Test Report

HELEM2111000483-1

FINAS
Finnish Accreditation Service
T004 (EN ISO/IEC 17025)

INTENTIONAL RADIATOR TESTS ACCORDING TO FCC PART 15 C AND ISED CANADA REQUIREMENTS

Equipment Under Test:	Temperature probe with SRD
Model:	Haytech QNT200-00
Manufacturer:	Quanturi Oy Lars Sonckin kaari 10 FI-02600 Espoo FINLAND
Customer:	Quanturi Oy Lars Sonckin kaari 10 FI-02600 Espoo FINLAND
FCC Rule Part:	15.247
IC Rule Part:	RSS-247, Issue 2, 2017 RSS-GEN Issue 5 Amendment 2, 2021
KDB:	558074 D01 15.247 Meas Guidance v05r02 Guidance for Compliance Measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under §15.247 of the FCC rules (April 2, 2019)

Date:	2 December 2022	Date:	2 December 2022
Issued by:	Rauno Repo Senior EMC Specialist	Checked by:	Henri Mäki Testing Engineer

TABLE OF CONTENTS

GENERAL REMARKS

Disclaimer

*This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at **http://www.sgs.com/en/Terms-and-Conditions.aspx** and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at **http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx***

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

RELEASE HISTORY

Version	Changes	Issued
1.0	Initial release	14 February 2022
1.1	Added the antenna port results from the test report HELEM2111000483-3 v1.0.	8 September 2022
1.2	Type errors corrected.	20 October 2022
1.3	All FCC required measurements were also made as radiated.	2 December 2022

PRODUCT DESCRIPTION

Equipment Under Test

Equipment Under Test:	Temperature probe with SRD
Model:	Haytech QNT200-00
Trademark:	Quanturi
Serial no:	-
SRD radio module or chip:	ON Semiconductor AX8052F143-D
FCC ID:	-
IC:	-

General Description

The HAYTECH system is designed to monitor the temperature of hay bales during storage. The system is used to prevent hay fires from spontaneous combustion and improve hay quality management. Probe transmits a packet once per hour. If the Base Station and/or repeater are in the receiving range they will proceed the message and reply to the probe.

Classification

Fixed device	☐
Mobile Device (Human body distance > 20cm)	☒
Portable Device (Human body distance < 20cm)	☐

Modifications Incorporated in the EUT

No modifications.

Ratings and declarations

Operating Frequency Range (OFR):	902 - 928 MHz
Modulation:	FSK
Antenna type:	Integral PCB antenna

Power Supply

Operating voltage range:	3.6 V- 2.2 Ah, Lithium Battery

Mechanical Size of the EUT

Height: 60 mm	Width: 60 mm	Length: 405 mm

SUMMARY OF TESTING

Test Specification	Description of Test	Result
§15.203	Antenna requirement	PASS
§15.207(a) / RSS-GEN 8.8	Conducted Emissions on Power Supply Lines	PASS [1)]
§15.247(b)(3) / RSS-247 5.4(d)	Maximum Peak Conducted Output Power	PASS [1) 2)]
§15.247(a)(2) / RSS-247 5.2(a)	6 dB Bandwidth	PASS [1) 2)]
§15.247(e) / RSS-247 5.2(b)	Power Spectral Density	PASS [1) 2)]
RSS-GEN 6.7	99% Occupied Bandwidth	PASS [1)]
§15.247(d) / RSS-247 5.5	100 kHz Bandwidth of Frequency Band Edges and Conducted Spurious Emissions	PASS [1) 2)]
§15.209(a), §15.247(d) / RSS-247 5.5	Radiated Emissions Within the Restricted Bands	PASS

The decision rule applied for the tests results stated in this test report is according to the requirements of section 1.3 of ANSI C63.10-2013.

1) Antenna port measurements were made with Repeater unit with the same SRD-circuit.
2) Tests were made also as radiated.

EUT Test Conditions during Testing

The EUT was in continuous modulated transmit mode during the tests. Tests were made with low, mid and high frequencies. The pre-measurements were performed with the EUT being in three orthogonal positions (X, Y, Z). Final measurements were done in worst position.

Figure 1: Test setup block diagram

Conducted tests from the antenna port were measured with the Repeater unit containing the same SRD circuit (FCC Test Report HELEM2111000483-3).

Table 1: Test frequencies

Channel	Frequency (MHz)
Low	903
Mid	915
High	927

Test Facility

Testing Laboratory / address: FCC designation number: FI0002 ISED CAB identifier: T004	SGS Fimko Ltd Takomotie 8 FI-00380, HELSINKI FINLAND
Test Site:	☐ K10LAB, ISED Canada registration number: 8708A-1 ☒ K5LAB, ISED Canada registration number: 8708A-2 ☐ T10LAB

TEST RESULTS

Antenna Requirement

Standard: FCC Rule §15.203
Tested by: RRE
Date: 10 February 2022

FCC Rule: 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Specification	Requirement (at least one of the following shall be applied)	Conclusion
§15.203	1. Permanently attached antenna 2. Unique coupling to the intentional radiator 3. Professionally installed radio. The installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	**PASS**
Note	Option 1 is used	

Maximum Peak Conducted Output Power

Standard:	ANSI C63.10	(2013)
Tested by:	RRE	
Date:	24 February 2022, 1 December 2022	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	
Measurement uncertainty:	± 2.87dB	Level of confidence 95 % (k = 2)

FCC Rule: 15.247(b)(3)
RSS-247 5.4(d)

For systems using digital modulation in the 902-928 MHz bands the limit is 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.
Tests were also performed as radiated measurements.

Measured values are peak values.

Results:

Conducted measurements:

Table 2: Maximum conducted output power

Channel	Conducted Power [dBm]	Limit [dBm]	Margin [dBm]	Result
Low	11.53	30	18.47	PASS
Mid	11.77	30	18.23	PASS
High	11.88	30	18.12	PASS

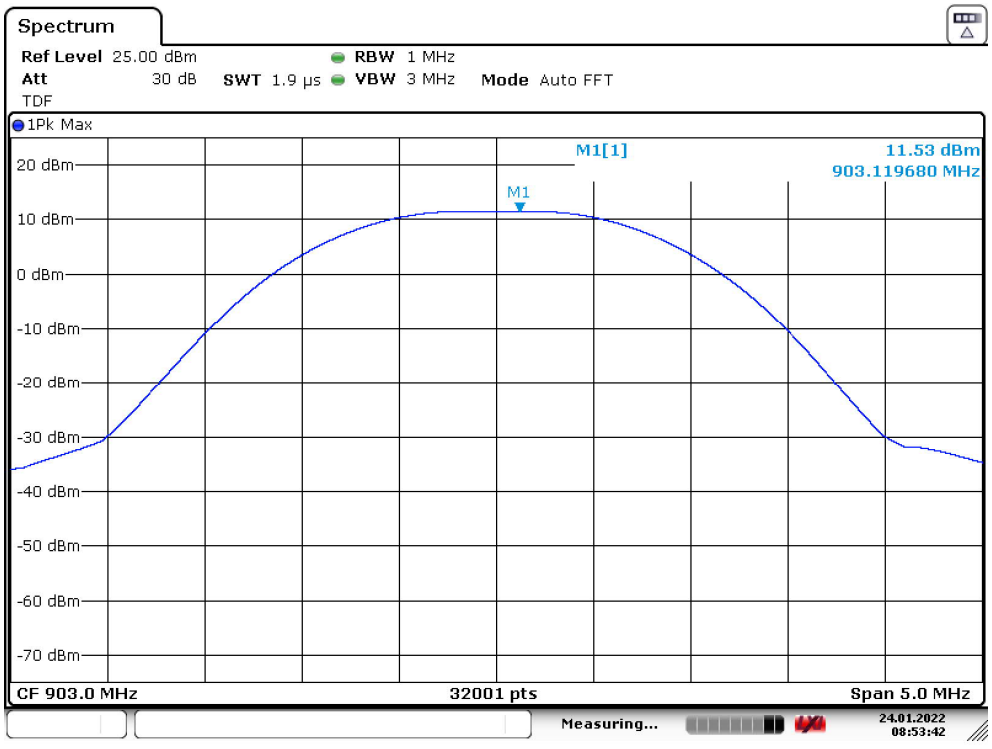

Figure 2: Conducted power, Channel LOW

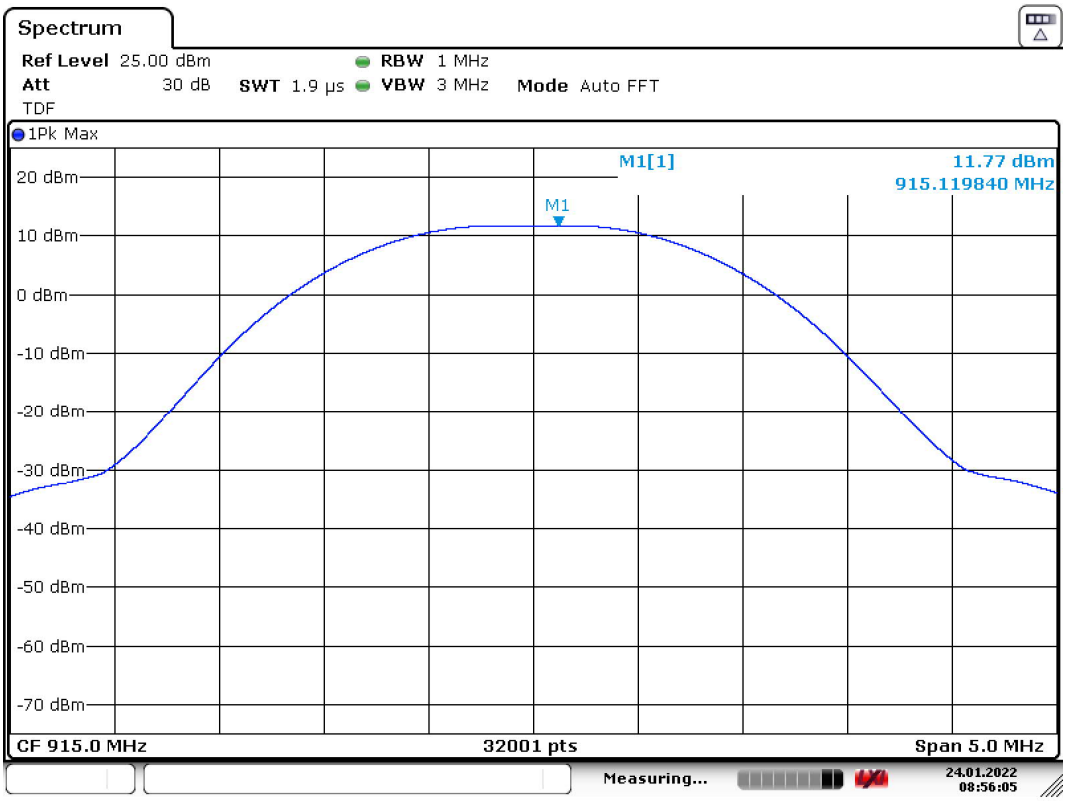

Figure 3: Conducted power, Channel MID

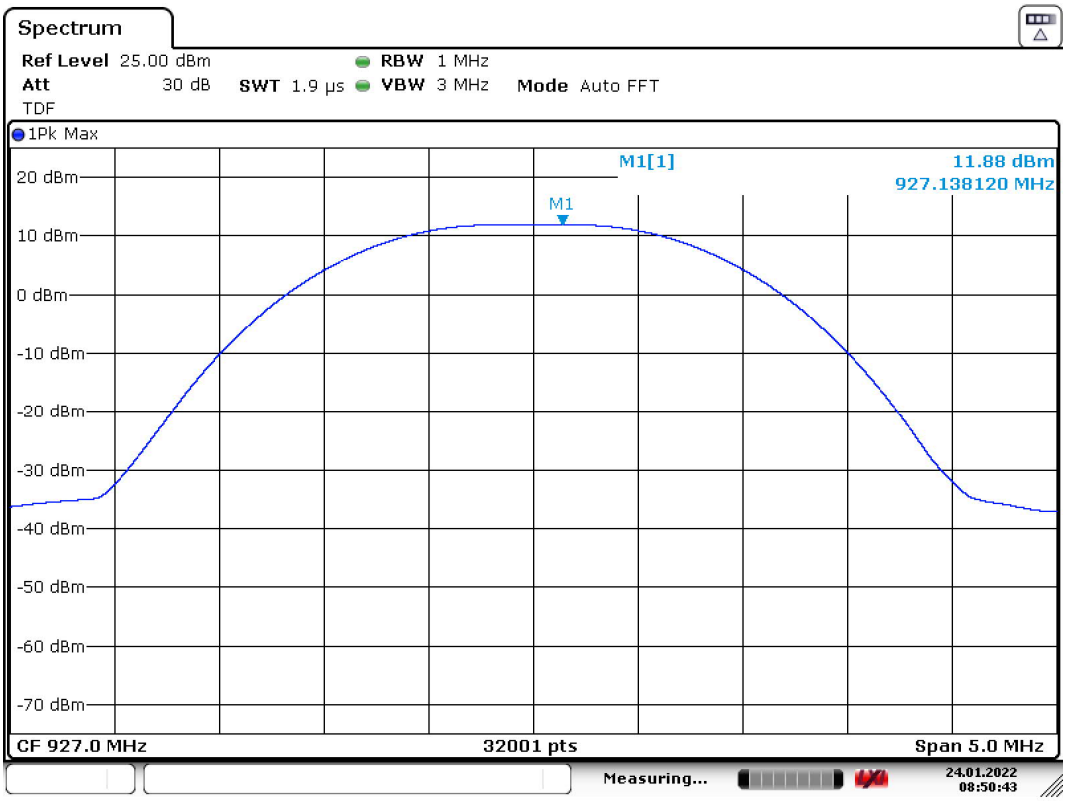

Figure 4: Conducted power, Channel HIGH

Radiated measurements:

Measurements were made as electric field strength measurement in dBµV/m and the results are converted to EIRP (dBm) according to the formulas presented in ANSI C63.10-2013 Clause 11.12.2.2.

