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TEST REPORT

ACCORDING TO: FCC part 15 §15.207; subpart B;
RSS-Gen issue 2:2007 and ICES-003 Issue 4:2004

FOR:

Motorola Israel Ltd.
r765 iDEN, MOTotalk
Transceiver with Bluetooth
Model:H06XCN6JS9AN

This report is in conformity with ISO/ IEC 17025. The "A2LA Accredited" symbol endorsement applies only to the tests and calibrations that are listed in the scope of Hermon Laboratories accreditation. The test results relate only to the items tested. This test report shall not be reproduced in any form except in full with the written approval of Hermon Laboratories Ltd.



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1 Applicant information

Client name: Motorola Israel Ltd.
Address: 3 Kremenetski street, P.O.B. 25016, 67899 Tel Aviv, Israel
Telephone: +972 3565 9796
Fax: +972 3565 9968
E-mail: shuki.levy@motorola.com
Contact name: Mr. Shuki Levy

2 Equipment under test attributes

Product name: r765 iDEN, MOTOtalk Transceiver with Bluetooth
Product type: Transceiver
Model(s): H06XCN6JS9AN
Receipt date 2/12/2009

3 Manufacturer information

Manufacturer name: Motorola Israel Ltd.
Address: 3 Kremenetski street, P.O.B. 25016, 67899 Tel Aviv, Israel
Telephone: +972 3565 9796
Fax: +972 3565 9968
E-Mail: shuki.levy@motorola.com
Contact name: Mr. Shuki Levy

4 Test details

Project ID: 19051
Location: Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started: 2/12/2009
Test completed: 2/24/2009
Test specification(s): FCC part 15 §15.207, subpart B; RSS-Gen issue 2:2007; ICES-003 issue 4:2004



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5 Tests summary

Test	Status
FCC part 15 Section 15.207(a)/ RSS-Gen, Section 7.2. 2, Conducted emission	Pass
FCC part 15 Section 15.109/ RSS-Gen, Section 7.2.3.2/ICES-003, Radiated emission	Pass

The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

	Name and Title	Date	Signature
Tested by:	Mr. L. Markel, test engineer	February 24, 2009	
Reviewed by:	Mrs. M. Cherniavsky, certification engineer	February 25, 2009	
Approved by:	Mr. M. Nikishin, EMC and radio group leader	February 26, 2009	



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6 EUT description

6.1 General information

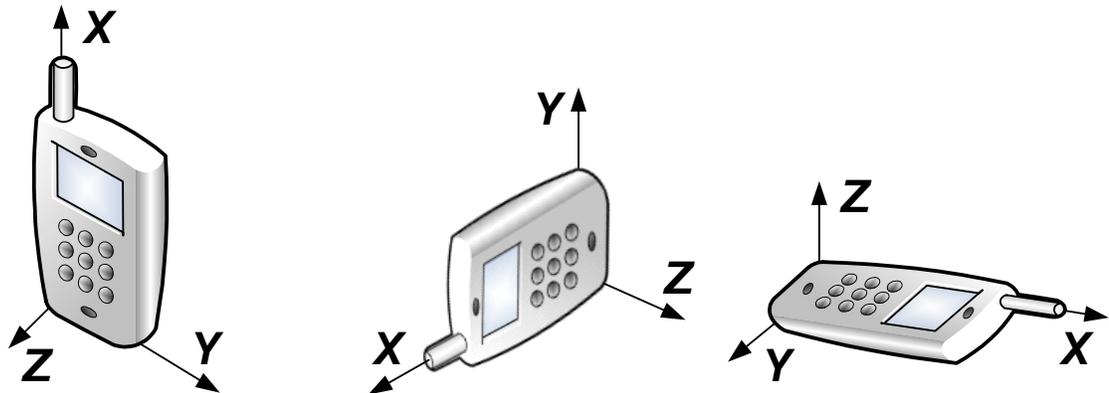
The EUT is a battery-powered hand-held radio transceiver for iDEN digital cellular networks. It also includes MOTotalk digital walkie-talkie option and Bluetooth (R).

The devices are rugged and durable monolith handsets targeted towards industrial, petrochemical and utility companies. Industries that use these handsets are manufacturing, construction, transportation and distribution. The handsets shall be certified for military specification requirements including humidity, shock and vibration and blowing rain.

The EUT is powered by 8 V rechargeable battery.

6.2 EUT positions

The EUT was tested in 3 orthogonal positions and maximum power was found at Z-axis orientation.



Test specification:	Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/23/2009 3:38:45 PM		
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

7 Emission tests

7.1 Conducted emissions

7.1.1 General

This test was performed to measure common mode conducted emissions at the power port. Specification test limits are given in Table 7.1.1.

Table 7.1.1 Limits for conducted emissions

Frequency, MHz	Class B limit, dB(μV)	
	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5.0	56	46
5.0 - 30	60	50

* The limit decreases linearly with the logarithm of frequency.

7.1.2 Test procedure

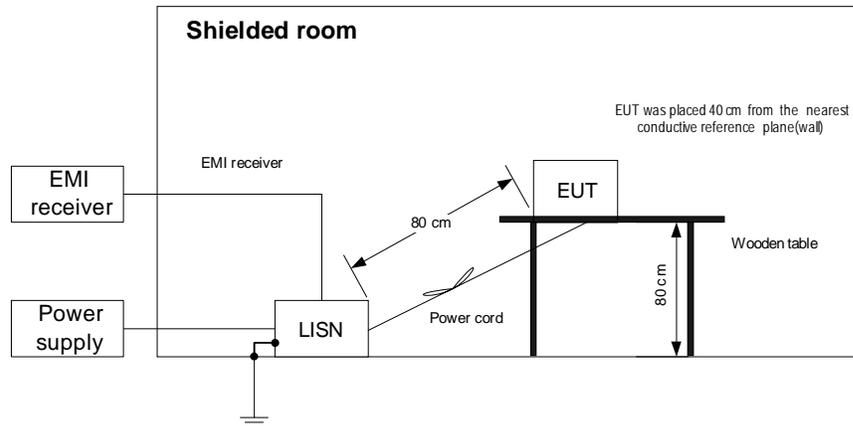
7.1.2.1 The EUT was set up as shown in Figure 7.1.1 and associated photographs, energized and the performance check was conducted.

