FCC RF Test Report

APPLICANT	:	Xiaomi Communications Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	POCO
MODEL NAME	:	22041216UG
FCC ID	:	2AFZZ1216U
STANDARD	:	47 CFR Part 2, 27
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	:	Mar. 17, 2022 ~ Apr. 11, 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.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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
FG231203D	Rev. 01	Initial issue of report	May 06, 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	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	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(l)(2)	Conducted Spurious Emission	< 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	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 37.25 dB at 7404.00 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	POCO
Model Name	22041216UG
FCC ID	2AFZZ1216U
IMEI Code	Conducted : 867032060031692/867032060031678 Radiation : 867032060031676/867032060031684
HW Version	P2
SW Version	MIUI13
EUT Stage	Identical Prototype

Remark: Only 5G NR bands are tested in this report, all the other RF bands are tested in the other reports separately.

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 / 25MHz / 30MHz / 40MHz / 50MHz n77, n78(30kHz): 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz
Antenna Gain	**Ant. 2:** 5G NR n77: -1.10 dBi 5G NR n78: -1.10 dBi **Ant. 3:** 5G NR n77: 0.77 dBi 5G NR n78: 0.77 dBi **Ant. 4:** 5G NR n77: 1.10 dBi 5G NR n78: 1.10 dBi

	Ant. 5: 5G NR n77: -1.30 dBi 5G NR n78: -0.80 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 4.
2. The device supports n78(1T4R) SRS resources on Ant.2/3/4/5, only the test data of worst Ant.4 is showed in the report according to the maximum power
3. 5G NR n77 support SA, n78 support SA & NSA, SA covers NSA by referring to the maximum power.
4. 5G NR bands support SCS 15kHz and SCS 30kHz. According to the maximum power, n77/n78 SCS 15kHz covers SCS 30kHz for BW 10/15/20/25/30/40/50MHz
5. The device supports HPUE mode for 5G NR SA n78.
6. The EN-DC mode combination: DC_2A_n78A, DC_5A_n78A, DC_7A_n78A, DC_38A_n78A, DC_41A_n78A.

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	0.5035	48M2G7D	0.4111	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	0.4831	96M9G7D	0.3420	97M1W7D
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	0.6934	48M0G7D	0.5495	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	0.6966	97M3G7D	0.5035	97M7W7D

Note: All modulations have been tested, only the maximum bandwidth and 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.**
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-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, 27
- 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.

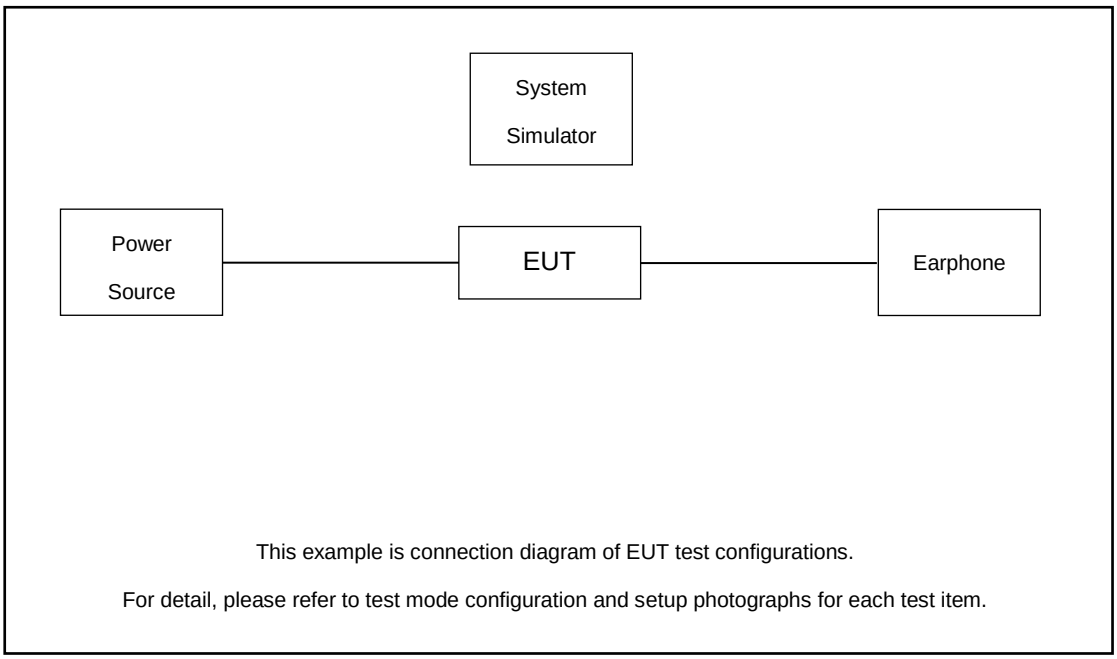
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

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		
		10	15	20	25	30	40	50	60-90	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	v
	n78	v	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	
	n78							v		v	v	v	v	v	v		v		v	
26dB and 99% Bandwidth	n77							v		v		v	v				v		v	
	n78							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		v
	n78	v	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	v
	n78	v	v	v	v	v	v	v	v	v		v				v		v	v	v
Frequency Stability	n77							v		v		v					v		v	
	n78							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	v
	n78	v	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	
	n78	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. Normal Voltage: 3.87Vdc, Extreme Voltage: 3.6Vdc ~4.45Vdc																			

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.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
4.	Earphone	Xiaomi	N/A	N/A	N/A	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
30	Channel	647666	656000	664334
	Frequency	3714.99	3840	3965.01
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
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
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
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
30	Channel	647668	656000	664334
	Frequency	3715.02	3840	3965.01
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
20	Channel	647334	656000	664668
	Frequency	3710.01	3840	3970.02
15	Channel	647168	656000	664834
	Frequency	3707.52	3840	3972.51
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

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
30	Channel	647666	650000	652334
	Frequency	3714.99	3750	3785.01
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647333	650000	652667
	Frequency	3710.00	3750.00	3790.01
15	Channel	647167	650000	652833
	Frequency	3707.51	3750.00	3792.50
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	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
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
30	Channel	647668	650000	652334
	Frequency	3715.02	3750	3785.01
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652668
	Frequency	3710.01	3750	3790.02
15	Channel	647168	650000	652834
	Frequency	3707.52	3750	3792.51
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

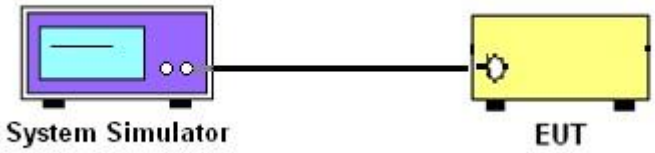
3 Conducted Test Items

3.1 Measuring Instruments

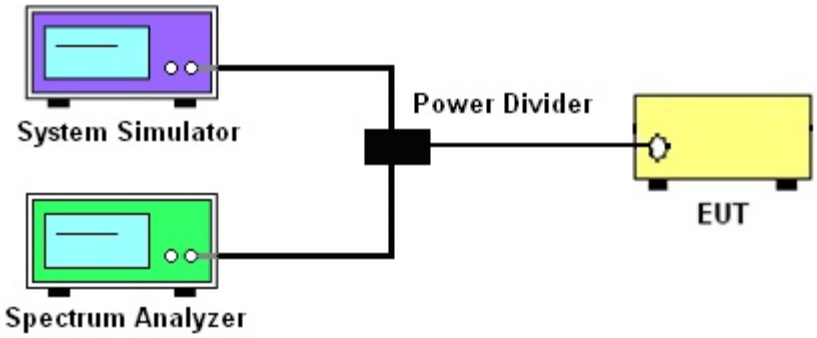
See list of measuring instruments of this test report.

3.2 Test Setup

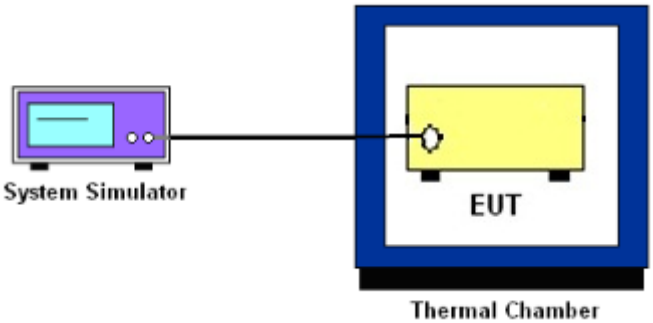
3.2.1 Conducted Output Power



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.

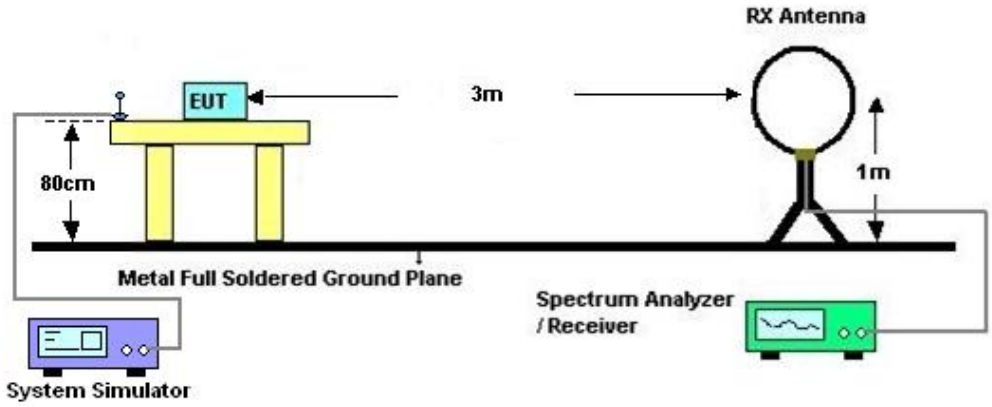
4 Radiated Test Items

4.1 Measuring Instruments

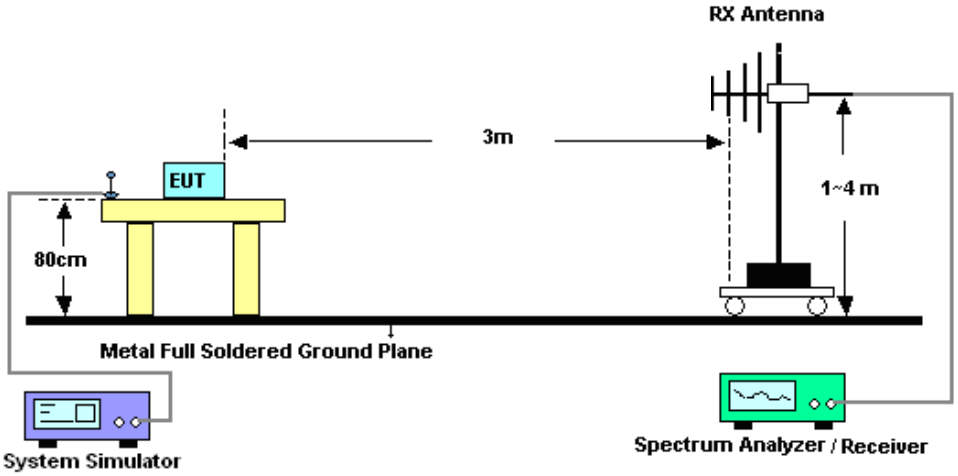
See list of measuring instruments of this test report.

4.2 Test Setup

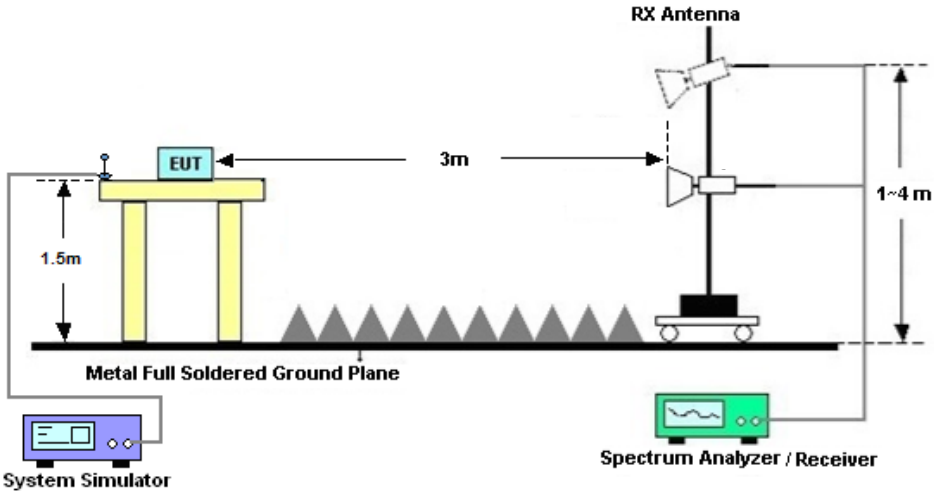
4.2.1 For radiated test below 30MHz



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	Mar. 17, 2022~ Mar. 25, 2022	Oct. 13, 2022	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2021	Mar. 17, 2022~ Mar. 25, 2022	Aug. 25, 2022	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 12, 2021	Mar. 17, 2022~ Mar. 25, 2022	Jul. 11, 2022	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Apr. 11, 2022	Apr. 12, 2022	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Apr. 11, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2021	Apr. 11, 2022	May 29, 2022	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 18, 2021	Apr. 11, 2022	Apr. 17, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Apr. 11, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Apr. 11, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2022	Apr. 11, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P	2025788	1Ghz-18Ghz	Jul. 30, 2021	Apr. 11, 2022	Jul. 29, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Apr. 11, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Apr. 11, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Apr. 11, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Apr. 11, 2022	NCR	Radiation (03CH04-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))	**3.3dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.8dB**

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Smile Wang	Temperature :	22~23℃
		Relative Humidity :	40~42%

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	25.62	25.68	25.60	1.10	0.4699	0.4764	0.4677
50	QPSK	1	1	25.61	25.59	25.61	1.10	0.4688	0.4667	0.4688
50	QPSK	1	268	25.49	25.65	25.72	1.10	0.4560	0.4732	0.4808
50	QPSK	135	67	25.82	25.88	25.92	1.10	0.4920	0.4989	0.5035
50	QPSK	270	0	24.76	24.84	24.85	1.10	0.3855	0.3926	0.3936
50	16QAM	1	1	25.04	24.80	24.86	1.10	0.4111	0.3890	0.3945
50	64QAM	1	1	23.01	23.06	23.26	1.10	0.2576	0.2606	0.2729
50	256QAM	1	1	21.42	21.50	21.46	1.10	0.1786	0.1820	0.1803
Channel				648000	656000	664000	Gain	L	M	H
Frequency (MHz)				3720	3840	3960				
40	PI/2 BPSK	1	1	25.25	25.28	25.24	1.10	0.4315	0.4345	0.4305
Channel				647666	656000	664334	Gain	L	M	H
Frequency (MHz)				3714.99	3840	3965.01				
30	PI/2 BPSK	1	1	25.44	25.58	25.49	1.10	0.4508	0.4656	0.4560
Channel				647500	656000	664500	Gain	L	M	H
Frequency (MHz)				3712.5	3840	3967.5				
25	PI/2 BPSK	1	1	25.50	25.24	25.38	1.10	0.4571	0.4305	0.4446
Channel				647333	656000	664667	Gain	L	M	H
Frequency (MHz)				3709.995	3840	3970.005				
20	PI/2 BPSK	1	1	25.59	25.36	25.65	1.10	0.4667	0.4426	0.4732
Channel				647167	656000	664833	Gain	L	M	H
Frequency (MHz)				3707.505	3840	3972.495				
15	PI/2 BPSK	1	1	25.55	25.32	25.42	1.10	0.4624	0.4385	0.4487
Channel				647000	656000	665000	Gain	L	M	H
Frequency (MHz)				3705	3840	3975				
10	PI/2 BPSK	1	1	25.51	25.44	25.36	1.10	0.4581	0.4508	0.4426

