

Report on the FCC and IC Testing of the
Novexx Solutions GmbH
RFID-reader module on carrier PCA + heat sink
Model: RFID module
In accordance with FCC 47 CFR Part 15 C and
ISED RSS-247 and ISED RSS-GEN



Prepared for: Novexx Solutions GmbH
Ohmstrasse 3
85486 Eching, Germany

FCC ID: 2AHDWM7ERUMODULE
IC: 33839-M7ERUMODULE

COMMERCIAL-IN-CONFIDENCE

Date: 2026-03-11

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RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Alexander Grill	2026-03-11	 SIGN-ID 1114378
Authorised Signatory	Alex Fink	2026-03-11	 SIGN-ID 1114888

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

Engineering Statement:

This measurement shown in this report were made in accordance with the procedures described on test pages.

All reported testing was carried out on a sample equipment to demonstrate limited compliance with with FCC 47 CFR Part 15 C and ISED RSS-247 and RSS-GEN.

The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Alexander Grill	2026-03-11	 SIGN-ID 1114377

Laboratory Accreditation

DAkS Reg. No. D-PL-11321-11-00

Laboratory recognition

Registration No. BNetzA-CAB-16/21-15

Industry Canada test site registration

3050A-2

Executive Statement:

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15 C:2024 and ISED RSS-247 Issue 4:2025 and RSS-GEN:2021

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www.tuvsud.com/imprint

Managing Directors:
Wolfgang Hübl (Sprecher / CEO)
Karl Meier
Patrick van Welij

Phone: +49 (0) 9421 56 82-0
Fax: +49 (0) 9421 56 82-199
www.tuvsud.com

TÜV SÜD Product Service GmbH
Äußere Frühlingsstraße 45
94315 Straubing
Germany



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1 Report Summary

1.1 Modification Report

Alternations and additions of this report will be issued to the holders of each copy in the form of a complete document. The current version replaces all previous versions.

Revision	Description of changes	Date of Issue
0	---	2026-02-18
1	Update of ISED RSS-247 Issue 3:2023 to ISED RSS-247 Issue 4:2025. Correction of Frequency range for North America to 902 – 928 MHz. Addition of Spurious Emission in Hopping mode. Addition of Frequency band edge in Hopping mode.	2026-03-11

Table 1: Report of Modifications

1.2 Introduction

Applicant	Novexx Solutions GmbH Ohmstrasse 3 85386 Eching, Germany
Manufacturer	datakamp System GmbH & Co. KG Brillenburgsweg 29 21614 Buxtehude, Germany
Model Number(s)	RFID module
Serial Number(s)	---
Hardware Version(s)	N104539-000
Software Version(s)	---
Number of Samples Tested	2 (only for radiated tests with two different Antennas)
Test Specification(s) / Issue / Date	FCC 47 CFR Part 15 C:2024 ISED RSS-247, Issue 4:2025 ISED RSS-GEN, Issue 5:2018 + Amd. 1:2019 + Amd. 2:2021
Test Plan/Issue/Date	Test sample basic information EMV – filled / 2026-02-10
Order Number	N104539
Date	2025-11-11
Date of Receipt of EUT	2025-12-02
Start of Test	2025-12-17
Finish of Test	2026-02-02
Name of Engineer(s)	Alexander Grill
Related Document(s)	ANSI C63.4:2014 ANSI C63.10:2013 ANSI C63.10:2020 KDB 558074 D01 V05R02



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15 C, ISSED RSS-247 and ISSED RSS-GEN is shown below.

Section	Specification Clause	Test Description	Result
2.1	15.203, 15.247(b)	Antenna requirement	Pass
2.2	15.247(a)(1)(iii)	Number of hopping channels	Pass
2.3	15.247	Emission Bandwidth	Noted
2.4	15.247(b)(d)	Output Power	Pass
2.5	15.247(a)(1)	Hopping Channel Separation	Pass
2.6	15.247(a)(1)(iii)	Time occupancy on any channel	Pass
2.7	15.247(d)	Frequency Band Edge	Pass
2.8	15.247(d), 15.205, 15.209	Spurious Emissions	Pass
2.10	15.207	Conducted Emissions on Mains Terminals	Pass

Table 2: Results according to FCC 47 CFR Part 15 C

Section	Specification Clause	Test Description	Result
2.2	5.1 d.	Number of Hopping Channels	Pass
2.3	5.1	Emission Bandwidth	Noted
2.4	5.1	Output Power	Pass
2.5	5.1.b.	Hopping Channel Separation	Pass
2.6	5.1.d:	Time occupancy on any channel	Pass
2.7	5.5	Frequency Band Edge	Pass
2.8	5.5	Spurious Emissions	Pass

Table 3: Results according to ISSED RSS-247

Section	Specification Clause	Test Description	Result
2.3	6.7	Emission Bandwidth	Pass
2.8	8.9, 8.10	Spurious Emissions	Pass
2.9	8.11	Temperature Stability	Pass
2.10	8.8	Conducted Emissions on Mains Terminals	Pass

Table 4: Results according to RSS-Gen



1.4 Product Information

1.4.1 Technical Description

The EUT is a RFID-reader module on carrier PCA + heat sink.

Supply Voltage: 20 – 50 V DC; 24 V DC nominal
Supply Frequency: N/A
Highest clock frequency: 928 MHz
UHF RFID frequency band: 902 – 928 MHz

RFID module
Novexx Solutions GmbH
Ohmstrasse 3, D - 85386 Eching
FCC ID: 2AHDWM7ERUMODULE
IC: 33839-M7ERUMODULE

Label

1.4.2 List of Antennas

Description	Technology	Frequency	Antenna Type	Antenna gain
Antenna 1	UHF RFID	902 – 928 MHz	Patch	-9.9 dBi
Antenna 2	UHF RFID	902 – 928 MHz	Patch	-14 dBi

1.4.3 EUT Ports / Cables identification

Description	Classification	Cable type	Cable length	
			Used	Maximum
24 V DC power supply	DC power	Unshielded	1 m	20 m
Antenna Port	Signal/Control port	Shielded	0.5 m	2 m
RS232/USB	Signal/Control port	Shielded	2 m	20 m

Table 5 Ports and Cables identification



1.5 Test Configuration

The EUT was configured as stand-alone equipment. For radiated Emission tests, two different Antennas were used. See TR-713388457-00 rev0 (FCC15C) Annexe for pictures.

1.6 Modes of Operation

Tests were performed on lowest, middle and highest frequency channel.
Tests regarding the frequency hopping were performed with a continuous read/write mode from/to RFID tag via Softwaretool.

1.7 EUT Modifications Record

The table below details modifications made to the EUT during the test programme.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer	Not Applicable	Not Applicable

Table 6

1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Straubing test laboratory:

Test Name	Name of Engineer(s)
Antenna requirement	Alexander Grill
Number of hopping channels	Alexander Grill
Emission Bandwidth	Alexander Grill
Output Power	Alexander Grill
Hopping Channel Separation	Alexander Grill
Time occupancy on any channel	Alexander Grill
Frequency Band Edge	Alexander Grill
Spurious Emissions	Alexander Grill
Temperature Stability	Alexander Grill
Conducted Emissions on Mains Terminals	Alexander Grill

Office Address:

Äußere Frühlingstraße 45
94315 Straubing
Germany



2 Test Details

2.1 Antenna requirement

2.1.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.203, 15.247(b)

2.1.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.1.3 Date of Test

2026-02-02

2.1.4 Specification Limits

FCC 47 CFR 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. The use of a permanently attached antenna or an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some fields disturbance sensors, or to other intentional radiators which must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits are not exceeded.

FCC 47 CFR 15.247(b)

Except for point-to-point operation and multiple directional beams, if the transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2.1.5 Test Results

The EUT uses two RFID antennas. See photos for details. Antenna connector is R-SMA.



2.2 Number of Hopping Channels

2.2.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247(a)(1)(i)
ISED RSS-247, Clause 5.1 d.

2.2.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.2.3 Date of Test

2026-01-26

2.2.4 Environmental Conditions

Ambient Temperature	23 °C
Relative Humidity	24 %

2.2.5 Specification Limits

Frequency hopping systems in the 902 MHz – 928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies.

2.2.6 Test Method

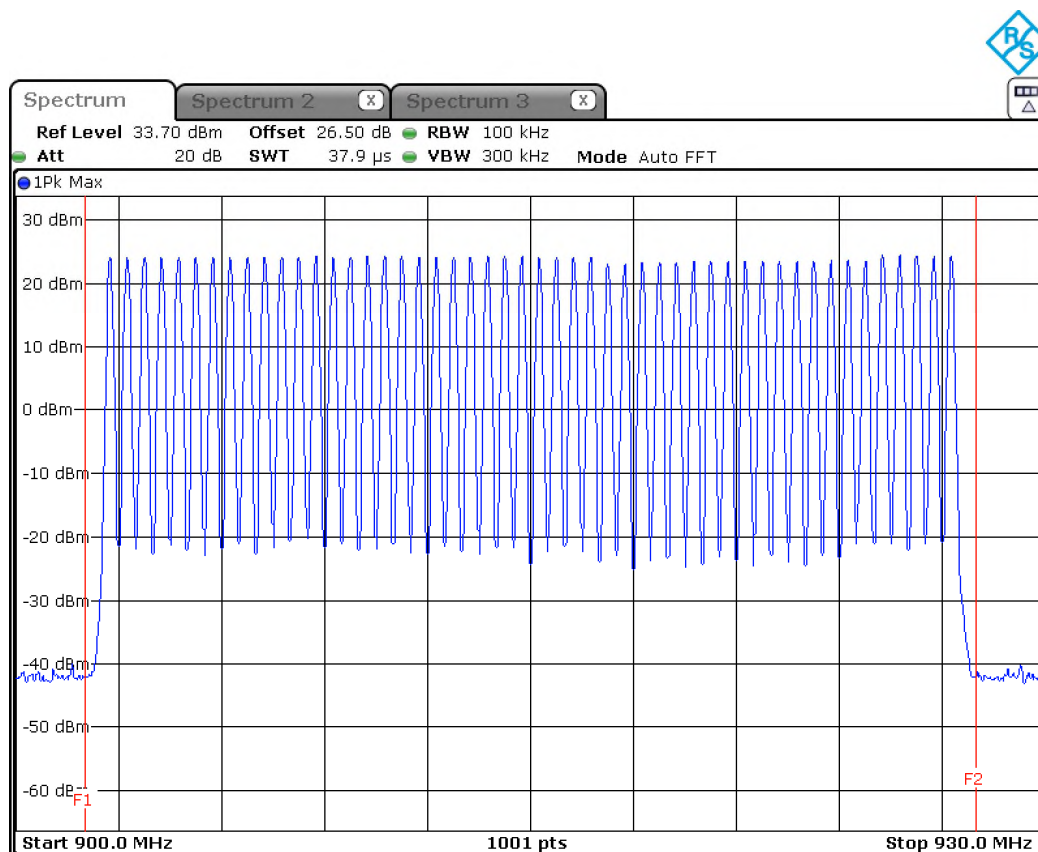
The test was performed according to ANSI C63.10, clause 7.8.3.



