



FCC RADIO TEST REPORT

FCC ID : E2K-DWRFID2501
Equipment : RFID 13.56MHz Wireless Module
Brand Name : DELL
Model Name : DWRFID2501
Applicant : Dell Inc.
One Dell Way Round Rock, Texas 78682 United States
Manufacturer : Dell Inc.
One Dell Way Round Rock, Texas 78682 United States
Standard : FCC Part 15 Subpart C §15.225

The product was received on Feb. 10, 2026 and testing was performed from Mar. 13, 2026 to Mar. 20, 2026. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1. General Description	5
1.1 Product Feature of Equipment Under Test	5
1.2 Modification of EUT	5
1.3 Testing Location	5
1.4 Applicable Standards.....	6
2. Test Configuration of Equipment Under Test.....	7
2.1 Descriptions of Test Mode	7
2.2 Connection Diagram of Test System	7
2.3 Table for Supporting Units	8
2.4 EUT Operation Test Setup	8
3. Test Results	9
3.1 AC Power Line Conducted Emissions Measurement	9
3.2 20dB and 99% OBW Spectrum Bandwidth Measurement.....	11
3.3 Frequency Stability Measurement	12
3.4 Field Strength of Fundamental Emissions and Mask Measurement.....	13
3.5 Radiated Emissions Measurement.....	15
3.6 Antenna Requirements.....	18
4. List of Measuring Equipment	19
5. Measurement Uncertainty.....	20
Appendix A. Test Results of Conducted Emission Test	
Appendix B. Test Results of Near Field Test Items	
B1. Test Result of 20dB Spectrum Bandwidth	
B2. Test Result of Frequency Stability	
Appendix C. Test Results of Radiated Test Items	
C1. Test Result of Field Strength of Fundamental Emissions	
C2. Results of Radiated Emissions (9 kHz~30MHz)	
C3. Results of Radiated Emissions (30MHz~1GHz)	
Appendix D. Setup Photographs	



History of this test report

Report No.	Version	Description	Issue Date
FR5D2217-01	01	Initial issue of report	Mar. 26, 2026

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.207	AC Power Line Conducted Emissions	Pass	-
3.2	15.215(c)	20dB Spectrum Bandwidth	Pass	-
	2.1049	99% OBW Spectrum Bandwidth	Pass	-
3.3	15.225(e)	Frequency Stability	Pass	-
3.4	15.225(a)(b)(c)	Field Strength of Fundamental Emissions	Pass	-
3.5	15.225(d) 15.209	Radiated Spurious Emissions	Pass	-
3.6	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sheng Kuo

Report Producer: Shiori Chen

1. General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
General Specs RFID	
Antenna Type RFID: Loop Antenna	
Sample 1	EUT with Host 1
Sample 2	EUT with Host 2

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

The product was installed into Portable Computer (Brand Name: DELL, Model Name: P207G) during test, and the host information was recorded in the following table.

Host Information	
Host 1	Host with Speed Antenna
Host 2	Host with HB Antenna

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

The test location is accredited based on TAF code 3786 designated by NCC (National Communication Commission).

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

FCC designation No.: TW3786

Note: The test site complies with ANSI C63.4 2014 requirement.



1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01
- ♦ FCC Part 15 Subpart C §15.225
- ♦ ANSI C63.10-2020 + Cor.1-2023

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2. Test Configuration of Equipment Under Test

2.1 Descriptions of Test Mode

Investigation has been done on all the possible configurations.

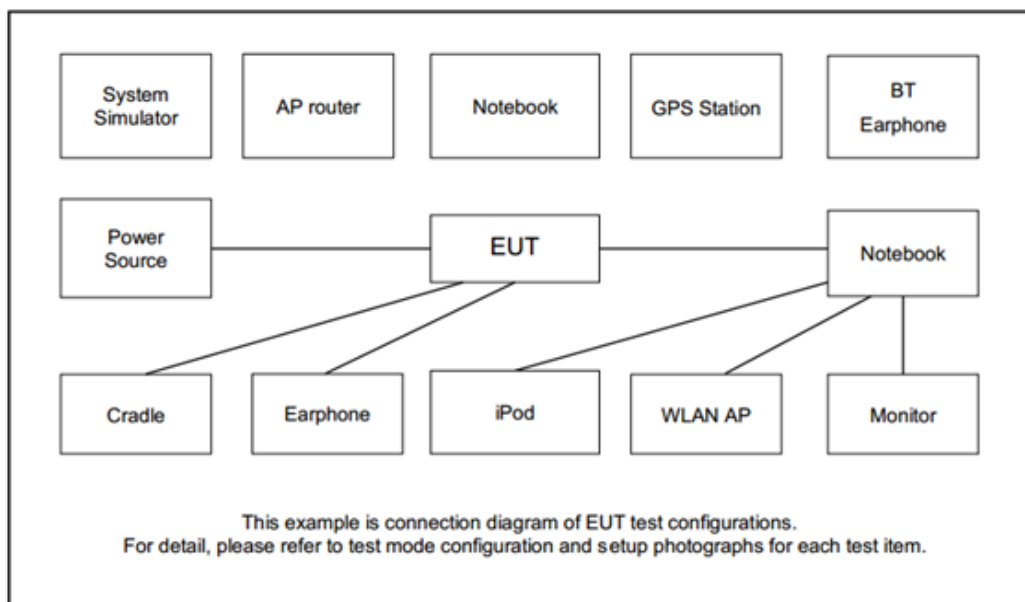
The following table is a list of the test modes shown in this test report.

Test Items	
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions
20dB Spectrum Bandwidth	Frequency Stability
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz

The EUT pre-scanned in reader mode with RFID tag (four RFID type A, B, F, V) and without reading tag. Based on the highest field strength of fundamental and spurious emissions, the worst case type (type V) was recorded in this report.

Test Cases	
AC Conducted Emission	Mode 1: RFID Link + SD Card + Earphone + USB HD*3 + LCD Monitor + Smart Card for Sample 1
	Mode 2: RFID Link + SD Card + Earphone + USB HD*3 + LCD Monitor + Smart Card for Sample 2
Remark: The worst case of Conducted Emission is mode 1; only the test data of it was reported.	

2.2 Connection Diagram of Test System



2.3 Table for Supporting Units

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Dell	Slate PTL(P207G)	N/A	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8m
2.	Adapter	Dell	HA100PM240	N/A	N/A	Unshielded, 1.8m
3.	WLAN AP	ASUS	RT-AC52	MSQ-RTAC4A00	N/A	Unshielded, 1.8m
4.	LCD MONITOR	Dell	ST2220Lb	FCC DoC	Shielded, 1.6m	Unshielded, 1.8m
5.	Earphone + Mic	Samsung	Ecouteur	N/A	Unshielded 1.8m	N/A
6.	USB HD	ADATA	HV620S	FCC DoC	Shielded, 0.5m	N/A
7.	USB HD	ADATA	HV620S	FCC DoC	Shielded, 0.5m	N/A
8.	USB HD	ADATA	HV620S	FCC DoC	Shielded, 0.5m	N/A
9.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
10.	Smart Card	Metro Taipei	Easy Card	N/A	N/A	N/A
11.	RFID Card A	N/A	N/A	N/A	N/A	N/A
12.	RFID Card B	N/A	N/A	N/A	N/A	N/A
13.	RFID Card V	N/A	N/A	N/A	N/A	N/A
14.	RFID Card F	N/A	N/A	N/A	N/A	N/A
15.	iPod Earphone	Apple	A1285	DoC	Shielded, 1.2m	N/A

2.4 EUT Operation Test Setup

The EUT is programmed to be in continuously transmitting mode.

The ancillary equipment, RFID card, is used to make the EUT (RFID) continuously transmitting signal (Power Level: Default) at 13.56MHz.

3. Test Results

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

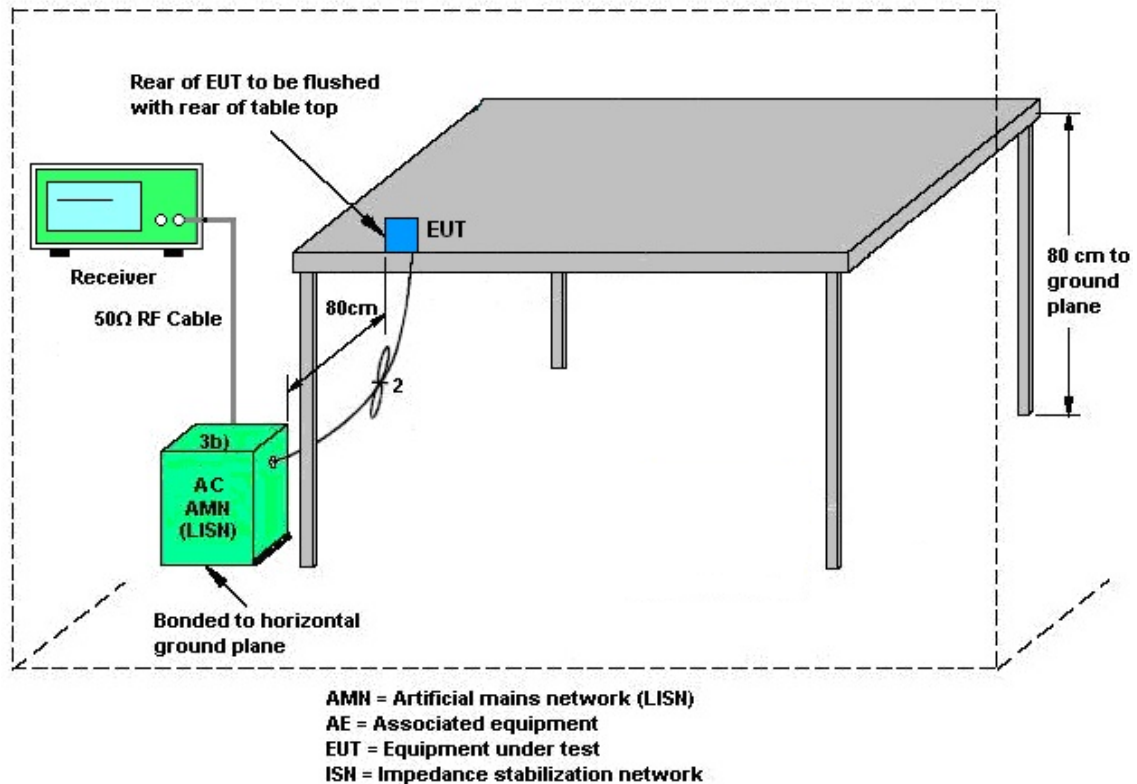
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.1.4 Test setup



3.1.5 Test Result of AC Conducted Emission

Please refer to Appendix A.

3.2 20dB and 99% OBW Spectrum Bandwidth Measurement

3.2.1 Limit

Intentional radiators must be designed to ensure that the 20 dB and 99% emission bandwidth in the specific band 13.553~13.567 MHz.

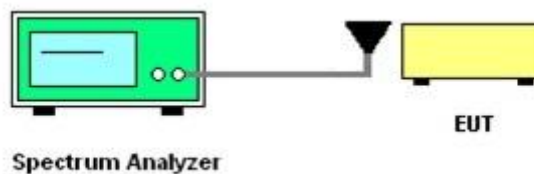
3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max Hold Mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20 dB below carrier.
4. Measured the 99% OBW.

3.2.4 Test Setup



3.2.5 Test Result of Near Field Test Items

Please refer to Appendix B.

