

Report on the FCC and IC Testing of the Ivoclar Vivadent AG

Model: PrograMill PM7

In accordance with FCC 47 CFR Part 15 C

Prepared for: Ivoclar Vivadent AG
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Liechtenstein

FCC ID: 2ASXH-PMHRW380



Product Service

Add value.
Inspire trust.

COMMERCIAL-IN-CONFIDENCE

Date: 2026-02-20

Document Number: TR-713369161-03 | Revision 1

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Michael Ingerl	2026-02-20	 SIGN-ID 1110009
Authorised Signatory	Alex Fink	2026-02-20	 SIGN-ID 1112481

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.

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

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Michael Ingerl	2026-02-20	 SIGN-ID 1110009

Laboratory Accreditation

DAkkS Reg. No. D-PL-11321-11-02

DAkkS Reg. No. D-PL-11321-11-03

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:2023

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Annex A: Photographs of test setups



1 Report Summary

1.1 Modification Report

Alterations 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	First Issue	2025-07-22
1	Chapter Antenna requirements added; Chapter 2.1.7, Retesting; Chapter 2.3.7, Retesting; Chapter 2.2.7, Deleted the additional test plots; Deleted ISSED RSS Standards	2026-02-20

Table 1: Report of Modifications

1.2 Introduction

Applicant	Ivoclar Vivadent AG
Manufacturer	Ivoclar Vivadent AG
Model Number(s)	PrograMill PM7
Serial Number(s)	9105002038
Hardware Version(s)	MFG 23 January 2025
Software Version(s)	V100.150
Number of Samples Tested	1
Test Specification(s) / Issue / Date	FCC 47 CFR Part 15 C:2023
Test Plan/Issue/Date	---
Order Number	8142929-1
Date of Receipt of EUT	2025-02-25
Start of Test	2025-03-11
Finish of Test	2026-02-19
Name of Engineer(s)	Michael Ingerl, Alexander Deese
Related Document(s)	ANSI C63.10:2020



Product Service

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15 C is shown below.

<i>Section</i>	<i>Specification Clause</i>	<i>Test Description</i>	<i>Result</i>
2.5	15.203	Antenna requirement	Pass
2.1	15.215(c)	Bandwidth of Signal	Pass
2.4	15.207	Conducted Disturbance at Mains Terminal	Pass
2.2	15.209, 15.225	Radiated Disturbance	Pass
2.3	15.225(e)	Frequency Tolerance	Pass

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

N/T: Not Tested



1.4 Product Information

1.4.1 Technical Description

The EUT is a Dental Mill with RFID.
It operates at 13.56 MHz.

Frequency Band: 13.553-13.567 MHz

Supply Voltage: 120 V

Supply Frequency: 60 Hz

1.5 Test Configuration

The EUT was 120 V / 60 Hz power supplied

1.6 Modes of Operation

Transmitting continuously

1.7 Deviations from Standard



1.8 EUT Modifications Record

The table below details modifications made to the EUT during the test program.
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 3

1.9 Test Location

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

Test Name	Name of Engineer(s)
Bandwidth of Signal	Michael Ingerl
Radiated Emissions	Michael Ingerl, Alexander Deese
Frequency Tolerance	Michael Ingerl
Conducted Disturbance at Mains Terminals	Michael Ingerl
Antenna requirement	Michael Ingerl

Office Address:

Äußere Frühlingstraße 45
94315 Straubing
Germany



Product Service

2 Test Details

2.1 Bandwidth of Signal

2.1.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.215(c)

2.1.2 Equipment under Test and Modification State

PrograMill PM7; S/N 9105002038; Modification state 0

2.1.3 Date of Test

2026-02-19

2.1.4 Environmental Conditions

Ambient Temperature	22 °C
Relative Humidity	37 %

2.1.5 Specification Limits

No limitation – Bandwidth noted

2.1.6 Test Method

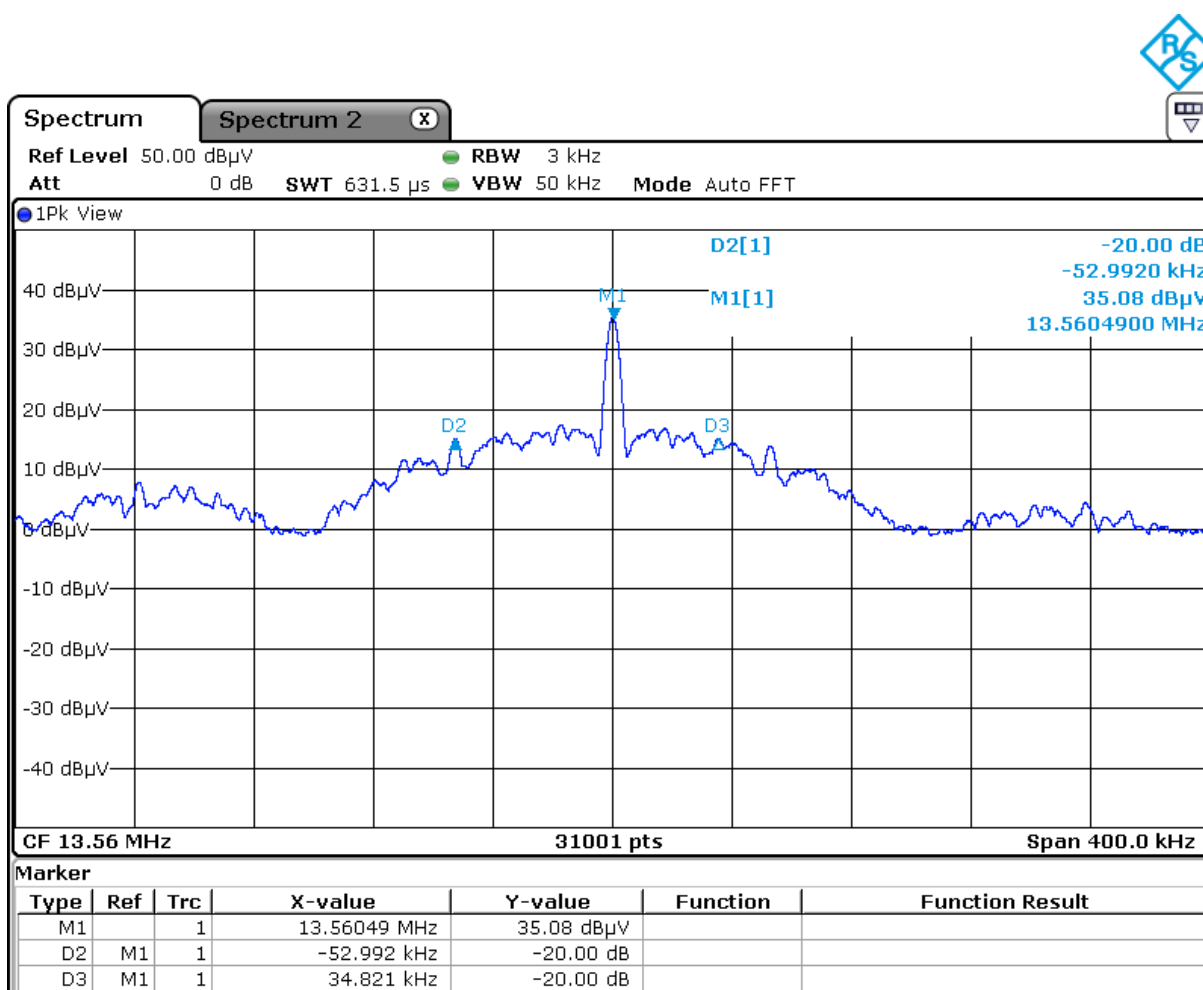
The test was performed according to ANSI C63.10, clauses 6.9
See section 2.2 of this test report for details.