2.2.7 Test Results

Number of hopping channels	Minimum limit
50	15

Table 7:



Date: 26.JAN.2026 11:15:17



2.2.8 Test Location and Test Equipment

The test was carried out in radio test laboratory.

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and spectrum analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Step attenuator	Rohde & Schwarz	RSC	20239	24	2026-04-30

Table 8



2.3 Emission Bandwidth

2.3.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247
ISED RSS-247, Clause 5.1
ISED RSS-Gen, Clause 6.7

2.3.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.3.3 Date of Test

2026-01-28

2.3.4 Environmental Conditions

Ambient Temperature	22 °C
Relative Humidity	29 %

2.3.5 Specification Limits

For frequency hopping systems in the 902 MHz – 928 MHz band the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

2.3.6 Test Method

The test was performed according to ANSI C63.10, clauses 6.9



2.3.7 Test Results

Frequency Channel	20 dB Bandwidth	Band Edge Left	Band Edge Right
902.75 MHz	72.07 kHz	902.71469 MHz	902.78678 MHz
915.25 MHz	75.26 kHz	915.21295 MHz	915.28821 MHz
927.25 MHz	74.97 kHz	927.21295 MHz	927.28792 MHz

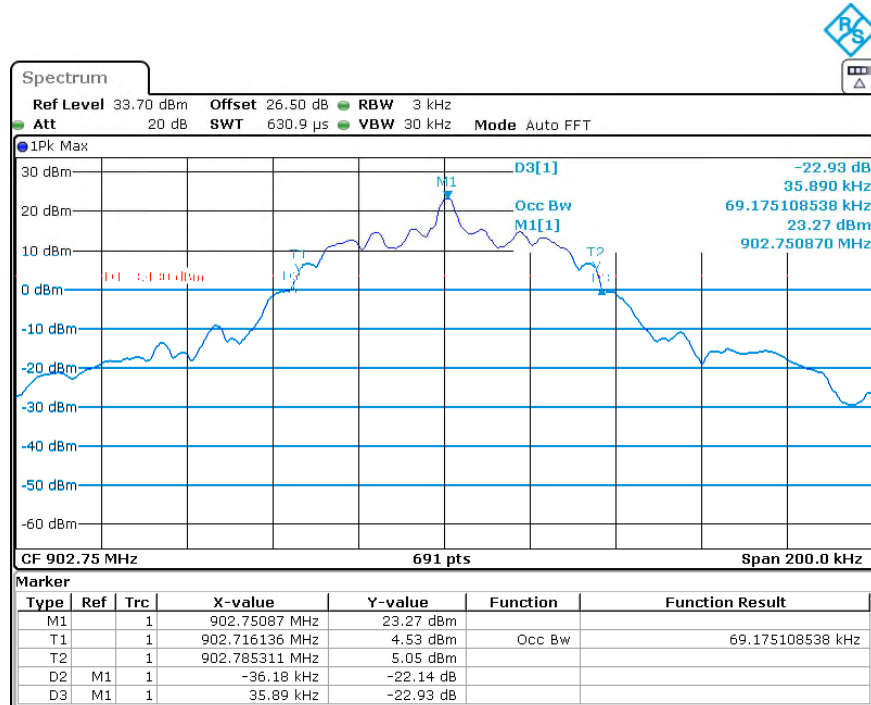
Table 9: 20 dB bandwidth

The maximum 20 dB bandwidth is 902.71469 MHz to 927.28792 MHz.

Frequency Channel	99% Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
902.75 MHz	69.175108538 kHz	902.716136 MHz	902.785311 MHz
915.25 MHz	72.069464544 kHz	915.214689 MHz	915.286758 MHz
927.25 MHz	69.75397974 kHz	927.215847 MHz	927.285601 MHz

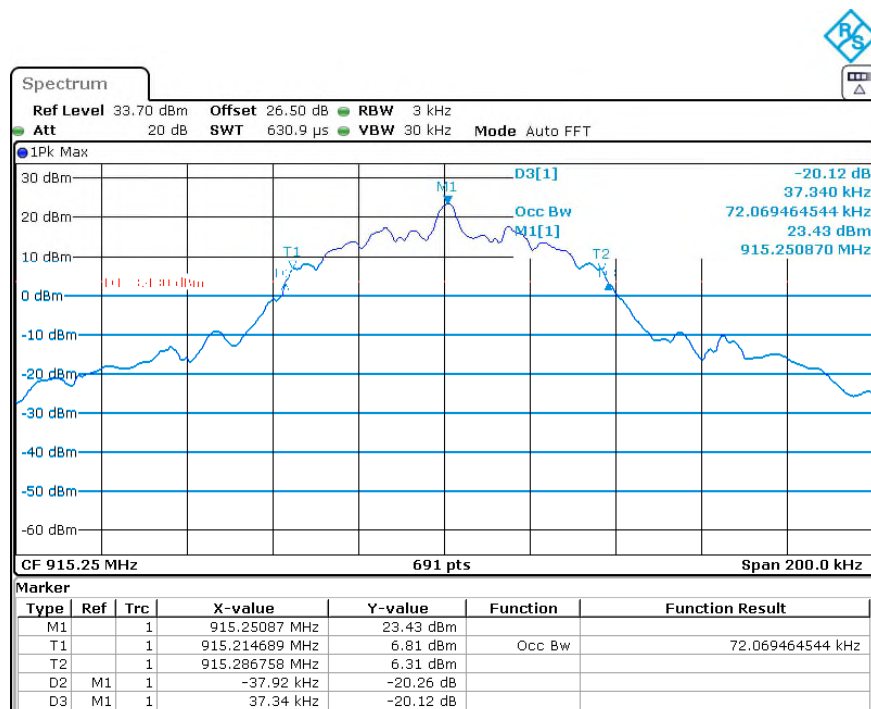
Table 10: 99% bandwidth

The maximum 99% bandwidth is 902.716136 MHz to 927.285601 MHz.



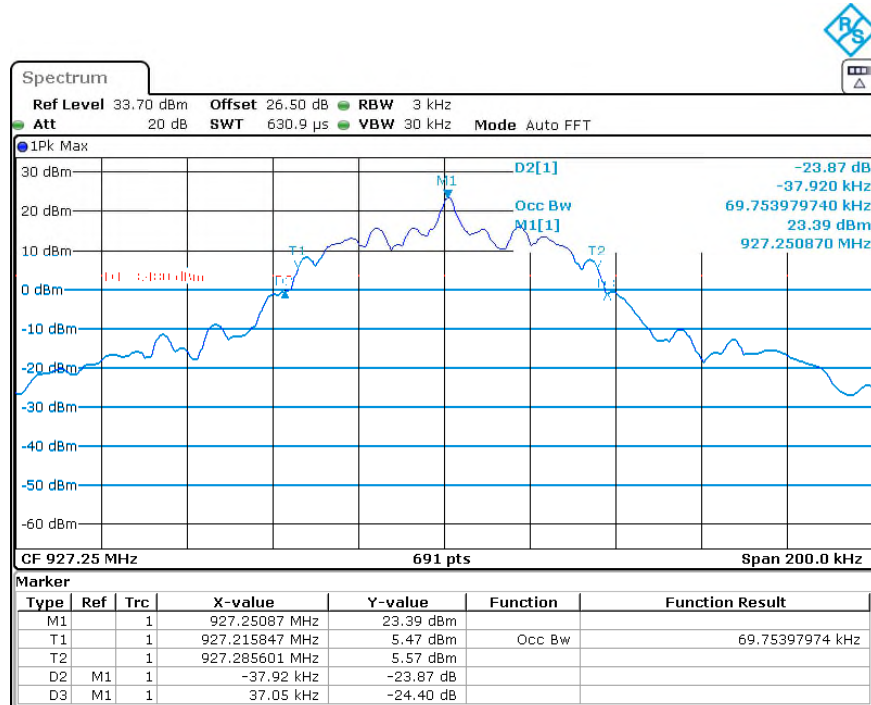
Date: 28.JAN.2026 12:35:39

902.750 MHz



Date: 28.JAN.2026 12:33:43

915.250 MHz



Date: 28.JAN.2026 12:37:28

927.250 MHz



2.3.8 Test Location and Test Equipment

The test was carried out in radio test laboratory.

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and spectrum analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Step attenuator	Rohde & Schwarz	RSC	20239	24	2026-04-30

Table 11



2.4 Output Power

2.4.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247(b)(3)
ISED RSS-247, Clause 5.1

2.4.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.4.3 Date of Test

2026-01-26

2.4.4 Environmental Conditions

Ambient Temperature	23 °C
Relative Humidity	24 %

2.4.5 Specification Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 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. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

2.4.6 Test Method

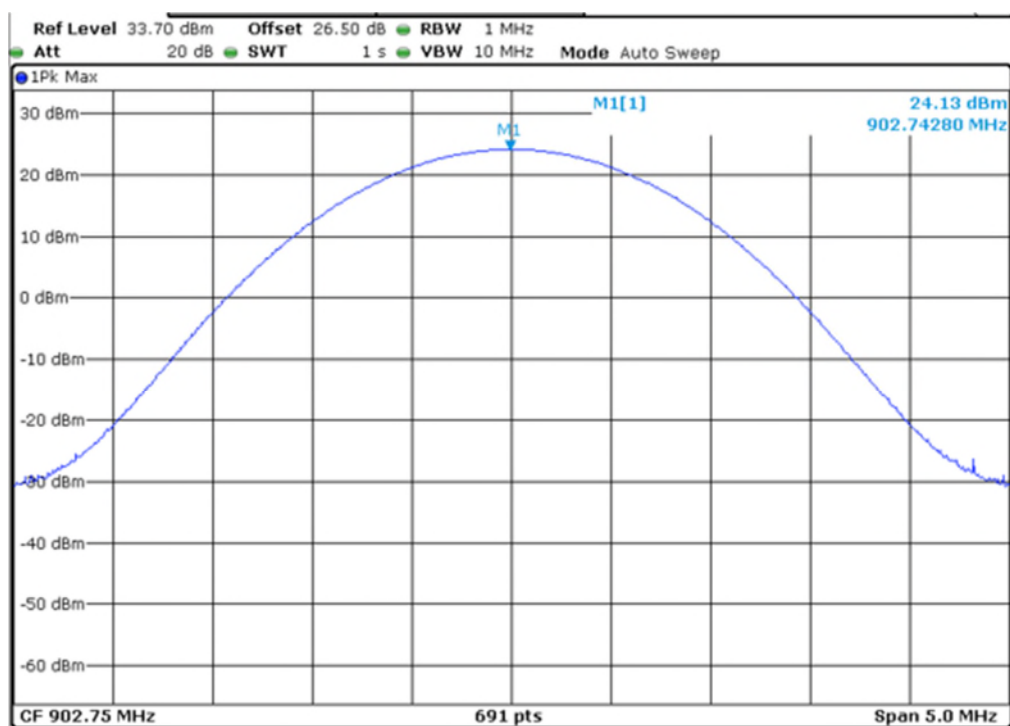
The test was performed according to ANSI C63.10, section 11.9



