FCC Part 15 Subpart C
Frequency Hopping
Spread Spectrum Transmitter

Certification Test Report

Manufacturer: Neptune Technology Group

Model: R900-v2

Variants:
- ◊ Pit Mounted MIU with External Antenna
- ◊ Wall Mounted MIU with Integrated Antenna

Rules Section: 15.247

Test Begin Date: January 29, 2004

Test End Date: March 8, 2004

Report Issue Date: March 12, 2004

ACS Report Number: 04-0044-15C

Test Result: PASS

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1.0 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.

1.2 Product Description

1.2.1 General
The Equipment Under Test(EUT) is the Model RF900-v3. This report covers 2 variants of the product that are identified as the Wall Mounted Meter Interface Unit (MIU) and the Pit Mounted MIU. Both variants are electrically identical and differ only in their antennas, mounting scheme and enclosure. The Wall mounted MIU uses an integrated folded dipole antenna and is usually wall mounted. The PIT Mounted MIU is usually mounted in a pit underground and uses a durable external patch antenna that is flush mounted to the surface above the pit.

Detailed photographs of the EUT are filed separately with this filing.

1.2.2 Intended Use

Wall Mount MIU – Engineering Sample: 1440001144
The R900 Wall Meter Interface Unit (MIU) is a compact electronic device that collects meter-usage data from an encoder register and transmits the data for collection by the meter reader. The R900 wall MIU provides water utilities with a reliable and economical RF reading solution. Data transmitted by the MIU is received by the Neptune walk-by or drive-by data collection system and stored for downloading at the utility office. The R900 wall MIU is a one-way communication device that transmits data using frequency-hopping spread-spectrum technology to ensure data security and improve meter reading accuracy. The R900 automatically detects the encoder without programming, reducing inventory and installation time. It can be easily mounted to most flat wall surfaces or pipe. The R900 wall MIU can be installed as far as 200 to 500 feet from the encoder register depending on the encoder register's manufacturer and model. The R900 wall MIU is compatible with Neptune ARB® V and ProRead AutoDetect encoder registers as well as Invensys ECR II® encoders. The MIU automatically detects the encoder type and adjusts to read the encoder. Connected to the encoder register by a three-conductor wire, the R900 Wall MIU reads the encoder register automatically, once an hour and transmits that data every four seconds. The MIU is designed to easily upgrade existing probe-based systems that use ARB V, ProRead AutoDetect, or Invensys ECR II encoder registers. The MIU simply connects to the existing three-conductor wire and will reutilize the existing mounting holes.

Pit Mount MIU – Engineering Sample: 1450001004
The R900 Pit Meter Interface Unit (MIU) is a compact electronic device that collects meter-usage data from an encoder register and transmits the data from the meter pit for collection by the meter reader. The R900 pit MIU provides water utilities with a reliable and economical RF reading solution. It has been specifically engineered to withstand the water meter pit environment. Data transmitted by the MIU is received by the Neptune walk-by or drive-by data collection system and stored for downloading at the utility office. The R900 pit MIU is a one-way communication device that transmits data using frequency-hopping spread-spectrum technology to ensure data security and improve meter reading accuracy. The R900 automatically detects the encoder without programming, reducing inventory and installation time. The antenna is mounted through the industry-standard 1-3/4" lid hole. Its metallic design allows installation in traffic areas. The antenna is coupled to the electronic assembly which goes under the lid. The assembly is fully potted to allow submersion (flooding of pits). The R900 pit MIU is compatible with the ARB® V and ProRead AutoDetect encoder registers as well as Invensys ECR II® encoders. The MIU automatically detects the encoder type and adjusts to read the encoder. Connected to the encoder register by a three-conductor wire, the R900 pit MIU reads the encoder register automatically once an hour and transmits that data every four seconds. The MIU is designed to easily upgrade existing probe-based systems that use ProRead pit receptacles since it can be installed in the existing predrilled 1-3/4" pit lid.

1.2.3 Technical Specifications

Table 1.2.3-1: Specifications

Frequency Band	902-928
Number of Channels	50
Channel Bandwidth	92kHz Nominal
Channel Spacing	N/A
Output power	18dBm nominal
Antenna Type	Wall Unit: 0dBi Closed Loop and Pit Unit: 0dBi Patch
Antenna Connector Type	Dipole Permanently Attached, Patch uses F type connector

1.2.4 Antennas

The Wall Antenna is a folded closed loop antenna. Purchased from outsource vendors. Neptune Technology Group Inc. model number of 12524-00X. The maximum gain is 0dB. This antenna will be soldered to the PCB.

The Pit Antenna is a patch antenna. . Purchased from outsource vendors. Neptune Technology Group Inc. model number of 12527-000. The maximum gain is 0dB. This antenna has an F-type male connector with custom water seal and strain relief bracket.

2.0 LOCATION OF TEST FACILTY

All testing was performed by qualified ACS personnel located at the following address:

ACS, Inc.
5015 B.U. Bowman Drive
Buford, GA 30518

2.1 DESCRIPTION OF TEST FACILITY

Both the 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.

