

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:

85227RRF.005A1

Test Report

USA FCC Part 15.225, 15.209

CANADA RSS-210, RSS-Gen

(*) Identification of item tested	Multi-functional RFID terminal
(*) Trademark	Gantner
(*) Model and /or type reference	GT7.1300
Other identification of the product	FCC ID: NC4-GEA2260296A IC: 11873A-2260296A
(*) Features	RFID 13.56 MHz, BLE HW version: 2.1 SW version: EMC APP 0.5.1
Applicant	Gantner Electronic GmbH Bundesstraße 12 6714 Nüziders, Austria
Test method requested, standard	USA FCC Part 15.225 (10-1-25 Edition): Operation within the band 13.110 -14.010. USA FCC Part 15.209 (10-1-25 Edition): Radiated emission limits, general requirements. CANADA RSS-210 Issue 11 (June 2024). CANADA RSS-Gen Issue 5 Amendment 2 (February 2021). ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager 
Date of issue	2026-09-16
Report template No	FDT08_27 (*) "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
99OBW	99% Occupied Bandwidth
Freq	Frequency
Freq Rng	Frequency Range
FreqError%	Frequency Error
FreqErrorkHz	Frequency Error in KHz
Mod	Modulation
Pol	Polarization
QuasiPeak	Radiated Quasi Peak Level
T	Temperature
Un	Nominal Voltage

Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification is an ISED-recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, with the appropriate scope of accreditation that covers the performed tests in this report.

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DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the radiated emissions of EUT from 9 kHz to 30 MHz is:
Measurement uncertainty $\leq \pm 3.08$ dB (with factor $k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 200 MHz is:
Measurement uncertainty $\leq \pm 5.35$ dB (with factor $k = 2$).

The total uncertainty of the measurement system for the conducted testing of EUT is:
Frequency Tolerance of the Carrier Signal: Measurement uncertainty $\leq \pm 12.3$ kHz
Occupied Bandwidth $\leq \pm 1.42$ kHz

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample consists of a Multi-functional RFID terminal. GT7 Lite, LEGIC Advant Reader, Color display 3.5 inch with Touchscreen, PoE, 1 Relay Output, 1 Optocoupler input.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	85227_7.1	Multi-functional RFID terminal	GT7.1300	2605010083	2026-03-19	Element Under Test
S/01	85227_16.1	Gigabit POE injector	POE150S	2251412013638	2026-03-19	Auxiliary Element
S/01	85227_17.1	Ethernet cable	--	--	2026-03-19	Auxiliary Element
S/01	85227_18.1	AC/DC adapter	--	--	2026-03-19	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Sample used for testing.

Test sample description

Ports..... :	Port name and description		Cable				
			Specified max length [m]	Attached during test	Shielded		
	Ethernet		< 100m	[X]	[X]		
.....			[]	[]			
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency			Reference poles			
				L1	L2	L3	N
	[]	AC:	[]	[]	[]	[]	[]
[X]		DC: PoE conf. to IEEE 802.3af, performance class 0					
Rated Power	PoE: DC 36 - 57 V						
Clock frequencies..... :	Q1: 40 MHz, Q2:32.768 kHz						
Other parameters							
Software version	EMC APP 0.5.1						
Hardware version	2.1						
Dimensions in cm (W x H x D)	152 x 152 x 50 mm						
Mounting position	[]	Table top equipment					
	[X]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					
	[]	Other:					
Modules/parts..... :	Module/parts of test item			Type		Manufacturer	
							
Accessories (not part of the test item)	Description			Type		Manufacturer	
							
Documents as provided by the applicant..... :	Description			File name		Issue date	
							

Identification of the client

Gantner Electronic GmbH
Bundesstraße 12
6714 Nüziders, Austria

Testing period and place

Test Location	DEKRA TESTING AND CERTIFICATION S.A.U. C/ Severo Ochoa, 6 - Parque Tecnológico de Andalucía; 29590 Campanillas (Málaga) (Location B)
Date (start)	2026-06-03
Date (finish)	2026-06-11

Document history

Report number	Date	Description
85227RRF.005	2026-06-25	First release.
85227RRF.005A1	2026-09-16	Second release. Modification due to standard update. This test report cancels and replaces to report 85227RRF.005