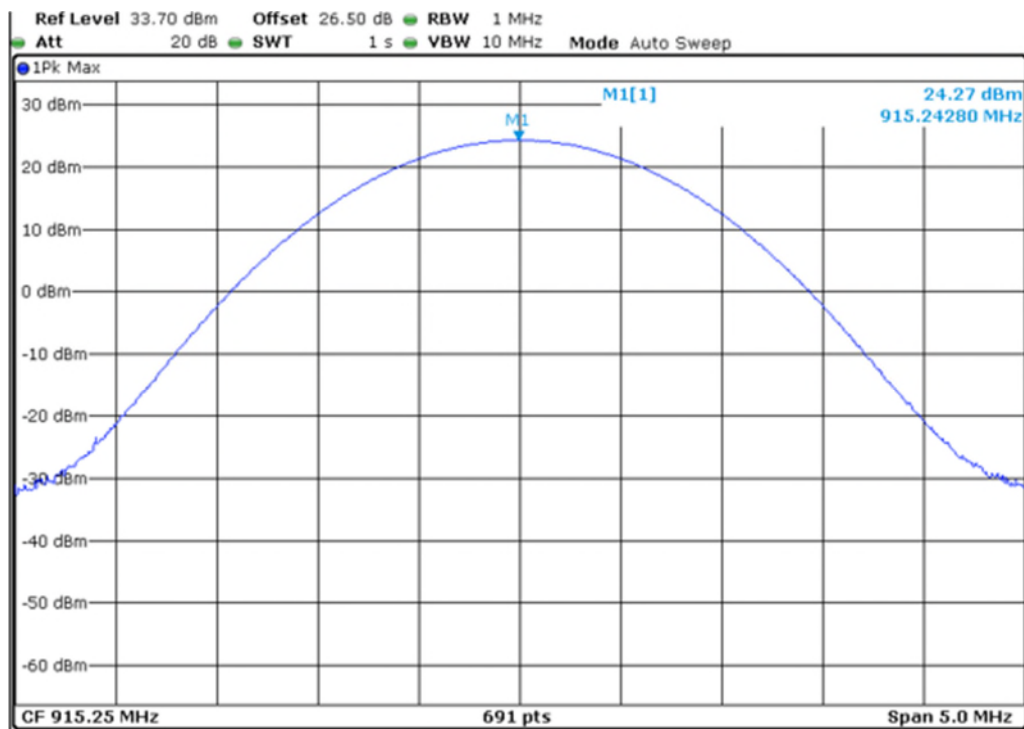
2.4.7 Test Results

Frequency Channel	Conducted Output Power (dBm)	Limit (dBm)
902.75 MHz	24.13	30.0
915.25 MHz	24.27	30.0
927.25 MHz	24.29	30.0

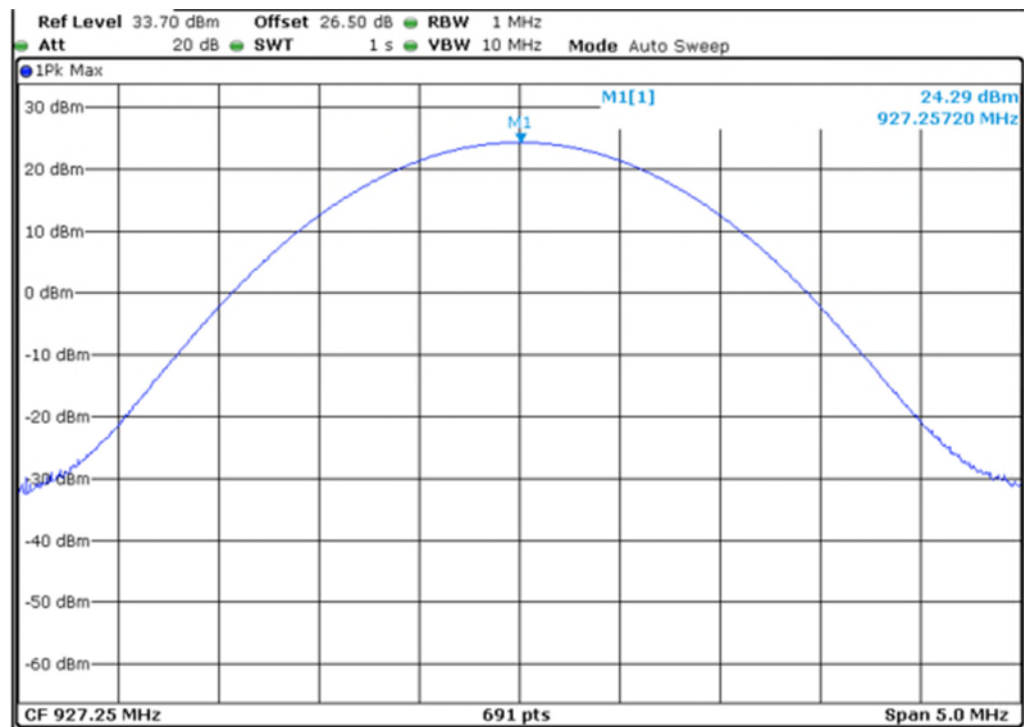
Table 12: Conducted Output Power



Date: 26 JAN 2026 10:48:19



Date: 26. JAN 2026 10:58:54



Date: 26. JAN 2026 11:00:20



2.4.8 Test Location and Test Equipment

The test was carried out in radio test laboratory.

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and spectrum analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Step attenuator	Rohde & Schwarz	RSC	20239	24	2026-04-30

Table 13



2.5 Hopping Channel Separation

2.5.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247(a)(1)(i)
ISED RSS-247, Clause 5.1 b.

2.5.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.5.3 Date of Test

2026-01-26 and 2025-01-27

2.5.4 Environmental Conditions

Ambient Temperature	23 °C
Relative Humidity	24 %

2.5.5 Specification Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

2.5.6 Test Method

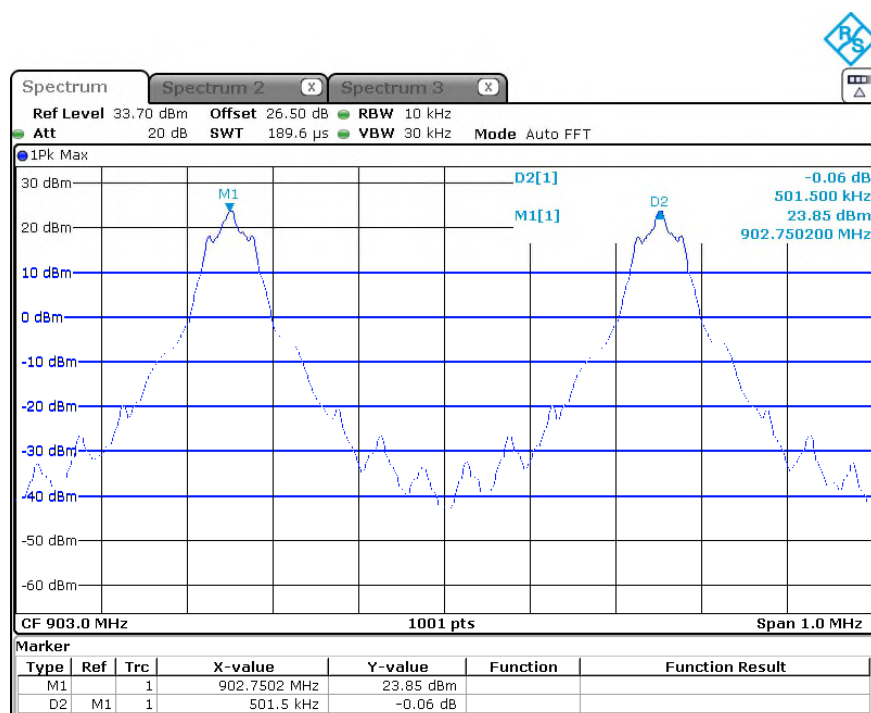
The test was performed according to ANSI C63.10, section 11.10



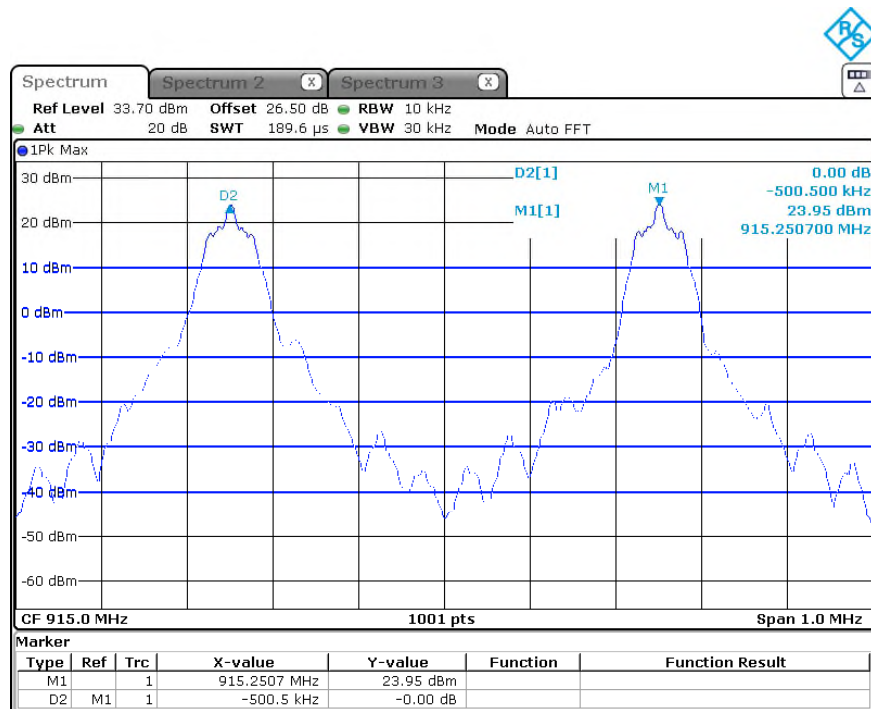
2.5.7 Test Results

Frequency Channel	Channel separation	20 dB bandwidth	Limit
902.75 MHz	501.5 kHz	72.07 kHz	> 72.07 kHz
915.25 MHz	500.5 kHz	75.26 kHz	> 75.26 kHz
927.25 MHz	499.5 kHz	74.97 kHz	> 74.97 kHz

