Excellence in Compliance Testing

Certification Test Report

FCC ID: TEB-HUNTSU864
IC: 5931A-HUNTSU864

FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210

ACS Report Number: 11-0366.W04.11.A

Manufacturer: Hunt Technologies, Inc.
Model: 0864

Test Begin Date: September 28, 2011
Test End Date: October 28, 2011

Report Issue Date: October 31, 2011

FOR THE SCOPE OF ACCREDITATION UNDER LAB Code 200612-0

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

Reviewed by: _____

Kirby Munroe
Director, Wireless Certifications
ACS, Inc.

This report contains 20 pages

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1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations and Industry Canada's Radio Standards Specification RSS-210 for a class II Permissive change. This class II permissive change is to include a 50kbps data rate (i.e. SUN Mode) and to address a change in the TCXO. The SUN mode 50kbps data rate replaces the Wide mode 76.8kbps data rate.

1.2 Product description

Hunt Technologies' 0864 consists of a 900 MHz transceiver and a separate ZigBee transceiver on a single printed circuit board. The 900 MHz circuit, operating in the 902-928 MHz frequency band, is a frequency hopping spread spectrum transceiver utilizing GFSK modulation. The ZigBee circuit is a direct sequence spread spectrum transmitter operating in the 2400-2483.5 MHz unlicensed band and utilizing O-QPSK modulation. The 0864 module will be assembled into a Landis+Gyr FOCUS AX meter before delivery to the customer. This report specifically addresses the testing of the 900 MHz transceiver.

The FOCUS AX Universal RF endpoint model 0864 will be transmitting and receiving over 902-928 MHz ISM band. It collects metering data from the meter module and transmits it to electric utility companies. It can also receive and repeat data from other similar modules or a central collector module

Technical Details:
The EUT provides 4 distinct modes of operation as outlined below.

Mode of Operation	Frequency Range (MHz)	Number of Channels	Channel Separation (kHz)	Data Rates Supported (kbps)
Wide Mode	902.3 - 927.8	86	300	9.6, 19.2, 38.4, 115.2
Narrow Mode	904.0 - 927.9	240	100	9.6, 19.2, 38.4
Full Narrow Mode	902.3 - 927.8	256	100	9.6, 19.2, 38.4
*SUN Mode	902.2 – 927.8	129	200	50.0

* New mode evaluated under class II permissive change. All other modes have been evaluated under the original certification.

Modulation format: FSK
Antenna Type/Gain: 3dBi; inverted F antenna
Operating Voltage: 12VDC; 240Vac / 60Hz

Manufacturer Information:
Hunt Technologies, Inc.
6436 County Rd 11
Pequot Lakes, MN 56472

Test Sample Serial Numbers: E115M311100017572

Test Sample Condition: The test samples were provided in good working order with no visible defects.

1.3 Test Methodology and Considerations

The addition of the 50kbps data rate introduces an extended frequency band, alternate channel spacing and alternate number of hopping channels when compared to the originally certified device, therefore all characteristics with respect to the 50kbps data rate were evaluated and reported.

2 TEST FACILITIES

2.1 Location

The radiated and conducted emissions test sites are located at the following address:

Advanced Compliance Solutions
5015 B.U. Bowman Drive
Buford, GA 30518
Phone: (770) 831-8048
Fax: (770) 831-8598

2.2 Laboratory Accreditations/Recognitions/Certifications

ACS is accredited to ISO/IEC 17025 by the National Institute of Standards and Technology under their National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 200612-0. Unless otherwise specified, all tests methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

The Semi-Anechoic Chamber Test Site, Open Area Test Site (OATS) and Conducted Emissions Site have been fully described, submitted to, and accepted by the FCC, Industry Canada and the Japanese Voluntary Control Council for Interference by information technology equipment.

FCC Registration Number: 511277
Industry Canada Lab Code: IC 4175A-1
VCCI Member Number: 1831

- VCCI OATS Registration Number R-1526
- VCCI Conducted Emissions Site Registration Number: C-1608

2.3 Radiated Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The Semi-Anechoic Chamber Test Site consists of a 20' x 30' x 18' shielded enclosure. The chamber is lined with Toyo Ferrite Grid Absorber, model number FFG-1000. The ferrite tile grid is 101 x 101 x 19mm thick and weighs approximately 550 grams. These tiles are mounted on steel panels and installed directly on the inner walls of the chamber.

The turntable is 150cm in diameter and is located 160cm from the back wall of the chamber. The chamber is grounded via 1 - 8' copper ground rod, installed at the center of the back wall, it is bound to the ground plane using 3/4" stainless steel braided cable.

The turntable is all steel, flush mounted table installed in an all steel frame. The table is remotely operated from inside the control room located 25' from the range. The turntable is electrically bonded to the surrounding ground plane via steel fingers installed on the edge of the turn table. The steel fingers make constant contact with the ground plane during operation.

Behind the turntable is a 3' x 6' x 4' deep shielded pit used for support equipment if necessary. The pit is equipped with 1 - 4" PVC chases from the turntable to the pit that allow for cabling to the EUT if necessary. The underside of the turntable can be accessed from the pit so cables can be supplied to the EUT from the pit.

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3-1 below:

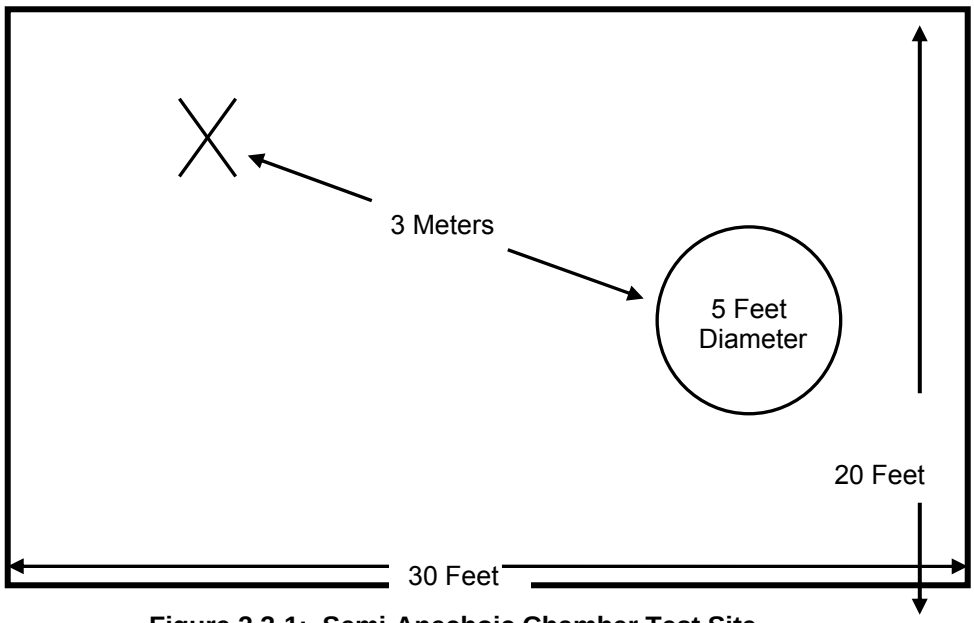


Figure 2.3-1: Semi-Anechoic Chamber Test Site

2.3.2 Open Area Tests Site (OATS)

The open area test site consists of a 40' x 66' concrete pad covered with a perforated electro-plated galvanized sheet metal. The perforations in the sheet metal are 1/8" holes that are staggered every 3/16". The individual sheets are placed to overlap each other by 1/4" and are riveted together to provide a continuous seam. Rivets are spaced every 3" in a 3 x 20 meter perimeter around the antenna mast and EUT area. Rivets in the remaining area are spaced as necessary to properly secure the ground plane and maintain the electrical continuity.