EIRP (dBm) = E (dBµV/m) + 20log(3) - 104.8 - 4.7

The EUT was in position which generates the highest emissions. The final measurements were performed by rotating the turntable 0° to 360° and antenna from 1.0 m to 4.0 m.

Table 3: Maximum power (radiated method, BW=1 MHz)

Channel	E [dBµV/m]	EIRP [dBm]	Limit [dBm]	Margin [dBm]	Result
Low	109.72	9.76	30	20.24	PASS
Mid	107.79	7.83	30	22.17	PASS
High	106.35	6.39	30	23.31	PASS

The electric field strength values (E) contain the cable attenuations and the measurement antenna gain.

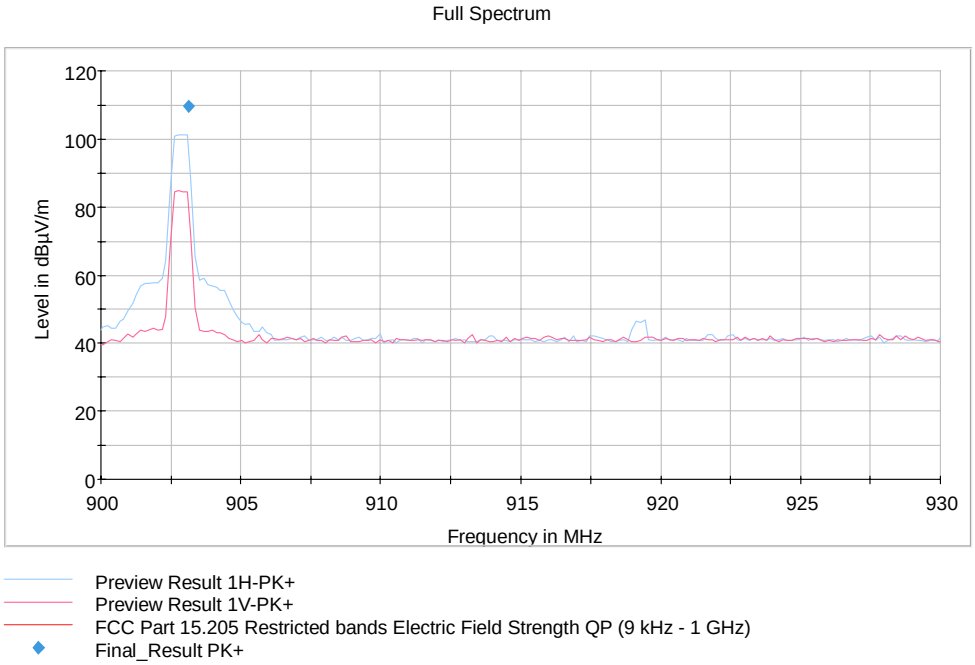

Figure 5: Measured power (903 MHz)

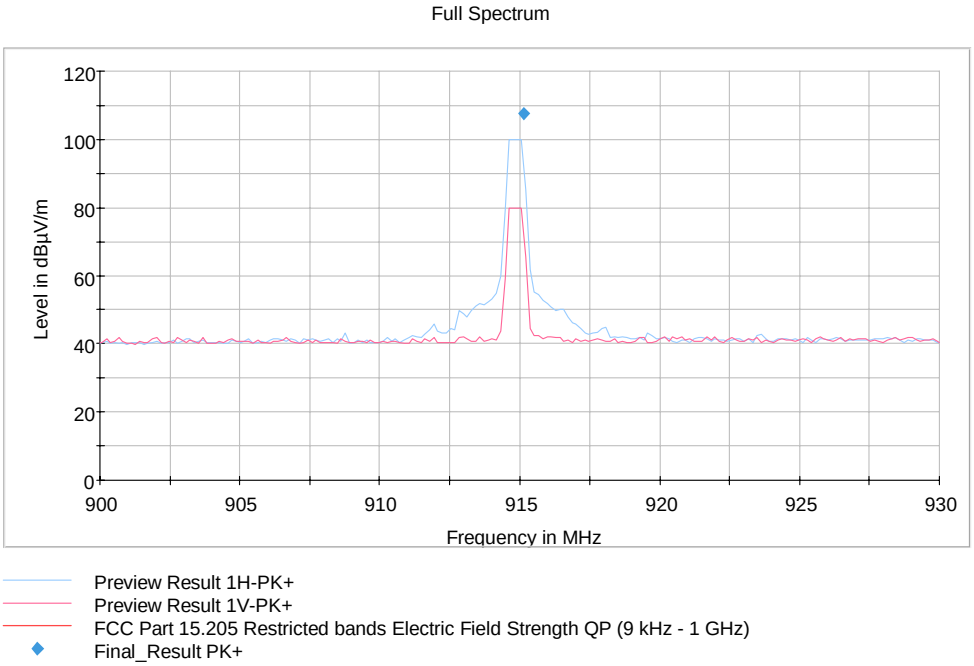

Figure 6: Measured power (915 MHz)

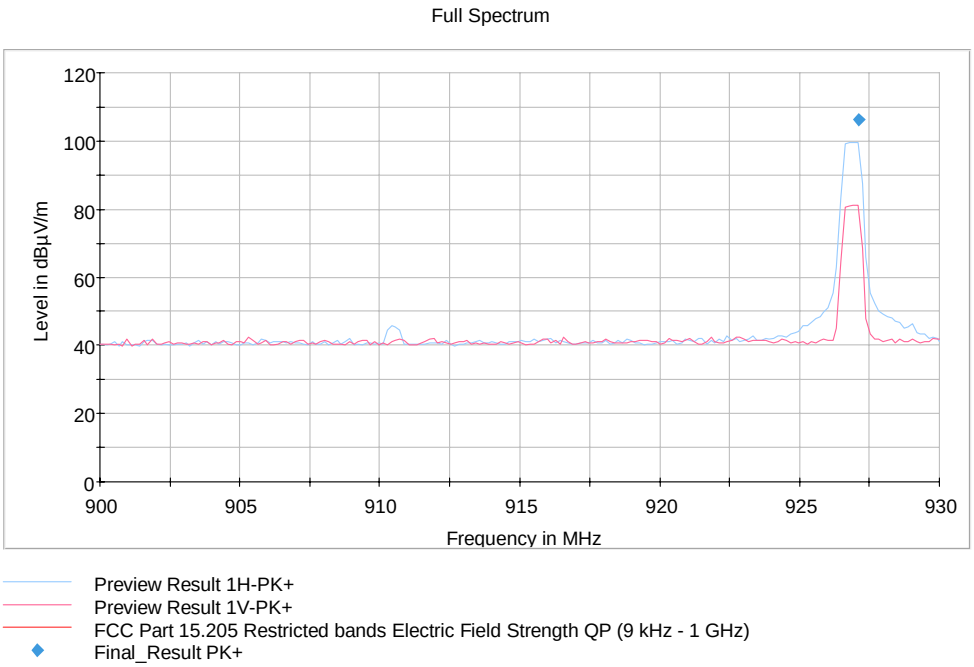

Figure 7: Measured power (927 MHz)

Transmitter Radiated Spurious Emissions 9 kHz - 10 GHz

Standard:	ANSI C63.10	(2013)
Tested by:	RRE	
Date:	22 November 2021, 10 February 2022	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	
Measurement uncertainty:	± 4.51 dB	Level of confidence 95 % (k = 2)

FCC Rule: 15.247(d), 15.209(a)

RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a)**.**

The correction factor in the final result table contains the sum of the transducers (antenna + amplifier + cables).

Peak values of emissions below 1000 MHz measured for reference as well as transmitter fundamental.

The pre-measurements were performed with the EUT being in three orthogonal positions (X, Y, Z). Final measurements were done in worst position.

All frequencies (low, mid and high) were measured but the worst case is presented in this document.

Frequency range [MHz]	Limit [µV/m]	Limit [dBµV/m]	Detector
0.009-0.490	2400/F(kHz)	48.5-13.8	Quasi-peak
0.490-1.705	24000/F(kHz)	33.8-22.97	Quasi-peak
1.705-30.0	30	29.54	Quasi-peak
30 - 80	100	40.0	Quasi-peak
88 - 216	150	43.5	Quasi-peak
216 - 960	200	46.0	Quasi-peak
960 - 1000	500	53.9	Quasi-peak
Above 1000	500	53.9	Average
Above 1000	5000	73.9	Peak

Results MID channel

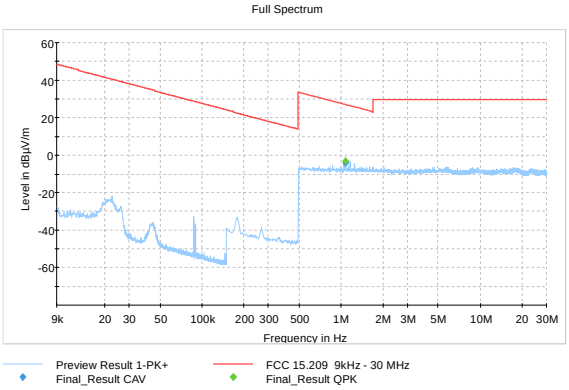

Figure 8: MID channel (9 kHz – 30 MHz)

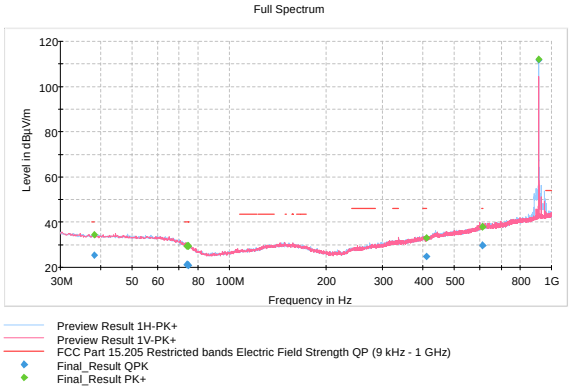

Figure 9: MID channel (30 MHz – 1000 MHz)

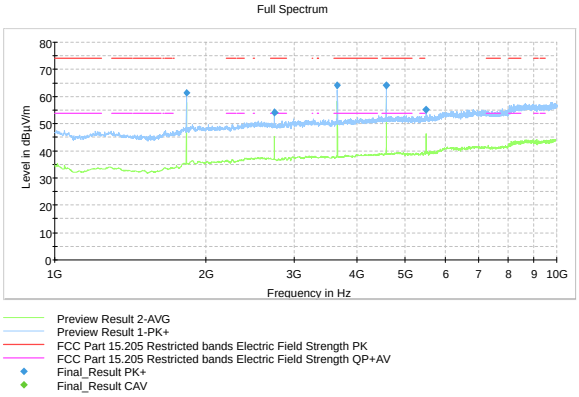

Figure 10: MID channel (1 GHz – 10 GHz)

Table 4: MID channel results (9 kHz to 30 MHz)

Frequency (MHz)	CAverage (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Angle (deg)	Pol	Azimuth (deg)	Corr. (dB/m)
1.078250	---	-3.09	26.97	30.06	15x1000.0	9.000	0.0	V	60.0	-20.2

Table 5: MID channel results (30 MHz to 1000 MHz)