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	24.92	25.06	25.16	1.10	0.3999	0.4130	0.4227
100	PI/2 BPSK	1	137	25.47	25.71	25.74	1.10	0.4539	0.4797	0.4831
100	PI/2 BPSK	1	271	24.99	25.02	25.12	1.10	0.4064	0.4093	0.4188
100	PI/2 BPSK	135	0	24.82	25.09	25.16	1.10	0.3908	0.4159	0.4227
100	PI/2 BPSK	135	69	25.51	25.71	25.66	1.10	0.4581	0.4797	0.4742
100	PI/2 BPSK	135	138	24.96	25.16	25.11	1.10	0.4036	0.4227	0.4178
100	PI/2 BPSK	270	0	24.91	25.12	25.12	1.10	0.3990	0.4188	0.4188
100	QPSK	1	1	24.92	25.19	25.12	1.10	0.3999	0.4256	0.4188
100	QPSK	1	137	25.49	25.72	25.71	1.10	0.4560	0.4808	0.4797
100	QPSK	1	271	25.01	25.09	25.11	1.10	0.4083	0.4159	0.4178
100	QPSK	135	0	24.29	24.62	24.64	1.10	0.3459	0.3733	0.3750
100	QPSK	135	69	25.46	25.71	25.69	1.10	0.4529	0.4797	0.4775
100	QPSK	135	138	24.47	24.65	24.56	1.10	0.3606	0.3758	0.3681
100	QPSK	270	0	24.41	24.61	24.61	1.10	0.3556	0.3724	0.3724
100	16QAM	1	1	24.05	24.24	24.23	1.10	0.3273	0.3420	0.3412
100	64QAM	1	1	22.51	22.50	22.83	1.10	0.2296	0.2291	0.2472
100	256QAM	1	1	20.61	20.82	20.84	1.10	0.1483	0.1556	0.1563
Channel				649668	656000	662334	Gain	L	M	H
Frequency (MHz)				3745.02	3840	3935.01				
90	PI/2 BPSK	1	1	24.96	25.17	25.14	1.10	0.4036	0.4236	0.4207
Channel				649334	656000	662668	Gain	L	M	H
Frequency (MHz)				3740.01	3840	3940.02				
80	PI/2 BPSK	1	1	25.16	25.32	25.26	1.10	0.4227	0.4385	0.4325
Channel				649000	656000	663000	Gain	L	M	H
Frequency (MHz)				3735	3840	3945				
70	PI/2 BPSK	1	1	25.29	25.39	25.38	1.10	0.4355	0.4457	0.4446
Channel				648668	656000	663334	Gain	L	M	H
Frequency (MHz)				3730.02	3840	3950.01				
60	PI/2 BPSK	1	1	25.24	25.29	25.28	1.10	0.4305	0.4355	0.4345
Channel				648334	656000	663668	Gain	L	M	H
Frequency (MHz)				3725.01	3840	3955.02				
50	PI/2 BPSK	1	1	25.06	25.16	25.13	1.10	0.4130	0.4227	0.4198
Channel				648000	656000	664000	Gain	L	M	H
Frequency (MHz)				3720	3840	3960				
40	PI/2 BPSK	1	1	25.13	25.12	25.17	1.10	0.4198	0.4188	0.4236
Channel				647668	656000	664334	Gain	L	M	H
Frequency (MHz)				3715.02	3840	3965.01				
30	PI/2 BPSK	1	1	25.04	25.13	25.19	1.10	0.4111	0.4198	0.4256
Channel				647500	656000	664500	Gain	L	M	H
Frequency (MHz)				3712.5	3840	3967.5				
25	PI/2 BPSK	1	1	25.16	25.25	25.26	1.10	0.4227	0.4315	0.4325
Channel				647334	656000	664668	Gain	L	M	H
Frequency (MHz)				3710.01	3840	3970.02				
20	PI/2 BPSK	1	1	25.22	25.46	25.45	1.10	0.4285	0.4529	0.4519

Channel				647168	656000	664834	Gain	L	M	H
Frequency (MHz)				3707.52	3840	3972.51				
15	PI/2 BPSK	1	1	25.26	25.32	25.33	1.10	0.4325	0.4385	0.4395
Channel				647000	656000	665000	Gain	L	M	H
Frequency (MHz)				3705	3840	3975				
10	PI/2 BPSK	1	1	25.13	25.44	25.26	1.10	0.4198	0.4508	0.4325

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	27.22	27.12	27.24	1.10	0.6792	0.6637	0.6823
50	QPSK	1	1	27.18	27.21	27.19	1.10	0.6730	0.6776	0.6745
50	QPSK	1	268	27.25	27.23	27.22	1.10	0.6839	0.6808	0.6792
50	QPSK	135	67	27.25	27.31	27.31	1.10	0.6839	0.6934	0.6934
50	QPSK	270	0	26.13	26.24	26.22	1.10	0.5284	0.5420	0.5395
50	16QAM	1	1	26.22	26.25	26.30	1.10	0.5395	0.5433	0.5495
50	64QAM	1	1	24.65	24.51	24.56	1.10	0.3758	0.3639	0.3681
50	256QAM	1	1	22.73	22.89	22.92	1.10	0.2415	0.2506	0.2523
Channel				648000	650000	652000	Gain	L	M	H
Frequency (MHz)				3720	3750	3780				
40	PI/2 BPSK	1	1	27.15	27.23	27.25	1.10	0.6683	0.6808	0.6839
Channel				647666	650000	652334	Gain	L	M	H
Frequency (MHz)				3714.99	3750	3785.01				
30	PI/2 BPSK	1	1	27.22	27.23	27.16	1.10	0.6792	0.6808	0.6699
Channel				647500	650000	652500	Gain	L	M	H
Frequency (MHz)				3712.5	3750	3787.5				
25	PI/2 BPSK	1	1	27.30	27.24	27.13	1.10	0.6918	0.6823	0.6653
Channel				647333	650000	652667	Gain	L	M	H
Frequency (MHz)				3710.00	3750.00	3790.01				
20	PI/2 BPSK	1	1	27.22	27.11	27.06	1.10	0.6792	0.6622	0.6546
Channel				647167	650000	652833	Gain	L	M	H
Frequency (MHz)				3707.51	3750.00	3792.50				
15	PI/2 BPSK	1	1	27.12	27.06	27.14	1.10	0.6637	0.6546	0.6668
Channel				647000	650000	653000	Gain	L	M	H
Frequency (MHz)				3705	3750	3795				
10	PI/2 BPSK	1	1	27.25	27.12	27.23	1.10	0.6839	0.6637	0.6808

5G NR n78(SCS 30kHz):

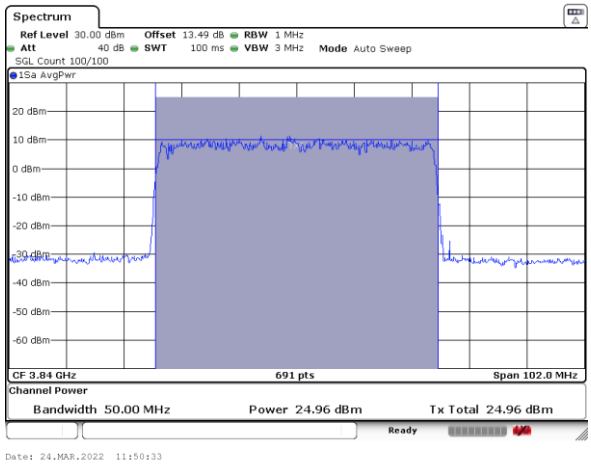
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Gain	EIRP		
Channel					650000				M	
Frequency (MHz)					3750					
100	PI/2 BPSK	1	1		26.95		1.10		0.6383	
100	QPSK	1	1		26.78		1.10		0.6138	
100	QPSK	1	271		26.79		1.10		0.6152	
100	QPSK	135	69		27.33		1.10		0.6966	
100	QPSK	270	0		26.26		1.10		0.5445	
100	16QAM	1	1		25.92		1.10		0.5035	
100	64QAM	1	1		24.31		1.10		0.3475	
100	256QAM	1	1		22.53		1.10		0.2307	
Channel				649668	650000	650334	Gain	L	M	H
Frequency (MHz)				3745.02	3750	3755.01				
90	PI/2 BPSK	1	1	26.89	26.95	27.02	1.10	0.6295	0.6383	0.6486
Channel				649334	650000	650666	Gain	L	M	H
Frequency (MHz)				3740.01	3750	3759.99				
80	PI/2 BPSK	1	1	27.02	27.00	27.03	1.10	0.6486	0.6457	0.6501
Channel				649000	650000	651000	Gain	L	M	H
Frequency (MHz)				3735	3750	3765				
70	PI/2 BPSK	1	1	27.14	27.12	27.13	1.10	0.6668	0.6637	0.6653
Channel				648668	650000	651334	Gain	L	M	H
Frequency (MHz)				3730.02	3750	3770.01				
60	PI/2 BPSK	1	1	27.12	27.09	27.06	1.10	0.6637	0.6592	0.6546
Channel				648334	650000	651668	Gain	L	M	H
Frequency (MHz)				3725.01	3750	3775.02				
50	PI/2 BPSK	1	1	27.11	27.18	27.16	1.10	0.6622	0.6730	0.6699
Channel				648000	650000	652000	Gain	L	M	H
Frequency (MHz)				3720	3750	3780				
40	PI/2 BPSK	1	1	26.93	26.85	26.92	1.10	0.6353	0.6237	0.6339
Channel				647668	650000	652334	Gain	L	M	H
Frequency (MHz)				3715.02	3750	3785.01				
30	PI/2 BPSK	1	1	27.16	27.06	27.05	1.10	0.6699	0.6546	0.6531
Channel				647500	650000	652500	Gain	L	M	H
Frequency (MHz)				3712.5	3750	3787.5				
25	PI/2 BPSK	1	1	27.02	27.09	27.05	1.10	0.6486	0.6592	0.6531
Channel				647334	650000	652668	Gain	L	M	H
Frequency (MHz)				3710.01	3750	3790.02				
20	PI/2 BPSK	1	1	27.02	27.16	27.03	1.10	0.6486	0.6699	0.6501
Channel				647168	650000	652834	Gain	L	M	H
Frequency (MHz)				3707.52	3750	3792.51				
15	PI/2 BPSK	1	1	27.03	27.15	27.12	1.10	0.6501	0.6683	0.6637
Channel				647000	650000	653000	Gain	L	M	H
Frequency (MHz)				3705	3750	3795				
10	PI/2 BPSK	1	1	27.12	27.06	27.14	1.10	0.6637	0.6546	0.6668

FR1 n77(SCS 15kHz)

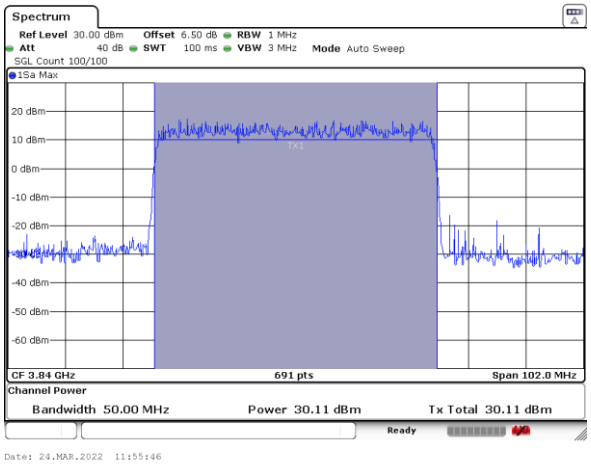
Peak-to-Average Ratio

Mode	FR1 n71 / 50MHz / DFT-S OFDM				
Mod.	50M				Limit: 13dB
RB Size	BPSK	QPSK	16QAM	64QAM	Result
Middle CH	5.15	5.29	5.27	5.14	PASS
RB Size	256QAM				
Middle CH	5.3				

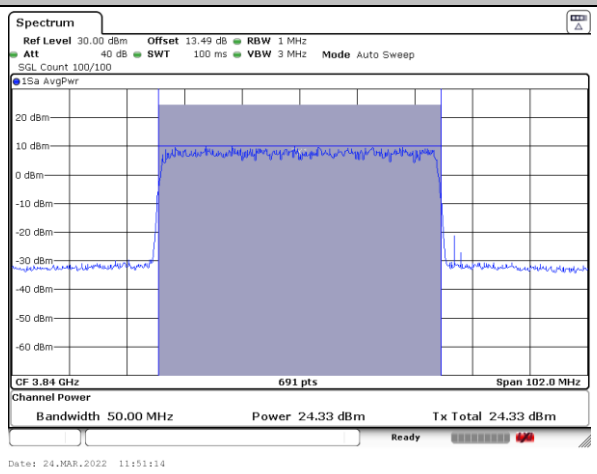
BPSK-A



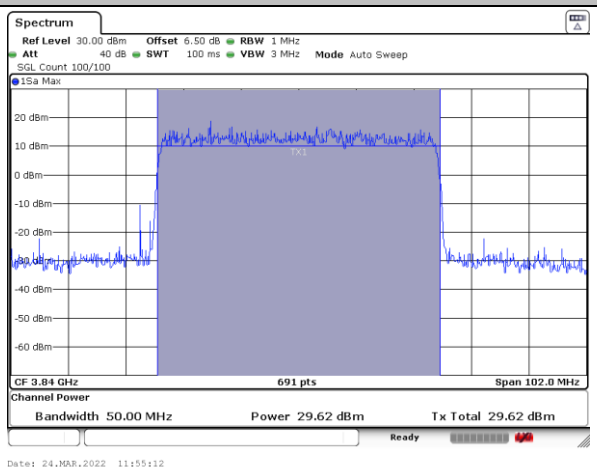
BPSK-P

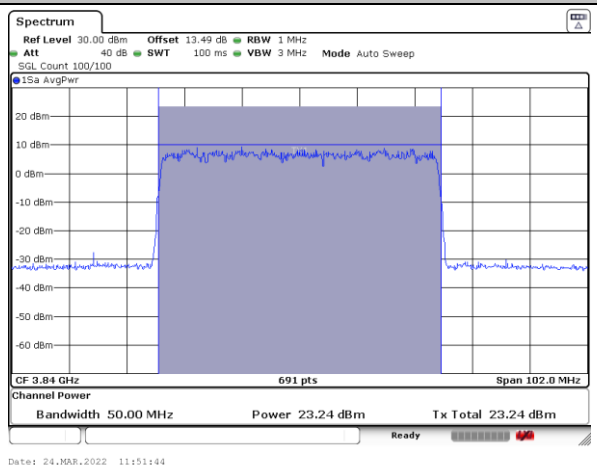
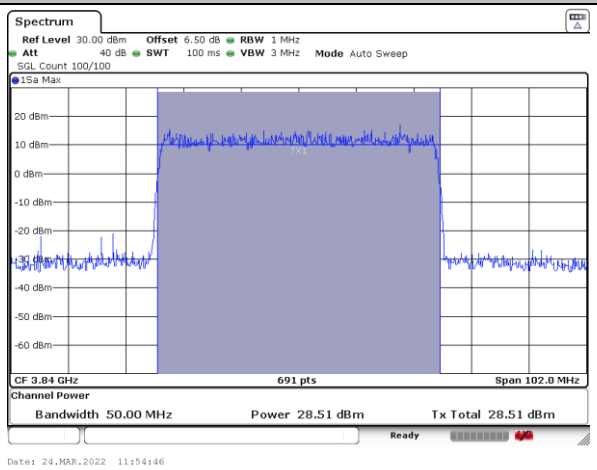
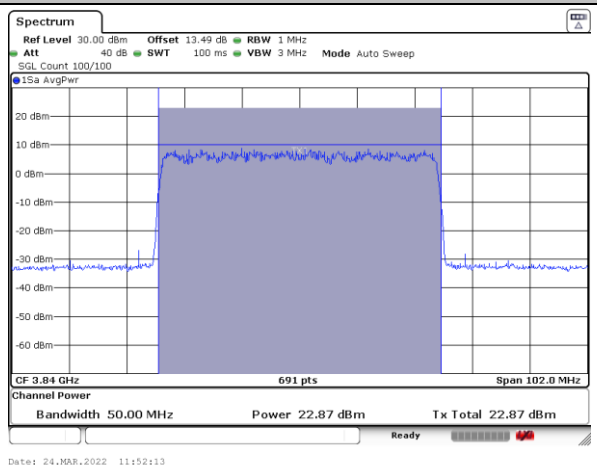
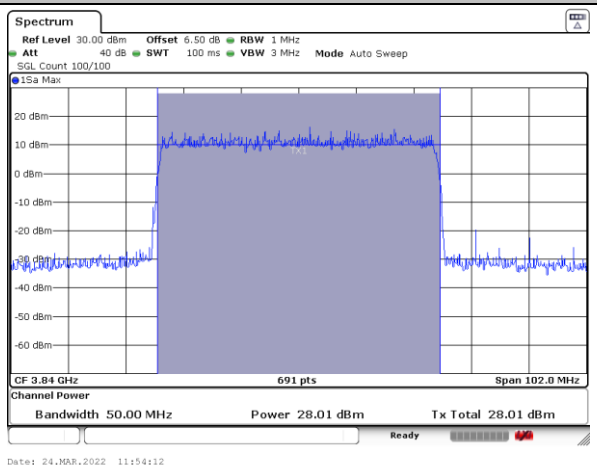
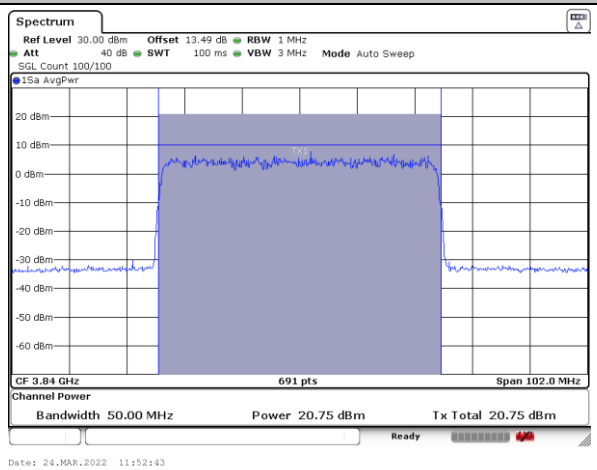
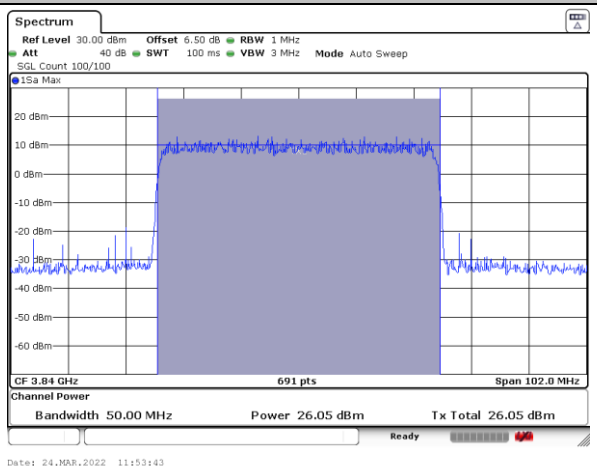