The entire ground plane extends 12' beyond the turntable edge and 16' beyond the antenna mast when set to a 10 meter measurement distance. The ground plane is grounded via 4 - 8' copper ground rods, each installed at a corner of the ground plane and bound to the ground plane using 3/4" stainless steel braided cable.

The turntable is an all aluminum 10' flush mounted table installed in an all aluminum frame. The table is remotely operated from inside the control room located 40' from the range. The turntable is electrically bonded to the surrounding ground plane via steel fingers installed on the edge of the turn table. The steel fingers make constant contact with the ground plane during operation.

Adjacent to the turntable is a 7' x 7' square and 4' deep concrete pit used for support equipment if necessary. The pit is equipped with 5 - 4" PVC chases from the pit to the control room that allow for cabling to the EUT if necessary. The underside of the turntable can be accessed from the pit so cables can be supplied to the EUT from the pit. The pit is covered with 2 sheets of 1/4" diamond style re-enforced steel sheets. The sheets are painted to match the perforated steel ground plane; however the underside edges have been masked off to maintain the electrical continuity of the ground plane. All reflecting objects are located outside of the ellipse defined in ANSI C63.4.

A diagram of the Open Area Test Site is shown in Figure 2.3-2 below:

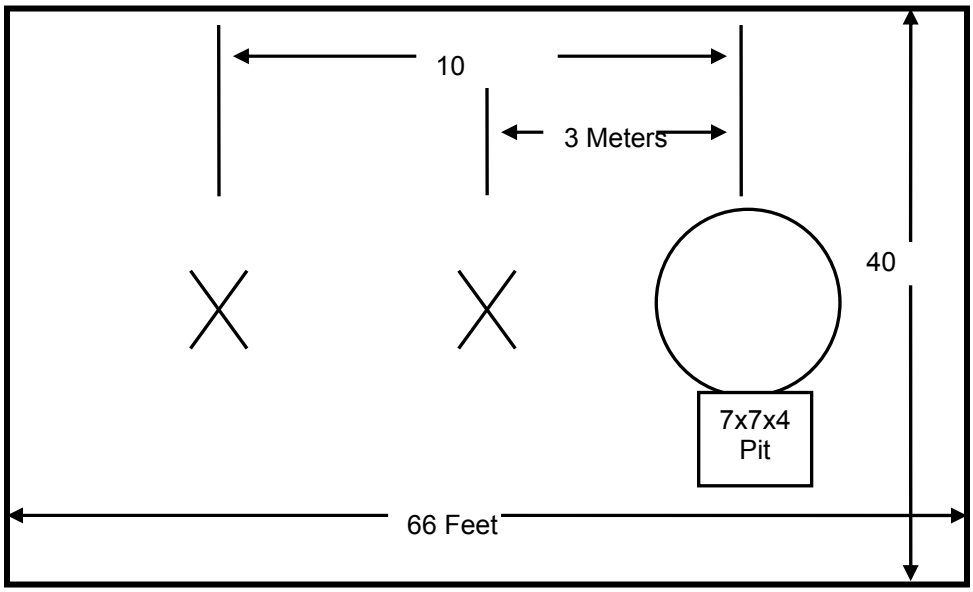


Figure 2.3-2: Open Area Test Site

2.4 Conducted Emissions Test Site Description

The AC mains conducted EMI site is located in the main EMC lab. It consists of an 8' x 8' solid aluminum horizontal group reference plane (GRP) bonded every 3" to an 8' X 8' vertical ground plane.

The site is of sufficient size to test table top and floor standing equipment in accordance with section 6.1.4 of ANSI C63.4.

A diagram of the room is shown below in figure 4.1.3-1:

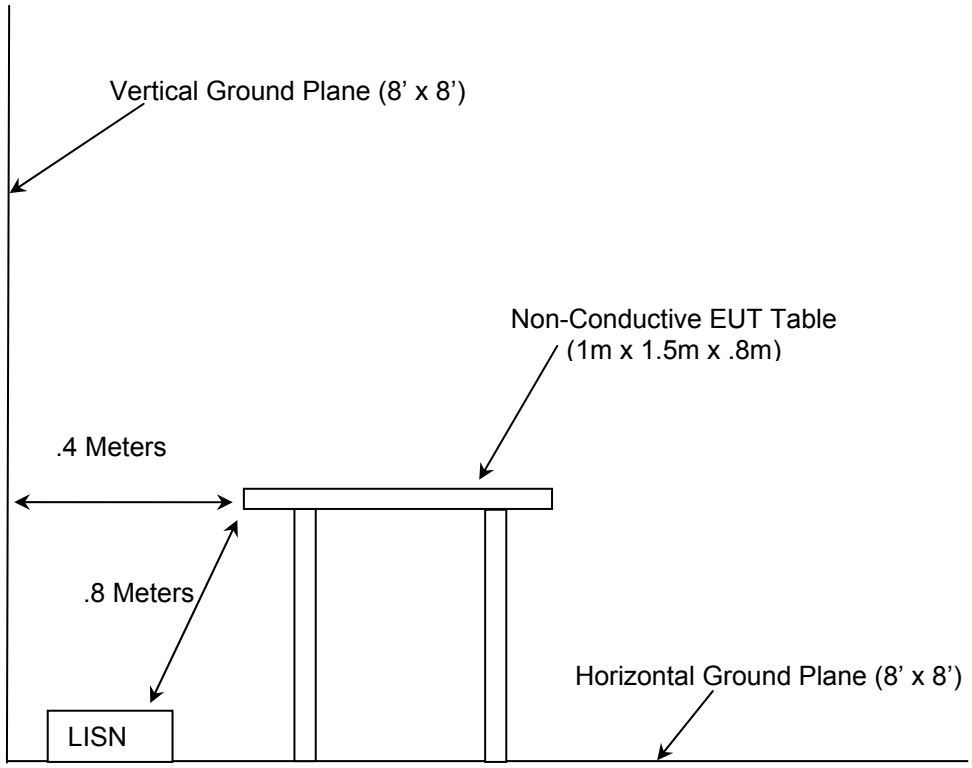


Figure 2.4-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

- ANSI C63.4-2003: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9KHz to 40GHz
- US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures, 2011
- US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2011
- FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems, March 30, 2000
- Industry Canada Radio Standards Specification: RSS-210 - Low-power License-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, Issue 8, December 2010
- Industry Canada Radio Standards Specification: RSS-GEN – General Requirements and Information for the Certification of Radiocommunication Equipment, Issue 3, December 2010.

