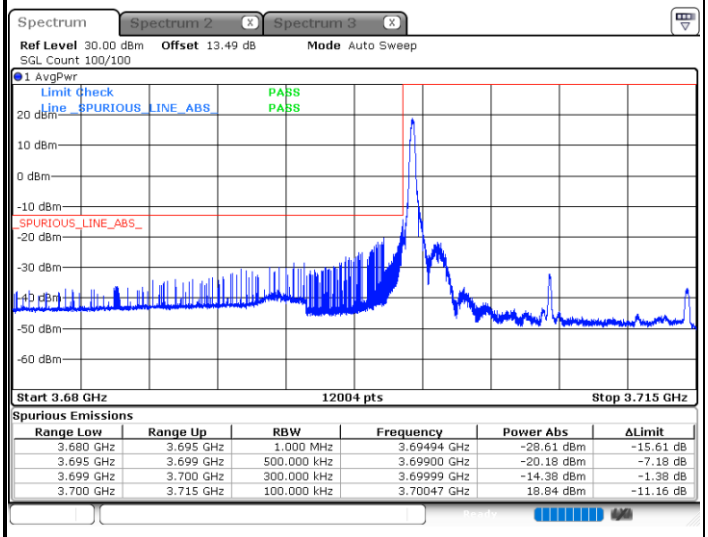
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97674 GHz	3.99 dBm	-26.01 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98026 GHz	-27.96 dBm	-14.96 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98175 GHz	-25.10 dBm	-12.10 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98500 GHz	-26.01 dBm	-13.01 dB

Date: 22.FEB.2022 09:43:31

FR1 n77 / 15MHz / DFT-S OFDM / 256Q

Lowest Band Edge / 1RB0

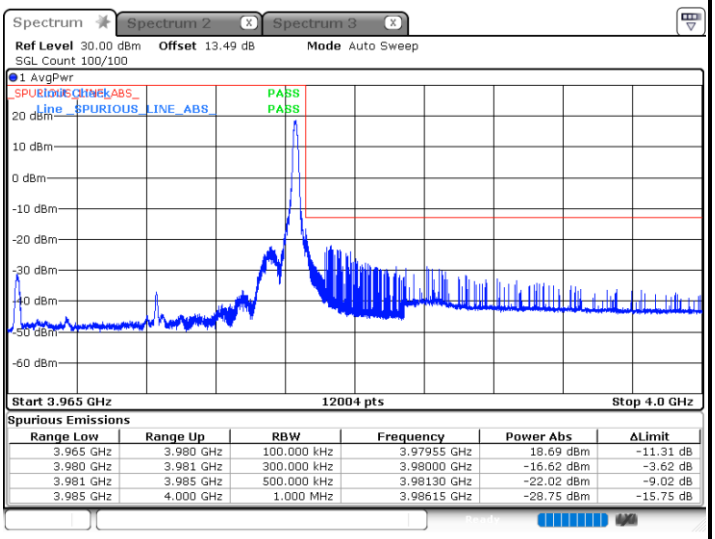


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69494 GHz	-28.61 dBm	-15.61 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69900 GHz	-20.18 dBm	-7.18 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-14.38 dBm	-1.38 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70047 GHz	18.84 dBm	-11.16 dB

Date: 22.FEB.2022 09:34:13

Highest Band Edge / 1RBmax

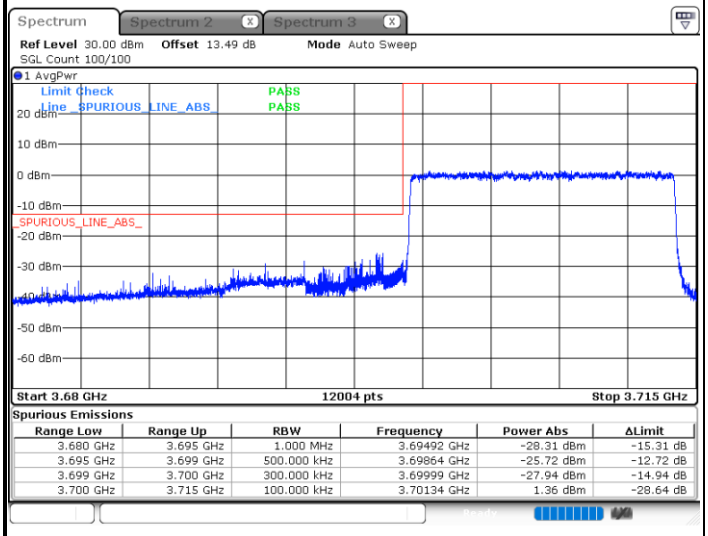


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97955 GHz	18.69 dBm	-11.31 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-16.62 dBm	-3.62 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98130 GHz	-22.02 dBm	-9.02 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98615 GHz	-28.75 dBm	-15.75 dB

