

# Global EMC Inc. Labs EMC & RF Test Report

As per

**RSS 210 Issue 6:2005**

**&**

**FCC Part 15 Subpart C:2006**

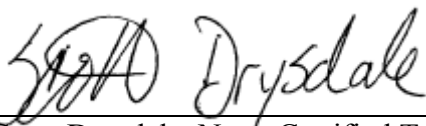
**Unlicensed Intentional Radiators**

on the

**Model HS900T**

**Professional Series**

**Spread Spectrum Data Transmitter**



Scott Drysdale, Narte Certified Technician

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Testing produced for



See Appendix A for full customer & EUT details.




Industry  
Canada

LAB REGISTRATION #6844A-1




FCC REGISTRATION #612361

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

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Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Report Scope

This report addresses the EMC verification testing and test results of the Model HS900T Professional Series Spread Spectrum Data Transmitter, herein referred to as EUT (Equipment Under Test) performed at Global EMC Labs.

This test report is for supporting documentation to an original equipment filing, with the following changes from a previous certification:

1. The RF power amplifier has been changed from an RF Micro Devices RF2131 to an RF Micro Devices RF 5110. The output power remains the same, both calculated and measured.
2. The PCB layout has been modified.
3. The VCO, TCXO and Synthesizer are all different

Some of these modifications are changes to the basic frequency determining and stabilizing circuitry (including clock or data rates), frequency multiplication stages, basic modulator circuit, so an original filing is mandatory.

The EUT was tested for compliance against the following standards:


RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

The results contained in this report relate only to the item(s) tested.

This report does not imply product endorsement by A2LA or any other accreditation agency, any government, or Global EMC Inc.


Opinions/interpretations expressed in this report, if any, are outside the scope of Global EMC Inc accreditation. Any opinions expressed do not necessarily reflect the opinions of Global EMC Inc, unless otherwise stated.

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## Summary


The results contained in this report relate only to the item(s) tested.

EUT FCC Certification #, FCC ID:	IA9HS-900T
EUT Industry Canada Certification #, IC:	1338B - 1021735
EUT Passed all tests performed.	Yes (see test results summary)
Tests conducted by	Scott Drysdale

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## Test Results Summary

Standard/Method	Description	Class/Limit	Result
FCC 15.203 RSS 210 Section 5.5	Antenna Requirement	Unique	Pass See Justification
FCC 15.205 RSS 210 Section 6.3 (Table 2)	Restricted Bands for intentional operation	None within chart	Pass See description
FCC 15.207 RSS 210 Section 6.6	Power line conducted emissions	QuasiPeak Average	Pass See Justification
FCC 15.209 RSS 210 Section 6.2.1 (Tables 3 & 7)	Radiated emissions	QuasiPeak Average	Pass
FCC 15.247(a)(1) RSS 210 6.2.2(o)	Channel Separation	> 25 kHz	Pass
FCC 15.247(a)(1)(i) RSS 210 6.2.2(o)	Number of channels	> 50	Pass
FCC 15.247(a)(1)(i) RSS 210 6.2.2(o)	Time of occupancy	< 400 mSec in 20 sec period	Pass
FCC 15.247(b) RSS 210 6.2.2(o)	Max output power	< 1 Watt	Pass
FCC 15.247(b)(4) RSS 210 6.2.2(o)	Antenna Gain	< 6 dBi	Pass See Justification
FCC 15.247(d) RSS 210 6.2.2(d)	Antenna conducted spurious	> 20 dBc	Pass
FCC 15.247(h)	FHSS Intelligence	No coordination	Pass See Justification
FCC 15.247(i) IC Safety code 6	Maximum Permissible Exposure	> 20 cm separation.	Pass See justification and calculations
<b>Overall Result</b>			<b>PASS</b>

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All tests were performed by Scott Drysdale.

If the product as tested or otherwise complies with the specification, the EUT is deemed to comply with the requirement and is deemed a 'PASS' grade. If not 'FAIL' grade will be issued. Note that 'PASS' / 'FAIL' grade is independent of any measurement uncertainties. A 'PASS' / 'FAIL' grade within measurement uncertainty is marked with a '\*'.

### ***Justifications, Descriptions, or Deviations***

The following justifications for tests not performed or deviations from the above listed specifications apply:

For the Antenna requirement specified in FCC 15.203 (RSS 210 section 5.5), the client attests that this unit is professionally installed. A MCX female port is used.


For the Restricted Bands of operation, the EUT is designed to only operate between 902 to 928 MHz.

For the power line conducted emissions requirements, the EUT is DC powered, and this test does not apply.

For the Antenna gain, higher gain antenna(s) such as a Yagi, may be used with this device. When higher gain antennas are used they are professionally installed and combined with sufficient cable length from the product such that the cable loss exceeds any gain above 6 dBi. The omni ¼ wave whip antenna, as provided, was tested for the purposes of this report.


For FHSS intelligence requirements, this device does not coordinate with other systems to avoid simultaneous occupancy of individual hopping frequencies.

For maximum permissible exposure, this device operates at less than 1 Watt at 902-928 MHz and is designed to operate greater than 20 cm from personnel during normal operation. No testing is required, however calculated exposure compliance follows later in this report.

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### ***Applicable Standards, Specifications and Methods***

- ANSI C63.4:2003 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
- CFR 47 FCC 15 - Code of Federal Regulations – Radio Frequency Devices
- CISPR 22:1997 - Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
- ICES-003:2004 - Digital Apparatus - Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard
- ISO 17025:2005 - General Requirements for the competence of testing and calibration laboratories
- RSS 210:2005 - Spectrum Management and Telecommunications Policy. Radio Standards Specification Low Power Licence-Exempt Radiocommunication Devices

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### ***Sample calculation(s)***

Margin = limit – (received signal + antenna factor + cable loss – pre-amp gain)

Margin = 50.5dBuV/m – (50dBuV + 10dB + 2.5dB – 20dB)

Margin = 8.5 dB

### ***Document Revision Status***

Revision 1 - 790042

First revision issued on April 18, 2007.

Revision 2 – 790042

Correction to typographical error of FCC ID.

Revision 3 - 790045

Correction of Class II permissive change to original filing.

Revision 4 - May 16, 2007

TCB requested retesting.


Clarified minimum separation distance.

Added note to all photos that they are also provided as separate PDF files

Revision 5 – May 29, 2007

TCB requested testing added, and MPE calculations clarified.



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## Definitions and Acronyms

The following definitions and acronyms are applicable in this report.  
See also ANSI C63.14.

**AE** – Auxillary Equipment.

**BW** – Bandwidth. Unless otherwise stated, this is refers to the 6 dB bandwidth.

**EMC** – Electro-Magnetic Compatibility

**EMI** – Electro-Magnetic Immunity


**EUT** – Equipment Under Test

**ITE** – Information Technology Equipment with a primary function(s) of entry, storage, display, retrieval, transmission, processing, switching, or control, of data.

**LISN** – Line impedance stabilization network

**NCR** – No Calibration Required

**RF** – Radio Frequency

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## Testing Facility

Testing for EMC on the EUT was carried out at Global EMC labs in Toronto, Ontario, Canada. The testing lab consists of a 3m semi-anechoic chamber calibrated to be able to allow measurements on an EUT with a maximum width or length of up to 2m and height up to 3m. The chamber is equipped with a turn table that is capable of testing devices up to 3300lb in weight. This facility is capable of testing products that are rated for 120 Vac and 240Vac single phase, or 208 Vac 3 phase input. DC capability is also available. The chamber is equipped with an antenna mast that controls polarization and height from the control room adjoining the shielded chamber. Radiated emissions measurements are performed using a Bilog, and Horn antenna where applicable. Conducted emissions, unless otherwise stated, are performed using a LISN.


### **Calibrations and Accreditations**

The measurement site used is registered with Federal Communications Commission (FCC) and Industry Canada (IC). This site is calibrated for Normalized Site Attenuation (NSA) using test procedures outlined in ANSI C63.4 “Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz”. The semi-anechoic chamber is lined with ferrite tiles and absorption cones to minimize any undesired reflections. All measuring equipment is calibrated on an annual or bi-annual basis as listed for each respective test.


### **Testing Environmental Conditions and Dates**

Following were the environmental conditions in the facility during time of testing –

Date	Test	Init.	Temperature (°C)	Humidity (%)	Pressure (kPa)
April 9 – 18, 2007	All	SD	20-25°C	30-45%	100 -103kPa
May 16, 2007	Re-test	SD	20-25°C	30-45%	100 -103kPa

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## Detailed Test Results Section

Client	<b>Omnex Control Systems, ULC</b>	
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## ***Spurious Radiated Emissions***

### **Purpose**

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT does not exceed the limits listed below as defined in the applicable test standard, as measured from a receiving antenna. This helps protect broadcast radio services such as television, FM radio, pagers, cellular telephones, emergency services, and so on, from unwanted interference.

### **Limit(s) and Method**

The method is as defined in ANSI C63.4:2003.


The limits, as defined in 15.247(d) for unintentional radiated emissions apply for those emissions that fall in the restricted bands, as defined in Section 15.205(a). These emissions must comply with the radiated emission limits specified in Section 15.209(a).

All unintentional emissions must also meet the ‘Spurious Conducted Emissions’ requirements of -20 dBc or greater. See also ‘Spurious Conducted Emissions’ for further details.

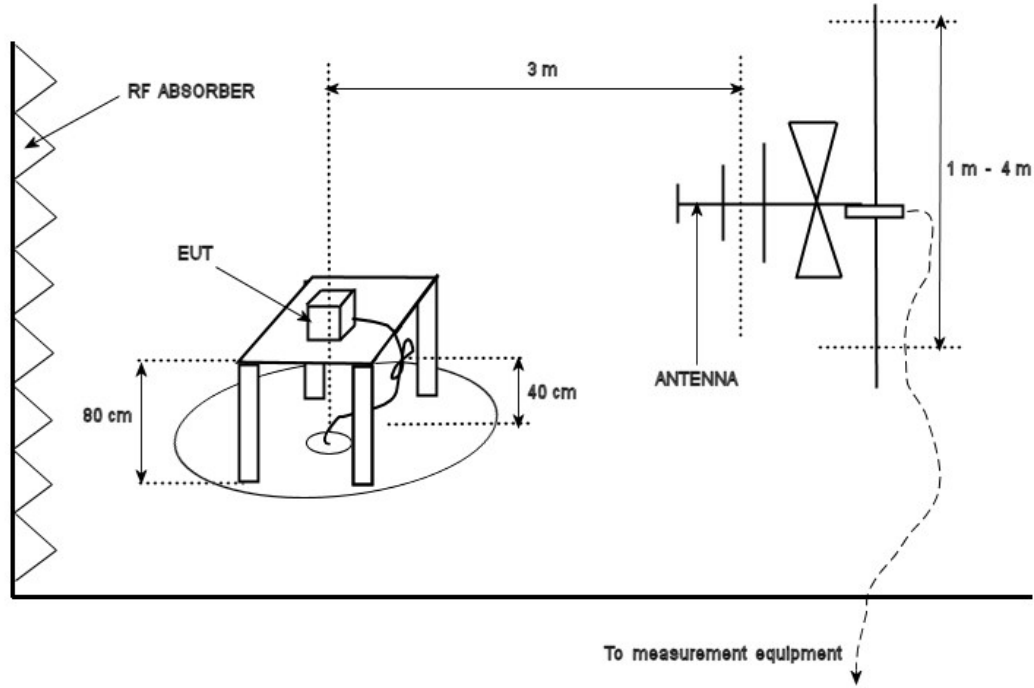
30 MHz – 88 MHz, 100 uV/m (40.0 dBuV/m<sup>1</sup>) at 3 m  
88 MHz – 216 MHz, 150 uV/m (43.5 dBuV/m<sup>1</sup>) at 3 m  
216 MHz – 960 MHz, 200 uV/m (46.4 dBuV/m<sup>1</sup>) at 3 m  
Above 960 MHz, 500 uV/m (54.0 dBuV/m<sup>1</sup>) at 3 m  
Above 1000 MHz<sup>2</sup>, 500 uV/m (54 dBuV/m) at 3m


<sup>1</sup>Limit is with 120 kHz measurement bandwidth and a using a Quasi Peak detector.

<sup>2</sup>Limit is with 1 MHz measurement bandwidth and using an Average detector, scanned in accordance with 15.33 to above the 10<sup>th</sup> harmonic (10 GHz).

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**Typical Radiated Emissions Setup**



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### Measurement Uncertainty

The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is +/-4.4 dB with a 'k=2' coverage factor and a %95 confidence level.

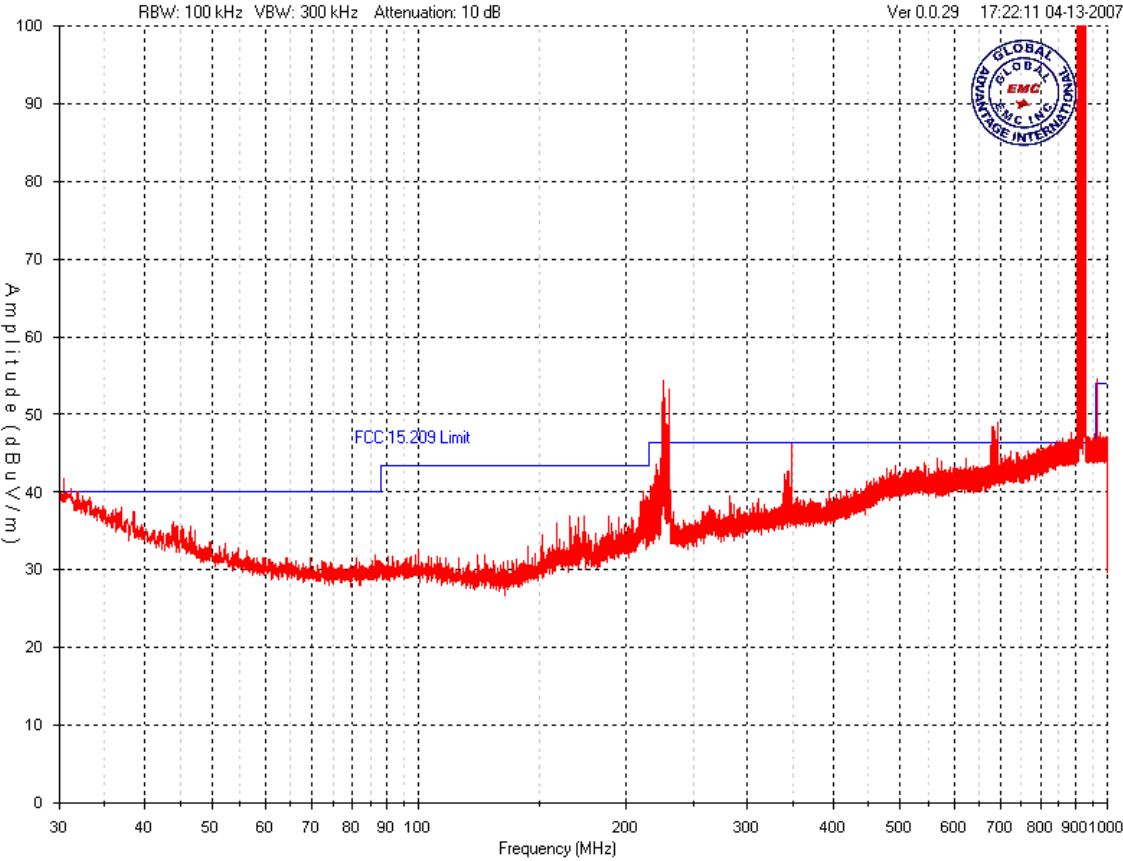
### Preliminary Graphs


Note the graphs shown below are for graphical illustration only. For final measurements with the appropriate detector, please refer to the final measurement table where applicable. The graph shown below is a maximized peak measurement graph, measured with a resolution bandwidth greater than the final required detector and over a full 0-360 rotation. This peaking process is done as a worst case measurement. This process enables the detection of frequencies of concern for final measurement, and provides considerable time savings.

In accordance with FCC Part 15, Subpart A, Section 15.33, the device was scanned to a minimum of a 10 GHz.

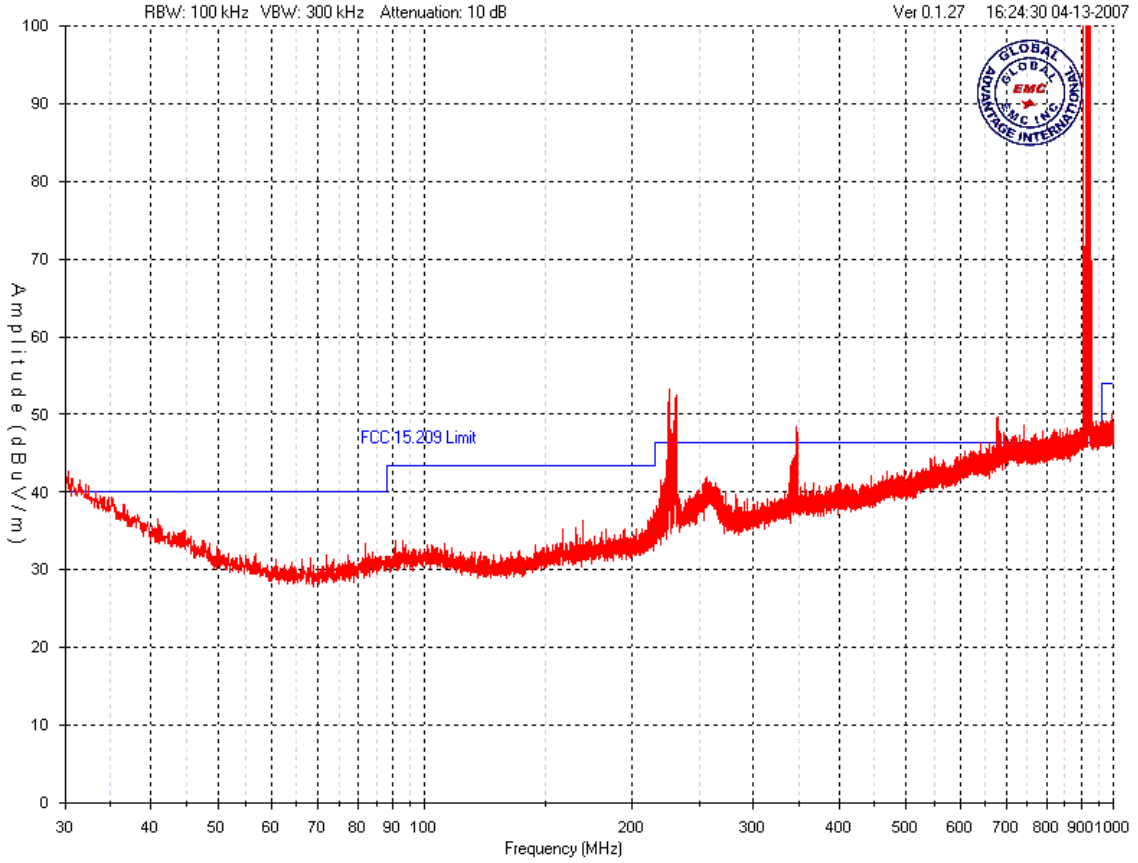
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Vertical – Peak Emissions Graph – Frequency Hopping Mode