2.1.7 Test Results

Voltage	Center frequency	20 dB Bandwidth (MHz)
120V	13.56 MHz	0.087

Table 4: 20 dB bandwidth



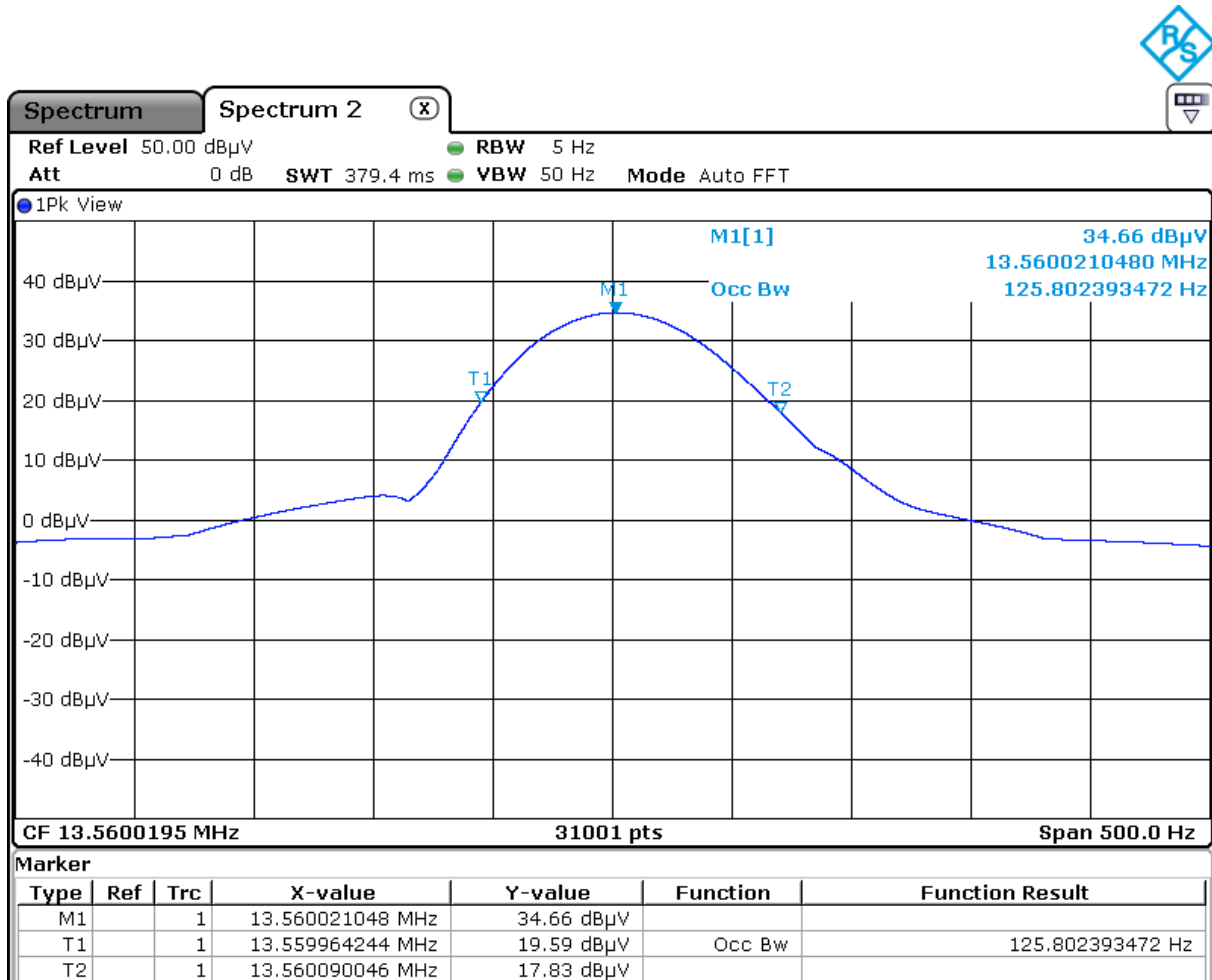
Date: 19.FEB.2026 12:17:21

Figure 1 – 20 dB Bandwidth



Voltage	Centre Frequency	99% Bandwidth (MHz)
120 V	13.56 MHz	0.000125

Table 5: 99% bandwidth



Date: 19.FEB.2026 12:09:50

Figure 3 – 99 % Bandwidth



2.1.8 Test Location and Test Equipment

The test was carried out in a non-shielded room:

<i>Instrument</i>	<i>Manufacturer</i>	<i>Type No</i>	<i>TE No</i>	<i>Calibra- tion Pe- riod (months)</i>	<i>Calibration Due</i>
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Climatic test chamber (Walk-in)	Feutron	KPK27000	65242	18	2026-10-03

Table 6



Product Service

2.2 Radiated Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.205, 15.209 and 15.225

2.2.2 Equipment under Test and Modification State

PrograMill PM7; S/N 9105002038; Modification state 0

2.2.3 Date of Test

2025-03-11 – 2025-04-01

2.2.4 Environmental Conditions

Ambient Temperature	22 °C
Relative Humidity	36 %



2.2.5 Specification Limits

Radiated emission limits:					
Frequency Range (MHz)	Test distance (m)	Field strength		Field strength	
		($\mu\text{A/m}$)	($\text{dB}\mu\text{A/m}$)	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
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 – 13.110	30	0.08	-21.94	30	29.54
13.110 – 13.410	30	0.283	-11.0	106	40.5
13.410 – 13.553	30	0.891	-1.0	334	50.5
13.553 – 13.567	30	42.26	32.5	15848	84
13.567 – 13.710	30	0.891	-1.0	334	50.5
13.710 – 14.010	30	0.283	-11.0	106	40.5
14.010 - 30	30	0.08	-21.94	30	29.54
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 7 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).