7.1.2.2 The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 7.1.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

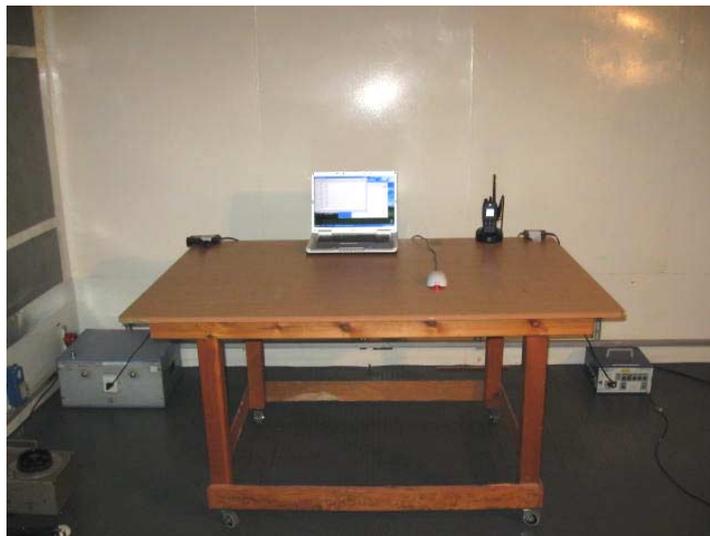
7.1.2.3 The position of the device cables was varied to determine maximum emission level. The worst test results (the lowest margins) were recorded in Table 7.1.2 and shown in the associated plots.

Test specification:	Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/23/2009 3:38:45 PM		
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

Figure 7.1.1 Setup for conducted emission measurements, table-top equipment



Photograph 7.1.1 Setup for conducted emission measurements





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Test specification:	Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/23/2009 3:38:45 PM		
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

Photograph 7.1.2 Setup for conducted emission measurements





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Test specification: Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission			
Test procedure: ANSI C63.4, Section 13.1.3			
Test mode: Compliance		Verdict: PASS	
Date & Time: 2/23/2009 3:38:45 PM			
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

Table 7.1.2 Conducted emission test results

LINE: AC mains
LIMIT: Class B
EUT OPERATING MODE: MT&BT transmit, audio script is running for RSM
EUT SET UP: TABLE-TOP
TEST SITE: SHIELDED ROOM
DETECTORS USED: PEAK / QUASI-PEAK / AVERAGE
FREQUENCY RANGE: 150 kHz - 30 MHz
RESOLUTION BANDWIDTH: 9 kHz

Frequency, MHz	Peak emission, dB(μV)	Quasi-peak			Average			Line ID	Verdict
		Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*		
0.177730	49.54	46.72	64.65	-17.93	35.93	54.65	-18.72	L1	Pass
0.193730	48.54	47.57	63.90	-16.33	38.98	53.90	-14.92		
0.258513	44.17	41.36	61.53	-20.17	32.47	51.53	-19.06		
0.451850	41.97	40.28	56.90	-16.62	37.37	46.90	-9.53		
0.581100	37.07	34.94	56.00	-21.06	33.11	46.00	-12.89		
0.150000	48.80	47.89	66.00	-18.11	35.41	56.00	-20.59		
0.192851	50.76	48.04	63.93	-15.89	38.09	53.93	-15.84	L2	Pass
0.200375	43.49	42.05	63.64	-21.59	32.23	53.64	-21.41		
0.247230	44.98	42.04	61.87	-19.83	29.61	51.87	-22.26		
0.291028	38.97	36.62	60.54	-23.92	25.90	50.54	-24.64		
0.451305	41.91	40.23	56.91	-16.68	37.32	46.91	-9.59		
0.177730	49.54	46.72	64.65	-17.93	35.93	54.65	-18.72		

Reference numbers of test equipment used

HL 0447	HL 0580	HL 1513	HL 2888	HL 3170	HL 3612		
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Full description is given in Appendix A.



Test specification: Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission			
Test procedure: ANSI C63.4, Section 13.1.3			
Test mode: Compliance		Verdict: PASS	
Date & Time: 2/23/2009 3:38:45 PM			
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

Table 7.1.3 Conducted emission test results

LINE: AC mains
LIMIT: Class B
EUT OPERATING MODE: MT&BT transmit, data script is running for laptop
EUT SET UP: TABLE-TOP
TEST SITE: SHIELDED ROOM
DETECTORS USED: PEAK / QUASI-PEAK / AVERAGE
FREQUENCY RANGE: 150 kHz - 30 MHz
RESOLUTION BANDWIDTH: 9 kHz

Frequency, MHz	Peak emission, dB(μV)	Quasi-peak			Average			Line ID	Verdict
		Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*		
0.159850	46.16	44.40	65.52	-21.12	32.77	55.52	-22.75	L1	Pass
0.243660	42.93	37.76	61.98	-24.22	27.11	51.98	-24.87		
3.750000	42.82	38.35	56.00	-17.65	25.19	46.00	-20.81		
15.481655	44.87	40.65	60.00	-19.35	30.80	50.00	-19.20		
21.600590	47.56	44.96	60.00	-15.04	36.07	50.00	-13.93		
26.416250	46.58	42.94	60.00	-17.06	31.33	50.00	-18.67		
0.232875	46.72	42.76	62.39	-19.63	32.78	52.39	-19.61	L2	Pass
3.820000	47.66	42.43	56.00	-13.57	30.33	46.00	-15.67		
14.394000	43.55	39.71	60.00	-20.29	31.16	50.00	-18.84		
21.600000	48.63	44.27	60.00	-15.73	34.84	50.00	-15.16		
26.630000	40.28	40.95	60.00	-19.05	31.49	50.00	-18.51		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