3.3 Frequency Stability Measurement

3.3.1 Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) 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 battery operated equipment, the equipment tests shall be performed by using a new battery.

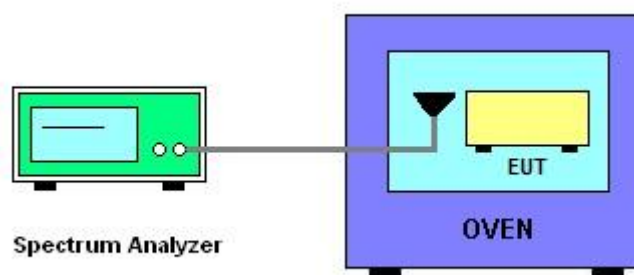
3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT.
2. EUT has transmitted signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
5. The f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than ± 100 ppm.
6. Extreme temperature rule is -20°C~50°C.

3.3.4 Test Setup



3.3.5 Test Result of Near Field Test Items

Please refer to Appendix B.

3.4 Field Strength of Fundamental Emissions and Mask Measurement

3.4.1 Limit

Rules and specifications	FCC CFR 47 Part 15 section 15.225			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Freq. of Emission (MHz)	Field Strength (μ V/m) at 30m	Field Strength (dB μ V/m) at 30m	Field Strength (dB μ V/m) at 10m	Field Strength (dB μ V/m) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

Remark:

1. The field strength test result is in 3m test distance, follow test rules the test data use distance extrapolation factor and reported in this report at 30m test result.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)

3.4.2 Measuring Instruments

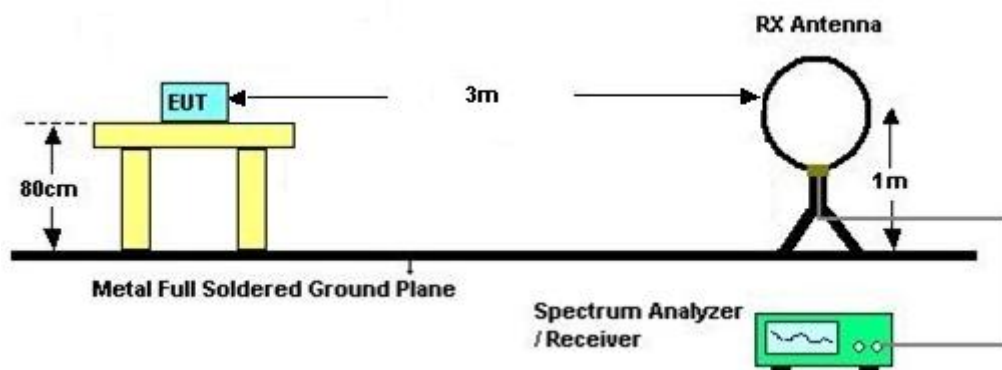
Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT is placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower is placed 3 meters far away from the turntable.
 2. Power on the EUT and all the supporting units. The turntable is rotated by 360 degrees to determine the position of the highest radiation.
 3. The height of the receiving antenna is fixed at one meter above ground to find the maximum emissions field strength.
 4. For Fundamental emissions, use the receiver to measure QP reading.
 5. When the radiated emissions limits are expressed in terms of the average value of the emissions, 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.
 6. Compliance with the spectrum mask is tested with RBW set to 9 kHz.
- Note: Emission level (dBμV/m) = 20 log Emission level (μV/m).

3.4.4 Test Setup

For radiated test below 30MHz



3.4.5 Test Result of Field Strength of Fundamental Emissions and Mask

Please refer to Appendix C.

3.5 Radiated Emissions Measurement

3.5.1 Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength (μ V/m)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.5.3 Measuring Instrument Setting

The following table is the setting of receiver:

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz and 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

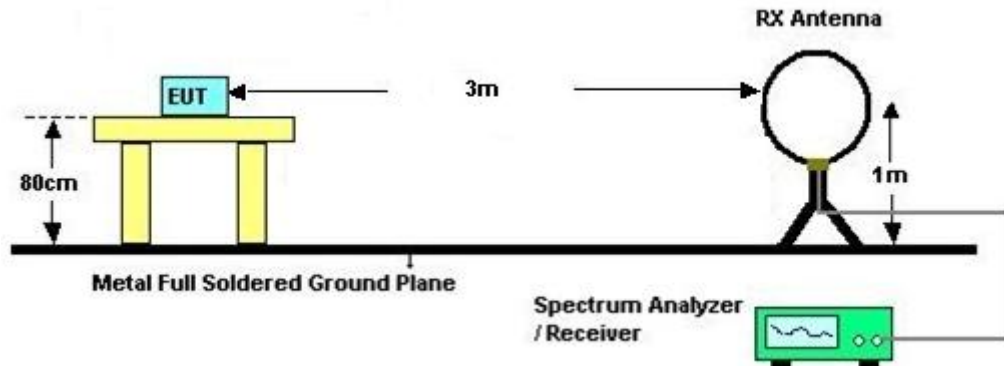


3.5.4 Test Procedures

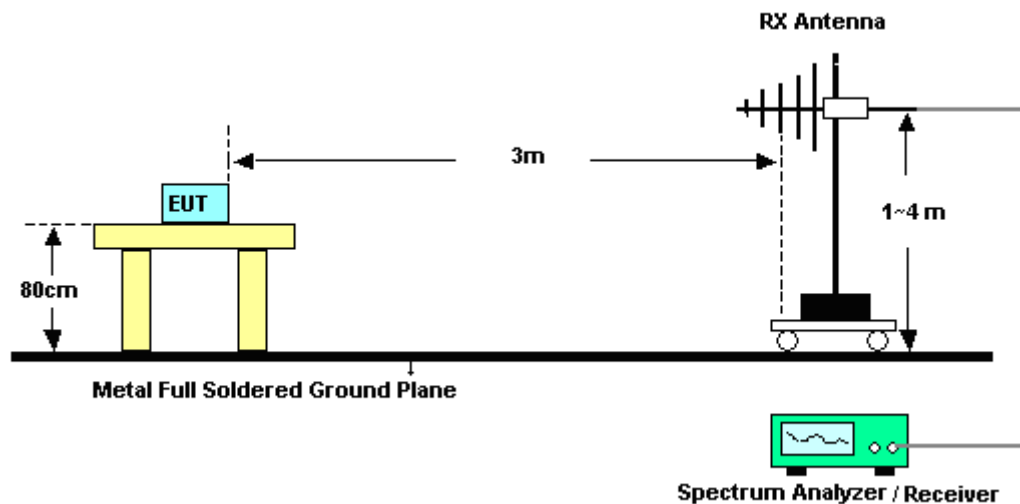
1. Configure the EUT according to ANSI C63.10. The EUT is placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower is placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable is rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna is varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower is scanned (from 1 M to 4 M) and then the turntable is rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, 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.
7. In case the emission is lower than 30 MHz, loop antenna has to be used for measurement and the recorded data shall be QP measured by receiver.
8. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.

3.5.5 Test Setup

For radiated test below 30MHz



For radiated test above 30MHz



3.5.6 Test Result of Radiated Emissions Measurement

Please refer to Appendix C.

Remark:

1. There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.
2. After pre-scan three receiving antenna orientations parallel (horizontal), perpendicular(vertical), and ground-parallel for Loop Antenna, the worst case is receiving antenna parallel.



3.6 Antenna Requirements

3.6.1 Standard Applicable

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 of 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), 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 in this part are not exceeded.

3.6.2 Antenna Anti-Replacement Construction

Antenna permanently attached.



4. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	37059 & 01	30MHz~1GHz	Nov. 26, 2025	Mar. 13, 2026~ Mar. 14, 2026	Nov. 25, 2026	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	101108	9 kHz~30 MHz	Dec. 11, 2025	Mar. 13, 2026~ Mar. 14, 2026	Dec. 10, 2026	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 06, 2025	Mar. 13, 2026~ Mar. 14, 2026	Dec. 05, 2026	Radiation (03CH11-HY)
EXA Signal Analyzer	Keysight	N9010B	MY64320114	10Hz~44GHz	Oct. 07, 2025	Mar. 13, 2026~ Mar. 14, 2026	Oct. 06, 2026	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	20MHz~8.4GHz	Jul. 22, 2025	Mar. 13, 2026~ Mar. 14, 2026	Jul. 21, 2026	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Mar. 13, 2026~ Mar. 14, 2026	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Mar. 13, 2026~ Mar. 14, 2026	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Mar. 13, 2026~ Mar. 14, 2026	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-002391	N/A	N/A	Mar. 13, 2026~ Mar. 14, 2026	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 05, 2026	Mar. 13, 2026~ Mar. 14, 2026	Mar. 04, 2027	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	30M~40G	Mar. 05, 2026	Mar. 13, 2026~ Mar. 14, 2026	Mar. 04, 2027	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	805139 2	30M~40G	May 10, 2025	Mar. 13, 2026~ Mar. 14, 2026	May 09, 2026	Radiation (03CH11-HY)
Filter	Wainwright	WHK20/1000C 7/40SS	SN2	20MHz High Pass Filter	Sep. 09, 2025	Mar. 13, 2026~ Mar. 14, 2026	Sep. 08, 2026	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP200722	N/A	Mar. 03, 2026	Mar. 13, 2026~ Mar. 14, 2026	Mar. 02, 2027	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP200880	N/A	Aug. 26, 2025	Mar. 13, 2026~ Mar. 14, 2026	Aug. 25, 2026	Radiation (03CH11-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Sep. 30, 2025	Mar. 19, 2026~ Mar. 20, 2026	Sep. 29, 2026	Conducted (TH05-HY)
DC Power Supply	GW Instek	GPE-2323	GEU871221	0V~64V ; 0A~6A	Apr. 14, 2025	Mar. 19, 2026~ Mar. 20, 2026	Apr. 13, 2026	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SU-242	93000763	-30°C ~95°C	Jan. 05, 2026	Mar. 19, 2026~ Mar. 20, 2026	Jan. 04, 2027	Conducted (TH05-HY)
Hygrometer	TECPEL	DTM-303A	TP224371	N/A	Jun. 16, 2025	Mar. 19, 2026~ Mar. 20, 2026	Jun. 15, 2026	Conducted (TH05-HY)
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Mar. 07, 2026	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Mar. 07, 2026	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 20, 2025	Mar. 07, 2026	Oct. 19, 2026	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 02, 2026	Mar. 07, 2026	Mar. 01, 2027	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 24, 2025	Mar. 07, 2026	Mar. 23, 2026	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 26, 2025	Mar. 07, 2026	Mar. 25, 2026	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Oct. 21, 2025	Mar. 07, 2026	Oct. 20, 2026	Conduction (CO07-HY)



5. Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.7 dB
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Uncertainty of Radiated Emission Measurement (9 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.4 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	6.5 dB
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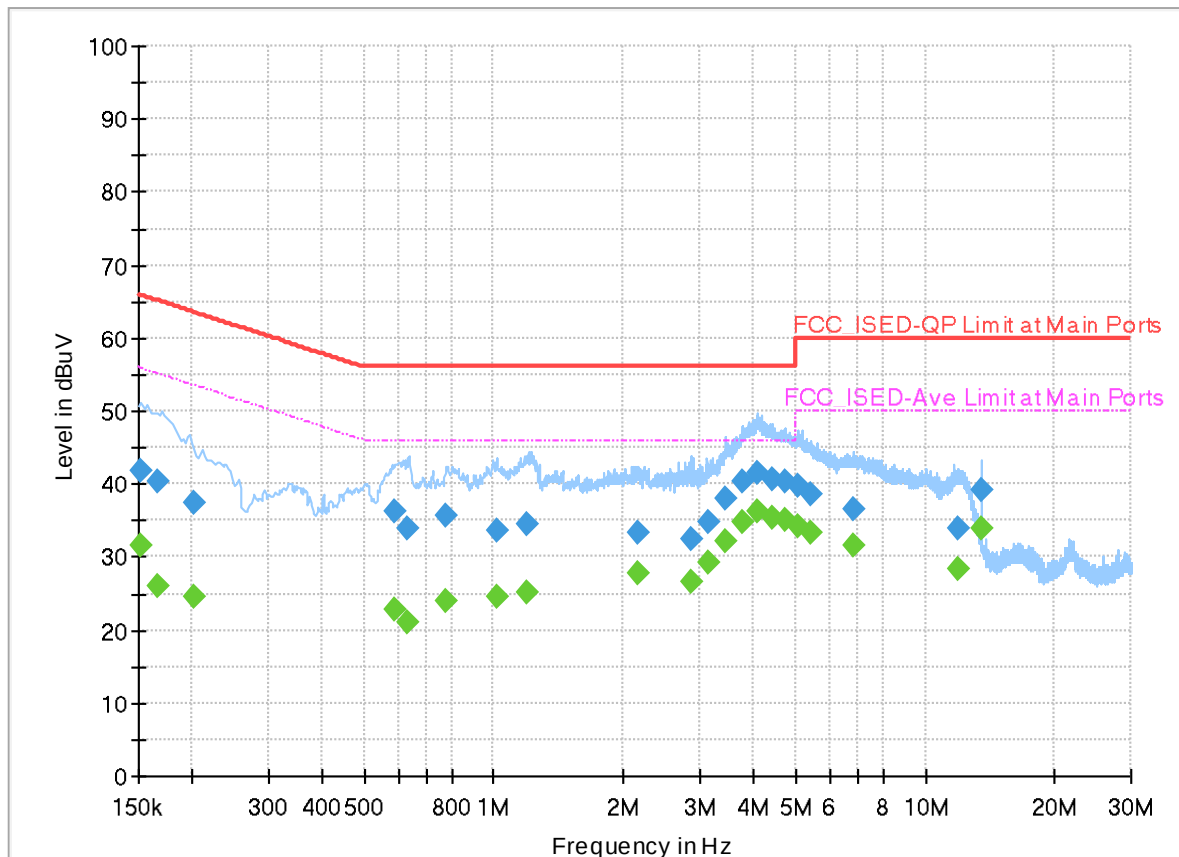


Appendix A. Test Results of Conducted Emission Test

EUT Information

Report NO : 5D2217-01
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



Final Result

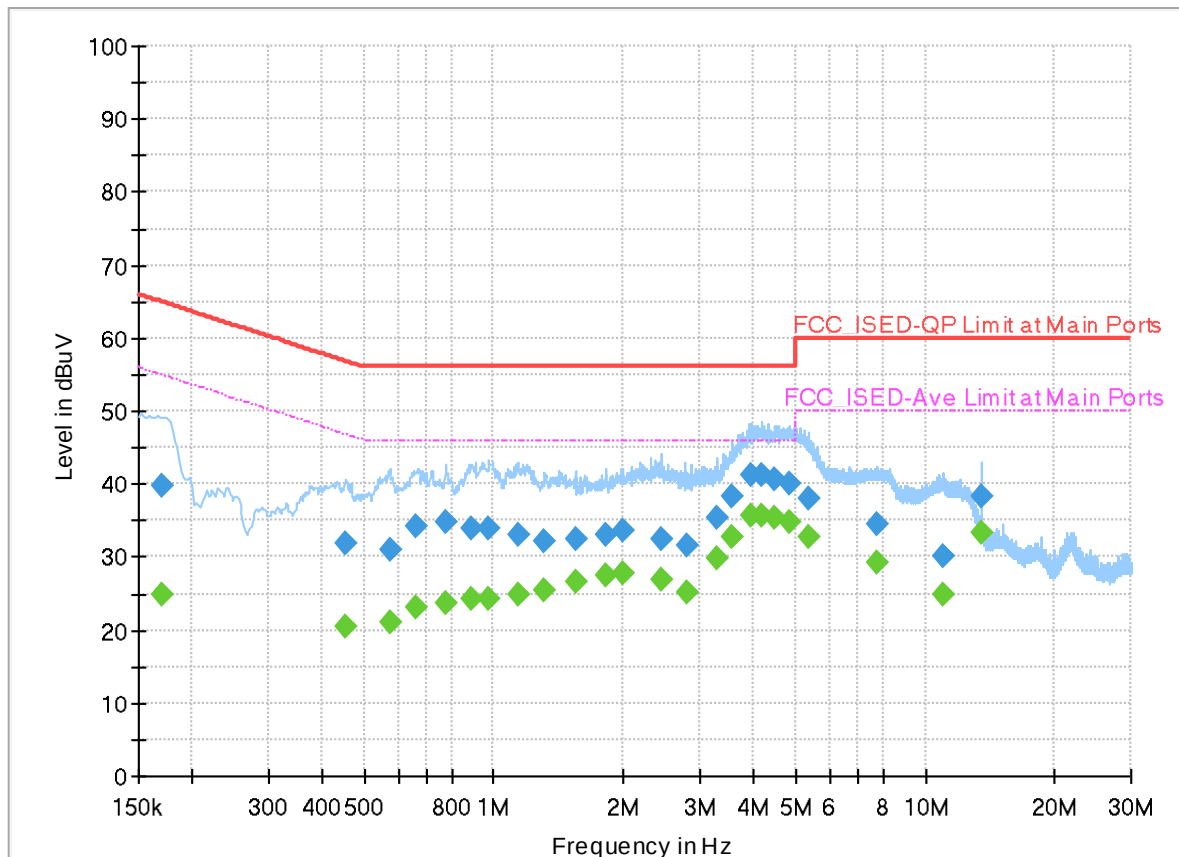
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	31.47	55.88	24.41	L1	ON	19.9
0.152250	41.76	---	65.88	24.12	L1	ON	19.9
0.165750	---	25.91	55.17	29.26	L1	ON	19.9
0.165750	40.39	---	65.17	24.78	L1	ON	19.9
0.201750	---	24.48	53.54	29.06	L1	ON	19.9
0.201750	37.30	---	63.54	26.24	L1	ON	19.9
0.590100	---	22.73	46.00	23.27	L1	ON	19.9
0.590100	36.36	---	56.00	19.64	L1	ON	19.9
0.633030	---	21.08	46.00	24.92	L1	ON	19.9
0.633030	34.01	---	56.00	21.99	L1	ON	19.9
0.777390	---	23.91	46.00	22.09	L1	ON	19.9
0.777390	35.77	---	56.00	20.23	L1	ON	19.9
1.020750	---	24.45	46.00	21.55	L1	ON	19.9
1.020750	33.74	---	56.00	22.26	L1	ON	19.9
1.198050	---	25.04	46.00	20.96	L1	ON	19.9
1.198050	34.61	---	56.00	21.39	L1	ON	19.9
2.163750	---	27.66	46.00	18.34	L1	ON	20.0
2.163750	33.25	---	56.00	22.75	L1	ON	20.0
2.875290	---	26.59	46.00	19.41	L1	ON	20.0

2.875290	32.36	---	56.00	23.64	L1	ON	20.0
3.126210	---	29.16	46.00	16.84	L1	ON	20.0
3.126210	34.70	---	56.00	21.30	L1	ON	20.0
3.447330	---	32.26	46.00	13.74	L1	ON	20.0
3.447330	38.10	---	56.00	17.90	L1	ON	20.0
3.766200	---	34.80	46.00	11.20	L1	ON	20.0
3.766200	40.46	---	56.00	15.54	L1	ON	20.0
4.080930	---	36.22	46.00	9.78	L1	ON	20.0
4.080930	41.61	---	56.00	14.39	L1	ON	20.0
4.429500	---	35.26	46.00	10.74	L1	ON	20.0
4.429500	40.66	---	56.00	15.34	L1	ON	20.0
4.737120	---	35.04	46.00	10.96	L1	ON	20.0
4.737120	40.48	---	56.00	15.52	L1	ON	20.0
5.077500	---	34.31	50.00	15.69	L1	ON	20.0
5.077500	39.66	---	60.00	20.34	L1	ON	20.0
5.421210	---	33.34	50.00	16.66	L1	ON	20.0
5.421210	38.61	---	60.00	21.39	L1	ON	20.0
6.797310	---	31.56	50.00	18.44	L1	ON	20.0
6.797310	36.53	---	60.00	23.47	L1	ON	20.0
11.986980	---	28.30	50.00	21.70	L1	ON	20.1
11.986980	33.87	---	60.00	26.13	L1	ON	20.1
13.560180	---	33.90	50.00	16.10	L1	ON	20.1
13.560180	39.16	---	60.00	20.84	L1	ON	20.1

EUT Information

Report NO : 5D2217-01
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum



Final Result

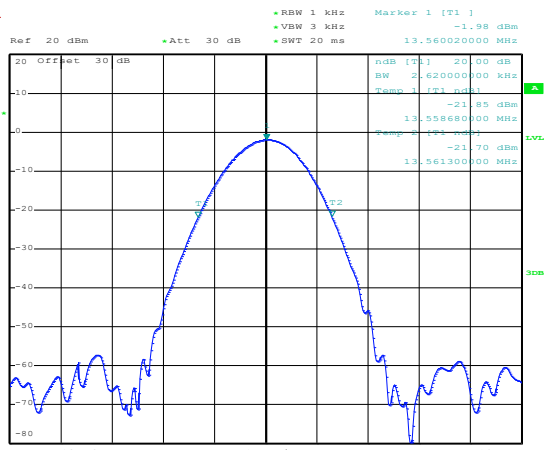
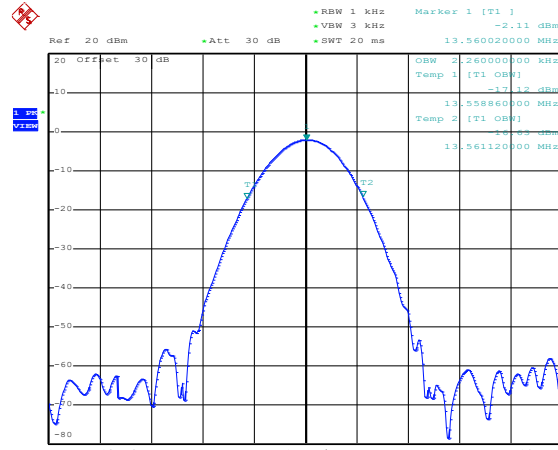
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.170700	---	24.97	54.93	29.96	N	ON	19.9
0.170700	39.62	---	64.93	25.31	N	ON	19.9
0.453750	---	20.59	46.81	26.22	N	ON	19.9
0.453750	31.81	---	56.81	25.00	N	ON	19.9
0.577680	---	20.96	46.00	25.04	N	ON	19.9
0.577680	31.12	---	56.00	24.88	N	ON	19.9
0.660930	---	22.98	46.00	23.02	N	ON	19.9
0.660930	34.35	---	56.00	21.65	N	ON	19.9
0.773340	---	23.71	46.00	22.29	N	ON	19.9
0.773340	34.73	---	56.00	21.27	N	ON	19.9
0.888000	---	24.16	46.00	21.84	N	ON	19.9
0.888000	33.79	---	56.00	22.21	N	ON	19.9
0.967020	---	24.18	46.00	21.82	N	ON	19.9
0.967020	33.81	---	56.00	22.19	N	ON	19.9
1.135230	---	24.94	46.00	21.06	N	ON	19.9
1.135230	33.17	---	56.00	22.83	N	ON	19.9
1.299750	---	25.49	46.00	20.51	N	ON	19.9
1.299750	32.17	---	56.00	23.83	N	ON	19.9
1.545720	---	26.56	46.00	19.44	N	ON	20.0