The following certification numbers have been issued in recognition of these accreditations and certifications:

FCC Registration Number: 89450
Industry Canada Lab Code: IC 4175
VCCI Member Number: 1831

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

2.1.1 Open Area Test Site

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 3.2-1 below:

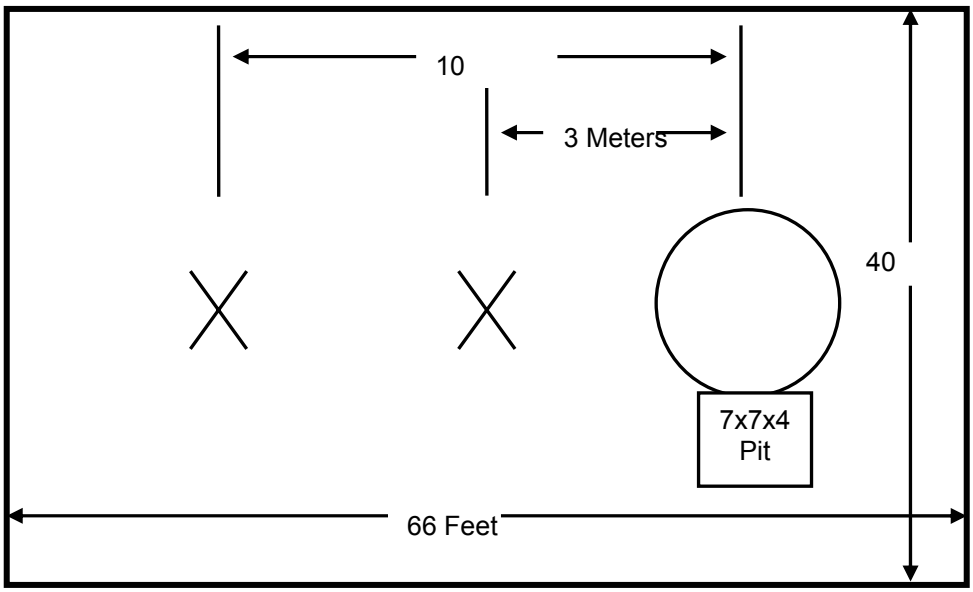


Figure 3.2-1: Open Area Test Site

2.1.2 Conducted Emissions Test Site Description
The AC mains conducted EMI site is a shielded room with the following dimensions:

- Height: 3.0 Meters
- Width: 3.6 Meters
- Length: 4.9 Meters

The room is manufactured by Rayproof Corporation and installed by Panashield, Inc. Earth ground is provided to the room via an 8' copper ground rod. Each panel of the room is connected electrically at intervals of 4".

Power to the room is filtered to prevent ambient noise from coupling to the EUT and measurement equipment. Filters are models 1B42-60P manufactured by Rayproof Corporation.

The room 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 2.1.2-1:

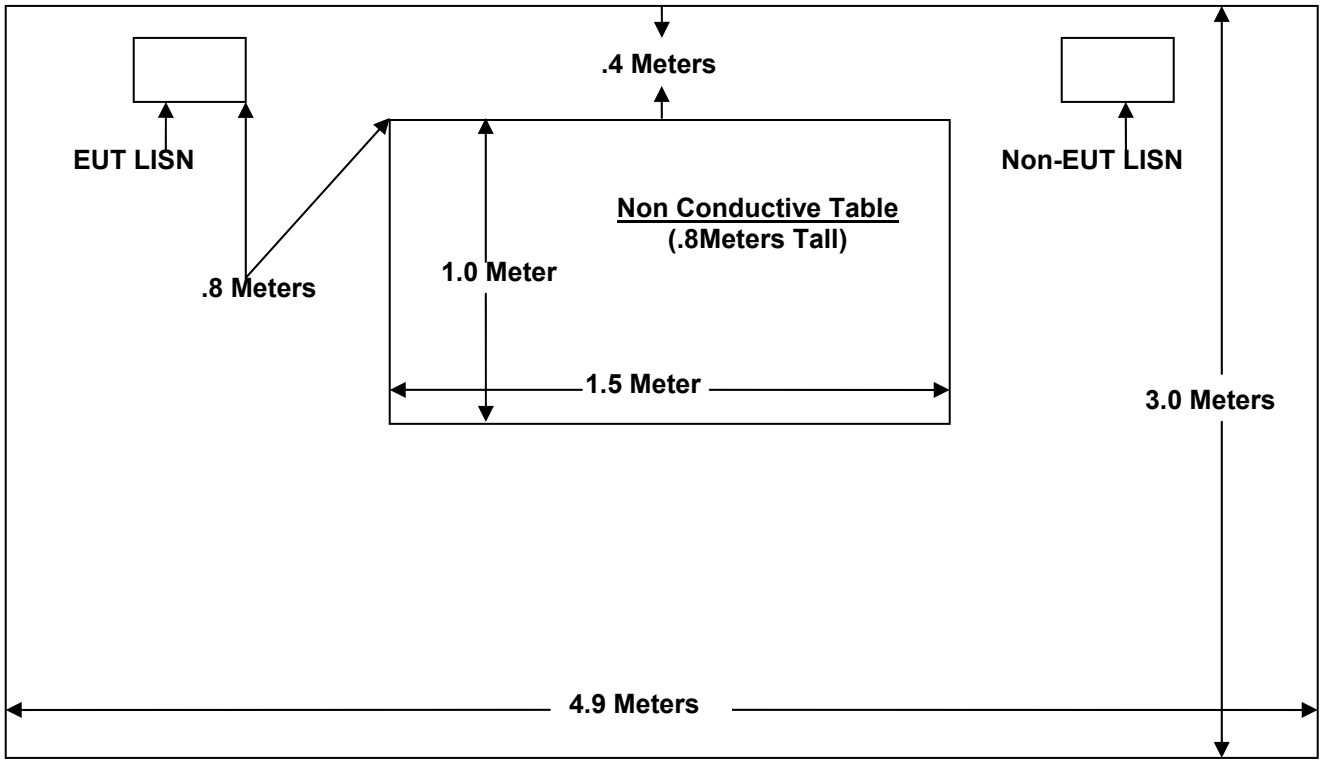


Figure 3.3-1: AC Mains Conducted EMI Site

3.0 APPLICABLE STANDARD REFERENCES
The following standards were used:

1 - ANSI C63.4-1992: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9KHz to 40GHz

2 - US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators (October 2000)

3 - FCC OET Bulletin 65 Appendix C - Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

4.0 LIST OF TEST EQUIPMENT

All test equipment used for regulatory testing is calibrated yearly or according to manufacturer's specifications.