Date: 22.FEB.2022 09:47:14

Lowest Band Edge / Full RB

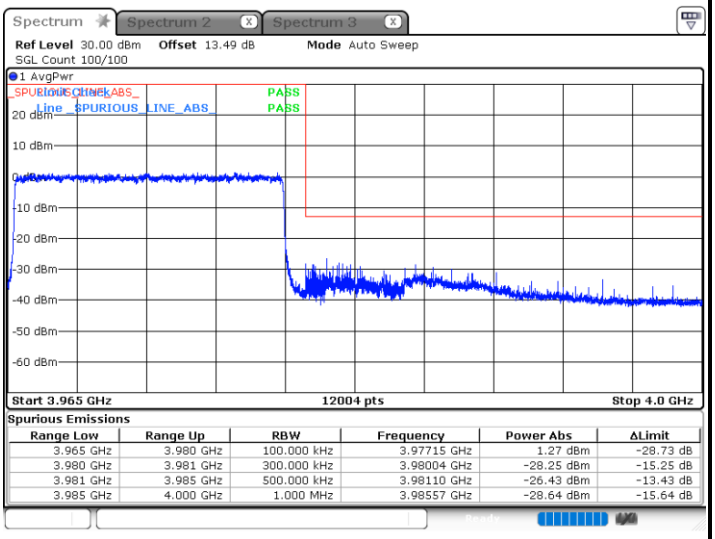


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69492 GHz	-28.31 dBm	-15.31 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69864 GHz	-25.72 dBm	-12.72 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-27.94 dBm	-14.94 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70134 GHz	1.36 dBm	-28.64 dB