1.545720	32.56	---	56.00	23.44	N	ON	20.0
1.811850	---	27.45	46.00	18.55	N	ON	20.0
1.811850	33.12	---	56.00	22.88	N	ON	20.0
1.983750	---	27.87	46.00	18.13	N	ON	20.0
1.983750	33.50	---	56.00	22.50	N	ON	20.0
2.446350	---	26.81	46.00	19.19	N	ON	20.0
2.446350	32.42	---	56.00	23.58	N	ON	20.0
2.789250	---	25.11	46.00	20.89	N	ON	20.0
2.789250	31.51	---	56.00	24.49	N	ON	20.0
3.299910	---	29.75	46.00	16.25	N	ON	20.0
3.299910	35.29	---	56.00	20.71	N	ON	20.0
3.575580	---	32.72	46.00	13.28	N	ON	20.0
3.575580	38.34	---	56.00	17.66	N	ON	20.0
3.952500	---	35.57	46.00	10.43	N	ON	20.0
3.952500	41.12	---	56.00	14.88	N	ON	20.0
4.191270	---	35.74	46.00	10.26	N	ON	20.0
4.191270	41.23	---	56.00	14.77	N	ON	20.0
4.473420	---	35.29	46.00	10.71	N	ON	20.0
4.473420	40.59	---	56.00	15.41	N	ON	20.0
4.853220	---	34.82	46.00	11.18	N	ON	20.0
4.853220	40.06	---	56.00	15.94	N	ON	20.0
5.364690	---	32.76	50.00	17.24	N	ON	20.0
5.364690	37.89	---	60.00	22.11	N	ON	20.0
7.771560	---	29.35	50.00	20.65	N	ON	20.1
7.771560	34.52	---	60.00	25.48	N	ON	20.1
10.979250	---	24.99	50.00	25.01	N	ON	20.1
10.979250	30.14	---	60.00	29.86	N	ON	20.1
13.560180	---	33.22	50.00	16.78	N	ON	20.2
13.560180	38.23	---	60.00	21.77	N	ON	20.2

Appendix B. Test Results of Near Field Test Items

B1. Test Result of 20dB Spectrum Bandwidth

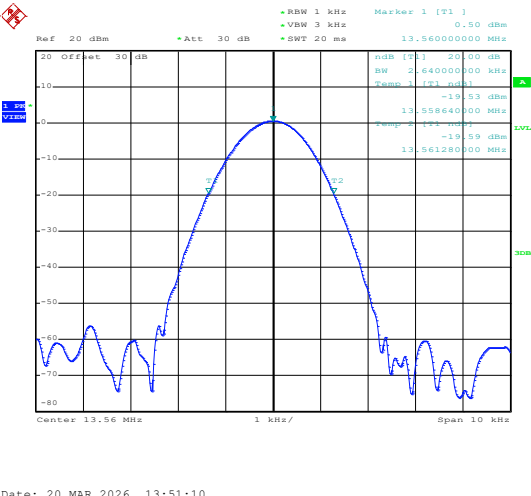
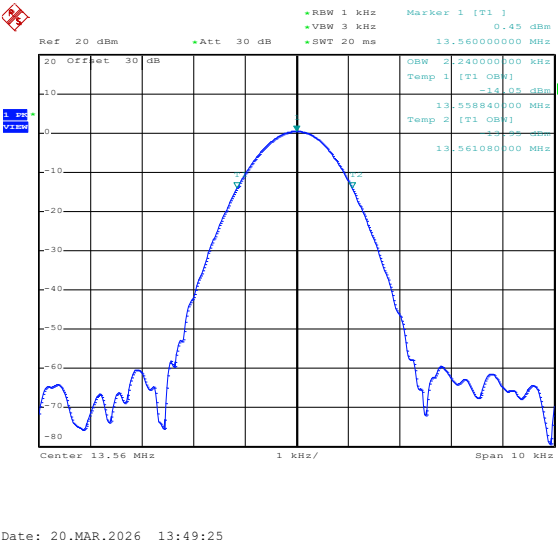
<Sample 1>

Test mode		Test Frequency (MHz)	
RFID Tx		13.56	
 Ref 20 dBm Att 30 dB RBW 1 kHz VBW 3 kHz SWT 20 ms Marker 1 [T1] -1.98 dBm 13.560020000 MHz dB [T1] 20.00 dB BW 2.620000000 kHz Temp 1 [T1] dBm -21.85 dBm 13.558680000 MHz Temp 2 [T1] dBm -21.70 dBm 13.561300000 MHz Center 13.56 MHz 1 kHz/ Span 10 kHz Date: 19.MAR.2026 14:22:26		 Ref 20 dBm Att 30 dB RBW 1 kHz VBW 3 kHz SWT 20 ms Marker 1 [T1] -2.11 dBm 13.560020000 MHz dB [T1] 20.00 dB BW 2.260000000 kHz Temp 1 [T1] dBm -17.12 dBm 13.558680000 MHz Temp 2 [T1] dBm -16.93 dBm 13.561200000 MHz Center 13.56 MHz 1 kHz/ Span 10 kHz Date: 19.MAR.2026 14:21:57	
20dB Bandwidth (kHz)	2.62	99% OccupiedBW(kHz)	2.26
Frequency range (MHz)	$f_L > 13.553$	13.558680	Test Result
	$f_H < 13.567$	13.561300	Complies

Remark: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.



<Sample 2>

Test mode		Test Frequency (MHz)	
RFID Tx		13.56	
			
20dB Bandwidth (kHz)	2.64	99% OccupiedBW(kHz)	2.24
Frequency range (MHz)	$f_L > 13.553$	13.558640	Test Result
	$f_H < 13.567$	13.561280	Complies

Remark: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

**B2. Test Result of Frequency Stability**

<Sample 1>

Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (°C)	Time (min)	Measurement Frequency (MHz)
11.7	13.559950	-20	0	13.560080
10.53	13.559960		2	13.560080
12.87	13.559960		5	13.560080
			10	13.560080
		-10	0	13.560080
			2	13.560080
			5	13.560080
			10	13.560080
		0	0	13.560070
			2	13.560080
			5	13.560070
			10	13.560080
		10	0	13.560060
			2	13.560060
			5	13.560060
			10	13.560060
		20	0	13.560030
			2	13.560030
			5	13.560040
			10	13.560020
		30	0	13.560000
			2	13.560000
			5	13.559990
			10	13.559990
		40	0	13.559970
			2	13.559960
			5	13.559920
			10	13.559960



Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vdc)	Measurement Frequency (MHz)	Temperature (°C)	Time (min)	Measurement Frequency (MHz)
		50	0	13.559940
			2	13.559940
			5	13.559940
			10	13.559940
Max.Deviation (MHz)	-0.000050	Max.Deviation (MHz)		-0.000080
Max.Deviation (ppm)	-3.6873	Max.Deviation (ppm)		-5.8997
Limit	FS < ±100 ppm	Limit		FS < ±100 ppm
Test Result	PASS	Test Result		PASS



<Sample 2>

Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vdc)	Measurement Frequency (MHz)	Temperature (°C)	Time (min)	Measurement Frequency (MHz)
11.7	13.559960	-20	0	13.560020
10.53	13.559960		2	13.560020
12.87	13.559960		5	13.560020
			10	13.560020
		-10	0	13.560030
			2	13.560030
			5	13.560040
			10	13.560040
		0	0	13.560020
			2	13.560020
			5	13.560020
			10	13.560020
		10	0	13.560000
			2	13.560000
			5	13.560000
			10	13.560000
		20	0	13.559960
			2	13.559960
			5	13.559960
			10	13.559960
		30	0	13.559920
			2	13.559920
			5	13.559920
			10	13.559920
		40	0	13.559880
			2	13.559880
			5	13.559880
			10	13.559880

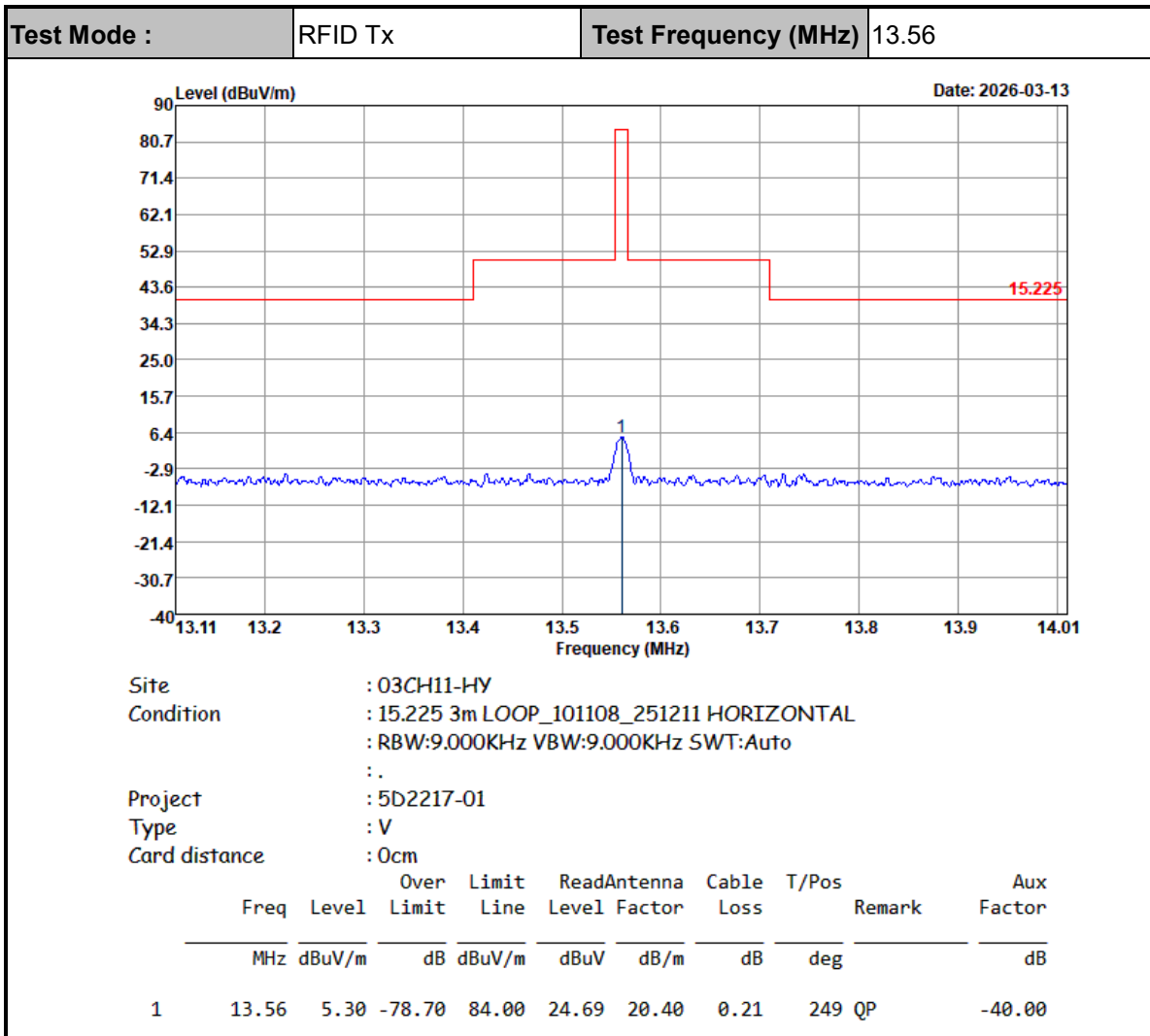


Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vdc)	Measurement Frequency (MHz)	Temperature (°C)	Time (min)	Measurement Frequency (MHz)
		50	0	13.559860
			2	13.559860
			5	13.559860
			10	13.559860
Max.Deviation (MHz)	-0.000040	Max.Deviation (MHz)		-0.000140
Max.Deviation (ppm)	-2.9499	Max.Deviation (ppm)		-10.3245
Limit	FS < ±100 ppm	Limit		FS < ±100 ppm
Test Result	PASS	Test Result		PASS