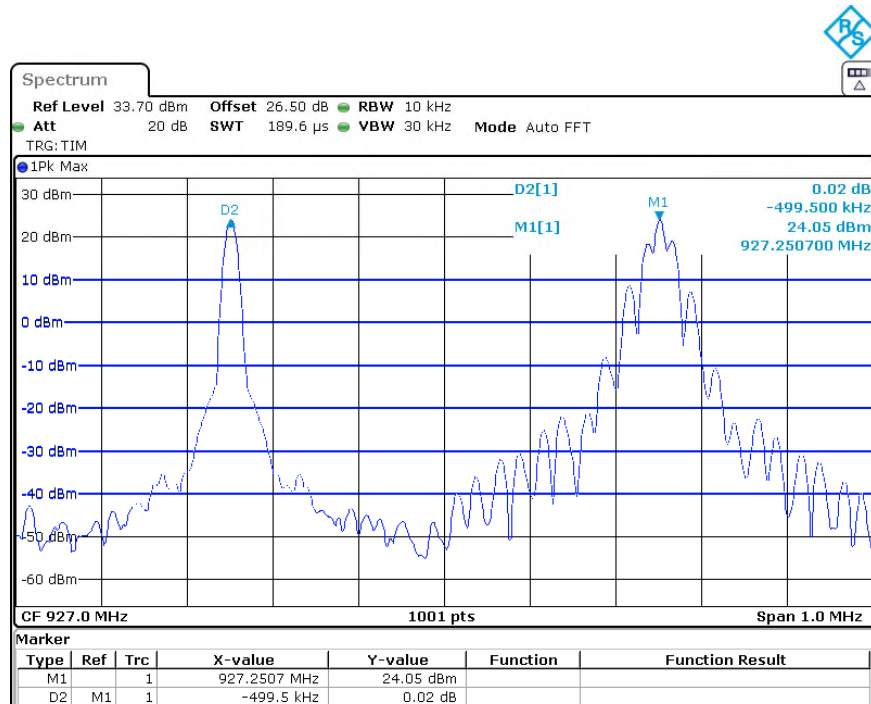
Table 14: Hopping channel separation



Date: 26.JAN.2026 11:38:07



Date: 26.JAN.2026 11:44:41



Date: 27.JAN.2026 08:58:34



2.5.8 Test Location and Test Equipment

The test was carried out in radio test laboratory.

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and spectrum analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Step attenuator	Rohde & Schwarz	RSC	20239	24	2026-04-30

Table 15



2.6 Time occupancy on any channel

2.6.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247(a)(1)(i)
ISED RSS-247, Clause 5.1 d.

2.6.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.6.3 Date of Test

2026-02-02

2.6.4 Environmental Conditions

Ambient Temperature	23 °C
Relative Humidity	26 %

2.6.5 Specification Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

2.6.6 Test Method

The test was performed according to ANSI C63.10, section 7.8.4



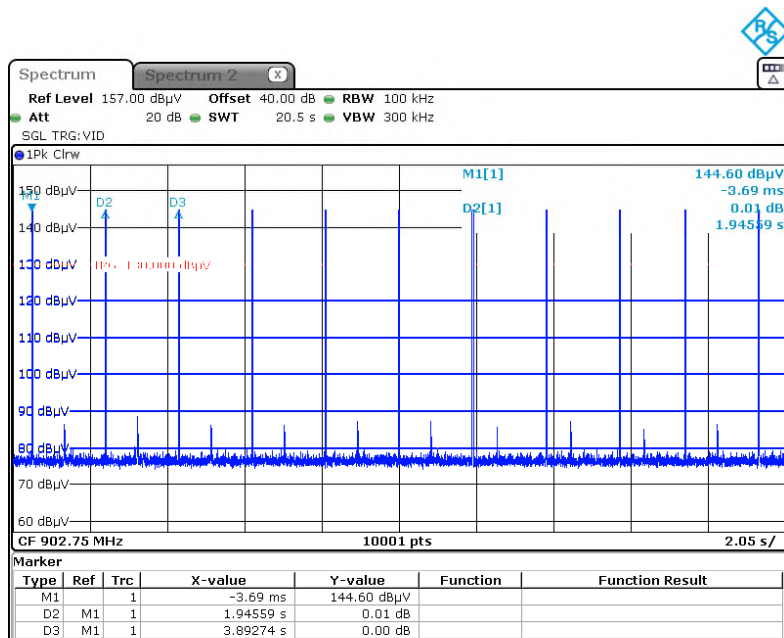
2.6.7 Test Results

Frequency Channel	Time occupancy	Limit
902.75 MHz	$10 \times 27.17 \text{ ms} = 271.70 \text{ ms}$	$< 0.4 \text{ s} / 20 \text{ s}$
915.25 MHz	$10 \times 27.32 \text{ ms} = 273.20 \text{ ms}$	$< 0.4 \text{ s} / 20 \text{ s}$
927.25 MHz	$10 \times 26.97 \text{ ms} = 269.70 \text{ ms}$	$< 0.4 \text{ s} / 20 \text{ s}$