Date: 22.FEB.2022 09:34:53

Highest Band Edge / Full RB

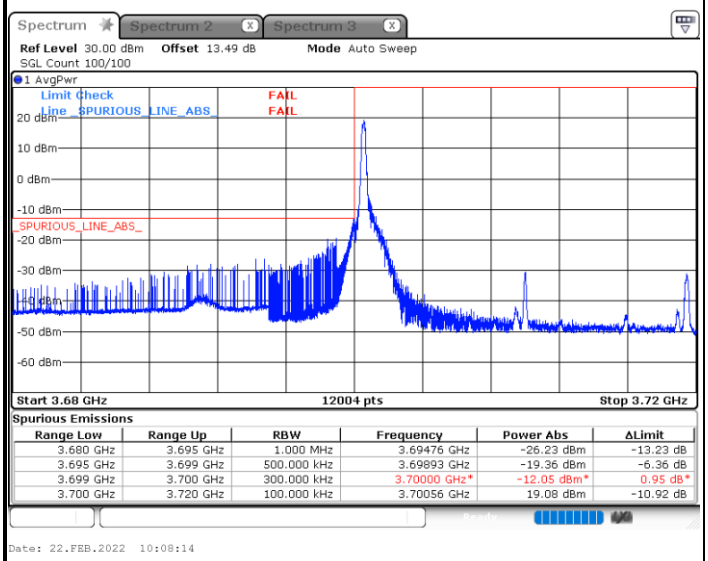


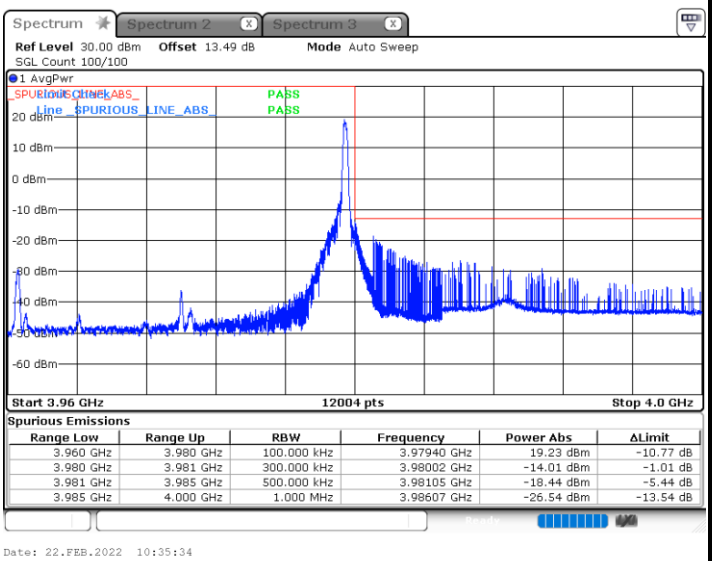
Spurious Emissions

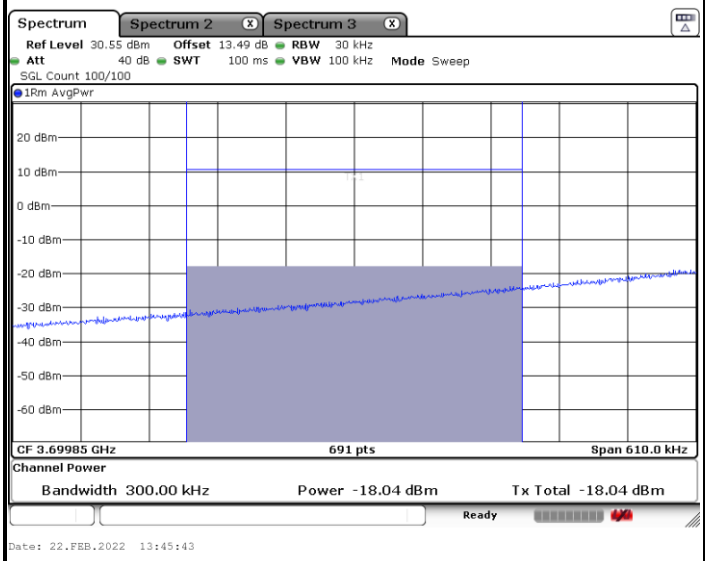
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97715 GHz	1.27 dBm	-28.73 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98004 GHz	-28.25 dBm	-15.25 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98110 GHz	-26.43 dBm	-13.43 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98557 GHz	-28.64 dBm	-15.64 dB

Date: 22.FEB.2022 09:45:40

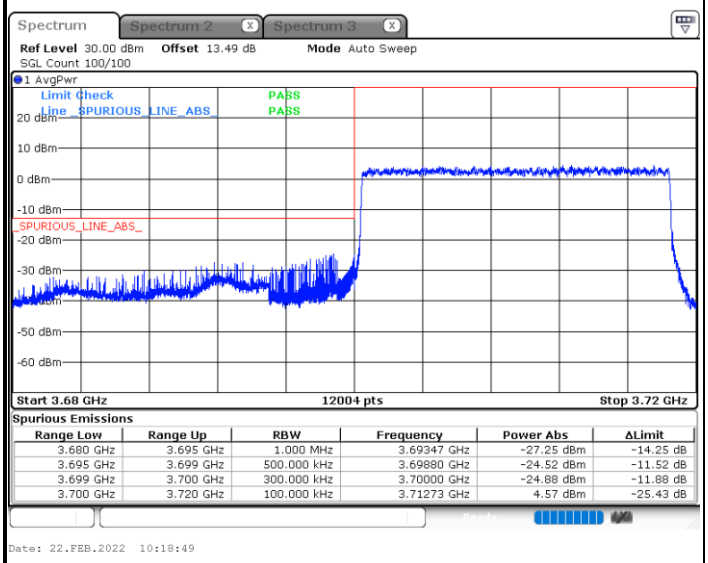
FR1 n77 / 20MHz / DFT-S OFDM / PI/2 BPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

