



FCC RF Test Report

(NFC)

Applicant: Automotive Data Solutions Inc.

Address of Applicant: 8400 Bougainville Montreal Quebec Canada H4P 2G1

Equipment Under Test (EUT)

Product Name: Interface programmer

Model No.: ADS-USB-HUB

Trade Mark: N/A

FCC ID: 2AEPJ-WEBLINKHUB

Applicable Standards: FCC CFR Title 47 Part 15C

Date of Sample Receipt: 30 Sep., 2022

Date of Test: 01 Oct., to 06 Dec., 2022

Date of Report Issue: 06 Dec., 2022

Test Result: PASS

Tested by:

Mike Ou
Test Engineer

Date:

06 Dec., 2022

Reviewed by:

Wenwen Zhang
Project Engineer

Date:

06 Dec., 2022

Approved by:

Wenwen Zhang
Manager

Date:

06 Dec., 2022

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

Version No.	Date	Description
00	31 Oct., 2022	Original
01	06 Dec., 2022	Updated Page 1/9.

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3 General Information

3.1 Client Information

Applicant:	Automotive Data Solutions Inc.
Address:	8400 Bougainville Montreal Quebec Canada H4P 2G1
Manufacturer/Factory:	DONGGUAN PORTMAN ELECTRONIC SCIENCE AND TECHNOLOGY CO., LTD.
Address:	NO.10, LUYI 2 ROAD, TANGXIA TOWN, DONGGUAN CITY GUANGDONG PROVINCE

3.2 General Description of E.U.T.

Product Name:	Interface programmer
Model No.:	ADS-USB-HUB
Operation Frequency:	125KHz, 134.2KHz
Channel Numbers:	1
Modulation Type:	ASK
Antenna Type:	Induction Coil Antenna
AC Adapter:	Model: L008A120050U Input: AC100-240V, 50/60Hz, 200mA Output: DC 12V, 500mA
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Test Mode and Environment

Test Mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation
Remark: Pre-scan The EUT was placed on three different polar directions tested: i.e. X axis, Y axis, Z axis, and found Y axis was worse case, so the report only reflects the worse axis tested data.	
Operating Environment:	
Temperature:	15°C ~ 35°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar

3.4 Description of Test Auxiliary Equipment

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
N/A	N/A	N/A	N/A	N/A

3.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.11 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.62 dB
Radiated Emission (9kHz ~ 30MHz) (3m SAC)	±3.13 dB
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.	

3.6 Additions to, Deviations, or Exclusions From the Method

No

3.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

3.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2024
Loop Antenna	Schwarzbeck	FMZB 1519 B	WXJ002-4	03-07-2022	03-06-2023
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	03-08-2022	03-07-2023
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	01-20-2022	01-19-2023
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	03-05-2022	03-04-2023
Coaxial Cable (9kHz ~ 30MHz)	JYT	JYT3M-1G-BB-5M	WXG001-6	01-20-2022	01-19-2023
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-20-2022	01-19-2023
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		
EMI Test Software	AUDIX	E3	Version: 6.110919b		

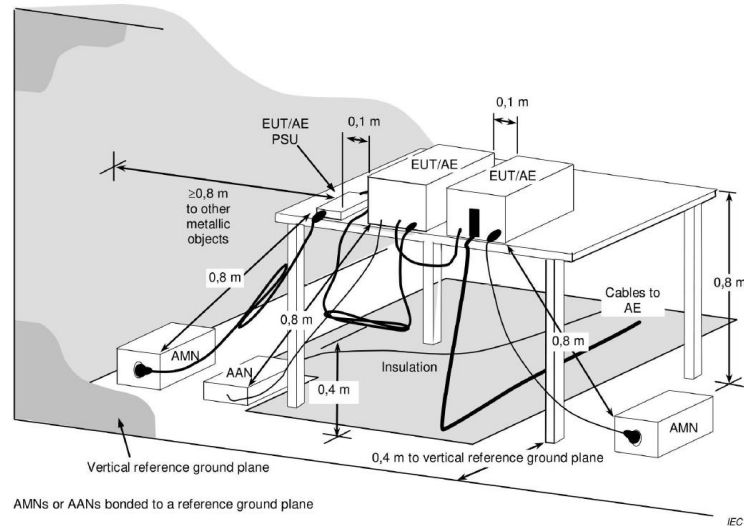
Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESR3	WXJ003-2	07-12-2022	07-11-2023
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	02-24-2022	02-23-2023
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	03-30-2022	03-29-2023
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	02-24-2022	02-23-2023
RF Switch	TOP PRECISION	RSU0301	WXG003	N/A	
Test Software	AUDIX	E3	Version: 6.110919b		

Conducted Method:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI 3	WXJ003	01-19-2022	01-18-2023
Spectrum analyzer	Rohde & Schwarz	FSP30	WXJ004	01-20-2022	01-19-2023
Spectrum Analyzer	Keysight	N9020B	WXJ081-1	06-29-2022	06-28-2023

4 Measurement Setup and Procedure

4.1 Test Setup

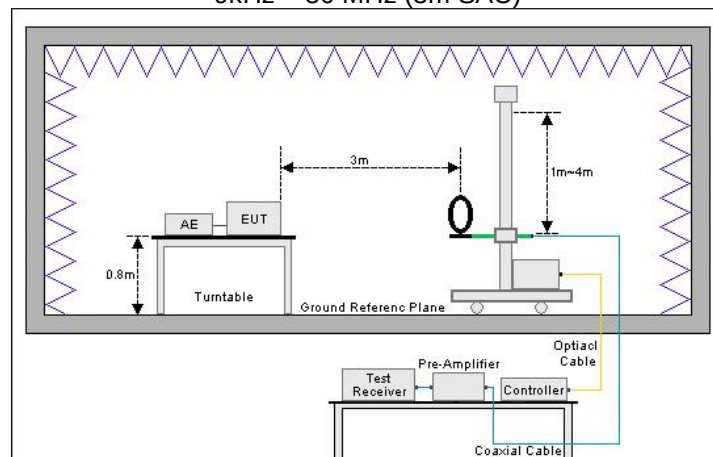
1) Conducted emission measurement:



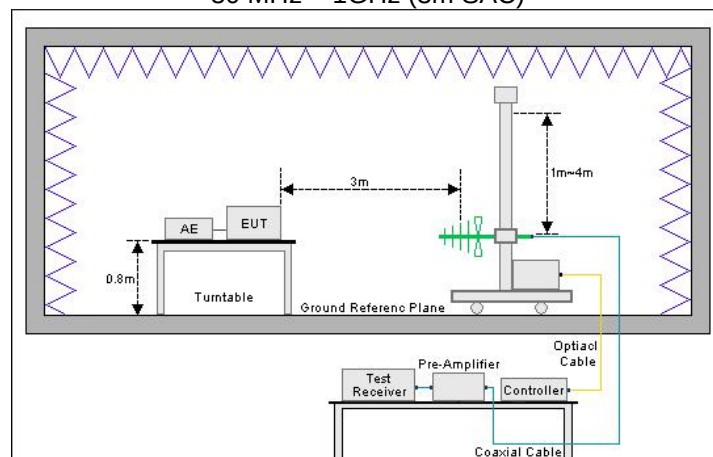
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

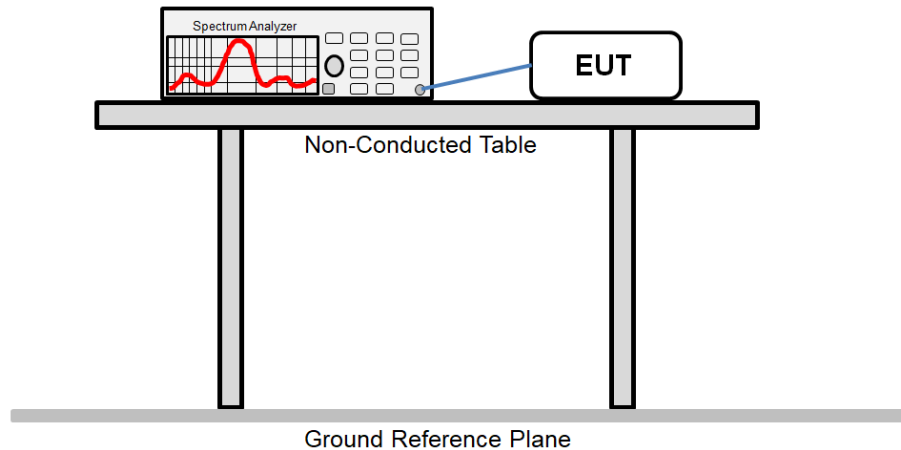
9kHz ~ 30 MHz (3m SAC)



30 MHz ~ 1GHz (3m SAC)



Conducted test method:



4.2 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	1. The antenna port of EUT was connected to the RF port of the spectrum analyzer through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. The test data is saved by the screenshot function of the spectrum analyzer.

5 Test Results

5.1 Summary

5.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203	See Section 5.2	Pass
AC Power Line Conducted Emission	15.207	See Section 5.3	Pass
20dB Bandwidth	15.215(c)	See Section 5.4	Pass
Field Strength of Fundamental	15.209	See Section 5.5	Pass
Field Strength of Spurious Emissions	15.209	See Section 5.6	Pass
Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. N/A: Not Applicable.			
Test Method:	ANSI C63.4-2014 ANSI C63.10-2013		

5.1.2 Test Limit

Items	Limit																								
AC Power Line Conducted Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>66 to 56 ^{Note 1}</td><td>56 to 46 ^{Note 1}</td></tr><tr><td>0.5 – 5</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>60</td><td>50</td></tr></table> Note 1: The limit level in dBµV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.	Frequency (MHz)	Limit (dBµV)		Quasi-Peak	Average	0.15 – 0.5	66 to 56 ^{Note 1}	56 to 46 ^{Note 1}	0.5 – 5	56	46	5 – 30	60	50										
Frequency (MHz)	Limit (dBµV)																								
	Quasi-Peak	Average																							
0.15 – 0.5	66 to 56 ^{Note 1}	56 to 46 ^{Note 1}																							
0.5 – 5	56	46																							
5 – 30	60	50																							
20dB Bandwidth	N/A																								
Field Strength of Fundamental Field Strength of Spurious Emissions	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009 – 0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490 – 1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705 – 30.0</td><td>30</td><td>30</td></tr><tr><td>30 – 88</td><td>100**</td><td>3</td></tr><tr><td>88 – 216</td><td>150**</td><td>3</td></tr><tr><td>216 – 960</td><td>200**</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.	Frequency (MHz)	Field strength (microvolts/meter)	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
Frequency (MHz)	Field strength (microvolts/meter)	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																							

