

ELECTROMAGNETIC COMPATIBILITY TEST REPORT

PREPARED FOR DALI WIRELESS INC.
BY QAI LABORATORIES



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American Association for Laboratory Accreditation Certificate Number: 3657.02

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Applicable Test Standards: 47 CFR (FCC) Part 2, Subpart J
47 CFR (FCC) Part 20, 20.21 (c)

Equipment Tested: Matrix hd30
Model Number: HD30-4-NA-CEHI-O1H
FCC ID: HD304NACEHIO1A
Manufacturer: Dali Wireless Inc.



REVISION HISTORY

Date	Report Number	Rev #	Details	Author's Initials
Nov. 16, 2016	PL-2016-031101-Dali_DaliWireless-hd30	0.0	Draft Test Report	HZ
Nov. 18, 2016	PL-2016-031101-Dali_DaliWireless-hd30	0.1	Draft Test Report	HZ
Nov. 28, 2016	PL-2016-031101-Dali_DaliWireless-hd30 (FCC Part 22, 24, 27)	1.0	Final Test Report	HZ
Dec. 9, 2016	PL-2016-031101-Dali_DaliWireless-hd30 (FCC Part 22, 24, 27)	2.0	-Updated Section 2.6 Test Equipment -Added Appendix A	HZ
Dec. 20, 2016	PL-2016-031101-Dali_DaliWireless-hd30 (FCC Part 22, 24, 27)	3.0	-Updated Section 2.5 Sample Calculations -Updated Section 2.6 Test Equipment -Updated Appendix A	HZ
All previous versions of this report have been superseded by the latest dated revision as listed in the above table. Please dispose of all previous electronic and paper printed revisions accordingly.				

REPORT AUTHORIZATION

The data documented in this report is for the test equipment provided by Dali Wireless. Tests were conducted on the sample equipment as requested by Dali Wireless for the purpose of demonstrating compliance with 47 CFR (FCC) Part 2 and 47 CFR (FCC) Part 20 as agreed upon by Dali Wireless as per Quote PL-2016-031101-Dali.

Dali Wireless Inc. is responsible for the tested product configuration, continued product compliance, and for the appropriate auditing of subsequent products as required. This report may comprise partial list of tests that are required for FCC Declaration of Conformity and can only be produced by the manufacturer.

This is to certify that the following report is true and correct to the best of our knowledge.



Written by HP Enriquez
EMC Technical Writer



Reviewed by Aman Jathaul
EMC Engineering Manager



Approved by Parminder Singh
Director for the EMC Department

QAI FACILITIES

Founded in 1994 by a group of experienced certification and testing experts, QAI is an independent third-party testing, inspection and certification organization which serves the building industry, government and individuals with cost effective solutions through our in-house capabilities / services, and an established world-wide network of qualified affiliates. To help get your product to market, trust the provider that many leading global manufacturers do: QAI.

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QAI EMC ACCREDITATION

QAI EMC is your one-stop regulatory compliance partner for electromagnetic compatibility (EMC) and electromagnetic interference (EMI). Products are tested to the latest and applicable EMC/EMI requirements for domestic and international markets. QAI EMC goes above and beyond being a testing facility—we are your regulatory compliance partner. QAI EMC has the capability to perform RF Emissions and Immunity for all types of electronics manufacturing including Industrial, Scientific, Medical, Information Technology, Telecom, Wireless, Automotive, Marine and Avionics.

