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TEST REPORT NO: FCC_RF_TEST_REPORT_AQQK-TYPEAPPR-1682788340-1001

FCC ID: VBNAQQK-01

Date:	Oulu 1. Feb 2022
Pages:	90
Appendices:	-

Equipment Under Test:	Airscale MAA 64T64R 192AE n77 320W 3.7GHz Radio Access technology: NR (TDD)
Type:	AQQK
Manufacturer:	Nokia Solutions and Networks Oy
Address:	P.O. Box 319, Kaapelitie 4, FI-90620, Oulu, Finland
Task:	Conformance test according to the specificarions mentioned below
Test Specification(s):	FCC 47 CFR part 2 and FCC 47 CFR part 27
Result:	The EUT complies with the requirements of the specification

The results relate only to the items tested as described in this test report.

Approved by:	**Date**	**Signature**
Jarkko Kenttälä Squad Group Lead, Type Approval Nokia Networks	01 Feb 2022	

CONTENTS

1. SUMMARY

The following tests were performed according to the FCC rules in order to verify the compliance of the EUT with the FCC requirements:

Test No.	Measurement	FCC Rule	Page Number of this Report	Result
1	RF Power Output	§ 2.1046, § 27.53	8	compliant
2	Modulation Characteristics	§ 2.1047,	39	compliant
3	Occupied Bandwidth	§ 2.1049	40	compliant
4	Spurious Emissions at Antenna Terminals	§ 2.1051, § 2.1057, § 27.53	45	compliant
5	Field Strength of Spurious Radiation	§ 2.1053, § 27.53	56	compliant
6	Frequency Stability	§ 2.1055, § 27.54	59	compliant

Table 1 Results – Summary

In accordance with the FCC Rule §15.3 (z) the equipment was tested with the limits that are valid for an *unintentional radiator*.

Measurements guidance: FCC OET laboratory KDB: 662911 D01 Multiple Transmitter Output v01r02 and FCC KDB 971168 D01 Power Meas License Digital Systems v03r01: ANSI C6326-2015.

Test Laboratory:

Nokia Solutions and Networks Oy

Kaapelitie 4,

FI-90620, Oulu, Finland

Jarkko Kenttälä

FCC Reg. No: 261413

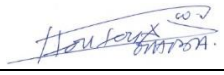
Testing laboratory accreditation number: T297

1.1 Time Schedule

Test No.	1, 2, 3, 4	5	6
Start of Test:	23 Dec 2021	15.Dec 2021	20 Jan 2022
End of Test:	29 Jan 2022	21 Dec 2021	28 Jan 2022

1.2 Participants

Name	Function	Signature
RF Test person (Nokia) Mika Kallankari	Tests nos: 1,2,3,4,6 Setup of EUT	
RF Test person (Nokia) Kimmo Huuki	Tests nos: 1,2,3,4,6 Setup of EUT	

EMC Test person (Nokia) Onyumbe Olamba N´Djeka	Test no 5, Setup of EUT	

2. EQUIPMENT UNDER TEST

The EUT is a Airscale MAA 64T64R 192AE n77 320W 3.7GHz.

The BTS performs the full RAN function of NR system (New Radio).

The tested equipment is representative for serial production.

2.1 Configuration of EUT

The used different EUT configurations are shown by the following table.

Module Type	**Airscale MAA 64T64R 192AE n77 320W 3.7GHz**	
Radio Access Technology	NR	
Duplex mode	Time Division Duplex (TDD)	
Channel Bandwidth	Single carrier 20MHz (Config. A), Single carrier 40MHz (Config. B), Single carrier 60MHz (Config. C), Single carrier 80MHz (Config. D), Single carrier 100MHz (Config. E), Dual carrier 100MHz+40MHz (Config. F), Dual carrier 100MHz+60MHz (Config. G), Dual carrier 100MHz+80MHz (Config. H), Dual carrier 100MHz+100MHz (Config.I)	
Supply Voltage	48.0 V DC	
Single carrier		
Rated Output Power (Prat)	1.6W (31.9dBm) to 5W (37.0dBm) conducted / carrier	
Dual carrier		
Rated Output Power (Prat)	1.4W (31.5dBm) to 2.5W (34.0dBm) conducted / carrier	
Downlink/Uplink ratio	6/3 to 8/1	
	RX	**TX**
Number of Antenna Ports	64 (ANT1 to ANT64)	64 (ANT1 to ANT64)
MiMo	Yes	Yes

Table 2 Overview of EUT configuration

The tests were performed with three EUT at the antenna ports from ANT1 to ANT64.

The used different EUT configurations are shown by the following table.

Module Name	**Serial-No.**	**Module Type**	**Config.**
AQQK	L1214706279	RRH	1,2,3,4
AQQK	L1214706022	RRH	5
AQQK	L1214900387	RRH	6

Table 3 Configuration of EUT

For a functional description of the modules, please refer to the appropriate related parts and exhibit sections of this certification application.

2.2 Operating Conditions

The EUT supports QPSK, 16QAM, 64QAM and 256QAM modulation. If not stated otherwise, the following standard setup procedure for the EUT was used:

The transmitter was set up according to 3GPP TS 38.141 NR Test Models (TM) for all tests:

- TM 1.1: All QPSK modulation testing
- TM 3.1: All 64QAM modulation testing
- TM 3.1A All 256QAM modulation testing
- TM 3.2: All 16QAM modulation testing

During the measurements, one carrier channel was tested at a time. The carrier was set to the maximum power level to ensure the maximum emission amplitudes during all measurements.

During the tests, the Airscale BTS is transmitting a pseudo random bit pattern on the data channels. This ensures that the measurements of the emission characteristics of the transmitter are pursuant to § 2.1049.

Test models TM1.1, TM3.1, TM3.1A and TM3.2 have uplink/downlink ratio 3:6.

3. TEST CONFIGURATION

If not stated otherwise, the following measurement configuration was used to perform all measurements (see figure below).

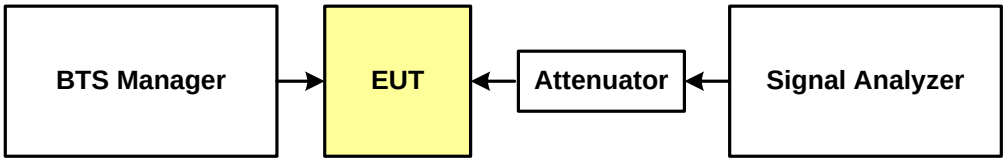


Figure 1 Test Configuration (single output)

The RF output of the transceiver (cell) under test is connected to a signal analyzer via a high power attenuator to protect the input of the signal analyzer from high RF power levels. A description of the analyzer settings is given in each of the sections describing the measurements. The other transceivers are terminated.

A complete list of the measurement equipment is included on page 68 of this measurement report.

3.1 Calibration of the Test Equipment

All relevant test equipment has a valid calibration from an external calibration laboratory. Additionally the signal analyzer has a built-in self-calibration procedure. This calibration procedure was activated prior to the measurements so that the analyzer is deemed accurate. High quality cables were used to connect the measurement equipment to the EUT. The actual loss of the attenuator and the cables was measured with a high precision network analyzer and taken into account for all measurements.

4. TEST RESULTS

4.1 Test No. 1: RF Power Output (§ 2.1046, § 27.53)

4.1.1. Limits

Per FCC 27.50(J)(2), the power of each fixed or base station transmitting in the 3700-3980MHz band is limited to an EIRP of 1640W/MHz, i.e., 62.15dBm/MHz EIRP. With 24.5dBi antenna gain, the total conducted power spectrum density limit is 38dBm/MHz per 32 ports (per polarization).

Peak to average power (PAPR) limit is 13dBm.

4.1.2. Test Procedure and Results

Detachable Antenna: The maximum output power at the antenna terminals was measured using a signal analyzer.

The RF power was measured with a frequency sweep across the carrier (see screenshots). The carrier power was calculated from the signal analyzer by integration over the result. The base station maximum output power is the sum of the measured carrier power and the external attenuation (cable loss of the test set up).

For the MiMo output, RF power output was measured from each antenna port individually and the results summed mathematically in accordance to FCC KDB 662911 D01 and ANSI C63.26 -guidance.

All Tx ports were tested in config E and highest Output power per port were selected in other configurations testing.

Peak to average power (PAPR) was examined using CCDF method and 0.1% value recorded in dB to the tables below.

Average Power Spectran density was measured using FSW signal Analyzer.

The following table shows the measured output powers at the antenna connector.

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
23.12.2021 – 29.01.2021	22.8 °C	25.1 °C	4.4 RH%	21.4 RH%

The Average Max RF Power Values are bolded in E configuration.

Config E:

Test Model 1.1 Modulation QPSK Channel Frequency 3750MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3750MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3750MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3750MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
1	35.37	1	35.39	1	35.41	1	35.32
2	35.41	2	35.37	2	35.43	2	35.41
3	35.32	3	35.27	3	35.32	3	35.29
4	35.30	4	35.28	4	35.32	4	35.32
5	35.07	5	35.03	5	35.09	5	35.10
6	35.13	6	35.10	6	35.18	6	35.17
7	35.30	7	35.25	7	35.32	7	35.31
8	35.08	8	34.99	8	35.09	8	35.05
9	35.34	9	35.27	9	35.34	9	35.36
10	35.50	10	35.47	10	35.50	10	35.50
11	35.37	11	35.33	11	35.37	11	35.38
12	35.45	12	35.42	12	35.44	12	35.47
13	35.07	13	35.03	13	35.08	13	35.07
14	35.13	14	35.08	14	35.14	14	35.10
15	**35.67**	15	**35.70**	15	**35.72**	15	**35.71**
16	35.30	16	35.28	16	35.34	16	35.30
17	35.16	17	35.10	17	35.14	17	35.08
18	35.03	18	34.98	18	35.02	18	34.97
19	35.29	19	35.26	19	35.28	19	35.20
20	35.15	20	35.11	20	35.14	20	35.16
21	35.38	21	35.29	21	35.36	21	35.38
22	35.24	22	35.23	22	35.28	22	35.23
23	35.54	23	35.50	23	35.54	23	35.52
24	35.42	24	35.39	24	35.43	24	35.43
25	35.06	25	35.05	25	35.07	25	35.05
26	35.37	26	35.33	26	35.39	26	35.35
27	35.01	27	35.01	27	35.04	27	35.02
28	35.12	28	35.10	28	35.16	28	35.11

29	34.97	29	34.95	29	34.99	29	34.95
30	35.19	30	35.15	30	35.18	30	35.17
31	35.03	31	35.01	31	35.06	31	35.02
32	35.19	32	35.15	32	35.21	32	35.19
33	35.31	33	35.29	33	35.34	33	35.30
34	35.33	34	35.38	34	35.42	34	35.33
35	35.32	35	35.31	35	35.33	35	35.34
36	35.32	36	35.32	36	35.35	36	35.33
37	35.40	37	35.39	37	35.41	37	35.39
38	35.24	38	35.25	38	35.28	38	35.23
39	35.30	39	35.29	39	35.31	39	35.32
40	35.32	40	35.30	40	35.36	40	35.31
41	35.46	41	35.43	41	35.49	41	35.45
42	35.49	42	35.46	42	35.52	42	35.50
43	35.37	43	35.40	43	35.45	43	35.43
44	35.44	44	35.41	44	35.46	44	35.44
45	35.29	45	35.26	45	35.32	45	35.28
46	35.42	46	35.42	46	35.45	46	35.51
47	35.32	47	35.29	47	35.33	47	35.34
48	35.21	48	35.18	48	35.23	48	35.22
49	35.63	49	35.64	49	35.68	49	35.62
50	35.04	50	35.02	50	35.06	50	35.05
51	35.23	51	35.20	51	35.23	51	35.23
52	35.07	52	35.08	52	35.11	52	35.14
53	35.40	53	35.36	53	35.38	53	35.38
54	35.39	54	35.38	54	35.43	54	35.38
55	35.47	55	35.44	55	35.46	55	35.46
56	35.32	56	35.30	56	35.33	56	35.28
57	35.03	57	35.00	57	35.06	57	35.01
58	35.29	58	35.27	58	35.31	58	35.28
59	35.16	59	35.16	59	35.21	59	35.16
60	35.36	60	35.31	60	35.33	60	35.33
61	35.05	61	35.15	61	35.18	61	35.10
62	35.10	62	35.15	62	35.17	62	35.13
63	35.34	63	35.30	63	35.34	63	35.30
64	35.21	64	35.16	64	35.20	64	35.21
Total power	215.79 W		214.65 W		216.79 W		215.67 W
	53.34 dBm		53.32 dBm		53.36 dBm		53.34 dBm

Table 4 RF Power Output (100 MHz BW Bottom Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3840MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3840MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3840MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
1	35.41	1	35.40	1	35.47	1	35.37
2	35.29	2	35.33	2	35.38	2	35.34
3	35.29	3	35.26	3	35.37	3	35.35
4	35.39	4	35.42	4	35.47	4	35.42
5	35.25	5	35.23	5	35.30	5	35.32
6	35.19	6	35.15	6	35.25	6	35.20
7	35.42	7	35.39	7	35.48	7	35.43
8	35.19	8	35.09	8	35.25	8	35.14
9	35.40	9	35.37	9	35.49	9	35.44
10	35.46	10	35.42	10	35.48	10	35.46
11	35.41	11	35.40	11	35.46	11	35.44
12	35.49	12	35.46	12	35.52	12	35.51
13	35.20	13	35.24	13	35.25	13	35.25
14	35.33	14	35.29	14	35.37	14	35.31
15	35.59	15	35.62	15	35.62	15	**35.61**
16	35.21	16	35.23	16	35.27	16	35.23
17	35.05	17	35.02	17	35.03	17	34.99
18	35.15	18	35.10	18	35.19	18	35.12
19	35.40	19	35.39	19	35.43	19	35.40
20	35.14	20	35.14	20	35.22	20	35.16
21	35.35	21	35.33	21	35.37	21	35.37
22	35.27	22	35.29	22	35.38	22	35.28
23	**35.65**	23	**35.64**	23	**35.70**	23	35.57
24	35.30	24	35.27	24	35.37	24	35.32
25	35.22	25	35.20	25	35.30	25	35.25
26	35.33	26	35.37	26	35.40	26	35.34
27	35.17	27	35.17	27	35.23	27	35.18
28	35.19	28	35.17	28	35.26	28	35.19
29	35.08	29	35.10	29	35.14	29	35.07
30	35.18	30	35.17	30	35.23	30	35.20
31	35.12	31	35.07	31	35.17	31	35.13
32	35.24	32	35.22	32	35.27	32	35.23
33	35.27	33	35.23	33	35.33	33	35.24
34	35.38	34	35.47	34	35.55	34	35.46
35	35.39	35	35.35	35	35.42	35	35.38

36	35.24	36	35.29	36	35.32	36	35.40
37	35.52	37	35.51	37	35.58	37	35.53
38	35.15	38	35.18	38	35.25	38	35.16
39	35.43	39	35.40	39	35.44	39	35.43
40	35.32	40	35.33	40	35.38	40	35.34
41	35.43	41	35.39	41	35.49	41	35.41
42	35.50	42	35.49	42	35.57	42	35.50
43	35.50	43	35.55	43	35.61	43	35.56
44	35.46	44	35.44	44	35.54	44	35.53
45	35.27	45	35.25	45	35.34	45	35.31
46	35.42	46	35.39	46	35.45	46	35.43
47	35.17	47	35.19	47	35.25	47	35.20
48	35.19	48	35.21	48	35.24	48	35.13
49	35.50	49	35.50	49	35.56	49	35.42
50	34.98	50	35.00	50	35.07	50	35.00
51	35.24	51	35.22	51	35.30	51	35.17
52	35.15	52	35.13	52	35.20	52	35.19
53	35.48	53	35.46	53	35.53	53	35.42
54	35.36	54	35.43	54	35.46	54	35.47
55	35.51	55	35.50	55	35.56	55	35.48
56	35.39	56	35.41	56	35.45	56	35.45
57	35.04	57	35.04	57	35.08	57	35.05
58	35.46	58	35.48	58	35.54	58	35.49
59	35.12	59	35.11	59	35.18	59	35.13
60	35.35	60	35.35	60	35.39	60	35.34
61	35.07	61	35.15	61	35.24	61	35.11
62	35.22	62	35.29	62	35.40	62	35.28
63	35.31	63	35.30	63	35.36	63	35.30
64	35.26	64	35.22	64	35.23	64	35.25
Total power	217.16 W		216.97 W		220.29 W		217.78 W
	53.37 dBm		53.36 dBm		53.43 dBm		53.38 dBm

Table 5 RF Power Output (100 MHz BW Middle Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3930MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3930MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3930MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3930MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
1	35.33	1	35.34	1	35.42	1	35.39
2	35.36	2	35.34	2	35.41	2	35.39
3	35.39	3	35.33	3	35.43	3	35.39
4	35.23	4	35.18	4	35.29	4	35.26
5	35.24	5	35.18	5	35.28	5	35.28
6	35.21	6	35.16	6	35.24	6	35.24
7	35.42	7	35.36	7	35.44	7	35.42
8	35.06	8	34.95	8	35.05	8	35.06
9	35.32	9	35.29	9	35.37	9	35.37
10	35.37	10	35.32	10	35.40	10	35.38
11	35.28	11	35.25	11	35.31	11	35.30
12	35.31	12	35.26	12	35.32	12	35.31
13	35.31	13	35.30	13	35.33	13	35.38
14	35.29	14	35.23	14	35.31	14	35.26
15	**35.58**	15	**35.55**	15	**35.63**	15	**35.61**
16	35.27	16	35.24	16	35.31	16	35.28
17	35.10	17	35.04	17	35.07	17	35.06
18	35.11	18	35.06	18	35.09	18	35.05
19	35.27	19	35.24	19	35.30	19	35.24
20	35.15	20	35.13	20	35.18	20	35.14
21	35.37	21	35.34	21	35.43	21	35.42
22	35.31	22	35.28	22	35.33	22	35.30
23	35.45	23	35.41	23	35.46	23	35.41
24	35.37	24	35.35	24	35.41	24	35.40
25	35.23	25	35.03	25	35.21	25	35.16
26	35.25	26	35.20	26	35.26	26	35.23
27	35.18	27	35.15	27	35.19	27	35.18
28	35.06	28	35.04	28	35.09	28	35.05
29	35.17	29	35.13	29	35.20	29	35.23
30	35.27	30	35.22	30	35.27	30	35.24
31	35.12	31	35.10	31	35.14	31	35.13
32	35.24	32	35.21	32	35.31	32	35.23
33	35.35	33	35.32	33	35.41	33	35.34

34	35.27	34	35.35	34	35.38	34	35.36
35	35.36	35	35.32	35	35.39	35	35.36
36	35.31	36	35.30	36	35.34	36	35.40
37	35.35	37	35.33	37	35.37	37	35.36
38	35.33	38	35.30	38	35.38	38	35.33
39	35.24	39	35.21	39	35.27	39	35.26
40	35.31	40	35.29	40	35.34	40	35.34
41	35.42	41	35.39	41	35.43	41	35.40
42	35.44	42	35.41	42	35.48	42	35.53
43	35.46	43	35.46	43	35.53	43	35.55
44	35.38	44	35.35	44	35.41	44	35.43
45	35.20	45	35.16	45	35.21	45	35.24
46	35.43	46	35.41	46	35.46	46	35.44
47	35.29	47	35.25	47	35.30	47	35.32
48	35.24	48	35.20	48	35.27	48	35.21
49	35.38	49	35.37	49	35.39	49	35.33
50	35.18	50	35.14	50	35.21	50	35.14
51	35.20	51	35.17	51	35.22	51	35.16
52	35.22	52	35.21	52	35.29	52	35.25
53	35.24	53	35.22	53	35.28	53	35.28
54	35.32	54	35.30	54	35.37	54	35.31
55	35.45	55	35.41	55	35.49	55	35.45
56	35.28	56	35.24	56	35.33	56	35.27
57	35.09	57	35.05	57	35.10	57	35.08
58	35.38	58	35.36	58	35.42	58	35.38
59	35.18	59	35.14	59	35.20	59	35.17
60	35.32	60	35.29	60	35.36	60	35.32
61	34.95	61	35.01	61	35.07	61	34.99
62	35.13	62	35.15	62	35.24	62	35.14
63	35.25	63	35.23	63	35.30	63	35.26
64	35.35	64	35.32	64	35.40	64	35.35
Total	215.93 W		214.33 W		217.65 W		216.45 W
power	53.34 dBm		53.31 dBm		53.38 dBm		53.35 dBm

Table 6 RF Power Output (100 MHz BW Top Channel)

Config A:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	30.97	15	30.91	15	30.85	15	30.88
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	30.78	23	30.81	23	30.62	15	30.50
Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	30.47	15	30.50	15	30.39	15	30.41

Table 7 RF Power Output (20 MHz Channel BW)

Config B:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.25	15	33.52	15	33.14	15	33.51
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	33.92	23	32.83	23	32.77	15	32.80
Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	32.60	15	32.68	15	32.66	15	32.70

Table 8 RF Power Output (40 MHz Channel BW)

Config C:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	34.56	15	34.49	15	34.47	15	34.47
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	34.53	23	34.56	23	34.50	15	34.46
Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	34.34	15	34.32	15	34.29	15	34.32

Table 9 RF Power Output (60 MHz Channel BW)

Config D:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	36.19	15	36.14	15	36.15	15	36.12
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	35.79	23	35.74	23	35.78	15	35.67
Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	35.89	15	35.95	15	35.95	15	35.93