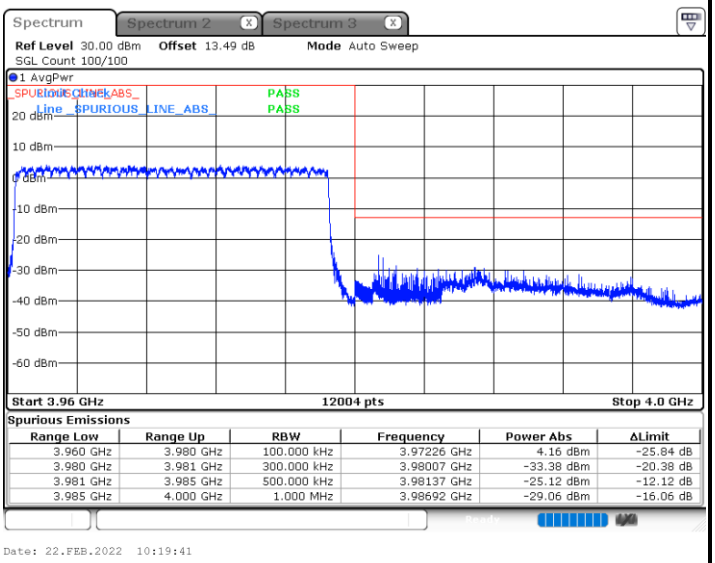




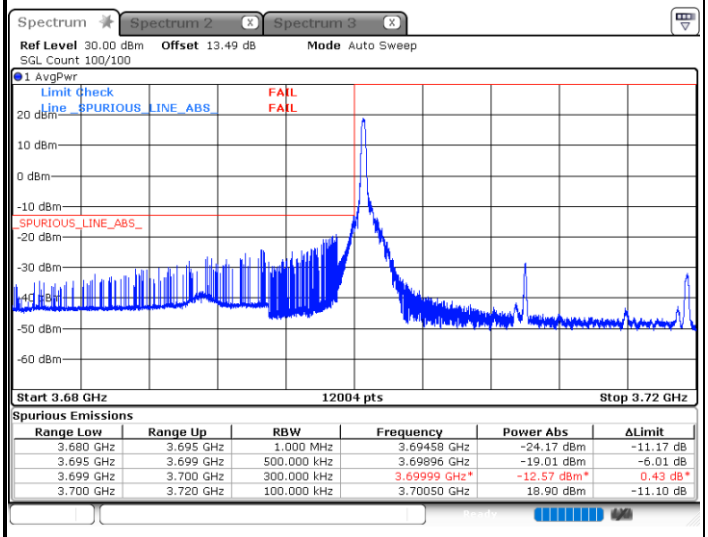


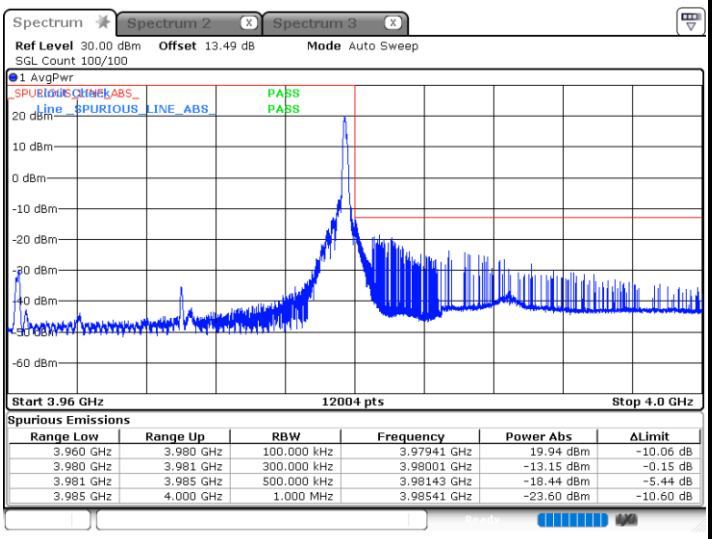
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