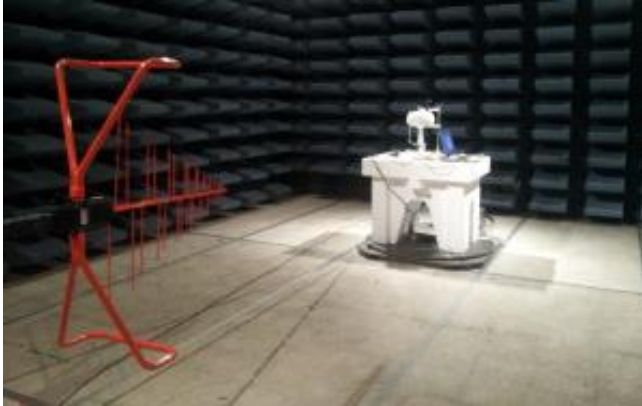
EMC Laboratory Location	FCC Designation (3m SAC)	IC Registration (3m SAC)	A2LA Certificate
Burnaby, BC Canada	CA9543	21146-1	3657.02
Everett, Washington USA	307482	11876A-1	3657.02



Headquarters & EMC Laboratory in Burnaby, BC



EMC Laboratory in Everett, Washington



3 m Semi-Anechoic Chamber (SAC) in Burnaby, BC



3 m Semi-Anechoic Chamber (SAC) in Burnaby, BC



10 m Open Area Test Site (OATS) in British Columbia, Canada



5 m Semi-Anechoic Chamber (SAC) in Everett, Washington



5 m Semi-Anechoic Chamber (SAC) in Everett, Washington

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Section I: EXECUTIVE SUMMARY

1.1 Purpose

The purpose of this report is to demonstrate and document the compliance of “Matrix hd30” as per Sections 1.2 & 1.3.

1.2 Scope

The information documented in this report is based on the test methods and levels as per Quote PL-2016-031101-Dali:

- **47 CFR (FCC) Part 2** – FREQUENCY ALLOCATIONS AND RADIO TREATY MATTER; GENERAL RULES AND REGULATIONS; Subpart J – Equipment Authorization Procedures; **2.1053**
- **47 CFR (FCC) Part 20** – COMMERCIAL MOBILE SERVICES, 20.21 (c). Signal boosters, Operation of Industrial Signal Boosters
 - 700 MHz hd30 Remote Unit RF Module
 - Downlink operating frequency range = 728-757 MHz
 - Limits per FCC 27.53 Emission limits
 - 850 MHz hd30 Remote Unit RF Module
 - Downlink operating frequency range = 869-894 MHz
 - Limits per FCC 22.917 Emission limits
 - 1900 MHz hd30 Remote Unit RF Module
 - Downlink operating frequency range = 1930-1995 MHz
 - Limits per FCC 24.238 Emission limitations for Broadband PCS equipment
 - 2100 MHz hd30 Remote Unit RF Module
 - Downlink operating frequency range = 2110-2155 MHz
 - Limits per FCC 27.53 Emission limits

The tests documented in this test report were performed in accordance with ANSI C63.4, FCC CFR 47 Part 2, FCC CFR 47 Part 15, and the FCC KDB 935210 D05 Indus Booster Basic Meas v01r01.

1.3 Summary of Results

The following tests demonstrate the testimony to “FCC” Mark Electromagnetic compatibility testing for “Matrix hd30” manufactured by Dali Wireless Inc.

The following testing was performed pursuant to the 47 CFR (FCC) Part 2, Subpart J and 47 CFR (FCC) Part 20

Test or Measurement	Applicable Standard	Description	Performance Criteria
Radiated Spurious Emissions (Intentional)	47 CFR Part 27.53 47 CFR Part 22.917 47 CFR Part 24.238	Measured in the 30 MHz – 22 GHz range (700 and 600 MHz Band, Cellular Band, and PCS Band)	Complies

Section II: GENERAL INFORMATION

2.1 Product Description

The information provided in this section is for the Equipment Under Test (EUT) and the corresponding Auxiliary Equipment needed to perform the tests as complete system.