4 LIST OF TEST EQUIPMENT

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

Table 4-1: Test Equipment

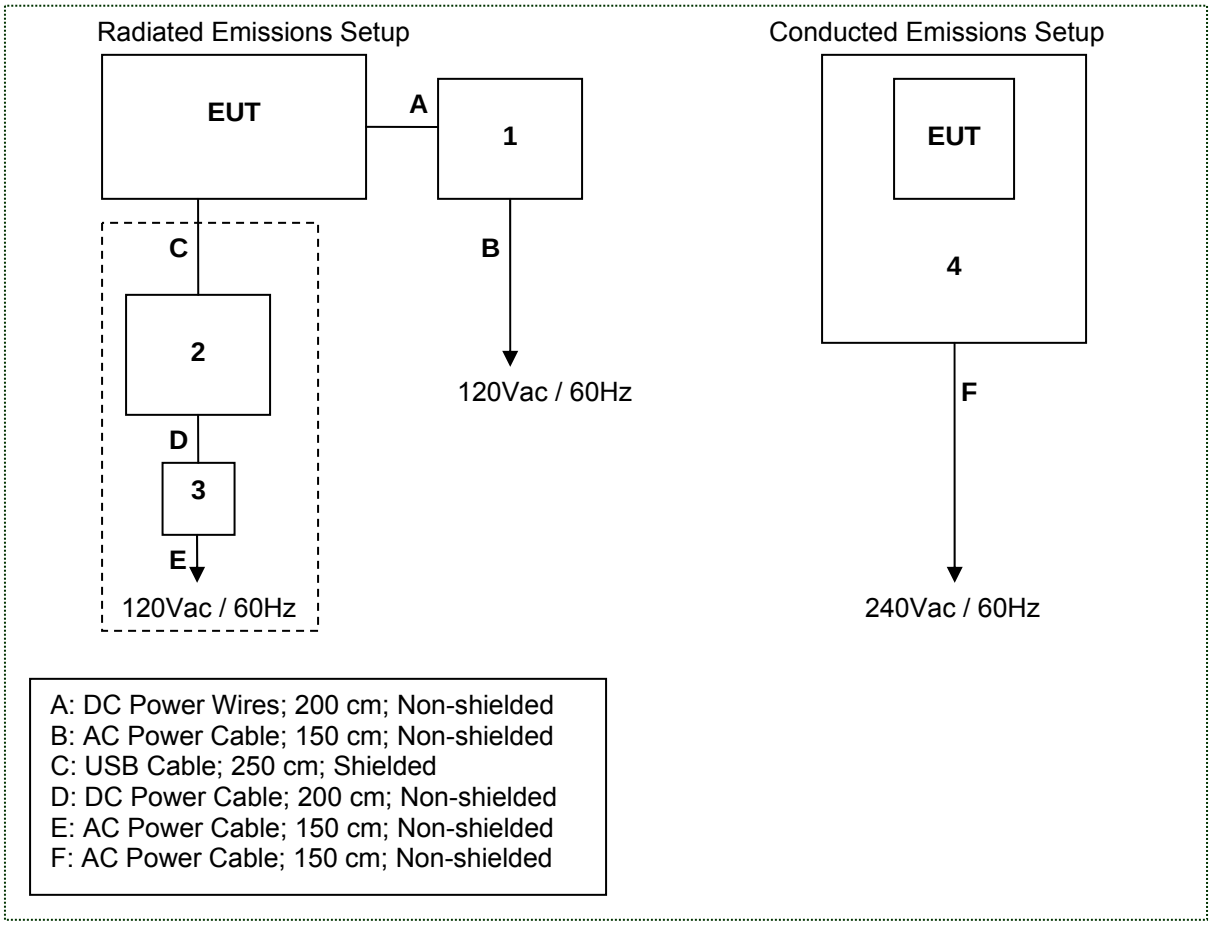
AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
1	Rohde & Schwarz	ESMI - Display	Spectrum Analyzers	833771/007	9/23/2010	9/23/2012
2	Rohde & Schwarz	ESMI-Receiver	Spectrum Analyzers	839587/003	9/23/2010	9/23/2012
3	Rohde & Schwarz	ESMI - Display	Spectrum Analyzers	839379/011	5/26/2011	5/26/2013
4	Rohde & Schwarz	ESMI - Receiver	Spectrum Analyzers	833827/003	5/26/2011	5/26/2013
30	Spectrum Technologies	DRH-0118	Antennas	970102	4/27/2011	4/27/2013
41	Electro-Metrics	BIA-25	Antennas	2925	12/21/2010	12/21/2012
73	Agilent	8447D	Amplifiers	2727A05624	3/21/2011	3/21/2012
73	Agilent	8447D	Amplifiers	2727A05624	9/30/2011	9/30/2012
152	EMCO	3825/2	LISN	9111-1905	11/2/2010	11/2/2012
167	ACS	Cable Set	Cable Set	167	1/26/2011	1/26/2012
168	Hewlett Packard	11947A	Attenuators	44829	2/4/2011	2/4/2012
291	Florida RF Cables	SMRE-200W-12.0-SMRE	Cables	None	12/7/2010	12/7/2011
292	Florida RF Cables	480.0-SMR	Cables	None	4/11/2011	4/11/2012
324	ACS	Belden	Cables	8214	7/6/2011	7/6/2012
331	Microwave Circuits	H1G513G1	Filters	31417	7/11/2011	7/11/2012
338	Hewlett Packard	8449B	Amplifiers	3008A01111	3/24/2011	3/24/2012
340	Aeroflex/Weinschel	AS-20	Attenuators	7136	8/29/2011	8/29/2012
412	Electro Metrics	LPA-25	Antennas	1241	7/28/2010	7/28/2012
422	Florida RF	MS-200AW-72.0-SM	Cables	805	12/29/2010	12/29/2011

5 SUPPORT EQUIPMENT

Table 5-1: Support Equipment

Item	Equipment Type	Manufacturer	Model Number	Serial Number
1	DC Power Supply	TryGon Electronics	DL40-1	489512
2	Laptop	Dell	PP10L	CN-0H2049-48643-46F-1251
3	Laptop Power Supply	Dell	PA-1650-05D2	CN-0F7970-71615-55M-6BF4
4	Electric Meter	Landis + Gyr	FM2S	109 796 946

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM



7 SUMMARY OF TESTS

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

7.1 Antenna Requirement – FCC: Section 15.203

The 0864 utilizes an integral PCB inverted F antenna which cannot be removed without permanently damaging the device thus satisfying Part 15.203.

7.2 Power Line Conducted Emissions – FCC: Section 15.207 IC: RSS-Gen 7.2.4

7.2.1 Measurement Procedure

ANSI C63.4 sections 6 and 7 were the guiding documents for this evaluation. Conducted emissions were performed from 150kHz to 30MHz with the spectrum analyzer's resolution bandwidth set to 9kHz and the video bandwidth set to 30kHz. The calculation for the conducted emissions is as follows:

Corrected Reading = Analyzer Reading + LISN Loss + Cable Loss
Margin = Applicable Limit - Corrected Reading

7.2.2 Measurement Results

Results of the test are shown below in and Tables 7.2.2-1 to 7.2.2-2.