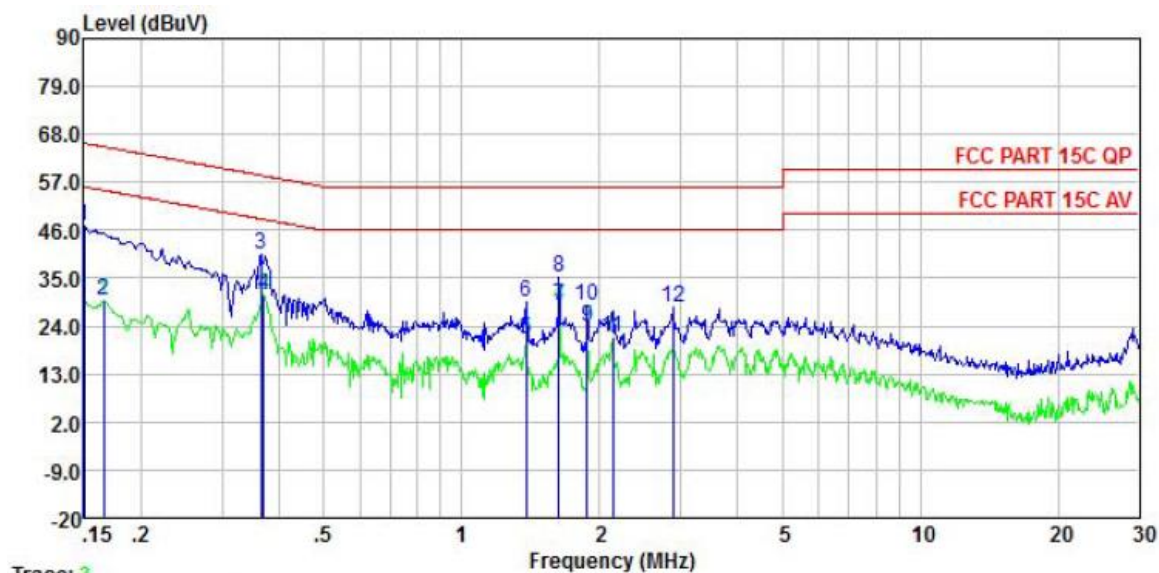
5.2 Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	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, 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.
E.U.T Antenna:	The EUT make use of an induction coil antenna.

5.3 AC Power Line Conducted Emission

125KHz:

Product name:	Interface programmer	Product model:	ADS-USB-HUB
Test by:	Mike	Test mode:	Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz		

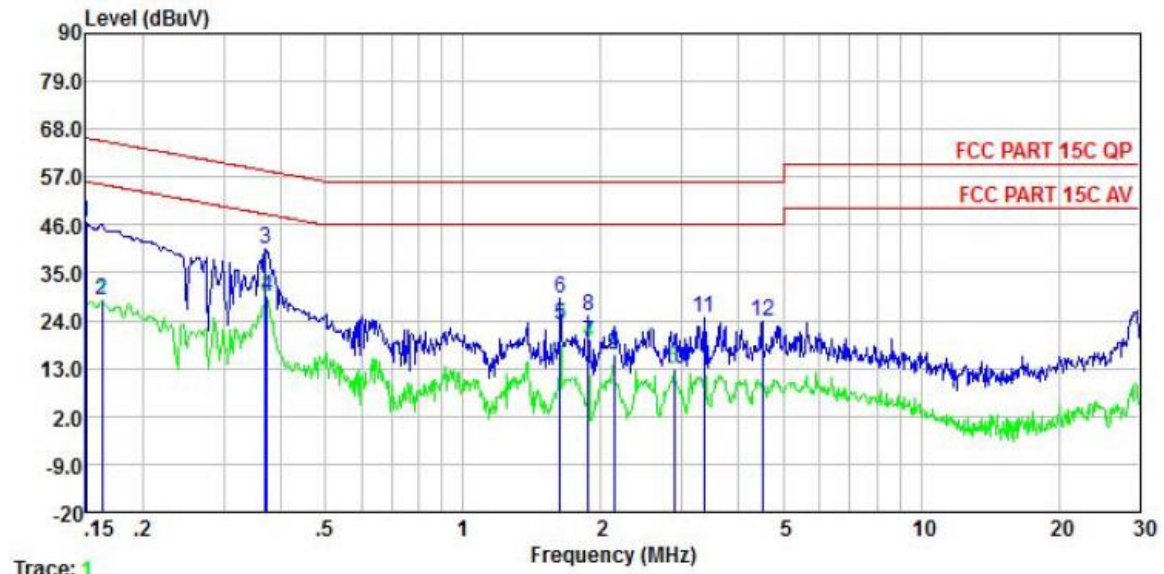


	Freq	Read Level	LISN Factor	Cable Loss	Aux2 Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	36.58	0.04	0.01	10.50	47.13	66.00	-18.87	QP
2	0.166	19.44	0.04	0.01	10.50	29.99	55.16	-25.17	Average
3	0.365	29.90	0.06	0.03	10.50	40.49	58.61	-18.12	QP
4	0.369	20.55	0.06	0.03	10.50	31.14	48.52	-17.38	Average
5	1.381	10.48	0.07	0.13	10.50	21.18	46.00	-24.82	Average
6	1.381	18.81	0.07	0.13	10.50	29.51	56.00	-26.49	QP
7	1.628	18.09	0.08	0.16	10.50	28.83	46.00	-17.17	Average
8	1.628	24.35	0.08	0.16	10.50	35.09	56.00	-20.91	QP
9	1.878	13.05	0.08	0.19	10.50	23.82	46.00	-22.18	Average
10	1.878	17.78	0.08	0.19	10.50	28.55	56.00	-27.45	QP
11	2.133	10.64	0.08	0.19	10.50	21.41	46.00	-24.59	Average
12	2.884	17.64	0.09	0.08	10.50	28.31	56.00	-27.69	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	Interface programmer	Product model:	ADS-USB-HUB
Test by:	Mike	Test mode:	Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