Equipment Under Test (EUT) Information

Equipment	Manufacturer	Description	Model No.	Serial No.
EUT	Dali Wireless Inc.	hd30 Quad-Band Low Power Remote Unit	HD30-4-NA-CEHI-O1H	15330111E02B6A003

Auxiliary Equipment Information

Equipment	Manufacturer	Description	Model No.	Serial No.
Auxiliary 1	Dali Wireless Inc.	UBiT Universal Base Station Interface Tray	UBIT-CP	15276411E02B6A003

2.2 Environmental Conditions

The equipment under test was operated and tested under the following environmental conditions:

Parameter	Conditions
Location	Indoors
Temperature	22-28°C
Relative Humidity	39.7 - 54.4%

2.3 Measurement Uncertainty

Parameter	Uncertainty
Radiated Emissions, 30MHz-1GHz	± 2.40 dB
Radiated Emissions, 1GHz-40GHz	± 2.48 dB
Radio Frequency	±1,5 x 10 ⁻⁵ MHz
Total RF Power Conducted	±1.36 dB
Spurious Emissions, Conducted	±1.36 dB
RF Power Density, Conducted	±1.36 dB
Temperature	±1°C
Humidity	±5 %
DC and low frequency voltages	±3 %

2.4 Worst Test Case

Worst-case scenario was determined as per the client's discretion, the EUT was setup to transmit and sweep through low, middle, and high channel of frequency bands 700MHz, 1900MHz, 800MHz, and 2100MHz using modulation schemes defined in FCC KDB 935210 D05 Indus Booster Basic Meas v01r01, (i.e. signal with 4.1 MHz 99 % occupied bandwidth (OBW) (representative of a 5 MHz LTE channel). Narrowband test signals shall use a representative MSK modulated signal, with a Gaussian Filter of 0.3 and a data rate of 270 kbps (representative of a GSM-TDMA signal). modulation scheme (GSM and LTE)) to detect spurious emissions.

2.5 Sample Calculations of Emissions Data

Radiated Emissions Limits Extrapolation at 3m for Part 27.53, 22.917, and 24.238

Radiated measurements are typically performed on an outdoor-area test site (OATS) or within a semi-anechoic or fully-anechoic chamber. Current FCC laboratory policy requires that final radiated measurements shall utilize signal substitution methods as described in TIA 603B.

As per KDB 971168 D01

Alternatively, the power limit can be mathematically converted to an equivalent field strength limit. The following relationships can be used to facilitate using radiated measurement data to demonstrate compliance to the relevant conducted output power limits (assuming that all radiated data was collected in the far-field region of both the transmit and receive antennas):

- $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance in meters.
- $\text{EIRP(dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance in meters.
- $\text{ERP} = \text{EIRP} - 2.15$; where ERP and EIRP are expressed in consistent units.
- $\text{EIRP} = \text{ERP} + 2.15$; ERP and EIRP are expressed in consistent units Note that the antenna factor is typically only provided for standard measurement distances (e.g., 1 m and/or 3 m), and thus may be a determinant factor in choosing what measurement distance to use.

For this unit Limit is On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB; where P is in Watts

Max Output Power 1 W or 30 dBm

So $43 + 10\log(1) = 43 \text{ dB}$

Hence the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least -13 dB (i.e. $30 - 43$)

$\text{EIRP} = \text{ERP} + 2.15 = -13 + 2.15 = -10.8 \text{ dBm}$

Limit at 3m distance for Radiated emissions using equation (c)

$E \text{ (dB}\mu\text{V/m)} = -10.8 - 20\log(3) + 104.8 = \mathbf{84.41 \text{ dB}\mu\text{V/m}}$

Limit at 3m distance **84.41 dBμV/m.**

Radiated and conducted emissions were performed using EMC32 software developed by Rohdes & Schwarz. Transducer factors like Antenna factors, Cable Losses and Amplifier gains were stored in the test templates which are used to perform the emissions measurements. After test is finished, data is generated from the EMC32 consisting of product details, emission plots and final data tables as shown below.

