



Certification Test Report

FCC ID: AZ489FT7099

IC: 109U-89FT7099

FCC Rule Part(s): 22 Subpart C, 74 Subpart D, 80 Subpart E and 90 Subpart I

ISED Canada Radio Standards Specification: RSS-119

Report Number: BO72129039.101

Applicant: Motorola Solutions, Inc.

Model(s): H92SDH9PW7AN

Test Begin Date: **July 3, 2017**

Test End Date: **July 17, 2017**

Report Issue Date: August 16, 2017



FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, ANSI, or any agency of the Federal Government.

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This report contains 22 pages

Table of Content

1	GENERAL	3
1.1	PURPOSE	3
1.2	MANUFACTURER INFORMATION.....	3
1.3	PRODUCT DESCRIPTION	3
1.4	TEST METHODOLOGY.....	3
1.4.1	<i>Configurations and Justification</i>	3
1.4.2	<i>In-Band Testing Methodology</i>	3
1.5	EMISSION DESIGNATORS	4
2	TEST FACILITIES	5
2.1	LOCATION.....	5
2.2	LABORATORY ACCREDITATIONS/RECOGNITIONS/CERTIFICATIONS.....	5
2.3	RADIATED & CONDUCTED EMISSIONS TEST SITE DESCRIPTION	6
2.3.1	<i>Semi-Anechoic Chamber Test Site</i>	6
2.3.2	<i>Conducted Emissions Test Site Description</i>	7
3	APPLICABLE STANDARD REFERENCES	7
4	LIST OF TEST EQUIPMENT	8
5	SUPPORT EQUIPMENT	9
6	EQUIPMENT UNDER TEST SETUP AND BLOCK DIAGRAM	9
7	SUMMARY OF TESTS	10
7.1	FIELD STRENGTH OF SPURIOUS EMISSIONS	10
7.1.1	<i>Measurement Procedure</i>	10
7.1.2	<i>Measurement Results</i>	11
8	MEASUREMENT UNCERTAINTIES	21
9	CONCLUSION	22

1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with 22 Subpart C, 74 Subpart D, 80 Subpart E and 90 Subpart I of the FCC's Code of Federal Regulations as well as Innovation, Science and Economic Development Canada's RSS-119 for the test procedures documented herein.

1.2 Manufacturer Information

Motorola Solutions Malaysia Sdn. Bhd
Plot 2 Bayan Lepas, Technoplex Industrial Park
MK 12 SWD, 11900 Pulau Pinang, Malaysia

1.3 Product Description

The Motorola Solutions, Inc. model H92SDH9PW7AN is a two way portable radio operating in the UHF band of 450 MHz - 512 MHz using Analog, Digital C4FM and APCO Phase 2 modulations. The device also incorporates a 2.4 GHz Bluetooth+EDR/Wi-Fi radio.

The test report documents compliance of the UHF LMR Radio only. The remaining radios are addressed in separate test reports.

Test Sample Serial Numbers: 837TTH0516

Test Sample Condition: The samples were provided in good physical condition with no observable defects.

1.4 Test Methodology

1.4.1 Configurations and Justification

The EUT was evaluated for compliance to the radiated emissions requirements of the aforementioned product standards per the manufacturer request. Compliance to the remaining tests requirements are documented in separate test reports.

The radiated emissions were performed for the EUT operating at the maximum and minimum power where applicable. The EUT was terminated by a 50 Ohm matching load at the antenna connector during the evaluation. Preliminary radiated emissions measurements were performed for the EUT in three orthogonal orientations. Final measurements were completed using the orientation leading to the highest emissions, which consists of the EUT set sideways on the test table.

The EUT was also evaluated for intermodulation products of the UHF land mobile radio operating simultaneously with the 2.4 GHz Bluetooth+EDR, BLE and Wi-Fi radios. All intermodulation products generated by the simultaneous transmissions of the co-located transceivers were attenuated below the limits of FCC Section 15.209 and ISED Canada's RSS-Gen.

1.4.2 In-Band Testing Methodology

The EUT band of operation is provided in the table below.