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Miguel Manuel López Guzmán and Aitana Díaz Lagares.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
06064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	FRANKONIA	N/A
06329	SHIELDED ROOM	--	FRANKONIA	N/A
06132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2027-05-12
06126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2027-04-30
00242	ACTIVE LOOP ANTENNA 9 kHz-30 MHz	11966A	HEWLETT PACKARD	2027-08-06
05641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2027-10-23
07414	PREAMPLIFIER BOX	--	INTERNO	2027-01-14
08866	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-06-12
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A
06793	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06611	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2027-04-28
06157	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2027-03-17
08002	TEMPERATURE CHAMBER MK56 BINDER	MK 56	BINDER	2027-02-10
07445	DC POWER SUPPLY 30V/5A	U8002A	KEYSIGHT TECHNOLOGIES	N/A
07760	DIGITAL MULTIMETER	175	FLUKE	2026-11-07

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

Summary

FCC PART 15 PARAGRAPH / RSS-210		
Requirement – Test case	Verdict	Remark
FCC 15.225 (a) / RSS-210 B.6 (a)(i) Field strength of emissions within the band 13.553 MHz -13.567 MHz	P	--
FCC 15.225 (b) / RSS-210 B.6 (a)(ii) Field strength of emissions within the band 13.410 - 13.553 MHz and 13.567 – 13.710 MHz	P	--
FCC 15.225 (c) / RSS-210 B.6 (a)(iii) Field strength of emissions within the band 13.110 - 13.410 MHz and 13.710 – 14.010 MHz	P	--
FCC 15.225 (d) / RSS-210 B.6 (a)(iv) Field strength of emissions outside of the band 13.110 MHz -14.010 MHz	P	--
FCC 15.225 (e) / RSS-210 B.6 (b) Frequency tolerance of the carrier signal	P	--
<u>Supplementary information and remarks:</u> None.		

Appendix A: Test results

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<i>FCC 15.225 (a) (b) (c) / RSS-210 B.6 (a) (b) (c). Field strength of emissions within the band 13.553 -13.567 MHz, 13.410 - 13.553 MHz and 13.567 - 13.710 MHz, 13.110 - 13.410 MHz and 13.710 - 14.010 MHz</i>	17
<i>FCC 15.225 (d) / RSS-210 B.6 (a)(iv) Field Strength of Emissions outside of the band 13.110 MHz - 14.010 MHz</i>	20
<i>FCC 15.225 (e) / RSS-210 B.6 (b) Frequency Tolerance of the Carrier Signal</i>	22

TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal: 230Vac
Vminimum: 207Vac
Vmaximum: 253Vac
Type of Power Supply: External power supply (PoE injector)

ANTENNA (*):

Type of Antenna: Integral antenna (PCB)
Maximum Declared Antenna Gain: N/A

TEST FREQUENCIES AND OPERATION MODE (*):

Technology	Modulation	Frequency
RFID	ISO 14443A	13.56 MHz

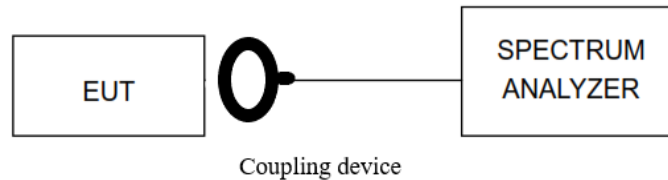
During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes as required. The equipment has no standby mode.

TEST SETUP

CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is directly connected to the spectrum analyzer.

For frequency stability test the EUT was placed inside a climatic chamber and connected to a frequency meter using a low loss cable. An external DC power supply was connected to the EUT for voltage variation test.



For extreme test conditions the EUT was placed inside a climatic chamber and connected to a spectrum analyzer using a low-loss cable and a coupling device. An external DC power supply was connected to the EUT for voltage variation test.

RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Loop antenna for the range between 9 kHz to 30 MHz and Bilog antenna for the range between 30 MHz to 200 MHz) is situated at a distance of 3 m.