2.2.6 Test Method

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

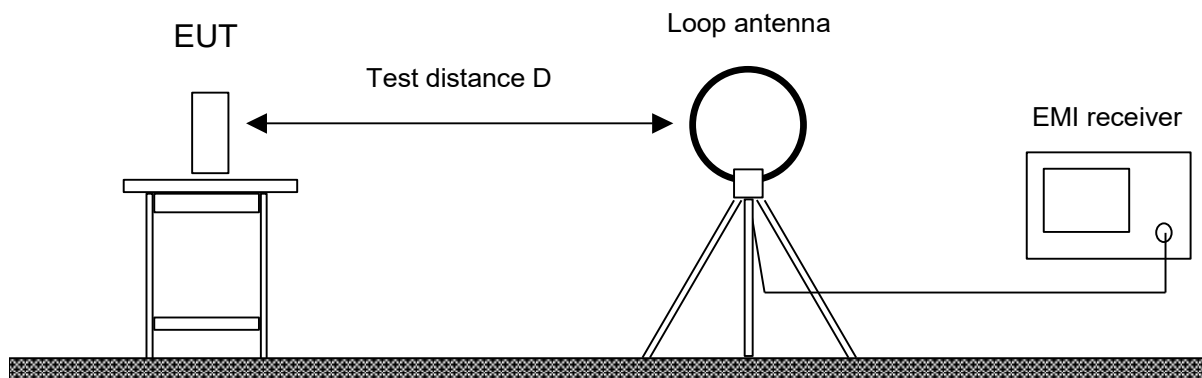
Prescans are performed in six positions of the EUT to get the full spectrum of emission caused by the EUT with the measuring antenna raised and lowered from 1 m to 4 m with vertical and horizontal polarisation to find the combination of table position, antenna height and antenna polarisation for the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

2.2.6.1 Frequency range 9 kHz – 30 MHz

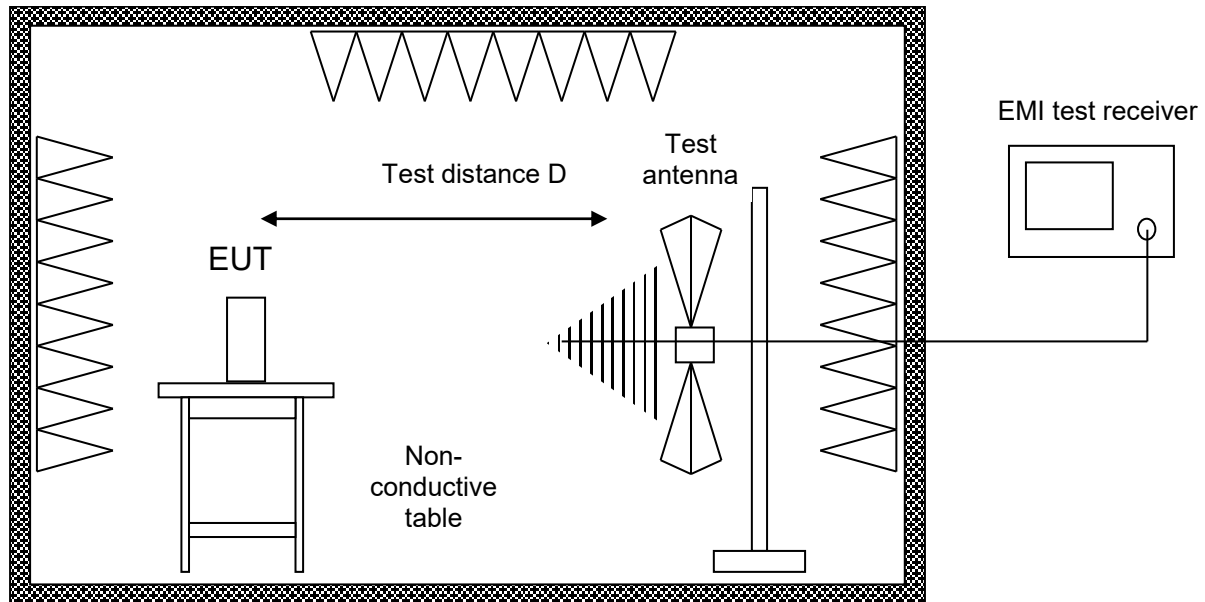


The EUT was placed on a non-conductive table, 0.8 m above the ground.

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.

2.2.6.2 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 is measured within a semi-anechoic room with 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.



2.2.7 Test Results

<i>Frequency range</i>	<i>Limit applied</i>	<i>Test distance</i>
9 kHz to 30 MHz	15.209, 15.225	10 m
30 MHz to 1 GHz	15.209	3 m

Table 8

Sample calculation:

$$\text{Final Value (dB}\mu\text{V/m)} = \text{Reading Value (dB}\mu\text{V)} + (\text{Cable attenuation (dB)} + \text{Antenna Transducer (dB(1/m))})$$

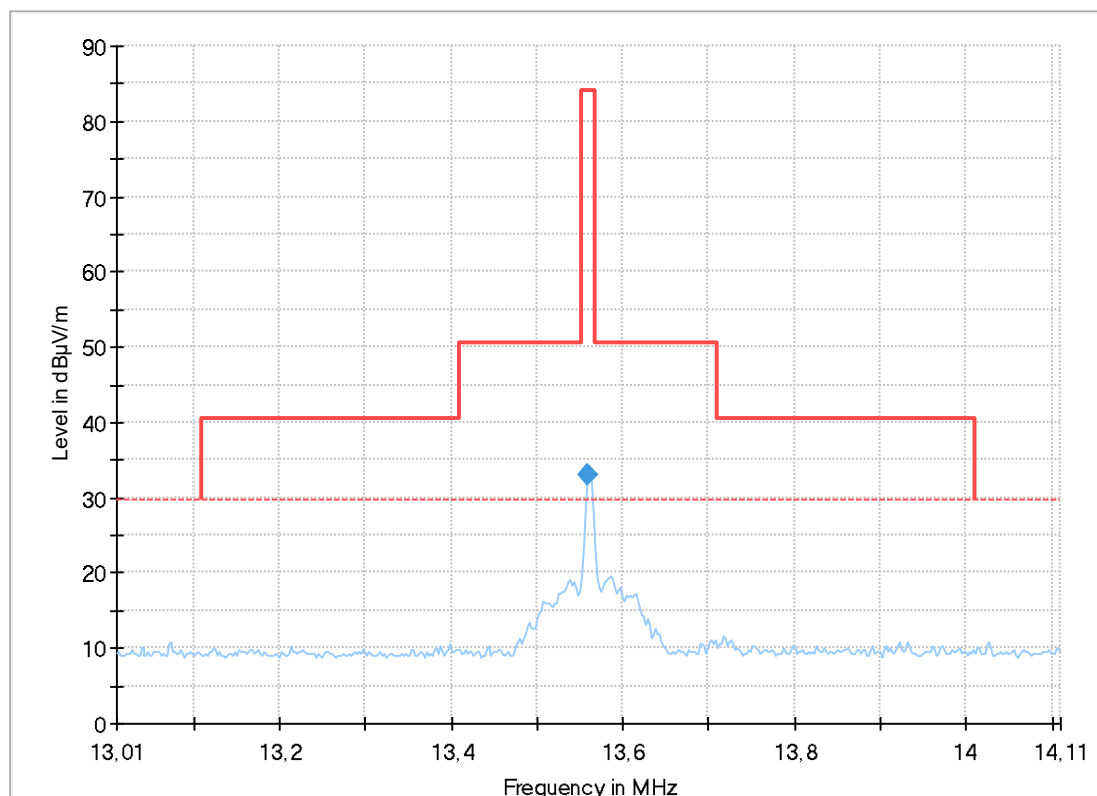
Additional correction of limit in the frequency range 9 – 490 kHz (300 m to 3 m): +80.0 dB

Additional correction of limit in the frequency range 490 kHz – 30 MHz (30 m to 3 m): +40.0 dB

Additional correction of limit in the frequency ranges above 1 GHz (3 m to 1 m): +9.54 dB



Frequency range 13.01 MHz – 14.11 MHz (Spectrum Mask acc. 15.225(a)-(c)):