Trace: 1

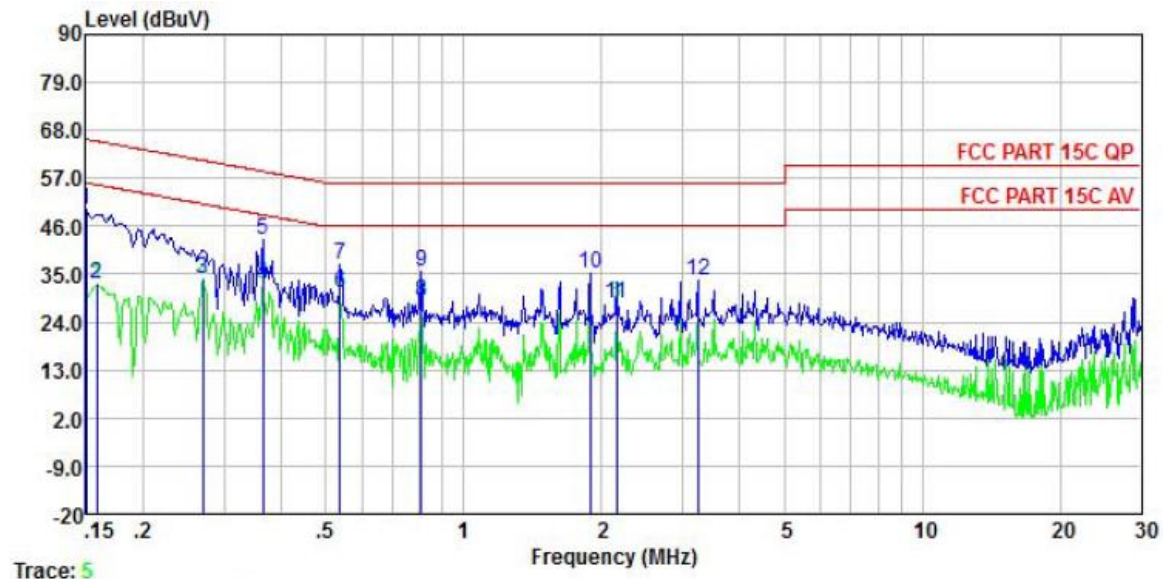
	Freq	Read Level	LISN Factor	Cable Loss	Aux2 Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	35.89	0.06	0.01	10.50	46.46	66.00	-19.54	QP
2	0.162	18.17	0.06	0.01	10.50	28.74	55.34	-26.60	Average
3	0.369	29.88	0.05	0.03	10.50	40.46	58.52	-18.06	QP
4	0.373	18.77	0.05	0.03	10.50	29.35	48.43	-19.08	Average
5	1.628	12.45	0.07	0.16	10.50	23.18	46.00	-22.82	Average
6	1.628	18.53	0.07	0.16	10.50	29.26	56.00	-26.74	QP
7	1.878	8.31	0.07	0.19	10.50	19.07	46.00	-26.93	Average
8	1.878	14.35	0.07	0.19	10.50	25.11	56.00	-30.89	QP
9	2.133	5.27	0.07	0.19	10.50	16.03	46.00	-29.97	Average
10	2.884	2.35	0.09	0.08	10.50	13.02	46.00	-32.98	Average
11	3.364	13.97	0.09	0.07	10.50	24.63	56.00	-31.37	QP
12	4.501	13.05	0.11	0.09	10.50	23.75	56.00	-32.25	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

134.2KHz:

Product name:	Interface programmer	Product model:	ADS-USB-HUB
Test by:	Mike	Test mode:	Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz		

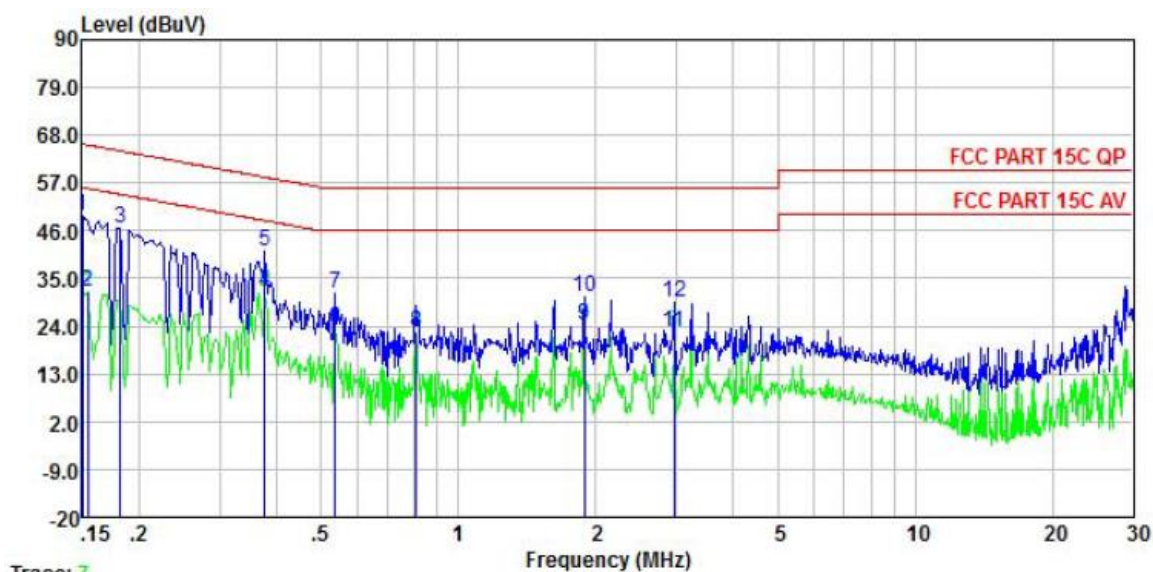


	Freq	Read Level	LISN Factor	Cable Loss	Aux2 Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	39.29	0.04	0.01	10.50	49.84	66.00	-16.16	QP
2	0.158	22.15	0.04	0.01	10.50	32.70	55.56	-22.86	Average
3	0.270	23.41	0.06	0.02	10.50	33.99	51.12	-17.13	Average
4	0.365	22.27	0.06	0.03	10.50	32.86	48.61	-15.75	Average
5	0.365	32.41	0.06	0.03	10.50	43.00	58.61	-15.61	QP
6	0.538	20.32	0.05	0.03	10.50	30.90	46.00	-15.10	Average
7	0.538	26.49	0.05	0.03	10.50	37.07	56.00	-18.93	QP
8	0.809	18.20	0.07	0.03	10.50	28.80	46.00	-17.20	Average
9	0.809	25.15	0.07	0.03	10.50	35.75	56.00	-20.25	QP
10	1.888	24.50	0.08	0.20	10.50	35.28	56.00	-20.72	QP
11	2.155	17.54	0.08	0.18	10.50	28.30	46.00	-17.70	Average
12	3.241	23.11	0.09	0.07	10.50	33.77	56.00	-22.23	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	Interface programmer	Product model:	ADS-USB-HUB
Test by:	Mike	Test mode:	Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