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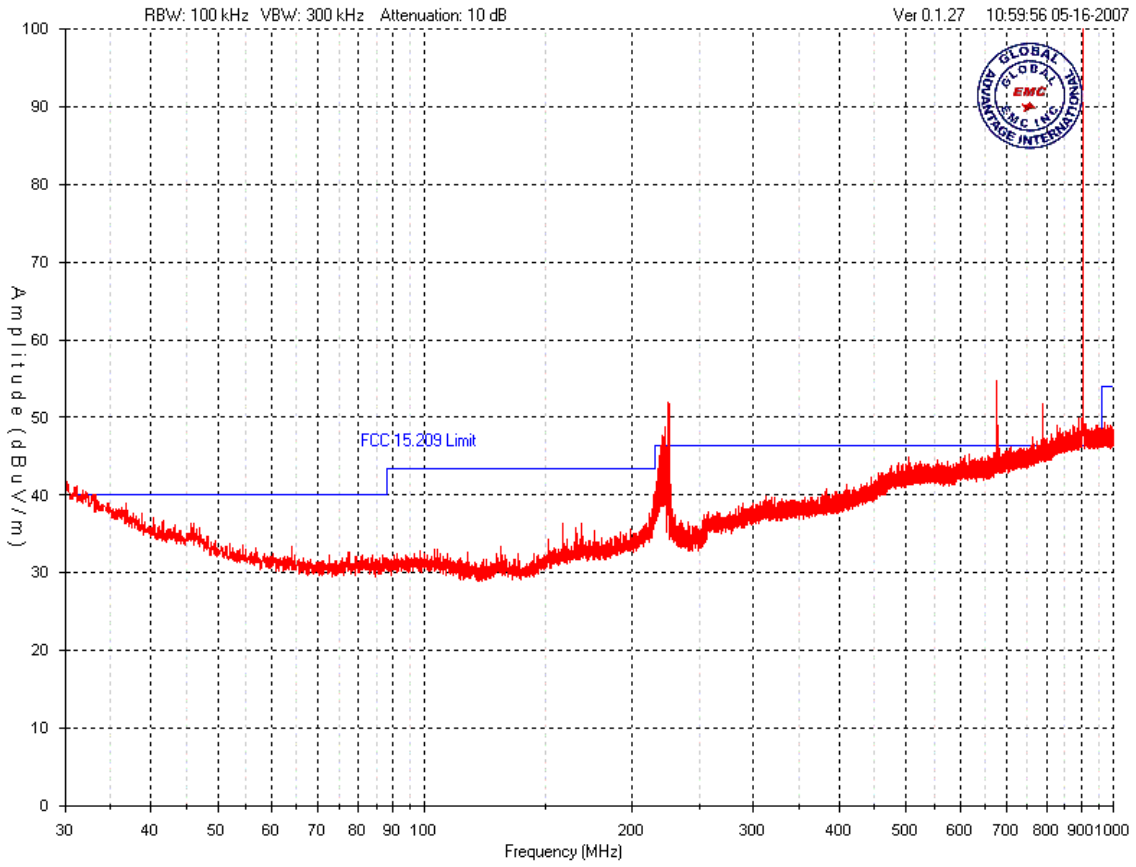
### Horizontal – Peak Emissions Graph – Frequency Hopping Mode






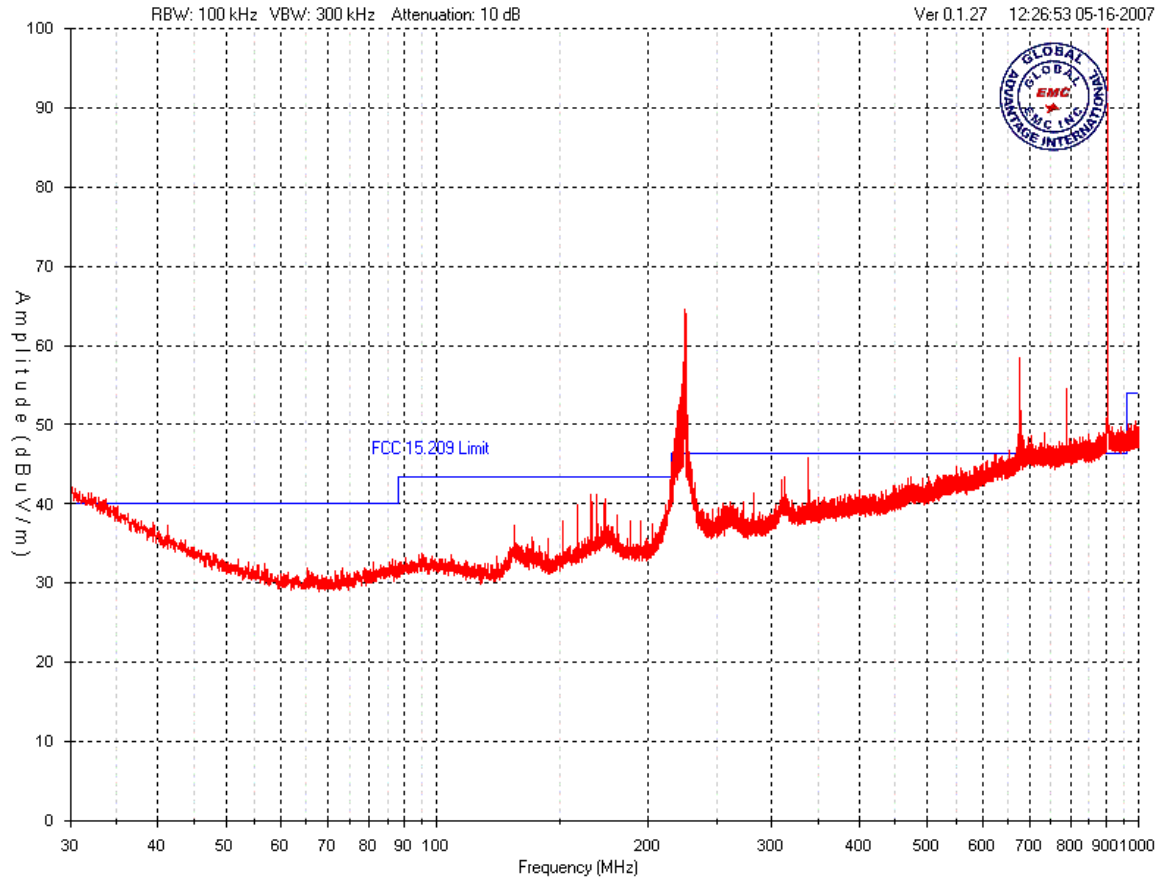
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Vertical – Peak Emissions Graph – Low Band (hopping stopped)



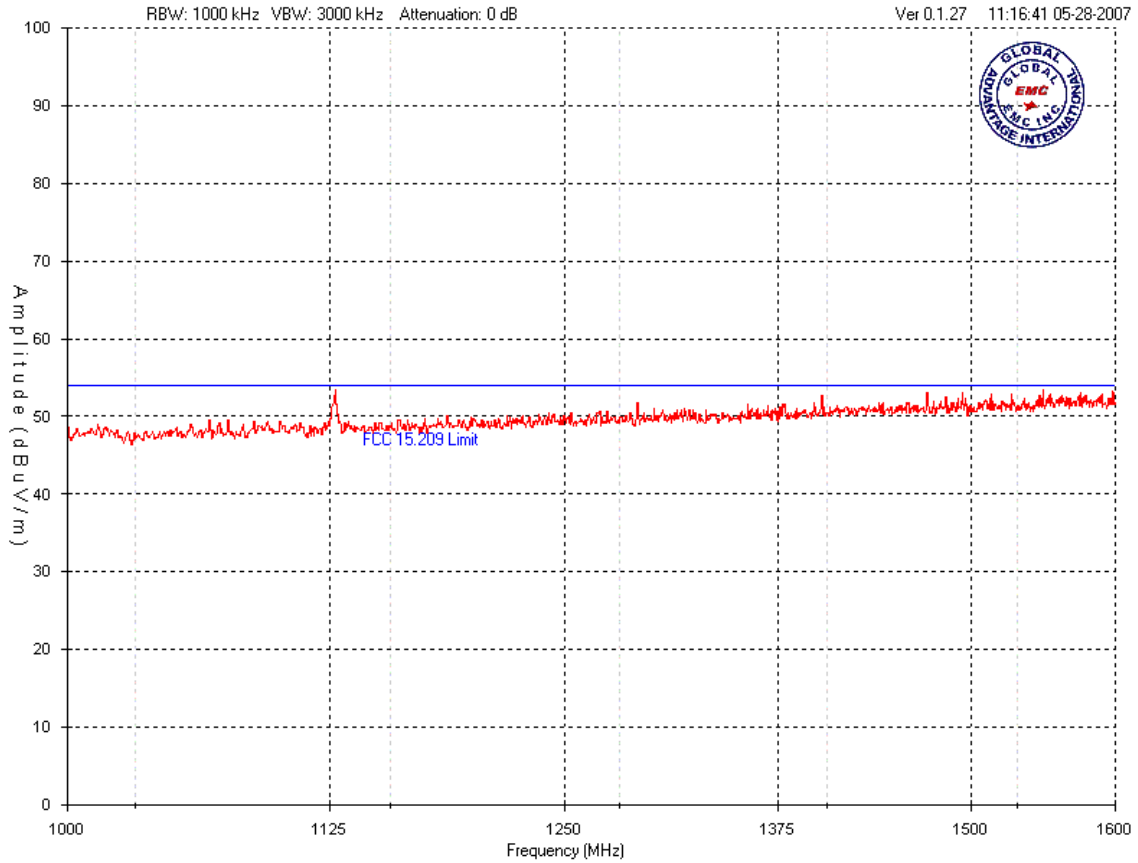
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Horizontal – Peak Emissions Graph – Low Band (hopping stopped)



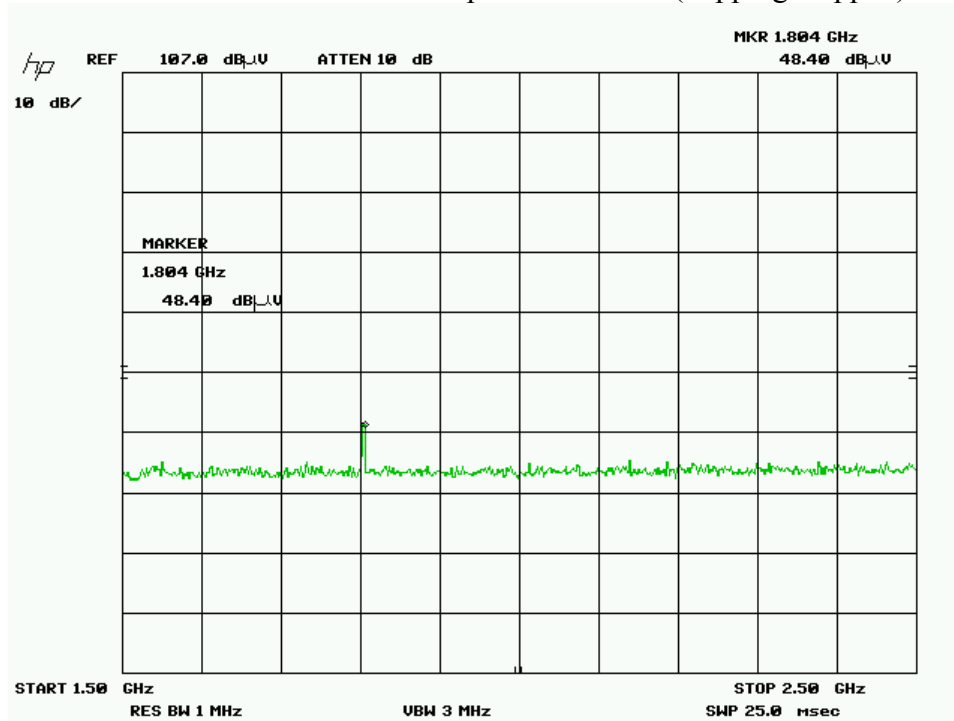
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### Maximum Peak Emissions Graph – Low Band (hopping stopped)

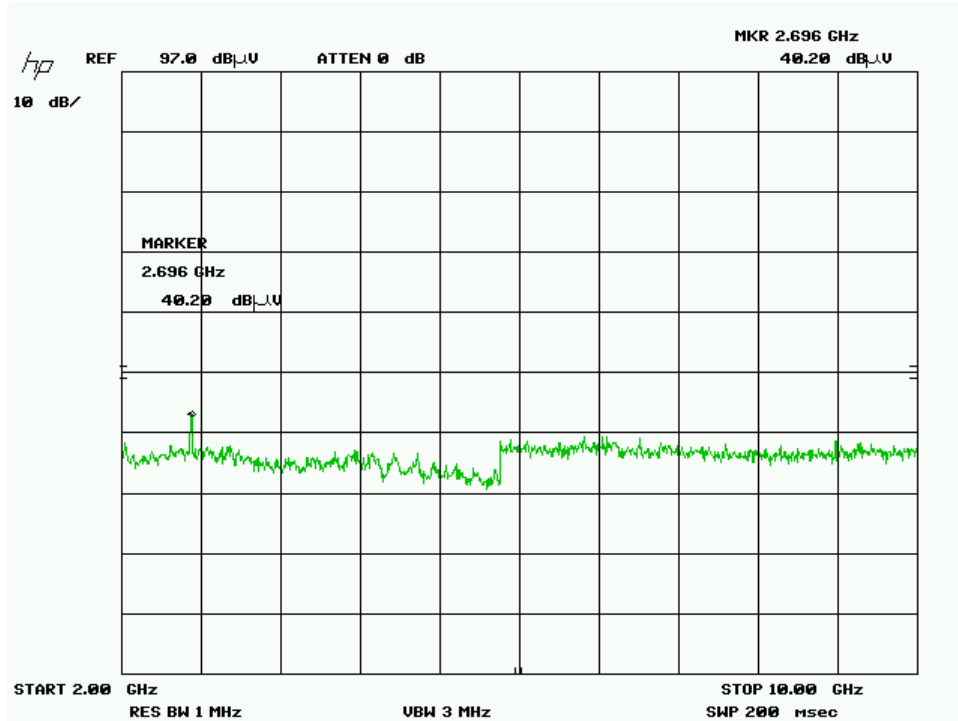



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Maximum Peak Emissions Graph – Low Band (hopping stopped)

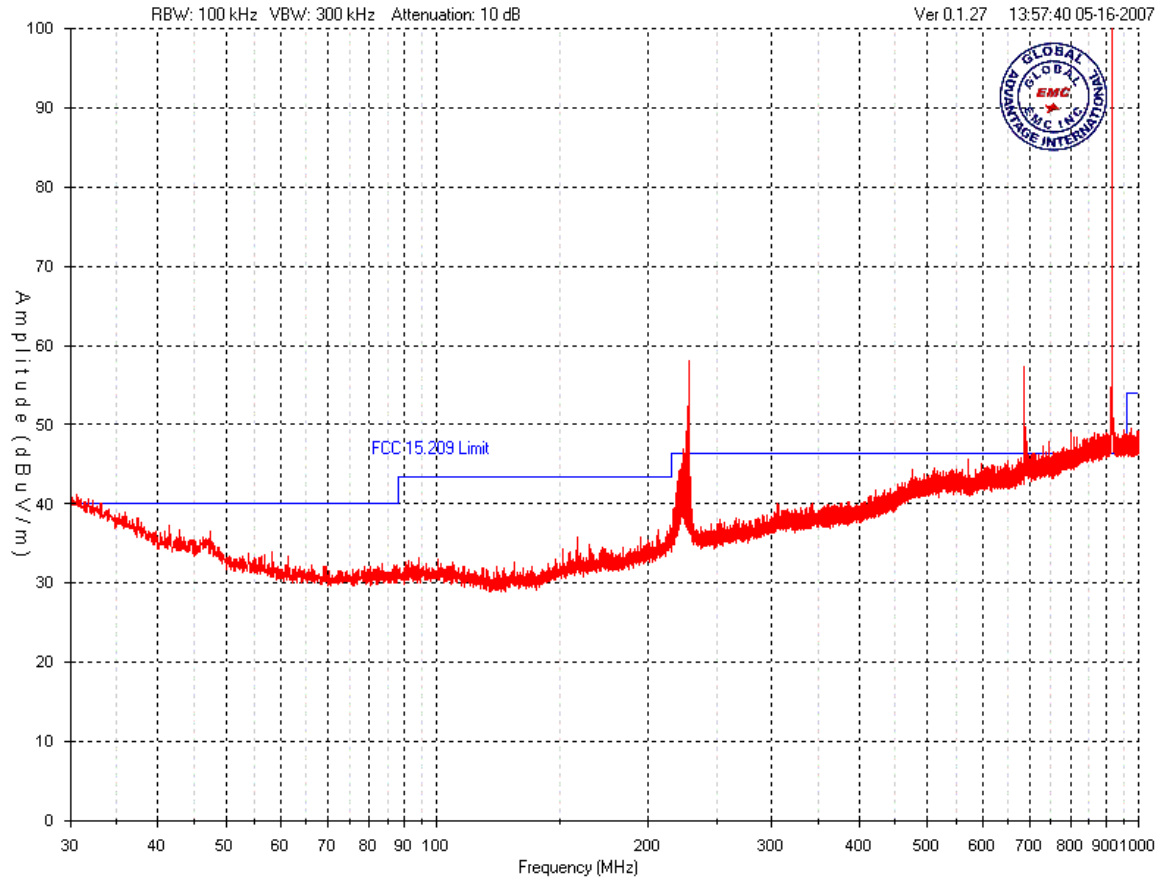



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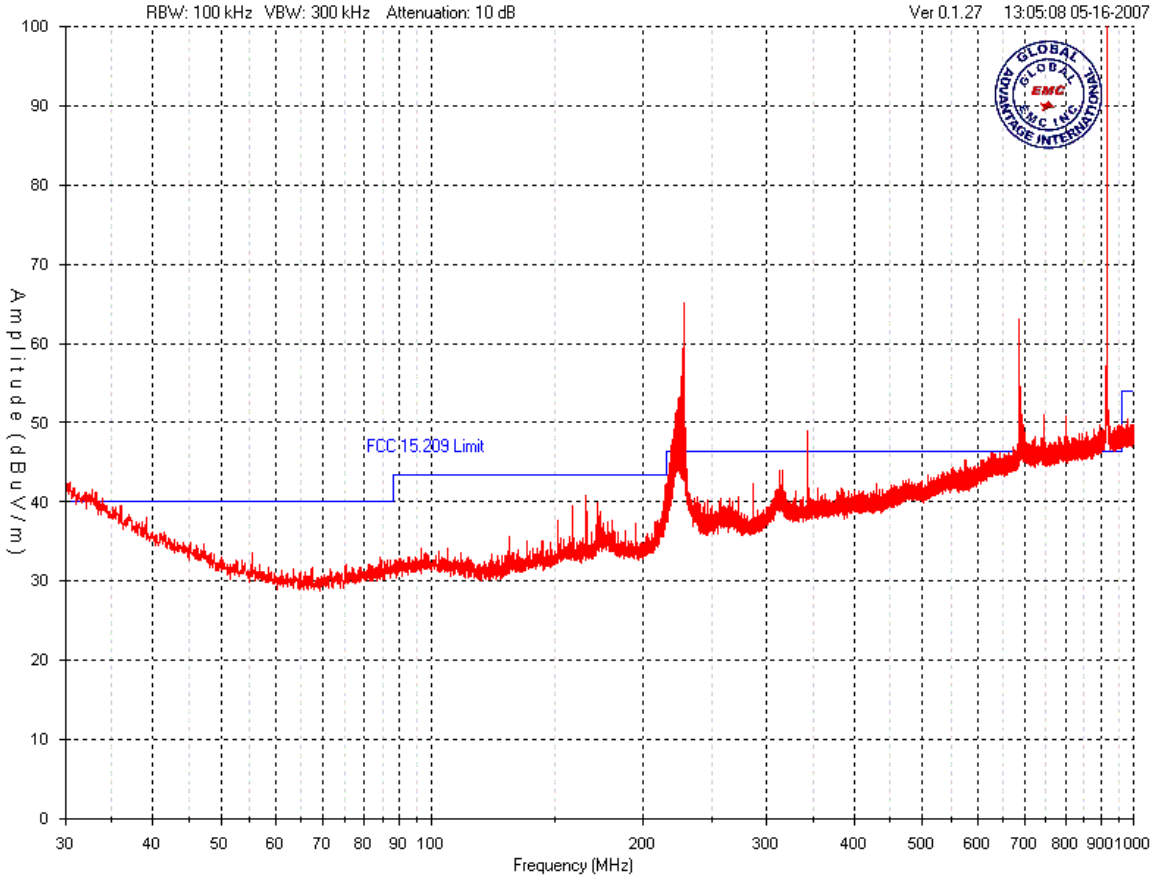
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Vertical – Peak Emissions Graph – Mid Band (hopping stopped)