QPSK-A



QPSK-P

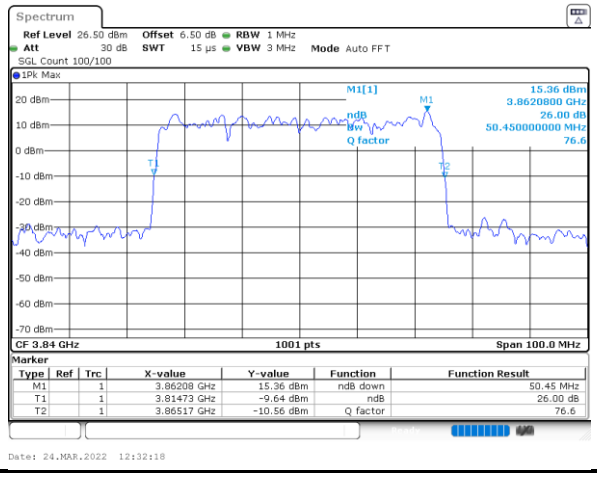


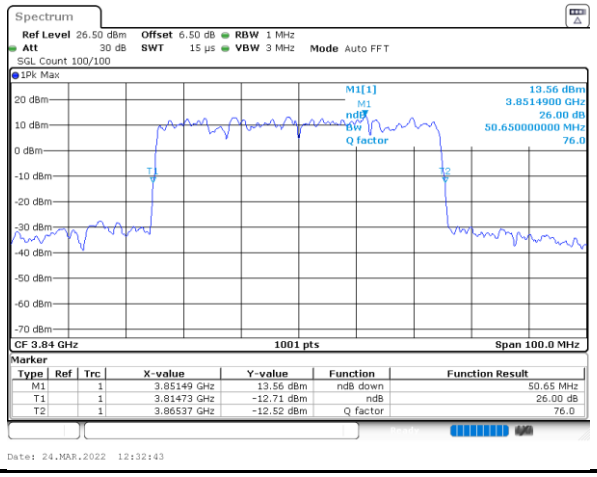
16QAM-A	16QAM-P
	
64QAM-A	64QAM-P
	
256QAM-A	256QAM-P
	

26dB Bandwidth

Mode	FR1 n77 : 26dB BW(MHz) / DFT-S OFDM	
BW	50M	
Mod.	QPSK	16QAM
Middle CH	50.45	50.65

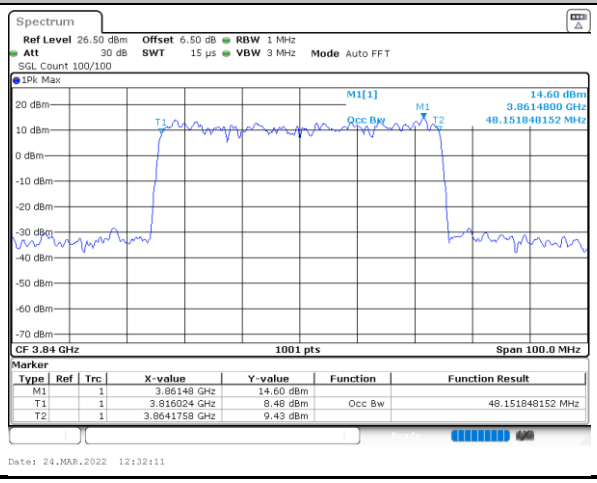
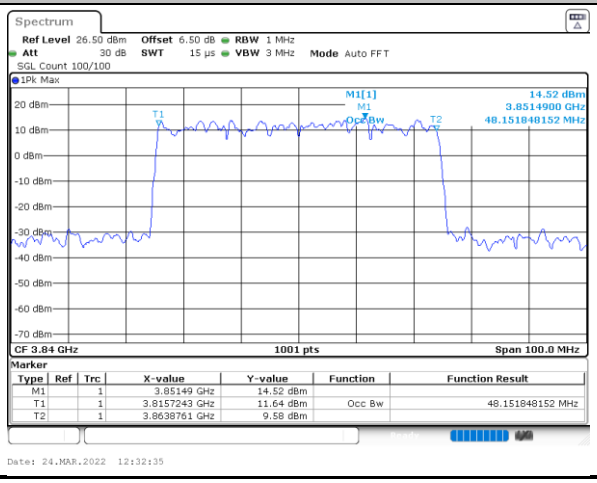
50M	
QPSK	16QAM





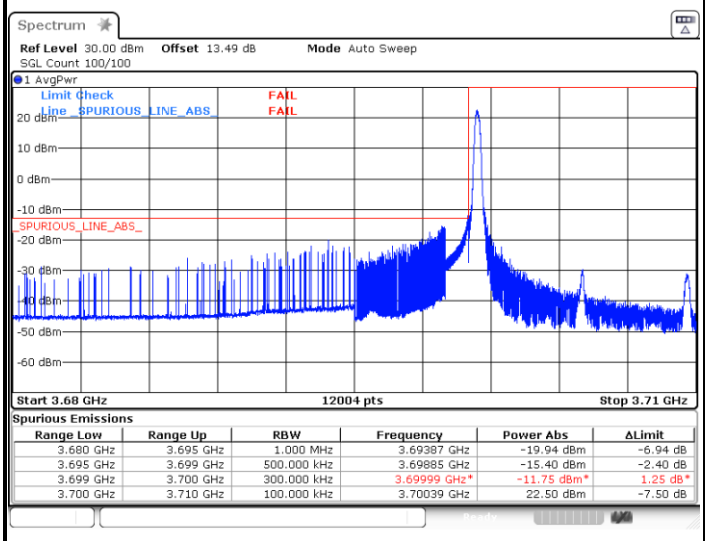
Occupied Bandwidth

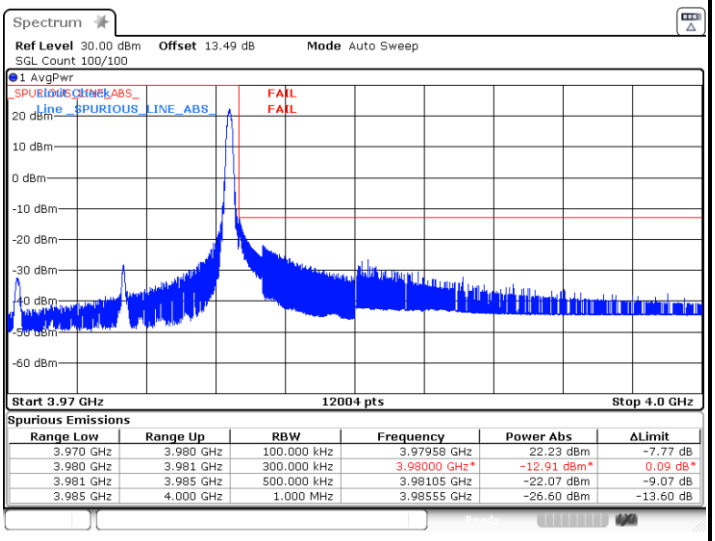
Mode	FR1 n77: OB BW(MHz) / DFT-S OFDM	
BW	50M	
Mod.	QPSK	16QAM
Middle CH	48.15	48.15

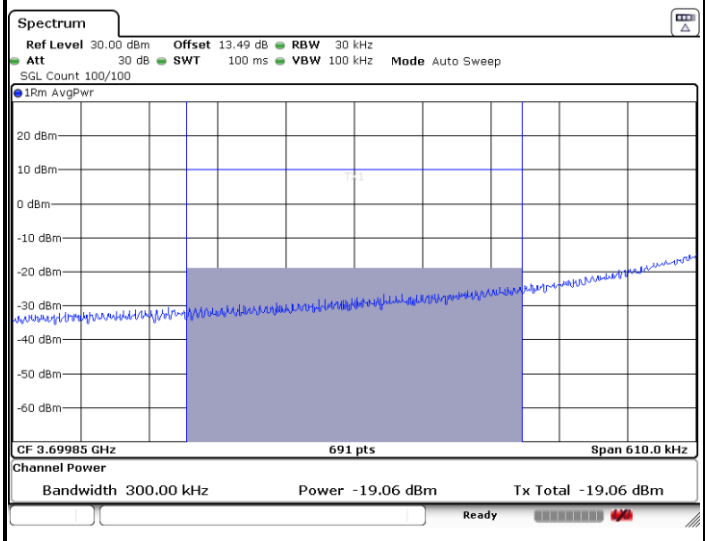
50M	
QPSK	16QAM
	

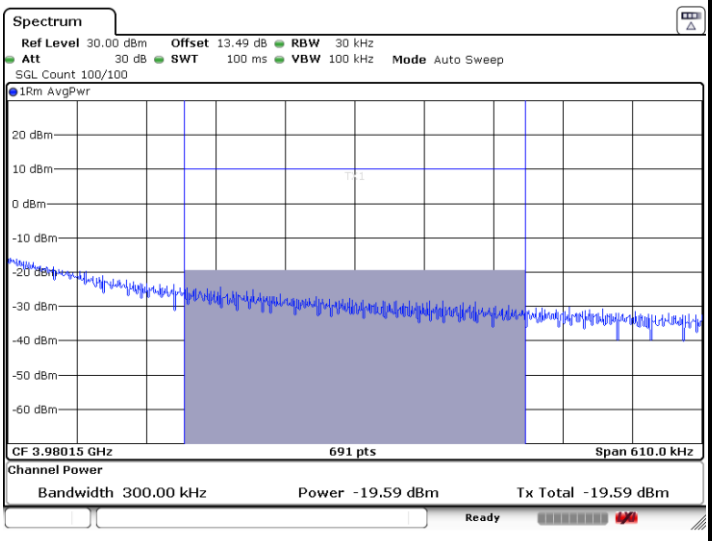
Conducted Band Edge

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

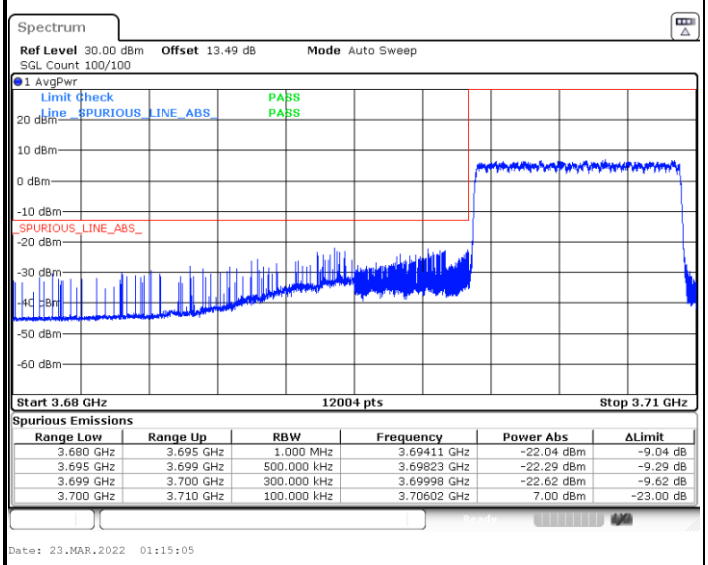








Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69411 GHz	-22.04 dBm	-9.04 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69823 GHz	-22.29 dBm	-9.29 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69998 GHz	-22.62 dBm	-9.62 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70602 GHz	7.00 dBm	-23.00 dB

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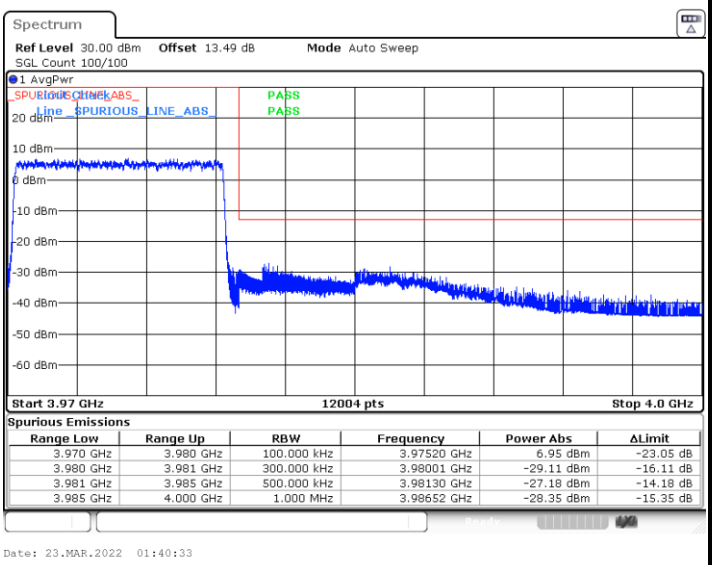

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97520 GHz	6.95 dBm	-23.05 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-29.11 dBm	-16.11 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98130 GHz	-27.18 dBm	-14.18 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98652 GHz	-28.35 dBm	-15.35 dB

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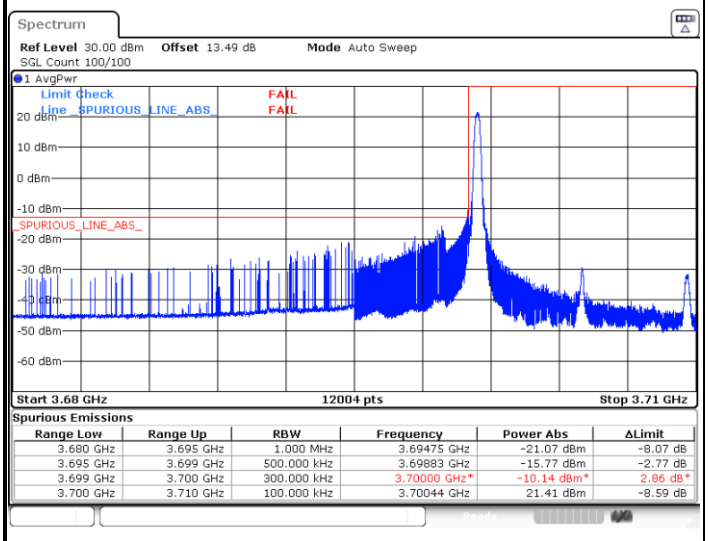
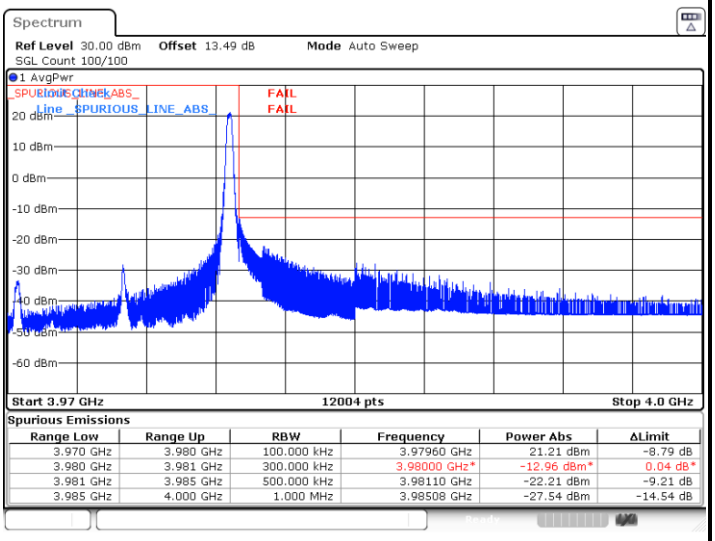
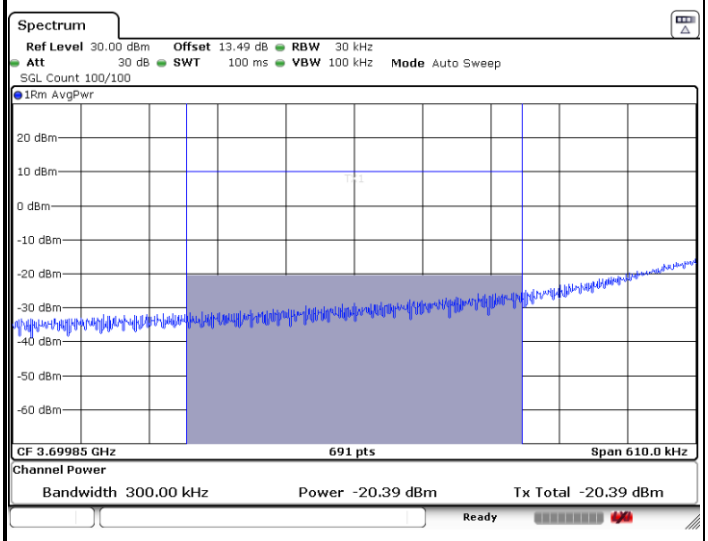
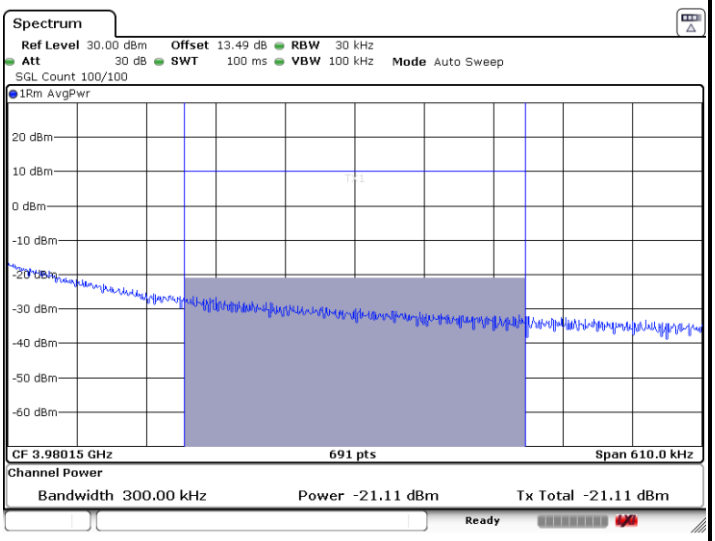
FR1 n77 / 10MHz / DFT-S OFDM / QPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