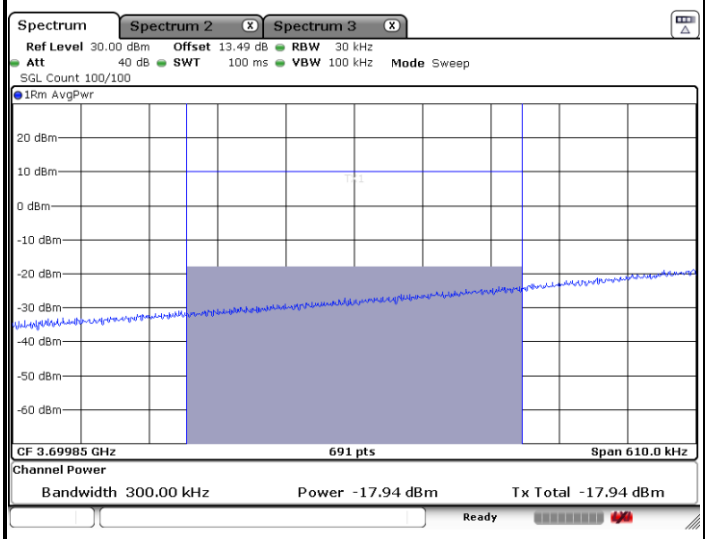


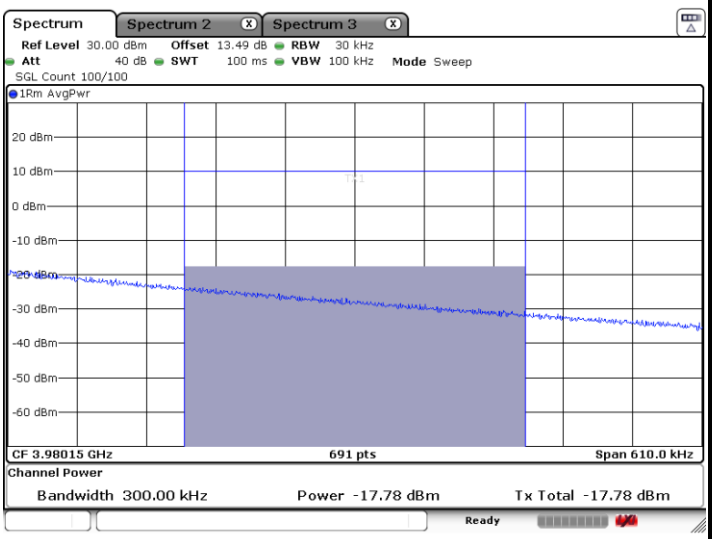


FR1 n77 / 20MHz / DFT-S OFDM / QPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