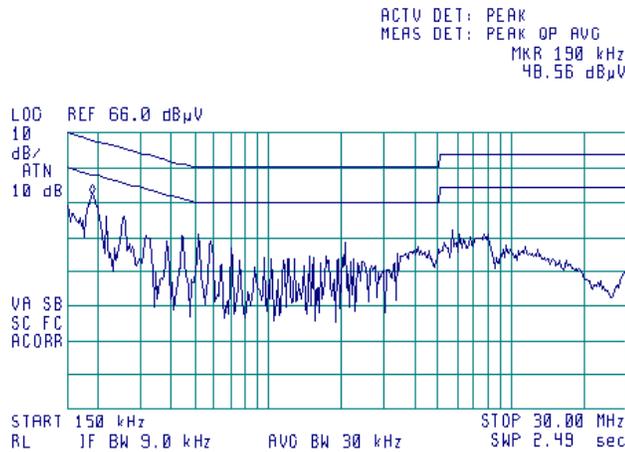
HL 0447	HL 0580	HL 1513	HL 2888	HL 3170	HL 3612		
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Full description is given in Appendix A.

Test specification:	Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/23/2009 3:38:45 PM		
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

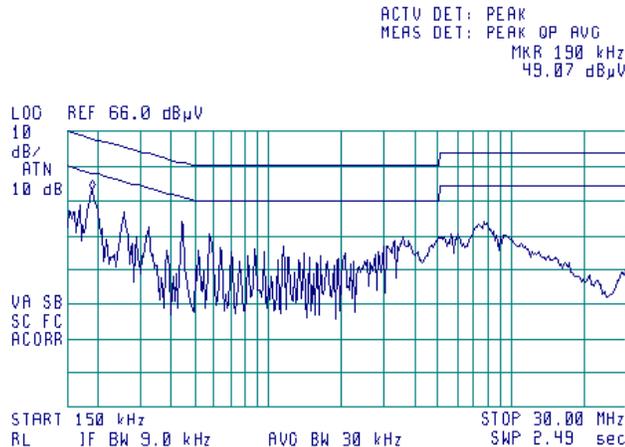
Plot 7.1.1 Conducted emission measurements

MODE: MT&BT transmit, audio script is running for RSM
 LINE: L1
 LIMIT: QUASI-PEAK, AVERAGE
 DETECTOR: PEAK



Plot 7.1.2 Conducted emission measurements

MODE: MT&BT transmit, audio script is running for RSM
 LINE: L2
 LIMIT: QUASI-PEAK, AVERAGE
 DETECTOR: PEAK



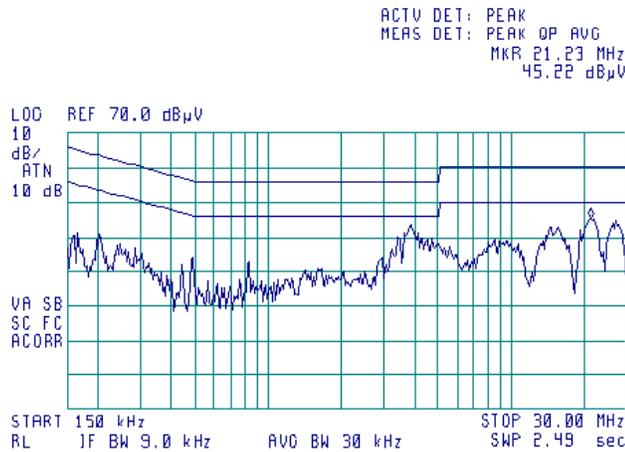


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Test specification:	Sections 15.207(a)/RSS-Gen, Section 7.2.2, Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/23/2009 3:38:45 PM		
Temperature: 22°C	Air Pressure: 1019 hPa	Relative Humidity: 40%	Power Supply: 120 VAC
Remarks: Single charger			

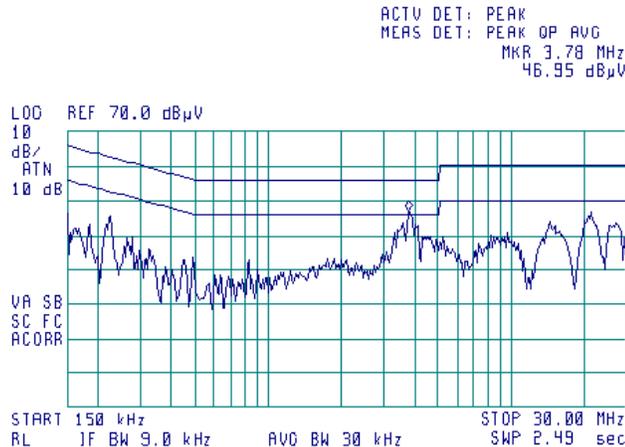
Plot 7.1.3 Conducted emission measurements

MODE: MT&BT transmit, data script is running for laptop
 LINE: L1
 LIMIT: QUASI-PEAK, AVERAGE
 DETECTOR: PEAK



Plot 7.1.4 Conducted emission measurements

MODE: MT&BT transmit, data script is running for laptop
 LINE: L2
 LIMIT: QUASI-PEAK, AVERAGE
 DETECTOR: PEAK



Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission	
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4	
Test mode: Compliance	Verdict: PASS
Date & Time: 2/24/2009 3:00:10 PM	
Temperature: 22°C	Air Pressure: 1008 hPa
Relative Humidity: 48%	
Power Supply: 120 VAC	
Remarks: MT & BT in receive mode	

7.2 Radiated emission measurements

7.2.1 General

This test was performed to measure radiated emissions from the EUT enclosure. Specification test limits are given in Table 7.2.1.