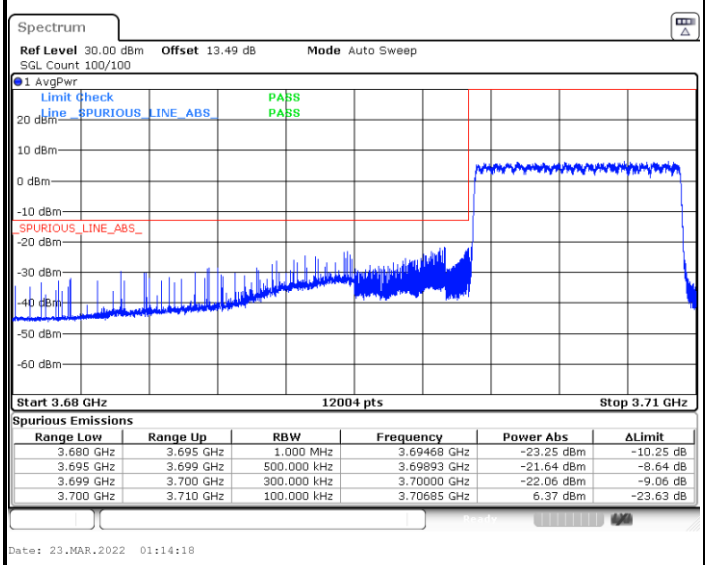








Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69468 GHz	-23.25 dBm	-10.25 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69893 GHz	-21.64 dBm	-8.64 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.70000 GHz	-22.06 dBm	-9.06 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70685 GHz	6.37 dBm	-23.63 dB

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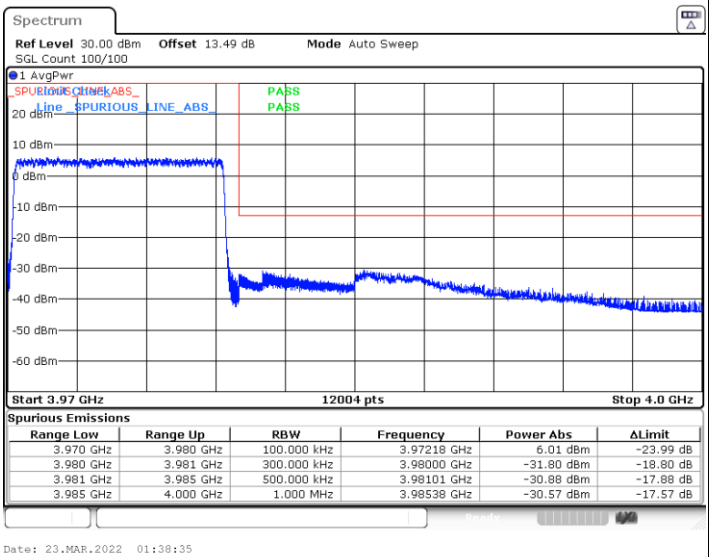

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97218 GHz	6.01 dBm	-23.99 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-31.80 dBm	-18.80 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98101 GHz	-30.88 dBm	-17.88 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98538 GHz	-30.57 dBm	-17.57 dB

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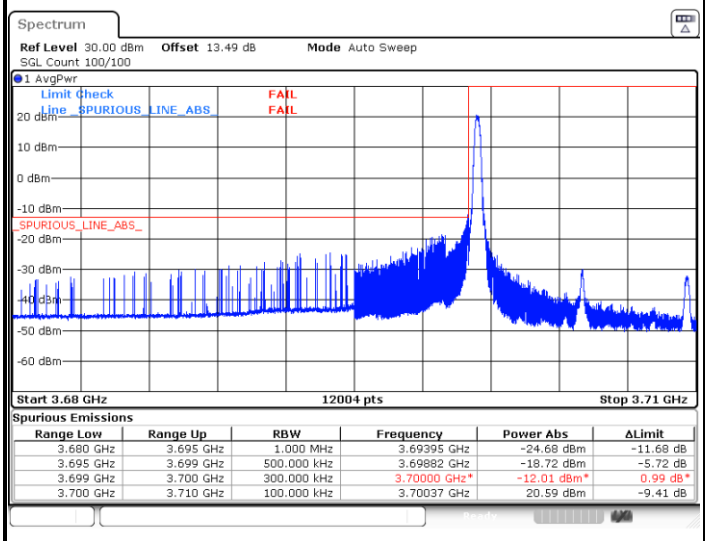
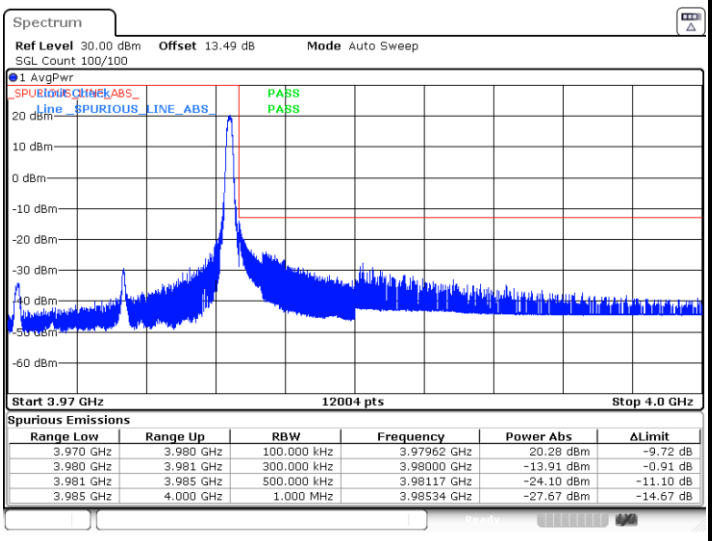
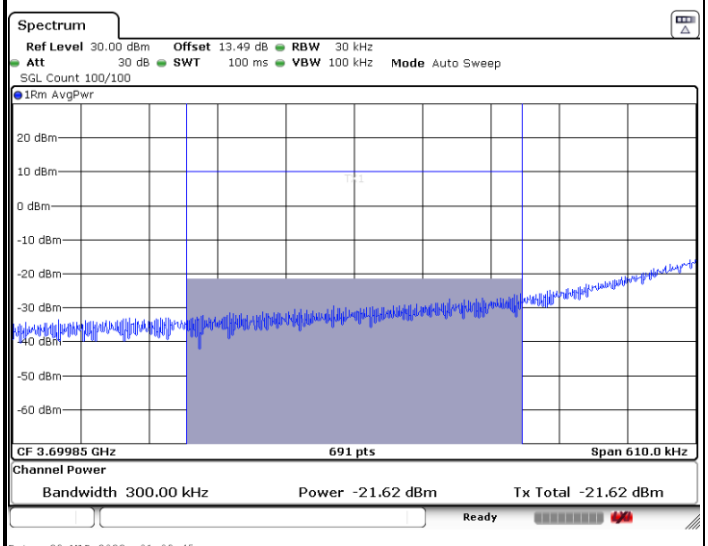
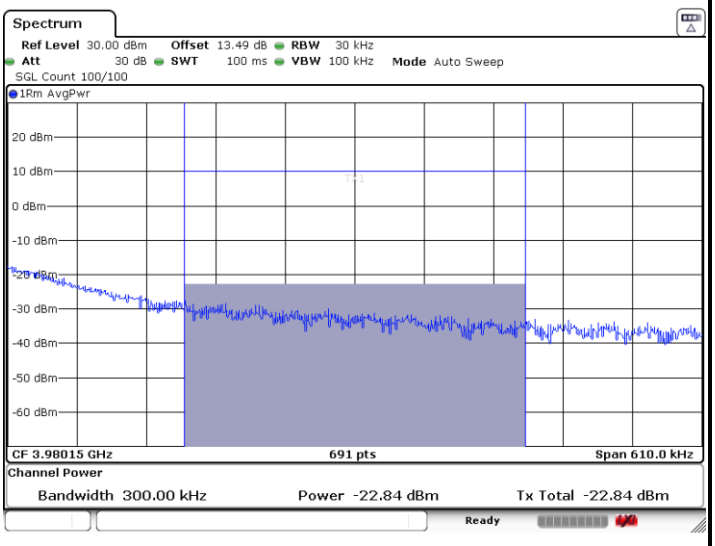
FR1 n77 / 10MHz / DFT-S OFDM / 16Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

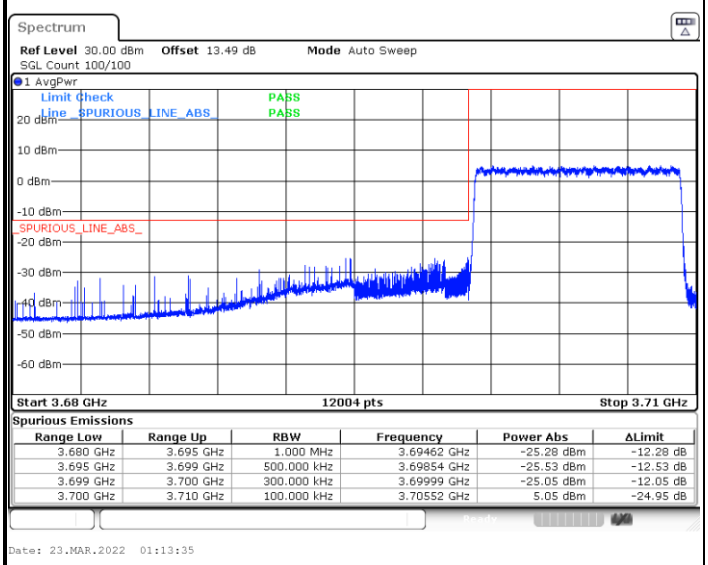








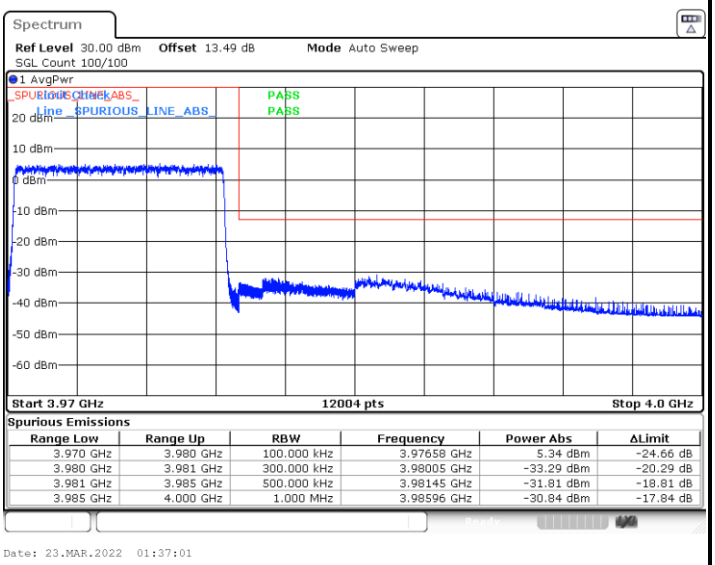
Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69462 GHz	-25.28 dBm	-12.28 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69854 GHz	-25.53 dBm	-12.53 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-25.05 dBm	-12.05 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70552 GHz	5.05 dBm	-24.95 dB

Date: 23.MAR.2022 01:13:35

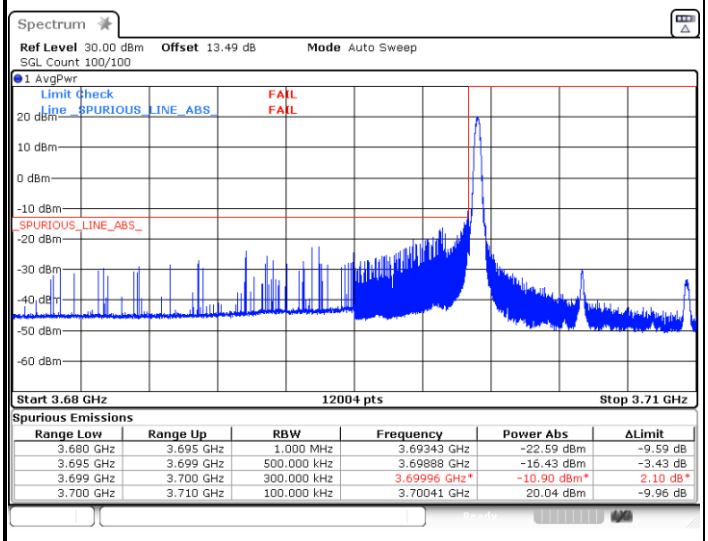


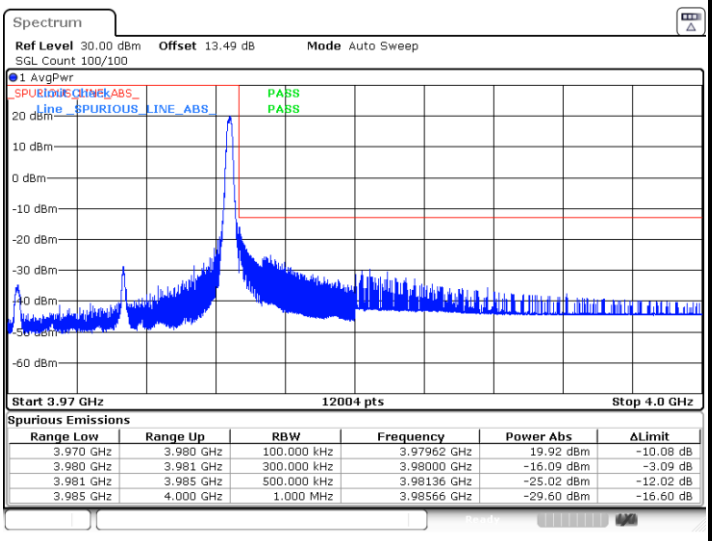
Spurious Emissions

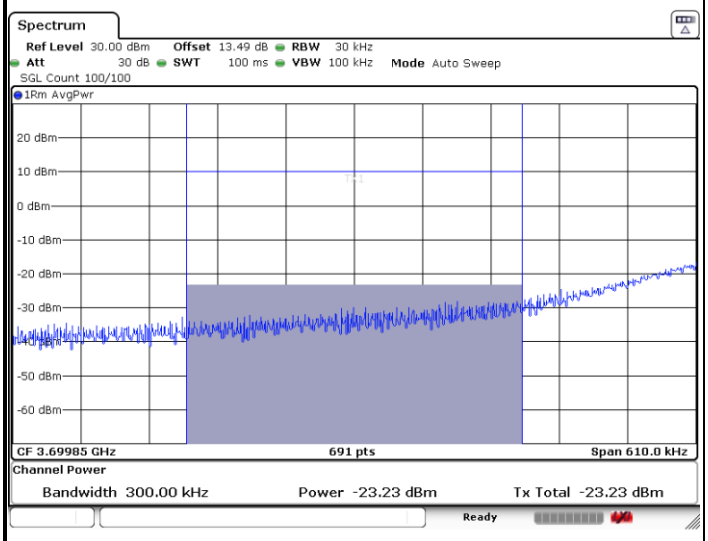
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97658 GHz	5.34 dBm	-24.66 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98005 GHz	-33.29 dBm	-20.29 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98145 GHz	-31.81 dBm	-18.81 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98596 GHz	-30.84 dBm	-17.84 dB