Frequency (MHz)	Quasi-Peak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
42.663900	33.0	1000.000	120.000	100.0	H	70.0	13.2	51.41	84.41

Quasi Peak reading shown in the table above is already corrected by the software using correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

Or

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable Loss} - \text{Amp gain (if pre-amplifier was used)}$$

The final Quasi peak reading shown in the data is calculated by the software using following equation:

$$\text{Corrected Quasi Peak (dB}\mu\text{V/m)} = \text{Raw Quasi Peak Reading} + \text{Antenna factor} + \text{Cable loss}$$

To obtain the final Quasi-Peak or Average reading during power line conducted emissions, transducer factors are included in the final measurement as shown below.

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	44.3	1000.000	9.000	0.6	40.11	84.41

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	27.2	1000.000	9.000	0.6	57.21	84.41

Quasi Peak or Average reading shown in above table is already corrected by the software using the correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

The final Quasi peak or Average reading shown in the data is calculated by the software using following equation:

$$\text{Corr. Quasi Peak/Average Reading (dB}\mu\text{V)} = \text{Raw Quasi Peak/Average Reading} + \text{Antenna factor} + \text{Cable loss}$$

The allowable margin from the limits, as per the standards, were calculated for both radiated and conducted emissions:

$$\text{Margin (dB)} = \text{Limit} - \text{Quasi-Peak or Average reading}$$

2.6 Test Equipment List

The tables below contain all the equipment used by QAI Laboratories in conducting all tests on the Equipment Under Test (EUT) as per Section 1.3.

Emissions Test Equipment

Manufacturer	Model	Description	Serial No.	Calibration Due Date
Sunol Sciences	SM46C	Turntable	051204-2	N/A
Sunol Sciences	TWR95	Mast	TREML0001	N/A
Sunol Sciences	JB3	Biconilog Antenna 30MHz – 3GHz	A120106	24-Sep-2017
Sunol Sciences	DRH-118	Horn Antenna 1GHz-18GHz	A050905	10-Mar-2019
ETS Lindgren	3160-09	Horn Antenna 18GHz-26.5GHz	9701-1071	30-Aug-2017
ETS Lindgren	3160-10	Horn Antenna 26.5GHz-40.0GH	9708-1075	30-Aug-2017
ETS Lindgren	2165	Turntable	00043677	N/A
ETS Lindgren	2125	Mast	00077487	N/A
Rohde & Schwarz	ESU40	EMI Receiver	100011	20-Nov-2017
Fischer	FCC-LISN-50-25-2-08	LISN (150kHz-30MHz)	2041	19-Nov-2018
ETS Lindgren	S201	5-meter Semi-Anechoic Chamber	1030	N/A
AH Systems	PAM118	Amplifier 10KHz-18GHz	189	Conditional Use
California Instruments	PACS-1	Harmonics and flicker analyzer	72569	18 July 2018
California Instruments	OMNI 1-18 I	Programmable Impedance Flicker test	-	18 July 2018
California Instruments	3001ix	Power supply	HK52117	18 July 2018

Note: Equipment listed above have 3 years calibration interval.

Measurement Software List

Manufacturer	Model	Version	Description
Rhode & Schwarz	EMC 32	6.20.0	Emissions Test Software

Section III: REQUIREMENTS FOR THE US MARKET – FCC

3.3 47 CFR Part 20 – Operation of Industrial Signal Boosters

As per FCC KDB 935210 D05 Industrial Booster Basic Measurement v01r01, broadband amplifiers/boosters shall be tested using a representative band-limited AWGN signal. The AWGN test signal must have a 4.1 MHz 99% occupied bandwidth (OBW) (representative of a 5 MHz LTE channel). Narrowband test signals shall use a representative MSK modulated signal, with a Gaussian Filter of 0.3 and data rate of 270 kbps (representative of a GSM-TDMA signal).

Radiated Emissions Limits Extrapolation at 3m for Part 27.53, 22.917, and 24.238

Radiated measurements are typically performed on an outdoor-area test site (OATS) or within a semi-anechoic or fully-anechoic chamber. Current FCC laboratory policy requires that final radiated measurements shall utilize signal substitution methods as described in TIA 603B.