Table 10 RF Power Output (80 MHz Channel BW)

Config F:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	34.20/30.78	15	34.17/30.77	15	34.22/30.73	15	34.21/30.80
Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	34.32/30.28	23	34.27/30.28	23	34.36/30.20	15	34.29/30.36
Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	34.25/30.04	15	34.24/30.05	15	34.28/29.95	15	34.23/30.03

Table 11 RF Power Output (100+40 MHz Channel BW)

Config G:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.54/32.46	15	33.54/32.44	15	33.58/32.39	15	33.52/32.44
Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	33.70/31.45	23	33.70/31.44	23	33.74/31.39	15	33.73/31.50
Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.81/31.25	15	33.75/31.19	15	33.85/31.15	15	33.75/31.20

Table 12 RF Power Output (100+60 MHz Channel BW)

Config H:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.03/32.29	15	33.04/32.32	15	33.11/32.33	15	33.03/32.30
Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	32.96/32.11	23	32.93/32.05	23	32.98/32.09	15	33.09/32.09
Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.82/32.25	15	33.77/32.20	15	33.85/32.20	15	33.77/32.18

Table 13 RF Power Output (100+80 MHz Channel BW)

Config I:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	32.59/33.22	15	32.56/33.23	15	32.61/33.29	15	32.55/33.20
Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
23	32.63/32.54	23	32.58/32.51	23	32.61/32.56	15	32.75/32.52
Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz	
Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)	Tx Port	(dBm)
15	33.53/32.44	15	33.47/32.39	15	33.52/32.45	15	33.45/32.37

Table 14 RF Power Output (100+100 MHz Channel BW)

The base station maximum output power was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

Config E:

Test Model 1.1 Modulation QPSK Channel Frequency 3750MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3750MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3750MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3750MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
1	16.26	1	16.13	1	18.04	1	16.12
2	16.21	2	16.14	2	18.13	2	16.19
3	16.10	3	16.09	3	18.01	3	16.06
4	16.28	4	16.16	4	17.89	4	16.16
5	15.92	5	15.84	5	17.70	5	15.88
6	15.89	6	15.81	6	17.70	6	15.86
7	16.14	7	16.07	7	17.85	7	16.05
8	16.03	8	15.91	8	17.61	8	15.91
9	16.23	9	16.12	9	18.34	9	16.00
10	16.49	10	16.38	10	18.10	10	16.30
11	16.31	11	16.20	11	17.99	11	16.18
12	16.53	12	16.45	12	18.08	12	16.36
13	16.00	13	15.94	13	17.67	13	15.94
14	16.14	14	16.09	14	17.74	14	16.04
15	16.50	15	16.48	15	18.37	15	16.49
16	16.02	16	15.96	16	17.87	16	15.92
17	15.97	17	15.97	17	17.89	17	15.93
18	15.99	18	16.04	18	17.72	18	15.89
19	16.33	19	16.37	19	18.02	19	16.28
20	16.13	20	16.13	20	17.90	20	16.06
21	16.04	21	16.06	21	17.93	21	15.97
22	16.22	22	16.20	22	17.93	22	16.12
23	16.47	23	16.45	23	18.15	23	16.41
24	16.27	24	16.25	24	18.07	24	16.19
25	16.05	25	16.05	25	17.71	25	16.02
26	16.37	26	16.36	26	18.00	26	16.32
27	16.08	27	16.04	27	17.66	27	16.03
28	16.04	28	15.99	28	17.75	28	16.01
29	15.99	29	15.94	29	17.70	29	15.91
30	16.20	30	16.15	30	17.88	30	16.14
31	15.80	31	15.73	31	17.69	31	15.84
32	15.89	32	15.93	32	17.82	32	15.91
33	16.00	33	15.98	33	17.96	33	16.05
34	16.18	34	16.12	34	17.99	34	16.15
35	16.32	35	16.27	35	17.95	35	16.27
36	16.12	36	16.06	36	18.03	36	16.10

37	16.31	37	16.29	37	18.02	37	16.25
38	16.03	38	16.03	38	17.99	38	16.04
39	16.24	39	16.17	39	17.89	39	16.18
40	16.21	40	16.16	40	18.05	40	16.20
41	16.21	41	16.21	41	18.09	41	16.16
42	16.27	42	16.22	42	18.09	42	16.21
43	16.29	43	16.25	43	17.95	43	16.17
44	16.26	44	16.27	44	17.94	44	16.28
45	16.15	45	16.14	45	17.91	45	16.22
46	16.44	46	16.41	46	18.12	46	16.32
47	16.12	47	16.14	47	18.05	47	16.07
48	16.07	48	16.07	48	18.06	48	16.04
49	16.44	49	16.50	49	18.36	49	16.41
50	15.93	50	15.95	50	17.90	50	15.94
51	16.17	51	16.14	51	17.90	51	16.12
52	15.94	52	15.95	52	17.73	52	15.87
53	16.35	53	16.34	53	17.99	53	16.37
54	16.35	54	16.32	54	17.98	54	16.28
55	16.43	55	16.44	55	18.08	55	16.42
56	16.30	56	16.30	56	17.96	56	16.29
57	15.87	57	15.84	57	17.74	57	15.92
58	16.02	58	16.01	58	17.87	58	16.04
59	16.06	59	16.03	59	17.80	59	16.03
60	16.27	60	16.22	60	17.82	60	16.23
61	15.91	61	15.93	61	17.83	61	15.92
62	16.21	62	16.21	62	17.78	62	16.18
63	16.15	63	16.13	63	18.02	63	16.19
64	15.97	64	16.01	64	17.87	64	16.04

Table 15 Power Spectral Density (100 MHz BW Bottom Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3840MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3840MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3840MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
1	16.36	1	16.27	1	18.31	1	16.22
2	16.31	2	16.29	2	18.26	2	16.20
3	16.01	3	15.97	3	17.94	3	15.94
4	16.29	4	16.29	4	18.18	4	16.18
5	16.12	5	16.00	5	17.97	5	15.97
6	16.07	6	16.02	6	17.99	6	15.96
7	16.13	7	16.12	7	18.06	7	16.08
8	16.08	8	16.02	8	17.93	8	15.87
9	16.28	9	16.21	9	18.60	9	16.07
10	16.23	10	16.21	10	18.14	10	16.05
11	16.18	11	16.12	11	18.04	11	16.09
12	16.30	12	16.31	12	18.23	12	16.27
13	16.05	13	16.02	13	17.96	13	15.92
14	16.19	14	16.18	14	18.06	14	16.13
15	16.53	15	16.55	15	18.42	15	16.48
16	16.10	16	16.04	16	18.02	16	15.98
17	15.77	17	15.83	17	17.67	17	15.74
18	16.10	18	16.18	18	17.97	18	15.97
19	16.22	19	16.20	19	18.15	19	16.20
20	15.99	20	16.09	20	17.96	20	15.95
21	16.17	21	16.19	21	18.08	21	16.14
22	16.13	22	16.12	22	18.08	22	16.07
23	16.39	23	16.41	23	18.32	23	16.41
24	16.07	24	16.12	24	18.08	24	16.05
25	16.10	25	16.10	25	18.06	25	16.07
26	16.24	26	16.18	26	18.16	26	16.14
27	16.09	27	16.13	27	18.06	27	16.08
28	15.93	28	15.89	28	17.96	28	15.92
29	16.04	29	16.07	29	17.97	29	15.99
30	16.04	30	16.06	30	17.95	30	16.03
31	15.85	31	15.82	31	17.76	31	15.85
32	16.11	32	16.14	32	18.04	32	16.12
33	16.19	33	16.17	33	18.16	33	16.16
34	16.19	34	16.21	34	18.06	34	16.18
35	16.24	35	16.20	35	18.21	35	16.25

36	16.10	36	16.12	36	18.05	36	16.04
37	16.38	37	16.37	37	18.32	37	16.31
38	15.79	38	15.80	38	17.71	38	15.79
39	16.24	39	16.26	39	18.15	39	16.17
40	16.25	40	16.21	40	18.17	40	16.16
41	16.16	41	16.13	41	18.11	41	16.16
42	16.30	42	16.30	42	18.19	42	16.19
43	16.26	43	16.32	43	18.24	43	16.20
44	16.17	44	16.18	44	18.17	44	16.25
45	16.08	45	16.07	45	17.98	45	16.12
46	16.13	46	16.14	46	18.04	46	16.16
47	16.18	47	16.18	47	18.11	47	16.19
48	16.03	48	16.04	48	17.99	48	15.97
49	16.35	49	16.27	49	18.16	49	16.32
50	15.79	50	15.88	50	17.73	50	15.87
51	16.02	51	16.09	51	18.02	51	16.13
52	16.05	52	16.13	52	17.95	52	16.01
53	16.26	53	16.27	53	18.23	53	16.30
54	16.21	54	16.20	54	18.06	54	16.23
55	16.33	55	16.39	55	18.22	55	16.38
56	16.25	56	16.28	56	18.16	56	16.29
57	15.94	57	15.92	57	17.78	57	15.88
58	16.33	58	16.33	58	18.25	58	16.30
59	16.03	59	16.11	59	17.90	59	16.01
60	16.13	60	16.16	60	18.10	60	16.15
61	15.92	61	15.93	61	17.85	61	15.89
62	16.16	62	16.27	62	18.04	62	16.22
63	16.22	63	16.28	63	18.10	63	16.30
64	16.14	64	16.23	64	18.05	64	16.18

Table 16 Power Spectral Density (100 MHz BW Middle Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3930MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3930MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3930MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3930MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
1	16.14	1	16.07	1	18.11	1	16.14
2	15.80	2	16.11	2	17.71	2	15.97
3	16.11	3	16.03	3	18.08	3	16.08
4	16.10	4	16.02	4	18.02	4	15.96
5	16.02	5	15.91	5	17.92	5	15.92
6	16.06	6	15.97	6	17.98	6	15.98
7	16.21	7	16.14	7	18.10	7	16.04
8	15.93	8	15.80	8	17.69	8	15.73
9	16.15	9	16.04	9	18.55	9	15.99
10	16.23	10	16.14	10	18.16	10	16.10
11	16.18	11	16.08	11	18.13	11	16.00
12	16.02	12	15.94	12	17.90	12	16.04
13	16.14	13	16.04	13	18.01	13	15.95
14	16.03	14	15.96	14	17.96	14	15.96
15	16.41	15	16.41	15	18.47	15	16.44
16	16.34	16	16.27	16	18.33	16	16.25
17	15.89	17	15.90	17	17.77	17	15.75
18	15.92	18	15.95	18	17.82	18	15.81
19	15.67	19	15.71	19	17.66	19	15.65
20	16.01	20	16.04	20	17.97	20	15.95
21	16.09	21	16.11	21	18.06	21	16.07
22	16.29	22	16.21	22	18.26	22	16.29
23	16.13	23	16.15	23	18.09	23	16.07
24	16.24	24	16.19	24	18.16	24	16.19
25	15.94	25	15.91	25	17.84	25	15.87
26	16.06	26	16.01	26	17.99	26	16.04
27	15.96	27	15.89	27	17.67	27	15.84
28	15.91	28	15.79	28	17.87	28	15.89
29	15.99	29	15.98	29	17.88	29	15.92
30	16.05	30	16.00	30	18.01	30	16.01
31	16.01	31	15.94	31	17.90	31	15.97
32	16.13	32	16.13	32	18.07	32	16.15
33	16.31	33	16.27	33	18.25	33	16.29

34	16.05	34	15.97	34	17.92	34	15.99
35	16.07	35	16.05	35	18.04	35	16.11
36	16.07	36	16.02	36	17.95	36	16.01
37	16.24	37	16.19	37	18.17	37	16.20
38	16.17	38	16.13	38	18.12	38	16.12
39	16.05	39	16.00	39	17.99	39	15.99
40	16.03	40	15.97	40	17.96	40	16.01
41	16.17	41	16.11	41	18.08	41	16.09
42	16.22	42	16.20	42	18.19	42	16.29
43	16.29	43	16.30	43	18.22	43	16.24
44	16.19	44	16.20	44	18.17	44	16.22
45	16.04	45	16.02	45	17.96	45	15.91
46	16.16	46	16.16	46	18.16	46	16.16
47	16.13	47	16.07	47	18.01	47	16.07
48	16.09	48	16.09	48	18.06	48	16.14
49	16.17	49	16.21	49	18.10	49	16.18
50	15.89	50	15.89	50	17.85	50	15.92
51	15.90	51	15.92	51	17.86	51	15.94
52	15.99	52	15.98	52	17.92	52	15.94
53	16.15	53	16.09	53	18.11	53	16.20
54	16.02	54	16.02	54	17.97	54	16.03
55	16.15	55	16.19	55	18.14	55	16.21
56	16.01	56	16.00	56	17.91	56	15.98
57	15.92	57	15.90	57	17.81	57	15.86
58	16.18	58	16.15	58	18.12	58	16.18
59	15.92	59	15.90	59	17.82	59	15.89
60	16.06	60	16.00	60	17.92	60	16.03
61	15.73	61	15.76	61	17.65	61	15.73
62	16.04	62	16.04	62	17.93	62	16.06
63	15.96	63	15.97	63	17.90	63	16.07
64	16.14	64	16.19	64	18.13	64	16.27

Table 17 Power Spectral Density (100 MHz BW Top Channel)

Config A:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	18.66	15	18.66	15	19.88	15	18.68
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	18.54	23	18.59	23	19.74	15	18.21
Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	18.40	15	18.46	15	19.64	15	18.39

Table 18 Power Spectral Density (20 MHz Channel BW)

Config B:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	18.04	15	18.05	15	19.90	15	18.08
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	17.68	23	17.60	23	19.52	15	17.53
Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	17.53	15	17.51	15	19.42	15	17.52

Table 19 Power Spectral Density (40 MHz Channel BW)

Config C:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	17.18	15	17.12	15	18.80	15	17.14
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	17.53	23	17.57	23	19.19	15	17.47
Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	17.31	15	17.25	15	18.96	15	17.31

Table 20 Power Spectral Density (60 MHz Channel BW)

Config D:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	17.56	15	17.92	15	19.65	15	17.92
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	17.51	23	17.45	23	19.47	15	17.64
Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	17.62	15	17.73	15	19.65	15	17.81

Table 21 Power Spectral Density (80 MHz Channel BW)

Config F:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	15.51	15	15.52	15	17.38	15	15.41
Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	15.31	23	15.35	23	17.31	15	15.28
Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.98	15	14.96	15	16.88	15	14.94

Table 22 Power Spectral Density (100+40 MHz Channel BW)

Config G:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.83	15	14.78	15	16.38	15	14.81
Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	14.69	23	14.70	23	16.65	15	14.72
Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.81	15	14.75	15	16.79	15	14.78

Table 23 Power Spectral Density (100+60 MHz Channel BW)

Config H:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.19	15	14.17	15	15.97	15	14.20
Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	13.63	23	13.64	23	15.61	15	13.98
Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.73	15	14.68	15	16.56	15	14.64

Table 24 Power Spectral Density (100+80 MHz Channel BW)

Config I:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	13.65	15	13.66	15	15.61	15	13.56
Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
23	13.36	23	13.36	23	15.36	15	13.52
Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz	
Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz	Tx Port	dBm/MHz
15	14.29	15	14.26	15	16.26	15	14.30

Table 25 Power Spectral Density (100+100 MHz Channel BW)

The base station power spectral density was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

Config E:

Test Model 1.1 Modulation QPSK Channel Frequency 3750MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3750MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3750MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3750MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
1	8.24	1	8.16	1	8.20	1	8.18
2	8.18	2	8.16	2	8.20	2	8.14
3	8.22	3	8.16	3	8.18	3	8.20
4	8.22	4	8.20	4	8.20	4	8.16
5	8.20	5	8.20	5	8.20	5	8.18
6	8.20	6	8.16	6	8.22	6	8.18
7	8.24	7	8.20	7	8.22	7	8.20
8	8.18	8	8.16	8	8.20	8	8.18
9	8.22	9	8.18	9	8.20	9	8.16
10	8.18	10	8.16	10	8.18	10	8.16
11	8.18	11	8.20	11	8.20	11	8.18
12	8.22	12	8.18	12	8.22	12	8.20
13	8.22	13	8.20	13	8.18	13	8.18
14	8.20	14	8.18	14	8.20	14	8.18
15	8.18	15	8.20	15	8.22	15	8.20
16	8.24	16	8.18	16	8.22	16	8.18
17	8.22	17	8.18	17	8.18	17	8.20
18	8.20	18	8.20	18	8.26	18	8.18
19	8.22	19	8.16	19	8.18	19	8.16
20	8.18	20	8.20	20	8.22	20	8.16
21	8.22	21	8.16	21	8.22	21	8.18
22	8.24	22	8.22	22	8.20	22	8.18
23	8.18	23	8.20	23	8.20	23	8.18
24	8.18	24	8.20	24	8.20	24	8.18
25	8.14	25	8.14	25	8.18	25	8.16
26	8.20	26	8.16	26	8.18	26	8.14
27	8.20	27	8.18	27	8.18	27	8.16
28	8.20	28	8.18	28	8.18	28	8.16
29	8.18	29	8.18	29	8.22	29	8.18
30	8.22	30	8.20	30	8.20	30	8.18
31	8.24	31	8.20	31	8.24	31	8.20
32	8.22	32	8.20	32	8.22	32	8.18
33	8.26	33	8.20	33	8.22	33	8.22
34	8.24	34	8.20	34	8.20	34	8.20
35	8.24	35	8.22	35	8.22	35	8.16

36	8.18	36	8.18	36	8.20	36	8.18
37	8.26	37	8.18	37	8.20	37	8.22
38	8.22	38	8.22	38	8.20	38	8.20
39	8.18	39	8.18	39	8.20	39	8.22
40	8.18	40	8.20	40	8.20	40	8.18
41	8.24	41	8.18	41	8.22	41	8.22
42	8.24	42	8.20	42	8.22	42	8.20
43	8.24	43	8.18	43	8.20	43	8.20
44	8.22	44	8.22	44	8.22	44	8.18
45	8.18	45	8.18	45	8.20	45	8.16
46	8.16	46	8.20	46	8.20	46	8.18
47	8.18	47	8.18	47	8.20	47	8.16
48	8.24	48	8.20	48	8.22	48	8.22
49	8.20	49	8.20	49	8.20	49	8.20
50	8.24	50	8.20	50	8.22	50	8.18
51	8.20	51	8.22	51	8.24	51	8.20
52	8.20	52	8.20	52	8.22	52	8.22
53	8.20	53	8.20	53	8.20	53	8.18
54	8.18	54	8.18	54	8.18	54	8.18
55	8.24	55	8.18	55	8.22	55	8.18
56	8.24	56	8.18	56	8.20	56	8.20
57	8.24	57	8.18	57	8.22	57	8.22
58	8.18	58	8.22	58	8.22	58	8.18
59	8.20	59	8.16	59	8.20	59	8.22
60	8.22	60	8.18	60	8.20	60	8.06
61	8.24	61	8.22	61	8.20	61	8.18
62	8.20	62	8.18	62	8.20	62	8.18
63	8.20	63	8.18	63	8.18	63	8.20
64	8.22	64	8.16	64	8.26	64	8.20

Table 26 Peak to Average Power (100 MHz BW Bottom Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3840MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3840MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3840MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
1	8.14	1	8.20	1	8.18	1	8.20
2	8.14	2	8.16	2	8.16	2	8.20
3	8.12	3	8.12	3	8.12	3	8.16
4	8.20	4	8.20	4	8.20	4	8.20
5	8.18	5	8.18	5	8.16	5	8.20
6	8.18	6	8.16	6	8.14	6	8.18
7	8.18	7	8.20	7	8.20	7	8.22
8	8.18	8	8.20	8	8.16	8	8.16
9	8.18	9	8.20	9	8.16	9	8.18
10	8.16	10	8.14	10	8.16	10	8.16
11	8.16	11	8.16	11	8.20	11	8.20
12	8.18	12	8.18	12	8.18	12	8.18
13	8.14	13	8.20	13	8.16	13	8.16
14	8.18	14	8.18	14	8.20	14	8.18
15	8.14	15	8.16	15	8.18	15	8.16
16	8.20	16	8.20	16	8.16	16	8.20
17	8.14	17	8.20	17	8.18	17	8.18
18	8.18	18	8.20	18	8.16	18	8.18
19	8.14	19	8.14	19	8.14	19	8.16
20	8.16	20	8.18	20	8.16	20	8.16
21	8.16	21	8.18	21	8.22	21	8.18
22	8.18	22	8.18	22	8.18	22	8.20
23	8.18	23	8.18	23	8.18	23	8.20
24	8.18	24	8.22	24	8.18	24	8.16
25	8.10	25	8.08	25	8.08	25	8.10
26	8.16	26	8.16	26	8.16	26	8.18
27	8.16	27	8.14	27	8.10	27	8.10
28	8.16	28	8.18	28	8.16	28	8.16
29	8.18	29	8.18	29	8.18	29	8.18
30	8.18	30	8.20	30	8.16	30	8.20
31	8.18	31	8.20	31	8.20	31	8.20
32	8.18	32	8.18	32	8.18	32	8.20
33	8.20	33	8.22	33	8.20	33	8.20
34	8.18	34	8.18	34	8.20	34	8.22
35	8.18	35	8.20	35	8.18	35	8.20
36	8.20	36	8.22	36	8.16	36	8.20

