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Work Order / Quote Number:2001326
Dates of Tests112/04/2001
FCC Part 22 Certification &
Industry Canada RSS-128

CERTIFICATE OF COMPLIANCE
FCC PART 15.247 CERTIFICATION & INDUSTRY CANADA CERTIFICATION

Test Lab:	Applicant Information
Rhein Tech Laboratories, Inc. 360 Herndon Parkway Suite 1400 Herndon, VA 20170 Phone: 703-689-0368 Fax: 703-689-2056 Web Site: www.rheintech.com	Samsung Electronics Co., LTD R&D Division, PC 416 Maetan-3Dong, Paldal-Gu Paldal-Gu, Kyungki-do 442742, Korea

FCC Classification:	DSS – Spread Spectrum Transmitter
FCC Rule Part(s):	Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz ☐ Frequency Hopping System ☒ Direct Sequence System ☐ Hybrid System
Industry Canada Standard:	RSS-210: Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands) RSS-210 Section 6.2.2(o): 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

FCC ID:	A3LSQ10WL	**MAX. RF OUTPUT POWER:**	0.036W
FRN Number:	0005-8239-50	**Frequency Tolerance:**	N/A
Equipment Type:	Mini PCI card	**Emission Designator:**	N/A
Tx Frequency Range:	2410-2462	**Date of Test Report:**	December 4, 2001
Rx Frequency Range:	2410-2462	**Platform:**	200STM, SQ10
Model(s):	MPCI3A-20-SQ10		

We, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

Furthermore, there was no deviation from, additions to or exclusions from the FCC Part 2, FCC Part 15, Industry Canada RSS-210, ANSI C63.4, ANSI/TIA/EIA603 and ANSI/TIA/EIA 603-1.

Signature: 

Date: December 7, 2001

Typed/Printed Name: Desmond A. Fraser

Position: President
(NVLAP Signatory)

NVLAP *Accredited by the National Voluntary Accreditation Program for the specific scope of accreditation under Lab Code 200061-0.*

Note: This report may not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

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1 GENERAL INFORMATION

1.1 SCOPE

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

IC RSS-210 Section 6.2.2(o): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

A direct sequence (DS) system is a spread spectrum (SS) system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high-speed code sequence dominates the "modulating function" and is the direct cause of the wide spreading of the transmitted signal.

1.2 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communication Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 1992).

1.3 RELATED SUBMITAL(S)/GRANT(S)

This is an original application for Certification on the WLAN card. The Storm PC platform notebook N/N: 200STM, SQ10; FCC ID: A3LSQ10 is host platform for the EUT. The application for FCC ID: A3LSQ10 notebook will be submitted for FCC certification. A DoC report is on file for the receiver section and digital interface for the EUT. The IF, LO and up to the 2nd LO were investigated.

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2 EQUIPMENT INFORMATION

2.1 APPLICANT AND EQUIPMENT INFORMATION

Samsung Electronics Co., LTD
R&D Division, PC
416 Maetan-3Dong, Paldal-Gu
Paldal-Gu, Kyungki-do 442742,
Korea

FCC Classification:	DSS – Spread Spectrum Transmitter
FCC Rule Part(s):	Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz ☐ Frequency Hopping System ☒ Direct Sequence System ☐ Hybrid System
Industry Canada Standard:	RSS-210: Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands) RSS-210 Section 6.2.2(o): 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

FCC ID:	A3LSQ10WL	**MAX. RF OUTPUT POWER:**	0.036W
FRN Number:	0005-8239-50	**Frequency Tolerance:**	N/A
Equipment Type:	Mini PCI card	**Emission Designator:**	N/A
Tx Frequency Range:	2410-2462	**Date of Test Report:**	December 4, 2001
Rx Frequency Range:	2410-2462	**Platform:**	200STM, SQ10
Model(s):	MPCI3A-20-SQ10		

2.2 JUSTIFICATION

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. Channel 1 at 2410 MHz, Channel 6 at 2437 MHz and channel 11 at 2462 MHz were tested and investigated from 9 kHz to 24 GHz. Data for all three channels are presented in this report.

The EUT contains two antennas, in order to complete the configuration required, the transmitter was tested in a note computer with an internal antenna, Gemini 2 connected to the antenna port, similar to its intended use. The Gemini 2 antenna transmits and receives and is connected to the main antenna port. The second antenna, Gemini 1 receives only and is connected to the AUX antenna port. Please refer to the product description appendix section of this application. Refer to the external antenna part of the Product Description exhibit.

The EUT was investigated with the internal antennas. The worst-case data taken in this report represents the highest data rate at 11 MBPS. Data rates of 5.5 MBPS, 2 MBPS and 1 MBPS were investigated and found to be in compliance. The change in envelope did not cause the EUT to be non-compliant in any of the aforementioned modes.

2.3 EXERCISING THE EUT

The EUT was provided with the software to continuously transmit during testing. The carrier was also checked to verify that the information was being transmitted.

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2.4 TEST SYSTEM DETAILS

The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system are:

TABLE 2-1: EQUIPMENT UNDER TEST (EUT)

PART	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID	CABLE DESCRIPTION	RTL BAR CODE
MINI PCI WIRELESS WLAN	SAMSUNG	MPCI3A-20-SQ10	N/A	A3LSQ10WL	N/A	N/A

TABLE 2-2: EXTERNAL COMPONENTS IN TEST CONFIGURATION

PART	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID	CABLE DESCRIPTION	PRODUCT	RTL BAR CODE
AC/DC CONVERTER	SAMSUNG	AD-4212	N/A	N/A	UNSHIELDED		13959
COMPUTER	SAMSUNG	200STM, SQ10	1128PR18	A3LSQ10	N/A	STORM	13960

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2.5 CONFIGURATION OF TESTED SYSTEM