Table 7.2.2-1: Line 1 Conducted EMI Results

Frequency (MHz)	Level (dBuV)	Transducer (dB)	Limit (dBuV)	Margin (dB)	Line	PE	Detector
1.458000	18.90	10.0	56	37.1	L1	GND	QP
24.390000	12.20	9.4	60	47.8	L1	GND	QP
24.714000	17.40	9.4	60	42.6	L1	GND	QP
25.488000	13.40	9.4	60	46.6	L1	GND	QP
25.818000	15.50	9.3	60	44.5	L1	GND	QP
26.010000	13.10	9.3	60	46.9	L1	GND	QP
26.610000	21.80	9.4	60	38.2	L1	GND	QP
26.706000	12.30	9.4	60	47.7	L1	GND	QP
26.868000	13.80	9.4	60	46.2	L1	GND	QP
27.114000	13.50	9.4	60	46.5	L1	GND	QP
1.476000	7.00	10.0	46	39.0	L1	GND	AVG
24.162000	8.60	9.4	50	41.4	L1	GND	AVG
24.648000	7.80	9.4	50	42.2	L1	GND	AVG
25.704000	14.60	9.3	50	35.4	L1	GND	AVG
25.866000	10.50	9.3	50	39.5	L1	GND	AVG
26.130000	8.50	9.3	50	41.5	L1	GND	AVG
26.220000	8.30	9.4	50	41.7	L1	GND	AVG
26.748000	8.20	9.4	50	41.8	L1	GND	AVG
26.850000	9.80	9.4	50	40.2	L1	GND	AVG
26.976000	8.30	9.4	50	41.7	L1	GND	AVG

Table 7.2.2-2: Line 2 Conducted EMI Results

Frequency (MHz)	Level (dBuV)	Transducer (dB)	Limit (dBuV)	Margin (dB)	Line	PE	Detector
0.600000	10.40	10.0	56	45.7	L2	GND	QP
1.464000	19.60	10.0	56	36.4	L2	GND	QP
19.458000	9.60	9.8	60	50.4	L2	GND	QP
24.318000	12.10	9.4	60	47.9	L2	GND	QP
24.636000	10.50	9.4	60	49.5	L2	GND	QP
25.626000	12.80	9.3	60	47.2	L2	GND	QP
25.824000	11.80	9.3	60	48.2	L2	GND	QP
26.142000	12.20	9.3	60	47.8	L2	GND	QP
26.814000	11.00	9.4	60	49.0	L2	GND	QP
29.736000	9.90	9.2	60	50.1	L2	GND	QP
0.618000	7.20	10.0	46	38.8	L2	GND	AVG
1.524000	7.10	10.0	46	38.9	L2	GND	AVG
19.740000	6.50	9.8	50	43.5	L2	GND	AVG
24.216000	7.40	9.4	50	42.6	L2	GND	AVG
24.498000	7.00	9.4	50	43.0	L2	GND	AVG
25.596000	10.50	9.4	50	39.5	L2	GND	AVG
25.662000	11.50	9.3	50	38.5	L2	GND	AVG
25.980000	8.20	9.3	50	41.8	L2	GND	AVG
26.808000	7.40	9.4	50	42.6	L2	GND	AVG
29.424000	8.40	9.2	50	41.6	L2	GND	AVG

7.3 Peak Output Power - FCC Section 15.247(b)(2) IC: RSS-210 A8.4(1)

7.3.1 Measurement Procedure (Conducted Method)

The RF output of the equipment under test was directly connected to the input of the spectrum analyzer. The spectrum analyzer RBW was set such that RBW >> EBW. Data was collected with the EUT operating at maximum power per channelization.

7.3.2 Measurement Results

Results are shown below in Table 7.3.2-1 and Figures 7.3.2-1 to 7.3.2-3 below:

Table 7.3.2-1: RF Output Power

Frequency [MHz]	Level [dBm]
902.2	26.43
915.0	25.52
927.8	24.14

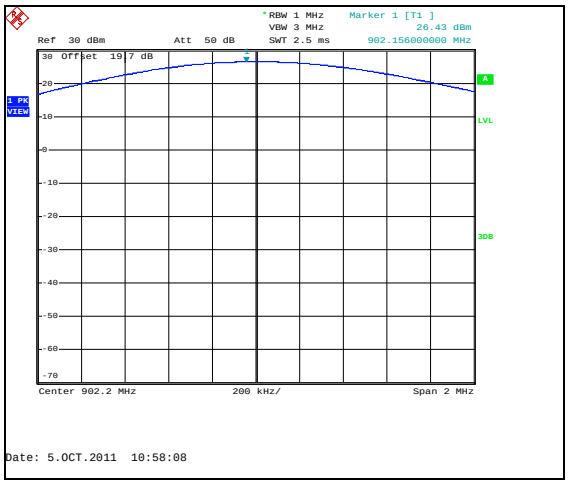


Figure 7.3.2-1: Output Power – 902.2MHz

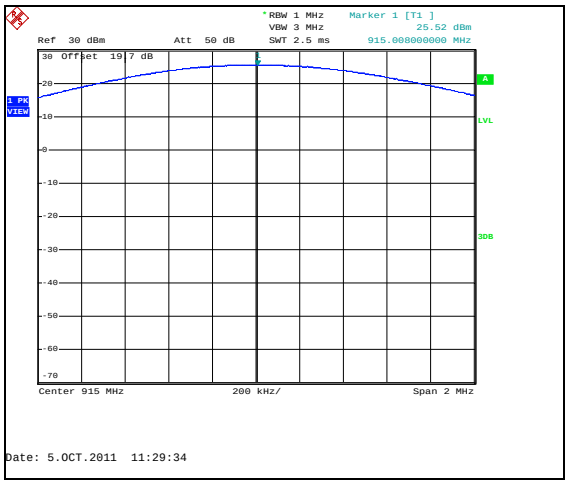


Figure 7.3.2-2: Output Power – 915MHz

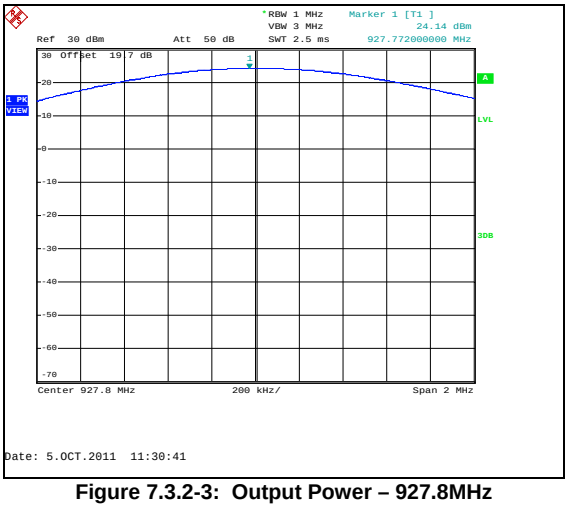


Figure 7.3.2-3: Output Power – 927.8MHz

7.4 Channel Usage Requirements

7.4.1 Carrier Frequency Separation – FCC: Section 15.247(a)(1) IC: RSS-210 A8.1(b)

7.4.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The span of the spectrum analyzer was set wide enough to capture two adjacent peaks and the RBW and VBW were set to ≥ 1% of the span.