37	8.18	37	8.18	37	8.20	37	8.18
38	8.20	38	8.20	38	8.22	38	8.22
39	8.18	39	8.20	39	8.16	39	8.18
40	8.18	40	8.20	40	8.18	40	8.20
41	8.18	41	8.22	41	8.16	41	8.18
42	8.18	42	8.16	42	8.18	42	8.16
43	8.20	43	8.22	43	8.16	43	8.22
44	8.18	44	8.22	44	8.20	44	8.20
45	8.18	45	8.18	45	8.18	45	8.20
46	8.16	46	8.18	46	8.18	46	8.20
47	8.16	47	8.18	47	8.20	47	8.18
48	8.20	48	8.22	48	8.18	48	8.20
49	8.20	49	8.22	49	8.20	49	8.22
50	8.18	50	8.22	50	8.16	50	8.22
51	8.22	51	8.20	51	8.16	51	8.20
52	8.22	52	8.22	52	8.18	52	8.18
53	8.16	53	8.18	53	8.20	53	8.20
54	8.20	54	8.16	54	8.18	54	8.20
55	8.16	55	8.18	55	8.18	55	8.20
56	8.16	56	8.20	56	8.20	56	8.18
57	8.22	57	8.22	57	8.18	57	8.18
58	8.18	58	8.18	58	8.20	58	8.16
59	8.20	59	8.20	59	8.20	59	8.20
60	8.18	60	8.20	60	8.20	60	8.04
61	8.18	61	8.18	61	8.18	61	8.16
62	8.20	62	8.22	62	8.18	62	8.18
63	8.18	63	8.18	63	8.18	63	8.18
64	8.20	64	8.20	64	8.18	64	8.20

Table 27 Peak to Average Power (100 MHz BW Middle Channel)

Test Model 1.1 Modulation QPSK Channel Frequency 3930MHz		Test Model 3.1 Modulation 64QAM Channel Frequency 3930MHz		Test Model 3.2 Modulation 16QAM Channel Frequency 3930MHz		Test Model 3.1a Modulation 256QAM Channel Frequency 3930MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
1	8.22	1	8.22	1	8.18	1	8.22
2	8.00	2	8.02	2	7.98	2	8.34
3	7.98	3	8.00	3	8.02	3	8.08
4	8.18	4	8.22	4	8.20	4	8.26
5	8.20	5	8.22	5	8.22	5	8.22
6	8.22	6	8.22	6	8.20	6	8.20
7	8.22	7	8.26	7	8.22	7	8.26
8	8.20	8	8.20	8	8.18	8	8.24
9	8.20	9	8.22	9	8.22	9	8.24
10	8.14	10	8.18	10	8.16	10	8.16
11	8.22	11	8.22	11	8.18	11	8.18
12	8.22	12	8.26	12	8.22	12	8.26
13	8.16	13	8.22	13	8.18	13	8.18
14	8.20	14	8.26	14	8.22	14	8.22
15	8.20	15	8.24	15	8.16	15	8.20
16	8.20	16	8.26	16	8.20	16	8.22
17	8.16	17	8.18	17	8.18	17	8.22
18	8.38	18	8.24	18	8.14	18	8.16
19	8.02	19	8.08	19	8.02	19	8.04
20	8.16	20	8.24	20	8.16	20	8.20
21	8.20	21	8.26	21	8.18	21	8.20
22	8.18	22	8.24	22	8.20	22	8.20
23	8.20	23	8.24	23	8.18	23	8.26
24	8.20	24	8.22	24	8.20	24	8.22
25	8.06	25	8.10	25	8.06	25	8.08
26	8.16	26	8.24	26	8.18	26	8.18
27	7.92	27	7.94	27	7.88	27	7.94
28	8.14	28	8.16	28	8.16	28	8.18
29	8.18	29	8.22	29	8.20	29	8.20
30	8.18	30	8.22	30	8.22	30	8.26
31	8.20	31	8.24	31	8.22	31	8.24
32	8.22	32	8.26	32	8.24	32	8.20
33	8.22	33	8.28	33	8.22	33	8.26
34	8.20	34	8.28	34	8.20	34	8.26
35	8.22	35	8.28	35	8.24	35	8.22
36	8.20	36	8.26	36	8.24	36	8.22

37	8.18	37	8.24	37	8.18	37	8.22
38	8.22	38	8.22	38	8.20	38	8.22
39	8.18	39	8.24	39	8.22	39	8.26
40	8.18	40	8.24	40	8.18	40	8.24
41	8.20	41	8.28	41	8.22	41	8.20
42	8.20	42	8.28	42	8.24	42	8.20
43	8.20	43	8.26	43	8.20	43	8.24
44	8.18	44	8.28	44	8.22	44	8.24
45	8.20	45	8.22	45	8.20	45	8.24
46	8.18	46	8.22	46	8.14	46	8.20
47	8.18	47	8.22	47	8.22	47	8.24
48	8.20	48	8.26	48	8.16	48	8.22
49	8.20	49	8.24	49	8.24	49	8.22
50	8.20	50	8.28	50	8.22	50	8.22
51	8.22	51	8.24	51	8.22	51	8.22
52	8.20	52	8.28	52	8.22	52	8.26
53	8.20	53	8.26	53	8.20	53	8.24
54	8.18	54	8.24	54	8.20	54	8.22
55	8.20	55	8.28	55	8.22	55	8.22
56	8.20	56	8.20	56	8.22	56	8.20
57	8.20	57	8.22	57	8.22	57	8.22
58	8.22	58	8.26	58	8.20	58	8.22
59	8.18	59	8.24	59	8.22	59	8.24
60	8.22	60	8.26	60	8.22	60	8.22
61	8.20	61	8.20	61	8.22	61	8.24
62	8.22	62	8.24	62	8.24	62	8.24
63	8.20	63	8.24	63	8.22	63	8.22
64	8.24	64	8.28	64	8.24	64	8.22

Table 28 Peak to Average Power (100 MHz BW Top Channel)

Config A:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.64	15	8.52	15	8.64	15	8.52
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.66	23	8.52	23	8.64	15	8.46
Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.62	15	8.46	15	8.64	15	8.58

Table 29 Peak to Average Power (20 MHz Channel BW)

Config B:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.52	15	8.48	15	8.46	15	8.56
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.52	23	8.48	23	8.60	15	8.56
Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.52	15	8.46	15	8.50	15	8.54

Table 30 Peak to Average Power (40 MHz Channel BW)

Config C:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.62	15	8.60	15	8.58	15	8.58
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.56	23	8.52	23	8.58	15	8.60
Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.56	15	8.60	15	8.56	15	8.56

Table 31 Peak to Average Power (60 MHz Channel BW)

Config D:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.14	15	8.18	15	8.18	15	8.22
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.14	23	8.20	23	8.14	15	8.16
Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.16	15	8.14	15	8.16	15	8.14

Table 32 Peak to Average Power (80 MHz Channel BW)

Config F:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.20	15	8.26	15	8.26	15	8.24
Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.16	23	8.20	23	8.18	15	8.16
Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.24	15	8.22	15	8.26	15	8.22

Table 33 Peak to Average Power (100+40MHz Channel BW)

Config G:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.24	15	8.28	15	8.26	15	8.28
Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.20	23	8.2	23	8.22	15	8.50
Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		0Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.22	15	8.24	15	8.26	15	8.28

Table 34 Peak to Average Power (100+60MHz Channel BW)

Config H:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.26	15	8.26	15	8.26	15	8.26
Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.18	23	8.20	23	8.20	15	8.18
Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.24	15	8.26	15	8.30	15	8.30

Table 35 Peak to Average Power (100+80MHz Channel BW)

Config I:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.30	15	8.34	15	8.32	15	8.30
Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
23	8.22	23	8.22	23	8.22	15	8.24
Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz	
Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%	Tx Port	CCDF 0.1%
15	8.30	15	8.30	15	8.28	15	8.30

Table 36 Peak to Average Power (100+100MHz Channel BW)

The base peak to average power was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

4.2 Test No. 2: Modulation Characteristics (§ 2.1047)

The occupied bandwidth was measured to be compliant with the manufacturer's specifications and with all requirements of the FCC rules, which represents the 99% power bandwidth (see the following section and screenshots on pages 81).

No further testing is required under this section of the FCC rules. No measurements other than the occupied bandwidth are required.

Sample of modulation screenshots are on page 78, in I/Q constellation diagrams and tables, showing QPSK, 16QAM, 64QAM and 256QAM –modulation generation.

4.3 Test No. 3: Occupied Bandwidth (§ 2.1049)

4.3.1. Limits

Para. No. 2.1049. The 99% 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 0.5% of the emitted power.

4.3.2. Test Procedure and Results

The 99% occupied bandwidth of the carrier emission is measured using a signal analyzer with Resolution Bandwidth set to 30 kHz (less than 1% of bandwidth; see screenshots on page 81 for details). The following tables summarize the results:

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
23.12.2021 – 29.01.2021	22.8 °C	25.0 °C	5.4 RH%	21.4 RH%

Config A:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz		Channel Frequency 3710.1MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	18.18	15	18.17	15	18.22	15	18.16
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	18.17	23	18.18	23	18.22	15	18.17
Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz		Channel Frequency 3969.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	18.17	15	18.17	15	18.20	15	18.18

Table 37 Occupied Bandwidth (20 MHz Channel bandwidth)

Config B:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz		Channel Frequency 3720MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	37.77	15	37.74	15	37.85	15	37.77
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	37.80	23	37.77	23	37.86	15	37.72
Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz		Channel Frequency 3960MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	37.78	15	37.74	15	37.85	15	37.78

Table 38 Occupied Bandwidth (40 MHz Channel bandwidth)

Config C:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz		Channel Frequency 3729.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	57.73	15	57.70	15	57.85	15	57.67
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	57.72	23	57.75	23	57.84	15	57.75
Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz		Channel Frequency 3950.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	57.69	15	57.68	15	57.80	15	57.68

Table 39 Occupied Bandwidth (60 MHz Channel bandwidth)

Config D:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz		Channel Frequency 3740.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	77.36	15	77.28	15	77.48	15	77.37
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	77.32	23	77.33	23	77.48	15	77.37
Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz		Channel Frequency 3939.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	77.32	15	77.36	15	77.48	15	77.29

Table 40 Occupied Bandwidth (80 MHz Channel bandwidth)

Config E:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750MHz		Channel Frequency 3750MHz		Channel Frequency 3750MHz		Channel Frequency 3750MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	97.21	15	97.24	15	97.40	15	97.24
Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz		Channel Frequency 3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	97.24	23	97.30	23	97.42	15	97.24
Channel Frequency 3930MHz		Channel Frequency 3930MHz		Channel Frequency 3930MHz		Channel Frequency 3930MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	97.18	15	97.19	15	97.38	15	97.32

Table 41 Occupied Bandwidth (100 MHz Channel bandwidth)

Config F:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz		Channel Frequency 3750/3819.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	136.72	15	136.70	15	137.01	15	136.77
Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz		Channel Frequency 3819.99/3890.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	136.81	23	136.85	23	137.04	15	136.73
Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz		Channel Frequency 3890.01/3960MHz	
Tx Port	MHz	Tx Port	136.86	Tx Port	MHz	Tx Port	MHz
15	136.82	15	8.22	15	137.06	15	136.78

Table 42 Occupied Bandwidth (100+40 MHz Channel bandwidth)

Config G:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz		Channel Frequency 3750/3830.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	156.57	15	156.58	15	156.86	15	156.66
Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz		Channel Frequency 3810/3890.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	156.66	23	156.65	23	156.94	15	156.60
Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz		Channel Frequency 3870/3950.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	156.73	15	156.72	15	157.03	15	156.73

Table 43 Occupied Bandwidth (100+60 MHz Channel bandwidth)

Config H:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz		Channel Frequency 3750/3840MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	173.35	15	176.34	15	176.62	15	176.26
Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz		Channel Frequency 3800.01/3890.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	176.37	23	176.30	23	176.65	15	176.31
Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz		Channel Frequency 3849.99/3939.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	176.33	15	176.36	15	176.64	15	176.27

Table 44 Occupied Bandwidth (100+80 MHz Channel bandwidth)

Config I:

Test Model 1.1 Modulation QPSK		Test Model 3.1 Modulation 64QAM		Test Model 3.2 Modulation 16QAM		Test Model 3.1a Modulation 256QAM	
Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz		Channel Frequency 3750/3849.99MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	196.07	15	196.01	15	195.74	15	196.09
Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz		Channel Frequency 3789.99/3890.01MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
23	196.20	23	196.27	23	195.99	15	196.11
Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz		Channel Frequency 3830.01/3930MHz	
Tx Port	MHz	Tx Port	MHz	Tx Port	MHz	Tx Port	MHz
15	196.08	15	196.17	15	195.75	15	196.03

Table 45 Occupied Bandwidth (100+100 MHz Channel bandwidth)

The occupied bandwidth was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

4.4 Test No. 4: Spurious Emissions at Antenna Terminals (§ 2.1051, § 2.1057, § 27.53)

4.4.1. Limits

Para. No. 27.53(l). For BRS and EBS stations, the power of any emissions outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) measured in watts.

(l)(2) For fixed and temporary fixed digital stations, the attenuation shall be not less than 43 + 10 log (P) dB (P = transmitter power in Watts).

The compliance limit was calculated in the following way:

Maximum transmitter output power [W]:	P
Maximum transmitter output power [dBm]:	30 + 10 log10 P (conversion from W to dBm)
Attenuation required by FCC:	43 + 10 log10 P

Compliance limit = Maximum transmitter output power - Required attenuation

= 30 + 10 log10 P - (43 + 10 log10 P) = <u>-13 dBm</u>

For MiMo output from 64 TX -antenna connectors, each antenna connectors were measured individually and each individual limit lime was reduced by 10log(64). Limit line was calculated to show -31dB emission limit, according to FCC KDB 662911 D01 and ANSI C6326-2015 guidance.

4.4.2. Test Procedure and Results

The tests were carried out in accordance with § 27.53. For all frequency ranges except two (immediately below and above the carrier frequency block) a 1 MHz resolution bandwidth was used for the measurements.

In the 1 MHz frequency bands immediately outside and adjacent to the carrier frequency block the resolution bandwidth is lowered to 1% of the 26 dB occupied bandwidth of the transmitted carrier.

According to § 2.1057, all emissions including the fundamental frequency from the lowest radio frequency generated in the equipment, without going below 9 kHz, up to the 10th harmonic were investigated.

The following tables summarize the worst case detected emission levels (see screenshots on page 86 for details). The external attenuation (cable loss of the set up) is already added in the results. It can be seen separately as the 'Offset' value in the screenshots.

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
19 – 28. Jan 2022	23.2 °C	25.0 °C	6.0 RH%	21.4 RH%

Config A Lower band edge:

Carrier Frequency: 3710.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3700	-41.82	compliant
16QAM-Modulation TX port 15			
	3700	-41.25	compliant
64QAM-Modulation TX port 15			
	3700	-41.64	compliant
256QAM-Modulation TX port 15			
	3700	-41.99	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 46 Spurious Emissions (Lower band edge) (20 MHz CH BW)

Config A Upper band edge:

Carrier Frequency: 3969.99 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3980	-35.17	compliant
16QAM-Modulation TX port 15			
	3980	-34.58	compliant
64QAM-Modulation TX port 15			
	3980	-34.60	compliant
256QAM-Modulation TX port 15			
	3980	-35.12	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 47 Spurious Emissions (Upper band edge) (20 MHz CH BW)

Config A Spurious emissions:

Carrier Frequency: 3840.0 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3829	-32.23	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3851	-31.55	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3851	-33.33	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3851	-32.94	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 48 Spurious Emissions (20 MHz Channel BW)

Config B Lower band edge:

Carrier Frequency: 3720 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3700	-41.74	compliant
16QAM-Modulation TX port 15			
	3700	-41.50	compliant
64QAM-Modulation TX port 15			
	3700	-41.94	compliant
256QAM-Modulation TX port 15			
	3700	-40.77	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 49 Spurious Emissions (Lower band edge) (40 MHz CH BW)

Config B Upper band edge:

Carrier Frequency: 3960 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3980	-38.60	compliant

16QAM-Modulation TX port 15			
	3980	-39.20	compliant
64QAM-Modulation TX port 15			
	3980	-38.68	compliant
256QAM-Modulation TX port 15			
	3981	-38.83	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 50 Spurious Emissions (Upper band edge) (40 MHz CH BW)

Config B Spurious emissions:

Carrier Frequency: 3840.0 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3819	-33.45	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3819	-33.94	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3819	-33.61	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3819	-33.62	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 51 Spurious Emissions (40 MHz Channel BW)

Config E Lower band edge:

Carrier Frequency: 3720 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3699	-36.03	compliant
16QAM-Modulation TX port 15			
	3699	-35.63	compliant
64QAM-Modulation TX port 15			
	3699	-35.83	compliant
256QAM-Modulation TX port 15			
	3699	-35.95	compliant

Measurement Uncertainty:	f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB

Table 52 Spurious Emissions (Lower band edge) (100 MHz CH BW)

Config E Upper band edge:

Carrier Frequency: 3930 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3981	-34.38	compliant
16QAM-Modulation TX port 15			
	3981	-34.38	compliant
64QAM-Modulation TX port 15			
	3981	-34.06	compliant
256QAM-Modulation TX port 15			
	3981	-34.02	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 53 Spurious Emissions (Upper band edge) (100 MHz CH BW)

Config E Spurious emissions:

Carrier Frequency: 3840 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3783	-33.24	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3783	-32.96	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3783	-33.66	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3783	-32.65	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 54 Spurious Emissions (100 MHz Channel BW)

Config F Lower band edge:

Carrier Frequency: 3750 / 3819.99 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3699	-34.93	compliant
16QAM-Modulation TX port 15			
	3699	-34.85	compliant
64QAM-Modulation TX port 15			
	3699	-34.78	compliant
256QAM-Modulation TX port 15			
	3699	-34.83	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 55 Spurious Emissions (Lower band edge) (100+40 MHz CH BW)

Config F Upper band edge:

Carrier Frequency:3890.01 / 3960 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3981	-33.71	compliant
16QAM-Modulation TX port 15			
	3981	-33.94	compliant
64QAM-Modulation TX port 15			
	3981	-33.84	compliant
256QAM-Modulation TX port 15			
	3981	-34.14	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 56 Spurious Emissions (Upper band edge) (100+40 MHz CH BW)

Config F Spurious emissions:

Carrier Frequency: 3819.99 / 3890.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3783	-33.24	compliant

16QAM-Modulation TX port 23			
0.009 – 39800	3783	-32.96	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3783	-33.66	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3783	-32.65	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 57 Spurious Emissions (100+40 MHz Channel BW)

Config G Lower band edge:

Carrier Frequency: 3750 / 3830.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3699	-32.82	compliant
16QAM-Modulation TX port 15			
	3699	-32.94	compliant
64QAM-Modulation TX port 15			
	3699	-33.11	compliant
256QAM-Modulation TX port 15			
	3699	-32.86	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 58 Spurious Emissions (Lower band edge) (100+60 MHz CH BW)

Config G Upper band edge:

Carrier Frequency: 3870 / 3950.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3981	-31.97	compliant
16QAM-Modulation TX port 15			
	3981	-32.10	compliant
64QAM-Modulation TX port 15			
	3981	-32.42	compliant
256QAM-Modulation TX port 15			
	3981	-32.47	compliant

	f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB

Table 59 Spurious Emissions (Upper band edge) (100+60 MHz CH BW)

Config G Spurious emissions:

Carrier Frequency: 3810 / 3890.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3939	-34.77	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3753	-34.50	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3921	-34.87	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3753	-34.29	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 60 Spurious Emissions (100+60 MHz Channel BW)

Config H Lower band edge:

Carrier Frequency: 3750 / 3840 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3699	-33.99	compliant
16QAM-Modulation TX port 15			
	3699	-34.14	compliant
64QAM-Modulation TX port 15			
	3699	-34.13	compliant
256QAM-Modulation TX port 15			
	3699	-33.97	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 61 Spurious Emissions (Lower band edge) (100+80 MHz CH BW)

Config H Upper band edge:

Carrier Frequency: 3849.99 / 3939.99 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3981	-32.92	compliant
16QAM-Modulation TX port 15			
	3981	-33.15	compliant
64QAM-Modulation TX port 15			
	3981	-33.05	compliant
256QAM-Modulation TX port 15			
	3982	-33.10	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 62 Spurious Emissions (Upper band edge) (100+80 MHz CH BW)

Config H Spurious emissions:

Carrier Frequency: 3800.01 / 3890.01 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3573	-34.42	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3931	-35.06	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3742	-34.66	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3961	-34.64	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 63 Spurious Emissions (100+80 MHz Channel BW)

Config I Lower band edge:

Carrier Frequency: 3750 / 3849.99 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port15			
	3699	-34.03	compliant

16QAM-Modulation TX port 15			
	3699	-34.01	compliant
64QAM-Modulation TX port 15			
	3699	-34.04	compliant
256QAM-Modulation TX port 15			
	3699	-34.05	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 64 Spurious Emissions (Lower band edge) (100+100 MHz CH BW)

Config I Upper band edge:

Carrier Frequency: 3830.01 / 3930 MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 15			
	3981	-33.06	compliant
16QAM-Modulation TX port 15			
	3982	-33.34	compliant
64QAM-Modulation TX port 15			
	3982	-33.28	compliant
256QAM-Modulation TX port 15			
	3981	-33.20	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty:3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

Table 65 Spurious Emissions (Upper band edge) (100+100 MHz CH BW)

Config I Spurious emissions:

Carrier Frequency: 3789.99 / 3890.01MHz			
Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
QPSK-Modulation TX port 23			
0.009 – 39800	3735	-35.01	compliant
16QAM-Modulation TX port 23			
0.009 – 39800	3735	-35.25	compliant
64QAM-Modulation TX port 23			
0.009 – 39800	3735	-34.47	compliant
256QAM-Modulation TX port 15			
0.009 – 39800	3735	-34.25	compliant

Measurement Uncertainty:	f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB

Table 66 Spurious Emissions (100+100 MHz Channel BW)

The measured conducted emission levels were found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

4.5 Test No. 5: Field Strength of Spurious Radiation (§ 2.1053, § 27.53)

4.5.1. Section 2.1053 Field Strength of Spurious Emissions

Field strength measurements of radiated spurious emissions were made in an FCC registered 3m Semi-Anechoic Chamber which is maintained by Nokia in Oulu, Finland. A complete description and full measurement data for the site is on file with the Commission (Site Registration Number: 261413).