Table 7.2.1 Radiated emission test limits

Frequency, MHz	Class B limit, dB(μV/m)		Class A limit, dB(μV/m)	
	10 m distance	3 m distance	10 m distance	3 m distance
30 - 88	29.5*	40.0	39.0	49.5*
88 - 216	33.0*	43.5	43.5	54.0*
216 - 960	35.5*	46.0	46.4	56.9*
Above 960	43.5*	54.0	49.5	60.0*

* The limit for test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows: $Lim_{S_2} = Lim_{S_1} + 20 \log(S_1/S_2)$, where S_1 and S_2 – standard defined and test distance respectively in meters.

Table 7.2.2 Radiated emission limits according to RSS-Gen, Section 7.2.3.2

Frequency, MHz	Field strength limit at 3 m test distance, dB(μV/m)
30 - 88	40.0
88 - 216	43.5
216 - 960	46.0
960 - 3 rd harmonic**	54.0

** - harmonic of the highest frequency the EUT generates, uses, operates or tunes to.

Table 7.2.3 Radiated emission limits according to ICES-003, Section 5

Frequency, MHz	Class B limit, dB(μV/m)	
	10 m distance	3 m distance
30 - 230	30	40.5*
230 - 1000	37	47.5*

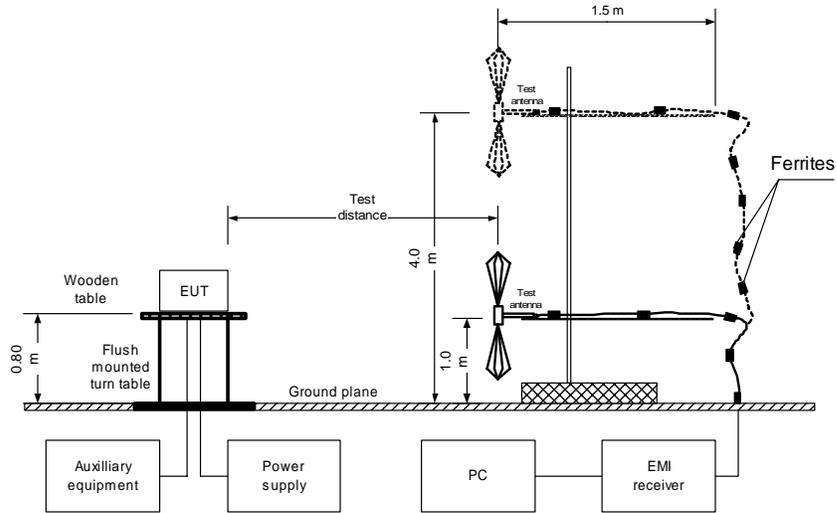
* - The limit for a test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows: $Lim_{S_2} = Lim_{S_1} + 20 \log(S_1/S_2)$, where S_1 and S_2 – the standard defined and the test distance respectively in meters.

7.2.2 Test procedure for measurements in semi-anechoic chamber

- 7.2.2.1** The EUT was set up as shown in Figure 7.2.1 and associated photographs, energized and the performance check was conducted.
- 7.2.2.2** The specified frequency range was investigated with biconilog antenna connected to EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal and the EUT cables position was varied.
- 7.2.2.3** The worst test results (the lowest margins) were recorded in Table 7.2.4, Table 7.2.5 and shown in the associated plots.

Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Figure 7.2.1 Setup for radiated emission measurements in the semi anechoic chamber, table-top equipment



Test specification:	Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission		
Test procedure:	ANSI C63.4, Sections 11.6 and 12.1.4		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/24/2009 3:00:10 PM		
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Photograph 7.2.1 Setup for radiated emission measurements, radio with RSM



Photograph 7.2.2 Setup for radiated emission measurements, radio with RSM

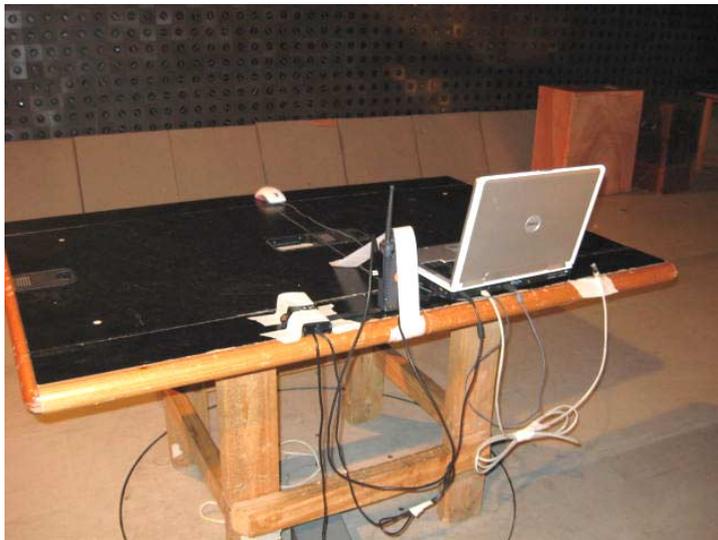


Test specification:	Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission		
Test procedure:	ANSI C63.4, Sections 11.6 and 12.1.4		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/24/2009 3:00:10 PM		
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Photograph 7.2.3 Setup for radiated emission measurements, radio connected to PC



Photograph 7.2.4 Setup for radiated emission measurements, EUT close view





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Test specification:		Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure:		ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode:	Compliance	Verdict:		PASS	
Date & Time:	2/24/2009 3:00:10 PM				
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC		
Remarks: MT & BT in receive mode					

Table 7.2.4 Radiated emission test results

EUT SET UP: Radio connected to PC via USB data cable PMLN5235A (with data transportation),
MT & BT in Rx mode