	Freq	Read Level	LISN Factor	Cable Loss	Aux2 Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	38.93	0.06	0.01	10.50	49.50	66.00	-16.50	QP
2	0.154	21.40	0.06	0.01	10.50	31.97	55.78	-23.81	Average
3	0.182	36.07	0.05	0.01	10.50	46.63	64.42	-17.79	QP
4	0.377	21.40	0.05	0.03	10.50	31.98	48.34	-16.36	Average
5	0.377	30.85	0.05	0.03	10.50	41.43	58.34	-16.91	QP
6	0.538	12.66	0.04	0.03	10.50	23.23	46.00	-22.77	Average
7	0.538	21.00	0.04	0.03	10.50	31.57	56.00	-24.43	QP
8	0.809	12.00	0.06	0.03	10.50	22.59	46.00	-23.41	Average
9	1.888	13.66	0.07	0.20	10.50	24.43	46.00	-21.57	Average
10	1.888	20.03	0.07	0.20	10.50	30.80	56.00	-25.20	QP
11	2.962	11.86	0.09	0.07	10.50	22.52	46.00	-23.48	Average
12	2.962	18.83	0.09	0.07	10.50	29.49	56.00	-26.51	QP

Remark:

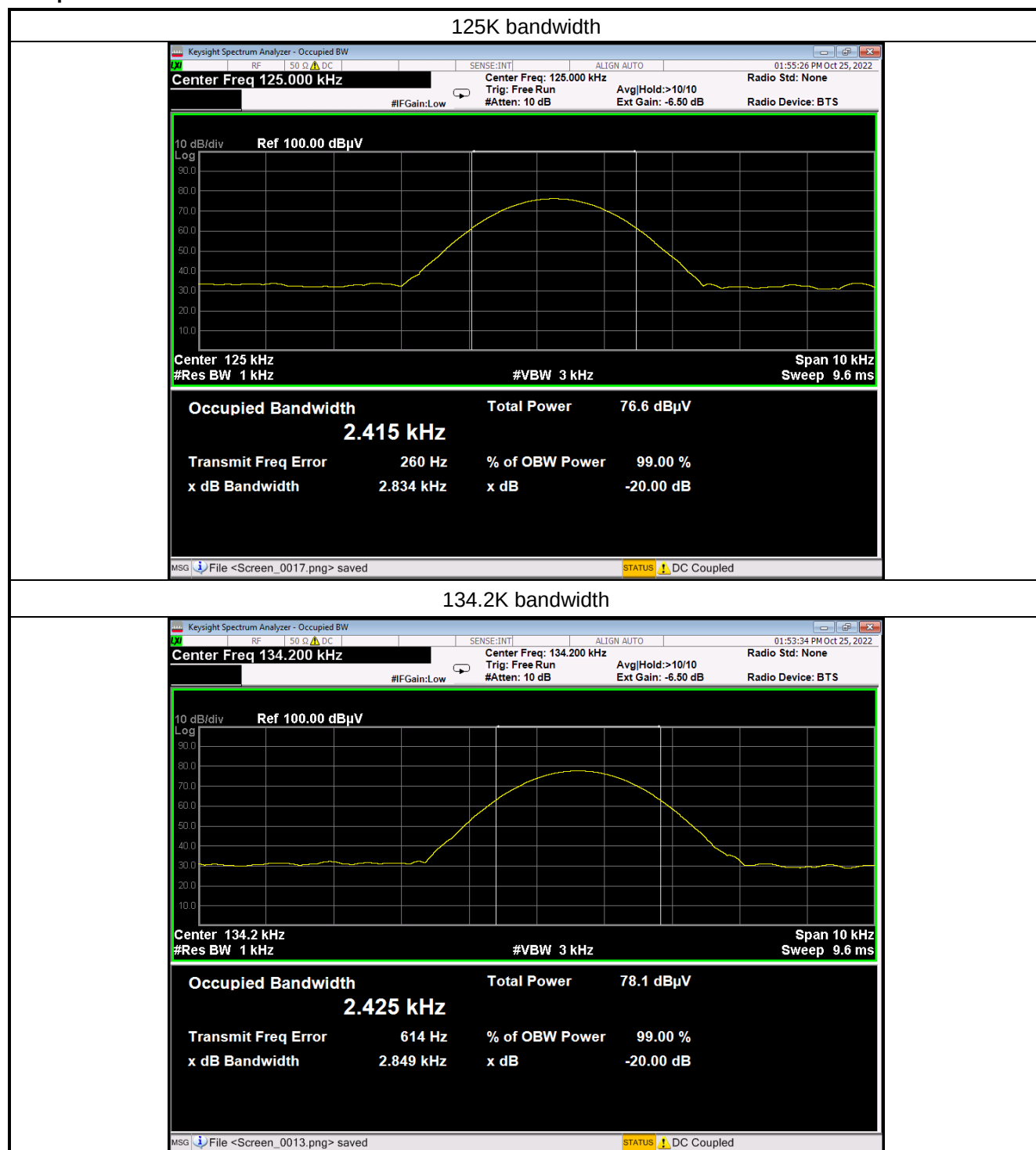
1. Level = Read level + LISN Factor + Cable Loss.

5.4 20dB Bandwidth

Channel	20dB bandwidth (kHz)	Limit (kHz)
125K	2.834	N/A
134.2K	2.849	N/A

Remark: For report purpose only.