The spectrum from 30 MHz to beyond the tenth harmonic of the carrier, 39.8 GHz, was searched for spurious radiation. Measurements were made using both horizontally and vertically polarized broadband antennas. Per FCC regulations, the comparison of out of band spurious emissions directly to the limit is appropriately made using the substitution method. However, when the emissions are more than 20 dB below the specification limit, the use of field strength measurements for compliance determination is acceptable and those emissions are considered not reportable (Section 2.1053 and the FCC Interpretive database for 2.1053). For this case the evaluation of acceptable radiated field strength is as follows.

4.5.2. Field Strength of Spurious Emissions - Limits

Sections 2.1053 and 27.53 contain the requirements for the levels of spurious radiation as a function of the level of the unmodulated carrier. The reference level for the unmodulated carrier is calculated as the field produced by an ideal dipole excited by the transmitter output power according to the following relation taken from Reference Data for Radio Engineers, page 676, 4th edition, IT&T Corp.

$$E = [(30*P)^{1/2}]/R$$

$$20 \log (E*10^6) – (43 + 10 \log P) = 82.23 \text{ dBµV/meter}$$

Where:

E = Field Intensity in Volts/meter P = Transmitted Power in Watts

R = Measurement distance in meters = 3 m

The Part 27 Limit is 82.23 dBµV/m at 3m and 85.75 dBuV/m at 2m

The calculated emission levels were found by:

Measured level (dBµV) + Cable Loss(dB)+Antenna Factor(dB) = Field Strength (dBµV/m)

4.5.3. RESULTS:

For compliance with 47CFR Parts 2 and 27, the field strength of any spurious radiation, measured at 3m, is required to be less than 82.23 dBµV/meter (82.23 @ 3m). Over the out of band spectrum investigated from 30 MHz to beyond the tenth harmonic of the carrier (up to 39.8 GHz), no reportable spurious emissions were detected.

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
15 Dec – 21 Dec 2021	21.8 °C	24.7 °C	6.5 RH%	21.5 RH%

Frequency Range [MHz]	**Emission Frequency [MHz]**	**Maximum Emission Level [dBm]**	**Result**
30 - 40000	1600.007833	-32.96 dBm	compliant
	14971.58529	-32.33 dBm	compliant
Measurement Uncertainty:			±5.60 dB

Table 67 Field Strength of Spurious Radiation

The measured emission levels were found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

4.6 Test No. 6: Frequency Stability (§ 2.1055, § 27.54)

4.6.1. Purpose

Frequency stability measurements were performed to verify that the frequency deviation of the emission stays within the licensee's frequency block under extreme temperature

4.6.2. Limits

Para. No. 27.54. (-30 °C to +50 °C) and supply voltage conditions according to § 2.1055.

4.6.3. Test Configuration

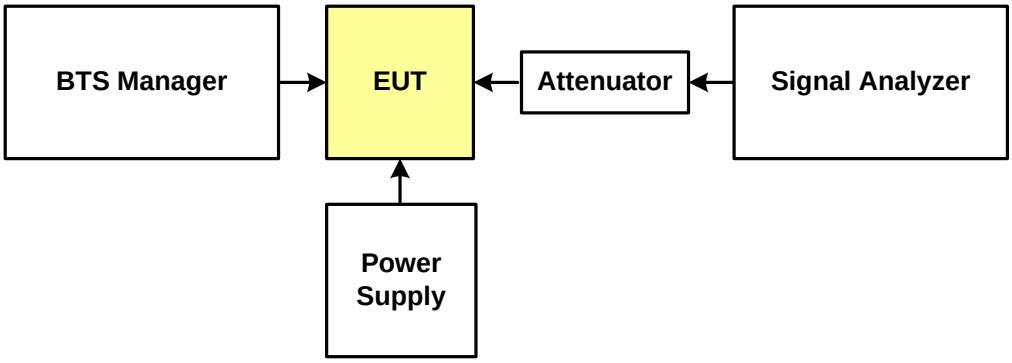


Figure 2 Test Configuration for frequency stability with voltage variation

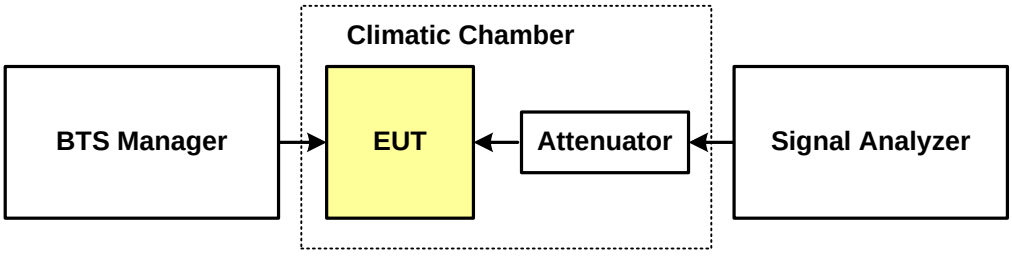


Figure 3 Test Configuration for frequency stability with temperature variation

A complete list of the measurement equipment is included on page 68 of this measurement report.

4.6.4. Test Procedure and Results

Frequency Stability with Temperature Variation:

The supply voltage of the EUT was set to the nominal value and the temperature of the environmental chamber was varied in 10 degree steps from -30 degrees Celsius to +50 degrees Celsius. The EUT was allowed to stabilize 60 min. at each temperature and the frequency error was measured.

Config A:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	Ambient Temperature [°C]	Frequency Deviation		Manufacturer's Specification		Result
		[Hz]	[ppm]	[Hz]	[ppm]	
QPSK Modulation TX PORT 15						
-48.0	-30.0	-3.56258	-0.001	129	0.05	compliant
-48.0	-20.0	0.46155	0.000	129	0.05	compliant
-48.0	-10.0	-0.99660	0.000	129	0.05	compliant
-48.0	0.0	-0.47987	0.000	129	0.05	compliant
-48.0	10.0	-1.76198	0.000	129	0.05	compliant
-48.0	30.0	0.01619	0.000	129	0.05	compliant
-48.0	40.0	-2.42715	-0.001	129	0.05	compliant
-48.0	50.0	-5.66859	-0.001	129	0.05	compliant
QPSK Modulation TX PORT 23						
-48.0	-30.0	-3.56258	-0.001	129	0.05	compliant
-48.0	-20.0	-4.72248	-0.001	129	0.05	compliant
-48.0	-10.0	-3.83467	-0.001	129	0.05	compliant
-48.0	0.0	-1.69816	0.000	129	0.05	compliant
-48.0	10.0	-3.08345	-0.001	129	0.05	compliant
-48.0	30.0	-3.94749	-0.001	129	0.05	compliant
-48.0	40.0	-3.41443	-0.001	129	0.05	compliant
-48.0	50.0	-2.55673	-0.001	129	0.05	compliant
16QAM Modulation TX port 15						
-48.0	-30.0	-0.16334	0.000	129	0.05	compliant
-48.0	-20.0	-1.7194	0.000	129	0.05	compliant
-48.0	-10.0	-0.61547	0.000	129	0.05	compliant
-48.0	0.0	1.45406	0.000	129	0.05	compliant
-48.0	10.0	0.70687	0.000	129	0.05	compliant
-48.0	30.0	-3.07928	-0.001	129	0.05	compliant
-48.0	40.0	1.28618	0.000	129	0.05	compliant
-48.0	50.0	1.28618	0.000	129	0.05	compliant
16QAM Modulation TX port 23						
-48.0	-30.0	-2.12467	-0.001	129	0.05	compliant
-48.0	-20.0	1.23875	0.000	129	0.05	compliant

-48.0	-10.0	2.01767	0.001	129	0.05	compliant
-48.0	0.0	-0.82496	0.000	129	0.05	compliant
-48.0	10.0	-2.51068	-0.001	129	0.05	compliant
-48.0	30.0	2.06491	0.001	129	0.05	compliant
-48.0	40.0	-1.57871	0.000	129	0.05	compliant
-48.0	50.0	3.81156	0.001	129	0.05	compliant
64QAM Modulation TX port 15						
-48.0	-30.0	3.66196	0.001	129	0.05	compliant
-48.0	-20.0	1.98265	0.001	129	0.05	compliant
-48.0	-10.0	0.90568	0.000	129	0.05	compliant
-48.0	0.0	-0.63745	0.000	129	0.05	compliant
-48.0	10.0	-3.58246	-0.001	129	0.05	compliant
-48.0	30.0	1.13026	0.000	129	0.05	compliant
-48.0	40.0	2.48628	0.001	129	0.05	compliant
-48.0	50.0	2.48628	0.001	129	0.05	compliant
64QAM Modulation TX port 23						
-48.0	-30.0	-3.27515	-0.001	129	0.05	compliant
-48.0	-20.0	-1.52022	0.000	129	0.05	compliant
-48.0	-10.0	2.22195	0.001	129	0.05	compliant
-48.0	0.0	2.40785	0.001	129	0.05	compliant
-48.0	10.0	2.07672	0.001	129	0.05	compliant
-48.0	30.0	-0.70344	0.000	129	0.05	compliant
-48.0	40.0	-1.04109	0.000	129	0.05	compliant
-48.0	50.0	2.48297	0.001	129	0.05	compliant
256QAM Modulation TX port 15						
-48.0	-30.0	1.86958	0.000	129	0.05	compliant
-48.0	-20.0	-1.04108	0.000	129	0.05	compliant
-48.0	-10.0	0.13986	0.000	129	0.05	compliant
-48.0	0.0	3.21360	0.001	129	0.05	compliant
-48.0	10.0	-0.89170	0.000	129	0.05	compliant
-48.0	30.0	-0.42139	0.000	129	0.05	compliant
-48.0	40.0	-1.41671	0.000	129	0.05	compliant
-48.0	50.0	-1.41671	0.000	129	0.05	compliant
256QAM Modulation TX port 23						
-48.0	-30.0	0.02246	0.000	129	0.05	compliant
-48.0	-20.0	-1.26571	0.000	129	0.05	compliant
-48.0	-10.0	0.01512	0.000	129	0.05	compliant
-48.0	0.0	1.21373	0.000	129	0.05	compliant
-48.0	10.0	-1.80093	0.000	129	0.05	compliant
-48.0	30.0	-2.49439	-0.001	129	0.05	compliant
-48.0	40.0	-0.19385	0.000	129	0.05	compliant
-48.0	50.0	0.46420	0.000	129	0.05	compliant

Measurement Uncertainty:	±1.0 Hz

Table 68 Frequency stability with temp. var. (20 MHz Channel BW)

Config B:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	Ambient Temperature [°C]	Frequency Deviation		Manufacturer's Specification		Result
		[Hz]	[ppm]	[Hz]	[ppm]	
QPSK Modulation ANT15						
-48.0	-30.0	-7.83585	-0.002	129	0.05	compliant
-48.0	-20.0	-2.47254	-0.001	129	0.05	compliant
-48.0	-10.0	-1.78278	0.000	129	0.05	compliant
-48.0	0.0	-1.54924	0.000	129	0.05	compliant
-48.0	10.0	0.44548	0.000	129	0.05	compliant
-48.0	30.0	2.85101	0.001	129	0.05	compliant
-48.0	40.0	0.55706	0.000	129	0.05	compliant
-48.0	50.0	1.85949	0.000	129	0.05	compliant
QPSK Modulation ANT23						
-48.0	-30.0	-1.22016	0.000	129	0.05	compliant
-48.0	-20.0	0.26983	0.000	129	0.05	compliant
-48.0	-10.0	-2.65744	-0.001	129	0.05	compliant
-48.0	0.0	-2.54911	-0.001	129	0.05	compliant
-48.0	10.0	-0.29867	0.000	129	0.05	compliant
-48.0	30.0	1.39263	0.000	129	0.05	compliant
-48.0	40.0	1.48614	0.000	129	0.05	compliant
-48.0	50.0	0.67370	0.000	129	0.05	compliant
16QAM Modulation ANT15						
-48.0	-30.0	1.14803	0.000	129	0.05	compliant
-48.0	-20.0	-1.70978	0.000	129	0.05	compliant
-48.0	-10.0	-1.01549	0.000	129	0.05	compliant
-48.0	0.0	-1.54258	0.000	129	0.05	compliant
-48.0	10.0	0.89634	0.000	129	0.05	compliant
-48.0	30.0	-0.84164	0.000	129	0.05	compliant
-48.0	40.0	-0.93538	0.000	129	0.05	compliant
-48.0	50.0	-1.68680	0.000	129	0.05	compliant
16QAM Modulation ANT23						
-48.0	-30.0	-1.04693	0.000	129	0.05	compliant
-48.0	-20.0	-1.27540	0.000	129	0.05	compliant
-48.0	-10.0	-1.31177	0.000	129	0.05	compliant
-48.0	0.0	-2.41843	-0.001	129	0.05	compliant
-48.0	10.0	-4.98762	-0.001	129	0.05	compliant

-48.0	30.0	-1.32464	0.000	129	0.05	compliant
-48.0	40.0	0.74657	0.000	129	0.05	compliant
-48.0	50.0	-0.76155	0.000	129	0.05	compliant
64QAM Modulation ANT15						
-48.0	-30.0	-4.31888	-0.001	129	0.05	compliant
-48.0	-20.0	-2.62899	-0.001	129	0.05	compliant
-48.0	-10.0	0.86493	0.000	129	0.05	compliant
-48.0	0.0	-2.25575	-0.001	129	0.05	compliant
-48.0	10.0	-2.07746	-0.001	129	0.05	compliant
-48.0	30.0	1.11327	0.000	129	0.05	compliant
-48.0	40.0	0.39524	0.000	129	0.05	compliant
-48.0	50.0	-0.70356	0.000	129	0.05	compliant
64QAM Modulation ANT23						
-48.0	-30.0	-4.08005	-0.001	129	0.05	compliant
-48.0	-20.0	-2.81310	-0.001	129	0.05	compliant
-48.0	-10.0	-2.45067	-0.001	129	0.05	compliant
-48.0	0.0	-0.47391	0.000	129	0.05	compliant
-48.0	10.0	-0.77177	0.000	129	0.05	compliant
-48.0	30.0	1.12478	0.000	129	0.05	compliant
-48.0	40.0	0.94674	0.000	129	0.05	compliant
-48.0	50.0	2.50717	0.001	129	0.05	compliant
256QAM Modulation ANT15						
-48.0	-30.0	-3.72234	-0.001	129	0.05	compliant
-48.0	-20.0	0.20663	0.000	129	0.05	compliant
-48.0	-10.0	-0.64586	0.000	129	0.05	compliant
-48.0	0.0	-1.22169	0.000	129	0.05	compliant
-48.0	10.0	0.63706	0.000	129	0.05	compliant
-48.0	30.0	0.98306	0.000	129	0.05	compliant
-48.0	40.0	-0.08639	0.000	129	0.05	compliant
-48.0	50.0	-0.27465	0.000	129	0.05	compliant
256QAM Modulation ANT23						
-48.0	-30.0	-3.80372	-0.001	129	0.05	compliant
-48.0	-20.0	-3.33266	-0.001	129	0.05	compliant
-48.0	-10.0	-1.10388	0.000	129	0.05	compliant
-48.0	0.0	-2.85942	-0.001	129	0.05	compliant
-48.0	10.0	1.14927	0.000	129	0.05	compliant
-48.0	30.0	0.78307	0.000	129	0.05	compliant
-48.0	40.0	-0.27924	0.000	129	0.05	compliant
-48.0	50.0	-0.42411	0.000	129	0.05	compliant
Measurement Uncertainty:					±1.0 Hz	

Table 69 Frequency stability with temp. var. (40 MHz Channel BW)

Config E:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	Ambient Temperature [°C]	Frequency Deviation		Manufacturer's Specification		Result
		[Hz]	[ppm]	[Hz]	[ppm]	
QPSK Modulation TX port 15						
-48.0	-30.0	1.22464	0.000	129	0.05	compliant
-48.0	-20.0	-0.78960	0.000	129	0.05	compliant
-48.0	-10.0	-1.54887	-0.000	129	0.05	compliant
-48.0	0.0	-2.26445	-0.001	129	0.05	compliant
-48.0	10.0	-3.24191	-0.001	129	0.05	compliant
-48.0	30.0	3.28191	0.001	129	0.05	compliant
-48.0	40.0	-0.80583	0.000	129	0.05	compliant
-48.0	50.0	-0.39533	0.000	129	0.05	compliant
QPSK Modulation TX port 23						
-48.0	-30.0	-5.12145	-0.001	129	0.05	compliant
-48.0	-20.0	-3.83482	-0.001	129	0.05	compliant
-48.0	-10.0	-2.63703	-0.001	129	0.05	compliant
-48.0	0.0	-1.16915	0.000	129	0.05	compliant
-48.0	10.0	-1.41049	0.000	129	0.05	compliant
-48.0	30.0	-1.01863	0.000	129	0.05	compliant
-48.0	40.0	0.97351	0.000	129	0.05	compliant
-48.0	50.0	0.64601	0.000	129	0.05	compliant
16QAM Modulation ANT15						
-48.0	-30.0	-2.07183	-0.001	129	0.05	compliant
-48.0	-20.0	-3.68593	-0.001	129	0.05	compliant
-48.0	-10.0	0.23890	0.000	129	0.05	compliant
-48.0	0.0	-2.58507	-0.001	129	0.05	compliant
-48.0	10.0	-1.96651	-0.001	129	0.05	compliant
-48.0	30.0	3.45771	0.001	129	0.05	compliant
-48.0	40.0	0.70821	0.000	129	0.05	compliant
-48.0	50.0	2.15926	0.001	129	0.05	compliant
16QAM Modulation ANT23						
-48.0	-30.0	-8.59658	-0.002	129	0.05	compliant
-48.0	-20.0	-2.82528	-0.001	129	0.05	compliant
-48.0	-10.0	-1.49631	0.000	129	0.05	compliant
-48.0	0.0	-1.10989	0.000	129	0.05	compliant
-48.0	10.0	-3.30337	-0.001	129	0.05	compliant
-48.0	30.0	2.81441	0.001	129	0.05	compliant
-48.0	40.0	1.70504	0.000	129	0.05	compliant
-48.0	50.0	-0.18700	0.000	129	0.05	compliant
64QAM Modulation ANT15						

-48.0	-30.0	-1.55507	0.000	129	0.05	compliant
-48.0	-20.0	-4.24330	-0.001	129	0.05	compliant
-48.0	-10.0	-1.90566	0.000	129	0.05	compliant
-48.0	0.0	-3.42232	-0.001	129	0.05	compliant
-48.0	10.0	-0.73499	0.000	129	0.05	compliant
-48.0	30.0	0.16908	0.000	129	0.05	compliant
-48.0	40.0	3.14734	0.001	129	0.05	compliant
-48.0	50.0	0.67312	0.000	129	0.05	compliant
64QAM Modulation ANT23						
-48.0	-30.0	-0.92115	0.000	129	0.05	compliant
-48.0	-20.0	-0.62548	0.000	129	0.05	compliant
-48.0	-10.0	-1.44494	0.000	129	0.05	compliant
-48.0	0.0	-5.78924	-0.002	129	0.05	compliant
-48.0	10.0	-0.77830	0.000	129	0.05	compliant
-48.0	30.0	1.64295	0.000	129	0.05	compliant
-48.0	40.0	3.25246	0.001	129	0.05	compliant
-48.0	50.0	-2.27900	-0.001	129	0.05	compliant
256QAM Modulation ANT15						
-48.0	-30.0	-1.09182	0.000	129	0.05	compliant
-48.0	-20.0	-0.81762	0.000	129	0.05	compliant
-48.0	-10.0	-1.81441	0.000	129	0.05	compliant
-48.0	0.0	-2.09446	-0.001	129	0.05	compliant
-48.0	10.0	-0.89550	0.000	129	0.05	compliant
-48.0	30.0	1.34524	0.000	129	0.05	compliant
-48.0	40.0	-0.18257	0.000	129	0.05	compliant
-48.0	50.0	3.41130	0.001	129	0.05	compliant
256QAM Modulation ANT23						
-48.0	-30.0	-1.87921	0.000	129	0.05	compliant
-48.0	-20.0	-4.27038	-0.001	129	0.05	compliant
-48.0	-10.0	-0.97065	0.000	129	0.05	compliant
-48.0	0.0	-4.11549	-0.001	129	0.05	compliant
-48.0	10.0	-2.42648	-0.001	129	0.05	compliant
-48.0	30.0	-0.40399	0.000	129	0.05	compliant
-48.0	40.0	-1.46997	0.000	129	0.05	compliant
-48.0	50.0	-0.96607	0.000	129	0.05	compliant
Measurement Uncertainty:					±1.0 Hz	

Table 70 Frequency stability with temp. var. (100 MHz Channel BW)

Frequency Stability with Voltage Variation:

The EUT was placed in a climatic chamber and allowed to stabilize at +20 degrees Celsius for at least 60 minutes. With the supply voltage of the EUT set to 85% of the

nominal value, the frequency error was measure. This procedure was repeated at 100% and 115% of the nominal supply voltage value.