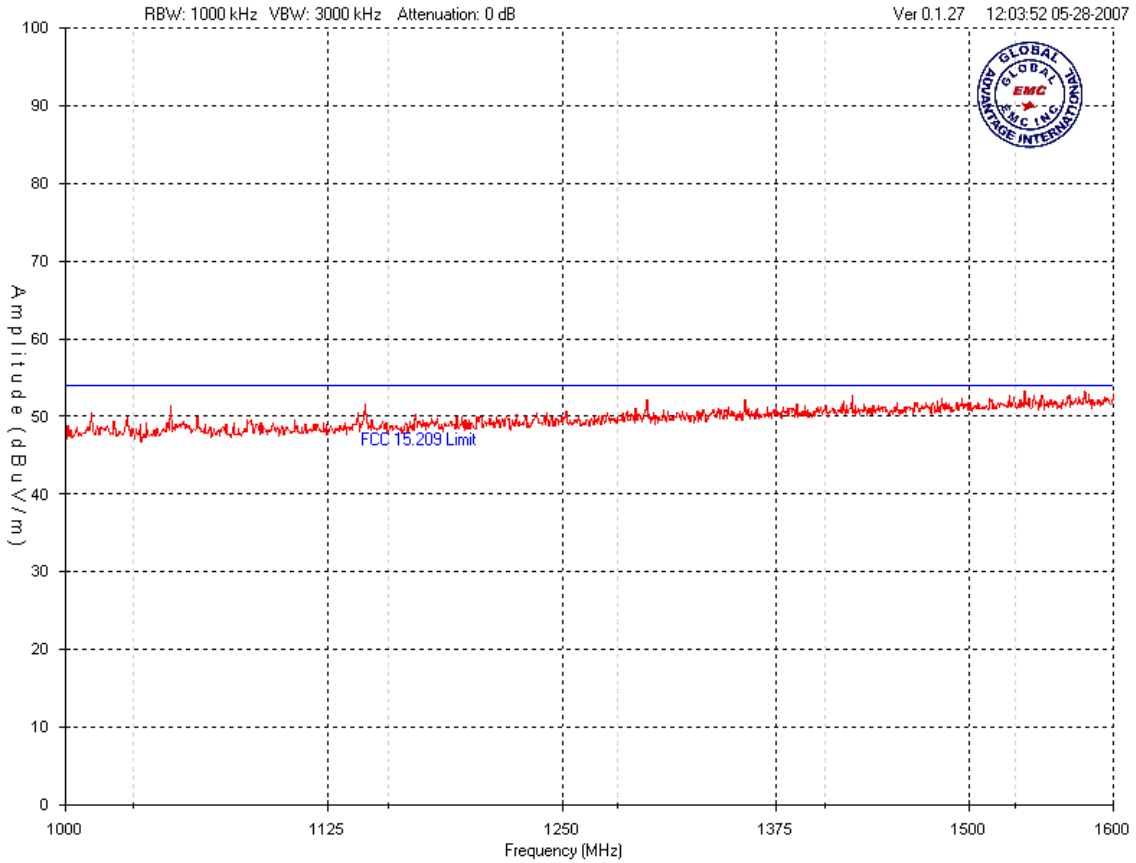
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Horizontal – Peak Emissions Graph – Mid Band (hopping stopped)




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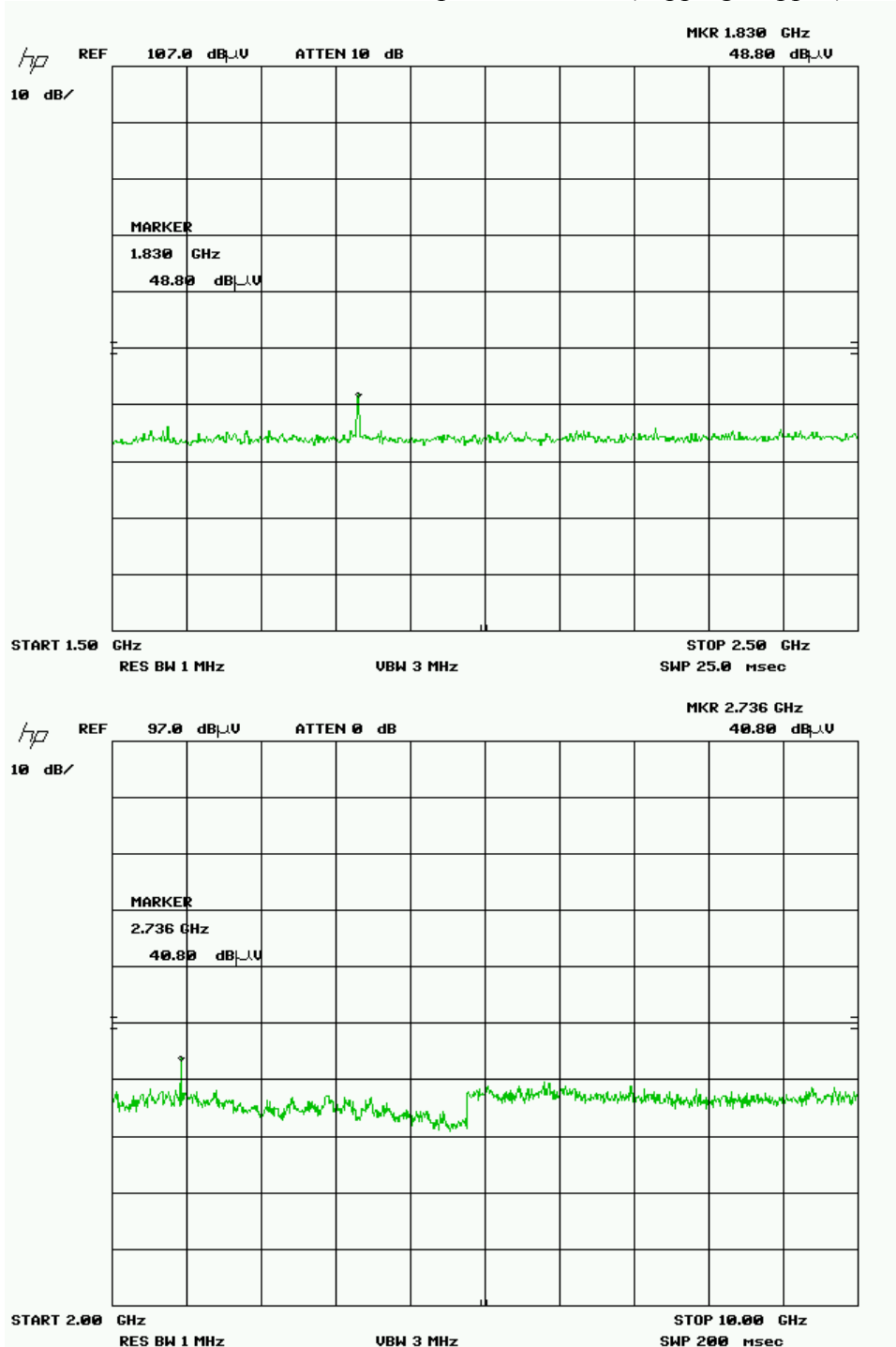
### Maximum Peak Emissions Graph – Mid Band (hopping stopped)






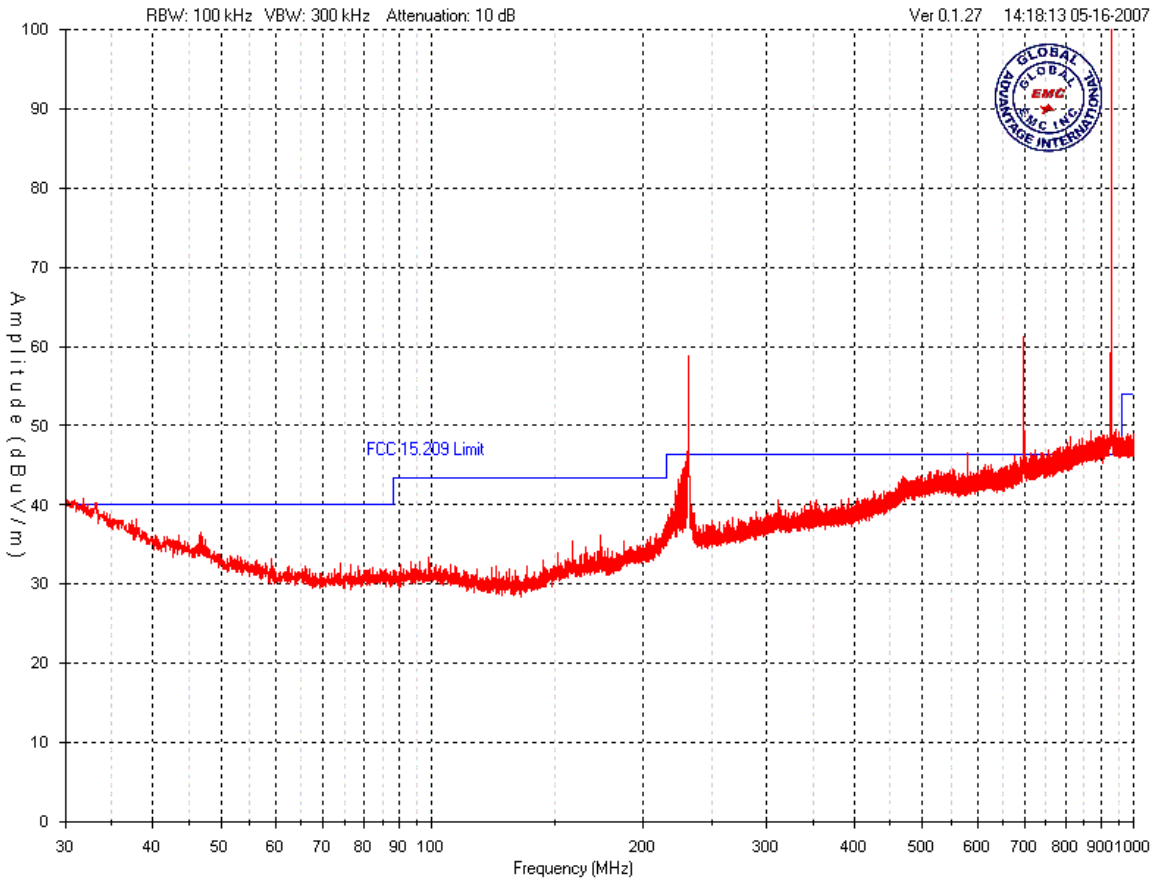
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Maximum Peak Emissions Graph – Mid Band (hopping stopped)



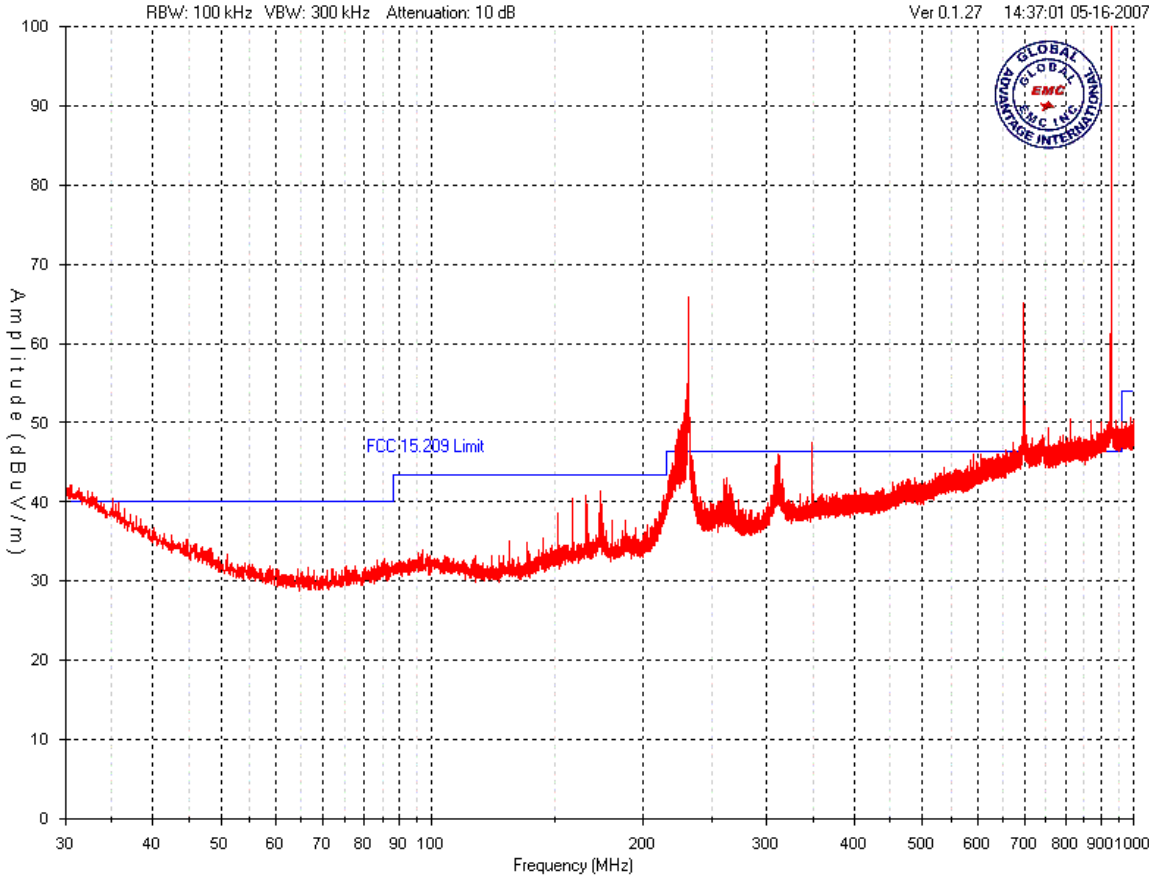
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Vertical – Peak Emissions Graph – High Band (hopping stopped)



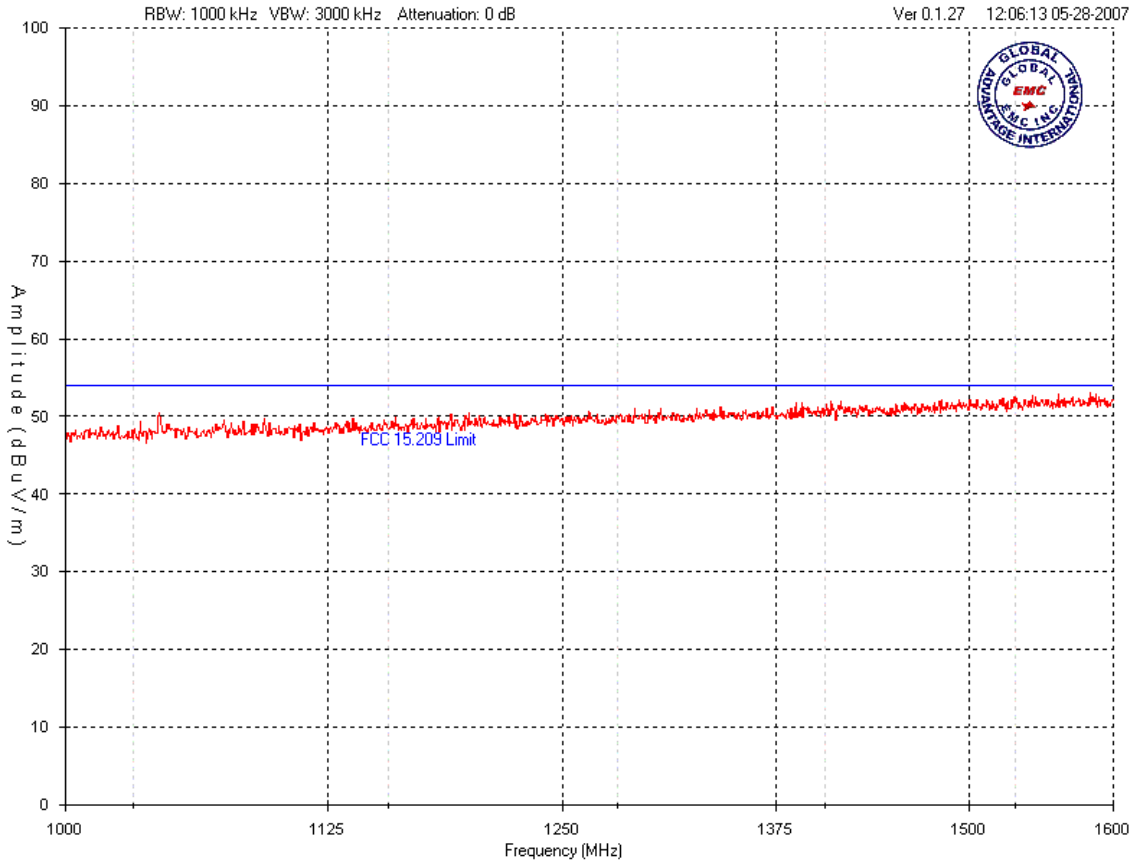
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Horizontal – Peak Emissions Graph – High Band (hopping stopped)



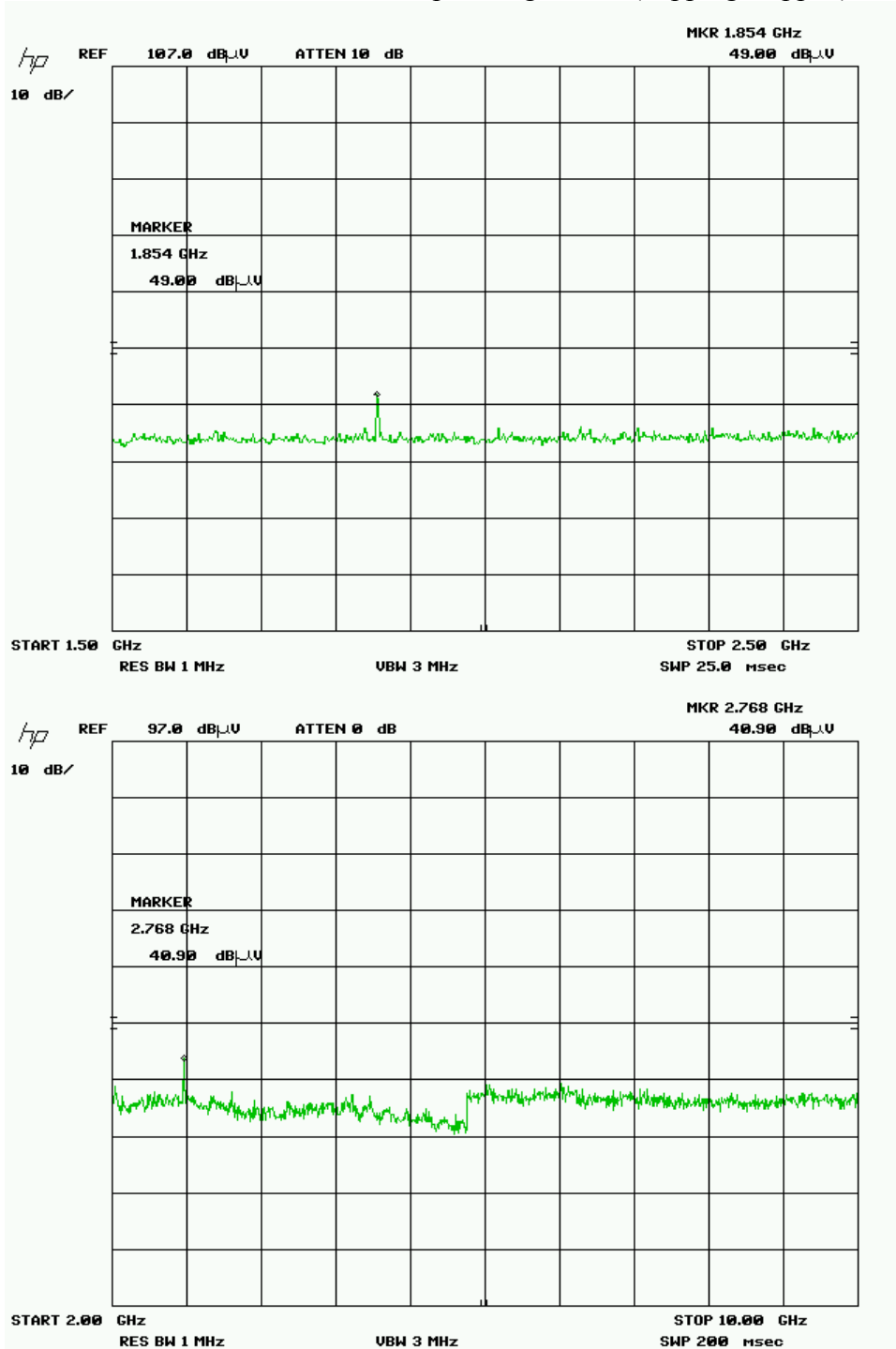
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### Maximum Peak Emissions Graph – High Band (hopping stopped)



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Maximum Peak Emissions Graph – High Band (hopping stopped)



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## Final Measurements

Note: In accordance with 15.247(d), only radiated emissions exceeding the 15.209 limit that occur within the bands listed in 15.205, need to be verified with a quasi-peak detector or an average detector.