TEST SITE: SEMI ANECHOIC CHAMBER

TEST DISTANCE: 3 m

DETECTORS USED: PEAK / QUASI-PEAK

FREQUENCY RANGE: 30 MHz – 1000 MHz

RESOLUTION BANDWIDTH: 120 kHz

Frequency, MHz	Peak emission, dB(μV/m)	Quasi-peak			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
40.891050	38.99	34.63	40.00	-5.37	Vertical	1.0	180	Pass
74.788850	38.59	32.99	40.00	-7.01	Vertical	1.0	270	
215.990000	43.26	38.29	43.50	-5.21	Horizontal	1.0	0	
240.000000	45.71	41.68	46.00	-4.32	Horizontal	1.0	90	
432.000000	43.63	40.83	46.00	-5.17	Vertical	1.0	0	
696.905000	40.88	38.28	46.00	-7.72	Vertical	1.2	15	

EUT SET UP: Radio connected to PC via USB data cable PMLN5235A (with data transportation),
MT & BT in Rx mode

TEST SITE: SEMI ANECHOIC CHAMBER

TEST DISTANCE: 3 m

DETECTORS USED: PEAK / Average

FREQUENCY RANGE: 1000 – 6500 MHz

RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	Peak emission, dB(μV/m)	Average			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
1330.8500	52.12	36.08	54.00	-17.92	V	1.0	180	Pass
1594.7000	52.15	29.91	54.00	-24.09	V	1.0	180	
2130.1250	52.73	33.51	54.00	-20.49	V	1.0	180	



Test specification:	Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission		
Test procedure:	ANSI C63.4, Sections 11.6 and 12.1.4		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	2/24/2009 3:00:10 PM		
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Table 7.2.5 Radiated emission test results

EUT SET UP: Radio with RSM (RMN5115A) with audio operating and Single-Unit-Charger (connected to mains); MT & BT in Rx mode
 TEST SITE: SEMI ANECHOIC CHAMBER
 TEST DISTANCE: 3 m
 DETECTORS USED: PEAK / QUASI-PEAK
 FREQUENCY RANGE: 30 MHz – 1000 MHz
 RESOLUTION BANDWIDTH: 120 kHz

Frequency, MHz	Peak emission, dB(μV/m)	Quasi-peak			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
33.64	26.90	23.10	40.00	-16.90	V	1.0	010	Pass

EUT SET UP: Radio with RSM (RMN5115A) with audio operating and Single-Unit-Charger (connected to mains); MT & BT in Rx mode
 TEST SITE: SEMI ANECHOIC CHAMBER
 TEST DISTANCE: 3 m
 DETECTORS USED: PEAK / Average
 FREQUENCY RANGE: 1000 – 5000 MHz
 RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	Peak emission, dB(μV/m)	Average			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
No emissions were found								Pass

*- Margin = Measured emission - specification limit.
 **- EUT front panel refer to 0 degrees position of turntable.

Reference numbers of test equipment used

HL 0521	HL 0604	HL 1905	HL 1984	HL 3121	HL 3616		
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Full description is given in Appendix A.



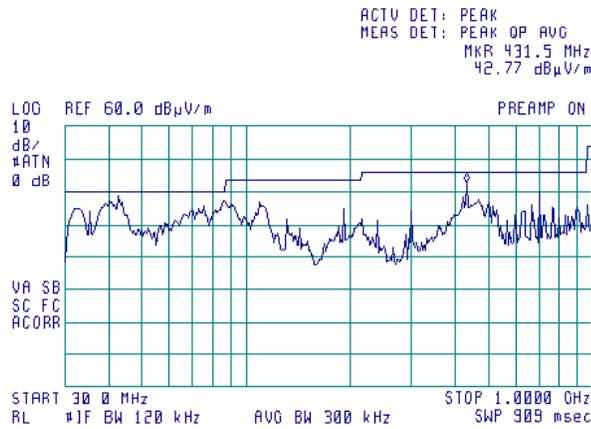
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Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Plot 7.2.1 Radiated emission measurements in 30 - 1000 MHz range, vertical antenna polarization

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
SET-UP: Laptop,
MT&BT in receive mode

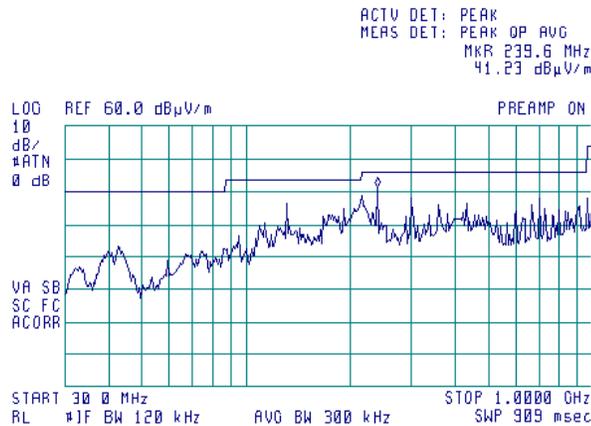
14:00:43 FEB 12, 2009



Plot 7.2.2 Radiated emission measurements in 30 - 1000 MHz range, horizontal antenna polarization

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
SET-UP: Laptop,
MT&BT in receive mode