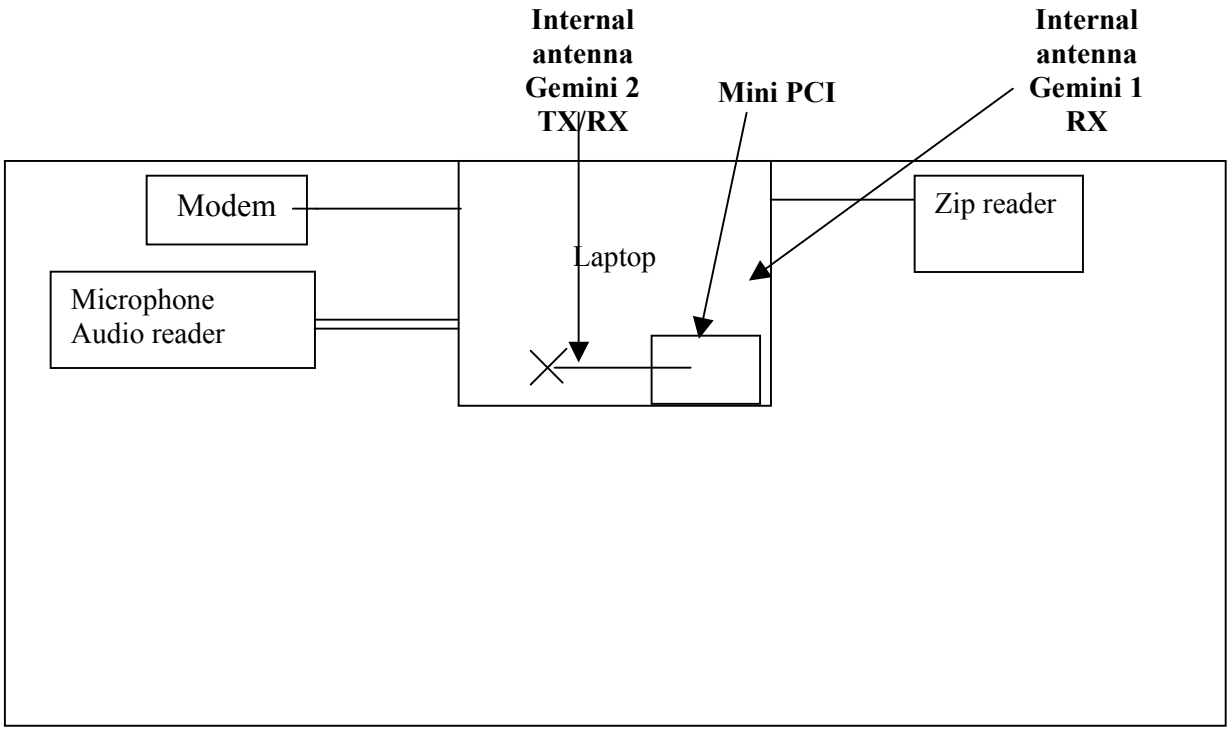

FIGURE 2-1: WORST CASE CONFIGURATION OF SYSTEM UNDER TEST

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3 COMPLIANCE WITH THE RESTRICTED BAND EDGE - §15.205

3.1 TEST PROCEDURE

Compliance with the band edges was performed using the FCC's "Radiated Measurement at a Band Edge" guidance document. The final data derived below were from radiated measurements only. The data taken in this report represents the worst case at 11 MBPS. Data rates of 5.5MBPS, 2 MBPS and 1 MBPS were investigated and found to be in compliance.

3.2 COMPLIANCE WITH THE RESTRICTED BAND EDGE TEST DATA

Operating Frequency (MHz): 2410-2462
Channel: 1 & 11
Measured Cond. Pwr. (dBm): 14.4
Distance: 3 meter
Limit: 54 dBuV/m

TABLE 3-1: COMPLIANCE WITH THE RESTRICTED BAND EDGE TEST DATA

Channel Set to	Frequency tested MHz	Detector	Field Strength Level (dBµV/m)	Delta Marker (dB)	Level Corrected (dBµV/m)	FCC Limit (dBµV/m)	FCC Margin (dB)
1	2390.0	Delta method	87.07	45.3	41.7	54.0	-12.2
11	2483.5	Delta method	85.49	43.0	42.4	54.0	-11.5

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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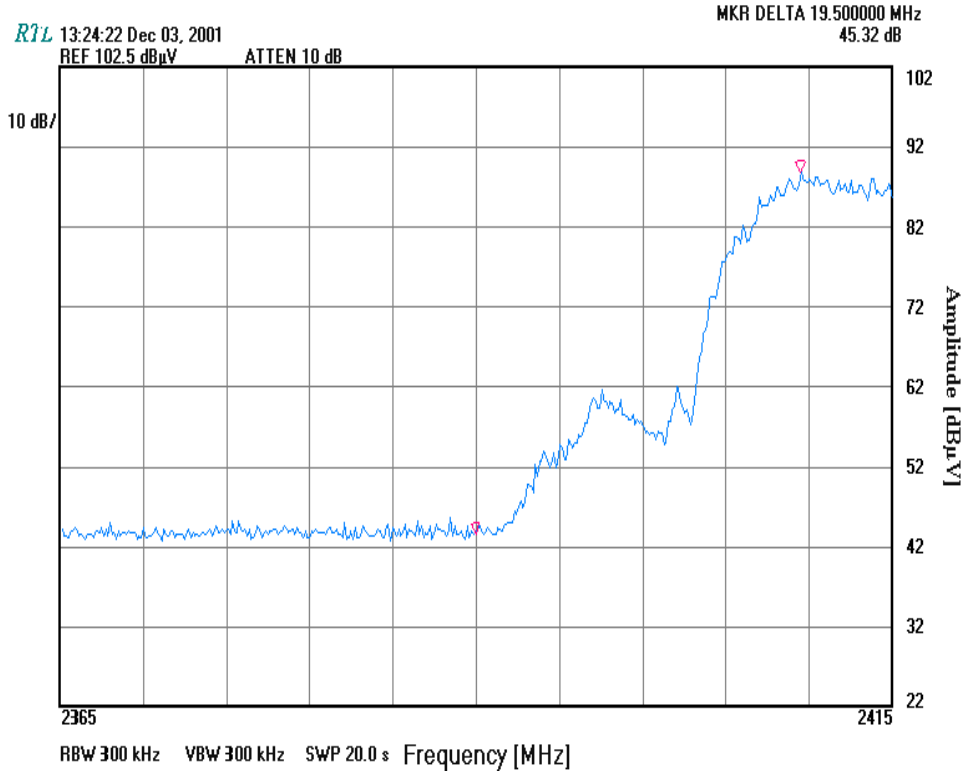
Bandwidth Channel Number: 1
Bandwidth Channel Frequency: 2410
Bandwidth Resolution: 300kHz
Bandwidth Video: 300kHz
Sweep Time: 20.0s