As per KDB 971168 D01

Alternatively, the power limit can be mathematically converted to an equivalent field strength limit. The following relationships can be used to facilitate using radiated measurement data to demonstrate compliance to the relevant conducted output power limits (assuming that all radiated data was collected in the far-field region of both the transmit and receive antennas):

- g) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- h) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- i) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance in meters.
- j) $\text{EIRP(dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance in meters.
- k) $\text{ERP} = \text{EIRP} - 2.15$; where ERP and EIRP are expressed in consistent units.
- l) $\text{EIRP} = \text{ERP} + 2.15$; ERP and EIRP are expressed in consistent units Note that the antenna factor is typically only provided for standard measurement distances (e.g., 1 m and/or 3 m), and thus may be a determinant factor in choosing what measurement distance to use.

For this unit Limit is On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB; where P is in Watts

Max Output Power 1 W or 30 dBm

So $43 + 10\log(1) = 43 \text{ dB}$

Hence the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least -13 dB (i.e. $30 - 43$)

$\text{EIRP} = \text{ERP} + 2.15 = -13 + 2.15 = -10.8 \text{ dBm}$

Limit at 3m distance for Radiated emissions using equation (c)

$E \text{ (dB}\mu\text{V/m)} = -10.8 - 20\log(3) + 104.8 = \mathbf{84.41 \text{ dB}\mu\text{V/m}}$

Limit at 3m distance **84.41 dBμV/m.**

47 CFR Part 27.53 – 700 and 600 MHz Band (Intentional Radiated Emissions)

Date Performed:

August 30, 2016

Test Standard:

- 47 CFR Part 20, §27.53

Limits and Method of Measurement as per §27.53:

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

(h) AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

Modifications:

No modification was required to comply for this test.

Performance:

Complies with the applicable standard.

Emissions Data and Plot:

Please refer to Appendix A of this report.

47 CFR Part 22.917 – Cellular Band (Intentional Radiated Emissions)

Date Performed:

August 30, 2016

Test Standard:

- 47 CFR Part 20, §22.917

Limits and Method of Measurement as per §22.917:

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Modifications:

No modification was required to comply for this test.

Performance:

Complies with the applicable standard.

Emissions Data and Plot:

Please refer to Appendix A of this report.

47 CFR Part 24.238 – PCS Band (Intentional Radiated Emissions)

Date Performed:

August 30, 2016

Test Standard:

- 47 CFR Part 20, §24.238

Limits and Method of Measurement as per §24.238:

a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Modifications:

No modification was required to comply for this test.

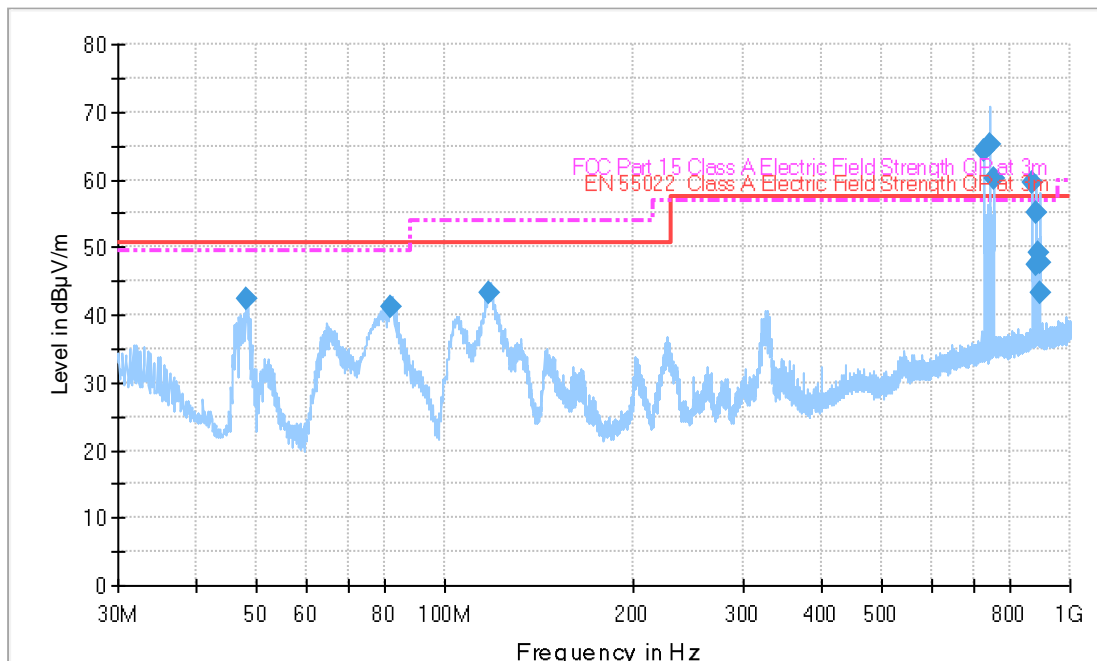
Performance:

Complies with the applicable standard.

Emissions Data and Plot:

Please refer to Appendix A of this report.

Appendix A: RADIATED SPURIOUS EMISSIONS DATA

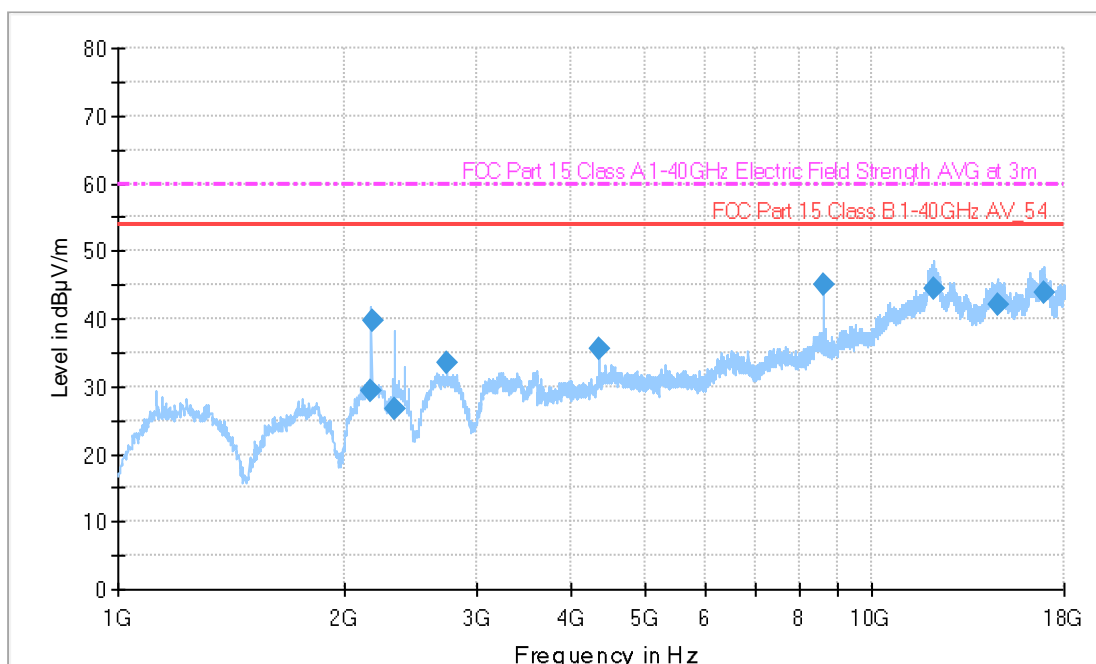


Plot 1: Radiated Emissions 30 MHz - 1 GHz at 3m SAC

Note: Limit lines showing on the plot are not applicable for this test as a different test method was used to calculate the limit to comply with standards FCC Part 22, 24, 27.