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.095000	25.17	---	40.00	14.83	15x1000.0	120.000	274.0	V	225.0	26.7
38.095000	---	34.31	---	---	15x1000.0	120.000	274.0	V	225.0	26.7
73.965000	---	29.42	---	---	15x1000.0	120.000	396.0	H	264.0	25.1
73.965000	21.06	---	40.00	18.94	15x1000.0	120.000	396.0	H	264.0	25.1
74.775000	20.77	---	---	---	15x1000.0	120.000	207.0	H	110.0	24.8
74.775000	---	29.28	---	---	15x1000.0	120.000	207.0	H	110.0	24.8
409.835000	---	32.95	---	---	15x1000.0	120.000	147.0	H	22.0	32.3
409.835000	24.57	---	46.02	21.45	15x1000.0	120.000	147.0	H	22.0	32.3
612.535000	29.62	---	46.02	16.40	15x1000.0	120.000	157.0	H	20.0	37.1
612.535000	---	37.99	---	---	15x1000.0	120.000	157.0	H	20.0	37.1
915.125000*	---	111.94	---	---	15x1000.0	120.000	100.0	H	135.0	41.7

*Fundamental frequency

Table 6: MID channel peak results (1 GHz to 10 GHz)

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Notes
1830.225000	61.43	91.79	30.36	15x1000.0	1000.000	198.0	H	321.0	12.1	dBc
2745.375000	54.20	74.00	19.80	15x1000.0	1000.000	147.0	H	114.0	14.2	-
3660.425000	64.23	74.00	9.77	15x1000.0	1000.000	157.0	H	71.0	15.4	-
4575.575000	64.22	74.00	9.78	15x1000.0	1000.000	121.0	H	73.0	16.5	-
5490.425000	55.19	91.79	36.60	15x1000.0	1000.000	121.0	H	24.0	17.9	dBc

Table 7: Average results (1 GHz to 10 GHz)

Frequency (MHz)	Average* (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Notes
2745.375000	34.15	54.00	19.85	15x1000.0	1000.000	147.0	H	114.0	14.2	-
3660.425000	44.18	54.00	9.82	15x1000.0	1000.000	157.0	H	71.0	15.4	-
4575.575000	44.17	54.00	9.83	15x1000.0	1000.000	121.0	H	73.0	16.5	-

* Average values for the harmonics are calculated from the peak results using duty cycle correction factor (look at section “Duty cycle correction factor, Transmit time in 100 ms”).

Transmitter Band Edge Measurement and Conducted Spurious Emissions

Standard:	ANSI C63.10	(2013)
Tested by:	RRE	
Date:	24 January 2022, 1 December 2022	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	
Measurement uncertainty:	± 2.87 dB	Level of confidence 95 % (k = 2)

FCC Rule: 15.247(d), 15.209(a)

RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Table 8: Band edge attenuation

Band Edge Attenuation	
Lower Band Edge	**Upper Band Edge**
-43.68 dBc (conducted)	-50.36 dBc (conducted)
-35.67 dBc (radiated)	-33.28 dBc (radiated)
Limit: -20 dBc	

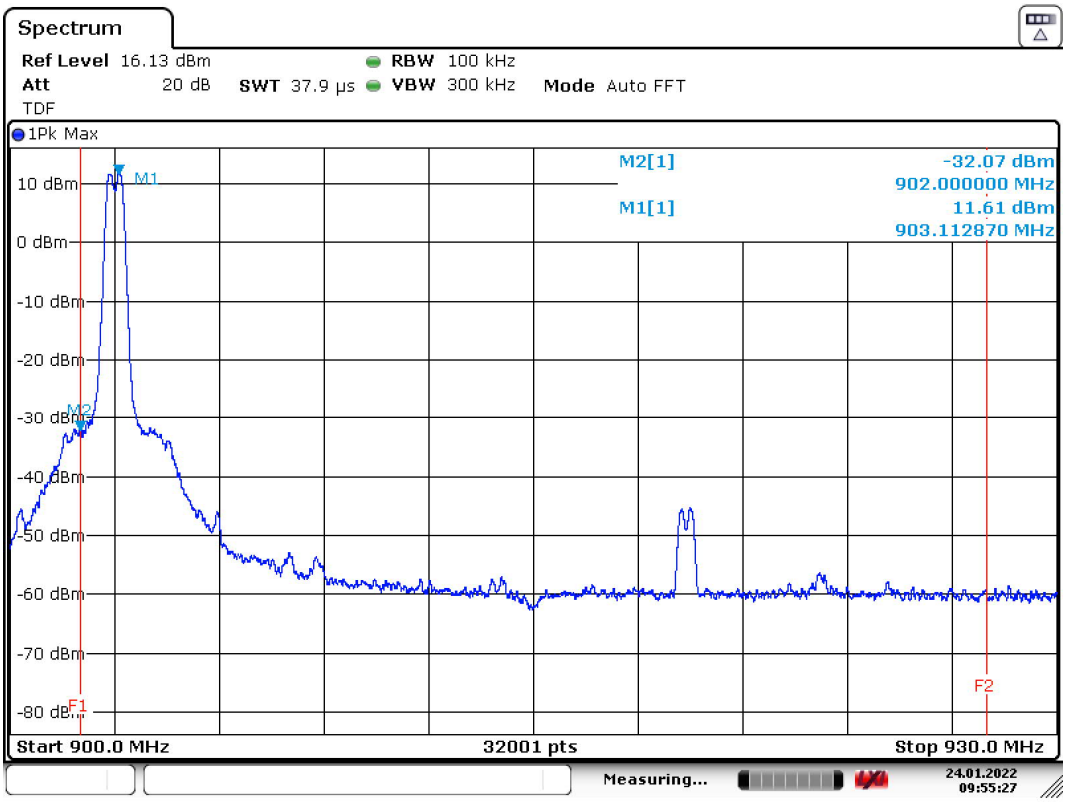

Figure 11: Lower Band Edge (conducted)

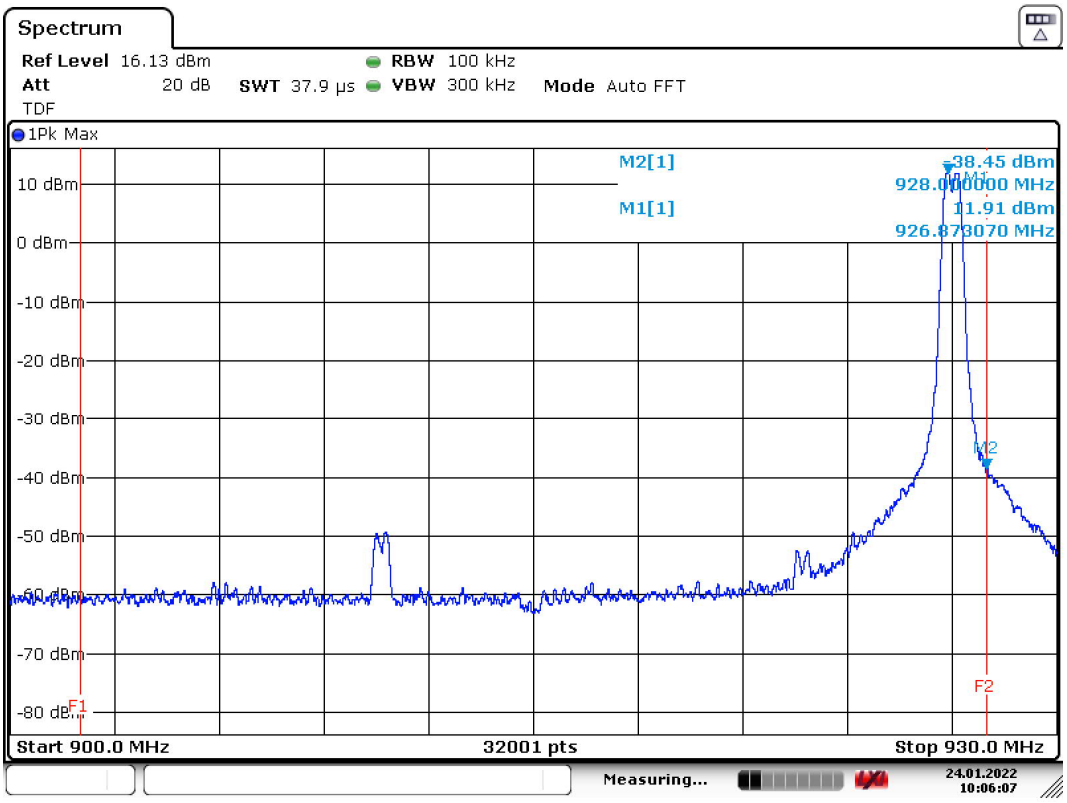

Figure 12: Upper Band Edge (conducted)

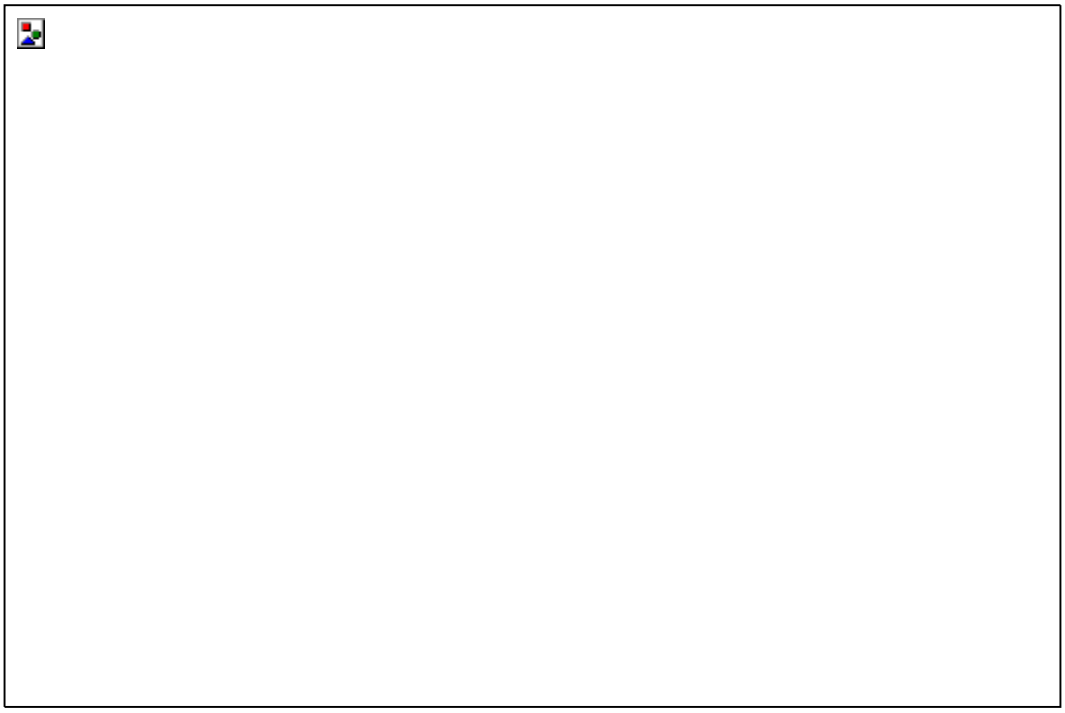

Figure 13: Lower Band Edge (radiated)

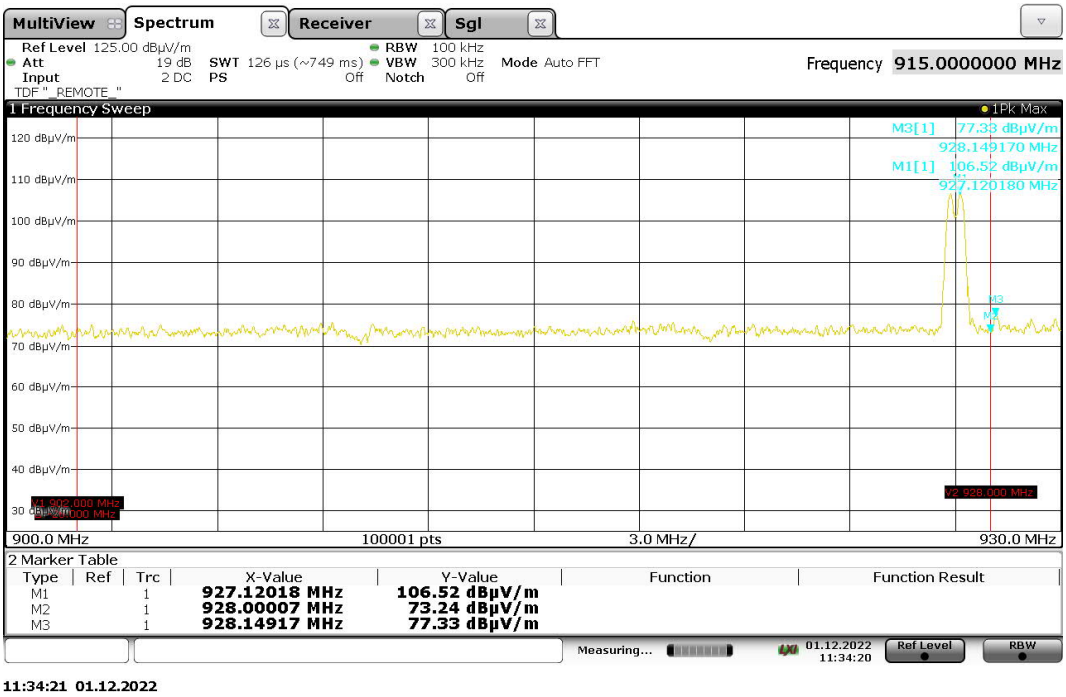

Figure 14: High Band Edge (radiated)