Table 4-1: Test Equipment

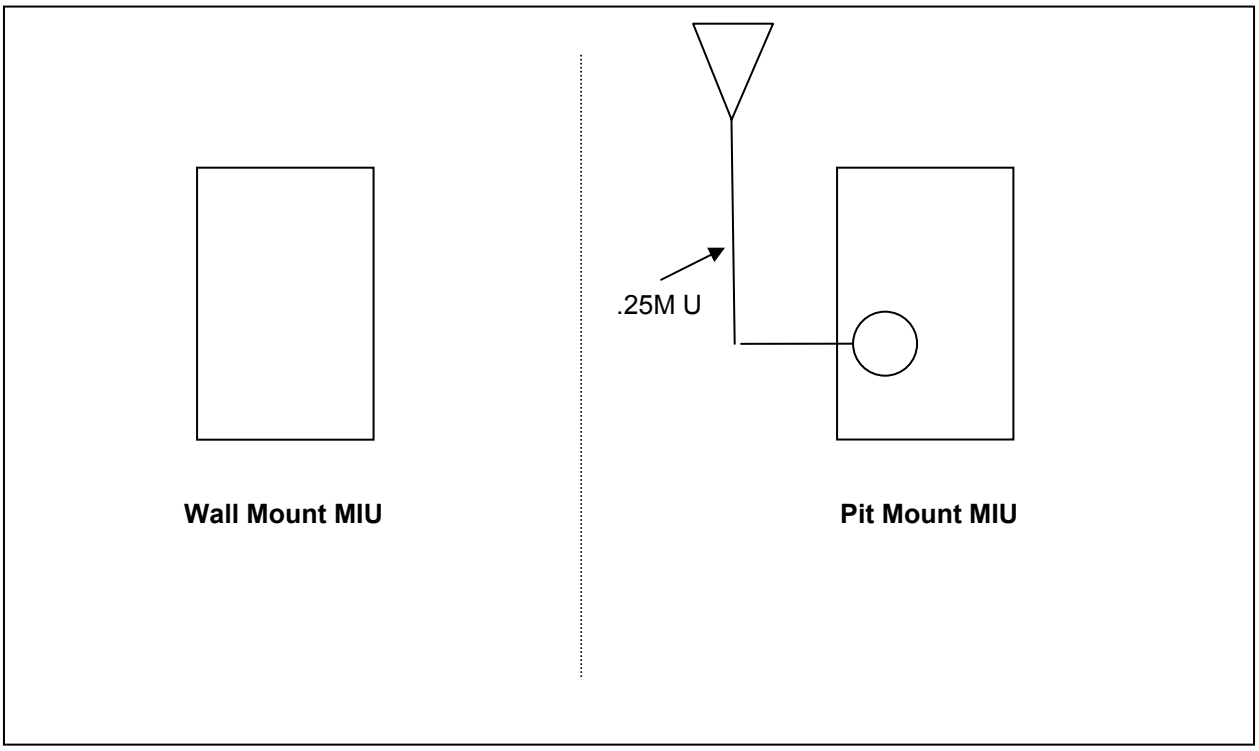
Equipment Calibration Information					
ACS #	**Mfg.**	**Eq. type**	**Model**	**S/N**	**Cal. Due**
---	Agilent	Spectrum Analyzer	E7402A	US40240259	11/08/04
---	Agilent	Spectrum Analyzer	8563EC	4111A01283	10/10/04
26	Chase	Bi-Log Antenna	CBL6111	1044	10/14/04
152	EMCO	LISN	3825/2	9111-1905	1/08/05
153	EMCO	LISN	3825/2	9411-2268	12/11/04
193	ACS	OATS Cable Set	RG8	193	1/09/05
167	ACS	Conducted EMI Cable Set	RG8	167	1/09/05
24	ACS	Cable	Heliax	24	04/07/04
5	ACS	Cable	LL-335	None	8/20/04
6	ACS	Cable	LL-335	None	8/6/04
22	Agilent	Pre-Amplifier	8449B	3008A00526	9/18/04
73	Agilent	Pre-Amplifier	8447D	272A05624	04/15/04
30	Spectrum Technologies	Horn Antenna	DRH-0118	970102	5/8/04
105	Microwave Circuits	High Pass Filter	H1G810G1	2123-01 DC0225	6/17/04
40	EMCO	Biconical Antenna	3104	3211	9/19/04

5.0 SUPPORT EQUIPMENT

Table 5-3: Support Equipment

Manufacturer	Equipment Type	Model Number	Serial Number	FCC ID
	EUT Was Self Supporting			

6.0 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM



M = Meters **S = Shielded** **U = Unshielded**

Figure 6-1: EUT Test Setup

7.0 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

Both the wall and pit mounted MIU are professionally installed equipment. The wall unit antenna is integrated and soldered to the board. The Pit mounted unit is installed underground and the antenna is flush mounted into the surface above the pit in which the MIU is installed.

7.2 Power Line Conducted Emissions - FCC Section 15.207

Conducted emissions were performed from 450kHz to 30MHz with the spectrum analyzer's resolution bandwidth set to 9kHz and the video bandwidth set to 30kHz. Results of the test are shown below in figure 1 and tables 7.2-1 and 7.2-2.

Table 7.2-1: Line 1 Conducted EMI Results (Quasi-Peak)

Frequency MHz	Level	Transducer dBµV	Limit dB	Margin dBµV	Line dB	PE
Both Variants are Battery Powered – Conducted Emissions Not Required						

Table 7.2-2: Line 2 Conducted EMI Results(Average)

Frequency MHz	Level	Transducer dBµV	Limit dB	Margin dBµV	Line dB	PE
Both Variants are Battery Powered – Conducted Emissions Not Required						

7.3 Radiated Emissions - FCC Section 15.209(Unintentional Radiation)

Radiated emissions tests were performed over the frequency range of 30MHz to 10GHz, 10 times the highest fundamental frequency. Measurements of the radiated field strength were made at a distance of 3m from the boundary of the equipment under test (EUT) and the receiving antenna. The antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. Radiated measurements were made with the Spectrum Analyzer's resolution bandwidth set to 120KHz for measurements above 30MHz.