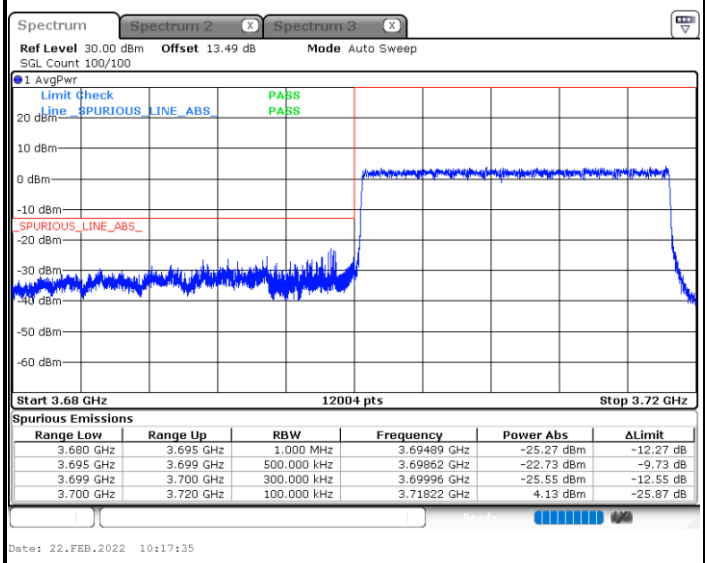


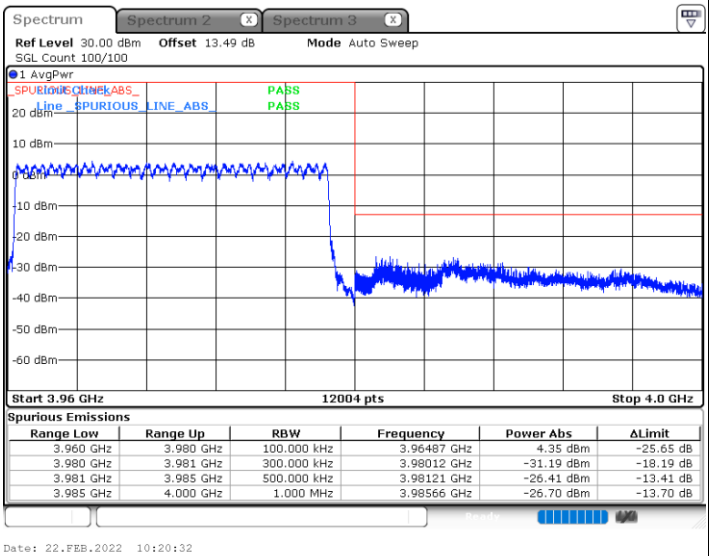




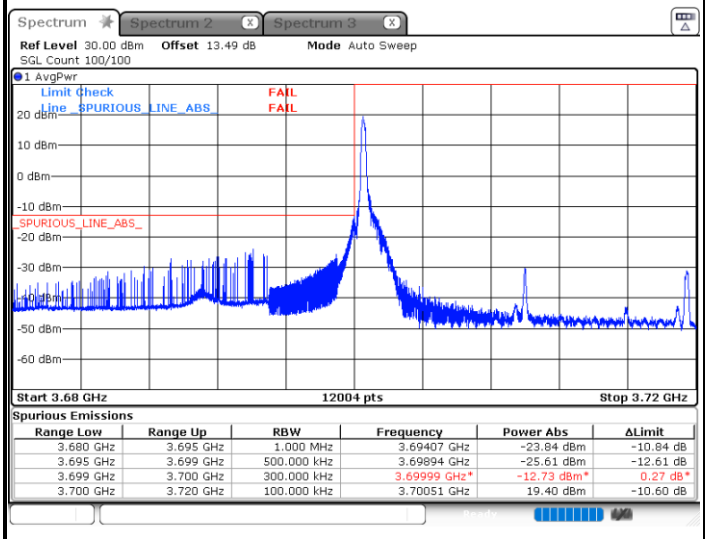


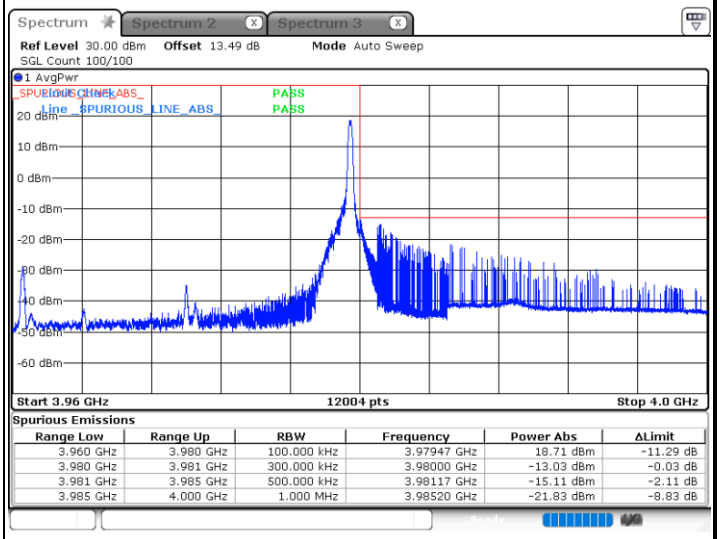
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