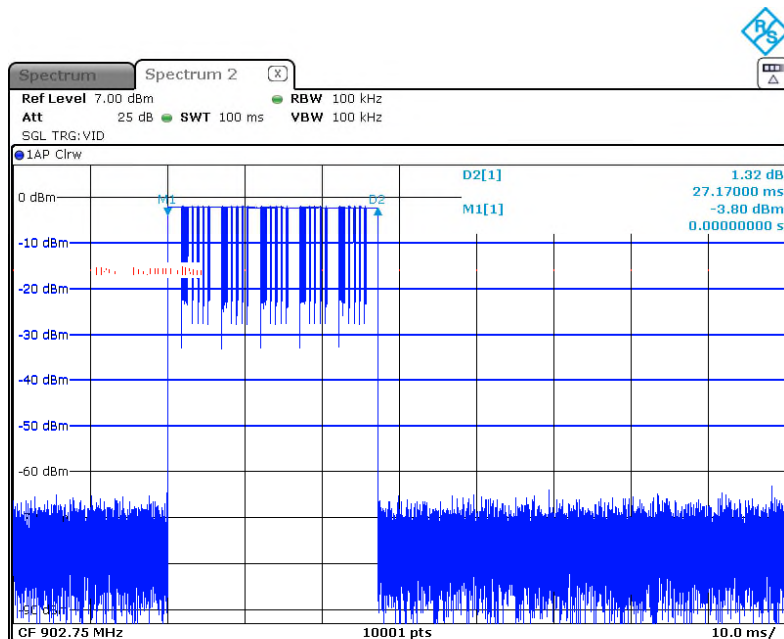
Table 16: Time occupancy



902.75 MHz



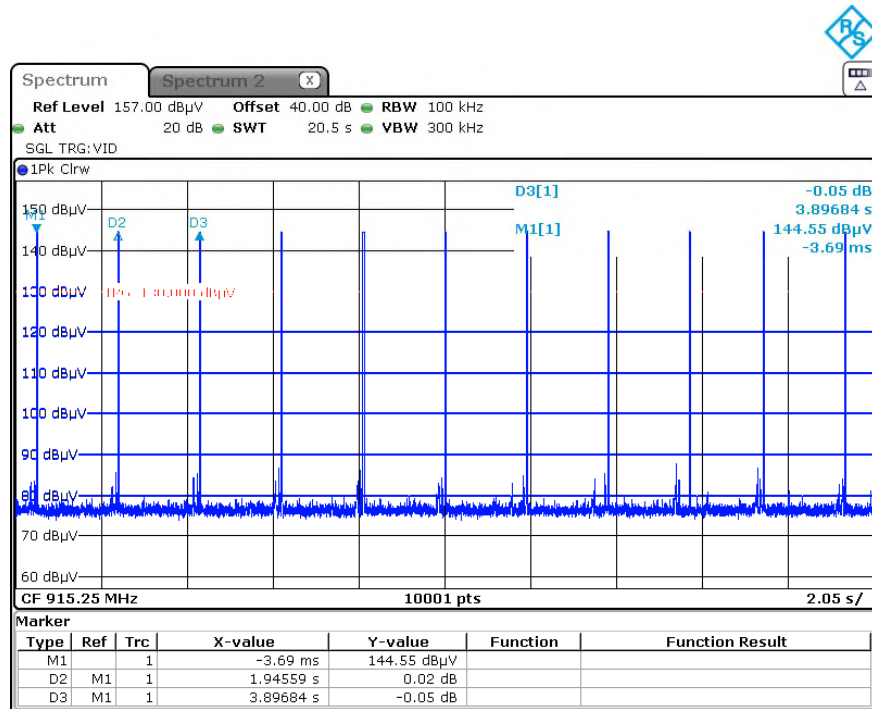
Date: 2.FEB.2026 09:42:29



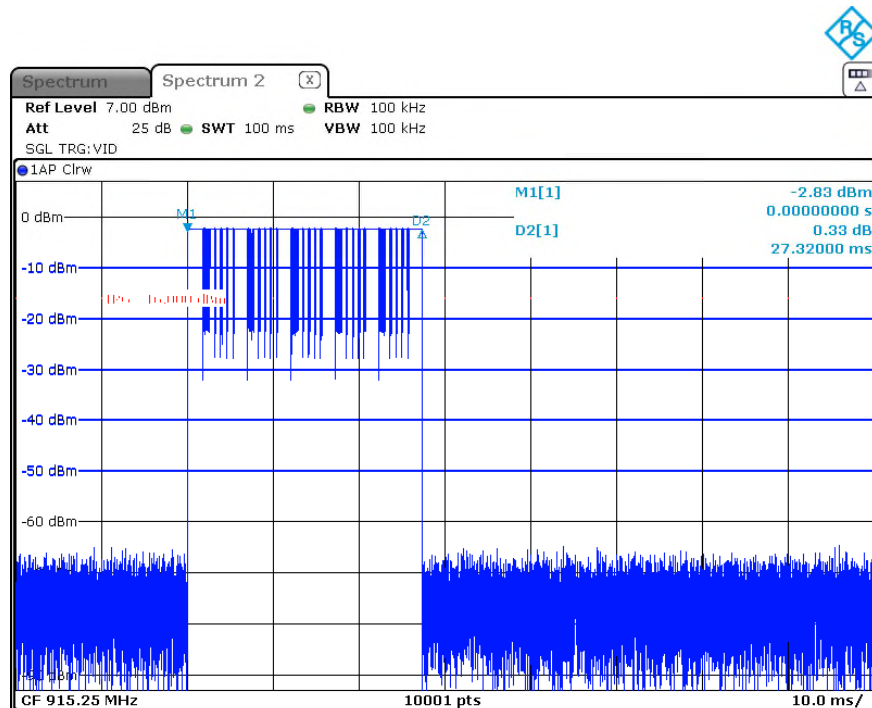
Date: 2.FEB.2026 09:47:41



915.25 MHz



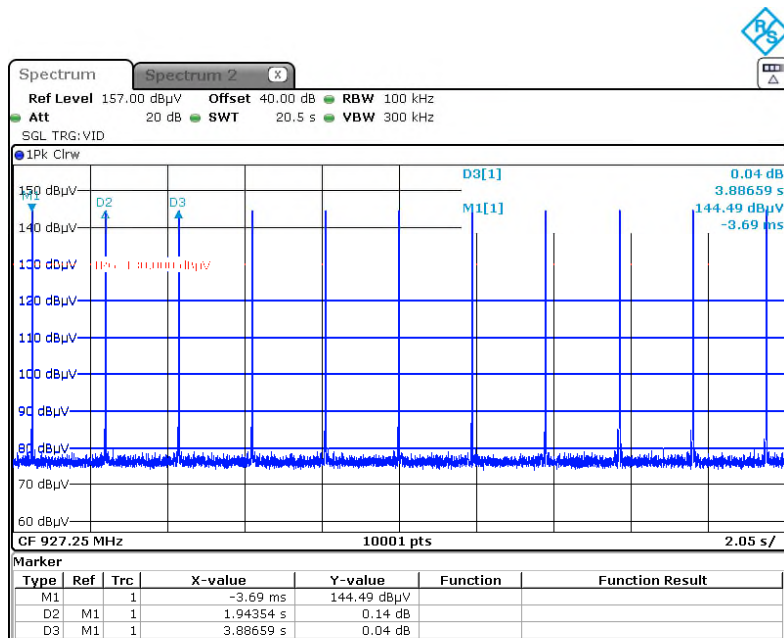
Date: 2.FEB.2026 09:57:22



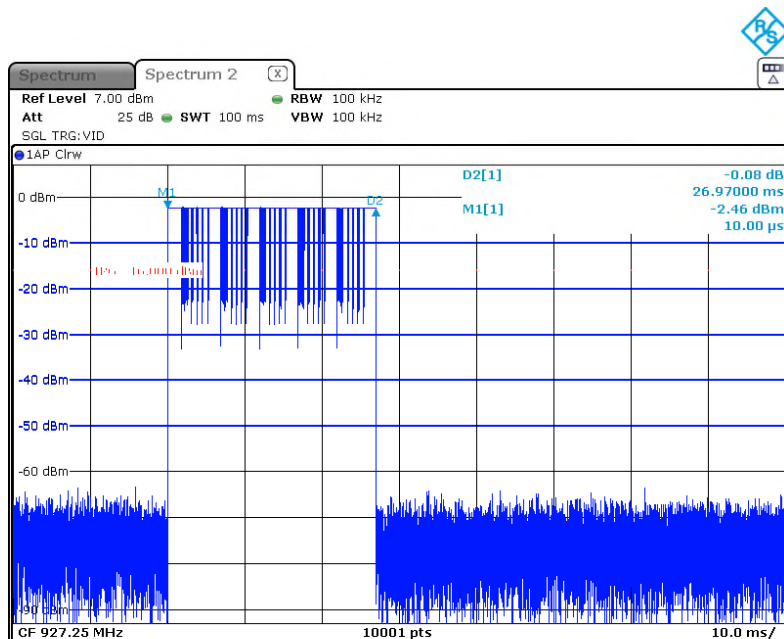
Date: 2.FEB.2026 09:55:06



927.25 MHz



Date: 2.FEB.2026 09:59:39



Date: 2.FEB.2026 10:01:02



2.6.8 Test Location and Test Equipment

The test was carried out in radio test laboratory.

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and spectrum analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Step attenuator	Rohde & Schwarz	RSC	20239	24	2026-04-30

Table 17



2.7 Frequency Band Edge

2.7.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.247(d)
ISED RSS-247, Clause 5.5

2.7.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.7.3 Date of Test

2025-11-17 and 2026-03-10

2.7.4 Environmental Conditions

Ambient Temperature	19 °C
Relative Humidity	46 %

2.7.5 Specification Limits

In any 100 kHz bandwidth outside the frequency band in which the device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power, based on either conducted or radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits is not required.

In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

2.7.6 Test Method

The test was performed according to ANSI C63.10, sections 11.11

See section 2.8.6 of this test report for further details.

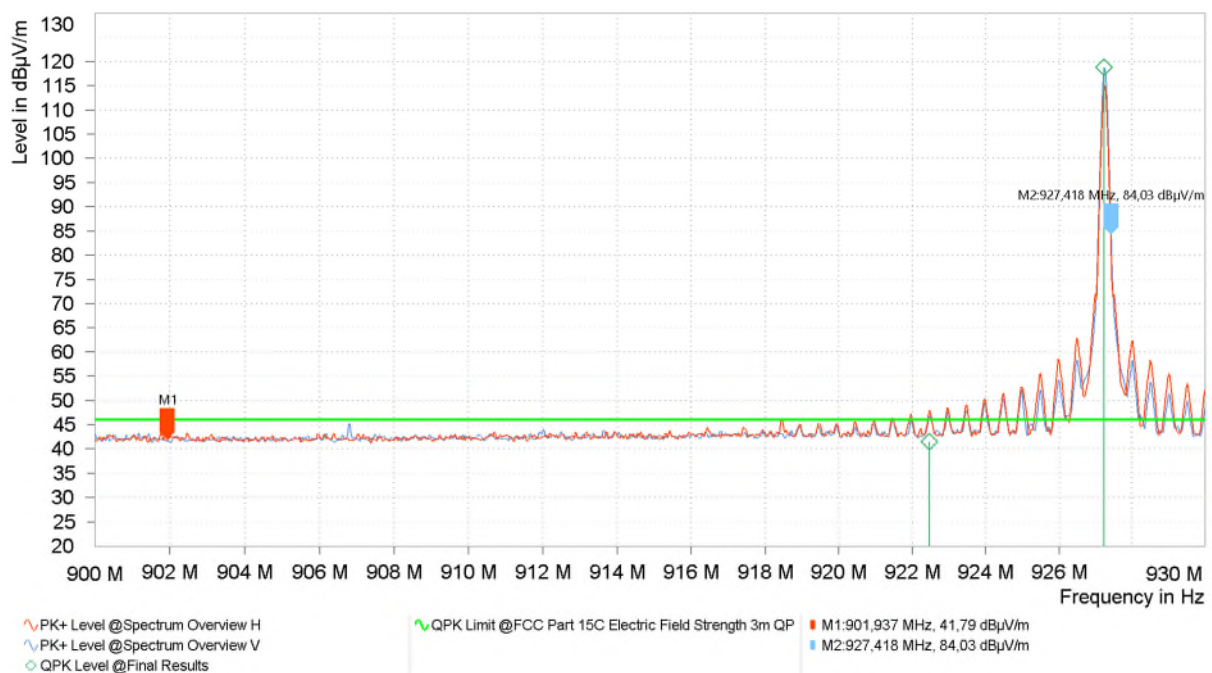
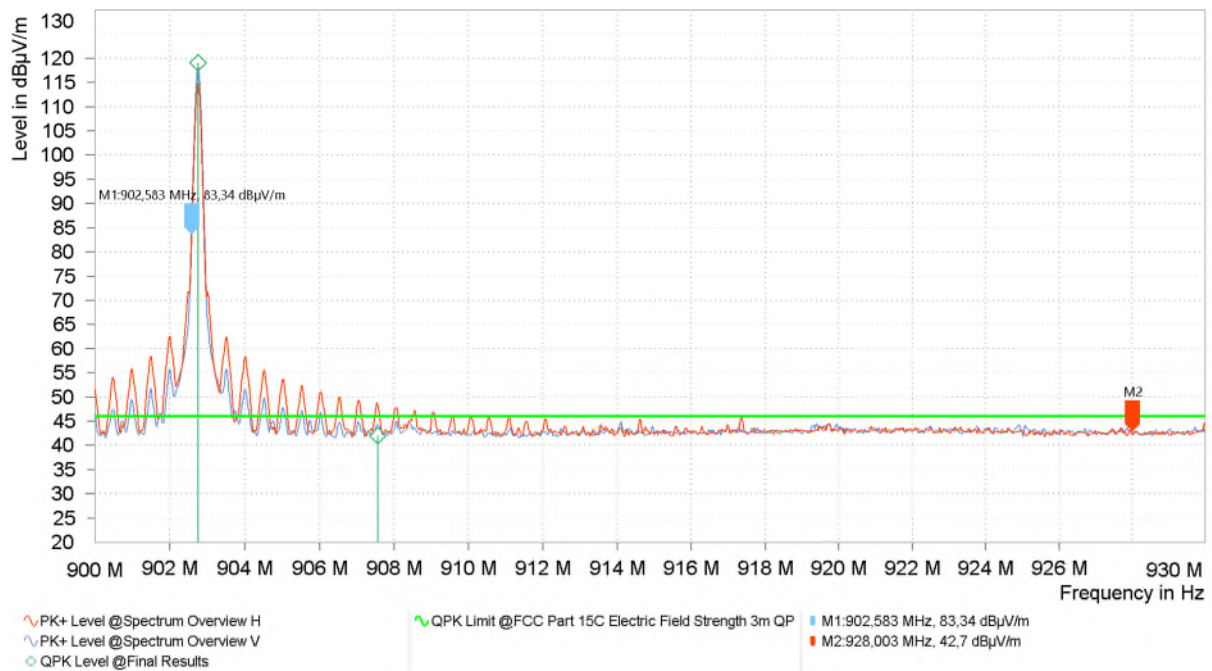


2.7.7 Test Results

Antenna 1:

RFID Frequency: 902.75 MHz and 927.25 MHz

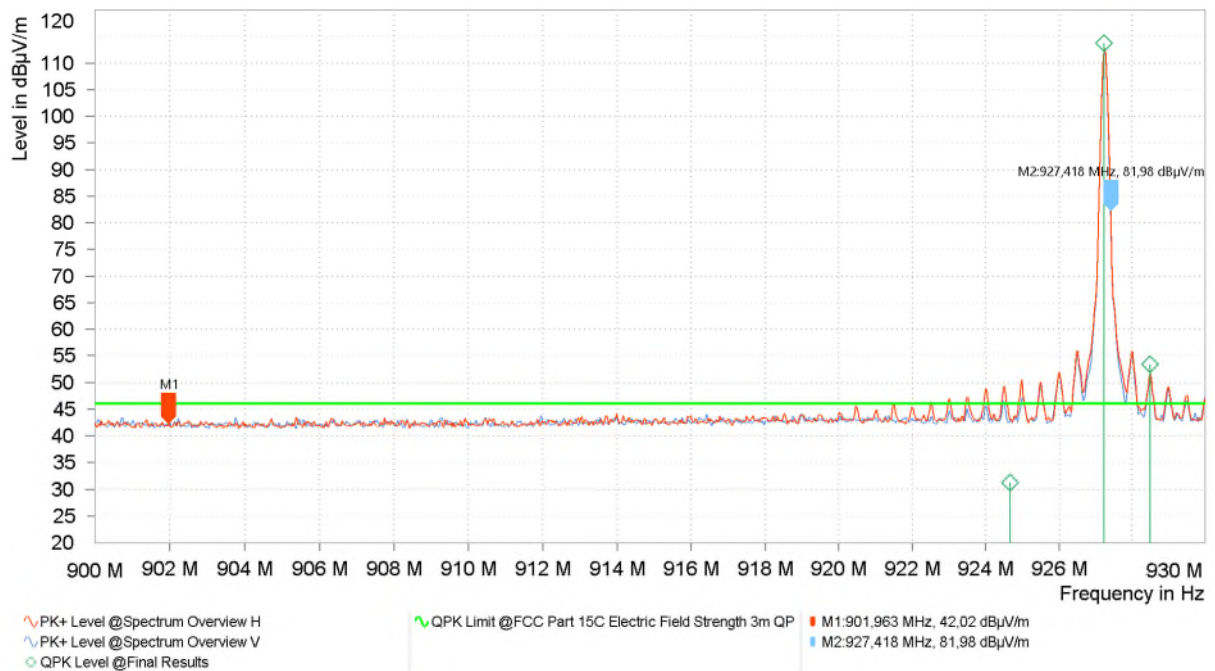
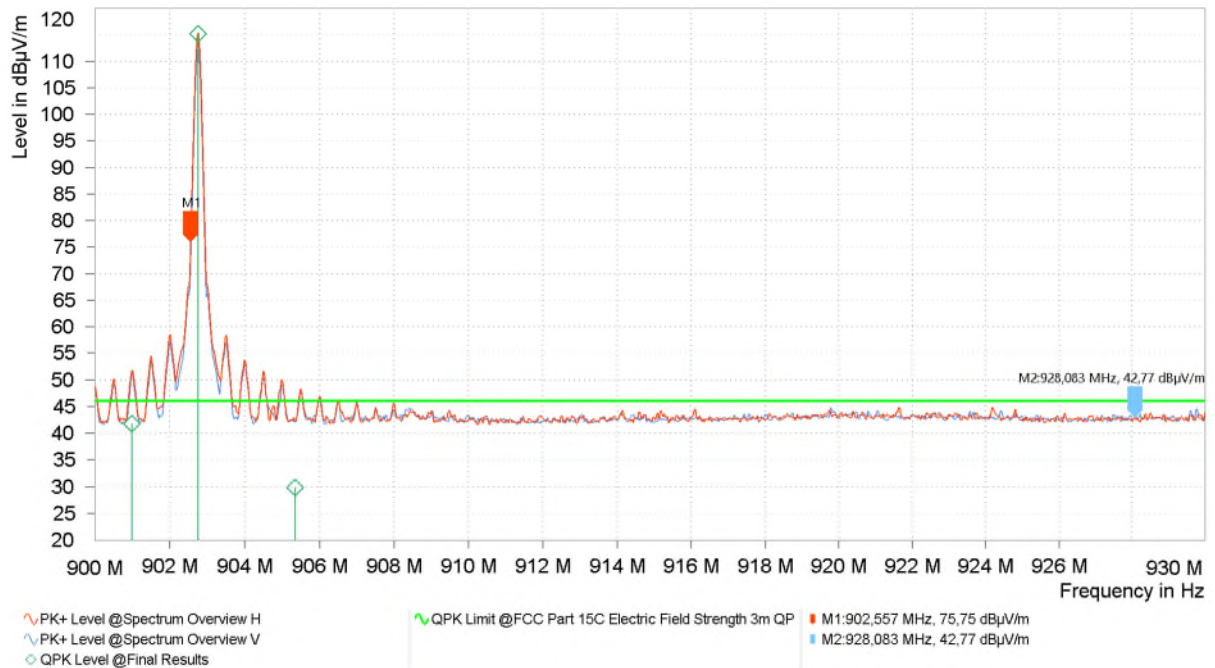
The margin at the band edges is at least 20 dBc; see plots for details:





Antenna 2:
RFID Frequency: 902.75 MHz and 927.25 MHz

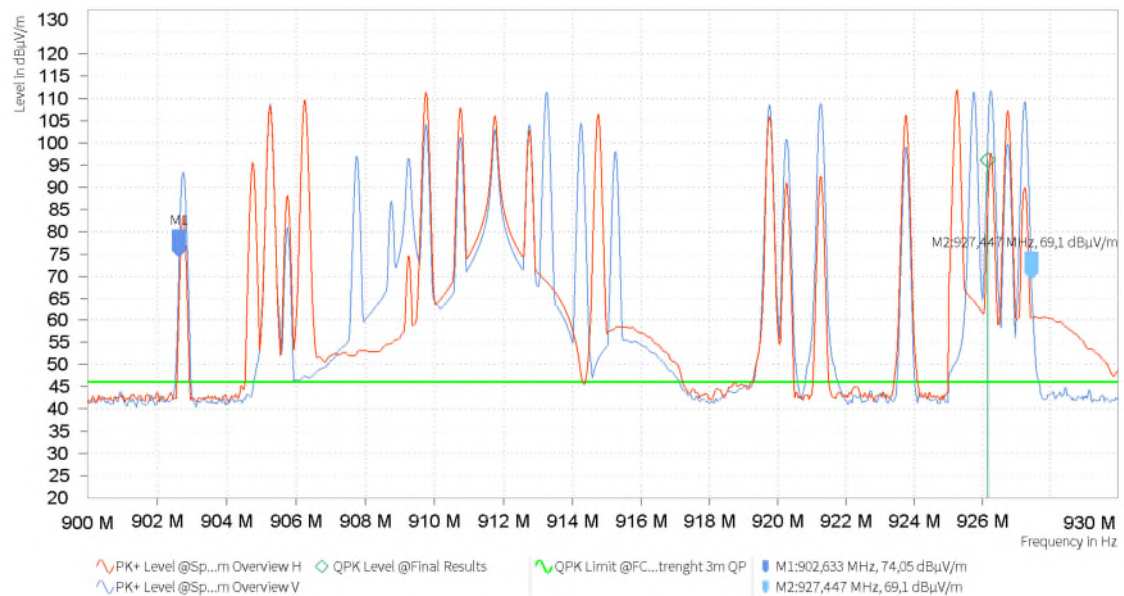
The margin at the band edges is at least 20 dBc; see plots for details:





Antenna 1:
RFID Frequency: Hopping mode

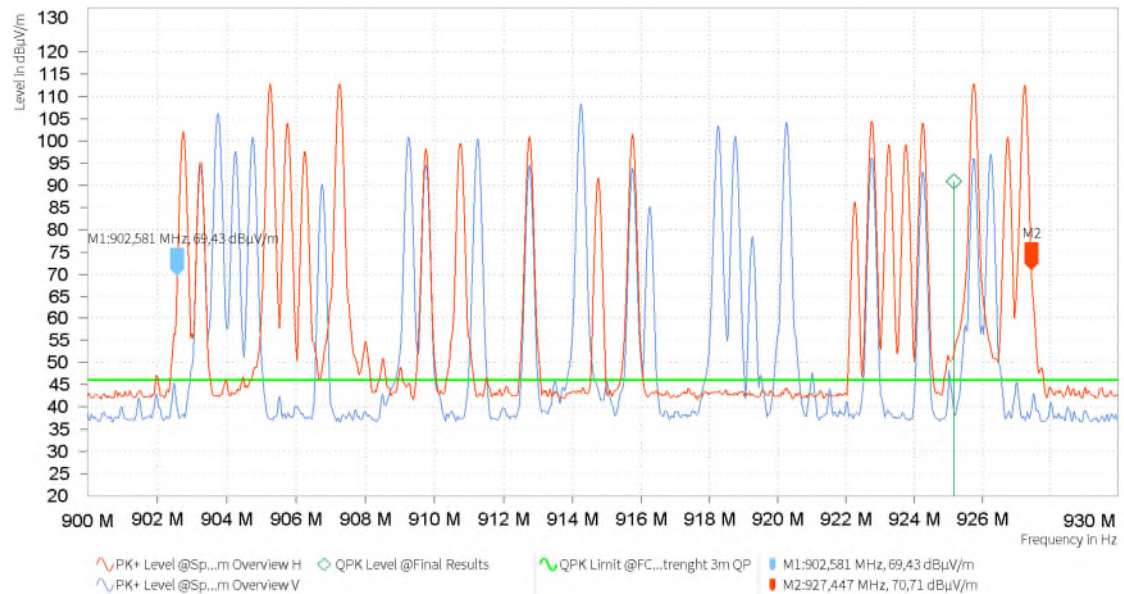
The margin at the band edges is at least 20 dBc; see plots for details:





Antenna 2:
RFID Frequency: Hopping mode

The margin at the band edges is at least 20 dBc; see plots for details:





2.7.8 Test Location and Test Equipment

The test was carried out in semi anechoic room, Cabin No. 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
EMI test receiver	Rohde & Schwarz	ESW44	39897	12	2026-03-31
ULTRALOG Antenna	Rohde & Schwarz	HL562E	39969	36	2026-03-31
Semi anechoic room	Frankonia	Cabin no. 11	42961	---	---

Table 18



2.8 Spurious emissions

2.8.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.205, 15.209 and 15.247(d)
ISED RSS-247, Clause 5.5
ISED RSS-Gen, Clauses 8.9 and 8.10

2.8.2 Equipment under Test and Modification State

RFID module; S/N: ---; Modification state 0

2.8.3 Date of Test

2025-12-17, 2026-01-22, 2026-01-23 and 2026-03-10

2.8.4 Environmental Conditions

Ambient Temperature	22 °C
Relative Humidity	30 %

2.8.5 Specification Limits

In any 100 kHz bandwidth outside the frequency band in which the device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power, based on either conducted or radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits is not required.