The EUT was caused to go into a "Receive Only" mode of operation for this test. Results of the test are given in Table 7.3-1 below:

Table 7.3-1: Radiated Emissions Tabulated Data

Frequency (MHz)	Uncorrected Reading (dBµV/m)	Antenna Polarity (H/V)	Antenna Height (cm)	Turntable Position (°)	Total Correction Factor (dB)	Corrected Reading (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Results
31.68	12.55	V	100	0	19.15	31.70	40	8.3	**Pass**
171.76	20.11	V	100	0	11.87	31.98	43.5	11.5	**Pass**
267.2	20.01	V	100	0	-8.84	11.17	46	34.8	**Pass**
305.36	19.08	V	100	0	-8.28	10.80	46	35.2	**Pass**
314.96	19.68	V	100	0	-8.13	11.55	46	34.5	**Pass**
324	23.05	V	100	0	-7.78	15.27	46	30.7	**Pass**
462	22.03	V	100	0	-3.30	18.73	46	27.3	**Pass**
664	25.9	V	100	0	1.49	27.39	46	18.6	**Pass**
925.92	19.32	V	100	0	5.85	25.17	46	20.8	**Pass**

7.4 Peak Output Power Requirement - FCC Section 15.247(b)

The peak output power of the EUT was made at the antenna connector using an 8560E Spectrum Analyzer. The 20dB bandwidth of the device was measured to be 183.3kHz, therefore a spectrum analyzer with the RBW set to 1MHz was used to measure the output power of the device. For the measurement, the EUT was caused to generate a continuous carrier. A 75 to 50Ohm adapter was used to compensate for the impedance mismatch of the EUT and measurement equipment. A correction factor of 6dB was added to the measured result and is reflected below. Results are shown below in Table 7.4-1 and Figures 7.4-1 through 7.4-3.

Table 7.4-1: Peak Output Power

Channel	Frequency (MHz)	Output Power (dBm)
Low	911.08	18.17
Mid	915.01	18.67
High	919.07	18.83