Appendix C. Test Results of Radiated Test Items

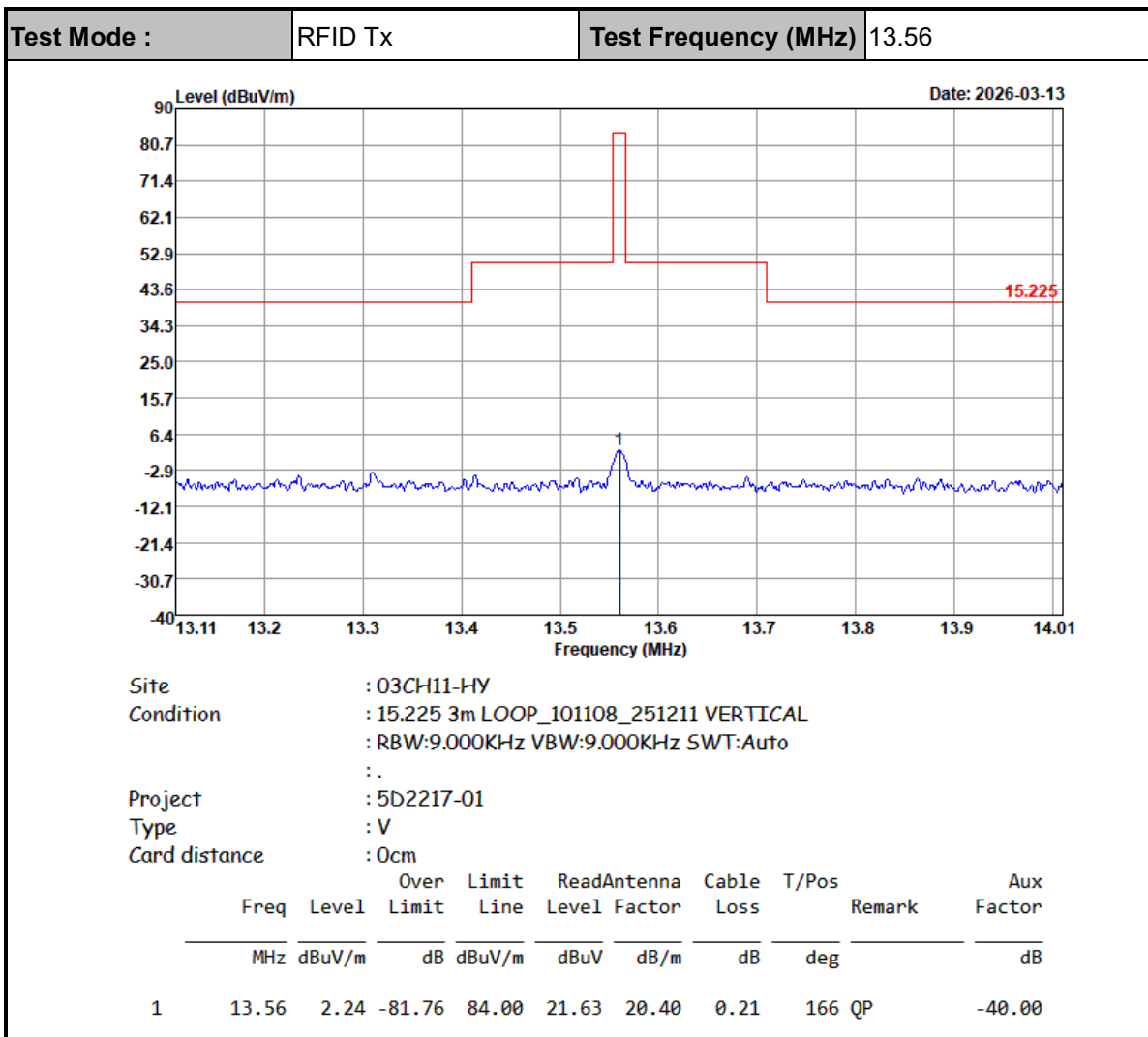
C1. Test Result of Field Strength of Fundamental Emissions

<Sample 1>

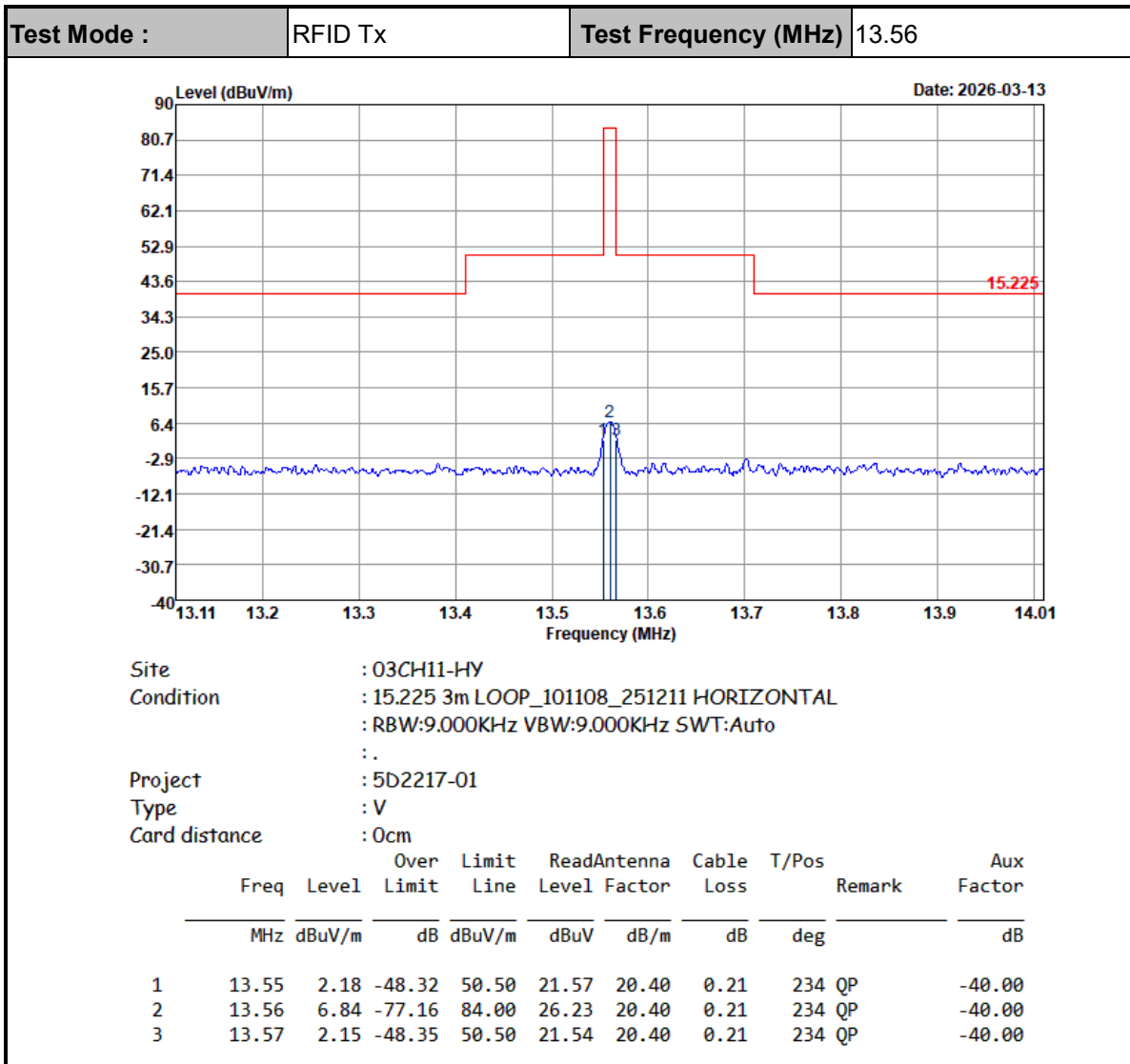


Note :

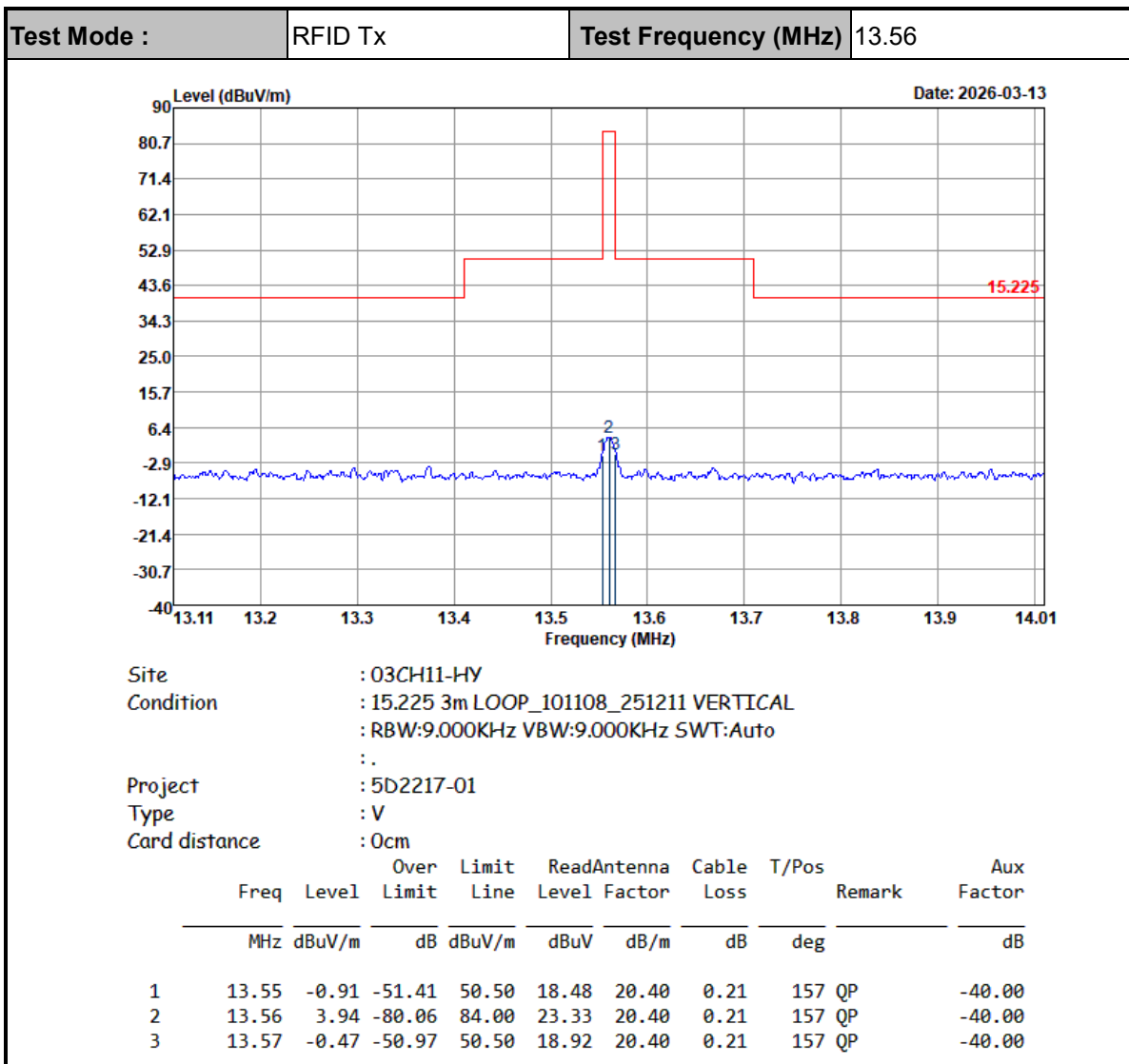
- Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB) = $40 \log (30/3) = 40$ (dB)
- Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.