Conducted spurious emissions results LOW channel

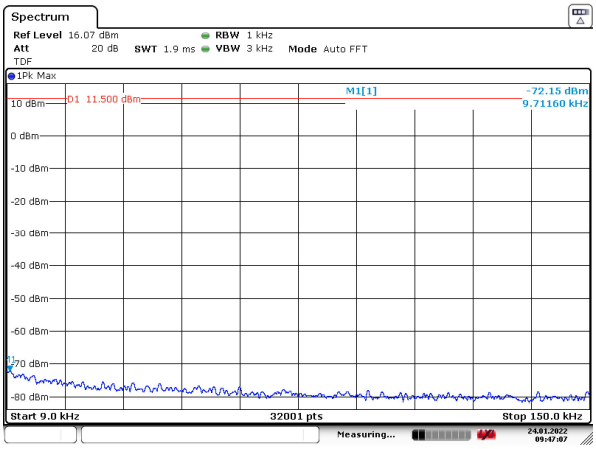

Figure 15: Conducted spurious emissions 9-150 kHz LOW channel

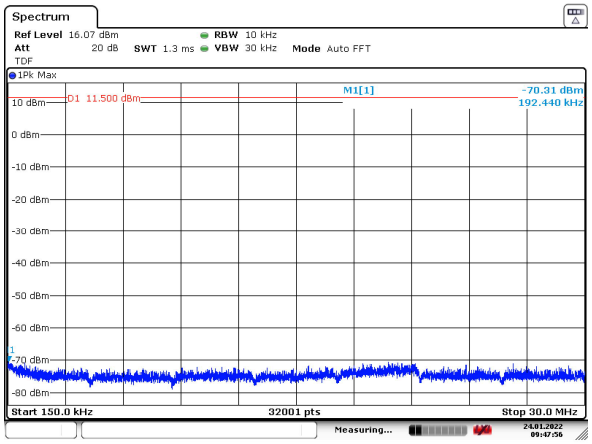

Figure 16: Conducted spurious emissions 150 kHz – 30 MHz LOW channel

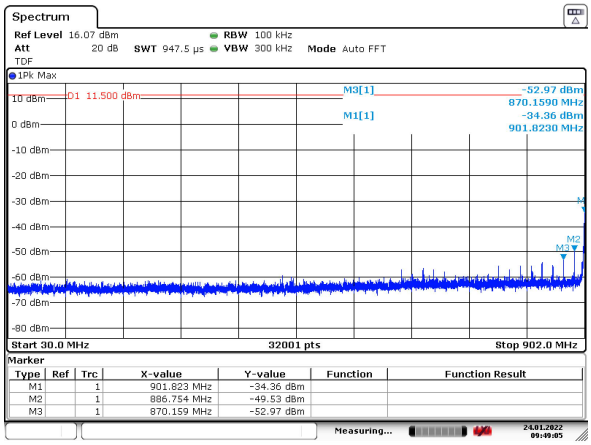

Figure 17: Conducted spurious emissions 30 MHz – 902 MHz LOW channel

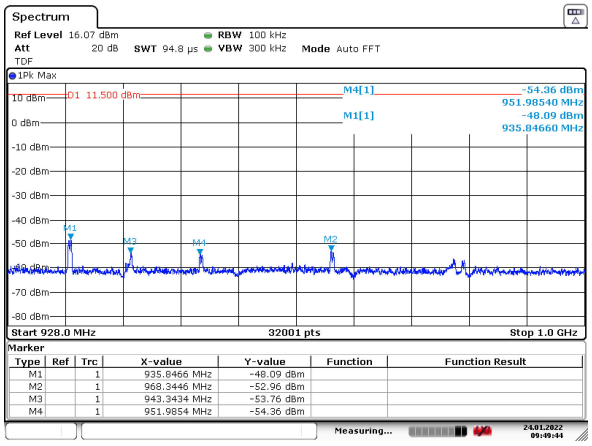

Figure 18: Conducted spurious emissions 928 MHz – 1 GHz LOW channel

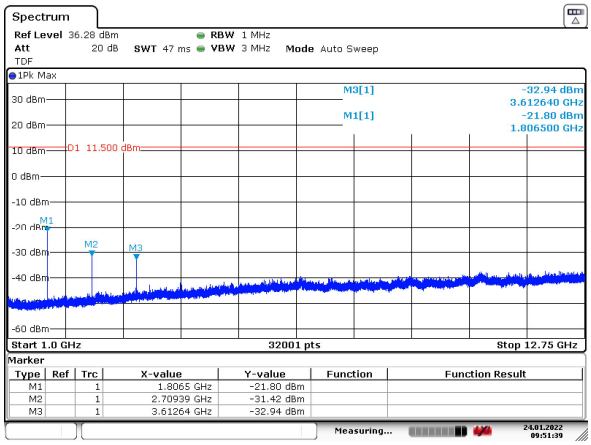

Figure 19: Conducted spurious emissions 1 GHz – 12.75 GHz LOW channel

Conducted spurious emissions results MID channel

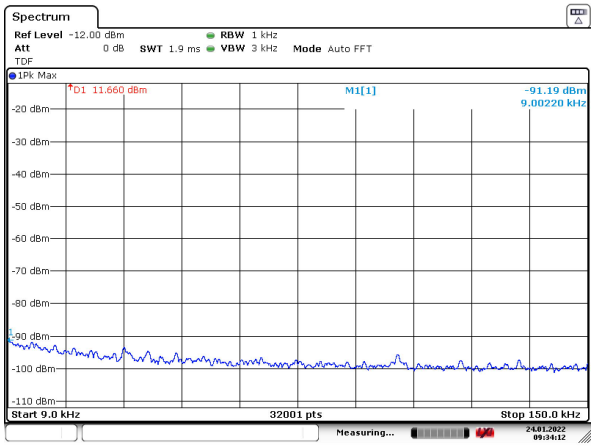

Figure 20: Conducted spurious emissions 9-150 kHz MID channel

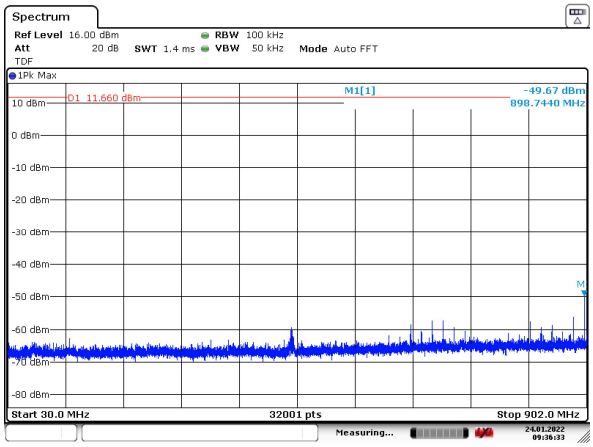

Figure 21: Conducted spurious emissions 150 kHz – 30 MHz MID channel

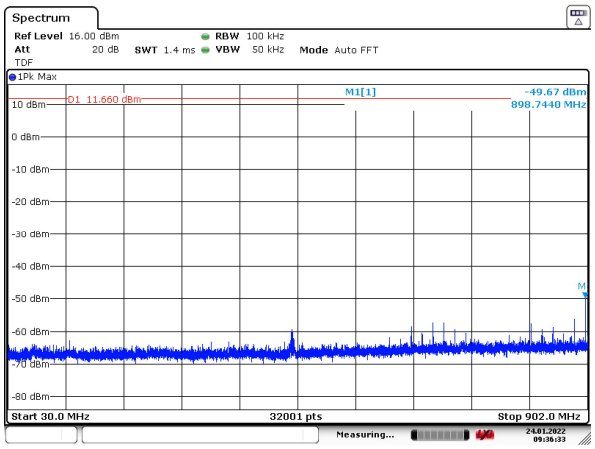

Figure 22: Conducted spurious emissions 30 MHz – 902 MHz MID channel

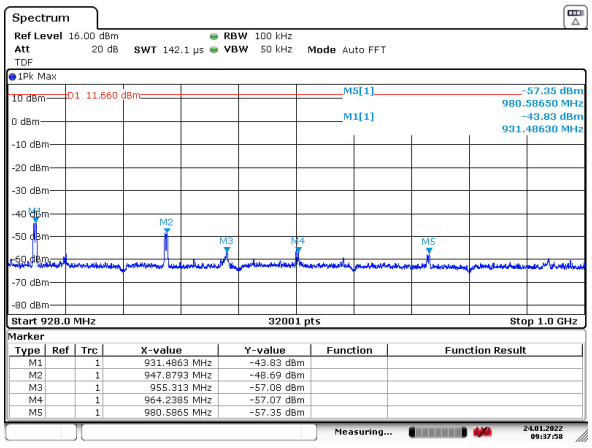

Figure 23: Conducted spurious emissions 928 MHz – 1 GHz MID channel

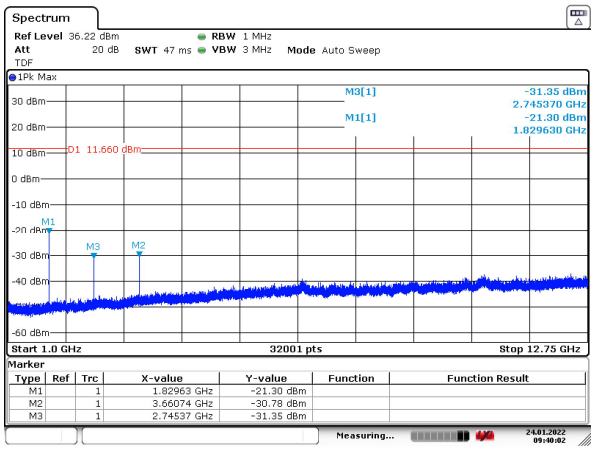

Figure 24: Conducted spurious emissions 1 GHz – 12.75 GHz MID channel

Conducted spurious emissions results HIGH channel