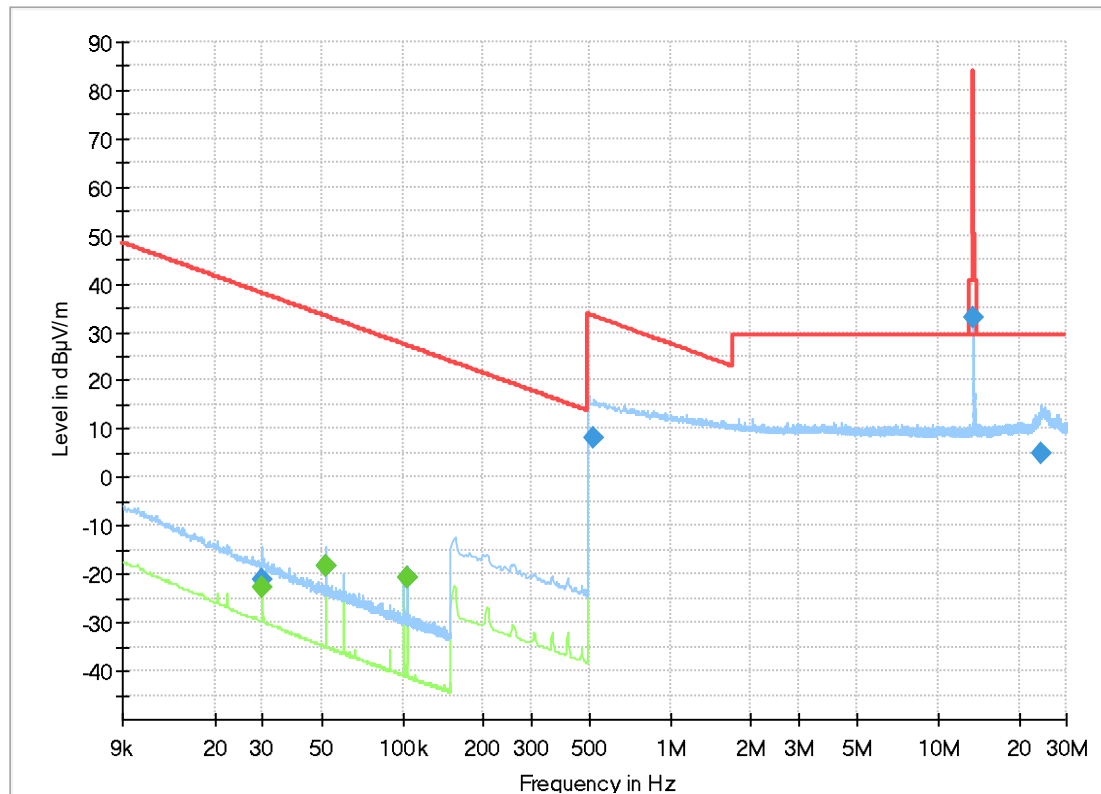
- Preview Result 2-AVG
- Preview Result 1-PK+
- FCC Part 15C Electric Field Strength 300m30m QP+AV (9k-30M)
- FCC 15.225 (30m)
- Final_Result QPK
- Final_Result CAV

Final Results 1:

Frequency MHz	Quasi-Peak dBμV/m	Limit dBμV/m	Margin dB	Meas. Time ms	Bandwidth kHz	Pol	Azimuth deg	Corr. dB/m
13.559250	33.00	84.00	51.00	3000.0	9.000	V	-58.0	0.7



Frequency range 9 kHz – 30 MHz:



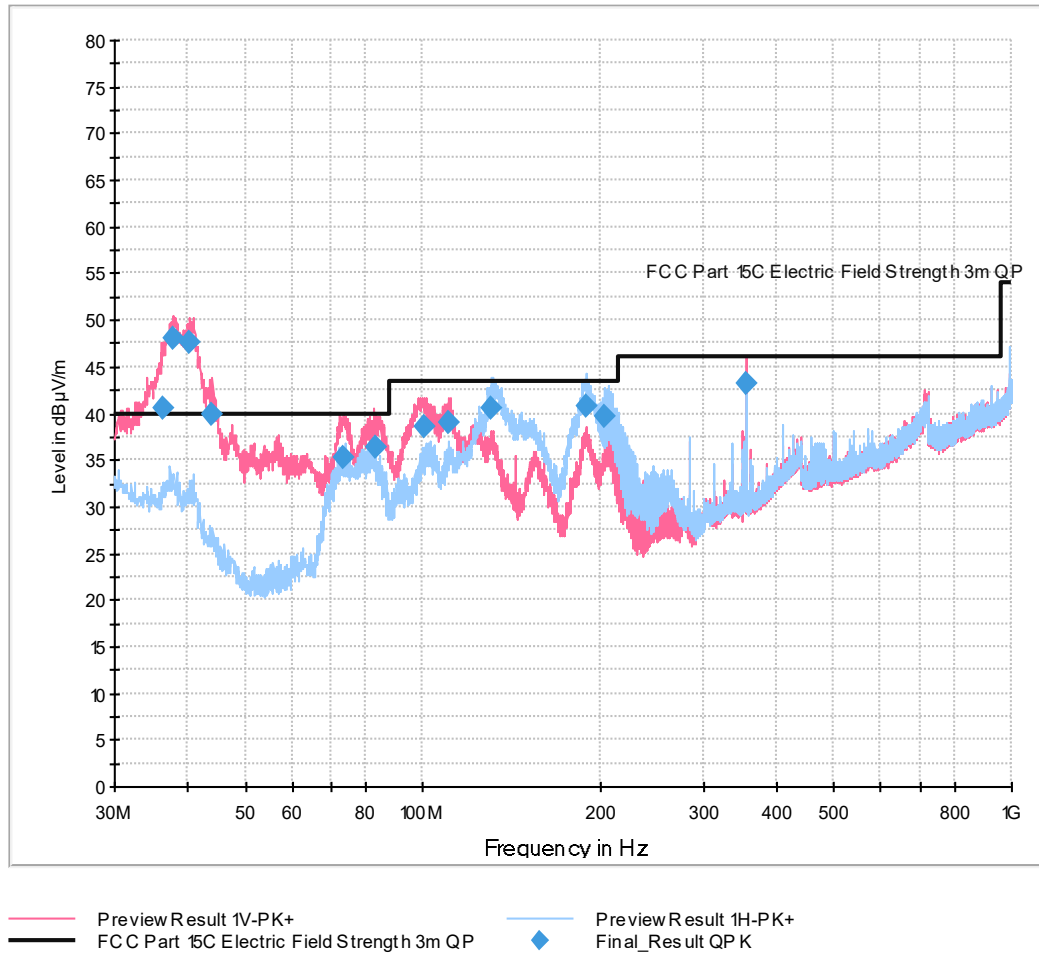
- Preview Result 2-AVG
- Preview Result 1-PK+
- FCC Part 15C Electric Field Strength 300m30m QP+AV (9k-30M)
- FCC 15.225 (30m)
- Final_Result QPK
- Final_Result CAV

Final Results:

Frequency MHz	QuasiPeak dBμV/m	Limit dBμV/m	Margin dB	Meas. Time ms	Band- width kHz	Pol	Azi- muth deg	Corr. dB/m
0.029910	-21.29	38.09	59.38	1000.0	0.200	V	75.0	-38.5
0.051790	-18.46	33.32	51.78	1000.0	0.200	V	124.0	-38.9
0.103460	-20.73	27.31	48.04	1000.0	0.200	V	142.0	-39.1
0.514000	8.22	33.39	25.17	3000.0	9.000	V	137.0	0.8
13.559250	33.00	84.00	51.00	3000.0	9.000	V	-58.0	0.7
24.304250	4.77	29.54	24.77	3000.0	9.000	V	22.0	1.5



Frequency range 30 MHz – 1 GHz:



Final Results:

Frequency MHz	Qua- siPeak dBµV/m	Limit dBµV/m	Mar- gin dB	Meas. Time ms	Band- width kHz	Height cm	Pol	Azi- muth deg	Corr. dB
36.180000	40.65	#1	#1	1000.0	120.000	100.0	V	-63.0	21.7
37.740000	48.06	#1	#1	1000.0	120.000	100.0	V	-5.0	20.8
40.260000	47.59	#1	#1	1000.0	120.000	100.0	V	62.0	19.3
43.980000	39.89	40.00	0.11	1000.0	120.000	100.0	V	-2.0	16.9
73.230000	35.25	40.00	4.75	1000.0	120.000	100.0	V	5.0	15.0
83.100000	36.28	40.00	3.72	1000.0	120.000	100.0	V	-5.0	16.2
100.770000	38.63	43.50	4.87	1000.0	120.000	100.0	V	5.0	16.9
110.550000	39.02	43.50	4.48	1000.0	120.000	100.0	V	0.0	17.4
131.220000	40.57	43.50	2.93	1000.0	120.000	200.0	H	-125.0	16.6
189.240000	40.69	43.50	2.81	1000.0	120.000	100.0	H	0.0	14.9
203.820000	39.62	43.50	3.88	1000.0	120.000	150.0	H	-115.0	15.8
355.530000	43.09	46.02	2.93	1000.0	120.000	150.0	V	65.0	20.9

#1 Digital emissions according to Part 15 B evaluation and not from the RFID Reader



2.2.8 Test Location and Test Equipment

The test was carried out in semi anechoic room – cabin no. 11 and cabin no. 8.

<i>Instrument</i>	<i>Manufacturer</i>	<i>Type No</i>	<i>TE No</i>	<i>Calibration Period (months)</i>	<i>Calibration Due</i>
EMI test receiver	Rohde & Schwarz	ESW44	39897	12	2026-03-31
Loop antenna	Schwarzbeck	FMZB 1519 C	72526	36	2028-01-31
EMC measurement software	Rohde & Schwarz	EMC32 V10.60.20	42986	---	---
Semi anechoic room	Frankonia	Cabin No. 11	42961	---	---
TRILOG Broadband Antenna	Schwarzbeck Mess-Elektronik	VULB 9162	20116	36	2028-01-31
EMI test receiver	Rohde & Schwarz GmbH & Co. KG	ESW26	28268	12	2025-04-30
Fixed attenuator	Aeroflex / Weinschel, Inc.	Model:1 4dB	39625	36	2028-01-31
Semi anechoic room	Albatross Projects GmbH	Cabin no. 8	19917	---	---
EMC measurement software	Rohde & Schwarz	EMC32 V10.60.20	19927	---	---

Table 9



2.3 Frequency Tolerance

2.3.1 Specification Reference

FCC 47 CFR Part 15 E, Clause 15.225(e)

2.3.2 Equipment under Test and Modification State

PrograMill PM7; S/N 9105002038; Modification state 0

2.3.3 Date of Test

2026-02-19

2.3.4 Environmental Conditions

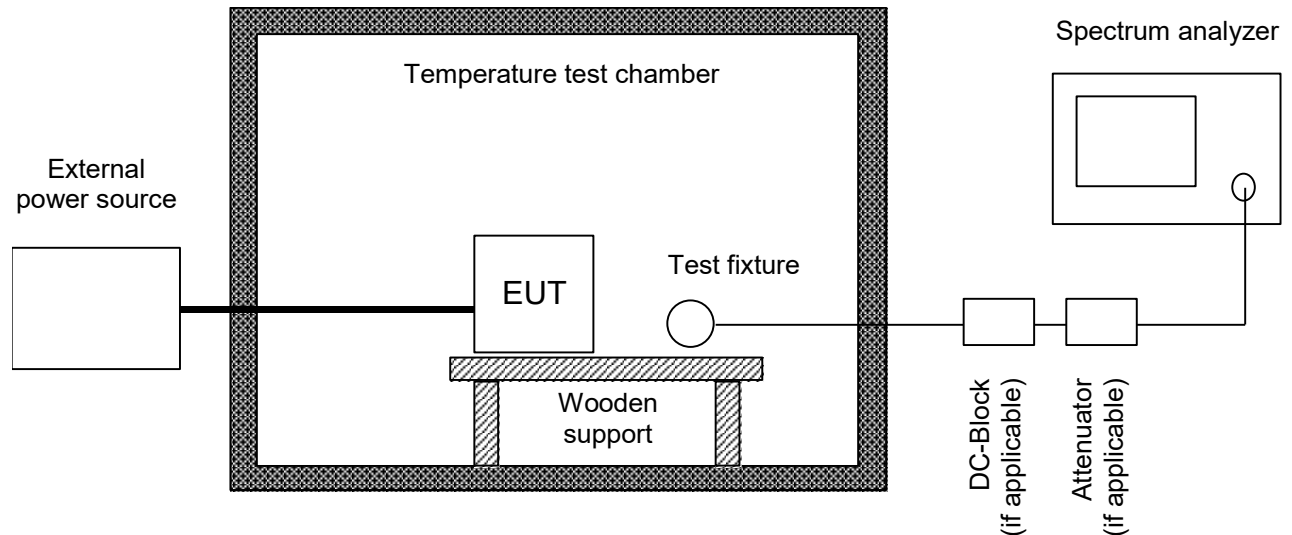
Ambient Temperature	21 °C
Relative Humidity	38 %

2.3.5 Specification Limits

The frequency tolerance of the carrier signal shall be maintained within ± 0.01 % of the operating frequency over a temperature variation of -20 °C to $+50$ °C at normal supply voltage, and for a variation in the primary supply voltage from 85 % to 115 % of the rated supply voltage at a temperature of 20 °C. For battery operated equipment, the equipment tests shall be performed using a new battery.

2.3.6 Test Method

The test was performed according to ANSI C63.10, section 6.8.



The frequency tolerance of the carrier signal is measured over a temperature variation of -20°C to $+50^{\circ}\text{C}$ at normal supply voltage, and for a variation in the primary supply voltage from 85 % to 115 % of the rated supply voltage at a temperature of 20°C . Temperature and voltage range may vary if the manufacturer states another temperature or voltage range.

If the EUT provides an antenna connector the spectrum analyzer is connected to this port. If required, a resistive matching network equal to the impedance specified or employed for the antenna is used as well as a DC block and appropriate (50 Ω) attenuators. In case where the EUT does not provide an antenna connector or a test fixture is used.