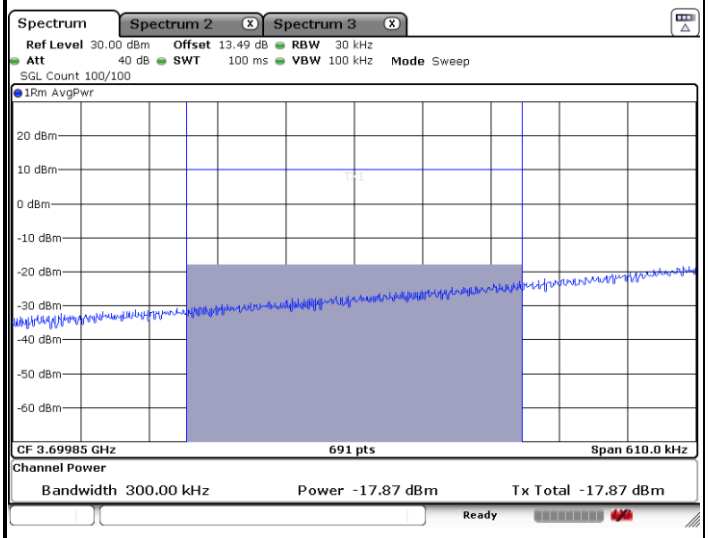


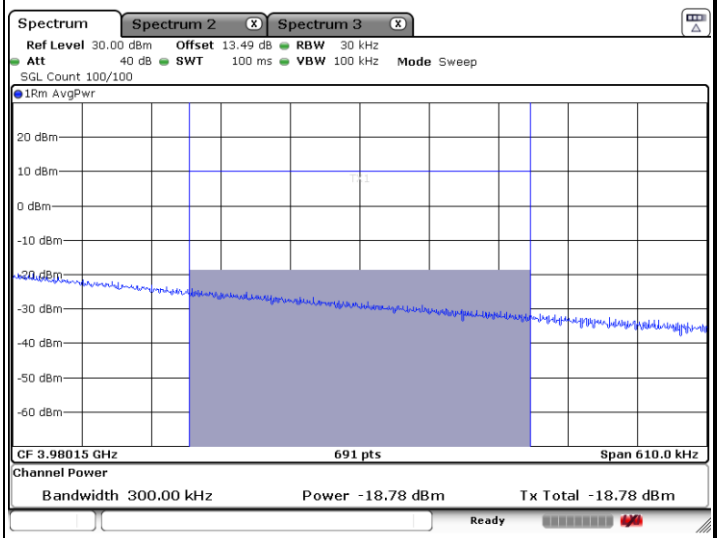


FR1 n77 / 20MHz / DFT-S OFDM / 16Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