The requirement of -20dBc is verified by the conducted method, please see ‘Spurious Antenna Conducted Emissions’ section of this report.

The frequency shown on the peak graph between 200 and 250 MHz as above, falls below 240 MHz as listed in FCC 15.205 and does not need to be verified.


The frequency shown on the peak graph at approximately 350 MHz as above, falls fully between 335.4 MHz and 399.9 MHz as listed in 15.205 and does not need to be verified.

The frequency shown on the peak graph at approximately 680 MHz falls fully between 614 MHz and 960 MHz as listed in 15.205 and does not need to be verified.

For information purposes, the fundamental was measured to be 117 dBuV/m at 3 meters, and none of the unintentional radiated emissions that fall outside of the restricted bands exceeded the -20dBc (or 97dBuV/m) requirement.

The following measurements were made at the harmonics shown in the above graphs.


See ‘Spurious Antenna Conducted Emissions’ measurements for -20 dBc requirements.

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### Radiated Emissions Measurements

Test Frequency (MHz)	Detection mode	Antenna polarity (Horz/Vert)	Raw signal dB(μV)	EUT Tx Band	Antenna factor dB	Cable loss dB	Attenuator dB	Pre-Amp Gain dB	Received signal dB(μV/m)	Emission limit dB(μV/m)	Margin dB(μV)	Result
1127.7	Avg	Vert	34.1	Low	24.3	2.4	3.0	21.2	42.6	54.0	11.4	PASS
1127.7	Avg	Horz	30.2	Low	25.4	2.4	3.0	21.2	39.8	54.0	14.2	PASS
1804	Pk	Vert	48.4	Low	29.6	3.0	0.0	26.1	54.9	63.5	8.6	PASS
1804	Pk	Horz	42.2	Low	29.6	3.0	0.0	26.1	48.7	63.5	14.8	PASS
2706	Pk	Vert	40.2	Low	30.6	3.2	0.0	25.9	48.1	63.5	15.4	PASS
2706	Pk	Horz	34.2	Low	30.6	3.2	0.0	25.9	42.1	63.5	21.4	PASS
1830	Pk	Vert	48.8	Mid	29.6	3.0	0.0	26.1	55.3	63.5	8.2	PASS
1830	Pk	Horz	41.4	Mid	29.6	3.0	0.0	26.1	47.9	63.5	15.6	PASS
2745	Pk	Vert	40.8	Mid	30.6	3.2	0.0	25.9	48.7	63.5	14.8	PASS
2745	Pk	Horz	40.5	Mid	30.6	3.2	0.0	25.9	48.4	63.5	15.1	PASS
1860	Pk	Vert	41.1	High	29.6	3.0	0.0	26.1	47.6	63.5	15.9	PASS
1860	Pk	Horz	38.1	High	29.6	3.0	0.0	26.1	44.6	63.5	18.9	PASS
2790	Pk	Vert	42.1	High	30.6	3.2	0.0	25.9	50.0	63.5	13.5	PASS
2790	Pk	Horz	48.5	High	30.6	3.2	0.0	25.9	56.4	63.5	7.1	PASS

Note: Radiated emissions measurements above 1.5 GHz were performed at a 1 meter test distance, and in accordance with FCC 15.31(f)(1) an extrapolation factor of 9.5 dB was applied. No emissions above the 3<sup>rd</sup> harmonic were detected at 1 meter. The system noise floor at the 10<sup>th</sup> harmonic was approximately 12 dB at 1m. Note that the peak emissions without average measurement or duty cycle correction complied with the average limit requirements, therefore average measurements and duty cycle correction were not applied.


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## Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
BiLog Antenna	3142-C	ETS	2006-08-06	2008-08-06	GEMC 8
Horn Antenna	6878/24	Q-Par	On file	2007-08-01	GEMC 65
1-26G pre-amp	HP 8449B	HP	On file	2007-08-01	GEMC 68
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Pre-Amplifier	PA-2.5-26	Vican	2006-09-12	2007-09-12	GEMC 9
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 28
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
RF Cable 0.5M	LMR-400-0.5M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 31

This report module is based on GEMC template "FCC - 15.209 - Radiated Emissions\_Rev1.doc"



Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## **Channel Carrier Bandwidth**

### **Purpose**

The purpose of this test is to allow for results that is used to help establish other limits. Although there is not specific limit for this requirement, the derived limits dependant on this information helps allow for other spread spectrum devices to co-exist in the same frequency spectrum.. This also helps prevent corruption of data by ensuring adequate channel separation to distinguish the reception of the intended information.

### **Limits**

There is no specified limit. However, an approximate calculated maximum limit can be obtained by dividing the maximum bandwidth of the frequency allocation by the minimum number of channels. Note that this is a maximum bandwidth, and the measurement is used to calculate other limits.


902 to 928 MHz <sup>1</sup>	902 to 928 MHz <sup>2</sup>	2.4 to 2.4835 GHz	5.725 GHz to 5.85 GHz
26 MHz / 50	26 MHz / 25	83.5 MHz / 15	125 MHz / 75
520 kHz	1.04 MHz	5.57 MHz	1.67 MHz

Note 1: When the 20 dB BW is less then 250 kHz

Note 2: When the 20 dB BW is greater then 250 kHz

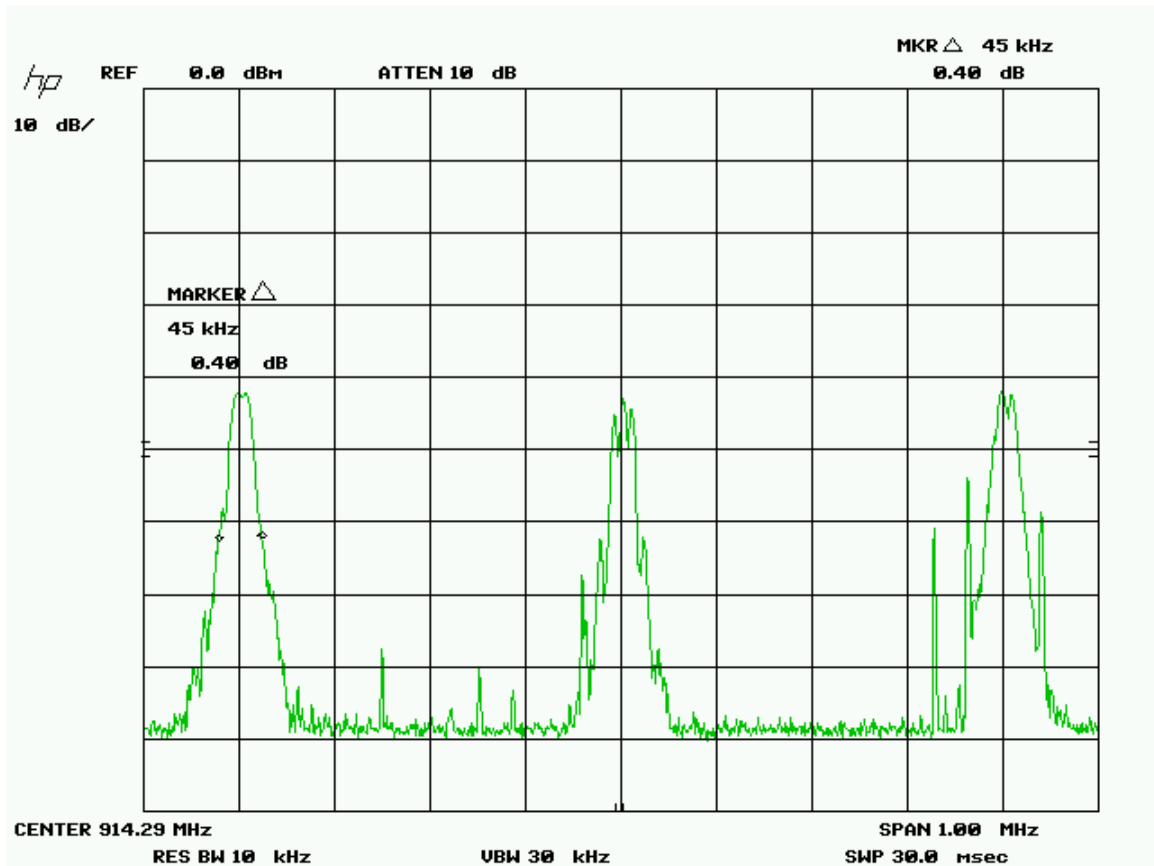
### **Results**

The EUT passed. The 20 dB BW measured was 45 kHz.


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Graph(s)

The graphs shown below shows the channel spacing during the operation of the device. This is measured by a max hold on the spectrum analyzer and the highest resolution bandwidth that is sufficiently low to exhibit the 20 dB bandwidth of a channel during operation of the EUT. This measurement is a peak measurement. Max hold is performed for a duration of not less than 1 minute.




Note: See ‘Appendix B – EUT & Test Setup Photographs’ for photos showing the test set-up.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## **Channel Carrier Separation**

### **Purpose**

The purpose of this test is to ensure that the RF energy of frequency hopping systems is sufficiently spread over a spectrum and that the radio energy is not overly dense. This limit helps allow for other spread spectrum devices to co-exist in the same frequency spectrum. This also helps prevent corruption of data by ensuring adequate channel separation to distinguish the reception of the intended information.

### **Limits**


The limits are as defined in 47 CFR FCC Part 15 Section 15.247(a)(1)

	902 to 928 MHz	2.4 to 2.4835 GHz	5.275 to 5.85 GHz
No conditions	25 kHz or 20 dB BW <sup>1</sup>	25 kHz or 20 dB BW <sup>1</sup>	25 kHz or 20 dB BW <sup>1</sup>
< 125 mW	25 kHz or 20 dB BW <sup>1</sup>	25 kHz or 2/3 of 20 dB BW <sup>1</sup>	25 kHz or 20 dB BW <sup>1</sup>

Note 1: Whichever is greater. The 20 dB BW of the system was measured to be 45 kHz, so a limit of 45 kHz applies.

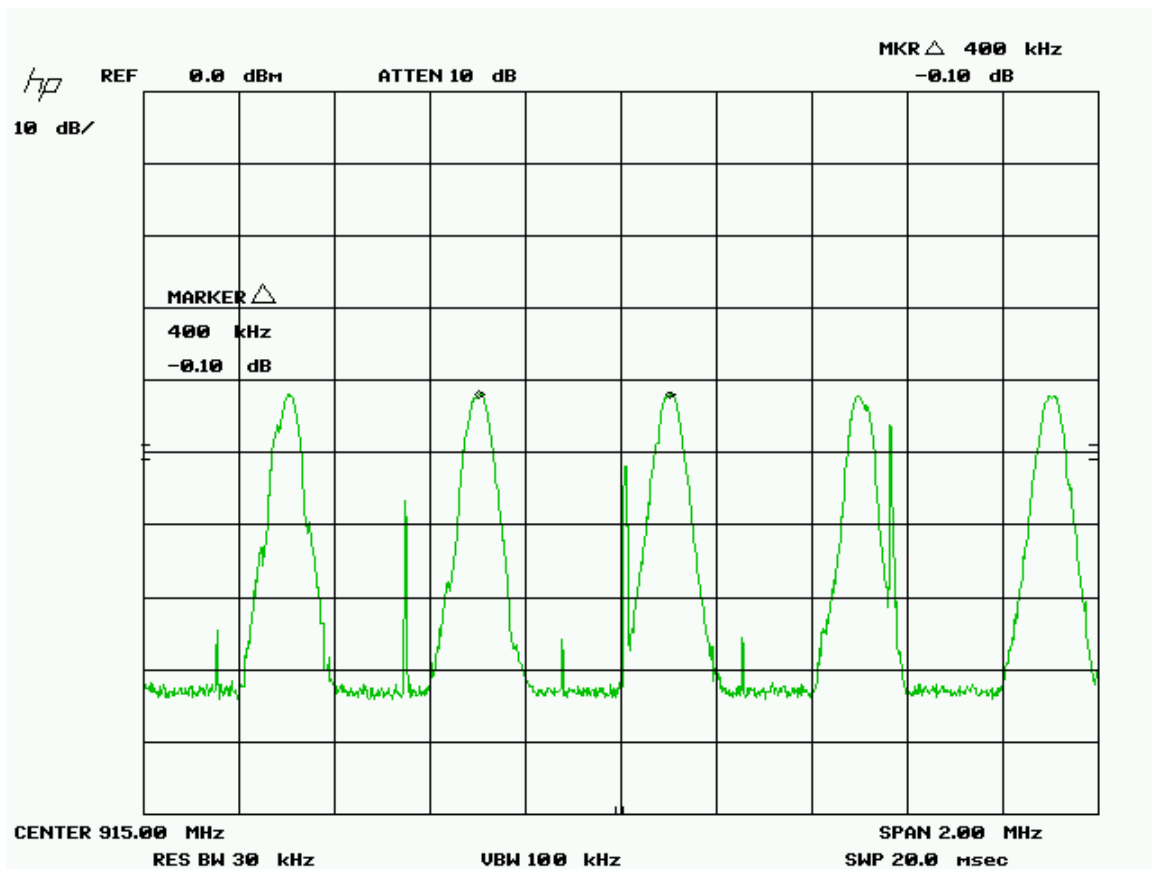
### **Results**

The EUT passed the requirements of channel carrier spacing exceeding the measured 20 dB BW of the EUT. The 20 dB BW previously measured was 45 kHz, and the device had a channel spacing of 400 kHz.


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Graph(s)

The graphs shown below shows the channel spacing during the operation of the device. This is measured by a max hold on the spectrum analyzer and the highest resolution bandwidth that is sufficiently low to exhibit the channel spacing of the signal being measured. This measurement is a peak measurement. Max hold is performed for a duration of not less than 1 minute.




Note: See 'Appendix B – EUT & Test Setup Photographs' for photos showing the test set-up.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## **Number of Channels**

### **Purpose**

The purpose of this test is to ensure that the RF energy of frequency hopping systems is sufficiently spread over a spectrum and that the radio energy is not overly dense. This limit helps allow for other spread spectrum devices to co-exist in the same frequency spectrum. This also helps prevent corruption of data by ensuring adequate channel separation to distinguish the reception of the intended information.


### **Limits**

The limits are as defined in 47 CFR FCC Part 15 Section 15.247(a)(1)

	902 to 928 MHz	2.4 to 2.4835 GHz	5.275 to 5.85 GHz
No conditions	>= 50 channels	>= 15 channels	>= 75 channels
20 dB BW exceeds 250 kHz	>= 25 channels	>= 15 channels	>= 75 channels

### **Results**

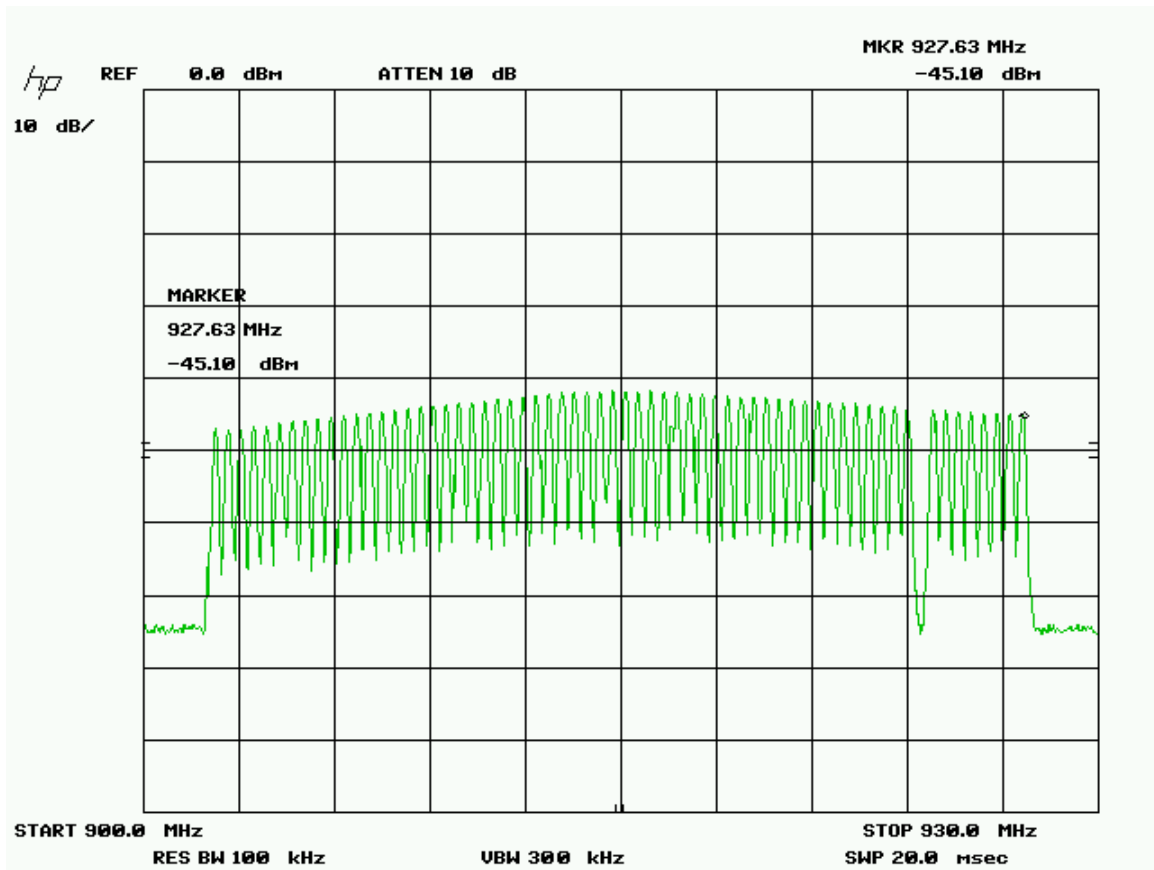
The EUT passed the requirements of the number of channels. The number of channels the device occupies is 63 channels in the allocation band of 902 to 928 MHz.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Graph(s)


The graphs shown below shows the number of occupied channels during the operation of the device. This is measured by a max hold on the spectrum analyzer and the highest resolution bandwidth that is sufficiently low to exhibit the channel spacing of the signal being measured. This measurement is a peak measurement. Max hold is performed for a duration of not less than 10 minutes, or as sufficient to capture the channels occupied.