Table 1: Radiated Emissions Measured at 30MHz-1GHz with Limit as per KDB 971168 D01 calculation

Frequency (MHz)	Peak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
47.993760	42.4	1000.000	120.000	100.0	V	174.0	16.5	42.01	84.41
82.005840	41.3	1000.000	120.000	100.0	V	5.0	14.6	43.11	84.41
117.914200	43.2	1000.000	120.000	100.0	V	14.0	20.6	41.21	84.41
728.261960	64.4	1000.000	120.000	100.0	V	90.0	29.0	20.01	84.41
742.432640	65.3	1000.000	120.000	237.0	H	25.0	29.2	19.11	84.41
756.693760	60.1	1000.000	120.000	133.0	V	40.0	29.4	24.31	84.41
869.279520	59.5	1000.000	120.000	274.0	H	27.0	30.7	24.91	84.41
881.571480	55.1	1000.000	120.000	250.0	H	26.0	30.9	29.31	84.41
881.657080	47.5	1000.000	120.000	261.0	H	52.0	30.9	36.91	84.41
889.401560	49.1	1000.000	120.000	100.0	H	26.0	31.0	35.31	84.41
892.667800	47.6	1000.000	120.000	100.0	H	27.0	31.0	36.81	84.41
892.814560	43.3	1000.000	120.000	179.0	H	27.0	31.0	41.11	84.41



Plot 2: Radiated Emissions 1 GHz - 18 GHz at 3m SAC

Note: Limit lines showing on the plot are not applicable for this test as a different test method was used to calculate the limit to comply with standards FCC Part 22, 24, 27.

Table 2: Radiated Emissions Measured at 1GHz-18GHz with Limit as per KDB 971168 D01 calculation

Frequency (MHz)	Peak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2159.995760	29.3	1000.000	1000.000	110.0	H	75.0	0.2	55.11	84.41
2169.928080	39.6	1000.000	1000.000	133.0	V	6.0	0.2	44.81	84.41
2331.076480	26.6	1000.000	1000.000	137.0	H	95.0	0.6	57.81	84.41
2725.906800	33.4	1000.000	1000.000	137.0	V	25.0	1.6	51.01	84.41
4339.861760	35.5	1000.000	1000.000	107.0	V	17.0	4.3	48.91	84.41
8649.747280	45.2	1000.000	1000.000	175.0	H	1.0	13.7	39.21	84.41
12066.271840	44.6	1000.000	1000.000	153.0	V	356.0	26.3	39.81	84.41
14663.604640	42.0	1000.000	1000.000	230.0	H	245.0	23.4	42.41	84.41
16889.612480	43.8	1000.000	1000.000	228.0	V	190.0	26.2	40.61	84.41

Note: Radiated Spurious Emissions were verified up to 40GHz. There were no frequency signals detected above 18GHz and were not included in this report.