Carrier frequency separation was measured for 50kbps data rate (i.e. SUN mode) and data presented in section 7.4.1.2 below.

7.4.1.2 Measurement Results

The adjacent channel separation was measured to be 200kHz for Sun Mode (129 channels). Results are shown below in Figure 7.4.1.2-1.

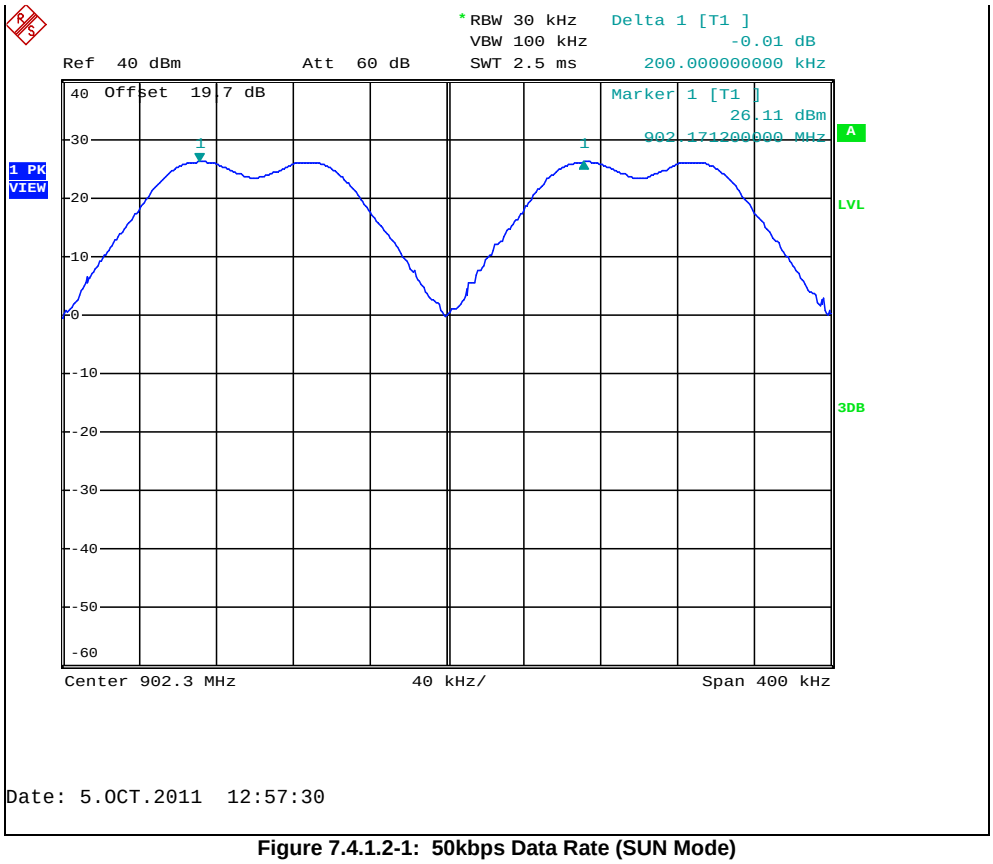


Figure 7.4.1.2-1: 50kbps Data Rate (SUN Mode)

7.4.2 Number of Hopping Channels – FCC: Section 15.247(a)(1)(i) IC: RSS-210 A8.1(c)

The 20dB bandwidth of the device is less than 250 kHz. The device employs > 50 hopping channels as required. Results are shown below in Figures 7.4.2-1 to 7.4.2-3.

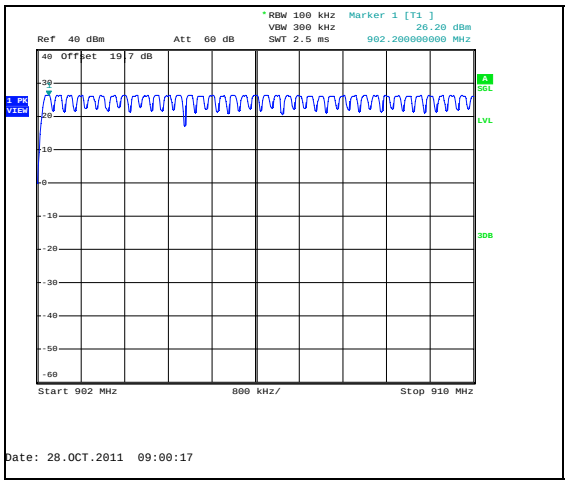


Figure 7.4.2-1: SUN Mode (129 Channels)

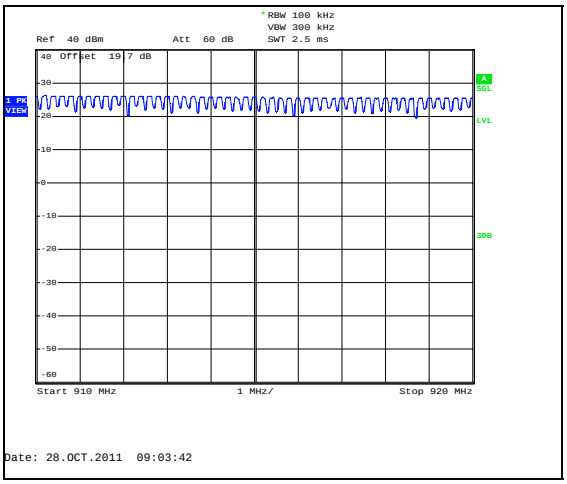


Figure 7.4.2-2: SUN Mode (129 Channels)

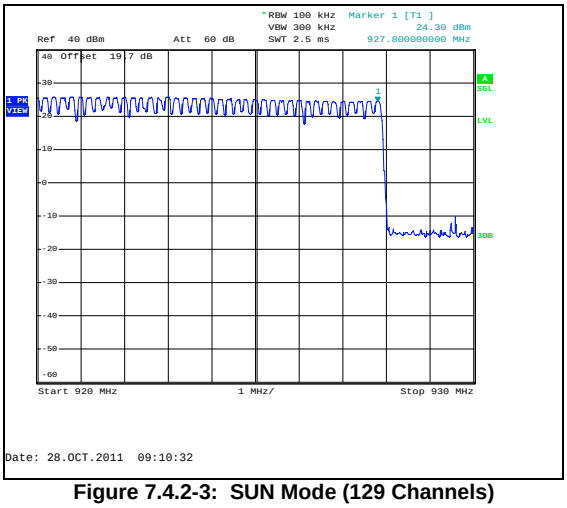


Figure 7.4.2-3: SUN Mode (129 Channels)

7.4.3 Channel Dwell Time – FCC: Section 15.247(a)(1)(i) IC: RSS-210 A8.1(c)

7.4.3.1 Measurement Procedure

The EUT test mode does not generate a worst case channel dwell time therefore a detailed engineering analysis is provided in the theory of operation.

As described in the theory of operation, the maximum channel transmitter dwell time is < 400ms per channel hop with the minimum period of 700ms between hops. Therefore the maximum time of occupancy on any one channel with a 20s period is <400ms for all modes of operation.