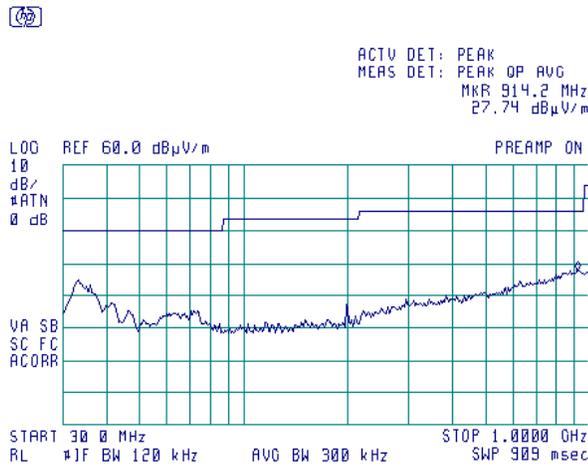
14:07:55 FEB 12, 2009



Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

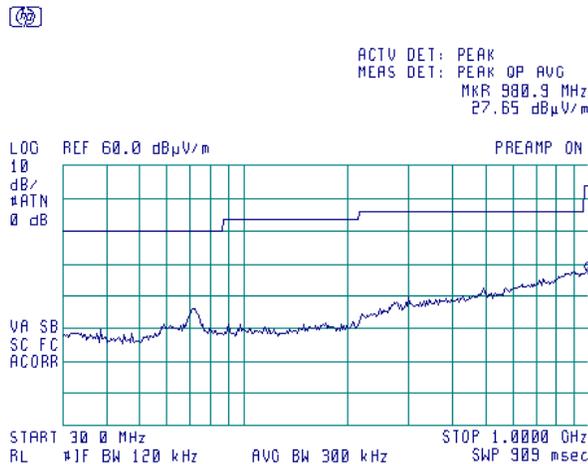
Plot 7.2.3 Radiated emission measurements in 30 - 1000 MHz range, vertical antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Single Charger RSM,
 Audio script running,
 MT and BT in receive mode



Plot 7.2.4 Radiated emission measurements in 30 - 1000 MHz range, horizontal antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Single Charger RSM,
 Audio script running,
 MT and BT in receive mode

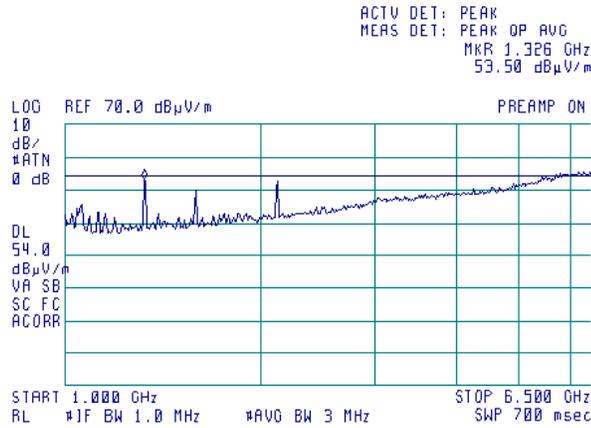


Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Plot 7.2.5 Radiated emission measurements above 1000 MHz, vertical antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Laptop,
 MT&BT in receive mode
 DETECTOR: Peak

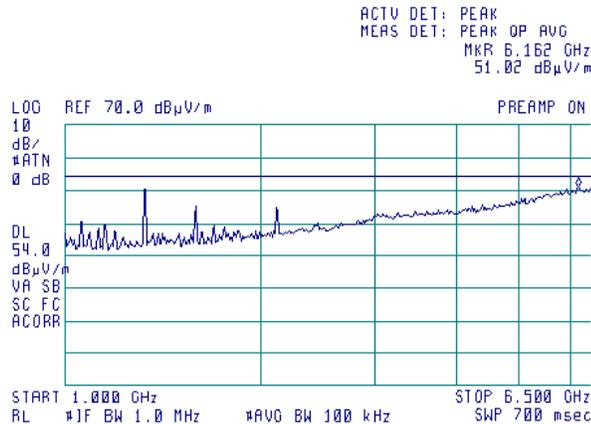
15:18:01 FEB 12, 2009



Plot 7.2.6 Radiated emission measurements above 1000 MHz, vertical antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Laptop,
 MT&BT in receive mode
 DETECTOR: VBW = 100 kHz

15:19:39 FEB 12, 2009

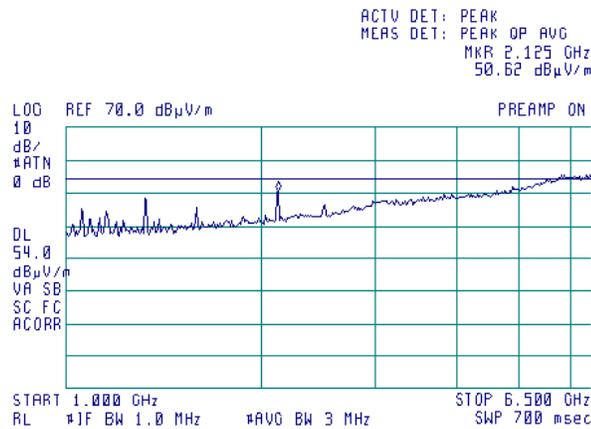


Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Plot 7.2.7 Radiated emission measurements above 1000 MHz, horizontal antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Laptop,
 MT&BT in receive mode
 DETECTOR: Peak

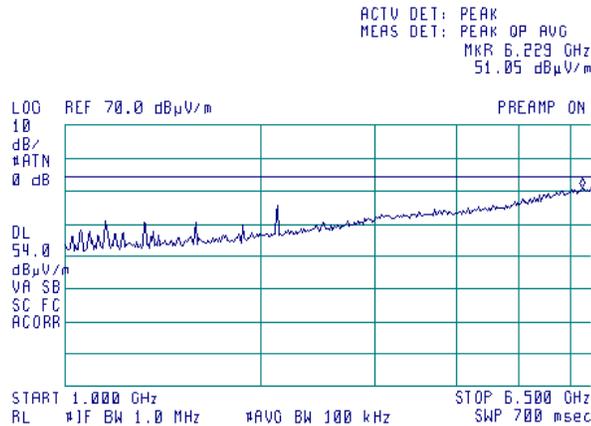
15:28:53 FEB 12, 2009



Plot 7.2.8 Radiated emission measurements above 1000 MHz, horizontal antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Laptop,
 MT&BT in receive mode
 DETECTOR: VBW = 100 kHz