Note :

1. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance}) \text{ (dB)} = 40 \log (30/3) = 40 \text{ (dB)}$
2. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.

<Sample 2>

Note :

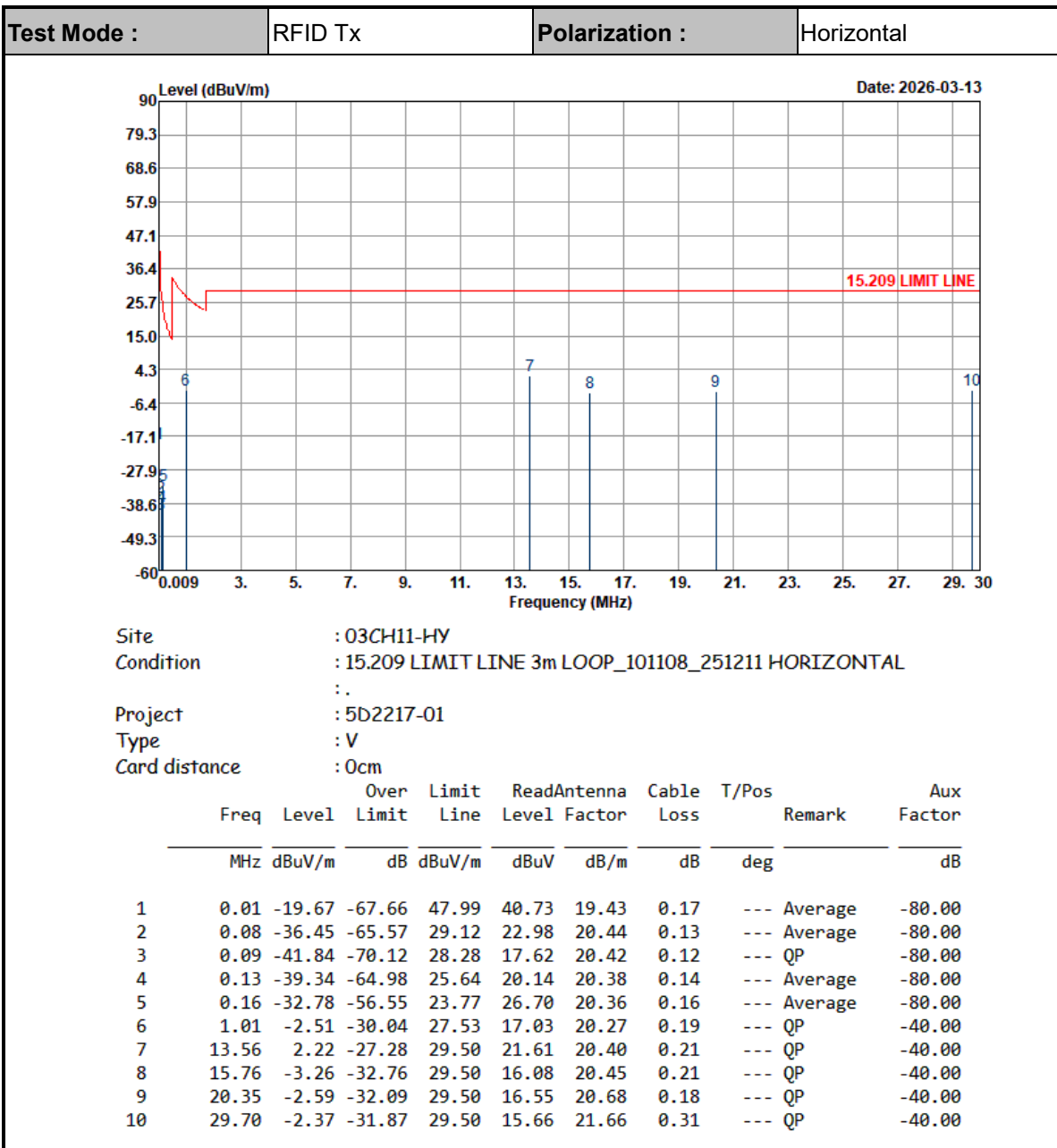
1. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance}) \text{ (dB)} = 40 \log (30/3) = 40 \text{ (dB)}$
2. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.


Note :

1. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance}) \text{ (dB)} = 40 \log (30/3) = 40 \text{ (dB)}$
2. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.

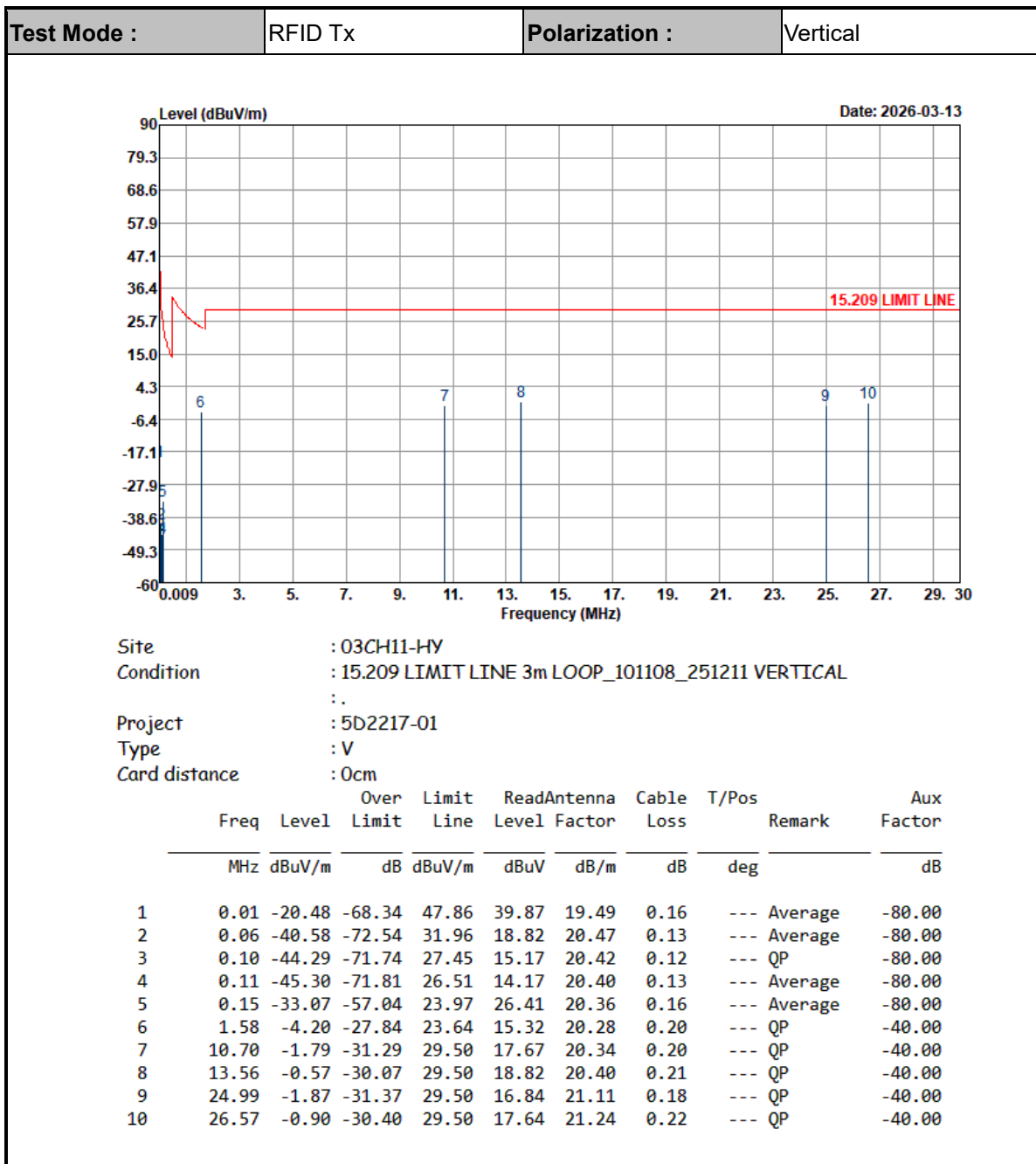
C2. Results of Radiated Spurious Emissions (9 kHz~30MHz)