PLOT 3-1: BAND EDGE: DELTA MEASUREMENT FOR CHANNEL 1



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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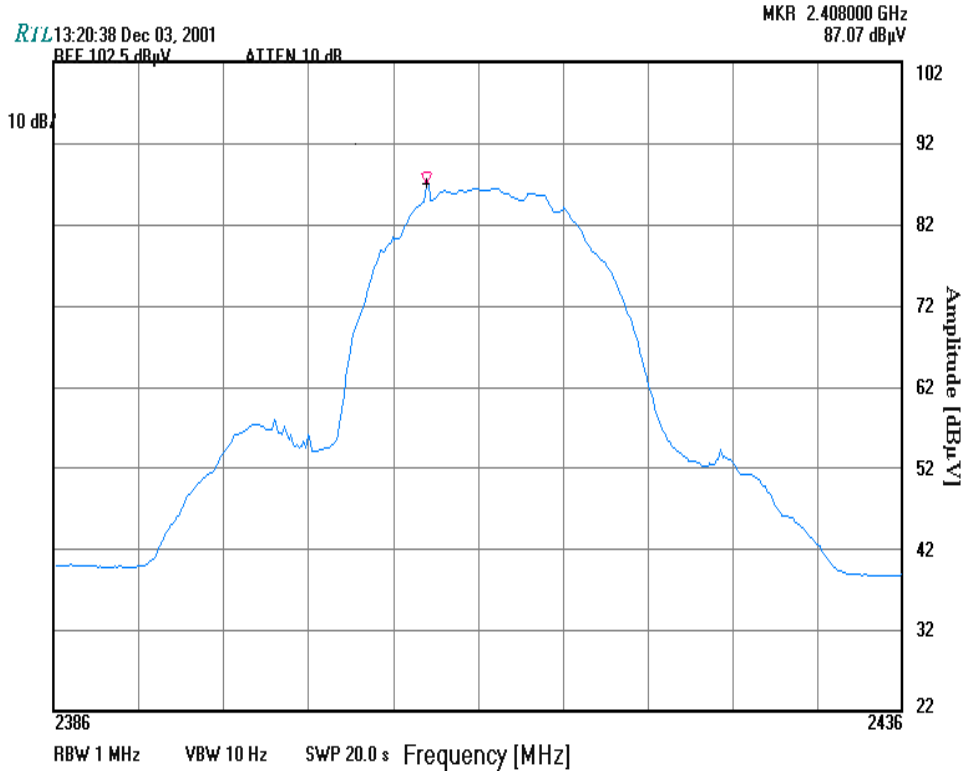
Bandwidth Channel Number: 1
Bandwidth Channel Frequency: 2410
Bandwidth Resolution: 1MHz
Bandwidth Video: 10Hz
Sweep Time: 20.0s

PLOT 3-2: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 1



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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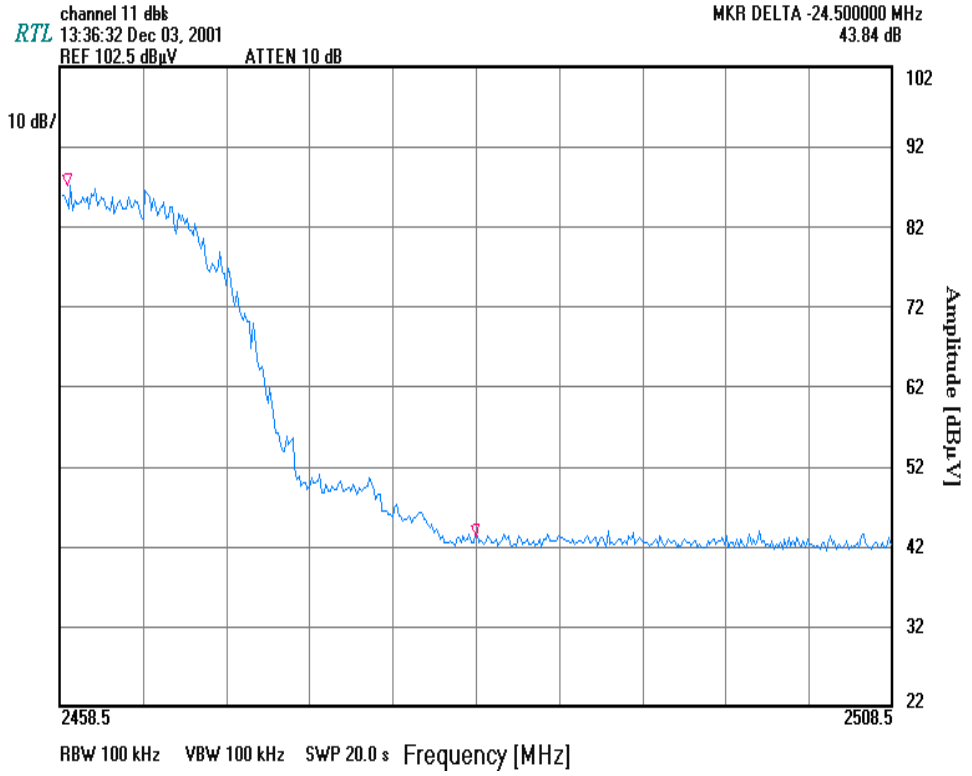
Bandwidth Channel Number: 11
Bandwidth Channel Frequency: 2462
Bandwidth Resolution: 300kHz
Bandwidth Video: 300kHz
Sweep Time: 20.0s

PLOT 3-3: BAND EDGE: DELTA MEASUREMENT FOR CHANNEL 11



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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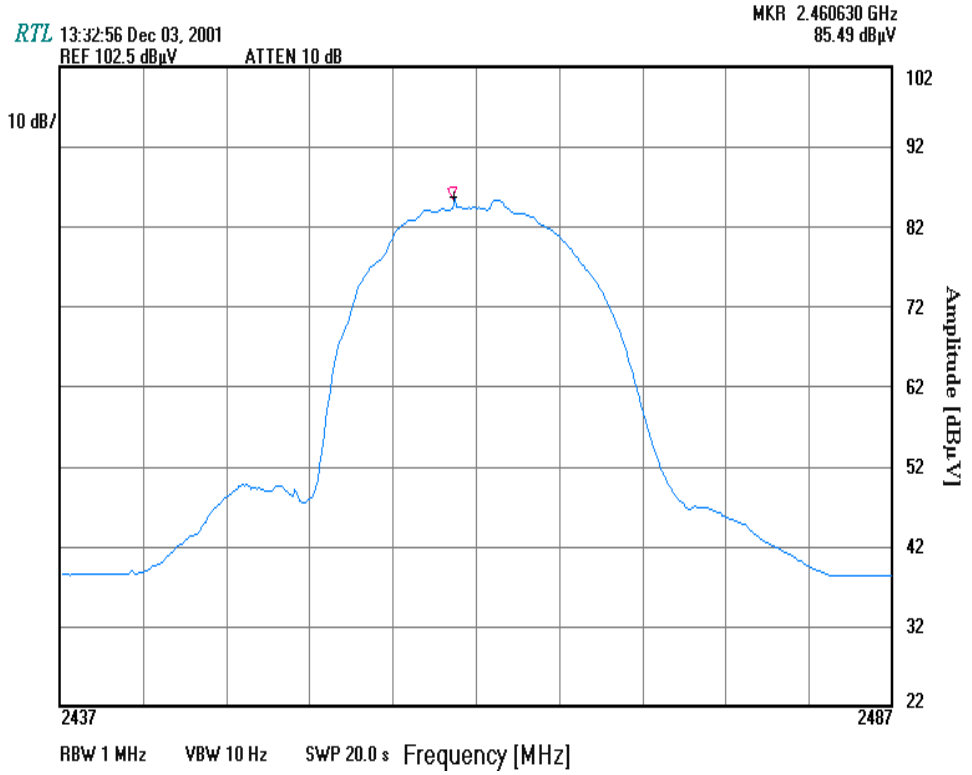
Bandwidth Channel Number: 11
Bandwidth Channel Frequency: 2462
Bandwidth Resolution: 1MHz
Bandwidth Video: 10Hz
Sweep Time: 20.0s

PLOT 3-4: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 1



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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4 CONDUCTED LIMITS - §15.207

This device was tested and is compliant. Test results are available upon request.