In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.



<i>General radiated emission limits:</i>					
<i>Frequency Range (MHz)</i>	<i>Test distance (m)</i>	<i>Field strength</i>		<i>Field strength</i>	
		<i>(μA/m)</i>	<i>(dBμA/m)</i>	<i>(μV/m)</i>	<i>(dBμV/m)</i>
0.009 – 0.49	300	6.37 / f	20*lg(6.37 / f)	2400 / f	20*lg(2400 / f)
0.49 – 1.705	30	63.7 / f	20*lg(63.7 / f)	24000 / f	20*lg(24000 / f)
1.705 - 30	30	0.08	20*lg(0.08 / f)	30	20*lg(30 / f)
30 – 88	3	---	--	100	40
88 – 216	3	--	--	150	43.5
126 – 960	3	--	--	200	46
above 960	3	--	--	500	54
Note 1: f in kHz					

Table 19 General radiated emission limits

At frequencies at or above 30 MHz, measurements may be performed at distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempts should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

2.8.6 Test Method

The test was performed according to ANSI C63.10, sections 11.11 and 11.12

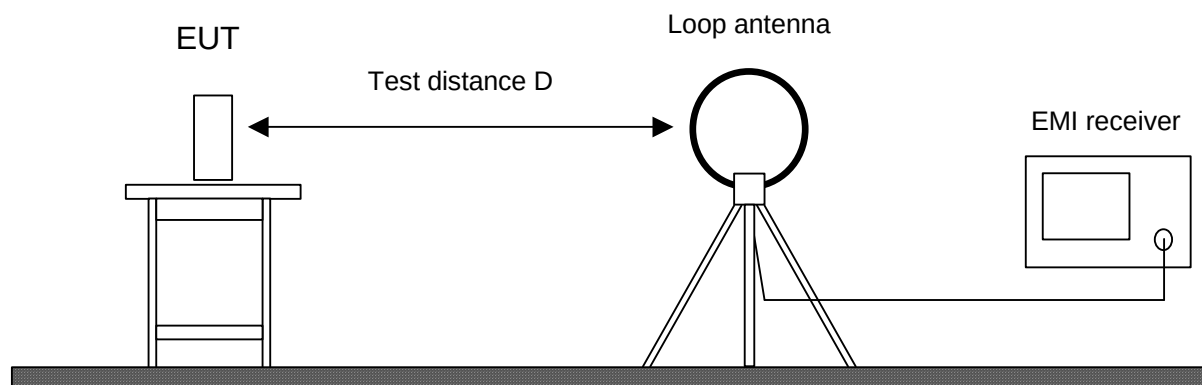
Prescans are performed in six positions of the EUT to get the full spectrum of emission caused by the EUT with the measuring antenna raised and lowered from 1 m to 4 m with vertical and horizontal polarisation to find the combination of table position, antenna height and antenna polarisation for the maximum emission levels.

Data reduction is applied to these results to select those levels having less margin than 10 dB or exceeding the limit using subranges and limited number of maximums.

Further maximisation for adjusting the maximum position is following.

Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

2.8.6.1 Frequency range 9 kHz – 30 MHz

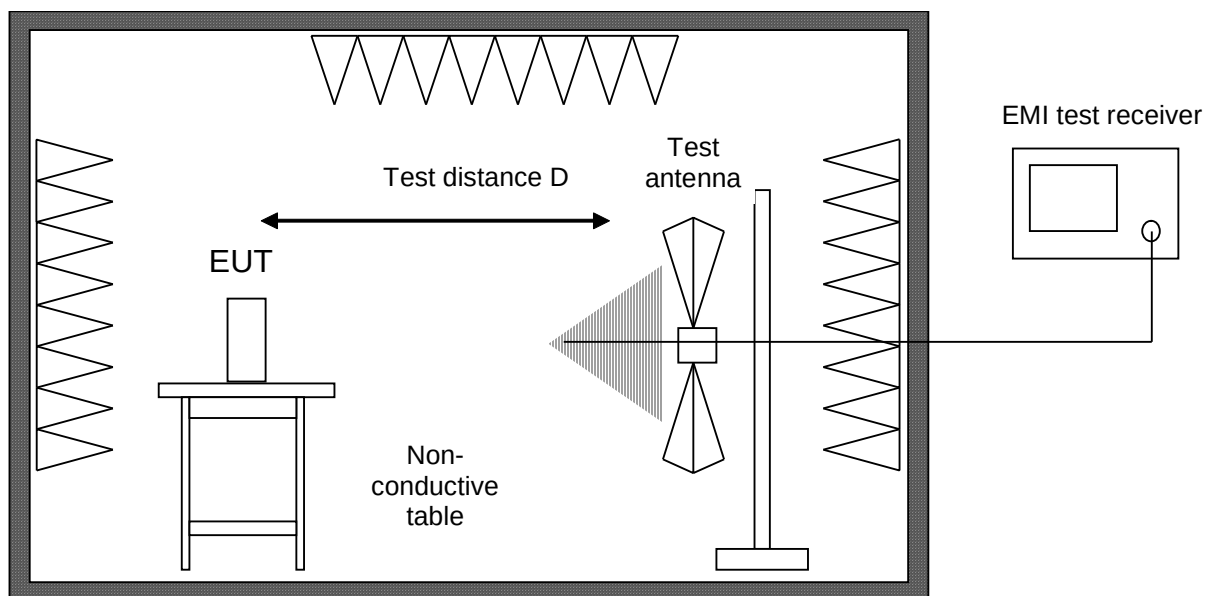


The EUT was placed on a non-conductive table, 0.8 m above the ground.

Radiated emissions in the frequency 9 kHz – 30 MHz is measured within a semi-anechoic room with an active loop antenna with the measurement detector set to peak. In addition in the frequency range 9 kHz to 490 kHz also an average detector was used. The measurement bandwidth of the receiver was set to 300 Hz in the frequency range 9 kHz to 150 kHz and 10 kHz in the frequency range 150 kHz to 30 MHz. Prescans were performed in six positions of the EUT.

For final measurements the detector was set to CISPR quasi-peak and in addition to CISPR average in the frequency range 9 kHz to 490 kHz with a resolution bandwidth 200 Hz in the frequency range 9 kHz to 150 kHz and 9 kHz in the frequency range 150 kHz to 30 MHz. Final tests were performed immediately after a final frequency and zoom (for drifting disturbances) and maximum adjustment.

2.8.6.2 Frequency range 30 MHz – 1 GHz



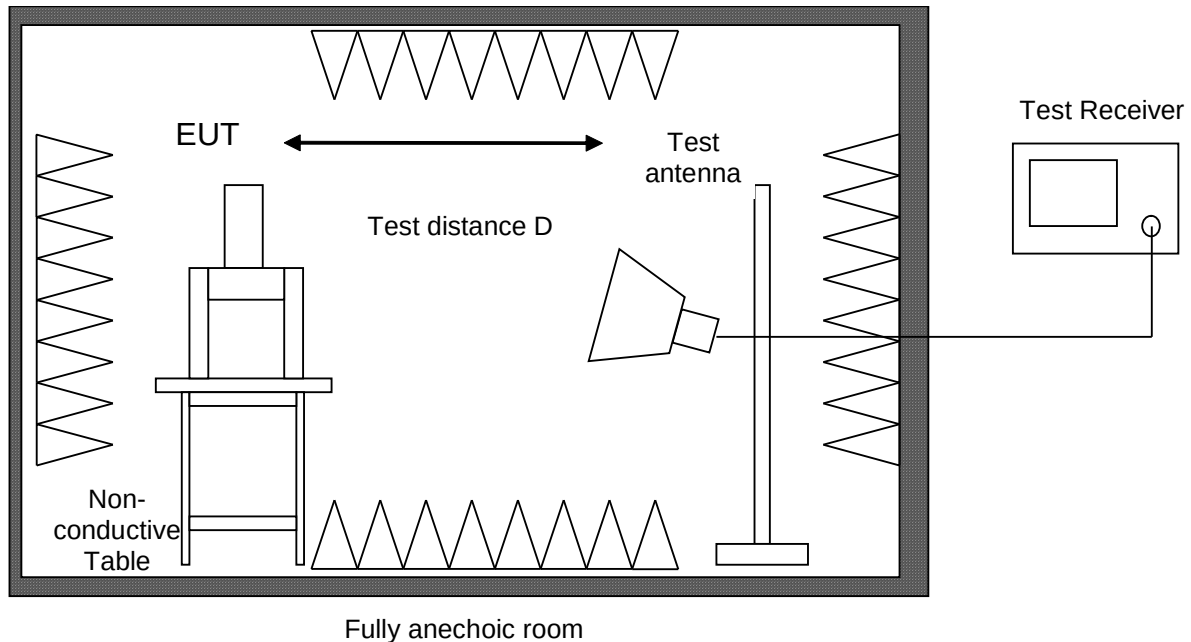
Alternate test site (semi anechoic room)

The EUT was placed on a non-conductive table, 0.8 m above the ground plane. Radiated emissions in the frequency range 30 MHz – 1 GHz are measured within a semi-anechoic room with a groundplane complying with the NSA requirements of ANSI C63.4. for alternative test sites. A linear polarised logarithmic periodic antenna combined with a 4:1 broadband dipole ("Trilog broadband antenna") is used.

For prescan tests the test receiver is set to peak-detector with a bandwidth of 120 kHz.

With the measurement bandwidth of the test receiver set to 120 kHz CISPR quasi-peak detector is selected for final measurements following immediately after a final frequency zoom (for drifting disturbances) and maximum adjustment.

2.8.6.3 Frequency range above 1 GHz



The EUT was placed on a non-conductive table, 1.5 m above the ground plane. Radiated emission tests above 1 GHz are performed in a fully anechoic room with the S_{VSWR} requirements of ANSI C63.4. Measurements are performed both in the horizontal and vertical planes of polarisation using a test receiver with the detector function set to peak and average and the resolution bandwidth set to 1 MHz. Testing above 1 GHz is performed with horn antennas with the EUT in boresight of the antenna. For prescan tests the test receiver is set to peak- and average-detector with a bandwidth of 1 MHz. With the measurement bandwidth of the test receiver set to 1 MHz and peak- and CISPR average-detector is selected for final measurements following immediately after a final frequency zoom (for drifting disturbances) and maximum adjustment.