Config A:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	**Ambient Temperature [°C]**	**Frequency Deviation**		**Manufacturer's Specification**		**Result**
		[Hz]	**[ppm]**	**[Hz]**	**[ppm]**	
QPSK Modulation TX port 15						
-40.8	20.0	-0.47656	0.000	129	0.05	compliant
-48.0	20.0	-4.22893	-0.001	129	0.05	compliant
-55.2	20.0	-3.38109	-0.001	129	0.05	compliant
QPSK Modulation TX port 23						
-40.8	20.0	-3.41943	0.000	129	0.05	compliant
-48.0	20.0	-1.33921	-0.001	129	0.05	compliant
-55.2	20.0	-1.62287	-0.001	129	0.05	compliant
16QAM Modulation TX port 15						
-40.8	20.0	4.99208	0.001	129	0.05	compliant
-48.0	20.0	1.14972	0.000	129	0.05	compliant
-55.2	20.0	2.84063	0.001	129	0.05	compliant
16QAM Modulation TX port 23						
-40.8	20.0	3.20250	0.001	129	0.05	compliant
-48.0	20.0	-0.16415	0.000	129	0.05	compliant
-55.2	20.0	0.66365	0.000	129	0.05	compliant
64QAM Modulation TX port 15						
-40.8	20.0	4.94391	0.001	129	0.05	compliant
-48.0	20.0	0.06814	0.000	129	0.05	compliant
-55.2	20.0	1.77583	0.000	129	0.05	compliant
64QAM Modulation TX port 23						
-40.8	20.0	1.53200	0.000	129	0.05	compliant
-48.0	20.0	2.82331	0.001	129	0.05	compliant
-55.2	20.0	1.23478	0.000	129	0.05	compliant
256QAM Modulation TX port 15						
-40.8	20.0	-0.80375	0.000	129	0.05	compliant
-48.0	20.0	1.01157	0.000	129	0.05	compliant
-55.2	20.0	3.25125	0.001	129	0.05	compliant
256QAM Modulation TX port 23						
-40.8	20.0	-0.61206	0.000	129	0.05	compliant
-48.0	20.0	1.00280	0.000	129	0.05	compliant
-55.2	20.0	0.12827	0.000	129	0.05	compliant
Measurement Uncertainty:					±1.0 Hz	

Table 71 Frequency stability with voltage var. (20 MHz Channel BW)

Config B:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	**Ambient Temperature [°C]**	**Frequency Deviation**		**Manufacturer's Specification**		**Result**
		[Hz]	**[ppm]**	**[Hz]**	**[ppm]**	
QPSK Modulation TX port 15						
-40.8	20.0	-2.0743	-0.001	129	0.05	compliant
-48.0	20.0	-2.77797	-0.001	129	0.05	compliant
-55.2	20.0	-4.70732	-0.001	129	0.05	compliant
QPSK Modulation TX port 23						
-40.8	20.0	-1.47910	0.000	129	0.05	compliant
-48.0	20.0	1.02828	0.000	129	0.05	compliant
-55.2	20.0	0.91918	0.000	129	0.05	compliant
16QAM Modulation TX port 15						
-40.8	20.0	-2.13520	-0.001	129	0.05	compliant
-48.0	20.0	-0.95511	0.000	129	0.05	compliant
-55.2	20.0	-4.38489	-0.001	129	0.05	compliant
16QAM Modulation TX port 23						
-40.8	20.0	-0.84732	0.000	129	0.05	compliant
-48.0	20.0	0.22088	0.000	129	0.05	compliant
-55.2	20.0	-0.19276	0.000	129	0.05	compliant
64QAM Modulation TX port 15						
-40.8	20.0	0.12475	0.000	129	0.05	compliant
-48.0	20.0	-0.33178	0.000	129	0.05	compliant
-55.2	20.0	-2.31318	-0.001	129	0.05	compliant
64QAM Modulation TX port 23						
-40.8	20.0	-0.94424	0.000	129	0.05	compliant
-48.0	20.0	0.65653	0.000	129	0.05	compliant
-55.2	20.0	-0.80957	0.000	129	0.05	compliant
256QAM Modulation TX port 15						
-40.8	20.0	-3.82605	-0.001	129	0.05	compliant
-48.0	20.0	0.18592	0.000	129	0.05	compliant
-55.2	20.0	-0.98191	0.000	129	0.05	compliant
256QAM Modulation TX port 23						
-40.8	20.0	0.69676	0.000	129	0.05	compliant
-48.0	20.0	0.44598	0.000	129	0.05	compliant
-55.2	20.0	2.20227	0.001	129	0.05	compliant
Measurement Uncertainty:					±1.0 Hz	

Table 72 Frequency stability with voltage var. (40 MHz Channel BW)

Config E:

Carrier Frequency: 3840.0 MHz						
Supply Voltage (DC) [V]	Ambient Temperature [°C]	Frequency Deviation		Manufacturer's Specification		Result
		[Hz]	[ppm]	[Hz]	[ppm]	
QPSK Modulation TX port 15						
-40.8	20.0	4.94709	0.001	129	0.05	compliant
-48.0	20.0	-0.65139	0.000	129	0.05	compliant
-55.2	20.0	2.21951	0.001	129	0.05	compliant
QPSK Modulation TX port 23						
-40.8	20.0	-0.53473	0.000	129	0.05	compliant
-48.0	20.0	3.12859	0.001	129	0.05	compliant
-55.2	20.0	-0.07128	0.000	129	0.05	compliant
16QAM Modulation TX port 15						
-40.8	20.0	1.04593	0.000	129	0.05	compliant
-48.0	20.0	0.579018	0.000	129	0.05	compliant
-55.2	20.0	-1.28144	0.000	129	0.05	compliant
16QAM Modulation TX port 23						
-40.8	20.0	-1.41193	0.000	129	0.05	compliant
-48.0	20.0	1.19376	0.000	129	0.05	compliant
-55.2	20.0	0.10765	0.000	129	0.05	compliant
64QAM Modulation TX port 15						
-40.8	20.0	-1.41656	0.000	129	0.05	compliant
-48.0	20.0	1.51080	0.000	129	0.05	compliant
-55.2	20.0	2.12911	0.001	129	0.05	compliant
64QAM Modulation TX port 23						
-40.8	20.0	1.99403	0.001	129	0.05	compliant
-48.0	20.0	4.28777	0.000	129	0.05	compliant
-55.2	20.0	0.85900	0.000	129	0.05	compliant
256QAM Modulation TX port 15						
-40.8	20.0	2.47783	0.001	129	0.05	compliant
-48.0	20.0	0.01483	0.000	129	0.05	compliant
-55.2	20.0	0.90032	0.000	129	0.05	compliant
256QAM Modulation TX port 23						
-40.8	20.0	2.50043	0.001	129	0.05	compliant
-48.0	20.0	2.34555	0.001	129	0.05	compliant
-55.2	20.0	-0.99935	0.000	129	0.05	compliant
Measurement Uncertainty:					±1.0 Hz	

Table 73 Frequency stability with voltage var. (100 MHz Channel BW)

The measured frequency stability was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.

5. TEST DATA AND SCREENSHOTS

5.1 Part List of the RF Measurement Test Equipment

No.	Test Equipment	Manufacturer & Type	Serial Number	Calibration date	Calibration due	Test No.
1	Signal Analyzer	Rohde & Schwarz: FSW	104599	06/2021	06/2022	1, 2, 3, 4
2	Signal Analyzer	Rohde & Schwarz: FSW	104597	06/2021	06/2022	6
3	Vector Network Analyzer	Rohde & Schwarz: ZVA40	100146	08/2021	08/2022	1, 2, 3, 4
4	Vector Network Analyzer	Rohde & Schwarz: ZVL13	101177	05/2021	05/2022	6
5	Calibration Unit	Rohde & Schwarz: ZV-Z54	100125	05/2021	05/2022	1, 2, 3, 4
6	Calibration Unit	Hewlett Packard 85032B	2919A04843	08/2021	08/2022	6
7	Frequency Standard	Symmetricom 8040	161730115011	07/2021	06/2022	1,2,3,4
8	Frequency Standard	Symmetricom 8040	162223101016	07/2021	07/2022	6
9	Multimeter	Fluke 83	DM8750386	08/2021	08/2022	1, 2, 3, 4, 6
10	Humidity and Temperature Indicator	Vaisala: HMT 131	E6316020	04/2021	04/2022	1, 2, 3, 4, 6
11	DC Power Supply	Sorensen: SGI 80/188	0525A00547	cnn	-	1, 2, 3, 4
12	DC Power Supply	SG180X188D-1AAA	1245A00011	cnn	-	6
13	DC Power Supply	Toellner TOE887	160142	cnn	-	6
14	Antenna Selector SSU	Orbis 64x4 Solid State Switch Matrix	SSU-1939-3823	cnn	-	1, 2, 3, 4
15	Attenuator	SHX DTS100G-20dB-24G	14111102	cnn	-	4
16	High Pass Filter	RF-Lambda RHPF23G06G40	21052000014	cnn	-	4
17	Attenuator	API Weinschel 254-30-33	UH351	cnn	-	6
18	Temperature chamber	Weiss WTS 3-600/70/5	58226142630010	12/2021	12/2022	6
19	EMI Test Receiver	Rohde & Schwarz: ESW44	101772	01/2021	02/2022	5
20	Horn Antenna	ETS-Lindgren ETS3115	92148	07/2021	07/2022	5
21	Bilog Antenna	Schaffner Chase CBL6112	2003	07/2021	07/2022	5
22	Horn Antenna	ETS-Lindgren 3116C	206990	07/2021	07/2022	5
23	Amplifier	Miteq AFSX4	1829263	cnn	-	5
24	Mast Controller	Maturo NCD/281	21250317	cnn	-	5

25	4-meter mast	Maturo TAM4.0-E	123/21250317	cnn	-	5
26	Anechoic chamber	Comtest Nokia 3m Chamber	Nokia 3m Chamber	10/2019	10/2022	5
27	Humidity and temperature meter	Vaisala HM40	TO920674	08/2021	08/2022	5

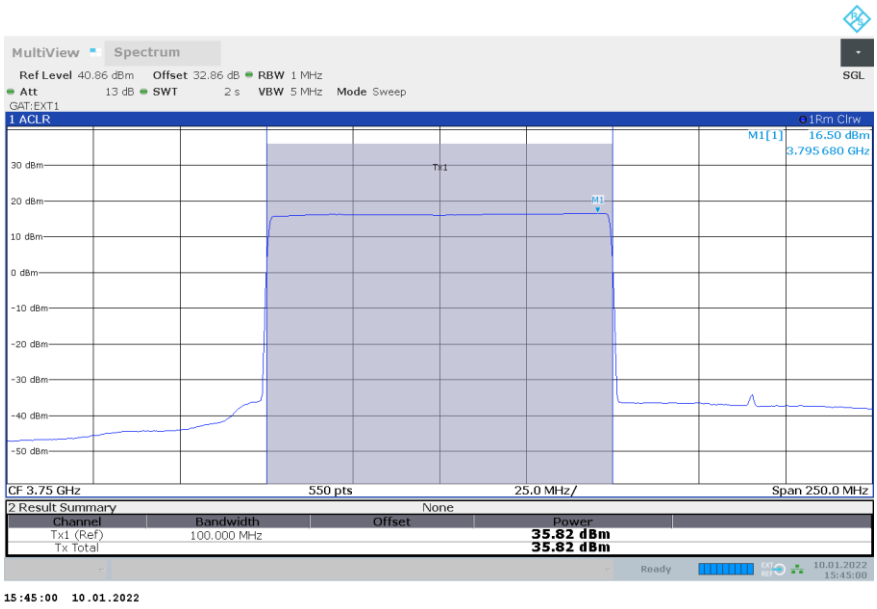
Table 74 Part List of the RF Measurement Test Equipment

5.2 Spectral Plots

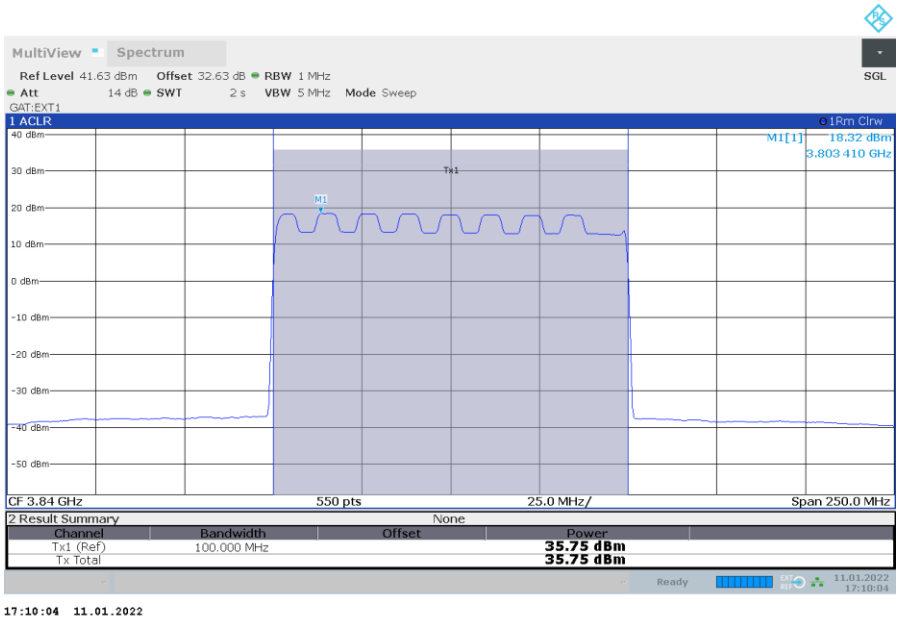
NOTE: Only a sample of the spectral plots are used and visible in this report. All measured test results and data are saved in Oulu located server.

5.2.1. Test No. 1: RF Output Power

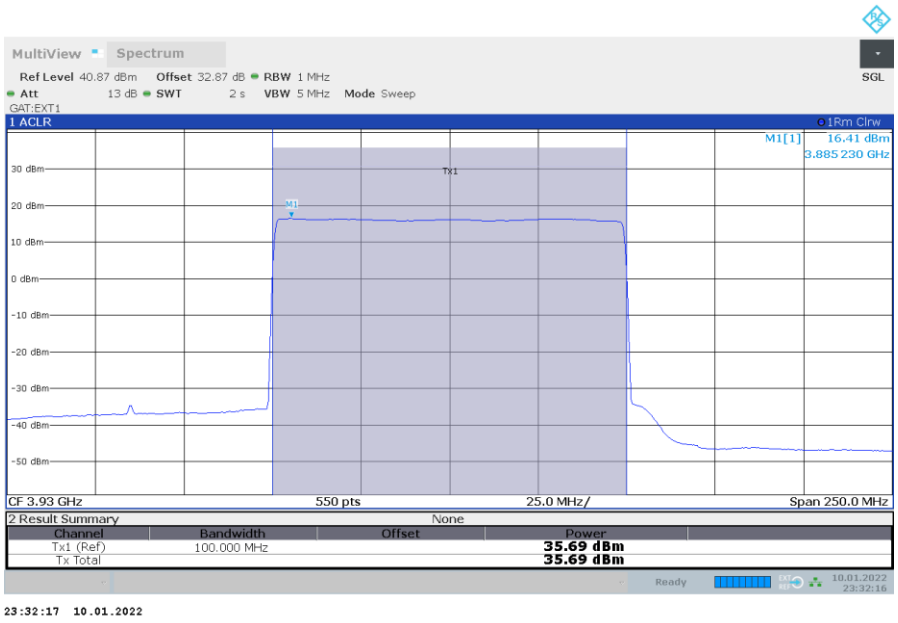
Power spectral density 100MHz BW



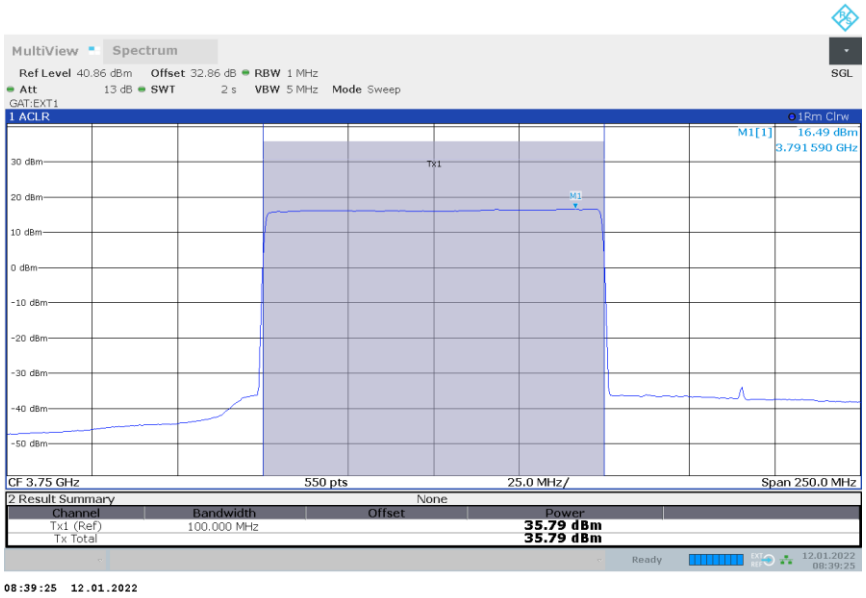
Test Model 1.1, Modulation QPSK, Channel Frequency 3750MHz, Tx port 15



Test Model 3.2, Modulation 16QAM, Channel Frequency 3840MHz, Tx port 23

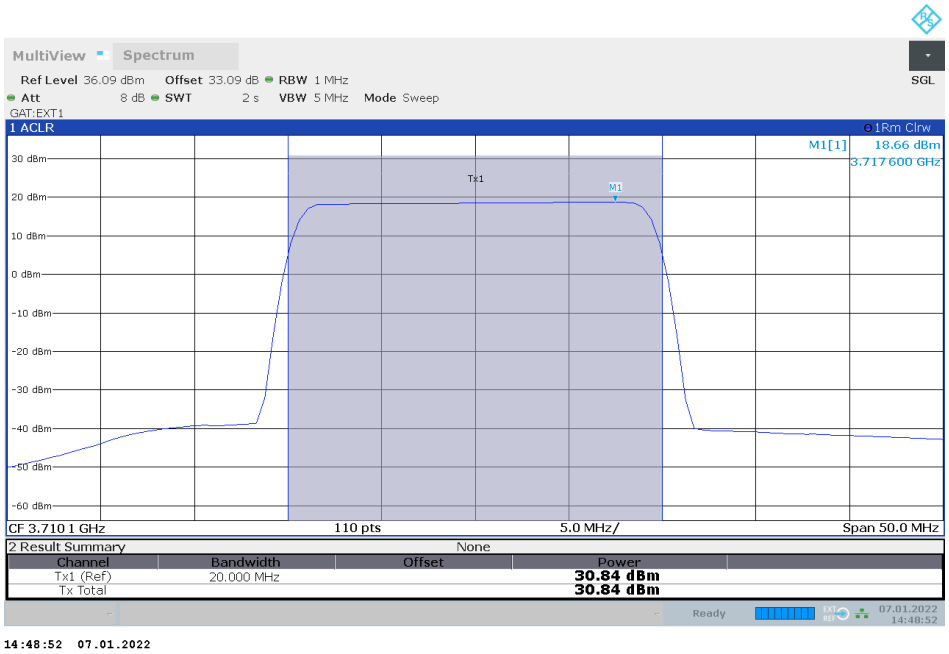


Test Model 3.1, Modulation 64QAM, Channel Frequency 3930MHz, Tx port 15



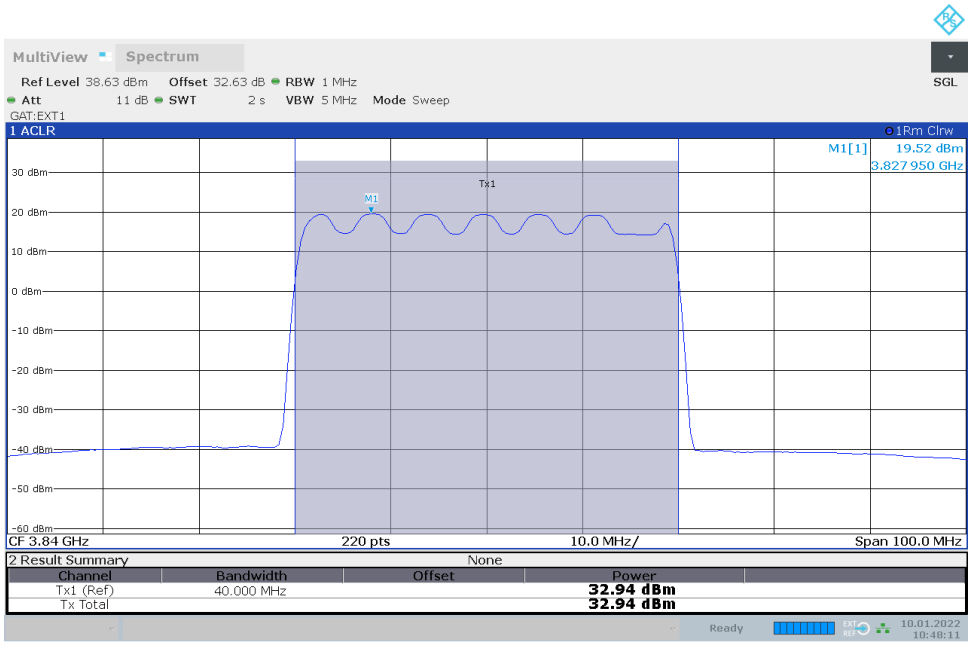
Test Model 3.1a, Modulation 256QAM, Channel Frequency 3750MHz, Tx port 15