5 RADIATED EMISSION LIMITS (GENERAL REQUIREMENTS) - §15.209

5.1 RADIATED EMISSION LIMITS TEST PROCEDURE

Radiated Spurious Emissions applies to harmonics and spurious emissions that fall in the restricted and non-restricted bands. The restricted bands are listed in Part 15.205. The maximum permitted average field strength for the restricted band is listed in Part 15.209. The EUT was tested in the X-Y, X-Z and Y-Z orthogonal plane.

5.2 TEST EQUIPMENT USED FOR TESTING

TABLE 5-1: RADIATED SPURIOUS EMISSIONS TEST EQUIPMENT

RTL ASSET #	MANUFACTURER	MODEL	PART TYPE	SERIAL NUMBER
900931	HP	8566B	Spectrum Analyzer (100Hz – 22 GHz)	3138A07771
900772	EMCO	3161-02	Horn ANTENNA (2-4 GHz)	900772
900321	EMCO	3161-03	Horn Antennas (4-8,2GHz)	9508-1020
900323	EMCO	3160-7	Horn Antennas (8,2-12,4 GHz)	9605-1054
900325	EMCO	3160-9	Horn Antennas (18 - 26.5 GHz)	9605-1051
900723	Miteq	NA	AMP 100MHz-26GHz	NA
900791	Schaffner - Chase	CBL6112	Antenna (25 MHz - 2 GHz)	2099

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5.3 RADIATED EMISSION LIMITS TEST DATA

Operating Frequency (MHz): 2410 **Measured EIRP (dBm):** 15.0
Channel: 1 **Antenna:** Gemini 2
Measured Cond. Pwr. (dBm): 14.4

TABLE 5-2: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 1) GEMINI 2 ANTENNA

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)
2401.57	Av	V	10	1.2	81.6	5.5	87.1	Fundamental
2401.57	Pk	V	10	1.2	91.9	5.5	97.4	Fundamental
2442.62	Av	V	10	1.0	42.7	5.5	48.2	54.0
2442.78	Pk	V	10	1.0	46.7	5.5	52.2	
2449.19	Av	V	10	1.2	42.7	5.5	48.2	54.0
2450.54	Pk	V	10	1.2	47.0	5.5	52.5	
2455.28	Av	V	20	1.2	43.1	5.5	48.6	54.0
2455.60	Pk	V	20	1.2	46.4	5.5	51.9	
2459.48	Av	V	15	1.2	44.7	5.5	50.2	54.0
2459.56	Pk	V	15	1.2	51.8	5.5	57.3	
2473.32	Av	V	20	1.2	46.0	5.5	51.5	54.0
2473.40	Pk	V	20	1.2	52.2	5.5	57.7	
2479.10	Av	V	30	1.2	45.4	5.5	50.9	54.0
2478.86	Pk	V	30	1.2	46.8	5.5	52.3	
3222.45	Av	V	20	1.2	33.9	6.2	40.1	54.0
3222.55	Pk	V	20	1.0	51.0	6.2	57.2	
4802.00	Av	V	10	1.0	32.3	11.1	43.4	54.0
4802.00	Pk	V	20	1.0	48.4	11.1	59.5	
7203.00	Av	V	10	1.0	29.9		NF	54.0
9604.00	Av	V	10	1.0	31.0		NF	54.0
12005.00	Av	V	10	1.0	30.5		NF	54.0
14406.00	Av	V	10	1.0	31.2		NF	54.0
16807.00	Av	V	10	1.0	32.2		NF	54.0
19208.00	Av	V	10	1.0	33.0		NF	54.0
21609.00	Av	V	10	1.0	32.5		NF	54.0
24010.00	Av	V	10	1.0	35.0		NF	54.0

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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Operating Frequency (MHz): 2437
Channel: 6
Measured Cond. Pwr. (dBm): 14.3

Measured EIRP (dBm): 14.8
Antenna: Gemini 2

TABLE 5-3: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) GEMINI 2 ANTENNA

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)
2439.00	Av	V	10	1.2	85.9	5.5	91.4	Fundamental
2437.30	Pk	V	10	1.2	93.4	5.5	98.9	Fundamental
2454.60	Av	V	10	1.0	48.1	5.5	53.6	54.0
2454.60	Pk	V	10	1.0	93.4	5.5	98.9	
2455.94	Av	V	10	1.2	48.1	5.5	53.6	54.0
2455.94	Pk	V	10	1.2	58.5	5.5	64.0	
2456.14	Av	V	20	1.2	47.5	5.5	53.0	54.0
2456.14	Pk	V	20	1.2	55.6	5.5	61.1	
2460.40	Av	V	20	1.2	39.4	5.5	44.9	54.0
2460.40	Pk	V	20	1.2	52.9	5.5	58.4	
2464.76	Av	V	20	1.2	42.9	5.5	48.4	54.0
2464.76	Pk	V	20	1.0	51.9	5.5	57.4	
2465.30	Av	V	10	1.0	47.5	5.5	53.0	54.0
2465.30	Pk	V	10	1.0	48.1	5.5	53.6	
2472.27	Av	V	10	1.0	39.4	5.5	44.9	54.0
2472.28	Pk	V	10	1.0	52.9	5.5	58.4	
2475.33	Av	V	20	1.0	42.9	5.5	48.4	54.0
2475.33	Pk	V	20	1.0	51.9	5.5	57.4	
4877.00	Av	V	10	1.0	32.5	11.0	43.5	54.0
4877.00	Pk	V	10	1.0	46.4	11.0	57.4	
7315.50	Av	V	10	1.0	28.5		NF	54.0
9754.00	Av	V	10	1.0	30.2		NF	54.0
12192.50	Av	V	10	1.0	30.0		NF	54.0
14631.00	Av	V	10	1.0	31.2		NF	54.0
17069.50	Av	V	10	1.0	32.0		NF	54.0
19508.00	Av	V	10	1.0	31.5		NF	54.0
21946.50	Av	V	10	1.0	32.0		NF	54.0
24385.00	Av	V	10	1.0	32.5		NF	54.0

AVERAGE: RES. =1 MHz, VID= 10Hz; NF = NOISE FLOOR

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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FCC Part 15 Certification &
Industry Canada RSS-210

Operating Frequency (MHz): 2462
Channel: 11
Measured Cond. Pwr. (dBm): 14.4

Measured EIRP (dBm): 15.0
Antenna: Gemini 2

TABLE 5-4: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 11) GEMINI 2 ANTENNA