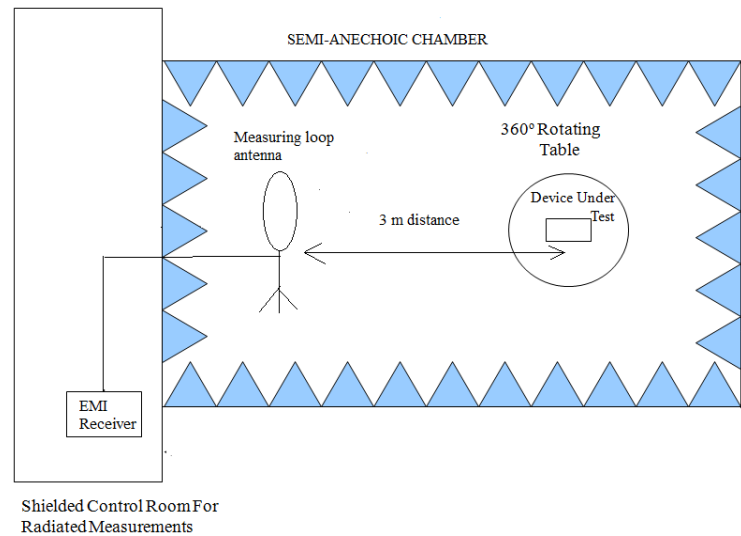
For radiated emissions in the range 9 kHz to 30 MHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 40 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and in the range between 30 MHz and 200 MHz the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

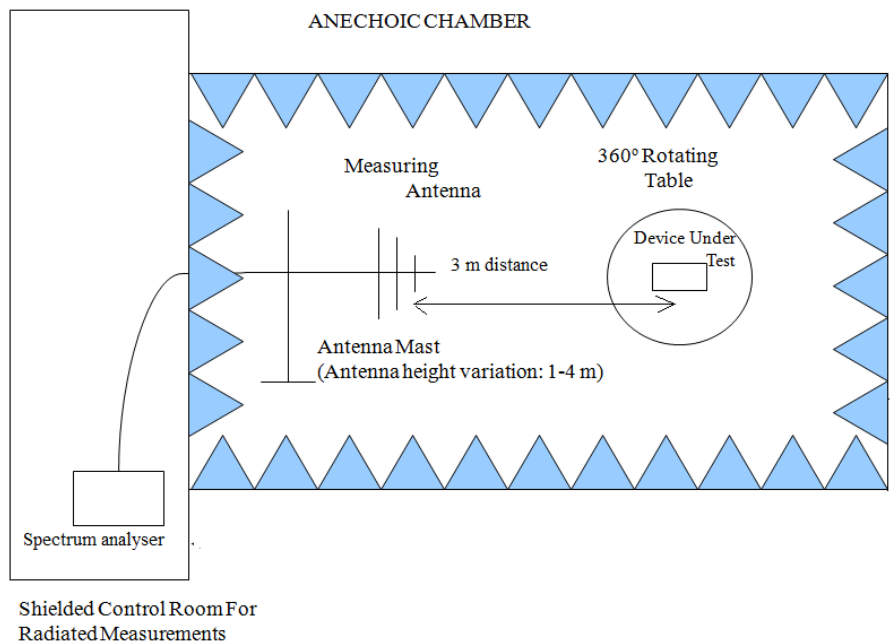
In the range between 9 kHz and 30 MHz the measurements were made in the three different orientation planes of the loop antenna to determine the maximum received field.

In the range between 30 MHz and 200 MHz the measurements were made in both horizontal and vertical planes of polarization.

Radiated measurements setup 9 kHz to 30 MHz:



Radiated measurements setup 30 MHz to 200 MHz:



SAMPLE CALCULATION

For radiated measurements:

Values measures by the test receiver / analyzer are converted to field strength, in dBuV/m, at the regulatory distance using the following calculation:

$$\text{Unwanted Lvl (dBuV/m)} = \text{Raw Rec (dBuV)} + \text{Preamp (dB)} + \text{Trd Corre. (dB/m)} + \text{SigPath (dB)}$$

Where,

Raw Rec (dBuV): Measured voltage in the receiver / spectrum analyzer in dBuV

Preamp (dB): Path loses due to preamplifier

Trd Corr. (dB/m): Antenna factor in dB/m

SigPath (dB) = Cable loss (dB) – External Gain amplifier (dB) – Distance factor (dB)

Cable loss (dB): Cable loss

External Gain amplifier (dB): Gain from external amplifier (when used)

Distance factor (dB): Distance factor in dB. When measurement distance is different to limit distance

The field strength, calculated by this way is compared with the regulatory limit.