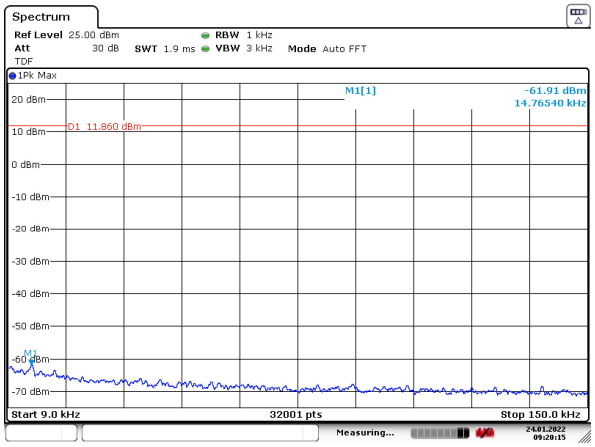

Figure 25: Conducted spurious emissions 9-150 kHz HIGH channel

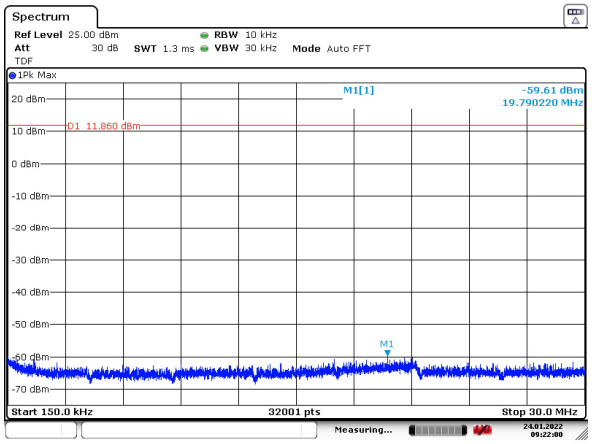

Figure 26: Conducted spurious emissions 150 kHz – 30 MHz HIGH channel

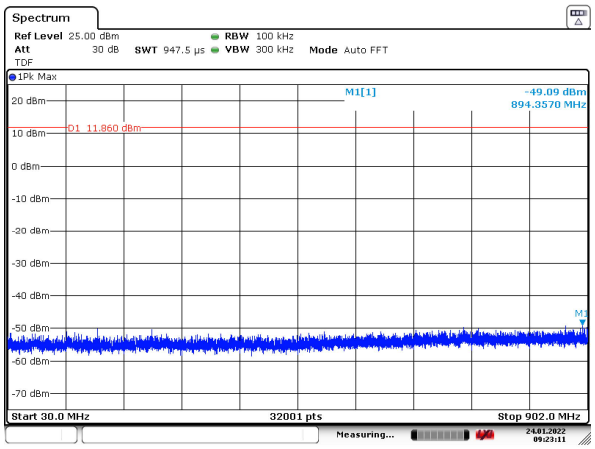

Figure 27: Conducted spurious emissions 30 MHz – 902 MHz HIGH channel

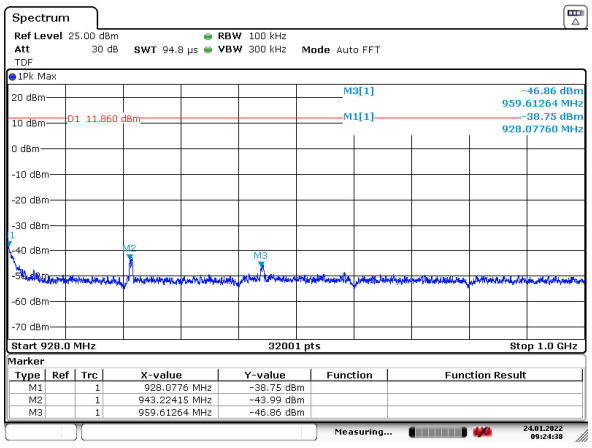

Figure 28: Conducted spurious emissions 928 MHz – 1 GHz HIGH channel

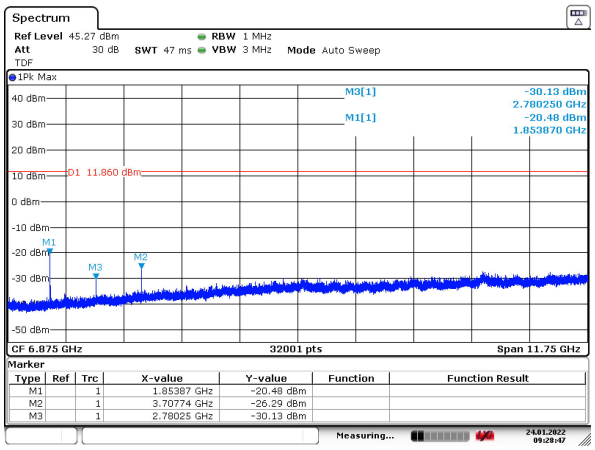

Figure 29: Conducted spurious emissions 1 GHz – 12.75 GHz HIGH channel

6 dB Bandwidth of the Channel

Standard: ANSI C63.10 (2013)
Tested by: RRE
Date: 24 January 2022, 1 December 2022
Temperature: 23 ± 3 °C
Humidity: 20 - 75 % RH

FCC Rule: 15.247(a)(2)
RSS-247 5.2(a)

Results

Table 9: 6 dB bandwidth test results

Channel	6 dB BW [kHz] conducted	6 dB BW [kHz] radiated	Minimum limit [kHz]
Low	517.8	503.5	500
Mid	518.6	511.3	
High	518.1	508.4	

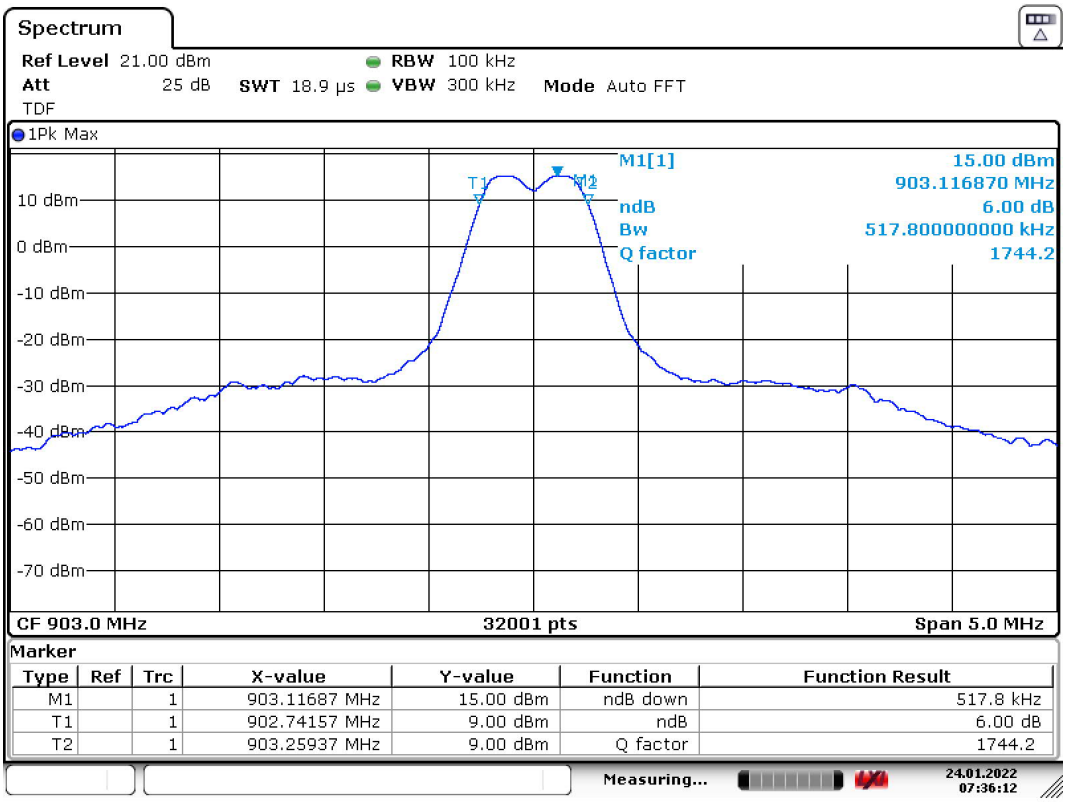

Figure 30: 6 dB bandwidth, channel LOW (conducted)

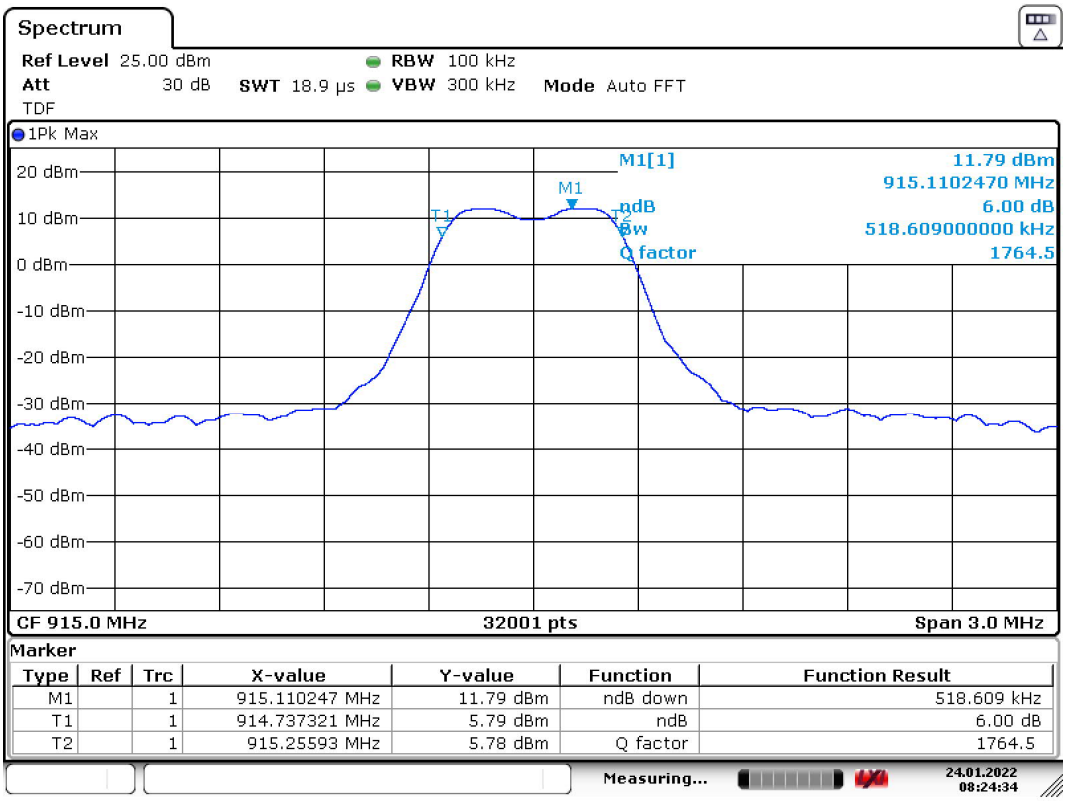

Figure 31: 6 dB bandwidth, channel MID (conducted)

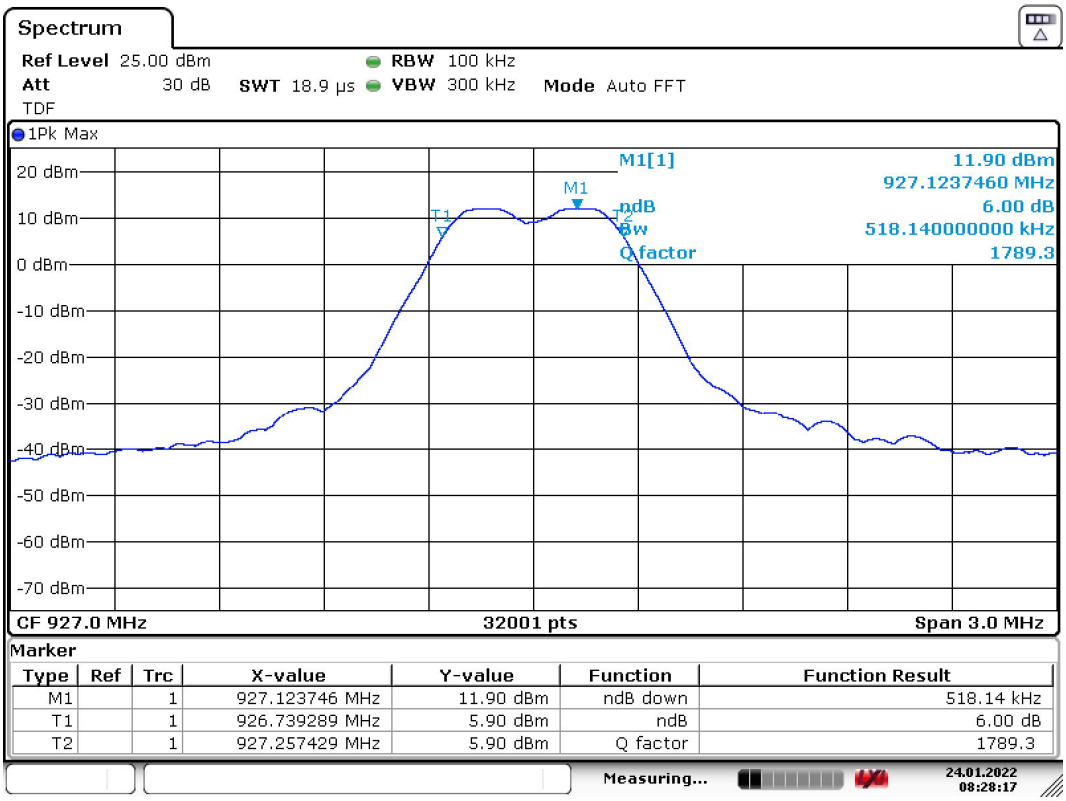

Figure 32: 6 dB bandwidth, channel HIGH (conducted)