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)
2410.10	Av	V	10	1.3	45.0	5.5	50.5	54.0
2409.80	Pk	V	10	1.3	52.2	5.5	57.7	
2420.90	Av	V	20	1.2	43.1	5.5	48.6	54.0
2419.10	Pk	V	20	1.2	50.2	5.5	55.7	
2428.90	Av	V	10	1.2	41.2	5.5	46.7	54.0
2428.10	Pk	V	10	1.0	51.4	5.5	56.9	
2430.40	Av	V	10	1.0	41.6	5.5	47.1	54.0
2429.50	Pk	V	10	1.2	50.2	5.5	55.7	
2460.65	Av	V	20	1.2	80.3	5.5	85.8	Fundamental
2459.53	Pk	V	20	1.2	88.0	5.5	93.5	Fundamental
2483.50	Av	V	20	1.2	80.3	5.5	85.8	54.0
2483.50	Pk	V	20	1.0	75.5	5.5	81.0	
4922.00	Av	V	10	1.0	35.0	11.0	46.0	54.0
4922.00	Pk	V	10	1.0	45.0	11.0	56.0	
7383.00	Av	V	10	1.0	29.5		NF	54.0
9844.00	Av	V	10	1.0	30.1		NF	54.0
12305.00	Av	V	10	1.0	32.0		NF	54.0
14766.00	Av	V	10	1.0	32.2		NF	54.0
17227.00	Av	V	10	1.0	31.0		NF	54.0
19688.00	Av	V	10	1.0	32.0		NF	54.0
22149.00	Av	V	10	1.0	32.0		NF	54.0
24610.00	Av	V	10	1.0	32.5		NF	54.0

AVERAGE: RES. =1 MHz, VID= 10Hz; NF = NOISE FLOOR

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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6 MODULATED BANDWIDTH - §15.247(A)(2)

6.1 MODULATED BANDWIDTH TEST PROCEDURE

The minimum 6 dB bandwidth per FCC 15.247 (a)(2) was measured using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The minimum 6 dB modulated bandwidths are the following:

6.2 TEST EQUIPMENT USED FOR TESTING

TABLE 6-1: TEST EQUIPMENT USED FOR TESTING (MODULATED BANDWIDTH)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number
900931	HP	8566B	Spectrum Analyzer (100Hz – 22 GHz)	3138A07771

6.3 MODULATED BANDWIDTH TEST DATA

TABLE 6-2: MINIMUM 6 DB MODULATED BANDWIDTHS

CHANNEL	6 dB BANDWIDTH (MHz)
1	10.3
6	10.3
11	10.3

The 6 dB bandwidth is listed in figures part 26.

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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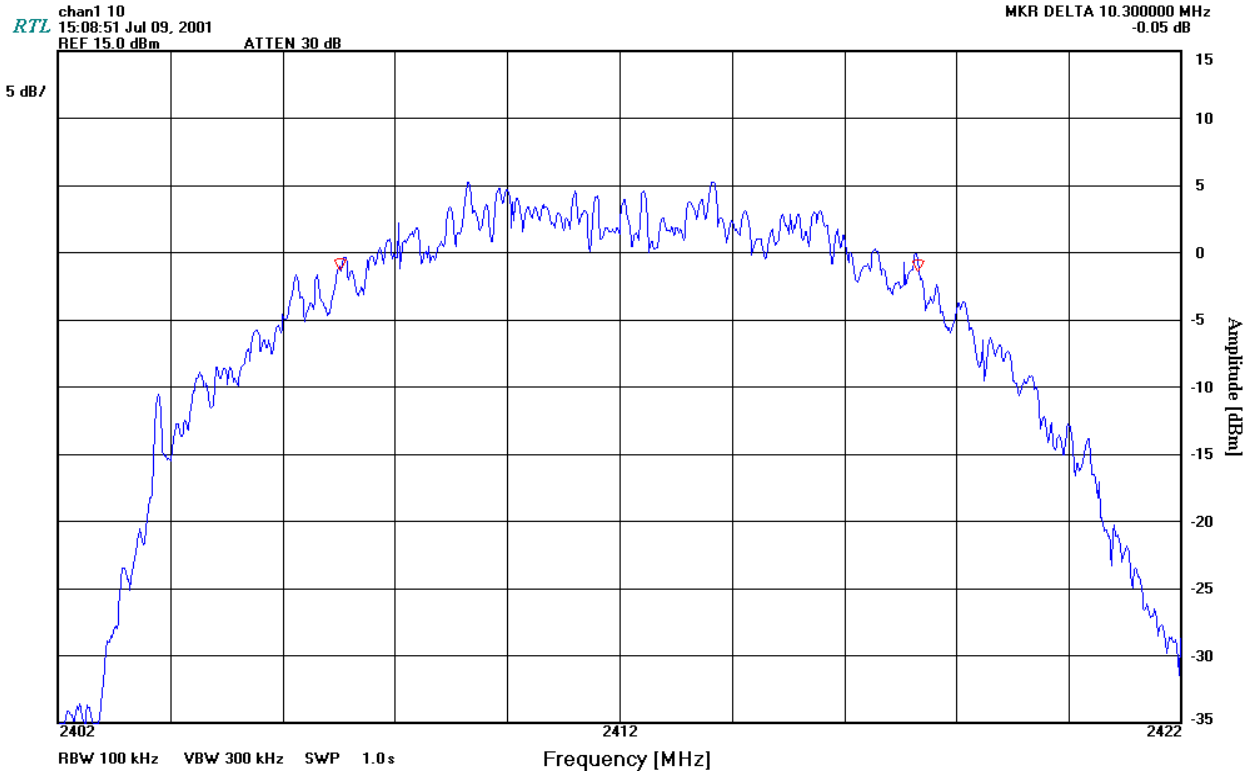
6.4 MODULATED BANDWIDTH PLOTS

Bandwidth Channel Number:	1
Bandwidth Channel Frequency (MHz):	2410
Bandwidth Resolution:	100kHz
Bandwidth Video:	300kHz
Sweep Time:	1.0s