2.8.7 Test Results

<i>Frequency range</i>	<i>Limit applied</i>	<i>Test distance</i>
9 kHz – 30 MHz	§ 15.209, §15.247(d)	3 m
30 MHz – 1 GHz	§ 15.209, §15.247(d)	3 m
1 – 6 GHz	§ 15.209, §15.247(d)	3 m
6 – 10 GHz	§ 15.209, §15.247(d)	1 m

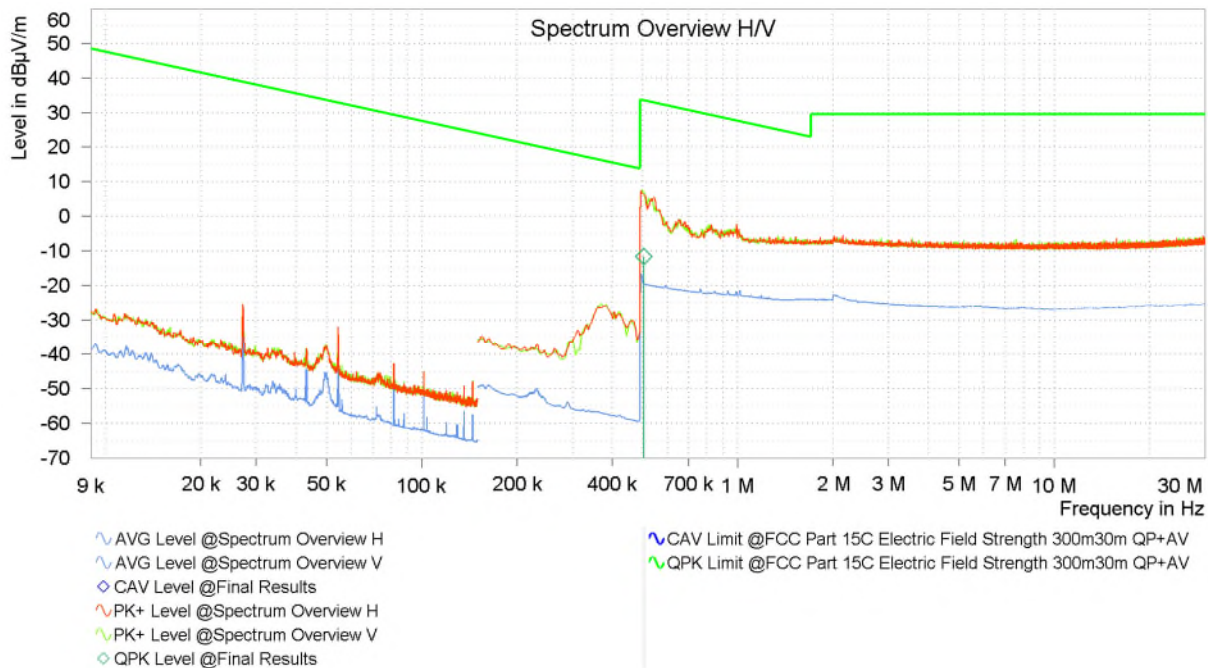
Table 20

Sample calculation:

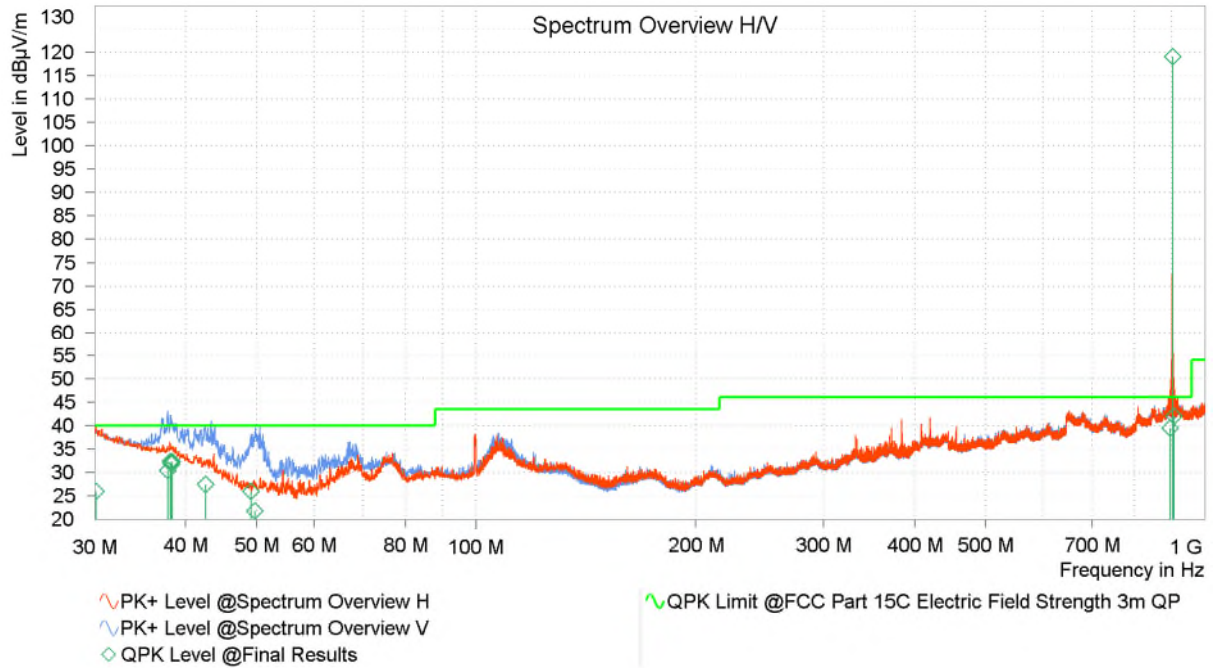
Final Value (dB μ V/m) = Reading Value (dB μ V) + (Cable attenuation (dB)
+ Antenna Transducer (dB(1/m)))



Antenna 1:
RFID Frequency: 902.75 MHz

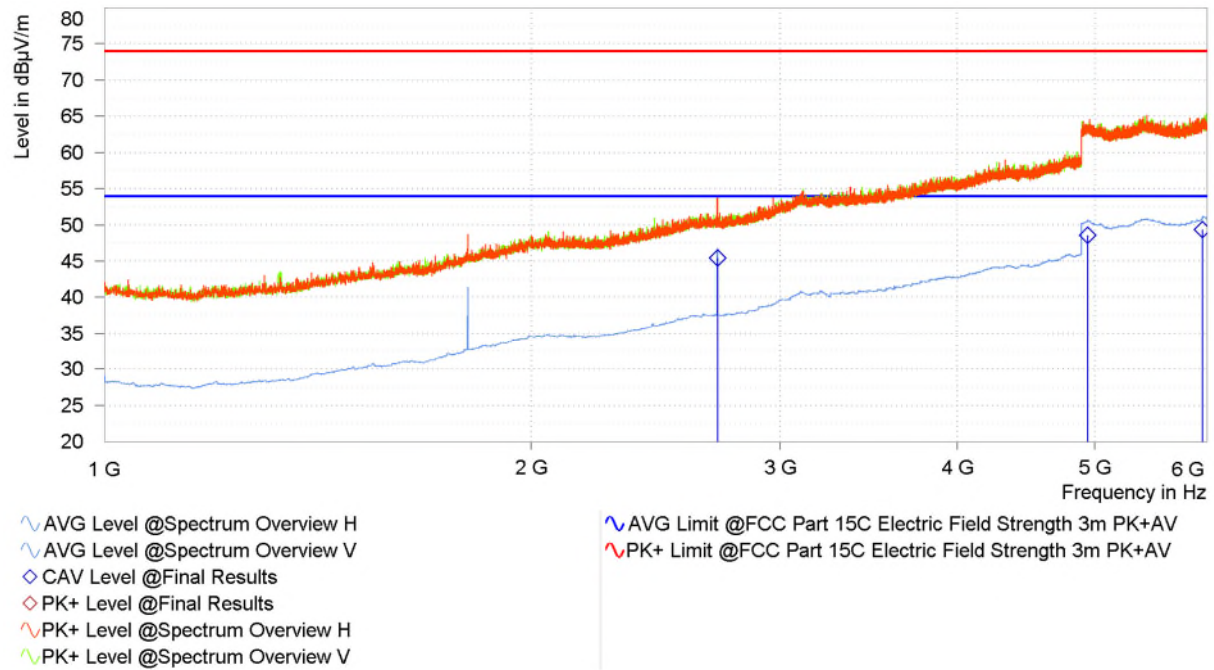


Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	CAV Level [dBµV/m]	CAV Limit [dBµV/m]	CAV Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Meas. Time [s]
2	0.503	-11.58	33.57	45.15	---	---	---	-20.71	V	103	1.00	9.000	1.000



Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Meas. Time [s]
1	30.120	25.89	40.00	14.11	25.15	H	153	1.50	120.000	15.000
1	37.800	30.36	40.00	9.64	20.77	V	169	1.06	120.000	15.000
1	38.070	32.25	40.00	7.75	20.61	V	183	1.22	120.000	15.000
1	38.280	31.68	40.00	8.32	20.48	V	26	1.06	120.000	15.000
1	38.310	32.27	40.00	7.73	20.46	V	162	1.00	120.000	15.000
1	42.600	27.46	40.00	12.54	17.84	V	149	1.06	120.000	15.000
1	49.110	25.94	40.00	14.06	13.48	V	-151	1.33	120.000	15.000
1	49.710	21.73	40.00	18.27	13.10	V	185	1.15	120.000	15.000
1	895.950	39.47	46.00	6.53	30.31	H	-35	1.39	120.000	15.000
1	902.760	119.08	*	*	30.41	V	-44	1.06	120.000	15.000
1	907.560	42.06	46.00	3.94	30.49	H	-14	1.33	120.000	15.000

* Intentional radiator not evaluated.



Rg	Fre- quency [MHz]	PK+ Le- vel [dBµV/m]	PK+ Li- mit [dBµV/m]	PK+ Margin [dB]	CAV Le- vel [dBµV/m]	CAV: AVG Limit [dBµV/m]	CAV Margin [dB]	Correc- tion [dB]	Polariza- tion	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Meas. Time [s]
1	2708.250	---	74.00	---	45.46	54.00	8.54	35.91	H	67	3.31	1.000	15.000
1	4945.750	---	74.00	---	48.60	54.00	5.40	42.68	V	46	3.95	1.000	15.000
1	5957.250	---	74.00	---	49.31	54.00	4.69	43.62	V	196	3.25	1.000	15.000