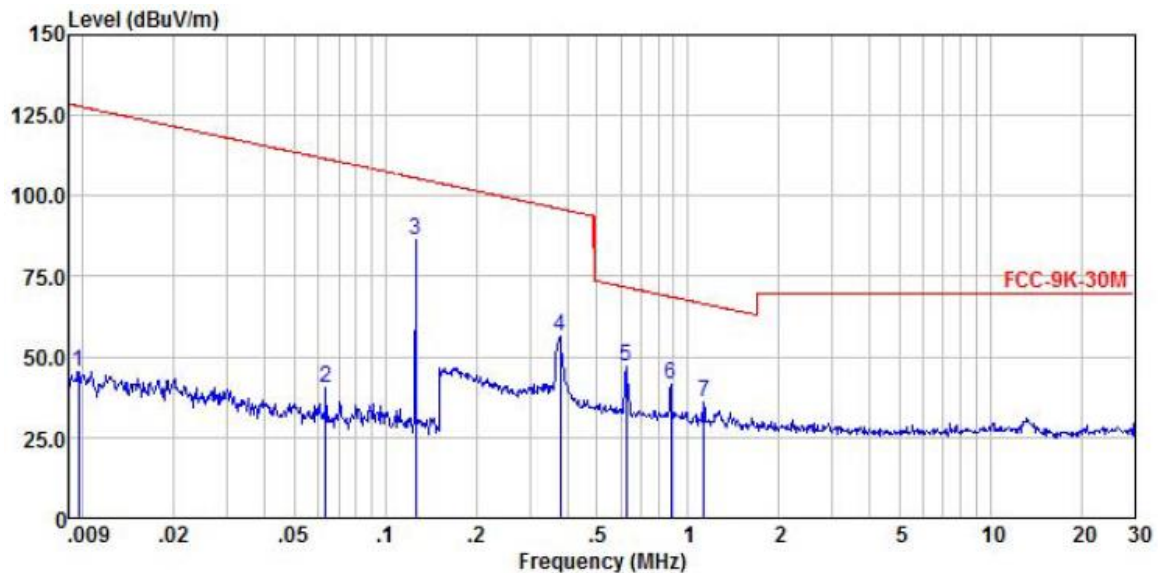
Test plot as follows:



5.5 Field Strength of Spurious Emissions

125KHz:

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	9 kHz – 30 MHz	Polarization:	Coxial
Test Voltage:	AC 120/60Hz		

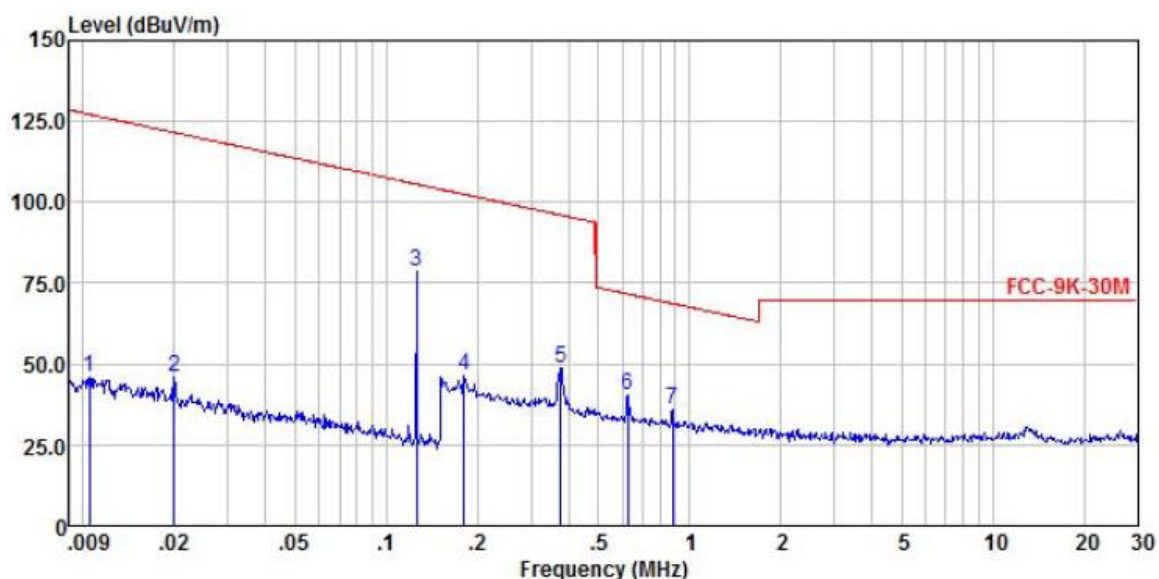


	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Remark			
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.010	25.11	20.44	0.01	0.00	45.56	127.87	-82.31	Peak
2	0.064	19.95	20.53	0.02	0.00	40.50	111.52	-71.02	Peak
3	0.126	66.58	19.98	0.03	0.00	86.59	105.64	-19.05	Peak
4	0.379	35.50	20.66	0.06	0.00	56.22	96.04	-39.82	Peak
5	0.626	26.08	20.70	0.09	0.00	46.87	71.68	-24.81	Peak
6	0.880	21.12	20.56	0.11	0.00	41.79	68.72	-26.93	Peak
7	1.132	15.54	20.49	0.17	0.00	36.20	66.55	-30.35	Peak

Remark:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	9 kHz – 30 MHz	Polarization:	Coplanar
Test Voltage:	AC 120/60Hz		