Power spectral density 20MHz BW



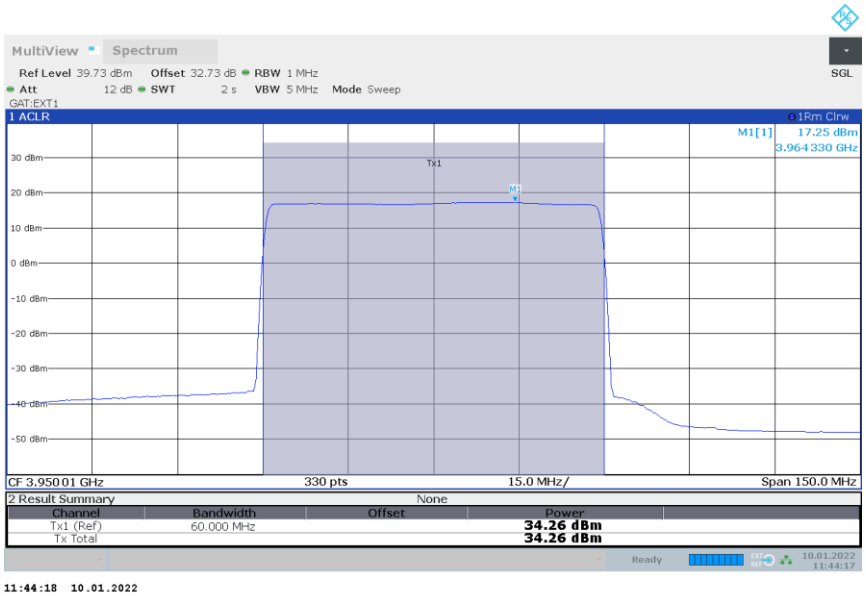
Test Model 1.1, Modulation QPSK, Channel Frequency 3710.01MHz, Tx port 15

Power spectral density 40MHz BW



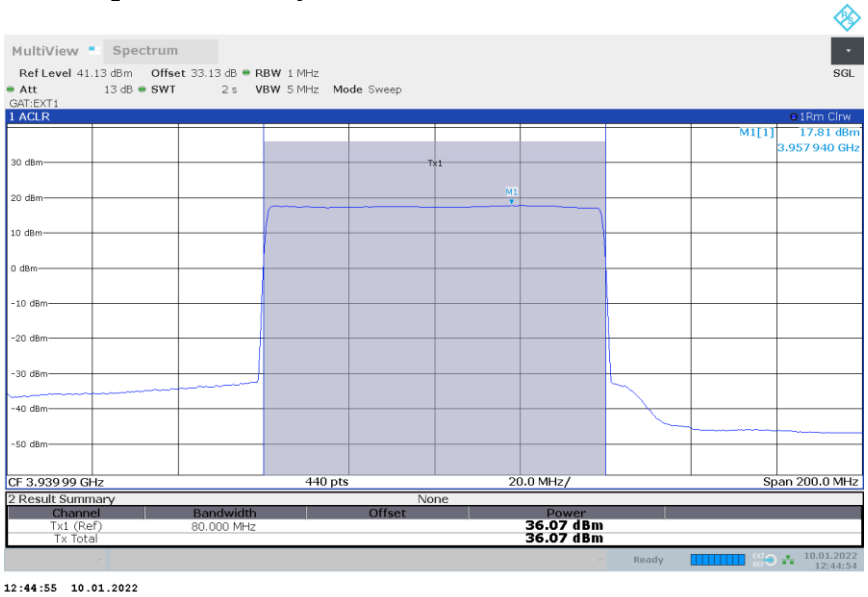
Test Model 3.2, Modulation 16QAM, Channel Frequency 3840MHz, Tx port 23

Power spectral density 60MHz BW



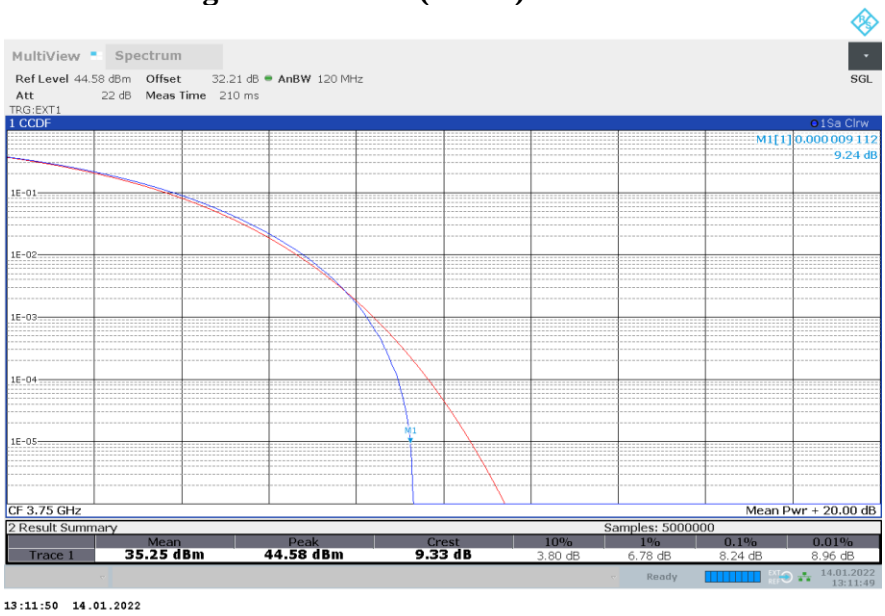
Test Model 3.1, Modulation 64QAM, Channel Frequency 3950.01MHz, Tx port 15

Power spectral density 80MHz BW



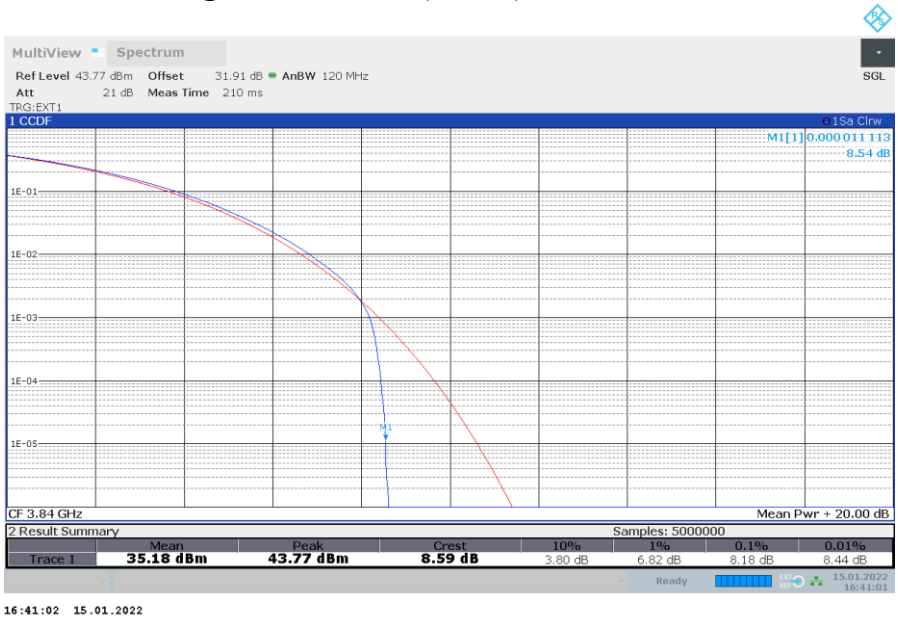
Test Model 3.1a, Modulation 256QAM, Channel Frequency 3939.99MHz,Tx Port15

Peak-to-Average Power Ratio (PAPR) 100MHz BW



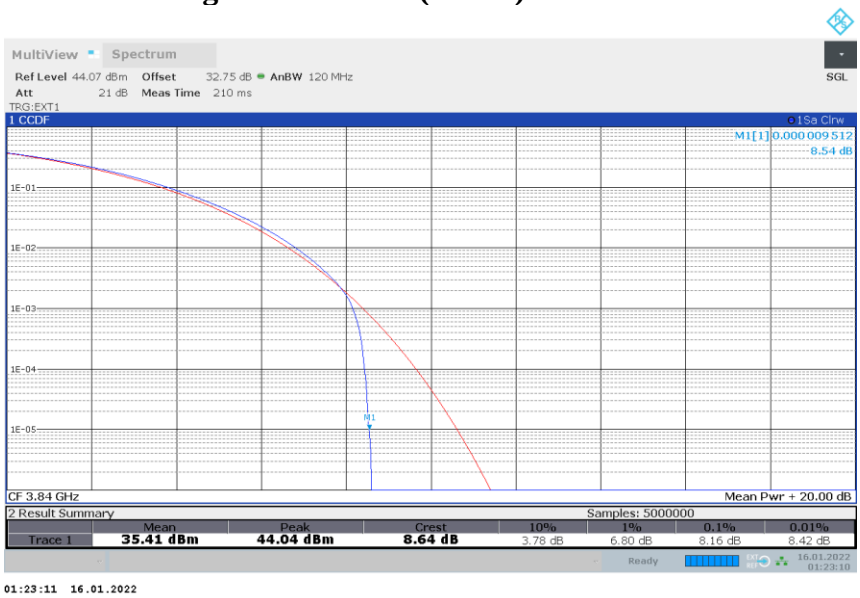
Test Model 1.1, Modulation QPSK, Channel Frequency 3750MHz,Tx Port15

Peak-to-Average Power Ratio (PAPR) 100MHz BW



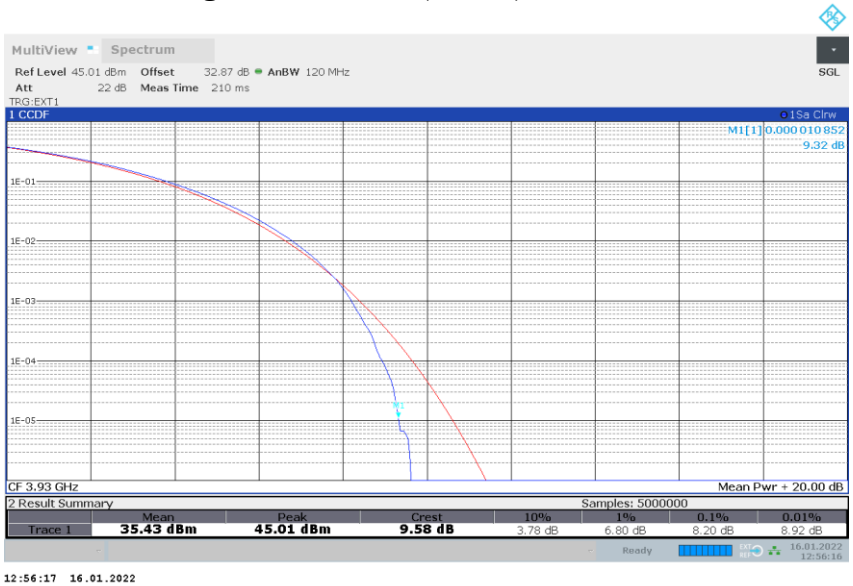
Test Model 3.2, Modulation 16QAM, Channel Frequency 3840MHz,Tx Port23

Peak-to-Average Power Ratio (PAPR) 100MHz BW



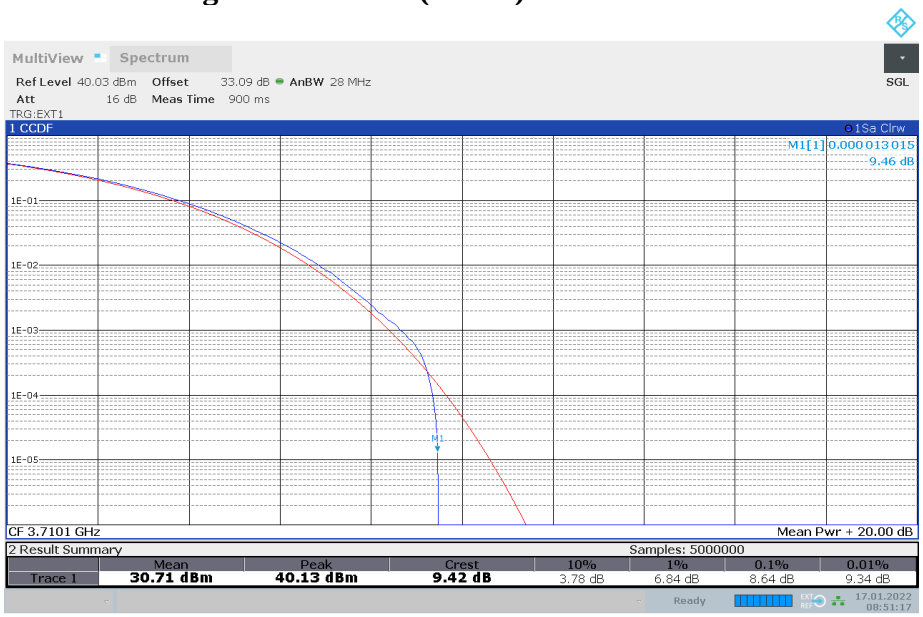
Test Model 3.1, Modulation 64QAM, Channel Frequency 3840MHz,Tx Port15

Peak-to-Average Power Ratio (PAPR) 100MHz BW



Test Model 3.1a, Modulation 256QAM, Channel Frequency 3930MHz,Tx Port15

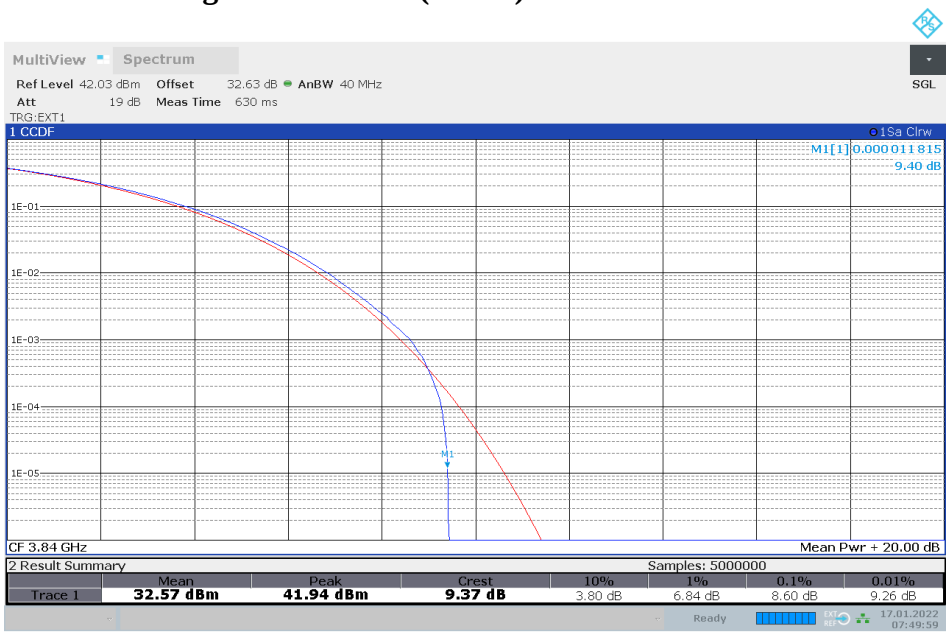
Peak-to-Average Power Ratio (PAPR) 20MHz BW



08:51:18 17.01.2022

Test Model 1.1, Modulation QPSK, Channel Frequency 3.710.1MHz,Tx Port15

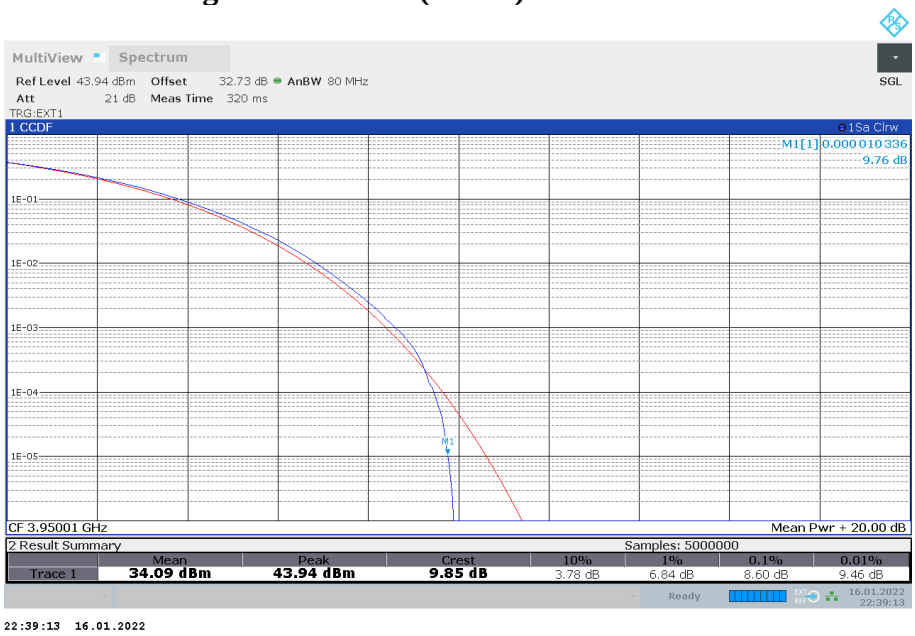
Peak-to-Average Power Ratio (PAPR) 40MHz BW



07:50:00 17.01.2022

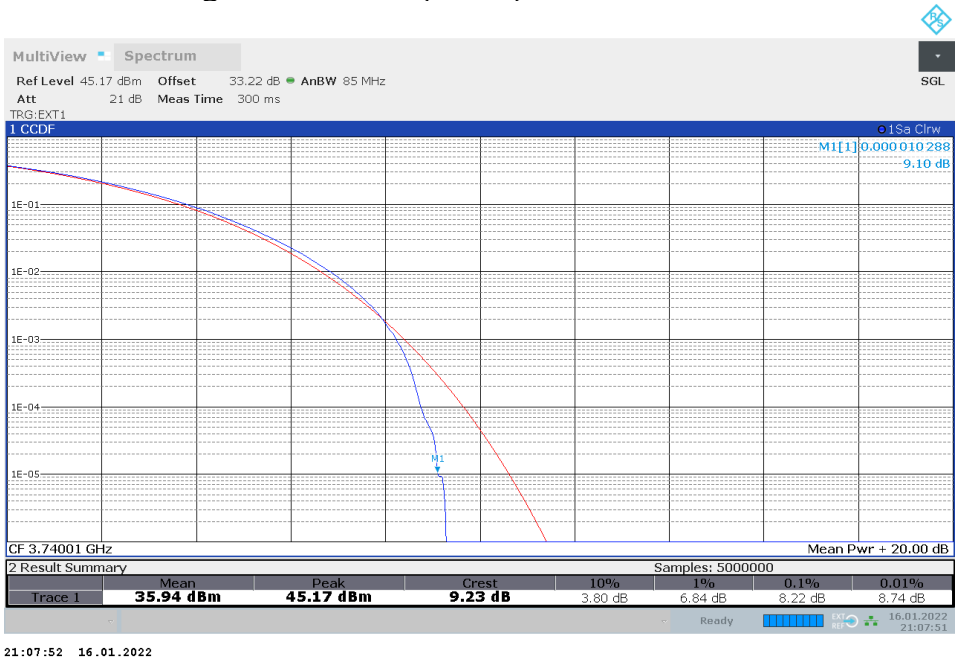
Test Model 3.2, Modulation 16QAM, Channel Frequency 3840MHz,Tx Port23