<Sample 1>

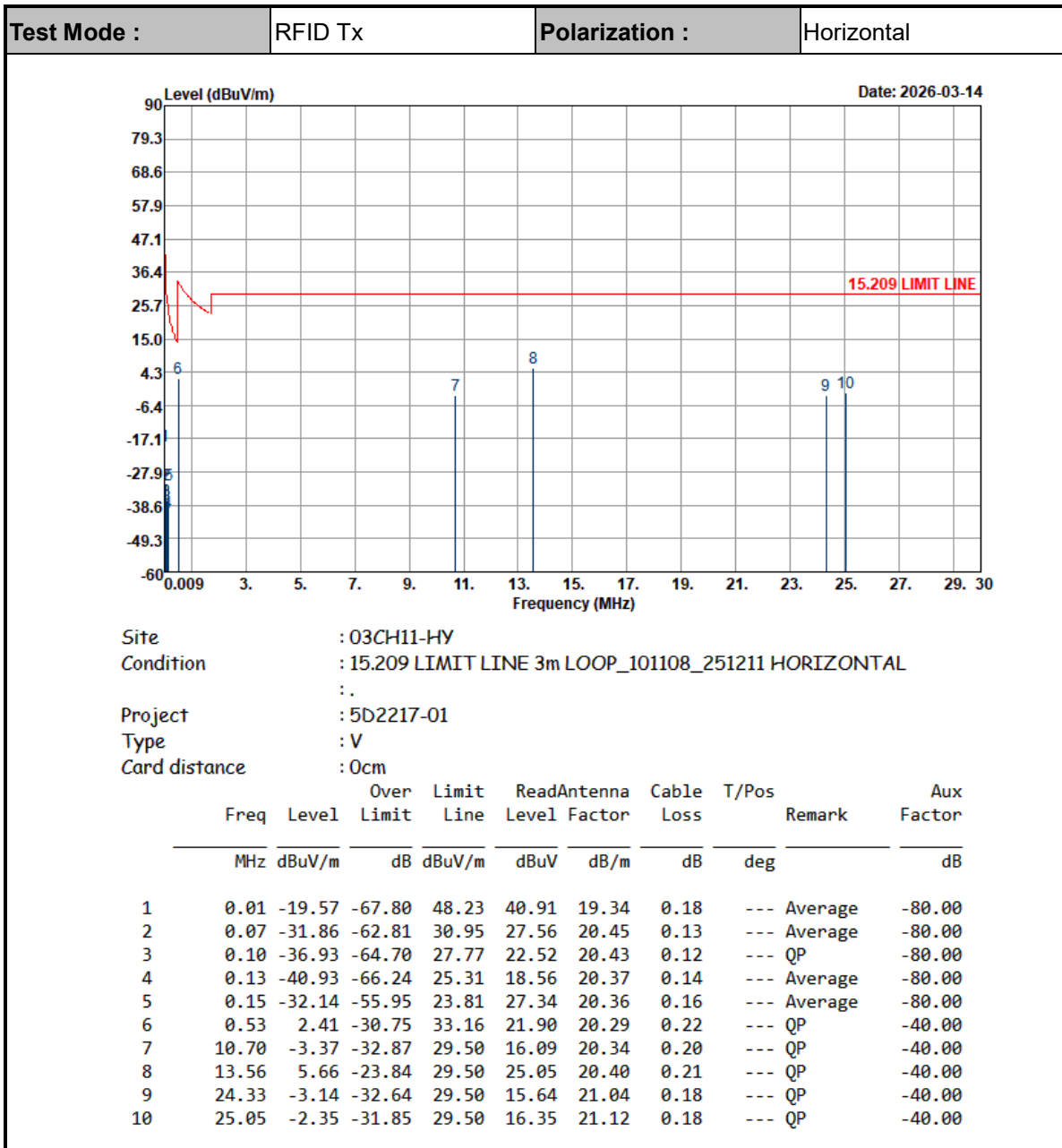


Note :

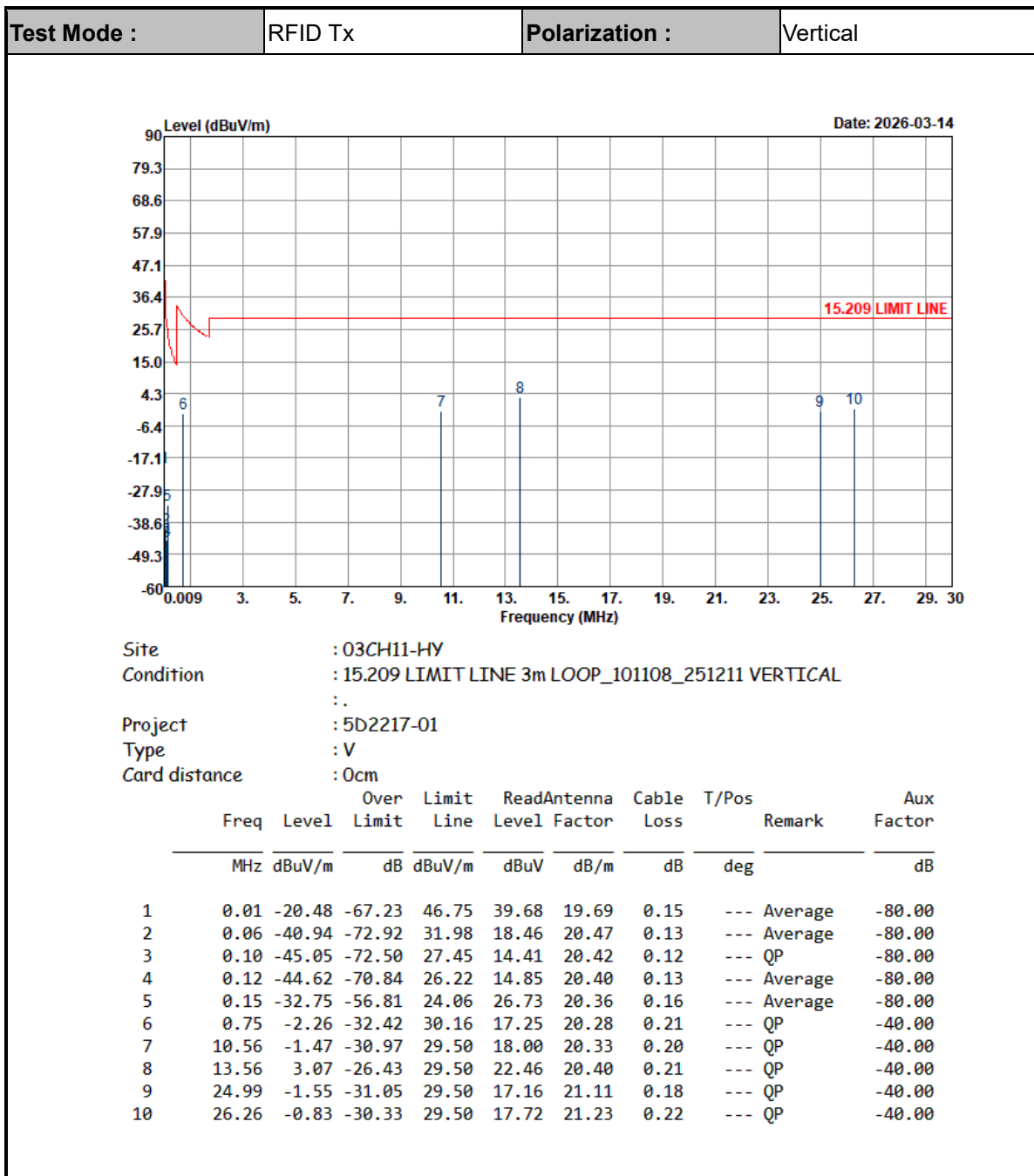
1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
 EX.:
 For below 490kHz Distance extrapolation factor = $40 \log (300/3) = 80$ (dB)
 For 490kHz to 30MHz Distance extrapolation factor = $40 \log (30/3) = 40$ (dB)
3. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.
4. 13.56 MHz is fundamental signal which can be ignored


Note :

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
EX.:
For below 490kHz Distance extrapolation factor = $40 \log (300/3) = 80$ (dB)
For 490kHz to 30MHz Distance extrapolation factor = $40 \log (30/3) = 40$ (dB)
3. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.
4. 13.56 MHz is fundamental signal which can be ignored

<Sample 2>

Note :

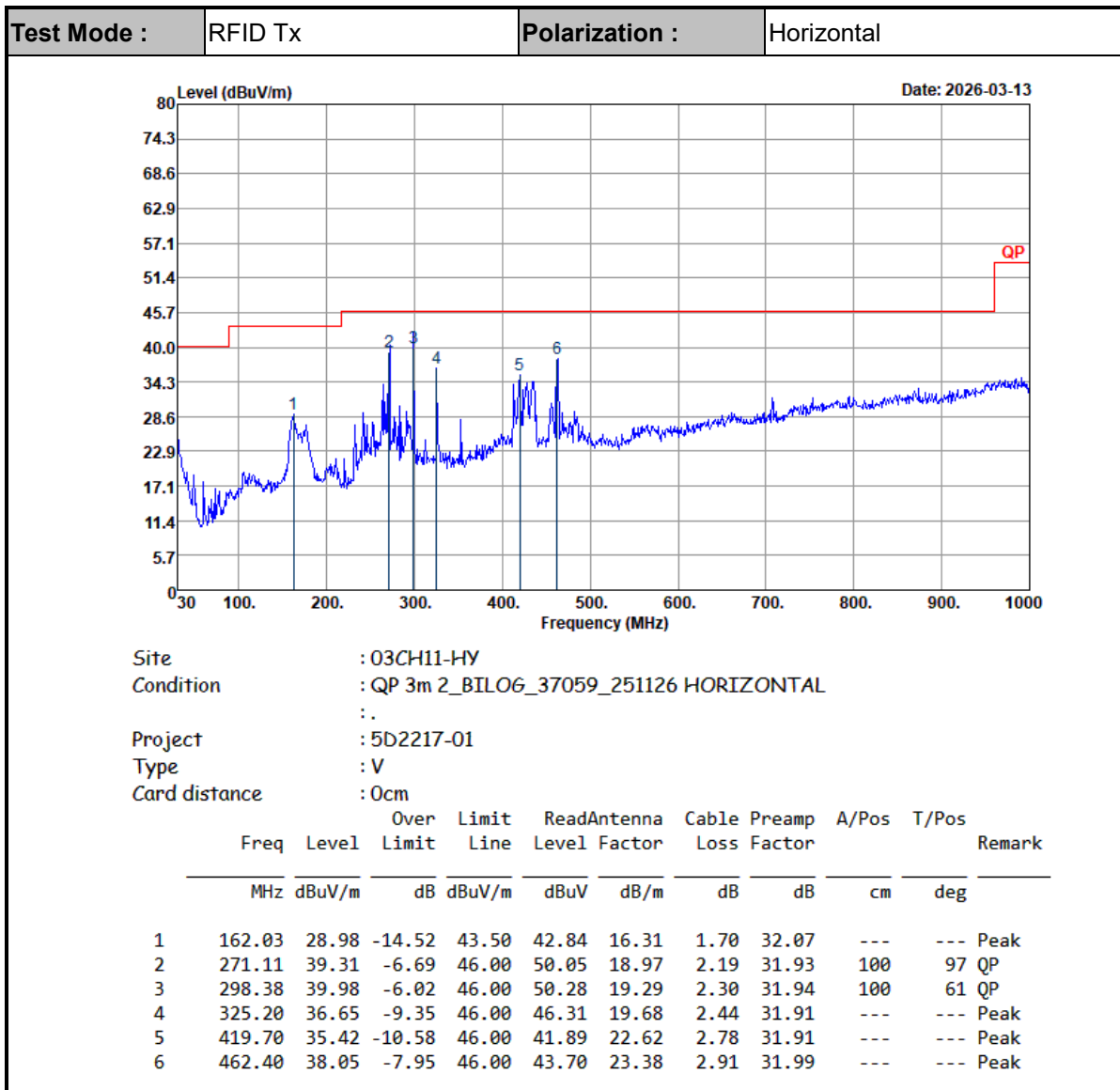
1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
EX.:
For below 490kHz Distance extrapolation factor = $40 \log (300/3) = 80$ (dB)
For 490kHz to 30MHz Distance extrapolation factor = $40 \log (30/3) = 40$ (dB)
3. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.
4. 13.56 MHz is fundamental signal which can be ignored


Note :

- The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
EX.:
For below 490kHz Distance extrapolation factor = $40 \log (300/3) = 80$ (dB)
For 490kHz to 30MHz Distance extrapolation factor = $40 \log (30/3) = 40$ (dB)
- Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.
- 13.56 MHz is fundamental signal which can be ignored