TEST CASES DETAILS

Occupied Bandwidth

Modulation: ISO 14443A

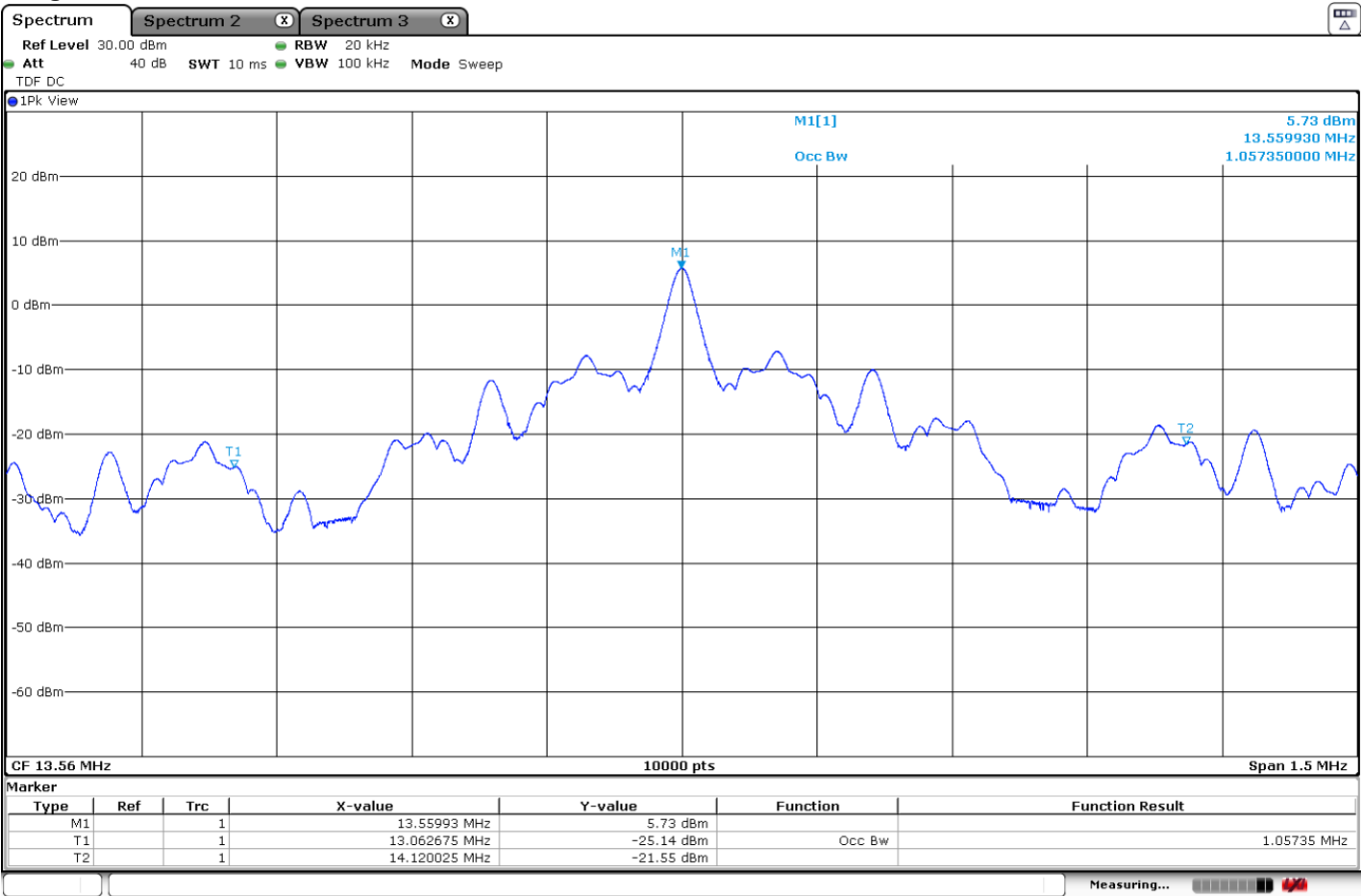
Results

Freq (MHz)	99% Occupied Bandwidth (kHz)
13.56	1057.35

Attachments

Modulation = ISO 14443A Frequency MHz = 13.56

Images:



FCC 15.225 (a) (b) (c) / RSS-210 B.6 (a) (b) (c). Field strength of emissions within the band 13.553 -13.567 MHz, 13.410 - 13.553 MHz and 13.567 - 13.710 MHz, 13.110 - 13.410 MHz and 13.710 - 14.010 MHz

Limits

- **FCC 15.225 (a) / RSS-210 B.6 (a). Field strength of emissions within the band 13.553 - 13.567 MHz**

The field strength of any emissions within the band 13.553 - 13.567 MHz shall not exceed 15,848 microvolts/meter (84 dBμV/m) at 30 meters.

- **FCC 15.225 (b) / RSS-210 B.6 (b). Field strength of emissions within the band 13.410 - 13.553 MHz and 13.567 - 13.710 MHz**

Within the bands 13.410-13.553 MHz and 13.567 - 13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (50.47 dBμV/m) at 30 meters.

- **FCC 15.225 (c) / RSS-210 B.6 (c). Field strength of emissions within the band 13.110 - 13.410 MHz and 13.710 - 14.010 MHz**

Within the bands 13.110-13.410 MHz and 13.710 - 14.010 MHz, the field strength of any emissions shall not exceed 106 microvolts/meter (40.51 dBμV/m) at 30 meters.

Modulation: ISO 14443A

Results

- Band 13.553 -13.567 MHz:

Frequency (MHz)	Maximum field strength (dBμV/m) measured at 3 m (quasi-peak detector)	Maximum field strength (dBμV/m) extrapolated to 30 m (40 dB/decade)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBμV)
13.5600	29.38	-10.62	-40.0	0.0	9.4	60.0

- Band 13.410 - 13.553 MHz:

Frequency (MHz)	Maximum field strength (dBμV/m) measured at 3 m (quasi-peak detector)	Maximum field strength (dBμV/m) extrapolated to 30 m (40 dB/decade)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBμV)
13.5510	6.89	-33.11	-40.0	0.0	9.4	37.5

- Band 13.567-13.710 MHz:

Frequency (MHz)	Maximum field strength (dBµV/m) measured at 3 m (quasi-peak detector)	Maximum field strength (dBµV/m) extrapolated to 30 m (40 dB/decade)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBµV)
13.5690	5.97	-34.03	-40.0	0.0	9.4	36.6

- Band 13.110-13.410 MHz:

Frequency (MHz)	Maximum field strength (dBµV/m) measured at 3 m (quasi-peak detector)	Maximum field strength (dBµV/m) extrapolated to 30 m (40 dB/decade)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBµV)
13.3485	4.33	-35.67	-40.0	0.0	9.4	34.9

- Band 13.710-14.010 MHz:

Frequency (MHz)	Maximum field strength (dBµV/m) measured at 3 m (quasi-peak detector)	Maximum field strength (dBµV/m) extrapolated to 30 m (40 dB/decade)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBµV)
13.7715	6.15	-33.85	-40.0	0.0	9.4	36.8