Peak-to-Average Power Ratio (PAPR) 60MHz BW



Test Model 3.1, Modulation 64QAM, Channel Frequency 3950.01MHz,Tx Port15

Peak-to-Average Power Ratio (PAPR) 80MHz BW

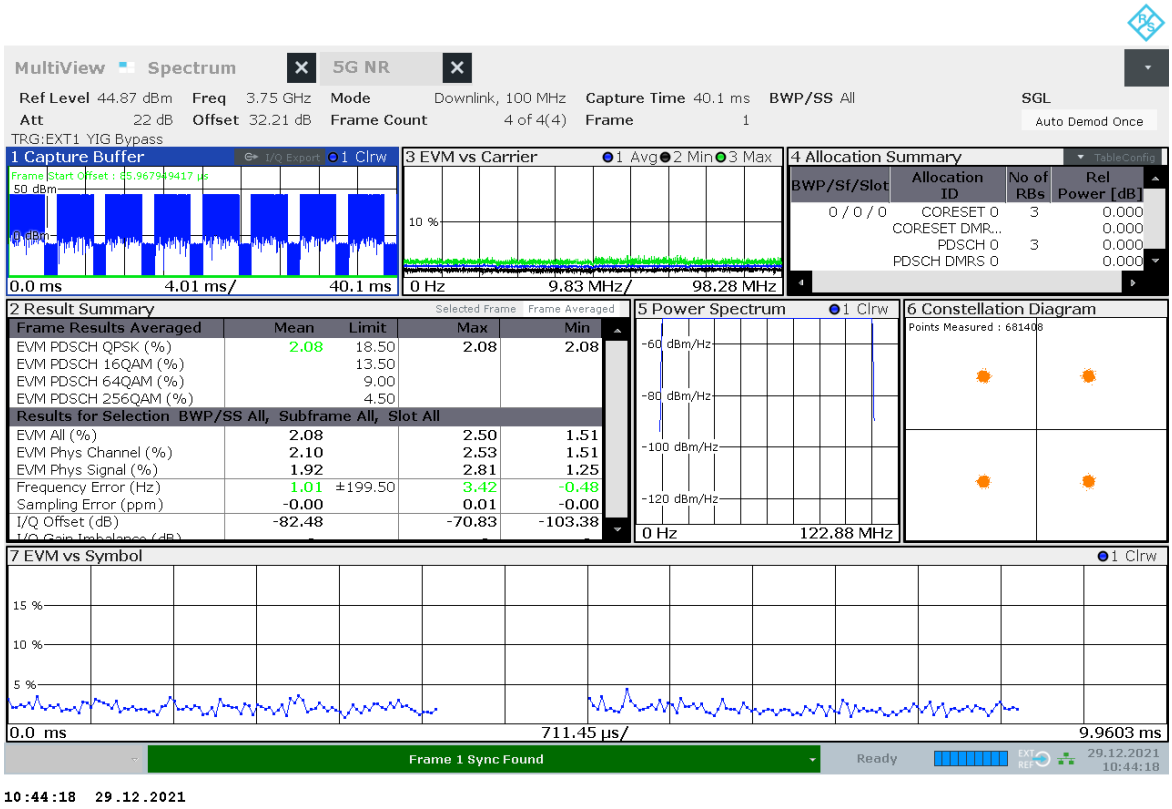


Test Model 3.1a, Modulation 265QAM, Channel Frequency 3740.01MHz,Tx Port15

5.2.2. Test No. 2: Modulation Characteristics

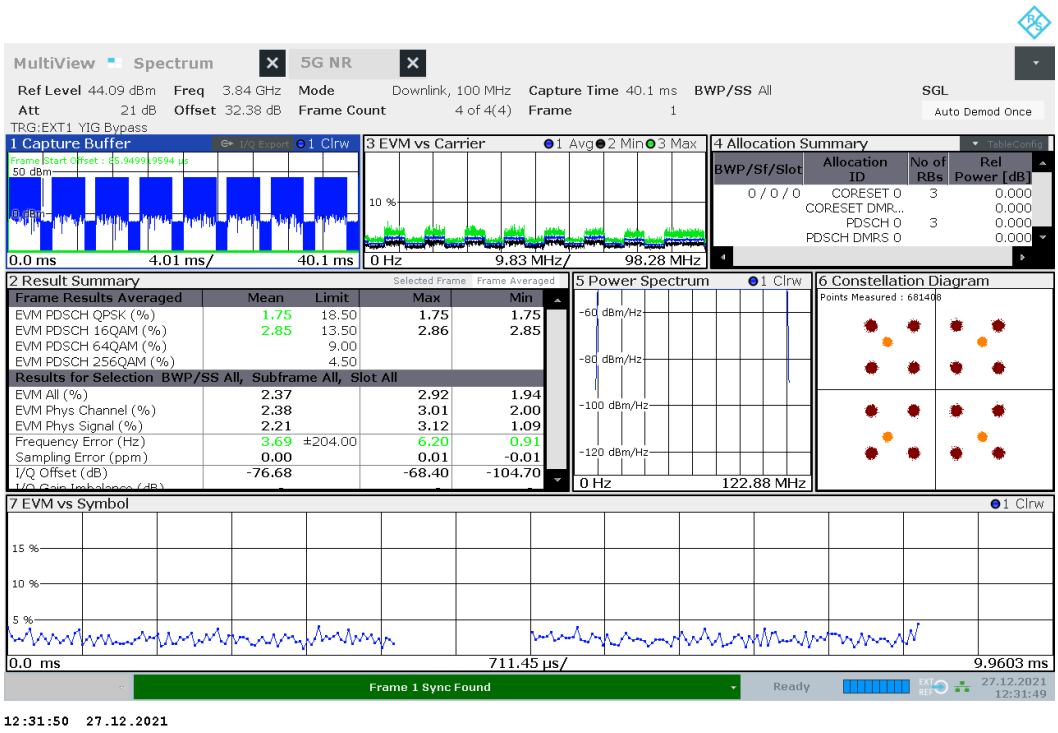
No additional measurements are required for the modulation characteristics. Please refer to test no. 3, occupied bandwidth on page 40.

Screenshots below shows information about the modulations I/Q constellation form and modulation information table, displaying error to ideal modulation symbols.



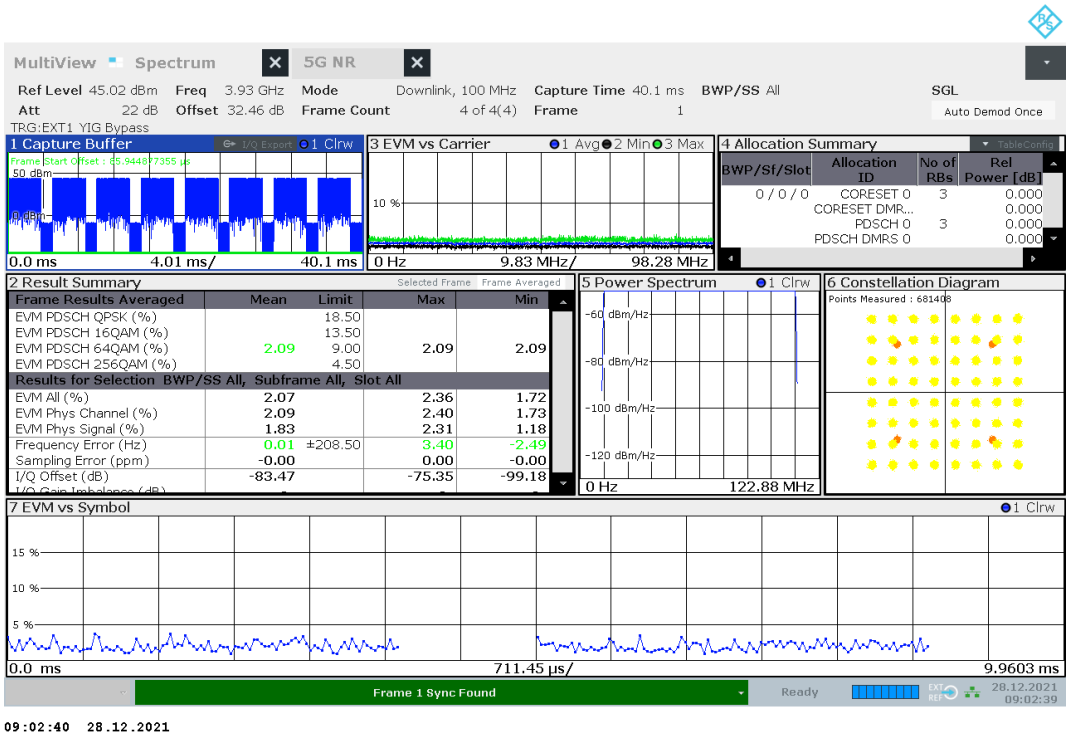
10:44:18 29.12.2021

I/Q constellation diagram with capture buffer – QPSK (3750MHz) (100MHz Channel BW)



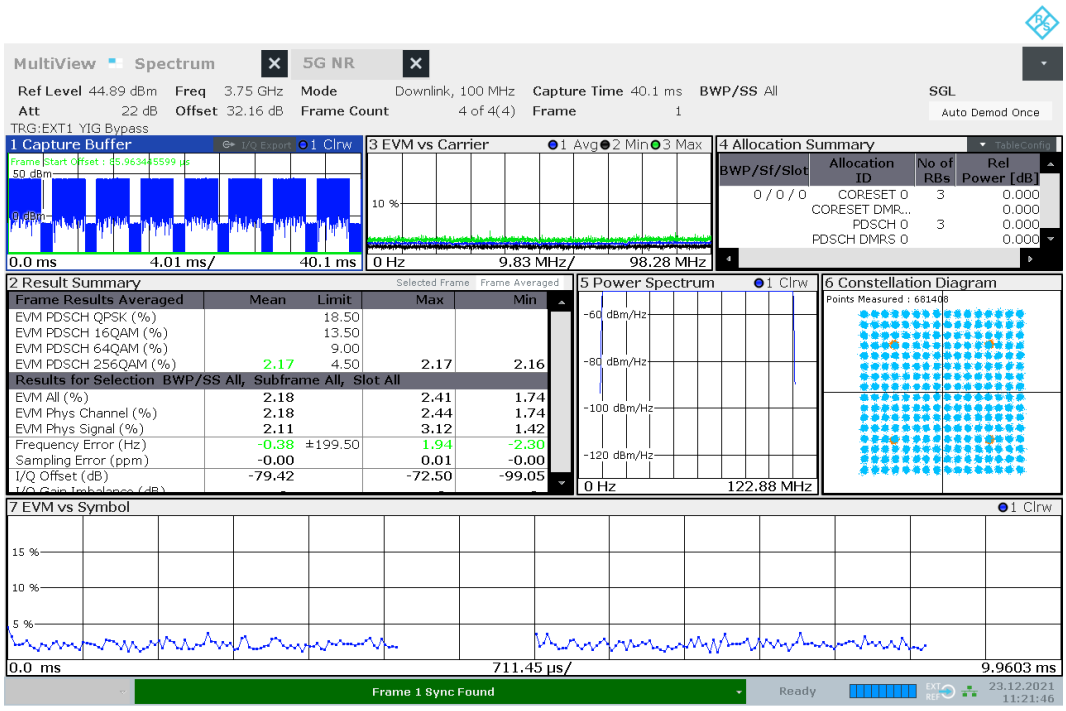
12:31:50 27.12.2021

I/Q constellation diagram with capture buffer – 16QAM (3840.0 MHz) (100MHz Channel BW)



09:02:40 28.12.2021

I/Q constellation diagram with capture buffer – 64QAM (3930.0 MHz) (100MHz Channel BW)



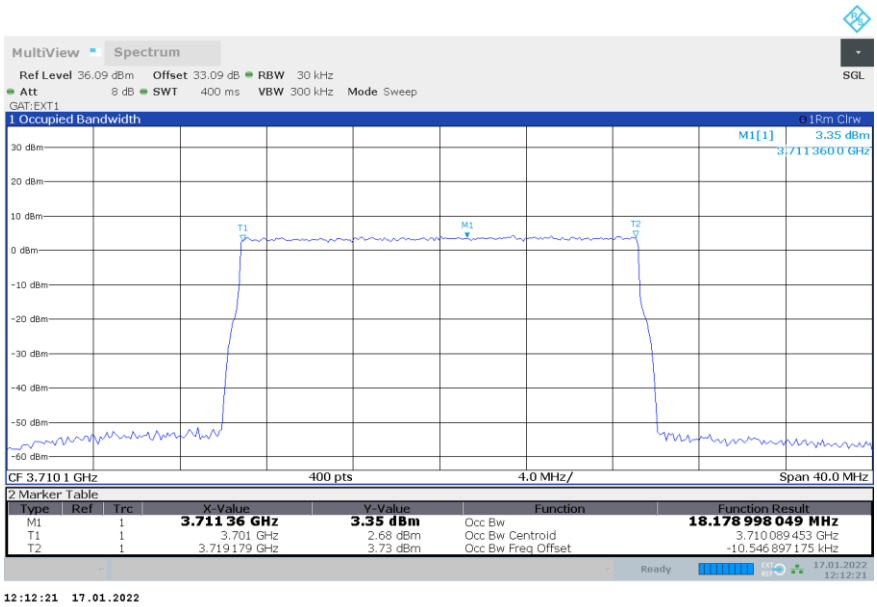
11:21:46 23.12.2021

I/Q constellation table with I/Q error –256QAM (3750 MHz) (100MHz Channel BW)

5.2.3. Test No. 3: Occupied Bandwidth

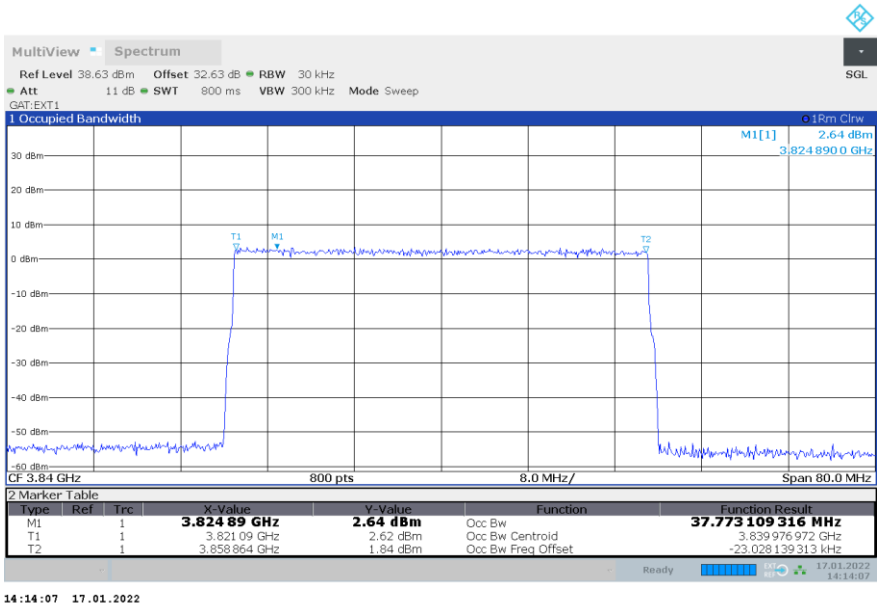
The value ‘Occ Bw’ is the measured occupied bandwidth.

Occupied Bandwidth 20MHz BW



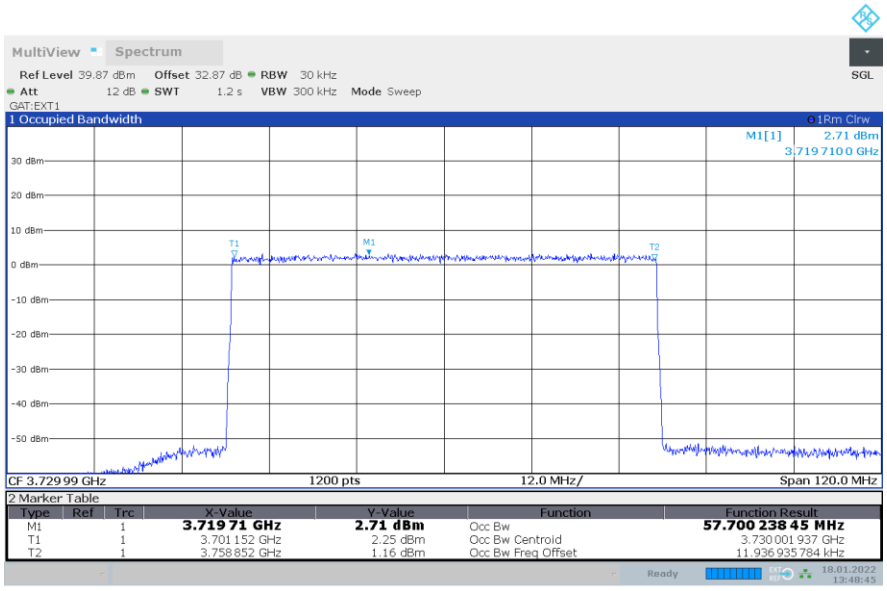
Test Model 1.1, Modulation QPSK, Channel Frequency 3710.1MHz,Tx Port15

Occupied Bandwidth 40MHz BW



Test Model 3.2, Modulation 16QAM, Channel Frequency 3840MHz,Tx Port23

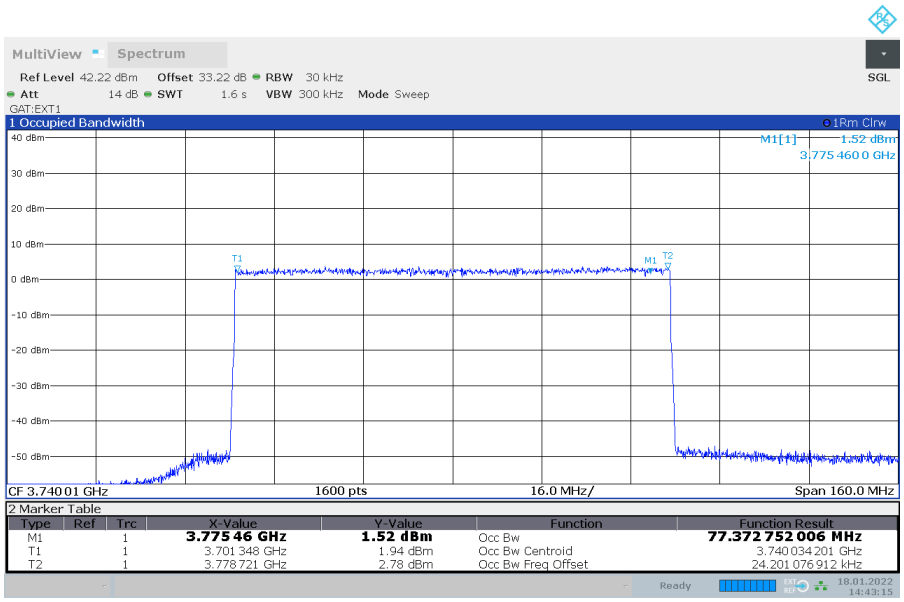
Occupied Bandwidth 60MHz BW



13:48:45 18.01.2022

Test Model 3.1, Modulation 64QAM, Channel Frequency 3729.99MHz,Tx Port15

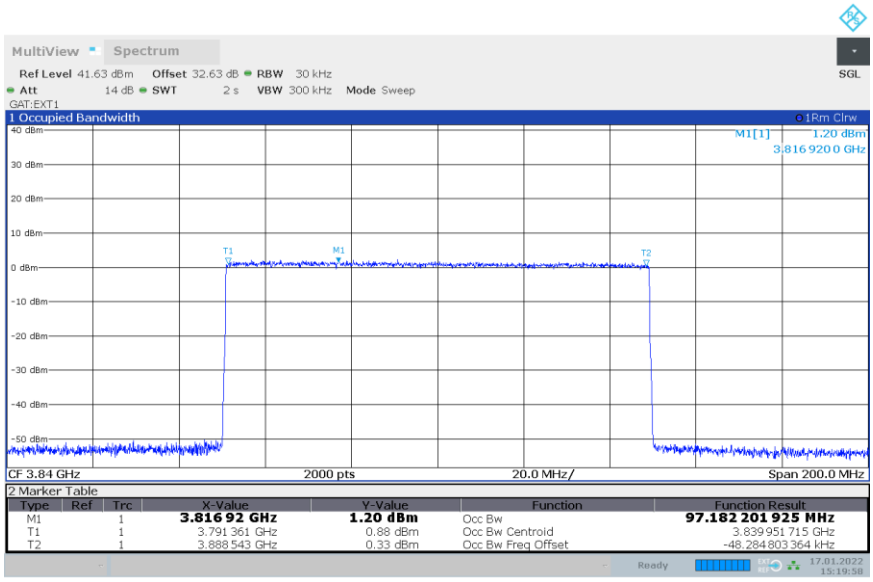
Occupied Bandwidth 80MHz BW



14:43:15 18.01.2022

Test Model 3.1a, Modulation 256QAM, Channel Frequency 3740.01MHz,Tx Port15

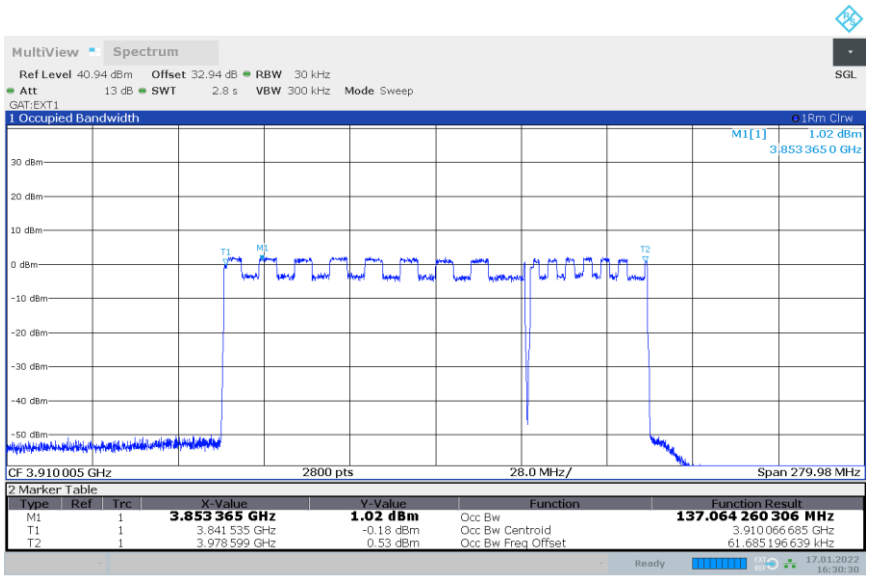
Occupied Bandwidth 100MHz BW



15:19:59 17.01.2022

Test Model 1.1, Modulation QPSK, Channel Frequency 3840MHz,Tx Port23

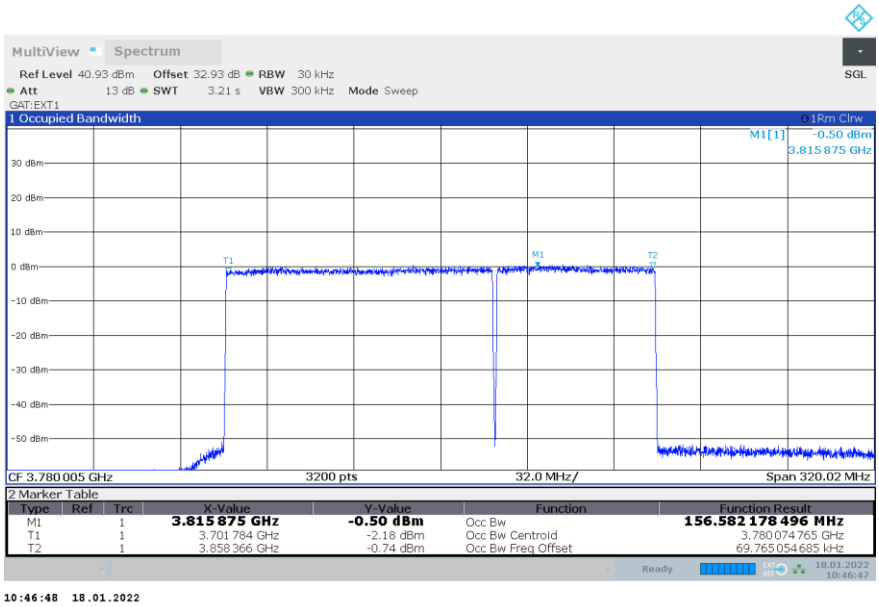
Occupied Bandwidth 100+40MHz BW



16:30:31 17.01.2022

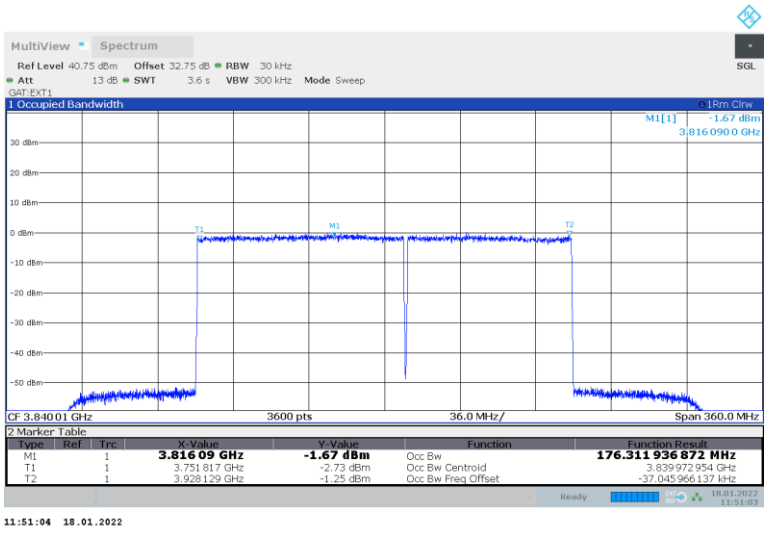
Test Model 3.2, Modulation 16QAM, Channel Frequency 3890.01/3960MHz, TxPort15