CFR Title 47 Rule Part	Frequency Band of Operation (MHz)
22	456 – 460
22	470 - 512
74	450 - 456
80	456 – 460
80	462.5375 - 470
90	450 – 454
90	456 – 462.5375
90	462.7365 – 467.5375
90	467.7375 – 512

Based on the requirements set forth in accordance 47 CFR 2.1046-2.1057 as stated above, the methodology in selecting the places to test in the available bands of operation is outlined in the following table.

CFR Title 47 Rule Part	Frequency Band of Operation (MHz)	Approx. Test Freq. (MHz)
74, 90	450 - 454	450.65
74	454 - 456	
22, 80, 90	456 - 460	459.125
90	460 – 462.5375	
Federal	462.5375 – 462.7365	
80, 90	462.7365 – 467.5375	
80	467.5375 – 467.7375	467.775
80, 90	467.7375 - 470	
22, 90	470 - 512	473.0625
		511.9875
Federal	512 - 520	519.9875

Note: The evaluation in the Federal bands are provided for reference only and are not included in the application for certification of the equipment.

1.5 Emission Designators

The H92SDH9PW7AN transmitter produces 5 distinct modulation formats. The emissions designators for the modulation type used by the H92SDH9PW7AN transmitter as calculated by the manufacturer are as follows:

EMISSIONS DESIGNATORS: 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E

2 TEST FACILITIES

2.1 Location

Unless otherwise noted, the radiated and conducted emissions test sites are located at the following addresses.

TÜV SÜD America, Inc.
3998 FAU Blvd, Suite 310
Boca Raton, Florida 33431
Phone: (561) 961-5585
Fax: (561) 961-5587
<http://www.tuv-sud-america.com>

2.2 Laboratory Accreditations/Recognitions/Certifications

TÜV SÜD America, Inc. is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ANAB program and has been issued certificate number AT-1533 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

FCC Test Firm Registration #: 475089
Innovation, Science and Economic Development Canada Lab Code: 4175A

2.3 Radiated & Conducted Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The EMC radiated test facility consists of an RF-shielded enclosure. The interior dimensions of the indoor semi-anechoic chamber are approximately 48 feet (14.6 m) long by 36 feet (10.8 m) wide by 24 feet (7.3 m) high and consist of rigid, 1/8 inch (0.32 cm) steel-clad, wood core modular panels with steel framing. In the shielded enclosure, the faces of the panels are galvanized and the chamber is self-supporting. 8-foot RF absorbing cones are installed on 4 walls and the ceiling. The steel-clad ground plane is covered with vinyl flooring.

The turntable is driven by pneumatic motor, which can support a 2000 lb. load. The turntable is flush with the chamber floor which it is connected to, around its circumference, with a continuous metallic loaded spring. An EMCO Model 1060 Multi-device controller controls the turntable position.

A pneumatic motor is used to control antenna polarizations and height relative to the ground. The height information is displayed on the control unit EMCO Model 1050.

The control room is an RF shielded enclosure attached to the semi-anechoic chamber with two bulkhead panels for connecting RF, and control cables. The dimension of the room is 7.3 m x 4.9 m x 3 m high and the entrance doors of both control and conducted rooms are 3 feet (0.91 m) by 7 feet (2.13 m).

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3.1-1 below:

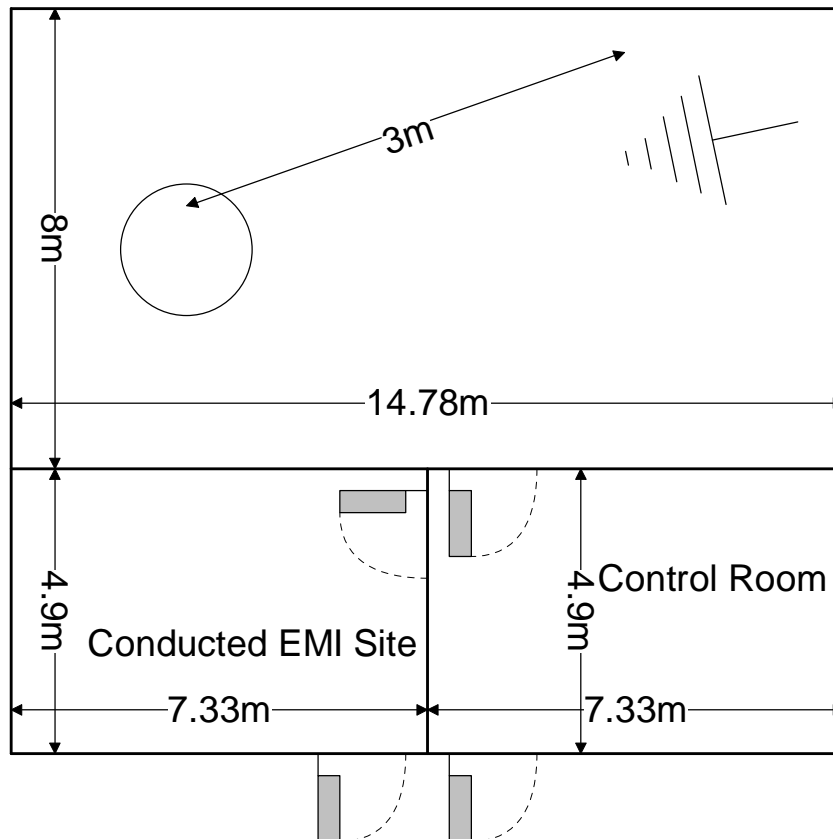


Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m³. The power line conducted emission site includes two LISNs: a Solar Model 8028-50 50 Ω/50 μH and an EMCO Model 3825/2R, which are installed as shown in the figure below. For evaluations requiring 230 V, 50 Hz AC input, a Polarad LISN (S/N 879341/048) is used in conjunction with a California Instruments signal generator Model 2001RP-OP1.

A diagram of the room is shown below in figure 2.3.2-1:

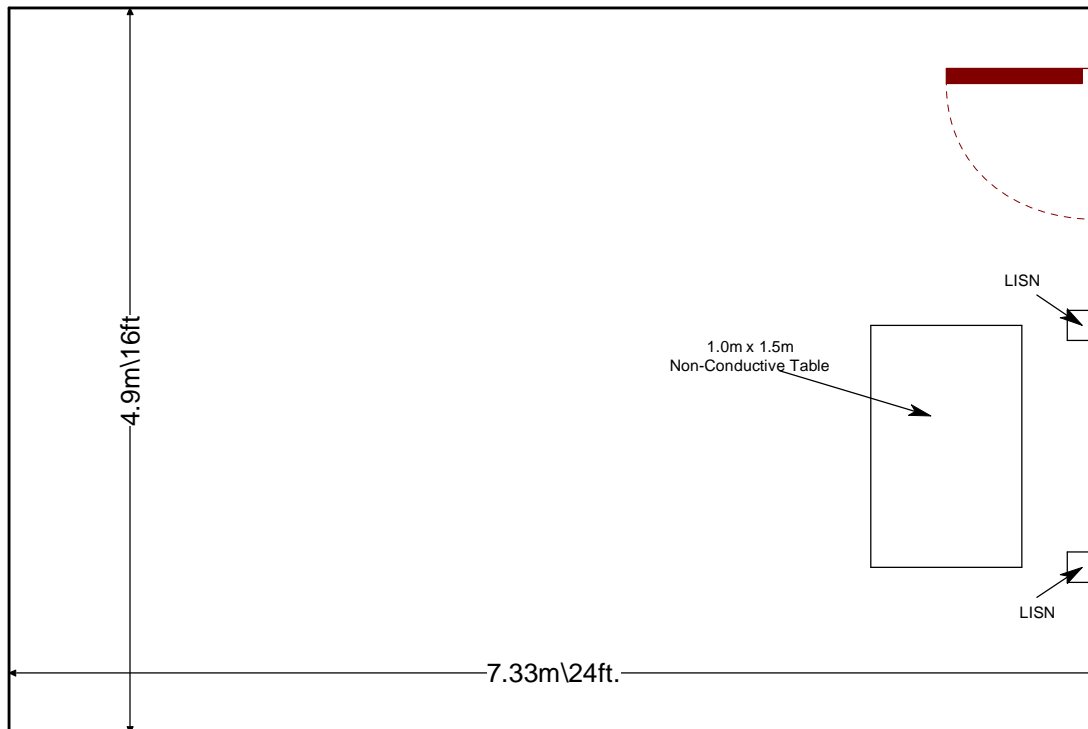


Figure 2.3.2-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

- 1 - US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures - 2017
- 2 - US Code of Federal Regulations (CFR): Title 47, Part 22: Public Mobile Services - 2017
- 3 - US Code of Federal Regulations (CFR): Title 47, Part 74: Experimental Radio, Auxiliary, Special Broadcast and Other Program Distributional Services - 2017
- 4 - US Code of Federal Regulations (CFR): Title 47, Part 80: Stations in the Maritime Services - 2017
- 5 - US Code of Federal Regulations (CFR): Title 47, Part 90: Private Land Mobile Services - 2017
- 6 - TIA-603-E: Land Mobile FM or PM - Communications Equipment - Measurement and Performance Standards - 2016
- 7 - ANSI C63.26: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services - December 2015
- 8 - Innovation, Science and Economic Development Canada Radio Standards Specification: RSS-119 - Land Mobile and Fixed Equipment Operating in the Frequency Range 27.41-960 MHz, Issue 12, May 2015

4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

Table 4-1: TÜV SÜD America Test Equipment

AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
523	Agilent	E7405	Spectrum Analyzers	MY45103293	12/9/2016	12/9/2018
2002	EMCO	3108	Antennas	2147	11/19/2015	11/19/2017
2003	EMCO	3108	Antennas	2148	2/29/2016	2/28/2018
2004	EMCO	3146	Antennas	1385	11/19/2015	11/19/2017
2005	FAU EMI R&D Lab	Lazarus	Antennas	EM001	2/16/2016	2/16/2018
2006	EMCO	3115	Antennas	2573	4/7/2017	4/7/2019
2007	EMCO	3115	Antennas	2419	1/28/2016	1/28/2018
2011	Hewlett-Packard	HP 8447D	Amplifiers	2443A03952	11/2/2016	11/2/2017
2089	Agilent Technologies, Inc.	83017A	Amplifiers	3123A00214	12/2/2016	12/2/2017
2121	ACS Boca	Radiated Cable Set	Cable Set	2121	8/1/2016	8/1/2017
2122	ACS Boca	Radiated Cable Set	Cable Set	2122	8/4/2016	8/4/2017
RE563	Hewlett Packard	8673D	Signal Generators	3034A01078	4/8/2016	4/8/2018

Notes: NCR = No Calibration Required

5 SUPPORT EQUIPMENT

Table 5-1: Support Equipment

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Motorola Solutions, Inc.	H92SDH9PW7AN	837TTH0516