The number of




Note: See 'Appendix B – EUT & Test Setup Photographs' for photos showing the test set-up.



Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## ***Maximum Peak Envelope Power***

### **Purpose**

The purpose of this test is to ensure that the maximum power conducted to the radiating element does not exceed the limits specified.


### **Limits**

The limits are defined in 15.247(b).

For frequency hopping systems operating in the 902-928 MHz band employing more than 50 hopping channels, the peak limit is 1 watt.

### **Results**

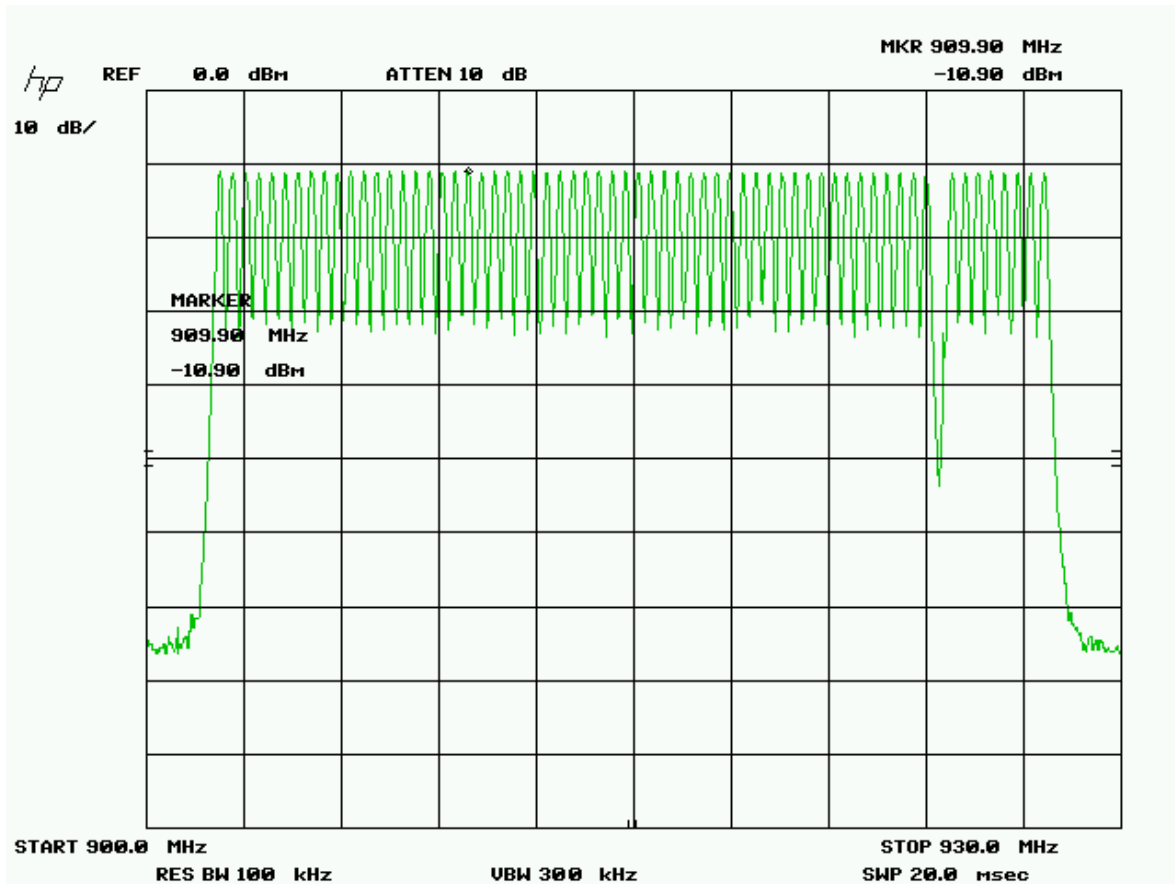
The EUT passed. The peak power measured was 29.0 dBm (795 mW).

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


### Graph(s)

The graphs shown below shows the peak power output of the device during the antenna conducted measurement during transmit operation of the EUT. Note there was 40 dB of external attenuation taken during this measurement.

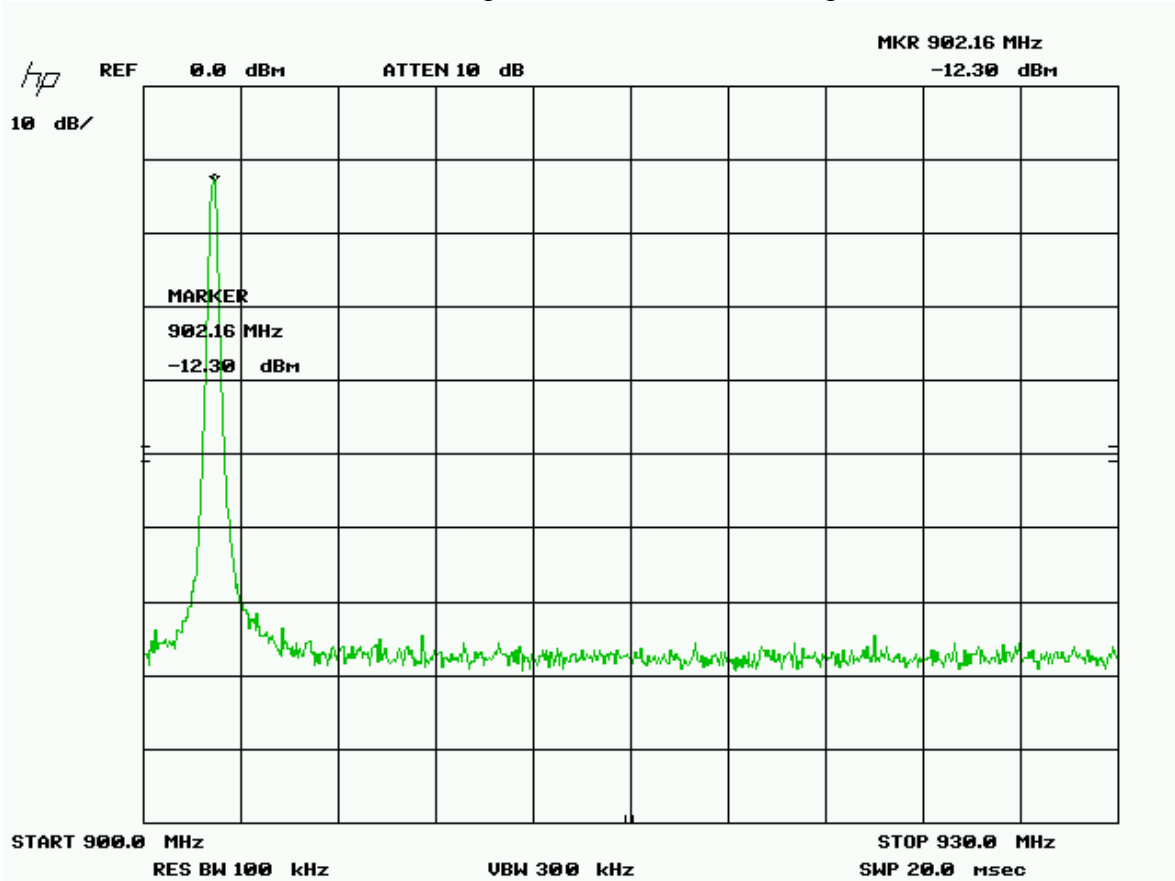
All channels – Chart




The calculated value is:  
 $-10.9 \text{ dBm} + 39.9 \text{ dB (attenuator)}$   
 $= +29 \text{ dBm or } 795 \text{ mW.}$

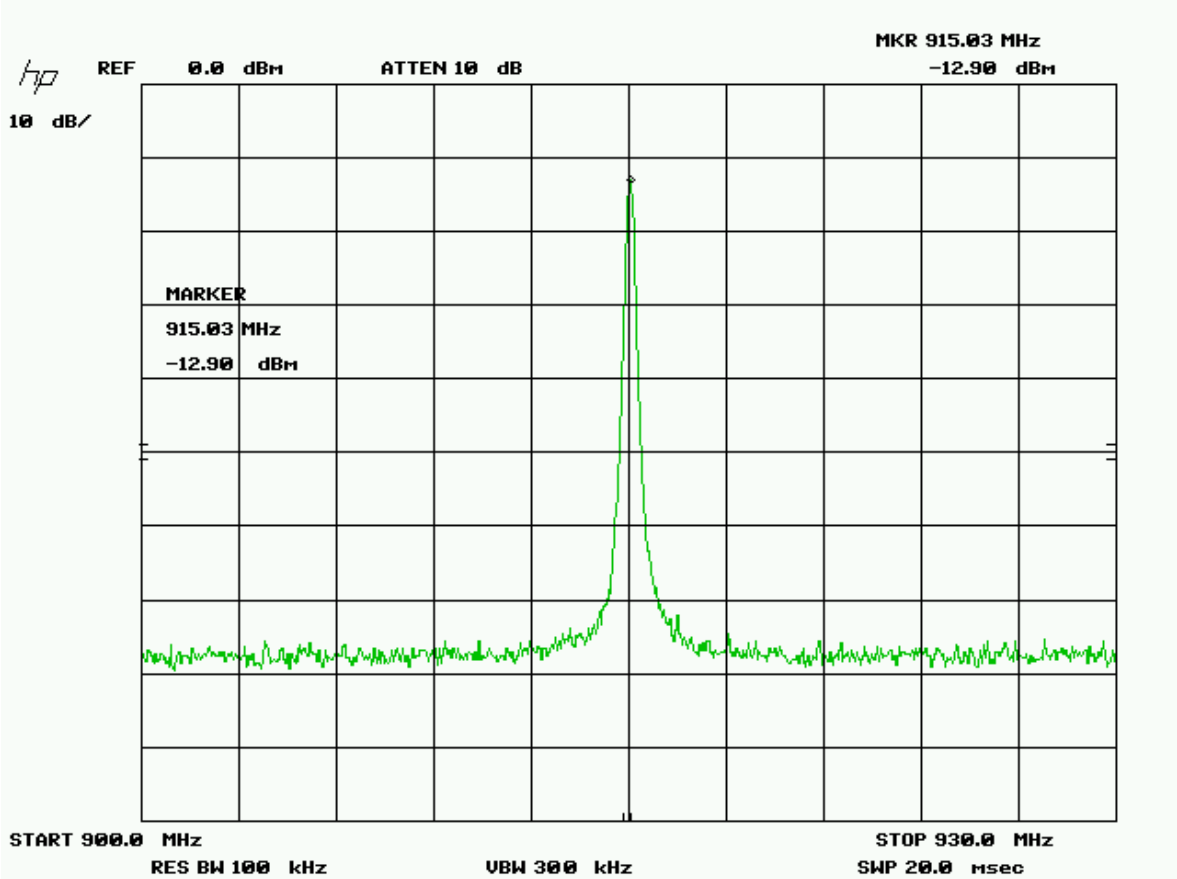
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


Peak Envelope Power – Low Band Graph



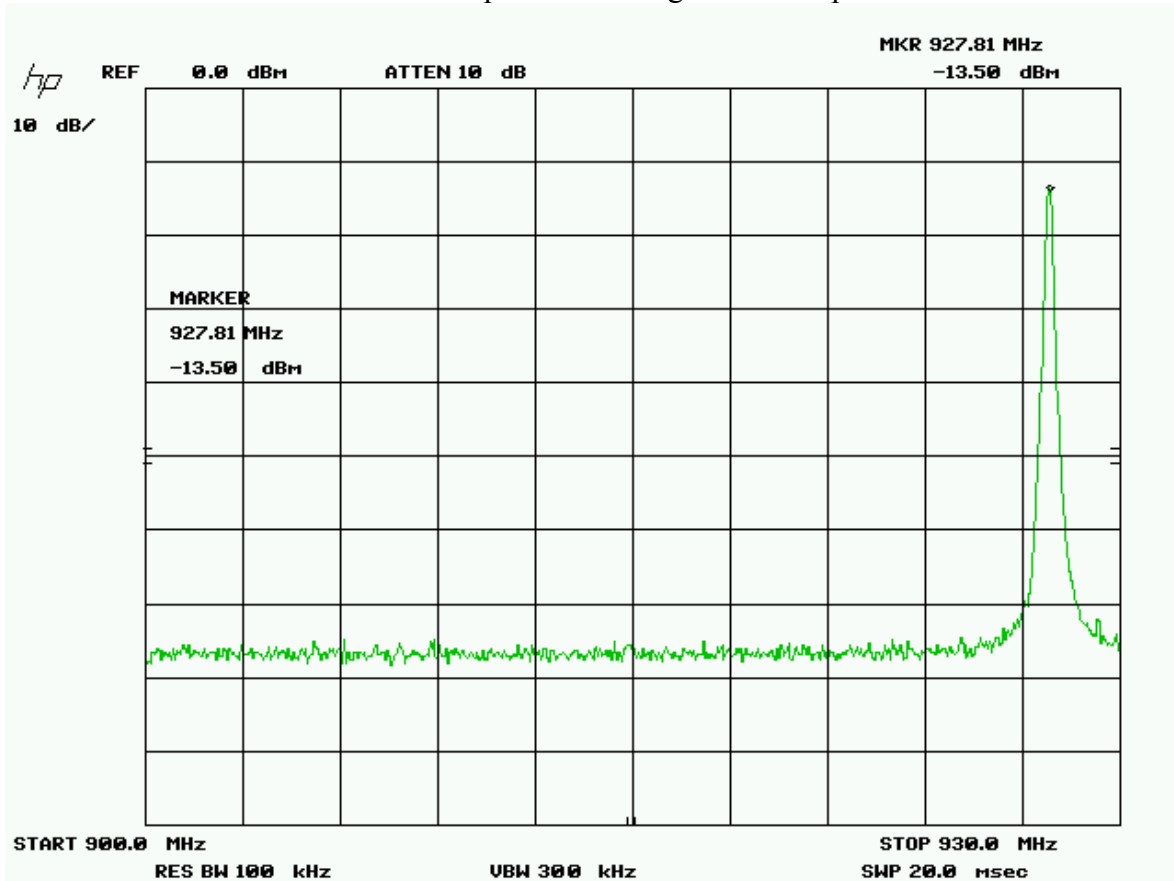
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Peak Envelope Power – Mid Band Graph




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Peak Envelope Power – High Band Graph




Note: See ‘Appendix B – EUT & Test Setup Photographs’ for photos showing the test set-up.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

### Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B\_Rev1"

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## ***Antenna Conducted Spurious Emissions***

### **Purpose**

The purpose of this test is to ensure that the maximum power conducted to the radiating element does not exceed the limits specified.

### **Limits**


The limits are defined in 15.247(d).

In any 100 kHz band, the peak spurious harmonics emissions must be at least 20 dB below the fundamental.

### **Results**

The EUT passed. The peak power measured was 29.0 dBm (795 mW). The worst case measurement was the instrumentation noise floor and was in excess of -60 dBc, well exceeding the requirement of -20 dBc. The 2<sup>nd</sup> and 3<sup>rd</sup> harmonics were verified to be not detected by zooming in on a harmonic, with a 0 Hz span, and a resolution BW of 1 MHz, a sweep time of 20 ms, and max hold.

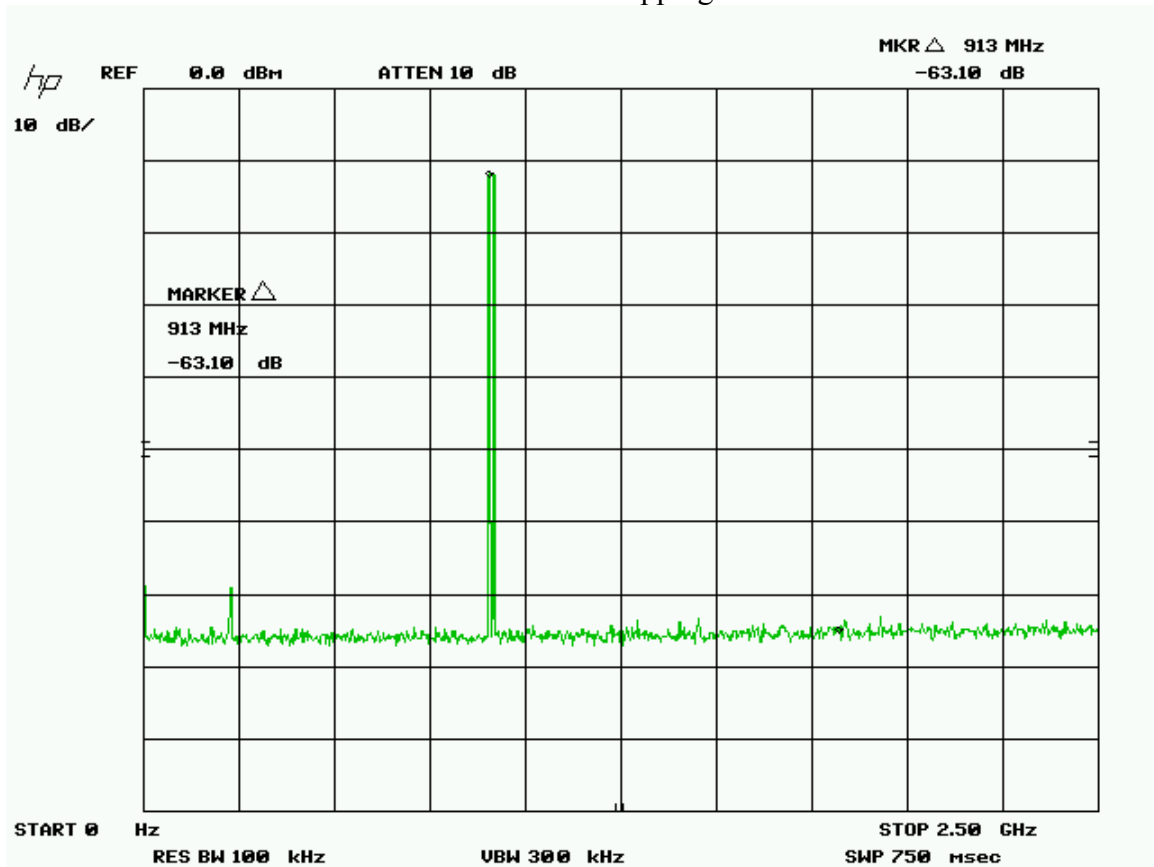



Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Graph(s)