Appendix B: TEST SETUP PICTURES

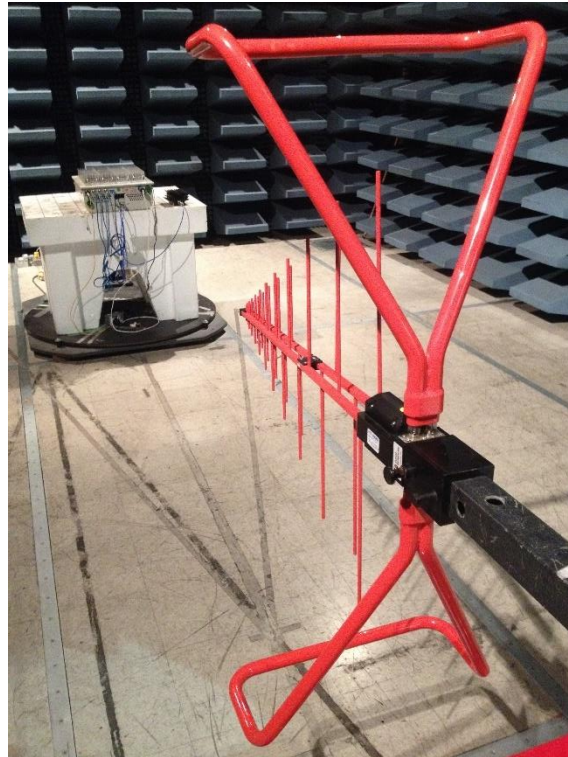


Figure 1: Radiated Emissions (below 1 GHz) Emissions Test Setup

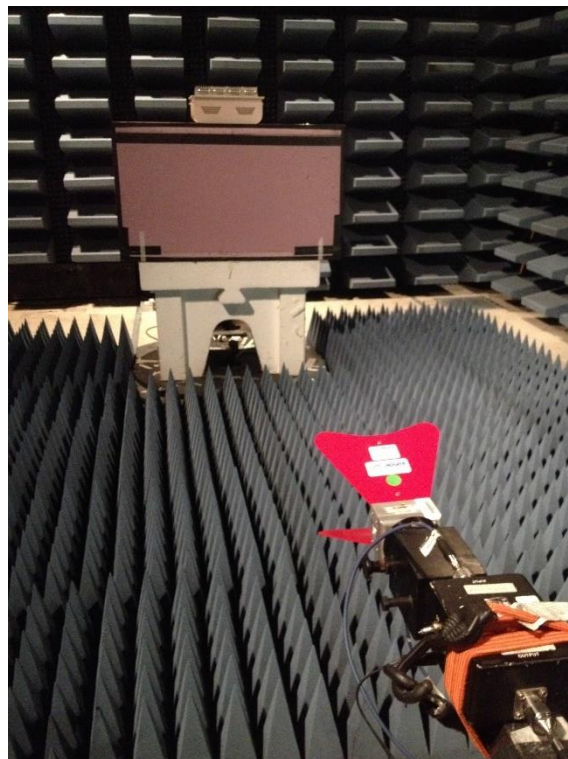


Figure 2: Radiated Emissions (above 1 GHz) Emissions Test Setup

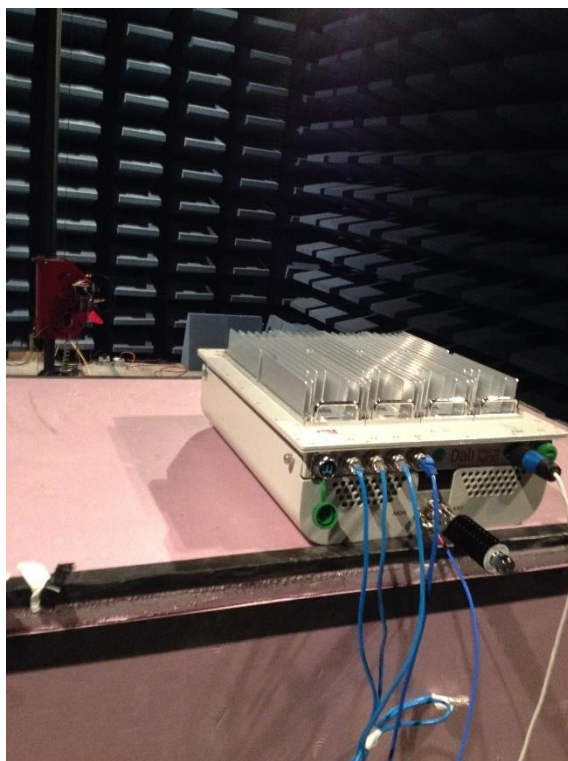


Figure 3: Radiated Emissions (above 1 GHz) Emissions Test Setup

Appendix C: ABBREVIATIONS

Abbreviation	Definition
AC	Alternating Current
DC	Direct Current
EMC	ElectroMagnetic Compatibility
EMI	ElectroMagnetic Interference
EUT	Equipment Under Test
FCC	Federal Communications Commission
LISN	Line Impedance Stabilizing Network
OATS	Open Area Test Site
RF	Radio Frequency
RMS	Root-Mean-Square
SAC	Semi-Anechoic Chamber

END OF REPORT