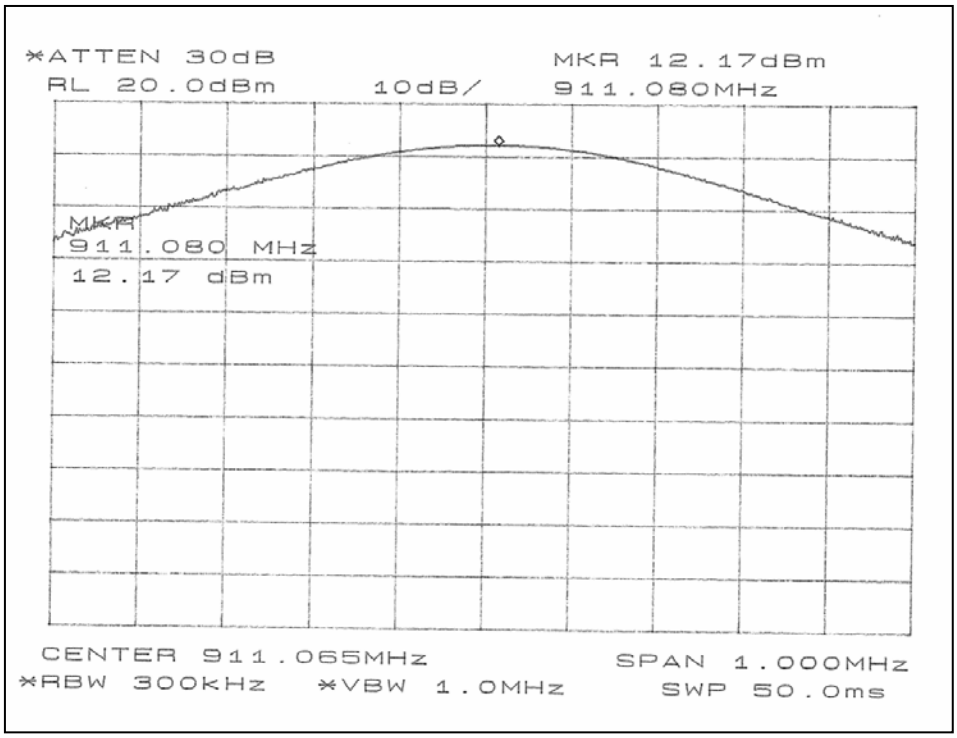


Figure 7.4-1: Output power – Low Channel

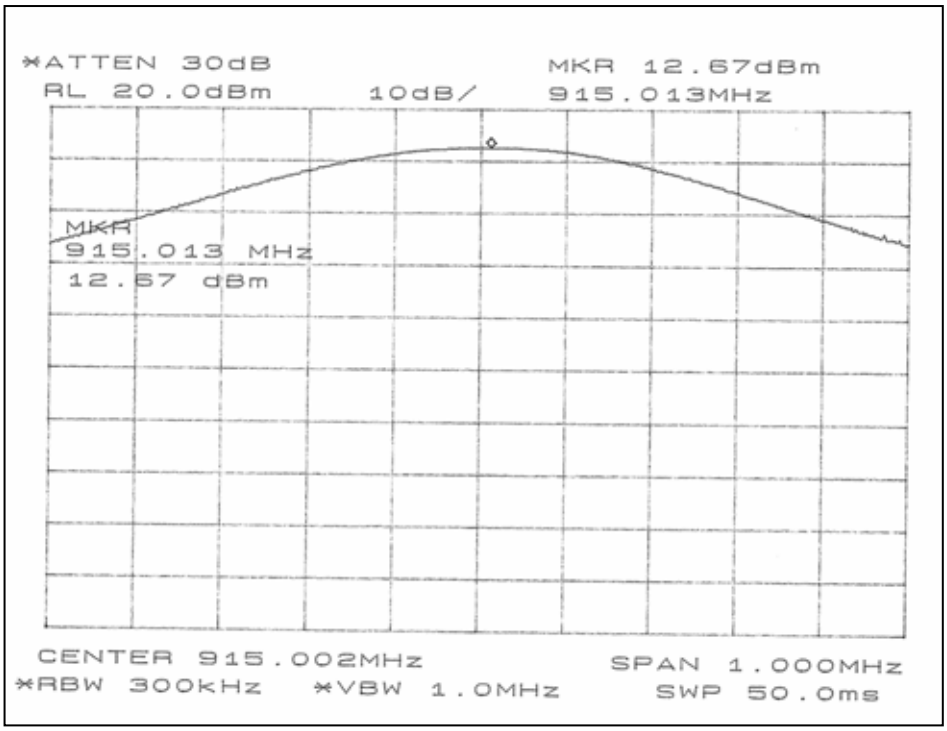


Figure 7.4-2: Output power – Middle Channel

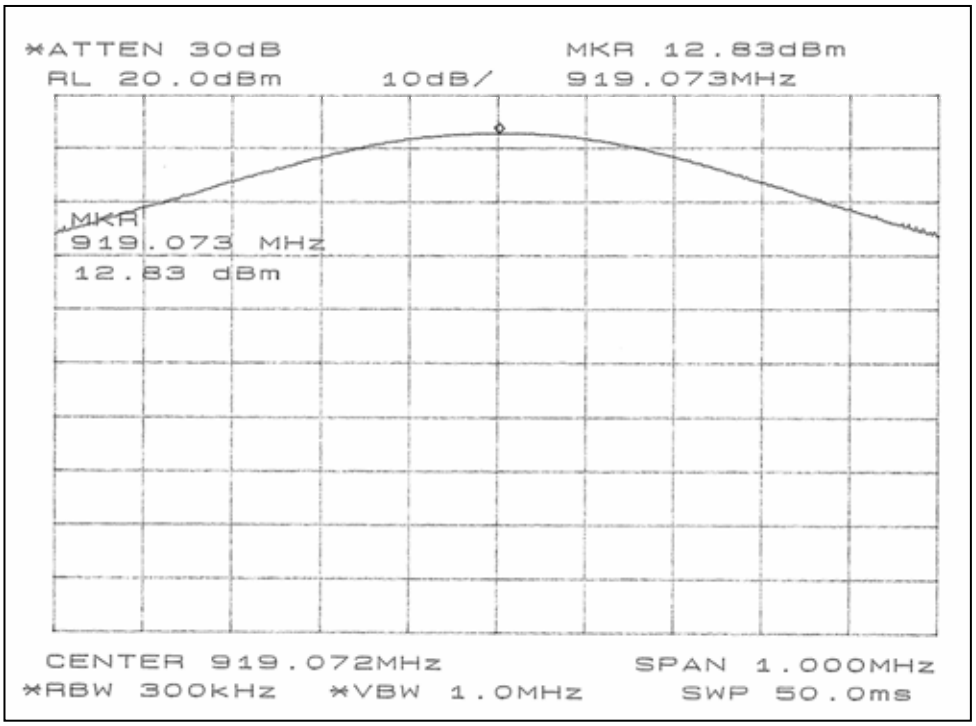


Figure 7.4-3: Output power – High Channel

7.5 Channel Usage Requirements - FCC Section 15.247(a)(1)

15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the wanted signal.

15.247(a)(1)(i): For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

7.5.1 Adjacent Channel Separation

Results: The 20dB bandwidth of the hopping channel was measured to be 181.3 kHz (See figure 7.5.4-1 below). The adjacent channel separation was measured to be 220kHz. Results are shown in figure 7.5.1-1 below:

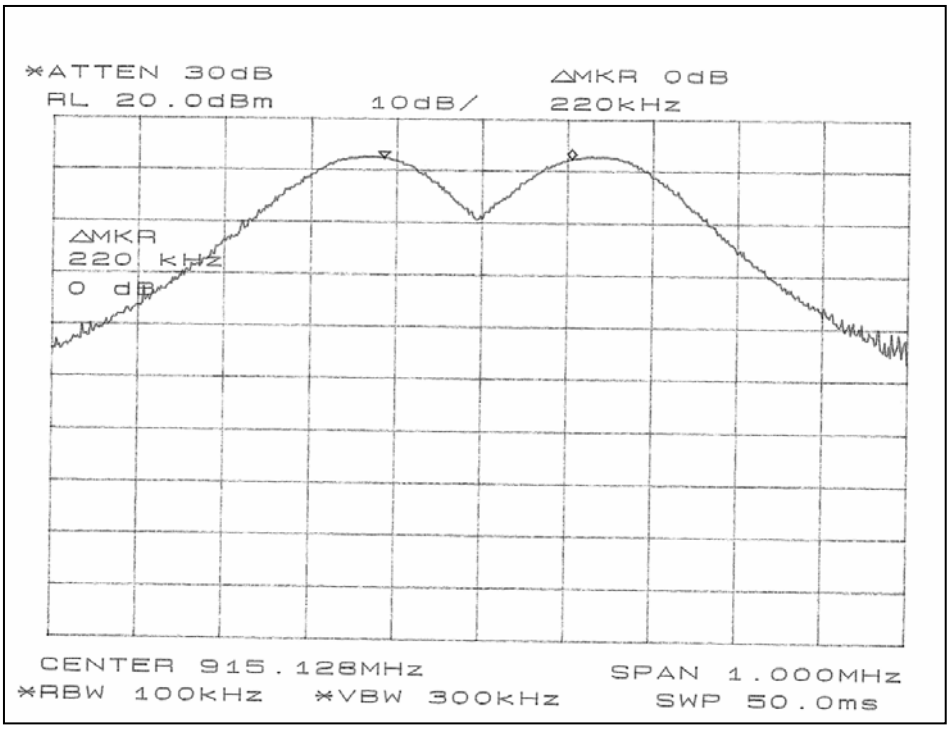


Figure 7.5.1-1: Adjacent Channel Separation

7.5.2 Number of Hopping Channels

Result: The 20dB bandwidth of the device is less than 250kHz. The device employs 50 hopping channels as required. Results are shown in figure 7.5.2-1 below