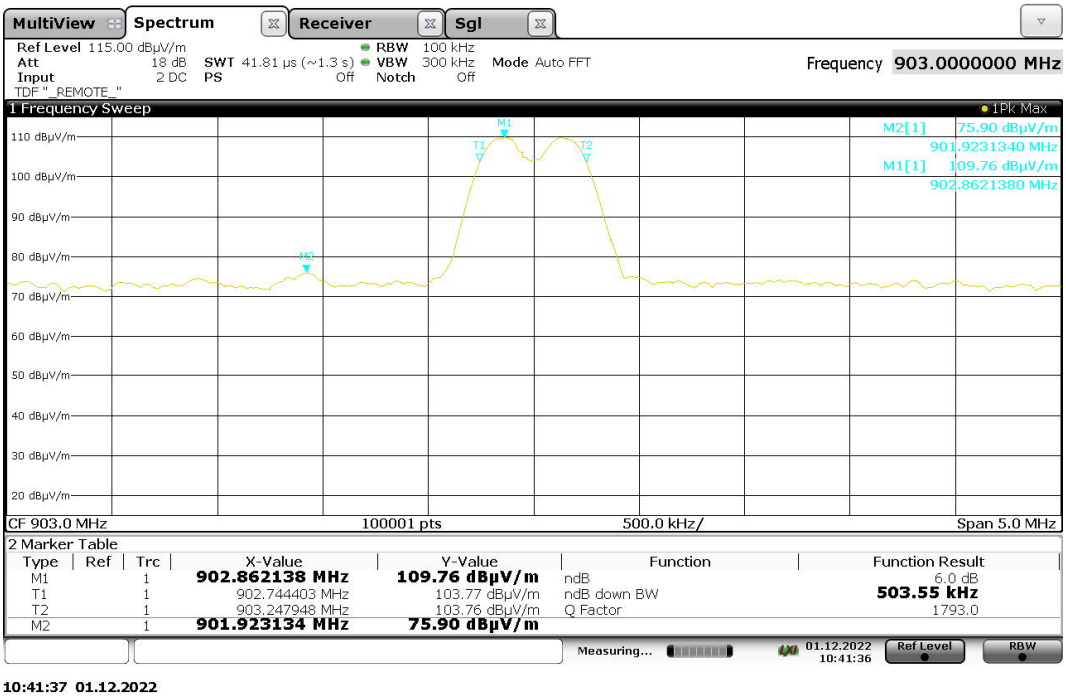

Figure 33: 6 dB bandwidth, channel LOW (radiated)

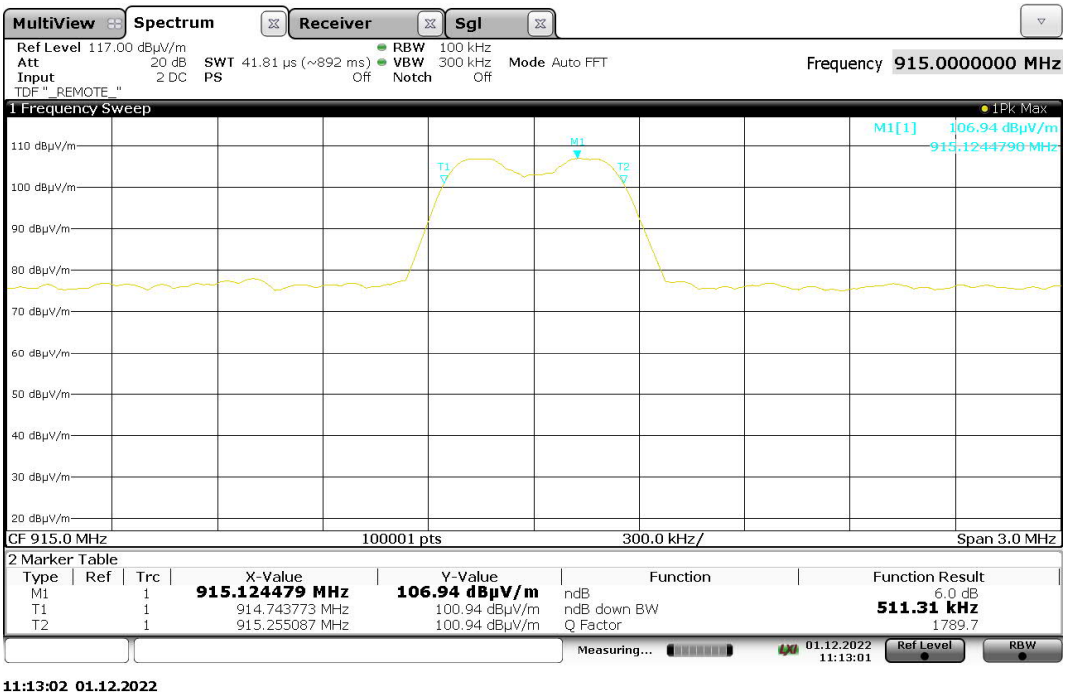

Figure 34: 6 dB bandwidth, channel MID (radiated)

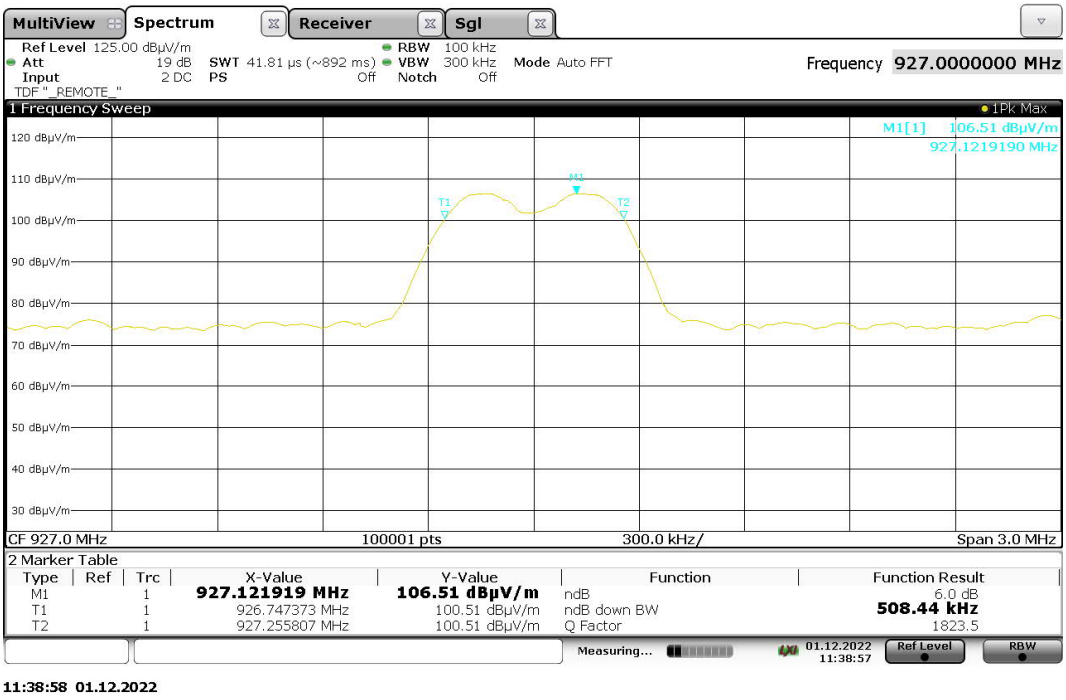

Figure 35: 6 dB bandwidth, channel HIGH (radiated)

Power Spectral Density

Standard:	ANSI C63.10	(2013)
Tested by:	RRE	RRE
Date:	24 January 2022, 1 December 2022	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	

FCC Rule: 15.247(e)
RSS-247 5.2(b)

Results

Table 10: Power spectral density test results (conducted)

Channel	Conducted PSD dBm/3 kHz	Maximum limit [dBm/3kHz]
Low	7.18	+8.00
Mid	6.36	
High	7.61	

Table 11: Power spectral density test results (radiated)

Channel	Radiated PSD dBµV/m /3 kHz	Radiated PSD dBm/3 kHz	Maximum limit [dBm/3kHz]
Low	105.49	5.53	+8.00
Mid	102.02	2.06	
High	102.22	2.26	

Radiated measurements were made as electric field strength measurement in dBµV/m and the results are converted to EIRP (dBm) according to the formulas presented in ANSI C63.10-2013 Clause 11.12.2.2.

EIRP (dBm) = E (dBµV/m) + 20log(3) - 104.8 - 4.7

The measurement was performed at a point (turntable and mast) where the highest radiated emissions were detected. The measurement distance was 3.0 m.

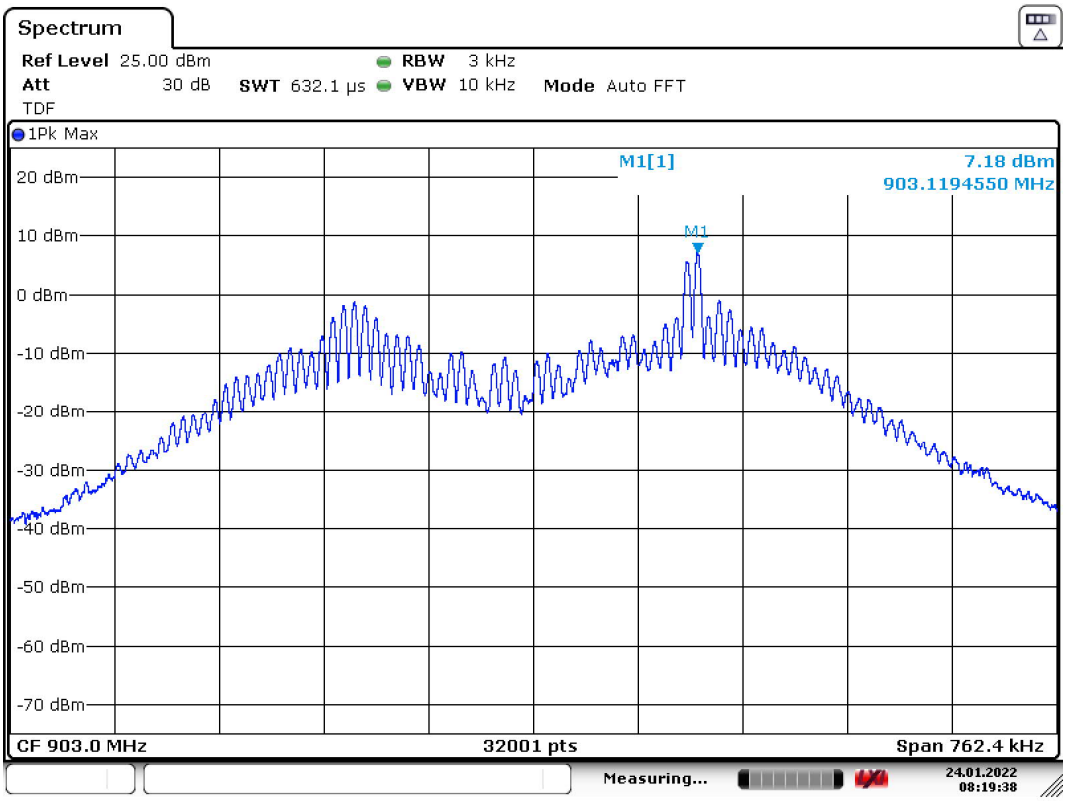

Figure 36: Power spectral density, channel LOW (conducted)

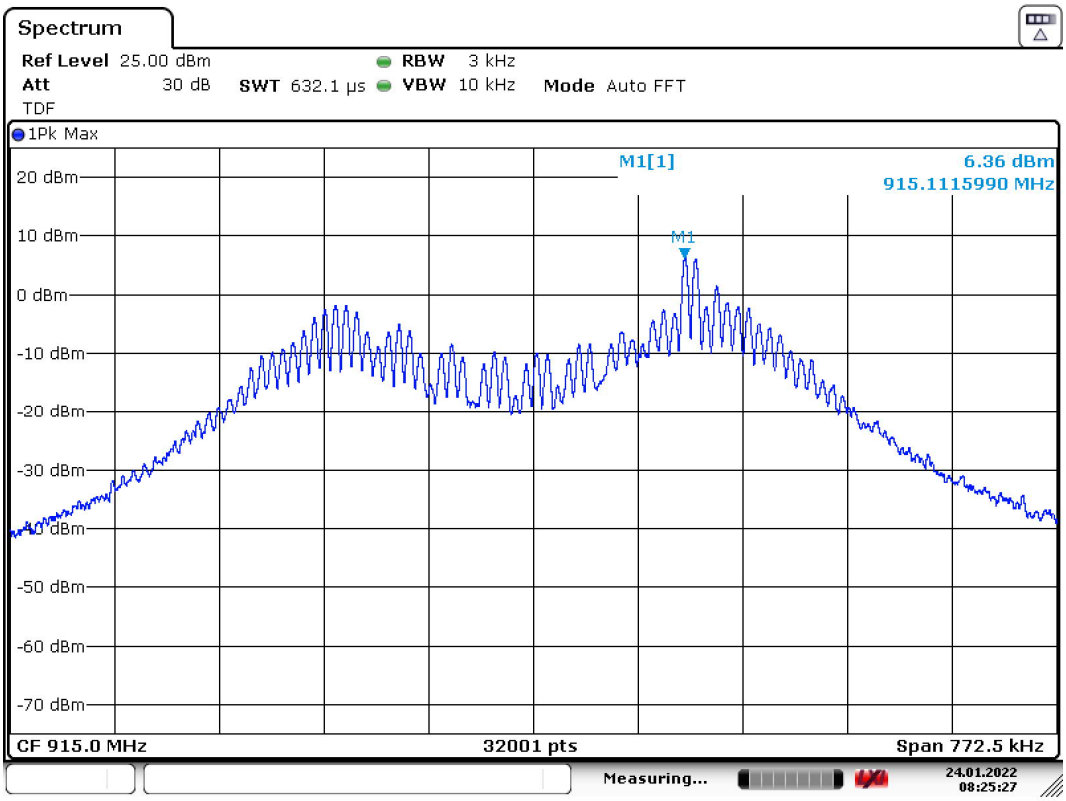

Figure 37: Power spectral density, channel MID (conducted)