Occupied Bandwidth 100+60MHz BW



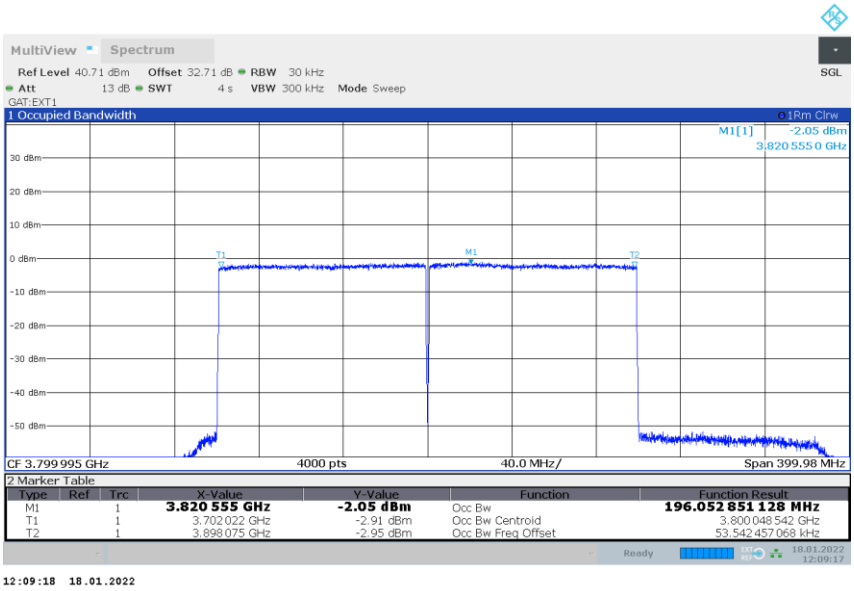
Test Model 3.1, Modulation 64QAM, Channel Frequency 3750/3830.01MHz, TxPort15

Occupied Bandwidth 100+80MHz BW



Test Model 3.1a, Modulation 256QAM, Channel Frequency 3800.01/3890.01MHz, TxPort15

Occupied Bandwidth 100+100MHz BW

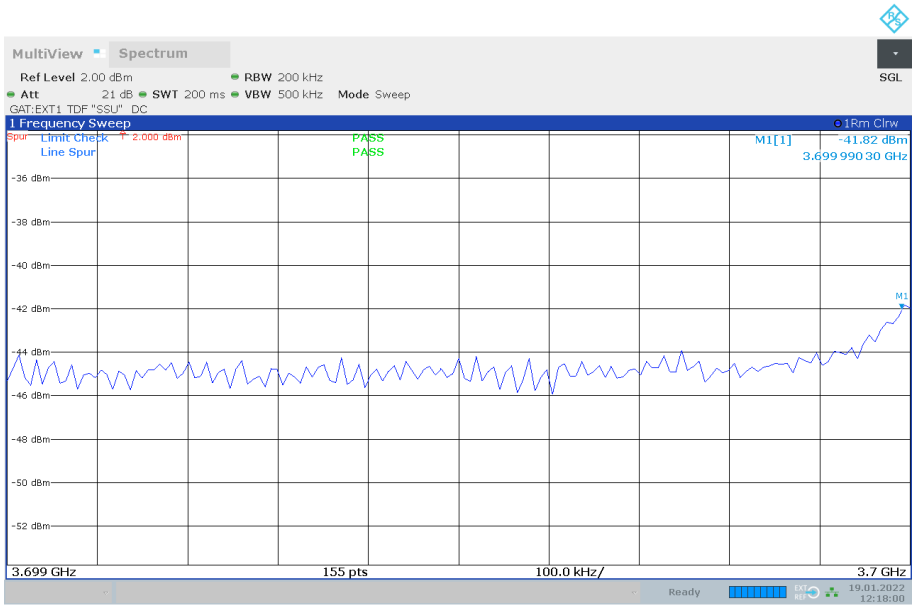


Test Model 1.1, Modulation QPSK, Channel Frequency 3750/3849.99MHz, TxPort15

5.2.4. Test No. 4: Spurious Emissions at the Antenna Terminals

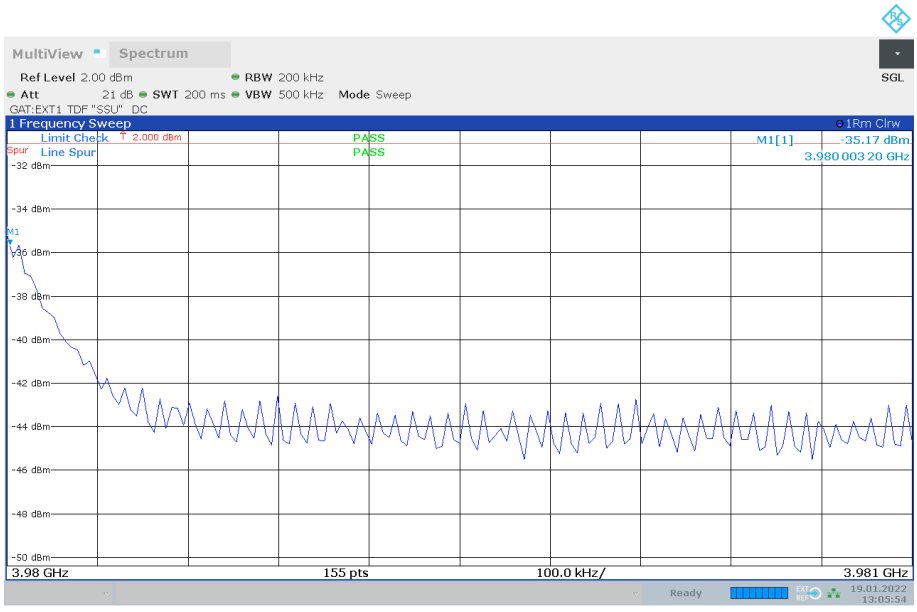
The external attenuation (cable loss of the setup) can be seen as the 'Offset' value in the screenshots. The external attenuation is frequency dependant. Thus the various 'Offset' values in the screenshots may differ.

Config A TX port 15:



12:18:01 19.01.2022

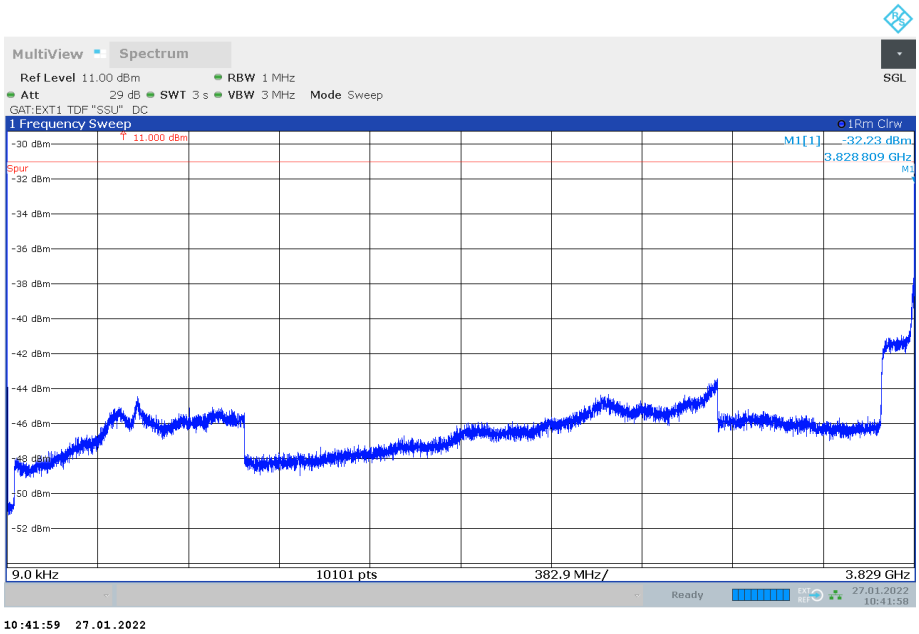
Spurious Emissions (Lower Band Edge) – QPSK (3710 MHz) (20MHz Channel BW)



13:05:54 19.01.2022

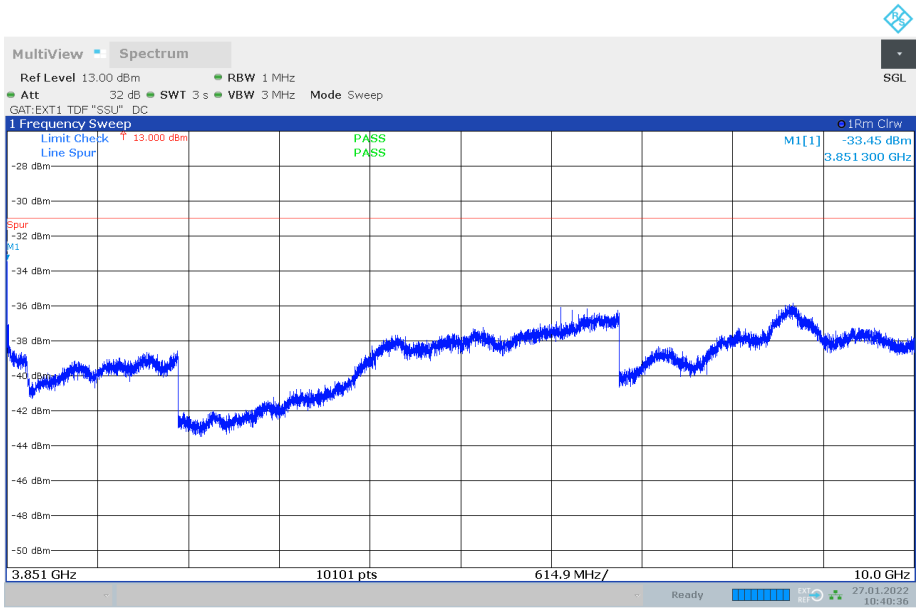
Spurious Emissions (Upper Band Edge) – QPSK (3969.99 MHz) (20 MHz Channel BW)

Config A TX port 23:



10:41:59 27.01.2022

Spurious Emissions (9kHz – 3.829GHz) - QPSK (3840 MHz) (20MHz Channel BW)



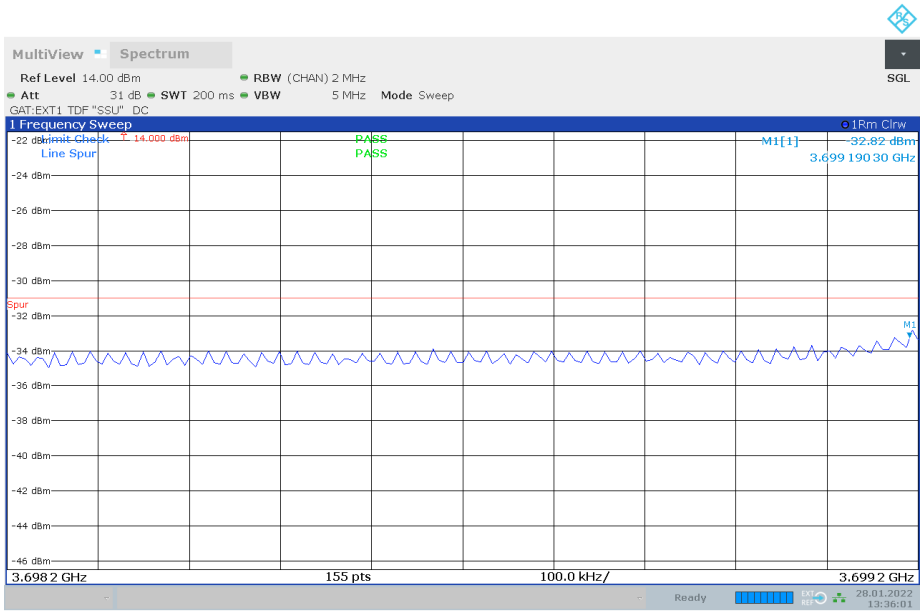
10:40:36 27.01.2022

Spurious Emissions (3.851GHz – 10GHz) – QPSK (3480MHz) (20MHz Channel BW)

17:45:45 27.01.2022

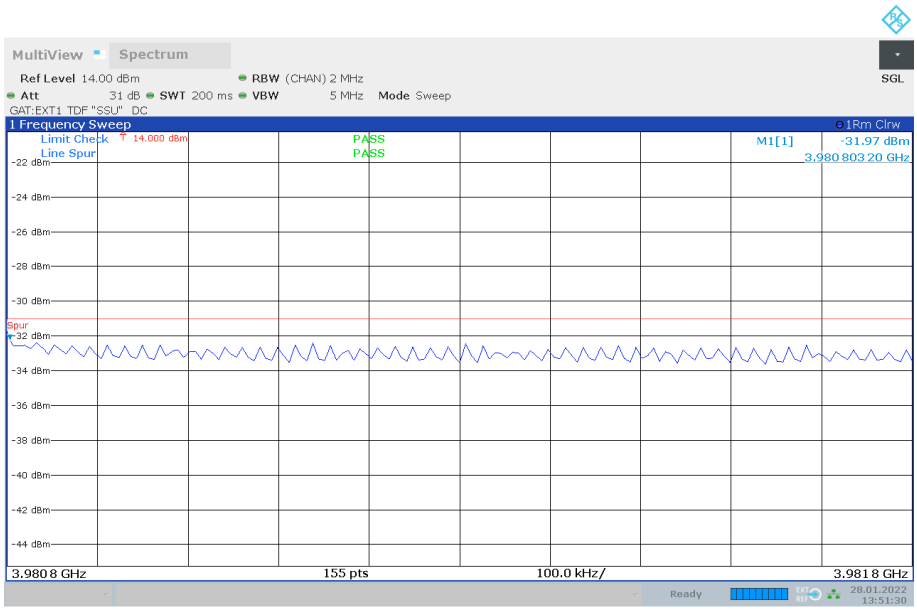
Spurious Emissions (10GHz – 39.8GHz) – QPSK (3840 MHz) (20MHz Channel BW)

Config G TX port 15:



13:36:01 28.01.2022

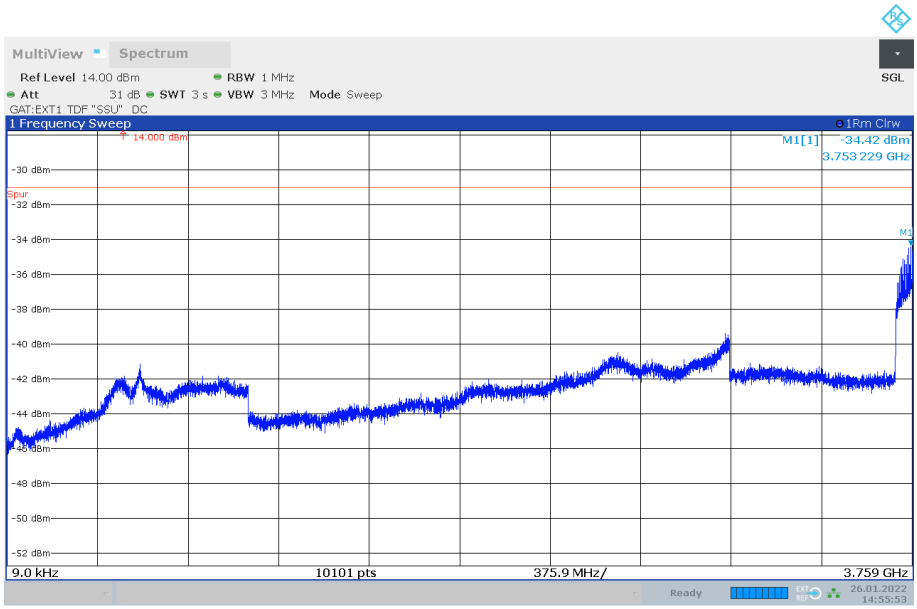
Spurious Emissions (Lower Band Edge) – QPSK (3870 / 3950.01 MHz) (100 +60MHz Channel BW)



13:51:30 28.01.2022

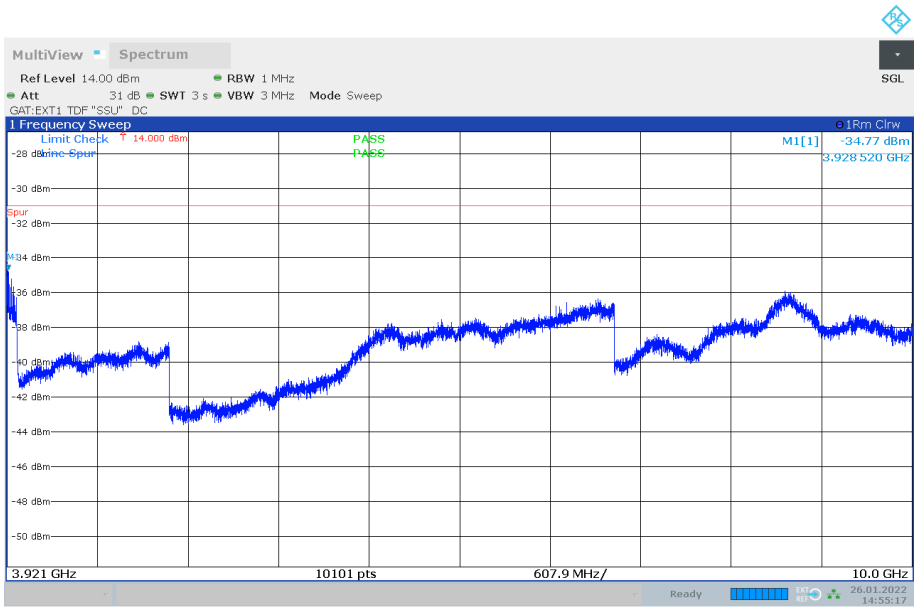
Spurious Emissions (Upper Band Edge) – QPSK (3870 / 3950.01 MHz) (100+60MHz Channel BW)

Config G TX port 23:



14:55:54 26.01.2022

Spurious Emissions (9kHz – 3.759GHz) - QPSK (3810 / 3890.01 MHz) (100+60MHz Channel BW)



14:55:17 26.01.2022

Spurious Emissions (3.921GHz – 10GHz) – QPSK (3810 / 3890.01 MHz) (100+60MHz Channel BW)

16:38:03 27.01.2022

Spurious Emissions (10GHz – 39.8GHz) – QPSK (3810 / 3890.01 MHz) (100+60MHz Channel BW)