Table 5-2: Cable Description

Cable #	Cable Type	Length	Shield	Termination
	The EUT was tested standalone			

6 EQUIPMENT UNDER TEST SETUP AND BLOCK DIAGRAM

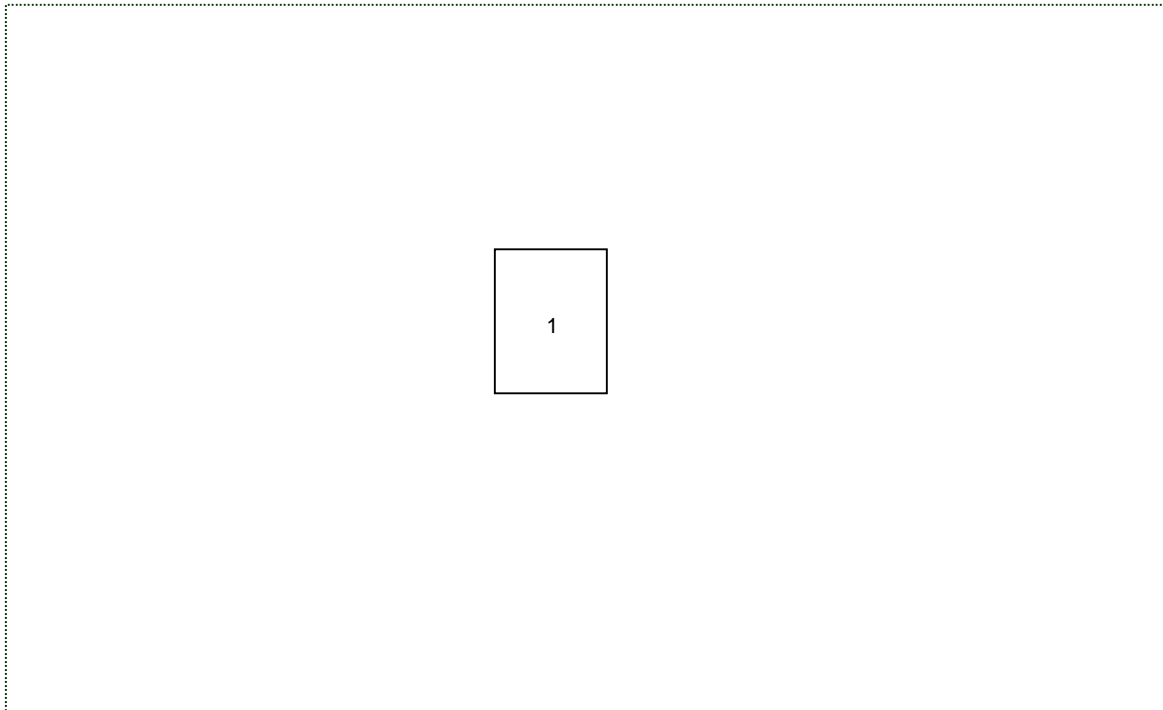


Figure 6-1: EUT Test Setup

7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

Table 7-1: Test Results Summary

Test Parameter	Test Summary
Field Strength of Spurious Emissions	Pass

7.1 Field Strength of Spurious Emissions

7.1.1 Measurement Procedure

The equipment under test is placed in the Semi-Anechoic Chamber (described in section 2.3.1) on a RF transparent table at the turntable center. For each spurious emission, the antenna mast is raised and lowered from one (1) to four (4) meters and the turntable is rotated 360° and the maximum reading on the spectrum analyzer is recorded. This was repeated for both horizontal and vertical polarizations of the receive antenna.

The equipment under test is then replaced with a substitution antenna fed by a signal generator. The signal generator's frequency is set to that of the spurious emission recorded from the equipment under test. The antenna mast is raised and lowered from one (1) to four (4) meters to obtain a maximum reading on the spectrum analyzer. The output of the signal generator is then adjusted until the reading on the spectrum analyzer matches that obtained from the equipment under test. The signal generator level is recorded. The power in dBm of each spurious emission is calculated by correcting the signal generator level for the cable loss and gain of the substitution antenna referenced to a dipole. The spectrum was investigated in accordance to CFR 47 Part 2.1057.

The magnitude of all spurious emissions not reported were attenuated below the noise floor of the measurement system and therefore not specified in this report. Results are shown below.

7.1.2 Measurement Results

Performed by: Jean Neptune Rene

FCC: 74.462(c); ISED Canada: RSS-119 5.8.1

Table 7.1.2-1: Field Strength of Spurious Emissions – 450.65 MHz – Analog 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-59.77	H	-54.96	-13.00	41.96
1351.95	-55.38	H	-67.72	-13.00	54.72
901.3	-74.06	V	-72.01	-13.00	59.01
1351.95	-55.76	V	-69.78	-13.00	56.78

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

Table 7.1.2-2: Field Strength of Spurious Emissions – 450.65 MHz – Analog 25 kHz –Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-70.68	H	-67.92	-20.00	47.92
901.3	-77.81	V	-78.44	-20.00	58.44

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

FCC: 74.462(c), 90.210(d); ISED Canada: RSS-119 5.8.3

Table 7.1.2-3: Field Strength of Spurious Emissions – 450.65 MHz – Digital C4FM – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-60.29	H	-55.53	-20.00	35.53
1351.95	-56.80	H	-69.64	-20.00	49.64
901.3	-73.06	V	-70.50	-20.00	50.50
1351.95	-56.36	V	-68.66	-20.00	48.66

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-4: Field Strength of Spurious Emissions – 450.65 MHz – Digital C4FM – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-70.13	H	-67.41	-20.00	47.41
901.3	-76.25	V	-76.53	-20.00	56.53