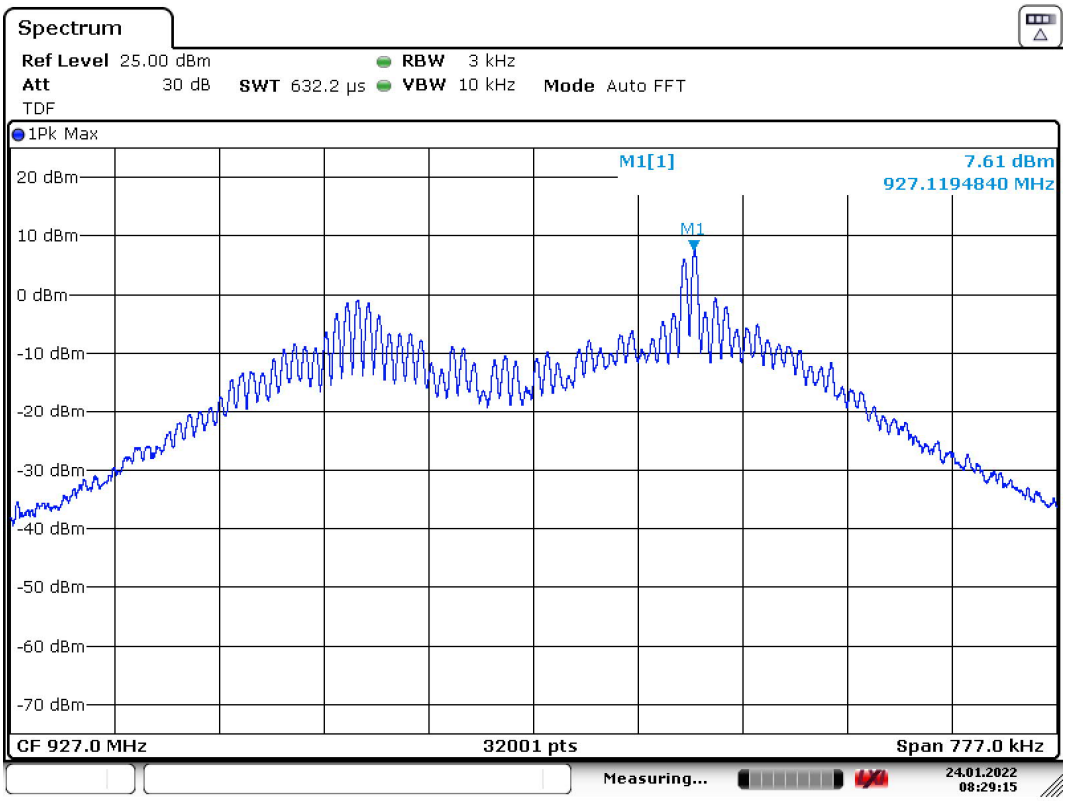

Figure 38: Power spectral density, channel HIGH (conducted)

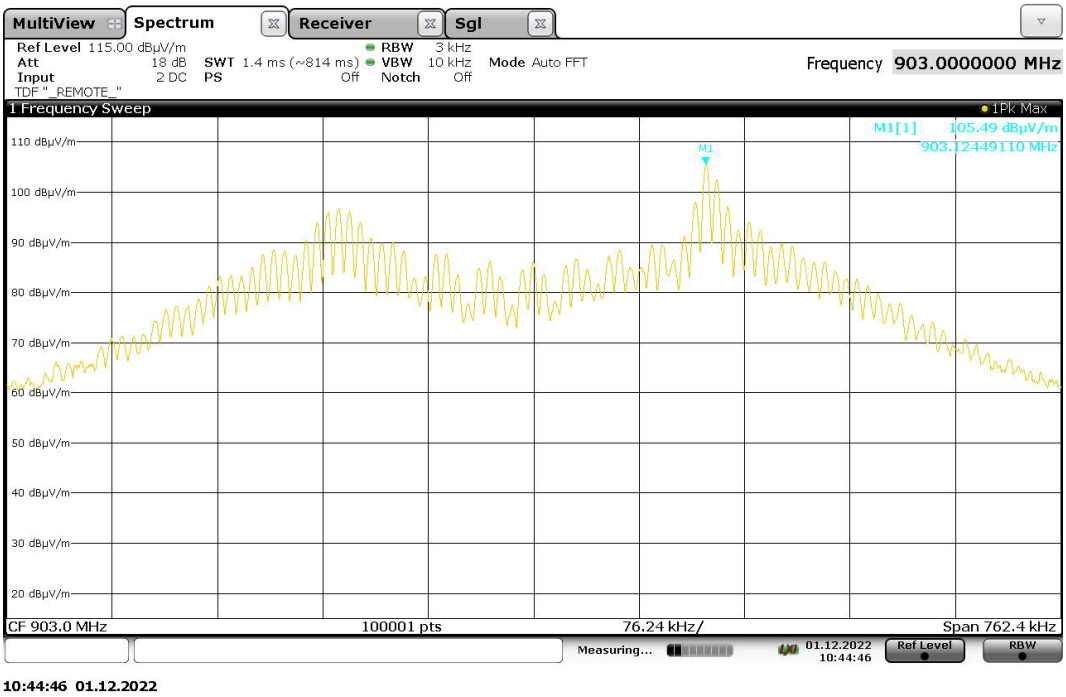

Figure 39: Power spectral density, channel LOW (radiated)

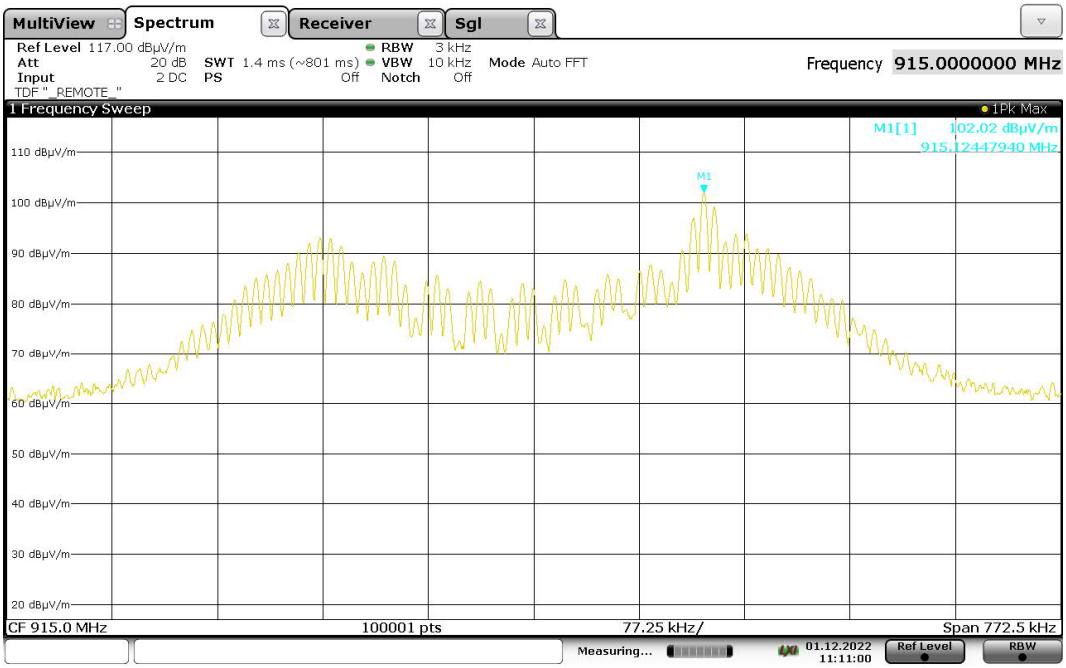

Figure 40: Power spectral density, channel MID (radiated)

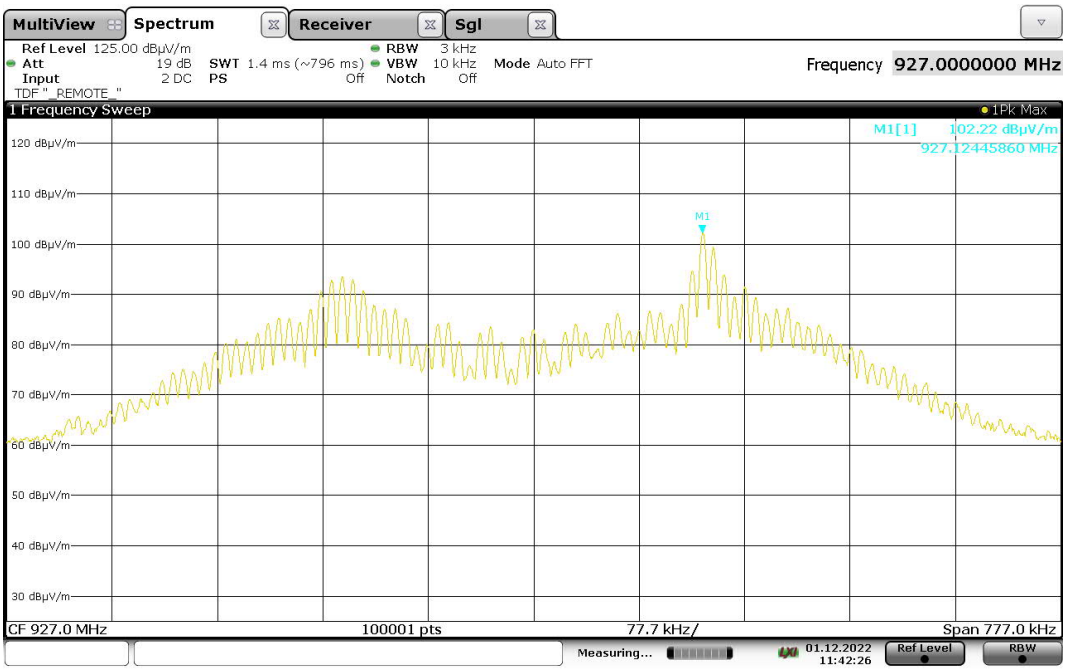

Figure 41: Power spectral density, channel HIGH (radiated)

99% Occupied Bandwidth

Standard:	RSS-GEN	(2019)
Tested by:	RRE	
Date:	24 January 2022	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	

RSS-GEN 6.6

Results

Table 12: 99% occupied bandwidth test results

Channel	Limit	99 % BW [kHz]	Result
Low	-	468.110371551	PASS
Mid	-	452.485859817	PASS
High	-	472.953970188	PASS