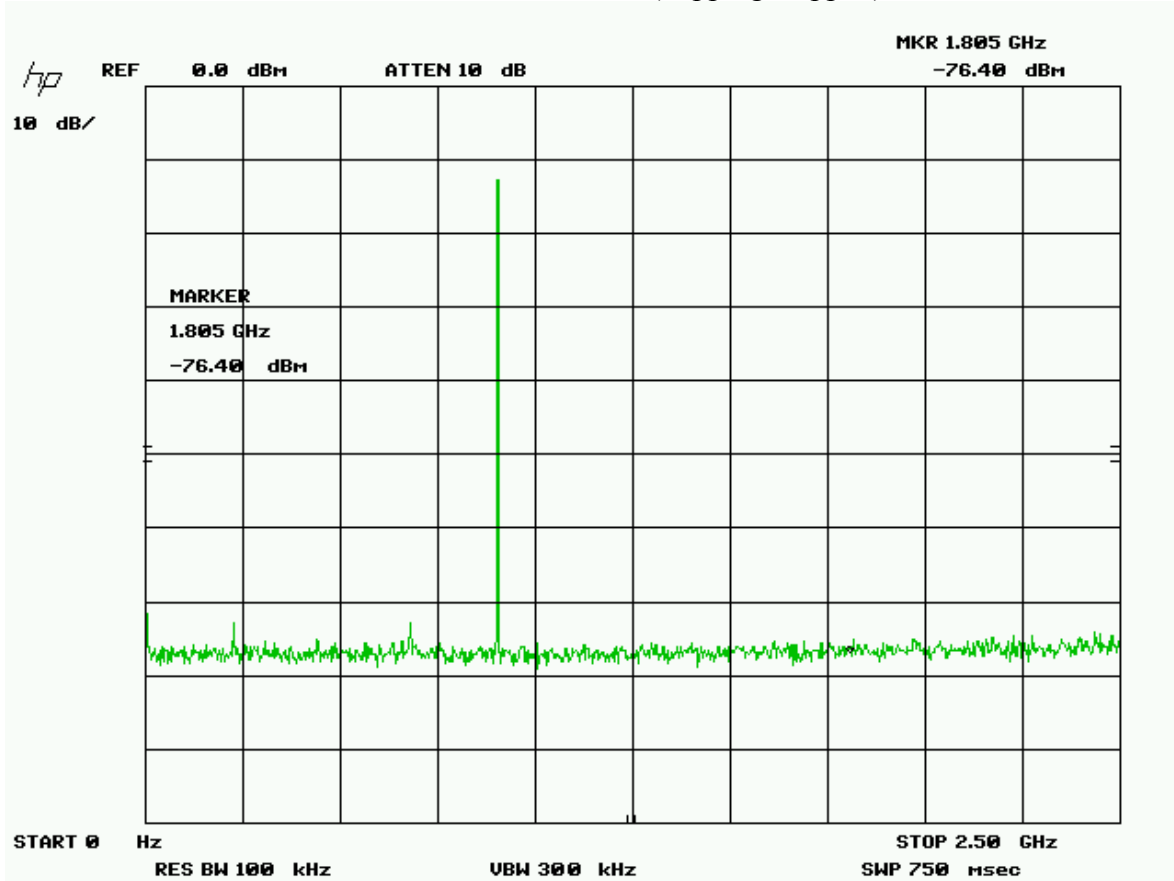
The graphs shown below shows the peak power output of the device during the antenna conducted measurement during transmit operation of the EUT. Note there was 40 dB of external attenuation taken during this measurement.


2<sup>nd</sup> Harmonic – Hopping mode



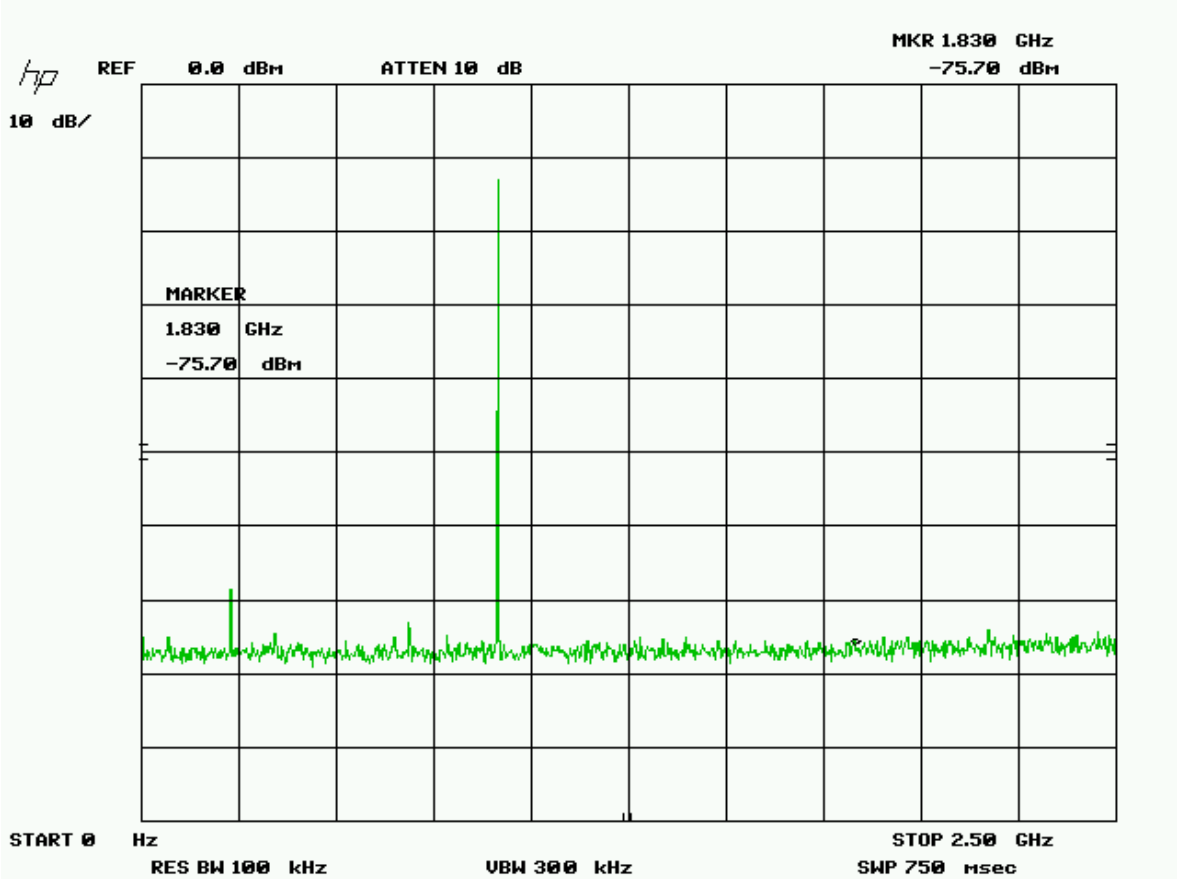
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


2<sup>nd</sup> Harmonic – Low Band (hopping stopped)



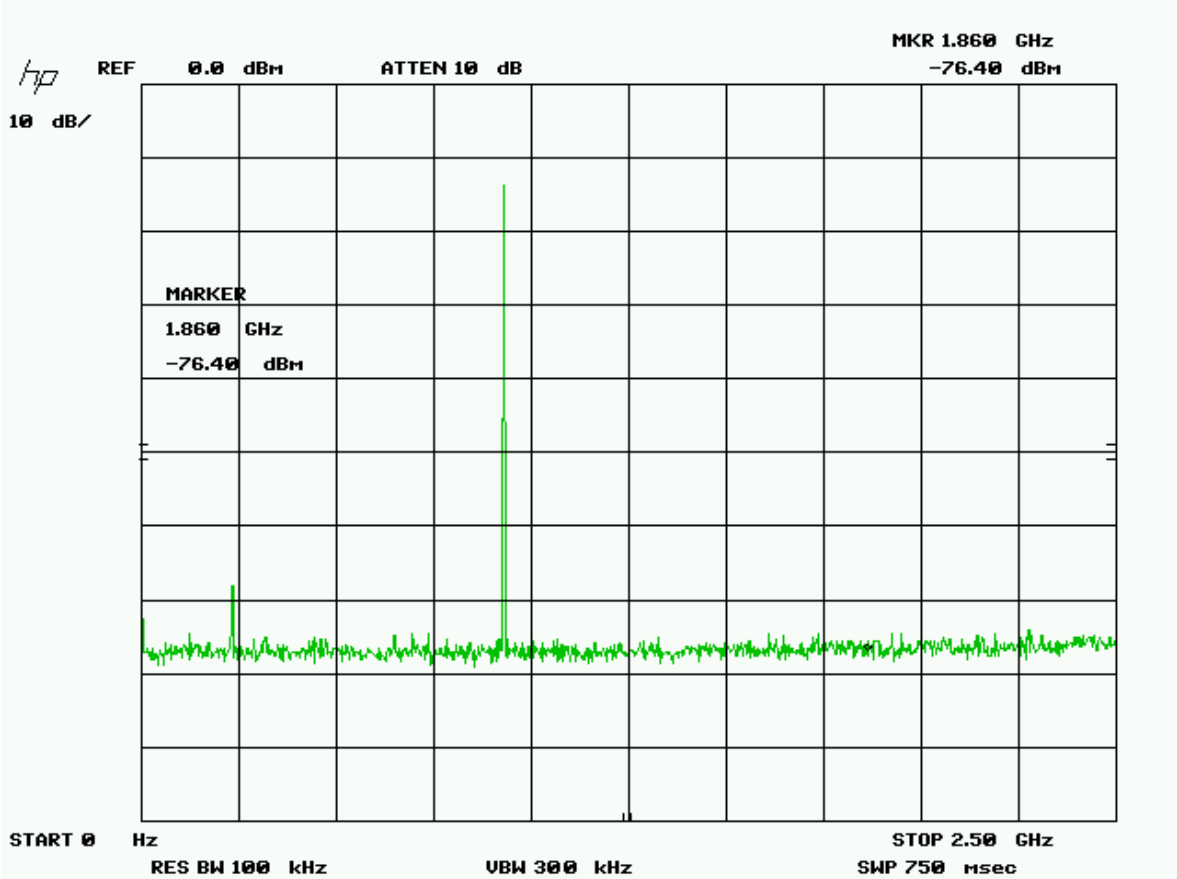
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


2<sup>nd</sup> Harmonic – Mid Band (hopping stopped)



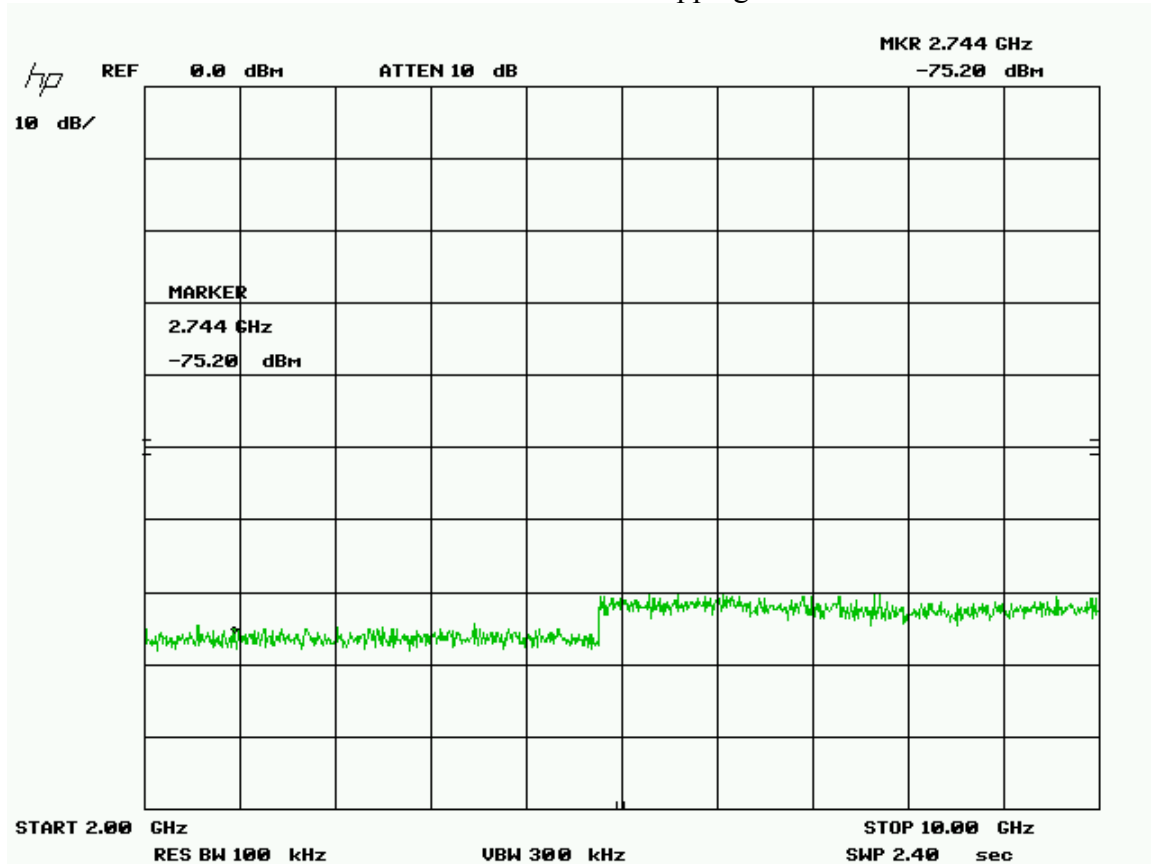
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

2<sup>nd</sup> Harmonic – High Band (hopping stopped)




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

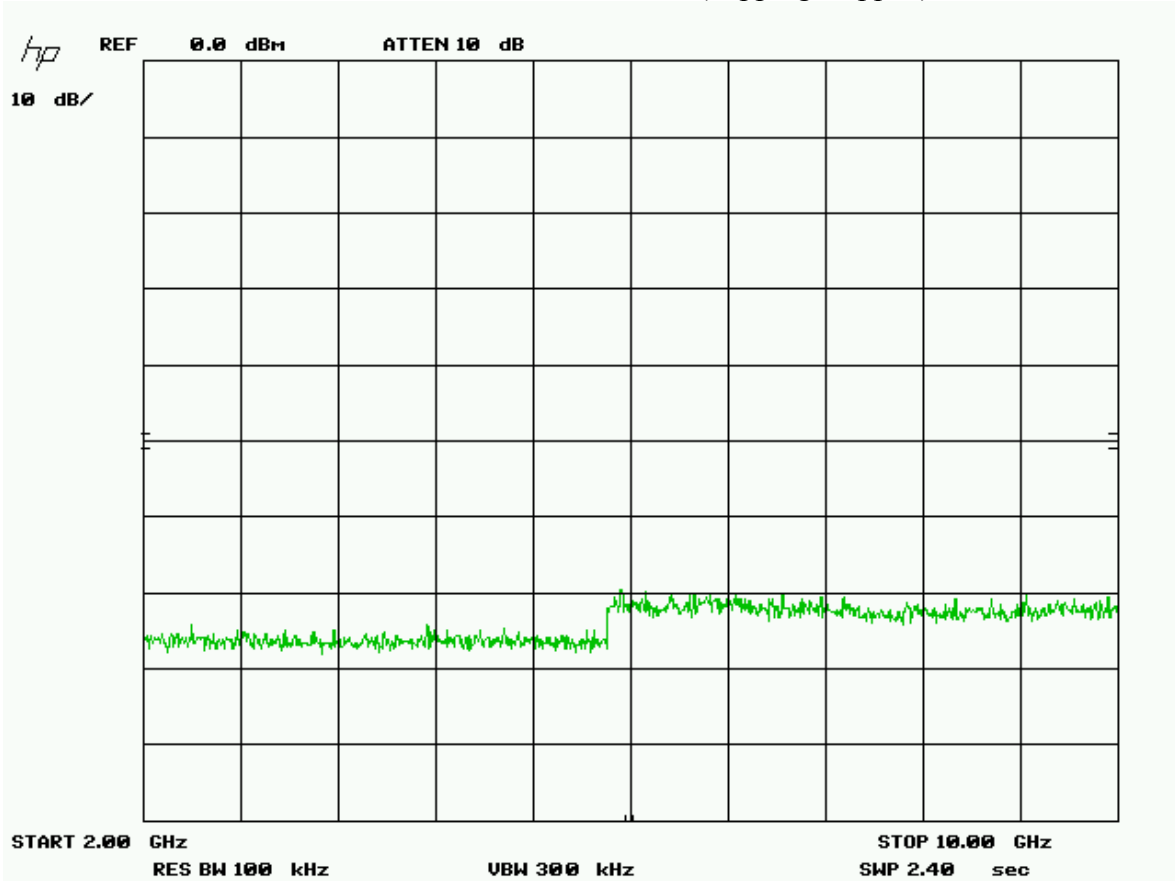
3<sup>rd</sup> to 10<sup>th</sup> Harmonics – Hopping Mode




Note: This graph was max-hold for a minimum of 20 sweeps. No emissions were detected, however the marker shows where a harmonic may have been present.