Date: 23.MAR.2022 01:37:01

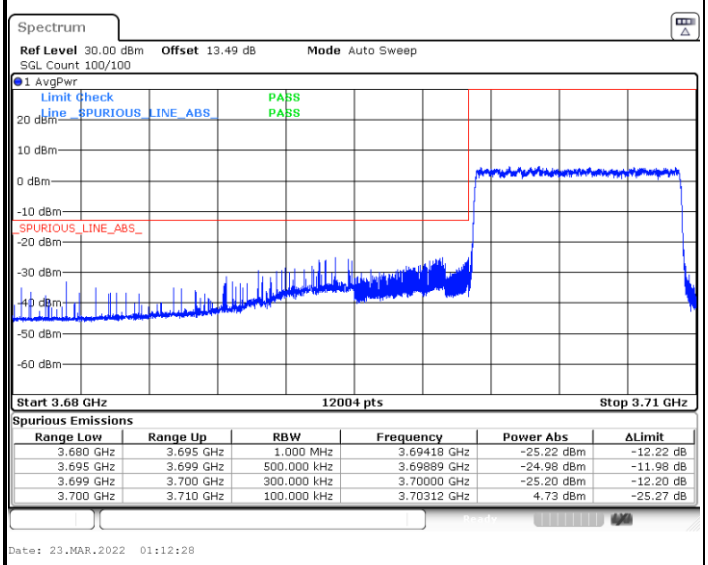
FR1 n77 / 10MHz / DFT-S OFDM / 64Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

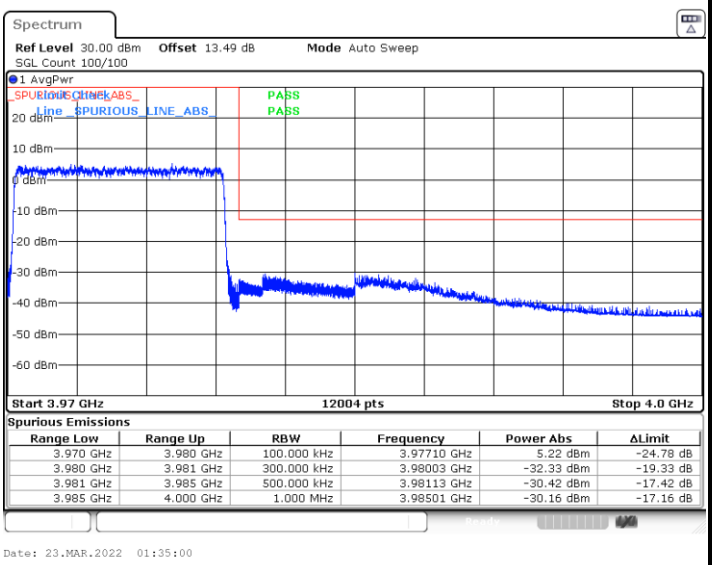






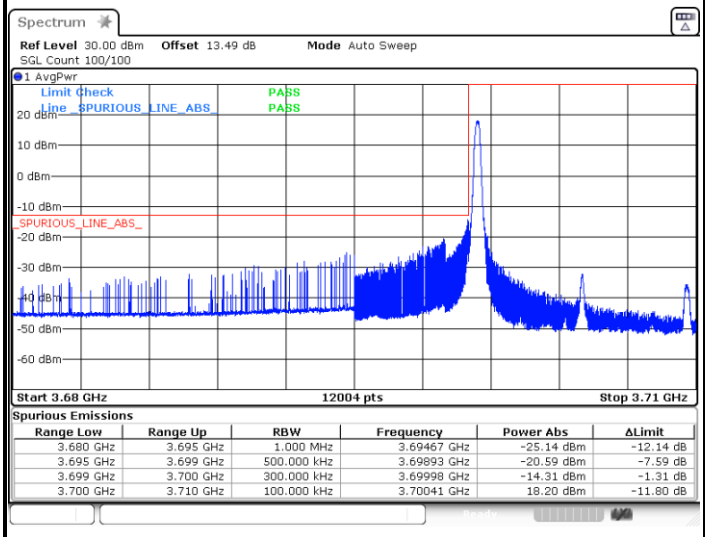
Lowest Band Edge / Full RB	Highest Band Edge / Full RB





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	3.69467 GHz	-25.14 dBm	-12.14 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69893 GHz	-20.59 dBm	-7.59 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69998 GHz	-14.31 dBm	-1.31 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70041 GHz	18.20 dBm	-11.80 dB

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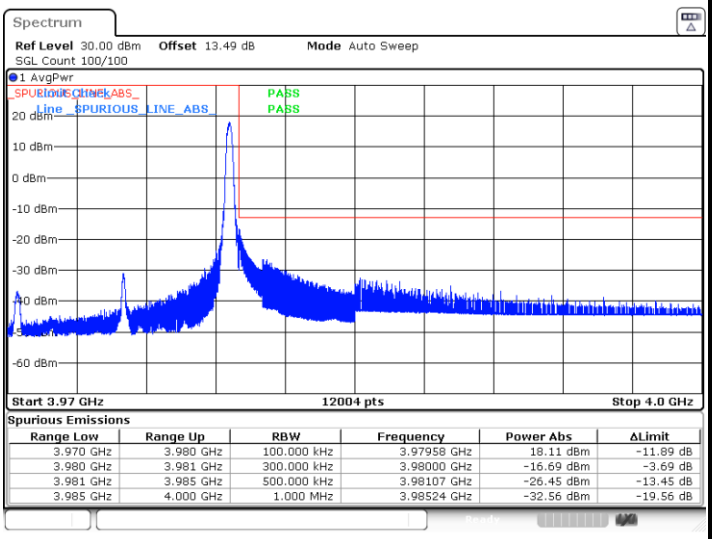
Highest Band Edge / 1RBmax



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97958 GHz	18.11 dBm	-11.89 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98000 GHz	-16.69 dBm	-3.69 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98107 GHz	-26.45 dBm	-13.45 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98524 GHz	-32.56 dBm	-19.56 dB

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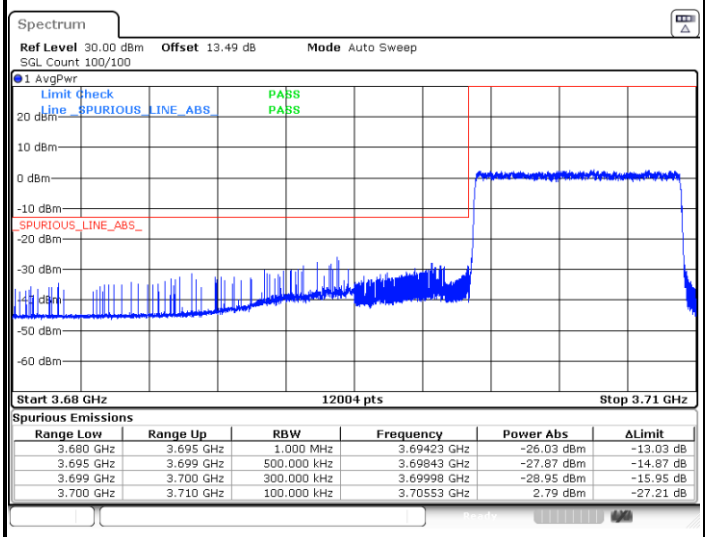
Lowest Band Edge / Full RB

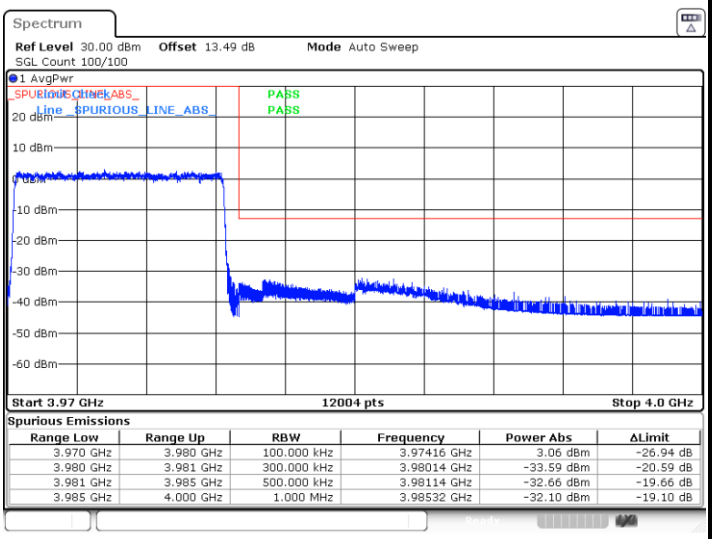


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69423 GHz	-26.03 dBm	-13.03 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69843 GHz	-27.87 dBm	-14.87 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69998 GHz	-28.95 dBm	-15.95 dB
3.700 GHz	3.710 GHz	100.000 kHz	3.70553 GHz	2.79 dBm	-27.21 dB

Date: 23.MAR.2022 01:11:47

Highest Band Edge / Full RB

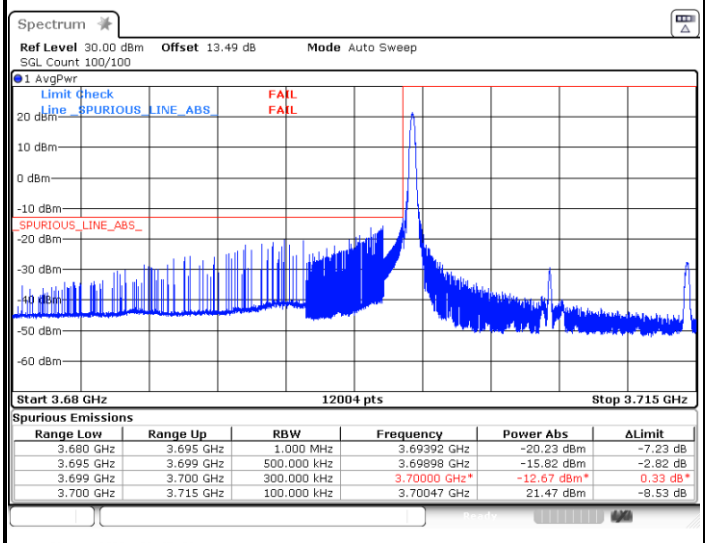


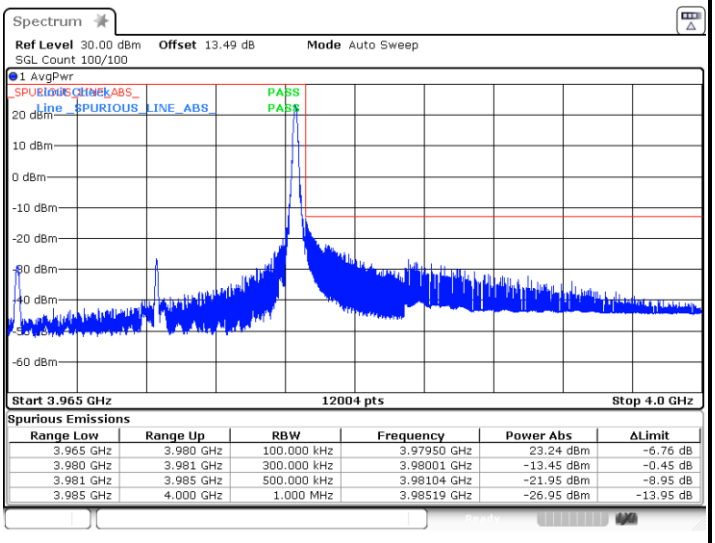
Spurious Emissions

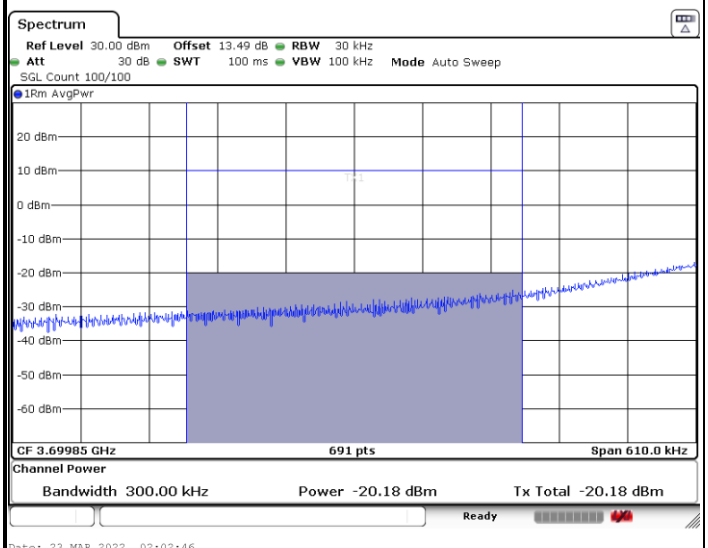
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.970 GHz	3.980 GHz	100.000 kHz	3.97416 GHz	3.06 dBm	-26.94 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98014 GHz	-33.59 dBm	-20.59 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98114 GHz	-32.66 dBm	-19.66 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98532 GHz	-32.10 dBm	-19.10 dB

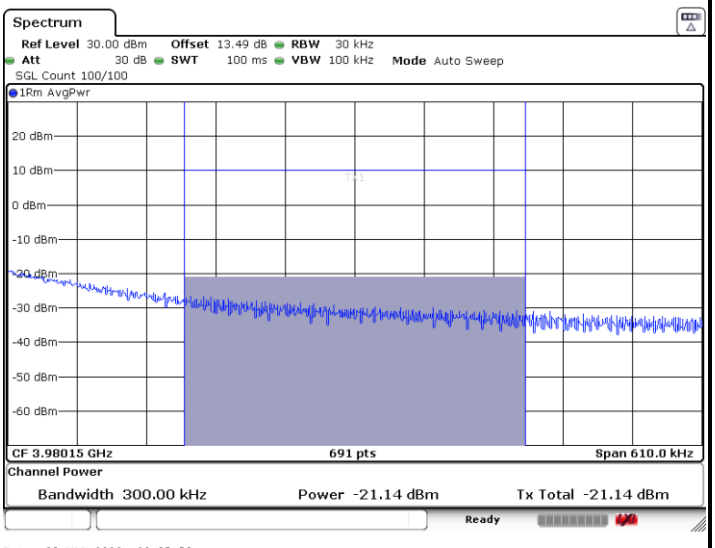
Date: 23.MAR.2022 01:33:25

FR1 n77 / 15MHz / DFT-S OFDM / PI/2 BPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