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

Table 7.1.2-5: Field Strength of Spurious Emissions – 450.65 MHz – Phase II – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-55.92	H	-50.51	-20.00	30.51
1351.95	-56.30	H	-68.68	-20.00	48.68
901.3	-72.26	V	-69.52	-20.00	49.52
1351.95	-56.97	V	-70.18	-20.00	50.18

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-6: Field Strength of Spurious Emissions – 450.65 MHz – Phase II – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
901.3	-68.87	H	-65.50	-20.00	45.50
901.3	-78.15	V	-79.45	-20.00	59.45

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

FCC: 22.359(a); ISED Canada RSS-119 5.8.1

Table 7.1.2-7: Field Strength of Spurious Emissions – 459.125 MHz – Analog – 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
918.25	-55.93	H	-52.12	-13.00	39.12
1377.375	-55.97	H	-65.73	-13.00	52.73
918.25	-71.50	V	-69.15	-13.00	56.15
1377.375	-55.03	V	-63.24	-13.00	50.24

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

FCC: 22.359(a), 90.210(d); ISED Canada: RSS-119 5.8.3

Table 7.1.2-8: Field Strength of Spurious Emissions – 459.125 MHz – Digital C4FM – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
918.25	-57.59	H	-53.63	-20.00	33.63
1377.375	-55.39	H	-63.65	-20.00	43.65
918.25	-70.38	V	-68.10	-20.00	48.10
1377.375	-55.68	V	-65.27	-20.00	45.27

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-9: Field Strength of Spurious Emissions – 459.125 MHz – Phase II – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
918.25	-55.14	H	-51.05	-20.00	31.05
1377.375	-52.46	H	-61.68	-20.00	41.68
918.25	-72.22	V	-70.54	-20.00	50.54
1377.375	-53.32	V	-62.63	-20.00	42.63

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

FCC: 80.211(f); ISED Canada: RSS – 119 5.8.1

Table 7.1.2-10: Field Strength of Spurious Emissions – 467.775 MHz – Analog – 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-57.84	H	-53.78	-13.00	40.78
1403.325	-55.07	H	-64.78	-13.00	51.78
935.55	-72.63	V	-70.29	-13.00	57.29
1403.325	-54.99	V	-64.30	-13.00	51.30

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

Table 7.1.2-11: Field Strength of Spurious Emissions – 467.775 MHz – Analog – 25 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-70.31	H	-68.63	-13.00	55.63
935.55	-78.10	V	-81.78	-13.00	68.78

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

FCC: 90.210(d); ISED Canada: RSS-119 5.8.3

Table 7.1.2-12: Field Strength of Spurious Emissions – 467.775 MHz – Digital C4FM – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-57.92	H	-54.14	-20.00	34.14
1403.325	-54.48	H	-62.86	-20.00	42.86
935.55	-73.25	V	-71.29	-20.00	51.29
1403.325	-54.14	V	-62.35	-20.00	42.35

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-13: Field Strength of Spurious Emissions – 467.775 MHz – Digital C4FM – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-70.42	H	-68.74	-20.00	48.74
935.55	-78.58	V	-82.31	-20.00	62.31

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

Table 7.1.2-14: Field Strength of Spurious Emissions – 467.775 MHz – Phase II – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-56.50	H	-52.80	-20.00	32.80
1403.325	-55.05	H	-63.87	-20.00	43.87
935.55	-71.62	V	-69.16	-20.00	49.16
1403.325	-54.69	V	-63.41	-20.00	43.41

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-15: Field Strength of Spurious Emissions – 467.775 MHz – Digital C4FM – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.55	-69.54	H	-67.69	-20.00	47.69
935.55	-78.39	V	-81.31	-20.00	61.31

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

FCC: 22.359(a), 90.210(b)

Table 7.1.2-16: Field Strength of Spurious Emissions – 473.0625 MHz – Analog – 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
946.125	-57.57	H	-53.26	-13.00	40.26
1419.1875	-52.98	H	-63.80	-13.00	50.80
946.125	-72.68	V	-70.81	-13.00	57.81
1419.1875	-53.05	V	-63.81	-13.00	50.81

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

FCC: 90.210(b), 90.210(d)