For battery operated equipment, the test is performed using a new battery. Alternatively, an external supply voltage can be used and is at least set to:

- The maximum battery voltage as delivered by a new battery or 115 % of the battery nominal voltage;
- The battery nominal voltage
- 85 % of the battery nominal voltage
- The battery operating end point voltage which shall be specified by the equipment manufacturer.

The EUT is operating providing an unmodulated carrier for frequency error tests. The peak detector of the spectrum analyzer is selected and resolution as well as video bandwidth are set to values appropriate to shape of the spectrum of the EUT. The frequency counter mode of the spectrum analyzer is used to maximize the accuracy of the measured frequency tolerance.

If an unmodulated carrier is not available a significant and stable point of the spectrum is selected and the span is reduced to a value that delivers an accuracy which shall be better than 1 % of the maximum frequency tolerance allowed for the carrier signal. This method may be performed as long as the margin to the frequency tolerance is larger than the uncertainty of the measured frequency tolerance.



2.3.7 Test Results

<i>Temperature</i>	<i>Supply Voltage</i>	<i>Relative drift (%)</i>
20 °C	120 V	0.0231
20 °C	102 V	0.0311
20 °C	138 V	0.0323
- 20 °C	120 V	0.0441
55 °C	120 V	0.0557

Table 10

2.3.8 Test Location and Test Equipment

The test was carried out in a non-shielded room:

<i>Instrument</i>	<i>Manufacturer</i>	<i>Type No</i>	<i>TE No</i>	<i>Calibra- tion Pe- riod (months)</i>	<i>Calibration Due</i>
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Climatic test chamber (Walk-in)	Feutron	KPK27000	65242	18	2026-10-03

Table 11



2.4 Conducted Emissions on Mains Terminals

2.4.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.207

2.4.2 Equipment under Test and Modification State

PrograMill PM7; S/N 9105002038; Modification state 0

2.4.3 Date of Test

2025-04-01

2.4.4 Environmental Conditions

Ambient Temperature 23 °C
Relative Humidity 35 %

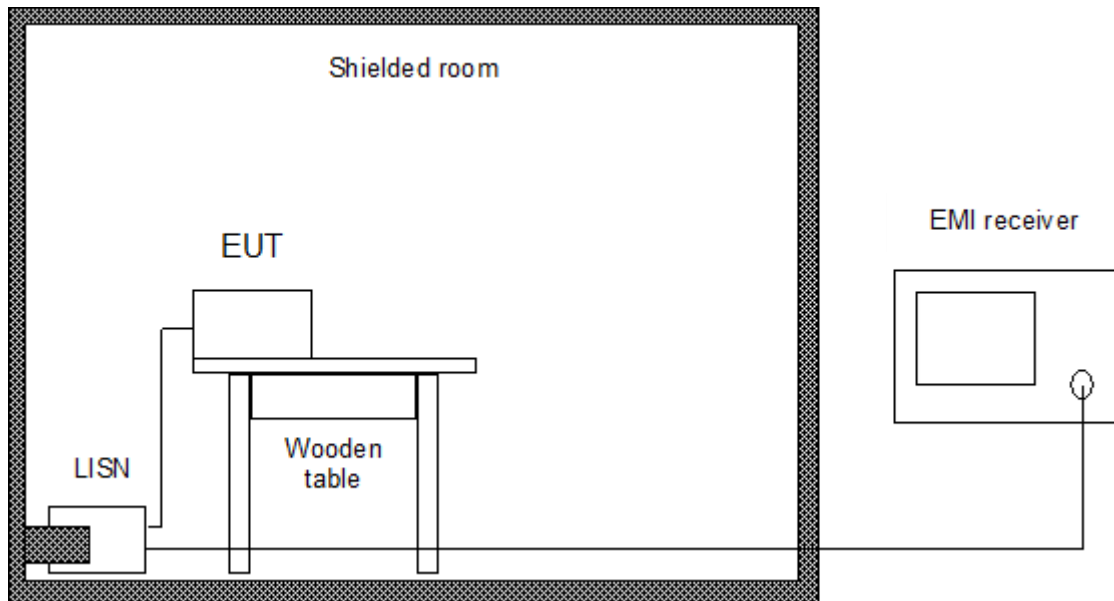
2.4.5 Specification Limits

Required Specification Limits			
Line Under Test	Frequency Range (MHz)	Quasi-peak (dBμV)	Average (dBμV)
AC Power Port	0.15 to 0.5	66 to 56*	56 to 46*
	0.5 to 5	56	46
	5 to 30	60	50
Supplementary information: *Decreases with the logarithm of the frequency.			

Table 14 Emission limits

2.4.6 Test Method

The test was performed according to ANSI C63.10, section 6.2.



The EUT was placed on a non-conductive table 0.8 m above a reference ground plane and 0.4 m away from a vertical coupling plane

All power was connected to the EUT through an Line Impedance Stabilization Network (LISN). Conducted disturbance voltage measurements on mains lines were made at the output of the LISN. The LISN was placed 0.8 m from the boundary of the EUT and bounded to the reference ground plane. To simplify testing with quasi-peak and linear average (cisp-r-average) detector the following procedure is used:

First the whole spectrum of emission caused by the equipment under test (EUT) is recorded with the detectors set to peak and average using CISPR bandwidth of 10 kHz. After that all emission levels having less margin than 10 dB to or exceeding the average limit are retested with the detectors set to quasi-peak and average. If the average limit is kept with quasi-peak levels measurement with average detector is optional. In cases of emission levels between quasi-peak and average limit an additional measurement with average detector has to be performed.