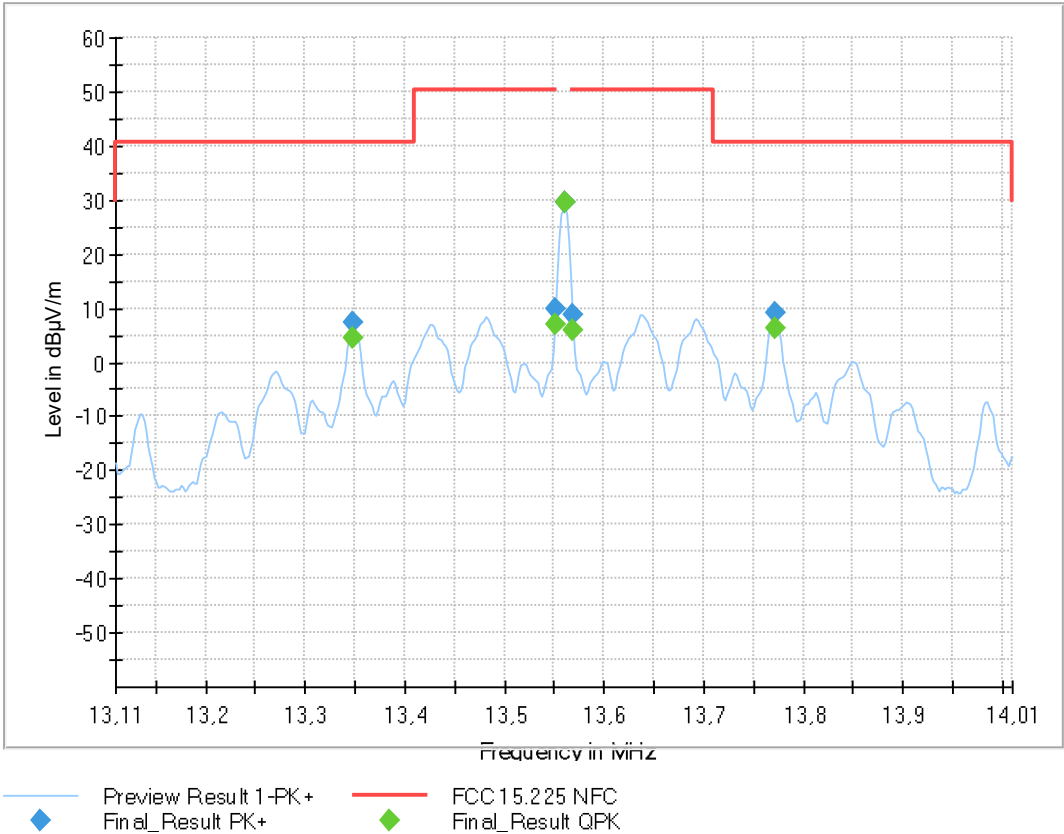
Verdict

Pass

Attachments

Modulation = ISO 14443A Frequency MHz = 13.56

Images:



Spectrum analyzer parameters:

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	50 Hz	PK+	200 Hz	0,1 s	0 dB
150 kHz - 30 MHz	2,25 kHz	PK+	9 kHz	0,1 s	0 dB

FCC 15.225 (d) / RSS-210 B.6 (a)(iv) Field Strength of Emissions outside of the band 13.110 MHz - 14.010 MHz

Limits

Field strength of any emissions appearing outside of the band 13.110 MHz - 14.010 MHz band shall not exceed the general radiated emission limits in 15.209/RSS-Gen:

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	29.54	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Modulation: ISO 14443A

Results

Spurious frequencies were found at less than 20 dB of the limit:

Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)	Raw Rec (dBµV)
36.4430	6.43	H	0.2	3.0	12.4	-9.1
39.7240	8.80	V	0.2	3.0	10.6	-5.0
40.6703	29.62	V	0.2	3.0	10.1	16.3
82.7623	18.04	V	0.5	3.0	7.0	7.5
87.4203	18.17	V	0.6	3.0	7.0	7.6
131.2123	29.87	V	0.8	3.0	8.2	17.9
137.2133	29.24	V	0.8	3.0	8.5	16.9
149.1983	25.50	V	0.8	3.0	9.3	12.4
172.7490	27.02	H	0.9	3.0	9.7	13.4
184.7283	31.09	V	1.0	3.0	10.0	17.2
192.7920	28.39	V	1.0	3.0	9.4	21.5