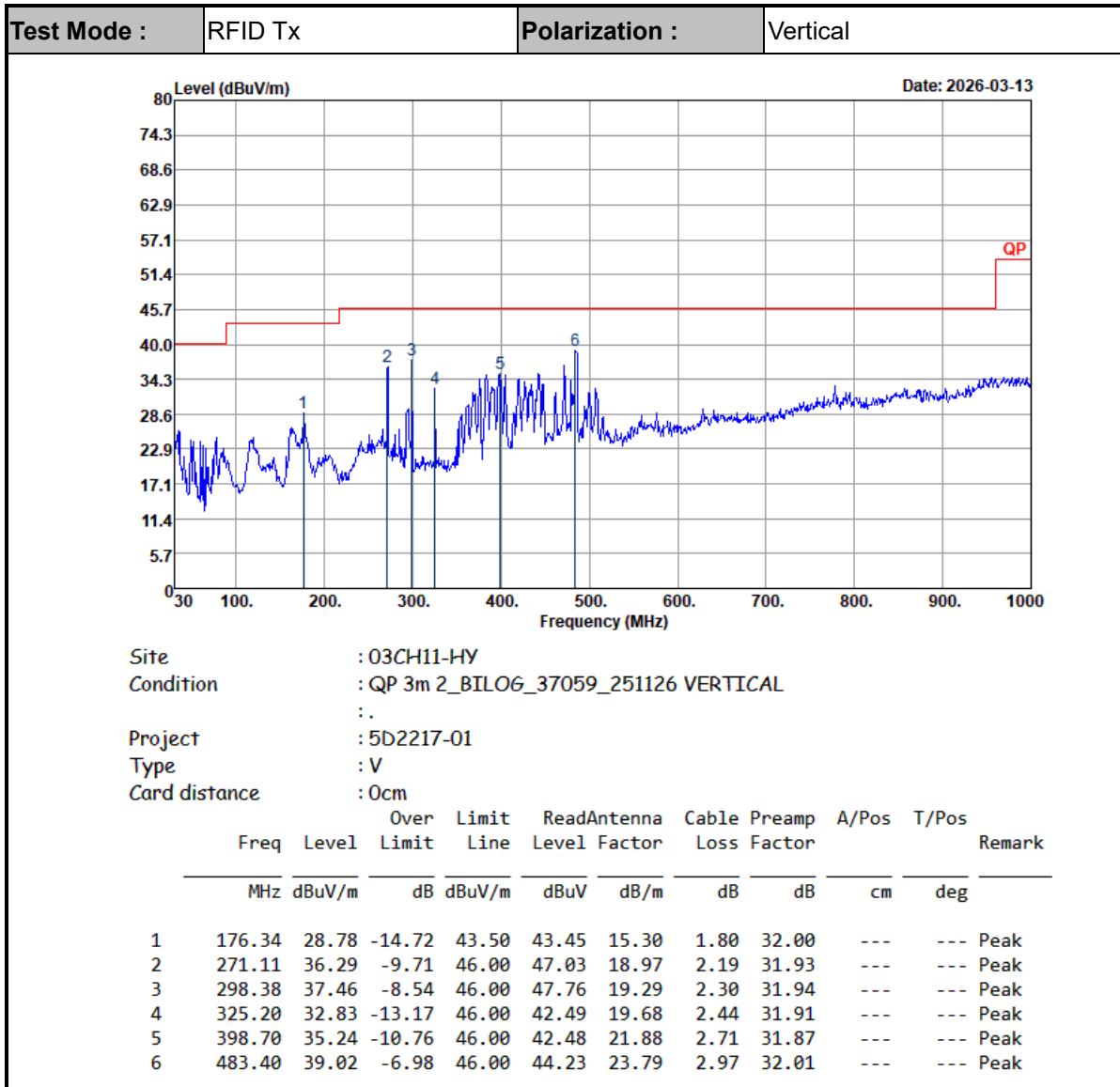
C3. Results of Radiated Spurious Emissions (30MHz~1GHz)

<Sample 1>

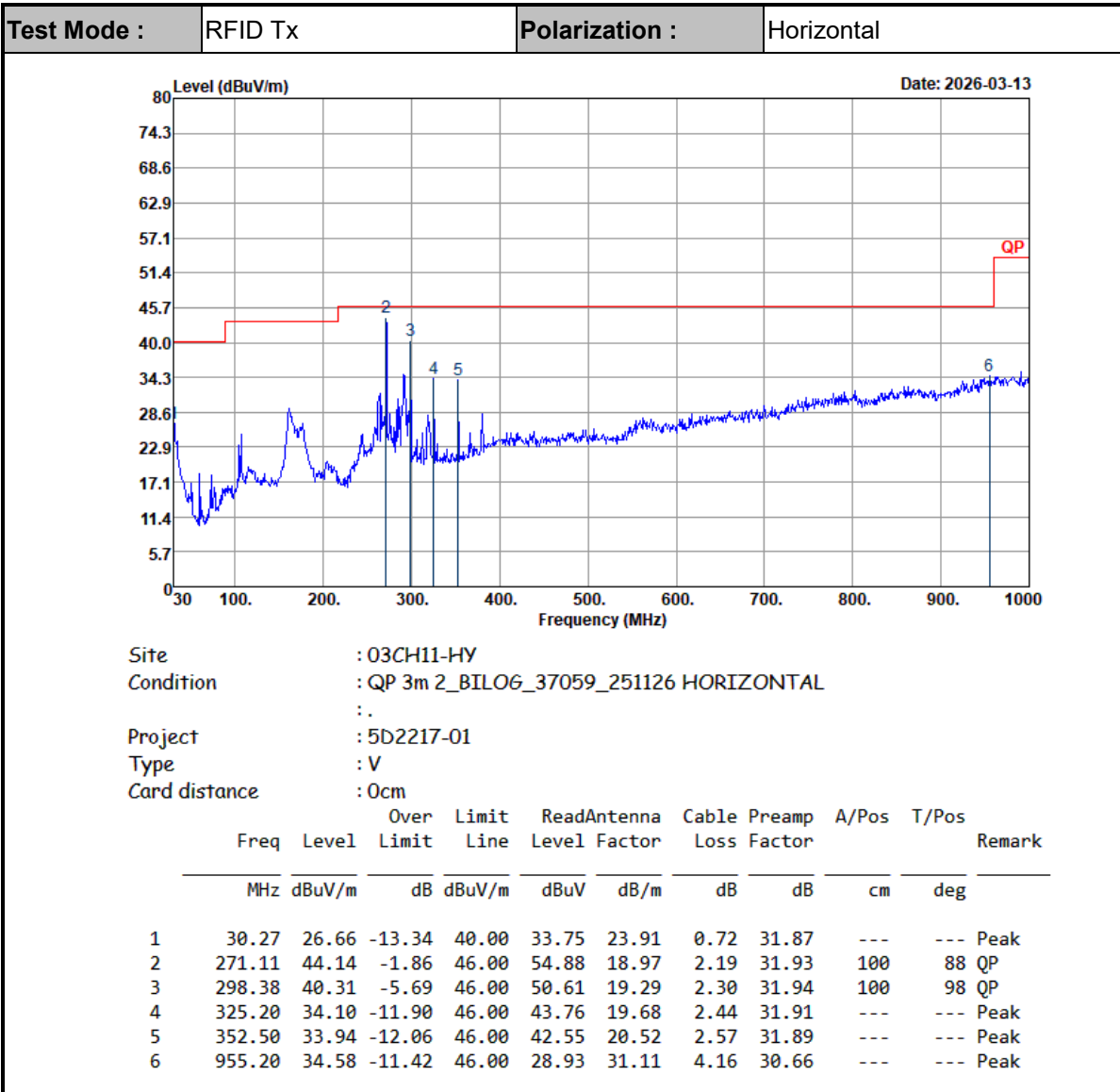


Note:

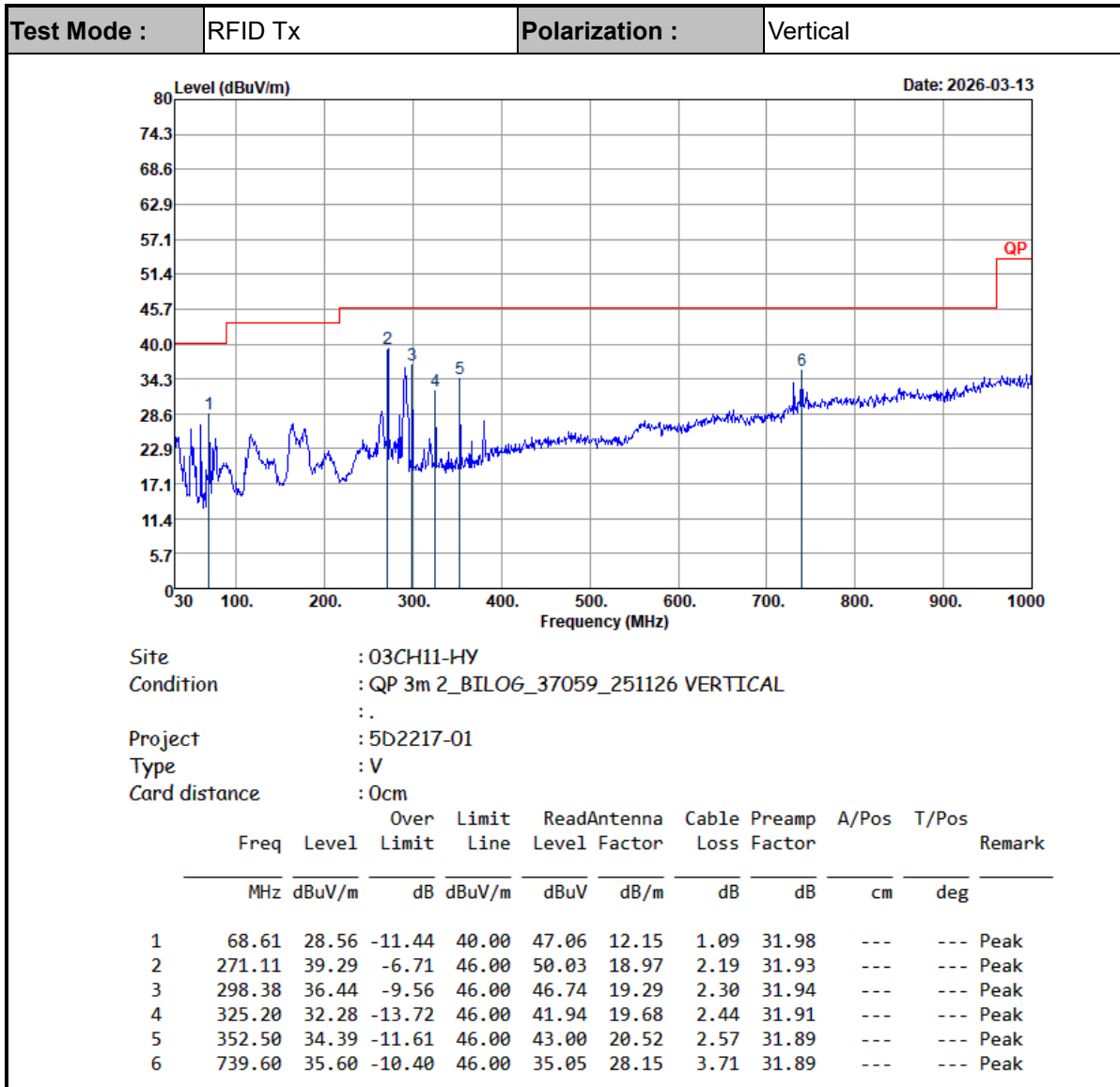
1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.
4. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.


Note:

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.
4. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.

<Sample 2>

Note:

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.
4. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.


Note:

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.
4. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.