15:30:11 FEB 12, 2009

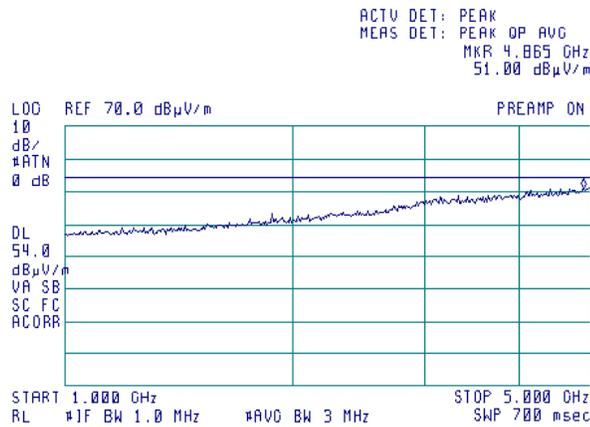


Test specification: Section 15.109/RSS-Gen, Section 7.2.3/ICES-003 class B, Radiated emission			
Test procedure: ANSI C63.4, Sections 11.6 and 12.1.4			
Test mode: Compliance	Verdict: PASS		
Date & Time: 2/24/2009 3:00:10 PM			
Temperature: 22°C	Air Pressure: 1008 hPa	Relative Humidity: 48%	Power Supply: 120 VAC
Remarks: MT & BT in receive mode			

Plot 7.2.9 Radiated emission measurements above 1000 MHz, vertical antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Single Charger,
 Audio script running for RSM,
 MT&BT in receive mode

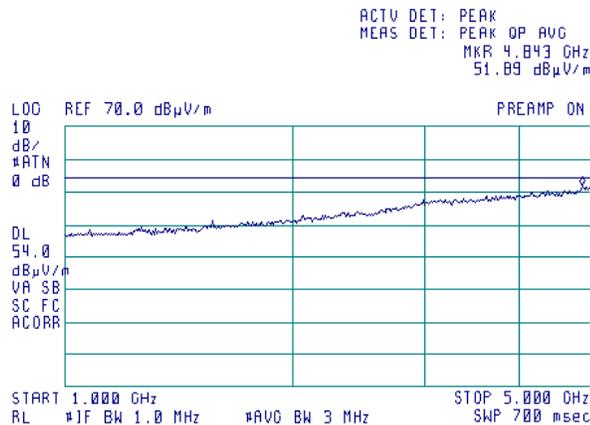
13:40:31 FEB 13, 2009



Plot 7.2.10 Radiated emission measurements above 1000 MHz, horizontal antenna polarization

TEST SITE: Anechoic chamber
 TEST DISTANCE: 3 m
 SET-UP: Single Charger,
 Audio script running for RSM,
 MT&BT in receive mode

13:42:28 FEB 13, 2009



8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal.	Due Cal.
0447	LISN, 16/2, 300V RMS, 50 Ohm/50 uH + 5 Ohm, STD CISPR 16-1	Hermon Laboratories	LISN 16 - 1	066	04-Nov-08	04-Nov-09
0521	EMI Receiver (Spectrum Analyzer) with RF filter section 9 kHz-6.5 GHz	Hewlett Packard Co	8546A	3617A 00319, 3448A002 53	29-Aug-08	29-Aug-09
0580	DC block adaptor 10 kHz - 2.2 GHz	Anritsu	MA8601 A	580	23-Nov-08	23-Nov-09
0604	Antenna BiconiLog Log-Periodic/T Bow-TIE, 26 - 2000 MHz	EMCO	3141	9611-1011	11-Jan-09	11-Jan-10
1513	Cable RF, 8 m, BNC/BNC	Belden	M17/167 MIL-C-17	1513	03-Sep-08	03-Sep-09
1905	Transformer 230/120 V, 160 W	Hermon Laboratories	230-120	1905	06-Jul-08	06-Jul-09
1984	Antenna, Double-Ridged Waveguide Horn, 1-18 GHz, 300 W	EMC Test Systems	3115	9911-5964	23-Jan-09	23-Jan-10
2888	LISN Two-line V-Network 50 Ohm / 50 uH + 5 Ohm, 16A, MIL STD 461E, CISPR 16-1	Rolf Heine	NNB-2/16Z	02/10018	09-Jul-08	09-Jul-09
3121	Microwave Cable Assembly, 18 GHz, 6.4 m, SMA - SMA	Huber-Suhner	198-9155-00	3121	07-Dec-08	07-Dec-09
3170	Attenuator, N-type, 10 dB, DC to 6 GHz, 1 W	Mini-Circuits	UNAT-10+	15542	07-May-08	07-May-09
3612	Cable RF, 17.5 m, N type-N type	Teldor	RG-214/U	NA	17-Nov-08	17-Nov-09
3616	Cable RF, 6.5 m, N type-N type, DC-6.5 GHz	Suhner Switzerland	Rg 214/U	NA	07-Dec-08	07-Dec-09

9 APPENDIX B Measurement uncertainties

Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements

Test description	Expanded uncertainty
Conducted carrier power at RF antenna connector	Below 12.4 GHz: ± 1.7 dB 12.4 GHz to 40 GHz: ± 2.3 dB
Conducted emissions at RF antenna connector	9 kHz to 2.9 GHz: ± 2.6 dB 2.9 GHz to 6.46 GHz: ± 3.5 dB 6.46 GHz to 13.2 GHz: ± 4.3 dB 13.2 GHz to 22.0 GHz: ± 5.0 dB 22.0 GHz to 26.8 GHz: ± 5.5 dB 26.8 GHz to 40.0 GHz: ± 4.8 dB
Duty cycle, timing (Tx ON / OFF) and average factor measurements	± 1.0 %
Conducted emissions with LISN	9 kHz to 150 kHz: ± 3.9 dB 150 kHz to 30 MHz: ± 3.8 dB
Radiated emissions at 3 m measuring distance Horizontal polarization Vertical polarization	Biconilog antenna: ± 5.3 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.3 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 6.0 dB Biconical antenna: ± 5.7 dB Log periodic antenna: ± 6.0 dB Double ridged horn antenna: ± 6.0 dB

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.