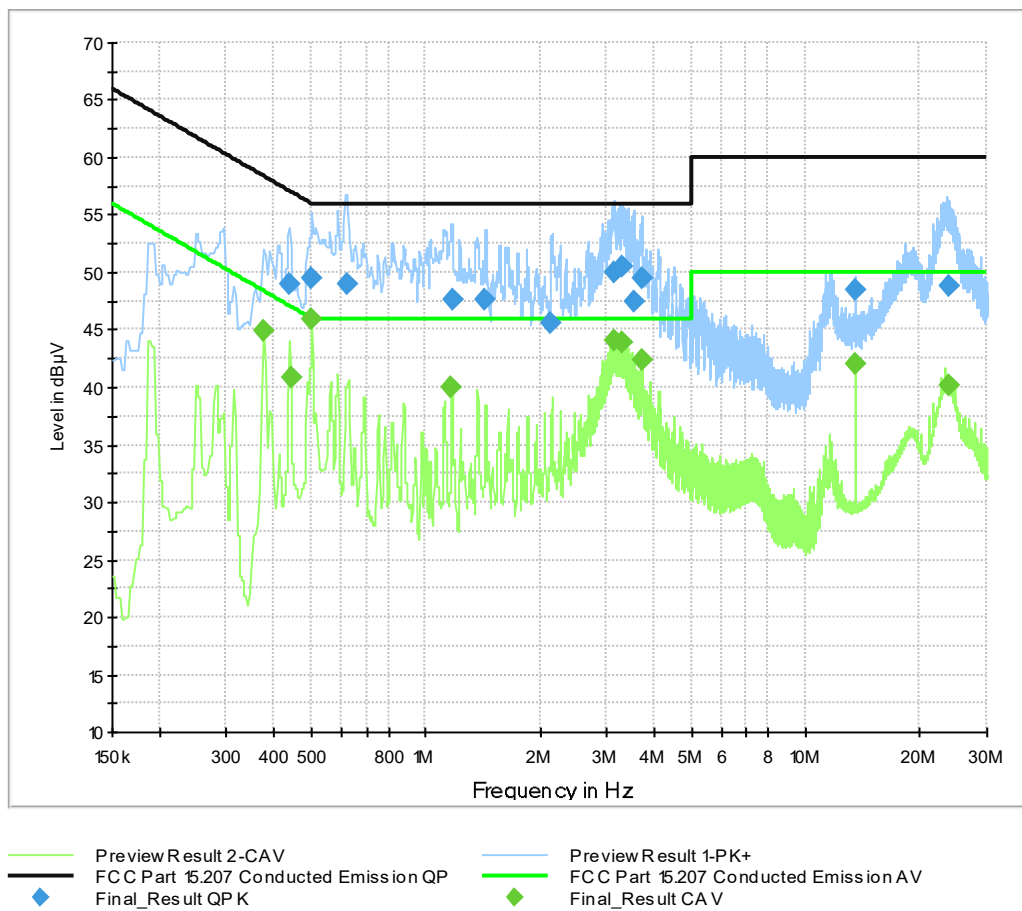


2.4.7 Test Results

Sample calculation:

$$\text{Final Value (dB}\mu\text{V)} = \text{Reading Value (dB}\mu\text{V)} + (\text{Cable attenuation (dB)} + \text{LISN Transducer (dB)})$$

Line Under Test: L1



Final Results 1:

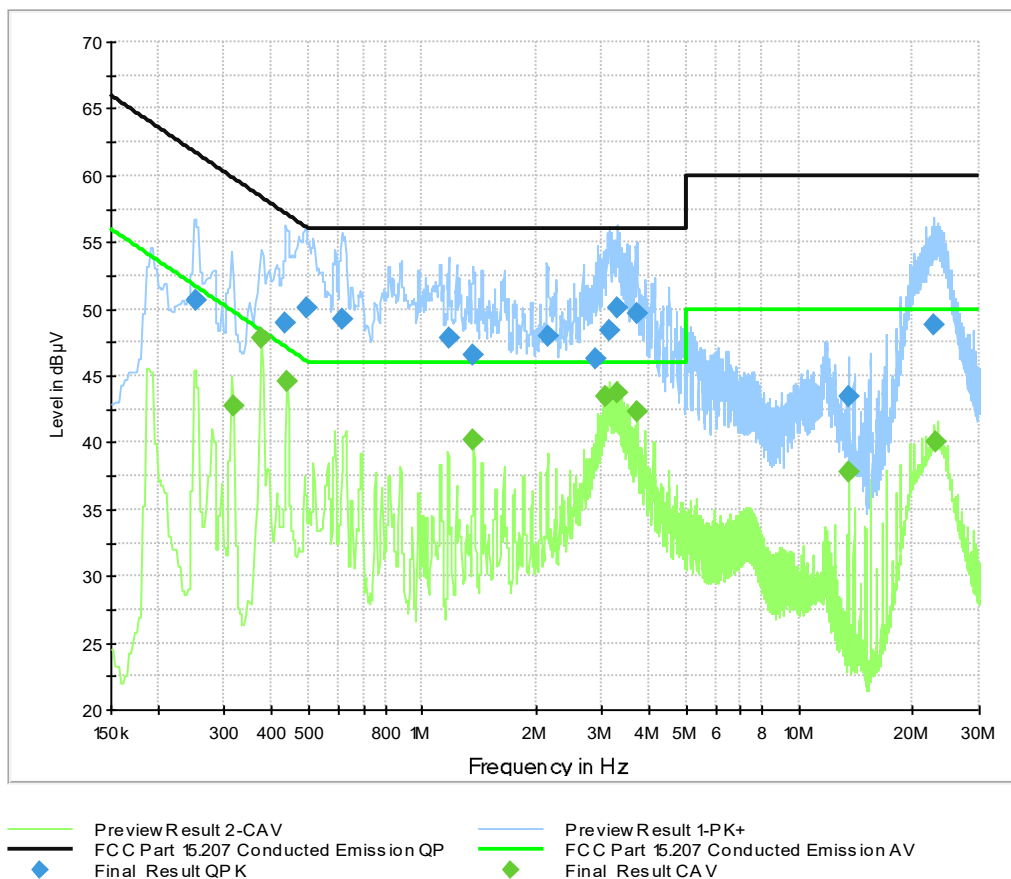
Frequency MHz	QuasiPeak dBμV	Average dBμV	Limit dBμV	Margin dB	Meas. Time ms	Band- width kHz	Line	Filter	Corr. dB
0.377250	---	44.94	48.34	3.40	1000.0	9.000	L1	ON	10.1
0.440250	49.04	---	57.06	8.02	1000.0	9.000	L1	ON	10.1
0.442500	---	40.85	47.02	6.17	1000.0	9.000	L1	ON	10.1
0.501000	---	45.96	46.00	0.04	1000.0	9.000	L1	ON	10.1



Frequency MHz	Qua- siPeak dBμV	CAver- age dBμV	Limit dBμV	Mar- gin dB	Meas. Time ms	Band- width kHz	Line	Fil- ter	Corr. dB
0.503250	49.48	---	56.00	6.52	1000.0	9.000	L1	ON	10.1
0.620250	49.05	---	56.00	6.95	1000.0	9.000	L1	ON	10.1
1.173750	---	40.00	46.00	6.00	1000.0	9.000	L1	ON	10.1
1.178250	47.66	---	56.00	8.34	1000.0	9.000	L1	ON	10.1
1.441500	47.55	---	56.00	8.45	1000.0	9.000	L1	ON	10.1
2.130000	45.56	---	56.00	10.44	1000.0	9.000	L1	ON	10.2
3.129000	---	44.06	46.00	1.94	1000.0	9.000	L1	ON	10.2
3.129000	49.99	---	56.00	6.01	1000.0	9.000	L1	ON	10.2
3.291000	50.51	---	56.00	5.49	1000.0	9.000	L1	ON	10.2
3.297750	---	43.86	46.00	2.14	1000.0	9.000	L1	ON	10.2
3.536250	47.45	---	56.00	8.55	1000.0	9.000	L1	ON	10.2
3.711750	---	42.31	46.00	3.69	1000.0	9.000	L1	ON	10.2
3.711750	49.46	---	56.00	6.54	1000.0	9.000	L1	ON	10.2
13.560000	48.45	---	60.00	11.55	1000.0	9.000	L1	ON	10.4
13.560000	---	41.98	50.00	8.02	1000.0	9.000	L1	ON	10.4
23.752500	48.77	---	60.00	11.23	1000.0	9.000	L1	ON	10.5
23.761500	---	40.09	50.00	9.91	1000.0	9.000	L1	ON	10.5



Line Under Test: N



Final Results 1:

Frequency MHz	QuasiPeak dBµV	CAverage dBµV	Limit dBµV	Margin dB	Meas. Time ms	Band- width kHz	Line	Filter	Corr. dB
0.253500	50.64	---	61.64	11.00	1000.0	9.000	N	ON	10.1
0.316500	---	42.76	49.80	7.04	1000.0	9.000	N	ON	10.1
0.377250	---	47.85	48.34	0.49	1000.0	9.000	N	ON	10.1
0.433500	48.94	---	57.19	8.25	1000.0	9.000	N	ON	10.1
0.440250	---	44.57	47.06	2.48	1000.0	9.000	N	ON	10.1
0.494250	50.14	---	56.10	5.96	1000.0	9.000	N	ON	10.1
0.618000	49.29	---	56.00	6.71	1000.0	9.000	N	ON	10.1
1.178250	47.82	---	56.00	8.18	1000.0	9.000	N	ON	10.1
1.362750	46.59	---	56.00	9.41	1000.0	9.000	N	ON	10.1
1.369500	---	40.25	46.00	5.75	1000.0	9.000	N	ON	10.1
2.161500	47.90	---	56.00	8.10	1000.0	9.000	N	ON	10.2
2.890500	46.34	---	56.00	9.66	1000.0	9.000	N	ON	10.2
3.070500	---	43.42	46.00	2.58	1000.0	9.000	N	ON	10.2
3.124500	48.37	---	56.00	7.63	1000.0	9.000	N	ON	10.2
3.297750	---	43.77	46.00	2.23	1000.0	9.000	N	ON	10.2
3.297750	50.11	---	56.00	5.89	1000.0	9.000	N	ON	10.2
3.711750	49.62	---	56.00	6.38	1000.0	9.000	N	ON	10.2



Product Service

<i>Frequency</i> <i>MHz</i>	<i>Qua- siPeak</i> <i>dBμV</i>	<i>CAver- age</i> <i>dBμV</i>	<i>Limit</i> <i>dBμV</i>	<i>Mar- gin</i> <i>dB</i>	<i>Meas. Time</i> <i>ms</i>	<i>Band- width</i> <i>kHz</i>	<i>Line</i>	<i>Fil- ter</i>	<i>Corr.</i> <i>dB</i>
3.711750	---	42.31	46.00	3.69	1000.0	9.000	N	ON	10.2
13.560000	43.44	---	60.00	16.56	1000.0	9.000	N	ON	10.4
13.560000	---	37.76	50.00	12.24	1000.0	9.000	N	ON	10.4
22.744500	48.84	---	60.00	11.16	1000.0	9.000	N	ON	10.5
23.019000	---	40.02	50.00	9.98	1000.0	9.000	N	ON	10.5



2.4.8 Test Location and Test Equipment

This test was carried out in Semi anechoic room - cabin no. 11.

Instrument	Manufacturer	Type No	T-ID	Calibration Period	Calibration Due
EMI test receiver	Rohde & Schwarz	ESW44	39897	12 months	2026-03-31
EMC measurement software	Rohde & Schwarz	EMC32 Emission K11 – V10.50	42986	---	
Semi anechoic room	Frankonia	Cabin No. 11	42961	---	
V-network	Rohde & Schwarz GmbH & Co. KG	ENV216	39908	12 months	2025-05-31

Table 12



2.5 Antenna requirement

2.5.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.203

2.5.2 Equipment under Test and Modification State

PrograMill PM7; S/N 9105002038; Modification state 0

2.5.3 Specification Limits

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.

2.5.4 Test Results

The EUT uses a internal antenna.

Antenna Type: PCB coil, TS-HRW380-USB



3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

<i>Radio Interference Emission Testing</i>		
<i>Test Name</i>	<i>kp</i>	<i>Expanded Uncertainty</i>
Conducted Voltage Emission		
9 kHz to 150 kHz (50Ω/50μH AMN)	2	± 3.8 dB
150 kHz to 30 MHz (50Ω/50μH AMN)	2	± 3.4 dB
100 kHz to 200 MHz (50Ω/5μH AMN)	2	± 3.6 dB
Discontinuous Conducted Emission		
9 kHz to 150 kHz (50Ω/50μH AMN)	2	± 3.8 dB
150 kHz to 30 MHz (50Ω/50μH AMN)	2	± 3.4 dB
Conducted Current Emission		
9 kHz to 200 MHz	2	± 3.5 dB
Magnetic Fieldstrength		
9 kHz to 30 MHz (with loop antenna)	2	± 3.9 dB
9 kHz to 30 MHz (large-loop antenna 2 m)	2	± 3.5 dB
Radiated Emission		
30 MHz to 300 MHz	2	± 4.9 dB
300 MHz to 1 GHz	2	± 5.0 dB
1 GHz to 6 GHz	2	± 4.6 dB
Test distance 10 m		
30 MHz to 300 MHz	2	± 4.9 dB
300 MHz to 1 GHz	2	± 4.9 dB
The expanded uncertainty reported according to CISPR16-4-2: 2011 + A1 + A2 + Cor1 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$		

Table 13 Measurement uncertainty based on CISPR 16-4-2



<i>Radio Interference Emission Testing</i>		
<i>Test Name</i>	<i>kp</i>	<i>Expanded Uncertainty</i>
Occupied Bandwidth	2	± 5 %
Conducted Power		
9 kHz ≤ f < 30 MHz	2	± 1.0 dB
30 MHz ≤ f < 1 GHz	2	± 1.5 dB
1 GHz ≤ f ≤ 40 GHz	2	± 2.5 dB
1 MS/s power sensor (TS8997)	2	± 1.5 dB
Occupied Bandwidth	2	± 5 %
Power Spectral Density	2	± 3.0 dB
Radiated Power		
25 MHz – 6 GHz	1.96	±4.4 dB
1 GHz – 18 GHz	1.96	±4.7 dB
18 GHz – 40 GHz	1.96	±4.9 dB
40 GHz – 325 GHz	1.96	±6.1 dB
Conducted Spurious Emissions	2	± 3.0 dB
Radiated Spurious Emissions	2	± 6.0 dB
Voltage		
DC	2	± 1.0 %
AC	2	± 2.0 %
Time (automatic)	2	± 5 %
Frequency	2	± 10 ⁻⁷
The expanded uncertainty reported according to ETSI TR 100 028:2001 is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%		

Table 14 Measurement uncertainty based on ETSI TR 100 028

The measurement uncertainty in the laboratory is less than or equal to the maximum measurement uncertainty according to CISPR16-4-2: 2011 + A1 + A2 + Cor1 (U_{CISPR}) and as specified in the test report below. This normative regulation means that the measured value is also the value to be assessed in relation to the limit value.



Test Name	Expanded Uncertainty
Occupied Bandwidth	±5 %
Conducted Power	
9 kHz ≤ f < 30 MHz	±1.0 dB
30 MHz ≤ f < 1 GHz	±1.5 dB
1 GHz ≤ f ≤ 40 GHz	±2.5 dB
1 MS/s power sensor (2.4 / 5 GHz band)	±1.5 dB
Power Spectral Density	±3.0 dB
Radiated Power	
25 MHz – 26.5 GHz	±6.0 dB
26.5 GHz – 66 GHz	±8.0 dB
40 GHz – 325 GHz	±10.0 dB
Conducted Spurious Emissions	±3.0 dB
Radiated Field Strength 9 kHz – 40 GHz	±6.0 dB
Voltage	
DC	± 1.0 %
AC	± 2.0 %
Time (automatic)	± 5 %
Frequency	± 10 ⁻⁷

Table 15 Decision Rule: Maximum allowed measurement uncertainty