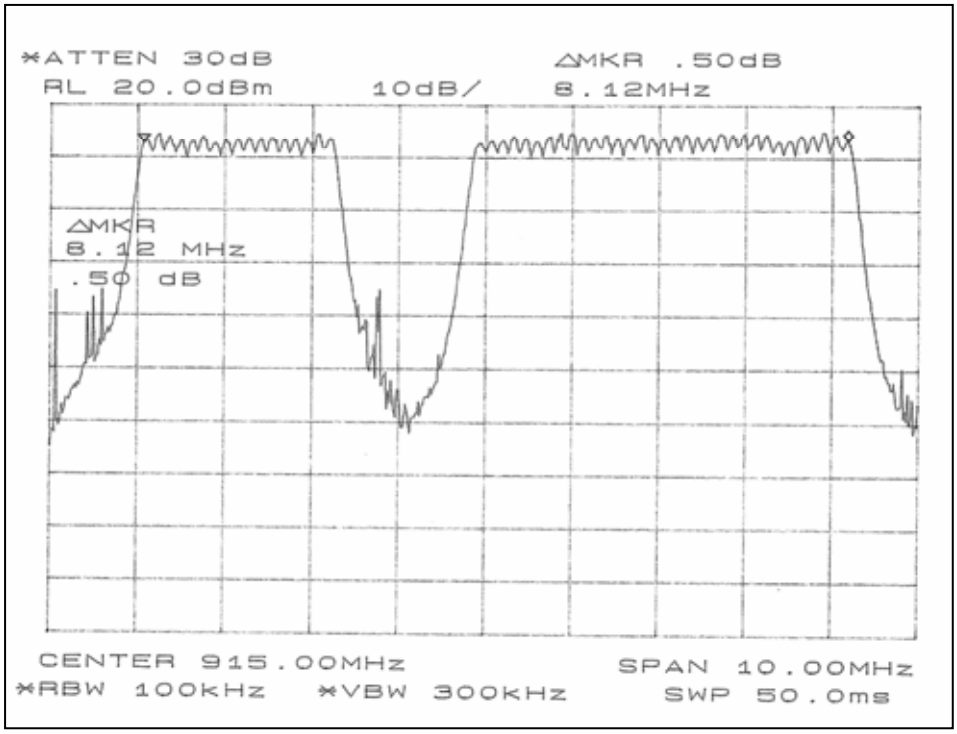


Figure 7.5.2-1: Number of Hopping Channels

7.5.3 Channel Dwell Time

Result: The duration of the RF transmission is 7.05 ms followed by a 13 second rest period in which the device hops to another channel according to the pseudorandom frequency table before transmitting another 7.05mS burst. Therefore the average time of occupancy on any channel in a 20 second period is 7.05mS. A single transmission is shown in figure 7.5.3-1 below:

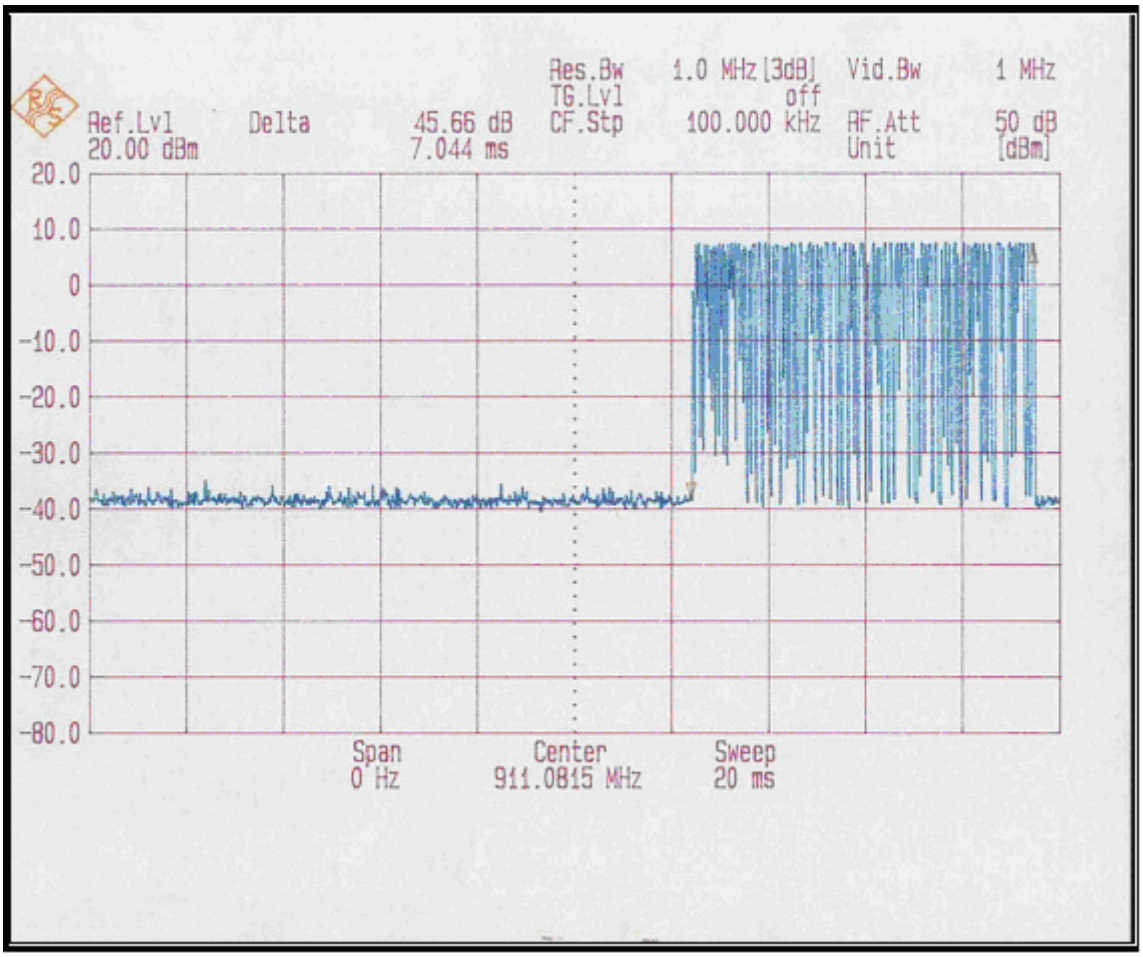


Figure 7.5.3-1: Channel Dwell Time

7.5.4 20dB Bandwidth

Result: The 20dB bandwidth was found to be less than 500kHz as required. Results are shown below in figure 7.5.4-1.

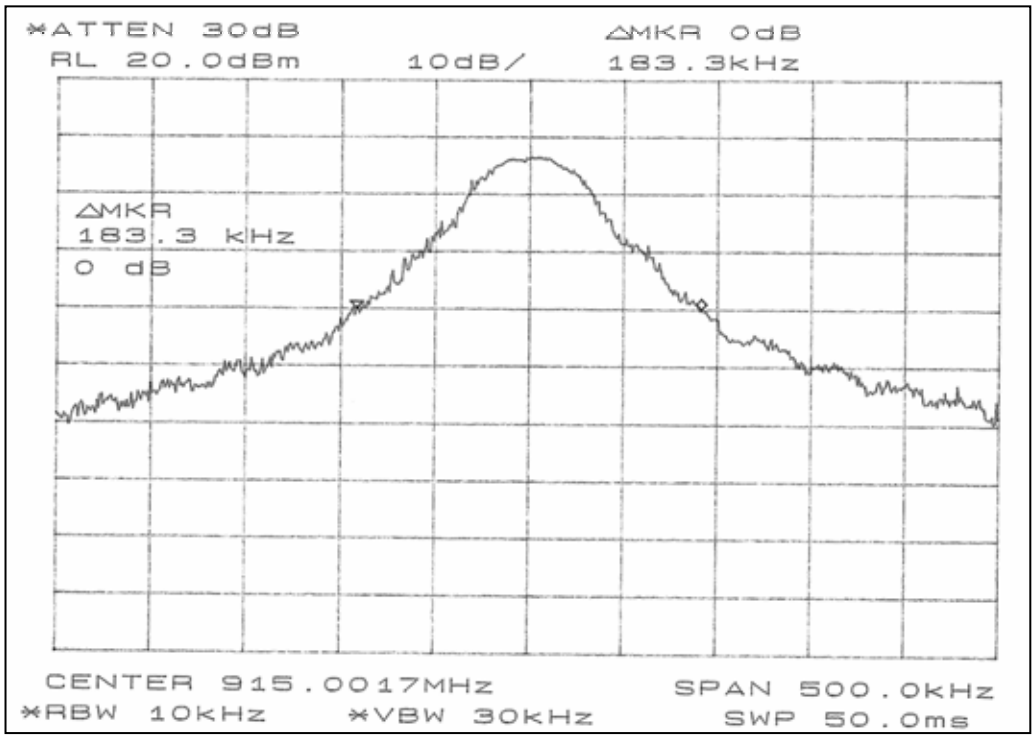


Figure 7.5.4-1: 20dB Bandwidth

7.6 Spurious Emissions - FCC Section 15.247(c)

7.6.1 RF Conducted Spurious Emissions

The EUT was investigated for conducted spurious emissions from 30MHz to 10GHz, 10 times the highest fundamental frequency. For each measurement, the spectrum analyzer's VBW was set to 100kHz and the RBW was set to 1MHz.

7.6.1.2 Test Results

All emission found were greater than 20dB down from the fundamental carrier. The RF conducted spurious emissions found in the band of 30MHz to 10GHz are reported in table 7.6.1.2-1 below.

Table 7.6.1.2-1: Conducted Spurious Emissions

Channel	Carrier Power (dBm)	Frequency (MHz)	Level (dBm)	dB Down from Carrier (dB)	Margin (dB)	Results (Pass/Fail)
Low - 910.1MHz	12.17	1820	-25.30	37.47	17.47	**Pass**
		2732	-46.70	46.70	26.70	**Pass**
		4840	-53.30	53.30	33.30	**Pass**
		6523	-54.00	54.00	34.00	**Pass**
		8345	-52.30	52.30	32.30	**Pass**
Middle - 914.7MHz	12.33	1830	-24.80	37.13	17.13	**Pass**
		2743	-47.30	47.30	27.30	**Pass**
		3343	-54.00	54.00	34.00	**Pass**
		6490	-53.20	53.20	33.20	**Pass**
		9820	-52.80	52.80	32.80	**Pass**
High - 917.8MHz	12.5	1837	-23.50	36.00	16.00	**Pass**
		2755	-47.67	47.67	27.67	**Pass**
		3137	-53.83	53.83	33.83	**Pass**
		6483	-53.67	53.67	33.67	**Pass**
		7675	-53.33	53.33	33.33	**Pass**

7.6.2 Radiated Spurious Emissions (Restricted Bands) - FCC Section 15.205

Radiated emissions tests were made over the frequency range of 30MHz to 10GHz, 10 times the highest fundamental frequency on each antenna given in section 1.2.3.

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 120kHz and a video bandwidth(VBW) of 300kHz. For frequencies above 1000MHz, average measurements were made using an RBW of 1MHz and a VBW of 10Hz and peak measurements were made with RBW of 1MHz and a VBW of 1MHz.