PLOT 6-1: MODULATED BANDWIDTH CHANNEL 1



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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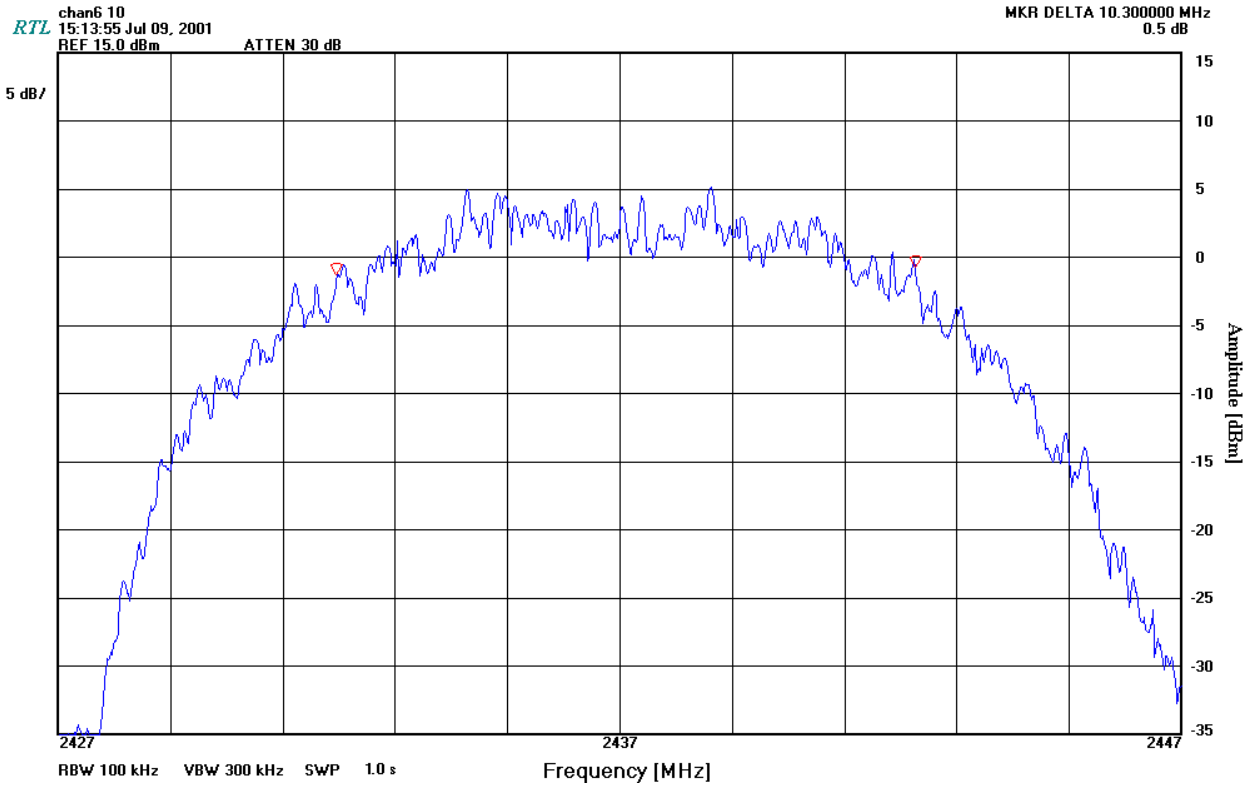
Bandwidth Channel Number: 6
Bandwidth Channel Frequency (MHz): 2437
Bandwidth Resolution: 100kHz
Bandwidth Video: 300kHz
Sweep Time: 1.0s

PLOT 6-2: MODULATED BANDWIDTH CHANNEL 6



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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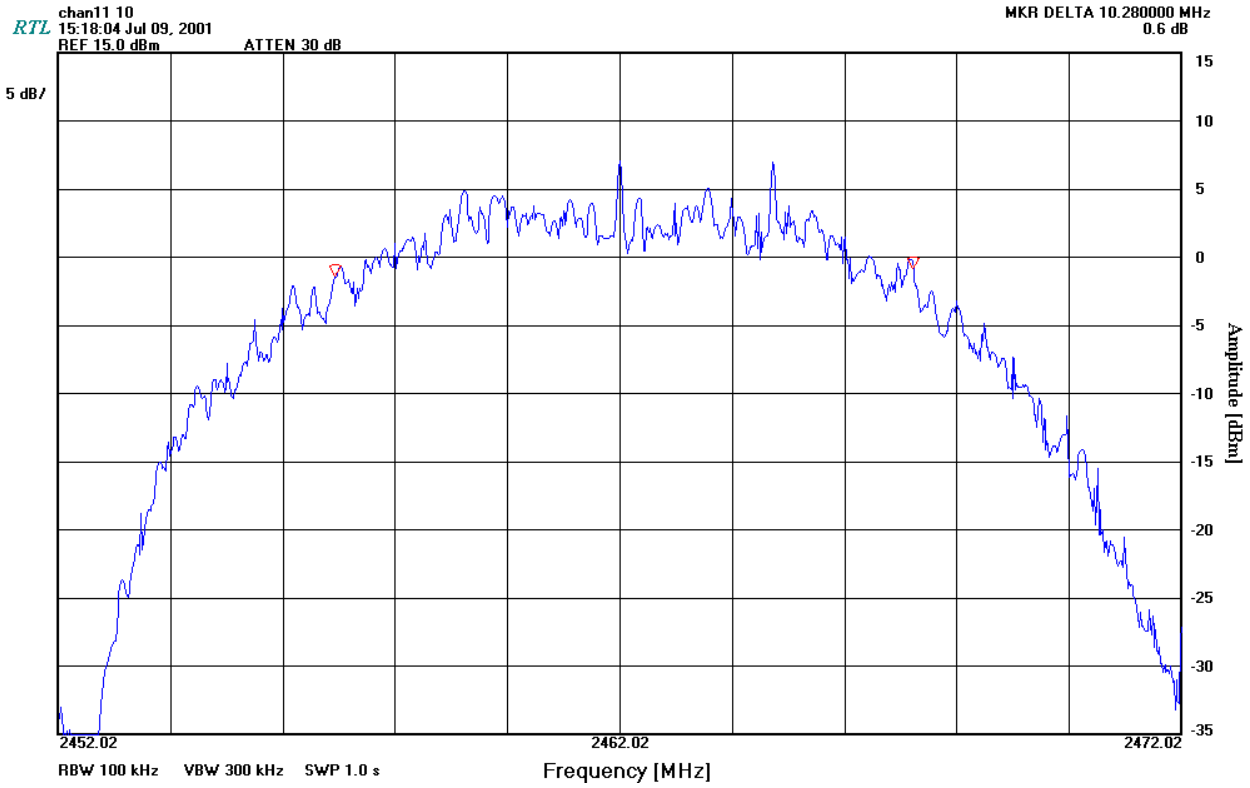
Bandwidth Channel Number:	11
Bandwidth Channel Frequency (MHz):	2462
Bandwidth Resolution:	100kHz
Bandwidth Video:	300kHz
Sweep Time:	1.0s

PLOT 6-3: MODULATED BANDWIDTH CHANNEL 11



TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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7 POWER OUTPUT - §15.247(B)

7.1 POWER OUTPUT TEST PROCEDURE

The power output per FCC 15.247(b) was measured on the EUT using an HP peak power meter. EIRP measurement was performed as a radiated test using the substitution method.