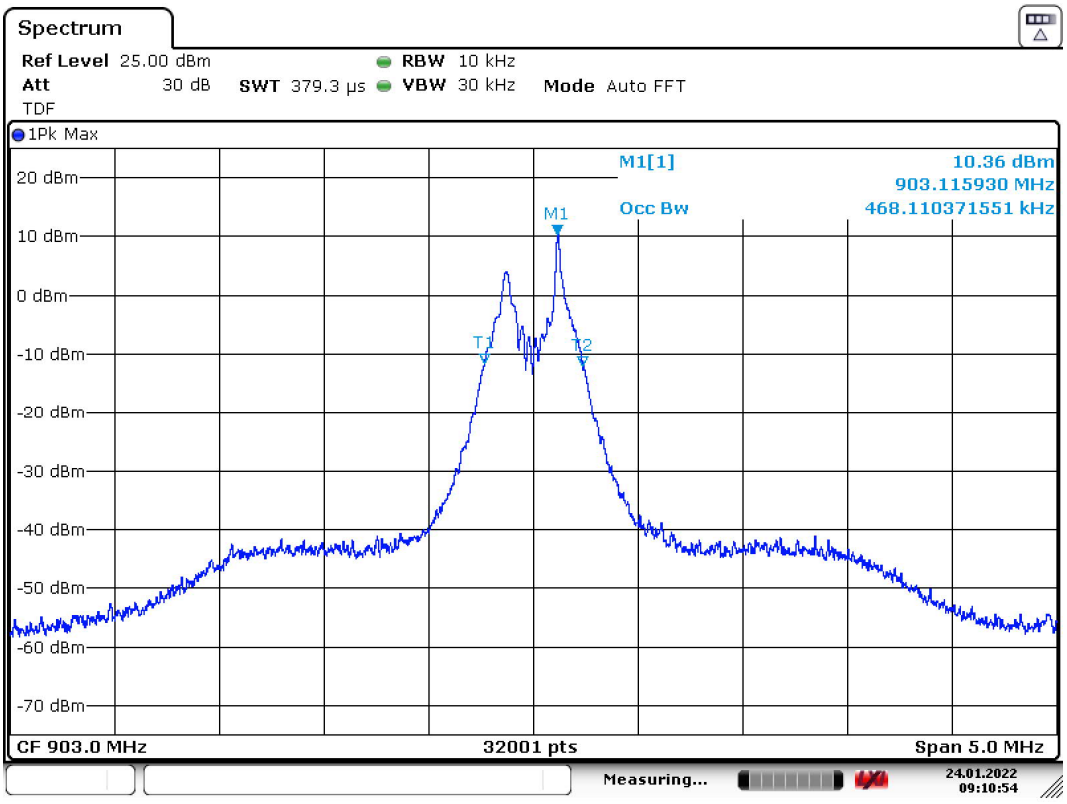

Figure 42: 99% OBW, channel LOW

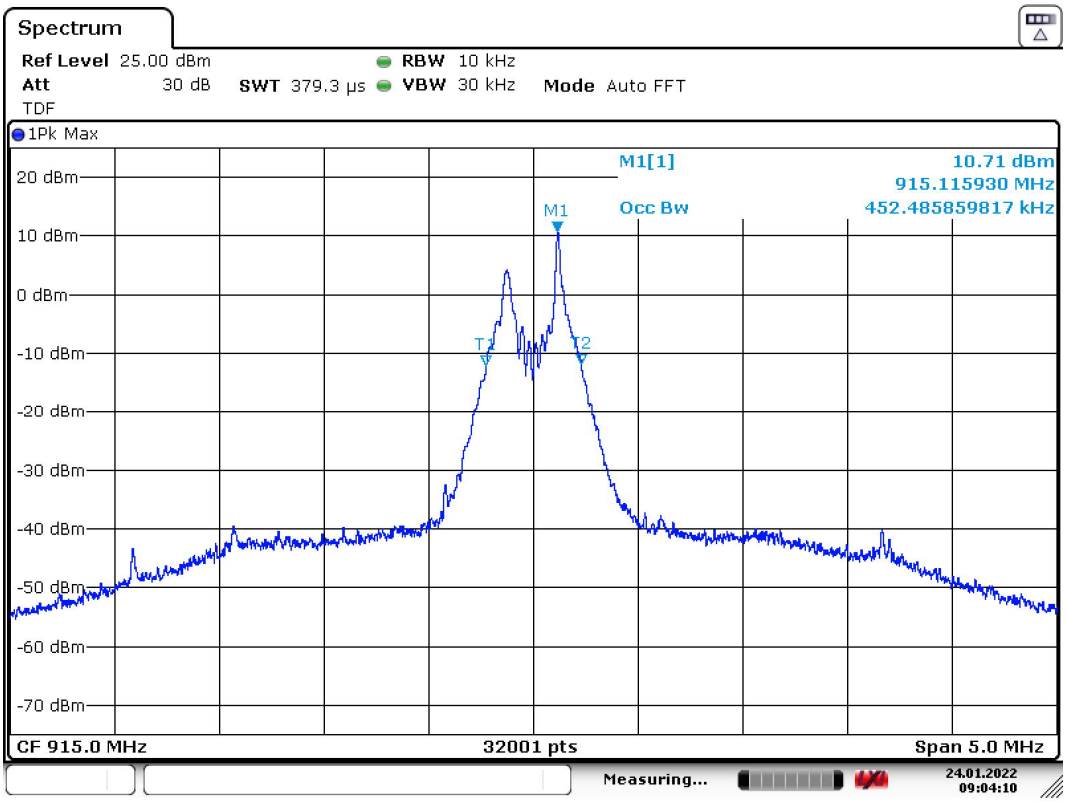

Figure 43: 99% OBW, channel MID

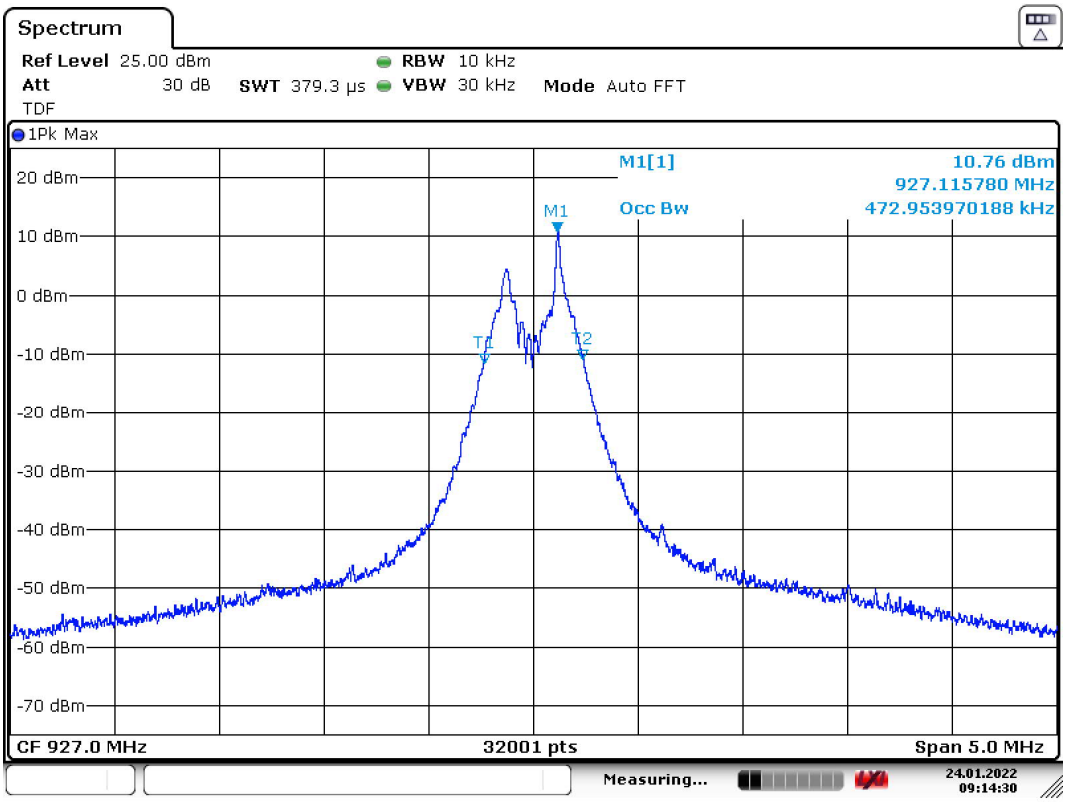

Figure 44: 99% OBW, channel HIGH

Duty cycle correction factor, Transmit time in 100 ms

Standard:	ANSI C63.10	(2013)
Tested by:	RRE	
Date:	17 December 2021	
Temperature:	23 ± 3 °C	
Humidity:	20 - 75 % RH	

Spectrum analyzer with zero span was used to investigate spectrum.

15.35(c) Unless otherwise specified, e.g.§ 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

Pulses / 100 ms = 1
Length of one pulse = 9.936735 ms
Duty Cycle Correction Factor=20*log(Tocc/100)=20*log(1*9.936735 /100) = -20.05 dB

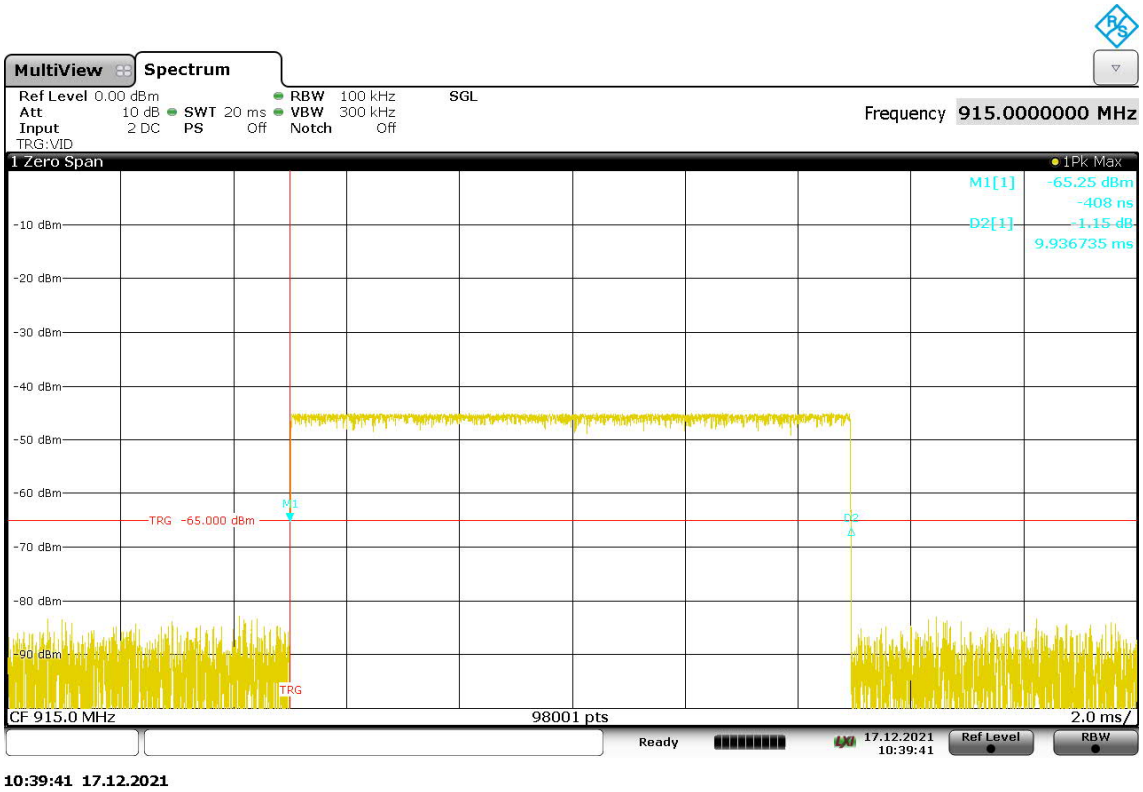

Figure 45. Pulse length

TEST EQUIPMENT

Equipment	Manufacturer	Type	Inv or serial	Prev Calib	Next Calib
ATTENUATOR	HUBER&SUHNER	6810.17.B (10dB)	inv:10390	2021-01-25	2023-01-25
ATTENUATOR	INMET	10 dB, DC-40 GHz	inv:10347	2021-04-20	2023-04-20
ANTENNA	A.H. SYSTEMS	SAS-200/518	inv:7873	NCR	NCR
SPECTRUM ANALYZER	AGILENT	E7405A, monitoring	inv:9746	NCR	NCR
RF PREAMPLIFIER	CIAO	CA118-3123	inv:10278	2021-10-05	2022-10-05
TEMPERATURE/ HUMIDITY SENSOR	EDS	OW-ENV-TH, K5 SAC	inv:10517	2021-10-22	2022-10-22
				2022-10-27	2023-10-27
ANTENNA	EMCO	3117, emi 1-18GHz	inv:7293	2020-03-11	2022-03-11
TURNTABLE	MATURO	DS430 UPGRADED	inv:10182	NCR	NCR
MAST & TURNTABLE CONTROLLER	MATURO	NCD	inv:10183	NCR	NCR
ANTENNA MAST	MATURO	TAM 4.0E	inv:10181	NCR	NCR
ATTENUATOR	PASTERNACK	PE 7004-4 (4dB)	inv:10126	2021-03-26	2022-03-26
				2021-03-30	2023-03-30
GPS REFERENCE	PENDELUM	GPS-88	inv:8032	NCR	NCR
TEST SOFTWARE	ROHDE & SCHWARZ	EMC-32	-	NCR	NCR
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW26	inv:10679	2021-06-21	2022-06-21
				2022-06-20	2023-06-20
SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSV40	inv:9093	2021-12-06	2022-12-06
ANTENNA	SCHWARZBECK	VULB 9168	inv:8911	2020-11-04	2022-11-04
ANTENNA	SCHWARZBECK	VULB 9168	inv:8885	2022-05-05	2024-05-05
FILTER	WAINWRIGHT	HP, WHKX1.0/15G-10SS	inv:8267	2021-01-29	2023-01-29

NCR = No calibration required

END OF REPORT