10 APPENDIX C Test laboratory description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, safety, environmental and telecommunication testing facility. Hermon Laboratories is listed by the Federal Communications Commission (USA) for all parts of Code of Federal Regulations 47 (CFR 47) and by Industry Canada for electromagnetic emissions (file numbers IC 2186-1 for OATS and IC 2186-2 for anechoic chamber), certified by VCCI, Japan (the registration numbers are R-808 for OATS, R-1082 for anechoic chamber, C-845 for conducted emissions site), assessed by TNO Certification EP&S (Netherlands) for a number of EMC, telecommunications, environmental, safety standards, and by AMTAC (UK) for safety of medical devices. The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing and environmental simulation (for exact scope please refer to Certificate No. 839.01).

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Person for contact: Mr. Alex Usoskin, CEO.

11 APPENDIX D Specification references

FCC 47CFR part 15: 2008	Radio Frequency Devices.
RSS-Gen issue 2:2007	General Requirements and Information for the Certification of Radiocommunication Equipment
Public notice DA 00- 705: 2000	Filing and measurement guidelines for frequency hopping spread spectrum systems.
ANSI C63.2: 1996	American National Standard for Instrumentation-Electromagnetic Noise and Field Strength, 10 kHz to 40 GHz-Specifications.
ANSI C63.4: 2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

12 APPENDIX E Test equipment correction factors

Correction factor
Line impedance stabilization network
Model LISN 16 - 1
Hermon Laboratories, HL 0447

Frequency, kHz	Correction factor, dB
10	4.9
15	2.86
20	1.83
25	1.25
30	0.91
35	0.69
40	0.53
50	0.35
60	0.25
70	0.18
80	0.14
90	0.11
100	0.09
125	0.06
150	0.04

The correction factor in dB is to be added to meter readings of an interference analyzer or a spectrum analyzer.

Antenna factor
Biconilog antenna EMCO Model 3141
Ser.No.1011, HL 0604

Frequency, MHz	Antenna Factor, dB(1/m)	Frequency, MHz	Antenna Factor, dB(1/m)
26	7.8	940	24.0
28	7.8	960	24.1
30	7.8	980	24.5
40	7.2	1000	24.9
60	7.1	1020	25.0
70	8.5	1040	25.2
80	9.4	1060	25.4
90	9.8	1080	25.6
100	9.7	1100	25.7
110	9.3	1120	26.0
120	8.8	1140	26.4
130	8.7	1160	27.0
140	9.2	1180	27.0
150	9.8	1200	26.7
160	10.2	1220	26.5
170	10.4	1240	26.5
180	10.4	1260	26.5
190	10.3	1280	26.6
200	10.6	1300	27.0
220	11.6	1320	27.8
240	12.4	1340	28.3
260	12.8	1360	28.2
280	13.7	1380	27.9
300	14.7	1400	27.9
320	15.2	1420	27.9
340	15.4	1440	27.8
360	16.1	1460	27.8
380	16.4	1480	28.0
400	16.6	1500	28.5
420	16.7	1520	28.9
440	17.0	1540	29.6
460	17.7	1560	29.8
480	18.1	1580	29.6
500	18.5	1600	29.5
520	19.1	1620	29.3
540	19.5	1640	29.2
560	19.8	1660	29.4
580	20.6	1680	29.6
600	21.3	1700	29.8
620	21.5	1720	30.3
640	21.2	1740	30.8
660	21.4	1760	31.1
680	21.9	1780	31.0
700	22.2	1800	30.9
720	22.2	1820	30.7
740	22.1	1840	30.6
760	22.3	1860	30.6
780	22.6	1880	30.6
800	22.7	1900	30.6
820	22.9	1920	30.7
840	23.1	1940	30.9
860	23.4	1960	31.2
880	23.8	1980	31.6
900	24.1	2000	32.0
920	24.1		

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

**Antenna factor
Double-ridged wave guide horn antenna
Model 3115, S/N 9911-5964, HL1984**

Frequency, MHz	Antenna factor, dB(1/m)
1000.0	24.7
1500.0	25.7
2000.0	27.6
2500.0	28.9
3000.0	31.2
3500.0	32.0
4000.0	32.5
4500.0	32.7
5000.0	33.6
5500.0	35.1
6000.0	35.4
6500.0	34.9
7000.0	36.1
7500.0	37.8
8000.0	38.0
8500.0	38.1
9000.0	39.1
9500.0	38.3
10000.0	38.6
10500.0	38.2
11000.0	38.7
11500.0	39.5
12000.0	40.0
12500.0	40.4
13000.0	40.5
13500.0	41.1
14000.0	41.6
14500.0	41.7
15000.0	38.7
15500.0	38.2
16000.0	38.8
16500.0	40.5
17000.0	42.5
17500.0	45.9
18000.0	49.4

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field intensity in dB(μ V/m).

13 APPENDIX F Abbreviations and acronyms

A	ampere
AC	alternating current
AM	amplitude modulation
AVRG	average (detector)
BB	broad band
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μ V)	decibel referred to one microvolt
dB(μ V/m)	decibel referred to one microvolt per meter
dB(μ A)	decibel referred to one microampere
DC	direct current
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
GND	ground
H	height
HL	Hermon laboratories
Hz	hertz
k	kilo
kHz	kilohertz
LO	local oscillator
m	meter
MHz	megahertz
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
OATS	open area test site
Ω	Ohm
ppm	part per million (10^{-6})
QP	quasi-peak
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
T	temperature
Tx	transmit
V	volt

END OF DOCUMENT