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

7.6.2.1 Duty Cycle Correction

For average measurements, the measured level was reduced by a factor 23dB to account for the duty cycle of the EUT. The EUT transmits for 7.05mS on a channel followed by a 13 second rest period before hopping to the next channel. The EUT does not return to the same channel for over 650 seconds. Therefore the duty cycle is 7.05%. The duty cycle correction factor is determined using the formula: 20log (.705)=-23dB.

7.6.2.2 Test Results

Radiated spurious emissions found in the band of 30MHz to 10GHz are reported in Table 7.6.2.2-1 and 7.6.2.2-2. Plots of these emissions are also presented separately in this filing. Each emission found to be in a restricted band as defined by section 15.205, was compared to the radiated emission limits for a class B device defined in section 15.209.

Table 7.6.2.2-1: Radiated Spurious Emissions – Wall Unit (Integrated Antenna)

Frequency (MHz)	Level (dBuV/m)	Detector (P/A)	Antenna Polarity (H/V)	Turntable Position (o)	Correction Factors (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
Low Channel								
2733	67.2	p	V	46	0.71	67.88	74.00	6.12
2733	58.5	a	V	46	-22.29	36.21	54.00	17.79
3644	63.5	p	V	46	7.63	71.13	74.00	2.87
3644	50.7	a	V	46	-15.37	35.30	54.00	18.70
4555	60.2	p	V	518	10.06	70.23	74.00	3.77
4555	51.0	a	V	518	-12.94	38.06	54.00	15.94
7288	49.0	p	V	220	17.21	66.21	74.00	7.79
7288	36.3	a	V	220	-5.79	30.54	54.00	23.46
8199	49.0	p	V	313	18.32	67.32	74.00	6.68
8199	36.2	a	V	313	-4.68	31.49	54.00	22.51
Middle Channel								
2745	61.2	p	h	530	0.73	61.96	74.00	12.04
2745	52.8	a	h	530	-22.27	30.56	54.00	23.44
3660	58.9	p	h	119	7.69	66.59	74.00	7.41
3660	46.1	a	h	119	-15.31	30.76	54.00	23.24
4575	58.6	p	h	20	10.16	68.73	74.00	5.27
4575	48.1	a	h	20	-12.84	35.23	54.00	18.77
7319	47.8	p	v	219	17.16	64.99	74.00	9.01
7319	38.2	a	v	219	-5.84	32.33	54.00	21.67
8235	45.0	p	v	482	18.27	63.27	74.00	10.73
8235	32.3	a	v	482	-4.73	27.60	54.00	26.40
High Channel								
2757	60.7	p	v	323	0.75	61.42	74.00	12.58
2757	54.5	a	v	323	-22.25	32.25	54.00	21.75
3676	60.3	p	h	56	7.75	68.08	74.00	5.92
3676	49.8	a	h	56	-15.25	34.58	54.00	19.42
4595	56.3	p	h	15	10.26	66.59	74.00	7.41
4595	47.3	a	h	15	-12.74	34.59	54.00	19.41
7352	48.2	p	v	215	17.10	65.27	74.00	8.73
7352	39.7	a	v	215	-5.90	33.77	54.00	20.23
8271	44.3	p	v	216	18.22	62.55	74.00	11.45
8271	31.5	a	v	216	-4.78	26.72	54.00	27.28

Table 7.6.2.2-2: Radiated Spurious Emissions – Pit Unit (External Antenna)

Frequency (MHz)	Level (dBuV/m)	Detector (P/A)	Antenna Polarity (H/V)	Turntable Position (o)	Correction Factors (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
Low Channel								
2733	60.83	p	v	270	0.71	61.54	74.00	12.46
2733	57.17	a	v	270	-22.29	34.88	54.00	19.12
3644	53.83	p	v	87	7.63	61.46	74.00	12.54
3644	49.83	a	v	87	-15.37	34.46	54.00	19.54
4555	57.5	p	v	310	10.06	67.56	74.00	6.44
4555	44.33	a	v	310	-12.94	31.39	54.00	22.61
7288	53.17	p	v	260	17.21	70.38	74.00	3.62
7288	43.2	a	v	260	-5.79	37.41	54.00	16.59
8199	45.5	p	v	103	18.32	63.82	74.00	10.18
8199	32.5	a	v	103	-4.68	27.82	54.00	26.18
Middle Channel								
2745	61.83	p	v	177	0.73	62.56	74.00	11.44
2745	53.5	a	v	177	-22.27	31.23	54.00	22.77
3660	65.17	p	v	260	7.69	72.86	74.00	1.14
3660	51.5	a	v	260	-15.31	36.19	54.00	17.81
4575	59.33	p	v	287	10.16	69.49	74.00	4.51
4575	49.5	a	v	287	-12.84	36.66	54.00	17.34
7319	50	p	v	99	17.16	67.16	74.00	6.84
7319	36.5	a	v	99	-5.84	30.66	54.00	23.34
8235	44.67	p	v	270	18.27	62.94	74.00	11.06
8235	32.33	a	v	270	-4.73	27.60	54.00	26.40
High Channel								
2757	64.83	p	v	272	0.75	65.58	74.00	8.42
2757	60	a	v	272	-22.25	37.75	54.00	16.25
3676	65	p	v	100	7.75	72.75	74.00	1.25
3676	52.67	a	v	100	-15.25	37.42	54.00	16.58
4595	58.67	p	V	282	10.26	68.93	74.00	5.07
4595	44.17	a	v	282	-12.74	31.43	54.00	22.57
7352	52.17	p	v	14	17.10	69.27	74.00	4.73
7352	38.67	a	v	14	-5.90	32.77	54.00	21.23
8271	46.33	p	v	334	18.22	64.55	74.00	9.45
8271	36.5	a	v	334	-4.78	31.72	54.00	22.28

7.6.2.3 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:

Corrected Level: 67.2 + .71) = 67.91 dBuV

Margin: 74dBuV – 67.91dBuV = 6.09dB

8.0 CONCLUSION

In the opinion of ACS, Inc. the R900-v3, manufactured by Neptune Technology Group, meets the requirements of FCC Part 15 subpart C.