7.4.4 20dB / 99% Bandwidth - FCC: Section 15.247(a)(1)(i) IC: RSS-210 A8.1(c)

7.4.4.1 Measurement Procedure

The span of the spectrum analyzer display was set between two times and five times the occupied bandwidth (OBW) of the emission. The RBW of the spectrum analyzer was set to approximately 1 % to 5 % of the OBW.

The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission and side bands. The RBW was to ~ 1% of the span. The trace was set to max hold with a sample detector. The occupied bandwidth measurement function of the analyzer was used for the 99% bandwidth.

7.4.4.2 Measurement Results

Results are shown below in Table 7.4.4.2-1 and Figures 7.4.4.2-1 through 7.4.4.2-6.

Table 7.4.4.2-1: 20dB / 99% Bandwidth

Frequency [MHz]	20dB Bandwidth [kHz]	99% Bandwidth [kHz]	Data Rate (kbps)
902.2	116.0	110.5	50.0
915.0	120.5	112.0	50.0
927.8	118.5	112.0	50.0

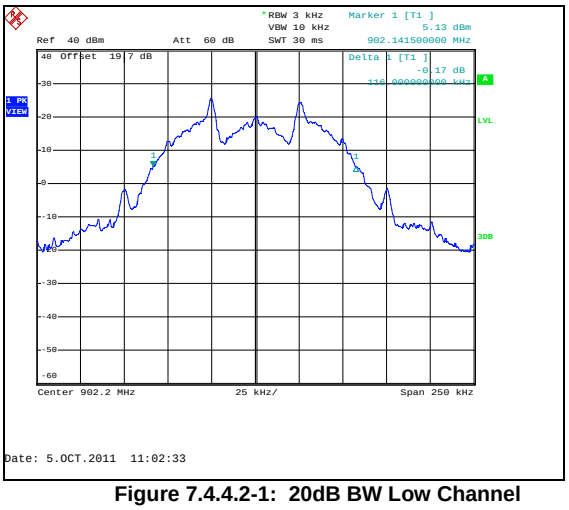


Figure 7.4.4.2-1: 20dB BW Low Channel

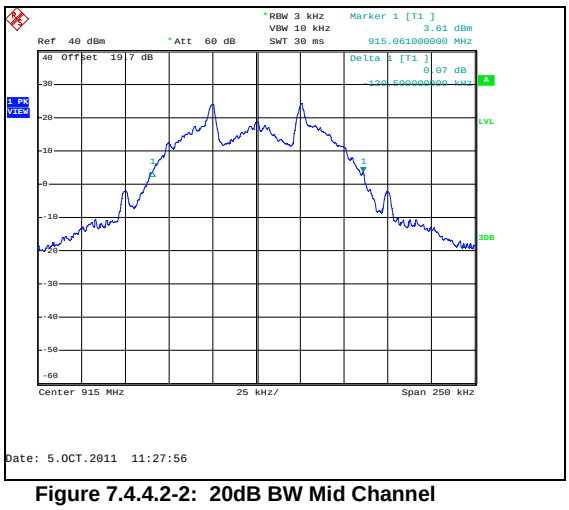


Figure 7.4.4.2-2: 20dB BW Mid Channel

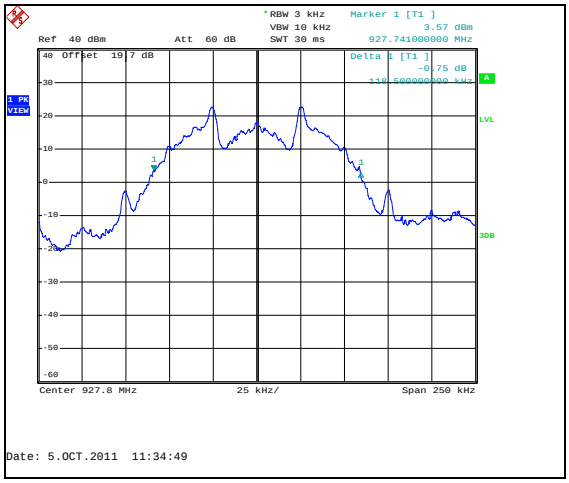


Figure 7.4.4.2-3: 20dB BW High Channel

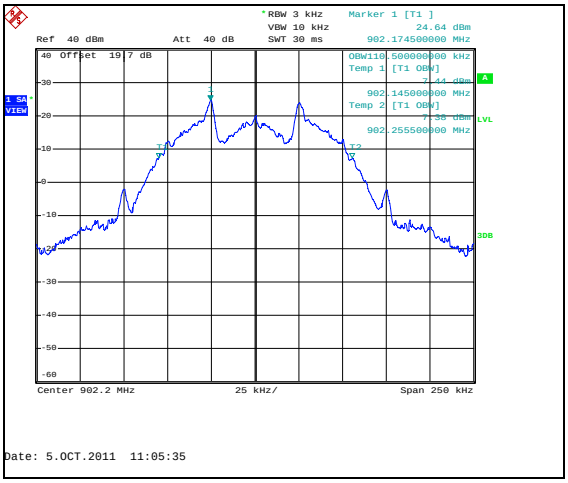


Figure 7.4.4.2-4: 99% BW Low Channel

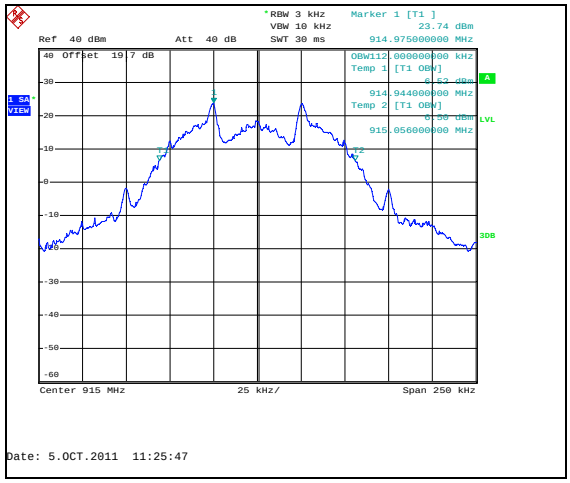


Figure 7.4.4.2-5: 99% BW Mid Channel

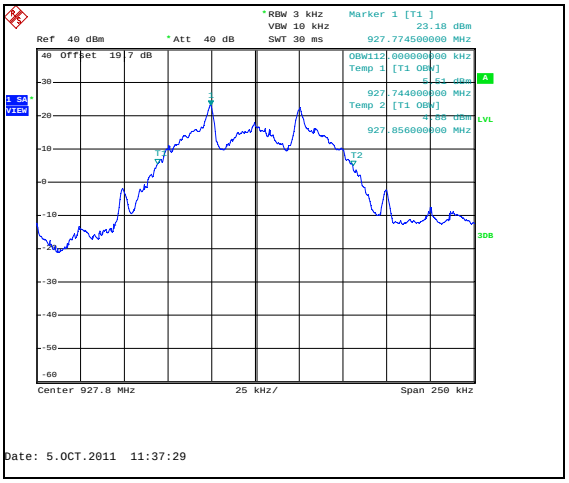


Figure 7.4.4.2-6: 99% BW High Channel

7.5 Band-Edge Compliance and Spurious Emissions-FCC 15.247(d) IC: RSS-210 2.2, A8.5

7.5.1 Band-Edge Compliance of RF Conducted Emissions

7.5.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The EUT was investigated at the lowest and highest channel available to determine band-edge compliance. For each measurement the spectrum analyzer's RBW was set to 100 kHz and the VBW was set to 300kHz.