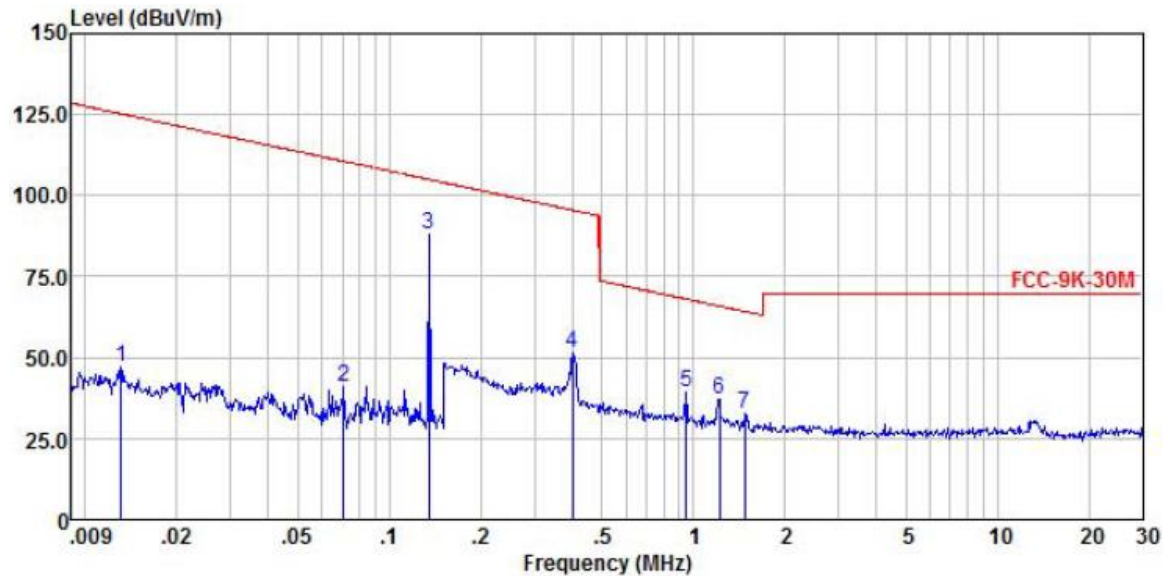
	Read Freq	Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.010	25.24	20.49	0.01	0.00	45.74	127.16	-81.42	Peak
2	0.020	25.36	20.31	0.01	0.00	45.68	121.60	-75.92	Peak
3	0.126	58.60	19.98	0.03	0.00	78.61	105.64	-27.03	Peak
4	0.181	26.34	20.29	0.04	0.00	46.67	102.47	-55.80	Peak
5	0.376	28.11	20.66	0.06	0.00	48.83	96.11	-47.28	Peak
6	0.626	19.51	20.70	0.09	0.00	40.30	71.68	-31.38	Peak
7	0.880	15.08	20.56	0.11	0.00	35.75	68.72	-32.97	Peak

Remark:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

134.2KHz:

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	9 kHz – 30 MHz	Polarization:	Coxial
Test Voltage:	AC 120/60Hz		

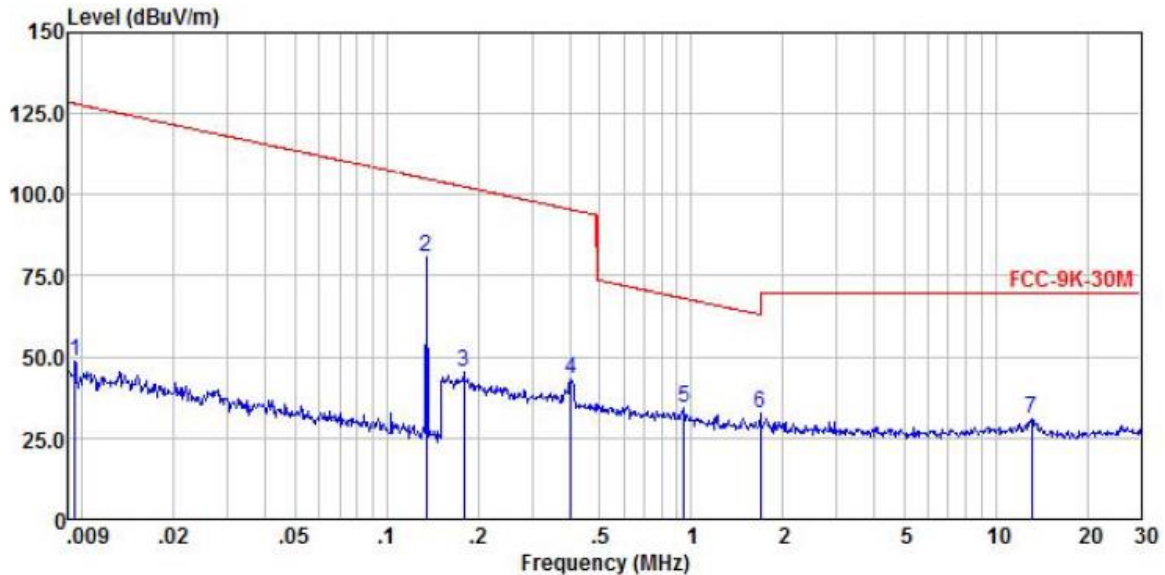


	Read Freq	Antenna Level	Cable Factor	Preamp Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.013	26.37	20.43	0.01	0.00	46.81	125.26	-78.45	
2	0.071	20.44	20.51	0.02	0.00	40.97	110.60	-69.63	
3	0.135	68.00	19.98	0.03	0.00	88.01	105.01	-17.00	
4	0.401	30.74	20.69	0.06	0.00	51.49	95.55	-44.06	
5	0.947	18.49	20.52	0.11	0.00	39.12	68.09	-28.97	
6	1.218	16.30	20.48	0.17	0.00	36.95	65.91	-28.96	
7	1.480	11.83	20.46	0.17	0.00	32.46	64.23	-31.77	

Remark:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	9 kHz – 30 MHz	Polarization:	Coplanar
Test Voltage:	AC 120/60Hz		