7.2 TEST EQUIPMENT USED FOR TESTING

TABLE 7-1: TEST EQUIPMENT USED FOR TESTING (RADIATED RF OUTPUT – EIRP)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number
900931	HP	8566B	Spectrum Analyzer (100Hz – 22 GHz)	3138A07771
901186	Agilent Technologies	E9323A (50MHz-6GHz)	Peak & Avg. Power Sensor	US40410380
901184	Agilent Technologies	E4416A	EPM-P Power Meter, single channel	GB41050573
900772	EMCO	3161-02	Horn ANTENNA (2-4 GHz)	900772
900723	Miteq	NA	AMP 100MHz-26GHz	NA
900814	Electro-Metrics	RGA-60	Double Ridges Guide Antenna (1-18 GHz)	2310

7.3 POWER OUTPUT TEST DATA

TABLE 7-2: POWER OUTPUT TEST DATA

Operating Frequency (MHz): 2410MHz, 2437MHz, 2462MHz
Channel: 1, 6 & 11
Measured Cond. Pwr. (dBm): 14.4, 14.3 & 14.4
Measured EIRP (dBm): 15.0, 14.8 & 15.0
Modulation: 10.3MHz
Antenna: Gemini 2

TABLE 7-3: POWER OUTPUT TEST DATA

CHANNEL	EIRP (dBm)* Gemini 2 Antenna	POWER CONDUCTED OUTPUT (dBm)
1	15.0	14.4
6	14.8	14.3
11	15.0	14.4

*Measurement accuracy is +/- 1.5 dB

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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8 ANTENNA CONDUCTED SPURIOUS EMISSIONS - §15.247(C)

8.1 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST PROCEDURES

Antenna spurious emission per FCC 15.247(c) was measured from the EUT antenna port using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The modulated carrier was identified at 2.410GHz for Channel 1, 2.437GHz for Channel 6 and 2.463GHz for Channel 11. No other harmonics or spurs were found within 20 dB of the carrier level, and from 9kHz to the carriers 10th harmonic. See antenna conducted spurious noise table. Channels 1, 6, and 11 were investigated and tested.

8.2 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST DATA

Operating Frequency (MHz): 2410
Channel: 1
Measured Cond. Pwr. (dBm): 14.4
Measured EIRP (dBm): 15.0
Limit: 20dB below carrier

TABLE 8-1: ANTENNA CONDUCTED SPURIOUS EMISSIONS: CHANNEL 1 (MAIN)

Frequency (MHz)	Spurious level (dBm)	FCC Margin (dB)
22.1	-44.1	-28.4
33.1	-54.1	-38.4
349.5	-59.2	-43.5
432.4	-47.1	-31.4
704.0	-46.1	-30.4
886.0	-43.1	-27.4
1295.0	-45.9	-30.2
1868.0	-54.5	-38.8
48220.0	-56.2	-40.5
72380.0	-58.6	-42.9

TEST PERSONNEL:

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Operating Frequency (MHz): 2437
Channel: 6
Measured Cond. Pwr. (dBm): 14.3
Measured EIRP (dBm): 14.8
Limit: 20dB below carrier

TABLE 8-2: ANTENNA CONDUCTED SPURIOUS EMISSIONS: CHANNEL 6 (MAIN)

Frequency (MHz)	Spurious level (dBm)	FCC Margin (dB)
350.1	-59.4	-43.7
428.6	-47.2	-31.5
464.0	-47.8	-32.1
704.0	-47.1	-31.4
885.0	-43.4	-27.7
1298.0	-46.5	-30.8
1403.0	-48.9	-33.2
1870.0	-56.0	-40.3
2395.2	-58.0	-42.3
4872.0	-53.0	-37.3
7307.0	-57.7	-42.0

TEST PERSONNEL:

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Test Technician/Engineer	Signature	Date Of Test

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Operating Frequency (MHz): 2462
Channel: 11
Measured Cond. Pwr. (dBm): 14.4
Measured EIRP (dBm): 15.0
Limit: 20dB below carrier

TABLE 8-3: ANTENNA CONDUCTED SPURIOUS EMISSIONS: CHANNEL 11 (MAIN)

Frequency (MHz)	Spurious level (dBm)	FCC Margin (dB)
350.1	-59.1	-43.1
436.4	-46.7	-30.7
704.2	-48.2	32.2
885.5	-43.5	-27.5
1305.0	-46.9	-30.9
1432.0	-49.4	-33.4
1662.0	-57.8	-41.8
1860.0	-56.4	-40.4
2370.0	-59.3	-43.3
4923.0	-45.0	-29.0
7368.0	-49.7	-33.7

TEST PERSONNEL:

Rachid Sehb		12/04/2001
Test Technician/Engineer	Signature	Date Of Test

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9 POWER SPECTRAL DENSITY - §15.247(D)

9.1 POWER SPECTRAL DENSITY TEST PROCEDURE

The Power spectral density per FCC 15.247(d) was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set at 3kHz, the video bandwidth set at 3kHz, and the sweep time set at 17 second. The spectral lines were resolved for the modulated carriers at 2.410GHz, 2.437GHz and 2.463GHz respectively. These levels are well below the +8 dBm limit. See power spectral density table and plots.

9.2 TEST EQUIPMENT USED FOR TESTING

TABLE 9-1: TEST EQUIPMENT USED FOR TESTING (POWER SPECTRAL DENSITY)

RTL ASSET #	MANUFACTURER	MODEL	PART TYPE	SERIAL NUMBER
900931	HP	8566B	Spectrum Analyzer (100Hz – 22 GHz)	3138A07771

9.3 POWER SPECTRAL DENSITY TEST DATA

Operating Frequency (MHz): 2410MHz, 2437MHz & 2462
Channel: 1, 6 & 11
Measured Cond. Pwr. (dBm): 14.4, 14.3 & 14.4
Measured ERP (dBm): 15.0, 14.8, 15.0
Modulation Bandwidth: 10.3 MHz
Limit: 8dBm

TABLE 9-2: POWER SPECTRAL DENSITY (MAIN PORT)

CHANNEL	POWER SPECTRAL DENSITY LIMIT = +8dBm
1	-1.2
6	-1.3
11	-2.2

TEST PERSONNEL:

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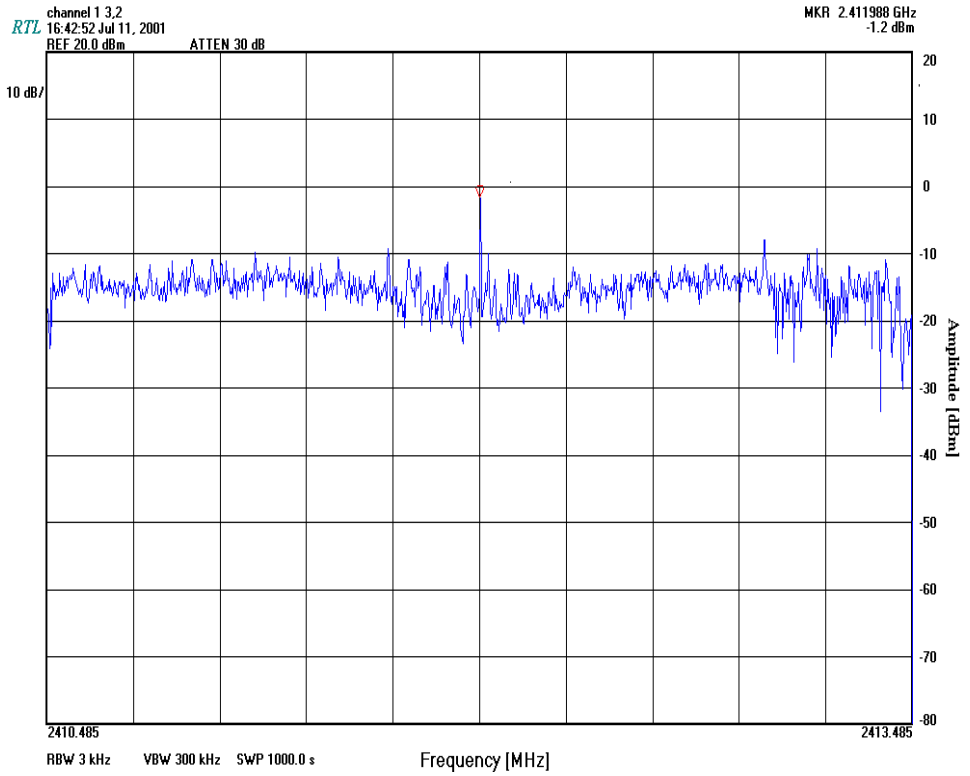
Operating Frequency (MHz):	2410
Channel:	1
Measured Cond. Pwr. (dBm):	14.4
Measured EIRP (dBm):	15.0
Bandwidth Resolution:	3kHz
Bandwidth Video:	300kHz
Sweep Time:	1000.0s