Band-edge was evaluated for 50.0kbps data rate (Sun Mode).

7.5.1.2 Measurement Results

Results are shown in the figures 7.5.1.2-1 to 7.5.1.2-4 below.

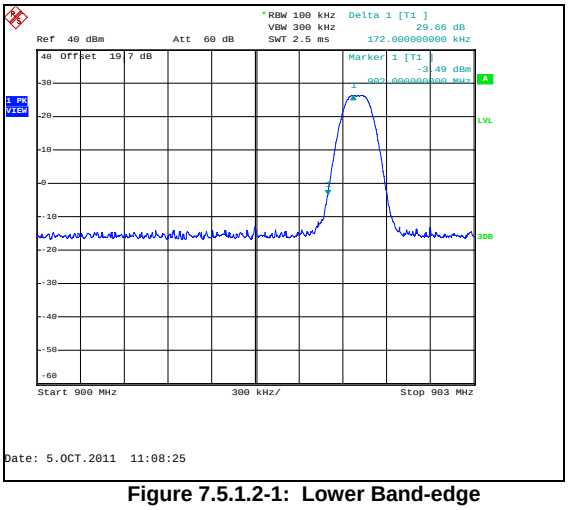


Figure 7.5.1.2-1: Lower Band-edge

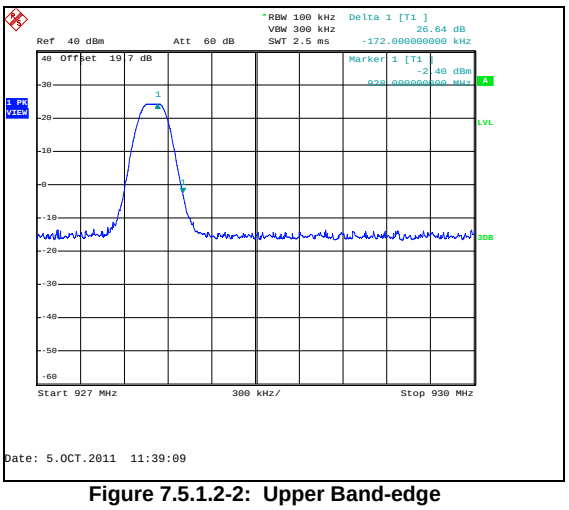


Figure 7.5.1.2-2: Upper Band-edge

HOPPING MODE:

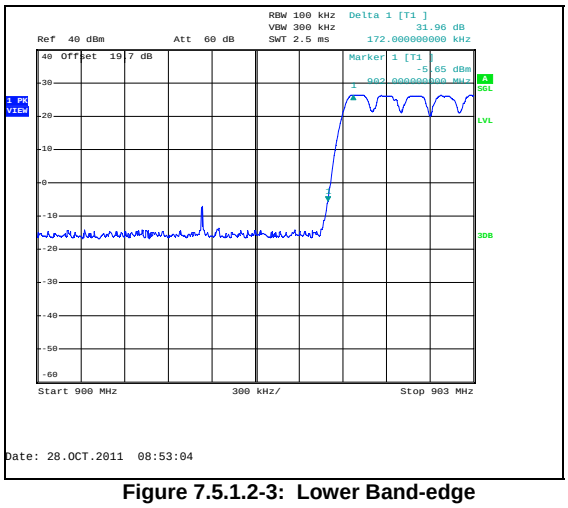


Figure 7.5.1.2-3: Lower Band-edge

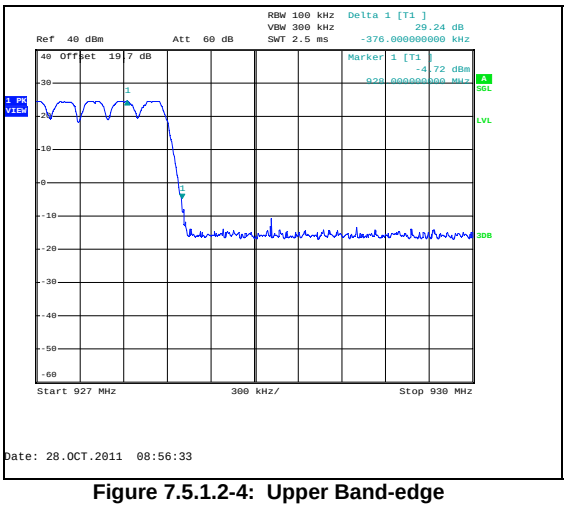


Figure 7.5.1.2-4: Upper Band-edge

7.5.2 RF Conducted Spurious Emissions

7.5.2.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The EUT was investigated for conducted spurious emissions from 30MHz to 10GHz, 10 times the highest fundamental frequency. Measurements were made at the low, center and high channels of the EUT. For each measurement, the spectrum analyzer's RBW was set to 100kHz. A peak detector function was used with the trace set to max hold.

RF conducted spurious emissions were evaluated for 50.0kbps data rate (Sun Mode).

7.5.2.2 Measurement Results

Results are shown below in Figures 7.5.2.2-1 to 7.5.2.2-6:

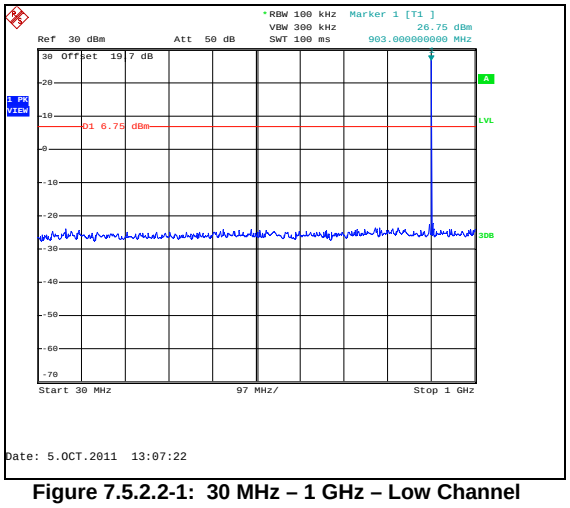


Figure 7.5.2.2-1: 30 MHz – 1 GHz – Low Channel

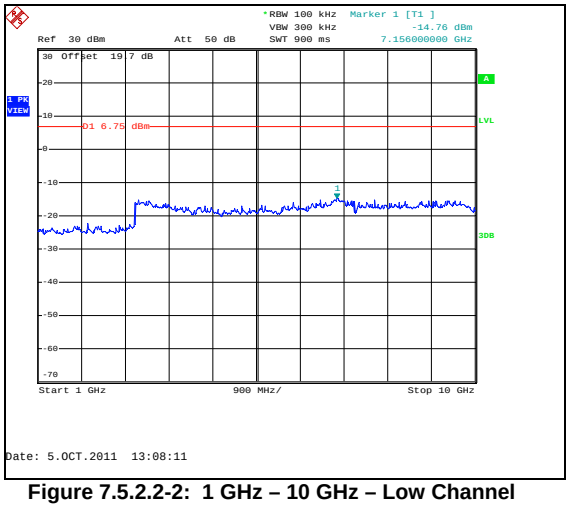


Figure 7.5.2.2-2: 1 GHz – 10 GHz – Low Channel

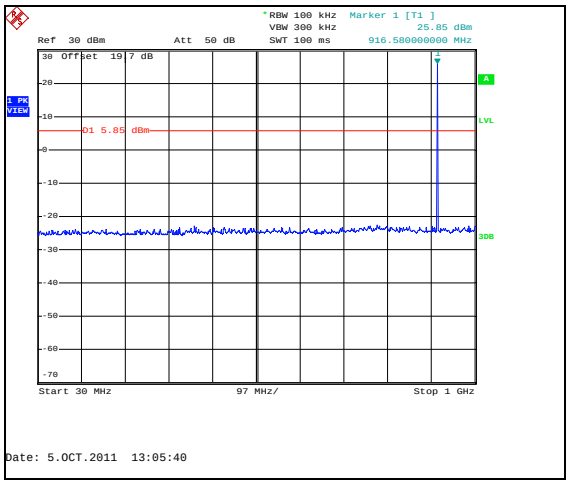


Figure 7.5.2.2-3: 30 MHz – 1 GHz –Mid Channel

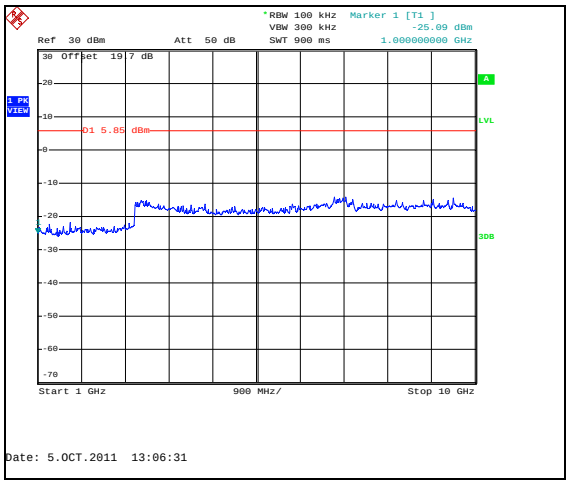


Figure 7.5.2.2-4: 1 GHz – 10 GHz – Mid Channel

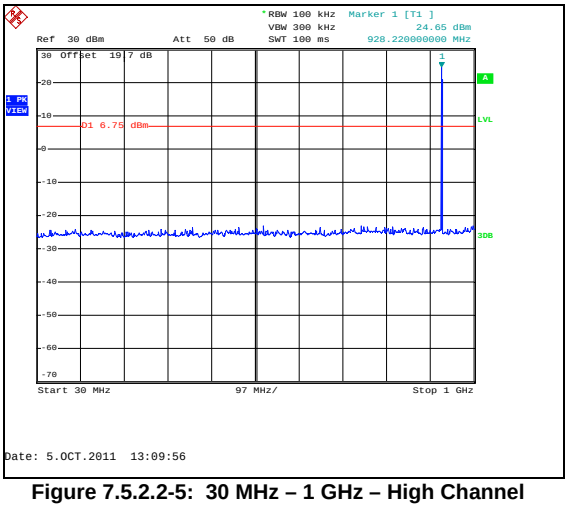


Figure 7.5.2.2-5: 30 MHz – 1 GHz – High Channel

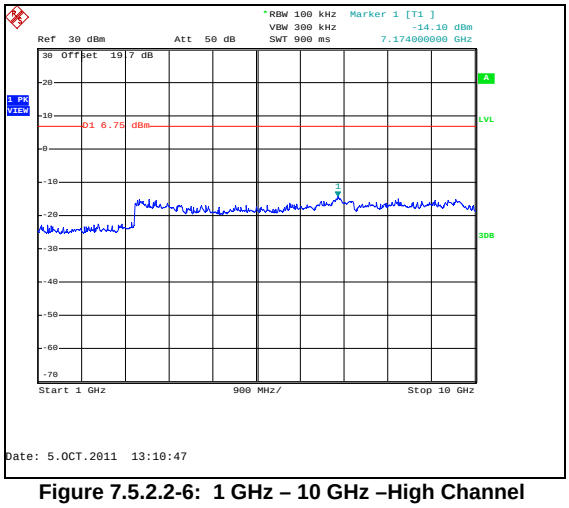


Figure 7.5.2.2-6: 1 GHz – 10 GHz –High Channel

7.5.3 Radiated Spurious Emissions (Restricted Bands)

7.5.3.1 Measurement Procedure

Radiated emissions tests were made over the frequency range of 30MHz to 10GHz, 10 times the highest fundamental frequency.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000MHz, quasi-peak measurements were made using a resolution bandwidth, RBW, of 120 kHz and a video bandwidth, VBW, of 300 kHz. For frequencies above 1000MHz, peak and average measurements made with RBW and VBW of 1 MHz and 3MHz respectively.

The EUT was caused to generate a continuous carrier signal on the hopping channel.

Radiated spurious emissions were evaluated for 50.0kbps data rate (Sun Mode).

7.5.3.2 Measurement Results

Radiated spurious emissions found in the band of 30MHz to 10GHz are reported in the Table 7.5.3.2-1 below.

Table 7.5.3.2-1: Radiated Spurious Emissions Tabulated Data

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel										
2706.3	51.10	45.47	H	-3.99	47.11	41.48	74.0	54.0	26.9	12.5
2706.3	54.11	49.84	V	-3.99	50.12	45.85	74.0	54.0	23.9	8.2
Mid Channel										
2745	54.20	50.65	H	-3.89	50.31	46.76	74.0	54.0	23.7	7.2
2745	54.56	50.60	V	-3.89	50.67	46.71	74.0	54.0	23.3	7.3
High Channel										
2783.7	54.31	50.65	H	-3.79	50.52	46.86	74.0	54.0	23.5	7.1
2783.7	55.19	51.84	V	-3.79	51.40	48.05	74.0	54.0	22.6	5.9

7.5.3.3 Sample Calculation:

$R_C = R_U + CF_T$

Where:

CF_T	=	Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only)
R_U	=	Uncorrected Reading
R_C	=	Corrected Level
AF	=	Antenna Factor
CA	=	Cable Attenuation
AG	=	Amplifier Gain
DC	=	Duty Cycle Correction Factor

Example Calculation: Peak
Corrected Level: 51.10 - 3.99 = 47.11dBuV/m
Margin: 74dBuV/m – 47.11dBuV/m = 26.9dB

Example Calculation: Average
Corrected Level: 45.47 - 3.99 - 0= 41.48dBuV
Margin: 54dBuV – 41.48dBuV = 12.5dB

8 CONCLUSION

In the opinion of ACS, Inc. the 0864, manufactured by Hunt Technologies, Inc. meets the requirements of FCC Part 15 subpart C and Industry Canada's Radio Standards Specification RSS-210.

END REPORT