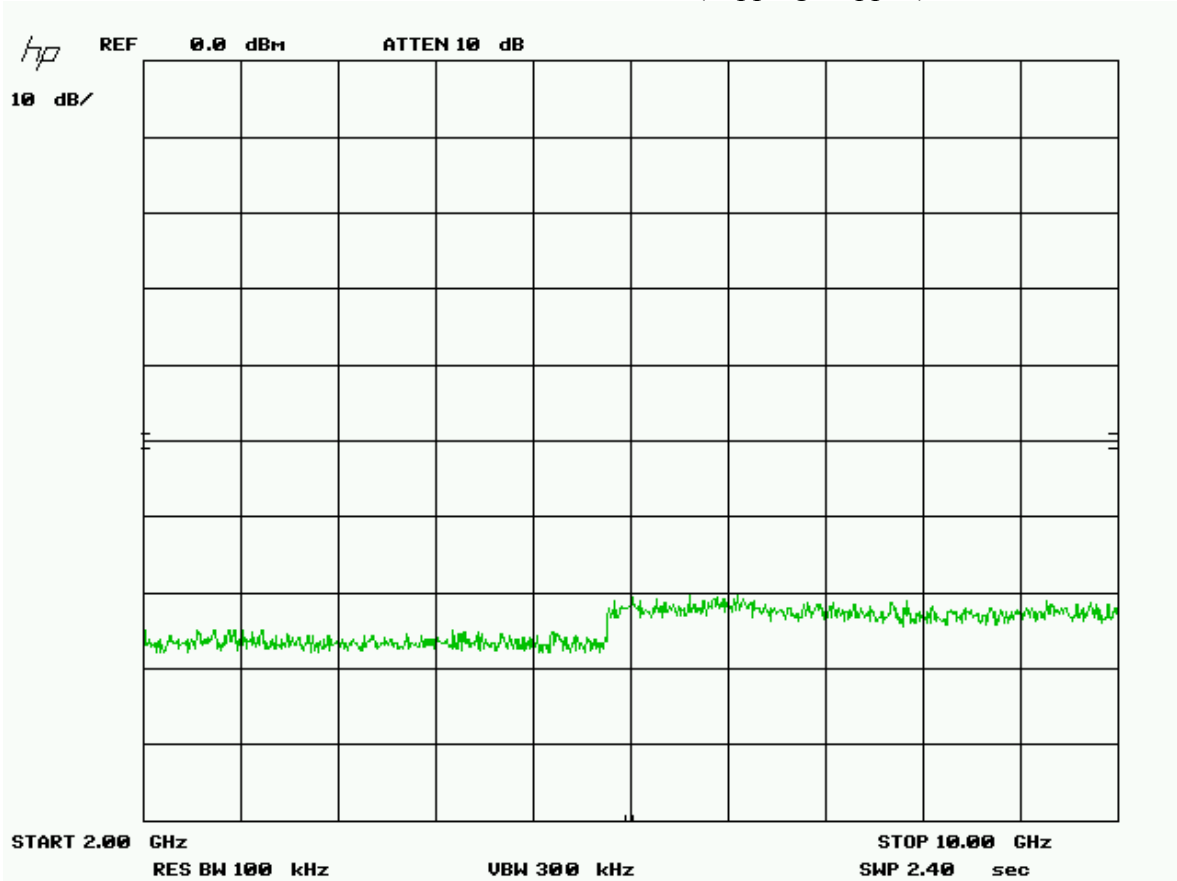
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


3<sup>rd</sup> to 10<sup>th</sup> Harmonics – Low Band (hopping stopped)



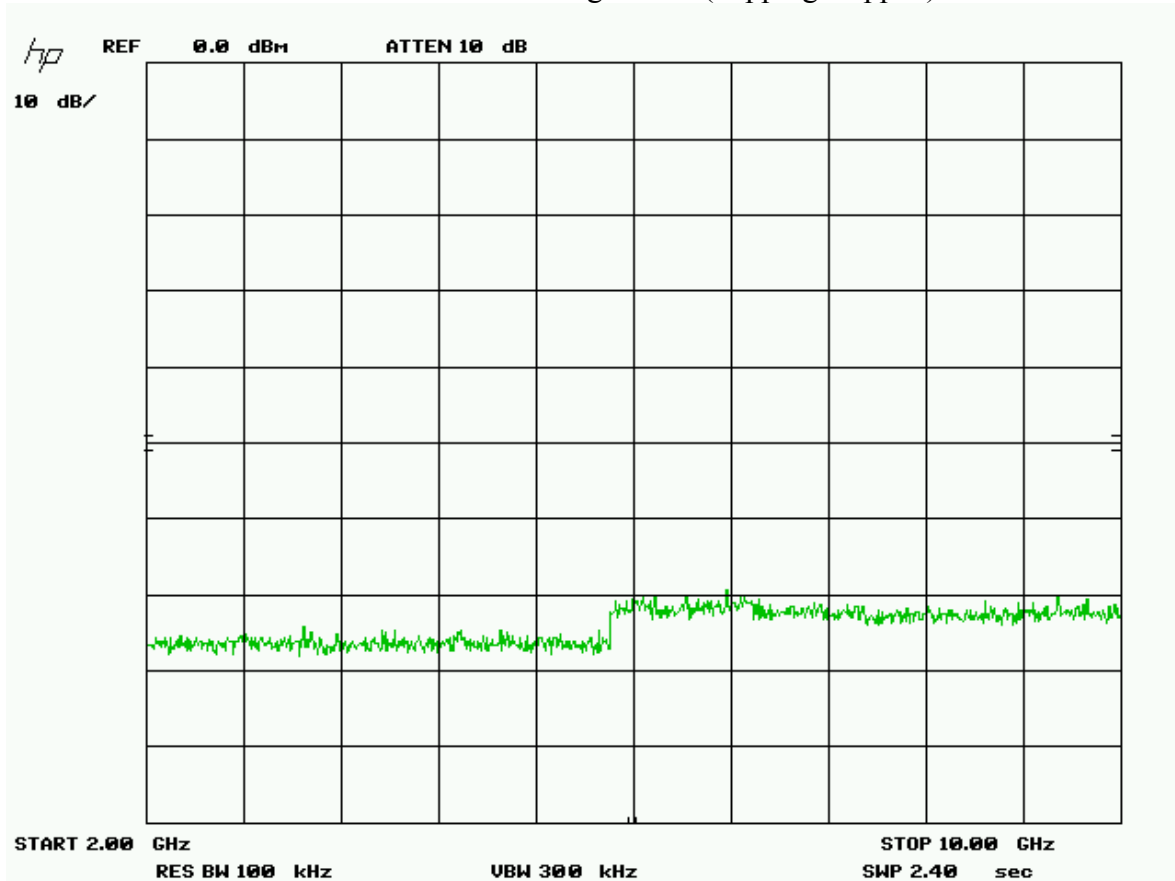
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

3<sup>rd</sup> to 10<sup>th</sup> Harmonics – Mid Band (hopping stopped)




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

3<sup>rd</sup> to 10<sup>th</sup> Harmonics – High Band (hopping stopped)



Note: See ‘Appendix B – EUT & Test Setup Photographs’ for photos showing the test set-up.




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B\_Rev1"

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## ***Time Of Occupancy (Dwell time)***

### **Purpose**

The purpose of this test is to ensure that the RF energy of frequency hopping systems is hopping at a minimum defined rate. This helps ensure sufficient time off to enable other frequency hopping devices to co-operate within this allocated band.

### **Limits**


For 902 to 928 MHz systems, the limits are as defined in 47 CFR FCC Part 15 Section 15.247(a)(1)(i).

For systems with greater than a 20 dB BW of a hopping channel, and greater than 50 hopping channels, such as this EUT, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period.

### **Results**


The EUT passed the requirements. The EUT cycles through its pseudo-random generated list of hopping frequencies every 17 seconds. The on time duration of each hop is 21.4 msec. The scaling factor to an average 20 second period is 20/17 (1.177).

Thus the EUT achieves an average occupancy of 25 msec within a 20 second period. This is under the 400 msec limit.

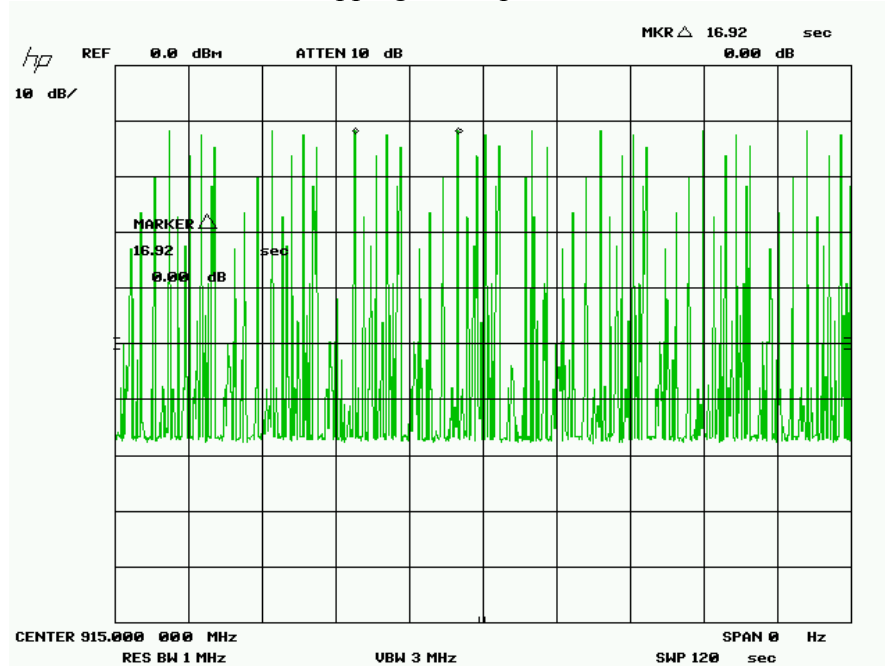
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Graph(s)

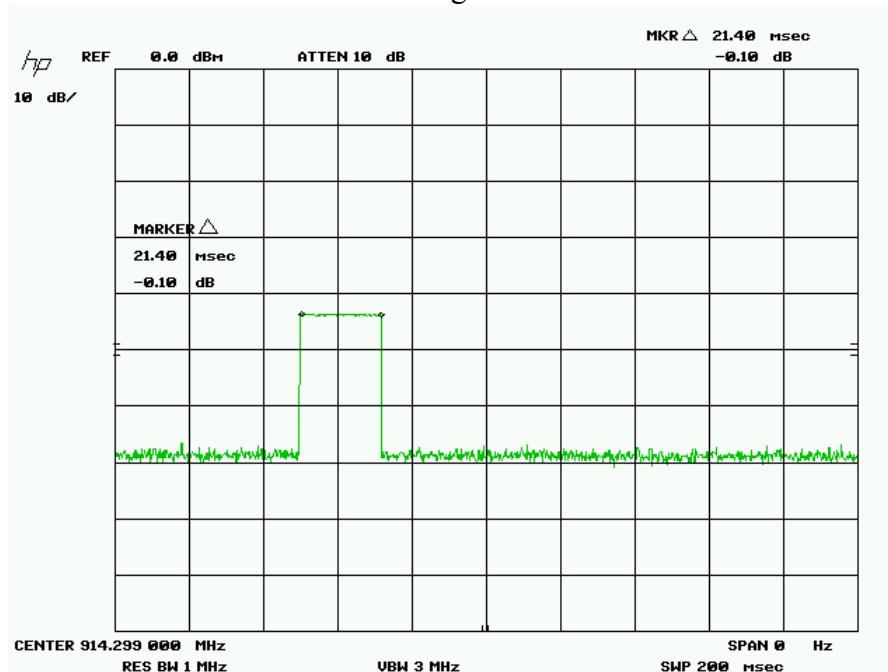
The first graph shown below shows the repeat time of the pseudorandom generated hopping list. This graph was taken over a period of 120 seconds. The second graph shows the on time during each transmission. Note that in the first graph, the peak represents the 'on' of the frequency being measured. The lower signals are artifacts of nearby channels due to the wide resolution BW used.


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

### Hopping List repeat rate



### On time during each channel




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Note: See ‘Appendix B – EUT & Test Setup Photographs’ for photos showing the test set-up.

### Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 1 dB	FP-50-1	Trilithic	NCR	NCR	GEMC 38
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Attenuator 6 dB	FP-50-6	Trilithic	NCR	NCR	GEMC 41
Attenuator 10 dB	FP-50-10	Trilithic	NCR	NCR	GEMC 42
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	GEMC 43
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	GEMC 49

This report module is based on GEMC template “FCC – Power Line Conducted Emissions Class B\_Rev1”

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


## ***Maximum Permissible Exposure***

### **Purpose**

The purpose of this test is to ensure that the RF energy intentionally transmitted, in terms of power density emitted from the EUT at a stated operating distance does not exceed the limits listed below as defined in the applicable test standard, as calculated based upon readings obtained during testing. This helps protect human exposure to excessive RF fields.

### **Limit(s) and Method**

The limits, as defined in FCC 15.247(i), and FCC 1.1310 Table 1 (B) limits for general public exposure was applied. The limit for the frequency range of 300 MHz to 1500 MHz is  $f/1500 \text{ mW/cm}^2$ , where  $f$  is the frequency in MHz. For a worst case limit, the lowest frequency used was for limit calculation purposed. The limit was calculated to be  $900/1500$ , or  $0.6 \text{ mW/cm}^2$ . The distance used for calculations was 20cm, as this is the minimum distance an operator will be from the EUT during normal operation.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Measurement Uncertainty

Measurement uncertainty does not apply to this requirement, as this is a calculated result based upon readings obtained. The measurement uncertainty of this calculation can be approximated by the measurement uncertainty of the peak power, combined with the measurement uncertainty of the antenna gain, which was not available at the time of evaluation.

## Results

The EUT passed the requirements. The worst case calculated power density was 0.15 mW/cm<sup>2</sup> this is under the 0.6 mW/cm<sup>2</sup> requirement.

## Calculations

Method 1 (conducted power)

$$P_d = (P_t * G) / (4 * \pi * R^2)$$

Where  $P_t = 29$  dBm or 795 mW as per Peak power conducted output


Where  $G = 0$  dB including cable loss, or numerically 1

Where  $R = 20$  cm

$$P_d = (795 \text{ mW} * 1) / (4 * \pi * 20\text{cm}^2)$$

$$P_d = 795 \text{ mW} / 5026 \text{ cm}^2$$

$$P_d = 0.15 \text{ mW/cm}^2$$


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

### Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Spectrum Analyzer	8566B	HP	2006-08-09	2007-08-09	GEMC 6
Quasi Peak Adapter	85650A	HP	2006-08-07	2007-08-07	GEMC 7
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	GEMC 40
Pre-Amplifier	PA-2.5-26	Vican	2006-09-12	2007-09-12	GEMC 9
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 28
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 29
RF Cable 0.5M	LMR-400-0.5M-50OHM-MN-MN	LexTec	NCR	NCR	GEMC 31

This report module is based on GEMC template "FCC - 15.209 - Radiated Emissions\_Rev1.doc"



Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	


## Appendix A – EUT Summary

For further details for filing purposes, refer to filing package.

### General EUT Description

<b>Manufacturer</b>	Omnex Control Systems, ULC #74-1833 Coast Meridian Road Port Coquitlam , BC
<b>EUT Name</b>	Model HS900T Professional Series Spread Spectrum Data Transmitter
<b>Approximate Size (LxWxH)</b>	11cm x 11cm x 2cm
<b>Equipment Category (Commercial / Residential / Medical)</b>	Industrial use RF transmitter.
<b>Input Voltage and Frequency</b>	24 Vdc
<b>Rated Input Current</b>	4 x 20 mA loop
<b>Intentional RF ( If yes describe )</b>	Yes – 902 to 928 MHz FHSS
<b>Table Top / Wall mount / Floor standing (choose table top if unsure)</b>	Table top (industrial mounted)
<b>I/O Connectors available on EUT</b>	DIN connectors
<b>Peripherals required for test</b>	None – EUT is self sufficient
<b>Minimum Separation distance from operator</b>	20 cm
<b>Types and lengths of all I/O cables</b>	RF Cable – varies.

Note the EUT is considered to have been received the date of the commencement of the first test, unless otherwise stated. For a close-up picture of the EUT, see ‘Appendix B – EUT & Test Setup Photographs’.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## EUT Functional Description

The HS900T is a frequency hopping spread spectrum (FHSS) transmitter designed to be compatible with FCC Part 15.247 (US) and RSS-210 (Canada) regulations for license free operation in the 902-928 MHz frequency band.

The transmitter will typically be DIN rail mounted in a cabinet and used to monitor and transmit the states of remote sensors measuring flow, temperature, pH, level, gas concentrations, etc. The transmitter employs an MCX(F) connector for antenna termination and is intended for professional installation only. The transmitter is powered by an external 24VDC regulated supply.

The EUT will be greater than 20 cm from the operator during normal operation.

## EUT Configuration

The EUT was configured in the following way during the tests. 24 VDC was applied to the Black and Red wires, as per instruction.

## Operational Setup

These devices are required to be attached to the EUT for its normal operation. None required, RF transmit operation is when DC is applied to product.


## Test Signals Required For Test

The following patterns or signals were generated during test by the peripherals as described above to exercise the EUT during testing.


None required.

## Modifications Required for Compliance

No modifications were required.

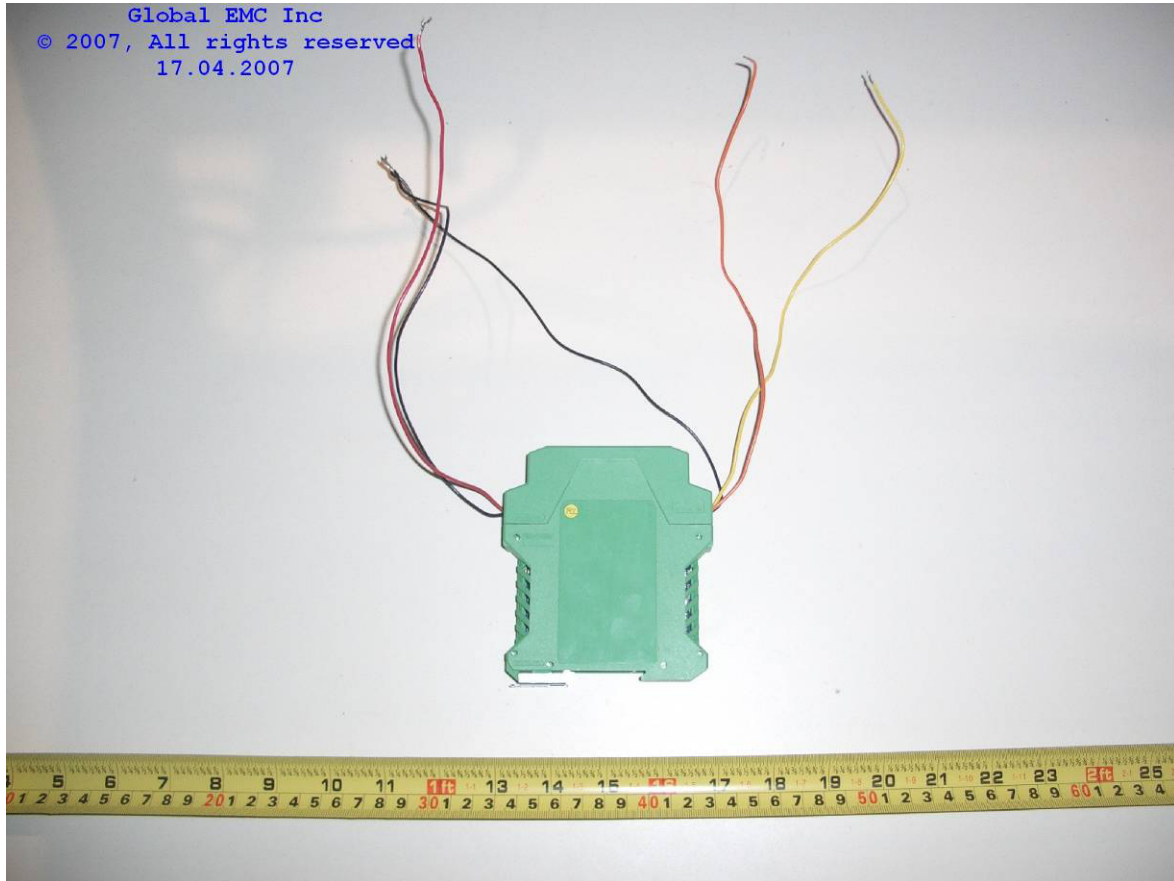
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

## Appendix B – EUT and Test Setup Photographs


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Note: These photos are for information purposes only. Also refer to PDF files that are separate from this test report.