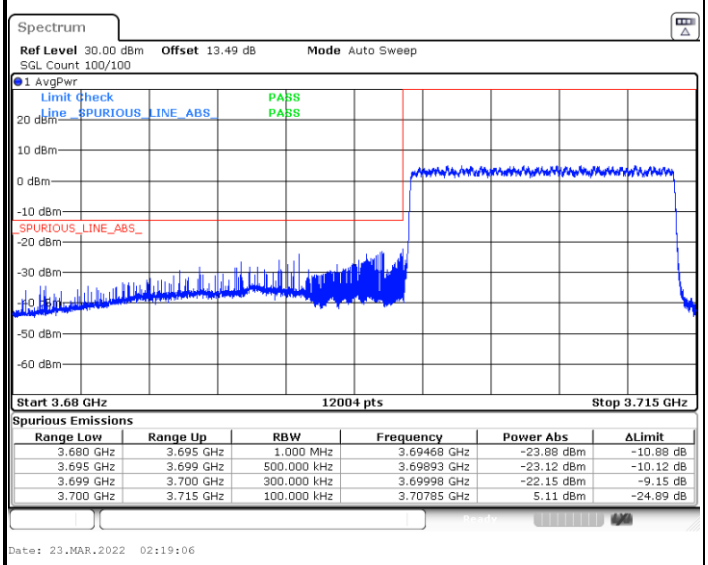


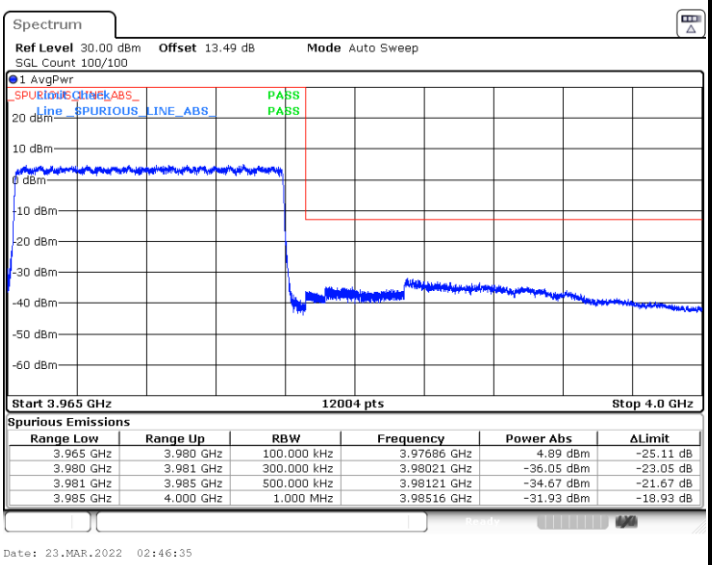




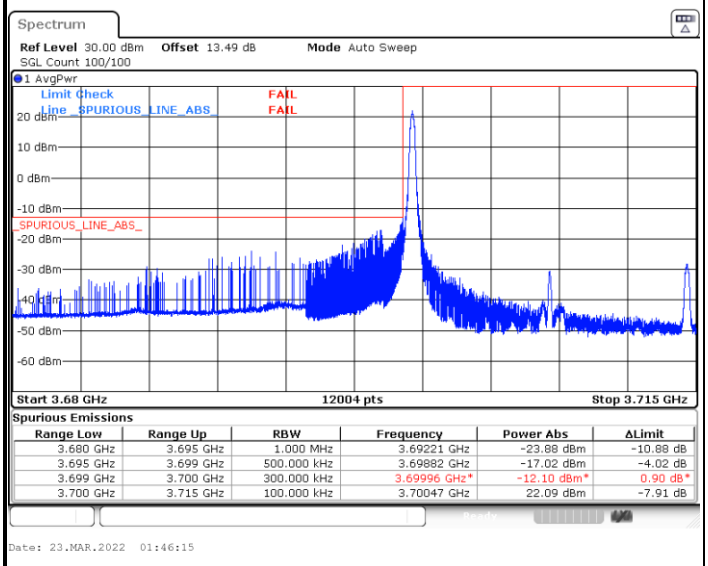


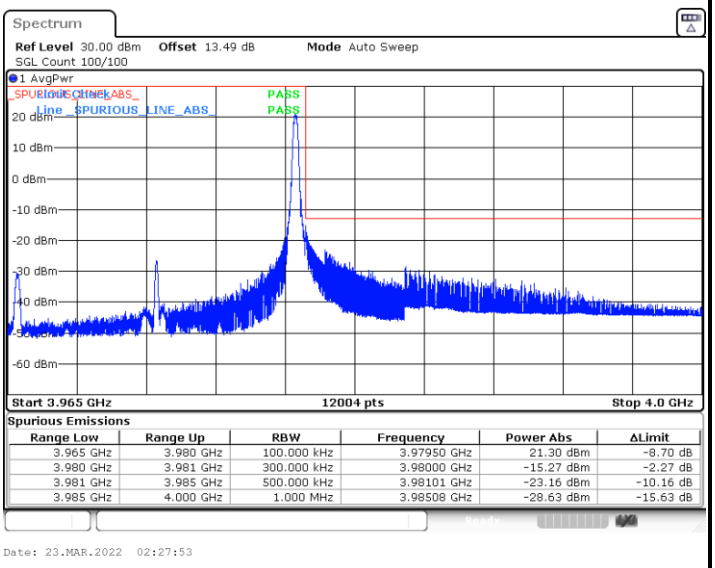
Lowest Band Edge / Full RB	Highest Band Edge / Full RB

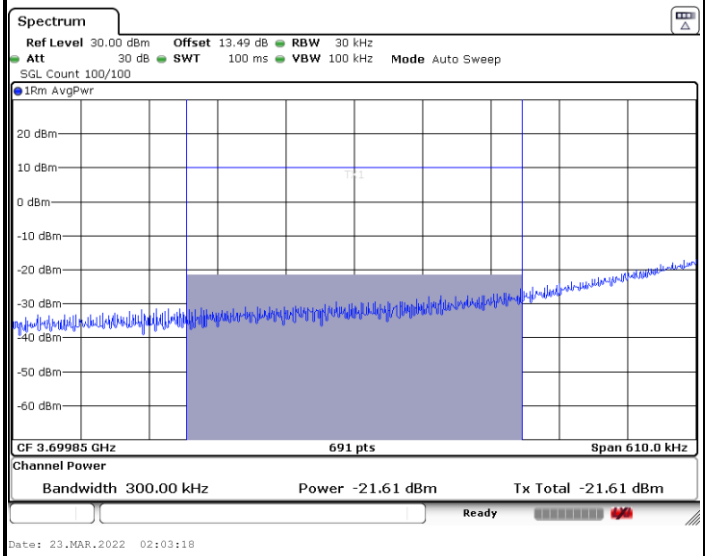




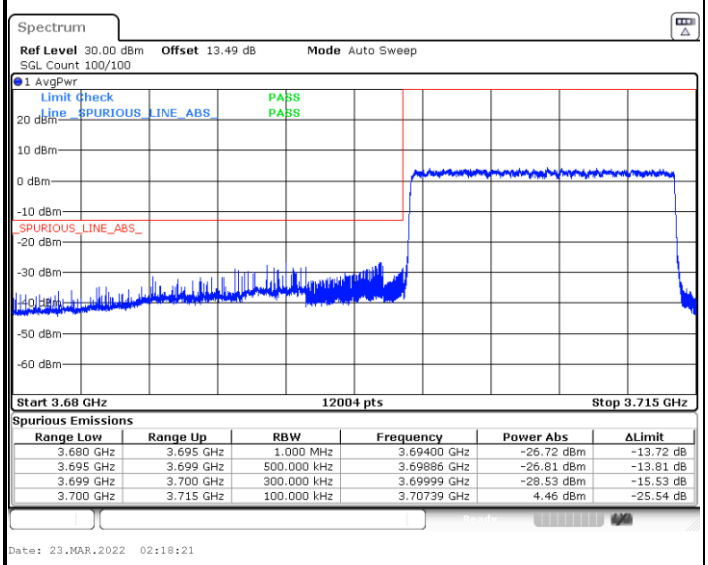
FR1 n77 / 15MHz / DFT-S OFDM / QPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

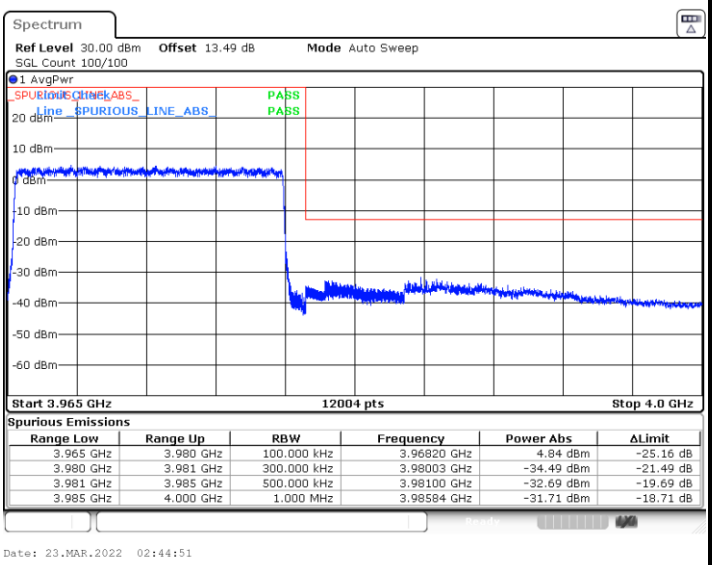






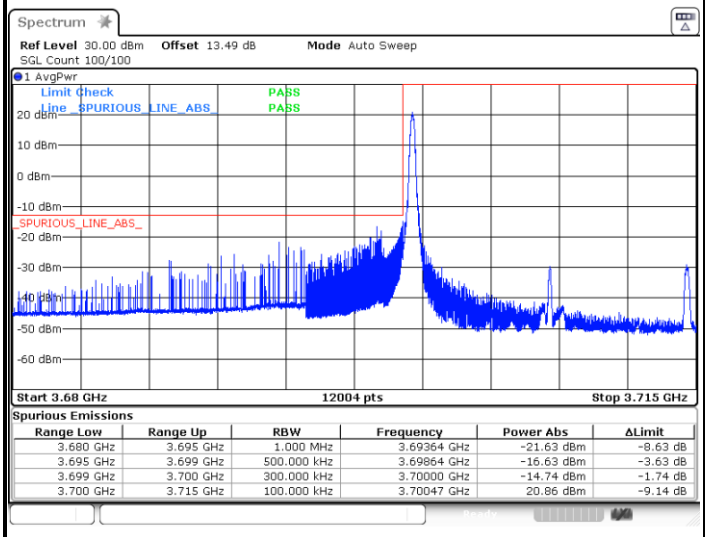
Lowest Band Edge / Full RB	Highest Band Edge / Full RB





FR1 n77 / 15MHz / DFT-S OFDM / 16Q

Lowest Band Edge / 1RB0

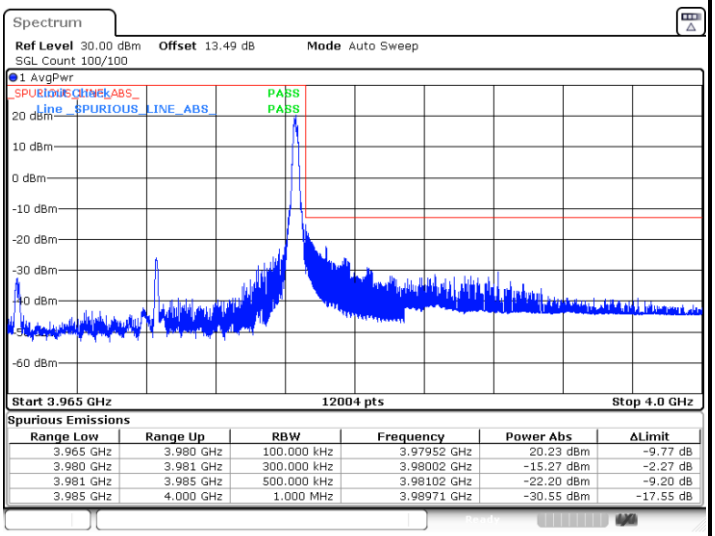


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69364 GHz	-21.63 dBm	-8.63 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69864 GHz	-16.63 dBm	-3.63 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.70000 GHz	-14.74 dBm	-1.74 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70047 GHz	20.86 dBm	-9.14 dB

Date: 23.MAR.2022 01:58:45

Highest Band Edge / 1RBmax

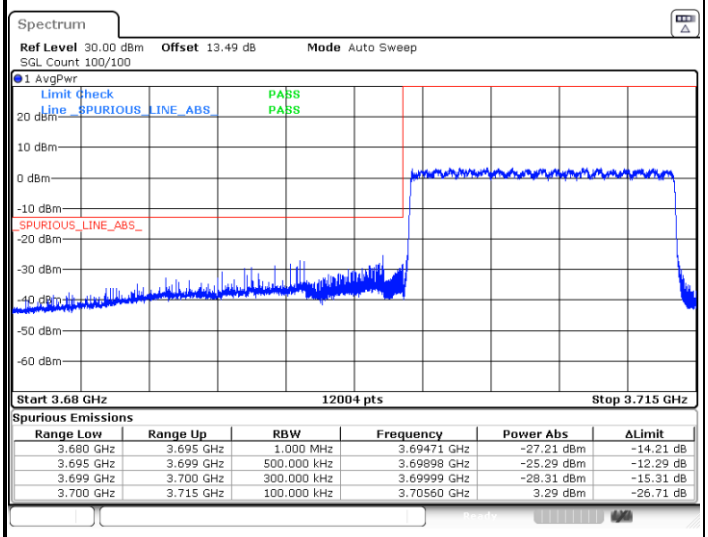


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97952 GHz	20.23 dBm	-9.77 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98002 GHz	-15.27 dBm	-2.27 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98102 GHz	-22.20 dBm	-9.20 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98971 GHz	-30.55 dBm	-17.55 dB

Date: 23.MAR.2022 02:30:12

Lowest Band Edge / Full RB

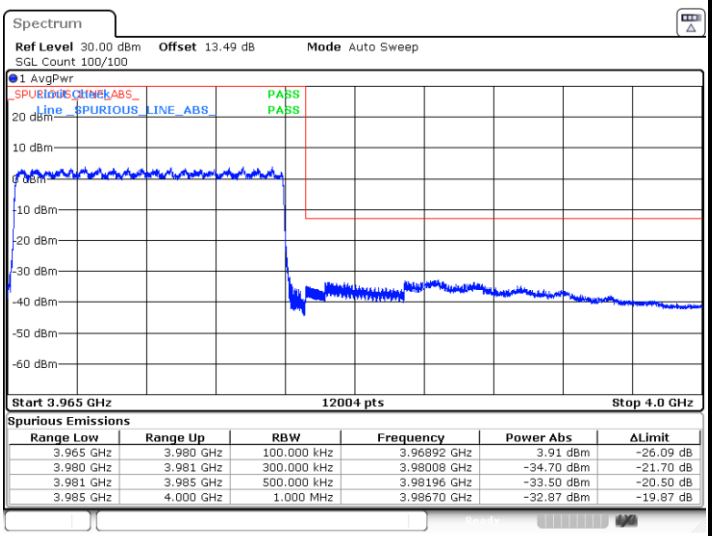


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69471 GHz	-27.21 dBm	-14.21 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69898 GHz	-25.29 dBm	-12.29 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-28.31 dBm	-15.31 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70560 GHz	3.29 dBm	-26.71 dB

Date: 23.MAR.2022 02:17:39

Highest Band Edge / Full RB



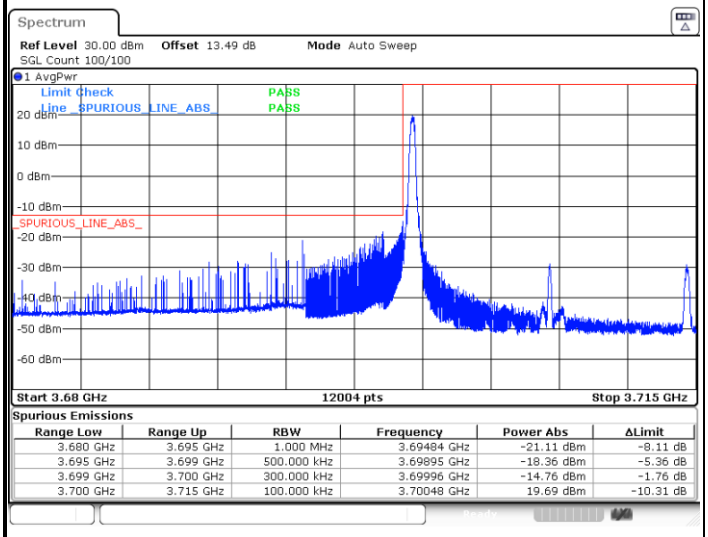
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.96892 GHz	3.91 dBm	-26.09 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98008 GHz	-34.70 dBm	-21.70 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98196 GHz	-33.50 dBm	-20.50 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98670 GHz	-32.87 dBm	-19.87 dB

Date: 23.MAR.2022 02:43:13

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

Lowest Band Edge / 1RB0

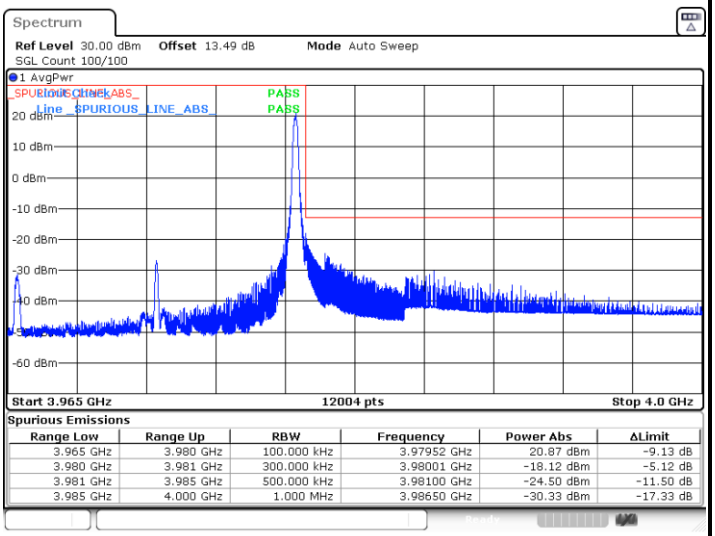


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69484 GHz	-21.11 dBm	-8.11 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69895 GHz	-18.36 dBm	-5.36 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69996 GHz	-14.76 dBm	-1.76 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70048 GHz	19.69 dBm	-10.31 dB