Table 7.1.2-17: Field Strength of Spurious Emissions – 511.9875 MHz – Analog – 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-51.41	H	-60.99	-13.00	47.99
1535.9625	-56.89	H	-68.19	-13.00	55.19
1023.975	-56.69	V	-76.02	-13.00	63.02
1535.9625	-57.62	V	-72.16	-13.00	59.16

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-18: Field Strength of Spurious Emissions – 511.9875 MHz – Analog – 25 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-55.76	H	-69.01	-13.00	56.01
1023.975	-56.93	V	-77.11	-13.00	64.11

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-19: Field Strength of Spurious Emissions – 511.9875 MHz – Digital C4FM – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-51.63	H	-61.47	-20.00	41.47
1535.9625	-56.88	H	-68.33	-20.00	48.33
1023.975	-56.51	V	-75.48	-20.00	55.48
1535.9625	-57.07	V	-70.22	-20.00	50.22

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment.

Table 7.1.2-20: Field Strength of Spurious Emissions – 511.9875 MHz – Digital C4FM – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-56.07	H	-71.94	-20.00	51.94
1023.975	-56.81	V	-76.52	-20.00	56.52

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-21: Field Strength of Spurious Emissions – 511.9875 MHz – Phase II – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-51.85	H	-62.05	-20.00	42.05
1535.9625	-56.21	H	-67.31	-20.00	47.31
1023.975	-57.00	V	-69.96	-20.00	49.96
1535.9625	-58.13	V	-74.32	-20.00	54.32

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-22: Field Strength of Spurious Emissions – 511.9875 MHz – Phase – 12.5 kHz – Low Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1023.975	-56.32	H	-73.10	-20.00	53.10
1023.975	-57.12	V	-80.08	-20.00	60.08

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Federal Band: Not for FCC Certification

Table 7.1.2-23: Field Strength of Spurious Emissions – 519.9875 MHz – Analog – 25 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1039.975	-52.21	H	-65.06	-13.00	52.06
1559.9625	-57.45	H	-79.06	-13.00	66.06

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-24: Field Strength of Spurious Emissions – 519.9875 MHz – Digital C4FM – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1039.975	-51.07	H	-63.08	-20.00	43.08
1559.9625	-56.05	H	-70.95	-20.00	50.95
1039.975	-55.05	V	-76.07	-20.00	56.07

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

Table 7.1.2-25: Field Strength of Spurious Emissions – 519.9875 MHz – Phase II – 12.5 kHz – High Power

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
1039.975	-50.85	H	-62.09	-20.00	42.09
1559.9625	-54.03	H	-63.49	-20.00	43.49
1039.975	-54.62	V	-74.10	-20.00	54.10
1559.9625	-56.33	V	-80.90	-20.00	60.90

NOTE: All frequencies not listed were below the limits and the noise floor of the measurement equipment

8 MEASUREMENT UNCERTAINTIES

The expanded laboratory measurement uncertainty figures (U_{Lab}) provided below correspond to an expansion factor (coverage factor) $k = 1.96$ which provide confidence levels of 95%.

Parameter	U_{lab}
Occupied Channel Bandwidth	$\pm 0.009 \%$
RF Conducted Output Power	$\pm 0.349 \text{ dB}$
Power Spectral Density	$\pm 0.372 \text{ dB}$
Antenna Port Conducted Emissions	$\pm 1.264 \text{ dB}$
Radiated Emissions $\leq 1\text{GHz}$	$\pm 3.93 \text{ dB}$
Radiated Emissions $> 1\text{GHz}$	$\pm 5.814 \text{ dB}$
Temperature	$\pm 0.860 \text{ }^\circ\text{C}$
Radio Frequency	$\pm 2.832 \times 10^{-8}$
AC Power Line Conducted Emissions	$\pm 2.93 \text{ dB}$

9 CONCLUSION

In the opinion of TÜV SÜD America, Inc. the model H92SDH9PW7AN, manufactured by Motorola Solutions, Inc., meets the requirements of FCC Part 22 Subpart C, 74 Subpart D, 80 Subpart E and 90 Subpart I as well as ISED Canada's RSS-119 for the tests documented herein.

End Report