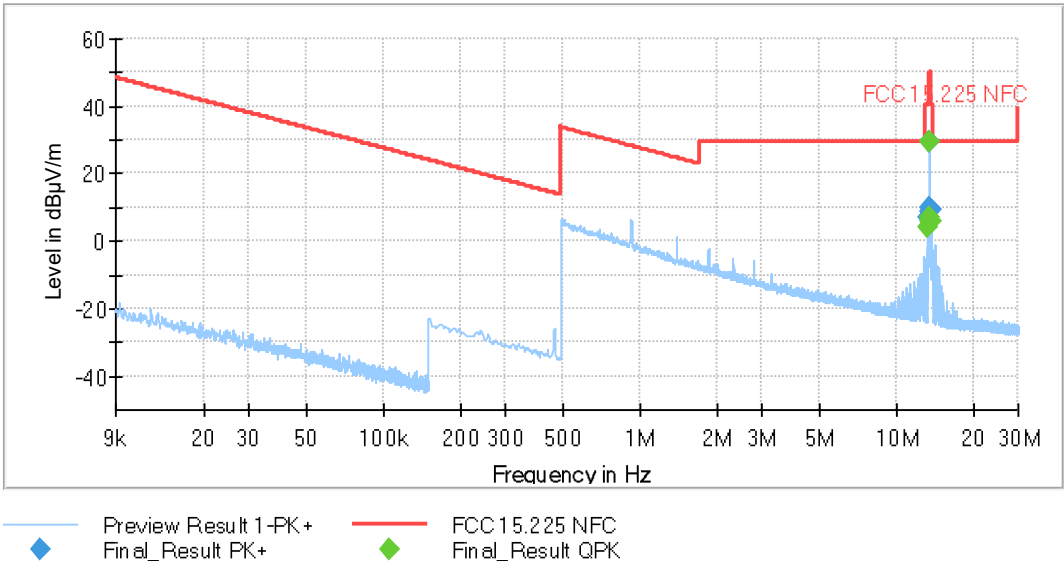
Verdict

Pass

Attachments

Modulation = ISO 14443A Frequency MHz = 13.56
Frequency Range MHz = [0.009, 30]

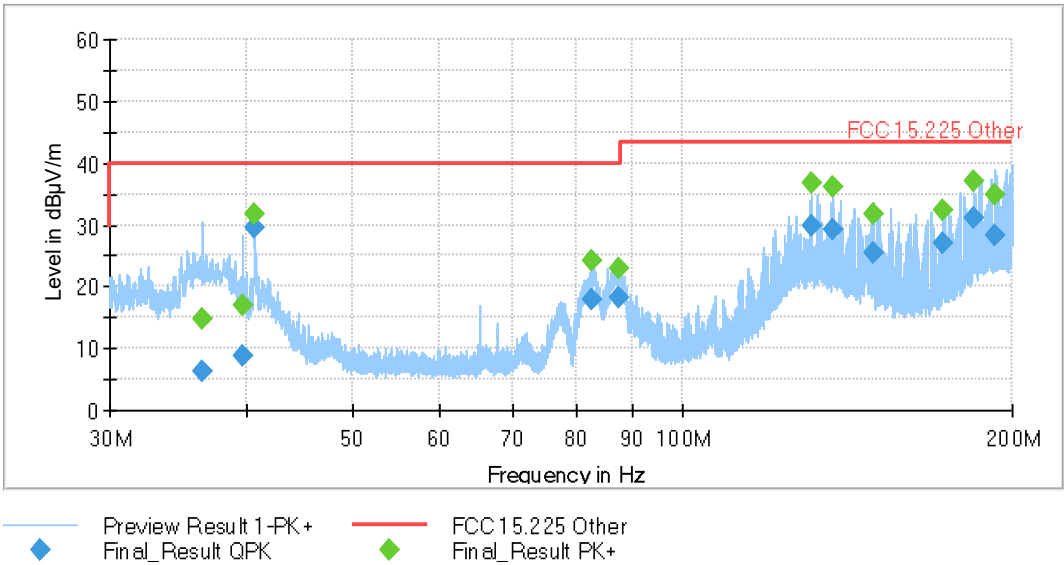
Images:



Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	50 Hz	PK+	200 Hz	0,1 s	0 dB
150 kHz - 30 MHz	2,25 kHz	PK+	9 kHz	0,1 s	0 dB

Modulation = ISO 14443A Frequency MHz = 13.56
Frequency Range MHz = [30, 200]

Images:



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 200 MHz	8,5 kHz	PK+	100 kHz	1 s	0 dB

FCC 15.225 (e) / RSS-210 B.6 (b) Frequency Tolerance of the Carrier Signal

Limits

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees 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 degrees C. For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

Modulation: ISO 14443A

Results

Frequency Stability over Temperature Variations:

T (°C)	Frequency Error (Hz)	Frequency Error (%)
+50	81.000000	0.000597
+40	55.500000	0.000409
+30	6.000000	0.000044
+20	15.000000	0.000111
+10	27.000000	0.000199
0	45.000000	0.000332
-10	69.000000	0.000509
-20	12.000000	0.000088

Frequency Stability over Voltage Variations:

V (V)	T (°C)	Frequency Error (Hz)	Frequency Error (%)
Vmaximum	20	18.000000	0.000133
Vminimum	20	79.500000	0.000586

Verdict

Pass