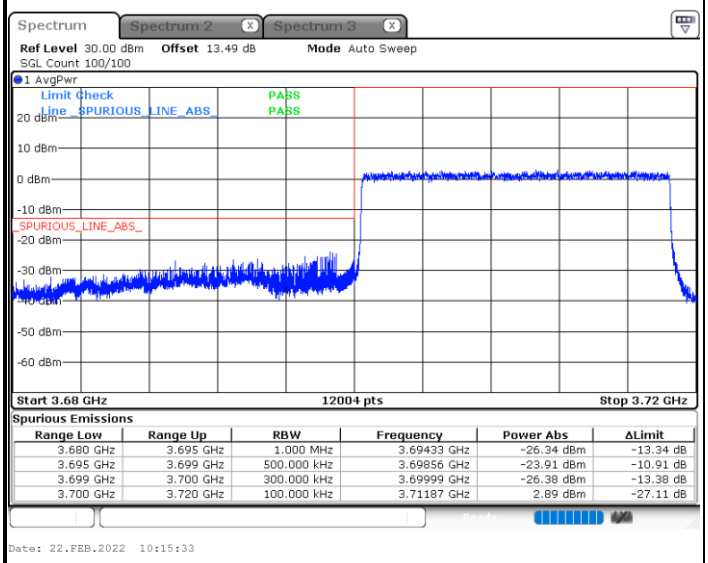


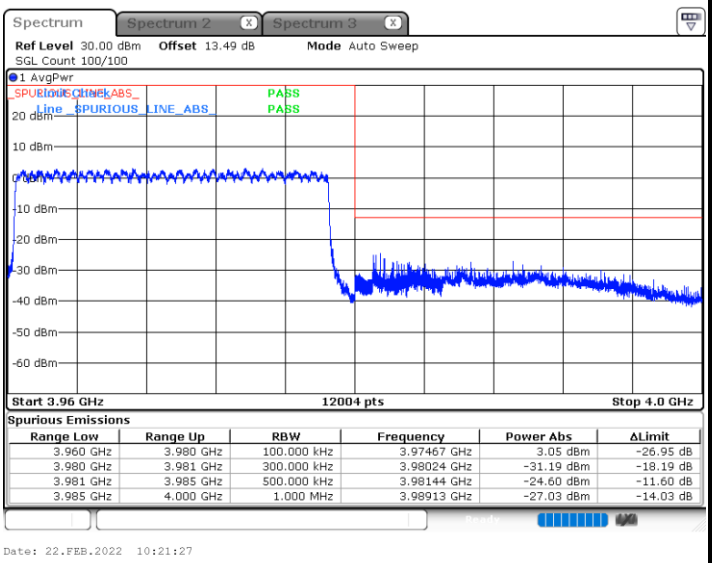




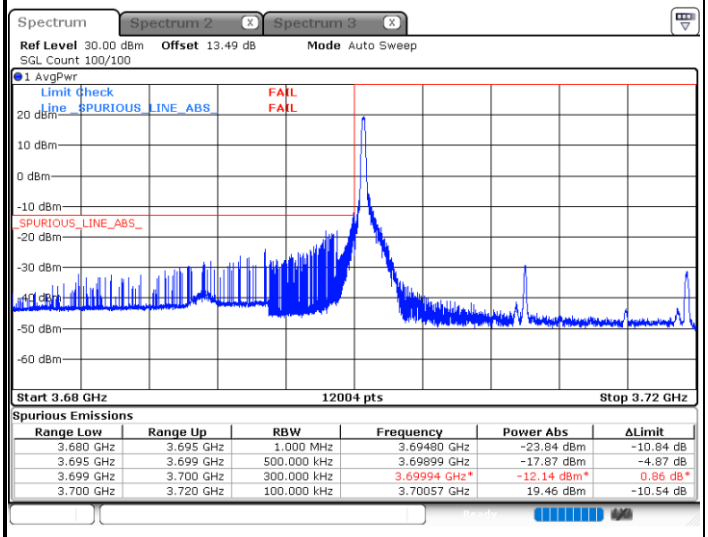


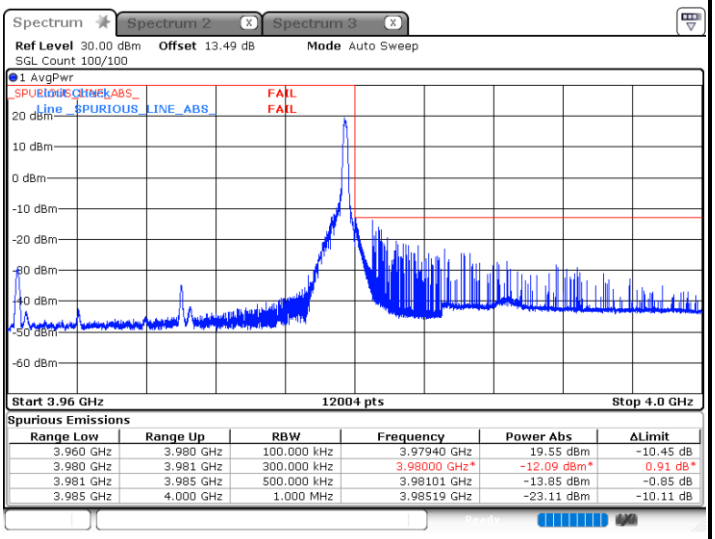
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

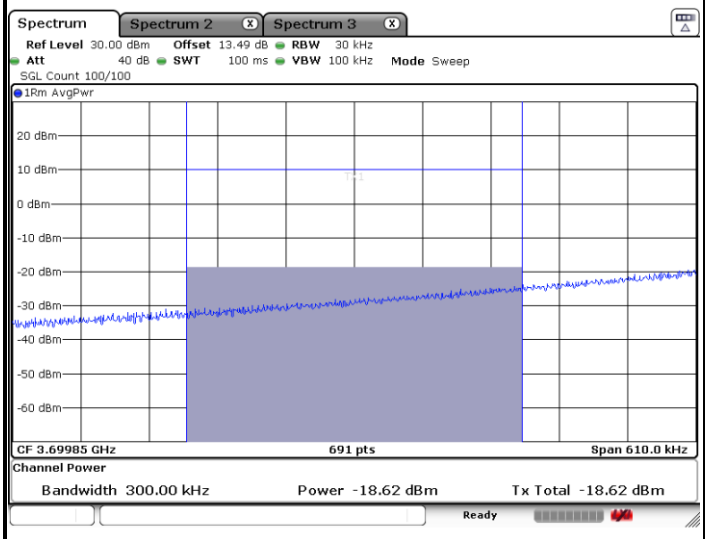


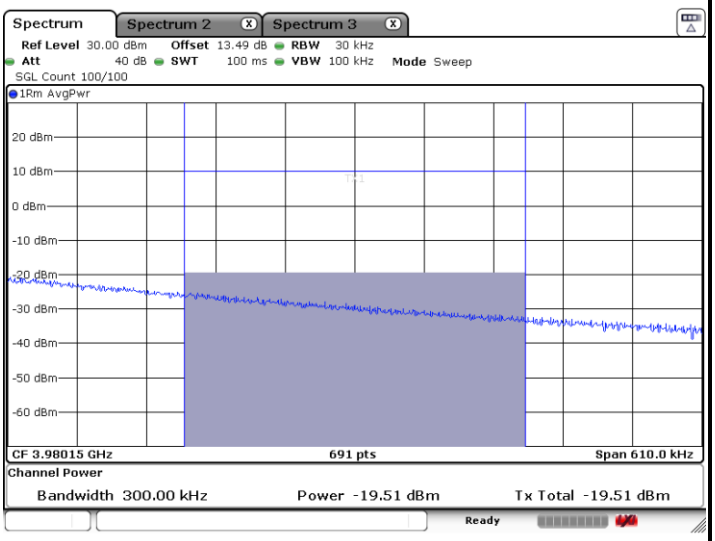


FR1 n77 / 20MHz / DFT-S OFDM / 64Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**









Lowest Band Edge / Full RB	Highest Band Edge / Full RB