Date: 23.MAR.2022 01:59:22

Highest Band Edge / 1RBmax

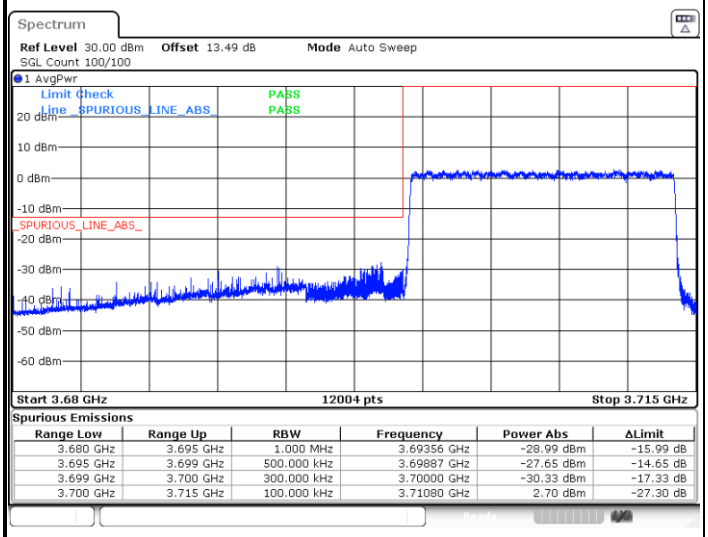


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97952 GHz	20.87 dBm	-9.13 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-18.12 dBm	-5.12 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98100 GHz	-24.50 dBm	-11.50 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98650 GHz	-30.33 dBm	-17.33 dB

Date: 23.MAR.2022 02:32:04

Lowest Band Edge / Full RB

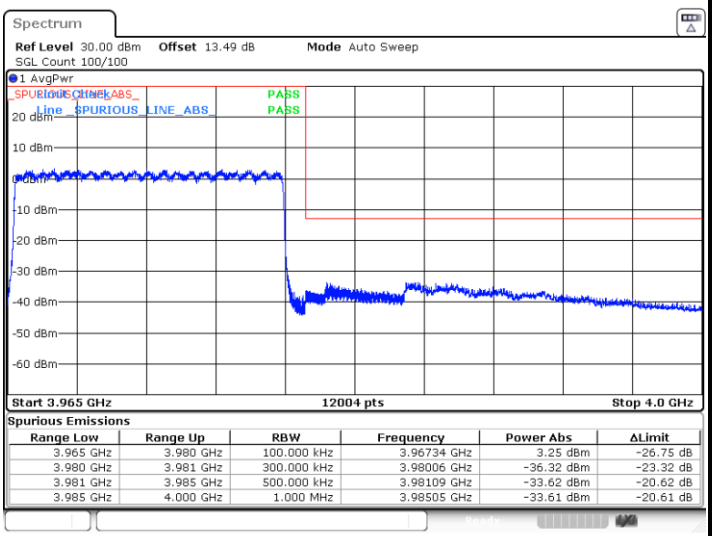


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69356 GHz	-28.99 dBm	-15.99 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69887 GHz	-27.65 dBm	-14.65 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.70000 GHz	-30.33 dBm	-17.33 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.71080 GHz	2.70 dBm	-27.30 dB

Date: 23.MAR.2022 02:05:02

Highest Band Edge / Full RB



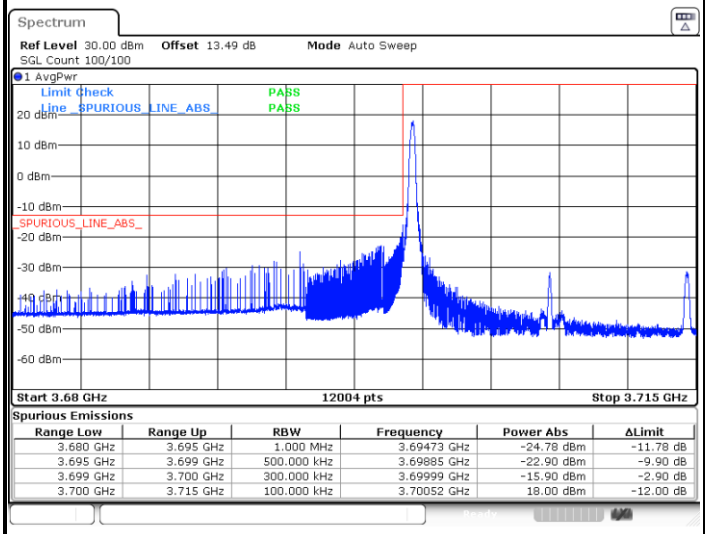
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.96734 GHz	3.25 dBm	-26.75 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98006 GHz	-36.32 dBm	-23.32 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98109 GHz	-33.62 dBm	-20.62 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98505 GHz	-33.61 dBm	-20.61 dB

Date: 23.MAR.2022 02:40:49

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

Lowest Band Edge / 1RB0

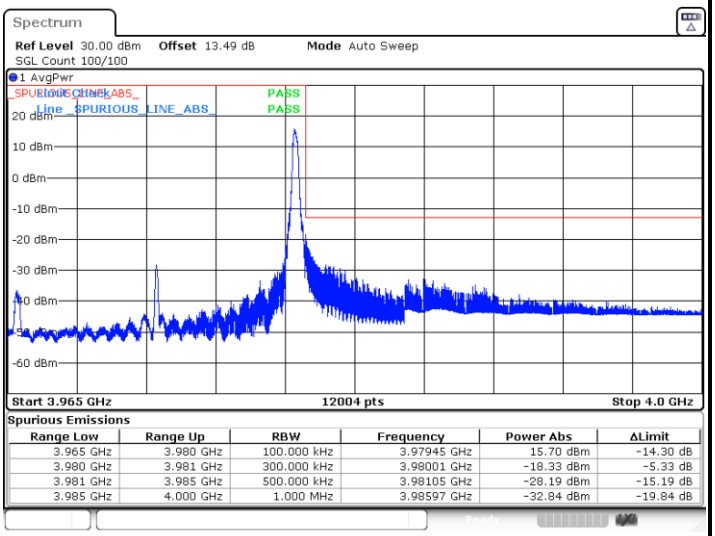


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69473 GHz	-24.78 dBm	-11.78 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69885 GHz	-22.90 dBm	-9.90 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69999 GHz	-15.90 dBm	-2.90 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70052 GHz	18.00 dBm	-12.00 dB

Date: 23.MAR.2022 02:00:26

Highest Band Edge / 1RBmax

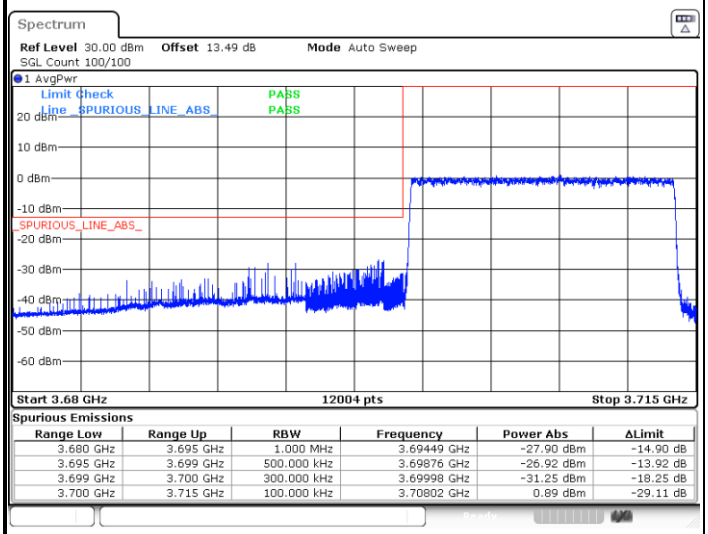


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97945 GHz	15.70 dBm	-14.30 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98001 GHz	-18.33 dBm	-5.33 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98105 GHz	-28.19 dBm	-15.19 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98597 GHz	-32.84 dBm	-19.84 dB

Date: 23.MAR.2022 02:33:44

Lowest Band Edge / Full RB

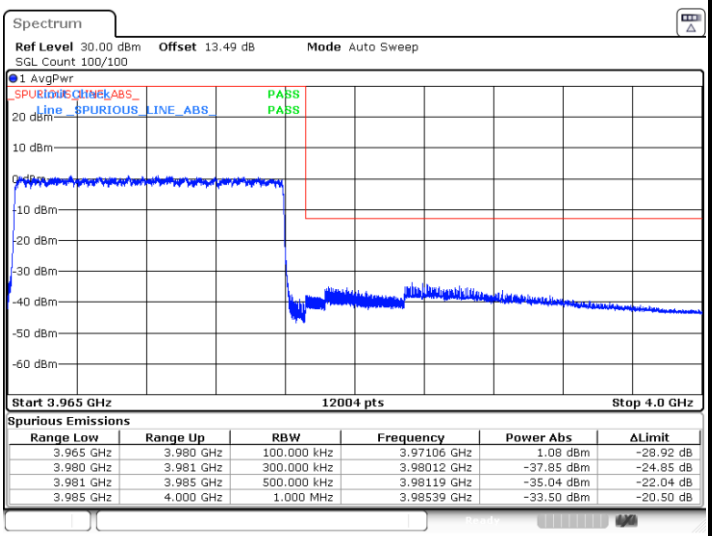


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.680 GHz	3.695 GHz	1.000 MHz	3.69449 GHz	-27.90 dBm	-14.90 dB
3.695 GHz	3.699 GHz	500.000 kHz	3.69876 GHz	-26.92 dBm	-13.92 dB
3.699 GHz	3.700 GHz	300.000 kHz	3.69998 GHz	-31.25 dBm	-18.25 dB
3.700 GHz	3.715 GHz	100.000 kHz	3.70802 GHz	0.89 dBm	-29.11 dB

Date: 23.MAR.2022 02:04:19

Highest Band Edge / Full RB

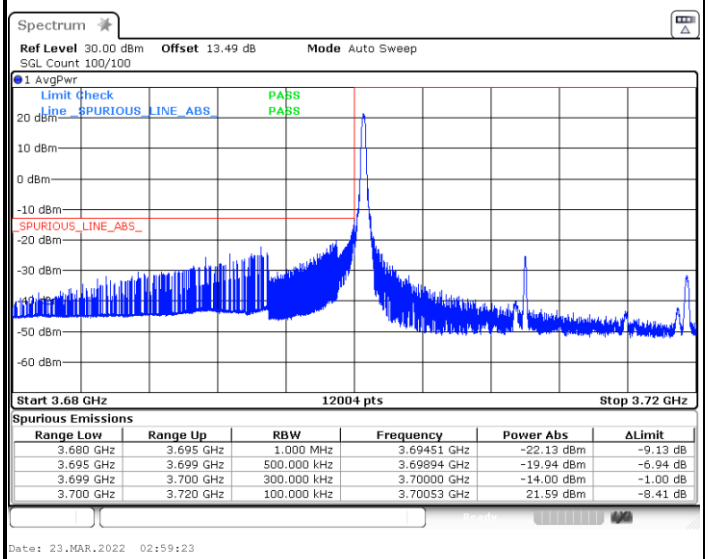


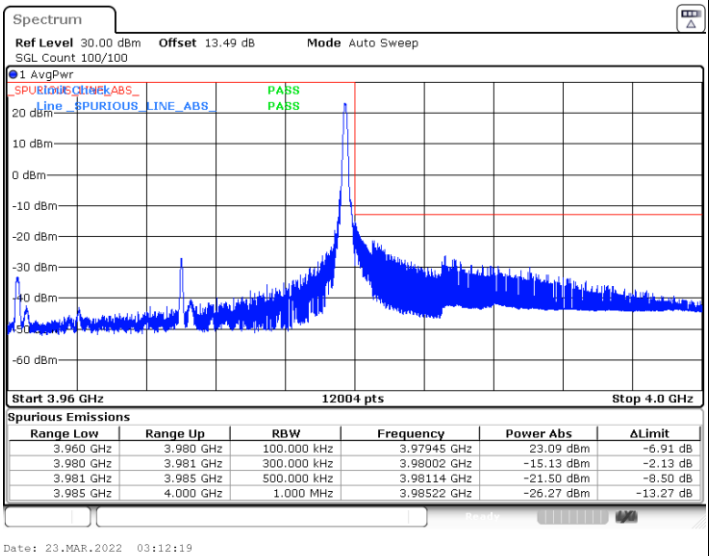
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.965 GHz	3.980 GHz	100.000 kHz	3.97106 GHz	1.08 dBm	-28.92 dB
3.980 GHz	3.981 GHz	300.000 kHz	3.98012 GHz	-37.85 dBm	-24.85 dB
3.981 GHz	3.985 GHz	500.000 kHz	3.98119 GHz	-35.04 dBm	-22.04 dB
3.985 GHz	4.000 GHz	1.000 MHz	3.98539 GHz	-33.50 dBm	-20.50 dB

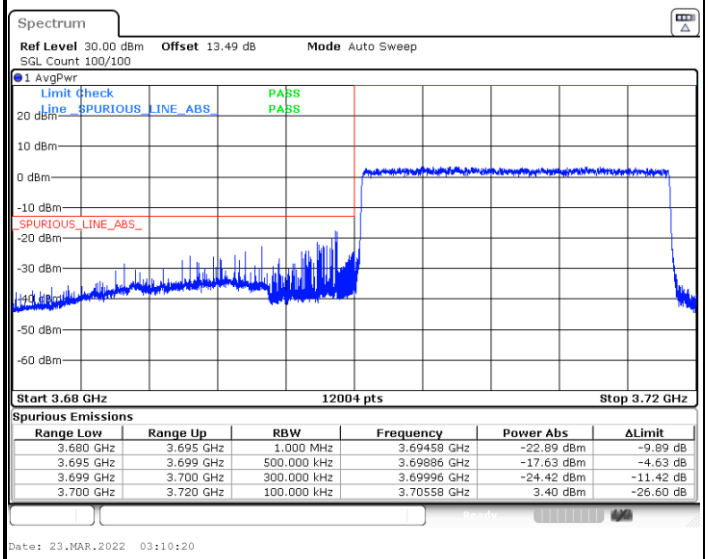
Date: 23.MAR.2022 02:39:16

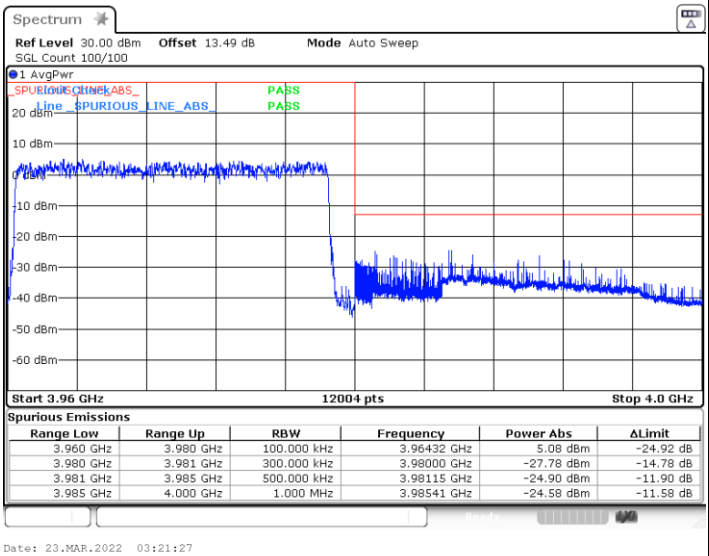
FR1 n77 / 20MHz / DFT-S OFDM / PI/2 BPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**



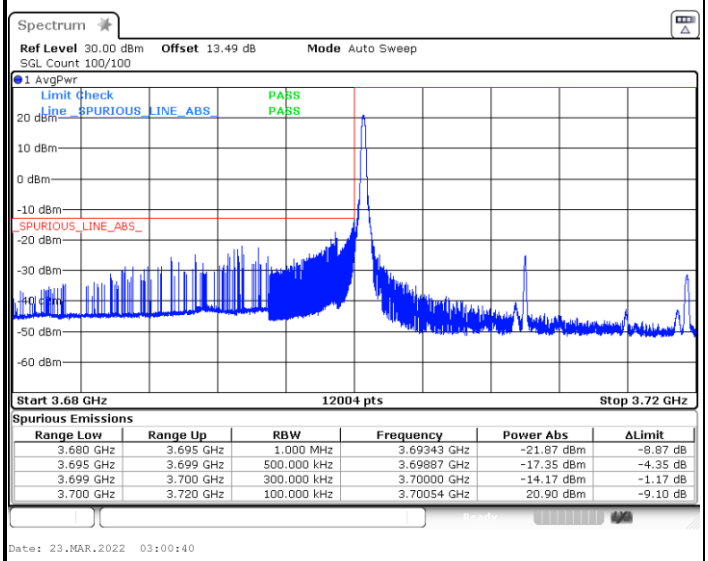


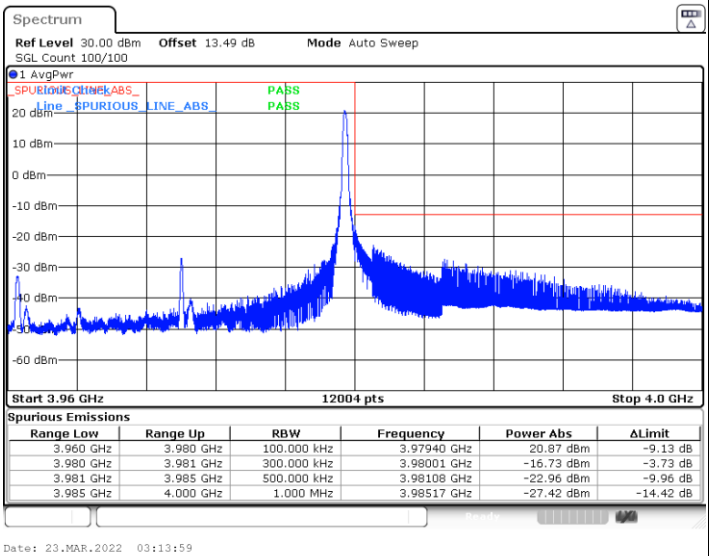
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**