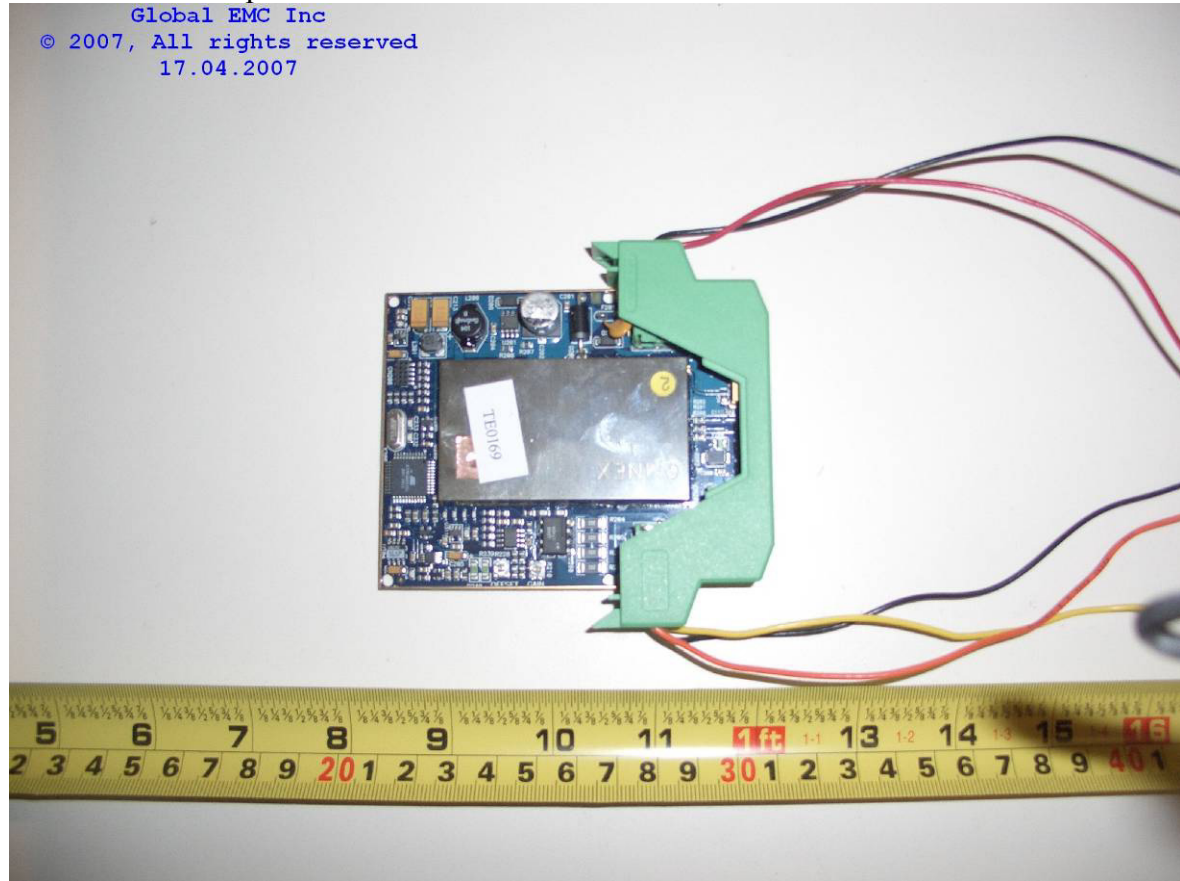
EUT External




Note: This photo can additionally be referenced in the separately provided 'HS900T ExtPho.PDF' file.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

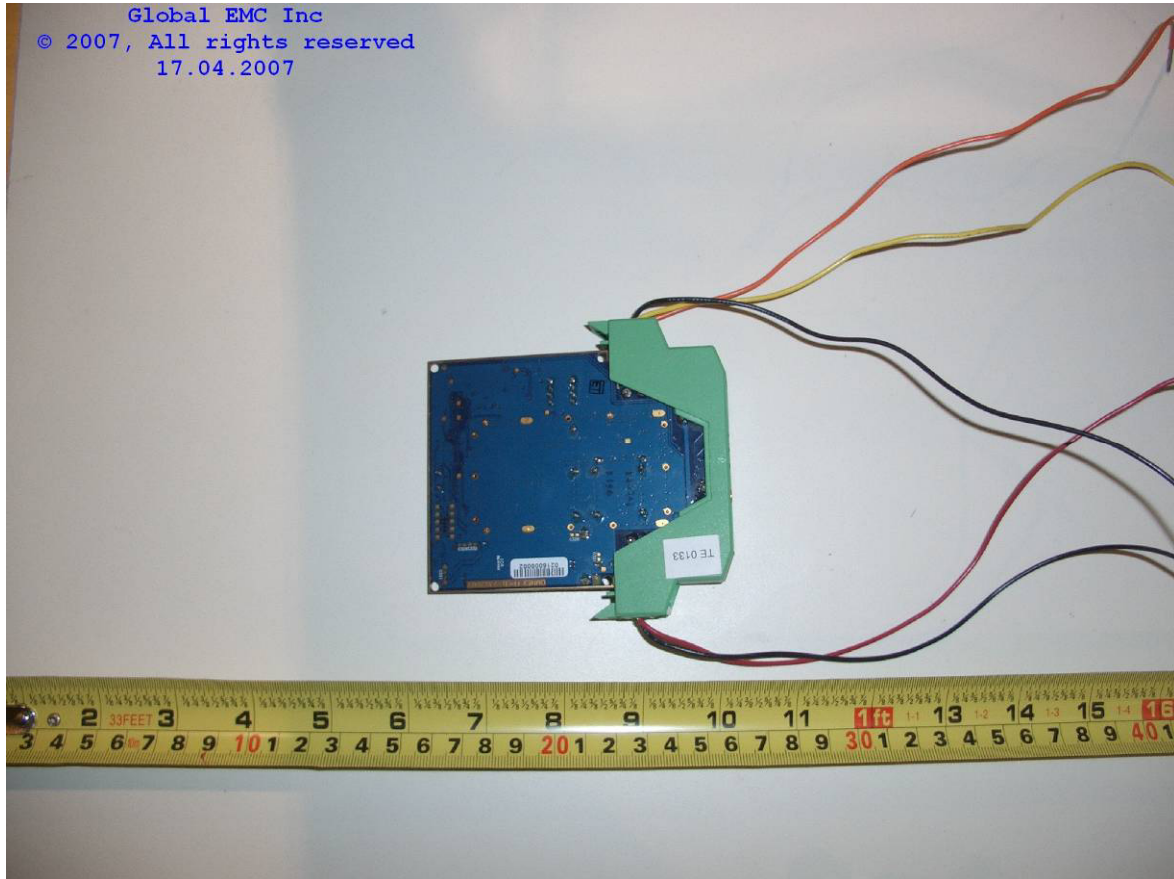
EUT – Internal Top




Note: This photo can additionally be referenced in the separately provided ‘HS900T IntPho.PDF’ file.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

EUT – Internal Bottom




Note: This photo can additionally be referenced in the separately provided ‘HS900T IntPho.PDF’ file.

Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

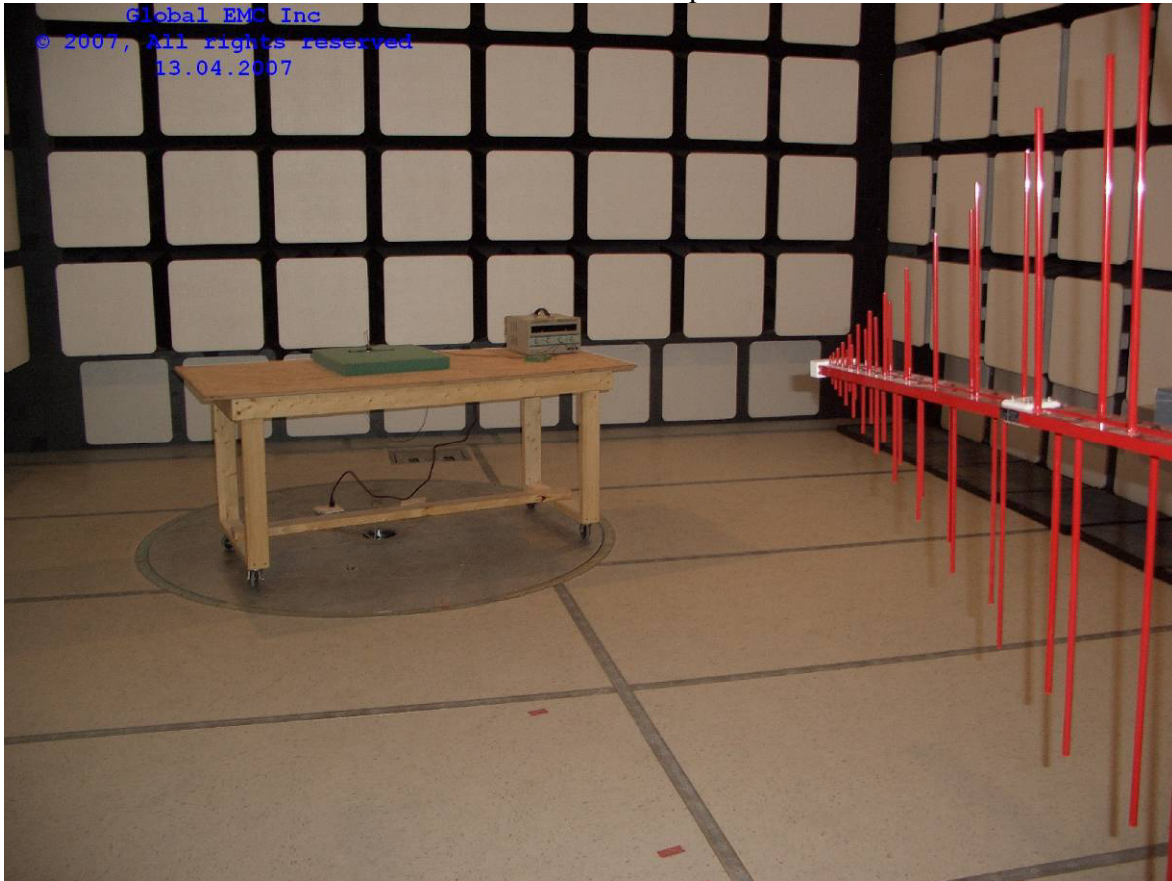
EUT – ¼ wave whip antenna



Note the cable used was 175 cm of RG 174A/U.


Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Radiated Emissions Setup Photo 1

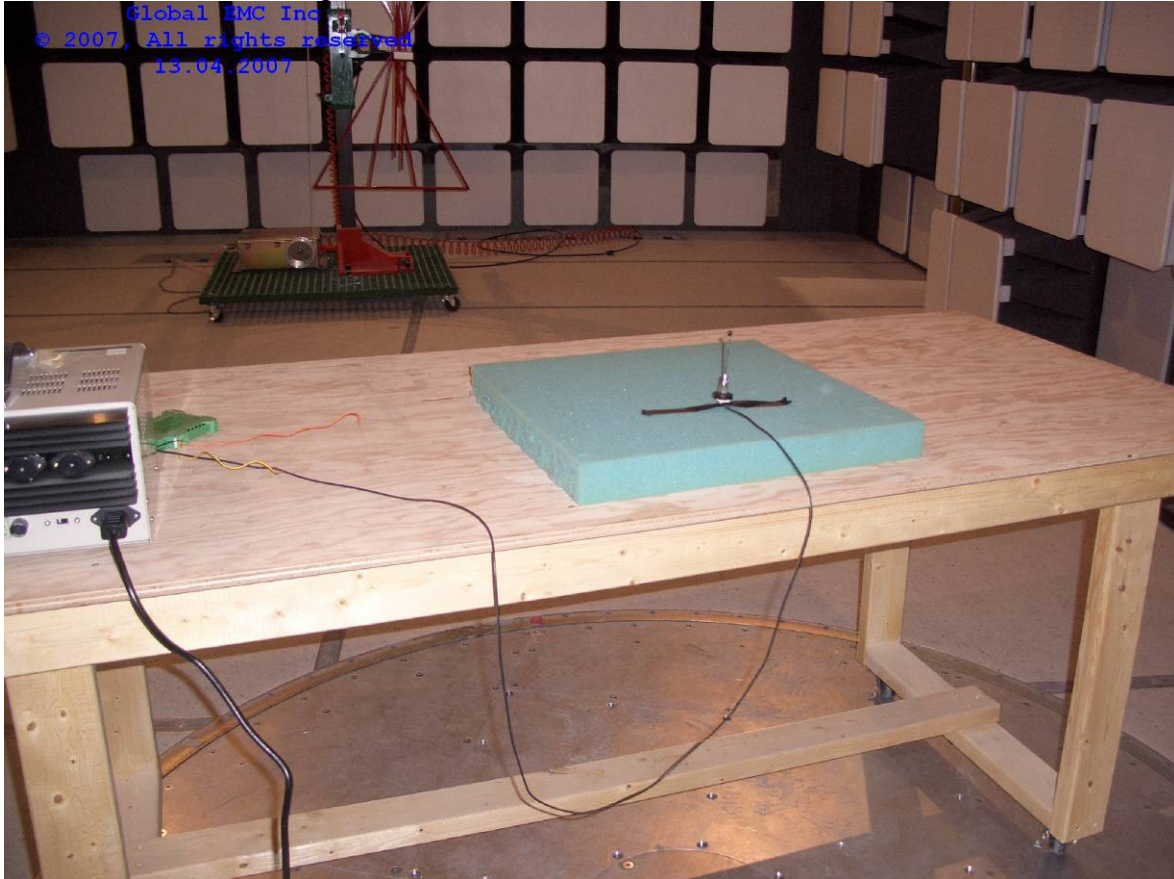


Note: This photo can additionally be referenced in the separately provided 'HS900T TSup.PDF' file.




Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

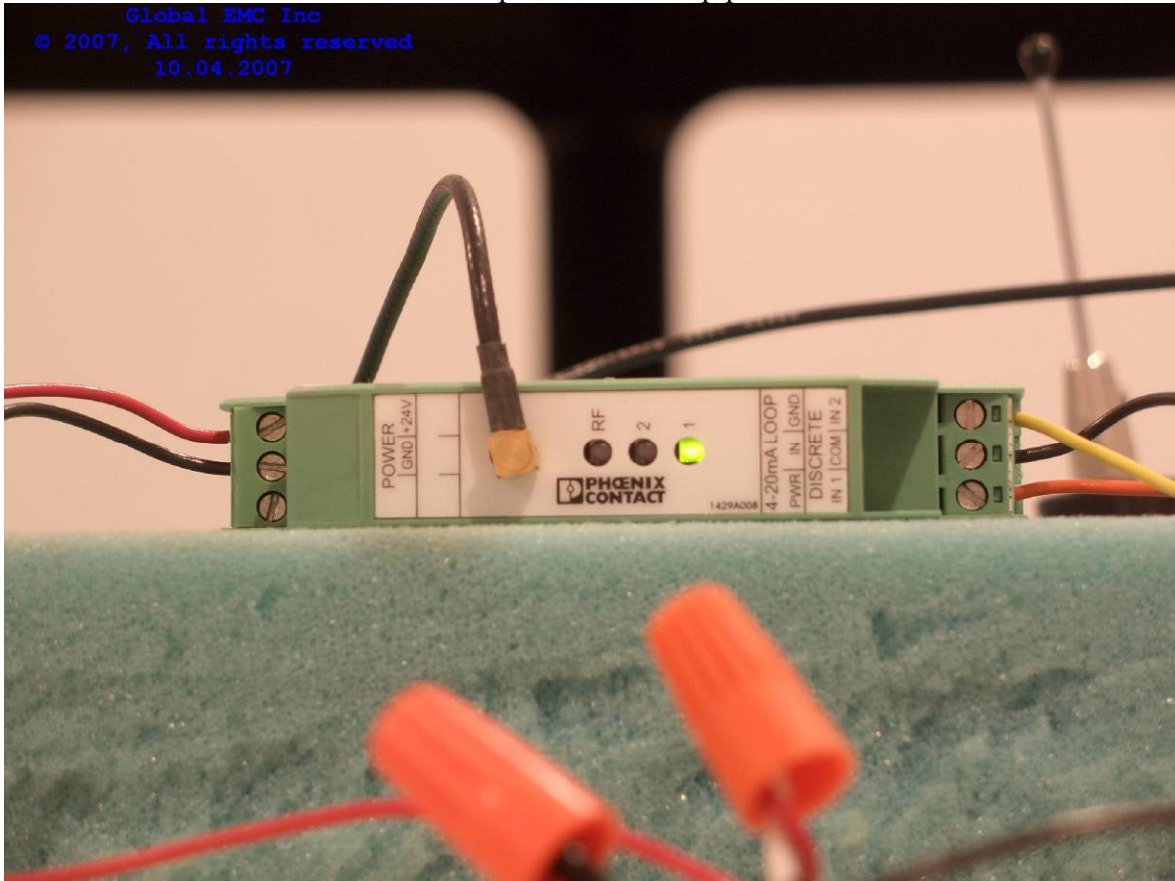
Radiated Emissions Setup – Photo 2




Note: This photo can additionally be referenced in the separately provided ‘HS900T TSup.PDF’ file.

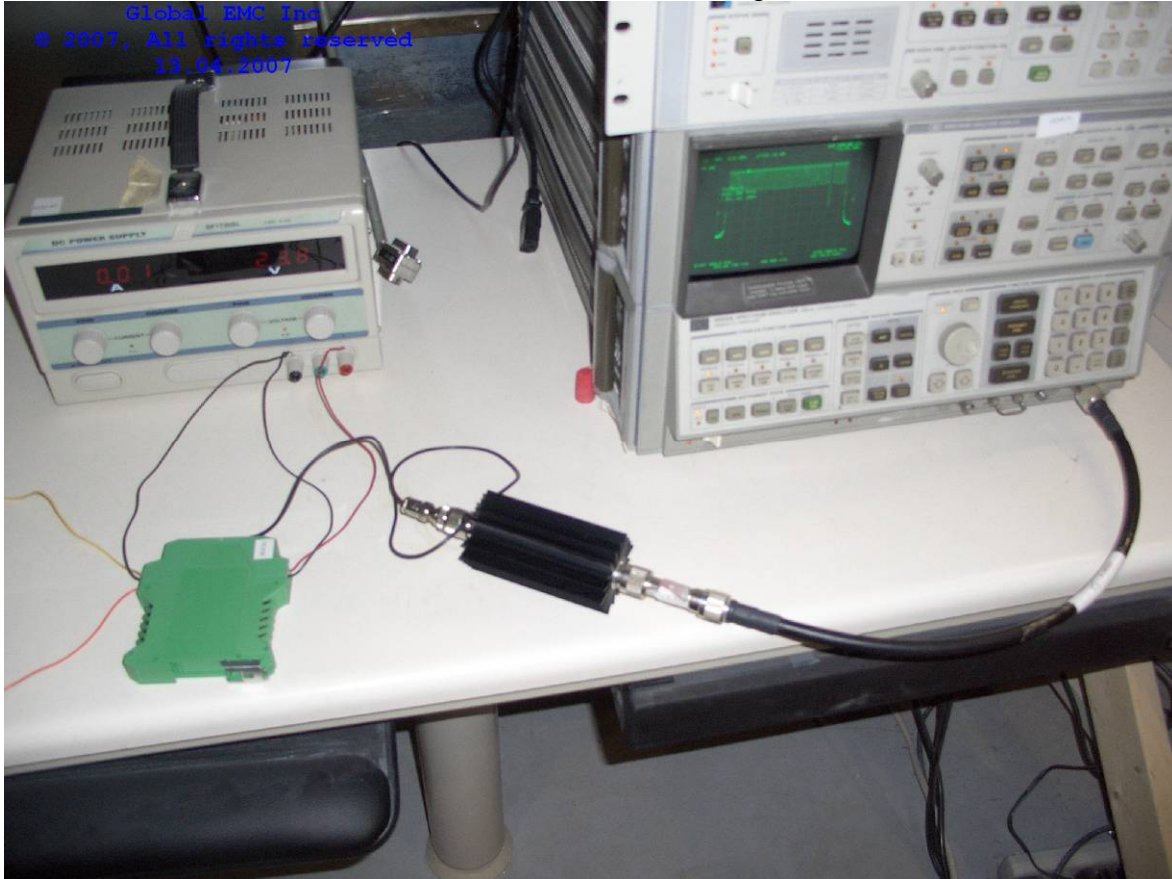
Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

Device operation close up photo



Client	<b>Omnex Control Systems, ULC</b>	
Product	Model HS900T Professional Series Spread Spectrum Data Transmitter	
Standard(s)	RSS 210 Issue 6:2005 / FCC Part 15 Subpart C 15:2006	

### Conducted Emissions Setup



Note: This photo can additionally be referenced in the separately provided 'HS900T TSup.PDF' file.