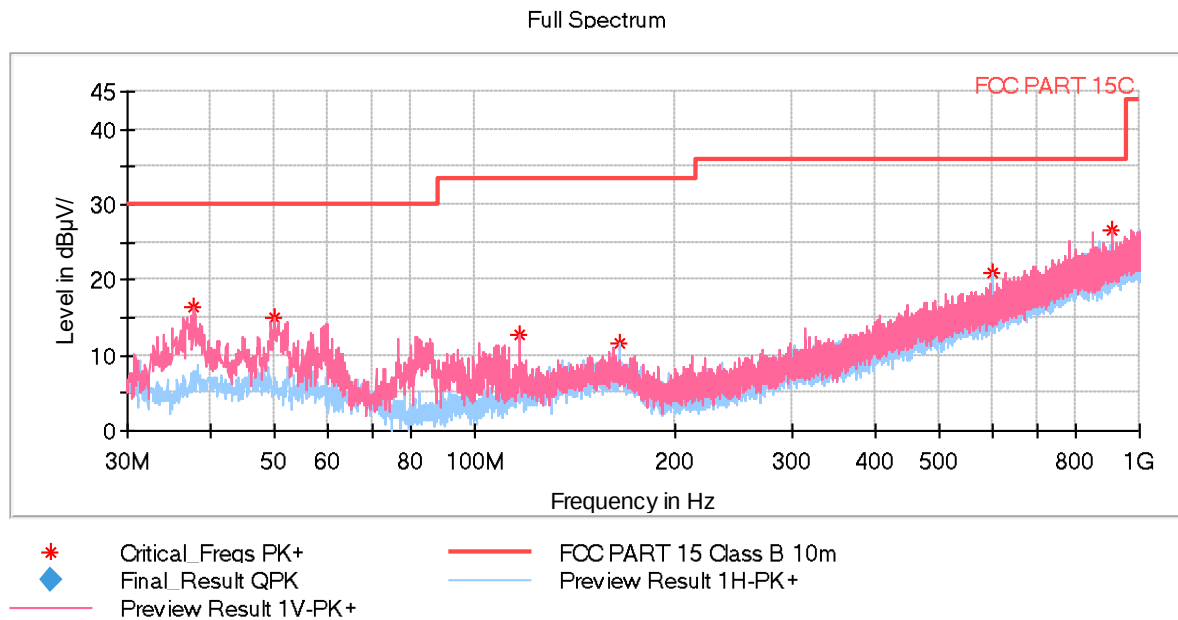
	Read	Antenna	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
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MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.009	28.15	20.39	0.01	0.00	48.55	128.08	-79.53
2	0.135	60.66	19.98	0.03	0.00	80.67	105.01	-24.34
3	0.180	24.93	20.29	0.04	0.00	45.26	102.54	-57.28
4	0.404	22.70	20.69	0.06	0.00	43.45	95.48	-52.03
5	0.947	13.96	20.52	0.11	0.00	34.59	68.09	-33.50
6	1.685	11.84	20.45	0.17	0.00	32.46	63.10	-30.64
7	13.116	11.08	19.68	0.39	0.00	31.15	69.50	-38.35

Remark:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

125KHz:

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	30 MHz – 1000 MHz	Polarization:	Vertical & Horizontal
Test Voltage:	AC 120/60Hz		



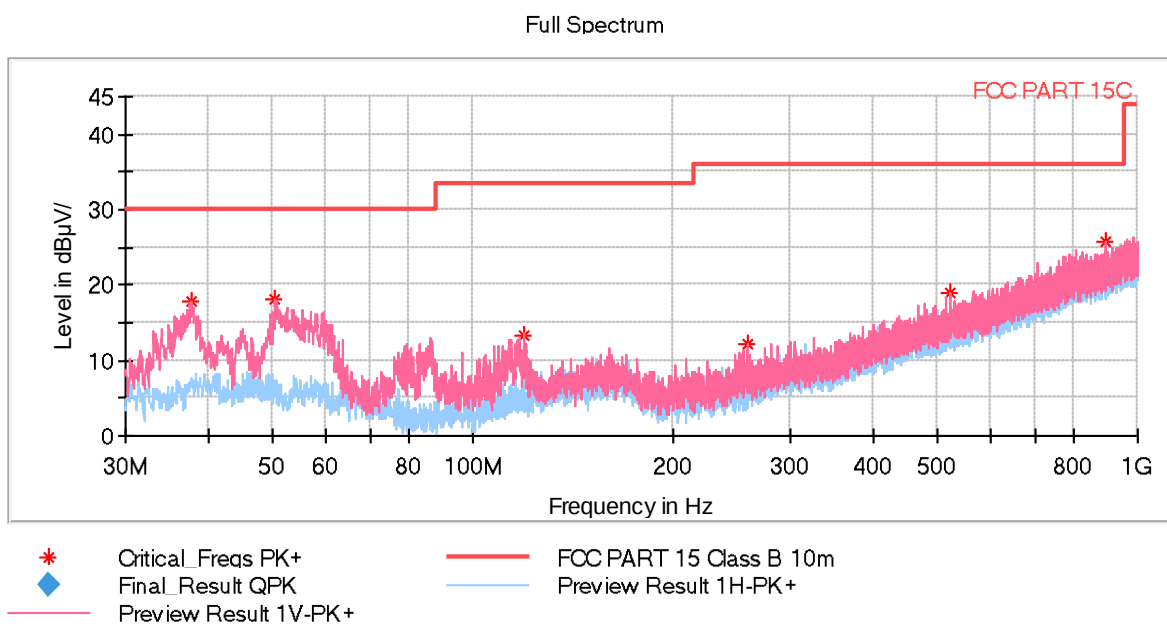
Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.808500	16.34	30.00	13.66	100.0	V	346.0	-16.2
49.885000	15.02	30.00	14.98	100.0	V	177.0	-16.5
116.572500	12.62	33.50	20.88	100.0	V	177.0	-17.9
164.781500	11.55	33.50	21.95	100.0	H	55.0	-15.0
599.584000	21.01	36.00	14.99	100.0	H	24.0	-7.7
908.529000	26.64	36.00	9.36	100.0	V	0.0	-1.4

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

134.2KHz:

Product Name:	Interface programmer	Product Model:	ADS-USB-HUB
Test By:	Mike	Test mode:	Tx mode
Test Frequency:	30 MHz – 1000 MHz	Polarization:	Vertical & Horizontal
Test Voltage:	AC 120/60Hz		



Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.614500	17.70	30.00	12.30	100.0	V	0.0	-16.2
50.418500	18.07	30.00	11.93	100.0	V	38.0	-16.4
119.191500	13.39	33.50	20.11	100.0	V	177.0	-17.7
258.192500	12.21	36.00	23.79	100.0	V	323.0	-16.5
523.148000	19.08	36.00	16.92	100.0	V	133.0	-8.7
898.247000	25.80	36.00	10.20	100.0	V	294.0	-1.6

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

-----End of report-----