PLOT 9-1: POWER SPECTRAL DENSITY: CHANNEL 1



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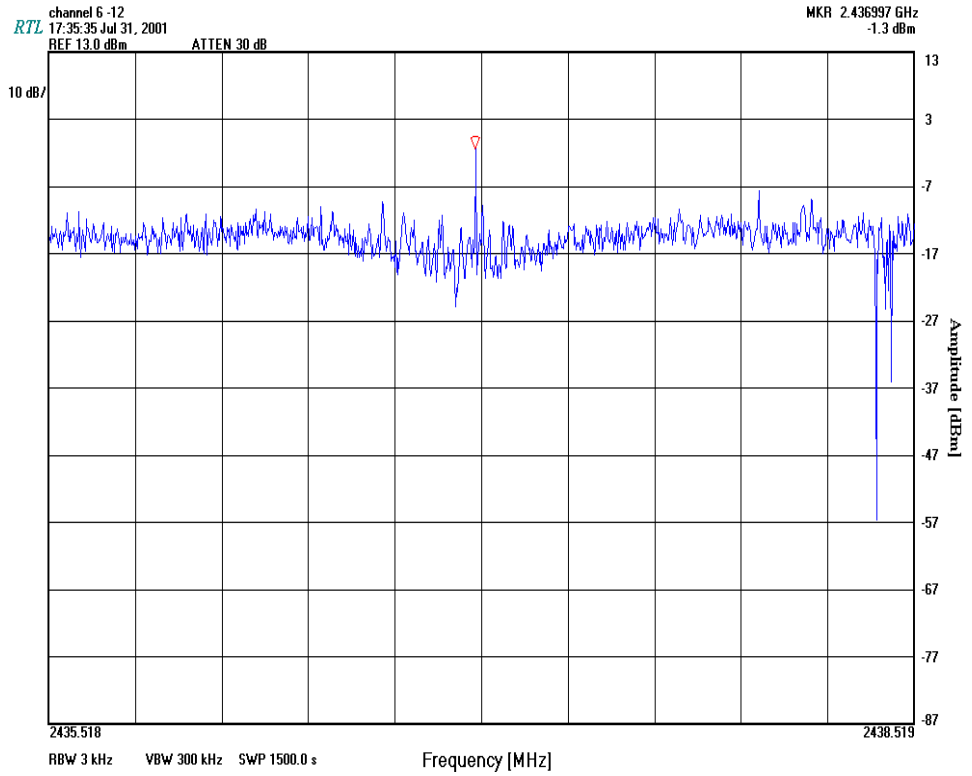
Operating Frequency (MHz):	2437
Channel:	6
Measured Cond. Pwr. (dBm):	14.3
Measured EIRP (dBm):	14.8
Bandwidth Resolution:	3kHz
Bandwidth Video:	300kHz
Sweep Time:	1500.0s

PLOT 9-2: POWER SPECTRAL DENSITY: CHANNEL 6



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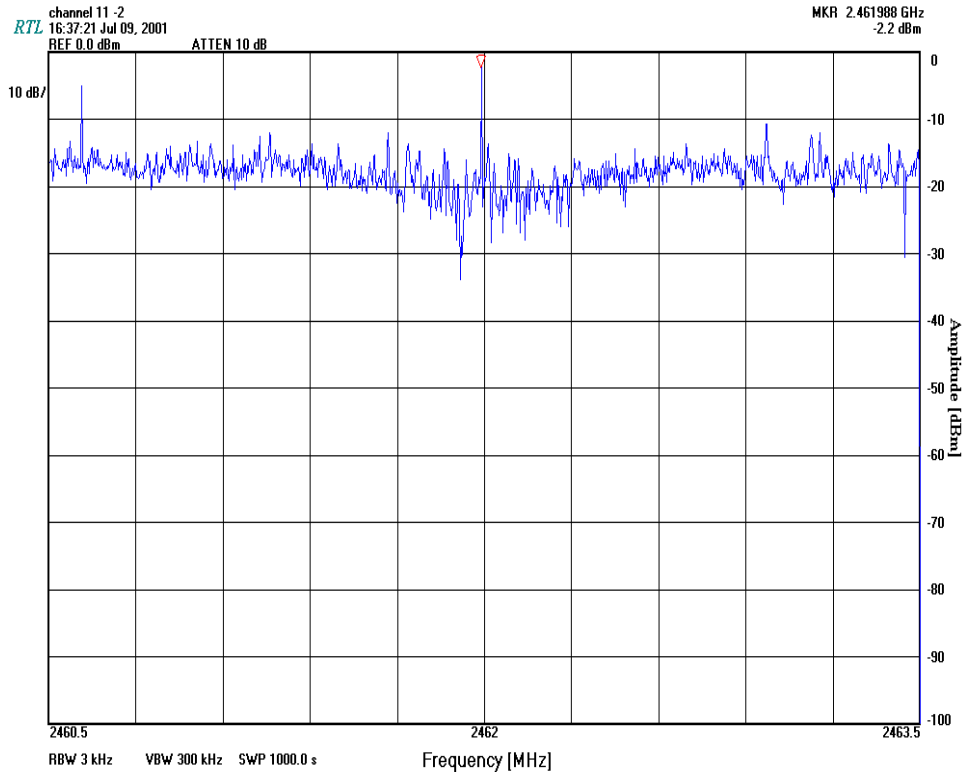
Operating Frequency (MHz):	2462
Channel:	11
Measured Cond. Pwr. (dBm):	14.4
Measured EIRP (dBm):	15.0
Bandwidth Resolution:	3kHz
Bandwidth Video:	300kHz
Sweep Time:	1000.0s

PLOT 9-3: POWER SPECTRAL DENSITY: CHANNEL 11



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10 CONCLUSION

The data in this measurement report shows that the Samsung Electronics Co., LTD***, Model: MPCI3A-20-SQ10, Platform: 200STMSQ10 Storm PC, FCC ID:A3LSQ10WL*** complies with all the requirements of Parts 2 and 22.901 of the FCC Rules and Industry Canada RSS-128.