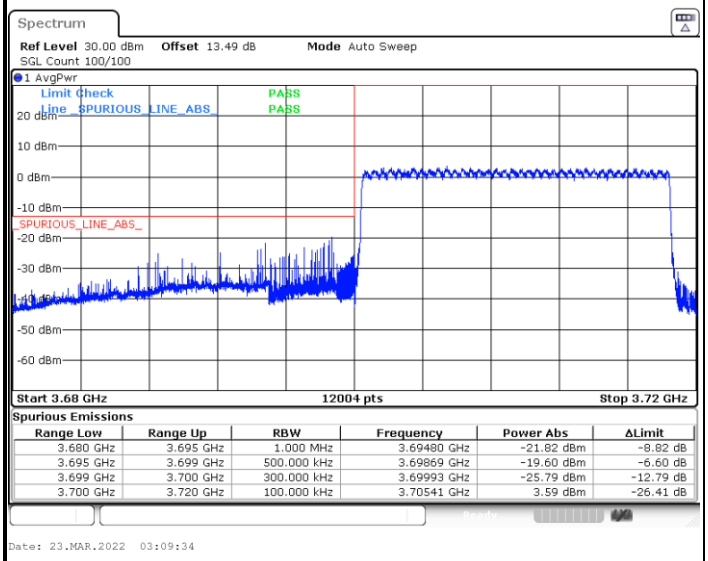


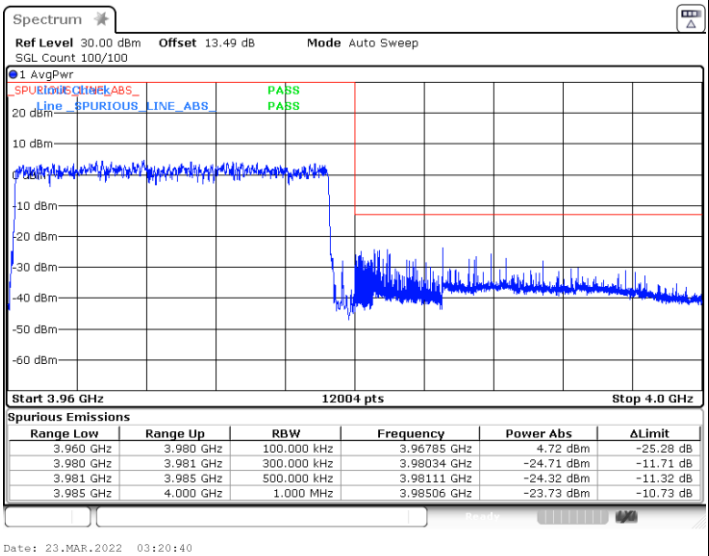
FR1 n77 / 20MHz / DFT-S OFDM / QPSK	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**



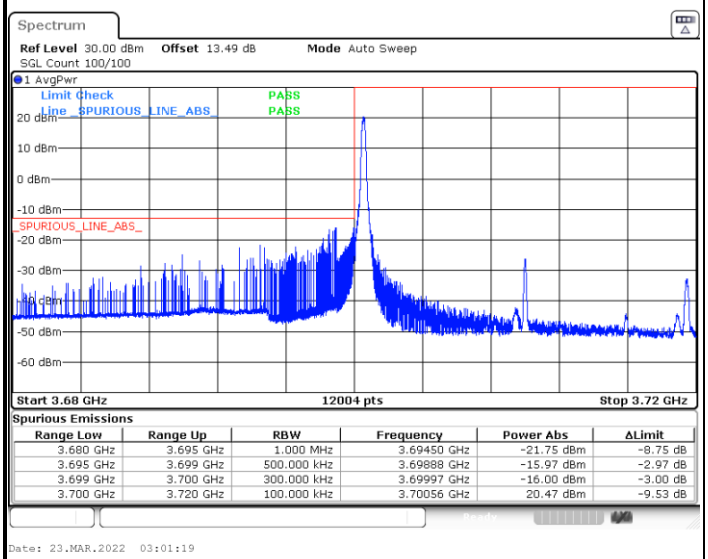


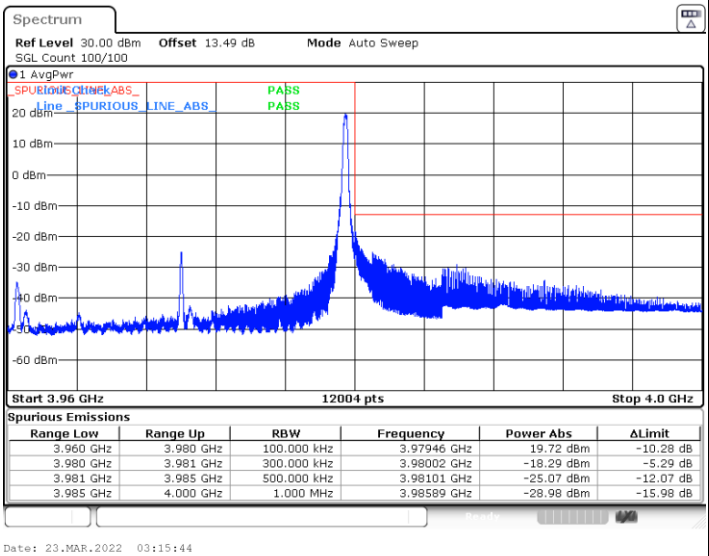
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**



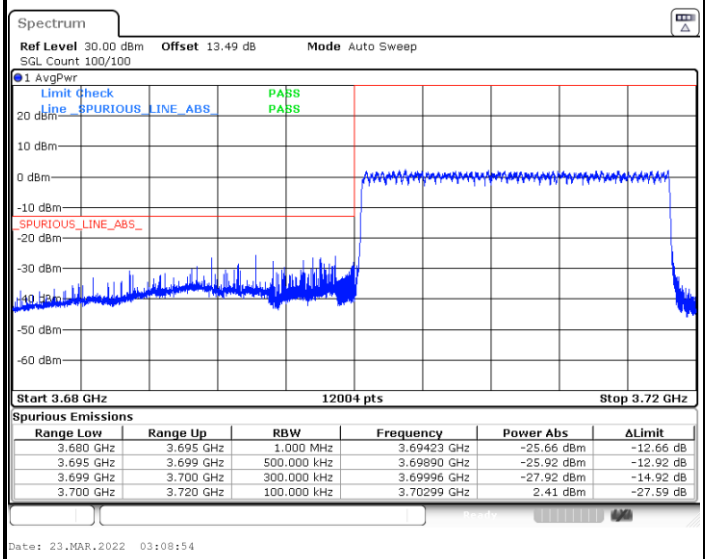


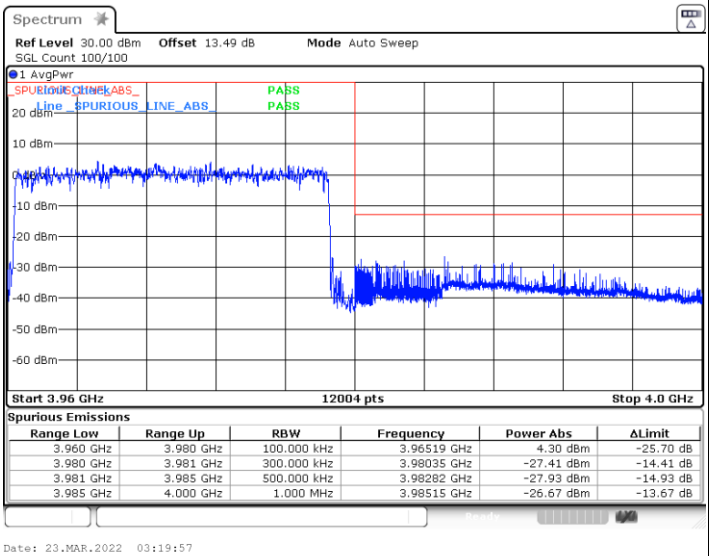
FR1 n77 / 20MHz / DFT-S OFDM / 16Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**



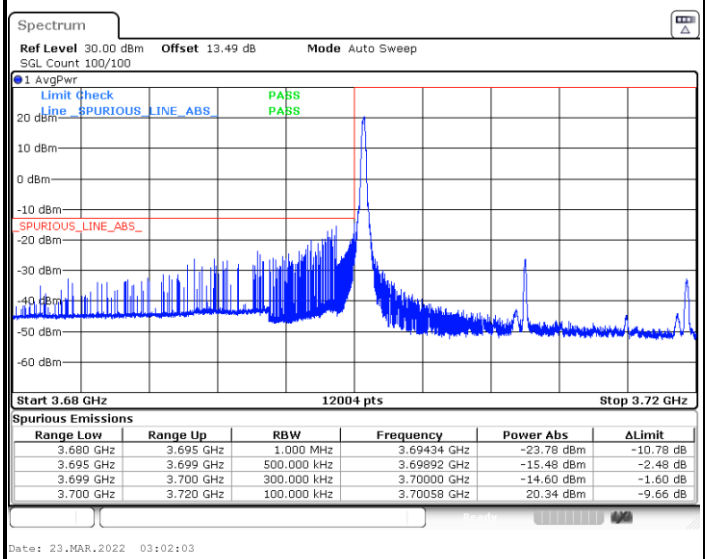


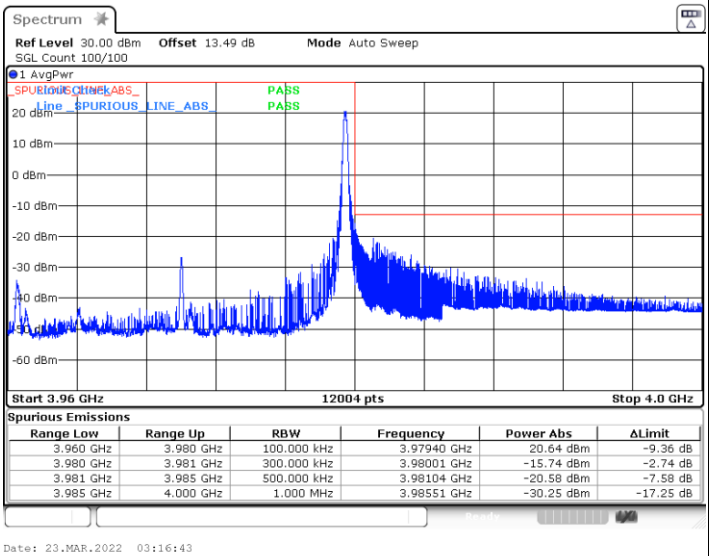
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**



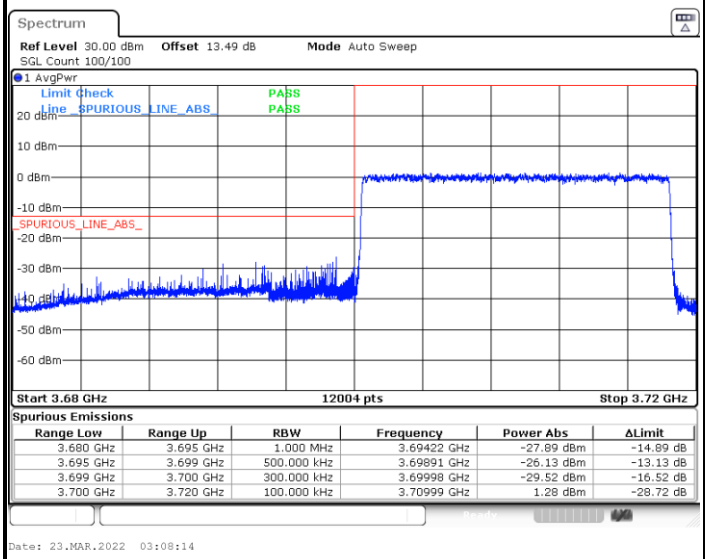


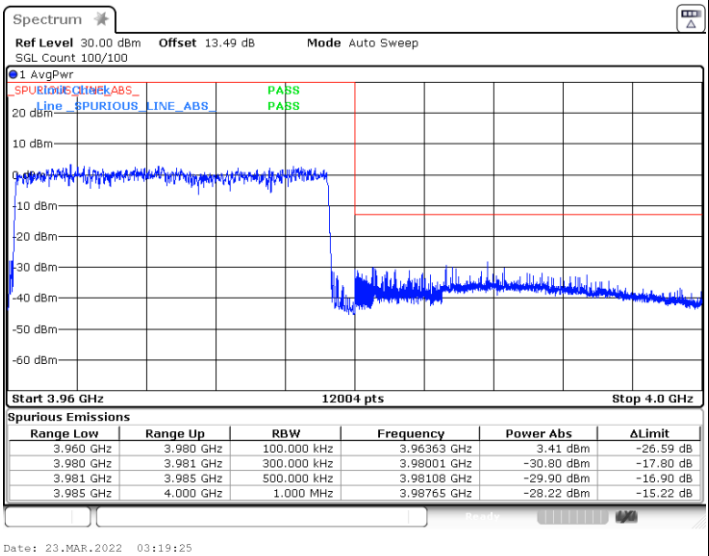
FR1 n77 / 20MHz / DFT-S OFDM / 64Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**

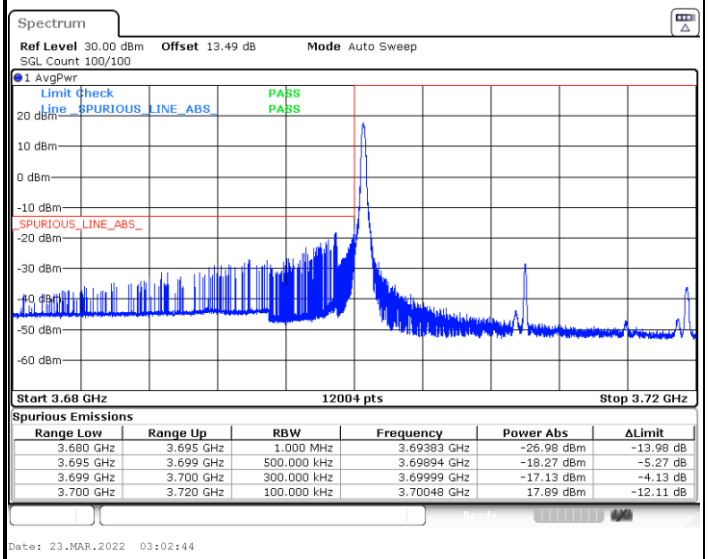
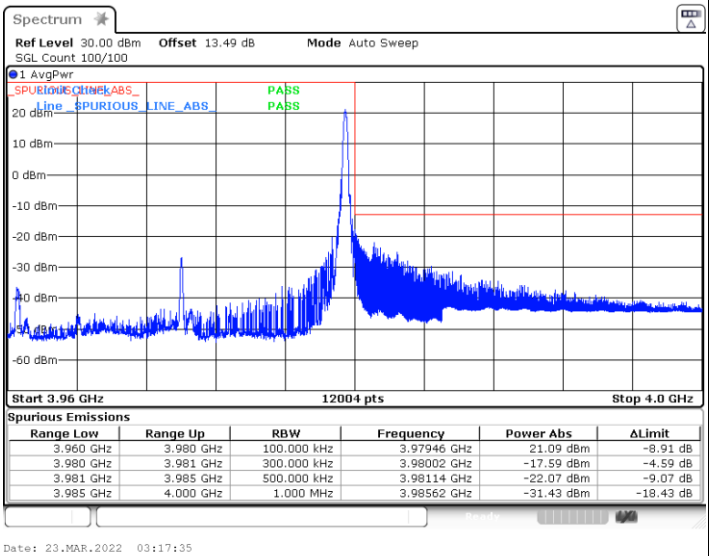




Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**





FR1 n77 / 20MHz / DFT-S OFDM / 256Q	
Lowest Band Edge / 1RB0	**Highest Band Edge / 1RBmax**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**